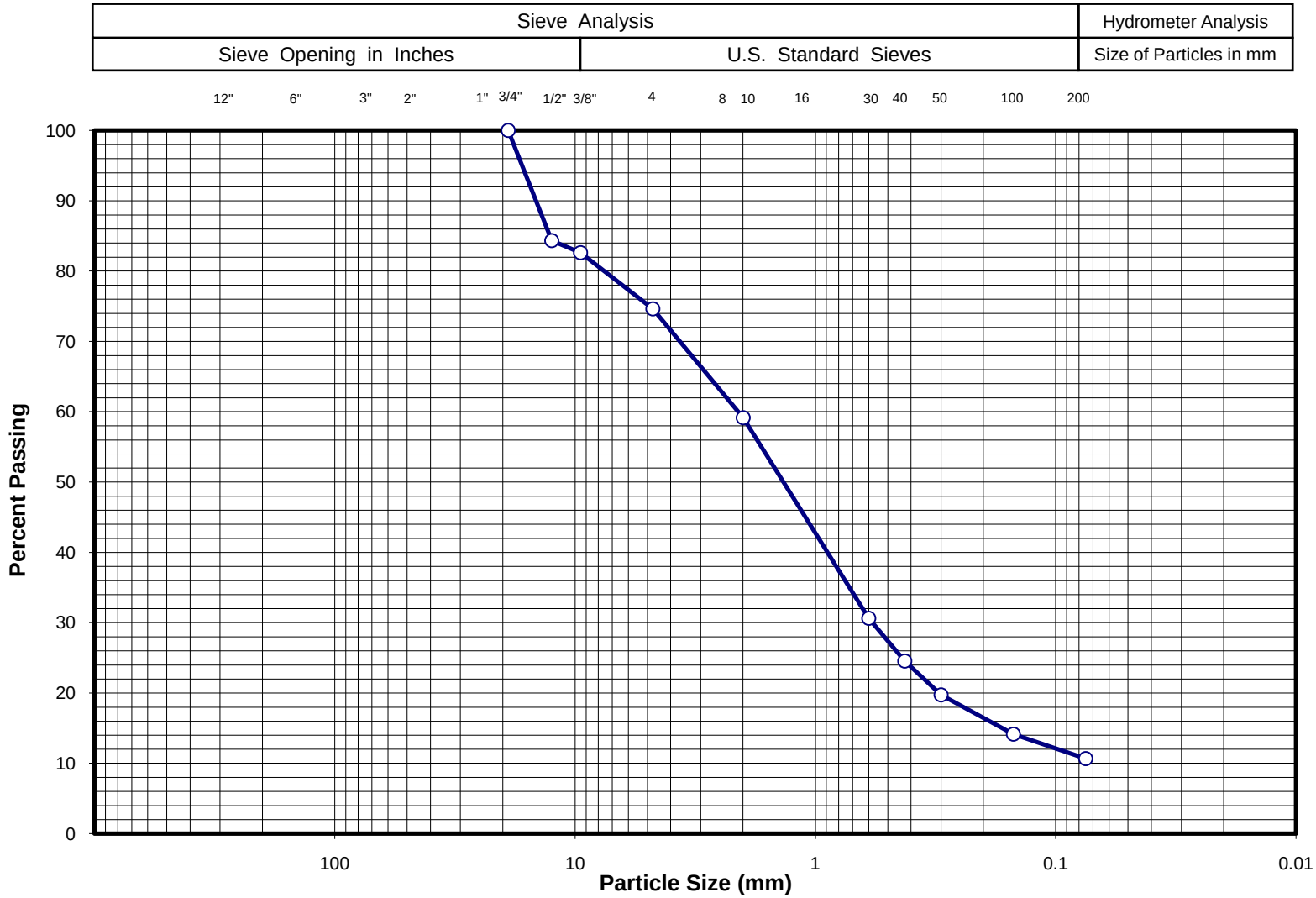

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	84
⅜"	83
#4	75
#10	59
#40	25
#200	11

Gravel (%)	25	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	64	PL	NP	Sample ID:	YA-B3
Fines (%)	11	PI	NP	Sample Depth (ft.):	15
Sample Description:	A-1-b (0) / SW-SM				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/05/12	Figure No.:	-

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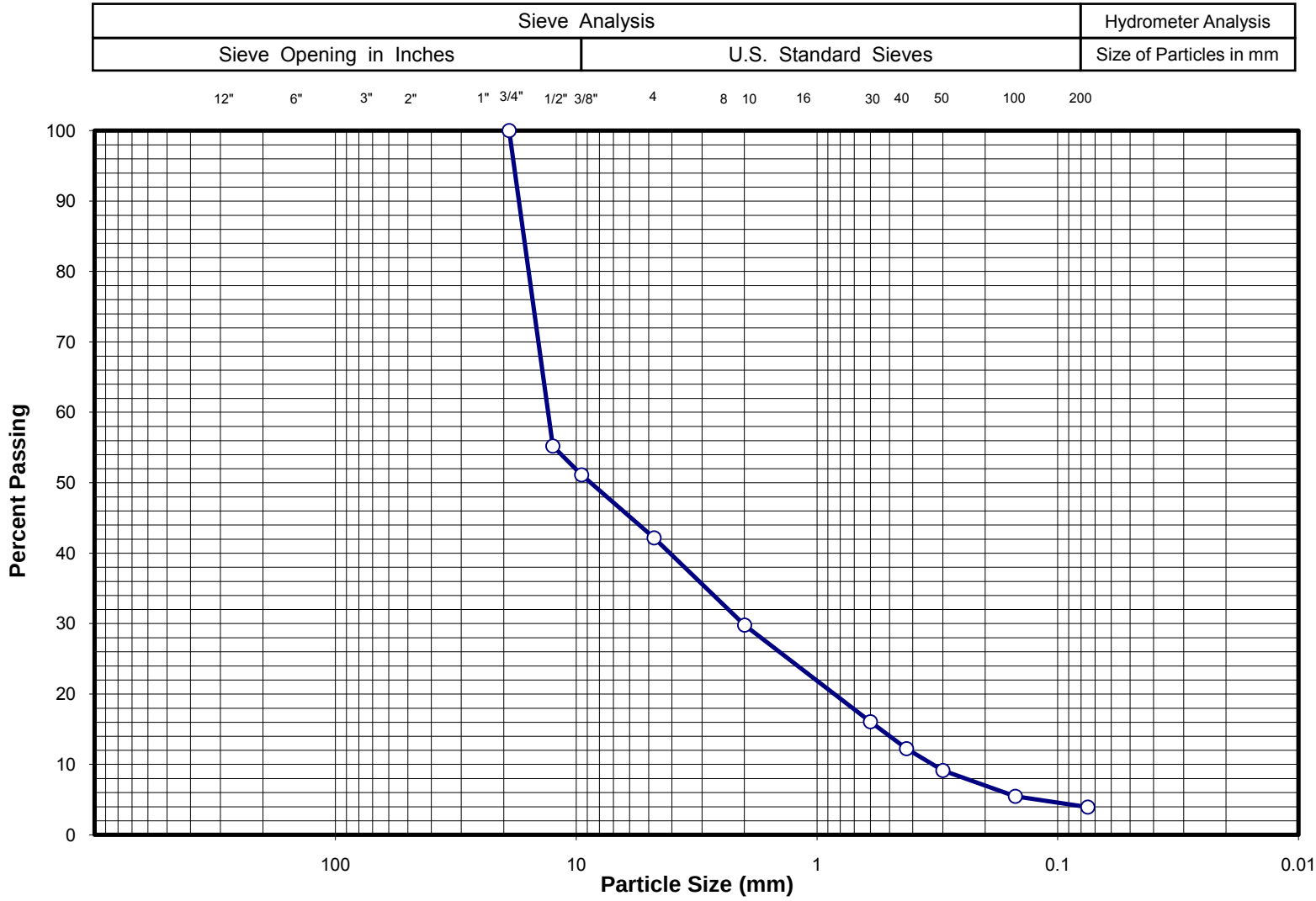

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	55
⅜"	51
#4	42
#10	30
#40	12
#200	4

Gravel (%)	58	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	38	PL	NP	Sample ID:	YA-B3
Fines (%)	4	PI	NP	Sample Depth (ft.):	25
Sample Description:	A-1-a (0) / GW				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
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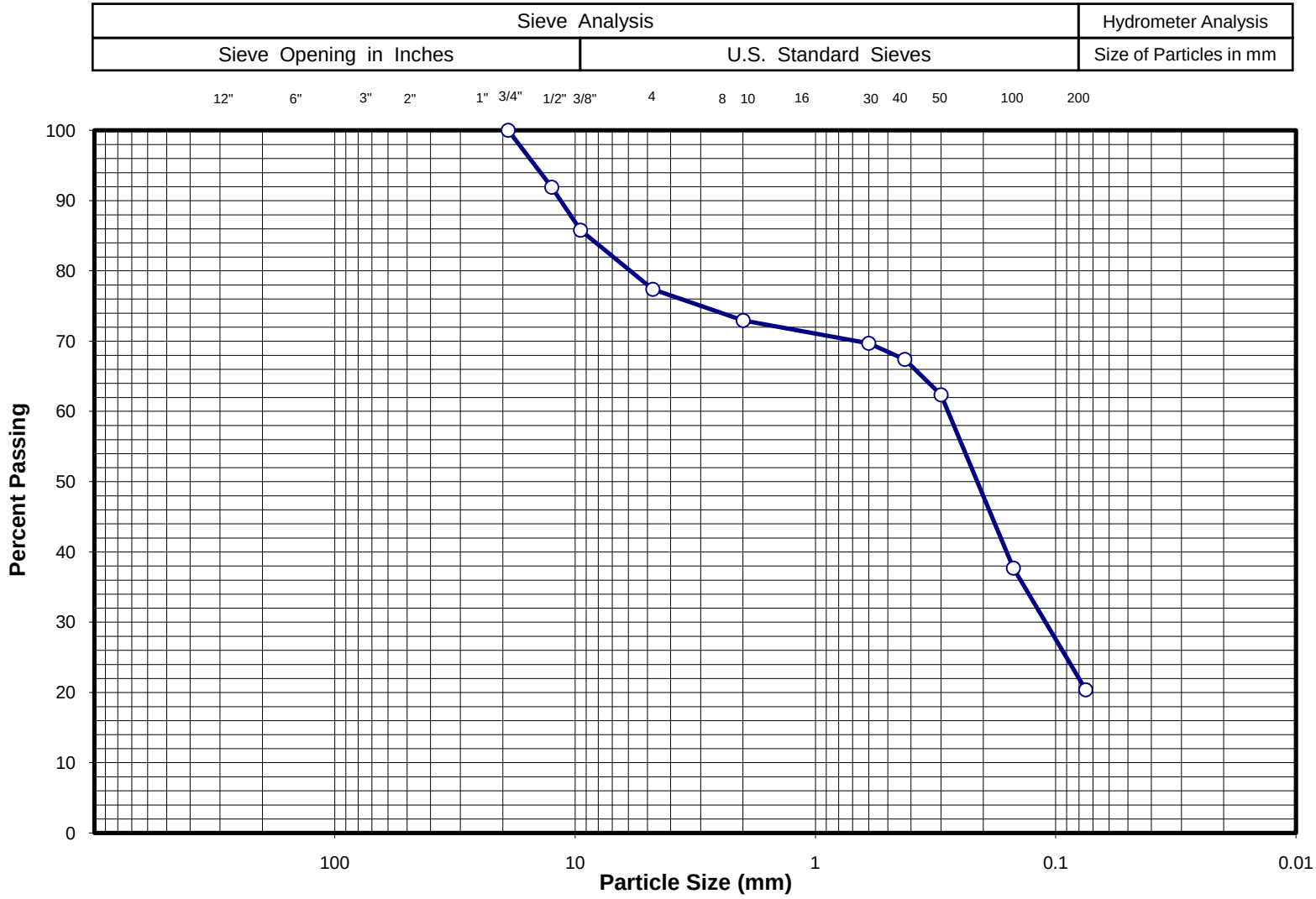

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	92
⅜"	86
#4	77
#10	73
#40	67
#200	20

Gravel (%)	23	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	57	PL	NP	Sample ID:	YA-B3
Fines (%)	20	PI	NP	Sample Depth (ft.):	60
Sample Description:	A-2-4 (0) / SM				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
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Date:	09/05/12	Figure No.:	-

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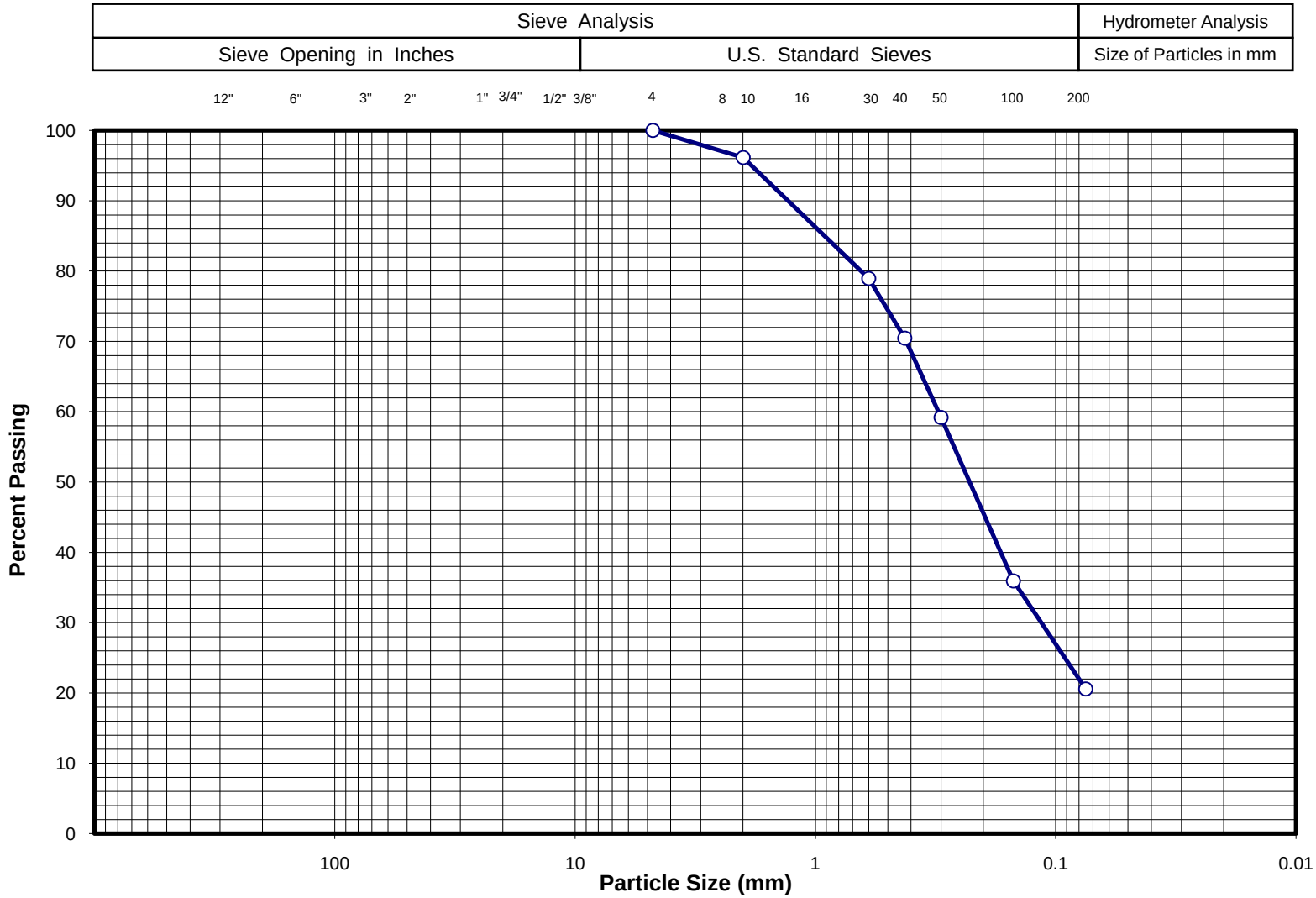

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	-
#4	100
#10	96
#40	70
#200	21

Gravel (%)	0	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	79	PL	NP	Sample ID:	YA-B4
Fines (%)	21	PI	NP	Sample Depth (ft.):	5
Sample Description:	A-2-4 (0) / SM				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
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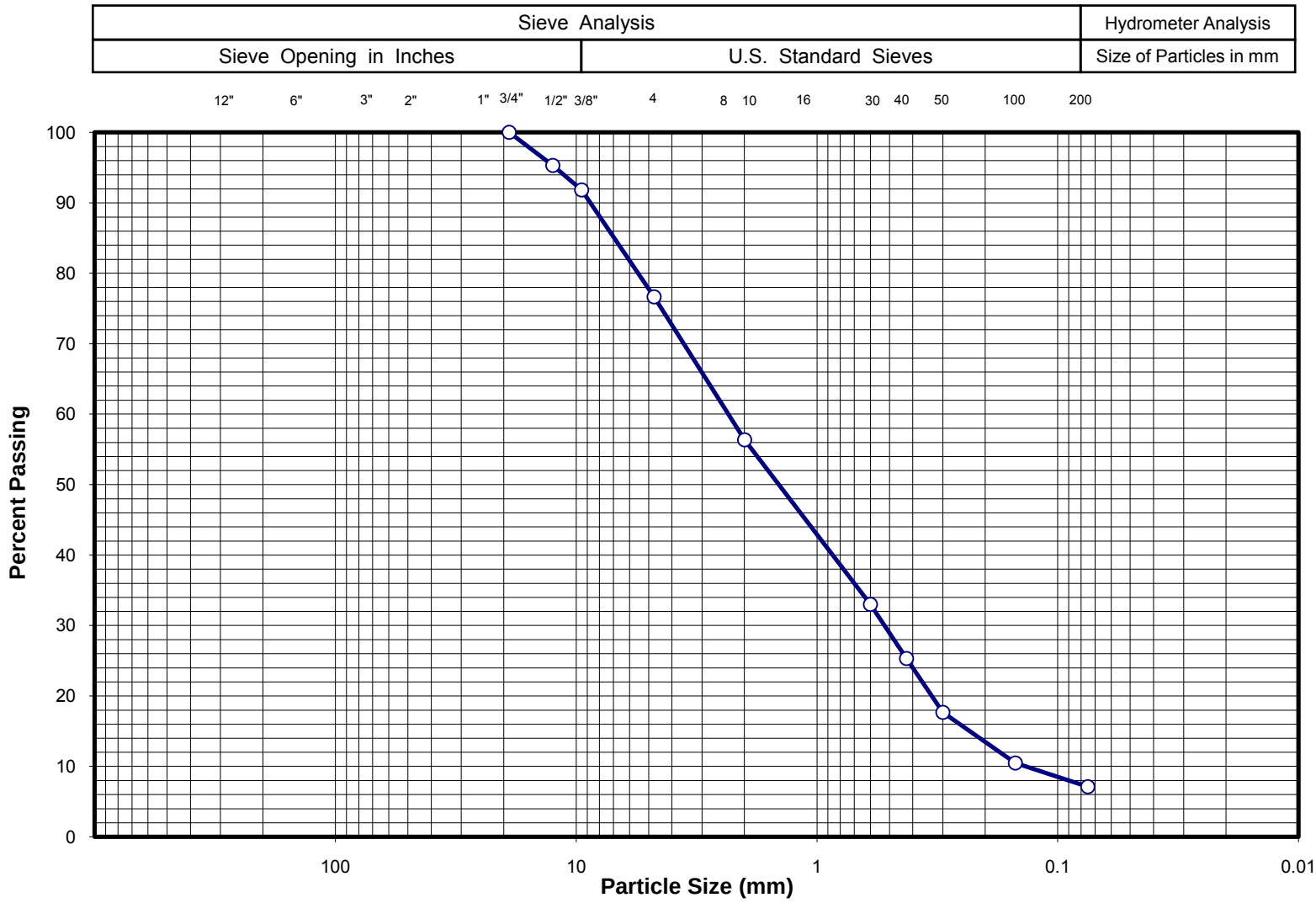

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	95
⅜"	92
#4	77
#10	56
#40	25
#200	7

Gravel (%)	23	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	70	PL	NP	Sample ID:	YA-B4
Fines (%)	7	PI	NP	Sample Depth (ft.):	10
Sample Description:	A-1-b (0) / SW-SM				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/05/12	Figure No.:	-

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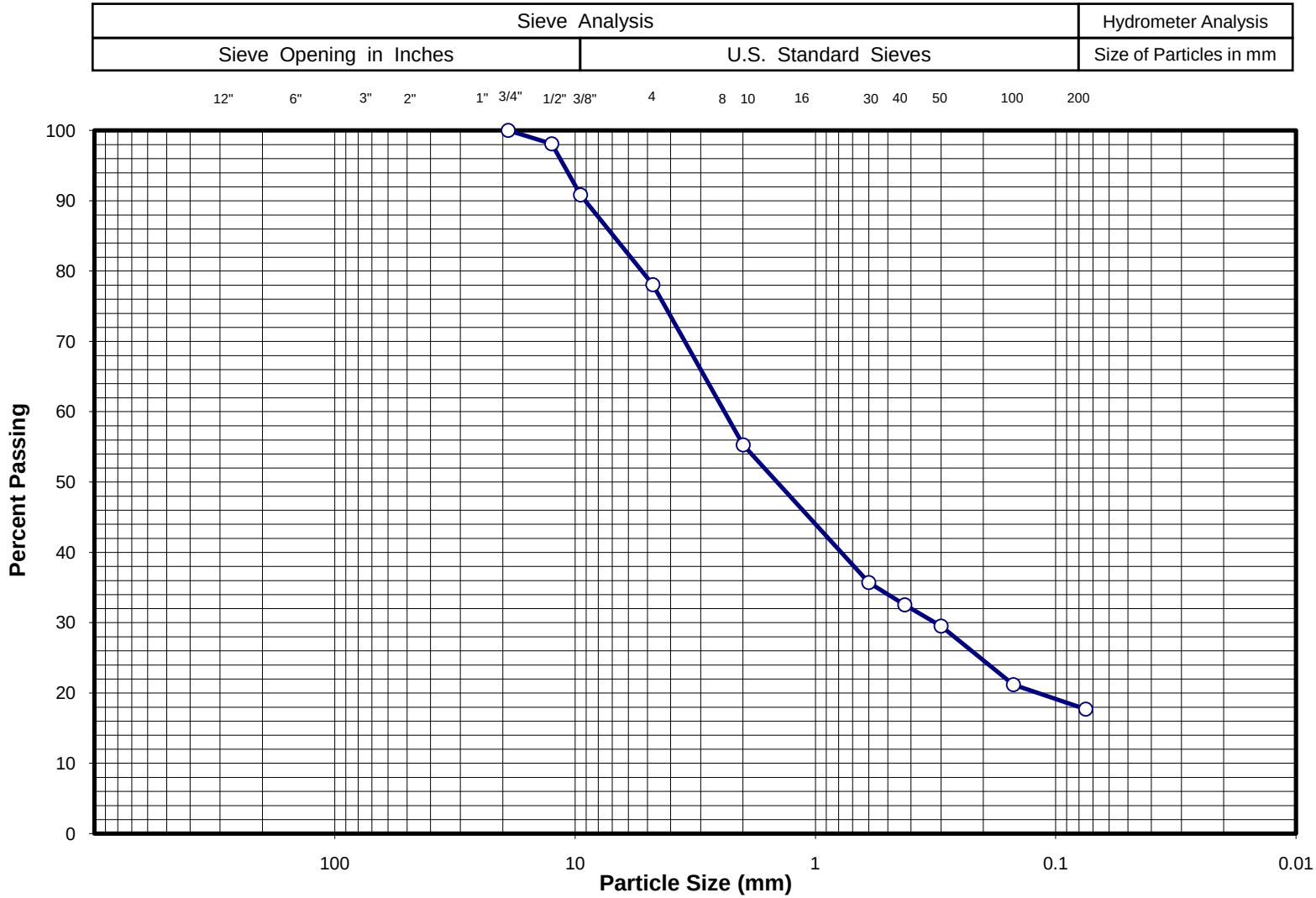

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	98
⅜"	91
#4	78
#10	55
#40	33
#200	18

Gravel (%)	22	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	60	PL	NP	Sample ID:	YA-B4
Fines (%)	18	PI	NP	Sample Depth (ft.):	15
Sample Description:	A-1-b (0) / SM				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/05/12	Figure No.:	-

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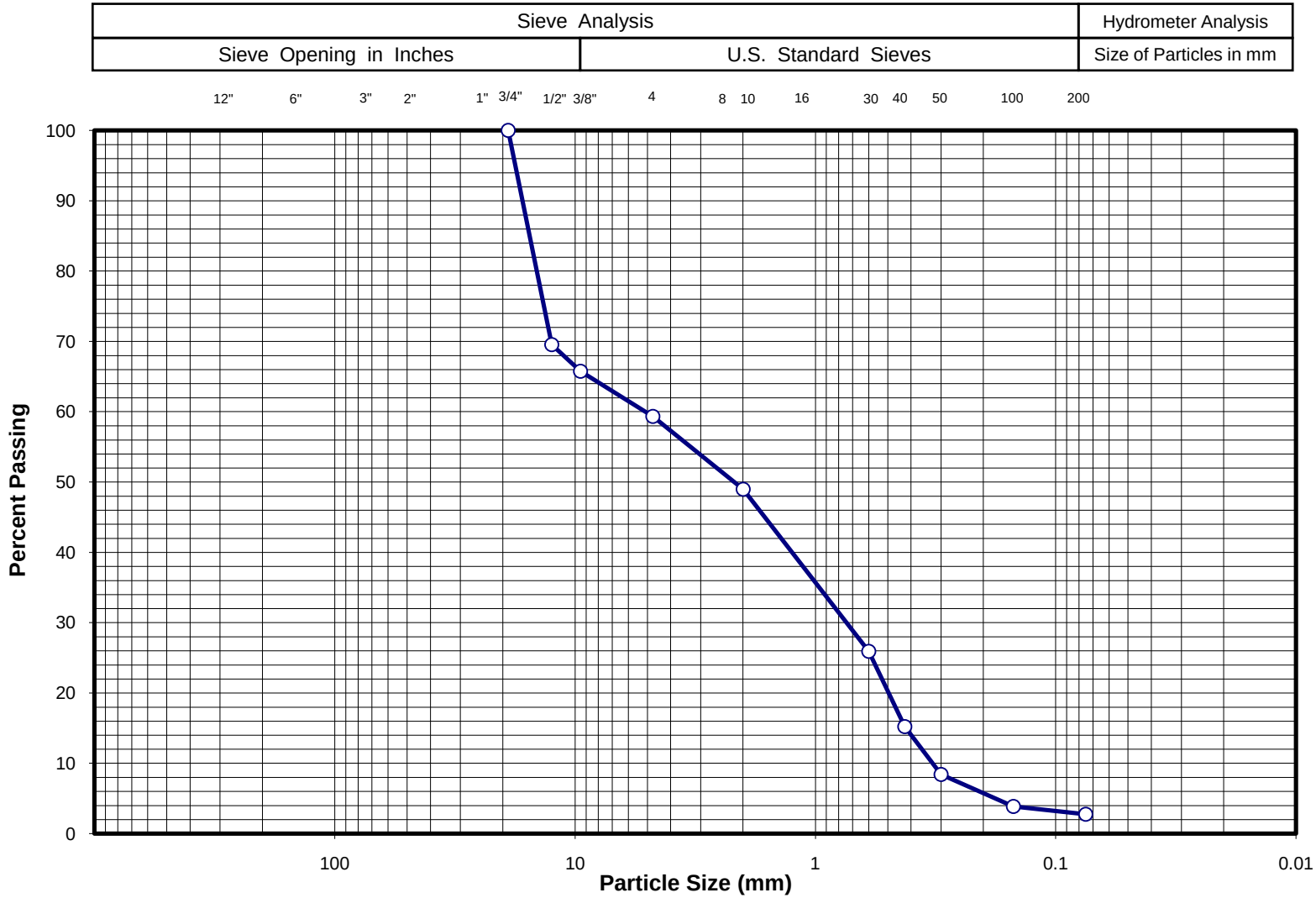

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	70
⅜"	66
#4	59
#10	49
#40	15
#200	3

Gravel (%)	41	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	56	PL	NP	Sample ID:	YA-B4
Fines (%)	3	PI	NP	Sample Depth (ft.):	25
Sample Description:	A-1-a (0) / SP				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/05/12	Figure No.:	-

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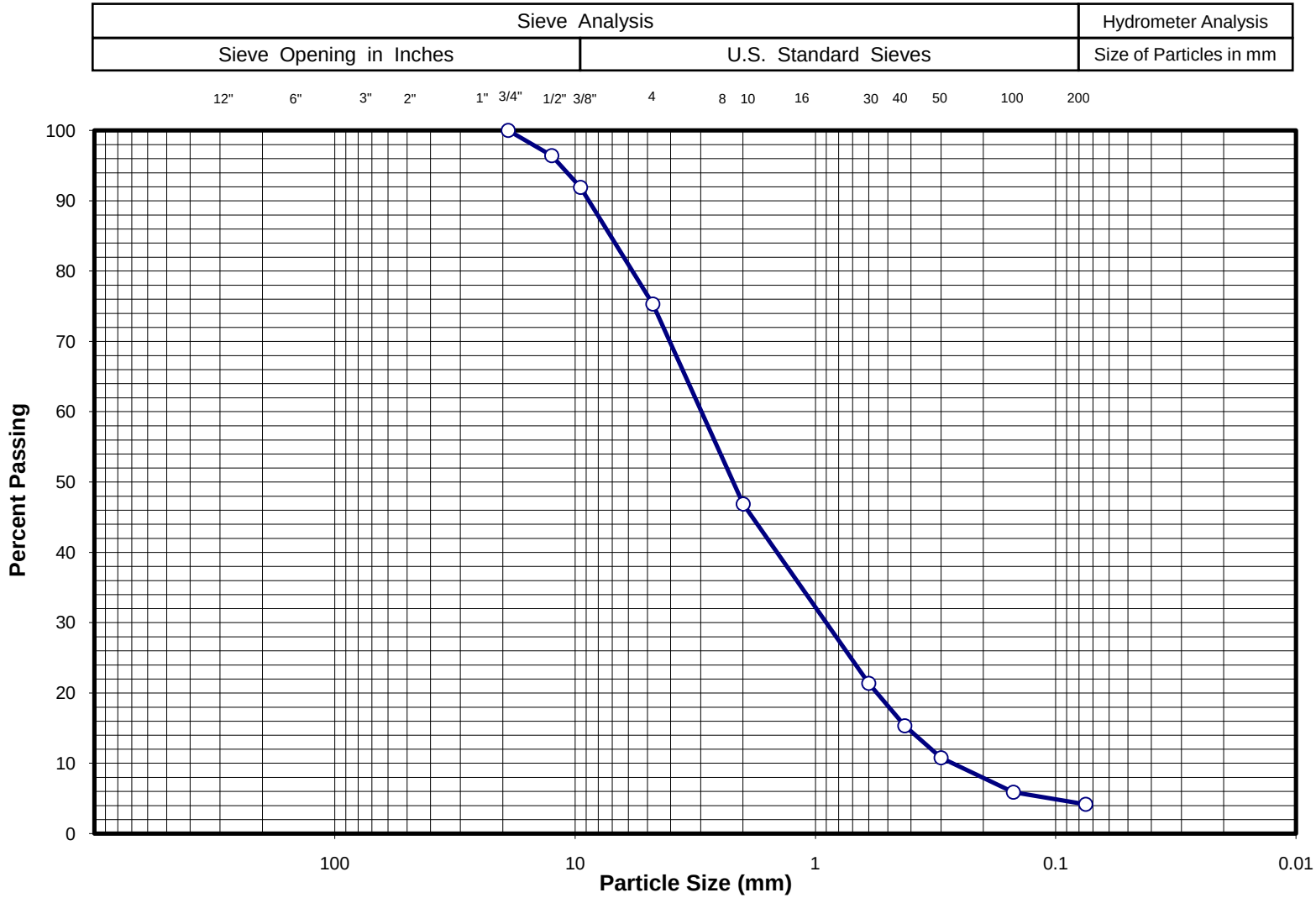

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	96
⅜"	92
#4	75
#10	47
#40	15
#200	4

Gravel (%)	25	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	71	PL	NP	Sample ID:	YA-B4
Fines (%)	4	PI	NP	Sample Depth (ft.):	45
Sample Description:	A-1-a (0) / SW				

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Drawn By:	MA	Project No.:	212-137
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Date:	09/12/12	Figure No.:	-

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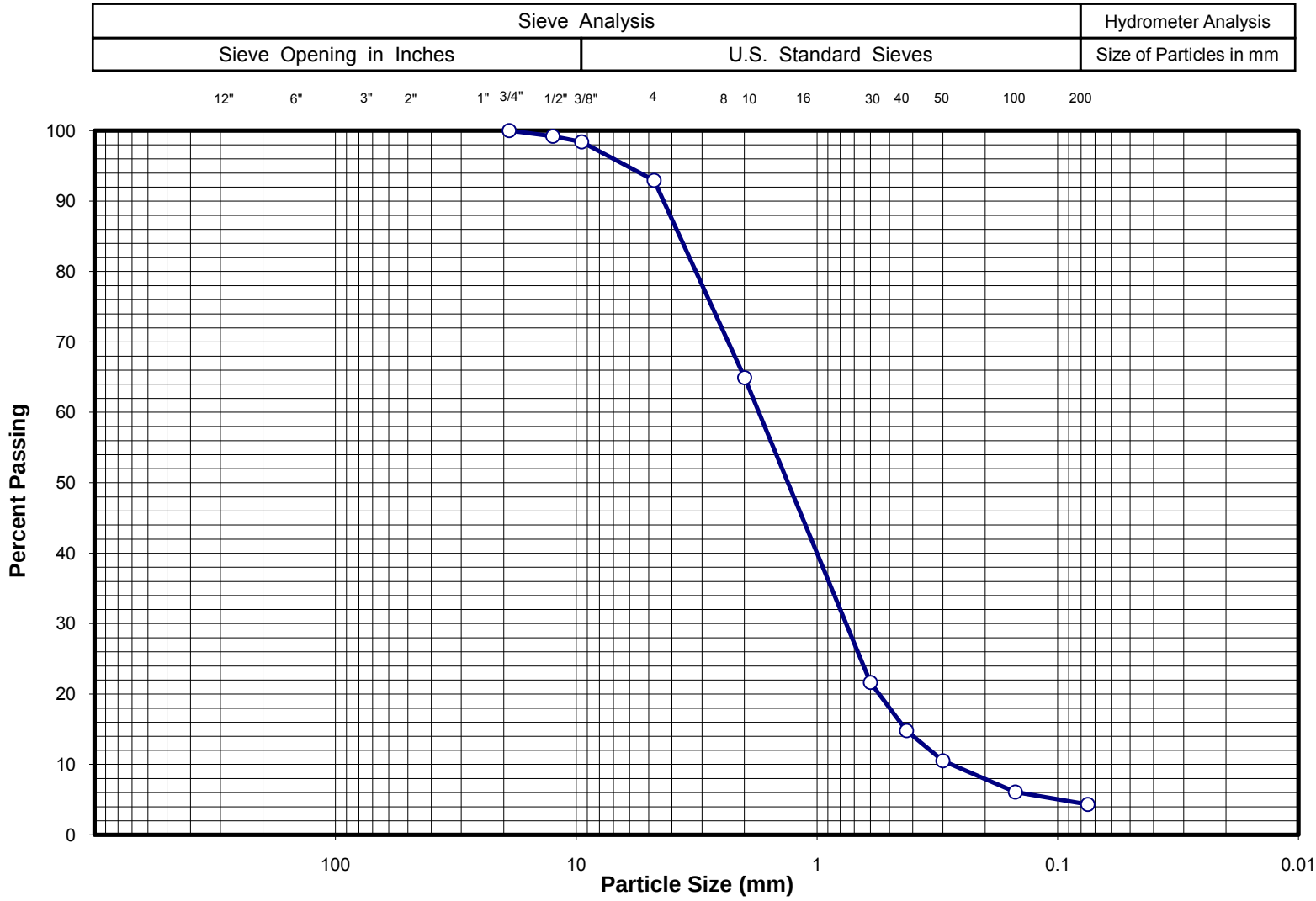

Sieve Size	% Passing
3"	
2 ½"	
2"	
1 ½"	
1"	
¾ "	100
½"	99
⅜"	98
#4	93
#10	65
#40	15
#200	4

Gravel (%)	7	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	89	PL	NP	Sample ID:	YA-B4
Fines (%)	4	PI	NP	Sample Depth (ft.):	60
Sample Description:	A-1-b (0) / SW				

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Drawn By:	MA	Project No.:	212-137
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Date:	09/12/12	Figure No.:	-

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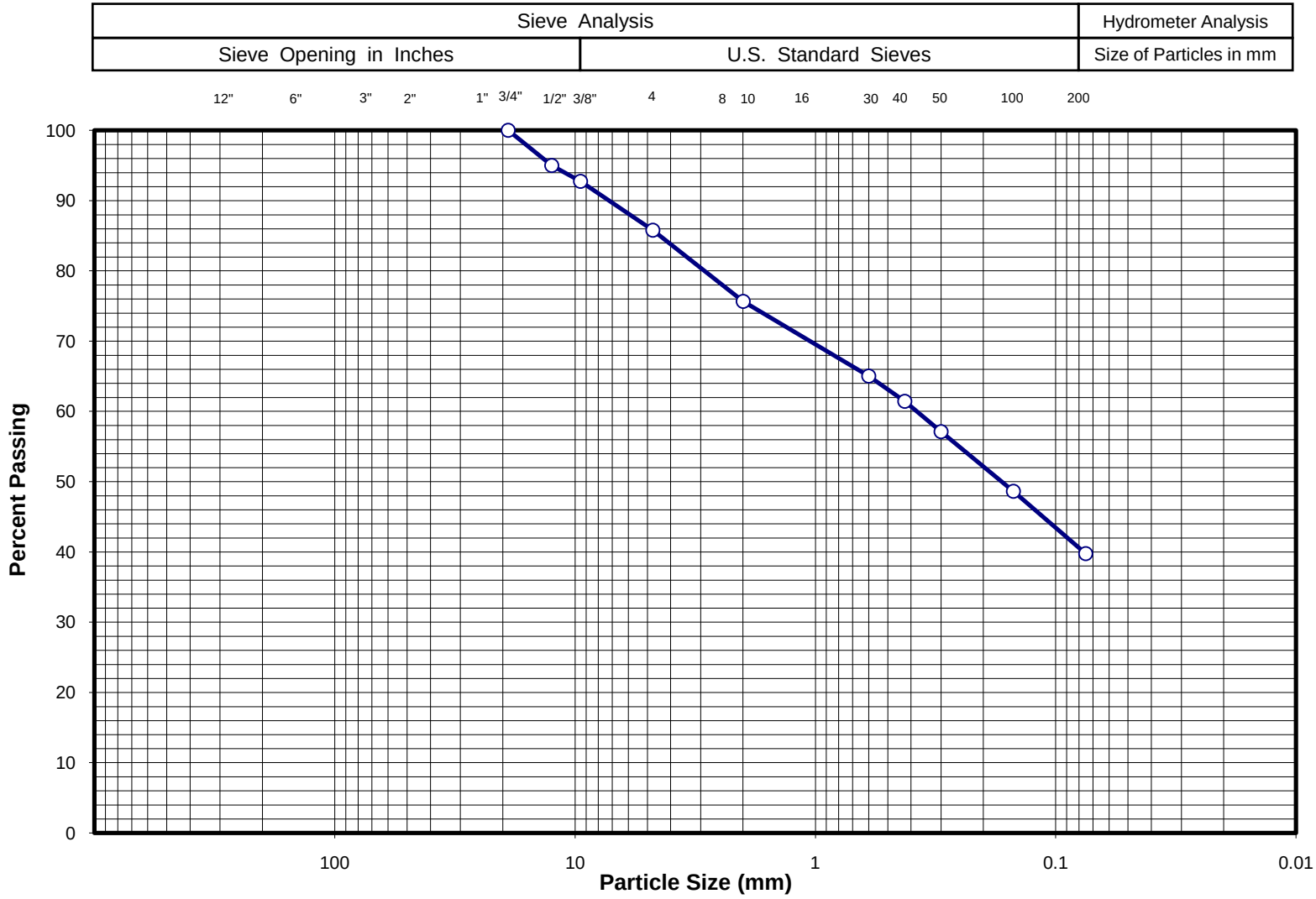

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	95
⅜"	93
#4	86
#10	76
#40	61
#200	40

Gravel (%)	14	LL	31	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	46	PL	15	Sample ID:	YA-B5
Fines (%)	40	PI	16	Sample Depth (ft.):	5
Sample Description:	A-6 (2) / SC				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/27/12	Figure No.:	-

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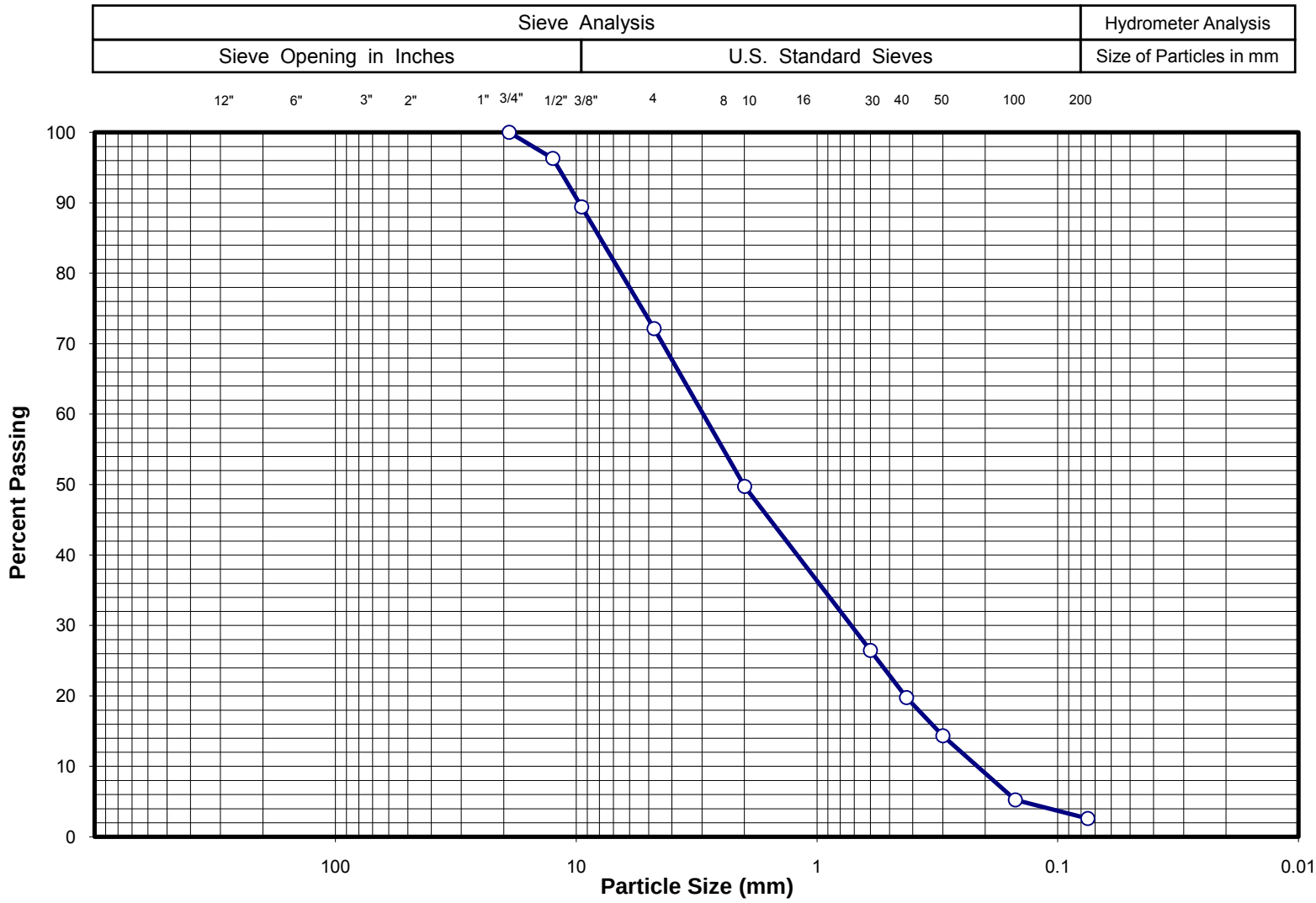

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	96
⅜"	89
#4	72
#10	50
#40	20
#200	3

Gravel (%)	28	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	69	PL	NP	Sample ID:	YA-B5
Fines (%)	3	PI	NP	Sample Depth (ft.):	10
Sample Description:	A-1-a (0) / SW				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/27/12	Figure No.:	-

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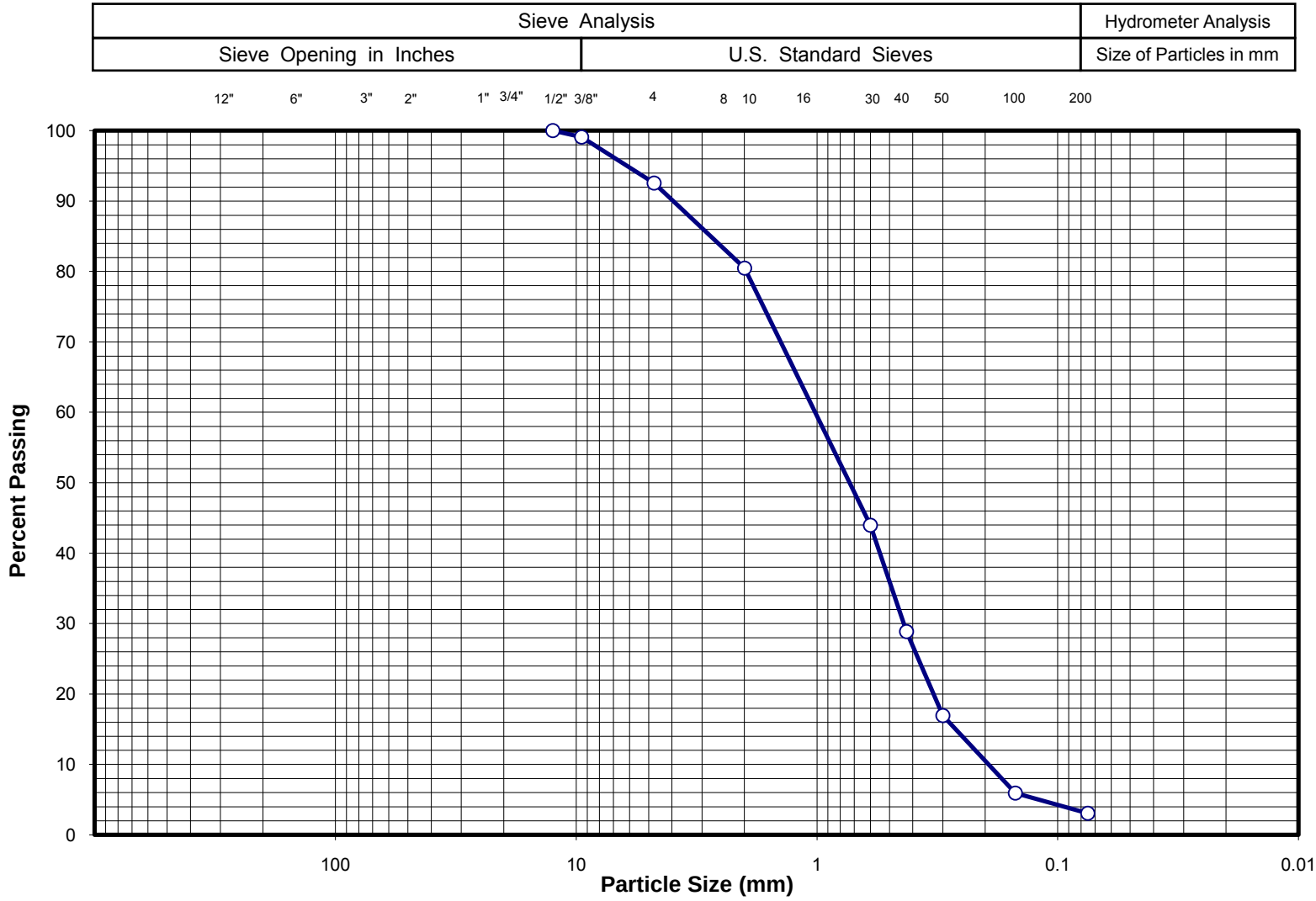

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	100
⅜"	99
#4	93
#10	80
#40	29
#200	3

Gravel (%)	7	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	90	PL	NP	Sample ID:	YA-B5
Fines (%)	3	PI	NP	Sample Depth (ft.):	25
Sample Description:	A-1-b (0) / SW				

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Drawn By:	MA	Project No.:	212-137
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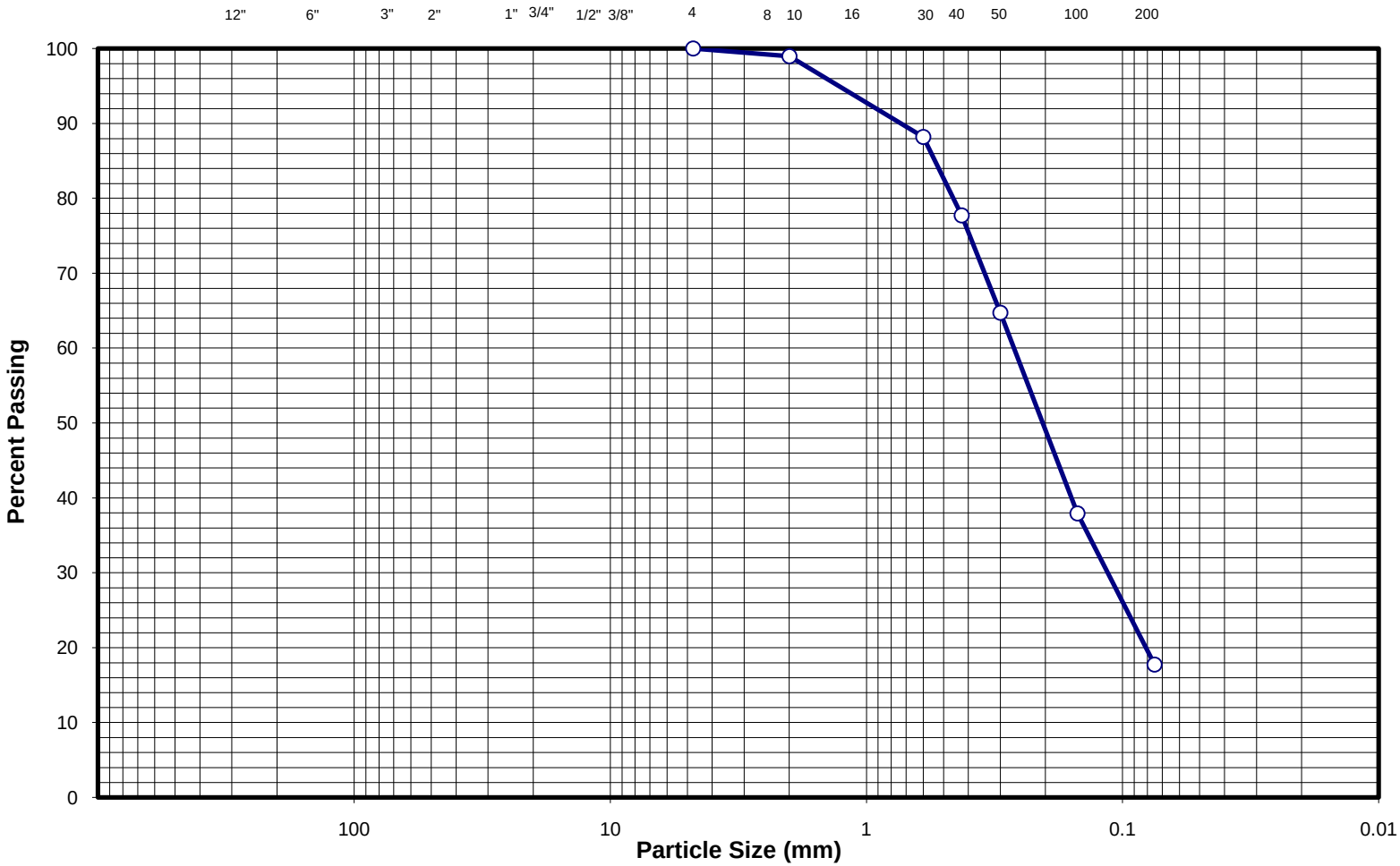
Sieve Analysis		Hydrometer Analysis
Sieve Opening in Inches	U.S. Standard Sieves	Size of Particles in mm



Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	-
#4	100
#10	99
#40	78
#200	18

Gravel (%)	0	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	82	PL	NP	Sample ID:	YA-B6
Fines (%)	18	PI	NP	Sample Depth (ft.):	10
Sample Description:	A-2-4 (0) / SM				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
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Date:	09/05/12	Figure No.:	-

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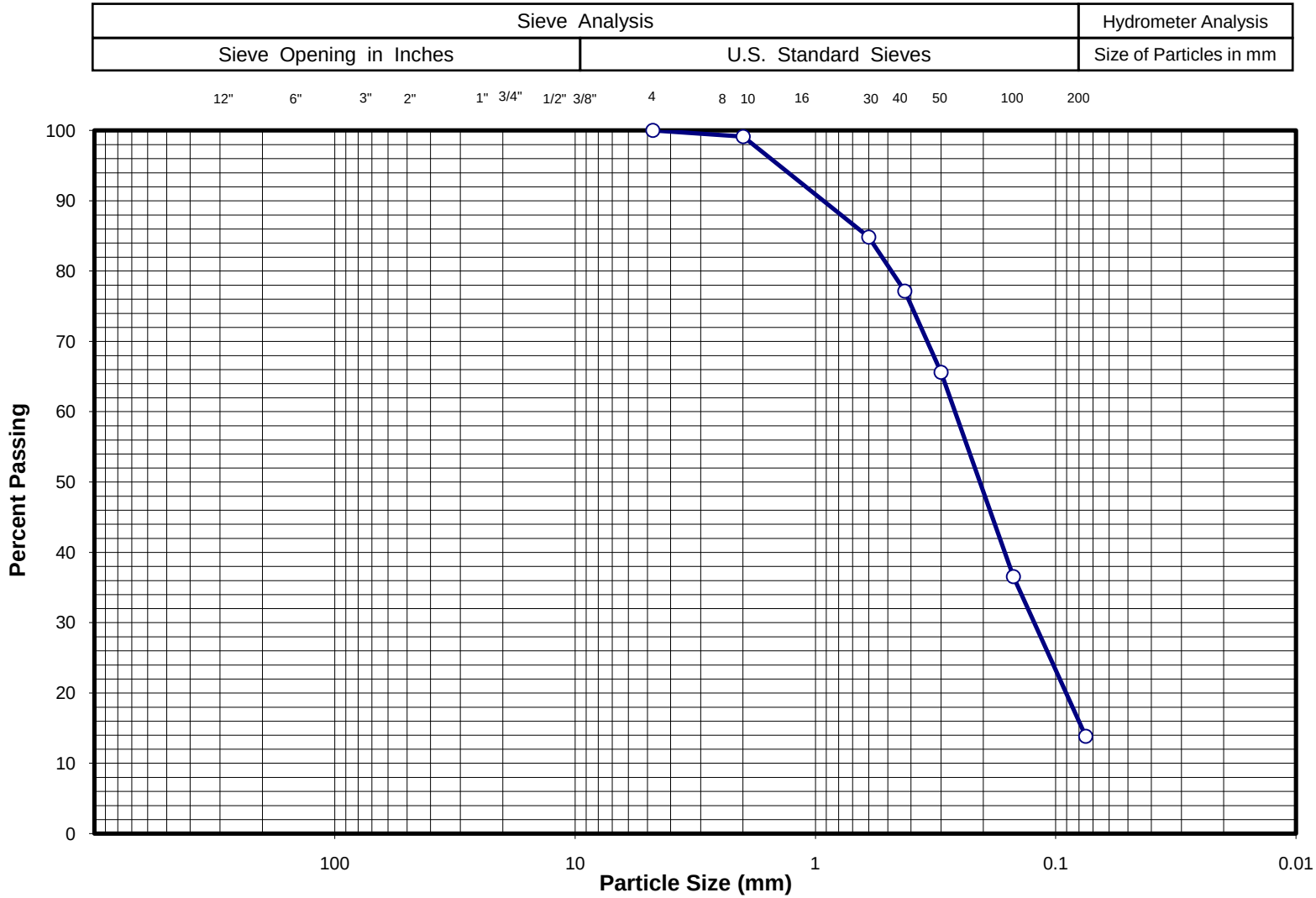

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	-
#4	100
#10	99
#40	77
#200	14

Gravel (%)	0	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	86	PL	NP	Sample ID:	YA-B7
Fines (%)	14	PI	NP	Sample Depth (ft.):	5
Sample Description:	A-2-4 (0) / SM				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/05/12	Figure No.:	-

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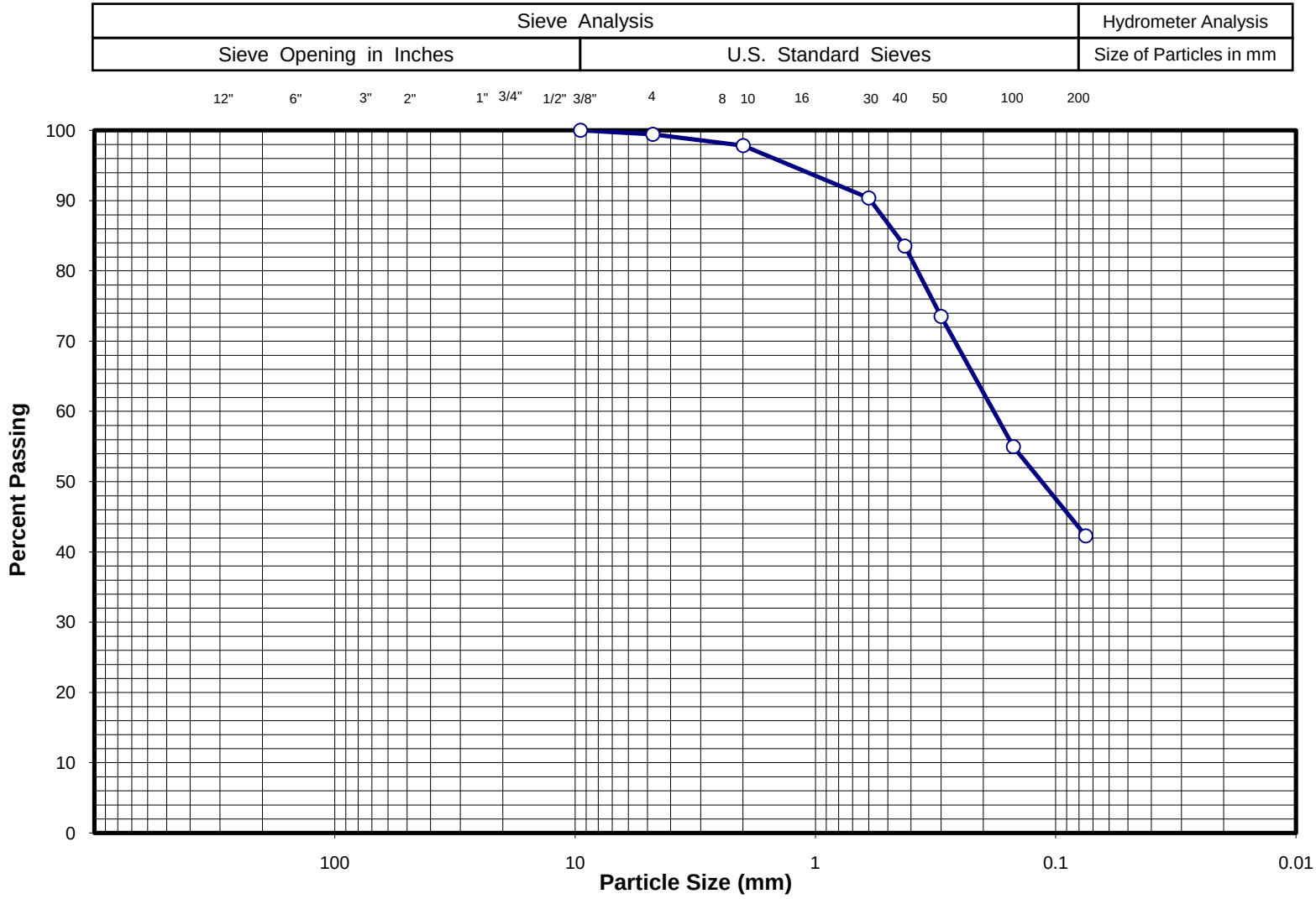

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	100
#4	99
#10	98
#40	84
#200	42

Gravel (%)	1	LL	27	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	57	PL	14	Sample ID:	YA-B7
Fines (%)	42	PI	13	Sample Depth (ft.):	20
Sample Description:	A-6 (2) / SC				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
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Date:	09/05/12	Figure No.:	-

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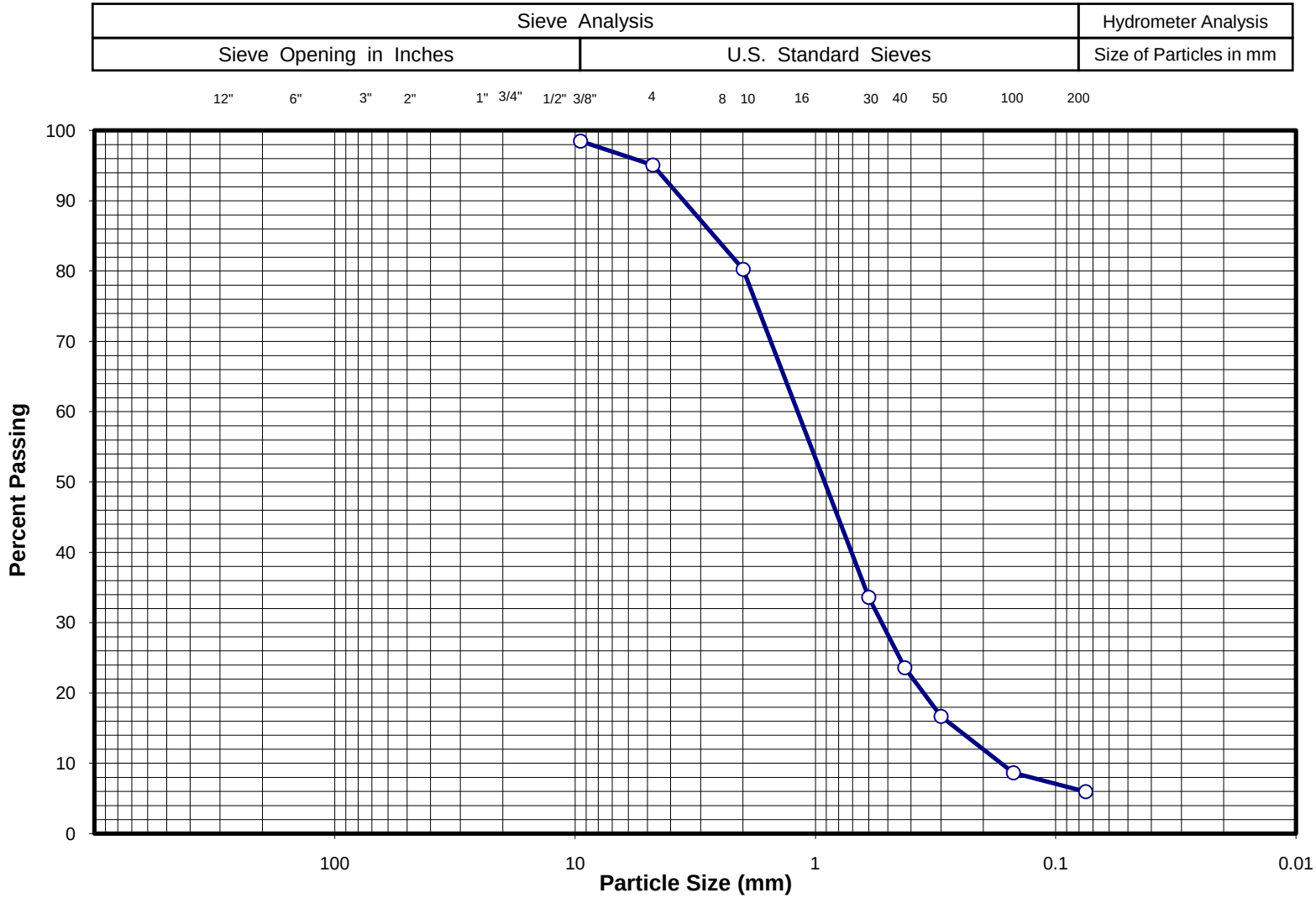

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	100
⅜"	98
#4	95
#10	80
#40	24
#200	6

Gravel (%)	5	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	89	PL	NP	Sample ID:	YA-B7
Fines (%)	6	PI	NP	Sample Depth (ft.):	30
Sample Description:	A-1-b (0) / SW-SM				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
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Date:	09/05/12	Figure No.:	-

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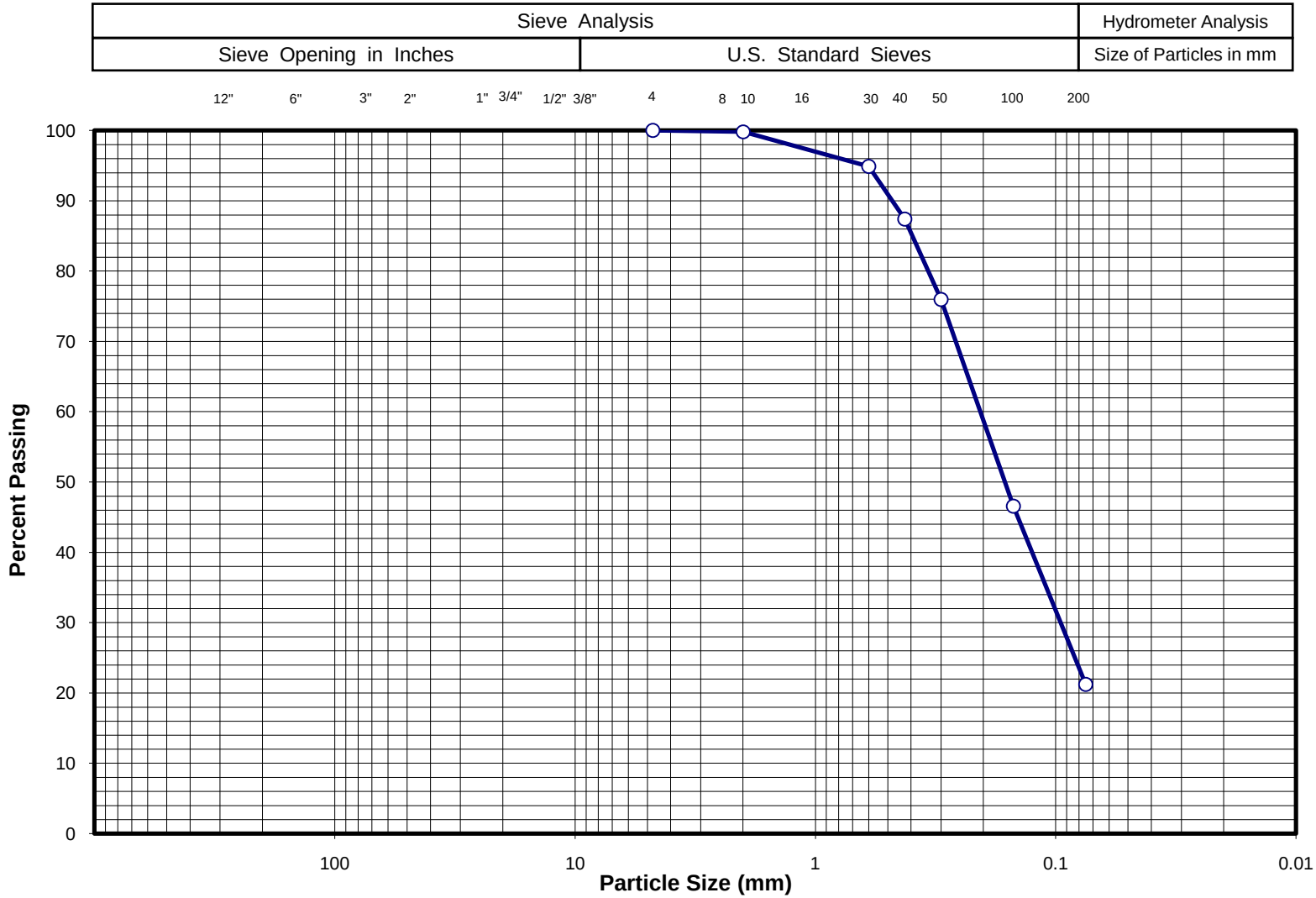

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	-
#4	100
#10	100
#40	87
#200	21

Gravel (%)	0	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	79	PL	NP	Sample ID:	YA-B8
Fines (%)	21	PI	NP	Sample Depth (ft.):	5
Sample Description:	A-2-4 (0) / SM				

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Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/05/12	Figure No.:	-

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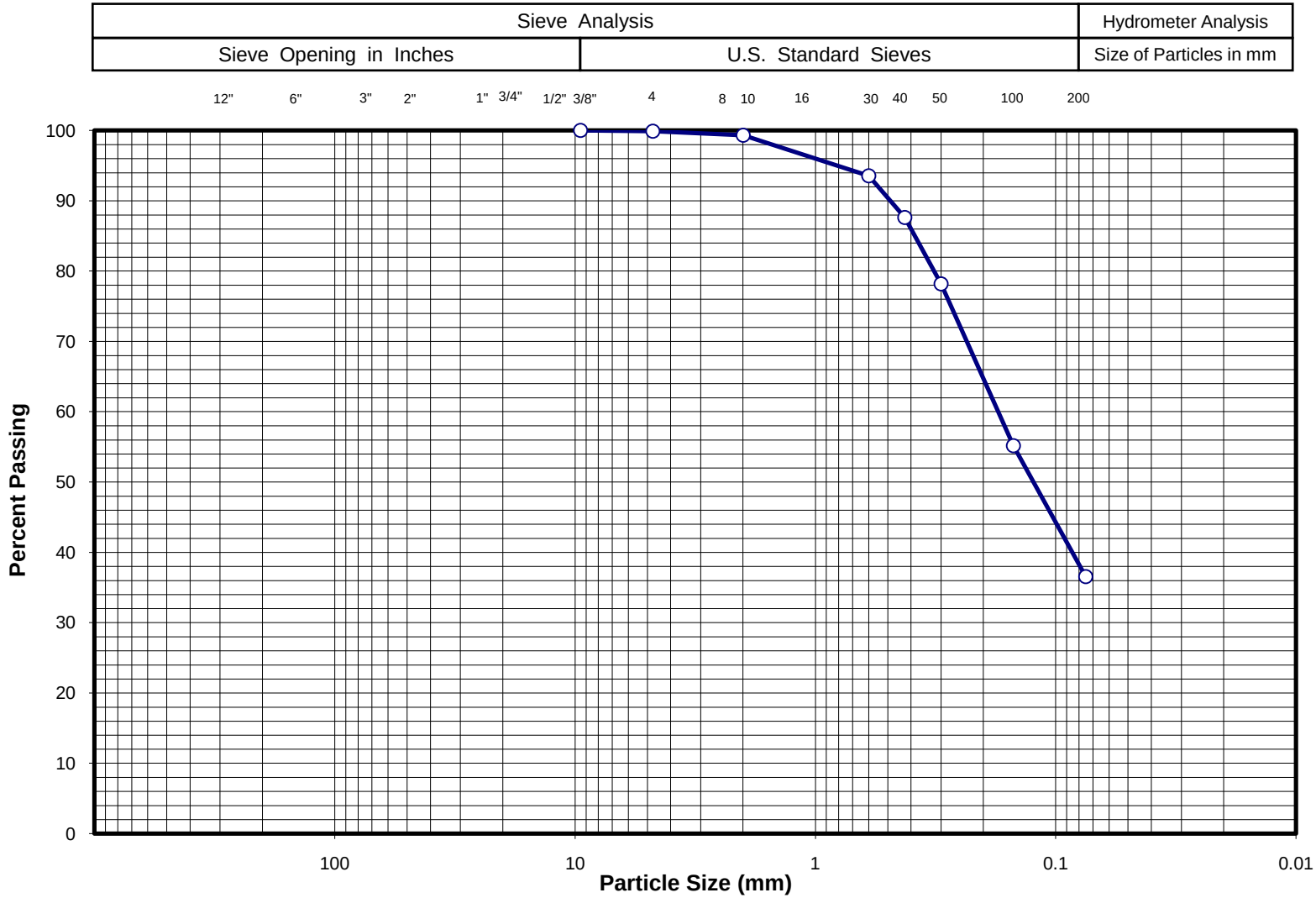

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	100
#4	100
#10	99
#40	88
#200	37

Gravel (%)	0	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	63	PL	NP	Sample ID:	YA-B8
Fines (%)	37	PI	NP	Sample Depth (ft.):	15
Sample Description:	A-4 (0) / SM				

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Drawn By:	MA	Project No.:	212-137
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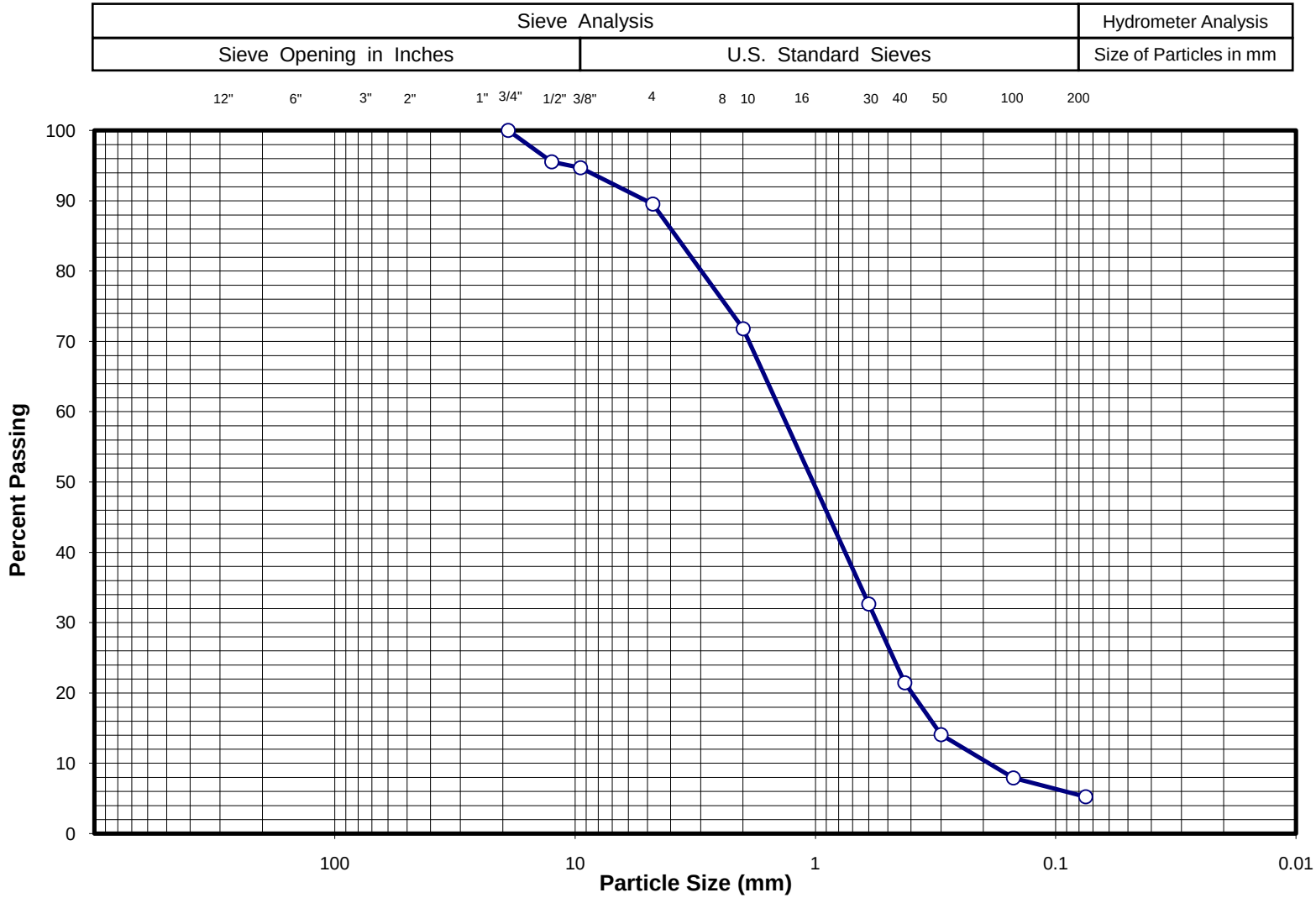

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	96
⅜"	95
#4	90
#10	72
#40	21
#200	5

Gravel (%)	10	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	85	PL	NP	Sample ID:	YA-B8
Fines (%)	5	PI	NP	Sample Depth (ft.):	40
Sample Description:	A-1-b (0) / SW-SM				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
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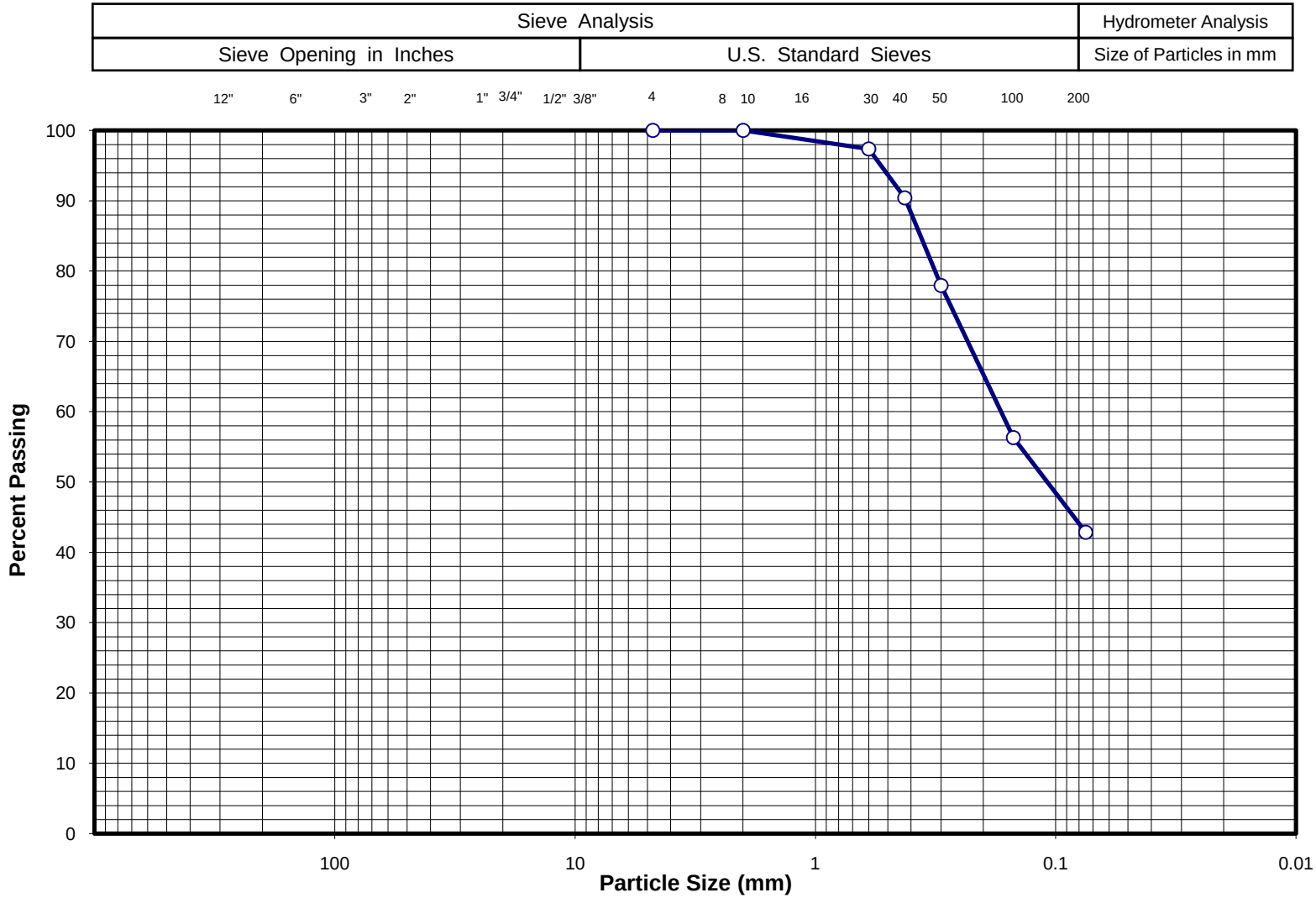

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	-
#4	100
#10	100
#40	90
#200	43

Gravel (%)	0	LL	53	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	57	PL	27	Sample ID:	YA-B8
Fines (%)	43	PI	26	Sample Depth (ft.):	55
Sample Description:	A-7-6 (7) / SC				

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SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/05/12	Figure No.:	-

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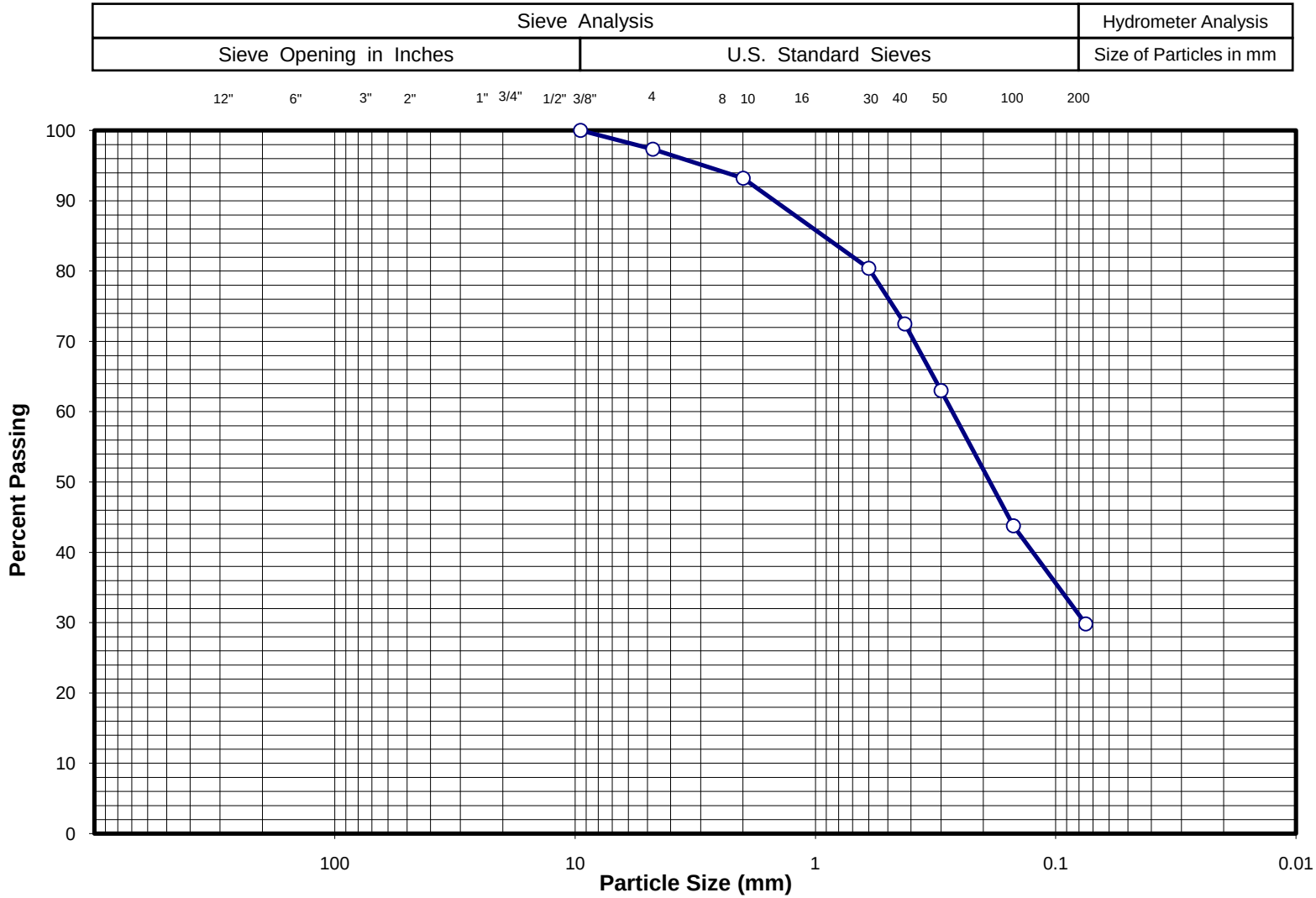

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	100
#4	97
#10	93
#40	72
#200	30

Gravel (%)	3	LL	39	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	67	PL	23	Sample ID:	YA-B9
Fines (%)	30	PI	16	Sample Depth (ft.):	5
Sample Description:	A-2-6 (0) / SC				

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Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/05/12	Figure No.:	-

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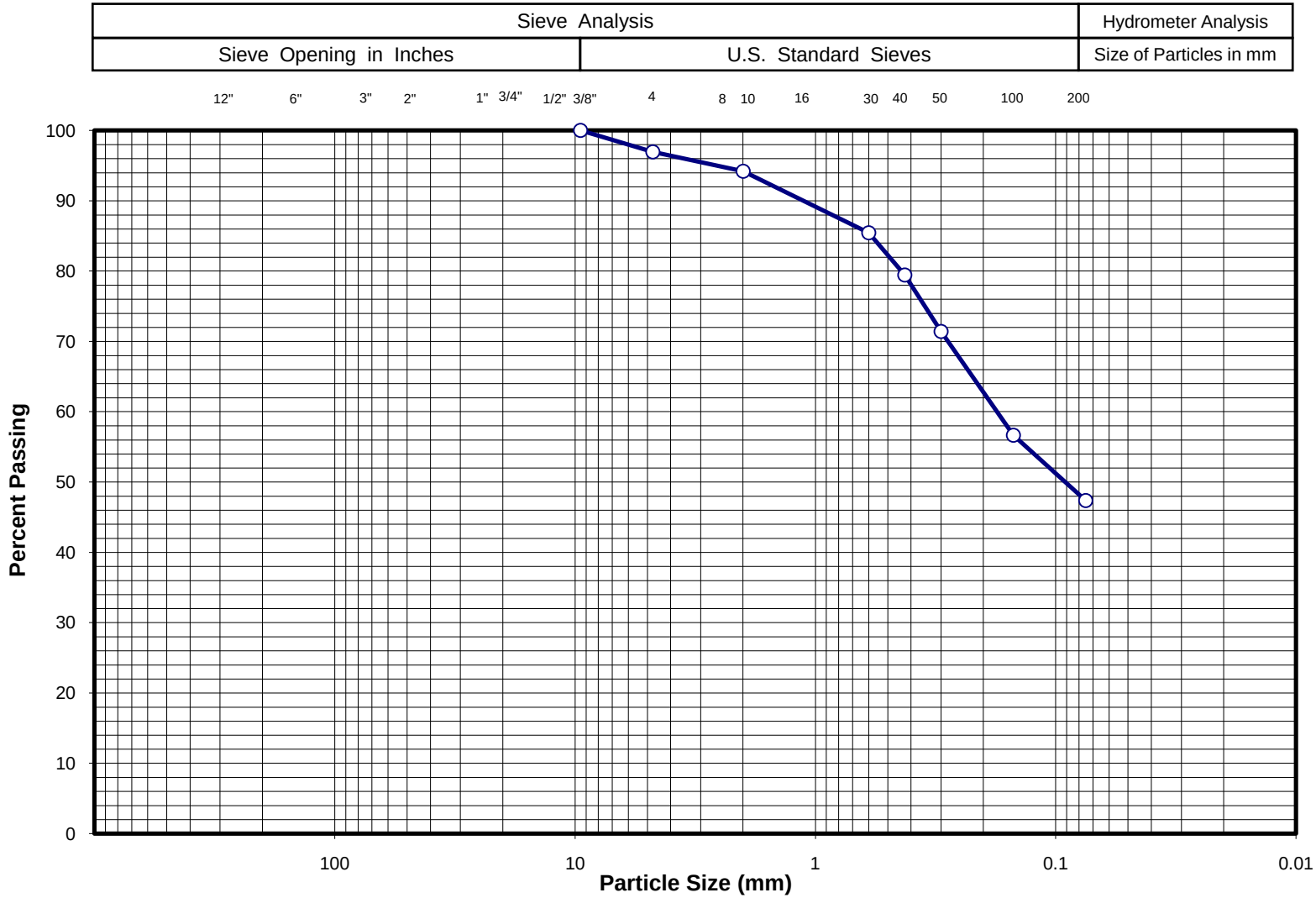

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	100
#4	97
#10	94
#40	79
#200	47

Gravel (%)	3	LL	40	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	50	PL	23	Sample ID:	YA-B9
Fines (%)	47	PI	17	Sample Depth (ft.):	10
Sample Description:	A-6 (5) / SC				

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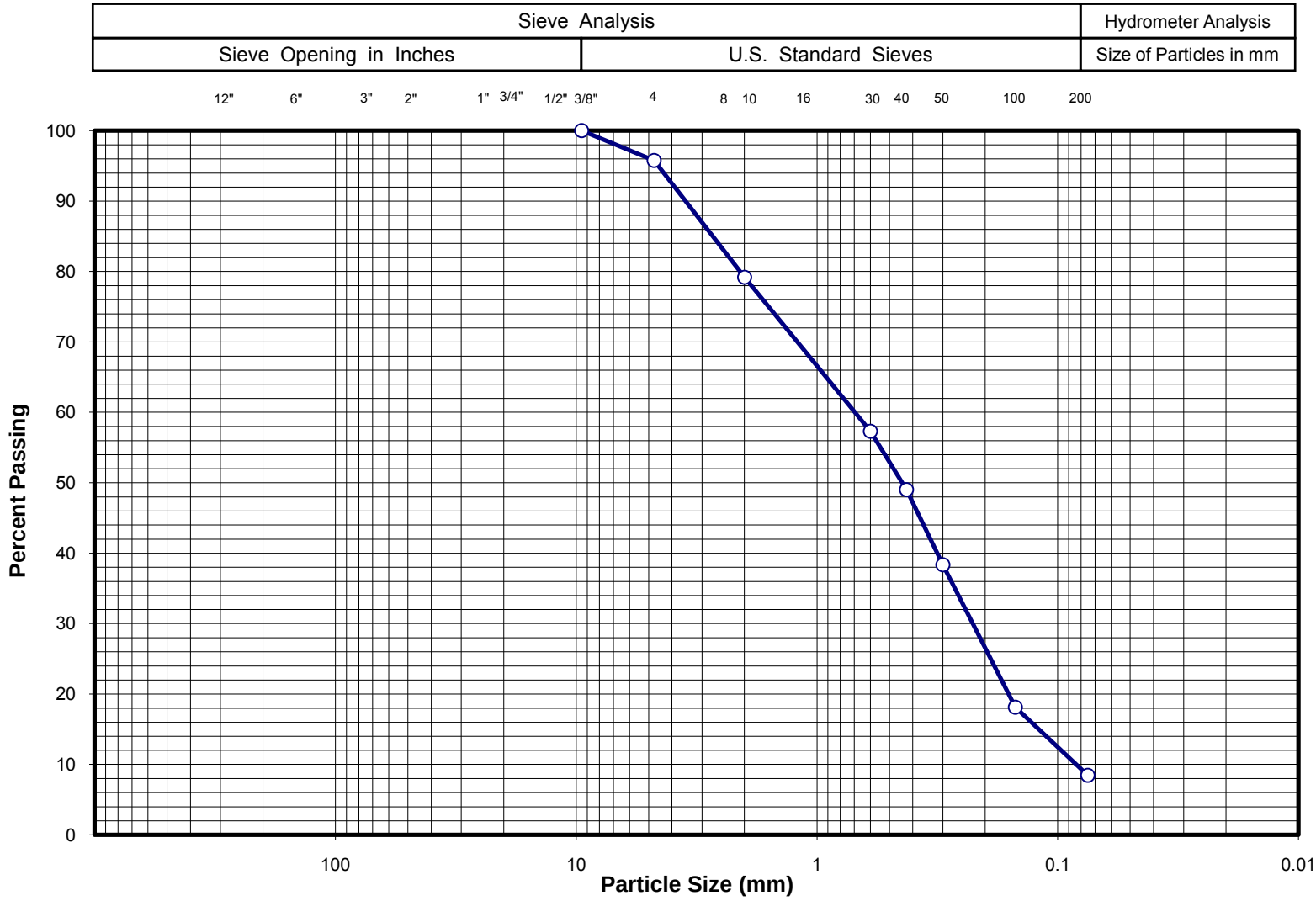
SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/05/12	Figure No.:	-

Revised 04/27/2004



Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	100
#4	96
#10	79
#40	49
#200	8

Gravel (%)	4	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	88	PL	NP	Sample ID:	YA-B9
Fines (%)	8	PI	NP	Sample Depth (ft.):	20
Sample Description:	A-1-b (0) / SW-SM				

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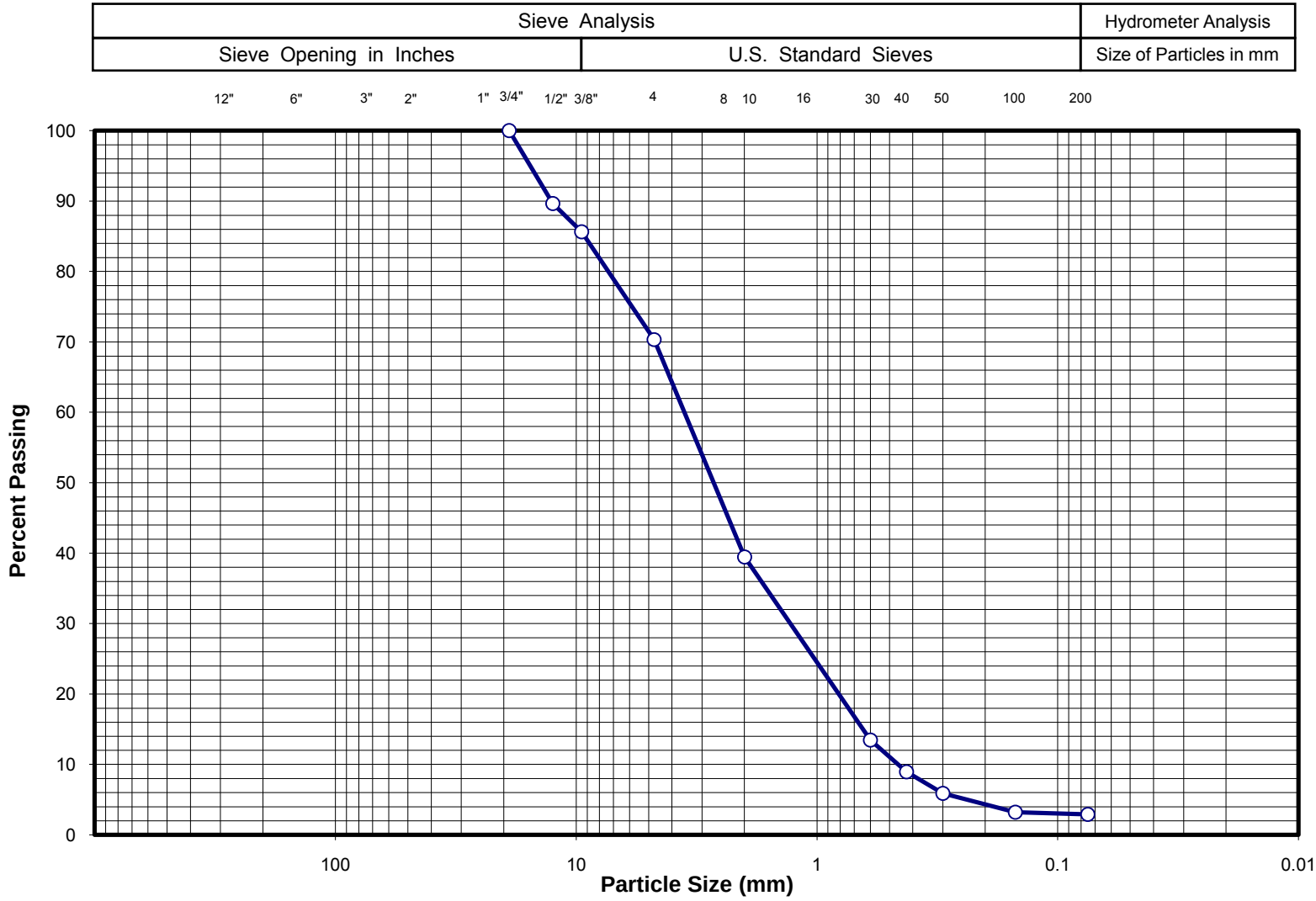
Geotechnical Engineering Consultants

SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/05/12	Figure No.:	-

Revised 04/27/2004



Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	90
⅜"	86
#4	70
#10	39
#40	9
#200	3

Gravel (%)	30	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	67	PL	NP	Sample ID:	YA-B9
Fines (%)	3	PI	NP	Sample Depth (ft.):	30
Sample Description:	A-1-a (0) / SW				

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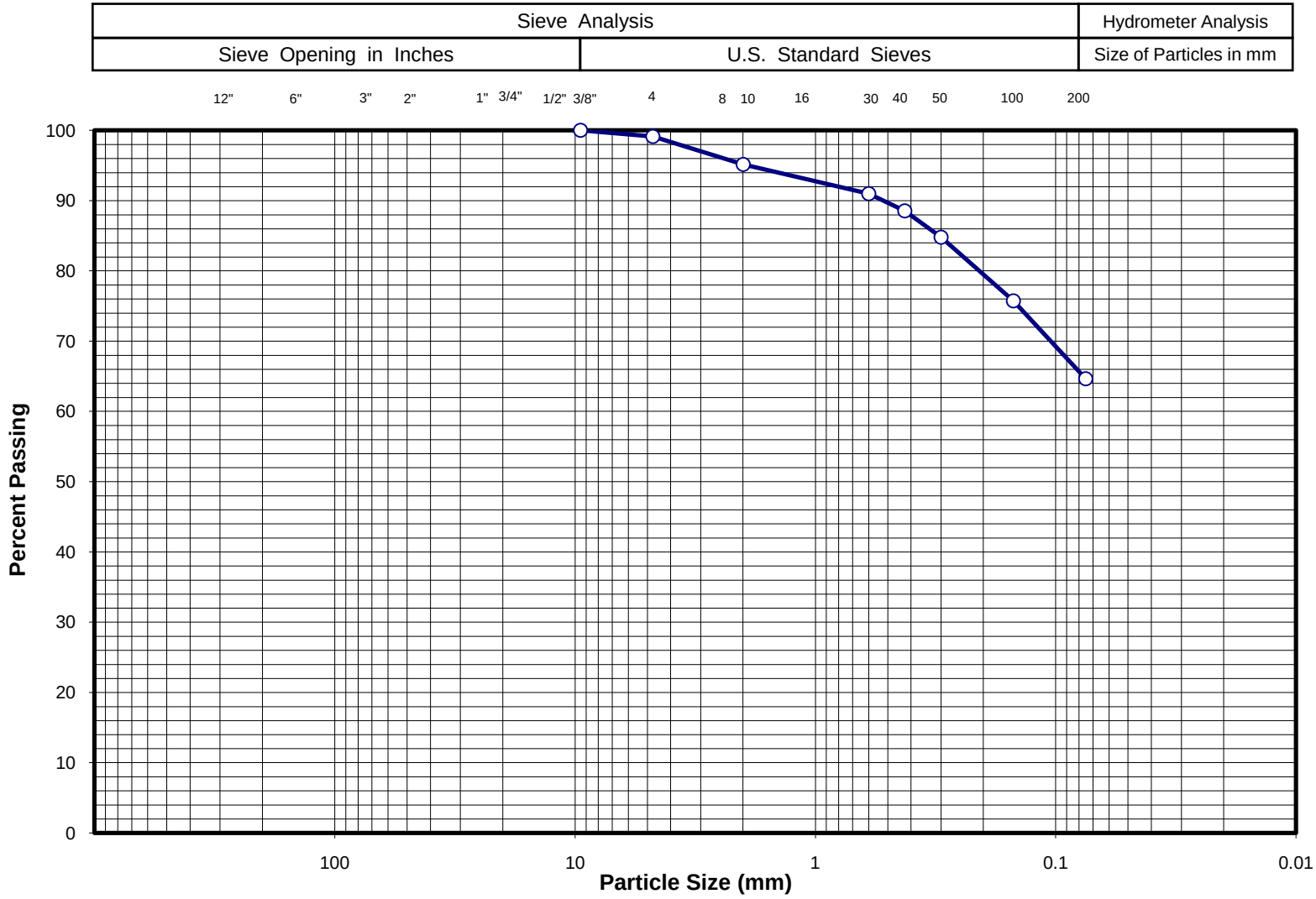
Geotechnical Engineering Consultants

SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/05/12	Figure No.:	-

Revised 04/27/2004



Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	100
#4	99
#10	95
#40	89
#200	65

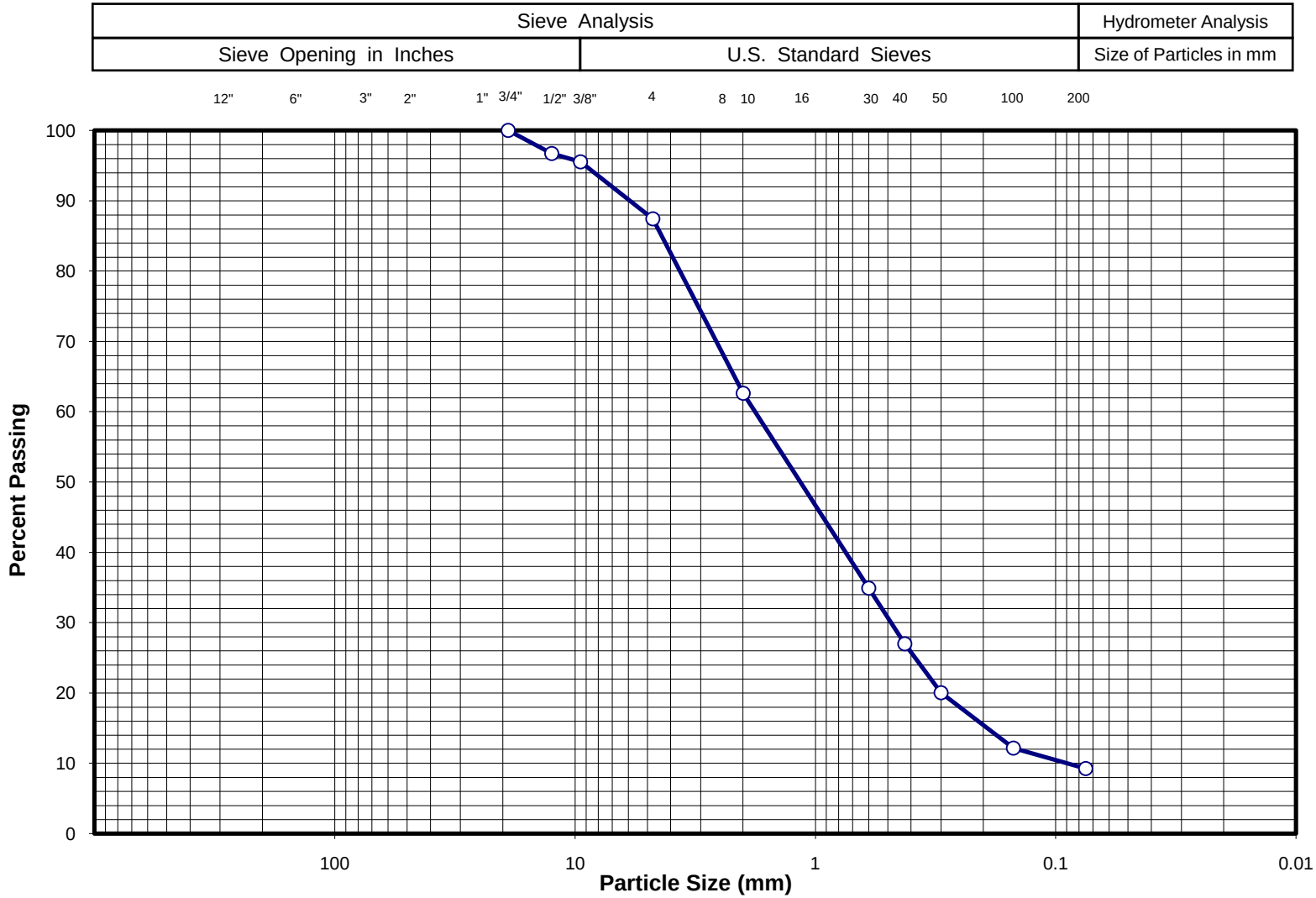
Gravel (%)	1	LL	43	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	34	PL	23	Sample ID:	YA-B10
Fines (%)	65	PI	20	Sample Depth (ft.):	10
Sample Description:	A-7-6 (11) / CL				

Yeh & Associates, Inc.
Geotechnical Engineering Consultants

SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/17/12	Figure No.:	-

Revised 04/27/2004



Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	97
⅜"	96
#4	87
#10	63
#40	27
#200	9

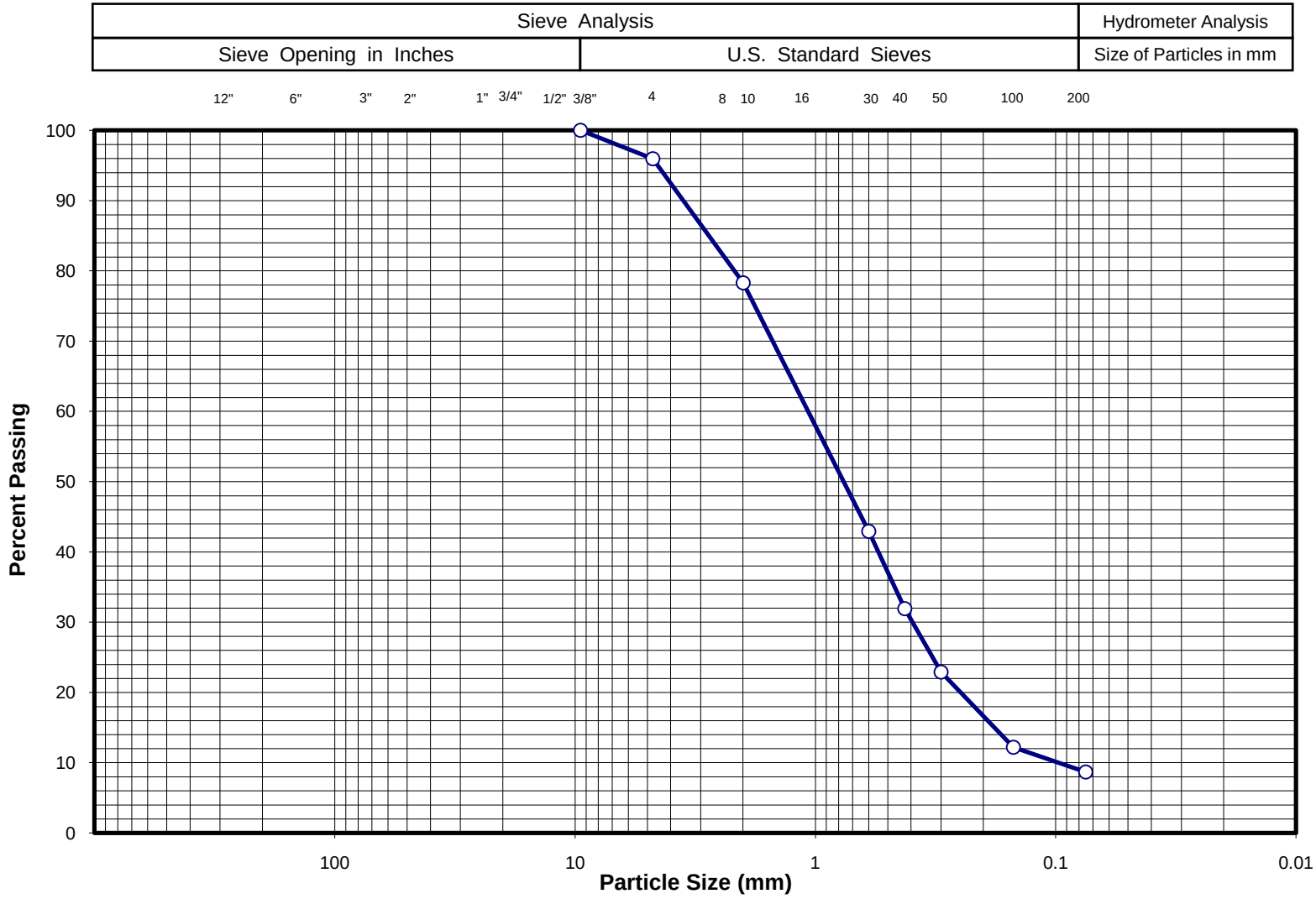
Gravel (%)	13	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	78	PL	NP	Sample ID:	YA-B10
Fines (%)	9	PI	NP	Sample Depth (ft.):	20
Sample Description:	A-1-a (0) / SW-SM				

Yeh & Associates, Inc.
Geotechnical Engineering Consultants

SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/17/12	Figure No.:	-

Revised 04/27/2004



Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	100
#4	96
#10	78
#40	32
#200	9

Gravel (%)	4	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	87	PL	NP	Sample ID:	YA-B10
Fines (%)	9	PI	NP	Sample Depth (ft.):	35
Sample Description:	A-1-b (0) / SW-SM				

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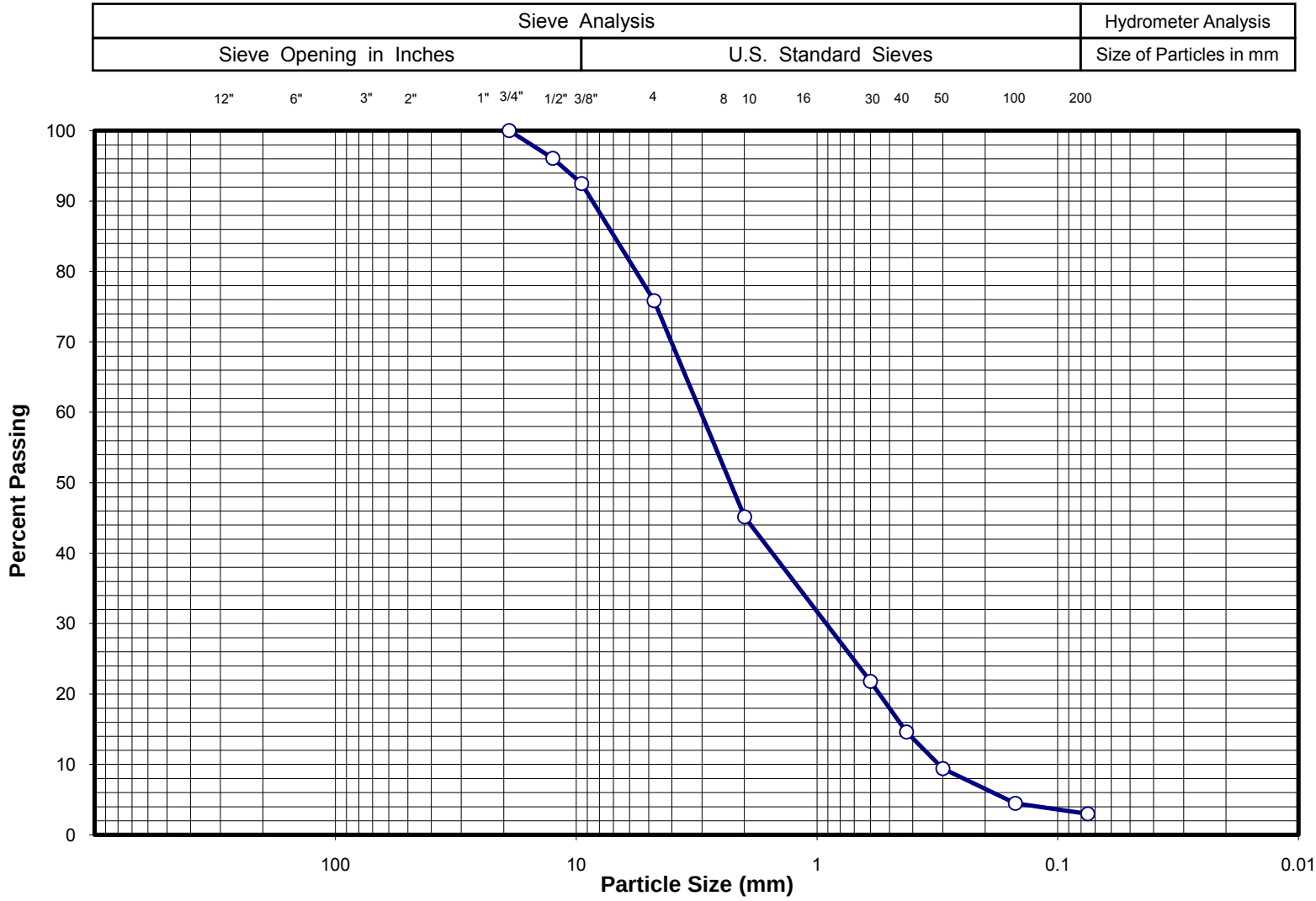
Geotechnical Engineering Consultants

SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/17/12	Figure No.:	-

Revised 04/27/2004



Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	96
⅜"	92
#4	76
#10	45
#40	15
#200	3

Gravel (%)	24	LL	NV	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	73	PL	NP	Sample ID:	YA-B10
Fines (%)	3	PI	NP	Sample Depth (ft.):	50
Sample Description:	A-1-a (0) / SW				

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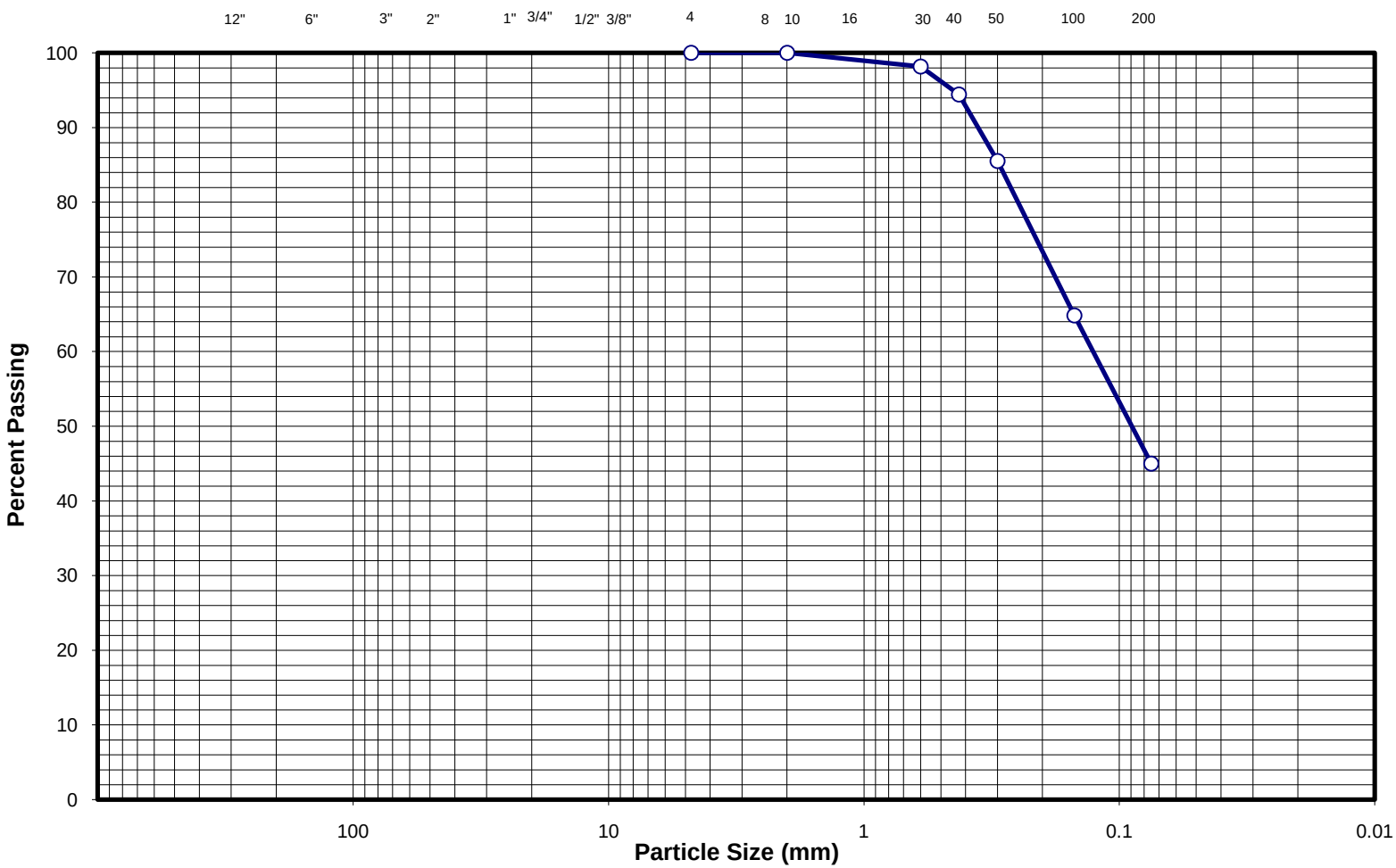
SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/17/12	Figure No.:	-

Revised 04/27/2004

Sieve Analysis		Hydrometer Analysis
Sieve Opening in Inches	U.S. Standard Sieves	Size of Particles in mm



Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	-
#4	100
#10	100
#40	94
#200	45

Gravel (%)	0	LL	60	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	55	PL	24	Sample ID:	YA-B10
Fines (%)	45	PI	36	Sample Depth (ft.):	80
Sample Description:	A-7-6 (11) / SC				

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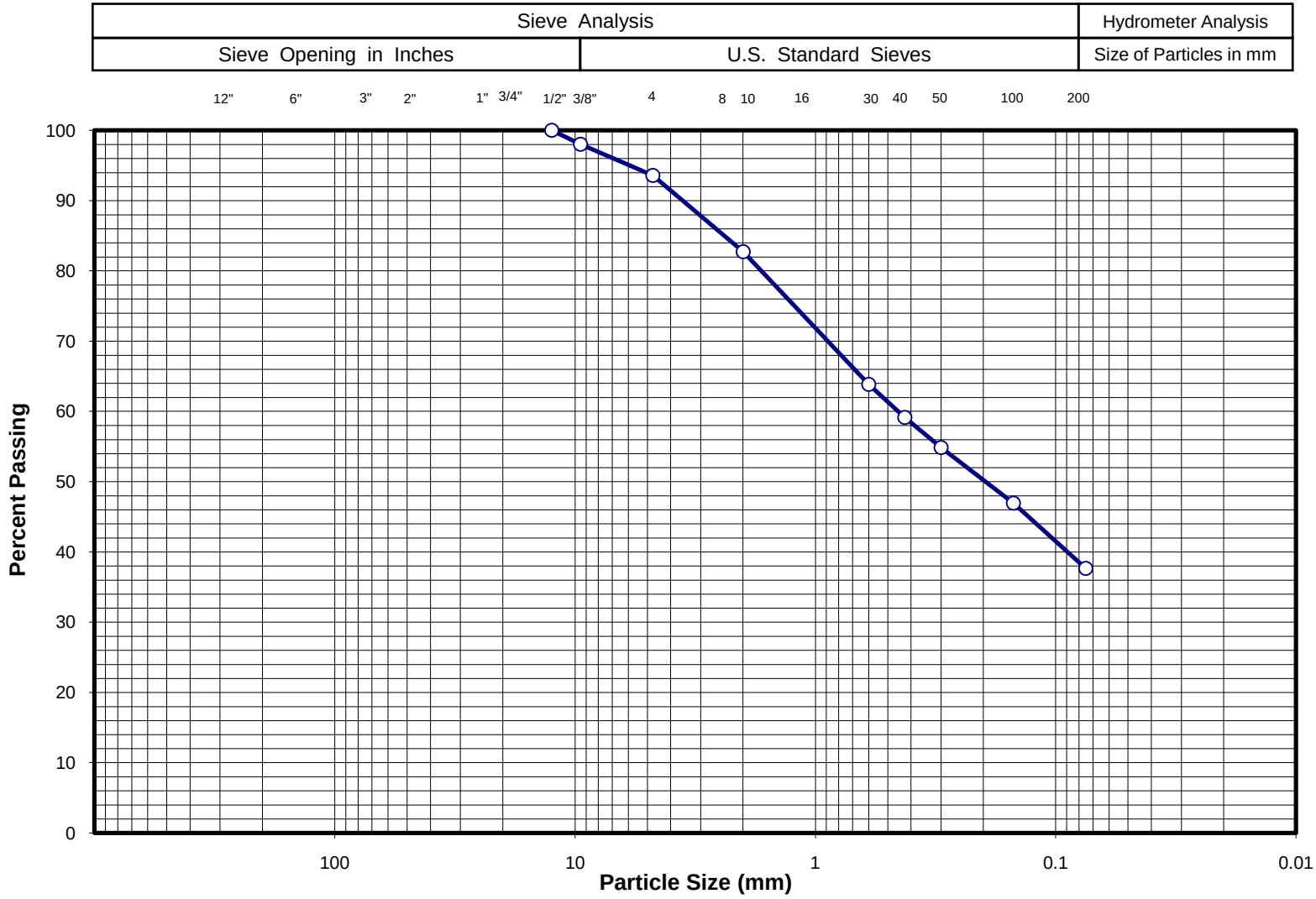
SIEVE ANALYSIS

Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/17/12	Figure No.:	-

Revised 04/27/2004



Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	100
⅜"	98
#4	94
#10	83
#40	59
#200	38

Gravel (%)	6	LL	60	Project Name:	I-70 East Partial Cover Lower Option
Sand (%)	56	PL	24	Sample ID:	YA-B10
Fines (%)	38	PI	36	Sample Depth (ft.):	90
Sample Description:	A-7-6 (3) / SC				

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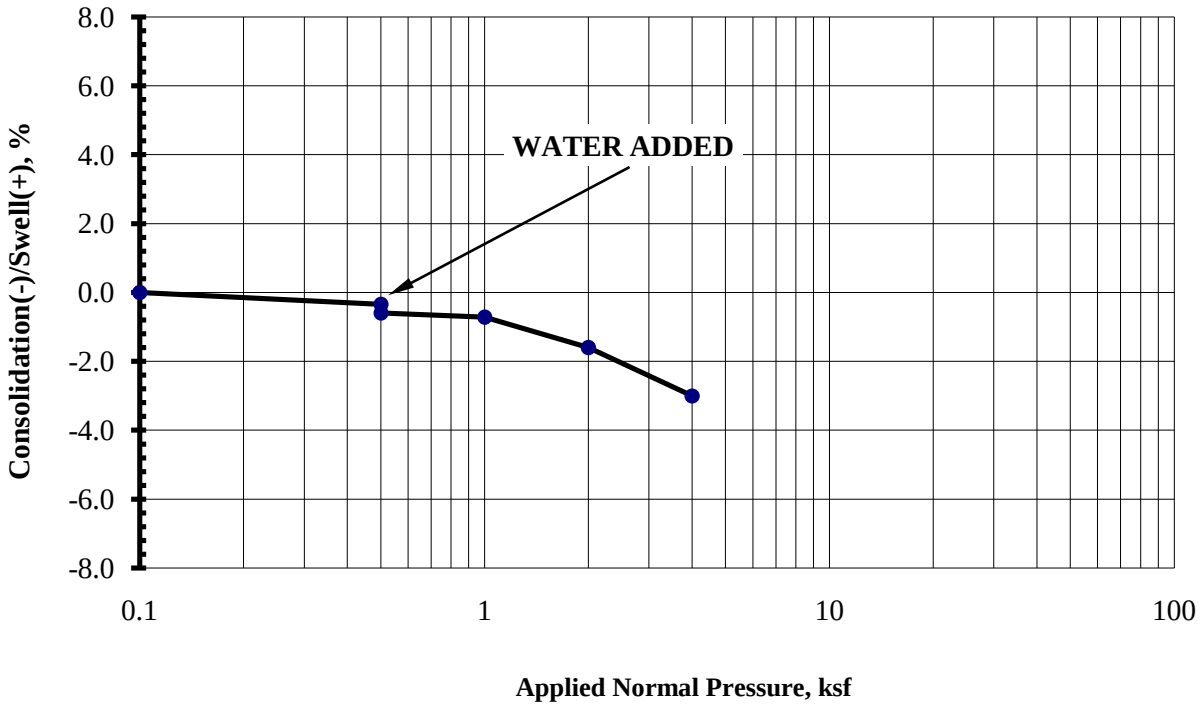
SIEVE ANALYSIS

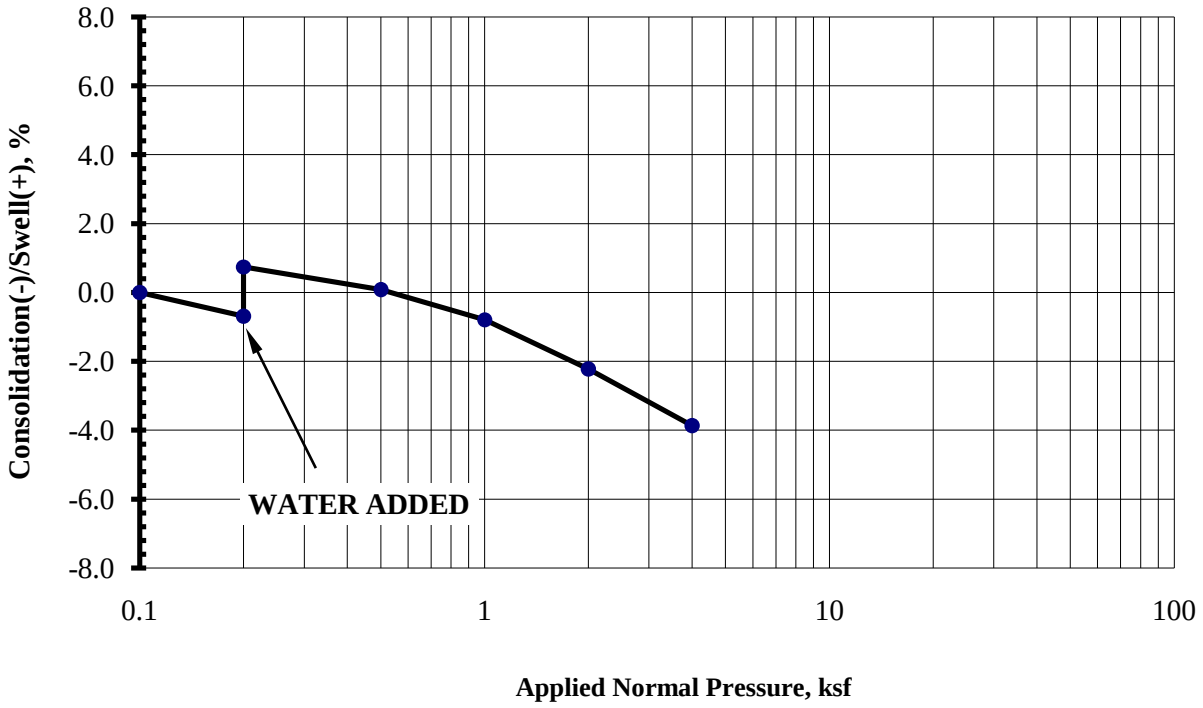
Drawn By:	MA	Project No.:	212-137
Checked By:	Mike		
Date:	09/17/12	Figure No.:	-

Revised 04/27/2004



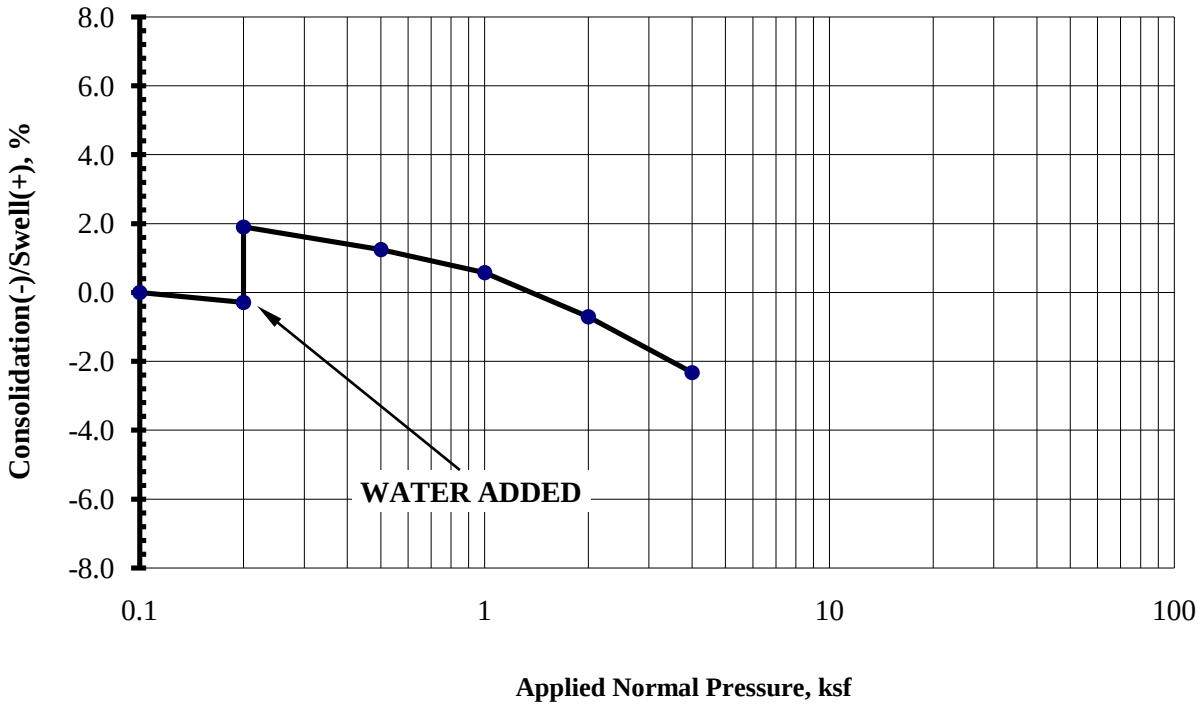
Boring Number		Depth, ft	Natural Dry Density, pcf	Moisture Content, %	Consolidation(-) /Swell(+), %	Soil Description	SWELL / CONSOLIDATION GRAPH
YA-B2		5	107.1	14.6%	-0.3		Drawn By: M.A
Job No:	212-137	Project Name:		I-70 East Partial Cover Lower Option			Checked By: I-Ping

YEH & ASSOCIATES, INC



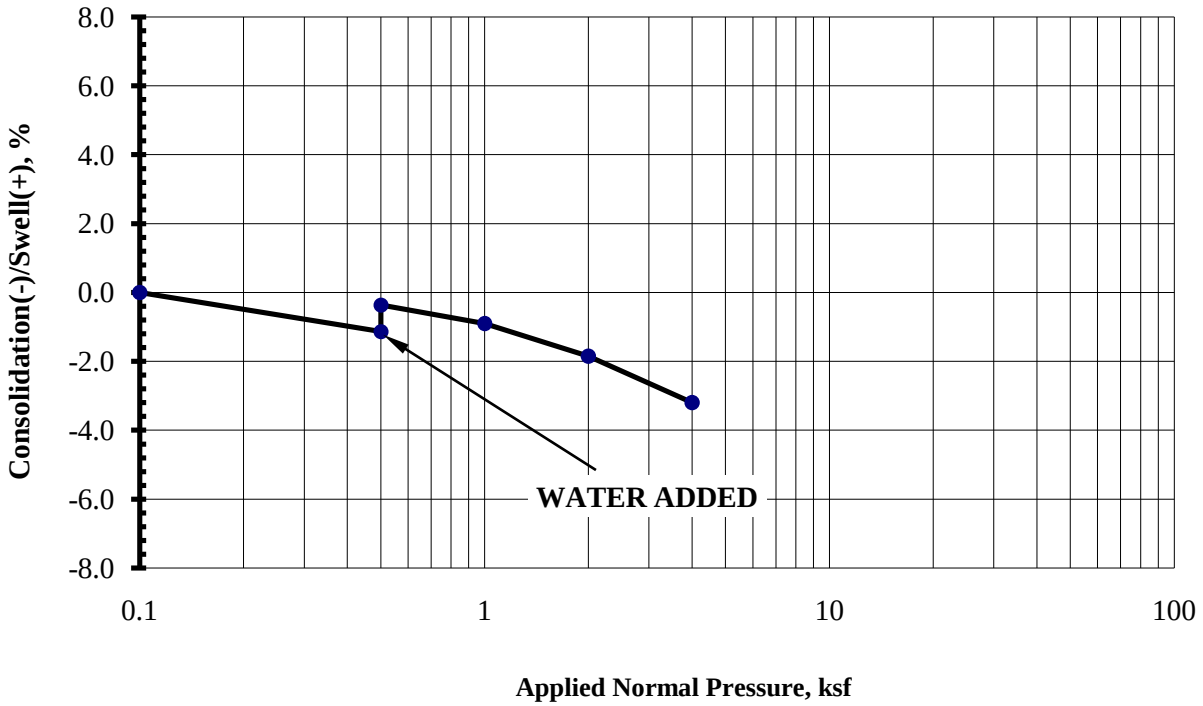
Boring Number		Depth, ft	Natural Dry Density, pcf	Moisture Content, %	Consolidation(-) /Swell(+), %	Soil Description	SWELL / CONSOLIDATION GRAPH
YA-B2		45	111.6	16.9%	1.4		Drawn By: M.A
Job No:	212-137	Project Name:		I-70 East Partial Cover Lower Option			Checked By: I-Ping

YEH & ASSOCIATES, INC



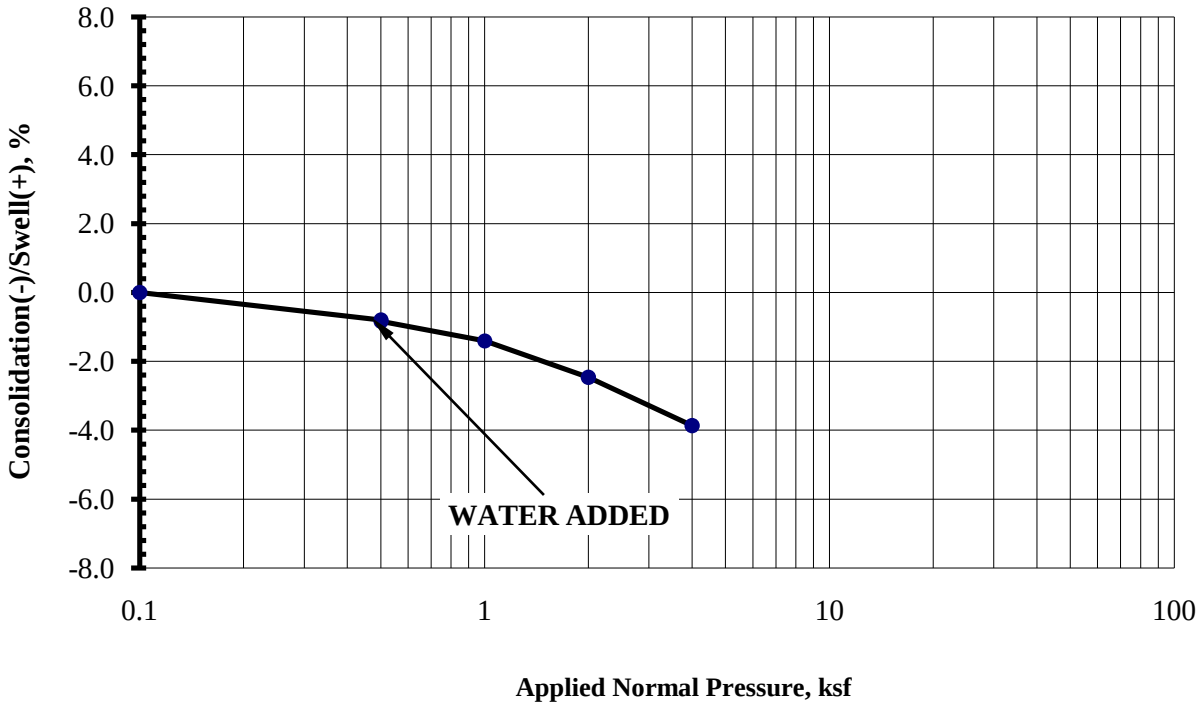
Boring Number		Depth, ft	Natural Dry Density, pcf	Moisture Content, %	Consolidation(-) /Swell(+), %	Soil Description	SWELL / CONSOLIDATION GRAPH
YA-B2		50	100.5	17.9%	2.2		Drawn By: M.A
Job No:	212-137	Project Name:		I-70 East Partial Cover Lower Option			Checked By: I-Ping

YEH & ASSOCIATES, INC



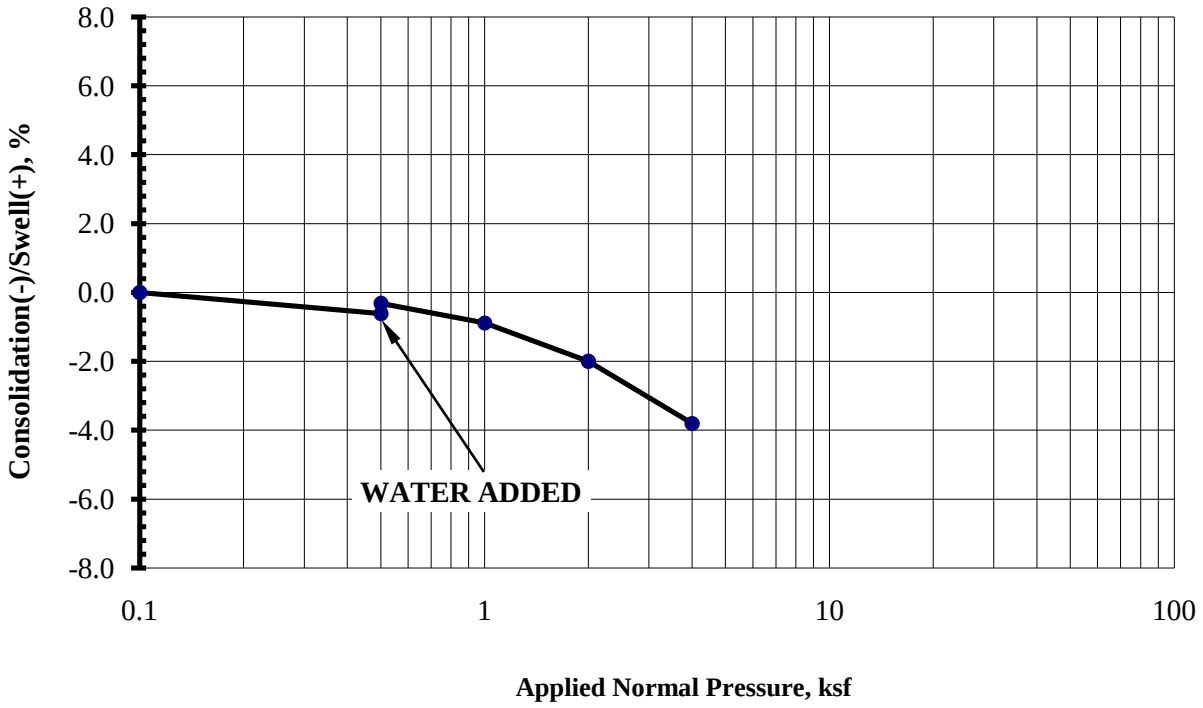
Boring Number		Depth, ft	Natural Dry Density, pcf	Moisture Content, %	Consolidation(-) /Swell(+), %	Soil Description	SWELL / CONSOLIDATION GRAPH
YA-B6		25	109.0	17.2%	0.8		Drawn By: M.A
Job No:	212-137	Project Name:		I-70 East Partial Cover Lower Option			Checked By: I-Ping

YEH & ASSOCIATES, INC



Boring Number		Depth, ft	Natural Dry Density, pcf	Moisture Content, %	Consolidation(-) /Swell(+), %	Soil Description	SWELL / CONSOLIDATION GRAPH
YA-B8		25	116.3	13.2%	0.0	CL	Drawn By: M.A
Job No:	212-137	Project Name:		I-70 East Partial Cover Lower Option			Checked By: I-Ping

YEH & ASSOCIATES, INC



Boring Number		Depth, ft	Natural Dry Density, pcf	Moisture Content, %	Consolidation(-) /Swell(+), %	Soil Description	SWELL / CONSOLIDATION GRAPH
YA-B9		25	91.4	23.3%	0.3		Drawn By: M.A
Job No:	212-137	Project Name:		I-70 East Partial Cover Lower Option			Checked By: I-Ping

YEH & ASSOCIATES, INC

Appendix F, Soil Chemical Analyses Reports

- **ESC Report Number L591689, Monitoring Well YA-MW6, Sample at 10 ft**
- **ESC Report Number L591691, Monitoring Well YA-MW6, Sample at 25 ft**
- **ESC Report Number L592342, Monitoring Well YA-MW2, Samples at 5 ft and 20 ft & Monitoring Well YA-MW7, Samples at 5 ft and 15 ft**
- **ESC Report Number L593015, Monitoring Well YA-MW8, Samples at 0 ft and 20 ft & Monitoring Well YA-MW9, Samples at 5 ft and 20 ft**
- **ESC Report Number L593051, Monitoring Well YA-MW4, Samples at 15 ft and 20 ft**
- **ESC Report Number L594042, Monitoring Well YA-MW3, Samples at 5 ft and 15 ft**
- **ESC Report Number L594311, Monitoring Well YA-MW1, Samples at 5 ft and 15 ft & Monitoring Well YA-MW10, Samples at 5 ft and 10 ft**
- **ESC Report Number L595432, Monitoring Well YA-MW5, Samples at 10 ft and 20 ft**

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

Report Summary

Friday August 31, 2012

Report Number: L591689
Samples Received: 08/24/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

August 31, 2012

ESC Sample # : L591689-01

Site ID : I-70 PCL YA-MW6

Project # : 212-137

Date Received : August 24, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-6 10 FT

Collected By : I P C
Collection Date : 08/20/12 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	08/25/12	1
Arsenic	BDL	1.0	mg/kg	6010B	08/27/12	1
Barium	58.	0.25	mg/kg	6010B	08/27/12	1
Cadmium	BDL	0.25	mg/kg	6010B	08/27/12	1
Chromium	5.0	0.50	mg/kg	6010B	08/27/12	1
Iron	8300	5.0	mg/kg	6010B	08/27/12	1
Lead	6.5	0.25	mg/kg	6010B	08/27/12	1
Selenium	BDL	1.0	mg/kg	6010B	08/27/12	1
Silver	BDL	0.50	mg/kg	6010B	08/27/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	08/26/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	08/26/12	5
Benzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	08/26/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	08/26/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	08/26/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	08/26/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	08/26/12	5
Chloroform	BDL	0.025	mg/kg	8260B	08/26/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	08/26/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	08/26/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	08/26/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	08/26/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/26/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/26/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/26/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

August 31, 2012

ESC Sample # : L591689-01

Site ID : I-70 PCL YA-MW6

Project # : 212-137

Date Received : August 24, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-6 10 FT

Collected By : I P C
Collection Date : 08/20/12 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/26/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/26/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/26/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/26/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	08/26/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	08/26/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	08/26/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	08/26/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	08/26/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	08/26/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	08/26/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Styrene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Toluene	BDL	0.025	mg/kg	8260B	08/26/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	08/26/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	08/26/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	08/26/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	08/26/12	5
Surrogate Recovery						
Toluene-d8	97.2		% Rec.	8260B	08/26/12	5
Dibromofluoromethane	104.		% Rec.	8260B	08/26/12	5
4-Bromofluorobenzene	99.3		% Rec.	8260B	08/26/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	08/30/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

August 31, 2012

ESC Sample # : L591689-01

Site ID : I-70 PCL YA-MW6

Project # : 212-137

Date Received : August 24, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-6 10 FT

Collected By : I P C
Collection Date : 08/20/12 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	08/30/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	08/30/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	08/30/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	08/30/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	08/27/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	08/27/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	08/27/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	08/27/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	08/27/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	08/27/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	08/27/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	81.6		% Rec.	8081/8082	08/27/12	1
Tetrachloro-m-xylene	81.0		% Rec.	8081/8082	08/27/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	08/29/12	1
Dalapon	BDL	0.80	mg/kg	8151	08/29/12	1
2,4-DB	BDL	0.070	mg/kg	8151	08/29/12	1
Dicamba	BDL	0.070	mg/kg	8151	08/29/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	08/29/12	1
Dinoseb	BDL	0.070	mg/kg	8151	08/29/12	1
MCPA	BDL	6.5	mg/kg	8151	08/29/12	1
MCPP	BDL	6.5	mg/kg	8151	08/29/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	08/29/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	08/29/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	76.5		% Rec.	8151	08/29/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	08/25/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

August 31, 2012

ESC Sample # : L591689-01

Site ID : I-70 PCL YA-MW6

Project # : 212-137

Date Received : August 24, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-6 10 FT

Collected By : I P C
Collection Date : 08/20/12 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	08/25/12	1
Anthracene	BDL	0.033	mg/kg	8270C	08/25/12	1
Benzidine	BDL	0.33	mg/kg	8270C	08/25/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	08/25/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	08/25/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	08/25/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	08/25/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	08/25/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	08/25/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	08/25/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	08/25/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	08/25/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	08/25/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	08/25/12	1
Chrysene	BDL	0.033	mg/kg	8270C	08/25/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	08/25/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	08/25/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	08/25/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	08/25/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	08/25/12	1
Fluorene	BDL	0.033	mg/kg	8270C	08/25/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	08/25/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	08/25/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	08/25/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	08/25/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	08/25/12	1
Isophorone	BDL	0.33	mg/kg	8270C	08/25/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	08/25/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	08/25/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	08/25/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	08/25/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	08/25/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	08/25/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	08/25/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	08/25/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	08/25/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	08/25/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	08/25/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	08/25/12	1
Pyrene	BDL	0.033	mg/kg	8270C	08/25/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	08/25/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	08/25/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	08/25/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

August 31, 2012

ESC Sample # : L591689-01

Date Received : August 24, 2012
Description : I-70 East PCL Project

Site ID : I-70 PCL YA-MW6

Sample ID : YA-MW-6 10 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/20/12 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	08/25/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	08/25/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	08/25/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	08/25/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	08/25/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	08/25/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	08/25/12	1
Phenol	BDL	0.33	mg/kg	8270C	08/25/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	08/25/12	1
Surrogate Recovery						
2-Fluorophenol	82.8		% Rec.	8270C	08/25/12	1
Phenol-d5	80.3		% Rec.	8270C	08/25/12	1
Nitrobenzene-d5	78.1		% Rec.	8270C	08/25/12	1
2-Fluorobiphenyl	88.7		% Rec.	8270C	08/25/12	1
2,4,6-Tribromophenol	95.5		% Rec.	8270C	08/25/12	1
p-Terphenyl-d14	94.3		% Rec.	8270C	08/25/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 08/31/12 12:45 Printed: 08/31/12 12:45

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L591689-01	WG609283	SAMP	Benzidine	R2316834	J4J6
	WG609492	SAMP	Endrin aldehyde	R2319153	J4
	WG609434	SAMP	n-Butylbenzene	R2317935	J4
	WG609434	SAMP	trans-1,3-Dichloropropene	R2317935	J4

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J4	The associated batch QC was outside the established quality control range for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
08/31/12 at 12:45:36

TSR Signing Reports: 358

Sample: L591689-01 Account: YEHDCO Received: 08/24/12 09:00 Due Date: 08/31/12 00:00 RPT Date: 08/31/12 12:45

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L591689

August 31, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Mercury	< .02	mg/kg			WG609362	08/25/12 12:35
1,2,4-Trichlorobenzene	< .333	mg/kg			WG609283	08/25/12 11:53
2,4,6-Trichlorophenol	< .333	mg/kg			WG609283	08/25/12 11:53
2,4-Dichlorophenol	< .333	mg/kg			WG609283	08/25/12 11:53
2,4-Dimethylphenol	< .333	mg/kg			WG609283	08/25/12 11:53
2,4-Dinitrophenol	< .333	mg/kg			WG609283	08/25/12 11:53
2,4-Dinitrotoluene	< .333	mg/kg			WG609283	08/25/12 11:53
2,6-Dinitrotoluene	< .333	mg/kg			WG609283	08/25/12 11:53
2-Chloronaphthalene	< .033	mg/kg			WG609283	08/25/12 11:53
2-Chlorophenol	< .333	mg/kg			WG609283	08/25/12 11:53
2-Nitrophenol	< .333	mg/kg			WG609283	08/25/12 11:53
3,3-Dichlorobenzidine	< .333	mg/kg			WG609283	08/25/12 11:53
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG609283	08/25/12 11:53
4-Bromophenyl-phenylether	< .333	mg/kg			WG609283	08/25/12 11:53
4-Chloro-3-methylphenol	< .333	mg/kg			WG609283	08/25/12 11:53
4-Chlorophenyl-phenylether	< .333	mg/kg			WG609283	08/25/12 11:53
4-Nitrophenol	< .333	mg/kg			WG609283	08/25/12 11:53
Acenaphthene	< .033	mg/kg			WG609283	08/25/12 11:53
Acenaphthylene	< .033	mg/kg			WG609283	08/25/12 11:53
Anthracene	< .033	mg/kg			WG609283	08/25/12 11:53
Benzidine	< .333	mg/kg			WG609283	08/25/12 11:53
Benzo(a)anthracene	< .033	mg/kg			WG609283	08/25/12 11:53
Benzo(a)pyrene	< .033	mg/kg			WG609283	08/25/12 11:53
Benzo(b)fluoranthene	< .033	mg/kg			WG609283	08/25/12 11:53
Benzo(g,h,i)perylene	< .033	mg/kg			WG609283	08/25/12 11:53
Benzo(k)fluoranthene	< .033	mg/kg			WG609283	08/25/12 11:53
Benzylbutyl phthalate	< .333	mg/kg			WG609283	08/25/12 11:53
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG609283	08/25/12 11:53
Bis(2-chloroethyl)ether	< .333	mg/kg			WG609283	08/25/12 11:53
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG609283	08/25/12 11:53
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG609283	08/25/12 11:53
Chrysene	< .033	mg/kg			WG609283	08/25/12 11:53
Di-n-butyl phthalate	< .333	mg/kg			WG609283	08/25/12 11:53
Di-n-octyl phthalate	< .333	mg/kg			WG609283	08/25/12 11:53
Dibenz(a,h)anthracene	< .033	mg/kg			WG609283	08/25/12 11:53
Diethyl phthalate	< .333	mg/kg			WG609283	08/25/12 11:53
Dimethyl phthalate	< .333	mg/kg			WG609283	08/25/12 11:53
Fluoranthene	< .033	mg/kg			WG609283	08/25/12 11:53
Fluorene	< .033	mg/kg			WG609283	08/25/12 11:53
Hexachloro-1,3-butadiene	< .333	mg/kg			WG609283	08/25/12 11:53
Hexachlorobenzene	< .333	mg/kg			WG609283	08/25/12 11:53
Hexachlorocyclopentadiene	< .333	mg/kg			WG609283	08/25/12 11:53
Hexachloroethane	< .333	mg/kg			WG609283	08/25/12 11:53
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG609283	08/25/12 11:53
Isophorone	< .333	mg/kg			WG609283	08/25/12 11:53
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG609283	08/25/12 11:53
n-Nitrosodimethylamine	< .333	mg/kg			WG609283	08/25/12 11:53
n-Nitrosodiphenylamine	< .333	mg/kg			WG609283	08/25/12 11:53
Naphthalene	< .033	mg/kg			WG609283	08/25/12 11:53
Nitrobenzene	< .333	mg/kg			WG609283	08/25/12 11:53
Pentachlorophenol	< .333	mg/kg			WG609283	08/25/12 11:53
Phenanthrene	< .033	mg/kg			WG609283	08/25/12 11:53
Phenol	< .333	mg/kg			WG609283	08/25/12 11:53
Pyrene	< .033	mg/kg			WG609283	08/25/12 11:53
2,4,6-Tribromophenol		% Rec.	81.34	16-136	WG609283	08/25/12 11:53
2-Fluorobiphenyl		% Rec.	77.47	37-119	WG609283	08/25/12 11:53
2-Fluorophenol		% Rec.	66.29	22-114	WG609283	08/25/12 11:53

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L591689

August 31, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Nitrobenzene-d5		% Rec.	62.71	20-114		08/25/12 11:53
Phenol-d5		% Rec.	66.97	26-127		08/25/12 11:53
p-Terphenyl-d14		% Rec.	79.75	15-174		08/25/12 11:53
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,1,1-Trichloroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,1,2-Trichloroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,1-Dichloroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,1-Dichloroethene	< .001	mg/kg			WG609434	08/26/12 12:23
1,1-Dichloropropene	< .001	mg/kg			WG609434	08/26/12 12:23
1,2,3-Trichlorobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,2,3-Trichloropropane	< .0025	mg/kg			WG609434	08/26/12 12:23
1,2,3-Trimethylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,2,4-Trichlorobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,2,4-Trimethylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG609434	08/26/12 12:23
1,2-Dibromoethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,2-Dichlorobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,2-Dichloroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,2-Dichloropropane	< .001	mg/kg			WG609434	08/26/12 12:23
1,3,5-Trimethylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,3-Dichlorobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,3-Dichloropropane	< .001	mg/kg			WG609434	08/26/12 12:23
1,4-Dichlorobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
2,2-Dichloropropane	< .001	mg/kg			WG609434	08/26/12 12:23
2-Butanone (MEK)	< .01	mg/kg			WG609434	08/26/12 12:23
2-Chloroethyl vinyl ether	< .05	mg/kg			WG609434	08/26/12 12:23
2-Chlorotoluene	< .001	mg/kg			WG609434	08/26/12 12:23
4-Chlorotoluene	< .001	mg/kg			WG609434	08/26/12 12:23
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG609434	08/26/12 12:23
Acetone	< .05	mg/kg			WG609434	08/26/12 12:23
Acrylonitrile	< .01	mg/kg			WG609434	08/26/12 12:23
Benzene	< .001	mg/kg			WG609434	08/26/12 12:23
Bromobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
Bromodichloromethane	< .001	mg/kg			WG609434	08/26/12 12:23
Bromoform	< .001	mg/kg			WG609434	08/26/12 12:23
Bromomethane	< .005	mg/kg			WG609434	08/26/12 12:23
Carbon tetrachloride	< .001	mg/kg			WG609434	08/26/12 12:23
Chlorobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
Chlorodibromomethane	< .001	mg/kg			WG609434	08/26/12 12:23
Chloroethane	< .005	mg/kg			WG609434	08/26/12 12:23
Chloroform	< .005	mg/kg			WG609434	08/26/12 12:23
Chloromethane	< .0025	mg/kg			WG609434	08/26/12 12:23
cis-1,2-Dichloroethene	< .001	mg/kg			WG609434	08/26/12 12:23
cis-1,3-Dichloropropene	< .001	mg/kg			WG609434	08/26/12 12:23
Di-isopropyl ether	< .001	mg/kg			WG609434	08/26/12 12:23
Dibromomethane	< .001	mg/kg			WG609434	08/26/12 12:23
Dichlorodifluoromethane	< .005	mg/kg			WG609434	08/26/12 12:23
Ethylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
Hexachloro-1,3-butadiene	< .001	mg/kg			WG609434	08/26/12 12:23
Isopropylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
Methyl tert-butyl ether	< .001	mg/kg			WG609434	08/26/12 12:23
Methylene Chloride	< .005	mg/kg			WG609434	08/26/12 12:23
n-Butylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
n-Propylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
Naphthalene	< .005	mg/kg			WG609434	08/26/12 12:23
p-Isopropyltoluene	< .001	mg/kg			WG609434	08/26/12 12:23
sec-Butylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23

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Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
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Level II

L591689

August 31, 2012

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Styrene	< .001	mg/kg			WG609434	08/26/12 12:23
tert-Butylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
Tetrachloroethene	< .001	mg/kg			WG609434	08/26/12 12:23
Toluene	< .005	mg/kg			WG609434	08/26/12 12:23
trans-1,2-Dichloroethene	< .001	mg/kg			WG609434	08/26/12 12:23
trans-1,3-Dichloropropene	< .001	mg/kg			WG609434	08/26/12 12:23
Trichloroethene	< .001	mg/kg			WG609434	08/26/12 12:23
Trichlorofluoromethane	< .005	mg/kg			WG609434	08/26/12 12:23
Vinyl chloride	< .001	mg/kg			WG609434	08/26/12 12:23
Xylenes, Total	< .003	mg/kg			WG609434	08/26/12 12:23
4-Bromofluorobenzene		% Rec.	100.6	67-133	WG609434	08/26/12 12:23
Dibromofluoromethane		% Rec.	102.8	72-135	WG609434	08/26/12 12:23
Toluene-d8		% Rec.	99.13	90-113	WG609434	08/26/12 12:23
Arsenic	< 1	mg/kg			WG609476	08/27/12 02:57
Barium	< .25	mg/kg			WG609476	08/27/12 02:57
Cadmium	< .25	mg/kg			WG609476	08/27/12 02:57
Chromium	< .5	mg/kg			WG609476	08/27/12 02:57
Lead	< .25	mg/kg			WG609476	08/27/12 02:57
Selenium	< 1	mg/kg			WG609476	08/27/12 02:57
Silver	< .5	mg/kg			WG609476	08/27/12 02:57
Iron	< 5	mg/kg			WG609476	08/27/12 13:09
PCB 1016	< .017	mg/kg			WG609492	08/27/12 16:19
PCB 1221	< .017	mg/kg			WG609492	08/27/12 16:19
PCB 1232	< .017	mg/kg			WG609492	08/27/12 16:19
PCB 1242	< .017	mg/kg			WG609492	08/27/12 16:19
PCB 1248	< .017	mg/kg			WG609492	08/27/12 16:19
PCB 1254	< .017	mg/kg			WG609492	08/27/12 16:19
PCB 1260	< .017	mg/kg			WG609492	08/27/12 16:19
Decachlorobiphenyl		% Rec.	77.62	18.9-115.8	WG609492	08/27/12 16:19
Tetrachloro-m-xylene		% Rec.	80.01	31.8-115.7	WG609492	08/27/12 16:19
2,4,5-T	< .07	mg/kg			WG609800	08/29/12 17:32
2,4,5-TP (Silvex)	< .07	mg/kg			WG609800	08/29/12 17:32
2,4-D	< .07	mg/kg			WG609800	08/29/12 17:32
2,4-DB	< .07	mg/kg			WG609800	08/29/12 17:32
Dalapon	< .8	mg/kg			WG609800	08/29/12 17:32
Dicamba	< .07	mg/kg			WG609800	08/29/12 17:32
Dichloroprop	< .07	mg/kg			WG609800	08/29/12 17:32
Dinoseb	< .07	mg/kg			WG609800	08/29/12 17:32
MCPA	< .68602	mg/kg			WG609800	08/29/12 17:32
MCPP	< 6.5	mg/kg			WG609800	08/29/12 17:32
2,4-Dichlorophenyl Acetic Acid		%	81.33	37-99	WG609800	08/29/12 17:32
4,4-DDD	< .02	mg/kg			WG609492	08/30/12 15:58
4,4-DDE	< .02	mg/kg			WG609492	08/30/12 15:58
4,4-DDT	< .02	mg/kg			WG609492	08/30/12 15:58
Aldrin	< .02	mg/kg			WG609492	08/30/12 15:58
Alpha BHC	< .02	mg/kg			WG609492	08/30/12 15:58
Beta BHC	< .02	mg/kg			WG609492	08/30/12 15:58
Chlordane	< .2	mg/kg			WG609492	08/30/12 15:58
Delta BHC	< .02	mg/kg			WG609492	08/30/12 15:58
Dieldrin	< .02	mg/kg			WG609492	08/30/12 15:58
Endosulfan I	< .02	mg/kg			WG609492	08/30/12 15:58

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Endosulfan II	< .02	mg/kg			WG609492	08/30/12 15:58
Endosulfan sulfate	< .02	mg/kg			WG609492	08/30/12 15:58
Endrin	< .02	mg/kg			WG609492	08/30/12 15:58
Endrin aldehyde	< .02	mg/kg			WG609492	08/30/12 15:58
Endrin ketone	< .02	mg/kg			WG609492	08/30/12 15:58
Gamma BHC	< .02	mg/kg			WG609492	08/30/12 15:58
Heptachlor	< .02	mg/kg			WG609492	08/30/12 15:58
Heptachlor epoxide	< .02	mg/kg			WG609492	08/30/12 15:58
Hexachlorobenzene	< .02	mg/kg			WG609492	08/30/12 15:58
Methoxychlor	< .02	mg/kg			WG609492	08/30/12 15:58
Toxaphene	< .4	mg/kg			WG609492	08/30/12 15:58
Decachlorobiphenyl		% Rec.	98.24	18.9-115.8	WG609492	08/30/12 15:58
Tetrachloro-m-xylene		% Rec.	91.84	31.8-115.7	WG609492	08/30/12 15:58

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0	0	0	20	L591516-05	WG609362
Barium	mg/kg	180.	120.	42.1*	20	L591691-01	WG609476
Cadmium	mg/kg	0	0	0	20	L591691-01	WG609476
Chromium	mg/kg	7.50	6.60	12.2	20	L591691-01	WG609476
Lead	mg/kg	8.10	7.60	5.87	20	L591691-01	WG609476
Selenium	mg/kg	0	0	0	20	L591691-01	WG609476
Silver	mg/kg	0	0	0	20	L591691-01	WG609476
Iron	mg/kg	14000	14000	3.51	20	L591691-01	WG609476
Arsenic	mg/kg	0	0	0	20	L591691-01	WG609476

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Mercury	mg/kg	12.4	14.2	115.	71.6-128	WG609362
1,2,4-Trichlorobenzene	mg/kg	.333	0.212	63.8	48-87	WG609283
2,4,6-Trichlorophenol	mg/kg	.333	0.246	73.9	50-98	WG609283
2,4-Dichlorophenol	mg/kg	.333	0.240	72.0	56-96	WG609283
2,4-Dimethylphenol	mg/kg	.333	0.245	73.6	52-101	WG609283
2,4-Dinitrophenol	mg/kg	.333	0.200	60.0	10-109	WG609283
2,4-Dinitrotoluene	mg/kg	.333	0.290	87.1	54-103	WG609283
2,6-Dinitrotoluene	mg/kg	.333	0.271	81.5	53-99	WG609283
2-Chloronaphthalene	mg/kg	.333	0.246	74.0	55-96	WG609283
2-Chlorophenol	mg/kg	.333	0.211	63.5	52-88	WG609283
2-Nitrophenol	mg/kg	.333	0.262	78.6	55-106	WG609283
3,3-Dichlorobenzidine	mg/kg	.333	0.273	81.8	36-84	WG609283
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.280	84.2	24-98	WG609283
4-Bromophenyl-phenylether	mg/kg	.333	0.254	76.2	58-111	WG609283
4-Chloro-3-methylphenol	mg/kg	.333	0.267	80.1	58-98	WG609283
4-Chlorophenyl-phenylether	mg/kg	.333	0.255	76.6	59-103	WG609283
4-Nitrophenol	mg/kg	.333	0.226	67.7	34-101	WG609283
Acenaphthene	mg/kg	.333	0.265	79.6	55-96	WG609283
Acenaphthylene	mg/kg	.333	0.265	79.6	61-107	WG609283
Anthracene	mg/kg	.333	0.266	80.0	58-105	WG609283
Benzidine	mg/kg	.333	0.00821	2.47*	10-21	WG609283
Benzo(a)anthracene	mg/kg	.333	0.262	78.7	56-103	WG609283
Benzo(a)pyrene	mg/kg	.333	0.266	80.0	57-103	WG609283
Benzo(b)fluoranthene	mg/kg	.333	0.260	78.0	52-106	WG609283
Benzo(g,h,i)perylene	mg/kg	.333	0.267	80.3	47-112	WG609283

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Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
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Quality Assurance Report
Level II

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August 31, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Benzo(k)fluoranthene	mg/kg	.333	0.258	77.5	53-104	WG609283
Benzylbutyl phthalate	mg/kg	.333	0.273	82.1	61-118	WG609283
Bis(2-chlorethoxy)methane	mg/kg	.333	0.236	70.9	58-104	WG609283
Bis(2-chloroethyl)ether	mg/kg	.333	0.220	66.0	51-103	WG609283
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.213	64.0	56-95	WG609283
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.285	85.6	56-120	WG609283
Chrysene	mg/kg	.333	0.266	79.8	55-102	WG609283
Di-n-butyl phthalate	mg/kg	.333	0.283	85.0	59-114	WG609283
Di-n-octyl phthalate	mg/kg	.333	0.293	88.0	51-119	WG609283
Dibenz(a,h)anthracene	mg/kg	.333	0.272	81.6	49-111	WG609283
Diethyl phthalate	mg/kg	.333	0.279	83.8	61-105	WG609283
Dimethyl phthalate	mg/kg	.333	0.266	79.8	60-106	WG609283
Fluoranthene	mg/kg	.333	0.274	82.3	59-108	WG609283
Fluorene	mg/kg	.333	0.255	76.7	59-100	WG609283
Hexachloro-1,3-butadiene	mg/kg	.333	0.234	70.2	53-106	WG609283
Hexachlorobenzene	mg/kg	.333	0.239	71.6	50-108	WG609283
Hexachlorocyclopentadiene	mg/kg	.333	0.283	84.8	36-117	WG609283
Hexachloroethane	mg/kg	.333	0.215	64.6	45-83	WG609283
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.270	81.1	50-110	WG609283
Isophorone	mg/kg	.333	0.201	60.5	51-99	WG609283
n-Nitrosodi-n-propylamine	mg/kg	.333	0.242	72.6	52-103	WG609283
n-Nitrosodimethylamine	mg/kg	.333	0.226	67.9	31-107	WG609283
n-Nitrosodiphenylamine	mg/kg	.333	0.251	75.5	57-121	WG609283
Naphthalene	mg/kg	.333	0.230	69.0	55-91	WG609283
Nitrobenzene	mg/kg	.333	0.242	72.6	47-92	WG609283
Pentachlorophenol	mg/kg	.333	0.210	63.1	10-89	WG609283
Phenanthrene	mg/kg	.333	0.254	76.3	55-103	WG609283
Phenol	mg/kg	.333	0.221	66.4	49-99	WG609283
Pyrene	mg/kg	.333	0.251	75.5	54-104	WG609283
2,4,6-Tribromophenol				89.48	16-136	WG609283
2-Fluorobiphenyl				80.21	37-119	WG609283
2-Fluorophenol				70.62	22-114	WG609283
Nitrobenzene-d5				75.16	20-114	WG609283
Phenol-d5				69.89	26-127	WG609283
p-Terphenyl-d14				76.82	15-174	WG609283
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0256	102.	77-129	WG609434
1,1,1-Trichloroethane	mg/kg	.025	0.0277	111.	70-127	WG609434
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0255	102.	76-133	WG609434
1,1,2-Trichloroethane	mg/kg	.025	0.0244	97.5	79-123	WG609434
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0322	129.	52-145	WG609434
1,1-Dichloroethane	mg/kg	.025	0.0274	110.	74-121	WG609434
1,1-Dichloroethene	mg/kg	.025	0.0287	115.	53-135	WG609434
1,1-Dichloropropene	mg/kg	.025	0.0267	107.	67-127	WG609434
1,2,3-Trichlorobenzene	mg/kg	.025	0.0255	102.	74-131	WG609434
1,2,3-Trichloropropane	mg/kg	.025	0.0248	99.4	75-135	WG609434
1,2,3-Trimethylbenzene	mg/kg	.025	0.0226	90.5	76-128	WG609434
1,2,4-Trichlorobenzene	mg/kg	.025	0.0247	98.9	72-130	WG609434
1,2,4-Trimethylbenzene	mg/kg	.025	0.0223	89.2	75-131	WG609434
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0260	104.	55-142	WG609434
1,2-Dibromoethane	mg/kg	.025	0.0262	105.	77-126	WG609434
1,2-Dichlorobenzene	mg/kg	.025	0.0247	98.9	80-123	WG609434
1,2-Dichloroethane	mg/kg	.025	0.0296	118.	70-128	WG609434
1,2-Dichloropropane	mg/kg	.025	0.0308	123.	74-125	WG609434
1,3,5-Trimethylbenzene	mg/kg	.025	0.0223	89.1	77-129	WG609434
1,3-Dichlorobenzene	mg/kg	.025	0.0242	96.8	76-128	WG609434
1,3-Dichloropropane	mg/kg	.025	0.0254	101.	77-118	WG609434
1,4-Dichlorobenzene	mg/kg	.025	0.0240	95.8	77-119	WG609434

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Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
2,2-Dichloropropane	mg/kg	.025	0.0292	117.	60-132	WG609434
2-Butanone (MEK)	mg/kg	.125	0.136	109.	56-146	WG609434
2-Chloroethyl vinyl ether	mg/kg	.125	0.144	115.	17-179	WG609434
2-Chlorotoluene	mg/kg	.025	0.0228	91.0	76-125	WG609434
4-Chlorotoluene	mg/kg	.025	0.0224	89.8	76-125	WG609434
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.146	117.	55-148	WG609434
Acetone	mg/kg	.125	0.158	126.	47-155	WG609434
Acrylonitrile	mg/kg	.125	0.140	112.	50-155	WG609434
Benzene	mg/kg	.025	0.0259	104.	72-120	WG609434
Bromobenzene	mg/kg	.025	0.0234	93.5	74-122	WG609434
Bromodichloromethane	mg/kg	.025	0.0295	118.	74-128	WG609434
Bromoform	mg/kg	.025	0.0261	105.	62-137	WG609434
Bromomethane	mg/kg	.025	0.0376	151.	38-180	WG609434
Carbon tetrachloride	mg/kg	.025	0.0281	113.	62-130	WG609434
Chlorobenzene	mg/kg	.025	0.0244	97.7	77-124	WG609434
Chlorodibromomethane	mg/kg	.025	0.0263	105.	74-128	WG609434
Chloroethane	mg/kg	.025	0.0326	131.	46-173	WG609434
Chloroform	mg/kg	.025	0.0274	110.	76-122	WG609434
Chloromethane	mg/kg	.025	0.0213	85.3	49-143	WG609434
cis-1,2-Dichloroethene	mg/kg	.025	0.0287	115.	73-123	WG609434
cis-1,3-Dichloropropene	mg/kg	.025	0.0291	116.	73-126	WG609434
Di-isopropyl ether	mg/kg	.025	0.0266	106.	64-131	WG609434
Dibromomethane	mg/kg	.025	0.0312	125.	75-127	WG609434
Dichlorodifluoromethane	mg/kg	.025	0.0215	86.1	30-177	WG609434
Ethylbenzene	mg/kg	.025	0.0239	95.7	76-126	WG609434
Hexachloro-1,3-butadiene	mg/kg	.025	0.0262	105.	71-134	WG609434
Isopropylbenzene	mg/kg	.025	0.0212	84.8	70-128	WG609434
Methyl tert-butyl ether	mg/kg	.025	0.0279	112.	66-127	WG609434
Methylene Chloride	mg/kg	.025	0.0282	113.	67-124	WG609434
n-Butylbenzene	mg/kg	.025	0.0215	86.1	71-133	WG609434
n-Propylbenzene	mg/kg	.025	0.0216	86.4	76-126	WG609434
Naphthalene	mg/kg	.025	0.0224	89.5	68-136	WG609434
p-Isopropyltoluene	mg/kg	.025	0.0221	88.5	75-134	WG609434
sec-Butylbenzene	mg/kg	.025	0.0217	86.7	75-132	WG609434
Styrene	mg/kg	.025	0.0233	93.2	68-148	WG609434
tert-Butylbenzene	mg/kg	.025	0.0233	93.1	75-132	WG609434
Tetrachloroethene	mg/kg	.025	0.0257	103.	70-131	WG609434
Toluene	mg/kg	.025	0.0264	106.	74-155	WG609434
trans-1,2-Dichloroethene	mg/kg	.025	0.0270	108.	63-126	WG609434
trans-1,3-Dichloropropene	mg/kg	.025	0.0320	128.*	68-126	WG609434
Trichloroethene	mg/kg	.025	0.0294	118.	75-121	WG609434
Trichlorofluoromethane	mg/kg	.025	0.0313	125.	48-170	WG609434
Vinyl chloride	mg/kg	.025	0.0253	101.	54-144	WG609434
Xylenes, Total	mg/kg	.075	0.0702	93.7	76-126	WG609434
4-Bromofluorobenzene				94.98	67-133	WG609434
Dibromofluoromethane				106.6	72-135	WG609434
Toluene-d8				100.3	90-113	WG609434
Arsenic	mg/kg	237	221.	93.2	83.1-117	WG609476
Barium	mg/kg	252	245.	97.2	84.1-116	WG609476
Cadmium	mg/kg	191	183.	95.8	83.2-117	WG609476
Chromium	mg/kg	128	122.	95.3	81.3-118	WG609476
Lead	mg/kg	103	99.6	96.7	83.1-117	WG609476
Selenium	mg/kg	110	104.	94.5	78.7-122	WG609476
Silver	mg/kg	47.3	42.2	89.2	66.2-134	WG609476
Iron	mg/kg	13100	12600	96.2	50.8-150	WG609476

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Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L591689

August 31, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
PCB 1016	mg/kg	.167	0.132	79.2	64-120	WG609492
PCB 1260	mg/kg	.167	0.140	83.6	72-130	WG609492
Decachlorobiphenyl				81.10	18.9-115.8	WG609492
Tetrachloro-m-xylene				78.95	31.8-115.7	WG609492
2,4,5-T	mg/kg	.167	0.151	90.2	32.9-103	WG609800
2,4,5-TP (Silvex)	mg/kg	.167	0.156	93.6	46-116	WG609800
2,4-D	mg/kg	.167	0.140	83.8	28-98	WG609800
2,4-DB	mg/kg	.167	0.144	86.2	28.9-108	WG609800
Dalapon	mg/kg	.167	0.117	70.1	18.4-113	WG609800
Dicamba	mg/kg	.167	0.151	90.3	37.2-119	WG609800
Dichloroprop	mg/kg	.167	0.166	99.2	40.5-114	WG609800
Dinoseb	mg/kg	.167	0.113	67.7	10-98	WG609800
MCPA	mg/kg	16.7	13.1	78.5	15.5-110	WG609800
MCPP	mg/kg	16.7	23.1	139.	40.1-177	WG609800
2,4-Dichlorophenyl Acetic Acid				70.78	37-99	WG609800
4,4-DDD	mg/kg	.0667	0.0640	95.9	74-114	WG609492
4,4-DDE	mg/kg	.0667	0.0633	95.0	74-115	WG609492
4,4-DDT	mg/kg	.0667	0.0656	98.3	62-124	WG609492
Aldrin	mg/kg	.0667	0.0597	89.5	69-110	WG609492
Alpha BHC	mg/kg	.0667	0.0567	85.0	68-111	WG609492
Beta BHC	mg/kg	.0667	0.0600	89.9	74-112	WG609492
Delta BHC	mg/kg	.0667	0.0619	92.8	71-110	WG609492
Dieldrin	mg/kg	.0667	0.0643	96.5	76-115	WG609492
Endosulfan I	mg/kg	.0667	0.0642	96.2	76-119	WG609492
Endosulfan II	mg/kg	.0667	0.0640	96.0	75-116	WG609492
Endosulfan sulfate	mg/kg	.0667	0.0641	96.0	70-118	WG609492
Endrin	mg/kg	.0667	0.0622	93.3	68-115	WG609492
Endrin aldehyde	mg/kg	.0667	0.0609	91.3	48-92	WG609492
Endrin ketone	mg/kg	.0667	0.0647	97.0	70-112	WG609492
Gamma BHC	mg/kg	.0667	0.0589	88.4	70-112	WG609492
Heptachlor	mg/kg	.0667	0.0611	91.6	69-111	WG609492
Heptachlor epoxide	mg/kg	.0667	0.0635	95.2	72-115	WG609492
Hexachlorobenzene	mg/kg	.0667	0.0513	76.8	64-111	WG609492
Methoxychlor	mg/kg	.0667	0.0665	99.7	65-123	WG609492
Decachlorobiphenyl				101.5	18.9-115.8	WG609492
Tetrachloro-m-xylene				89.37	31.8-115.7	WG609492

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,2,4-Trichlorobenzene	mg/kg	0.201	0.212	60.0	48-87	5.45	20	WG609283
2,4,6-Trichlorophenol	mg/kg	0.241	0.246	72.0	50-98	2.12	20	WG609283
2,4-Dichlorophenol	mg/kg	0.232	0.240	70.0	56-96	3.20	20	WG609283
2,4-Dimethylphenol	mg/kg	0.237	0.245	71.0	52-101	3.57	20	WG609283
2,4-Dinitrophenol	mg/kg	0.206	0.200	62.0	10-109	3.06	39	WG609283
2,4-Dinitrotoluene	mg/kg	0.279	0.290	84.0	54-103	4.05	20	WG609283
2,6-Dinitrotoluene	mg/kg	0.262	0.271	79.0	53-99	3.44	20	WG609283
2-Chloronaphthalene	mg/kg	0.239	0.246	72.0	55-96	2.91	20	WG609283
2-Chlorophenol	mg/kg	0.204	0.211	61.0	52-88	3.34	20	WG609283
2-Nitrophenol	mg/kg	0.238	0.262	71.0	55-106	9.63	20	WG609283
3,3-Dichlorobenzidine	mg/kg	0.274	0.273	82.0	36-84	0.709	20	WG609283
4,6-Dinitro-2-methylphenol	mg/kg	0.274	0.280	82.0	24-98	2.27	32	WG609283
4-Bromophenyl-phenylether	mg/kg	0.248	0.254	74.0	58-111	2.14	20	WG609283
4-Chloro-3-methylphenol	mg/kg	0.258	0.267	78.0	58-98	3.22	20	WG609283
4-Chlorophenyl-phenylether	mg/kg	0.249	0.255	75.0	59-103	2.39	20	WG609283

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Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
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Quality Assurance Report
Level II

L591689

August 31, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
4-Nitrophenol	mg/kg	0.230	0.226	69.0	34-101	2.15	26	WG609283
Acenaphthene	mg/kg	0.254	0.265	76.0	55-96	4.21	20	WG609283
Acenaphthylene	mg/kg	0.256	0.265	77.0	61-107	3.53	20	WG609283
Anthracene	mg/kg	0.258	0.266	78.0	58-105	3.04	20	WG609283
Benzidine	mg/kg	0.00831	0.00821	2*	10-21	1.27	40	WG609283
Benzo(a)anthracene	mg/kg	0.260	0.262	78.0	56-103	0.736	20	WG609283
Benzo(a)pyrene	mg/kg	0.268	0.266	80.0	57-103	0.648	20	WG609283
Benzo(b)fluoranthene	mg/kg	0.255	0.260	77.0	52-106	1.71	20	WG609283
Benzo(g,h,i)perylene	mg/kg	0.266	0.267	80.0	47-112	0.677	20	WG609283
Benzo(k)fluoranthene	mg/kg	0.269	0.258	81.0	53-104	4.02	20	WG609283
Benzylbutyl phthalate	mg/kg	0.276	0.273	83.0	61-118	0.783	20	WG609283
Bis(2-chlorethoxy)methane	mg/kg	0.228	0.236	68.0	58-104	3.37	20	WG609283
Bis(2-chloroethyl)ether	mg/kg	0.202	0.220	61.0	51-103	8.18	20	WG609283
Bis(2-chloroisopropyl)ether	mg/kg	0.207	0.213	62.0	56-95	3.11	20	WG609283
Bis(2-ethylhexyl)phthalate	mg/kg	0.292	0.285	88.0	56-120	2.46	20	WG609283
Chrysene	mg/kg	0.275	0.266	82.0	55-102	3.22	20	WG609283
Di-n-butyl phthalate	mg/kg	0.282	0.283	85.0	59-114	0.406	20	WG609283
Di-n-octyl phthalate	mg/kg	0.295	0.293	89.0	51-119	0.732	22	WG609283
Dibenz(a,h)anthracene	mg/kg	0.271	0.272	81.0	49-111	0.292	20	WG609283
Diethyl phthalate	mg/kg	0.276	0.279	83.0	61-105	1.19	20	WG609283
Dimethyl phthalate	mg/kg	0.271	0.266	81.0	60-106	2.07	20	WG609283
Fluoranthene	mg/kg	0.274	0.274	82.0	59-108	0.0714	20	WG609283
Fluorene	mg/kg	0.250	0.255	75.0	59-100	2.12	20	WG609283
Hexachloro-1,3-butadiene	mg/kg	0.216	0.234	65.0	53-106	7.70	20	WG609283
Hexachlorobenzene	mg/kg	0.233	0.239	70.0	50-108	2.48	20	WG609283
Hexachlorocyclopentadiene	mg/kg	0.277	0.283	83.0	36-117	1.80	20	WG609283
Hexachloroethane	mg/kg	0.200	0.215	60.0	45-83	7.58	20	WG609283
Indeno(1,2,3-cd)pyrene	mg/kg	0.271	0.270	81.0	50-110	0.384	20	WG609283
Isophorone	mg/kg	0.195	0.201	59.0	51-99	2.99	20	WG609283
n-Nitrosodi-n-propylamine	mg/kg	0.240	0.242	72.0	52-103	0.898	20	WG609283
n-Nitrosodimethylamine	mg/kg	0.219	0.226	66.0	31-107	3.38	23	WG609283
n-Nitrosodiphenylamine	mg/kg	0.249	0.251	75.0	57-121	0.929	20	WG609283
Naphthalene	mg/kg	0.218	0.230	65.0	55-91	5.35	20	WG609283
Nitrobenzene	mg/kg	0.222	0.242	67.0	47-92	8.31	20	WG609283
Pentachlorophenol	mg/kg	0.219	0.210	66.0	10-89	3.93	28	WG609283
Phenanthrene	mg/kg	0.246	0.254	74.0	55-103	3.43	20	WG609283
Phenol	mg/kg	0.213	0.221	64.0	49-99	3.88	20	WG609283
Pyrene	mg/kg	0.257	0.251	77.0	54-104	2.15	20	WG609283
2,4,6-Tribromophenol				87.30	16-136			WG609283
2-Fluorobiphenyl				78.44	37-119			WG609283
2-Fluorophenol				65.41	22-114			WG609283
Nitrobenzene-d5				70.10	20-114			WG609283
Phenol-d5				66.62	26-127			WG609283
p-Terphenyl-d14				80.13	15-174			WG609283
1,1,1,2-Tetrachloroethane	mg/kg	0.0239	0.0256	95.0	77-129	7.07	20	WG609434
1,1,1-Trichloroethane	mg/kg	0.0254	0.0277	102.	70-127	8.62	20	WG609434
1,1,2,2-Tetrachloroethane	mg/kg	0.0242	0.0255	97.0	76-133	5.10	20	WG609434
1,1,2-Trichloroethane	mg/kg	0.0228	0.0244	91.0	79-123	6.57	20	WG609434
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0297	0.0322	119.	52-145	8.17	20	WG609434
1,1-Dichloroethane	mg/kg	0.0250	0.0274	100.	74-121	9.18	20	WG609434
1,1-Dichloroethene	mg/kg	0.0273	0.0287	109.	53-135	4.93	20	WG609434
1,1-Dichloropropene	mg/kg	0.0248	0.0267	99.0	67-127	7.50	20	WG609434
1,2,3-Trichlorobenzene	mg/kg	0.0218	0.0255	87.0	74-131	15.6	20	WG609434
1,2,3-Trichloropropane	mg/kg	0.0229	0.0248	91.0	75-135	8.34	20	WG609434
1,2,3-Trimethylbenzene	mg/kg	0.0198	0.0226	79.0	76-128	13.2	20	WG609434
1,2,4-Trichlorobenzene	mg/kg	0.0197	0.0247	79.0	72-130	22.8*	20	WG609434
1,2,4-Trimethylbenzene	mg/kg	0.0201	0.0223	80.0	75-131	10.4	20	WG609434

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Quality Assurance Report
Level II

L591689

August 31, 2012

		Laboratory Control Sample				Duplicate		
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,2-Dibromo-3-Chloropropane	mg/kg	0.0253	0.0260	101.	55-142	2.55	20	WG609434
1,2-Dibromoethane	mg/kg	0.0247	0.0262	99.0	77-126	5.95	20	WG609434
1,2-Dichlorobenzene	mg/kg	0.0220	0.0247	88.0	80-123	11.4	20	WG609434
1,2-Dichloroethane	mg/kg	0.0263	0.0296	105.	70-128	11.8	20	WG609434
1,2-Dichloropropane	mg/kg	0.0279	0.0308	112.	74-125	9.87	20	WG609434
1,3,5-Trimethylbenzene	mg/kg	0.0201	0.0223	80.0	77-129	10.3	20	WG609434
1,3-Dichlorobenzene	mg/kg	0.0219	0.0242	88.0	76-128	9.81	20	WG609434
1,3-Dichloropropane	mg/kg	0.0234	0.0254	94.0	77-118	7.90	20	WG609434
1,4-Dichlorobenzene	mg/kg	0.0205	0.0240	82.0	77-119	15.4	20	WG609434
2,2-Dichloropropane	mg/kg	0.0240	0.0292	96.0	60-132	19.4	20	WG609434
2-Butanone (MEK)	mg/kg	0.100	0.136	80.0	56-146	30.2*	20	WG609434
2-Chloroethyl vinyl ether	mg/kg	0.123	0.144	98.0	17-179	15.5	22	WG609434
2-Chlorotoluene	mg/kg	0.0209	0.0228	84.0	76-125	8.45	20	WG609434
4-Chlorotoluene	mg/kg	0.0201	0.0224	80.0	76-125	11.2	20	WG609434
4-Methyl-2-pentanone (MIBK)	mg/kg	0.131	0.146	104.	55-148	11.2	20	WG609434
Acetone	mg/kg	0.116	0.158	92.0	47-155	30.9*	22	WG609434
Acrylonitrile	mg/kg	0.130	0.140	104.	50-155	7.41	20	WG609434
Benzene	mg/kg	0.0235	0.0259	94.0	72-120	9.51	20	WG609434
Bromobenzene	mg/kg	0.0215	0.0234	86.0	74-122	8.51	20	WG609434
Bromodichloromethane	mg/kg	0.0261	0.0295	104.	74-128	12.5	20	WG609434
Bromoform	mg/kg	0.0255	0.0261	102.	62-137	2.31	20	WG609434
Bromomethane	mg/kg	0.0366	0.0376	146.	38-180	2.89	20	WG609434
Carbon tetrachloride	mg/kg	0.0258	0.0281	103.	62-130	8.51	20	WG609434
Chlorobenzene	mg/kg	0.0227	0.0244	91.0	77-124	7.46	20	WG609434
Chlorodibromomethane	mg/kg	0.0242	0.0263	97.0	74-128	8.05	20	WG609434
Chloroethane	mg/kg	0.0304	0.0326	122.	46-173	6.99	20	WG609434
Chloroform	mg/kg	0.0251	0.0274	100.	76-122	8.86	20	WG609434
Chloromethane	mg/kg	0.0209	0.0213	84.0	49-143	1.82	20	WG609434
cis-1,2-Dichloroethene	mg/kg	0.0263	0.0287	105.	73-123	8.92	20	WG609434
cis-1,3-Dichloropropene	mg/kg	0.0248	0.0291	99.0	73-126	15.8	20	WG609434
Di-isopropyl ether	mg/kg	0.0237	0.0266	95.0	64-131	11.4	20	WG609434
Dibromomethane	mg/kg	0.0287	0.0312	115.	75-127	8.55	20	WG609434
Dichlorodifluoromethane	mg/kg	0.0208	0.0215	83.0	30-177	3.31	20	WG609434
Ethylbenzene	mg/kg	0.0227	0.0239	91.0	76-126	5.39	20	WG609434
Hexachloro-1,3-butadiene	mg/kg	0.0224	0.0262	90.0	71-134	15.6	20	WG609434
Isopropylbenzene	mg/kg	0.0194	0.0212	78.0	70-128	8.81	20	WG609434
Methyl tert-butyl ether	mg/kg	0.0254	0.0279	102.	66-127	9.33	20	WG609434
Methylene Chloride	mg/kg	0.0260	0.0282	104.	67-124	8.27	20	WG609434
n-Butylbenzene	mg/kg	0.0175	0.0215	70*	71-133	20.8*	20	WG609434
n-Propylbenzene	mg/kg	0.0193	0.0216	77.0	76-126	11.3	20	WG609434
Naphthalene	mg/kg	0.0203	0.0224	81.0	68-136	9.96	20	WG609434
p-Isopropyltoluene	mg/kg	0.0196	0.0221	78.0	75-134	12.1	20	WG609434
sec-Butylbenzene	mg/kg	0.0197	0.0217	79.0	75-132	9.80	20	WG609434
Styrene	mg/kg	0.0215	0.0233	86.0	68-148	7.89	20	WG609434
tert-Butylbenzene	mg/kg	0.0218	0.0233	87.0	75-132	6.71	20	WG609434
Tetrachloroethene	mg/kg	0.0244	0.0257	97.0	70-131	5.30	20	WG609434
Toluene	mg/kg	0.0237	0.0264	95.0	74-155	10.8	20	WG609434
trans-1,2-Dichloroethene	mg/kg	0.0251	0.0270	100.	63-126	7.10	20	WG609434
trans-1,3-Dichloropropene	mg/kg	0.0285	0.0320	114.	68-126	11.7	20	WG609434
Trichloroethene	mg/kg	0.0276	0.0294	110.	75-121	6.45	20	WG609434
Trichlorofluoromethane	mg/kg	0.0291	0.0313	116.	48-170	7.41	20	WG609434
Vinyl chloride	mg/kg	0.0248	0.0253	99.0	54-144	1.79	20	WG609434
Xylenes, Total	mg/kg	0.0639	0.0702	85.0	76-126	9.41	20	WG609434
4-Bromofluorobenzene				94.79	67-133			WG609434
Dibromofluoromethane				105.0	72-135			WG609434
Toluene-d8				98.84	90-113			WG609434
PCB 1016	mg/kg	0.153	0.132	91.0	64-120	14.3	20	WG609492

* Performance of this Analyte is outside of established criteria.
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Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
5700 E. Evans Avenue

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Quality Assurance Report
Level II

L591689

August 31, 2012

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
PCB 1260	mg/kg	0.144	0.140	86.0	72-130	2.92	20	WG609492
Decachlorobiphenyl				78.22	18.9-115.8			WG609492
Tetrachloro-m-xylene				75.28	31.8-115.7			WG609492
2,4,5-T	mg/kg	0.155	0.151	93.0	32.9-103	3.17	27.4	WG609800
2,4,5-TP (Silvex)	mg/kg	0.163	0.156	98.0	46-116	4.47	25.2	WG609800
2,4-D	mg/kg	0.148	0.140	88.0	28-98	5.49	24	WG609800
2,4-DB	mg/kg	0.170	0.144	102.	28.9-108	16.3	30.3	WG609800
Dalapon	mg/kg	0.126	0.117	76.0	18.4-113	7.71	24.1	WG609800
Dicamba	mg/kg	0.165	0.151	99.0	37.2-119	8.92	21.2	WG609800
Dichloroprop	mg/kg	0.176	0.166	105.	40.5-114	6.05	23.3	WG609800
Dinoseb	mg/kg	0.117	0.113	70.0	10-98	3.40	40	WG609800
MCPA	mg/kg	14.1	13.1	85.0	15.5-110	7.56	40	WG609800
MCPP	mg/kg	24.9	23.1	149.	40.1-177	7.42	32.2	WG609800
2,4-Dichlorophenyl Acetic Acid				77.05	37-99			WG609800
4,4-DDD	mg/kg	0.0680	0.0640	102.	74-114	6.14	20	WG609492
4,4-DDE	mg/kg	0.0675	0.0633	101.	74-115	6.39	20	WG609492
4,4-DDT	mg/kg	0.0694	0.0656	104.	62-124	5.63	20	WG609492
Aldrin	mg/kg	0.0635	0.0597	95.0	69-110	6.20	20	WG609492
Alpha BHC	mg/kg	0.0604	0.0567	91.0	68-111	6.40	20	WG609492
Beta BHC	mg/kg	0.0637	0.0600	95.0	74-112	5.98	20	WG609492
Delta BHC	mg/kg	0.0660	0.0619	99.0	71-110	6.34	20	WG609492
Dieldrin	mg/kg	0.0681	0.0643	102.	76-115	5.65	20	WG609492
Endosulfan I	mg/kg	0.0683	0.0642	102.	76-119	6.23	20	WG609492
Endosulfan II	mg/kg	0.0681	0.0640	102.	75-116	6.21	20	WG609492
Endosulfan sulfate	mg/kg	0.0682	0.0641	102.	70-118	6.27	20	WG609492
Endrin	mg/kg	0.0656	0.0622	98.0	68-115	5.39	20	WG609492
Endrin aldehyde	mg/kg	0.0655	0.0609	98*	48-92	7.27	20	WG609492
Endrin ketone	mg/kg	0.0687	0.0647	103.	70-112	6.02	20	WG609492
Gamma BHC	mg/kg	0.0628	0.0589	94.0	70-112	6.35	20	WG609492
Heptachlor	mg/kg	0.0653	0.0611	98.0	69-111	6.70	20	WG609492
Heptachlor epoxide	mg/kg	0.0673	0.0635	101.	72-115	5.78	20	WG609492
Hexachlorobenzene	mg/kg	0.0549	0.0513	82.0	64-111	6.89	20	WG609492
Methoxychlor	mg/kg	0.0702	0.0665	105.	65-123	5.41	20	WG609492
Decachlorobiphenyl				103.3	18.9-115.8			WG609492
Tetrachloro-m-xylene				91.82	31.8-115.7			WG609492

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Mercury	mg/kg	0.277	0	.25	111.	80-120	L591516-05	WG609362
1,2,4-Trichlorobenzene	mg/kg	0.226	0	.333	67.8	27-118	L591689-01	WG609283
2,4,6-Trichlorophenol	mg/kg	0.284	0	.333	85.4	18-140	L591689-01	WG609283
2,4-Dichlorophenol	mg/kg	0.275	0	.333	82.4	30-134	L591689-01	WG609283
2,4-Dimethylphenol	mg/kg	0.259	0	.333	77.8	13-147	L591689-01	WG609283
2,4-Dinitrophenol	mg/kg	0.225	0	.333	67.6	10-110	L591689-01	WG609283
2,4-Dinitrotoluene	mg/kg	0.320	0	.333	96.2	12-146	L591689-01	WG609283
2,6-Dinitrotoluene	mg/kg	0.312	0	.333	93.7	10-150	L591689-01	WG609283
2-Chloronaphthalene	mg/kg	0.269	0	.333	80.8	31-127	L591689-01	WG609283
2-Chlorophenol	mg/kg	0.246	0	.333	73.9	26-120	L591689-01	WG609283
2-Nitrophenol	mg/kg	0.295	0	.333	88.4	10-156	L591689-01	WG609283
3,3-Dichlorobenzidine	mg/kg	0.276	0	.333	82.8	10-127	L591689-01	WG609283
4,6-Dinitro-2-methylphenol	mg/kg	0.318	0	.333	95.4	10-124	L591689-01	WG609283
4-Bromophenyl-phenylether	mg/kg	0.283	0	.333	85.0	27-150	L591689-01	WG609283

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Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
4-Chloro-3-methylphenol	mg/kg	0.293	0	.333	88.0	24-140	L591689-01	WG609283
4-Chlorophenyl-phenylether	mg/kg	0.286	0	.333	85.8	27-142	L591689-01	WG609283
4-Nitrophenol	mg/kg	0.279	0	.333	83.8	10-166	L591689-01	WG609283
Acenaphthene	mg/kg	0.294	0	.333	88.3	30-132	L591689-01	WG609283
Acenaphthylene	mg/kg	0.294	0	.333	88.2	31-144	L591689-01	WG609283
Anthracene	mg/kg	0.300	0	.333	90.1	27-140	L591689-01	WG609283
Benzidine	mg/kg	0	0	.333	0*	10-55	L591689-01	WG609283
Benzo(a)anthracene	mg/kg	0.293	0	.333	87.8	22-139	L591689-01	WG609283
Benzo(a)pyrene	mg/kg	0.299	0	.333	89.7	16-148	L591689-01	WG609283
Benzo(b)fluoranthene	mg/kg	0.287	0	.333	86.2	13-152	L591689-01	WG609283
Benzo(g,h,i)perylene	mg/kg	0.306	0	.333	91.8	10-137	L591689-01	WG609283
Benzo(k)fluoranthene	mg/kg	0.299	0	.333	89.7	15-152	L591689-01	WG609283
Benzylbutyl phthalate	mg/kg	0.320	0	.333	96.0	20-168	L591689-01	WG609283
Bis(2-chlorethoxy)methane	mg/kg	0.261	0	.333	78.4	32-141	L591689-01	WG609283
Bis(2-chloroethyl)ether	mg/kg	0.239	0	.333	71.8	25-139	L591689-01	WG609283
Bis(2-chloroisopropyl)ether	mg/kg	0.228	0	.333	68.5	32-128	L591689-01	WG609283
Bis(2-ethylhexyl)phthalate	mg/kg	0.331	0	.333	99.3	20-163	L591689-01	WG609283
Chrysene	mg/kg	0.305	0	.333	91.6	20-139	L591689-01	WG609283
Di-n-butyl phthalate	mg/kg	0.322	0	.333	96.7	24-149	L591689-01	WG609283
Di-n-octyl phthalate	mg/kg	0.340	0	.333	102.	14-164	L591689-01	WG609283
Dibenz(a,h)anthracene	mg/kg	0.307	0	.333	92.3	10-137	L591689-01	WG609283
Diethyl phthalate	mg/kg	0.316	0	.333	94.9	28-142	L591689-01	WG609283
Dimethyl phthalate	mg/kg	0.301	0	.333	90.3	31-142	L591689-01	WG609283
Fluoranthene	mg/kg	0.305	0	.333	91.4	24-145	L591689-01	WG609283
Fluorene	mg/kg	0.285	0	.333	85.5	30-138	L591689-01	WG609283
Hexachloro-1,3-butadiene	mg/kg	0.254	0	.333	76.4	29-136	L591689-01	WG609283
Hexachlorobenzene	mg/kg	0.260	0	.333	78.2	26-136	L591689-01	WG609283
Hexachlorocyclopentadiene	mg/kg	0.291	0	.333	87.5	10-124	L591689-01	WG609283
Hexachloroethane	mg/kg	0.233	0	.333	70.1	21-107	L591689-01	WG609283
Indeno(1,2,3-cd)pyrene	mg/kg	0.310	0	.333	93.0	10-139	L591689-01	WG609283
Isophorone	mg/kg	0.220	0	.333	65.9	26-134	L591689-01	WG609283
n-Nitrosodi-n-propylamine	mg/kg	0.261	0	.333	78.4	24-141	L591689-01	WG609283
n-Nitrosodimethylamine	mg/kg	0.256	0	.333	76.9	18-126	L591689-01	WG609283
n-Nitrosodiphenylamine	mg/kg	0.270	0	.333	81.0	16-128	L591689-01	WG609283
Naphthalene	mg/kg	0.247	0	.333	74.1	31-124	L591689-01	WG609283
Nitrobenzene	mg/kg	0.260	0	.333	78.2	22-122	L591689-01	WG609283
Pentachlorophenol	mg/kg	0.279	0	.333	83.6	10-124	L591689-01	WG609283
Phenanthrene	mg/kg	0.284	0	.333	85.4	25-139	L591689-01	WG609283
Phenol	mg/kg	0.251	0	.333	75.4	22-129	L591689-01	WG609283
Pyrene	mg/kg	0.285	0	.333	85.6	23-145	L591689-01	WG609283
2,4,6-Tribromophenol					102.3	16-136		WG609283
2-Fluorobiphenyl					89.25	37-119		WG609283
2-Fluorophenol					75.69	22-114		WG609283
Nitrobenzene-d5					81.59	20-114		WG609283
Phenol-d5					78.63	26-127		WG609283
p-Terphenyl-d14					93.21	15-174		WG609283
1,1,1,2-Tetrachloroethane	mg/kg	0.113	0	.025	90.2	49-135	L591689-01	WG609434
1,1,1-Trichloroethane	mg/kg	0.126	0	.025	101.	43-142	L591689-01	WG609434
1,1,2,2-Tetrachloroethane	mg/kg	0.104	0	.025	83.4	42-147	L591689-01	WG609434
1,1,2-Trichloroethane	mg/kg	0.108	0	.025	86.6	51-134	L591689-01	WG609434
1,1,2-Trichlorotrifluoroethane	mg/kg	0.151	0	.025	121.	25-156	L591689-01	WG609434
1,1-Dichloroethane	mg/kg	0.122	0	.025	97.3	50-131	L591689-01	WG609434
1,1-Dichloroethene	mg/kg	0.141	0	.025	113.	29-145	L591689-01	WG609434
1,1-Dichloropropene	mg/kg	0.120	0	.025	95.8	40-136	L591689-01	WG609434
1,2,3-Trichlorobenzene	mg/kg	0.110	0	.025	88.1	13-142	L591689-01	WG609434
1,2,3-Trichloropropane	mg/kg	0.103	0	.025	82.2	41-149	L591689-01	WG609434
1,2,3-Trimethylbenzene	mg/kg	0.0929	0	.025	74.3	33-146	L591689-01	WG609434

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August 31, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,2,4-Trichlorobenzene	mg/kg	0.110	0	.025	87.8	12-140	L591689-01	WG609434
1,2,4-Trimethylbenzene	mg/kg	0.0987	0	.025	79.0	29-143	L591689-01	WG609434
1,2-Dibromo-3-Chloropropane	mg/kg	0.107	0	.025	85.8	29-151	L591689-01	WG609434
1,2-Dibromoethane	mg/kg	0.114	0	.025	91.3	48-133	L591689-01	WG609434
1,2-Dichlorobenzene	mg/kg	0.107	0	.025	85.9	37-136	L591689-01	WG609434
1,2-Dichloroethane	mg/kg	0.121	0	.025	96.8	49-131	L591689-01	WG609434
1,2-Dichloropropane	mg/kg	0.132	0	.025	106.	50-132	L591689-01	WG609434
1,3,5-Trimethylbenzene	mg/kg	0.101	0	.025	80.9	29-144	L591689-01	WG609434
1,3-Dichlorobenzene	mg/kg	0.110	0	.025	87.6	26-140	L591689-01	WG609434
1,3-Dichloropropane	mg/kg	0.108	0	.025	86.3	50-126	L591689-01	WG609434
1,4-Dichlorobenzene	mg/kg	0.106	0	.025	84.5	34-132	L591689-01	WG609434
2,2-Dichloropropane	mg/kg	0.125	0	.025	100.	35-148	L591689-01	WG609434
2-Butanone (MEK)	mg/kg	0.657	0	.125	105.	40-149	L591689-01	WG609434
2-Chloroethyl vinyl ether	mg/kg	0.582	0	.125	93.1	10-173	L591689-01	WG609434
2-Chlorotoluene	mg/kg	0.100	0	.025	80.2	34-136	L591689-01	WG609434
4-Chlorotoluene	mg/kg	0.0986	0	.025	78.9	31-137	L591689-01	WG609434
4-Methyl-2-pentanone (MIBK)	mg/kg	0.606	0	.125	97.0	37-153	L591689-01	WG609434
Acetone	mg/kg	0.861	0	.125	138.	10-177	L591689-01	WG609434
Acrylonitrile	mg/kg	0.602	0	.125	96.4	33-159	L591689-01	WG609434
Benzene	mg/kg	0.113	0	.025	90.1	44-131	L591689-01	WG609434
Bromobenzene	mg/kg	0.103	0	.025	82.3	36-132	L591689-01	WG609434
Bromodichloromethane	mg/kg	0.120	0	.025	95.8	48-134	L591689-01	WG609434
Bromoform	mg/kg	0.117	0	.025	93.7	34-141	L591689-01	WG609434
Bromomethane	mg/kg	0.181	0	.025	145.	19-173	L591689-01	WG609434
Carbon tetrachloride	mg/kg	0.127	0	.025	102.	36-140	L591689-01	WG609434
Chlorobenzene	mg/kg	0.109	0	.025	86.9	42-133	L591689-01	WG609434
Chlorodibromomethane	mg/kg	0.110	0	.025	88.2	45-135	L591689-01	WG609434
Chloroethane	mg/kg	0.152	0	.025	122.	16-178	L591689-01	WG609434
Chloroform	mg/kg	0.121	0	.025	97.0	52-130	L591689-01	WG609434
Chloromethane	mg/kg	0.104	0	.025	83.1	28-147	L591689-01	WG609434
cis-1,2-Dichloroethene	mg/kg	0.126	0	.025	101.	52-128	L591689-01	WG609434
cis-1,3-Dichloropropene	mg/kg	0.121	0	.025	97.2	46-131	L591689-01	WG609434
Di-isopropyl ether	mg/kg	0.113	0	.025	90.8	46-134	L591689-01	WG609434
Dibromomethane	mg/kg	0.137	0	.025	109.	51-133	L591689-01	WG609434
Dichlorodifluoromethane	mg/kg	0.108	0	.025	86.6	12-179	L591689-01	WG609434
Ethylbenzene	mg/kg	0.111	0	.025	88.7	38-139	L591689-01	WG609434
Hexachloro-1,3-butadiene	mg/kg	0.110	0	.025	87.8	10-147	L591689-01	WG609434
Isopropylbenzene	mg/kg	0.104	0	.025	83.1	34-137	L591689-01	WG609434
Methyl tert-butyl ether	mg/kg	0.122	0	.025	97.3	45-134	L591689-01	WG609434
Methylene Chloride	mg/kg	0.124	0	.025	99.4	41-133	L591689-01	WG609434
n-Butylbenzene	mg/kg	0.0925	0	.025	74.0	19-149	L591689-01	WG609434
n-Propylbenzene	mg/kg	0.0960	0	.025	76.8	27-142	L591689-01	WG609434
Naphthalene	mg/kg	0.0930	0	.025	74.4	19-146	L591689-01	WG609434
p-Isopropyltoluene	mg/kg	0.101	0	.025	80.6	21-150	L591689-01	WG609434
sec-Butylbenzene	mg/kg	0.0978	0	.025	78.2	25-148	L591689-01	WG609434
Styrene	mg/kg	0.103	0	.025	82.1	30-156	L591689-01	WG609434
tert-Butylbenzene	mg/kg	0.107	0	.025	85.5	32-146	L591689-01	WG609434
Tetrachloroethene	mg/kg	0.117	0	.025	93.7	35-139	L591689-01	WG609434
Toluene	mg/kg	0.117	0	.025	93.2	43-127	L591689-01	WG609434
trans-1,2-Dichloroethene	mg/kg	0.125	0	.025	100.	41-132	L591689-01	WG609434
trans-1,3-Dichloropropene	mg/kg	0.132	0	.025	105.	43-129	L591689-01	WG609434
Trichloroethene	mg/kg	0.134	0	.025	107.	42-136	L591689-01	WG609434
Trichlorofluoromethane	mg/kg	0.143	0	.025	115.	20-178	L591689-01	WG609434
Vinyl chloride	mg/kg	0.122	0	.025	97.4	30-157	L591689-01	WG609434
Xylenes, Total	mg/kg	0.315	0	.075	84.1	38-137	L591689-01	WG609434
4-Bromofluorobenzene					94.62	67-133		WG609434
Dibromofluoromethane					102.6	72-135		WG609434
Toluene-d8					99.72	90-113		WG609434

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Quality Assurance Report
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August 31, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Barium	mg/kg	143.	120.	50	46.0*	75-125	L591691-01	WG609476
Cadmium	mg/kg	42.5	0	50	85.0	75-125	L591691-01	WG609476
Chromium	mg/kg	49.6	6.60	50	86.0	75-125	L591691-01	WG609476
Lead	mg/kg	51.8	7.60	50	88.4	75-125	L591691-01	WG609476
Selenium	mg/kg	39.6	0	50	79.2	75-125	L591691-01	WG609476
Silver	mg/kg	41.7	0	50	83.4	75-125	L591691-01	WG609476
Arsenic	mg/kg	47.5	2.60	50	89.8	75-125	L591741-03	WG609476
Barium	mg/kg	141.	92.0	50	98.0	75-125	L591741-03	WG609476
Chromium	mg/kg	68.8	19.0	50	99.6	75-125	L591741-03	WG609476
Lead	mg/kg	57.2	11.0	50	92.4	75-125	L591741-03	WG609476
Selenium	mg/kg	45.5	0	50	91.0	75-125	L591741-03	WG609476
Silver	mg/kg	46.8	0	50	93.6	75-125	L591741-03	WG609476
Cadmium	mg/kg	54.2	0	10	108.	75-125	L591892-01	WG609476
Chromium	mg/kg	570.	370.	10	400.*	75-125	L591892-01	WG609476
Lead	mg/kg	83.0	37.0	10	92.0	75-125	L591892-01	WG609476
Selenium	mg/kg	38.0	0	10	76.0	75-125	L591892-01	WG609476
Silver	mg/kg	56.4	1.80	10	109.	75-125	L591892-01	WG609476
Iron	mg/kg	14100	14000	50	200.*	75-125	L591691-01	WG609476
Arsenic	mg/kg	46.0	0	5	92.0	75-125	L591691-01	WG609476
Cadmium	mg/kg	49.2	0	25	98.4	75-125	L591741-03	WG609476
Arsenic	mg/kg	-29.2	0	2.5	0*	75-125	L591892-01	WG609476
PCB 1016	mg/kg	0.139	0	.167	83.4	10-165	L591691-01	WG609492
PCB 1260	mg/kg	0.141	0	.167	84.2	29-154	L591691-01	WG609492
Decachlorobiphenyl					68.09	18.9-115.8		WG609492
Tetrachloro-m-xylene					76.09	31.8-115.7		WG609492
2,4,5-T	mg/kg	0.0980	0	.167	58.7	18-111	L591691-01	WG609800
2,4,5-TP (Silvex)	mg/kg	0.138	0	.167	82.7	27-123	L591691-01	WG609800
2,4-D	mg/kg	0.0868	0	.167	52.0	10-137	L591691-01	WG609800
2,4-DB	mg/kg	0.151	0	.167	90.2	15-121	L591691-01	WG609800
Dalapon	mg/kg	0.0145	0	.167	8.67*	10-111	L591691-01	WG609800
Dicamba	mg/kg	0.0815	0	.167	48.8	21-118	L591691-01	WG609800
Dichloroprop	mg/kg	0.147	0	.167	88.1	27-125	L591691-01	WG609800
Dinoseb	mg/kg	0.113	0	.167	67.6	10-95	L591691-01	WG609800
MCPA	mg/kg	10.7	0	16.7	64.0	10-164	L591691-01	WG609800
MCPP	mg/kg	23.0	0	16.7	138.	17-186	L591691-01	WG609800
2,4-Dichlorophenyl Acetic Acid					71.50	37-99		WG609800
4,4-DDD	mg/kg	0.0613	0	.0667	91.9	45-139	L591689-01	WG609492
4,4-DDE	mg/kg	0.0594	0	.0667	89.0	47-134	L591689-01	WG609492
4,4-DDT	mg/kg	0.0626	0	.0667	93.9	11-148	L591689-01	WG609492
Aldrin	mg/kg	0.0566	0	.0667	84.9	52-117	L591689-01	WG609492
Alpha BHC	mg/kg	0.0525	0	.0667	78.8	51-120	L591689-01	WG609492
Beta BHC	mg/kg	0.0570	0	.0667	85.5	48-124	L591689-01	WG609492
Delta BHC	mg/kg	0.0599	0	.0667	89.8	38-128	L591689-01	WG609492
Dieldrin	mg/kg	0.0598	0	.0667	89.6	48-135	L591689-01	WG609492
Endosulfan I	mg/kg	0.0596	0	.0667	89.3	51-129	L591689-01	WG609492
Endosulfan II	mg/kg	0.0602	0	.0667	90.3	42-142	L591689-01	WG609492
Endosulfan sulfate	mg/kg	0.0653	0	.0667	97.9	38-140	L591689-01	WG609492
Endrin	mg/kg	0.0604	0	.0667	90.6	44-133	L591689-01	WG609492
Endrin aldehyde	mg/kg	0.0584	0	.0667	87.6	16-116	L591689-01	WG609492
Endrin ketone	mg/kg	0.0639	0	.0667	95.8	33-131	L591689-01	WG609492
Gamma BHC	mg/kg	0.0546	0	.0667	81.9	52-119	L591689-01	WG609492
Heptachlor	mg/kg	0.0580	0	.0667	87.0	47-121	L591689-01	WG609492

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Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L591689

August 31, 2012

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Heptachlor epoxide	mg/kg	0.0586	0	.0667	87.9	54-120	L591689-01	WG609492
Hexachlorobenzene	mg/kg	0.0498	0	.0667	74.6	58-115	L591689-01	WG609492
Methoxychlor	mg/kg	0.0644	0	.0667	96.5	9-153	L591689-01	WG609492
Decachlorobiphenyl					90.53	18.9-115.8		WG609492
Tetrachloro-m-xylene					80.55	31.8-115.7		WG609492

		Matrix Spike Duplicate							
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0.280	0.277	112.	80-120	1.08	20	L591516-05	WG609362
1,2,4-Trichlorobenzene	mg/kg	0.261	0.226	78.4	27-118	14.5	23	L591689-01	WG609283
2,4,6-Trichlorophenol	mg/kg	0.314	0.284	94.2	18-140	9.82	26	L591689-01	WG609283
2,4-Dichlorophenol	mg/kg	0.306	0.275	91.9	30-134	10.9	23	L591689-01	WG609283
2,4-Dimethylphenol	mg/kg	0.295	0.259	88.5	13-147	12.9	27	L591689-01	WG609283
2,4-Dinitrophenol	mg/kg	0.210	0.225	63.0	10-110	7.01	40	L591689-01	WG609283
2,4-Dinitrotoluene	mg/kg	0.360	0.320	108.	12-146	11.8	25	L591689-01	WG609283
2,6-Dinitrotoluene	mg/kg	0.339	0.312	102.	10-150	8.25	23	L591689-01	WG609283
2-Chloronaphthalene	mg/kg	0.307	0.269	92.3	31-127	13.2	23	L591689-01	WG609283
2-Chlorophenol	mg/kg	0.268	0.246	80.4	26-120	8.41	21	L591689-01	WG609283
2-Nitrophenol	mg/kg	0.323	0.295	97.1	10-156	9.37	24	L591689-01	WG609283
3,3-Dichlorobenzidine	mg/kg	0.292	0.276	87.6	10-127	5.64	40	L591689-01	WG609283
4,6-Dinitro-2-methylphenol	mg/kg	0.291	0.318	87.4	10-124	8.69	40	L591689-01	WG609283
4-Bromophenyl-phenylether	mg/kg	0.302	0.283	90.6	27-150	6.44	20	L591689-01	WG609283
4-Chloro-3-methylphenol	mg/kg	0.335	0.293	100.	24-140	13.2	22	L591689-01	WG609283
4-Chlorophenyl-phenylether	mg/kg	0.317	0.286	95.1	27-142	10.2	21	L591689-01	WG609283
4-Nitrophenol	mg/kg	0.297	0.279	89.1	10-166	6.15	35	L591689-01	WG609283
Acenaphthene	mg/kg	0.323	0.294	97.1	30-132	9.50	21	L591689-01	WG609283
Acenaphthylene	mg/kg	0.332	0.294	99.8	31-144	12.3	24	L591689-01	WG609283
Anthracene	mg/kg	0.317	0.300	95.2	27-140	5.48	20	L591689-01	WG609283
Benzidine	mg/kg	0	0	0*	10-55	0	36	L591689-01	WG609283
Benzo(a)anthracene	mg/kg	0.322	0.293	96.6	22-139	9.54	22	L591689-01	WG609283
Benzo(a)pyrene	mg/kg	0.323	0.299	96.9	16-148	7.73	21	L591689-01	WG609283
Benzo(b)fluoranthene	mg/kg	0.321	0.287	96.3	13-152	11.1	24	L591689-01	WG609283
Benzo(g,h,i)perylene	mg/kg	0.324	0.306	97.2	10-137	5.74	32	L591689-01	WG609283
Benzo(k)fluoranthene	mg/kg	0.308	0.299	92.5	15-152	3.04	22	L591689-01	WG609283
Benzylbutyl phthalate	mg/kg	0.350	0.320	105.	20-168	8.99	23	L591689-01	WG609283
Bis(2-chlorethoxy)methane	mg/kg	0.294	0.261	88.2	32-141	11.8	20	L591689-01	WG609283
Bis(2-chloroethyl)ether	mg/kg	0.269	0.239	80.8	25-139	11.9	26	L591689-01	WG609283
Bis(2-chloroisopropyl)ether	mg/kg	0.257	0.228	77.1	32-128	11.8	22	L591689-01	WG609283
Bis(2-ethylhexyl)phthalate	mg/kg	0.363	0.331	109.	20-163	9.43	24	L591689-01	WG609283
Chrysene	mg/kg	0.332	0.305	99.6	20-139	8.36	23	L591689-01	WG609283
Di-n-butyl phthalate	mg/kg	0.338	0.322	101.	24-149	4.84	24	L591689-01	WG609283
Di-n-octyl phthalate	mg/kg	0.373	0.340	112.	14-164	9.11	24	L591689-01	WG609283
Dibenz(a,h)anthracene	mg/kg	0.334	0.307	100.	10-137	8.17	29	L591689-01	WG609283
Diethyl phthalate	mg/kg	0.347	0.316	104.	28-142	9.24	23	L591689-01	WG609283
Dimethyl phthalate	mg/kg	0.330	0.301	99.0	31-142	9.22	22	L591689-01	WG609283
Fluoranthene	mg/kg	0.316	0.305	94.8	24-145	3.63	29	L591689-01	WG609283
Fluorene	mg/kg	0.314	0.285	94.2	30-138	9.62	22	L591689-01	WG609283
Hexachloro-1,3-butadiene	mg/kg	0.292	0.254	87.6	29-136	13.6	22	L591689-01	WG609283
Hexachlorobenzene	mg/kg	0.286	0.260	85.8	26-136	9.26	20	L591689-01	WG609283
Hexachlorocyclopentadiene	mg/kg	0.304	0.291	91.4	10-124	4.39	33	L591689-01	WG609283
Hexachloroethane	mg/kg	0.283	0.233	85.0	21-107	19.3	27	L591689-01	WG609283
Indeno(1,2,3-cd)pyrene	mg/kg	0.333	0.310	100.	10-139	7.26	32	L591689-01	WG609283
Isophorone	mg/kg	0.245	0.220	73.7	26-134	11.1	20	L591689-01	WG609283
n-Nitrosodi-n-propylamine	mg/kg	0.300	0.261	90.2	24-141	13.9	20	L591689-01	WG609283
n-Nitrosodimethylamine	mg/kg	0.295	0.256	88.6	18-126	14.2	27	L591689-01	WG609283
n-Nitrosodiphenylamine	mg/kg	0.292	0.270	87.6	16-128	7.81	25	L591689-01	WG609283

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Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
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Quality Assurance Report
Level II

L591689

August 31, 2012

Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Naphthalene	mg/kg	0.288	0.247	86.4	31-124	15.4	25	L591689-01	WG609283
Nitrobenzene	mg/kg	0.290	0.260	87.1	22-122	10.8	20	L591689-01	WG609283
Pentachlorophenol	mg/kg	0.304	0.279	91.2	10-124	8.59	34	L591689-01	WG609283
Phenanthrene	mg/kg	0.308	0.284	92.4	25-139	7.90	25	L591689-01	WG609283
Phenol	mg/kg	0.271	0.251	81.5	22-129	7.74	25	L591689-01	WG609283
Pyrene	mg/kg	0.323	0.285	97.0	23-145	12.4	30	L591689-01	WG609283
2,4,6-Tribromophenol				107.6	16-136				WG609283
2-Fluorobiphenyl				101.0	37-119				WG609283
2-Fluorophenol				85.92	22-114				WG609283
Nitrobenzene-d5				93.20	20-114				WG609283
Phenol-d5				85.31	26-127				WG609283
p-Terphenyl-d14				99.61	15-174				WG609283
1,1,1,2-Tetrachloroethane	mg/kg	0.119	0.113	94.8	49-135	5.01	23	L591689-01	WG609434
1,1,1-Trichloroethane	mg/kg	0.128	0.126	102.	43-142	1.28	24	L591689-01	WG609434
1,1,2,2-Tetrachloroethane	mg/kg	0.108	0.104	86.7	42-147	3.91	25	L591689-01	WG609434
1,1,2-Trichloroethane	mg/kg	0.112	0.108	89.4	51-134	3.24	21	L591689-01	WG609434
1,1,2-Trichlorotrifluoroethane	mg/kg	0.156	0.151	124.	25-156	2.94	29	L591689-01	WG609434
1,1-Dichloroethane	mg/kg	0.122	0.122	97.7	50-131	0.450	21	L591689-01	WG609434
1,1-Dichloroethene	mg/kg	0.143	0.141	114.	29-145	1.43	28	L591689-01	WG609434
1,1-Dichloropropene	mg/kg	0.121	0.120	96.5	40-136	0.730	24	L591689-01	WG609434
1,2,3-Trichlorobenzene	mg/kg	0.110	0.110	88.3	13-142	0.200	33	L591689-01	WG609434
1,2,3-Trichloropropane	mg/kg	0.106	0.103	85.1	41-149	3.44	28	L591689-01	WG609434
1,2,3-Trimethylbenzene	mg/kg	0.0940	0.0929	75.2	33-146	1.15	27	L591689-01	WG609434
1,2,4-Trichlorobenzene	mg/kg	0.111	0.110	88.5	12-140	0.740	32	L591689-01	WG609434
1,2,4-Trimethylbenzene	mg/kg	0.103	0.0987	82.2	29-143	4.03	30	L591689-01	WG609434
1,2-Dibromo-3-Chloropropane	mg/kg	0.116	0.107	92.4	29-151	7.46	31	L591689-01	WG609434
1,2-Dibromoethane	mg/kg	0.118	0.114	94.7	48-133	3.73	22	L591689-01	WG609434
1,2-Dichlorobenzene	mg/kg	0.109	0.107	87.3	37-136	1.63	25	L591689-01	WG609434
1,2-Dichloroethane	mg/kg	0.121	0.121	96.5	49-131	0.240	20	L591689-01	WG609434
1,2-Dichloropropane	mg/kg	0.134	0.132	107.	50-132	1.15	21	L591689-01	WG609434
1,3,5-Trimethylbenzene	mg/kg	0.103	0.101	82.1	29-144	1.45	30	L591689-01	WG609434
1,3-Dichlorobenzene	mg/kg	0.115	0.110	91.8	26-140	4.63	28	L591689-01	WG609434
1,3-Dichloropropane	mg/kg	0.112	0.108	89.4	50-126	3.52	22	L591689-01	WG609434
1,4-Dichlorobenzene	mg/kg	0.107	0.106	85.9	34-132	1.68	26	L591689-01	WG609434
2,2-Dichloropropane	mg/kg	0.129	0.125	103.	35-148	3.32	26	L591689-01	WG609434
2-Butanone (MEK)	mg/kg	0.651	0.657	104.	40-149	0.940	27	L591689-01	WG609434
2-Chloroethyl vinyl ether	mg/kg	0.609	0.582	97.4	10-173	4.48	33	L591689-01	WG609434
2-Chlorotoluene	mg/kg	0.104	0.100	83.0	34-136	3.48	28	L591689-01	WG609434
4-Chlorotoluene	mg/kg	0.103	0.0986	82.6	31-137	4.64	27	L591689-01	WG609434
4-Methyl-2-pentanone (MIBK)	mg/kg	0.626	0.606	100.	37-153	3.27	27	L591689-01	WG609434
Acetone	mg/kg	0.825	0.861	132.	10-177	4.34	28	L591689-01	WG609434
Acrylonitrile	mg/kg	0.593	0.602	94.9	33-159	1.53	26	L591689-01	WG609434
Benzene	mg/kg	0.115	0.113	91.6	44-131	1.68	21	L591689-01	WG609434
Bromobenzene	mg/kg	0.106	0.103	84.8	36-132	2.98	26	L591689-01	WG609434
Bromodichloromethane	mg/kg	0.124	0.120	99.2	48-134	3.43	20	L591689-01	WG609434
Bromoform	mg/kg	0.121	0.117	96.5	34-141	2.99	24	L591689-01	WG609434
Bromomethane	mg/kg	0.182	0.181	145.	19-173	0.380	25	L591689-01	WG609434
Carbon tetrachloride	mg/kg	0.128	0.127	103.	36-140	0.930	26	L591689-01	WG609434
Chlorobenzene	mg/kg	0.114	0.109	91.0	42-133	4.55	24	L591689-01	WG609434
Chlorodibromomethane	mg/kg	0.117	0.110	93.4	45-135	5.67	23	L591689-01	WG609434
Chloroethane	mg/kg	0.151	0.152	121.	16-178	0.510	25	L591689-01	WG609434
Chloroform	mg/kg	0.122	0.121	97.3	52-130	0.270	21	L591689-01	WG609434
Chloromethane	mg/kg	0.106	0.104	85.1	28-147	2.42	23	L591689-01	WG609434
cis-1,2-Dichloroethene	mg/kg	0.128	0.126	102.	52-128	1.42	21	L591689-01	WG609434
cis-1,3-Dichloropropene	mg/kg	0.125	0.121	99.8	46-131	2.74	21	L591689-01	WG609434
Di-isopropyl ether	mg/kg	0.113	0.113	90.2	46-134	0.690	20	L591689-01	WG609434
Dibromomethane	mg/kg	0.141	0.137	113.	51-133	3.27	21	L591689-01	WG609434

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Level II

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August 31, 2012

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Dichlorodifluoromethane	mg/kg	0.108	0.108	86.8	12-179	0.200	27	L591689-01	WG609434
Ethylbenzene	mg/kg	0.114	0.111	91.6	38-139	3.20	27	L591689-01	WG609434
Hexachloro-1,3-butadiene	mg/kg	0.114	0.110	90.8	10-147	3.41	37	L591689-01	WG609434
Isopropylbenzene	mg/kg	0.106	0.104	84.4	34-137	1.62	29	L591689-01	WG609434
Methyl tert-butyl ether	mg/kg	0.122	0.122	97.6	45-134	0.320	22	L591689-01	WG609434
Methylene Chloride	mg/kg	0.124	0.124	99.2	41-133	0.150	28	L591689-01	WG609434
n-Butylbenzene	mg/kg	0.0919	0.0925	73.5	19-149	0.670	32	L591689-01	WG609434
n-Propylbenzene	mg/kg	0.0987	0.0960	78.9	27-142	2.78	29	L591689-01	WG609434
Naphthalene	mg/kg	0.0964	0.0930	77.1	19-146	3.62	30	L591689-01	WG609434
p-Isopropyltoluene	mg/kg	0.104	0.101	82.8	21-150	2.80	31	L591689-01	WG609434
sec-Butylbenzene	mg/kg	0.0991	0.0978	79.3	25-148	1.34	31	L591689-01	WG609434
Styrene	mg/kg	0.107	0.103	85.8	30-156	4.41	26	L591689-01	WG609434
tert-Butylbenzene	mg/kg	0.110	0.107	88.1	32-146	2.94	30	L591689-01	WG609434
Tetrachloroethene	mg/kg	0.123	0.117	98.5	35-139	5.03	27	L591689-01	WG609434
Toluene	mg/kg	0.120	0.117	96.1	43-127	3.07	21	L591689-01	WG609434
trans-1,2-Dichloroethene	mg/kg	0.125	0.125	100.	41-132	0.360	23	L591689-01	WG609434
trans-1,3-Dichloropropene	mg/kg	0.137	0.132	109.	43-129	3.70	23	L591689-01	WG609434
Trichloroethene	mg/kg	0.137	0.134	110.	42-136	2.18	23	L591689-01	WG609434
Trichlorofluoromethane	mg/kg	0.146	0.143	117.	20-178	2.10	30	L591689-01	WG609434
Vinyl chloride	mg/kg	0.123	0.122	98.7	30-157	1.32	24	L591689-01	WG609434
Xylenes, Total	mg/kg	0.328	0.315	87.6	38-137	3.99	26	L591689-01	WG609434
4-Bromofluorobenzene				95.73	67-133				WG609434
Dibromofluoromethane				101.1	72-135				WG609434
Toluene-d8				99.96	90-113				WG609434
Barium	mg/kg	155.	143.	70.0*	75-125	8.05	20	L591691-01	WG609476
Cadmium	mg/kg	41.6	42.5	16.6*	75-125	2.14	20	L591691-01	WG609476
Chromium	mg/kg	49.3	49.6	85.4	75-125	0.607	20	L591691-01	WG609476
Lead	mg/kg	50.8	51.8	86.4	75-125	1.95	20	L591691-01	WG609476
Selenium	mg/kg	38.2	39.6	76.4	75-125	3.60	20	L591691-01	WG609476
Silver	mg/kg	41.0	41.7	82.0	75-125	1.69	20	L591691-01	WG609476
Arsenic	mg/kg	47.6	47.5	90.0	75-125	0.210	20	L591741-03	WG609476
Barium	mg/kg	130.	141.	76.0	75-125	8.12	20	L591741-03	WG609476
Chromium	mg/kg	65.4	68.8	92.8	75-125	5.07	20	L591741-03	WG609476
Lead	mg/kg	57.7	57.2	93.4	75-125	0.870	20	L591741-03	WG609476
Selenium	mg/kg	46.2	45.5	92.4	75-125	1.53	20	L591741-03	WG609476
Silver	mg/kg	46.2	46.8	92.4	75-125	1.29	20	L591741-03	WG609476
Cadmium	mg/kg	51.7	54.2	103.	75-125	4.72	20	L591892-01	WG609476
Chromium	mg/kg	247.	570.	0*	75-125	79.1*	20	L591892-01	WG609476
Lead	mg/kg	93.2	83.0	112.	75-125	11.6	20	L591892-01	WG609476
Selenium	mg/kg	44.3	38.0	88.6	75-125	15.3	20	L591892-01	WG609476
Silver	mg/kg	53.0	56.4	102.	75-125	6.22	20	L591892-01	WG609476
Iron	mg/kg	14200	14100	400.*	75-125	0.707	20	L591691-01	WG609476
Arsenic	mg/kg	45.2	46.0	90.4	75-125	1.75	20	L591691-01	WG609476
Cadmium	mg/kg	49.4	49.2	98.8	75-125	0.406	20	L591741-03	WG609476
Arsenic	mg/kg	-0.00220	-29.2	0*	75-125	-200.*	20	L591892-01	WG609476
PCB 1016	mg/kg	0.167	0.139	100.	10-165	18.2	33	L591691-01	WG609492
PCB 1260	mg/kg	0.152	0.141	91.2	29-154	7.98	23	L591691-01	WG609492
Decachlorobiphenyl				69.47	18.9-115.8				WG609492
Tetrachloro-m-xylene				81.34	31.8-115.7				WG609492
2,4,5-T	mg/kg	0.118	0.0980	70.4	18-111	18.1	29	L591691-01	WG609800
2,4,5-TP (Silvex)	mg/kg	0.142	0.138	84.8	27-123	2.48	23	L591691-01	WG609800
2,4-D	mg/kg	0.117	0.0868	69.8	10-137	29.3	40	L591691-01	WG609800
2,4-DB	mg/kg	0.161	0.151	96.3	15-121	6.52	33	L591691-01	WG609800

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

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Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L591689

August 31, 2012

Analyte	Units	Matrix Spike MSD	Matrix Spike Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Dalapon	mg/kg	0.0156	0.0145	9.37*	10-111	7.76	37	L591691-01	WG609800
Dicamba	mg/kg	0.0907	0.0815	54.3	21-118	10.6	24	L591691-01	WG609800
Dichloroprop	mg/kg	0.152	0.147	91.1	27-125	3.38	24	L591691-01	WG609800
Dinoseb	mg/kg	0.106	0.113	63.4	10-95	6.35	40	L591691-01	WG609800
MCPA	mg/kg	11.3	10.7	67.8	10-164	5.77	40	L591691-01	WG609800
MCPP	mg/kg	18.8	23.0	113.	17-186	19.9	40	L591691-01	WG609800
2,4-Dichlorophenyl Acetic Acid				72.96	37-99				WG609800
4,4-DDD	mg/kg	0.0649	0.0613	97.3	45-139	5.76	21	L591689-01	WG609492
4,4-DDE	mg/kg	0.0627	0.0594	94.0	47-134	5.47	21	L591689-01	WG609492
4,4-DDT	mg/kg	0.0664	0.0626	99.5	11-148	5.80	21	L591689-01	WG609492
Aldrin	mg/kg	0.0606	0.0566	90.8	52-117	6.79	21	L591689-01	WG609492
Alpha BHC	mg/kg	0.0594	0.0525	89.1	51-120	12.3	20	L591689-01	WG609492
Beta BHC	mg/kg	0.0621	0.0570	93.1	48-124	8.52	21	L591689-01	WG609492
Delta BHC	mg/kg	0.0646	0.0599	96.8	38-128	7.55	21	L591689-01	WG609492
Dieldrin	mg/kg	0.0635	0.0598	95.2	48-135	6.12	20	L591689-01	WG609492
Endosulfan I	mg/kg	0.0630	0.0596	94.4	51-129	5.61	20	L591689-01	WG609492
Endosulfan II	mg/kg	0.0645	0.0602	96.7	42-142	6.89	21	L591689-01	WG609492
Endosulfan sulfate	mg/kg	0.0690	0.0653	103.	38-140	5.45	22	L591689-01	WG609492
Endrin	mg/kg	0.0630	0.0604	94.5	44-133	4.17	20	L591689-01	WG609492
Endrin aldehyde	mg/kg	0.0625	0.0584	93.7	16-116	6.73	23	L591689-01	WG609492
Endrin ketone	mg/kg	0.0679	0.0639	102.	33-131	5.97	21	L591689-01	WG609492
Gamma BHC	mg/kg	0.0605	0.0546	90.6	52-119	10.1	20	L591689-01	WG609492
Heptachlor	mg/kg	0.0630	0.0580	94.4	47-121	8.17	20	L591689-01	WG609492
Heptachlor epoxide	mg/kg	0.0621	0.0586	93.1	54-120	5.75	20	L591689-01	WG609492
Hexachlorobenzene	mg/kg	0.0550	0.0498	82.4	58-115	9.91	20	L591689-01	WG609492
Methoxychlor	mg/kg	0.0675	0.0644	101.	9-153	4.74	22	L591689-01	WG609492
Decachlorobiphenyl				96.26	18.9-115.8				WG609492
Tetrachloro-m-xylene				92.08	31.8-115.7				WG609492

Batch number /Run number / Sample number cross reference

WG609362: R2316653: L591689-01
WG609283: R2316834: L591689-01
WG609434: R2317935: L591689-01
WG609476: R2318675: L591689-01
WG609492: R2319153: L591689-01
WG609800: R2322817: L591689-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW6, Sample at 10 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L591689

August 31, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Soil Analyses, Monitoring Well YA-MW6, Sample at 25 ft.
I-70 East Corridor EIS PCL

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Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

Report Summary

Friday August 31, 2012

Report Number: L591691
Samples Received: 08/24/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

Soil Analyses, Monitoring Well YA-MW6, Sample at 25 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

August 31, 2012

ESC Sample # : L591691-01

Site ID : I-70 PCL YA-MW6

Project # : 212-137

Date Received : August 24, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-6 25 FT

Collected By : I P C
Collection Date : 08/20/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	08/25/12	1
Arsenic	BDL	10.	mg/kg	6010B	08/27/12	10
Barium	120	0.25	mg/kg	6010B	08/27/12	1
Cadmium	BDL	0.25	mg/kg	6010B	08/27/12	1
Chromium	6.6	0.50	mg/kg	6010B	08/27/12	1
Iron	14000	5.0	mg/kg	6010B	08/27/12	1
Lead	7.6	0.25	mg/kg	6010B	08/27/12	1
Selenium	BDL	1.0	mg/kg	6010B	08/27/12	1
Silver	BDL	0.50	mg/kg	6010B	08/27/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	08/26/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	08/26/12	5
Benzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	08/26/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	08/26/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	08/26/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	08/26/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	08/26/12	5
Chloroform	BDL	0.025	mg/kg	8260B	08/26/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	08/26/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	08/26/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	08/26/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	08/26/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/26/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/26/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/26/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW6, Sample at 25 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

August 31, 2012

ESC Sample # : L591691-01

Site ID : I-70 PCL YA-MW6

Project # : 212-137

Date Received : August 24, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-6 25 FT

Collected By : I P C
Collection Date : 08/20/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/26/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/26/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/26/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/26/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	08/26/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	08/26/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	08/26/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	08/26/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	08/26/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	08/26/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	08/26/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Styrene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Toluene	BDL	0.025	mg/kg	8260B	08/26/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	08/26/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	08/26/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	08/26/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/26/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	08/26/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	08/26/12	5
Surrogate Recovery						
Toluene-d8	97.6		% Rec.	8260B	08/26/12	5
Dibromofluoromethane	99.3		% Rec.	8260B	08/26/12	5
4-Bromofluorobenzene	100.		% Rec.	8260B	08/26/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	08/30/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW6, Sample at 25 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

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August 31, 2012

ESC Sample # : L591691-01

Site ID : I-70 PCL YA-MW6

Project # : 212-137

Date Received : August 24, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-6 25 FT

Collected By : I P C
Collection Date : 08/20/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	08/30/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	08/30/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	08/30/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	08/30/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	08/30/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	08/27/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	08/27/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	08/27/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	08/27/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	08/27/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	08/27/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	08/27/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	68.9		% Rec.	8081/8082	08/27/12	1
Tetrachloro-m-xylene	81.8		% Rec.	8081/8082	08/27/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	08/29/12	1
Dalapon	BDL	0.80	mg/kg	8151	08/29/12	1
2,4-DB	BDL	0.070	mg/kg	8151	08/29/12	1
Dicamba	BDL	0.070	mg/kg	8151	08/29/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	08/29/12	1
Dinoseb	BDL	0.070	mg/kg	8151	08/29/12	1
MCPA	BDL	6.5	mg/kg	8151	08/29/12	1
MCPP	BDL	6.5	mg/kg	8151	08/29/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	08/29/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	08/29/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	79.3		% Rec.	8151	08/29/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	08/25/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW6, Sample at 25 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

August 31, 2012

ESC Sample # : L591691-01

Site ID : I-70 PCL YA-MW6

Project # : 212-137

Date Received : August 24, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-6 25 FT

Collected By : I P C
Collection Date : 08/20/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	08/25/12	1
Anthracene	BDL	0.033	mg/kg	8270C	08/25/12	1
Benzidine	BDL	0.33	mg/kg	8270C	08/25/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	08/25/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	08/25/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	08/25/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	08/25/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	08/25/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	08/25/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	08/25/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	08/25/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	08/25/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	08/25/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	08/25/12	1
Chrysene	BDL	0.033	mg/kg	8270C	08/25/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	08/25/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	08/25/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	08/25/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	08/25/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	08/25/12	1
Fluorene	BDL	0.033	mg/kg	8270C	08/25/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	08/25/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	08/25/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	08/25/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	08/25/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	08/25/12	1
Isophorone	BDL	0.33	mg/kg	8270C	08/25/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	08/25/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	08/25/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	08/25/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	08/25/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	08/25/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	08/25/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	08/25/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	08/25/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	08/25/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	08/25/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	08/25/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	08/25/12	1
Pyrene	BDL	0.033	mg/kg	8270C	08/25/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	08/25/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	08/25/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	08/25/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW6, Sample at 25 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

August 31, 2012

ESC Sample # : L591691-01

Date Received : August 24, 2012
Description : I-70 East PCL Project

Site ID : I-70 PCL YA-MW6

Sample ID : YA-MW-6 25 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/20/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	08/25/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	08/25/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	08/25/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	08/25/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	08/25/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	08/25/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	08/25/12	1
Phenol	BDL	0.33	mg/kg	8270C	08/25/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	08/25/12	1
Surrogate Recovery						
2-Fluorophenol	64.2		% Rec.	8270C	08/25/12	1
Phenol-d5	65.5		% Rec.	8270C	08/25/12	1
Nitrobenzene-d5	66.2		% Rec.	8270C	08/25/12	1
2-Fluorobiphenyl	75.0		% Rec.	8270C	08/25/12	1
2,4,6-Tribromophenol	85.9		% Rec.	8270C	08/25/12	1
p-Terphenyl-d14	78.3		% Rec.	8270C	08/25/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 08/31/12 12:45 Printed: 08/31/12 12:46

Soil Analyses, Monitoring Well YA-MW6, Sample at 25 ft.
I-70 East Corridor EIS PCL

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L591691-01	WG609283	SAMP	Benzidine	R2316834	J4
	WG609492	SAMP	Endrin aldehyde	R2319153	J4
	WG609476	SAMP	Arsenic	R2318675	O
	WG609476	SAMP	Barium	R2318675	J3J6
	WG609476	SAMP	Iron	R2318675	V
	WG609434	SAMP	Acetone	R2317935	J3
	WG609434	SAMP	n-Butylbenzene	R2317935	J4J3
	WG609434	SAMP	trans-1,3-Dichloropropene	R2317935	J4
	WG609434	SAMP	2-Butanone (MEK)	R2317935	J3
	WG609434	SAMP	1,2,4-Trichlorobenzene	R2317935	J3
	WG609800	SAMP	Dalapon	R2322817	J6

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Soil Analyses, Monitoring Well YA-MW6, Sample at 25 ft.
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
08/31/12 at 12:46:12

TSR Signing Reports: 358

Sample: L591691-01 Account: YEHDCO Received: 08/24/12 09:00 Due Date: 08/31/12 00:00 RPT Date: 08/31/12 12:45

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L591691

August 31, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Mercury	< .02	mg/kg			WG609362	08/25/12 12:35
1,2,4-Trichlorobenzene	< .333	mg/kg			WG609283	08/25/12 11:53
2,4,6-Trichlorophenol	< .333	mg/kg			WG609283	08/25/12 11:53
2,4-Dichlorophenol	< .333	mg/kg			WG609283	08/25/12 11:53
2,4-Dimethylphenol	< .333	mg/kg			WG609283	08/25/12 11:53
2,4-Dinitrophenol	< .333	mg/kg			WG609283	08/25/12 11:53
2,4-Dinitrotoluene	< .333	mg/kg			WG609283	08/25/12 11:53
2,6-Dinitrotoluene	< .333	mg/kg			WG609283	08/25/12 11:53
2-Chloronaphthalene	< .033	mg/kg			WG609283	08/25/12 11:53
2-Chlorophenol	< .333	mg/kg			WG609283	08/25/12 11:53
2-Nitrophenol	< .333	mg/kg			WG609283	08/25/12 11:53
3,3-Dichlorobenzidine	< .333	mg/kg			WG609283	08/25/12 11:53
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG609283	08/25/12 11:53
4-Bromophenyl-phenylether	< .333	mg/kg			WG609283	08/25/12 11:53
4-Chloro-3-methylphenol	< .333	mg/kg			WG609283	08/25/12 11:53
4-Chlorophenyl-phenylether	< .333	mg/kg			WG609283	08/25/12 11:53
4-Nitrophenol	< .333	mg/kg			WG609283	08/25/12 11:53
Acenaphthene	< .033	mg/kg			WG609283	08/25/12 11:53
Acenaphthylene	< .033	mg/kg			WG609283	08/25/12 11:53
Anthracene	< .033	mg/kg			WG609283	08/25/12 11:53
Benzidine	< .333	mg/kg			WG609283	08/25/12 11:53
Benzo(a)anthracene	< .033	mg/kg			WG609283	08/25/12 11:53
Benzo(a)pyrene	< .033	mg/kg			WG609283	08/25/12 11:53
Benzo(b)fluoranthene	< .033	mg/kg			WG609283	08/25/12 11:53
Benzo(g,h,i)perylene	< .033	mg/kg			WG609283	08/25/12 11:53
Benzo(k)fluoranthene	< .033	mg/kg			WG609283	08/25/12 11:53
Benzylbutyl phthalate	< .333	mg/kg			WG609283	08/25/12 11:53
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG609283	08/25/12 11:53
Bis(2-chloroethyl)ether	< .333	mg/kg			WG609283	08/25/12 11:53
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG609283	08/25/12 11:53
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG609283	08/25/12 11:53
Chrysene	< .033	mg/kg			WG609283	08/25/12 11:53
Di-n-butyl phthalate	< .333	mg/kg			WG609283	08/25/12 11:53
Di-n-octyl phthalate	< .333	mg/kg			WG609283	08/25/12 11:53
Dibenz(a,h)anthracene	< .033	mg/kg			WG609283	08/25/12 11:53
Diethyl phthalate	< .333	mg/kg			WG609283	08/25/12 11:53
Dimethyl phthalate	< .333	mg/kg			WG609283	08/25/12 11:53
Fluoranthene	< .033	mg/kg			WG609283	08/25/12 11:53
Fluorene	< .033	mg/kg			WG609283	08/25/12 11:53
Hexachloro-1,3-butadiene	< .333	mg/kg			WG609283	08/25/12 11:53
Hexachlorobenzene	< .333	mg/kg			WG609283	08/25/12 11:53
Hexachlorocyclopentadiene	< .333	mg/kg			WG609283	08/25/12 11:53
Hexachloroethane	< .333	mg/kg			WG609283	08/25/12 11:53
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG609283	08/25/12 11:53
Isophorone	< .333	mg/kg			WG609283	08/25/12 11:53
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG609283	08/25/12 11:53
n-Nitrosodimethylamine	< .333	mg/kg			WG609283	08/25/12 11:53
n-Nitrosodiphenylamine	< .333	mg/kg			WG609283	08/25/12 11:53
Naphthalene	< .033	mg/kg			WG609283	08/25/12 11:53
Nitrobenzene	< .333	mg/kg			WG609283	08/25/12 11:53
Pentachlorophenol	< .333	mg/kg			WG609283	08/25/12 11:53
Phenanthrene	< .033	mg/kg			WG609283	08/25/12 11:53
Phenol	< .333	mg/kg			WG609283	08/25/12 11:53
Pyrene	< .033	mg/kg			WG609283	08/25/12 11:53
2,4,6-Tribromophenol		% Rec.	81.34	16-136	WG609283	08/25/12 11:53
2-Fluorobiphenyl		% Rec.	77.47	37-119	WG609283	08/25/12 11:53
2-Fluorophenol		% Rec.	66.29	22-114	WG609283	08/25/12 11:53

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L591691

August 31, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Nitrobenzene-d5		% Rec.	62.71	20-114		08/25/12 11:53
Phenol-d5		% Rec.	66.97	26-127		08/25/12 11:53
p-Terphenyl-d14		% Rec.	79.75	15-174		08/25/12 11:53
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,1,1-Trichloroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,1,2-Trichloroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,1-Dichloroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,1-Dichloroethene	< .001	mg/kg			WG609434	08/26/12 12:23
1,1-Dichloropropene	< .001	mg/kg			WG609434	08/26/12 12:23
1,2,3-Trichlorobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,2,3-Trichloropropane	< .0025	mg/kg			WG609434	08/26/12 12:23
1,2,3-Trimethylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,2,4-Trichlorobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,2,4-Trimethylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG609434	08/26/12 12:23
1,2-Dibromoethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,2-Dichlorobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,2-Dichloroethane	< .001	mg/kg			WG609434	08/26/12 12:23
1,2-Dichloropropane	< .001	mg/kg			WG609434	08/26/12 12:23
1,3,5-Trimethylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,3-Dichlorobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
1,3-Dichloropropane	< .001	mg/kg			WG609434	08/26/12 12:23
1,4-Dichlorobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
2,2-Dichloropropane	< .001	mg/kg			WG609434	08/26/12 12:23
2-Butanone (MEK)	< .01	mg/kg			WG609434	08/26/12 12:23
2-Chloroethyl vinyl ether	< .05	mg/kg			WG609434	08/26/12 12:23
2-Chlorotoluene	< .001	mg/kg			WG609434	08/26/12 12:23
4-Chlorotoluene	< .001	mg/kg			WG609434	08/26/12 12:23
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG609434	08/26/12 12:23
Acetone	< .05	mg/kg			WG609434	08/26/12 12:23
Acrylonitrile	< .01	mg/kg			WG609434	08/26/12 12:23
Benzene	< .001	mg/kg			WG609434	08/26/12 12:23
Bromobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
Bromodichloromethane	< .001	mg/kg			WG609434	08/26/12 12:23
Bromoform	< .001	mg/kg			WG609434	08/26/12 12:23
Bromomethane	< .005	mg/kg			WG609434	08/26/12 12:23
Carbon tetrachloride	< .001	mg/kg			WG609434	08/26/12 12:23
Chlorobenzene	< .001	mg/kg			WG609434	08/26/12 12:23
Chlorodibromomethane	< .001	mg/kg			WG609434	08/26/12 12:23
Chloroethane	< .005	mg/kg			WG609434	08/26/12 12:23
Chloroform	< .005	mg/kg			WG609434	08/26/12 12:23
Chloromethane	< .0025	mg/kg			WG609434	08/26/12 12:23
cis-1,2-Dichloroethene	< .001	mg/kg			WG609434	08/26/12 12:23
cis-1,3-Dichloropropene	< .001	mg/kg			WG609434	08/26/12 12:23
Di-isopropyl ether	< .001	mg/kg			WG609434	08/26/12 12:23
Dibromomethane	< .001	mg/kg			WG609434	08/26/12 12:23
Dichlorodifluoromethane	< .005	mg/kg			WG609434	08/26/12 12:23
Ethylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
Hexachloro-1,3-butadiene	< .001	mg/kg			WG609434	08/26/12 12:23
Isopropylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
Methyl tert-butyl ether	< .001	mg/kg			WG609434	08/26/12 12:23
Methylene Chloride	< .005	mg/kg			WG609434	08/26/12 12:23
n-Butylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
n-Propylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
Naphthalene	< .005	mg/kg			WG609434	08/26/12 12:23
p-Isopropyltoluene	< .001	mg/kg			WG609434	08/26/12 12:23
sec-Butylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23

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Soil Analyses, Monitoring Well YA-MW6, Sample at 25 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L591691

August 31, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Styrene	< .001	mg/kg			WG609434	08/26/12 12:23
tert-Butylbenzene	< .001	mg/kg			WG609434	08/26/12 12:23
Tetrachloroethene	< .001	mg/kg			WG609434	08/26/12 12:23
Toluene	< .005	mg/kg			WG609434	08/26/12 12:23
trans-1,2-Dichloroethene	< .001	mg/kg			WG609434	08/26/12 12:23
trans-1,3-Dichloropropene	< .001	mg/kg			WG609434	08/26/12 12:23
Trichloroethene	< .001	mg/kg			WG609434	08/26/12 12:23
Trichlorofluoromethane	< .005	mg/kg			WG609434	08/26/12 12:23
Vinyl chloride	< .001	mg/kg			WG609434	08/26/12 12:23
Xylenes, Total	< .003	mg/kg			WG609434	08/26/12 12:23
4-Bromofluorobenzene		% Rec.	100.6	67-133	WG609434	08/26/12 12:23
Dibromofluoromethane		% Rec.	102.8	72-135	WG609434	08/26/12 12:23
Toluene-d8		% Rec.	99.13	90-113	WG609434	08/26/12 12:23
Arsenic	< 1	mg/kg			WG609476	08/27/12 02:57
Barium	< .25	mg/kg			WG609476	08/27/12 02:57
Cadmium	< .25	mg/kg			WG609476	08/27/12 02:57
Chromium	< .5	mg/kg			WG609476	08/27/12 02:57
Lead	< .25	mg/kg			WG609476	08/27/12 02:57
Selenium	< 1	mg/kg			WG609476	08/27/12 02:57
Silver	< .5	mg/kg			WG609476	08/27/12 02:57
Iron	< 5	mg/kg			WG609476	08/27/12 13:09
PCB 1016	< .017	mg/kg			WG609492	08/27/12 16:19
PCB 1221	< .017	mg/kg			WG609492	08/27/12 16:19
PCB 1232	< .017	mg/kg			WG609492	08/27/12 16:19
PCB 1242	< .017	mg/kg			WG609492	08/27/12 16:19
PCB 1248	< .017	mg/kg			WG609492	08/27/12 16:19
PCB 1254	< .017	mg/kg			WG609492	08/27/12 16:19
PCB 1260	< .017	mg/kg			WG609492	08/27/12 16:19
Decachlorobiphenyl		% Rec.	77.62	18.9-115.8	WG609492	08/27/12 16:19
Tetrachloro-m-xylene		% Rec.	80.01	31.8-115.7	WG609492	08/27/12 16:19
2,4,5-T	< .07	mg/kg			WG609800	08/29/12 17:32
2,4,5-TP (Silvex)	< .07	mg/kg			WG609800	08/29/12 17:32
2,4-D	< .07	mg/kg			WG609800	08/29/12 17:32
2,4-DB	< .07	mg/kg			WG609800	08/29/12 17:32
Dalapon	< .8	mg/kg			WG609800	08/29/12 17:32
Dicamba	< .07	mg/kg			WG609800	08/29/12 17:32
Dichloroprop	< .07	mg/kg			WG609800	08/29/12 17:32
Dinoseb	< .07	mg/kg			WG609800	08/29/12 17:32
MCPA	< .68602	mg/kg			WG609800	08/29/12 17:32
MCPP	< 6.5	mg/kg			WG609800	08/29/12 17:32
2,4-Dichlorophenyl Acetic Acid		%	81.33	37-99	WG609800	08/29/12 17:32
4,4-DDD	< .02	mg/kg			WG609492	08/30/12 15:58
4,4-DDE	< .02	mg/kg			WG609492	08/30/12 15:58
4,4-DDT	< .02	mg/kg			WG609492	08/30/12 15:58
Aldrin	< .02	mg/kg			WG609492	08/30/12 15:58
Alpha BHC	< .02	mg/kg			WG609492	08/30/12 15:58
Beta BHC	< .02	mg/kg			WG609492	08/30/12 15:58
Chlordane	< .2	mg/kg			WG609492	08/30/12 15:58
Delta BHC	< .02	mg/kg			WG609492	08/30/12 15:58
Dieldrin	< .02	mg/kg			WG609492	08/30/12 15:58
Endosulfan I	< .02	mg/kg			WG609492	08/30/12 15:58

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Quality Assurance Report
Level II

L591691

August 31, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Endosulfan II	< .02	mg/kg			WG609492	08/30/12 15:58
Endosulfan sulfate	< .02	mg/kg			WG609492	08/30/12 15:58
Endrin	< .02	mg/kg			WG609492	08/30/12 15:58
Endrin aldehyde	< .02	mg/kg			WG609492	08/30/12 15:58
Endrin ketone	< .02	mg/kg			WG609492	08/30/12 15:58
Gamma BHC	< .02	mg/kg			WG609492	08/30/12 15:58
Heptachlor	< .02	mg/kg			WG609492	08/30/12 15:58
Heptachlor epoxide	< .02	mg/kg			WG609492	08/30/12 15:58
Hexachlorobenzene	< .02	mg/kg			WG609492	08/30/12 15:58
Methoxychlor	< .02	mg/kg			WG609492	08/30/12 15:58
Toxaphene	< .4	mg/kg			WG609492	08/30/12 15:58
Decachlorobiphenyl		% Rec.	98.24	18.9-115.8	WG609492	08/30/12 15:58
Tetrachloro-m-xylene		% Rec.	91.84	31.8-115.7	WG609492	08/30/12 15:58

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0	0	0	20	L591516-05	WG609362
Barium	mg/kg	180.	120.	42.1*	20	L591691-01	WG609476
Cadmium	mg/kg	0	0	0	20	L591691-01	WG609476
Chromium	mg/kg	7.50	6.60	12.2	20	L591691-01	WG609476
Lead	mg/kg	8.10	7.60	5.87	20	L591691-01	WG609476
Selenium	mg/kg	0	0	0	20	L591691-01	WG609476
Silver	mg/kg	0	0	0	20	L591691-01	WG609476
Iron	mg/kg	14000	14000	3.51	20	L591691-01	WG609476
Arsenic	mg/kg	0	0	0	20	L591691-01	WG609476

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Mercury	mg/kg	12.4	14.2	115.	71.6-128	WG609362
1,2,4-Trichlorobenzene	mg/kg	.333	0.212	63.8	48-87	WG609283
2,4,6-Trichlorophenol	mg/kg	.333	0.246	73.9	50-98	WG609283
2,4-Dichlorophenol	mg/kg	.333	0.240	72.0	56-96	WG609283
2,4-Dimethylphenol	mg/kg	.333	0.245	73.6	52-101	WG609283
2,4-Dinitrophenol	mg/kg	.333	0.200	60.0	10-109	WG609283
2,4-Dinitrotoluene	mg/kg	.333	0.290	87.1	54-103	WG609283
2,6-Dinitrotoluene	mg/kg	.333	0.271	81.5	53-99	WG609283
2-Chloronaphthalene	mg/kg	.333	0.246	74.0	55-96	WG609283
2-Chlorophenol	mg/kg	.333	0.211	63.5	52-88	WG609283
2-Nitrophenol	mg/kg	.333	0.262	78.6	55-106	WG609283
3,3-Dichlorobenzidine	mg/kg	.333	0.273	81.8	36-84	WG609283
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.280	84.2	24-98	WG609283
4-Bromophenyl-phenylether	mg/kg	.333	0.254	76.2	58-111	WG609283
4-Chloro-3-methylphenol	mg/kg	.333	0.267	80.1	58-98	WG609283
4-Chlorophenyl-phenylether	mg/kg	.333	0.255	76.6	59-103	WG609283
4-Nitrophenol	mg/kg	.333	0.226	67.7	34-101	WG609283
Acenaphthene	mg/kg	.333	0.265	79.6	55-96	WG609283
Acenaphthylene	mg/kg	.333	0.265	79.6	61-107	WG609283
Anthracene	mg/kg	.333	0.266	80.0	58-105	WG609283
Benzidine	mg/kg	.333	0.00821	2.47*	10-21	WG609283
Benzo(a)anthracene	mg/kg	.333	0.262	78.7	56-103	WG609283
Benzo(a)pyrene	mg/kg	.333	0.266	80.0	57-103	WG609283
Benzo(b)fluoranthene	mg/kg	.333	0.260	78.0	52-106	WG609283
Benzo(g,h,i)perylene	mg/kg	.333	0.267	80.3	47-112	WG609283

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Quality Assurance Report
Level II

L591691

August 31, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Benzo(k)fluoranthene	mg/kg	.333	0.258	77.5	53-104	WG609283
Benzylbutyl phthalate	mg/kg	.333	0.273	82.1	61-118	WG609283
Bis(2-chlorethoxy)methane	mg/kg	.333	0.236	70.9	58-104	WG609283
Bis(2-chloroethyl)ether	mg/kg	.333	0.220	66.0	51-103	WG609283
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.213	64.0	56-95	WG609283
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.285	85.6	56-120	WG609283
Chrysene	mg/kg	.333	0.266	79.8	55-102	WG609283
Di-n-butyl phthalate	mg/kg	.333	0.283	85.0	59-114	WG609283
Di-n-octyl phthalate	mg/kg	.333	0.293	88.0	51-119	WG609283
Dibenz(a,h)anthracene	mg/kg	.333	0.272	81.6	49-111	WG609283
Diethyl phthalate	mg/kg	.333	0.279	83.8	61-105	WG609283
Dimethyl phthalate	mg/kg	.333	0.266	79.8	60-106	WG609283
Fluoranthene	mg/kg	.333	0.274	82.3	59-108	WG609283
Fluorene	mg/kg	.333	0.255	76.7	59-100	WG609283
Hexachloro-1,3-butadiene	mg/kg	.333	0.234	70.2	53-106	WG609283
Hexachlorobenzene	mg/kg	.333	0.239	71.6	50-108	WG609283
Hexachlorocyclopentadiene	mg/kg	.333	0.283	84.8	36-117	WG609283
Hexachloroethane	mg/kg	.333	0.215	64.6	45-83	WG609283
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.270	81.1	50-110	WG609283
Isophorone	mg/kg	.333	0.201	60.5	51-99	WG609283
n-Nitrosodi-n-propylamine	mg/kg	.333	0.242	72.6	52-103	WG609283
n-Nitrosodimethylamine	mg/kg	.333	0.226	67.9	31-107	WG609283
n-Nitrosodiphenylamine	mg/kg	.333	0.251	75.5	57-121	WG609283
Naphthalene	mg/kg	.333	0.230	69.0	55-91	WG609283
Nitrobenzene	mg/kg	.333	0.242	72.6	47-92	WG609283
Pentachlorophenol	mg/kg	.333	0.210	63.1	10-89	WG609283
Phenanthrene	mg/kg	.333	0.254	76.3	55-103	WG609283
Phenol	mg/kg	.333	0.221	66.4	49-99	WG609283
Pyrene	mg/kg	.333	0.251	75.5	54-104	WG609283
2,4,6-Tribromophenol				89.48	16-136	WG609283
2-Fluorobiphenyl				80.21	37-119	WG609283
2-Fluorophenol				70.62	22-114	WG609283
Nitrobenzene-d5				75.16	20-114	WG609283
Phenol-d5				69.89	26-127	WG609283
p-Terphenyl-d14				76.82	15-174	WG609283
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0256	102.	77-129	WG609434
1,1,1-Trichloroethane	mg/kg	.025	0.0277	111.	70-127	WG609434
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0255	102.	76-133	WG609434
1,1,2-Trichloroethane	mg/kg	.025	0.0244	97.5	79-123	WG609434
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0322	129.	52-145	WG609434
1,1-Dichloroethane	mg/kg	.025	0.0274	110.	74-121	WG609434
1,1-Dichloroethene	mg/kg	.025	0.0287	115.	53-135	WG609434
1,1-Dichloropropene	mg/kg	.025	0.0267	107.	67-127	WG609434
1,2,3-Trichlorobenzene	mg/kg	.025	0.0255	102.	74-131	WG609434
1,2,3-Trichloropropane	mg/kg	.025	0.0248	99.4	75-135	WG609434
1,2,3-Trimethylbenzene	mg/kg	.025	0.0226	90.5	76-128	WG609434
1,2,4-Trichlorobenzene	mg/kg	.025	0.0247	98.9	72-130	WG609434
1,2,4-Trimethylbenzene	mg/kg	.025	0.0223	89.2	75-131	WG609434
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0260	104.	55-142	WG609434
1,2-Dibromoethane	mg/kg	.025	0.0262	105.	77-126	WG609434
1,2-Dichlorobenzene	mg/kg	.025	0.0247	98.9	80-123	WG609434
1,2-Dichloroethane	mg/kg	.025	0.0296	118.	70-128	WG609434
1,2-Dichloropropane	mg/kg	.025	0.0308	123.	74-125	WG609434
1,3,5-Trimethylbenzene	mg/kg	.025	0.0223	89.1	77-129	WG609434
1,3-Dichlorobenzene	mg/kg	.025	0.0242	96.8	76-128	WG609434
1,3-Dichloropropane	mg/kg	.025	0.0254	101.	77-118	WG609434
1,4-Dichlorobenzene	mg/kg	.025	0.0240	95.8	77-119	WG609434

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Soil Analyses, Monitoring Well YA-MW6, Sample at 25 ft.
I-70 East Corridor EIS PCL

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August 31, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
2,2-Dichloropropane	mg/kg	.025	0.0292	117.	60-132	WG609434
2-Butanone (MEK)	mg/kg	.125	0.136	109.	56-146	WG609434
2-Chloroethyl vinyl ether	mg/kg	.125	0.144	115.	17-179	WG609434
2-Chlorotoluene	mg/kg	.025	0.0228	91.0	76-125	WG609434
4-Chlorotoluene	mg/kg	.025	0.0224	89.8	76-125	WG609434
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.146	117.	55-148	WG609434
Acetone	mg/kg	.125	0.158	126.	47-155	WG609434
Acrylonitrile	mg/kg	.125	0.140	112.	50-155	WG609434
Benzene	mg/kg	.025	0.0259	104.	72-120	WG609434
Bromobenzene	mg/kg	.025	0.0234	93.5	74-122	WG609434
Bromodichloromethane	mg/kg	.025	0.0295	118.	74-128	WG609434
Bromoform	mg/kg	.025	0.0261	105.	62-137	WG609434
Bromomethane	mg/kg	.025	0.0376	151.	38-180	WG609434
Carbon tetrachloride	mg/kg	.025	0.0281	113.	62-130	WG609434
Chlorobenzene	mg/kg	.025	0.0244	97.7	77-124	WG609434
Chlorodibromomethane	mg/kg	.025	0.0263	105.	74-128	WG609434
Chloroethane	mg/kg	.025	0.0326	131.	46-173	WG609434
Chloroform	mg/kg	.025	0.0274	110.	76-122	WG609434
Chloromethane	mg/kg	.025	0.0213	85.3	49-143	WG609434
cis-1,2-Dichloroethene	mg/kg	.025	0.0287	115.	73-123	WG609434
cis-1,3-Dichloropropene	mg/kg	.025	0.0291	116.	73-126	WG609434
Di-isopropyl ether	mg/kg	.025	0.0266	106.	64-131	WG609434
Dibromomethane	mg/kg	.025	0.0312	125.	75-127	WG609434
Dichlorodifluoromethane	mg/kg	.025	0.0215	86.1	30-177	WG609434
Ethylbenzene	mg/kg	.025	0.0239	95.7	76-126	WG609434
Hexachloro-1,3-butadiene	mg/kg	.025	0.0262	105.	71-134	WG609434
Isopropylbenzene	mg/kg	.025	0.0212	84.8	70-128	WG609434
Methyl tert-butyl ether	mg/kg	.025	0.0279	112.	66-127	WG609434
Methylene Chloride	mg/kg	.025	0.0282	113.	67-124	WG609434
n-Butylbenzene	mg/kg	.025	0.0215	86.1	71-133	WG609434
n-Propylbenzene	mg/kg	.025	0.0216	86.4	76-126	WG609434
Naphthalene	mg/kg	.025	0.0224	89.5	68-136	WG609434
p-Isopropyltoluene	mg/kg	.025	0.0221	88.5	75-134	WG609434
sec-Butylbenzene	mg/kg	.025	0.0217	86.7	75-132	WG609434
Styrene	mg/kg	.025	0.0233	93.2	68-148	WG609434
tert-Butylbenzene	mg/kg	.025	0.0233	93.1	75-132	WG609434
Tetrachloroethene	mg/kg	.025	0.0257	103.	70-131	WG609434
Toluene	mg/kg	.025	0.0264	106.	74-155	WG609434
trans-1,2-Dichloroethene	mg/kg	.025	0.0270	108.	63-126	WG609434
trans-1,3-Dichloropropene	mg/kg	.025	0.0320	128.*	68-126	WG609434
Trichloroethene	mg/kg	.025	0.0294	118.	75-121	WG609434
Trichlorofluoromethane	mg/kg	.025	0.0313	125.	48-170	WG609434
Vinyl chloride	mg/kg	.025	0.0253	101.	54-144	WG609434
Xylenes, Total	mg/kg	.075	0.0702	93.7	76-126	WG609434
4-Bromofluorobenzene				94.98	67-133	WG609434
Dibromofluoromethane				106.6	72-135	WG609434
Toluene-d8				100.3	90-113	WG609434
Arsenic	mg/kg	237	221.	93.2	83.1-117	WG609476
Barium	mg/kg	252	245.	97.2	84.1-116	WG609476
Cadmium	mg/kg	191	183.	95.8	83.2-117	WG609476
Chromium	mg/kg	128	122.	95.3	81.3-118	WG609476
Lead	mg/kg	103	99.6	96.7	83.1-117	WG609476
Selenium	mg/kg	110	104.	94.5	78.7-122	WG609476
Silver	mg/kg	47.3	42.2	89.2	66.2-134	WG609476
Iron	mg/kg	13100	12600	96.2	50.8-150	WG609476

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Michael Keifer
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Quality Assurance Report
Level II

L591691

August 31, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
PCB 1016	mg/kg	.167	0.132	79.2	64-120	WG609492
PCB 1260	mg/kg	.167	0.140	83.6	72-130	WG609492
Decachlorobiphenyl				81.10	18.9-115.8	WG609492
Tetrachloro-m-xylene				78.95	31.8-115.7	WG609492
2,4,5-T	mg/kg	.167	0.151	90.2	32.9-103	WG609800
2,4,5-TP (Silvex)	mg/kg	.167	0.156	93.6	46-116	WG609800
2,4-D	mg/kg	.167	0.140	83.8	28-98	WG609800
2,4-DB	mg/kg	.167	0.144	86.2	28.9-108	WG609800
Dalapon	mg/kg	.167	0.117	70.1	18.4-113	WG609800
Dicamba	mg/kg	.167	0.151	90.3	37.2-119	WG609800
Dichloroprop	mg/kg	.167	0.166	99.2	40.5-114	WG609800
Dinoseb	mg/kg	.167	0.113	67.7	10-98	WG609800
MCPA	mg/kg	16.7	13.1	78.5	15.5-110	WG609800
MCPP	mg/kg	16.7	23.1	139.	40.1-177	WG609800
2,4-Dichlorophenyl Acetic Acid				70.78	37-99	WG609800
4,4-DDD	mg/kg	.0667	0.0640	95.9	74-114	WG609492
4,4-DDE	mg/kg	.0667	0.0633	95.0	74-115	WG609492
4,4-DDT	mg/kg	.0667	0.0656	98.3	62-124	WG609492
Aldrin	mg/kg	.0667	0.0597	89.5	69-110	WG609492
Alpha BHC	mg/kg	.0667	0.0567	85.0	68-111	WG609492
Beta BHC	mg/kg	.0667	0.0600	89.9	74-112	WG609492
Delta BHC	mg/kg	.0667	0.0619	92.8	71-110	WG609492
Dieldrin	mg/kg	.0667	0.0643	96.5	76-115	WG609492
Endosulfan I	mg/kg	.0667	0.0642	96.2	76-119	WG609492
Endosulfan II	mg/kg	.0667	0.0640	96.0	75-116	WG609492
Endosulfan sulfate	mg/kg	.0667	0.0641	96.0	70-118	WG609492
Endrin	mg/kg	.0667	0.0622	93.3	68-115	WG609492
Endrin aldehyde	mg/kg	.0667	0.0609	91.3	48-92	WG609492
Endrin ketone	mg/kg	.0667	0.0647	97.0	70-112	WG609492
Gamma BHC	mg/kg	.0667	0.0589	88.4	70-112	WG609492
Heptachlor	mg/kg	.0667	0.0611	91.6	69-111	WG609492
Heptachlor epoxide	mg/kg	.0667	0.0635	95.2	72-115	WG609492
Hexachlorobenzene	mg/kg	.0667	0.0513	76.8	64-111	WG609492
Methoxychlor	mg/kg	.0667	0.0665	99.7	65-123	WG609492
Decachlorobiphenyl				101.5	18.9-115.8	WG609492
Tetrachloro-m-xylene				89.37	31.8-115.7	WG609492

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,2,4-Trichlorobenzene	mg/kg	0.201	0.212	60.0	48-87	5.45	20	WG609283
2,4,6-Trichlorophenol	mg/kg	0.241	0.246	72.0	50-98	2.12	20	WG609283
2,4-Dichlorophenol	mg/kg	0.232	0.240	70.0	56-96	3.20	20	WG609283
2,4-Dimethylphenol	mg/kg	0.237	0.245	71.0	52-101	3.57	20	WG609283
2,4-Dinitrophenol	mg/kg	0.206	0.200	62.0	10-109	3.06	39	WG609283
2,4-Dinitrotoluene	mg/kg	0.279	0.290	84.0	54-103	4.05	20	WG609283
2,6-Dinitrotoluene	mg/kg	0.262	0.271	79.0	53-99	3.44	20	WG609283
2-Chloronaphthalene	mg/kg	0.239	0.246	72.0	55-96	2.91	20	WG609283
2-Chlorophenol	mg/kg	0.204	0.211	61.0	52-88	3.34	20	WG609283
2-Nitrophenol	mg/kg	0.238	0.262	71.0	55-106	9.63	20	WG609283
3,3-Dichlorobenzidine	mg/kg	0.274	0.273	82.0	36-84	0.709	20	WG609283
4,6-Dinitro-2-methylphenol	mg/kg	0.274	0.280	82.0	24-98	2.27	32	WG609283
4-Bromophenyl-phenylether	mg/kg	0.248	0.254	74.0	58-111	2.14	20	WG609283
4-Chloro-3-methylphenol	mg/kg	0.258	0.267	78.0	58-98	3.22	20	WG609283
4-Chlorophenyl-phenylether	mg/kg	0.249	0.255	75.0	59-103	2.39	20	WG609283

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Quality Assurance Report
Level II

August 31, 2012

L591691

		Laboratory Control Sample				Duplicate		
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
4-Nitrophenol	mg/kg	0.230	0.226	69.0	34-101	2.15	26	WG609283
Acenaphthene	mg/kg	0.254	0.265	76.0	55-96	4.21	20	WG609283
Acenaphthylene	mg/kg	0.256	0.265	77.0	61-107	3.53	20	WG609283
Anthracene	mg/kg	0.258	0.266	78.0	58-105	3.04	20	WG609283
Benzidine	mg/kg	0.00831	0.00821	2*	10-21	1.27	40	WG609283
Benzo(a)anthracene	mg/kg	0.260	0.262	78.0	56-103	0.736	20	WG609283
Benzo(a)pyrene	mg/kg	0.268	0.266	80.0	57-103	0.648	20	WG609283
Benzo(b)fluoranthene	mg/kg	0.255	0.260	77.0	52-106	1.71	20	WG609283
Benzo(g,h,i)perylene	mg/kg	0.266	0.267	80.0	47-112	0.677	20	WG609283
Benzo(k)fluoranthene	mg/kg	0.269	0.258	81.0	53-104	4.02	20	WG609283
Benzylbutyl phthalate	mg/kg	0.276	0.273	83.0	61-118	0.783	20	WG609283
Bis(2-chlorethoxy)methane	mg/kg	0.228	0.236	68.0	58-104	3.37	20	WG609283
Bis(2-chloroethyl)ether	mg/kg	0.202	0.220	61.0	51-103	8.18	20	WG609283
Bis(2-chloroisopropyl)ether	mg/kg	0.207	0.213	62.0	56-95	3.11	20	WG609283
Bis(2-ethylhexyl)phthalate	mg/kg	0.292	0.285	88.0	56-120	2.46	20	WG609283
Chrysene	mg/kg	0.275	0.266	82.0	55-102	3.22	20	WG609283
Di-n-butyl phthalate	mg/kg	0.282	0.283	85.0	59-114	0.406	20	WG609283
Di-n-octyl phthalate	mg/kg	0.295	0.293	89.0	51-119	0.732	22	WG609283
Dibenz(a,h)anthracene	mg/kg	0.271	0.272	81.0	49-111	0.292	20	WG609283
Diethyl phthalate	mg/kg	0.276	0.279	83.0	61-105	1.19	20	WG609283
Dimethyl phthalate	mg/kg	0.271	0.266	81.0	60-106	2.07	20	WG609283
Fluoranthene	mg/kg	0.274	0.274	82.0	59-108	0.0714	20	WG609283
Fluorene	mg/kg	0.250	0.255	75.0	59-100	2.12	20	WG609283
Hexachloro-1,3-butadiene	mg/kg	0.216	0.234	65.0	53-106	7.70	20	WG609283
Hexachlorobenzene	mg/kg	0.233	0.239	70.0	50-108	2.48	20	WG609283
Hexachlorocyclopentadiene	mg/kg	0.277	0.283	83.0	36-117	1.80	20	WG609283
Hexachloroethane	mg/kg	0.200	0.215	60.0	45-83	7.58	20	WG609283
Indeno(1,2,3-cd)pyrene	mg/kg	0.271	0.270	81.0	50-110	0.384	20	WG609283
Isophorone	mg/kg	0.195	0.201	59.0	51-99	2.99	20	WG609283
n-Nitrosodi-n-propylamine	mg/kg	0.240	0.242	72.0	52-103	0.898	20	WG609283
n-Nitrosodimethylamine	mg/kg	0.219	0.226	66.0	31-107	3.38	23	WG609283
n-Nitrosodiphenylamine	mg/kg	0.249	0.251	75.0	57-121	0.929	20	WG609283
Naphthalene	mg/kg	0.218	0.230	65.0	55-91	5.35	20	WG609283
Nitrobenzene	mg/kg	0.222	0.242	67.0	47-92	8.31	20	WG609283
Pentachlorophenol	mg/kg	0.219	0.210	66.0	10-89	3.93	28	WG609283
Phenanthrene	mg/kg	0.246	0.254	74.0	55-103	3.43	20	WG609283
Phenol	mg/kg	0.213	0.221	64.0	49-99	3.88	20	WG609283
Pyrene	mg/kg	0.257	0.251	77.0	54-104	2.15	20	WG609283
2,4,6-Tribromophenol				87.30	16-136			WG609283
2-Fluorobiphenyl				78.44	37-119			WG609283
2-Fluorophenol				65.41	22-114			WG609283
Nitrobenzene-d5				70.10	20-114			WG609283
Phenol-d5				66.62	26-127			WG609283
p-Terphenyl-d14				80.13	15-174			WG609283
1,1,1,2-Tetrachloroethane	mg/kg	0.0239	0.0256	95.0	77-129	7.07	20	WG609434
1,1,1-Trichloroethane	mg/kg	0.0254	0.0277	102.	70-127	8.62	20	WG609434
1,1,2,2-Tetrachloroethane	mg/kg	0.0242	0.0255	97.0	76-133	5.10	20	WG609434
1,1,2-Trichloroethane	mg/kg	0.0228	0.0244	91.0	79-123	6.57	20	WG609434
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0297	0.0322	119.	52-145	8.17	20	WG609434
1,1-Dichloroethane	mg/kg	0.0250	0.0274	100.	74-121	9.18	20	WG609434
1,1-Dichloroethene	mg/kg	0.0273	0.0287	109.	53-135	4.93	20	WG609434
1,1-Dichloropropene	mg/kg	0.0248	0.0267	99.0	67-127	7.50	20	WG609434
1,2,3-Trichlorobenzene	mg/kg	0.0218	0.0255	87.0	74-131	15.6	20	WG609434
1,2,3-Trichloropropane	mg/kg	0.0229	0.0248	91.0	75-135	8.34	20	WG609434
1,2,3-Trimethylbenzene	mg/kg	0.0198	0.0226	79.0	76-128	13.2	20	WG609434
1,2,4-Trichlorobenzene	mg/kg	0.0197	0.0247	79.0	72-130	22.8*	20	WG609434
1,2,4-Trimethylbenzene	mg/kg	0.0201	0.0223	80.0	75-131	10.4	20	WG609434

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Quality Assurance Report
Level II

L591691

August 31, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
1,2-Dibromo-3-Chloropropane	mg/kg	0.0253	0.0260	101.	55-142	2.55	20	WG609434
1,2-Dibromoethane	mg/kg	0.0247	0.0262	99.0	77-126	5.95	20	WG609434
1,2-Dichlorobenzene	mg/kg	0.0220	0.0247	88.0	80-123	11.4	20	WG609434
1,2-Dichloroethane	mg/kg	0.0263	0.0296	105.	70-128	11.8	20	WG609434
1,2-Dichloropropane	mg/kg	0.0279	0.0308	112.	74-125	9.87	20	WG609434
1,3,5-Trimethylbenzene	mg/kg	0.0201	0.0223	80.0	77-129	10.3	20	WG609434
1,3-Dichlorobenzene	mg/kg	0.0219	0.0242	88.0	76-128	9.81	20	WG609434
1,3-Dichloropropane	mg/kg	0.0234	0.0254	94.0	77-118	7.90	20	WG609434
1,4-Dichlorobenzene	mg/kg	0.0205	0.0240	82.0	77-119	15.4	20	WG609434
2,2-Dichloropropane	mg/kg	0.0240	0.0292	96.0	60-132	19.4	20	WG609434
2-Butanone (MEK)	mg/kg	0.100	0.136	80.0	56-146	30.2*	20	WG609434
2-Chloroethyl vinyl ether	mg/kg	0.123	0.144	98.0	17-179	15.5	22	WG609434
2-Chlorotoluene	mg/kg	0.0209	0.0228	84.0	76-125	8.45	20	WG609434
4-Chlorotoluene	mg/kg	0.0201	0.0224	80.0	76-125	11.2	20	WG609434
4-Methyl-2-pentanone (MIBK)	mg/kg	0.131	0.146	104.	55-148	11.2	20	WG609434
Acetone	mg/kg	0.116	0.158	92.0	47-155	30.9*	22	WG609434
Acrylonitrile	mg/kg	0.130	0.140	104.	50-155	7.41	20	WG609434
Benzene	mg/kg	0.0235	0.0259	94.0	72-120	9.51	20	WG609434
Bromobenzene	mg/kg	0.0215	0.0234	86.0	74-122	8.51	20	WG609434
Bromodichloromethane	mg/kg	0.0261	0.0295	104.	74-128	12.5	20	WG609434
Bromoform	mg/kg	0.0255	0.0261	102.	62-137	2.31	20	WG609434
Bromomethane	mg/kg	0.0366	0.0376	146.	38-180	2.89	20	WG609434
Carbon tetrachloride	mg/kg	0.0258	0.0281	103.	62-130	8.51	20	WG609434
Chlorobenzene	mg/kg	0.0227	0.0244	91.0	77-124	7.46	20	WG609434
Chlorodibromomethane	mg/kg	0.0242	0.0263	97.0	74-128	8.05	20	WG609434
Chloroethane	mg/kg	0.0304	0.0326	122.	46-173	6.99	20	WG609434
Chloroform	mg/kg	0.0251	0.0274	100.	76-122	8.86	20	WG609434
Chloromethane	mg/kg	0.0209	0.0213	84.0	49-143	1.82	20	WG609434
cis-1,2-Dichloroethene	mg/kg	0.0263	0.0287	105.	73-123	8.92	20	WG609434
cis-1,3-Dichloropropene	mg/kg	0.0248	0.0291	99.0	73-126	15.8	20	WG609434
Di-isopropyl ether	mg/kg	0.0237	0.0266	95.0	64-131	11.4	20	WG609434
Dibromomethane	mg/kg	0.0287	0.0312	115.	75-127	8.55	20	WG609434
Dichlorodifluoromethane	mg/kg	0.0208	0.0215	83.0	30-177	3.31	20	WG609434
Ethylbenzene	mg/kg	0.0227	0.0239	91.0	76-126	5.39	20	WG609434
Hexachloro-1,3-butadiene	mg/kg	0.0224	0.0262	90.0	71-134	15.6	20	WG609434
Isopropylbenzene	mg/kg	0.0194	0.0212	78.0	70-128	8.81	20	WG609434
Methyl tert-butyl ether	mg/kg	0.0254	0.0279	102.	66-127	9.33	20	WG609434
Methylene Chloride	mg/kg	0.0260	0.0282	104.	67-124	8.27	20	WG609434
n-Butylbenzene	mg/kg	0.0175	0.0215	70*	71-133	20.8*	20	WG609434
n-Propylbenzene	mg/kg	0.0193	0.0216	77.0	76-126	11.3	20	WG609434
Naphthalene	mg/kg	0.0203	0.0224	81.0	68-136	9.96	20	WG609434
p-Isopropyltoluene	mg/kg	0.0196	0.0221	78.0	75-134	12.1	20	WG609434
sec-Butylbenzene	mg/kg	0.0197	0.0217	79.0	75-132	9.80	20	WG609434
Styrene	mg/kg	0.0215	0.0233	86.0	68-148	7.89	20	WG609434
tert-Butylbenzene	mg/kg	0.0218	0.0233	87.0	75-132	6.71	20	WG609434
Tetrachloroethene	mg/kg	0.0244	0.0257	97.0	70-131	5.30	20	WG609434
Toluene	mg/kg	0.0237	0.0264	95.0	74-155	10.8	20	WG609434
trans-1,2-Dichloroethene	mg/kg	0.0251	0.0270	100.	63-126	7.10	20	WG609434
trans-1,3-Dichloropropene	mg/kg	0.0285	0.0320	114.	68-126	11.7	20	WG609434
Trichloroethene	mg/kg	0.0276	0.0294	110.	75-121	6.45	20	WG609434
Trichlorofluoromethane	mg/kg	0.0291	0.0313	116.	48-170	7.41	20	WG609434
Vinyl chloride	mg/kg	0.0248	0.0253	99.0	54-144	1.79	20	WG609434
Xylenes, Total	mg/kg	0.0639	0.0702	85.0	76-126	9.41	20	WG609434
4-Bromofluorobenzene				94.79	67-133			WG609434
Dibromofluoromethane				105.0	72-135			WG609434
Toluene-d8				98.84	90-113			WG609434
PCB 1016	mg/kg	0.153	0.132	91.0	64-120	14.3	20	WG609492

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Quality Assurance Report
Level II

August 31, 2012

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Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
PCB 1260	mg/kg	0.144	0.140	86.0	72-130	2.92	20	WG609492
Decachlorobiphenyl				78.22	18.9-115.8			WG609492
Tetrachloro-m-xylene				75.28	31.8-115.7			WG609492
2,4,5-T	mg/kg	0.155	0.151	93.0	32.9-103	3.17	27.4	WG609800
2,4,5-TP (Silvex)	mg/kg	0.163	0.156	98.0	46-116	4.47	25.2	WG609800
2,4-D	mg/kg	0.148	0.140	88.0	28-98	5.49	24	WG609800
2,4-DB	mg/kg	0.170	0.144	102.	28.9-108	16.3	30.3	WG609800
Dalapon	mg/kg	0.126	0.117	76.0	18.4-113	7.71	24.1	WG609800
Dicamba	mg/kg	0.165	0.151	99.0	37.2-119	8.92	21.2	WG609800
Dichloroprop	mg/kg	0.176	0.166	105.	40.5-114	6.05	23.3	WG609800
Dinoseb	mg/kg	0.117	0.113	70.0	10-98	3.40	40	WG609800
MCPA	mg/kg	14.1	13.1	85.0	15.5-110	7.56	40	WG609800
MCPP	mg/kg	24.9	23.1	149.	40.1-177	7.42	32.2	WG609800
2,4-Dichlorophenyl Acetic Acid				77.05	37-99			WG609800
4,4-DDD	mg/kg	0.0680	0.0640	102.	74-114	6.14	20	WG609492
4,4-DDE	mg/kg	0.0675	0.0633	101.	74-115	6.39	20	WG609492
4,4-DDT	mg/kg	0.0694	0.0656	104.	62-124	5.63	20	WG609492
Aldrin	mg/kg	0.0635	0.0597	95.0	69-110	6.20	20	WG609492
Alpha BHC	mg/kg	0.0604	0.0567	91.0	68-111	6.40	20	WG609492
Beta BHC	mg/kg	0.0637	0.0600	95.0	74-112	5.98	20	WG609492
Delta BHC	mg/kg	0.0660	0.0619	99.0	71-110	6.34	20	WG609492
Dieldrin	mg/kg	0.0681	0.0643	102.	76-115	5.65	20	WG609492
Endosulfan I	mg/kg	0.0683	0.0642	102.	76-119	6.23	20	WG609492
Endosulfan II	mg/kg	0.0681	0.0640	102.	75-116	6.21	20	WG609492
Endosulfan sulfate	mg/kg	0.0682	0.0641	102.	70-118	6.27	20	WG609492
Endrin	mg/kg	0.0656	0.0622	98.0	68-115	5.39	20	WG609492
Endrin aldehyde	mg/kg	0.0655	0.0609	98*	48-92	7.27	20	WG609492
Endrin ketone	mg/kg	0.0687	0.0647	103.	70-112	6.02	20	WG609492
Gamma BHC	mg/kg	0.0628	0.0589	94.0	70-112	6.35	20	WG609492
Heptachlor	mg/kg	0.0653	0.0611	98.0	69-111	6.70	20	WG609492
Heptachlor epoxide	mg/kg	0.0673	0.0635	101.	72-115	5.78	20	WG609492
Hexachlorobenzene	mg/kg	0.0549	0.0513	82.0	64-111	6.89	20	WG609492
Methoxychlor	mg/kg	0.0702	0.0665	105.	65-123	5.41	20	WG609492
Decachlorobiphenyl				103.3	18.9-115.8			WG609492
Tetrachloro-m-xylene				91.82	31.8-115.7			WG609492

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Mercury	mg/kg	0.277	0	.25	111.	80-120	L591516-05	WG609362
1,2,4-Trichlorobenzene	mg/kg	0.226	0	.333	67.8	27-118	L591689-01	WG609283
2,4,6-Trichlorophenol	mg/kg	0.284	0	.333	85.4	18-140	L591689-01	WG609283
2,4-Dichlorophenol	mg/kg	0.275	0	.333	82.4	30-134	L591689-01	WG609283
2,4-Dimethylphenol	mg/kg	0.259	0	.333	77.8	13-147	L591689-01	WG609283
2,4-Dinitrophenol	mg/kg	0.225	0	.333	67.6	10-110	L591689-01	WG609283
2,4-Dinitrotoluene	mg/kg	0.320	0	.333	96.2	12-146	L591689-01	WG609283
2,6-Dinitrotoluene	mg/kg	0.312	0	.333	93.7	10-150	L591689-01	WG609283
2-Chloronaphthalene	mg/kg	0.269	0	.333	80.8	31-127	L591689-01	WG609283
2-Chlorophenol	mg/kg	0.246	0	.333	73.9	26-120	L591689-01	WG609283
2-Nitrophenol	mg/kg	0.295	0	.333	88.4	10-156	L591689-01	WG609283
3,3-Dichlorobenzidine	mg/kg	0.276	0	.333	82.8	10-127	L591689-01	WG609283
4,6-Dinitro-2-methylphenol	mg/kg	0.318	0	.333	95.4	10-124	L591689-01	WG609283
4-Bromophenyl-phenylether	mg/kg	0.283	0	.333	85.0	27-150	L591689-01	WG609283

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L591691

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Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
4-Chloro-3-methylphenol	mg/kg	0.293	0	.333	88.0	24-140	L591689-01	WG609283
4-Chlorophenyl-phenylether	mg/kg	0.286	0	.333	85.8	27-142	L591689-01	WG609283
4-Nitrophenol	mg/kg	0.279	0	.333	83.8	10-166	L591689-01	WG609283
Acenaphthene	mg/kg	0.294	0	.333	88.3	30-132	L591689-01	WG609283
Acenaphthylene	mg/kg	0.294	0	.333	88.2	31-144	L591689-01	WG609283
Anthracene	mg/kg	0.300	0	.333	90.1	27-140	L591689-01	WG609283
Benzidine	mg/kg	0	0	.333	0*	10-55	L591689-01	WG609283
Benzo(a)anthracene	mg/kg	0.293	0	.333	87.8	22-139	L591689-01	WG609283
Benzo(a)pyrene	mg/kg	0.299	0	.333	89.7	16-148	L591689-01	WG609283
Benzo(b)fluoranthene	mg/kg	0.287	0	.333	86.2	13-152	L591689-01	WG609283
Benzo(g,h,i)perylene	mg/kg	0.306	0	.333	91.8	10-137	L591689-01	WG609283
Benzo(k)fluoranthene	mg/kg	0.299	0	.333	89.7	15-152	L591689-01	WG609283
Benzylbutyl phthalate	mg/kg	0.320	0	.333	96.0	20-168	L591689-01	WG609283
Bis(2-chlorethoxy)methane	mg/kg	0.261	0	.333	78.4	32-141	L591689-01	WG609283
Bis(2-chloroethyl)ether	mg/kg	0.239	0	.333	71.8	25-139	L591689-01	WG609283
Bis(2-chloroisopropyl)ether	mg/kg	0.228	0	.333	68.5	32-128	L591689-01	WG609283
Bis(2-ethylhexyl)phthalate	mg/kg	0.331	0	.333	99.3	20-163	L591689-01	WG609283
Chrysene	mg/kg	0.305	0	.333	91.6	20-139	L591689-01	WG609283
Di-n-butyl phthalate	mg/kg	0.322	0	.333	96.7	24-149	L591689-01	WG609283
Di-n-octyl phthalate	mg/kg	0.340	0	.333	102.	14-164	L591689-01	WG609283
Dibenz(a,h)anthracene	mg/kg	0.307	0	.333	92.3	10-137	L591689-01	WG609283
Diethyl phthalate	mg/kg	0.316	0	.333	94.9	28-142	L591689-01	WG609283
Dimethyl phthalate	mg/kg	0.301	0	.333	90.3	31-142	L591689-01	WG609283
Fluoranthene	mg/kg	0.305	0	.333	91.4	24-145	L591689-01	WG609283
Fluorene	mg/kg	0.285	0	.333	85.5	30-138	L591689-01	WG609283
Hexachloro-1,3-butadiene	mg/kg	0.254	0	.333	76.4	29-136	L591689-01	WG609283
Hexachlorobenzene	mg/kg	0.260	0	.333	78.2	26-136	L591689-01	WG609283
Hexachlorocyclopentadiene	mg/kg	0.291	0	.333	87.5	10-124	L591689-01	WG609283
Hexachloroethane	mg/kg	0.233	0	.333	70.1	21-107	L591689-01	WG609283
Indeno(1,2,3-cd)pyrene	mg/kg	0.310	0	.333	93.0	10-139	L591689-01	WG609283
Isophorone	mg/kg	0.220	0	.333	65.9	26-134	L591689-01	WG609283
n-Nitrosodi-n-propylamine	mg/kg	0.261	0	.333	78.4	24-141	L591689-01	WG609283
n-Nitrosodimethylamine	mg/kg	0.256	0	.333	76.9	18-126	L591689-01	WG609283
n-Nitrosodiphenylamine	mg/kg	0.270	0	.333	81.0	16-128	L591689-01	WG609283
Naphthalene	mg/kg	0.247	0	.333	74.1	31-124	L591689-01	WG609283
Nitrobenzene	mg/kg	0.260	0	.333	78.2	22-122	L591689-01	WG609283
Pentachlorophenol	mg/kg	0.279	0	.333	83.6	10-124	L591689-01	WG609283
Phenanthrene	mg/kg	0.284	0	.333	85.4	25-139	L591689-01	WG609283
Phenol	mg/kg	0.251	0	.333	75.4	22-129	L591689-01	WG609283
Pyrene	mg/kg	0.285	0	.333	85.6	23-145	L591689-01	WG609283
2,4,6-Tribromophenol					102.3	16-136		WG609283
2-Fluorobiphenyl					89.25	37-119		WG609283
2-Fluorophenol					75.69	22-114		WG609283
Nitrobenzene-d5					81.59	20-114		WG609283
Phenol-d5					78.63	26-127		WG609283
p-Terphenyl-d14					93.21	15-174		WG609283
1,1,1,2-Tetrachloroethane	mg/kg	0.113	0	.025	90.2	49-135	L591689-01	WG609434
1,1,1-Trichloroethane	mg/kg	0.126	0	.025	101.	43-142	L591689-01	WG609434
1,1,2,2-Tetrachloroethane	mg/kg	0.104	0	.025	83.4	42-147	L591689-01	WG609434
1,1,2-Trichloroethane	mg/kg	0.108	0	.025	86.6	51-134	L591689-01	WG609434
1,1,2-Trichlorotrifluoroethane	mg/kg	0.151	0	.025	121.	25-156	L591689-01	WG609434
1,1-Dichloroethane	mg/kg	0.122	0	.025	97.3	50-131	L591689-01	WG609434
1,1-Dichloroethene	mg/kg	0.141	0	.025	113.	29-145	L591689-01	WG609434
1,1-Dichloropropene	mg/kg	0.120	0	.025	95.8	40-136	L591689-01	WG609434
1,2,3-Trichlorobenzene	mg/kg	0.110	0	.025	88.1	13-142	L591689-01	WG609434
1,2,3-Trichloropropane	mg/kg	0.103	0	.025	82.2	41-149	L591689-01	WG609434
1,2,3-Trimethylbenzene	mg/kg	0.0929	0	.025	74.3	33-146	L591689-01	WG609434

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Soil Analyses, Monitoring Well YA-MW6, Sample at 25 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L591691

August 31, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,2,4-Trichlorobenzene	mg/kg	0.110	0	.025	87.8	12-140	L591689-01	WG609434
1,2,4-Trimethylbenzene	mg/kg	0.0987	0	.025	79.0	29-143	L591689-01	WG609434
1,2-Dibromo-3-Chloropropane	mg/kg	0.107	0	.025	85.8	29-151	L591689-01	WG609434
1,2-Dibromoethane	mg/kg	0.114	0	.025	91.3	48-133	L591689-01	WG609434
1,2-Dichlorobenzene	mg/kg	0.107	0	.025	85.9	37-136	L591689-01	WG609434
1,2-Dichloroethane	mg/kg	0.121	0	.025	96.8	49-131	L591689-01	WG609434
1,2-Dichloropropane	mg/kg	0.132	0	.025	106.	50-132	L591689-01	WG609434
1,3,5-Trimethylbenzene	mg/kg	0.101	0	.025	80.9	29-144	L591689-01	WG609434
1,3-Dichlorobenzene	mg/kg	0.110	0	.025	87.6	26-140	L591689-01	WG609434
1,3-Dichloropropane	mg/kg	0.108	0	.025	86.3	50-126	L591689-01	WG609434
1,4-Dichlorobenzene	mg/kg	0.106	0	.025	84.5	34-132	L591689-01	WG609434
2,2-Dichloropropane	mg/kg	0.125	0	.025	100.	35-148	L591689-01	WG609434
2-Butanone (MEK)	mg/kg	0.657	0	.125	105.	40-149	L591689-01	WG609434
2-Chloroethyl vinyl ether	mg/kg	0.582	0	.125	93.1	10-173	L591689-01	WG609434
2-Chlorotoluene	mg/kg	0.100	0	.025	80.2	34-136	L591689-01	WG609434
4-Chlorotoluene	mg/kg	0.0986	0	.025	78.9	31-137	L591689-01	WG609434
4-Methyl-2-pentanone (MIBK)	mg/kg	0.606	0	.125	97.0	37-153	L591689-01	WG609434
Acetone	mg/kg	0.861	0	.125	138.	10-177	L591689-01	WG609434
Acrylonitrile	mg/kg	0.602	0	.125	96.4	33-159	L591689-01	WG609434
Benzene	mg/kg	0.113	0	.025	90.1	44-131	L591689-01	WG609434
Bromobenzene	mg/kg	0.103	0	.025	82.3	36-132	L591689-01	WG609434
Bromodichloromethane	mg/kg	0.120	0	.025	95.8	48-134	L591689-01	WG609434
Bromoform	mg/kg	0.117	0	.025	93.7	34-141	L591689-01	WG609434
Bromomethane	mg/kg	0.181	0	.025	145.	19-173	L591689-01	WG609434
Carbon tetrachloride	mg/kg	0.127	0	.025	102.	36-140	L591689-01	WG609434
Chlorobenzene	mg/kg	0.109	0	.025	86.9	42-133	L591689-01	WG609434
Chlorodibromomethane	mg/kg	0.110	0	.025	88.2	45-135	L591689-01	WG609434
Chloroethane	mg/kg	0.152	0	.025	122.	16-178	L591689-01	WG609434
Chloroform	mg/kg	0.121	0	.025	97.0	52-130	L591689-01	WG609434
Chloromethane	mg/kg	0.104	0	.025	83.1	28-147	L591689-01	WG609434
cis-1,2-Dichloroethene	mg/kg	0.126	0	.025	101.	52-128	L591689-01	WG609434
cis-1,3-Dichloropropene	mg/kg	0.121	0	.025	97.2	46-131	L591689-01	WG609434
Di-isopropyl ether	mg/kg	0.113	0	.025	90.8	46-134	L591689-01	WG609434
Dibromomethane	mg/kg	0.137	0	.025	109.	51-133	L591689-01	WG609434
Dichlorodifluoromethane	mg/kg	0.108	0	.025	86.6	12-179	L591689-01	WG609434
Ethylbenzene	mg/kg	0.111	0	.025	88.7	38-139	L591689-01	WG609434
Hexachloro-1,3-butadiene	mg/kg	0.110	0	.025	87.8	10-147	L591689-01	WG609434
Isopropylbenzene	mg/kg	0.104	0	.025	83.1	34-137	L591689-01	WG609434
Methyl tert-butyl ether	mg/kg	0.122	0	.025	97.3	45-134	L591689-01	WG609434
Methylene Chloride	mg/kg	0.124	0	.025	99.4	41-133	L591689-01	WG609434
n-Butylbenzene	mg/kg	0.0925	0	.025	74.0	19-149	L591689-01	WG609434
n-Propylbenzene	mg/kg	0.0960	0	.025	76.8	27-142	L591689-01	WG609434
Naphthalene	mg/kg	0.0930	0	.025	74.4	19-146	L591689-01	WG609434
p-Isopropyltoluene	mg/kg	0.101	0	.025	80.6	21-150	L591689-01	WG609434
sec-Butylbenzene	mg/kg	0.0978	0	.025	78.2	25-148	L591689-01	WG609434
Styrene	mg/kg	0.103	0	.025	82.1	30-156	L591689-01	WG609434
tert-Butylbenzene	mg/kg	0.107	0	.025	85.5	32-146	L591689-01	WG609434
Tetrachloroethene	mg/kg	0.117	0	.025	93.7	35-139	L591689-01	WG609434
Toluene	mg/kg	0.117	0	.025	93.2	43-127	L591689-01	WG609434
trans-1,2-Dichloroethene	mg/kg	0.125	0	.025	100.	41-132	L591689-01	WG609434
trans-1,3-Dichloropropene	mg/kg	0.132	0	.025	105.	43-129	L591689-01	WG609434
Trichloroethene	mg/kg	0.134	0	.025	107.	42-136	L591689-01	WG609434
Trichlorofluoromethane	mg/kg	0.143	0	.025	115.	20-178	L591689-01	WG609434
Vinyl chloride	mg/kg	0.122	0	.025	97.4	30-157	L591689-01	WG609434
Xylenes, Total	mg/kg	0.315	0	.075	84.1	38-137	L591689-01	WG609434
4-Bromofluorobenzene					94.62	67-133		WG609434
Dibromofluoromethane					102.6	72-135		WG609434
Toluene-d8					99.72	90-113		WG609434

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Soil Analyses, Monitoring Well YA-MW6, Sample at 25 ft.
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Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Barium	mg/kg	143.	120.	50	46.0*	75-125	L591691-01	WG609476
Cadmium	mg/kg	42.5	0	50	85.0	75-125	L591691-01	WG609476
Chromium	mg/kg	49.6	6.60	50	86.0	75-125	L591691-01	WG609476
Lead	mg/kg	51.8	7.60	50	88.4	75-125	L591691-01	WG609476
Selenium	mg/kg	39.6	0	50	79.2	75-125	L591691-01	WG609476
Silver	mg/kg	41.7	0	50	83.4	75-125	L591691-01	WG609476
Arsenic	mg/kg	47.5	2.60	50	89.8	75-125	L591741-03	WG609476
Barium	mg/kg	141.	92.0	50	98.0	75-125	L591741-03	WG609476
Chromium	mg/kg	68.8	19.0	50	99.6	75-125	L591741-03	WG609476
Lead	mg/kg	57.2	11.0	50	92.4	75-125	L591741-03	WG609476
Selenium	mg/kg	45.5	0	50	91.0	75-125	L591741-03	WG609476
Silver	mg/kg	46.8	0	50	93.6	75-125	L591741-03	WG609476
Cadmium	mg/kg	54.2	0	10	108.	75-125	L591892-01	WG609476
Chromium	mg/kg	570.	370.	10	400.*	75-125	L591892-01	WG609476
Lead	mg/kg	83.0	37.0	10	92.0	75-125	L591892-01	WG609476
Selenium	mg/kg	38.0	0	10	76.0	75-125	L591892-01	WG609476
Silver	mg/kg	56.4	1.80	10	109.	75-125	L591892-01	WG609476
Iron	mg/kg	14100	14000	50	200.*	75-125	L591691-01	WG609476
Arsenic	mg/kg	46.0	0	5	92.0	75-125	L591691-01	WG609476
Cadmium	mg/kg	49.2	0	25	98.4	75-125	L591741-03	WG609476
Arsenic	mg/kg	-29.2	0	2.5	0*	75-125	L591892-01	WG609476
PCB 1016	mg/kg	0.139	0	.167	83.4	10-165	L591691-01	WG609492
PCB 1260	mg/kg	0.141	0	.167	84.2	29-154	L591691-01	WG609492
Decachlorobiphenyl					68.09	18.9-115.8		WG609492
Tetrachloro-m-xylene					76.09	31.8-115.7		WG609492
2,4,5-T	mg/kg	0.0980	0	.167	58.7	18-111	L591691-01	WG609800
2,4,5-TP (Silvex)	mg/kg	0.138	0	.167	82.7	27-123	L591691-01	WG609800
2,4-D	mg/kg	0.0868	0	.167	52.0	10-137	L591691-01	WG609800
2,4-DB	mg/kg	0.151	0	.167	90.2	15-121	L591691-01	WG609800
Dalapon	mg/kg	0.0145	0	.167	8.67*	10-111	L591691-01	WG609800
Dicamba	mg/kg	0.0815	0	.167	48.8	21-118	L591691-01	WG609800
Dichloroprop	mg/kg	0.147	0	.167	88.1	27-125	L591691-01	WG609800
Dinoseb	mg/kg	0.113	0	.167	67.6	10-95	L591691-01	WG609800
MCPA	mg/kg	10.7	0	16.7	64.0	10-164	L591691-01	WG609800
MCPP	mg/kg	23.0	0	16.7	138.	17-186	L591691-01	WG609800
2,4-Dichlorophenyl Acetic Acid					71.50	37-99		WG609800
4,4-DDD	mg/kg	0.0613	0	.0667	91.9	45-139	L591689-01	WG609492
4,4-DDE	mg/kg	0.0594	0	.0667	89.0	47-134	L591689-01	WG609492
4,4-DDT	mg/kg	0.0626	0	.0667	93.9	11-148	L591689-01	WG609492
Aldrin	mg/kg	0.0566	0	.0667	84.9	52-117	L591689-01	WG609492
Alpha BHC	mg/kg	0.0525	0	.0667	78.8	51-120	L591689-01	WG609492
Beta BHC	mg/kg	0.0570	0	.0667	85.5	48-124	L591689-01	WG609492
Delta BHC	mg/kg	0.0599	0	.0667	89.8	38-128	L591689-01	WG609492
Dieldrin	mg/kg	0.0598	0	.0667	89.6	48-135	L591689-01	WG609492
Endosulfan I	mg/kg	0.0596	0	.0667	89.3	51-129	L591689-01	WG609492
Endosulfan II	mg/kg	0.0602	0	.0667	90.3	42-142	L591689-01	WG609492
Endosulfan sulfate	mg/kg	0.0653	0	.0667	97.9	38-140	L591689-01	WG609492
Endrin	mg/kg	0.0604	0	.0667	90.6	44-133	L591689-01	WG609492
Endrin aldehyde	mg/kg	0.0584	0	.0667	87.6	16-116	L591689-01	WG609492
Endrin ketone	mg/kg	0.0639	0	.0667	95.8	33-131	L591689-01	WG609492
Gamma BHC	mg/kg	0.0546	0	.0667	81.9	52-119	L591689-01	WG609492
Heptachlor	mg/kg	0.0580	0	.0667	87.0	47-121	L591689-01	WG609492

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Quality Assurance Report
Level II

L591691

August 31, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Heptachlor epoxide	mg/kg	0.0586	0	.0667	87.9	54-120	L591689-01	WG609492
Hexachlorobenzene	mg/kg	0.0498	0	.0667	74.6	58-115	L591689-01	WG609492
Methoxychlor	mg/kg	0.0644	0	.0667	96.5	9-153	L591689-01	WG609492
Decachlorobiphenyl					90.53	18.9-115.8		WG609492
Tetrachloro-m-xylene					80.55	31.8-115.7		WG609492

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0.280	0.277	112.	80-120	1.08	20	L591516-05	WG609362
1,2,4-Trichlorobenzene	mg/kg	0.261	0.226	78.4	27-118	14.5	23	L591689-01	WG609283
2,4,6-Trichlorophenol	mg/kg	0.314	0.284	94.2	18-140	9.82	26	L591689-01	WG609283
2,4-Dichlorophenol	mg/kg	0.306	0.275	91.9	30-134	10.9	23	L591689-01	WG609283
2,4-Dimethylphenol	mg/kg	0.295	0.259	88.5	13-147	12.9	27	L591689-01	WG609283
2,4-Dinitrophenol	mg/kg	0.210	0.225	63.0	10-110	7.01	40	L591689-01	WG609283
2,4-Dinitrotoluene	mg/kg	0.360	0.320	108.	12-146	11.8	25	L591689-01	WG609283
2,6-Dinitrotoluene	mg/kg	0.339	0.312	102.	10-150	8.25	23	L591689-01	WG609283
2-Chloronaphthalene	mg/kg	0.307	0.269	92.3	31-127	13.2	23	L591689-01	WG609283
2-Chlorophenol	mg/kg	0.268	0.246	80.4	26-120	8.41	21	L591689-01	WG609283
2-Nitrophenol	mg/kg	0.323	0.295	97.1	10-156	9.37	24	L591689-01	WG609283
3,3-Dichlorobenzidine	mg/kg	0.292	0.276	87.6	10-127	5.64	40	L591689-01	WG609283
4,6-Dinitro-2-methylphenol	mg/kg	0.291	0.318	87.4	10-124	8.69	40	L591689-01	WG609283
4-Bromophenyl-phenylether	mg/kg	0.302	0.283	90.6	27-150	6.44	20	L591689-01	WG609283
4-Chloro-3-methylphenol	mg/kg	0.335	0.293	100.	24-140	13.2	22	L591689-01	WG609283
4-Chlorophenyl-phenylether	mg/kg	0.317	0.286	95.1	27-142	10.2	21	L591689-01	WG609283
4-Nitrophenol	mg/kg	0.297	0.279	89.1	10-166	6.15	35	L591689-01	WG609283
Acenaphthene	mg/kg	0.323	0.294	97.1	30-132	9.50	21	L591689-01	WG609283
Acenaphthylene	mg/kg	0.332	0.294	99.8	31-144	12.3	24	L591689-01	WG609283
Anthracene	mg/kg	0.317	0.300	95.2	27-140	5.48	20	L591689-01	WG609283
Benzidine	mg/kg	0	0	0*	10-55	0	36	L591689-01	WG609283
Benzo(a)anthracene	mg/kg	0.322	0.293	96.6	22-139	9.54	22	L591689-01	WG609283
Benzo(a)pyrene	mg/kg	0.323	0.299	96.9	16-148	7.73	21	L591689-01	WG609283
Benzo(b)fluoranthene	mg/kg	0.321	0.287	96.3	13-152	11.1	24	L591689-01	WG609283
Benzo(g,h,i)perylene	mg/kg	0.324	0.306	97.2	10-137	5.74	32	L591689-01	WG609283
Benzo(k)fluoranthene	mg/kg	0.308	0.299	92.5	15-152	3.04	22	L591689-01	WG609283
Benzylbutyl phthalate	mg/kg	0.350	0.320	105.	20-168	8.99	23	L591689-01	WG609283
Bis(2-chlorethoxy)methane	mg/kg	0.294	0.261	88.2	32-141	11.8	20	L591689-01	WG609283
Bis(2-chloroethyl)ether	mg/kg	0.269	0.239	80.8	25-139	11.9	26	L591689-01	WG609283
Bis(2-chloroisopropyl)ether	mg/kg	0.257	0.228	77.1	32-128	11.8	22	L591689-01	WG609283
Bis(2-ethylhexyl)phthalate	mg/kg	0.363	0.331	109.	20-163	9.43	24	L591689-01	WG609283
Chrysene	mg/kg	0.332	0.305	99.6	20-139	8.36	23	L591689-01	WG609283
Di-n-butyl phthalate	mg/kg	0.338	0.322	101.	24-149	4.84	24	L591689-01	WG609283
Di-n-octyl phthalate	mg/kg	0.373	0.340	112.	14-164	9.11	24	L591689-01	WG609283
Dibenz(a,h)anthracene	mg/kg	0.334	0.307	100.	10-137	8.17	29	L591689-01	WG609283
Diethyl phthalate	mg/kg	0.347	0.316	104.	28-142	9.24	23	L591689-01	WG609283
Dimethyl phthalate	mg/kg	0.330	0.301	99.0	31-142	9.22	22	L591689-01	WG609283
Fluoranthene	mg/kg	0.316	0.305	94.8	24-145	3.63	29	L591689-01	WG609283
Fluorene	mg/kg	0.314	0.285	94.2	30-138	9.62	22	L591689-01	WG609283
Hexachloro-1,3-butadiene	mg/kg	0.292	0.254	87.6	29-136	13.6	22	L591689-01	WG609283
Hexachlorobenzene	mg/kg	0.286	0.260	85.8	26-136	9.26	20	L591689-01	WG609283
Hexachlorocyclopentadiene	mg/kg	0.304	0.291	91.4	10-124	4.39	33	L591689-01	WG609283
Hexachloroethane	mg/kg	0.283	0.233	85.0	21-107	19.3	27	L591689-01	WG609283
Indeno(1,2,3-cd)pyrene	mg/kg	0.333	0.310	100.	10-139	7.26	32	L591689-01	WG609283
Isophorone	mg/kg	0.245	0.220	73.7	26-134	11.1	20	L591689-01	WG609283
n-Nitrosodi-n-propylamine	mg/kg	0.300	0.261	90.2	24-141	13.9	20	L591689-01	WG609283
n-Nitrosodimethylamine	mg/kg	0.295	0.256	88.6	18-126	14.2	27	L591689-01	WG609283
n-Nitrosodiphenylamine	mg/kg	0.292	0.270	87.6	16-128	7.81	25	L591689-01	WG609283

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Quality Assurance Report
Level II

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August 31, 2012

		Matrix Spike		Duplicate					
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Naphthalene	mg/kg	0.288	0.247	86.4	31-124	15.4	25	L591689-01	WG609283
Nitrobenzene	mg/kg	0.290	0.260	87.1	22-122	10.8	20	L591689-01	WG609283
Pentachlorophenol	mg/kg	0.304	0.279	91.2	10-124	8.59	34	L591689-01	WG609283
Phenanthrene	mg/kg	0.308	0.284	92.4	25-139	7.90	25	L591689-01	WG609283
Phenol	mg/kg	0.271	0.251	81.5	22-129	7.74	25	L591689-01	WG609283
Pyrene	mg/kg	0.323	0.285	97.0	23-145	12.4	30	L591689-01	WG609283
2,4,6-Tribromophenol				107.6	16-136				WG609283
2-Fluorobiphenyl				101.0	37-119				WG609283
2-Fluorophenol				85.92	22-114				WG609283
Nitrobenzene-d5				93.20	20-114				WG609283
Phenol-d5				85.31	26-127				WG609283
p-Terphenyl-d14				99.61	15-174				WG609283
1,1,1,2-Tetrachloroethane	mg/kg	0.119	0.113	94.8	49-135	5.01	23	L591689-01	WG609434
1,1,1-Trichloroethane	mg/kg	0.128	0.126	102.	43-142	1.28	24	L591689-01	WG609434
1,1,2,2-Tetrachloroethane	mg/kg	0.108	0.104	86.7	42-147	3.91	25	L591689-01	WG609434
1,1,2-Trichloroethane	mg/kg	0.112	0.108	89.4	51-134	3.24	21	L591689-01	WG609434
1,1,2-Trichlorotrifluoroethane	mg/kg	0.156	0.151	124.	25-156	2.94	29	L591689-01	WG609434
1,1-Dichloroethane	mg/kg	0.122	0.122	97.7	50-131	0.450	21	L591689-01	WG609434
1,1-Dichloroethene	mg/kg	0.143	0.141	114.	29-145	1.43	28	L591689-01	WG609434
1,1-Dichloropropene	mg/kg	0.121	0.120	96.5	40-136	0.730	24	L591689-01	WG609434
1,2,3-Trichlorobenzene	mg/kg	0.110	0.110	88.3	13-142	0.200	33	L591689-01	WG609434
1,2,3-Trichloropropane	mg/kg	0.106	0.103	85.1	41-149	3.44	28	L591689-01	WG609434
1,2,3-Trimethylbenzene	mg/kg	0.0940	0.0929	75.2	33-146	1.15	27	L591689-01	WG609434
1,2,4-Trichlorobenzene	mg/kg	0.111	0.110	88.5	12-140	0.740	32	L591689-01	WG609434
1,2,4-Trimethylbenzene	mg/kg	0.103	0.0987	82.2	29-143	4.03	30	L591689-01	WG609434
1,2-Dibromo-3-Chloropropane	mg/kg	0.116	0.107	92.4	29-151	7.46	31	L591689-01	WG609434
1,2-Dibromoethane	mg/kg	0.118	0.114	94.7	48-133	3.73	22	L591689-01	WG609434
1,2-Dichlorobenzene	mg/kg	0.109	0.107	87.3	37-136	1.63	25	L591689-01	WG609434
1,2-Dichloroethane	mg/kg	0.121	0.121	96.5	49-131	0.240	20	L591689-01	WG609434
1,2-Dichloropropane	mg/kg	0.134	0.132	107.	50-132	1.15	21	L591689-01	WG609434
1,3,5-Trimethylbenzene	mg/kg	0.103	0.101	82.1	29-144	1.45	30	L591689-01	WG609434
1,3-Dichlorobenzene	mg/kg	0.115	0.110	91.8	26-140	4.63	28	L591689-01	WG609434
1,3-Dichloropropane	mg/kg	0.112	0.108	89.4	50-126	3.52	22	L591689-01	WG609434
1,4-Dichlorobenzene	mg/kg	0.107	0.106	85.9	34-132	1.68	26	L591689-01	WG609434
2,2-Dichloropropane	mg/kg	0.129	0.125	103.	35-148	3.32	26	L591689-01	WG609434
2-Butanone (MEK)	mg/kg	0.651	0.657	104.	40-149	0.940	27	L591689-01	WG609434
2-Chloroethyl vinyl ether	mg/kg	0.609	0.582	97.4	10-173	4.48	33	L591689-01	WG609434
2-Chlorotoluene	mg/kg	0.104	0.100	83.0	34-136	3.48	28	L591689-01	WG609434
4-Chlorotoluene	mg/kg	0.103	0.0986	82.6	31-137	4.64	27	L591689-01	WG609434
4-Methyl-2-pentanone (MIBK)	mg/kg	0.626	0.606	100.	37-153	3.27	27	L591689-01	WG609434
Acetone	mg/kg	0.825	0.861	132.	10-177	4.34	28	L591689-01	WG609434
Acrylonitrile	mg/kg	0.593	0.602	94.9	33-159	1.53	26	L591689-01	WG609434
Benzene	mg/kg	0.115	0.113	91.6	44-131	1.68	21	L591689-01	WG609434
Bromobenzene	mg/kg	0.106	0.103	84.8	36-132	2.98	26	L591689-01	WG609434
Bromodichloromethane	mg/kg	0.124	0.120	99.2	48-134	3.43	20	L591689-01	WG609434
Bromoform	mg/kg	0.121	0.117	96.5	34-141	2.99	24	L591689-01	WG609434
Bromomethane	mg/kg	0.182	0.181	145.	19-173	0.380	25	L591689-01	WG609434
Carbon tetrachloride	mg/kg	0.128	0.127	103.	36-140	0.930	26	L591689-01	WG609434
Chlorobenzene	mg/kg	0.114	0.109	91.0	42-133	4.55	24	L591689-01	WG609434
Chlorodibromomethane	mg/kg	0.117	0.110	93.4	45-135	5.67	23	L591689-01	WG609434
Chloroethane	mg/kg	0.151	0.152	121.	16-178	0.510	25	L591689-01	WG609434
Chloroform	mg/kg	0.122	0.121	97.3	52-130	0.270	21	L591689-01	WG609434
Chloromethane	mg/kg	0.106	0.104	85.1	28-147	2.42	23	L591689-01	WG609434
cis-1,2-Dichloroethene	mg/kg	0.128	0.126	102.	52-128	1.42	21	L591689-01	WG609434
cis-1,3-Dichloropropene	mg/kg	0.125	0.121	99.8	46-131	2.74	21	L591689-01	WG609434
Di-isopropyl ether	mg/kg	0.113	0.113	90.2	46-134	0.690	20	L591689-01	WG609434
Dibromomethane	mg/kg	0.141	0.137	113.	51-133	3.27	21	L591689-01	WG609434

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August 31, 2012

Analyte	Units	Matrix Spike MSD	Matrix Spike Ref	Matrix Spike %Rec	Limit	RPD	Limit	Ref Samp	Batch
Dichlorodifluoromethane	mg/kg	0.108	0.108	86.8	12-179	0.200	27	L591689-01	WG609434
Ethylbenzene	mg/kg	0.114	0.111	91.6	38-139	3.20	27	L591689-01	WG609434
Hexachloro-1,3-butadiene	mg/kg	0.114	0.110	90.8	10-147	3.41	37	L591689-01	WG609434
Isopropylbenzene	mg/kg	0.106	0.104	84.4	34-137	1.62	29	L591689-01	WG609434
Methyl tert-butyl ether	mg/kg	0.122	0.122	97.6	45-134	0.320	22	L591689-01	WG609434
Methylene Chloride	mg/kg	0.124	0.124	99.2	41-133	0.150	28	L591689-01	WG609434
n-Butylbenzene	mg/kg	0.0919	0.0925	73.5	19-149	0.670	32	L591689-01	WG609434
n-Propylbenzene	mg/kg	0.0987	0.0960	78.9	27-142	2.78	29	L591689-01	WG609434
Naphthalene	mg/kg	0.0964	0.0930	77.1	19-146	3.62	30	L591689-01	WG609434
p-Isopropyltoluene	mg/kg	0.104	0.101	82.8	21-150	2.80	31	L591689-01	WG609434
sec-Butylbenzene	mg/kg	0.0991	0.0978	79.3	25-148	1.34	31	L591689-01	WG609434
Styrene	mg/kg	0.107	0.103	85.8	30-156	4.41	26	L591689-01	WG609434
tert-Butylbenzene	mg/kg	0.110	0.107	88.1	32-146	2.94	30	L591689-01	WG609434
Tetrachloroethene	mg/kg	0.123	0.117	98.5	35-139	5.03	27	L591689-01	WG609434
Toluene	mg/kg	0.120	0.117	96.1	43-127	3.07	21	L591689-01	WG609434
trans-1,2-Dichloroethene	mg/kg	0.125	0.125	100.	41-132	0.360	23	L591689-01	WG609434
trans-1,3-Dichloropropene	mg/kg	0.137	0.132	109.	43-129	3.70	23	L591689-01	WG609434
Trichloroethene	mg/kg	0.137	0.134	110.	42-136	2.18	23	L591689-01	WG609434
Trichlorofluoromethane	mg/kg	0.146	0.143	117.	20-178	2.10	30	L591689-01	WG609434
Vinyl chloride	mg/kg	0.123	0.122	98.7	30-157	1.32	24	L591689-01	WG609434
Xylenes, Total	mg/kg	0.328	0.315	87.6	38-137	3.99	26	L591689-01	WG609434
4-Bromofluorobenzene				95.73	67-133				WG609434
Dibromofluoromethane				101.1	72-135				WG609434
Toluene-d8				99.96	90-113				WG609434
Barium	mg/kg	155.	143.	70.0*	75-125	8.05	20	L591691-01	WG609476
Cadmium	mg/kg	41.6	42.5	16.6*	75-125	2.14	20	L591691-01	WG609476
Chromium	mg/kg	49.3	49.6	85.4	75-125	0.607	20	L591691-01	WG609476
Lead	mg/kg	50.8	51.8	86.4	75-125	1.95	20	L591691-01	WG609476
Selenium	mg/kg	38.2	39.6	76.4	75-125	3.60	20	L591691-01	WG609476
Silver	mg/kg	41.0	41.7	82.0	75-125	1.69	20	L591691-01	WG609476
Arsenic	mg/kg	47.6	47.5	90.0	75-125	0.210	20	L591741-03	WG609476
Barium	mg/kg	130.	141.	76.0	75-125	8.12	20	L591741-03	WG609476
Chromium	mg/kg	65.4	68.8	92.8	75-125	5.07	20	L591741-03	WG609476
Lead	mg/kg	57.7	57.2	93.4	75-125	0.870	20	L591741-03	WG609476
Selenium	mg/kg	46.2	45.5	92.4	75-125	1.53	20	L591741-03	WG609476
Silver	mg/kg	46.2	46.8	92.4	75-125	1.29	20	L591741-03	WG609476
Cadmium	mg/kg	51.7	54.2	103.	75-125	4.72	20	L591892-01	WG609476
Chromium	mg/kg	247.	570.	0*	75-125	79.1*	20	L591892-01	WG609476
Lead	mg/kg	93.2	83.0	112.	75-125	11.6	20	L591892-01	WG609476
Selenium	mg/kg	44.3	38.0	88.6	75-125	15.3	20	L591892-01	WG609476
Silver	mg/kg	53.0	56.4	102.	75-125	6.22	20	L591892-01	WG609476
Iron	mg/kg	14200	14100	400.*	75-125	0.707	20	L591691-01	WG609476
Arsenic	mg/kg	45.2	46.0	90.4	75-125	1.75	20	L591691-01	WG609476
Cadmium	mg/kg	49.4	49.2	98.8	75-125	0.406	20	L591741-03	WG609476
Arsenic	mg/kg	-0.00220	-29.2	0*	75-125	-200.*	20	L591892-01	WG609476
PCB 1016	mg/kg	0.167	0.139	100.	10-165	18.2	33	L591691-01	WG609492
PCB 1260	mg/kg	0.152	0.141	91.2	29-154	7.98	23	L591691-01	WG609492
Decachlorobiphenyl				69.47	18.9-115.8				WG609492
Tetrachloro-m-xylene				81.34	31.8-115.7				WG609492
2,4,5-T	mg/kg	0.118	0.0980	70.4	18-111	18.1	29	L591691-01	WG609800
2,4,5-TP (Silvex)	mg/kg	0.142	0.138	84.8	27-123	2.48	23	L591691-01	WG609800
2,4-D	mg/kg	0.117	0.0868	69.8	10-137	29.3	40	L591691-01	WG609800
2,4-DB	mg/kg	0.161	0.151	96.3	15-121	6.52	33	L591691-01	WG609800

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L591691

August 31, 2012

Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Dalapon	mg/kg	0.0156	0.0145	9.37*	10-111	7.76	37	L591691-01	WG609800
Dicamba	mg/kg	0.0907	0.0815	54.3	21-118	10.6	24	L591691-01	WG609800
Dichloroprop	mg/kg	0.152	0.147	91.1	27-125	3.38	24	L591691-01	WG609800
Dinoseb	mg/kg	0.106	0.113	63.4	10-95	6.35	40	L591691-01	WG609800
MCPA	mg/kg	11.3	10.7	67.8	10-164	5.77	40	L591691-01	WG609800
MCPP	mg/kg	18.8	23.0	113.	17-186	19.9	40	L591691-01	WG609800
2,4-Dichlorophenyl Acetic Acid				72.96	37-99				WG609800
4,4-DDD	mg/kg	0.0649	0.0613	97.3	45-139	5.76	21	L591689-01	WG609492
4,4-DDE	mg/kg	0.0627	0.0594	94.0	47-134	5.47	21	L591689-01	WG609492
4,4-DDT	mg/kg	0.0664	0.0626	99.5	11-148	5.80	21	L591689-01	WG609492
Aldrin	mg/kg	0.0606	0.0566	90.8	52-117	6.79	21	L591689-01	WG609492
Alpha BHC	mg/kg	0.0594	0.0525	89.1	51-120	12.3	20	L591689-01	WG609492
Beta BHC	mg/kg	0.0621	0.0570	93.1	48-124	8.52	21	L591689-01	WG609492
Delta BHC	mg/kg	0.0646	0.0599	96.8	38-128	7.55	21	L591689-01	WG609492
Dieldrin	mg/kg	0.0635	0.0598	95.2	48-135	6.12	20	L591689-01	WG609492
Endosulfan I	mg/kg	0.0630	0.0596	94.4	51-129	5.61	20	L591689-01	WG609492
Endosulfan II	mg/kg	0.0645	0.0602	96.7	42-142	6.89	21	L591689-01	WG609492
Endosulfan sulfate	mg/kg	0.0690	0.0653	103.	38-140	5.45	22	L591689-01	WG609492
Endrin	mg/kg	0.0630	0.0604	94.5	44-133	4.17	20	L591689-01	WG609492
Endrin aldehyde	mg/kg	0.0625	0.0584	93.7	16-116	6.73	23	L591689-01	WG609492
Endrin ketone	mg/kg	0.0679	0.0639	102.	33-131	5.97	21	L591689-01	WG609492
Gamma BHC	mg/kg	0.0605	0.0546	90.6	52-119	10.1	20	L591689-01	WG609492
Heptachlor	mg/kg	0.0630	0.0580	94.4	47-121	8.17	20	L591689-01	WG609492
Heptachlor epoxide	mg/kg	0.0621	0.0586	93.1	54-120	5.75	20	L591689-01	WG609492
Hexachlorobenzene	mg/kg	0.0550	0.0498	82.4	58-115	9.91	20	L591689-01	WG609492
Methoxychlor	mg/kg	0.0675	0.0644	101.	9-153	4.74	22	L591689-01	WG609492
Decachlorobiphenyl				96.26	18.9-115.8				WG609492
Tetrachloro-m-xylene				92.08	31.8-115.7				WG609492

Batch number /Run number / Sample number cross reference

WG609362: R2316653: L591691-01
WG609283: R2316834: L591691-01
WG609434: R2317935: L591691-01
WG609476: R2318675: L591691-01
WG609492: R2319153: L591691-01
WG609800: R2322817: L591691-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L591691

August 31, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

Report Summary

Sunday September 09, 2012

Report Number: L592342
Samples Received: 08/29/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences.
Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-01

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-2 5 FT

Collected By : I P C
Collection Date : 08/27/12 15:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	0.023	0.020	mg/kg	7471	08/30/12	1
Arsenic	1.9	1.0	mg/kg	6010B	09/01/12	1
Barium	200	0.25	mg/kg	6010B	09/01/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/01/12	1
Chromium	8.5	0.50	mg/kg	6010B	09/01/12	1
Iron	11000	5.0	mg/kg	6010B	09/01/12	1
Lead	160	0.25	mg/kg	6010B	09/01/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/01/12	1
Silver	BDL	0.50	mg/kg	6010B	09/01/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	08/30/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	08/30/12	5
Benzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	08/30/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	08/30/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	08/30/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	08/30/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	08/30/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	08/30/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	08/30/12	5
Chloroform	BDL	0.025	mg/kg	8260B	08/30/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	08/30/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	08/30/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	08/30/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	08/30/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	08/30/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/30/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/30/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/30/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-01

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-2 5 FT

Collected By : I P C
Collection Date : 08/27/12 15:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/30/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/30/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/30/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/30/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	08/30/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	08/30/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	08/30/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	08/30/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	08/30/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	08/30/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	08/30/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	08/30/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
Styrene	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	08/30/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	08/30/12	5
Toluene	BDL	0.025	mg/kg	8260B	08/30/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	08/30/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	08/30/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	08/30/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	08/30/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/30/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	08/30/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	08/30/12	5
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	08/30/12	5
Dibromofluoromethane	101.		% Rec.	8260B	08/30/12	5
4-Bromofluorobenzene	101.		% Rec.	8260B	08/30/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-01

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-2 5 FT

Collected By : I P C
Collection Date : 08/27/12 15:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/04/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/04/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/04/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/04/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	08/31/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	63.3		% Rec.	8081/8082	08/31/12	1
Tetrachloro-m-xylene	81.5		% Rec.	8081/8082	08/31/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	08/31/12	1
Dalapon	BDL	0.80	mg/kg	8151	08/31/12	1
2,4-DB	BDL	0.070	mg/kg	8151	08/31/12	1
Dicamba	BDL	0.070	mg/kg	8151	08/31/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	08/31/12	1
Dinoseb	BDL	0.070	mg/kg	8151	08/31/12	1
MCPA	BDL	6.5	mg/kg	8151	08/31/12	1
MCPP	BDL	6.5	mg/kg	8151	08/31/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	08/31/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	08/31/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	71.6		% Rec.	8151	08/31/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/07/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-01

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-2 5 FT

Collected By : I P C
Collection Date : 08/27/12 15:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/07/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/07/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/07/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/07/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/07/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/07/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/07/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/07/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/07/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/07/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/07/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/07/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/07/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/07/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/07/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/07/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/07/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/07/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/07/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/07/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/07/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/07/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/07/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/07/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/07/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/07/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/07/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/07/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/07/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/07/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Mt. Juliet, TN 37122
(615) 758-5858
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-01

Date Received : August 29, 2012
Description : I-70 East PCL Project

Site ID : I-70 PCL

Sample ID : YA-MW-2 5 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/27/12 15:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/07/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
Surrogate Recovery						
2-Fluorophenol	44.6		% Rec.	8270C	09/07/12	1
Phenol-d5	59.9		% Rec.	8270C	09/07/12	1
Nitrobenzene-d5	50.4		% Rec.	8270C	09/07/12	1
2-Fluorobiphenyl	65.3		% Rec.	8270C	09/07/12	1
2,4,6-Tribromophenol	71.2		% Rec.	8270C	09/07/12	1
p-Terphenyl-d14	57.3		% Rec.	8270C	09/07/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 09/09/12 09:17 Printed: 09/09/12 09:18

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-02

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-2 20 FT

Collected By : I P C
Collection Date : 08/27/12 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	08/30/12	1
Arsenic	BDL	1.0	mg/kg	6010B	09/01/12	1
Barium	10.	0.25	mg/kg	6010B	09/01/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/01/12	1
Chromium	1.2	0.50	mg/kg	6010B	09/01/12	1
Iron	2200	5.0	mg/kg	6010B	09/01/12	1
Lead	2.0	0.25	mg/kg	6010B	09/01/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/01/12	1
Silver	BDL	0.50	mg/kg	6010B	09/01/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	08/29/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	08/29/12	5
Benzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	08/29/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	08/29/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	08/29/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	08/29/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	08/29/12	5
Chloroform	BDL	0.025	mg/kg	8260B	08/29/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	08/29/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	08/29/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	08/29/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	08/29/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/29/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-02

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-2 20 FT

Collected By : I P C
Collection Date : 08/27/12 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/29/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/29/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/29/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	08/29/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	08/29/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	08/29/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	08/29/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	08/29/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	08/29/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	08/29/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Styrene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Toluene	BDL	0.025	mg/kg	8260B	08/29/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	08/29/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	08/29/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	08/29/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	08/29/12	5
Surrogate Recovery						
Toluene-d8	98.3		% Rec.	8260B	08/29/12	5
Dibromofluoromethane	98.6		% Rec.	8260B	08/29/12	5
4-Bromofluorobenzene	105.		% Rec.	8260B	08/29/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-02

Date Received : August 29, 2012
Description : I-70 East PCL Project

Site ID : I-70 PCL

Sample ID : YA-MW-2 20 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/27/12 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/04/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/04/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/04/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/04/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	08/31/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	50.3		% Rec.	8081/8082	08/31/12	1
Tetrachloro-m-xylene	85.8		% Rec.	8081/8082	08/31/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	08/31/12	1
Dalapon	BDL	0.80	mg/kg	8151	08/31/12	1
2,4-DB	BDL	0.070	mg/kg	8151	08/31/12	1
Dicamba	BDL	0.070	mg/kg	8151	08/31/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	08/31/12	1
Dinoseb	BDL	0.070	mg/kg	8151	08/31/12	1
MCPA	BDL	6.5	mg/kg	8151	08/31/12	1
MCPP	BDL	6.5	mg/kg	8151	08/31/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	08/31/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	08/31/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	72.6		% Rec.	8151	08/31/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/07/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-02

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-2 20 FT

Collected By : I P C
Collection Date : 08/27/12 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/07/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/07/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/07/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/07/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/07/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/07/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/07/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/07/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/07/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/07/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/07/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/07/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/07/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/07/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/07/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/07/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/07/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/07/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/07/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/07/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/07/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/07/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/07/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/07/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/07/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/07/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/07/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/07/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/07/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/07/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-02

Date Received : August 29, 2012
Description : I-70 East PCL Project

Site ID : I-70 PCL

Sample ID : YA-MW-2 20 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/27/12 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/07/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
Surrogate Recovery						
2-Fluorophenol	55.7		% Rec.	8270C	09/07/12	1
Phenol-d5	72.3		% Rec.	8270C	09/07/12	1
Nitrobenzene-d5	63.2		% Rec.	8270C	09/07/12	1
2-Fluorobiphenyl	70.6		% Rec.	8270C	09/07/12	1
2,4,6-Tribromophenol	78.7		% Rec.	8270C	09/07/12	1
p-Terphenyl-d14	58.1		% Rec.	8270C	09/07/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 09/09/12 09:17 Printed: 09/09/12 09:18

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-03

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-7 5 FT

Collected By : I P C
Collection Date : 08/27/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	08/30/12	1
Arsenic	BDL	1.0	mg/kg	6010B	09/01/12	1
Barium	57.	0.25	mg/kg	6010B	09/01/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/01/12	1
Chromium	7.9	0.50	mg/kg	6010B	09/01/12	1
Iron	8500	5.0	mg/kg	6010B	09/01/12	1
Lead	16.	0.25	mg/kg	6010B	09/01/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/01/12	1
Silver	BDL	0.50	mg/kg	6010B	09/01/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	08/29/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	08/29/12	5
Benzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	08/29/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	08/29/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	08/29/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	08/29/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	08/29/12	5
Chloroform	BDL	0.025	mg/kg	8260B	08/29/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	08/29/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	08/29/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	08/29/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	08/29/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/29/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L592342-03 (SV8270BNA) - Dilution due to matrix

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-03

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-7 5 FT

Collected By : I P C
Collection Date : 08/27/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/29/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/29/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/29/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	08/29/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	08/29/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	08/29/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	08/29/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	08/29/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	08/29/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	08/29/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Styrene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Toluene	BDL	0.025	mg/kg	8260B	08/29/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	08/29/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	08/29/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	08/29/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	08/29/12	5
Surrogate Recovery						
Toluene-d8	97.9		% Rec.	8260B	08/29/12	5
Dibromofluoromethane	98.5		% Rec.	8260B	08/29/12	5
4-Bromofluorobenzene	106.		% Rec.	8260B	08/29/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L592342-03 (SV8270BNA) - Dilution due to matrix

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-03

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-7 5 FT

Collected By : I P C
Collection Date : 08/27/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/04/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/04/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/04/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/04/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	08/31/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	65.1		% Rec.	8081/8082	08/31/12	1
Tetrachloro-m-xylene	77.5		% Rec.	8081/8082	08/31/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	08/31/12	1
Dalapon	BDL	0.80	mg/kg	8151	08/31/12	1
2,4-DB	BDL	0.070	mg/kg	8151	08/31/12	1
Dicamba	BDL	0.070	mg/kg	8151	08/31/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	08/31/12	1
Dinoseb	BDL	0.070	mg/kg	8151	08/31/12	1
MCPA	BDL	6.5	mg/kg	8151	08/31/12	1
MCPP	BDL	6.5	mg/kg	8151	08/31/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	08/31/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	08/31/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	73.8		% Rec.	8151	08/31/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.16	mg/kg	8270C	09/07/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L592342-03 (SV8270BNA) - Dilution due to matrix

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-03

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-7 5 FT

Collected By : I P C
Collection Date : 08/27/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.16	mg/kg	8270C	09/07/12	5
Anthracene	BDL	0.16	mg/kg	8270C	09/07/12	5
Benzidine	BDL	1.7	mg/kg	8270C	09/07/12	5
Benzo(a)anthracene	BDL	0.16	mg/kg	8270C	09/07/12	5
Benzo(b)fluoranthene	BDL	0.16	mg/kg	8270C	09/07/12	5
Benzo(k)fluoranthene	BDL	0.16	mg/kg	8270C	09/07/12	5
Benzo(g,h,i)perylene	BDL	0.16	mg/kg	8270C	09/07/12	5
Benzo(a)pyrene	BDL	0.16	mg/kg	8270C	09/07/12	5
Bis(2-chlorethoxy)methane	BDL	1.7	mg/kg	8270C	09/07/12	5
Bis(2-chloroethyl)ether	BDL	1.7	mg/kg	8270C	09/07/12	5
Bis(2-chloroisopropyl)ether	BDL	1.7	mg/kg	8270C	09/07/12	5
4-Bromophenyl-phenylether	BDL	1.7	mg/kg	8270C	09/07/12	5
2-Chloronaphthalene	BDL	0.16	mg/kg	8270C	09/07/12	5
4-Chlorophenyl-phenylether	BDL	1.7	mg/kg	8270C	09/07/12	5
Chrysene	BDL	0.16	mg/kg	8270C	09/07/12	5
Dibenz(a,h)anthracene	BDL	0.16	mg/kg	8270C	09/07/12	5
3,3-Dichlorobenzidine	BDL	1.7	mg/kg	8270C	09/07/12	5
2,4-Dinitrotoluene	BDL	1.7	mg/kg	8270C	09/07/12	5
2,6-Dinitrotoluene	BDL	1.7	mg/kg	8270C	09/07/12	5
Fluoranthene	BDL	0.16	mg/kg	8270C	09/07/12	5
Fluorene	BDL	0.16	mg/kg	8270C	09/07/12	5
Hexachlorobenzene	BDL	1.7	mg/kg	8270C	09/07/12	5
Hexachloro-1,3-butadiene	BDL	1.7	mg/kg	8270C	09/07/12	5
Hexachlorocyclopentadiene	BDL	1.7	mg/kg	8270C	09/07/12	5
Hexachloroethane	BDL	1.7	mg/kg	8270C	09/07/12	5
Indeno(1,2,3-cd)pyrene	BDL	0.16	mg/kg	8270C	09/07/12	5
Isophorone	BDL	1.7	mg/kg	8270C	09/07/12	5
Naphthalene	BDL	0.16	mg/kg	8270C	09/07/12	5
Nitrobenzene	BDL	1.7	mg/kg	8270C	09/07/12	5
n-Nitrosodimethylamine	BDL	1.7	mg/kg	8270C	09/07/12	5
n-Nitrosodiphenylamine	BDL	1.7	mg/kg	8270C	09/07/12	5
n-Nitrosodi-n-propylamine	BDL	1.7	mg/kg	8270C	09/07/12	5
Phenanthrene	BDL	0.16	mg/kg	8270C	09/07/12	5
Benzylbutyl phthalate	BDL	1.7	mg/kg	8270C	09/07/12	5
Bis(2-ethylhexyl)phthalate	BDL	1.7	mg/kg	8270C	09/07/12	5
Di-n-butyl phthalate	BDL	1.7	mg/kg	8270C	09/07/12	5
Diethyl phthalate	BDL	1.7	mg/kg	8270C	09/07/12	5
Dimethyl phthalate	BDL	1.7	mg/kg	8270C	09/07/12	5
Di-n-octyl phthalate	BDL	1.7	mg/kg	8270C	09/07/12	5
Pyrene	BDL	0.16	mg/kg	8270C	09/07/12	5
1,2,4-Trichlorobenzene	BDL	1.7	mg/kg	8270C	09/07/12	5
Acid Extractables						
4-Chloro-3-methylphenol	BDL	1.7	mg/kg	8270C	09/07/12	5
2-Chlorophenol	BDL	1.7	mg/kg	8270C	09/07/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L592342-03 (SV8270BNA) - Dilution due to matrix

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-03

Date Received : August 29, 2012
Description : I-70 East PCL Project

Site ID : I-70 PCL

Sample ID : YA-MW-7 5 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/27/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	1.7	mg/kg	8270C	09/07/12	5
2,4-Dimethylphenol	BDL	1.7	mg/kg	8270C	09/07/12	5
4,6-Dinitro-2-methylphenol	BDL	1.7	mg/kg	8270C	09/07/12	5
2,4-Dinitrophenol	BDL	1.7	mg/kg	8270C	09/07/12	5
2-Nitrophenol	BDL	1.7	mg/kg	8270C	09/07/12	5
4-Nitrophenol	BDL	1.7	mg/kg	8270C	09/07/12	5
Pentachlorophenol	BDL	1.7	mg/kg	8270C	09/07/12	5
Phenol	BDL	1.7	mg/kg	8270C	09/07/12	5
2,4,6-Trichlorophenol	BDL	1.7	mg/kg	8270C	09/07/12	5
Surrogate Recovery						
2-Fluorophenol	57.5		% Rec.	8270C	09/07/12	5
Phenol-d5	51.0		% Rec.	8270C	09/07/12	5
Nitrobenzene-d5	55.3		% Rec.	8270C	09/07/12	5
2-Fluorobiphenyl	60.7		% Rec.	8270C	09/07/12	5
2,4,6-Tribromophenol	53.1		% Rec.	8270C	09/07/12	5
p-Terphenyl-d14	51.8		% Rec.	8270C	09/07/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 09/09/12 09:17 Printed: 09/09/12 09:18
L592342-03 (SV8270BNA) - Dilution due to matrix

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-04

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-7 15 FT

Collected By : I P C
Collection Date : 08/27/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	08/30/12	1
Arsenic	4.6	1.0	mg/kg	6010B	08/31/12	1
Barium	96.	0.25	mg/kg	6010B	08/31/12	1
Cadmium	BDL	0.25	mg/kg	6010B	08/31/12	1
Chromium	14.	0.50	mg/kg	6010B	08/31/12	1
Iron	12000	5.0	mg/kg	6010B	08/31/12	1
Lead	16.	0.25	mg/kg	6010B	08/31/12	1
Selenium	BDL	1.0	mg/kg	6010B	08/31/12	1
Silver	BDL	0.50	mg/kg	6010B	08/31/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	08/29/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	08/29/12	5
Benzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	08/29/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	08/29/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	08/29/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	08/29/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	08/29/12	5
Chloroform	BDL	0.025	mg/kg	8260B	08/29/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	08/29/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	08/29/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	08/29/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	08/29/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/29/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-04

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-7 15 FT

Collected By : I P C
Collection Date : 08/27/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/29/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/29/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	08/29/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	08/29/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	08/29/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	08/29/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	08/29/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	08/29/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	08/29/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	08/29/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Styrene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Toluene	BDL	0.025	mg/kg	8260B	08/29/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	08/29/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	08/29/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	08/29/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	08/29/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	08/29/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	08/29/12	5
Surrogate Recovery						
Toluene-d8	98.3		% Rec.	8260B	08/29/12	5
Dibromofluoromethane	98.0		% Rec.	8260B	08/29/12	5
4-Bromofluorobenzene	105.		% Rec.	8260B	08/29/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-04

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-7 15 FT

Collected By : I P C
Collection Date : 08/27/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/04/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/04/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/04/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/04/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/04/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	08/31/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	08/31/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	61.9		% Rec.	8081/8082	08/31/12	1
Tetrachloro-m-xylene	71.3		% Rec.	8081/8082	08/31/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	08/31/12	1
Dalapon	BDL	0.80	mg/kg	8151	08/31/12	1
2,4-DB	BDL	0.070	mg/kg	8151	08/31/12	1
Dicamba	BDL	0.070	mg/kg	8151	08/31/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	08/31/12	1
Dinoseb	BDL	0.070	mg/kg	8151	08/31/12	1
MCPA	BDL	6.5	mg/kg	8151	08/31/12	1
MCPP	BDL	6.5	mg/kg	8151	08/31/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	08/31/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	08/31/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	71.1		% Rec.	8151	08/31/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/07/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-04

Site ID : I-70 PCL

Project # : 212-137

Date Received : August 29, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW-7 15 FT

Collected By : I P C
Collection Date : 08/27/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/07/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/07/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/07/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/07/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/07/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/07/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/07/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/07/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/07/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/07/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/07/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/07/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/07/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/07/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/07/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/07/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/07/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/07/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/07/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/07/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/07/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/07/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/07/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/07/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/07/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/07/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/07/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/07/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/07/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/07/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/07/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/07/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 09, 2012

ESC Sample # : L592342-04

Date Received : August 29, 2012
Description : I-70 East PCL Project

Site ID : I-70 PCL

Sample ID : YA-MW-7 15 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/27/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/07/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/07/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/07/12	1
Surrogate Recovery						
2-Fluorophenol	40.5		% Rec.	8270C	09/07/12	1
Phenol-d5	53.5		% Rec.	8270C	09/07/12	1
Nitrobenzene-d5	49.9		% Rec.	8270C	09/07/12	1
2-Fluorobiphenyl	62.2		% Rec.	8270C	09/07/12	1
2,4,6-Tribromophenol	66.6		% Rec.	8270C	09/07/12	1
p-Terphenyl-d14	54.6		% Rec.	8270C	09/07/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 09/09/12 09:17 Printed: 09/09/12 09:18

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L592342-01	WG610105	SAMP	Benzidine	R2333854	J4
	WG610113	SAMP	Endosulfan sulfate	R2327393	L1
	WG610113	SAMP	Endrin ketone	R2327393	L1
	WG609291	SAMP	2-Chloroethyl vinyl ether	R2324473	J4
	WG609291	SAMP	Dichlorodifluoromethane	R2324473	J3
L592342-02	WG610105	SAMP	Benzidine	R2333854	J4
	WG610113	SAMP	Endosulfan sulfate	R2327393	L1
	WG610113	SAMP	Endrin ketone	R2327393	L1
	WG609291	SAMP	2-Chloroethyl vinyl ether	R2322993	J4
	WG609291	SAMP	Dichlorodifluoromethane	R2322993	J3
L592342-03	WG610105	SAMP	Acenaphthene	R2333854	O
	WG610105	SAMP	Acenaphthylene	R2333854	O
	WG610105	SAMP	Anthracene	R2333854	O
	WG610105	SAMP	Benzidine	R2333854	J4O
	WG610105	SAMP	Benzo(a)anthracene	R2333854	O
	WG610105	SAMP	Benzo(b)fluoranthene	R2333854	O
	WG610105	SAMP	Benzo(k)fluoranthene	R2333854	O
	WG610105	SAMP	Benzo(g,h,i)perylene	R2333854	O
	WG610105	SAMP	Benzo(a)pyrene	R2333854	O
	WG610105	SAMP	Bis(2-chlorethoxy)methane	R2333854	O
	WG610105	SAMP	Bis(2-chloroethyl)ether	R2333854	O
	WG610105	SAMP	Bis(2-chloroisopropyl)ether	R2333854	O
	WG610105	SAMP	4-Bromophenyl-phenylether	R2333854	O
	WG610105	SAMP	2-Chloronaphthalene	R2333854	O
	WG610105	SAMP	4-Chlorophenyl-phenylether	R2333854	O
	WG610105	SAMP	Chrysene	R2333854	O
	WG610105	SAMP	Dibenz(a,h)anthracene	R2333854	O
	WG610105	SAMP	3,3-Dichlorobenzidine	R2333854	O
	WG610105	SAMP	2,4-Dinitrotoluene	R2333854	O
	WG610105	SAMP	2,6-Dinitrotoluene	R2333854	O
	WG610105	SAMP	Fluoranthene	R2333854	O
	WG610105	SAMP	Fluorene	R2333854	O
	WG610105	SAMP	Hexachlorobenzene	R2333854	O
	WG610105	SAMP	Hexachloro-1,3-butadiene	R2333854	O
	WG610105	SAMP	Hexachlorocyclopentadiene	R2333854	O
	WG610105	SAMP	Hexachloroethane	R2333854	O
	WG610105	SAMP	Indeno(1,2,3-cd)pyrene	R2333854	O
	WG610105	SAMP	Isophorone	R2333854	O
	WG610105	SAMP	Naphthalene	R2333854	O
	WG610105	SAMP	Nitrobenzene	R2333854	O
	WG610105	SAMP	n-Nitrosodimethylamine	R2333854	O
	WG610105	SAMP	n-Nitrosodiphenylamine	R2333854	O
	WG610105	SAMP	n-Nitrosodi-n-propylamine	R2333854	O
	WG610105	SAMP	Phenanthrene	R2333854	O
	WG610105	SAMP	Benzylbutyl phthalate	R2333854	O
	WG610105	SAMP	Bis(2-ethylhexyl)phthalate	R2333854	O
	WG610105	SAMP	Di-n-butyl phthalate	R2333854	O
	WG610105	SAMP	Diethyl phthalate	R2333854	O
	WG610105	SAMP	Dimethyl phthalate	R2333854	O
	WG610105	SAMP	Di-n-octyl phthalate	R2333854	O
	WG610105	SAMP	Pyrene	R2333854	O
	WG610105	SAMP	1,2,4-Trichlorobenzene	R2333854	O
	WG610105	SAMP	4-Chloro-3-methylphenol	R2333854	O
	WG610105	SAMP	2-Chlorophenol	R2333854	O
	WG610105	SAMP	2,4-Dichlorophenol	R2333854	O
	WG610105	SAMP	2,4-Dimethylphenol	R2333854	O
	WG610105	SAMP	4,6-Dinitro-2-methylphenol	R2333854	O
	WG610105	SAMP	2,4-Dinitrophenol	R2333854	O
	WG610105	SAMP	2-Nitrophenol	R2333854	O
	WG610105	SAMP	4-Nitrophenol	R2333854	O
	WG610105	SAMP	Pentachlorophenol	R2333854	O
	WG610105	SAMP	Phenol	R2333854	O
	WG610105	SAMP	2,4,6-Trichlorophenol	R2333854	O
	WG610113	SAMP	Endosulfan sulfate	R2327393	L1
	WG610113	SAMP	Endrin ketone	R2327393	L1
	WG609291	SAMP	2-Chloroethyl vinyl ether	R2322993	J4
	WG609291	SAMP	Dichlorodifluoromethane	R2322993	J3
L592342-04	WG610105	SAMP	Benzidine	R2333854	J4
	WG610113	SAMP	Endosulfan sulfate	R2327393	L1

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
	WG610113	SAMP	Endrin ketone	R2327393	L1
	WG609291	SAMP	2-Chloroethyl vinyl ether	R2322993	J4
	WG609291	SAMP	Dichlorodifluoromethane	R2322993	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
L1	(ESC) The associated batch LCS exceeded the upper control limit, which indicates a high bias; The sample analyte was "not detected" and is therefore unaffected.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
09/09/12 at 09:18:47

TSR Signing Reports: 358

Sample: L592342-01 Account: YEHDCO Received: 08/29/12 09:00 Due Date: 09/06/12 00:00 RPT Date: 09/09/12 09:17

Sample: L592342-02 Account: YEHDCO Received: 08/29/12 09:00 Due Date: 09/06/12 00:00 RPT Date: 09/09/12 09:17

Sample: L592342-03 Account: YEHDCO Received: 08/29/12 09:00 Due Date: 09/06/12 00:00 RPT Date: 09/09/12 09:17

Sample: L592342-04 Account: YEHDCO Received: 08/29/12 09:00 Due Date: 09/06/12 00:00 RPT Date: 09/09/12 09:17

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Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L592342

September 09, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG609291	08/29/12 12:57
1,1,1-Trichloroethane	< .001	mg/kg			WG609291	08/29/12 12:57
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG609291	08/29/12 12:57
1,1,2-Trichloroethane	< .001	mg/kg			WG609291	08/29/12 12:57
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG609291	08/29/12 12:57
1,1-Dichloroethane	< .001	mg/kg			WG609291	08/29/12 12:57
1,1-Dichloroethene	< .001	mg/kg			WG609291	08/29/12 12:57
1,1-Dichloropropene	< .001	mg/kg			WG609291	08/29/12 12:57
1,2,3-Trichlorobenzene	< .001	mg/kg			WG609291	08/29/12 12:57
1,2,3-Trichloropropane	< .0025	mg/kg			WG609291	08/29/12 12:57
1,2,3-Trimethylbenzene	< .001	mg/kg			WG609291	08/29/12 12:57
1,2,4-Trichlorobenzene	< .001	mg/kg			WG609291	08/29/12 12:57
1,2,4-Trimethylbenzene	< .001	mg/kg			WG609291	08/29/12 12:57
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG609291	08/29/12 12:57
1,2-Dibromoethane	< .001	mg/kg			WG609291	08/29/12 12:57
1,2-Dichlorobenzene	< .001	mg/kg			WG609291	08/29/12 12:57
1,2-Dichloroethane	< .001	mg/kg			WG609291	08/29/12 12:57
1,2-Dichloropropane	< .001	mg/kg			WG609291	08/29/12 12:57
1,3,5-Trimethylbenzene	< .001	mg/kg			WG609291	08/29/12 12:57
1,3-Dichlorobenzene	< .001	mg/kg			WG609291	08/29/12 12:57
1,3-Dichloropropane	< .001	mg/kg			WG609291	08/29/12 12:57
1,4-Dichlorobenzene	< .001	mg/kg			WG609291	08/29/12 12:57
2,2-Dichloropropane	< .001	mg/kg			WG609291	08/29/12 12:57
2-Butanone (MEK)	< .01	mg/kg			WG609291	08/29/12 12:57
2-Chloroethyl vinyl ether	< .05	mg/kg			WG609291	08/29/12 12:57
2-Chlorotoluene	< .001	mg/kg			WG609291	08/29/12 12:57
4-Chlorotoluene	< .001	mg/kg			WG609291	08/29/12 12:57
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG609291	08/29/12 12:57
Acetone	< .05	mg/kg			WG609291	08/29/12 12:57
Acrylonitrile	< .01	mg/kg			WG609291	08/29/12 12:57
Benzene	< .001	mg/kg			WG609291	08/29/12 12:57
Bromobenzene	< .001	mg/kg			WG609291	08/29/12 12:57
Bromodichloromethane	< .001	mg/kg			WG609291	08/29/12 12:57
Bromoform	< .001	mg/kg			WG609291	08/29/12 12:57
Bromomethane	< .005	mg/kg			WG609291	08/29/12 12:57
Carbon tetrachloride	< .001	mg/kg			WG609291	08/29/12 12:57
Chlorobenzene	< .001	mg/kg			WG609291	08/29/12 12:57
Chlorodibromomethane	< .001	mg/kg			WG609291	08/29/12 12:57
Chloroethane	< .005	mg/kg			WG609291	08/29/12 12:57
Chloroform	< .005	mg/kg			WG609291	08/29/12 12:57
Chloromethane	< .0025	mg/kg			WG609291	08/29/12 12:57
cis-1,2-Dichloroethene	< .001	mg/kg			WG609291	08/29/12 12:57
cis-1,3-Dichloropropene	< .001	mg/kg			WG609291	08/29/12 12:57
Di-isopropyl ether	< .001	mg/kg			WG609291	08/29/12 12:57
Dibromomethane	< .001	mg/kg			WG609291	08/29/12 12:57
Dichlorodifluoromethane	< .005	mg/kg			WG609291	08/29/12 12:57
Ethylbenzene	< .001	mg/kg			WG609291	08/29/12 12:57
Hexachloro-1,3-butadiene	< .001	mg/kg			WG609291	08/29/12 12:57
Isopropylbenzene	< .001	mg/kg			WG609291	08/29/12 12:57
Methyl tert-butyl ether	< .001	mg/kg			WG609291	08/29/12 12:57
Methylene Chloride	< .005	mg/kg			WG609291	08/29/12 12:57
n-Butylbenzene	< .001	mg/kg			WG609291	08/29/12 12:57
n-Propylbenzene	< .001	mg/kg			WG609291	08/29/12 12:57
Naphthalene	< .005	mg/kg			WG609291	08/29/12 12:57
p-Isopropyltoluene	< .001	mg/kg			WG609291	08/29/12 12:57
sec-Butylbenzene	< .001	mg/kg			WG609291	08/29/12 12:57
Styrene	< .001	mg/kg			WG609291	08/29/12 12:57
tert-Butylbenzene	< .001	mg/kg			WG609291	08/29/12 12:57
Tetrachloroethene	< .001	mg/kg			WG609291	08/29/12 12:57

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L592342

September 09, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Toluene	< .005	mg/kg			WG609291	08/29/12 12:57
trans-1,2-Dichloroethene	< .001	mg/kg			WG609291	08/29/12 12:57
trans-1,3-Dichloropropene	< .001	mg/kg			WG609291	08/29/12 12:57
Trichloroethene	< .001	mg/kg			WG609291	08/29/12 12:57
Trichlorofluoromethane	< .005	mg/kg			WG609291	08/29/12 12:57
Vinyl chloride	< .001	mg/kg			WG609291	08/29/12 12:57
Xylenes, Total	< .003	mg/kg			WG609291	08/29/12 12:57
4-Bromofluorobenzene		% Rec.	105.4	67-133	WG609291	08/29/12 12:57
Dibromofluoromethane		% Rec.	98.06	72-135	WG609291	08/29/12 12:57
Toluene-d8		% Rec.	98.58	90-113	WG609291	08/29/12 12:57
Mercury	< .02	mg/kg			WG610084	08/30/12 12:17
2,4,5-T	< .07	mg/kg			WG610302	08/31/12 17:47
2,4,5-TP (Silvex)	< .07	mg/kg			WG610302	08/31/12 17:47
2,4-D	< .07	mg/kg			WG610302	08/31/12 17:47
2,4-DB	< .07	mg/kg			WG610302	08/31/12 17:47
Dalapon	< .8	mg/kg			WG610302	08/31/12 17:47
Dicamba	< .07	mg/kg			WG610302	08/31/12 17:47
Dichloroprop	< .07	mg/kg			WG610302	08/31/12 17:47
Dinoseb	< .07	mg/kg			WG610302	08/31/12 17:47
MCPA	< .68602	mg/kg			WG610302	08/31/12 17:47
MCPP	< 6.5	mg/kg			WG610302	08/31/12 17:47
2,4-Dichlorophenyl Acetic Acid		%	73.55	37-99	WG610302	08/31/12 17:47
PCB 1016	< .017	mg/kg			WG610113	08/31/12 18:53
PCB 1221	< .017	mg/kg			WG610113	08/31/12 18:53
PCB 1232	< .017	mg/kg			WG610113	08/31/12 18:53
PCB 1242	< .017	mg/kg			WG610113	08/31/12 18:53
PCB 1248	< .017	mg/kg			WG610113	08/31/12 18:53
PCB 1254	< .017	mg/kg			WG610113	08/31/12 18:53
PCB 1260	< .017	mg/kg			WG610113	08/31/12 18:53
Decachlorobiphenyl		% Rec.	96.31	18.9-115.8	WG610113	08/31/12 18:53
Tetrachloro-m-xylene		% Rec.	93.94	31.8-115.7	WG610113	08/31/12 18:53
Arsenic	< 1	mg/kg			WG610250	09/01/12 13:38
Barium	< .25	mg/kg			WG610250	09/01/12 13:38
Cadmium	< .25	mg/kg			WG610250	09/01/12 13:38
Chromium	< .5	mg/kg			WG610250	09/01/12 13:38
Iron	< 5	mg/kg			WG610250	09/01/12 13:38
Lead	< .25	mg/kg			WG610250	09/01/12 13:38
Selenium	< 1	mg/kg			WG610250	09/01/12 13:38
Silver	< .5	mg/kg			WG610250	09/01/12 13:38
Arsenic	< 1	mg/kg			WG610294	08/31/12 10:31
Barium	< .25	mg/kg			WG610294	08/31/12 10:31
Cadmium	< .25	mg/kg			WG610294	08/31/12 10:31
Chromium	< .5	mg/kg			WG610294	08/31/12 10:31
Iron	< 5	mg/kg			WG610294	08/31/12 10:31
Lead	< .25	mg/kg			WG610294	08/31/12 10:31
Selenium	< 1	mg/kg			WG610294	08/31/12 10:31
Silver	< .5	mg/kg			WG610294	08/31/12 10:31

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
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Quality Assurance Report
Level II

L592342

September 09, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
4,4-DDD	< .02	mg/kg			WG610113	09/04/12 16:58
4,4-DDE	< .02	mg/kg			WG610113	09/04/12 16:58
4,4-DDT	< .02	mg/kg			WG610113	09/04/12 16:58
Aldrin	< .02	mg/kg			WG610113	09/04/12 16:58
Alpha BHC	< .02	mg/kg			WG610113	09/04/12 16:58
Beta BHC	< .02	mg/kg			WG610113	09/04/12 16:58
Chlordane	< .2	mg/kg			WG610113	09/04/12 16:58
Delta BHC	< .02	mg/kg			WG610113	09/04/12 16:58
Dieldrin	< .02	mg/kg			WG610113	09/04/12 16:58
Endosulfan I	< .02	mg/kg			WG610113	09/04/12 16:58
Endosulfan II	< .02	mg/kg			WG610113	09/04/12 16:58
Endosulfan sulfate	< .02	mg/kg			WG610113	09/04/12 16:58
Endrin	< .02	mg/kg			WG610113	09/04/12 16:58
Endrin aldehyde	< .02	mg/kg			WG610113	09/04/12 16:58
Endrin ketone	< .02	mg/kg			WG610113	09/04/12 16:58
Gamma BHC	< .02	mg/kg			WG610113	09/04/12 16:58
Heptachlor	< .02	mg/kg			WG610113	09/04/12 16:58
Heptachlor epoxide	< .02	mg/kg			WG610113	09/04/12 16:58
Hexachlorobenzene	< .02	mg/kg			WG610113	09/04/12 16:58
Methoxychlor	< .02	mg/kg			WG610113	09/04/12 16:58
Toxaphene	< .4	mg/kg			WG610113	09/04/12 16:58
Decachlorobiphenyl		% Rec.	98.38	18.9-115.8	WG610113	09/04/12 16:58
Tetrachloro-m-xylene		% Rec.	94.98	31.8-115.7	WG610113	09/04/12 16:58
1,2,4-Trichlorobenzene	< .333	mg/kg			WG610105	09/06/12 15:02
2,4,6-Trichlorophenol	< .333	mg/kg			WG610105	09/06/12 15:02
2,4-Dichlorophenol	< .333	mg/kg			WG610105	09/06/12 15:02
2,4-Dimethylphenol	< .333	mg/kg			WG610105	09/06/12 15:02
2,4-Dinitrophenol	< .333	mg/kg			WG610105	09/06/12 15:02
2,4-Dinitrotoluene	< .333	mg/kg			WG610105	09/06/12 15:02
2,6-Dinitrotoluene	< .333	mg/kg			WG610105	09/06/12 15:02
2-Chloronaphthalene	< .033	mg/kg			WG610105	09/06/12 15:02
2-Chlorophenol	< .333	mg/kg			WG610105	09/06/12 15:02
2-Nitrophenol	< .333	mg/kg			WG610105	09/06/12 15:02
3,3-Dichlorobenzidine	< .333	mg/kg			WG610105	09/06/12 15:02
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG610105	09/06/12 15:02
4-Bromophenyl-phenylether	< .333	mg/kg			WG610105	09/06/12 15:02
4-Chloro-3-methylphenol	< .333	mg/kg			WG610105	09/06/12 15:02
4-Chlorophenyl-phenylether	< .333	mg/kg			WG610105	09/06/12 15:02
4-Nitrophenol	< .333	mg/kg			WG610105	09/06/12 15:02
Acenaphthene	< .033	mg/kg			WG610105	09/06/12 15:02
Acenaphthylene	< .033	mg/kg			WG610105	09/06/12 15:02
Anthracene	< .033	mg/kg			WG610105	09/06/12 15:02
Benzidine	< .333	mg/kg			WG610105	09/06/12 15:02
Benzo(a)anthracene	< .033	mg/kg			WG610105	09/06/12 15:02
Benzo(a)pyrene	< .033	mg/kg			WG610105	09/06/12 15:02
Benzo(b)fluoranthene	< .033	mg/kg			WG610105	09/06/12 15:02
Benzo(g,h,i)perylene	< .033	mg/kg			WG610105	09/06/12 15:02
Benzo(k)fluoranthene	< .033	mg/kg			WG610105	09/06/12 15:02
Benzylbutyl phthalate	< .333	mg/kg			WG610105	09/06/12 15:02
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG610105	09/06/12 15:02
Bis(2-chloroethyl)ether	< .333	mg/kg			WG610105	09/06/12 15:02
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG610105	09/06/12 15:02
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG610105	09/06/12 15:02
Chrysene	< .033	mg/kg			WG610105	09/06/12 15:02
Di-n-butyl phthalate	< .333	mg/kg			WG610105	09/06/12 15:02
Di-n-octyl phthalate	< .333	mg/kg			WG610105	09/06/12 15:02
Dibenz(a,h)anthracene	< .033	mg/kg			WG610105	09/06/12 15:02

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L592342

September 09, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Diethyl phthalate	< .333	mg/kg			WG610105	09/06/12 15:02
Dimethyl phthalate	< .333	mg/kg			WG610105	09/06/12 15:02
Fluoranthene	< .033	mg/kg			WG610105	09/06/12 15:02
Fluorene	< .033	mg/kg			WG610105	09/06/12 15:02
Hexachloro-1,3-butadiene	< .333	mg/kg			WG610105	09/06/12 15:02
Hexachlorobenzene	< .333	mg/kg			WG610105	09/06/12 15:02
Hexachlorocyclopentadiene	< .333	mg/kg			WG610105	09/06/12 15:02
Hexachloroethane	< .333	mg/kg			WG610105	09/06/12 15:02
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG610105	09/06/12 15:02
Isophorone	< .333	mg/kg			WG610105	09/06/12 15:02
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG610105	09/06/12 15:02
n-Nitrosodimethylamine	< .333	mg/kg			WG610105	09/06/12 15:02
n-Nitrosodiphenylamine	< .333	mg/kg			WG610105	09/06/12 15:02
Naphthalene	< .033	mg/kg			WG610105	09/06/12 15:02
Nitrobenzene	< .333	mg/kg			WG610105	09/06/12 15:02
Pentachlorophenol	< .333	mg/kg			WG610105	09/06/12 15:02
Phenanthrene	< .033	mg/kg			WG610105	09/06/12 15:02
Phenol	< .333	mg/kg			WG610105	09/06/12 15:02
Pyrene	< .033	mg/kg			WG610105	09/06/12 15:02
2,4,6-Tribromophenol		% Rec.	57.03	16-136	WG610105	09/06/12 15:02
2-Fluorobiphenyl		% Rec.	63.16	37-119	WG610105	09/06/12 15:02
2-Fluorophenol		% Rec.	57.61	22-114	WG610105	09/06/12 15:02
Nitrobenzene-d5		% Rec.	51.59	20-114	WG610105	09/06/12 15:02
Phenol-d5		% Rec.	59.62	26-127	WG610105	09/06/12 15:02
p-Terphenyl-d14		% Rec.	61.56	15-174	WG610105	09/06/12 15:02

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0.120	0.140	14.6	20	L592346-01	WG610084
Arsenic	mg/kg	24.0	12.0	67.4*	20	L592334-23	WG610250
Barium	mg/kg	130.	130.	3.03	20	L592334-23	WG610250
Chromium	mg/kg	49.0	30.0	48.3*	20	L592334-23	WG610250
Iron	mg/kg	21000	20000	6.76	20	L592334-23	WG610250
Lead	mg/kg	20.0	17.0	14.7	20	L592334-23	WG610250
Selenium	mg/kg	0	1.10	NA	20	L592334-23	WG610250
Silver	mg/kg	0	0	0	20	L592334-23	WG610250
Cadmium	mg/kg	0	0	0	20	L592334-23	WG610250
Arsenic	mg/kg	12.0	9.80	21.8*	20	L592308-17	WG610294
Barium	mg/kg	120.	120.	2.47	20	L592308-17	WG610294
Cadmium	mg/kg	0.970	0.860	12.2	20	L592308-17	WG610294
Chromium	mg/kg	22.0	17.0	27.0*	20	L592308-17	WG610294
Iron	mg/kg	18000	16400	11.5	20	L592308-17	WG610294
Selenium	mg/kg	3.40	2.00	50.7*	20	L592308-17	WG610294
Lead	mg/kg	510.	440.	15.1	20	L592308-17	WG610294
Silver	mg/kg	0	0	0	20	L592308-17	WG610294

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0214	85.7	77-129	WG609291
1,1,1-Trichloroethane	mg/kg	.025	0.0222	88.7	70-127	WG609291
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0217	86.6	76-133	WG609291
1,1,2-Trichloroethane	mg/kg	.025	0.0216	86.4	79-123	WG609291
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0237	94.8	52-145	WG609291

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Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
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Denver, CO 80222

Quality Assurance Report
Level II

L592342

September 09, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1-Dichloroethane	mg/kg	.025	0.0216	86.5	74-121	WG609291
1,1-Dichloroethene	mg/kg	.025	0.0216	86.5	53-135	WG609291
1,1-Dichloropropene	mg/kg	.025	0.0215	85.9	67-127	WG609291
1,2,3-Trichlorobenzene	mg/kg	.025	0.0211	84.4	74-131	WG609291
1,2,3-Trichloropropane	mg/kg	.025	0.0239	95.7	75-135	WG609291
1,2,3-Trimethylbenzene	mg/kg	.025	0.0191	76.6	76-128	WG609291
1,2,4-Trichlorobenzene	mg/kg	.025	0.0221	88.5	72-130	WG609291
1,2,4-Trimethylbenzene	mg/kg	.025	0.0211	84.2	75-131	WG609291
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0213	85.1	55-142	WG609291
1,2-Dibromoethane	mg/kg	.025	0.0226	90.3	77-126	WG609291
1,2-Dichlorobenzene	mg/kg	.025	0.0207	83.0	80-123	WG609291
1,2-Dichloroethane	mg/kg	.025	0.0225	89.9	70-128	WG609291
1,2-Dichloropropane	mg/kg	.025	0.0199	79.7	74-125	WG609291
1,3,5-Trimethylbenzene	mg/kg	.025	0.0212	84.9	77-129	WG609291
1,3-Dichlorobenzene	mg/kg	.025	0.0220	87.9	76-128	WG609291
1,3-Dichloropropane	mg/kg	.025	0.0218	87.0	77-118	WG609291
1,4-Dichlorobenzene	mg/kg	.025	0.0206	82.6	77-119	WG609291
2,2-Dichloropropane	mg/kg	.025	0.0211	84.4	60-132	WG609291
2-Butanone (MEK)	mg/kg	.125	0.132	105.	56-146	WG609291
2-Chloroethyl vinyl ether	mg/kg	.125	0.0142	11.3*	17-179	WG609291
2-Chlorotoluene	mg/kg	.025	0.0211	84.5	76-125	WG609291
4-Chlorotoluene	mg/kg	.025	0.0211	84.5	76-125	WG609291
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.123	98.2	55-148	WG609291
Acetone	mg/kg	.125	0.138	110.	47-155	WG609291
Acrylonitrile	mg/kg	.125	0.117	93.5	50-155	WG609291
Benzene	mg/kg	.025	0.0209	83.7	72-120	WG609291
Bromobenzene	mg/kg	.025	0.0207	83.0	74-122	WG609291
Bromodichloromethane	mg/kg	.025	0.0191	76.6	74-128	WG609291
Bromoform	mg/kg	.025	0.0211	84.4	62-137	WG609291
Bromomethane	mg/kg	.025	0.0210	84.1	38-180	WG609291
Carbon tetrachloride	mg/kg	.025	0.0211	84.4	62-130	WG609291
Chlorobenzene	mg/kg	.025	0.0219	87.4	77-124	WG609291
Chlorodibromomethane	mg/kg	.025	0.0212	84.7	74-128	WG609291
Chloroethane	mg/kg	.025	0.0199	79.6	46-173	WG609291
Chloroform	mg/kg	.025	0.0216	86.3	76-122	WG609291
Chloromethane	mg/kg	.025	0.0216	86.6	49-143	WG609291
cis-1,2-Dichloroethene	mg/kg	.025	0.0219	87.5	73-123	WG609291
cis-1,3-Dichloropropene	mg/kg	.025	0.0200	80.2	73-126	WG609291
Di-isopropyl ether	mg/kg	.025	0.0220	87.8	64-131	WG609291
Dibromomethane	mg/kg	.025	0.0220	87.9	75-127	WG609291
Dichlorodifluoromethane	mg/kg	.025	0.0202	81.0	30-177	WG609291
Ethylbenzene	mg/kg	.025	0.0217	86.8	76-126	WG609291
Hexachloro-1,3-butadiene	mg/kg	.025	0.0203	81.1	71-134	WG609291
Isopropylbenzene	mg/kg	.025	0.0220	87.9	70-128	WG609291
Methyl tert-butyl ether	mg/kg	.025	0.0217	86.9	66-127	WG609291
Methylene Chloride	mg/kg	.025	0.0221	88.3	67-124	WG609291
n-Butylbenzene	mg/kg	.025	0.0199	79.6	71-133	WG609291
n-Propylbenzene	mg/kg	.025	0.0211	84.6	76-126	WG609291
Naphthalene	mg/kg	.025	0.0218	87.2	68-136	WG609291
p-Isopropyltoluene	mg/kg	.025	0.0217	86.9	75-134	WG609291
sec-Butylbenzene	mg/kg	.025	0.0212	84.7	75-132	WG609291
Styrene	mg/kg	.025	0.0217	86.6	68-148	WG609291
tert-Butylbenzene	mg/kg	.025	0.0215	86.0	75-132	WG609291
Tetrachloroethene	mg/kg	.025	0.0223	89.1	70-131	WG609291
Toluene	mg/kg	.025	0.0197	78.8	74-155	WG609291
trans-1,2-Dichloroethene	mg/kg	.025	0.0204	81.7	63-126	WG609291
trans-1,3-Dichloropropene	mg/kg	.025	0.0196	78.4	68-126	WG609291
Trichloroethene	mg/kg	.025	0.0215	86.2	75-121	WG609291
Trichlorofluoromethane	mg/kg	.025	0.0226	90.6	48-170	WG609291

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Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L592342

September 09, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Vinyl chloride	mg/kg	.025	0.0194	77.6	54-144	WG609291
Xylenes, Total	mg/kg	.075	0.0641	85.4	76-126	WG609291
4-Bromofluorobenzene				102.7	67-133	WG609291
Dibromofluoromethane				105.1	72-135	WG609291
Toluene-d8				99.72	90-113	WG609291
Mercury	mg/kg	12.4	15.4	124.	71.6-128	WG610084
2,4,5-T	mg/kg	.167	0.129	77.2	32.9-103	WG610302
2,4,5-TP (Silvex)	mg/kg	.167	0.134	80.1	46-116	WG610302
2,4-D	mg/kg	.167	0.118	70.8	28-98	WG610302
2,4-DB	mg/kg	.167	0.125	74.8	28.9-108	WG610302
Dalapon	mg/kg	.167	0.152	91.1	18.4-113	WG610302
Dicamba	mg/kg	.167	0.136	81.7	37.2-119	WG610302
Dichloroprop	mg/kg	.167	0.149	89.4	40.5-114	WG610302
Dinoseb	mg/kg	.167	0.0772	46.2	10-98	WG610302
MCPA	mg/kg	16.7	13.4	80.1	15.5-110	WG610302
MCPP	mg/kg	16.7	18.8	113.	40.1-177	WG610302
2,4-Dichlorophenyl Acetic Acid				75.01	37-99	WG610302
PCB 1016	mg/kg	.167	0.159	95.3	64-120	WG610113
PCB 1260	mg/kg	.167	0.162	96.8	72-130	WG610113
Decachlorobiphenyl				98.94	18.9-115.8	WG610113
Tetrachloro-m-xylene				100.7	31.8-115.7	WG610113
Arsenic	mg/kg	237	216.	91.1	83.1-117	WG610250
Barium	mg/kg	252	255.	101.	84.1-116	WG610250
Cadmium	mg/kg	191	179.	93.7	83.2-117	WG610250
Chromium	mg/kg	128	127.	99.2	81.3-118	WG610250
Iron	mg/kg	13100	13900	106.	50.8-150	WG610250
Lead	mg/kg	103	95.4	92.6	83.1-117	WG610250
Selenium	mg/kg	110	103.	93.6	78.7-122	WG610250
Silver	mg/kg	47.3	45.0	95.1	66.2-134	WG610250
Arsenic	mg/kg	237	239.	101.	83.1-117	WG610294
Barium	mg/kg	252	267.	106.	84.1-116	WG610294
Cadmium	mg/kg	191	200.	105.	83.2-117	WG610294
Chromium	mg/kg	128	136.	106.	81.3-118	WG610294
Iron	mg/kg	13100	14200	108.	50.8-150	WG610294
Lead	mg/kg	103	113.	110.	83.1-117	WG610294
Selenium	mg/kg	110	111.	101.	78.7-122	WG610294
Silver	mg/kg	47.3	47.4	100.	66.2-134	WG610294
4,4-DDD	mg/kg	.0667	0.0634	95.1	74-114	WG610113
4,4-DDE	mg/kg	.0667	0.0615	92.1	74-115	WG610113
4,4-DDT	mg/kg	.0667	0.0636	95.3	62-124	WG610113
Aldrin	mg/kg	.0667	0.0615	92.2	69-110	WG610113
Alpha BHC	mg/kg	.0667	0.0623	93.3	68-111	WG610113
Beta BHC	mg/kg	.0667	0.0630	94.5	74-112	WG610113
Delta BHC	mg/kg	.0667	0.0666	99.8	71-110	WG610113
Dieldrin	mg/kg	.0667	0.0641	96.1	76-115	WG610113
Endosulfan I	mg/kg	.0667	0.0627	94.0	76-119	WG610113
Endosulfan II	mg/kg	.0667	0.0638	95.6	75-116	WG610113

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Quality Assurance Report
Level II

L592342

September 09, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Endosulfan sulfate	mg/kg	.0667	0.0765	115.	70-118	WG610113
Endrin	mg/kg	.0667	0.0644	96.6	68-115	WG610113
Endrin aldehyde	mg/kg	.0667	0.0570	85.5	48-92	WG610113
Endrin ketone	mg/kg	.0667	0.0718	108.	70-112	WG610113
Gamma BHC	mg/kg	.0667	0.0627	94.0	70-112	WG610113
Heptachlor	mg/kg	.0667	0.0636	95.3	69-111	WG610113
Heptachlor epoxide	mg/kg	.0667	0.0634	95.1	72-115	WG610113
Hexachlorobenzene	mg/kg	.0667	0.0577	86.4	64-111	WG610113
Methoxychlor	mg/kg	.0667	0.0670	100.	65-123	WG610113
Decachlorobiphenyl				98.19	18.9-115.8	WG610113
Tetrachloro-m-xylene				95.19	31.8-115.7	WG610113
1,2,4-Trichlorobenzene	mg/kg	.333	0.200	60.0	48-87	WG610105
2,4,6-Trichlorophenol	mg/kg	.333	0.213	63.9	50-98	WG610105
2,4-Dichlorophenol	mg/kg	.333	0.219	65.7	56-96	WG610105
2,4-Dimethylphenol	mg/kg	.333	0.213	64.0	52-101	WG610105
2,4-Dinitrophenol	mg/kg	.333	0.0870	26.1	10-109	WG610105
2,4-Dinitrotoluene	mg/kg	.333	0.216	64.9	54-103	WG610105
2,6-Dinitrotoluene	mg/kg	.333	0.212	63.5	53-99	WG610105
2-Chloronaphthalene	mg/kg	.333	0.213	64.0	55-96	WG610105
2-Chlorophenol	mg/kg	.333	0.213	64.1	52-88	WG610105
2-Nitrophenol	mg/kg	.333	0.200	60.0	55-106	WG610105
3,3-Dichlorobenzidine	mg/kg	.333	0.189	56.8	36-84	WG610105
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.133	40.0	24-98	WG610105
4-Bromophenyl-phenylether	mg/kg	.333	0.227	68.3	58-111	WG610105
4-Chloro-3-methylphenol	mg/kg	.333	0.225	67.5	58-98	WG610105
4-Chlorophenyl-phenylether	mg/kg	.333	0.230	69.0	59-103	WG610105
4-Nitrophenol	mg/kg	.333	0.160	48.0	34-101	WG610105
Acenaphthene	mg/kg	.333	0.207	62.3	55-96	WG610105
Acenaphthylene	mg/kg	.333	0.206	62.0	61-107	WG610105
Anthracene	mg/kg	.333	0.205	61.6	58-105	WG610105
Benzidine	mg/kg	.333	0.00624	1.87*	10-21	WG610105
Benzo(a)anthracene	mg/kg	.333	0.214	64.1	56-103	WG610105
Benzo(a)pyrene	mg/kg	.333	0.215	64.5	57-103	WG610105
Benzo(b)fluoranthene	mg/kg	.333	0.213	64.0	52-106	WG610105
Benzo(g,h,i)perylene	mg/kg	.333	0.235	70.6	47-112	WG610105
Benzo(k)fluoranthene	mg/kg	.333	0.213	63.8	53-104	WG610105
Benzylbutyl phthalate	mg/kg	.333	0.224	67.3	61-118	WG610105
Bis(2-chlorethoxy)methane	mg/kg	.333	0.206	61.7	58-104	WG610105
Bis(2-chloroethyl)ether	mg/kg	.333	0.195	58.4	51-103	WG610105
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.195	58.6	56-95	WG610105
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.249	74.9	56-120	WG610105
Chrysene	mg/kg	.333	0.231	69.4	55-102	WG610105
Di-n-butyl phthalate	mg/kg	.333	0.201	60.2	59-114	WG610105
Di-n-octyl phthalate	mg/kg	.333	0.251	75.3	51-119	WG610105
Dibenz(a,h)anthracene	mg/kg	.333	0.237	71.3	49-111	WG610105
Diethyl phthalate	mg/kg	.333	0.216	65.0	61-105	WG610105
Dimethyl phthalate	mg/kg	.333	0.221	66.5	60-106	WG610105
Fluoranthene	mg/kg	.333	0.210	63.0	59-108	WG610105
Fluorene	mg/kg	.333	0.210	62.9	59-100	WG610105
Hexachloro-1,3-butadiene	mg/kg	.333	0.226	67.8	53-106	WG610105
Hexachlorobenzene	mg/kg	.333	0.220	66.2	50-108	WG610105
Hexachlorocyclopentadiene	mg/kg	.333	0.199	59.7	36-117	WG610105
Hexachloroethane	mg/kg	.333	0.191	57.3	45-83	WG610105
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.238	71.5	50-110	WG610105
Isophorone	mg/kg	.333	0.173	51.9	51-99	WG610105
n-Nitrosodi-n-propylamine	mg/kg	.333	0.215	64.6	52-103	WG610105
n-Nitrosodimethylamine	mg/kg	.333	0.188	56.6	31-107	WG610105

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Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L592342

September 09, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
n-Nitrosodiphenylamine	mg/kg	.333	0.204	61.3	57-121	WG610105
Naphthalene	mg/kg	.333	0.197	59.1	55-91	WG610105
Nitrobenzene	mg/kg	.333	0.202	60.5	47-92	WG610105
Pentachlorophenol	mg/kg	.333	0.136	40.8	10-89	WG610105
Phenanthrene	mg/kg	.333	0.212	63.6	55-103	WG610105
Phenol	mg/kg	.333	0.223	67.0	49-99	WG610105
Pyrene	mg/kg	.333	0.227	68.3	54-104	WG610105
2,4,6-Tribromophenol				67.99	16-136	WG610105
2-Fluorobiphenyl				68.03	37-119	WG610105
2-Fluorophenol				64.33	22-114	WG610105
Nitrobenzene-d5				61.62	20-114	WG610105
Phenol-d5				66.49	26-127	WG610105
p-Terphenyl-d14				66.02	15-174	WG610105

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0254	0.0214	102.	77-129	17.0	20	WG609291
1,1,1-Trichloroethane	mg/kg	0.0252	0.0222	101.	70-127	12.7	20	WG609291
1,1,2,2-Tetrachloroethane	mg/kg	0.0244	0.0217	98.0	76-133	12.0	20	WG609291
1,1,2-Trichloroethane	mg/kg	0.0254	0.0216	102.	79-123	16.2	20	WG609291
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0260	0.0237	104.	52-145	9.19	20	WG609291
1,1-Dichloroethane	mg/kg	0.0260	0.0216	104.	74-121	18.3	20	WG609291
1,1-Dichloroethene	mg/kg	0.0237	0.0216	95.0	53-135	9.26	20	WG609291
1,1-Dichloropropene	mg/kg	0.0245	0.0215	98.0	67-127	13.4	20	WG609291
1,2,3-Trichlorobenzene	mg/kg	0.0253	0.0211	101.	74-131	17.9	20	WG609291
1,2,3-Trichloropropane	mg/kg	0.0265	0.0239	106.	75-135	10.3	20	WG609291
1,2,3-Trimethylbenzene	mg/kg	0.0228	0.0191	91.0	76-128	17.3	20	WG609291
1,2,4-Trichlorobenzene	mg/kg	0.0269	0.0221	108.	72-130	19.6	20	WG609291
1,2,4-Trimethylbenzene	mg/kg	0.0250	0.0211	100.	75-131	17.0	20	WG609291
1,2-Dibromo-3-Chloropropane	mg/kg	0.0243	0.0213	97.0	55-142	13.1	20	WG609291
1,2-Dibromoethane	mg/kg	0.0258	0.0226	103.	77-126	13.5	20	WG609291
1,2-Dichlorobenzene	mg/kg	0.0246	0.0207	98.0	80-123	17.1	20	WG609291
1,2-Dichloroethane	mg/kg	0.0251	0.0225	100.	70-128	11.2	20	WG609291
1,2-Dichloropropane	mg/kg	0.0234	0.0199	94.0	74-125	16.1	20	WG609291
1,3,5-Trimethylbenzene	mg/kg	0.0256	0.0212	102.	77-129	18.6	20	WG609291
1,3-Dichlorobenzene	mg/kg	0.0261	0.0220	104.	76-128	17.2	20	WG609291
1,3-Dichloropropane	mg/kg	0.0249	0.0218	100.	77-118	13.6	20	WG609291
1,4-Dichlorobenzene	mg/kg	0.0250	0.0206	100.	77-119	19.1	20	WG609291
2,2-Dichloropropane	mg/kg	0.0237	0.0211	95.0	60-132	11.5	20	WG609291
2-Butanone (MEK)	mg/kg	0.144	0.132	115.	56-146	8.73	20	WG609291
2-Chloroethyl vinyl ether	mg/kg	0.0145	0.0142	12*	17-179	2.32	22	WG609291
2-Chlorotoluene	mg/kg	0.0247	0.0211	99.0	76-125	15.7	20	WG609291
4-Chlorotoluene	mg/kg	0.0255	0.0211	102.	76-125	18.8	20	WG609291
4-Methyl-2-pentanone (MIBK)	mg/kg	0.135	0.123	108.	55-148	9.48	20	WG609291
Acetone	mg/kg	0.154	0.138	123.	47-155	11.3	22	WG609291
Acrylonitrile	mg/kg	0.131	0.117	105.	50-155	11.6	20	WG609291
Benzene	mg/kg	0.0236	0.0209	94.0	72-120	12.1	20	WG609291
Bromobenzene	mg/kg	0.0246	0.0207	98.0	74-122	17.2	20	WG609291
Bromodichloromethane	mg/kg	0.0222	0.0191	89.0	74-128	15.0	20	WG609291
Bromoform	mg/kg	0.0242	0.0211	97.0	62-137	13.5	20	WG609291
Bromomethane	mg/kg	0.0229	0.0210	92.0	38-180	8.61	20	WG609291
Carbon tetrachloride	mg/kg	0.0236	0.0211	94.0	62-130	11.3	20	WG609291
Chlorobenzene	mg/kg	0.0260	0.0219	104.	77-124	17.4	20	WG609291
Chlorodibromomethane	mg/kg	0.0253	0.0212	101.	74-128	18.0	20	WG609291
Chloroethane	mg/kg	0.0231	0.0199	92.0	46-173	14.9	20	WG609291
Chloroform	mg/kg	0.0239	0.0216	95.0	76-122	10.0	20	WG609291
Chloromethane	mg/kg	0.0249	0.0216	100.	49-143	14.2	20	WG609291
cis-1,2-Dichloroethene	mg/kg	0.0245	0.0219	98.0	73-123	11.2	20	WG609291

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Quality Assurance Report
Level II

L592342

September 09, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
cis-1,3-Dichloropropene	mg/kg	0.0229	0.0200	92.0	73-126	13.3	20	WG609291
Di-isopropyl ether	mg/kg	0.0247	0.0220	99.0	64-131	11.7	20	WG609291
Dibromomethane	mg/kg	0.0249	0.0220	100.	75-127	12.6	20	WG609291
Dichlorodifluoromethane	mg/kg	0.0249	0.0202	100.	30-177	20.8*	20	WG609291
Ethylbenzene	mg/kg	0.0261	0.0217	104.	76-126	18.4	20	WG609291
Hexachloro-1,3-butadiene	mg/kg	0.0246	0.0203	98.0	71-134	19.3	20	WG609291
Isopropylbenzene	mg/kg	0.0265	0.0220	106.	70-128	18.5	20	WG609291
Methyl tert-butyl ether	mg/kg	0.0235	0.0217	94.0	66-127	7.66	20	WG609291
Methylene Chloride	mg/kg	0.0247	0.0221	99.0	67-124	11.4	20	WG609291
n-Butylbenzene	mg/kg	0.0240	0.0199	96.0	71-133	18.5	20	WG609291
n-Propylbenzene	mg/kg	0.0253	0.0211	101.	76-126	17.9	20	WG609291
Naphthalene	mg/kg	0.0256	0.0218	102.	68-136	15.9	20	WG609291
p-Isopropyltoluene	mg/kg	0.0258	0.0217	103.	75-134	17.0	20	WG609291
sec-Butylbenzene	mg/kg	0.0254	0.0212	102.	75-132	18.3	20	WG609291
Styrene	mg/kg	0.0257	0.0217	103.	68-148	16.9	20	WG609291
tert-Butylbenzene	mg/kg	0.0256	0.0215	102.	75-132	17.3	20	WG609291
Tetrachloroethene	mg/kg	0.0269	0.0223	108.	70-131	19.0	20	WG609291
Toluene	mg/kg	0.0235	0.0197	94.0	74-155	17.5	20	WG609291
trans-1,2-Dichloroethene	mg/kg	0.0235	0.0204	94.0	63-126	13.8	20	WG609291
trans-1,3-Dichloropropene	mg/kg	0.0228	0.0196	91.0	68-126	15.1	20	WG609291
Trichloroethene	mg/kg	0.0253	0.0215	101.	75-121	16.1	20	WG609291
Trichlorofluoromethane	mg/kg	0.0262	0.0226	105.	48-170	14.4	20	WG609291
Vinyl chloride	mg/kg	0.0234	0.0194	93.0	54-144	18.5	20	WG609291
Xylenes, Total	mg/kg	0.0765	0.0641	102.	76-126	17.6	20	WG609291
4-Bromofluorobenzene				102.7	67-133			WG609291
Dibromofluoromethane				101.7	72-135			WG609291
Toluene-d8				100.1	90-113			WG609291
2,4,5-T	mg/kg	0.146	0.129	87.0	32.9-103	12.1	27.4	WG610302
2,4,5-TP (Silvex)	mg/kg	0.143	0.134	86.0	46-116	6.88	25.2	WG610302
2,4-D	mg/kg	0.133	0.118	80.0	28-98	12.1	24	WG610302
2,4-DB	mg/kg	0.143	0.125	86.0	28.9-108	13.8	30.3	WG610302
Dalapon	mg/kg	0.148	0.152	89.0	18.4-113	2.59	24.1	WG610302
Dicamba	mg/kg	0.155	0.136	93.0	37.2-119	12.9	21.2	WG610302
Dichloroprop	mg/kg	0.173	0.149	104.	40.5-114	14.9	23.3	WG610302
Dinoseb	mg/kg	0.0543	0.0772	32.0	10-98	34.8	40	WG610302
MCPA	mg/kg	14.0	13.4	84.0	15.5-110	4.43	40	WG610302
MCPP	mg/kg	20.4	18.8	122.	40.1-177	8.08	32.2	WG610302
2,4-Dichlorophenyl Acetic Acid				88.73	37-99			WG610302
PCB 1016	mg/kg	0.169	0.159	101.	64-120	6.18	20	WG610113
PCB 1260	mg/kg	0.175	0.162	105.	72-130	8.17	20	WG610113
Decachlorobiphenyl				102.1	18.9-115.8			WG610113
Tetrachloro-m-xylene				103.8	31.8-115.7			WG610113
4,4-DDD	mg/kg	0.0688	0.0634	103.	74-114	8.09	20	WG610113
4,4-DDE	mg/kg	0.0643	0.0615	96.0	74-115	4.51	20	WG610113
4,4-DDT	mg/kg	0.0662	0.0636	99.0	62-124	4.08	20	WG610113
Aldrin	mg/kg	0.0646	0.0615	97.0	69-110	4.93	20	WG610113
Alpha BHC	mg/kg	0.0650	0.0623	97.0	68-111	4.31	20	WG610113
Beta BHC	mg/kg	0.0658	0.0630	99.0	74-112	4.36	20	WG610113
Delta BHC	mg/kg	0.0696	0.0666	104.	71-110	4.52	20	WG610113
Dieldrin	mg/kg	0.0683	0.0641	102.	76-115	6.40	20	WG610113
Endosulfan I	mg/kg	0.0659	0.0627	99.0	76-119	4.87	20	WG610113
Endosulfan II	mg/kg	0.0693	0.0638	104.	75-116	8.32	20	WG610113
Endosulfan sulfate	mg/kg	0.0797	0.0765	119*	70-118	4.07	20	WG610113
Endrin	mg/kg	0.0687	0.0644	103.	68-115	6.44	20	WG610113
Endrin aldehyde	mg/kg	0.0606	0.0570	91.0	48-92	6.11	20	WG610113

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Quality Assurance Report
Level II

L592342

September 09, 2012

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Endrin ketone	mg/kg	0.0751	0.0718	112.	70-112	4.55	20	WG610113
Gamma BHC	mg/kg	0.0653	0.0627	98.0	70-112	4.04	20	WG610113
Heptachlor	mg/kg	0.0667	0.0636	100.	69-111	4.84	20	WG610113
Heptachlor epoxide	mg/kg	0.0658	0.0634	99.0	72-115	3.65	20	WG610113
Hexachlorobenzene	mg/kg	0.0597	0.0577	89.0	64-111	3.42	20	WG610113
Methoxychlor	mg/kg	0.0702	0.0670	105.	65-123	4.64	20	WG610113
Decachlorobiphenyl				101.0	18.9-115.8			WG610113
Tetrachloro-m-xylene				98.66	31.8-115.7			WG610113
1,2,4-Trichlorobenzene	mg/kg	0.197	0.200	59.0	48-87	1.20	20	WG610105
2,4,6-Trichlorophenol	mg/kg	0.212	0.213	64.0	50-98	0.409	20	WG610105
2,4-Dichlorophenol	mg/kg	0.213	0.219	64.0	56-96	2.89	20	WG610105
2,4-Dimethylphenol	mg/kg	0.196	0.213	59.0	52-101	8.44	20	WG610105
2,4-Dinitrophenol	mg/kg	0.0833	0.0870	25.0	10-109	4.33	39	WG610105
2,4-Dinitrotoluene	mg/kg	0.206	0.216	62.0	54-103	4.87	20	WG610105
2,6-Dinitrotoluene	mg/kg	0.216	0.212	65.0	53-99	2.00	20	WG610105
2-Chloronaphthalene	mg/kg	0.212	0.213	64.0	55-96	0.705	20	WG610105
2-Chlorophenol	mg/kg	0.203	0.213	61.0	52-88	4.86	20	WG610105
2-Nitrophenol	mg/kg	0.206	0.200	62.0	55-106	3.03	20	WG610105
3,3-Dichlorobenzidine	mg/kg	0.185	0.189	55.0	36-84	2.46	20	WG610105
4,6-Dinitro-2-methylphenol	mg/kg	0.135	0.133	40.0	24-98	1.37	32	WG610105
4-Bromophenyl-phenylether	mg/kg	0.217	0.227	65.0	58-111	4.48	20	WG610105
4-Chloro-3-methylphenol	mg/kg	0.209	0.225	63.0	58-98	7.43	20	WG610105
4-Chlorophenyl-phenylether	mg/kg	0.219	0.230	66.0	59-103	4.80	20	WG610105
4-Nitrophenol	mg/kg	0.159	0.160	48.0	34-101	0.732	26	WG610105
Acenaphthene	mg/kg	0.204	0.207	61.0	55-96	1.47	20	WG610105
Acenaphthylene	mg/kg	0.210	0.206	63.0	61-107	1.93	20	WG610105
Anthracene	mg/kg	0.200	0.205	60.0	58-105	2.47	20	WG610105
Benzidine	mg/kg	0.00690	0.00624	2*	10-21	10.1	40	WG610105
Benzo(a)anthracene	mg/kg	0.220	0.214	66.0	56-103	2.92	20	WG610105
Benzo(a)pyrene	mg/kg	0.215	0.215	64.0	57-103	0.0181	20	WG610105
Benzo(b)fluoranthene	mg/kg	0.203	0.213	61.0	52-106	4.70	20	WG610105
Benzo(g,h,i)perylene	mg/kg	0.223	0.235	67.0	47-112	5.48	20	WG610105
Benzo(k)fluoranthene	mg/kg	0.212	0.213	64.0	53-104	0.368	20	WG610105
Benzylbutyl phthalate	mg/kg	0.216	0.224	65.0	61-118	3.59	20	WG610105
Bis(2-chlorethoxy)methane	mg/kg	0.207	0.206	62.0	58-104	0.481	20	WG610105
Bis(2-chloroethyl)ether	mg/kg	0.192	0.195	58.0	51-103	1.05	20	WG610105
Bis(2-chloroisopropyl)ether	mg/kg	0.195	0.195	59.0	56-95	0.0999	20	WG610105
Bis(2-ethylhexyl)phthalate	mg/kg	0.242	0.249	73.0	56-120	3.02	20	WG610105
Chrysene	mg/kg	0.224	0.231	67.0	55-102	3.13	20	WG610105
Di-n-butyl phthalate	mg/kg	0.200	0.201	60.0	59-114	0.169	20	WG610105
Di-n-octyl phthalate	mg/kg	0.244	0.251	73.0	51-119	2.64	22	WG610105
Dibenz(a,h)anthracene	mg/kg	0.226	0.237	68.0	49-111	5.02	20	WG610105
Diethyl phthalate	mg/kg	0.216	0.216	65.0	61-105	0.193	20	WG610105
Dimethyl phthalate	mg/kg	0.219	0.221	66.0	60-106	1.25	20	WG610105
Fluoranthene	mg/kg	0.200	0.210	60.0	59-108	4.93	20	WG610105
Fluorene	mg/kg	0.210	0.210	63.0	59-100	0.0195	20	WG610105
Hexachloro-1,3-butadiene	mg/kg	0.235	0.226	71.0	53-106	4.13	20	WG610105
Hexachlorobenzene	mg/kg	0.214	0.220	64.0	50-108	2.79	20	WG610105
Hexachlorocyclopentadiene	mg/kg	0.204	0.199	61.0	36-117	2.56	20	WG610105
Hexachloroethane	mg/kg	0.176	0.191	53.0	45-83	8.12	20	WG610105
Indeno(1,2,3-cd)pyrene	mg/kg	0.227	0.238	68.0	50-110	5.00	20	WG610105
Isophorone	mg/kg	0.172	0.173	52.0	51-99	0.479	20	WG610105
n-Nitrosodi-n-propylamine	mg/kg	0.218	0.215	66.0	52-103	1.48	20	WG610105
n-Nitrosodimethylamine	mg/kg	0.199	0.188	60.0	31-107	5.42	23	WG610105
n-Nitrosodiphenylamine	mg/kg	0.208	0.204	62.0	57-121	1.70	20	WG610105
Naphthalene	mg/kg	0.193	0.197	58.0	55-91	2.15	20	WG610105
Nitrobenzene	mg/kg	0.198	0.202	60.0	47-92	1.53	20	WG610105

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Quality Assurance Report
Level II

L592342

September 09, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
Pentachlorophenol	mg/kg	0.121	0.136	36.0	10-89	11.5	28	WG610105
Phenanthrene	mg/kg	0.206	0.212	62.0	55-103	2.53	20	WG610105
Phenol	mg/kg	0.205	0.223	61.0	49-99	8.59	20	WG610105
Pyrene	mg/kg	0.230	0.227	69.0	54-104	1.00	20	WG610105
2,4,6-Tribromophenol				65.28	16-136			WG610105
2-Fluorobiphenyl				66.61	37-119			WG610105
2-Fluorophenol				63.96	22-114			WG610105
Nitrobenzene-d5				60.98	20-114			WG610105
Phenol-d5				61.51	26-127			WG610105
p-Terphenyl-d14				67.63	15-174			WG610105

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.115	0	.025	92.4	49-135	L592342-01	WG609291
1,1,1-Trichloroethane	mg/kg	0.113	0	.025	90.6	43-142	L592342-01	WG609291
1,1,2,2-Tetrachloroethane	mg/kg	0.116	0	.025	92.7	42-147	L592342-01	WG609291
1,1,2-Trichloroethane	mg/kg	0.115	0	.025	92.2	51-134	L592342-01	WG609291
1,1,2-Trichlorotrifluoroethane	mg/kg	0.102	0	.025	81.6	25-156	L592342-01	WG609291
1,1-Dichloroethane	mg/kg	0.111	0	.025	88.7	50-131	L592342-01	WG609291
1,1-Dichloroethene	mg/kg	0.101	0	.025	81.1	29-145	L592342-01	WG609291
1,1-Dichloropropene	mg/kg	0.111	0	.025	88.8	40-136	L592342-01	WG609291
1,2,3-Trichlorobenzene	mg/kg	0.104	0	.025	83.4	13-142	L592342-01	WG609291
1,2,3-Trichloropropane	mg/kg	0.116	0	.025	92.8	41-149	L592342-01	WG609291
1,2,3-Trimethylbenzene	mg/kg	0.120	0	.025	95.9	33-146	L592342-01	WG609291
1,2,4-Trichlorobenzene	mg/kg	0.108	0	.025	86.1	12-140	L592342-01	WG609291
1,2,4-Trimethylbenzene	mg/kg	0.113	0	.025	90.6	29-143	L592342-01	WG609291
1,2-Dibromo-3-Chloropropane	mg/kg	0.122	0	.025	97.6	29-151	L592342-01	WG609291
1,2-Dibromoethane	mg/kg	0.115	0	.025	91.7	48-133	L592342-01	WG609291
1,2-Dichlorobenzene	mg/kg	0.115	0	.025	91.8	37-136	L592342-01	WG609291
1,2-Dichloroethane	mg/kg	0.109	0	.025	87.1	49-131	L592342-01	WG609291
1,2-Dichloropropane	mg/kg	0.113	0	.025	90.7	50-132	L592342-01	WG609291
1,3,5-Trimethylbenzene	mg/kg	0.114	0	.025	91.3	29-144	L592342-01	WG609291
1,3-Dichlorobenzene	mg/kg	0.109	0	.025	86.9	26-140	L592342-01	WG609291
1,3-Dichloropropane	mg/kg	0.112	0	.025	90.0	50-126	L592342-01	WG609291
1,4-Dichlorobenzene	mg/kg	0.112	0	.025	89.3	34-132	L592342-01	WG609291
2,2-Dichloropropane	mg/kg	0.120	0	.025	95.8	35-148	L592342-01	WG609291
2-Butanone (MEK)	mg/kg	0.595	0	.125	95.1	40-149	L592342-01	WG609291
2-Chloroethyl vinyl ether	mg/kg	0.571	0	.125	91.4	10-173	L592342-01	WG609291
2-Chlorotoluene	mg/kg	0.113	0	.025	90.0	34-136	L592342-01	WG609291
4-Chlorotoluene	mg/kg	0.111	0	.025	88.5	31-137	L592342-01	WG609291
4-Methyl-2-pentanone (MIBK)	mg/kg	0.589	0	.125	94.2	37-153	L592342-01	WG609291
Acetone	mg/kg	0.585	0	.125	93.6	10-177	L592342-01	WG609291
Acrylonitrile	mg/kg	0.566	0	.125	90.6	33-159	L592342-01	WG609291
Benzene	mg/kg	0.109	0	.025	87.6	44-131	L592342-01	WG609291
Bromobenzene	mg/kg	0.110	0	.025	87.8	36-132	L592342-01	WG609291
Bromodichloromethane	mg/kg	0.113	0	.025	90.4	48-134	L592342-01	WG609291
Bromoform	mg/kg	0.118	0	.025	94.3	34-141	L592342-01	WG609291
Bromomethane	mg/kg	0.119	0	.025	95.4	19-173	L592342-01	WG609291
Carbon tetrachloride	mg/kg	0.106	0	.025	84.9	36-140	L592342-01	WG609291
Chlorobenzene	mg/kg	0.113	0	.025	90.6	42-133	L592342-01	WG609291
Chlorodibromomethane	mg/kg	0.115	0	.025	92.1	45-135	L592342-01	WG609291
Chloroethane	mg/kg	0.117	0	.025	93.4	16-178	L592342-01	WG609291
Chloroform	mg/kg	0.112	0	.025	89.2	52-130	L592342-01	WG609291
Chloromethane	mg/kg	0.116	0	.025	93.1	28-147	L592342-01	WG609291
cis-1,2-Dichloroethene	mg/kg	0.109	0	.025	87.3	52-128	L592342-01	WG609291
cis-1,3-Dichloropropene	mg/kg	0.113	0	.025	90.4	46-131	L592342-01	WG609291
Di-isopropyl ether	mg/kg	0.112	0	.025	89.4	46-134	L592342-01	WG609291
Dibromomethane	mg/kg	0.111	0	.025	89.0	51-133	L592342-01	WG609291

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L592342

September 09, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Dichlorodifluoromethane	mg/kg	0.114	0	.025	91.5	12-179	L592342-01	WG609291
Ethylbenzene	mg/kg	0.115	0	.025	92.1	38-139	L592342-01	WG609291
Hexachloro-1,3-butadiene	mg/kg	0.109	0	.025	87.4	10-147	L592342-01	WG609291
Isopropylbenzene	mg/kg	0.117	0	.025	93.2	34-137	L592342-01	WG609291
Methyl tert-butyl ether	mg/kg	0.109	0	.025	87.1	45-134	L592342-01	WG609291
Methylene Chloride	mg/kg	0.102	0.00133	.025	80.7	41-133	L592342-01	WG609291
n-Butylbenzene	mg/kg	0.117	0	.025	93.4	19-149	L592342-01	WG609291
n-Propylbenzene	mg/kg	0.114	0	.025	91.5	27-142	L592342-01	WG609291
Naphthalene	mg/kg	0.111	0.000549	.025	88.5	19-146	L592342-01	WG609291
p-Isopropyltoluene	mg/kg	0.117	0	.025	93.2	21-150	L592342-01	WG609291
sec-Butylbenzene	mg/kg	0.116	0	.025	93.2	25-148	L592342-01	WG609291
Styrene	mg/kg	0.115	0	.025	91.8	30-156	L592342-01	WG609291
tert-Butylbenzene	mg/kg	0.116	0	.025	92.4	32-146	L592342-01	WG609291
Tetrachloroethene	mg/kg	0.111	0	.025	88.8	35-139	L592342-01	WG609291
Toluene	mg/kg	0.110	0	.025	88.0	43-127	L592342-01	WG609291
trans-1,2-Dichloroethene	mg/kg	0.108	0	.025	86.8	41-132	L592342-01	WG609291
trans-1,3-Dichloropropene	mg/kg	0.113	0	.025	90.4	43-129	L592342-01	WG609291
Trichloroethene	mg/kg	0.111	0	.025	88.7	42-136	L592342-01	WG609291
Trichlorofluoromethane	mg/kg	0.115	0	.025	91.7	20-178	L592342-01	WG609291
Vinyl chloride	mg/kg	0.120	0	.025	95.7	30-157	L592342-01	WG609291
Xylenes, Total	mg/kg	0.343	0	.075	91.6	38-137	L592342-01	WG609291
4-Bromofluorobenzene					97.71	67-133		WG609291
Dibromofluoromethane					102.6	72-135		WG609291
Toluene-d8					104.0	90-113		WG609291
Mercury	mg/kg	0.338	0.140	.25	79.2*	80-120	L592346-01	WG610084
2,4,5-T	mg/kg	0.123	0	.167	73.4	18-111	L592342-03	WG610302
2,4,5-TP (Silvex)	mg/kg	0.122	0	.167	72.9	27-123	L592342-03	WG610302
2,4-D	mg/kg	0.128	0	.167	76.5	10-137	L592342-03	WG610302
2,4-DB	mg/kg	0.117	0	.167	70.3	15-121	L592342-03	WG610302
Dalapon	mg/kg	0.128	0	.167	76.4	10-111	L592342-03	WG610302
Dicamba	mg/kg	0.139	0	.167	83.5	21-118	L592342-03	WG610302
Dichloroprop	mg/kg	0.143	0	.167	85.5	27-125	L592342-03	WG610302
Dinoseb	mg/kg	0.0724	0	.167	43.3	10-95	L592342-03	WG610302
MCPA	mg/kg	12.6	0	16.7	75.6	10-164	L592342-03	WG610302
MCPP	mg/kg	18.7	0	16.7	112.	17-186	L592342-03	WG610302
2,4-Dichlorophenyl Acetic Acid					76.88	37-99		WG610302
PCB 1016	mg/kg	0.137	0	.167	81.8	10-165	L592342-01	WG610113
PCB 1260	mg/kg	0.133	0	.167	79.6	29-154	L592342-01	WG610113
Decachlorobiphenyl					80.11	18.9-115.8		WG610113
Tetrachloro-m-xylene					91.73	31.8-115.7		WG610113
Arsenic	mg/kg	65.1	12.0	50	106.	75-125	L592334-23	WG610250
Barium	mg/kg	180.	130.	50	100.	75-125	L592334-23	WG610250
Chromium	mg/kg	86.6	30.0	50	113.	75-125	L592334-23	WG610250
Iron	mg/kg	20700	20000	50	1400*	75-125	L592334-23	WG610250
Lead	mg/kg	65.7	17.0	50	97.4	75-125	L592334-23	WG610250
Selenium	mg/kg	40.9	1.10	50	79.6	75-125	L592334-23	WG610250
Silver	mg/kg	43.6	0	50	87.2	75-125	L592334-23	WG610250
Cadmium	mg/kg	45.1	0	10	90.2	75-125	L592334-23	WG610250
Arsenic	mg/kg	61.8	9.80	50	104.	75-125	L592308-17	WG610294

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L592342

September 09, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Barium	mg/kg	166.	120.	50	92.0	75-125	L592308-17	WG610294
Cadmium	mg/kg	49.6	0.860	50	97.5	75-125	L592308-17	WG610294
Chromium	mg/kg	62.6	17.0	50	91.2	75-125	L592308-17	WG610294
Iron	mg/kg	17000	16400	50	1200*	75-125	L592308-17	WG610294
Selenium	mg/kg	48.0	2.00	50	92.0	75-125	L592308-17	WG610294
Lead	mg/kg	384.	440.	50	0*	75-125	L592308-17	WG610294
Silver	mg/kg	48.2	0	50	19.3*	75-125	L592308-17	WG610294
4,4-DDD	mg/kg	0.0629	0	.0667	94.3	45-139	L592334-21	WG610113
4,4-DDE	mg/kg	0.0586	0	.0667	87.8	47-134	L592334-21	WG610113
4,4-DDT	mg/kg	0.0611	0	.0667	91.6	11-148	L592334-21	WG610113
Aldrin	mg/kg	0.0593	0	.0667	88.8	52-117	L592334-21	WG610113
Alpha BHC	mg/kg	0.0614	0	.0667	92.1	51-120	L592334-21	WG610113
Beta BHC	mg/kg	0.0616	0	.0667	92.4	48-124	L592334-21	WG610113
Delta BHC	mg/kg	0.0664	0	.0667	99.5	38-128	L592334-21	WG610113
Dieldrin	mg/kg	0.0616	0	.0667	92.3	48-135	L592334-21	WG610113
Endosulfan I	mg/kg	0.0603	0	.0667	90.4	51-129	L592334-21	WG610113
Endosulfan II	mg/kg	0.0611	0	.0667	91.6	42-142	L592334-21	WG610113
Endosulfan sulfate	mg/kg	0.0757	0	.0667	113.	38-140	L592334-21	WG610113
Endrin	mg/kg	0.0628	0	.0667	94.2	44-133	L592334-21	WG610113
Endrin aldehyde	mg/kg	0.0598	0	.0667	89.7	16-116	L592334-21	WG610113
Endrin ketone	mg/kg	0.0693	0	.0667	104.	33-131	L592334-21	WG610113
Gamma BHC	mg/kg	0.0616	0	.0667	92.3	52-119	L592334-21	WG610113
Heptachlor	mg/kg	0.0622	0	.0667	93.3	47-121	L592334-21	WG610113
Heptachlor epoxide	mg/kg	0.0602	0	.0667	90.3	54-120	L592334-21	WG610113
Hexachlorobenzene	mg/kg	0.0558	0	.0667	83.6	58-115	L592334-21	WG610113
Methoxychlor	mg/kg	0.0647	0	.0667	96.9	9-153	L592334-21	WG610113
Decachlorobiphenyl					86.99	18.9-115.8		WG610113
Tetrachloro-m-xylene					89.65	31.8-115.7		WG610113
1,2,4-Trichlorobenzene	mg/kg	0.196	0	.333	58.7	27-118	L592308-01	WG610105
2,4,6-Trichlorophenol	mg/kg	0.202	0	.333	60.6	18-140	L592308-01	WG610105
2,4-Dichlorophenol	mg/kg	0.213	0	.333	64.0	30-134	L592308-01	WG610105
2,4-Dimethylphenol	mg/kg	0.200	0	.333	60.2	13-147	L592308-01	WG610105
2,4-Dinitrophenol	mg/kg	0.108	0	.333	32.5	10-110	L592308-01	WG610105
2,4-Dinitrotoluene	mg/kg	0.224	0	.333	67.1	12-146	L592308-01	WG610105
2,6-Dinitrotoluene	mg/kg	0.231	0	.333	69.5	10-150	L592308-01	WG610105
2-Chloronaphthalene	mg/kg	0.209	0	.333	62.9	31-127	L592308-01	WG610105
2-Chlorophenol	mg/kg	0.187	0	.333	56.0	26-120	L592308-01	WG610105
2-Nitrophenol	mg/kg	0.224	0	.333	67.2	10-156	L592308-01	WG610105
3,3-Dichlorobenzidine	mg/kg	0.167	0	.333	50.1	10-127	L592308-01	WG610105
4,6-Dinitro-2-methylphenol	mg/kg	0.0985	0	.333	29.6	10-124	L592308-01	WG610105
4-Bromophenyl-phenylether	mg/kg	0.208	0	.333	62.4	27-150	L592308-01	WG610105
4-Chloro-3-methylphenol	mg/kg	0.223	0	.333	67.0	24-140	L592308-01	WG610105
4-Chlorophenyl-phenylether	mg/kg	0.205	0	.333	61.6	27-142	L592308-01	WG610105
4-Nitrophenol	mg/kg	0.162	0	.333	48.6	10-166	L592308-01	WG610105
Acenaphthene	mg/kg	0.232	0	.333	69.6	30-132	L592308-01	WG610105
Acenaphthylene	mg/kg	0.238	0	.333	71.4	31-144	L592308-01	WG610105
Anthracene	mg/kg	0.231	0	.333	69.3	27-140	L592308-01	WG610105
Benzidine	mg/kg	0.00294	0	.333	0.881*	10-55	L592308-01	WG610105
Benzo(a)anthracene	mg/kg	0.264	0.100	.333	49.2	22-139	L592308-01	WG610105
Benzo(a)pyrene	mg/kg	0.288	0.100	.333	56.4	16-148	L592308-01	WG610105
Benzo(b)fluoranthene	mg/kg	0.304	0.130	.333	52.4	13-152	L592308-01	WG610105
Benzo(g,h,i)perylene	mg/kg	0.141	0.0420	.333	29.7	10-137	L592308-01	WG610105
Benzo(k)fluoranthene	mg/kg	0.248	0.0400	.333	62.3	15-152	L592308-01	WG610105
Benzylbutyl phthalate	mg/kg	0.203	0	.333	60.9	20-168	L592308-01	WG610105
Bis(2-chlorethoxy)methane	mg/kg	0.210	0	.333	63.2	32-141	L592308-01	WG610105

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Quality Assurance Report
Level II

L592342

September 09, 2012

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Bis(2-chloroethyl)ether	mg/kg	0.194	0	.333	58.4	25-139	L592308-01	WG610105
Bis(2-chloroisopropyl)ether	mg/kg	0.185	0	.333	55.7	32-128	L592308-01	WG610105
Bis(2-ethylhexyl)phthalate	mg/kg	0.238	0	.333	71.4	20-163	L592308-01	WG610105
Chrysene	mg/kg	0.267	0.0870	.333	54.1	20-139	L592308-01	WG610105
Di-n-butyl phthalate	mg/kg	0.223	0	.333	67.0	24-149	L592308-01	WG610105
Di-n-octyl phthalate	mg/kg	0.214	0	.333	64.4	14-164	L592308-01	WG610105
Dibenz(a,h)anthracene	mg/kg	0.148	0	.333	44.5	10-137	L592308-01	WG610105
Diethyl phthalate	mg/kg	0.212	0	.333	63.6	28-142	L592308-01	WG610105
Dimethyl phthalate	mg/kg	0.227	0	.333	68.3	31-142	L592308-01	WG610105
Fluoranthene	mg/kg	0.352	0.190	.333	48.7	24-145	L592308-01	WG610105
Fluorene	mg/kg	0.229	0	.333	68.9	30-138	L592308-01	WG610105
Hexachloro-1,3-butadiene	mg/kg	0.198	0	.333	59.3	29-136	L592308-01	WG610105
Hexachlorobenzene	mg/kg	0.196	0	.333	58.8	26-136	L592308-01	WG610105
Hexachlorocyclopentadiene	mg/kg	0.174	0	.333	52.1	10-124	L592308-01	WG610105
Hexachloroethane	mg/kg	0.192	0	.333	57.5	21-107	L592308-01	WG610105
Indeno(1,2,3-cd)pyrene	mg/kg	0.163	0.0440	.333	35.8	10-139	L592308-01	WG610105
Isophorone	mg/kg	0.175	0	.333	52.5	26-134	L592308-01	WG610105
n-Nitrosodi-n-propylamine	mg/kg	0.213	0	.333	64.0	24-141	L592308-01	WG610105
n-Nitrosodimethylamine	mg/kg	0.198	0	.333	59.6	18-126	L592308-01	WG610105
n-Nitrosodiphenylamine	mg/kg	0.210	0	.333	63.0	16-128	L592308-01	WG610105
Naphthalene	mg/kg	0.248	0	.333	74.3	31-124	L592308-01	WG610105
Nitrobenzene	mg/kg	0.205	0	.333	61.6	22-122	L592308-01	WG610105
Pentachlorophenol	mg/kg	0.172	0	.333	51.5	10-124	L592308-01	WG610105
Phenanthrene	mg/kg	0.307	0.0860	.333	66.5	25-139	L592308-01	WG610105
Phenol	mg/kg	0.179	0	.333	53.7	22-129	L592308-01	WG610105
Pyrene	mg/kg	0.295	0.150	.333	43.5	23-145	L592308-01	WG610105
2,4,6-Tribromophenol					73.48	16-136		WG610105
2-Fluorobiphenyl					62.05	37-119		WG610105
2-Fluorophenol					55.25	22-114		WG610105
Nitrobenzene-d5					62.26	20-114		WG610105
Phenol-d5					56.05	26-127		WG610105
p-Terphenyl-d14					45.62	15-174		WG610105

		Matrix Spike Duplicate							
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.118	0.115	94.3	49-135	2.03	23	L592342-01	WG609291
1,1,1-Trichloroethane	mg/kg	0.114	0.113	91.0	43-142	0.500	24	L592342-01	WG609291
1,1,2,2-Tetrachloroethane	mg/kg	0.117	0.116	93.7	42-147	1.03	25	L592342-01	WG609291
1,1,2-Trichloroethane	mg/kg	0.115	0.115	92.2	51-134	0.0200	21	L592342-01	WG609291
1,1,2-Trichlorotrifluoroethane	mg/kg	0.101	0.102	80.9	25-156	0.940	29	L592342-01	WG609291
1,1-Dichloroethane	mg/kg	0.112	0.111	89.8	50-131	1.31	21	L592342-01	WG609291
1,1-Dichloroethene	mg/kg	0.101	0.101	81.2	29-145	0.0400	28	L592342-01	WG609291
1,1-Dichloropropene	mg/kg	0.111	0.111	88.5	40-136	0.270	24	L592342-01	WG609291
1,2,3-Trichlorobenzene	mg/kg	0.100	0.104	80.0	13-142	4.14	33	L592342-01	WG609291
1,2,3-Trichloropropane	mg/kg	0.117	0.116	93.5	41-149	0.750	28	L592342-01	WG609291
1,2,3-Trimethylbenzene	mg/kg	0.118	0.120	94.5	33-146	1.44	27	L592342-01	WG609291
1,2,4-Trichlorobenzene	mg/kg	0.102	0.108	81.9	12-140	4.96	32	L592342-01	WG609291
1,2,4-Trimethylbenzene	mg/kg	0.112	0.113	89.2	29-143	1.48	30	L592342-01	WG609291
1,2-Dibromo-3-Chloropropane	mg/kg	0.126	0.122	101.	29-151	3.13	31	L592342-01	WG609291
1,2-Dibromoethane	mg/kg	0.116	0.115	92.4	48-133	0.850	22	L592342-01	WG609291
1,2-Dichlorobenzene	mg/kg	0.114	0.115	91.2	37-136	0.590	25	L592342-01	WG609291
1,2-Dichloroethane	mg/kg	0.111	0.109	89.1	49-131	2.31	20	L592342-01	WG609291
1,2-Dichloropropane	mg/kg	0.114	0.113	91.3	50-132	0.640	21	L592342-01	WG609291
1,3,5-Trimethylbenzene	mg/kg	0.113	0.114	90.0	29-144	1.34	30	L592342-01	WG609291
1,3-Dichlorobenzene	mg/kg	0.105	0.109	84.3	26-140	3.01	28	L592342-01	WG609291
1,3-Dichloropropane	mg/kg	0.113	0.112	90.2	50-126	0.270	22	L592342-01	WG609291
1,4-Dichlorobenzene	mg/kg	0.109	0.112	87.2	34-132	2.37	26	L592342-01	WG609291
2,2-Dichloropropane	mg/kg	0.112	0.120	89.6	35-148	6.66	26	L592342-01	WG609291

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L592342

September 09, 2012

Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
2-Butanone (MEK)	mg/kg	0.603	0.595	96.5	40-149	1.41	27	L592342-01	WG609291
2-Chloroethyl vinyl ether	mg/kg	0.585	0.571	93.6	10-173	2.37	33	L592342-01	WG609291
2-Chlorotoluene	mg/kg	0.111	0.113	88.4	34-136	1.76	28	L592342-01	WG609291
4-Chlorotoluene	mg/kg	0.109	0.111	87.0	31-137	1.68	27	L592342-01	WG609291
4-Methyl-2-pentanone (MIBK)	mg/kg	0.599	0.589	95.8	37-153	1.65	27	L592342-01	WG609291
Acetone	mg/kg	0.588	0.585	94.2	10-177	0.550	28	L592342-01	WG609291
Acrylonitrile	mg/kg	0.579	0.566	92.6	33-159	2.17	26	L592342-01	WG609291
Benzene	mg/kg	0.110	0.109	88.3	44-131	0.810	21	L592342-01	WG609291
Bromobenzene	mg/kg	0.109	0.110	87.4	36-132	0.510	26	L592342-01	WG609291
Bromodichloromethane	mg/kg	0.114	0.113	91.0	48-134	0.610	20	L592342-01	WG609291
Bromoform	mg/kg	0.117	0.118	93.8	34-141	0.530	24	L592342-01	WG609291
Bromomethane	mg/kg	0.123	0.119	98.1	19-173	2.74	25	L592342-01	WG609291
Carbon tetrachloride	mg/kg	0.106	0.106	84.6	36-140	0.390	26	L592342-01	WG609291
Chlorobenzene	mg/kg	0.112	0.113	89.8	42-133	0.890	24	L592342-01	WG609291
Chlorodibromomethane	mg/kg	0.117	0.115	93.4	45-135	1.41	23	L592342-01	WG609291
Chloroethane	mg/kg	0.117	0.117	93.7	16-178	0.310	25	L592342-01	WG609291
Chloroform	mg/kg	0.113	0.112	90.6	52-130	1.61	21	L592342-01	WG609291
Chloromethane	mg/kg	0.116	0.116	93.0	28-147	0.160	23	L592342-01	WG609291
cis-1,2-Dichloroethene	mg/kg	0.112	0.109	89.2	52-128	2.16	21	L592342-01	WG609291
cis-1,3-Dichloropropene	mg/kg	0.114	0.113	91.3	46-131	0.930	21	L592342-01	WG609291
Di-isopropyl ether	mg/kg	0.114	0.112	91.5	46-134	2.41	20	L592342-01	WG609291
Dibromomethane	mg/kg	0.113	0.111	90.4	51-133	1.62	21	L592342-01	WG609291
Dichlorodifluoromethane	mg/kg	0.116	0.114	92.4	12-179	0.950	27	L592342-01	WG609291
Ethylbenzene	mg/kg	0.113	0.115	90.5	38-139	1.75	27	L592342-01	WG609291
Hexachloro-1,3-butadiene	mg/kg	0.0990	0.109	79.2	10-147	9.80	37	L592342-01	WG609291
Isopropylbenzene	mg/kg	0.115	0.117	92.2	34-137	1.11	29	L592342-01	WG609291
Methyl tert-butyl ether	mg/kg	0.113	0.109	90.1	45-134	3.34	22	L592342-01	WG609291
Methylene Chloride	mg/kg	0.104	0.102	82.3	41-133	2.00	28	L592342-01	WG609291
n-Butylbenzene	mg/kg	0.109	0.117	87.4	19-149	6.64	32	L592342-01	WG609291
n-Propylbenzene	mg/kg	0.112	0.114	89.4	27-142	2.32	29	L592342-01	WG609291
Naphthalene	mg/kg	0.111	0.111	88.0	19-146	0.560	30	L592342-01	WG609291
p-Isopropyltoluene	mg/kg	0.112	0.117	89.6	21-150	4.00	31	L592342-01	WG609291
sec-Butylbenzene	mg/kg	0.113	0.116	90.2	25-148	3.24	31	L592342-01	WG609291
Styrene	mg/kg	0.115	0.115	91.9	30-156	0.140	26	L592342-01	WG609291
tert-Butylbenzene	mg/kg	0.114	0.116	90.8	32-146	1.72	30	L592342-01	WG609291
Tetrachloroethene	mg/kg	0.109	0.111	87.4	35-139	1.61	27	L592342-01	WG609291
Toluene	mg/kg	0.109	0.110	87.1	43-127	1.00	21	L592342-01	WG609291
trans-1,2-Dichloroethene	mg/kg	0.110	0.108	87.9	41-132	1.25	23	L592342-01	WG609291
trans-1,3-Dichloropropene	mg/kg	0.113	0.113	90.2	43-129	0.310	23	L592342-01	WG609291
Trichloroethene	mg/kg	0.111	0.111	88.5	42-136	0.250	23	L592342-01	WG609291
Trichlorofluoromethane	mg/kg	0.112	0.115	89.4	20-178	2.47	30	L592342-01	WG609291
Vinyl chloride	mg/kg	0.120	0.120	95.8	30-157	0.100	24	L592342-01	WG609291
Xylenes, Total	mg/kg	0.338	0.343	90.3	38-137	1.46	26	L592342-01	WG609291
4-Bromofluorobenzene				98.05	67-133				WG609291
Dibromofluoromethane				104.5	72-135				WG609291
Toluene-d8				103.4	90-113				WG609291
Mercury	mg/kg	0.337	0.338	78.8*	80-120	0.296	20	L592346-01	WG610084
2,4,5-T	mg/kg	0.130	0.123	77.6	18-111	5.47	29	L592342-03	WG610302
2,4,5-TP (Silvex)	mg/kg	0.124	0.122	74.5	27-123	2.11	23	L592342-03	WG610302
2,4-D	mg/kg	0.130	0.128	78.1	10-137	2.08	40	L592342-03	WG610302
2,4-DB	mg/kg	0.124	0.117	74.5	15-121	5.78	33	L592342-03	WG610302
Dalapon	mg/kg	0.152	0.128	91.1	10-111	17.6	37	L592342-03	WG610302
Dicamba	mg/kg	0.143	0.139	85.6	21-118	2.54	24	L592342-03	WG610302
Dichloroprop	mg/kg	0.150	0.143	89.6	27-125	4.75	24	L592342-03	WG610302
Dinoseb	mg/kg	0.0733	0.0724	43.9	10-95	1.22	40	L592342-03	WG610302

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
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Denver, CO 80222

Quality Assurance Report
Level II

L592342

September 09, 2012

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
MCPA	mg/kg	13.2	12.6	79.1	10-164	4.55	40	L592342-03	WG610302
MCPP	mg/kg	19.4	18.7	116.	17-186	3.63	40	L592342-03	WG610302
2,4-Dichlorophenyl Acetic Acid				77.28	37-99				WG610302
PCB 1016	mg/kg	0.142	0.137	84.9	10-165	3.67	33	L592342-01	WG610113
PCB 1260	mg/kg	0.141	0.133	84.4	29-154	5.88	23	L592342-01	WG610113
Decachlorobiphenyl				84.33	18.9-115.8				WG610113
Tetrachloro-m-xylene				92.72	31.8-115.7				WG610113
Arsenic	mg/kg	77.5	65.1	131.*	75-125	17.4	20	L592334-23	WG610250
Barium	mg/kg	193.	180.	126.*	75-125	6.97	20	L592334-23	WG610250
Chromium	mg/kg	100.	86.6	140.*	75-125	14.4	20	L592334-23	WG610250
Iron	mg/kg	22000	20700	4000*	75-125	6.09	20	L592334-23	WG610250
Lead	mg/kg	68.2	65.7	102.	75-125	3.73	20	L592334-23	WG610250
Selenium	mg/kg	44.6	40.9	87.0	75-125	8.65	20	L592334-23	WG610250
Silver	mg/kg	46.5	43.6	93.0	75-125	6.44	20	L592334-23	WG610250
Cadmium	mg/kg	48.0	45.1	96.0	75-125	6.23	20	L592334-23	WG610250
Arsenic	mg/kg	60.9	61.8	102.	75-125	1.47	20	L592308-17	WG610294
Barium	mg/kg	170.	166.	100.	75-125	2.38	20	L592308-17	WG610294
Cadmium	mg/kg	53.5	49.6	105.	75-125	7.57	20	L592308-17	WG610294
Chromium	mg/kg	67.2	62.6	100.	75-125	7.09	20	L592308-17	WG610294
Iron	mg/kg	16900	17000	1000*	75-125	0.590	20	L592308-17	WG610294
Selenium	mg/kg	51.8	48.0	99.6	75-125	7.62	20	L592308-17	WG610294
Lead	mg/kg	489.	384.	98.0	75-125	24.1*	20	L592308-17	WG610294
Silver	mg/kg	52.4	48.2	105.	75-125	8.35	20	L592308-17	WG610294
4,4-DDD	mg/kg	0.0630	0.0629	94.4	45-139	0.175	21	L592334-21	WG610113
4,4-DDE	mg/kg	0.0582	0.0586	87.3	47-134	0.556	21	L592334-21	WG610113
4,4-DDT	mg/kg	0.0619	0.0611	92.8	11-148	1.30	21	L592334-21	WG610113
Aldrin	mg/kg	0.0598	0.0593	89.6	52-117	0.898	21	L592334-21	WG610113
Alpha BHC	mg/kg	0.0617	0.0614	92.5	51-120	0.401	20	L592334-21	WG610113
Beta BHC	mg/kg	0.0615	0.0616	92.2	48-124	0.253	21	L592334-21	WG610113
Delta BHC	mg/kg	0.0664	0.0664	99.6	38-128	0.0472	21	L592334-21	WG610113
Dieldrin	mg/kg	0.0616	0.0616	92.4	48-135	0.102	20	L592334-21	WG610113
Endosulfan I	mg/kg	0.0605	0.0603	90.6	51-129	0.302	20	L592334-21	WG610113
Endosulfan II	mg/kg	0.0614	0.0611	92.1	42-142	0.514	21	L592334-21	WG610113
Endosulfan sulfate	mg/kg	0.0749	0.0757	112.	38-140	0.979	22	L592334-21	WG610113
Endrin	mg/kg	0.0631	0.0628	94.7	44-133	0.480	20	L592334-21	WG610113
Endrin aldehyde	mg/kg	0.0594	0.0598	89.1	16-116	0.684	23	L592334-21	WG610113
Endrin ketone	mg/kg	0.0688	0.0693	103.	33-131	0.653	21	L592334-21	WG610113
Gamma BHC	mg/kg	0.0618	0.0616	92.6	52-119	0.273	20	L592334-21	WG610113
Heptachlor	mg/kg	0.0631	0.0622	94.5	47-121	1.35	20	L592334-21	WG610113
Heptachlor epoxide	mg/kg	0.0608	0.0602	91.1	54-120	0.966	20	L592334-21	WG610113
Hexachlorobenzene	mg/kg	0.0562	0.0558	84.3	58-115	0.837	20	L592334-21	WG610113
Methoxychlor	mg/kg	0.0643	0.0647	96.4	9-153	0.530	22	L592334-21	WG610113
Decachlorobiphenyl				87.13	18.9-115.8				WG610113
Tetrachloro-m-xylene				90.38	31.8-115.7				WG610113
1,2,4-Trichlorobenzene	mg/kg	0.206	0.196	62.0	27-118	5.43	23	L592308-01	WG610105
2,4,6-Trichlorophenol	mg/kg	0.223	0.202	67.1	18-140	10.2	26	L592308-01	WG610105
2,4-Dichlorophenol	mg/kg	0.225	0.213	67.5	30-134	5.30	23	L592308-01	WG610105
2,4-Dimethylphenol	mg/kg	0.226	0.200	67.9	13-147	12.1	27	L592308-01	WG610105
2,4-Dinitrophenol	mg/kg	0.112	0.108	33.6	10-110	3.33	40	L592308-01	WG610105

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
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Quality Assurance Report
Level II

L592342

September 09, 2012

Analyte	Units	Matrix Spike MSD	Matrix Spike Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
2,4-Dinitrotoluene	mg/kg	0.239	0.224	71.8	12-146	6.70	25	L592308-01	WG610105
2,6-Dinitrotoluene	mg/kg	0.233	0.231	69.9	10-150	0.595	23	L592308-01	WG610105
2-Chloronaphthalene	mg/kg	0.218	0.209	65.5	31-127	4.08	23	L592308-01	WG610105
2-Chlorophenol	mg/kg	0.210	0.187	63.1	26-120	11.9	21	L592308-01	WG610105
2-Nitrophenol	mg/kg	0.242	0.224	72.6	10-156	7.68	24	L592308-01	WG610105
3,3-Dichlorobenzidine	mg/kg	0.210	0.167	63.0	10-127	22.9	40	L592308-01	WG610105
4,6-Dinitro-2-methylphenol	mg/kg	0.0997	0.0985	29.9	10-124	1.21	40	L592308-01	WG610105
4-Bromophenyl-phenylether	mg/kg	0.232	0.208	69.8	27-150	11.2	20	L592308-01	WG610105
4-Chloro-3-methylphenol	mg/kg	0.233	0.223	69.9	24-140	4.34	22	L592308-01	WG610105
4-Chlorophenyl-phenylether	mg/kg	0.231	0.205	69.3	27-142	11.8	21	L592308-01	WG610105
4-Nitrophenol	mg/kg	0.172	0.162	51.5	10-166	5.80	35	L592308-01	WG610105
Acenaphthene	mg/kg	0.248	0.232	74.5	30-132	6.73	21	L592308-01	WG610105
Acenaphthylene	mg/kg	0.247	0.238	74.1	31-144	3.70	24	L592308-01	WG610105
Anthracene	mg/kg	0.237	0.231	71.0	27-140	2.51	20	L592308-01	WG610105
Benzidine	mg/kg	0.00734	0.00294	2.20*	10-55	85.7*	36	L592308-01	WG610105
Benzo(a)anthracene	mg/kg	0.276	0.264	53.0	22-139	4.64	22	L592308-01	WG610105
Benzo(a)pyrene	mg/kg	0.304	0.288	61.3	16-148	5.52	21	L592308-01	WG610105
Benzo(b)fluoranthene	mg/kg	0.304	0.304	52.2	13-152	0.131	24	L592308-01	WG610105
Benzo(g,h,i)perylene	mg/kg	0.162	0.141	35.9	10-137	13.7	32	L592308-01	WG610105
Benzo(k)fluoranthene	mg/kg	0.272	0.248	69.7	15-152	9.49	22	L592308-01	WG610105
Benzylbutyl phthalate	mg/kg	0.226	0.203	67.8	20-168	10.7	23	L592308-01	WG610105
Bis(2-chlorethoxy)methane	mg/kg	0.219	0.210	65.8	32-141	4.17	20	L592308-01	WG610105
Bis(2-chloroethyl)ether	mg/kg	0.214	0.194	64.1	25-139	9.32	26	L592308-01	WG610105
Bis(2-chloroisopropyl)ether	mg/kg	0.197	0.185	59.1	32-128	6.01	22	L592308-01	WG610105
Bis(2-ethylhexyl)phthalate	mg/kg	0.411	0.238	123.	20-163	53.4*	24	L592308-01	WG610105
Chrysene	mg/kg	0.277	0.267	57.0	20-139	3.62	23	L592308-01	WG610105
Di-n-butyl phthalate	mg/kg	0.236	0.223	70.9	24-149	5.59	24	L592308-01	WG610105
Di-n-octyl phthalate	mg/kg	0.254	0.214	76.2	14-164	16.7	24	L592308-01	WG610105
Dibenz(a,h)anthracene	mg/kg	0.167	0.148	50.2	10-137	11.8	29	L592308-01	WG610105
Diethyl phthalate	mg/kg	0.233	0.212	70.1	28-142	9.77	23	L592308-01	WG610105
Dimethyl phthalate	mg/kg	0.234	0.227	70.2	31-142	2.71	22	L592308-01	WG610105
Fluoranthene	mg/kg	0.320	0.352	38.9	24-145	9.74	29	L592308-01	WG610105
Fluorene	mg/kg	0.238	0.229	71.5	30-138	3.73	22	L592308-01	WG610105
Hexachloro-1,3-butadiene	mg/kg	0.223	0.198	67.0	29-136	12.1	22	L592308-01	WG610105
Hexachlorobenzene	mg/kg	0.217	0.196	65.1	26-136	10.2	20	L592308-01	WG610105
Hexachlorocyclopentadiene	mg/kg	0.176	0.174	52.7	10-124	1.18	33	L592308-01	WG610105
Hexachloroethane	mg/kg	0.210	0.192	63.0	21-107	9.20	27	L592308-01	WG610105
Indeno(1,2,3-cd)pyrene	mg/kg	0.182	0.163	41.3	10-139	10.7	32	L592308-01	WG610105
Isophorone	mg/kg	0.184	0.175	55.2	26-134	4.97	20	L592308-01	WG610105
n-Nitrosodi-n-propylamine	mg/kg	0.230	0.213	69.0	24-141	7.50	20	L592308-01	WG610105
n-Nitrosodimethylamine	mg/kg	0.225	0.198	67.5	18-126	12.5	27	L592308-01	WG610105
n-Nitrosodiphenylamine	mg/kg	0.223	0.210	66.8	16-128	5.86	25	L592308-01	WG610105
Naphthalene	mg/kg	0.277	0.248	83.1	31-124	11.1	25	L592308-01	WG610105
Nitrobenzene	mg/kg	0.219	0.205	65.7	22-122	6.54	20	L592308-01	WG610105
Pentachlorophenol	mg/kg	0.195	0.172	58.6	10-124	12.9	34	L592308-01	WG610105
Phenanthrene	mg/kg	0.290	0.307	61.4	25-139	5.71	25	L592308-01	WG610105
Phenol	mg/kg	0.220	0.179	66.0	22-129	20.6	25	L592308-01	WG610105
Pyrene	mg/kg	0.294	0.295	43.1	23-145	0.439	30	L592308-01	WG610105
2,4,6-Tribromophenol				77.31	16-136				WG610105
2-Fluorobiphenyl				72.02	37-119				WG610105
2-Fluorophenol				63.82	22-114				WG610105
Nitrobenzene-d5				69.94	20-114				WG610105
Phenol-d5				63.56	26-127				WG610105
p-Terphenyl-d14				62.29	15-174				WG610105

Batch number /Run number / Sample number cross reference

WG609291: R2322993 R2324473: L592342-02 03 04 01

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L592342

September 09, 2012

WG610084: R2324554: L592342-01 02 03 04
WG610302: R2326793: L592342-01 02 03 04
WG610113: R2327393: L592342-01 02 03 04
WG610250: R2327513: L592342-01 02 03
WG610294: R2329034: L592342-04
WG610105: R2333854: L592342-01 02 03 04

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW2, Samples at 5 ft. & 20 ft.
Monitoring Well YA-MW7, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L592342

September 09, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

Report Summary

Tuesday September 11, 2012

Report Number: L593015
Samples Received: 09/01/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-01

Site ID : I-70

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8 0 FT

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/05/12	1
Arsenic	BDL	1.0	mg/kg	6010B	09/06/12	1
Barium	92.	0.25	mg/kg	6010B	09/06/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/06/12	1
Chromium	7.0	0.50	mg/kg	6010B	09/06/12	1
Iron	9000	5.0	mg/kg	6010B	09/06/12	1
Lead	23.	0.25	mg/kg	6010B	09/06/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/06/12	1
Silver	BDL	0.50	mg/kg	6010B	09/06/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/03/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/03/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/03/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/03/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/03/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/03/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/03/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/03/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/03/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/03/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/03/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/03/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/03/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/03/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/03/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/03/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/03/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/03/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L593015-01 (SV8270BNA) - diluted due to matrix

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-01

Site ID : I-70

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8 0 FT

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/03/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/03/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/03/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/03/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/03/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/03/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/03/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/03/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/03/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/03/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/03/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/03/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/03/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/03/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/03/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/03/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/03/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/03/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/03/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/03/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/03/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/03/12	5
Surrogate Recovery						
Toluene-d8	99.4		% Rec.	8260B	09/03/12	5
Dibromofluoromethane	98.8		% Rec.	8260B	09/03/12	5
4-Bromofluorobenzene	105.		% Rec.	8260B	09/03/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L593015-01 (SV8270BNA) - diluted due to matrix

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-01

Site ID : I-70

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8 0 FT

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/06/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/06/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/06/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/06/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/05/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	93.9		% Rec.	8081/8082	09/05/12	1
Tetrachloro-m-xylene	87.1		% Rec.	8081/8082	09/05/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/10/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/10/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/10/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/10/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/10/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/10/12	1
MCPA	BDL	6.5	mg/kg	8151	09/10/12	1
MCPP	BDL	6.5	mg/kg	8151	09/10/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/10/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/10/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	78.6		% Rec.	8151	09/10/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.16	mg/kg	8270C	09/10/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L593015-01 (SV8270BNA) - diluted due to matrix

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-01

Site ID : I-70

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8 0 FT

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.16	mg/kg	8270C	09/10/12	5
Anthracene	BDL	0.16	mg/kg	8270C	09/10/12	5
Benzidine	BDL	1.7	mg/kg	8270C	09/10/12	5
Benzo(a)anthracene	BDL	0.16	mg/kg	8270C	09/10/12	5
Benzo(b)fluoranthene	BDL	0.16	mg/kg	8270C	09/10/12	5
Benzo(k)fluoranthene	BDL	0.16	mg/kg	8270C	09/10/12	5
Benzo(g,h,i)perylene	BDL	0.16	mg/kg	8270C	09/10/12	5
Benzo(a)pyrene	BDL	0.16	mg/kg	8270C	09/10/12	5
Bis(2-chlorethoxy)methane	BDL	1.7	mg/kg	8270C	09/10/12	5
Bis(2-chloroethyl)ether	BDL	1.7	mg/kg	8270C	09/10/12	5
Bis(2-chloroisopropyl)ether	BDL	1.7	mg/kg	8270C	09/10/12	5
4-Bromophenyl-phenylether	BDL	1.7	mg/kg	8270C	09/10/12	5
2-Chloronaphthalene	BDL	0.16	mg/kg	8270C	09/10/12	5
4-Chlorophenyl-phenylether	BDL	1.7	mg/kg	8270C	09/10/12	5
Chrysene	BDL	0.16	mg/kg	8270C	09/10/12	5
Dibenz(a,h)anthracene	BDL	0.16	mg/kg	8270C	09/10/12	5
3,3-Dichlorobenzidine	BDL	1.7	mg/kg	8270C	09/10/12	5
2,4-Dinitrotoluene	BDL	1.7	mg/kg	8270C	09/10/12	5
2,6-Dinitrotoluene	BDL	1.7	mg/kg	8270C	09/10/12	5
Fluoranthene	BDL	0.16	mg/kg	8270C	09/10/12	5
Fluorene	BDL	0.16	mg/kg	8270C	09/10/12	5
Hexachlorobenzene	BDL	1.7	mg/kg	8270C	09/10/12	5
Hexachloro-1,3-butadiene	BDL	1.7	mg/kg	8270C	09/10/12	5
Hexachlorocyclopentadiene	BDL	1.7	mg/kg	8270C	09/10/12	5
Hexachloroethane	BDL	1.7	mg/kg	8270C	09/10/12	5
Indeno(1,2,3-cd)pyrene	BDL	0.16	mg/kg	8270C	09/10/12	5
Isophorone	BDL	1.7	mg/kg	8270C	09/10/12	5
Naphthalene	BDL	0.16	mg/kg	8270C	09/10/12	5
Nitrobenzene	BDL	1.7	mg/kg	8270C	09/10/12	5
n-Nitrosodimethylamine	BDL	1.7	mg/kg	8270C	09/10/12	5
n-Nitrosodiphenylamine	BDL	1.7	mg/kg	8270C	09/10/12	5
n-Nitrosodi-n-propylamine	BDL	1.7	mg/kg	8270C	09/10/12	5
Phenanthrene	BDL	0.16	mg/kg	8270C	09/10/12	5
Benzylbutyl phthalate	5.4	1.7	mg/kg	8270C	09/10/12	5
Bis(2-ethylhexyl)phthalate	BDL	1.7	mg/kg	8270C	09/10/12	5
Di-n-butyl phthalate	BDL	1.7	mg/kg	8270C	09/10/12	5
Diethyl phthalate	BDL	1.7	mg/kg	8270C	09/10/12	5
Dimethyl phthalate	BDL	1.7	mg/kg	8270C	09/10/12	5
Di-n-octyl phthalate	BDL	1.7	mg/kg	8270C	09/10/12	5
Pyrene	BDL	0.16	mg/kg	8270C	09/10/12	5
1,2,4-Trichlorobenzene	BDL	1.7	mg/kg	8270C	09/10/12	5
Acid Extractables						
4-Chloro-3-methylphenol	BDL	1.7	mg/kg	8270C	09/10/12	5
2-Chlorophenol	BDL	1.7	mg/kg	8270C	09/10/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L593015-01 (SV8270BNA) - diluted due to matrix

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-01

Date Received : September 01, 2012
Description : I-70 East PCL Project

Site ID : I-70

Sample ID : YA-MW 8 0 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	1.7	mg/kg	8270C	09/10/12	5
2,4-Dimethylphenol	BDL	1.7	mg/kg	8270C	09/10/12	5
4,6-Dinitro-2-methylphenol	BDL	1.7	mg/kg	8270C	09/10/12	5
2,4-Dinitrophenol	BDL	1.7	mg/kg	8270C	09/10/12	5
2-Nitrophenol	BDL	1.7	mg/kg	8270C	09/10/12	5
4-Nitrophenol	BDL	1.7	mg/kg	8270C	09/10/12	5
Pentachlorophenol	BDL	1.7	mg/kg	8270C	09/10/12	5
Phenol	BDL	1.7	mg/kg	8270C	09/10/12	5
2,4,6-Trichlorophenol	BDL	1.7	mg/kg	8270C	09/10/12	5
Surrogate Recovery						
2-Fluorophenol	61.8		% Rec.	8270C	09/10/12	5
Phenol-d5	67.0		% Rec.	8270C	09/10/12	5
Nitrobenzene-d5	58.1		% Rec.	8270C	09/10/12	5
2-Fluorobiphenyl	65.5		% Rec.	8270C	09/10/12	5
2,4,6-Tribromophenol	54.1		% Rec.	8270C	09/10/12	5
p-Terphenyl-d14	61.9		% Rec.	8270C	09/10/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 09/11/12 14:53 Printed: 09/11/12 14:54
L593015-01 (SV8270BNA) - diluted due to matrix

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-02

Date Received : September 01, 2012
Description : I-70 East PCL Project

Site ID : I-70

Sample ID : YA-MW 8 20 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/05/12	1
Arsenic	BDL	2.0	mg/kg	6010B	09/06/12	2
Barium	93.	0.25	mg/kg	6010B	09/06/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/06/12	1
Chromium	12.	0.50	mg/kg	6010B	09/06/12	1
Iron	12000	5.0	mg/kg	6010B	09/06/12	1
Lead	7.5	0.25	mg/kg	6010B	09/06/12	1
Selenium	BDL	2.0	mg/kg	6010B	09/06/12	2
Silver	BDL	0.50	mg/kg	6010B	09/06/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/05/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/05/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/05/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/05/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/05/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/05/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/05/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/05/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/05/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/05/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/05/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/05/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-02

Site ID : I-70

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8 20 FT

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/05/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/05/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/05/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/05/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/05/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/05/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/05/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/05/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/05/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/05/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/05/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/05/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/05/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/05/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/05/12	5
Surrogate Recovery						
Toluene-d8	96.9		% Rec.	8260B	09/05/12	5
Dibromofluoromethane	88.2		% Rec.	8260B	09/05/12	5
4-Bromofluorobenzene	102.		% Rec.	8260B	09/05/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-02

Site ID : I-70

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8 20 FT

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/06/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/06/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/06/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/06/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/05/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	91.4		% Rec.	8081/8082	09/05/12	1
Tetrachloro-m-xylene	95.1		% Rec.	8081/8082	09/05/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/10/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/10/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/10/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/10/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/10/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/10/12	1
MCPA	BDL	6.5	mg/kg	8151	09/10/12	1
MCPP	BDL	6.5	mg/kg	8151	09/10/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/10/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/10/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	72.7		% Rec.	8151	09/10/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-02

Site ID : I-70

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8 20 FT

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/10/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/10/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/10/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/10/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/10/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/10/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/10/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/10/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/10/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/10/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/10/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/10/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-02

Date Received : September 01, 2012
Description : I-70 East PCL Project

Site ID : I-70

Sample ID : YA-MW 8 20 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Surrogate Recovery						
2-Fluorophenol	66.2		% Rec.	8270C	09/10/12	1
Phenol-d5	68.9		% Rec.	8270C	09/10/12	1
Nitrobenzene-d5	57.4		% Rec.	8270C	09/10/12	1
2-Fluorobiphenyl	68.0		% Rec.	8270C	09/10/12	1
2,4,6-Tribromophenol	58.3		% Rec.	8270C	09/10/12	1
p-Terphenyl-d14	83.2		% Rec.	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 09/11/12 14:53 Printed: 09/11/12 14:54

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-03

Date Received : September 01, 2012
Description : I-70 East PCL Project

Site ID : I-70

Sample ID : YA-MW 9 5 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/05/12	1
Arsenic	BDL	2.0	mg/kg	6010B	09/06/12	2
Barium	68.	0.25	mg/kg	6010B	09/06/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/06/12	1
Chromium	13.	0.50	mg/kg	6010B	09/06/12	1
Iron	13000	5.0	mg/kg	6010B	09/06/12	1
Lead	6.7	0.25	mg/kg	6010B	09/06/12	1
Selenium	BDL	2.0	mg/kg	6010B	09/06/12	2
Silver	BDL	0.50	mg/kg	6010B	09/06/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/06/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/06/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/06/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/06/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/06/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/06/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/06/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/06/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/06/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/06/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/06/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/06/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/06/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/06/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/06/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/06/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/06/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/06/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-03

Site ID : I-70

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 9 5 FT

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/06/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/06/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/06/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/06/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/06/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/06/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/06/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/06/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/06/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/06/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/06/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/06/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/06/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/06/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/06/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/06/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/06/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/06/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/06/12	5
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	09/06/12	5
Dibromofluoromethane	98.1		% Rec.	8260B	09/06/12	5
4-Bromofluorobenzene	100.		% Rec.	8260B	09/06/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-03

Date Received : September 01, 2012
Description : I-70 East PCL Project

Site ID : I-70

Sample ID : YA-MW 9 5 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/06/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/06/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/06/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/06/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/05/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	85.4		% Rec.	8081/8082	09/05/12	1
Tetrachloro-m-xylene	92.7		% Rec.	8081/8082	09/05/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/10/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/10/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/10/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/10/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/10/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/10/12	1
MCPA	BDL	6.5	mg/kg	8151	09/10/12	1
MCPP	BDL	6.5	mg/kg	8151	09/10/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/10/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/10/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	74.2		% Rec.	8151	09/10/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-03

Site ID : I-70

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 9 5 FT

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/10/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/10/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/10/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/10/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/10/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/10/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/10/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/10/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/10/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/10/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/10/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/10/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-03

Date Received : September 01, 2012
Description : I-70 East PCL Project

Site ID : I-70

Sample ID : YA-MW 9 5 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Surrogate Recovery						
2-Fluorophenol	63.3		% Rec.	8270C	09/10/12	1
Phenol-d5	67.6		% Rec.	8270C	09/10/12	1
Nitrobenzene-d5	56.4		% Rec.	8270C	09/10/12	1
2-Fluorobiphenyl	65.9		% Rec.	8270C	09/10/12	1
2,4,6-Tribromophenol	58.0		% Rec.	8270C	09/10/12	1
p-Terphenyl-d14	73.3		% Rec.	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 09/11/12 14:53 Printed: 09/11/12 14:54

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-04

Date Received : September 01, 2012
Description : I-70 East PCL Project

Site ID : I-70

Sample ID : YA-MW 9 20 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/05/12	1
Arsenic	BDL	1.0	mg/kg	6010B	09/06/12	1
Barium	60.	0.25	mg/kg	6010B	09/06/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/06/12	1
Chromium	6.6	0.50	mg/kg	6010B	09/06/12	1
Iron	5400	5.0	mg/kg	6010B	09/06/12	1
Lead	2.3	0.25	mg/kg	6010B	09/06/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/06/12	1
Silver	BDL	0.50	mg/kg	6010B	09/06/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/05/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/05/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/05/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/05/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/05/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/05/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/05/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/05/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/05/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/05/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/05/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/05/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-04

Site ID : I-70

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 9 20 FT

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/05/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/05/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/05/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/05/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/05/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/05/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/05/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/05/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/05/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/05/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/05/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/05/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/05/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/05/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/05/12	5
Surrogate Recovery						
Toluene-d8	94.7		% Rec.	8260B	09/05/12	5
Dibromofluoromethane	87.4		% Rec.	8260B	09/05/12	5
4-Bromofluorobenzene	106.		% Rec.	8260B	09/05/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-04

Date Received : September 01, 2012
Description : I-70 East PCL Project

Site ID : I-70

Sample ID : YA-MW 9 20 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/06/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/06/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/06/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/06/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/05/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	84.9		% Rec.	8081/8082	09/05/12	1
Tetrachloro-m-xylene	90.5		% Rec.	8081/8082	09/05/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/10/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/10/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/10/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/10/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/10/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/10/12	1
MCPA	BDL	6.5	mg/kg	8151	09/10/12	1
MCPP	BDL	6.5	mg/kg	8151	09/10/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/10/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/10/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	99.7		% Rec.	8151	09/10/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-04

Site ID : I-70

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 9 20 FT

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/10/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/10/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/10/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/10/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/10/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/10/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/10/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/10/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/10/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/10/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/10/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/10/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593015-04

Date Received : September 01, 2012
Description : I-70 East PCL Project

Site ID : I-70

Sample ID : YA-MW 9 20 FT

Project # : 212-137

Collected By : I P C
Collection Date : 08/30/12 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Surrogate Recovery						
2-Fluorophenol	65.2		% Rec.	8270C	09/10/12	1
Phenol-d5	70.7		% Rec.	8270C	09/10/12	1
Nitrobenzene-d5	57.2		% Rec.	8270C	09/10/12	1
2-Fluorobiphenyl	67.4		% Rec.	8270C	09/10/12	1
2,4,6-Tribromophenol	58.2		% Rec.	8270C	09/10/12	1
p-Terphenyl-d14	83.0		% Rec.	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 09/11/12 14:53 Printed: 09/11/12 14:54

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L593015-01	WG610744	SAMP	Benzidine	R2337694	J4
	WG610693	SAMP	1,1,2,2-Tetrachloroethane	R2328693	J3
	WG610693	SAMP	1,2,4-Trichlorobenzene	R2328693	J3
	WG610970	SAMP	2,4-D	R2338774	J3
	WG610970	SAMP	2,4-DB	R2338774	J3
	WG610970	SAMP	Dicamba	R2338774	J3
	WG610970	SAMP	Dichloroprop	R2338774	J3L1
	WG610970	SAMP	MCPA	R2338774	J3
	WG610970	SAMP	MCPP	R2338774	J3
	WG610970	SAMP	2,4,5-T	R2338774	J3
L593015-02	WG610744	SAMP	Benzidine	R2337694	J4
	WG610909	SAMP	Arsenic	R2334594	O
	WG610909	SAMP	Selenium	R2334594	O
	WG610695	SAMP	Benzene	R2329673	J3
	WG610695	SAMP	Bromobenzene	R2329673	J3
	WG610695	SAMP	Bromodichloromethane	R2329673	J3
	WG610695	SAMP	Bromoform	R2329673	J4
	WG610695	SAMP	Bromomethane	R2329673	J3
	WG610695	SAMP	Chlorodibromomethane	R2329673	J3
	WG610695	SAMP	Chloroform	R2329673	J3
	WG610695	SAMP	Chloromethane	R2329673	J3
	WG610695	SAMP	1,2-Dibromoethane	R2329673	J3
	WG610695	SAMP	Dibromomethane	R2329673	J3
	WG610695	SAMP	1,2-Dichlorobenzene	R2329673	J3
	WG610695	SAMP	1,4-Dichlorobenzene	R2329673	J3
	WG610695	SAMP	1,1-Dichloroethane	R2329673	J3
	WG610695	SAMP	1,2-Dichloroethane	R2329673	J3
	WG610695	SAMP	cis-1,2-Dichloroethene	R2329673	J3
	WG610695	SAMP	trans-1,2-Dichloroethene	R2329673	J3
	WG610695	SAMP	1,2-Dichloropropane	R2329673	J3
	WG610695	SAMP	1,3-Dichloropropane	R2329673	J3
	WG610695	SAMP	cis-1,3-Dichloropropene	R2329673	J3
	WG610695	SAMP	trans-1,3-Dichloropropene	R2329673	J3
	WG610695	SAMP	Di-isopropyl ether	R2329673	J3
	WG610695	SAMP	4-Methyl-2-pentanone (MIBK)	R2329673	J3
	WG610695	SAMP	Methyl tert-butyl ether	R2329673	J3
	WG610695	SAMP	Naphthalene	R2329673	J3
	WG610695	SAMP	n-Propylbenzene	R2329673	J3
	WG610695	SAMP	1,1,1,2-Tetrachloroethane	R2329673	J3
	WG610695	SAMP	Toluene	R2329673	J3
	WG610695	SAMP	1,2,3-Trichlorobenzene	R2329673	J3
	WG610695	SAMP	1,1,2-Trichloroethane	R2329673	J3
	WG610695	SAMP	1,2,3-Trimethylbenzene	R2329673	J3
	WG610695	SAMP	Vinyl chloride	R2329673	J3
	WG610970	SAMP	2,4-D	R2338774	J3
	WG610970	SAMP	2,4-DB	R2338774	J3
	WG610970	SAMP	Dicamba	R2338774	J3
	WG610970	SAMP	Dichloroprop	R2338774	J3L1
	WG610970	SAMP	MCPA	R2338774	J3
	WG610970	SAMP	MCPP	R2338774	J3
	WG610970	SAMP	2,4,5-T	R2338774	J3
L593015-03	WG610744	SAMP	Benzidine	R2337694	J4J6J3
	WG610909	SAMP	Arsenic	R2334594	O
	WG610909	SAMP	Selenium	R2334594	O
	WG610970	SAMP	2,4-D	R2338774	J3
	WG610970	SAMP	2,4-DB	R2338774	J3
	WG610970	SAMP	Dicamba	R2338774	J3
	WG610970	SAMP	Dichloroprop	R2338774	J3L1
	WG610970	SAMP	MCPA	R2338774	J3
	WG610970	SAMP	MCPP	R2338774	J3
	WG610970	SAMP	2,4,5-T	R2338774	J3
L593015-04	WG610744	SAMP	Benzidine	R2337694	J4
	WG610695	SAMP	Bromoform	R2329673	J4J3
	WG610970	SAMP	2,4-D	R2338774	J3
	WG610970	SAMP	2,4-DB	R2338774	J3
	WG610970	SAMP	Dicamba	R2338774	J3
	WG610970	SAMP	Dichloroprop	R2338774	J3L1
	WG610970	SAMP	MCPA	R2338774	J3
	WG610970	SAMP	MCPP	R2338774	J3

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
	WG610970	SAMP	2,4,5-T	R2338774	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
L1	(ESC) The associated batch LCS exceeded the upper control limit, which indicates a high bias; The sample analyte was "not detected" and is therefore unaffected.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
09/11/12 at 14:54:29

TSR Signing Reports: 358

Sample: L593015-01 Account: YEHDCO Received: 09/01/12 09:00 Due Date: 09/12/12 00:00 RPT Date: 09/11/12 14:53

Sample: L593015-02 Account: YEHDCO Received: 09/01/12 09:00 Due Date: 09/12/12 00:00 RPT Date: 09/11/12 14:53

Sample: L593015-03 Account: YEHDCO Received: 09/01/12 09:00 Due Date: 09/12/12 00:00 RPT Date: 09/11/12 14:53

Sample: L593015-04 Account: YEHDCO Received: 09/01/12 09:00 Due Date: 09/12/12 00:00 RPT Date: 09/11/12 14:53

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG610693	09/02/12 20:10
1,1,1-Trichloroethane	< .001	mg/kg			WG610693	09/02/12 20:10
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG610693	09/02/12 20:10
1,1,2-Trichloroethane	< .001	mg/kg			WG610693	09/02/12 20:10
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG610693	09/02/12 20:10
1,1-Dichloroethane	< .001	mg/kg			WG610693	09/02/12 20:10
1,1-Dichloroethene	< .001	mg/kg			WG610693	09/02/12 20:10
1,1-Dichloropropene	< .001	mg/kg			WG610693	09/02/12 20:10
1,2,3-Trichlorobenzene	< .001	mg/kg			WG610693	09/02/12 20:10
1,2,3-Trichloropropane	< .0025	mg/kg			WG610693	09/02/12 20:10
1,2,3-Trimethylbenzene	< .001	mg/kg			WG610693	09/02/12 20:10
1,2,4-Trichlorobenzene	< .001	mg/kg			WG610693	09/02/12 20:10
1,2,4-Trimethylbenzene	< .001	mg/kg			WG610693	09/02/12 20:10
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG610693	09/02/12 20:10
1,2-Dibromoethane	< .001	mg/kg			WG610693	09/02/12 20:10
1,2-Dichlorobenzene	< .001	mg/kg			WG610693	09/02/12 20:10
1,2-Dichloroethane	< .001	mg/kg			WG610693	09/02/12 20:10
1,2-Dichloropropane	< .001	mg/kg			WG610693	09/02/12 20:10
1,3,5-Trimethylbenzene	< .001	mg/kg			WG610693	09/02/12 20:10
1,3-Dichlorobenzene	< .001	mg/kg			WG610693	09/02/12 20:10
1,3-Dichloropropane	< .001	mg/kg			WG610693	09/02/12 20:10
1,4-Dichlorobenzene	< .001	mg/kg			WG610693	09/02/12 20:10
2,2-Dichloropropane	< .001	mg/kg			WG610693	09/02/12 20:10
2-Butanone (MEK)	< .01	mg/kg			WG610693	09/02/12 20:10
2-Chloroethyl vinyl ether	< .05	mg/kg			WG610693	09/02/12 20:10
2-Chlorotoluene	< .001	mg/kg			WG610693	09/02/12 20:10
4-Chlorotoluene	< .001	mg/kg			WG610693	09/02/12 20:10
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG610693	09/02/12 20:10
Acetone	< .05	mg/kg			WG610693	09/02/12 20:10
Acrylonitrile	< .01	mg/kg			WG610693	09/02/12 20:10
Benzene	< .001	mg/kg			WG610693	09/02/12 20:10
Bromobenzene	< .001	mg/kg			WG610693	09/02/12 20:10
Bromodichloromethane	< .001	mg/kg			WG610693	09/02/12 20:10
Bromoform	< .001	mg/kg			WG610693	09/02/12 20:10
Bromomethane	< .005	mg/kg			WG610693	09/02/12 20:10
Carbon tetrachloride	< .001	mg/kg			WG610693	09/02/12 20:10
Chlorobenzene	< .001	mg/kg			WG610693	09/02/12 20:10
Chlorodibromomethane	< .001	mg/kg			WG610693	09/02/12 20:10
Chloroethane	< .005	mg/kg			WG610693	09/02/12 20:10
Chloroform	< .005	mg/kg			WG610693	09/02/12 20:10
Chloromethane	< .0025	mg/kg			WG610693	09/02/12 20:10
cis-1,2-Dichloroethene	< .001	mg/kg			WG610693	09/02/12 20:10
cis-1,3-Dichloropropene	< .001	mg/kg			WG610693	09/02/12 20:10
Di-isopropyl ether	< .001	mg/kg			WG610693	09/02/12 20:10
Dibromomethane	< .001	mg/kg			WG610693	09/02/12 20:10
Dichlorodifluoromethane	< .005	mg/kg			WG610693	09/02/12 20:10
Ethylbenzene	< .001	mg/kg			WG610693	09/02/12 20:10
Hexachloro-1,3-butadiene	< .001	mg/kg			WG610693	09/02/12 20:10
Isopropylbenzene	< .001	mg/kg			WG610693	09/02/12 20:10
Methyl tert-butyl ether	< .001	mg/kg			WG610693	09/02/12 20:10
Methylene Chloride	< .005	mg/kg			WG610693	09/02/12 20:10
n-Butylbenzene	< .001	mg/kg			WG610693	09/02/12 20:10
n-Propylbenzene	< .001	mg/kg			WG610693	09/02/12 20:10
Naphthalene	< .005	mg/kg			WG610693	09/02/12 20:10
p-Isopropyltoluene	< .001	mg/kg			WG610693	09/02/12 20:10
sec-Butylbenzene	< .001	mg/kg			WG610693	09/02/12 20:10
Styrene	< .001	mg/kg			WG610693	09/02/12 20:10
tert-Butylbenzene	< .001	mg/kg			WG610693	09/02/12 20:10
Tetrachloroethene	< .001	mg/kg			WG610693	09/02/12 20:10

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Toluene	< .005	mg/kg			WG610693	09/02/12 20:10
trans-1,2-Dichloroethene	< .001	mg/kg			WG610693	09/02/12 20:10
trans-1,3-Dichloropropene	< .001	mg/kg			WG610693	09/02/12 20:10
Trichloroethene	< .001	mg/kg			WG610693	09/02/12 20:10
Trichlorofluoromethane	< .005	mg/kg			WG610693	09/02/12 20:10
Vinyl chloride	< .001	mg/kg			WG610693	09/02/12 20:10
Xylenes, Total	< .003	mg/kg			WG610693	09/02/12 20:10
4-Bromofluorobenzene		% Rec.	105.3	67-133	WG610693	09/02/12 20:10
Dibromofluoromethane		% Rec.	97.47	72-135	WG610693	09/02/12 20:10
Toluene-d8		% Rec.	98.64	90-113	WG610693	09/02/12 20:10
PCB 1016	< .017	mg/kg			WG610742	09/05/12 10:59
PCB 1221	< .017	mg/kg			WG610742	09/05/12 10:59
PCB 1232	< .017	mg/kg			WG610742	09/05/12 10:59
PCB 1242	< .017	mg/kg			WG610742	09/05/12 10:59
PCB 1248	< .017	mg/kg			WG610742	09/05/12 10:59
PCB 1254	< .017	mg/kg			WG610742	09/05/12 10:59
PCB 1260	< .017	mg/kg			WG610742	09/05/12 10:59
Decachlorobiphenyl		% Rec.	100.7	18.9-115.8	WG610742	09/05/12 10:59
Tetrachloro-m-xylene		% Rec.	100.9	31.8-115.7	WG610742	09/05/12 10:59
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,1,1-Trichloroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,1,2-Trichloroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,1-Dichloroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,1-Dichloroethene	< .001	mg/kg			WG610695	09/05/12 02:37
1,1-Dichloropropene	< .001	mg/kg			WG610695	09/05/12 02:37
1,2,3-Trichlorobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,2,3-Trichloropropane	< .0025	mg/kg			WG610695	09/05/12 02:37
1,2,3-Trimethylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,2,4-Trichlorobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,2,4-Trimethylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG610695	09/05/12 02:37
1,2-Dibromoethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,2-Dichlorobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,2-Dichloroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,2-Dichloropropane	< .001	mg/kg			WG610695	09/05/12 02:37
1,3,5-Trimethylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,3-Dichlorobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,3-Dichloropropane	< .001	mg/kg			WG610695	09/05/12 02:37
1,4-Dichlorobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
2,2-Dichloropropane	< .001	mg/kg			WG610695	09/05/12 02:37
2-Butanone (MEK)	< .01	mg/kg			WG610695	09/05/12 02:37
2-Chloroethyl vinyl ether	< .05	mg/kg			WG610695	09/05/12 02:37
2-Chlorotoluene	< .001	mg/kg			WG610695	09/05/12 02:37
4-Chlorotoluene	< .001	mg/kg			WG610695	09/05/12 02:37
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG610695	09/05/12 02:37
Acetone	< .05	mg/kg			WG610695	09/05/12 02:37
Acrylonitrile	< .01	mg/kg			WG610695	09/05/12 02:37
Benzene	< .001	mg/kg			WG610695	09/05/12 02:37
Bromobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Bromodichloromethane	< .001	mg/kg			WG610695	09/05/12 02:37
Bromoform	< .001	mg/kg			WG610695	09/05/12 02:37
Bromomethane	< .005	mg/kg			WG610695	09/05/12 02:37
Carbon tetrachloride	< .001	mg/kg			WG610695	09/05/12 02:37

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Level II

L593015

September 11, 2012

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chlorobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Chlorodibromomethane	< .001	mg/kg			WG610695	09/05/12 02:37
Chloroethane	< .005	mg/kg			WG610695	09/05/12 02:37
Chloroform	< .005	mg/kg			WG610695	09/05/12 02:37
Chloromethane	< .0025	mg/kg			WG610695	09/05/12 02:37
cis-1,2-Dichloroethene	< .001	mg/kg			WG610695	09/05/12 02:37
cis-1,3-Dichloropropene	< .001	mg/kg			WG610695	09/05/12 02:37
Di-isopropyl ether	< .001	mg/kg			WG610695	09/05/12 02:37
Dibromomethane	< .001	mg/kg			WG610695	09/05/12 02:37
Dichlorodifluoromethane	< .005	mg/kg			WG610695	09/05/12 02:37
Ethylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Hexachloro-1,3-butadiene	< .001	mg/kg			WG610695	09/05/12 02:37
Isopropylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Methyl tert-butyl ether	< .001	mg/kg			WG610695	09/05/12 02:37
Methylene Chloride	< .005	mg/kg			WG610695	09/05/12 02:37
n-Butylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
n-Propylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Naphthalene	< .005	mg/kg			WG610695	09/05/12 02:37
p-Isopropyltoluene	< .001	mg/kg			WG610695	09/05/12 02:37
sec-Butylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Styrene	< .001	mg/kg			WG610695	09/05/12 02:37
tert-Butylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Tetrachloroethene	< .001	mg/kg			WG610695	09/05/12 02:37
Toluene	< .005	mg/kg			WG610695	09/05/12 02:37
trans-1,2-Dichloroethene	< .001	mg/kg			WG610695	09/05/12 02:37
trans-1,3-Dichloropropene	< .001	mg/kg			WG610695	09/05/12 02:37
Trichloroethene	< .001	mg/kg			WG610695	09/05/12 02:37
Trichlorofluoromethane	< .005	mg/kg			WG610695	09/05/12 02:37
Vinyl chloride	< .001	mg/kg			WG610695	09/05/12 02:37
Xylenes, Total	< .003	mg/kg			WG610695	09/05/12 02:37
4-Bromofluorobenzene		% Rec.	98.81	67-133	WG610695	09/05/12 02:37
Dibromofluoromethane		% Rec.	83.83	72-135	WG610695	09/05/12 02:37
Toluene-d8		% Rec.	96.27	90-113	WG610695	09/05/12 02:37
Mercury	< .02	mg/kg			WG610704	09/05/12 10:10
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG611208	09/06/12 12:29
1,1,1-Trichloroethane	< .001	mg/kg			WG611208	09/06/12 12:29
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG611208	09/06/12 12:29
1,1,2-Trichloroethane	< .001	mg/kg			WG611208	09/06/12 12:29
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG611208	09/06/12 12:29
1,1-Dichloroethane	< .001	mg/kg			WG611208	09/06/12 12:29
1,1-Dichloroethene	< .001	mg/kg			WG611208	09/06/12 12:29
1,1-Dichloropropene	< .001	mg/kg			WG611208	09/06/12 12:29
1,2,3-Trichlorobenzene	< .001	mg/kg			WG611208	09/06/12 12:29
1,2,3-Trichloropropane	< .0025	mg/kg			WG611208	09/06/12 12:29
1,2,3-Trimethylbenzene	< .001	mg/kg			WG611208	09/06/12 12:29
1,2,4-Trichlorobenzene	< .001	mg/kg			WG611208	09/06/12 12:29
1,2,4-Trimethylbenzene	< .001	mg/kg			WG611208	09/06/12 12:29
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG611208	09/06/12 12:29
1,2-Dibromoethane	< .001	mg/kg			WG611208	09/06/12 12:29
1,2-Dichlorobenzene	< .001	mg/kg			WG611208	09/06/12 12:29
1,2-Dichloroethane	< .001	mg/kg			WG611208	09/06/12 12:29
1,2-Dichloropropane	< .001	mg/kg			WG611208	09/06/12 12:29
1,3,5-Trimethylbenzene	< .001	mg/kg			WG611208	09/06/12 12:29
1,3-Dichlorobenzene	< .001	mg/kg			WG611208	09/06/12 12:29
1,3-Dichloropropane	< .001	mg/kg			WG611208	09/06/12 12:29

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L593015

September 11, 2012

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,4-Dichlorobenzene	< .001	mg/kg			WG611208	09/06/12 12:29
2,2-Dichloropropane	< .001	mg/kg			WG611208	09/06/12 12:29
2-Butanone (MEK)	< .01	mg/kg			WG611208	09/06/12 12:29
2-Chloroethyl vinyl ether	< .05	mg/kg			WG611208	09/06/12 12:29
2-Chlorotoluene	< .001	mg/kg			WG611208	09/06/12 12:29
4-Chlorotoluene	< .001	mg/kg			WG611208	09/06/12 12:29
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG611208	09/06/12 12:29
Acetone	< .05	mg/kg			WG611208	09/06/12 12:29
Acrylonitrile	< .01	mg/kg			WG611208	09/06/12 12:29
Benzene	< .001	mg/kg			WG611208	09/06/12 12:29
Bromobenzene	< .001	mg/kg			WG611208	09/06/12 12:29
Bromodichloromethane	< .001	mg/kg			WG611208	09/06/12 12:29
Bromoform	< .001	mg/kg			WG611208	09/06/12 12:29
Bromomethane	< .005	mg/kg			WG611208	09/06/12 12:29
Carbon tetrachloride	< .001	mg/kg			WG611208	09/06/12 12:29
Chlorobenzene	< .001	mg/kg			WG611208	09/06/12 12:29
Chlorodibromomethane	< .001	mg/kg			WG611208	09/06/12 12:29
Chloroethane	< .005	mg/kg			WG611208	09/06/12 12:29
Chloroform	< .005	mg/kg			WG611208	09/06/12 12:29
Chloromethane	< .0025	mg/kg			WG611208	09/06/12 12:29
cis-1,2-Dichloroethene	< .001	mg/kg			WG611208	09/06/12 12:29
cis-1,3-Dichloropropene	< .001	mg/kg			WG611208	09/06/12 12:29
Di-isopropyl ether	< .001	mg/kg			WG611208	09/06/12 12:29
Dibromomethane	< .001	mg/kg			WG611208	09/06/12 12:29
Dichlorodifluoromethane	< .005	mg/kg			WG611208	09/06/12 12:29
Ethylbenzene	< .001	mg/kg			WG611208	09/06/12 12:29
Hexachloro-1,3-butadiene	< .001	mg/kg			WG611208	09/06/12 12:29
Isopropylbenzene	< .001	mg/kg			WG611208	09/06/12 12:29
Methyl tert-butyl ether	< .001	mg/kg			WG611208	09/06/12 12:29
Methylene Chloride	< .005	mg/kg			WG611208	09/06/12 12:29
n-Butylbenzene	< .001	mg/kg			WG611208	09/06/12 12:29
n-Propylbenzene	< .001	mg/kg			WG611208	09/06/12 12:29
Naphthalene	< .005	mg/kg			WG611208	09/06/12 12:29
p-Isopropyltoluene	< .001	mg/kg			WG611208	09/06/12 12:29
sec-Butylbenzene	< .001	mg/kg			WG611208	09/06/12 12:29
Styrene	< .001	mg/kg			WG611208	09/06/12 12:29
tert-Butylbenzene	< .001	mg/kg			WG611208	09/06/12 12:29
Tetrachloroethene	< .001	mg/kg			WG611208	09/06/12 12:29
Toluene	< .005	mg/kg			WG611208	09/06/12 12:29
trans-1,2-Dichloroethene	< .001	mg/kg			WG611208	09/06/12 12:29
trans-1,3-Dichloropropene	< .001	mg/kg			WG611208	09/06/12 12:29
Trichloroethene	< .001	mg/kg			WG611208	09/06/12 12:29
Trichlorofluoromethane	< .005	mg/kg			WG611208	09/06/12 12:29
Vinyl chloride	< .001	mg/kg			WG611208	09/06/12 12:29
Xylenes, Total	< .003	mg/kg			WG611208	09/06/12 12:29
4-Bromofluorobenzene		% Rec.	102.8	67-133	WG611208	09/06/12 12:29
Dibromofluoromethane		% Rec.	100.6	72-135	WG611208	09/06/12 12:29
Toluene-d8		% Rec.	97.02	90-113	WG611208	09/06/12 12:29
4,4-DDD	< .02	mg/kg			WG610742	09/06/12 10:45
4,4-DDE	< .02	mg/kg			WG610742	09/06/12 10:45
4,4-DDT	< .02	mg/kg			WG610742	09/06/12 10:45
Aldrin	< .02	mg/kg			WG610742	09/06/12 10:45
Alpha BHC	< .02	mg/kg			WG610742	09/06/12 10:45
Beta BHC	< .02	mg/kg			WG610742	09/06/12 10:45
Chlordane	< .2	mg/kg			WG610742	09/06/12 10:45
Delta BHC	< .02	mg/kg			WG610742	09/06/12 10:45
Dieldrin	< .02	mg/kg			WG610742	09/06/12 10:45

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Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L593015

September 11, 2012

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Endosulfan I	< .02	mg/kg			WG610742	09/06/12 10:45
Endosulfan II	< .02	mg/kg			WG610742	09/06/12 10:45
Endosulfan sulfate	< .02	mg/kg			WG610742	09/06/12 10:45
Endrin	< .02	mg/kg			WG610742	09/06/12 10:45
Endrin aldehyde	< .02	mg/kg			WG610742	09/06/12 10:45
Endrin ketone	< .02	mg/kg			WG610742	09/06/12 10:45
Gamma BHC	< .02	mg/kg			WG610742	09/06/12 10:45
Heptachlor	< .02	mg/kg			WG610742	09/06/12 10:45
Heptachlor epoxide	< .02	mg/kg			WG610742	09/06/12 10:45
Hexachlorobenzene	< .02	mg/kg			WG610742	09/06/12 10:45
Methoxychlor	< .02	mg/kg			WG610742	09/06/12 10:45
Toxaphene	< .4	mg/kg			WG610742	09/06/12 10:45
Decachlorobiphenyl		% Rec.	93.50	18.9-115.8	WG610742	09/06/12 10:45
Tetrachloro-m-xylene		% Rec.	95.02	31.8-115.7	WG610742	09/06/12 10:45
Arsenic	< 1	mg/kg			WG610909	09/06/12 21:18
Barium	< .25	mg/kg			WG610909	09/06/12 21:18
Cadmium	< .25	mg/kg			WG610909	09/06/12 21:18
Chromium	< .5	mg/kg			WG610909	09/06/12 21:18
Iron	< 5	mg/kg			WG610909	09/06/12 21:18
Lead	< .25	mg/kg			WG610909	09/06/12 21:18
Selenium	< 1	mg/kg			WG610909	09/06/12 21:18
Silver	< .5	mg/kg			WG610909	09/06/12 21:18
1,2,4-Trichlorobenzene	< .333	mg/kg			WG610744	09/10/12 02:39
2,4,6-Trichlorophenol	< .333	mg/kg			WG610744	09/10/12 02:39
2,4-Dichlorophenol	< .333	mg/kg			WG610744	09/10/12 02:39
2,4-Dimethylphenol	< .333	mg/kg			WG610744	09/10/12 02:39
2,4-Dinitrophenol	< .333	mg/kg			WG610744	09/10/12 02:39
2,4-Dinitrotoluene	< .333	mg/kg			WG610744	09/10/12 02:39
2,6-Dinitrotoluene	< .333	mg/kg			WG610744	09/10/12 02:39
2-Chloronaphthalene	< .033	mg/kg			WG610744	09/10/12 02:39
2-Chlorophenol	< .333	mg/kg			WG610744	09/10/12 02:39
2-Nitrophenol	< .333	mg/kg			WG610744	09/10/12 02:39
3,3-Dichlorobenzidine	< .333	mg/kg			WG610744	09/10/12 02:39
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG610744	09/10/12 02:39
4-Bromophenyl-phenylether	< .333	mg/kg			WG610744	09/10/12 02:39
4-Chloro-3-methylphenol	< .333	mg/kg			WG610744	09/10/12 02:39
4-Chlorophenyl-phenylether	< .333	mg/kg			WG610744	09/10/12 02:39
4-Nitrophenol	< .333	mg/kg			WG610744	09/10/12 02:39
Acenaphthene	< .033	mg/kg			WG610744	09/10/12 02:39
Acenaphthylene	< .033	mg/kg			WG610744	09/10/12 02:39
Anthracene	< .033	mg/kg			WG610744	09/10/12 02:39
Benzidine	< .333	mg/kg			WG610744	09/10/12 02:39
Benzo(a)anthracene	< .033	mg/kg			WG610744	09/10/12 02:39
Benzo(a)pyrene	< .033	mg/kg			WG610744	09/10/12 02:39
Benzo(b)fluoranthene	< .033	mg/kg			WG610744	09/10/12 02:39
Benzo(g,h,i)perylene	< .033	mg/kg			WG610744	09/10/12 02:39
Benzo(k)fluoranthene	< .033	mg/kg			WG610744	09/10/12 02:39
Benzylbutyl phthalate	< .333	mg/kg			WG610744	09/10/12 02:39
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG610744	09/10/12 02:39
Bis(2-chloroethyl)ether	< .333	mg/kg			WG610744	09/10/12 02:39
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG610744	09/10/12 02:39
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG610744	09/10/12 02:39
Chrysene	< .033	mg/kg			WG610744	09/10/12 02:39
Di-n-butyl phthalate	< .333	mg/kg			WG610744	09/10/12 02:39
Di-n-octyl phthalate	< .333	mg/kg			WG610744	09/10/12 02:39

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Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L593015

September 11, 2012

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Dibenz(a,h)anthracene	< .033	mg/kg			WG610744	09/10/12 02:39
Diethyl phthalate	< .333	mg/kg			WG610744	09/10/12 02:39
Dimethyl phthalate	< .333	mg/kg			WG610744	09/10/12 02:39
Fluoranthene	< .033	mg/kg			WG610744	09/10/12 02:39
Fluorene	< .033	mg/kg			WG610744	09/10/12 02:39
Hexachloro-1,3-butadiene	< .333	mg/kg			WG610744	09/10/12 02:39
Hexachlorobenzene	< .333	mg/kg			WG610744	09/10/12 02:39
Hexachlorocyclopentadiene	< .333	mg/kg			WG610744	09/10/12 02:39
Hexachloroethane	< .333	mg/kg			WG610744	09/10/12 02:39
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG610744	09/10/12 02:39
Isophorone	< .333	mg/kg			WG610744	09/10/12 02:39
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG610744	09/10/12 02:39
n-Nitrosodimethylamine	< .333	mg/kg			WG610744	09/10/12 02:39
n-Nitrosodiphenylamine	< .333	mg/kg			WG610744	09/10/12 02:39
Naphthalene	< .033	mg/kg			WG610744	09/10/12 02:39
Nitrobenzene	< .333	mg/kg			WG610744	09/10/12 02:39
Pentachlorophenol	< .333	mg/kg			WG610744	09/10/12 02:39
Phenanthrene	< .033	mg/kg			WG610744	09/10/12 02:39
Phenol	< .333	mg/kg			WG610744	09/10/12 02:39
Pyrene	< .033	mg/kg			WG610744	09/10/12 02:39
2,4,6-Tribromophenol		% Rec.	47.93	16-136	WG610744	09/10/12 02:39
2-Fluorobiphenyl		% Rec.	59.73	37-119	WG610744	09/10/12 02:39
2-Fluorophenol		% Rec.	57.33	22-114	WG610744	09/10/12 02:39
Nitrobenzene-d5		% Rec.	49.86	20-114	WG610744	09/10/12 02:39
Phenol-d5		% Rec.	62.74	26-127	WG610744	09/10/12 02:39
p-Terphenyl-d14		% Rec.	72.29	15-174	WG610744	09/10/12 02:39
2,4,5-T	< .07	mg/kg			WG610970	09/10/12 16:57
2,4,5-TP (Silvex)	< .07	mg/kg			WG610970	09/10/12 16:57
2,4-D	< .07	mg/kg			WG610970	09/10/12 16:57
2,4-DB	< .07	mg/kg			WG610970	09/10/12 16:57
Dalapon	< .8	mg/kg			WG610970	09/10/12 16:57
Dicamba	< .07	mg/kg			WG610970	09/10/12 16:57
Dichloroprop	< .07	mg/kg			WG610970	09/10/12 16:57
Dinoseb	< .07	mg/kg			WG610970	09/10/12 16:57
MCPA	< .68602	mg/kg			WG610970	09/10/12 16:57
MCPP	< 6.5	mg/kg			WG610970	09/10/12 16:57
2,4-Dichlorophenyl Acetic Acid		%	74.24	37-99	WG610970	09/10/12 16:57

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0.0690	0.0660	4.15	20	L593046-04	WG610704
Arsenic	mg/kg	0.260	0.360	33.0*	20	L593006-09	WG610909
Barium	mg/kg	13.0	15.0	12.8	20	L593006-09	WG610909
Cadmium	mg/kg	0	0	0	20	L593006-09	WG610909
Chromium	mg/kg	3.00	3.40	11.2	20	L593006-09	WG610909
Iron	mg/kg	3800	4280	11.9	20	L593006-09	WG610909
Lead	mg/kg	2.30	2.70	15.6	20	L593006-09	WG610909
Selenium	mg/kg	0	0	0	20	L593006-09	WG610909
Silver	mg/kg	0	0	0	20	L593006-09	WG610909

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0309	124.	77-129	WG610693

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Quality Assurance Report
Level II

L593015

September 11, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1-Trichloroethane	mg/kg	.025	0.0268	107.	70-127	WG610693
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0322	129.	76-133	WG610693
1,1,2-Trichloroethane	mg/kg	.025	0.0283	113.	79-123	WG610693
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0298	119.	52-145	WG610693
1,1-Dichloroethane	mg/kg	.025	0.0250	100.	74-121	WG610693
1,1-Dichloroethene	mg/kg	.025	0.0303	121.	53-135	WG610693
1,1-Dichloropropene	mg/kg	.025	0.0234	93.7	67-127	WG610693
1,2,3-Trichlorobenzene	mg/kg	.025	0.0319	127.	74-131	WG610693
1,2,3-Trichloropropane	mg/kg	.025	0.0288	115.	75-135	WG610693
1,2,3-Trimethylbenzene	mg/kg	.025	0.0277	111.	76-128	WG610693
1,2,4-Trichlorobenzene	mg/kg	.025	0.0322	129.	72-130	WG610693
1,2,4-Trimethylbenzene	mg/kg	.025	0.0305	122.	75-131	WG610693
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0280	112.	55-142	WG610693
1,2-Dibromoethane	mg/kg	.025	0.0276	110.	77-126	WG610693
1,2-Dichlorobenzene	mg/kg	.025	0.0299	120.	80-123	WG610693
1,2-Dichloroethane	mg/kg	.025	0.0238	95.1	70-128	WG610693
1,2-Dichloropropane	mg/kg	.025	0.0250	100.	74-125	WG610693
1,3,5-Trimethylbenzene	mg/kg	.025	0.0302	121.	77-129	WG610693
1,3-Dichlorobenzene	mg/kg	.025	0.0319	127.	76-128	WG610693
1,3-Dichloropropane	mg/kg	.025	0.0263	105.	77-118	WG610693
1,4-Dichlorobenzene	mg/kg	.025	0.0288	115.	77-119	WG610693
2,2-Dichloropropane	mg/kg	.025	0.0270	108.	60-132	WG610693
2-Butanone (MEK)	mg/kg	.125	0.109	86.9	56-146	WG610693
2-Chloroethyl vinyl ether	mg/kg	.125	0.118	94.4	17-179	WG610693
2-Chlorotoluene	mg/kg	.025	0.0300	120.	76-125	WG610693
4-Chlorotoluene	mg/kg	.025	0.0295	118.	76-125	WG610693
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.127	102.	55-148	WG610693
Acetone	mg/kg	.125	0.113	90.4	47-155	WG610693
Acrylonitrile	mg/kg	.125	0.116	92.5	50-155	WG610693
Benzene	mg/kg	.025	0.0238	95.4	72-120	WG610693
Bromobenzene	mg/kg	.025	0.0284	114.	74-122	WG610693
Bromodichloromethane	mg/kg	.025	0.0257	103.	74-128	WG610693
Bromoform	mg/kg	.025	0.0310	124.	62-137	WG610693
Bromomethane	mg/kg	.025	0.0356	142.	38-180	WG610693
Carbon tetrachloride	mg/kg	.025	0.0283	113.	62-130	WG610693
Chlorobenzene	mg/kg	.025	0.0288	115.	77-124	WG610693
Chlorodibromomethane	mg/kg	.025	0.0294	118.	74-128	WG610693
Chloroethane	mg/kg	.025	0.0294	117.	46-173	WG610693
Chloroform	mg/kg	.025	0.0268	107.	76-122	WG610693
Chloromethane	mg/kg	.025	0.0196	78.5	49-143	WG610693
cis-1,2-Dichloroethene	mg/kg	.025	0.0258	103.	73-123	WG610693
cis-1,3-Dichloropropene	mg/kg	.025	0.0241	96.4	73-126	WG610693
Di-isopropyl ether	mg/kg	.025	0.0236	94.2	64-131	WG610693
Dibromomethane	mg/kg	.025	0.0247	98.8	75-127	WG610693
Dichlorodifluoromethane	mg/kg	.025	0.0238	95.2	30-177	WG610693
Ethylbenzene	mg/kg	.025	0.0278	111.	76-126	WG610693
Hexachloro-1,3-butadiene	mg/kg	.025	0.0324	130.	71-134	WG610693
Isopropylbenzene	mg/kg	.025	0.0298	119.	70-128	WG610693
Methyl tert-butyl ether	mg/kg	.025	0.0257	103.	66-127	WG610693
Methylene Chloride	mg/kg	.025	0.0256	103.	67-124	WG610693
n-Butylbenzene	mg/kg	.025	0.0279	112.	71-133	WG610693
n-Propylbenzene	mg/kg	.025	0.0290	116.	76-126	WG610693
Naphthalene	mg/kg	.025	0.0285	114.	68-136	WG610693
p-Isopropyltoluene	mg/kg	.025	0.0312	125.	75-134	WG610693
sec-Butylbenzene	mg/kg	.025	0.0311	124.	75-132	WG610693
Styrene	mg/kg	.025	0.0288	115.	68-148	WG610693
tert-Butylbenzene	mg/kg	.025	0.0311	125.	75-132	WG610693
Tetrachloroethene	mg/kg	.025	0.0288	115.	70-131	WG610693
Toluene	mg/kg	.025	0.0259	103.	74-155	WG610693

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
trans-1,2-Dichloroethene	mg/kg	.025	0.0253	101.	63-126	WG610693
trans-1,3-Dichloropropene	mg/kg	.025	0.0245	98.1	68-126	WG610693
Trichloroethene	mg/kg	.025	0.0268	107.	75-121	WG610693
Trichlorofluoromethane	mg/kg	.025	0.0295	118.	48-170	WG610693
Vinyl chloride	mg/kg	.025	0.0240	95.9	54-144	WG610693
Xylenes, Total	mg/kg	.075	0.0870	116.	76-126	WG610693
4-Bromofluorobenzene				102.9	67-133	WG610693
Dibromofluoromethane				99.96	72-135	WG610693
Toluene-d8				100.5	90-113	WG610693
PCB 1016	mg/kg	.167	0.158	94.8	64-120	WG610742
PCB 1260	mg/kg	.167	0.172	103.	72-130	WG610742
Decachlorobiphenyl				105.4	18.9-115.8	WG610742
Tetrachloro-m-xylene				96.06	31.8-115.7	WG610742
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0271	108.	77-129	WG610695
1,1,1-Trichloroethane	mg/kg	.025	0.0219	87.7	70-127	WG610695
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0225	89.9	76-133	WG610695
1,1,2-Trichloroethane	mg/kg	.025	0.0248	99.4	79-123	WG610695
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0195	78.1	52-145	WG610695
1,1-Dichloroethane	mg/kg	.025	0.0192	77.0	74-121	WG610695
1,1-Dichloroethene	mg/kg	.025	0.0188	75.2	53-135	WG610695
1,1-Dichloropropene	mg/kg	.025	0.0191	76.3	67-127	WG610695
1,2,3-Trichlorobenzene	mg/kg	.025	0.0258	103.	74-131	WG610695
1,2,3-Trichloropropane	mg/kg	.025	0.0260	104.	75-135	WG610695
1,2,3-Trimethylbenzene	mg/kg	.025	0.0218	87.2	76-128	WG610695
1,2,4-Trichlorobenzene	mg/kg	.025	0.0272	109.	72-130	WG610695
1,2,4-Trimethylbenzene	mg/kg	.025	0.0251	101.	75-131	WG610695
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0265	106.	55-142	WG610695
1,2-Dibromoethane	mg/kg	.025	0.0257	103.	77-126	WG610695
1,2-Dichlorobenzene	mg/kg	.025	0.0243	97.2	80-123	WG610695
1,2-Dichloroethane	mg/kg	.025	0.0203	81.3	70-128	WG610695
1,2-Dichloropropane	mg/kg	.025	0.0218	87.1	74-125	WG610695
1,3,5-Trimethylbenzene	mg/kg	.025	0.0248	99.1	77-129	WG610695
1,3-Dichlorobenzene	mg/kg	.025	0.0257	103.	76-128	WG610695
1,3-Dichloropropane	mg/kg	.025	0.0246	98.3	77-118	WG610695
1,4-Dichlorobenzene	mg/kg	.025	0.0235	93.8	77-119	WG610695
2,2-Dichloropropane	mg/kg	.025	0.0201	80.5	60-132	WG610695
2-Butanone (MEK)	mg/kg	.125	0.111	89.1	56-146	WG610695
2-Chloroethyl vinyl ether	mg/kg	.125	0.135	108.	17-179	WG610695
2-Chlorotoluene	mg/kg	.025	0.0235	94.1	76-125	WG610695
4-Chlorotoluene	mg/kg	.025	0.0241	96.4	76-125	WG610695
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.128	102.	55-148	WG610695
Acetone	mg/kg	.125	0.120	96.2	47-155	WG610695
Acrylonitrile	mg/kg	.125	0.0971	77.7	50-155	WG610695
Benzene	mg/kg	.025	0.0186	74.4	72-120	WG610695
Bromobenzene	mg/kg	.025	0.0232	92.9	74-122	WG610695
Bromodichloromethane	mg/kg	.025	0.0238	95.2	74-128	WG610695
Bromoform	mg/kg	.025	0.0296	119.	62-137	WG610695
Bromomethane	mg/kg	.025	0.0219	87.4	38-180	WG610695
Carbon tetrachloride	mg/kg	.025	0.0209	83.8	62-130	WG610695
Chlorobenzene	mg/kg	.025	0.0252	101.	77-124	WG610695
Chlorodibromomethane	mg/kg	.025	0.0281	112.	74-128	WG610695
Chloroethane	mg/kg	.025	0.0195	77.9	46-173	WG610695
Chloroform	mg/kg	.025	0.0204	81.6	76-122	WG610695
Chloromethane	mg/kg	.025	0.0187	74.9	49-143	WG610695
cis-1,2-Dichloroethene	mg/kg	.025	0.0196	78.5	73-123	WG610695

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Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
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Quality Assurance Report
Level II

L593015

September 11, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
cis-1,3-Dichloropropene	mg/kg	.025	0.0230	92.1	73-126	WG610695
Di-isopropyl ether	mg/kg	.025	0.0189	75.6	64-131	WG610695
Dibromomethane	mg/kg	.025	0.0247	99.0	75-127	WG610695
Dichlorodifluoromethane	mg/kg	.025	0.0216	86.5	30-177	WG610695
Ethylbenzene	mg/kg	.025	0.0245	98.0	76-126	WG610695
Hexachloro-1,3-butadiene	mg/kg	.025	0.0244	97.6	71-134	WG610695
Isopropylbenzene	mg/kg	.025	0.0266	106.	70-128	WG610695
Methyl tert-butyl ether	mg/kg	.025	0.0203	81.4	66-127	WG610695
Methylene Chloride	mg/kg	.025	0.0188	75.1	67-124	WG610695
n-Butylbenzene	mg/kg	.025	0.0223	89.2	71-133	WG610695
n-Propylbenzene	mg/kg	.025	0.0246	98.2	76-126	WG610695
Naphthalene	mg/kg	.025	0.0237	94.9	68-136	WG610695
p-Isopropyltoluene	mg/kg	.025	0.0267	107.	75-134	WG610695
sec-Butylbenzene	mg/kg	.025	0.0253	101.	75-132	WG610695
Styrene	mg/kg	.025	0.0252	101.	68-148	WG610695
tert-Butylbenzene	mg/kg	.025	0.0257	103.	75-132	WG610695
Tetrachloroethene	mg/kg	.025	0.0273	109.	70-131	WG610695
Toluene	mg/kg	.025	0.0231	92.5	74-155	WG610695
trans-1,2-Dichloroethene	mg/kg	.025	0.0186	74.3	63-126	WG610695
trans-1,3-Dichloropropene	mg/kg	.025	0.0267	107.	68-126	WG610695
Trichloroethene	mg/kg	.025	0.0234	93.6	75-121	WG610695
Trichlorofluoromethane	mg/kg	.025	0.0216	86.5	48-170	WG610695
Vinyl chloride	mg/kg	.025	0.0193	77.2	54-144	WG610695
Xylenes, Total	mg/kg	.075	0.0755	101.	76-126	WG610695
4-Bromofluorobenzene				94.26	67-133	WG610695
Dibromofluoromethane				86.99	72-135	WG610695
Toluene-d8				96.61	90-113	WG610695
Mercury	mg/kg	12.4	15.2	123.	71.6-128	WG610704
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0273	109.	77-129	WG611208
1,1,1-Trichloroethane	mg/kg	.025	0.0224	89.7	70-127	WG611208
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0241	96.3	76-133	WG611208
1,1,2-Trichloroethane	mg/kg	.025	0.0255	102.	79-123	WG611208
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0235	94.0	52-145	WG611208
1,1-Dichloroethane	mg/kg	.025	0.0205	81.9	74-121	WG611208
1,1-Dichloroethene	mg/kg	.025	0.0249	99.6	53-135	WG611208
1,1-Dichloropropene	mg/kg	.025	0.0213	85.2	67-127	WG611208
1,2,3-Trichlorobenzene	mg/kg	.025	0.0269	108.	74-131	WG611208
1,2,3-Trichloropropane	mg/kg	.025	0.0259	104.	75-135	WG611208
1,2,3-Trimethylbenzene	mg/kg	.025	0.0247	98.8	76-128	WG611208
1,2,4-Trichlorobenzene	mg/kg	.025	0.0279	112.	72-130	WG611208
1,2,4-Trimethylbenzene	mg/kg	.025	0.0287	115.	75-131	WG611208
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0252	101.	55-142	WG611208
1,2-Dibromoethane	mg/kg	.025	0.0262	105.	77-126	WG611208
1,2-Dichlorobenzene	mg/kg	.025	0.0260	104.	80-123	WG611208
1,2-Dichloroethane	mg/kg	.025	0.0205	82.0	70-128	WG611208
1,2-Dichloropropane	mg/kg	.025	0.0235	93.9	74-125	WG611208
1,3,5-Trimethylbenzene	mg/kg	.025	0.0287	115.	77-129	WG611208
1,3-Dichlorobenzene	mg/kg	.025	0.0277	111.	76-128	WG611208
1,3-Dichloropropane	mg/kg	.025	0.0243	97.1	77-118	WG611208
1,4-Dichlorobenzene	mg/kg	.025	0.0263	105.	77-119	WG611208
2,2-Dichloropropane	mg/kg	.025	0.0221	88.3	60-132	WG611208
2-Butanone (MEK)	mg/kg	.125	0.139	111.	56-146	WG611208
2-Chloroethyl vinyl ether	mg/kg	.125	0.125	99.7	17-179	WG611208
2-Chlorotoluene	mg/kg	.025	0.0272	109.	76-125	WG611208
4-Chlorotoluene	mg/kg	.025	0.0261	104.	76-125	WG611208

* Performance of this Analyte is outside of established criteria.
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Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L593015

September 11, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.127	102.	55-148	WG611208
Acetone	mg/kg	.125	0.180	144.	47-155	WG611208
Acrylonitrile	mg/kg	.125	0.106	85.1	50-155	WG611208
Benzene	mg/kg	.025	0.0212	84.8	72-120	WG611208
Bromobenzene	mg/kg	.025	0.0254	102.	74-122	WG611208
Bromodichloromethane	mg/kg	.025	0.0234	93.6	74-128	WG611208
Bromoform	mg/kg	.025	0.0270	108.	62-137	WG611208
Bromomethane	mg/kg	.025	0.0274	110.	38-180	WG611208
Carbon tetrachloride	mg/kg	.025	0.0221	88.2	62-130	WG611208
Chlorobenzene	mg/kg	.025	0.0260	104.	77-124	WG611208
Chlorodibromomethane	mg/kg	.025	0.0261	104.	74-128	WG611208
Chloroethane	mg/kg	.025	0.0287	115.	46-173	WG611208
Chloroform	mg/kg	.025	0.0215	86.2	76-122	WG611208
Chloromethane	mg/kg	.025	0.0215	86.1	49-143	WG611208
cis-1,2-Dichloroethene	mg/kg	.025	0.0219	87.6	73-123	WG611208
cis-1,3-Dichloropropene	mg/kg	.025	0.0242	96.9	73-126	WG611208
Di-isopropyl ether	mg/kg	.025	0.0209	83.6	64-131	WG611208
Dibromomethane	mg/kg	.025	0.0243	97.2	75-127	WG611208
Dichlorodifluoromethane	mg/kg	.025	0.0218	87.1	30-177	WG611208
Ethylbenzene	mg/kg	.025	0.0271	108.	76-126	WG611208
Hexachloro-1,3-butadiene	mg/kg	.025	0.0263	105.	71-134	WG611208
Isopropylbenzene	mg/kg	.025	0.0309	123.	70-128	WG611208
Methyl tert-butyl ether	mg/kg	.025	0.0229	91.7	66-127	WG611208
Methylene Chloride	mg/kg	.025	0.0193	77.3	67-124	WG611208
n-Butylbenzene	mg/kg	.025	0.0256	103.	71-133	WG611208
n-Propylbenzene	mg/kg	.025	0.0266	107.	76-126	WG611208
Naphthalene	mg/kg	.025	0.0265	106.	68-136	WG611208
p-Isopropyltoluene	mg/kg	.025	0.0289	116.	75-134	WG611208
sec-Butylbenzene	mg/kg	.025	0.0286	115.	75-132	WG611208
Styrene	mg/kg	.025	0.0262	105.	68-148	WG611208
tert-Butylbenzene	mg/kg	.025	0.0292	117.	75-132	WG611208
Tetrachloroethene	mg/kg	.025	0.0279	111.	70-131	WG611208
Toluene	mg/kg	.025	0.0255	102.	74-155	WG611208
trans-1,2-Dichloroethene	mg/kg	.025	0.0230	92.2	63-126	WG611208
trans-1,3-Dichloropropene	mg/kg	.025	0.0254	102.	68-126	WG611208
Trichloroethene	mg/kg	.025	0.0240	95.9	75-121	WG611208
Trichlorofluoromethane	mg/kg	.025	0.0271	108.	48-170	WG611208
Vinyl chloride	mg/kg	.025	0.0261	104.	54-144	WG611208
Xylenes, Total	mg/kg	.075	0.0815	109.	76-126	WG611208
4-Bromofluorobenzene				100.3	67-133	WG611208
Dibromofluoromethane				90.90	72-135	WG611208
Toluene-d8				104.6	90-113	WG611208
4,4-DDD	mg/kg	.0667	0.0652	97.7	74-114	WG610742
4,4-DDE	mg/kg	.0667	0.0631	94.6	74-115	WG610742
4,4-DDT	mg/kg	.0667	0.0671	101.	62-124	WG610742
Aldrin	mg/kg	.0667	0.0618	92.7	69-110	WG610742
Alpha BHC	mg/kg	.0667	0.0614	92.0	68-111	WG610742
Beta BHC	mg/kg	.0667	0.0627	94.0	74-112	WG610742
Delta BHC	mg/kg	.0667	0.0633	94.9	71-110	WG610742
Dieldrin	mg/kg	.0667	0.0640	95.9	76-115	WG610742
Endosulfan I	mg/kg	.0667	0.0640	95.9	76-119	WG610742
Endosulfan II	mg/kg	.0667	0.0632	94.7	75-116	WG610742
Endosulfan sulfate	mg/kg	.0667	0.0593	88.9	70-118	WG610742
Endrin	mg/kg	.0667	0.0656	98.4	68-115	WG610742
Endrin aldehyde	mg/kg	.0667	0.0611	91.6	48-92	WG610742
Endrin ketone	mg/kg	.0667	0.0606	90.9	70-112	WG610742
Gamma BHC	mg/kg	.0667	0.0624	93.6	70-112	WG610742

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Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
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Quality Assurance Report
Level II

L593015

September 11, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Heptachlor	mg/kg	.0667	0.0660	99.0	69-111	WG610742
Heptachlor epoxide	mg/kg	.0667	0.0637	95.6	72-115	WG610742
Hexachlorobenzene	mg/kg	.0667	0.0556	83.4	64-111	WG610742
Methoxychlor	mg/kg	.0667	0.0705	106.	65-123	WG610742
Decachlorobiphenyl				94.43	18.9-115.8	WG610742
Tetrachloro-m-xylene				92.80	31.8-115.7	WG610742
Arsenic	mg/kg	237	218.	92.0	83.1-117	WG610909
Barium	mg/kg	252	243.	96.4	84.1-116	WG610909
Cadmium	mg/kg	191	181.	94.8	83.2-117	WG610909
Chromium	mg/kg	128	122.	95.3	81.3-118	WG610909
Iron	mg/kg	13100	12000	91.6	50.8-150	WG610909
Lead	mg/kg	103	96.6	93.8	83.1-117	WG610909
Selenium	mg/kg	110	103.	93.6	78.7-122	WG610909
Silver	mg/kg	47.3	42.9	90.7	66.2-134	WG610909
1,2,4-Trichlorobenzene	mg/kg	.333	0.200	60.2	48-87	WG610744
2,4,6-Trichlorophenol	mg/kg	.333	0.217	65.2	50-98	WG610744
2,4-Dichlorophenol	mg/kg	.333	0.228	68.4	56-96	WG610744
2,4-Dimethylphenol	mg/kg	.333	0.209	62.7	52-101	WG610744
2,4-Dinitrophenol	mg/kg	.333	0.0948	28.5	10-109	WG610744
2,4-Dinitrotoluene	mg/kg	.333	0.226	68.0	54-103	WG610744
2,6-Dinitrotoluene	mg/kg	.333	0.232	69.6	53-99	WG610744
2-Chloronaphthalene	mg/kg	.333	0.208	62.6	55-96	WG610744
2-Chlorophenol	mg/kg	.333	0.212	63.6	52-88	WG610744
2-Nitrophenol	mg/kg	.333	0.224	67.3	55-106	WG610744
3,3-Dichlorobenzidine	mg/kg	.333	0.173	52.0	36-84	WG610744
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.175	52.6	24-98	WG610744
4-Bromophenyl-phenylether	mg/kg	.333	0.210	62.9	58-111	WG610744
4-Chloro-3-methylphenol	mg/kg	.333	0.229	68.7	58-98	WG610744
4-Chlorophenyl-phenylether	mg/kg	.333	0.230	69.0	59-103	WG610744
4-Nitrophenol	mg/kg	.333	0.234	70.4	34-101	WG610744
Acenaphthene	mg/kg	.333	0.226	67.8	55-96	WG610744
Acenaphthylene	mg/kg	.333	0.229	68.8	61-107	WG610744
Anthracene	mg/kg	.333	0.239	71.8	58-105	WG610744
Benzidine	mg/kg	.333	0.00358	1.07*	10-21	WG610744
Benzo(a)anthracene	mg/kg	.333	0.227	68.0	56-103	WG610744
Benzo(a)pyrene	mg/kg	.333	0.246	73.9	57-103	WG610744
Benzo(b)fluoranthene	mg/kg	.333	0.233	70.1	52-106	WG610744
Benzo(g,h,i)perylene	mg/kg	.333	0.245	73.6	47-112	WG610744
Benzo(k)fluoranthene	mg/kg	.333	0.251	75.3	53-104	WG610744
Benzylbutyl phthalate	mg/kg	.333	0.236	70.8	61-118	WG610744
Bis(2-chlorethoxy)methane	mg/kg	.333	0.229	68.8	58-104	WG610744
Bis(2-chloroethyl)ether	mg/kg	.333	0.227	68.2	51-103	WG610744
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.204	61.2	56-95	WG610744
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.245	73.7	56-120	WG610744
Chrysene	mg/kg	.333	0.230	69.1	55-102	WG610744
Di-n-butyl phthalate	mg/kg	.333	0.234	70.4	59-114	WG610744
Di-n-octyl phthalate	mg/kg	.333	0.248	74.4	51-119	WG610744
Dibenz(a,h)anthracene	mg/kg	.333	0.249	74.8	49-111	WG610744
Diethyl phthalate	mg/kg	.333	0.213	63.9	61-105	WG610744
Dimethyl phthalate	mg/kg	.333	0.230	69.1	60-106	WG610744
Fluoranthene	mg/kg	.333	0.235	70.6	59-108	WG610744
Fluorene	mg/kg	.333	0.229	68.8	59-100	WG610744
Hexachloro-1,3-butadiene	mg/kg	.333	0.188	56.3	53-106	WG610744
Hexachlorobenzene	mg/kg	.333	0.190	57.1	50-108	WG610744
Hexachlorocyclopentadiene	mg/kg	.333	0.196	58.8	36-117	WG610744

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Hexachloroethane	mg/kg	.333	0.189	56.9	45-83	WG610744
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.246	73.8	50-110	WG610744
Isophorone	mg/kg	.333	0.190	56.9	51-99	WG610744
n-Nitrosodi-n-propylamine	mg/kg	.333	0.233	69.9	52-103	WG610744
n-Nitrosodimethylamine	mg/kg	.333	0.184	55.2	31-107	WG610744
n-Nitrosodiphenylamine	mg/kg	.333	0.223	66.9	57-121	WG610744
Naphthalene	mg/kg	.333	0.203	61.1	55-91	WG610744
Nitrobenzene	mg/kg	.333	0.211	63.4	47-92	WG610744
Pentachlorophenol	mg/kg	.333	0.154	46.3	10-89	WG610744
Phenanthrene	mg/kg	.333	0.231	69.5	55-103	WG610744
Phenol	mg/kg	.333	0.231	69.4	49-99	WG610744
Pyrene	mg/kg	.333	0.245	73.7	54-104	WG610744
2,4,6-Tribromophenol				57.58	16-136	WG610744
2-Fluorobiphenyl				66.14	37-119	WG610744
2-Fluorophenol				64.37	22-114	WG610744
Nitrobenzene-d5				64.86	20-114	WG610744
Phenol-d5				67.73	26-127	WG610744
p-Terphenyl-d14				70.43	15-174	WG610744
2,4,5-T	mg/kg	.167	0.138	82.5	32.9-103	WG610970
2,4,5-TP (Silvex)	mg/kg	.167	0.148	88.6	46-116	WG610970
2,4-D	mg/kg	.167	0.116	69.2	28-98	WG610970
2,4-DB	mg/kg	.167	0.121	72.6	28.9-108	WG610970
Dalapon	mg/kg	.167	0.133	79.9	18.4-113	WG610970
Dicamba	mg/kg	.167	0.147	88.3	37.2-119	WG610970
Dichloroprop	mg/kg	.167	0.267	160.*	40.5-114	WG610970
Dinoseb	mg/kg	.167	0.0221	13.3	10-98	WG610970
MCPA	mg/kg	16.7	14.1	84.4	15.5-110	WG610970
MCPP	mg/kg	16.7	18.4	110.	40.1-177	WG610970
2,4-Dichlorophenyl Acetic Acid				91.38	37-99	WG610970

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0258	0.0309	103.	77-129	18.2	20	WG610693
1,1,1-Trichloroethane	mg/kg	0.0244	0.0268	98.0	70-127	9.03	20	WG610693
1,1,2,2-Tetrachloroethane	mg/kg	0.0263	0.0322	105.	76-133	20.0*	20	WG610693
1,1,2-Trichloroethane	mg/kg	0.0244	0.0283	98.0	79-123	14.6	20	WG610693
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0258	0.0298	103.	52-145	14.4	20	WG610693
1,1-Dichloroethane	mg/kg	0.0228	0.0250	91.0	74-121	9.23	20	WG610693
1,1-Dichloroethene	mg/kg	0.0264	0.0303	106.	53-135	13.7	20	WG610693
1,1-Dichloropropene	mg/kg	0.0219	0.0234	88.0	67-127	6.84	20	WG610693
1,2,3-Trichlorobenzene	mg/kg	0.0263	0.0319	105.	74-131	19.1	20	WG610693
1,2,3-Trichloropropane	mg/kg	0.0241	0.0288	96.0	75-135	17.6	20	WG610693
1,2,3-Trimethylbenzene	mg/kg	0.0236	0.0277	94.0	76-128	16.2	20	WG610693
1,2,4-Trichlorobenzene	mg/kg	0.0261	0.0322	104.	72-130	21.1*	20	WG610693
1,2,4-Trimethylbenzene	mg/kg	0.0263	0.0305	105.	75-131	15.0	20	WG610693
1,2-Dibromo-3-Chloropropane	mg/kg	0.0243	0.0280	97.0	55-142	14.3	20	WG610693
1,2-Dibromoethane	mg/kg	0.0244	0.0276	98.0	77-126	12.3	20	WG610693
1,2-Dichlorobenzene	mg/kg	0.0251	0.0299	100.	80-123	17.7	20	WG610693
1,2-Dichloroethane	mg/kg	0.0222	0.0238	89.0	70-128	6.61	20	WG610693
1,2-Dichloropropane	mg/kg	0.0230	0.0250	92.0	74-125	8.55	20	WG610693
1,3,5-Trimethylbenzene	mg/kg	0.0263	0.0302	105.	77-129	13.8	20	WG610693
1,3-Dichlorobenzene	mg/kg	0.0270	0.0319	108.	76-128	16.6	20	WG610693
1,3-Dichloropropane	mg/kg	0.0237	0.0263	95.0	77-118	10.5	20	WG610693
1,4-Dichlorobenzene	mg/kg	0.0246	0.0288	98.0	77-119	15.6	20	WG610693
2,2-Dichloropropane	mg/kg	0.0245	0.0270	98.0	60-132	9.71	20	WG610693
2-Butanone (MEK)	mg/kg	0.101	0.109	81.0	56-146	7.10	20	WG610693

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
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Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
2-Chloroethyl vinyl ether	mg/kg	0.109	0.118	87.0	17-179	8.31	22	WG610693
2-Chlorotoluene	mg/kg	0.0259	0.0300	104.	76-125	14.5	20	WG610693
4-Chlorotoluene	mg/kg	0.0252	0.0295	101.	76-125	15.5	20	WG610693
4-Methyl-2-pentanone (MIBK)	mg/kg	0.109	0.127	88.0	55-148	14.9	20	WG610693
Acetone	mg/kg	0.0988	0.113	79.0	47-155	13.4	22	WG610693
Acrylonitrile	mg/kg	0.108	0.116	86.0	50-155	6.93	20	WG610693
Benzene	mg/kg	0.0221	0.0238	88.0	72-120	7.42	20	WG610693
Bromobenzene	mg/kg	0.0244	0.0284	97.0	74-122	15.3	20	WG610693
Bromodichloromethane	mg/kg	0.0230	0.0257	92.0	74-128	11.3	20	WG610693
Bromoform	mg/kg	0.0257	0.0310	103.	62-137	18.9	20	WG610693
Bromomethane	mg/kg	0.0309	0.0356	123.	38-180	14.2	20	WG610693
Carbon tetrachloride	mg/kg	0.0258	0.0283	103.	62-130	9.04	20	WG610693
Chlorobenzene	mg/kg	0.0252	0.0288	101.	77-124	13.7	20	WG610693
Chlorodibromomethane	mg/kg	0.0251	0.0294	100.	74-128	15.6	20	WG610693
Chloroethane	mg/kg	0.0264	0.0294	106.	46-173	10.7	20	WG610693
Chloroform	mg/kg	0.0244	0.0268	98.0	76-122	9.32	20	WG610693
Chloromethane	mg/kg	0.0178	0.0196	71.0	49-143	9.72	20	WG610693
cis-1,2-Dichloroethene	mg/kg	0.0235	0.0258	94.0	73-123	9.46	20	WG610693
cis-1,3-Dichloropropene	mg/kg	0.0224	0.0241	89.0	73-126	7.43	20	WG610693
Di-isopropyl ether	mg/kg	0.0210	0.0236	84.0	64-131	11.4	20	WG610693
Dibromomethane	mg/kg	0.0231	0.0247	92.0	75-127	6.50	20	WG610693
Dichlorodifluoromethane	mg/kg	0.0216	0.0238	86.0	30-177	9.68	20	WG610693
Ethylbenzene	mg/kg	0.0251	0.0278	100.	76-126	10.4	20	WG610693
Hexachloro-1,3-butadiene	mg/kg	0.0279	0.0324	112.	71-134	15.0	20	WG610693
Isopropylbenzene	mg/kg	0.0261	0.0298	104.	70-128	13.0	20	WG610693
Methyl tert-butyl ether	mg/kg	0.0231	0.0257	92.0	66-127	10.6	20	WG610693
Methylene Chloride	mg/kg	0.0237	0.0256	95.0	67-124	7.68	20	WG610693
n-Butylbenzene	mg/kg	0.0243	0.0279	97.0	71-133	14.0	20	WG610693
n-Propylbenzene	mg/kg	0.0254	0.0290	102.	76-126	13.0	20	WG610693
Naphthalene	mg/kg	0.0239	0.0285	95.0	68-136	17.8	20	WG610693
p-Isopropyltoluene	mg/kg	0.0272	0.0312	109.	75-134	14.0	20	WG610693
sec-Butylbenzene	mg/kg	0.0272	0.0311	109.	75-132	13.5	20	WG610693
Styrene	mg/kg	0.0249	0.0288	100.	68-148	14.2	20	WG610693
tert-Butylbenzene	mg/kg	0.0273	0.0311	109.	75-132	13.1	20	WG610693
Tetrachloroethene	mg/kg	0.0273	0.0288	109.	70-131	5.37	20	WG610693
Toluene	mg/kg	0.0238	0.0259	95.0	74-155	8.18	20	WG610693
trans-1,2-Dichloroethene	mg/kg	0.0229	0.0253	92.0	63-126	9.75	20	WG610693
trans-1,3-Dichloropropene	mg/kg	0.0219	0.0245	88.0	68-126	11.4	20	WG610693
Trichloroethene	mg/kg	0.0250	0.0268	100.	75-121	6.80	20	WG610693
Trichlorofluoromethane	mg/kg	0.0268	0.0295	107.	48-170	9.47	20	WG610693
Vinyl chloride	mg/kg	0.0218	0.0240	87.0	54-144	9.63	20	WG610693
Xylenes, Total	mg/kg	0.0778	0.0870	104.	76-126	11.2	20	WG610693
4-Bromofluorobenzene				99.63	67-133			WG610693
Dibromofluoromethane				97.59	72-135			WG610693
Toluene-d8				99.08	90-113			WG610693
PCB 1016	mg/kg	0.169	0.158	101.	64-120	6.84	20	WG610742
PCB 1260	mg/kg	0.182	0.172	109.	72-130	5.65	20	WG610742
Decachlorobiphenyl				107.2	18.9-115.8			WG610742
Tetrachloro-m-xylene				100.7	31.8-115.7			WG610742
1,1,1,2-Tetrachloroethane	mg/kg	0.0309	0.0271	124.	77-129	13.3	20	WG610695
1,1,1-Trichloroethane	mg/kg	0.0223	0.0219	89.0	70-127	1.68	20	WG610695
1,1,2,2-Tetrachloroethane	mg/kg	0.0270	0.0225	108.	76-133	18.3	20	WG610695
1,1,2-Trichloroethane	mg/kg	0.0276	0.0248	110.	79-123	10.4	20	WG610695
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0199	0.0195	80.0	52-145	2.06	20	WG610695
1,1-Dichloroethane	mg/kg	0.0192	0.0192	77.0	74-121	0.0800	20	WG610695

* Performance of this Analyte is outside of established criteria.
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Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
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Quality Assurance Report
Level II

L593015

September 11, 2012

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1-Dichloroethene	mg/kg	0.0201	0.0188	80.0	53-135	6.46	20	WG610695
1,1-Dichloropropene	mg/kg	0.0196	0.0191	78.0	67-127	2.56	20	WG610695
1,2,3-Trichlorobenzene	mg/kg	0.0260	0.0258	104.	74-131	0.650	20	WG610695
1,2,3-Trichloropropane	mg/kg	0.0304	0.0260	122.	75-135	15.7	20	WG610695
1,2,3-Trimethylbenzene	mg/kg	0.0214	0.0218	86.0	76-128	1.73	20	WG610695
1,2,4-Trichlorobenzene	mg/kg	0.0275	0.0272	110.	72-130	1.05	20	WG610695
1,2,4-Trimethylbenzene	mg/kg	0.0282	0.0251	113.	75-131	11.4	20	WG610695
1,2-Dibromo-3-Chloropropane	mg/kg	0.0269	0.0265	107.	55-142	1.48	20	WG610695
1,2-Dibromoethane	mg/kg	0.0284	0.0257	114.	77-126	9.94	20	WG610695
1,2-Dichlorobenzene	mg/kg	0.0234	0.0243	94.0	80-123	3.67	20	WG610695
1,2-Dichloroethane	mg/kg	0.0207	0.0203	83.0	70-128	2.05	20	WG610695
1,2-Dichloropropane	mg/kg	0.0228	0.0218	91.0	74-125	4.60	20	WG610695
1,3,5-Trimethylbenzene	mg/kg	0.0286	0.0248	114.	77-129	14.5	20	WG610695
1,3-Dichlorobenzene	mg/kg	0.0301	0.0257	120.	76-128	15.9	20	WG610695
1,3-Dichloropropane	mg/kg	0.0274	0.0246	110.	77-118	11.0	20	WG610695
1,4-Dichlorobenzene	mg/kg	0.0236	0.0235	94.0	77-119	0.770	20	WG610695
2,2-Dichloropropane	mg/kg	0.0206	0.0201	82.0	60-132	2.33	20	WG610695
2-Butanone (MEK)	mg/kg	0.121	0.111	97.0	56-146	8.57	20	WG610695
2-Chloroethyl vinyl ether	mg/kg	0.143	0.135	114.	17-179	5.61	22	WG610695
2-Chlorotoluene	mg/kg	0.0272	0.0235	109.	76-125	14.4	20	WG610695
4-Chlorotoluene	mg/kg	0.0276	0.0241	110.	76-125	13.3	20	WG610695
4-Methyl-2-pentanone (MIBK)	mg/kg	0.127	0.128	102.	55-148	0.210	20	WG610695
Acetone	mg/kg	0.135	0.120	108.	47-155	11.4	22	WG610695
Acrylonitrile	mg/kg	0.0995	0.0971	80.0	50-155	2.45	20	WG610695
Benzene	mg/kg	0.0190	0.0186	76.0	72-120	2.11	20	WG610695
Bromobenzene	mg/kg	0.0263	0.0232	105.	74-122	12.5	20	WG610695
Bromodichloromethane	mg/kg	0.0242	0.0238	97.0	74-128	1.42	20	WG610695
Bromoform	mg/kg	0.0370	0.0296	148*	62-137	22.1*	20	WG610695
Bromomethane	mg/kg	0.0229	0.0219	91.0	38-180	4.52	20	WG610695
Carbon tetrachloride	mg/kg	0.0212	0.0209	85.0	62-130	1.30	20	WG610695
Chlorobenzene	mg/kg	0.0291	0.0252	116.	77-124	14.7	20	WG610695
Chlorodibromomethane	mg/kg	0.0317	0.0281	127.	74-128	12.1	20	WG610695
Chloroethane	mg/kg	0.0201	0.0195	80.0	46-173	3.18	20	WG610695
Chloroform	mg/kg	0.0211	0.0204	84.0	76-122	3.47	20	WG610695
Chloromethane	mg/kg	0.0192	0.0187	77.0	49-143	2.51	20	WG610695
cis-1,2-Dichloroethene	mg/kg	0.0202	0.0196	81.0	73-123	2.96	20	WG610695
cis-1,3-Dichloropropene	mg/kg	0.0240	0.0230	96.0	73-126	4.11	20	WG610695
Di-isopropyl ether	mg/kg	0.0191	0.0189	76.0	64-131	0.960	20	WG610695
Dibromomethane	mg/kg	0.0244	0.0247	98.0	75-127	1.31	20	WG610695
Dichlorodifluoromethane	mg/kg	0.0223	0.0216	89.0	30-177	3.18	20	WG610695
Ethylbenzene	mg/kg	0.0288	0.0245	115.	76-126	16.2	20	WG610695
Hexachloro-1,3-butadiene	mg/kg	0.0243	0.0244	97.0	71-134	0.310	20	WG610695
Isopropylbenzene	mg/kg	0.0304	0.0266	121.	70-128	13.3	20	WG610695
Methyl tert-butyl ether	mg/kg	0.0211	0.0203	84.0	66-127	3.61	20	WG610695
Methylene Chloride	mg/kg	0.0197	0.0188	79.0	67-124	4.77	20	WG610695
n-Butylbenzene	mg/kg	0.0215	0.0223	86.0	71-133	3.82	20	WG610695
n-Propylbenzene	mg/kg	0.0273	0.0246	109.	76-126	10.5	20	WG610695
Naphthalene	mg/kg	0.0253	0.0237	101.	68-136	6.40	20	WG610695
p-Isopropyltoluene	mg/kg	0.0299	0.0267	120.	75-134	11.4	20	WG610695
sec-Butylbenzene	mg/kg	0.0306	0.0253	122.	75-132	19.0	20	WG610695
Styrene	mg/kg	0.0285	0.0252	114.	68-148	12.4	20	WG610695
tert-Butylbenzene	mg/kg	0.0292	0.0257	117.	75-132	12.9	20	WG610695
Tetrachloroethene	mg/kg	0.0310	0.0273	124.	70-131	12.7	20	WG610695
Toluene	mg/kg	0.0237	0.0231	95.0	74-155	2.34	20	WG610695
trans-1,2-Dichloroethene	mg/kg	0.0190	0.0186	76.0	63-126	2.34	20	WG610695
trans-1,3-Dichloropropene	mg/kg	0.0269	0.0267	108.	68-126	0.650	20	WG610695
Trichloroethene	mg/kg	0.0240	0.0234	96.0	75-121	2.43	20	WG610695
Trichlorofluoromethane	mg/kg	0.0227	0.0216	91.0	48-170	4.86	20	WG610695
Vinyl chloride	mg/kg	0.0194	0.0193	78.0	54-144	0.400	20	WG610695

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
Xylenes, Total	mg/kg	0.0854	0.0755	114.	76-126	12.2	20	WG610695
4-Bromofluorobenzene				107.4	67-133			WG610695
Dibromofluoromethane				89.51	72-135			WG610695
Toluene-d8				96.64	90-113			WG610695
1,1,1,2-Tetrachloroethane	mg/kg	0.0258	0.0273	103.	77-129	5.77	20	WG611208
1,1,1-Trichloroethane	mg/kg	0.0218	0.0224	87.0	70-127	2.98	20	WG611208
1,1,2,2-Tetrachloroethane	mg/kg	0.0243	0.0241	97.0	76-133	0.760	20	WG611208
1,1,2-Trichloroethane	mg/kg	0.0257	0.0255	103.	79-123	0.960	20	WG611208
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0230	0.0235	92.0	52-145	2.03	20	WG611208
1,1-Dichloroethane	mg/kg	0.0204	0.0205	82.0	74-121	0.370	20	WG611208
1,1-Dichloroethene	mg/kg	0.0241	0.0249	96.0	53-135	3.21	20	WG611208
1,1-Dichloropropene	mg/kg	0.0210	0.0213	84.0	67-127	1.23	20	WG611208
1,2,3-Trichlorobenzene	mg/kg	0.0266	0.0269	106.	74-131	1.17	20	WG611208
1,2,3-Trichloropropane	mg/kg	0.0260	0.0259	104.	75-135	0.580	20	WG611208
1,2,3-Trimethylbenzene	mg/kg	0.0245	0.0247	98.0	76-128	0.850	20	WG611208
1,2,4-Trichlorobenzene	mg/kg	0.0282	0.0279	113.	72-130	0.980	20	WG611208
1,2,4-Trimethylbenzene	mg/kg	0.0274	0.0287	109.	75-131	4.88	20	WG611208
1,2-Dibromo-3-Chloropropane	mg/kg	0.0257	0.0252	103.	55-142	2.00	20	WG611208
1,2-Dibromoethane	mg/kg	0.0269	0.0262	108.	77-126	2.82	20	WG611208
1,2-Dichlorobenzene	mg/kg	0.0258	0.0260	103.	80-123	0.710	20	WG611208
1,2-Dichloroethane	mg/kg	0.0213	0.0205	85.0	70-128	3.80	20	WG611208
1,2-Dichloropropane	mg/kg	0.0227	0.0235	91.0	74-125	3.30	20	WG611208
1,3,5-Trimethylbenzene	mg/kg	0.0266	0.0287	106.	77-129	7.62	20	WG611208
1,3-Dichlorobenzene	mg/kg	0.0288	0.0277	115.	76-128	3.80	20	WG611208
1,3-Dichloropropane	mg/kg	0.0247	0.0243	99.0	77-118	1.72	20	WG611208
1,4-Dichlorobenzene	mg/kg	0.0263	0.0263	105.	77-119	0.0500	20	WG611208
2,2-Dichloropropane	mg/kg	0.0213	0.0221	85.0	60-132	3.67	20	WG611208
2-Butanone (MEK)	mg/kg	0.127	0.139	102.	56-146	8.55	20	WG611208
2-Chloroethyl vinyl ether	mg/kg	0.132	0.125	106.	17-179	6.13	22	WG611208
2-Chlorotoluene	mg/kg	0.0254	0.0272	102.	76-125	6.79	20	WG611208
4-Chlorotoluene	mg/kg	0.0266	0.0261	106.	76-125	1.78	20	WG611208
4-Methyl-2-pentanone (MIBK)	mg/kg	0.126	0.127	100.	55-148	1.43	20	WG611208
Acetone	mg/kg	0.143	0.180	115.	47-155	22.5*	22	WG611208
Acrylonitrile	mg/kg	0.111	0.106	89.0	50-155	4.22	20	WG611208
Benzene	mg/kg	0.0210	0.0212	84.0	72-120	0.850	20	WG611208
Bromobenzene	mg/kg	0.0254	0.0254	102.	74-122	0.100	20	WG611208
Bromodichloromethane	mg/kg	0.0230	0.0234	92.0	74-128	1.82	20	WG611208
Bromoform	mg/kg	0.0281	0.0270	112.	62-137	4.00	20	WG611208
Bromomethane	mg/kg	0.0267	0.0274	107.	38-180	2.64	20	WG611208
Carbon tetrachloride	mg/kg	0.0211	0.0221	84.0	62-130	4.58	20	WG611208
Chlorobenzene	mg/kg	0.0255	0.0260	102.	77-124	1.83	20	WG611208
Chlorodibromomethane	mg/kg	0.0266	0.0261	106.	74-128	1.96	20	WG611208
Chloroethane	mg/kg	0.0276	0.0287	110.	46-173	4.09	20	WG611208
Chloroform	mg/kg	0.0217	0.0215	87.0	76-122	0.520	20	WG611208
Chloromethane	mg/kg	0.0207	0.0215	83.0	49-143	3.74	20	WG611208
cis-1,2-Dichloroethene	mg/kg	0.0219	0.0219	88.0	73-123	0.190	20	WG611208
cis-1,3-Dichloropropene	mg/kg	0.0235	0.0242	94.0	73-126	2.80	20	WG611208
Di-isopropyl ether	mg/kg	0.0206	0.0209	82.0	64-131	1.58	20	WG611208
Dibromomethane	mg/kg	0.0245	0.0243	98.0	75-127	0.830	20	WG611208
Dichlorodifluoromethane	mg/kg	0.0211	0.0218	84.0	30-177	3.25	20	WG611208
Ethylbenzene	mg/kg	0.0269	0.0271	108.	76-126	0.690	20	WG611208
Hexachloro-1,3-butadiene	mg/kg	0.0256	0.0263	102.	71-134	2.60	20	WG611208
Isopropylbenzene	mg/kg	0.0285	0.0309	114.	70-128	7.96	20	WG611208
Methyl tert-butyl ether	mg/kg	0.0230	0.0229	92.0	66-127	0.290	20	WG611208
Methylene Chloride	mg/kg	0.0194	0.0193	78.0	67-124	0.410	20	WG611208
n-Butylbenzene	mg/kg	0.0250	0.0256	100.	71-133	2.66	20	WG611208
n-Propylbenzene	mg/kg	0.0261	0.0266	104.	76-126	2.12	20	WG611208

* Performance of this Analyte is outside of established criteria.
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Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
Naphthalene	mg/kg	0.0259	0.0265	104.	68-136	2.24	20	WG611208
p-Isopropyltoluene	mg/kg	0.0279	0.0289	112.	75-134	3.44	20	WG611208
sec-Butylbenzene	mg/kg	0.0267	0.0286	107.	75-132	6.91	20	WG611208
Styrene	mg/kg	0.0268	0.0262	107.	68-148	1.99	20	WG611208
tert-Butylbenzene	mg/kg	0.0269	0.0292	107.	75-132	8.16	20	WG611208
Tetrachloroethene	mg/kg	0.0269	0.0279	108.	70-131	3.37	20	WG611208
Toluene	mg/kg	0.0239	0.0255	96.0	74-155	6.23	20	WG611208
trans-1,2-Dichloroethene	mg/kg	0.0222	0.0230	89.0	63-126	3.64	20	WG611208
trans-1,3-Dichloropropene	mg/kg	0.0244	0.0254	98.0	68-126	4.27	20	WG611208
Trichloroethene	mg/kg	0.0244	0.0240	98.0	75-121	1.73	20	WG611208
Trichlorofluoromethane	mg/kg	0.0259	0.0271	104.	48-170	4.63	20	WG611208
Vinyl chloride	mg/kg	0.0254	0.0261	102.	54-144	2.53	20	WG611208
Xylenes, Total	mg/kg	0.0840	0.0815	112.	76-126	2.99	20	WG611208
4-Bromofluorobenzene				99.51	67-133			WG611208
Dibromofluoromethane				90.04	72-135			WG611208
Toluene-d8				99.55	90-113			WG611208
4,4-DDD	mg/kg	0.0647	0.0652	97.0	74-114	0.755	20	WG610742
4,4-DDE	mg/kg	0.0625	0.0631	94.0	74-115	1.01	20	WG610742
4,4-DDT	mg/kg	0.0663	0.0671	99.0	62-124	1.14	20	WG610742
Aldrin	mg/kg	0.0618	0.0618	92.0	69-110	0.0784	20	WG610742
Alpha BHC	mg/kg	0.0616	0.0614	92.0	68-111	0.397	20	WG610742
Beta BHC	mg/kg	0.0625	0.0627	94.0	74-112	0.298	20	WG610742
Delta BHC	mg/kg	0.0629	0.0633	94.0	71-110	0.570	20	WG610742
Dieldrin	mg/kg	0.0635	0.0640	95.0	76-115	0.777	20	WG610742
Endosulfan I	mg/kg	0.0634	0.0640	95.0	76-119	0.997	20	WG610742
Endosulfan II	mg/kg	0.0628	0.0632	94.0	75-116	0.643	20	WG610742
Endosulfan sulfate	mg/kg	0.0589	0.0593	88.0	70-118	0.589	20	WG610742
Endrin	mg/kg	0.0648	0.0656	97.0	68-115	1.22	20	WG610742
Endrin aldehyde	mg/kg	0.0609	0.0611	91.0	48-92	0.424	20	WG610742
Endrin ketone	mg/kg	0.0601	0.0606	90.0	70-112	0.911	20	WG610742
Gamma BHC	mg/kg	0.0623	0.0624	93.0	70-112	0.277	20	WG610742
Heptachlor	mg/kg	0.0662	0.0660	99.0	69-111	0.287	20	WG610742
Heptachlor epoxide	mg/kg	0.0632	0.0637	95.0	72-115	0.905	20	WG610742
Hexachlorobenzene	mg/kg	0.0571	0.0556	86.0	64-111	2.60	20	WG610742
Methoxychlor	mg/kg	0.0697	0.0705	104.	65-123	1.07	20	WG610742
Decachlorobiphenyl				91.31	18.9-115.8			WG610742
Tetrachloro-m-xylene				92.86	31.8-115.7			WG610742
1,2,4-Trichlorobenzene	mg/kg	0.210	0.200	63.0	48-87	4.46	20	WG610744
2,4,6-Trichlorophenol	mg/kg	0.230	0.217	69.0	50-98	5.72	20	WG610744
2,4-Dichlorophenol	mg/kg	0.239	0.228	72.0	56-96	4.68	20	WG610744
2,4-Dimethylphenol	mg/kg	0.227	0.209	68.0	52-101	8.24	20	WG610744
2,4-Dinitrophenol	mg/kg	0.105	0.0948	32.0	10-109	10.5	39	WG610744
2,4-Dinitrotoluene	mg/kg	0.241	0.226	72.0	54-103	6.09	20	WG610744
2,6-Dinitrotoluene	mg/kg	0.246	0.232	74.0	53-99	6.15	20	WG610744
2-Chloronaphthalene	mg/kg	0.225	0.208	68.0	55-96	7.74	20	WG610744
2-Chlorophenol	mg/kg	0.226	0.212	68.0	52-88	6.57	20	WG610744
2-Nitrophenol	mg/kg	0.235	0.224	70.0	55-106	4.70	20	WG610744
3,3-Dichlorobenzidine	mg/kg	0.192	0.173	58.0	36-84	10.4	20	WG610744
4,6-Dinitro-2-methylphenol	mg/kg	0.179	0.175	54.0	24-98	1.87	32	WG610744
4-Bromophenyl-phenylether	mg/kg	0.211	0.210	63.0	58-111	0.821	20	WG610744
4-Chloro-3-methylphenol	mg/kg	0.241	0.229	72.0	58-98	5.05	20	WG610744
4-Chlorophenyl-phenylether	mg/kg	0.243	0.230	73.0	59-103	5.62	20	WG610744
4-Nitrophenol	mg/kg	0.246	0.234	74.0	34-101	4.83	26	WG610744
Acenaphthene	mg/kg	0.231	0.226	69.0	55-96	2.34	20	WG610744
Acenaphthylene	mg/kg	0.237	0.229	71.0	61-107	3.62	20	WG610744

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Quality Assurance Report
Level II

L593015

September 11, 2012

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Anthracene	mg/kg	0.240	0.239	72.0	58-105	0.252	20	WG610744
Benzidine	mg/kg	0.00382	0.00358	1*	10-21	6.41	40	WG610744
Benzo(a)anthracene	mg/kg	0.231	0.227	69.0	56-103	1.78	20	WG610744
Benzo(a)pyrene	mg/kg	0.257	0.246	77.0	57-103	4.43	20	WG610744
Benzo(b)fluoranthene	mg/kg	0.257	0.233	77.0	52-106	9.56	20	WG610744
Benzo(g,h,i)perylene	mg/kg	0.241	0.245	72.0	47-112	1.76	20	WG610744
Benzo(k)fluoranthene	mg/kg	0.250	0.251	75.0	53-104	0.461	20	WG610744
Benzylbutyl phthalate	mg/kg	0.250	0.236	75.0	61-118	5.71	20	WG610744
Bis(2-chlorethoxy)methane	mg/kg	0.239	0.229	72.0	58-104	4.21	20	WG610744
Bis(2-chloroethyl)ether	mg/kg	0.238	0.227	72.0	51-103	4.82	20	WG610744
Bis(2-chloroisopropyl)ether	mg/kg	0.212	0.204	64.0	56-95	3.88	20	WG610744
Bis(2-ethylhexyl)phthalate	mg/kg	0.253	0.245	76.0	56-120	3.19	20	WG610744
Chrysene	mg/kg	0.244	0.230	73.0	55-102	5.86	20	WG610744
Di-n-butyl phthalate	mg/kg	0.233	0.234	70.0	59-114	0.594	20	WG610744
Di-n-octyl phthalate	mg/kg	0.252	0.248	76.0	51-119	1.70	22	WG610744
Dibenz(a,h)anthracene	mg/kg	0.240	0.249	72.0	49-111	3.65	20	WG610744
Diethyl phthalate	mg/kg	0.231	0.213	69.0	61-105	8.37	20	WG610744
Dimethyl phthalate	mg/kg	0.243	0.230	73.0	60-106	5.38	20	WG610744
Fluoranthene	mg/kg	0.240	0.235	72.0	59-108	2.23	20	WG610744
Fluorene	mg/kg	0.244	0.229	73.0	59-100	6.21	20	WG610744
Hexachloro-1,3-butadiene	mg/kg	0.199	0.188	60.0	53-106	5.70	20	WG610744
Hexachlorobenzene	mg/kg	0.195	0.190	58.0	50-108	2.44	20	WG610744
Hexachlorocyclopentadiene	mg/kg	0.207	0.196	62.0	36-117	5.40	20	WG610744
Hexachloroethane	mg/kg	0.199	0.189	60.0	45-83	4.94	20	WG610744
Indeno(1,2,3-cd)pyrene	mg/kg	0.242	0.246	73.0	50-110	1.37	20	WG610744
Isophorone	mg/kg	0.202	0.190	60.0	51-99	6.20	20	WG610744
n-Nitrosodi-n-propylamine	mg/kg	0.241	0.233	72.0	52-103	3.33	20	WG610744
n-Nitrosodimethylamine	mg/kg	0.187	0.184	56.0	31-107	1.79	23	WG610744
n-Nitrosodiphenylamine	mg/kg	0.224	0.223	67.0	57-121	0.426	20	WG610744
Naphthalene	mg/kg	0.215	0.203	64.0	55-91	5.44	20	WG610744
Nitrobenzene	mg/kg	0.218	0.211	65.0	47-92	3.25	20	WG610744
Pentachlorophenol	mg/kg	0.164	0.154	49.0	10-89	6.35	28	WG610744
Phenanthrene	mg/kg	0.231	0.231	69.0	55-103	0.102	20	WG610744
Phenol	mg/kg	0.236	0.231	71.0	49-99	2.18	20	WG610744
Pyrene	mg/kg	0.258	0.245	78.0	54-104	5.24	20	WG610744
2,4,6-Tribromophenol				57.72	16-136			WG610744
2-Fluorobiphenyl				68.86	37-119			WG610744
2-Fluorophenol				64.46	22-114			WG610744
Nitrobenzene-d5				65.10	20-114			WG610744
Phenol-d5				68.87	26-127			WG610744
p-Terphenyl-d14				76.01	15-174			WG610744
2,4,5-T	mg/kg	0.0708	0.138	42.0	32.9-103	64.2*	27.4	WG610970
2,4,5-TP (Silvex)	mg/kg	0.127	0.148	76.0	46-116	15.1	25.2	WG610970
2,4-D	mg/kg	0.0686	0.116	41.0	28-98	50.9*	24	WG610970
2,4-DB	mg/kg	0.0731	0.121	44.0	28.9-108	49.6*	30.3	WG610970
Dalapon	mg/kg	0.107	0.133	64.0	18.4-113	22.0	24.1	WG610970
Dicamba	mg/kg	0.0627	0.147	38.0	37.2-119	80.7*	21.2	WG610970
Dichloroprop	mg/kg	0.0948	0.267	57.0	40.5-114	95.2*	23.3	WG610970
Dinoseb	mg/kg	0.0310	0.0221	18.0	10-98	33.5	40	WG610970
MCPA	mg/kg	6.39	14.1	38.0	15.5-110	75.2*	40	WG610970
MCPP	mg/kg	9.94	18.4	60.0	40.1-177	59.7*	32.2	WG610970
2,4-Dichlorophenyl Acetic Acid				40.98	37-99			WG610970

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0210	0	.025	84.1	49-135	L593002-11	WG610693

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1-Trichloroethane	mg/kg	0.0200	0	.025	80.0	43-142	L593002-11	WG610693
1,1,2,2-Tetrachloroethane	mg/kg	0.0226	0	.025	90.3	42-147	L593002-11	WG610693
1,1,2-Trichloroethane	mg/kg	0.0214	0	.025	85.8	51-134	L593002-11	WG610693
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0206	0	.025	82.4	25-156	L593002-11	WG610693
1,1-Dichloroethane	mg/kg	0.0193	0	.025	77.1	50-131	L593002-11	WG610693
1,1-Dichloroethene	mg/kg	0.0224	0	.025	89.6	29-145	L593002-11	WG610693
1,1-Dichloropropene	mg/kg	0.0183	0	.025	73.4	40-136	L593002-11	WG610693
1,2,3-Trichlorobenzene	mg/kg	0.0152	0	.025	61.0	13-142	L593002-11	WG610693
1,2,3-Trichloropropane	mg/kg	0.0205	0	.025	81.9	41-149	L593002-11	WG610693
1,2,3-Trimethylbenzene	mg/kg	0.0200	0.00413	.025	63.4	33-146	L593002-11	WG610693
1,2,4-Trichlorobenzene	mg/kg	0.0155	0	.025	62.1	12-140	L593002-11	WG610693
1,2,4-Trimethylbenzene	mg/kg	0.0253	0.00850	.025	67.2	29-143	L593002-11	WG610693
1,2-Dibromo-3-Chloropropane	mg/kg	0.0208	0	.025	83.1	29-151	L593002-11	WG610693
1,2-Dibromoethane	mg/kg	0.0215	0	.025	85.8	48-133	L593002-11	WG610693
1,2-Dichlorobenzene	mg/kg	0.0177	0	.025	70.7	37-136	L593002-11	WG610693
1,2-Dichloroethane	mg/kg	0.0195	0	.025	77.9	49-131	L593002-11	WG610693
1,2-Dichloropropane	mg/kg	0.0198	0	.025	79.1	50-132	L593002-11	WG610693
1,3,5-Trimethylbenzene	mg/kg	0.0212	0.00360	.025	70.3	29-144	L593002-11	WG610693
1,3-Dichlorobenzene	mg/kg	0.0186	0	.025	74.4	26-140	L593002-11	WG610693
1,3-Dichloropropane	mg/kg	0.0210	0	.025	83.8	50-126	L593002-11	WG610693
1,4-Dichlorobenzene	mg/kg	0.0169	0	.025	67.7	34-132	L593002-11	WG610693
2,2-Dichloropropane	mg/kg	0.0204	0	.025	81.7	35-148	L593002-11	WG610693
2-Butanone (MEK)	mg/kg	0.110	0.0190	.125	72.5	40-149	L593002-11	WG610693
2-Chloroethyl vinyl ether	mg/kg	0.102	0	.125	81.4	10-173	L593002-11	WG610693
2-Chlorotoluene	mg/kg	0.0189	0	.025	75.4	34-136	L593002-11	WG610693
4-Chlorotoluene	mg/kg	0.0184	0	.025	73.5	31-137	L593002-11	WG610693
4-Methyl-2-pentanone (MIBK)	mg/kg	0.103	0	.125	82.4	37-153	L593002-11	WG610693
Acetone	mg/kg	0.177	0.120	.125	45.6	10-177	L593002-11	WG610693
Acrylonitrile	mg/kg	0.0997	0	.125	79.8	33-159	L593002-11	WG610693
Benzene	mg/kg	0.0191	0	.025	76.6	44-131	L593002-11	WG610693
Bromobenzene	mg/kg	0.0184	0	.025	73.5	36-132	L593002-11	WG610693
Bromodichloromethane	mg/kg	0.0200	0	.025	80.2	48-134	L593002-11	WG610693
Bromoform	mg/kg	0.0216	0	.025	86.3	34-141	L593002-11	WG610693
Bromomethane	mg/kg	0.0263	0	.025	105.	19-173	L593002-11	WG610693
Carbon tetrachloride	mg/kg	0.0183	0	.025	73.3	36-140	L593002-11	WG610693
Chlorobenzene	mg/kg	0.0201	0	.025	80.2	42-133	L593002-11	WG610693
Chlorodibromomethane	mg/kg	0.0213	0	.025	85.1	45-135	L593002-11	WG610693
Chloroethane	mg/kg	0.0221	0	.025	88.4	16-178	L593002-11	WG610693
Chloroform	mg/kg	0.0206	0	.025	82.3	52-130	L593002-11	WG610693
Chloromethane	mg/kg	0.0151	0	.025	60.6	28-147	L593002-11	WG610693
cis-1,2-Dichloroethene	mg/kg	0.0197	0	.025	78.8	52-128	L593002-11	WG610693
cis-1,3-Dichloropropene	mg/kg	0.0196	0	.025	78.5	46-131	L593002-11	WG610693
Di-isopropyl ether	mg/kg	0.0180	0	.025	72.1	46-134	L593002-11	WG610693
Dibromomethane	mg/kg	0.0200	0	.025	79.9	51-133	L593002-11	WG610693
Dichlorodifluoromethane	mg/kg	0.0185	0	.025	74.1	12-179	L593002-11	WG610693
Ethylbenzene	mg/kg	0.0205	0	.025	81.9	38-139	L593002-11	WG610693
Hexachloro-1,3-butadiene	mg/kg	0.0143	0	.025	57.2	10-147	L593002-11	WG610693
Isopropylbenzene	mg/kg	0.0191	0	.025	76.3	34-137	L593002-11	WG610693
Methyl tert-butyl ether	mg/kg	0.0208	0	.025	83.2	45-134	L593002-11	WG610693
Methylene Chloride	mg/kg	0.0198	0	.025	79.1	41-133	L593002-11	WG610693
n-Butylbenzene	mg/kg	0.0157	0	.025	63.0	19-149	L593002-11	WG610693
n-Propylbenzene	mg/kg	0.0183	0	.025	73.2	27-142	L593002-11	WG610693
Naphthalene	mg/kg	0.0171	0	.025	68.3	19-146	L593002-11	WG610693
p-Isopropyltoluene	mg/kg	0.0188	0.000541	.025	73.2	21-150	L593002-11	WG610693
sec-Butylbenzene	mg/kg	0.0182	0	.025	72.6	25-148	L593002-11	WG610693
Styrene	mg/kg	0.0191	0	.025	76.3	30-156	L593002-11	WG610693
tert-Butylbenzene	mg/kg	0.0191	0	.025	76.2	32-146	L593002-11	WG610693
Tetrachloroethene	mg/kg	0.0200	0	.025	80.2	35-139	L593002-11	WG610693
Toluene	mg/kg	0.0247	0	.025	98.8	43-127	L593002-11	WG610693

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
trans-1,2-Dichloroethene	mg/kg	0.0190	0	.025	76.1	41-132	L593002-11	WG610693
trans-1,3-Dichloropropene	mg/kg	0.0198	0	.025	79.2	43-129	L593002-11	WG610693
Trichloroethene	mg/kg	0.0212	0	.025	84.7	42-136	L593002-11	WG610693
Trichlorofluoromethane	mg/kg	0.0223	0	.025	89.2	20-178	L593002-11	WG610693
Vinyl chloride	mg/kg	0.0183	0	.025	73.0	30-157	L593002-11	WG610693
Xylenes, Total	mg/kg	0.0649	0	.075	86.5	38-137	L593002-11	WG610693
4-Bromofluorobenzene					100.6	67-133		WG610693
Dibromofluoromethane					98.97	72-135		WG610693
Toluene-d8					99.63	90-113		WG610693
1,1,1,2-Tetrachloroethane	mg/kg	0.122	0	.025	97.8	49-135	L593015-02	WG610695
1,1,1-Trichloroethane	mg/kg	0.0960	0	.025	76.8	43-142	L593015-02	WG610695
1,1,2,2-Tetrachloroethane	mg/kg	0.101	0	.025	80.4	42-147	L593015-02	WG610695
1,1,2-Trichloroethane	mg/kg	0.104	0	.025	82.8	51-134	L593015-02	WG610695
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0832	0	.025	66.5	25-156	L593015-02	WG610695
1,1-Dichloroethane	mg/kg	0.0780	0	.025	62.4	50-131	L593015-02	WG610695
1,1-Dichloroethene	mg/kg	0.0799	0	.025	63.9	29-145	L593015-02	WG610695
1,1-Dichloropropene	mg/kg	0.0808	0	.025	64.6	40-136	L593015-02	WG610695
1,2,3-Trichlorobenzene	mg/kg	0.0973	0	.025	77.8	13-142	L593015-02	WG610695
1,2,3-Trichloropropane	mg/kg	0.114	0	.025	91.0	41-149	L593015-02	WG610695
1,2,3-Trimethylbenzene	mg/kg	0.0890	0	.025	71.2	33-146	L593015-02	WG610695
1,2,4-Trichlorobenzene	mg/kg	0.106	0	.025	85.0	12-140	L593015-02	WG610695
1,2,4-Trimethylbenzene	mg/kg	0.111	0	.025	88.9	29-143	L593015-02	WG610695
1,2-Dibromo-3-Chloropropane	mg/kg	0.101	0	.025	81.0	29-151	L593015-02	WG610695
1,2-Dibromoethane	mg/kg	0.104	0	.025	83.4	48-133	L593015-02	WG610695
1,2-Dichlorobenzene	mg/kg	0.0959	0	.025	76.7	37-136	L593015-02	WG610695
1,2-Dichloroethane	mg/kg	0.0854	0	.025	68.4	49-131	L593015-02	WG610695
1,2-Dichloropropane	mg/kg	0.0926	0	.025	74.1	50-132	L593015-02	WG610695
1,3,5-Trimethylbenzene	mg/kg	0.112	0	.025	89.9	29-144	L593015-02	WG610695
1,3-Dichlorobenzene	mg/kg	0.119	0	.025	94.8	26-140	L593015-02	WG610695
1,3-Dichloropropane	mg/kg	0.104	0	.025	83.4	50-126	L593015-02	WG610695
1,4-Dichlorobenzene	mg/kg	0.0955	0	.025	76.4	34-132	L593015-02	WG610695
2,2-Dichloropropane	mg/kg	0.0892	0	.025	71.4	35-148	L593015-02	WG610695
2-Butanone (MEK)	mg/kg	0.506	0	.125	81.0	40-149	L593015-02	WG610695
2-Chloroethyl vinyl ether	mg/kg	0.543	0	.125	86.9	10-173	L593015-02	WG610695
2-Chlorotoluene	mg/kg	0.104	0	.025	83.4	34-136	L593015-02	WG610695
4-Chlorotoluene	mg/kg	0.108	0	.025	86.3	31-137	L593015-02	WG610695
4-Methyl-2-pentanone (MIBK)	mg/kg	0.474	0	.125	75.9	37-153	L593015-02	WG610695
Acetone	mg/kg	0.544	0	.125	87.0	10-177	L593015-02	WG610695
Acrylonitrile	mg/kg	0.397	0	.125	63.5	33-159	L593015-02	WG610695
Benzene	mg/kg	0.0801	0	.025	64.1	44-131	L593015-02	WG610695
Bromobenzene	mg/kg	0.103	0	.025	82.3	36-132	L593015-02	WG610695
Bromodichloromethane	mg/kg	0.0988	0	.025	79.0	48-134	L593015-02	WG610695
Bromoform	mg/kg	0.132	0	.025	106.	34-141	L593015-02	WG610695
Bromomethane	mg/kg	0.0943	0	.025	75.4	19-173	L593015-02	WG610695
Carbon tetrachloride	mg/kg	0.0904	0	.025	72.3	36-140	L593015-02	WG610695
Chlorobenzene	mg/kg	0.114	0	.025	90.8	42-133	L593015-02	WG610695
Chlorodibromomethane	mg/kg	0.121	0	.025	96.9	45-135	L593015-02	WG610695
Chloroethane	mg/kg	0.0833	0	.025	66.6	16-178	L593015-02	WG610695
Chloroform	mg/kg	0.0877	0	.025	70.2	52-130	L593015-02	WG610695
Chloromethane	mg/kg	0.0820	0	.025	65.6	28-147	L593015-02	WG610695
cis-1,2-Dichloroethene	mg/kg	0.0822	0	.025	65.8	52-128	L593015-02	WG610695
cis-1,3-Dichloropropene	mg/kg	0.0958	0	.025	76.6	46-131	L593015-02	WG610695
Di-isopropyl ether	mg/kg	0.0777	0	.025	62.1	46-134	L593015-02	WG610695
Dibromomethane	mg/kg	0.0985	0	.025	78.8	51-133	L593015-02	WG610695
Dichlorodifluoromethane	mg/kg	0.0985	0	.025	78.8	12-179	L593015-02	WG610695
Ethylbenzene	mg/kg	0.114	0	.025	90.9	38-139	L593015-02	WG610695
Hexachloro-1,3-butadiene	mg/kg	0.0977	0	.025	78.2	10-147	L593015-02	WG610695

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Isopropylbenzene	mg/kg	0.122	0	.025	97.5	34-137	L593015-02	WG610695
Methyl tert-butyl ether	mg/kg	0.0814	0	.025	65.2	45-134	L593015-02	WG610695
Methylene Chloride	mg/kg	0.0775	0	.025	62.0	41-133	L593015-02	WG610695
n-Butylbenzene	mg/kg	0.0885	0	.025	70.8	19-149	L593015-02	WG610695
n-Propylbenzene	mg/kg	0.109	0	.025	87.3	27-142	L593015-02	WG610695
Naphthalene	mg/kg	0.0905	0	.025	72.4	19-146	L593015-02	WG610695
p-Isopropyltoluene	mg/kg	0.122	0	.025	97.5	21-150	L593015-02	WG610695
sec-Butylbenzene	mg/kg	0.115	0	.025	92.3	25-148	L593015-02	WG610695
Styrene	mg/kg	0.113	0	.025	90.5	30-156	L593015-02	WG610695
tert-Butylbenzene	mg/kg	0.119	0	.025	95.2	32-146	L593015-02	WG610695
Tetrachloroethene	mg/kg	0.122	0	.025	97.4	35-139	L593015-02	WG610695
Toluene	mg/kg	0.0987	0	.025	79.0	43-127	L593015-02	WG610695
trans-1,2-Dichloroethene	mg/kg	0.0781	0	.025	62.5	41-132	L593015-02	WG610695
trans-1,3-Dichloropropene	mg/kg	0.112	0	.025	89.6	43-129	L593015-02	WG610695
Trichloroethene	mg/kg	0.101	0	.025	80.5	42-136	L593015-02	WG610695
Trichlorofluoromethane	mg/kg	0.0923	0	.025	73.8	20-178	L593015-02	WG610695
Vinyl chloride	mg/kg	0.0863	0	.025	69.1	30-157	L593015-02	WG610695
Xylenes, Total	mg/kg	0.340	0	.075	90.6	38-137	L593015-02	WG610695
4-Bromofluorobenzene					102.5	67-133		WG610695
Dibromofluoromethane					88.88	72-135		WG610695
Toluene-d8					97.22	90-113		WG610695
PCB 1016	mg/kg	0.159	0	.167	95.1	10-165	L593051-02	WG610742
PCB 1260	mg/kg	0.169	0	.167	101.	29-154	L593051-02	WG610742
Decachlorobiphenyl					94.95	18.9-115.8		WG610742
Tetrachloro-m-xylene					96.43	31.8-115.7		WG610742
Mercury	mg/kg	0.334	0.0660	.25	107.	80-120	L593046-04	WG610704
1,1,1,2-Tetrachloroethane	mg/kg	0.137	0	.025	110.	49-135	L593015-03	WG611208
1,1,1-Trichloroethane	mg/kg	0.111	0	.025	89.0	43-142	L593015-03	WG611208
1,1,2,2-Tetrachloroethane	mg/kg	0.126	0	.025	101.	42-147	L593015-03	WG611208
1,1,2-Trichloroethane	mg/kg	0.141	0	.025	113.	51-134	L593015-03	WG611208
1,1,2-Trichlorotrifluoroethane	mg/kg	0.127	0	.025	102.	25-156	L593015-03	WG611208
1,1-Dichloroethane	mg/kg	0.101	0	.025	80.5	50-131	L593015-03	WG611208
1,1-Dichloroethene	mg/kg	0.128	0	.025	102.	29-145	L593015-03	WG611208
1,1-Dichloropropene	mg/kg	0.111	0	.025	88.9	40-136	L593015-03	WG611208
1,2,3-Trichlorobenzene	mg/kg	0.123	0	.025	98.6	13-142	L593015-03	WG611208
1,2,3-Trichloropropane	mg/kg	0.135	0	.025	108.	41-149	L593015-03	WG611208
1,2,3-Trimethylbenzene	mg/kg	0.126	0	.025	100.	33-146	L593015-03	WG611208
1,2,4-Trichlorobenzene	mg/kg	0.129	0	.025	103.	12-140	L593015-03	WG611208
1,2,4-Trimethylbenzene	mg/kg	0.138	0	.025	110.	29-143	L593015-03	WG611208
1,2-Dibromo-3-Chloropropane	mg/kg	0.138	0	.025	110.	29-151	L593015-03	WG611208
1,2-Dibromoethane	mg/kg	0.136	0	.025	109.	48-133	L593015-03	WG611208
1,2-Dichlorobenzene	mg/kg	0.130	0	.025	104.	37-136	L593015-03	WG611208
1,2-Dichloroethane	mg/kg	0.107	0	.025	85.7	49-131	L593015-03	WG611208
1,2-Dichloropropane	mg/kg	0.109	0	.025	87.6	50-132	L593015-03	WG611208
1,3,5-Trimethylbenzene	mg/kg	0.139	0	.025	111.	29-144	L593015-03	WG611208
1,3-Dichlorobenzene	mg/kg	0.137	0	.025	110.	26-140	L593015-03	WG611208
1,3-Dichloropropane	mg/kg	0.126	0	.025	101.	50-126	L593015-03	WG611208
1,4-Dichlorobenzene	mg/kg	0.132	0	.025	105.	34-132	L593015-03	WG611208
2,2-Dichloropropane	mg/kg	0.109	0	.025	87.2	35-148	L593015-03	WG611208
2-Butanone (MEK)	mg/kg	0.780	0	.125	125.	40-149	L593015-03	WG611208
2-Chloroethyl vinyl ether	mg/kg	0.615	0	.125	98.4	10-173	L593015-03	WG611208
2-Chlorotoluene	mg/kg	0.132	0	.025	106.	34-136	L593015-03	WG611208
4-Chlorotoluene	mg/kg	0.135	0	.025	108.	31-137	L593015-03	WG611208

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
4-Methyl-2-pentanone (MIBK)	mg/kg	0.654	0	.125	105.	37-153	L593015-03	WG611208
Acetone	mg/kg	0.997	0	.125	160.	10-177	L593015-03	WG611208
Acrylonitrile	mg/kg	0.552	0	.125	88.4	33-159	L593015-03	WG611208
Benzene	mg/kg	0.114	0	.025	90.8	44-131	L593015-03	WG611208
Bromobenzene	mg/kg	0.127	0	.025	102.	36-132	L593015-03	WG611208
Bromodichloromethane	mg/kg	0.113	0	.025	90.6	48-134	L593015-03	WG611208
Bromoform	mg/kg	0.144	0	.025	115.	34-141	L593015-03	WG611208
Bromomethane	mg/kg	0.133	0	.025	107.	19-173	L593015-03	WG611208
Carbon tetrachloride	mg/kg	0.111	0	.025	88.7	36-140	L593015-03	WG611208
Chlorobenzene	mg/kg	0.133	0	.025	106.	42-133	L593015-03	WG611208
Chlorodibromomethane	mg/kg	0.133	0	.025	106.	45-135	L593015-03	WG611208
Chloroethane	mg/kg	0.139	0	.025	111.	16-178	L593015-03	WG611208
Chloroform	mg/kg	0.105	0	.025	84.1	52-130	L593015-03	WG611208
Chloromethane	mg/kg	0.106	0	.025	84.6	28-147	L593015-03	WG611208
cis-1,2-Dichloroethene	mg/kg	0.107	0	.025	85.5	52-128	L593015-03	WG611208
cis-1,3-Dichloropropene	mg/kg	0.117	0	.025	93.8	46-131	L593015-03	WG611208
Di-isopropyl ether	mg/kg	0.100	0	.025	80.3	46-134	L593015-03	WG611208
Dibromomethane	mg/kg	0.122	0	.025	98.0	51-133	L593015-03	WG611208
Dichlorodifluoromethane	mg/kg	0.118	0	.025	94.4	12-179	L593015-03	WG611208
Ethylbenzene	mg/kg	0.145	0	.025	116.	38-139	L593015-03	WG611208
Hexachloro-1,3-butadiene	mg/kg	0.118	0	.025	94.4	10-147	L593015-03	WG611208
Isopropylbenzene	mg/kg	0.160	0	.025	128.	34-137	L593015-03	WG611208
Methyl tert-butyl ether	mg/kg	0.110	0	.025	88.2	45-134	L593015-03	WG611208
Methylene Chloride	mg/kg	0.0937	0	.025	75.0	41-133	L593015-03	WG611208
n-Butylbenzene	mg/kg	0.134	0	.025	108.	19-149	L593015-03	WG611208
n-Propylbenzene	mg/kg	0.137	0	.025	109.	27-142	L593015-03	WG611208
Naphthalene	mg/kg	0.131	0	.025	104.	19-146	L593015-03	WG611208
p-Isopropyltoluene	mg/kg	0.146	0	.025	117.	21-150	L593015-03	WG611208
sec-Butylbenzene	mg/kg	0.140	0	.025	112.	25-148	L593015-03	WG611208
Styrene	mg/kg	0.134	0	.025	107.	30-156	L593015-03	WG611208
tert-Butylbenzene	mg/kg	0.140	0	.025	112.	32-146	L593015-03	WG611208
Tetrachloroethene	mg/kg	0.146	0	.025	116.	35-139	L593015-03	WG611208
Toluene	mg/kg	0.120	0	.025	96.4	43-127	L593015-03	WG611208
trans-1,2-Dichloroethene	mg/kg	0.112	0	.025	89.7	41-132	L593015-03	WG611208
trans-1,3-Dichloropropene	mg/kg	0.121	0	.025	96.6	43-129	L593015-03	WG611208
Trichloroethene	mg/kg	0.131	0	.025	104.	42-136	L593015-03	WG611208
Trichlorofluoromethane	mg/kg	0.138	0	.025	110.	20-178	L593015-03	WG611208
Vinyl chloride	mg/kg	0.132	0	.025	105.	30-157	L593015-03	WG611208
Xylenes, Total	mg/kg	0.415	0	.075	111.	38-137	L593015-03	WG611208
4-Bromofluorobenzene					100.6	67-133		WG611208
Dibromofluoromethane					87.90	72-135		WG611208
Toluene-d8					100.2	90-113		WG611208
4,4-DDD	mg/kg	0.0689	0	.0667	103.	45-139	L593051-02	WG610742
4,4-DDE	mg/kg	0.0642	0	.0667	96.2	47-134	L593051-02	WG610742
4,4-DDT	mg/kg	0.0671	0	.0667	100.	11-148	L593051-02	WG610742
Aldrin	mg/kg	0.0627	0	.0667	94.0	52-117	L593051-02	WG610742
Alpha BHC	mg/kg	0.0640	0	.0667	96.0	51-120	L593051-02	WG610742
Beta BHC	mg/kg	0.0633	0	.0667	94.8	48-124	L593051-02	WG610742
Delta BHC	mg/kg	0.0714	0	.0667	107.	38-128	L593051-02	WG610742
Dieldrin	mg/kg	0.0648	0	.0667	97.1	48-135	L593051-02	WG610742
Endosulfan I	mg/kg	0.0645	0	.0667	96.6	51-129	L593051-02	WG610742
Endosulfan II	mg/kg	0.0654	0	.0667	98.1	42-142	L593051-02	WG610742
Endosulfan sulfate	mg/kg	0.0821	0	.0667	123.	38-140	L593051-02	WG610742
Endrin	mg/kg	0.0668	0	.0667	100.	44-133	L593051-02	WG610742
Endrin aldehyde	mg/kg	0.0628	0	.0667	94.1	16-116	L593051-02	WG610742
Endrin ketone	mg/kg	0.0754	0	.0667	113.	33-131	L593051-02	WG610742
Gamma BHC	mg/kg	0.0648	0	.0667	97.2	52-119	L593051-02	WG610742

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Heptachlor	mg/kg	0.0665	0	.0667	99.7	47-121	L593051-02	WG610742
Heptachlor epoxide	mg/kg	0.0645	0	.0667	96.8	54-120	L593051-02	WG610742
Hexachlorobenzene	mg/kg	0.0577	0	.0667	86.5	58-115	L593051-02	WG610742
Methoxychlor	mg/kg	0.0728	0	.0667	109.	9-153	L593051-02	WG610742
Decachlorobiphenyl					93.11	18.9-115.8		WG610742
Tetrachloro-m-xylene					95.31	31.8-115.7		WG610742
Arsenic	mg/kg	37.0	0.360	50	73.3*	75-125	L593006-09	WG610909
Barium	mg/kg	54.3	15.0	50	78.6	75-125	L593006-09	WG610909
Cadmium	mg/kg	39.1	0	50	78.2	75-125	L593006-09	WG610909
Chromium	mg/kg	42.4	3.40	50	78.0	75-125	L593006-09	WG610909
Iron	mg/kg	4540	4280	50	520.*	75-125	L593006-09	WG610909
Lead	mg/kg	41.7	2.70	50	78.0	75-125	L593006-09	WG610909
Selenium	mg/kg	36.8	0	50	73.6*	75-125	L593006-09	WG610909
Silver	mg/kg	38.2	0	50	76.4	75-125	L593006-09	WG610909
1,2,4-Trichlorobenzene	mg/kg	0.217	0	.333	65.1	27-118	L593015-03	WG610744
2,4,6-Trichlorophenol	mg/kg	0.242	0	.333	72.7	18-140	L593015-03	WG610744
2,4-Dichlorophenol	mg/kg	0.255	0	.333	76.6	30-134	L593015-03	WG610744
2,4-Dimethylphenol	mg/kg	0.226	0	.333	67.8	13-147	L593015-03	WG610744
2,4-Dinitrophenol	mg/kg	0.107	0	.333	32.3	10-110	L593015-03	WG610744
2,4-Dinitrotoluene	mg/kg	0.246	0	.333	73.8	12-146	L593015-03	WG610744
2,6-Dinitrotoluene	mg/kg	0.242	0	.333	72.8	10-150	L593015-03	WG610744
2-Chloronaphthalene	mg/kg	0.234	0	.333	70.3	31-127	L593015-03	WG610744
2-Chlorophenol	mg/kg	0.239	0	.333	71.7	26-120	L593015-03	WG610744
2-Nitrophenol	mg/kg	0.255	0	.333	76.7	10-156	L593015-03	WG610744
3,3-Dichlorobenzidine	mg/kg	0.207	0	.333	62.0	10-127	L593015-03	WG610744
4,6-Dinitro-2-methylphenol	mg/kg	0.184	0	.333	55.2	10-124	L593015-03	WG610744
4-Bromophenyl-phenylether	mg/kg	0.231	0	.333	69.2	27-150	L593015-03	WG610744
4-Chloro-3-methylphenol	mg/kg	0.249	0	.333	74.9	24-140	L593015-03	WG610744
4-Chlorophenyl-phenylether	mg/kg	0.247	0	.333	74.3	27-142	L593015-03	WG610744
4-Nitrophenol	mg/kg	0.259	0	.333	77.9	10-166	L593015-03	WG610744
Acenaphthene	mg/kg	0.240	0	.333	72.0	30-132	L593015-03	WG610744
Acenaphthylene	mg/kg	0.243	0	.333	73.1	31-144	L593015-03	WG610744
Anthracene	mg/kg	0.253	0	.333	76.1	27-140	L593015-03	WG610744
Benzidine	mg/kg	0.00760	0	.333	2.28*	10-55	L593015-03	WG610744
Benzo(a)anthracene	mg/kg	0.247	0	.333	74.2	22-139	L593015-03	WG610744
Benzo(a)pyrene	mg/kg	0.267	0	.333	80.1	16-148	L593015-03	WG610744
Benzo(b)fluoranthene	mg/kg	0.252	0	.333	75.7	13-152	L593015-03	WG610744
Benzo(g,h,i)perylene	mg/kg	0.266	0	.333	79.9	10-137	L593015-03	WG610744
Benzo(k)fluoranthene	mg/kg	0.259	0	.333	77.7	15-152	L593015-03	WG610744
Benzylbutyl phthalate	mg/kg	0.258	0	.333	77.4	20-168	L593015-03	WG610744
Bis(2-chlorethoxy)methane	mg/kg	0.250	0	.333	75.1	32-141	L593015-03	WG610744
Bis(2-chloroethyl)ether	mg/kg	0.263	0	.333	78.9	25-139	L593015-03	WG610744
Bis(2-chloroisopropyl)ether	mg/kg	0.230	0	.333	69.0	32-128	L593015-03	WG610744
Bis(2-ethylhexyl)phthalate	mg/kg	0.275	0	.333	82.6	20-163	L593015-03	WG610744
Chrysene	mg/kg	0.252	0	.333	75.8	20-139	L593015-03	WG610744
Di-n-butyl phthalate	mg/kg	0.240	0	.333	72.2	24-149	L593015-03	WG610744
Di-n-octyl phthalate	mg/kg	0.275	0	.333	82.5	14-164	L593015-03	WG610744
Dibenz(a,h)anthracene	mg/kg	0.277	0	.333	83.1	10-137	L593015-03	WG610744
Diethyl phthalate	mg/kg	0.232	0	.333	69.6	28-142	L593015-03	WG610744
Dimethyl phthalate	mg/kg	0.247	0	.333	74.2	31-142	L593015-03	WG610744
Fluoranthene	mg/kg	0.242	0	.333	72.8	24-145	L593015-03	WG610744
Fluorene	mg/kg	0.249	0	.333	74.9	30-138	L593015-03	WG610744
Hexachloro-1,3-butadiene	mg/kg	0.218	0	.333	65.4	29-136	L593015-03	WG610744
Hexachlorobenzene	mg/kg	0.204	0	.333	61.1	26-136	L593015-03	WG610744
Hexachlorocyclopentadiene	mg/kg	0.160	0	.333	48.0	10-124	L593015-03	WG610744

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexachloroethane	mg/kg	0.220	0	.333	66.0	21-107	L593015-03	WG610744
Indeno(1,2,3-cd)pyrene	mg/kg	0.274	0	.333	82.3	10-139	L593015-03	WG610744
Isophorone	mg/kg	0.197	0	.333	59.1	26-134	L593015-03	WG610744
n-Nitrosodi-n-propylamine	mg/kg	0.251	0	.333	75.3	24-141	L593015-03	WG610744
n-Nitrosodimethylamine	mg/kg	0.200	0	.333	60.2	18-126	L593015-03	WG610744
n-Nitrosodiphenylamine	mg/kg	0.240	0	.333	72.1	16-128	L593015-03	WG610744
Naphthalene	mg/kg	0.229	0	.333	68.9	31-124	L593015-03	WG610744
Nitrobenzene	mg/kg	0.235	0	.333	70.7	22-122	L593015-03	WG610744
Pentachlorophenol	mg/kg	0.192	0	.333	57.8	10-124	L593015-03	WG610744
Phenanthrene	mg/kg	0.255	0	.333	76.4	25-139	L593015-03	WG610744
Phenol	mg/kg	0.250	0	.333	75.1	22-129	L593015-03	WG610744
Pyrene	mg/kg	0.265	0	.333	79.7	23-145	L593015-03	WG610744
2,4,6-Tribromophenol					65.93	16-136		WG610744
2-Fluorobiphenyl					73.11	37-119		WG610744
2-Fluorophenol					72.49	22-114		WG610744
Nitrobenzene-d5					70.98	20-114		WG610744
Phenol-d5					74.56	26-127		WG610744
p-Terphenyl-d14					71.32	15-174		WG610744
2,4,5-T	mg/kg	0.151	0	.167	90.2	18-111	L592812-02	WG610970
2,4,5-TP (Silvex)	mg/kg	0.174	0	.167	104.	27-123	L592812-02	WG610970
2,4-D	mg/kg	0.137	0	.167	81.8	10-137	L592812-02	WG610970
2,4-DB	mg/kg	0.153	0	.167	91.6	15-121	L592812-02	WG610970
Dalapon	mg/kg	0.179	0	.167	107.	10-111	L592812-02	WG610970
Dicamba	mg/kg	0.171	0	.167	103.	21-118	L592812-02	WG610970
Dichloroprop	mg/kg	0.155	0	.167	92.6	27-125	L592812-02	WG610970
Dinoseb	mg/kg	0.125	0	.167	74.8	10-95	L592812-02	WG610970
MCPA	mg/kg	15.2	0	16.7	90.8	10-164	L592812-02	WG610970
MCPP	mg/kg	27.1	0	16.7	162.	17-186	L592812-02	WG610970
2,4-Dichlorophenyl Acetic Acid					94.49	37-99		WG610970

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0222	0.0210	88.8	49-135	5.42	23	L593002-11	WG610693
1,1,1-Trichloroethane	mg/kg	0.0211	0.0200	84.6	43-142	5.59	24	L593002-11	WG610693
1,1,2,2-Tetrachloroethane	mg/kg	0.0232	0.0226	92.7	42-147	2.66	25	L593002-11	WG610693
1,1,2-Trichloroethane	mg/kg	0.0222	0.0214	88.7	51-134	3.31	21	L593002-11	WG610693
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0226	0.0206	90.4	25-156	9.21	29	L593002-11	WG610693
1,1-Dichloroethane	mg/kg	0.0199	0.0193	79.6	50-131	3.21	21	L593002-11	WG610693
1,1-Dichloroethene	mg/kg	0.0238	0.0224	95.2	29-145	6.14	28	L593002-11	WG610693
1,1-Dichloropropene	mg/kg	0.0194	0.0183	77.7	40-136	5.72	24	L593002-11	WG610693
1,2,3-Trichlorobenzene	mg/kg	0.0158	0.0152	63.0	13-142	3.29	33	L593002-11	WG610693
1,2,3-Trichloropropane	mg/kg	0.0194	0.0205	77.7	41-149	5.35	28	L593002-11	WG610693
1,2,3-Trimethylbenzene	mg/kg	0.0198	0.0200	62.8	33-146	0.670	27	L593002-11	WG610693
1,2,4-Trichlorobenzene	mg/kg	0.0157	0.0155	62.8	12-140	1.22	32	L593002-11	WG610693
1,2,4-Trimethylbenzene	mg/kg	0.0242	0.0253	62.8	29-143	4.50	30	L593002-11	WG610693
1,2-Dibromo-3-Chloropropane	mg/kg	0.0208	0.0208	83.0	29-151	0.150	31	L593002-11	WG610693
1,2-Dibromoethane	mg/kg	0.0217	0.0215	86.8	48-133	1.19	22	L593002-11	WG610693
1,2-Dichlorobenzene	mg/kg	0.0186	0.0177	74.3	37-136	5.00	25	L593002-11	WG610693
1,2-Dichloroethane	mg/kg	0.0199	0.0195	79.6	49-131	2.17	20	L593002-11	WG610693
1,2-Dichloropropane	mg/kg	0.0207	0.0198	82.9	50-132	4.70	21	L593002-11	WG610693
1,3,5-Trimethylbenzene	mg/kg	0.0216	0.0212	72.2	29-144	2.20	30	L593002-11	WG610693
1,3-Dichlorobenzene	mg/kg	0.0196	0.0186	78.5	26-140	5.28	28	L593002-11	WG610693
1,3-Dichloropropane	mg/kg	0.0210	0.0210	83.9	50-126	0.120	22	L593002-11	WG610693
1,4-Dichlorobenzene	mg/kg	0.0178	0.0169	71.1	34-132	4.97	26	L593002-11	WG610693
2,2-Dichloropropane	mg/kg	0.0211	0.0204	84.6	35-148	3.43	26	L593002-11	WG610693
2-Butanone (MEK)	mg/kg	0.106	0.110	69.3	40-149	3.66	27	L593002-11	WG610693

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
2-Chloroethyl vinyl ether	mg/kg	0.0987	0.102	79.0	10-173	2.99	33	L593002-11	WG610693
2-Chlorotoluene	mg/kg	0.0198	0.0189	79.2	34-136	4.86	28	L593002-11	WG610693
4-Chlorotoluene	mg/kg	0.0192	0.0184	76.9	31-137	4.59	27	L593002-11	WG610693
4-Methyl-2-pentanone (MIBK)	mg/kg	0.101	0.103	81.1	37-153	1.60	27	L593002-11	WG610693
Acetone	mg/kg	0.172	0.177	41.7	10-177	2.75	28	L593002-11	WG610693
Acrylonitrile	mg/kg	0.0977	0.0997	78.2	33-159	2.02	26	L593002-11	WG610693
Benzene	mg/kg	0.0197	0.0191	78.8	44-131	2.83	21	L593002-11	WG610693
Bromobenzene	mg/kg	0.0191	0.0184	76.3	36-132	3.74	26	L593002-11	WG610693
Bromodichloromethane	mg/kg	0.0202	0.0200	81.0	48-134	1.01	20	L593002-11	WG610693
Bromoform	mg/kg	0.0225	0.0216	90.1	34-141	4.25	24	L593002-11	WG610693
Bromomethane	mg/kg	0.0272	0.0263	109.	19-173	3.44	25	L593002-11	WG610693
Carbon tetrachloride	mg/kg	0.0220	0.0183	88.1	36-140	18.4	26	L593002-11	WG610693
Chlorobenzene	mg/kg	0.0208	0.0201	83.4	42-133	3.87	24	L593002-11	WG610693
Chlorodibromomethane	mg/kg	0.0224	0.0213	89.4	45-135	4.99	23	L593002-11	WG610693
Chloroethane	mg/kg	0.0228	0.0221	91.4	16-178	3.37	25	L593002-11	WG610693
Chloroform	mg/kg	0.0213	0.0206	85.2	52-130	3.43	21	L593002-11	WG610693
Chloromethane	mg/kg	0.0159	0.0151	63.4	28-147	4.63	23	L593002-11	WG610693
cis-1,2-Dichloroethene	mg/kg	0.0204	0.0197	81.8	52-128	3.67	21	L593002-11	WG610693
cis-1,3-Dichloropropene	mg/kg	0.0202	0.0196	80.6	46-131	2.64	21	L593002-11	WG610693
Di-isopropyl ether	mg/kg	0.0187	0.0180	75.0	46-134	3.93	20	L593002-11	WG610693
Dibromomethane	mg/kg	0.0204	0.0200	81.4	51-133	1.95	21	L593002-11	WG610693
Dichlorodifluoromethane	mg/kg	0.0191	0.0185	76.3	12-179	2.91	27	L593002-11	WG610693
Ethylbenzene	mg/kg	0.0208	0.0205	83.2	38-139	1.46	27	L593002-11	WG610693
Hexachloro-1,3-butadiene	mg/kg	0.0153	0.0143	61.0	10-147	6.58	37	L593002-11	WG610693
Isopropylbenzene	mg/kg	0.0202	0.0191	80.9	34-137	5.86	29	L593002-11	WG610693
Methyl tert-butyl ether	mg/kg	0.0209	0.0208	83.6	45-134	0.510	22	L593002-11	WG610693
Methylene Chloride	mg/kg	0.0207	0.0198	82.7	41-133	4.39	28	L593002-11	WG610693
n-Butylbenzene	mg/kg	0.0162	0.0157	64.7	19-149	2.75	32	L593002-11	WG610693
n-Propylbenzene	mg/kg	0.0192	0.0183	76.7	27-142	4.59	29	L593002-11	WG610693
Naphthalene	mg/kg	0.0172	0.0171	68.8	19-146	0.770	30	L593002-11	WG610693
p-Isopropyltoluene	mg/kg	0.0198	0.0188	77.0	21-150	4.90	31	L593002-11	WG610693
sec-Butylbenzene	mg/kg	0.0192	0.0182	76.8	25-148	5.53	31	L593002-11	WG610693
Styrene	mg/kg	0.0200	0.0191	80.0	30-156	4.72	26	L593002-11	WG610693
tert-Butylbenzene	mg/kg	0.0204	0.0191	81.5	32-146	6.68	30	L593002-11	WG610693
Tetrachloroethene	mg/kg	0.0212	0.0200	84.6	35-139	5.40	27	L593002-11	WG610693
Toluene	mg/kg	0.0213	0.0247	85.4	43-127	14.5	21	L593002-11	WG610693
trans-1,2-Dichloroethene	mg/kg	0.0203	0.0190	81.2	41-132	6.41	23	L593002-11	WG610693
trans-1,3-Dichloropropene	mg/kg	0.0202	0.0198	80.7	43-129	1.88	23	L593002-11	WG610693
Trichloroethene	mg/kg	0.0219	0.0212	87.6	42-136	3.32	23	L593002-11	WG610693
Trichlorofluoromethane	mg/kg	0.0234	0.0223	93.4	20-178	4.58	30	L593002-11	WG610693
Vinyl chloride	mg/kg	0.0191	0.0183	76.6	30-157	4.74	24	L593002-11	WG610693
Xylenes, Total	mg/kg	0.0634	0.0649	84.5	38-137	2.32	26	L593002-11	WG610693
4-Bromofluorobenzene				101.3	67-133				WG610693
Dibromofluoromethane				99.32	72-135				WG610693
Toluene-d8				99.56	90-113				WG610693
1,1,1,2-Tetrachloroethane	mg/kg	0.158	0.122	126.	49-135	25.4*	23	L593015-02	WG610695
1,1,1-Trichloroethane	mg/kg	0.119	0.0960	94.9	43-142	21.1	24	L593015-02	WG610695
1,1,2,2-Tetrachloroethane	mg/kg	0.128	0.101	103.	42-147	24.3	25	L593015-02	WG610695
1,1,2-Trichloroethane	mg/kg	0.134	0.104	108.	51-134	26.0*	21	L593015-02	WG610695
1,1,2-Trichlorotrifluoroethane	mg/kg	0.103	0.0832	82.6	25-156	21.6	29	L593015-02	WG610695
1,1-Dichloroethane	mg/kg	0.102	0.0780	81.9	50-131	27.0*	21	L593015-02	WG610695
1,1-Dichloroethene	mg/kg	0.101	0.0799	80.5	29-145	22.9	28	L593015-02	WG610695
1,1-Dichloropropene	mg/kg	0.102	0.0808	81.4	40-136	23.0	24	L593015-02	WG610695
1,2,3-Trichlorobenzene	mg/kg	0.138	0.0973	111.	13-142	34.8*	33	L593015-02	WG610695
1,2,3-Trichloropropane	mg/kg	0.141	0.114	113.	41-149	21.6	28	L593015-02	WG610695
1,2,3-Trimethylbenzene	mg/kg	0.117	0.0890	93.9	33-146	27.4*	27	L593015-02	WG610695
1,2,4-Trichlorobenzene	mg/kg	0.141	0.106	113.	12-140	28.4	32	L593015-02	WG610695

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,2,4-Trimethylbenzene	mg/kg	0.142	0.111	114.	29-143	24.4	30	L593015-02	WG610695
1,2-Dibromo-3-Chloropropane	mg/kg	0.133	0.101	106.	29-151	26.8	31	L593015-02	WG610695
1,2-Dibromoethane	mg/kg	0.132	0.104	106.	48-133	23.6*	22	L593015-02	WG610695
1,2-Dichlorobenzene	mg/kg	0.132	0.0959	105.	37-136	31.5*	25	L593015-02	WG610695
1,2-Dichloroethane	mg/kg	0.110	0.0854	88.3	49-131	25.5*	20	L593015-02	WG610695
1,2-Dichloropropane	mg/kg	0.115	0.0926	92.0	50-132	21.5*	21	L593015-02	WG610695
1,3,5-Trimethylbenzene	mg/kg	0.143	0.112	114.	29-144	23.6	30	L593015-02	WG610695
1,3-Dichlorobenzene	mg/kg	0.148	0.119	119.	26-140	22.3	28	L593015-02	WG610695
1,3-Dichloropropane	mg/kg	0.133	0.104	106.	50-126	24.2*	22	L593015-02	WG610695
1,4-Dichlorobenzene	mg/kg	0.128	0.0955	102.	34-132	29.2*	26	L593015-02	WG610695
2,2-Dichloropropane	mg/kg	0.113	0.0892	90.4	35-148	23.5	26	L593015-02	WG610695
2-Butanone (MEK)	mg/kg	0.651	0.506	104.	40-149	25.1	27	L593015-02	WG610695
2-Chloroethyl vinyl ether	mg/kg	0.707	0.543	113.	10-173	26.2	33	L593015-02	WG610695
2-Chlorotoluene	mg/kg	0.132	0.104	106.	34-136	23.9	28	L593015-02	WG610695
4-Chlorotoluene	mg/kg	0.136	0.108	109.	31-137	23.3	27	L593015-02	WG610695
4-Methyl-2-pentanone (MIBK)	mg/kg	0.629	0.474	101.	37-153	28.1*	27	L593015-02	WG610695
Acetone	mg/kg	0.711	0.544	114.	10-177	26.6	28	L593015-02	WG610695
Acrylonitrile	mg/kg	0.512	0.397	82.0	33-159	25.5	26	L593015-02	WG610695
Benzene	mg/kg	0.102	0.0801	81.8	44-131	24.3*	21	L593015-02	WG610695
Bromobenzene	mg/kg	0.140	0.103	112.	36-132	30.6*	26	L593015-02	WG610695
Bromodichloromethane	mg/kg	0.131	0.0988	105.	48-134	28.0*	20	L593015-02	WG610695
Bromoform	mg/kg	0.165	0.132	132.	34-141	22.3	24	L593015-02	WG610695
Bromomethane	mg/kg	0.121	0.0943	97.0	19-173	25.0*	25	L593015-02	WG610695
Carbon tetrachloride	mg/kg	0.115	0.0904	92.4	36-140	24.4	26	L593015-02	WG610695
Chlorobenzene	mg/kg	0.145	0.114	116.	42-133	24.0	24	L593015-02	WG610695
Chlorodibromomethane	mg/kg	0.157	0.121	126.	45-135	26.0*	23	L593015-02	WG610695
Chloroethane	mg/kg	0.107	0.0833	85.6	16-178	24.9	25	L593015-02	WG610695
Chloroform	mg/kg	0.113	0.0877	90.7	52-130	25.5*	21	L593015-02	WG610695
Chloromethane	mg/kg	0.103	0.0820	82.8	28-147	23.1*	23	L593015-02	WG610695
cis-1,2-Dichloroethene	mg/kg	0.104	0.0822	83.4	52-128	23.7*	21	L593015-02	WG610695
cis-1,3-Dichloropropene	mg/kg	0.130	0.0958	104.	46-131	30.2*	21	L593015-02	WG610695
Di-isopropyl ether	mg/kg	0.0998	0.0777	79.8	46-134	25.0*	20	L593015-02	WG610695
Dibromomethane	mg/kg	0.124	0.0985	99.1	51-133	22.8*	21	L593015-02	WG610695
Dichlorodifluoromethane	mg/kg	0.128	0.0985	102.	12-179	25.8	27	L593015-02	WG610695
Ethylbenzene	mg/kg	0.142	0.114	114.	38-139	22.4	27	L593015-02	WG610695
Hexachloro-1,3-butadiene	mg/kg	0.131	0.0977	105.	10-147	29.1	37	L593015-02	WG610695
Isopropylbenzene	mg/kg	0.154	0.122	123.	34-137	23.5	29	L593015-02	WG610695
Methyl tert-butyl ether	mg/kg	0.107	0.0814	85.4	45-134	26.9*	22	L593015-02	WG610695
Methylene Chloride	mg/kg	0.0972	0.0775	77.7	41-133	22.6	28	L593015-02	WG610695
n-Butylbenzene	mg/kg	0.120	0.0885	95.9	19-149	30.1	32	L593015-02	WG610695
n-Propylbenzene	mg/kg	0.148	0.109	118.	27-142	30.3*	29	L593015-02	WG610695
Naphthalene	mg/kg	0.128	0.0905	102.	19-146	34.3*	30	L593015-02	WG610695
p-Isopropyltoluene	mg/kg	0.151	0.122	121.	21-150	21.6	31	L593015-02	WG610695
sec-Butylbenzene	mg/kg	0.147	0.115	118.	25-148	24.2	31	L593015-02	WG610695
Styrene	mg/kg	0.145	0.113	116.	30-156	24.9	26	L593015-02	WG610695
tert-Butylbenzene	mg/kg	0.149	0.119	119.	32-146	22.4	30	L593015-02	WG610695
Tetrachloroethene	mg/kg	0.150	0.122	120.	35-139	20.9	27	L593015-02	WG610695
Toluene	mg/kg	0.123	0.0987	98.7	43-127	22.2*	21	L593015-02	WG610695
trans-1,2-Dichloroethene	mg/kg	0.0999	0.0781	80.0	41-132	24.5*	23	L593015-02	WG610695
trans-1,3-Dichloropropene	mg/kg	0.144	0.112	115.	43-129	24.8*	23	L593015-02	WG610695
Trichloroethene	mg/kg	0.125	0.101	99.9	42-136	21.5	23	L593015-02	WG610695
Trichlorofluoromethane	mg/kg	0.121	0.0923	96.5	20-178	26.7	30	L593015-02	WG610695
Vinyl chloride	mg/kg	0.110	0.0863	88.3	30-157	24.4*	24	L593015-02	WG610695
Xylenes, Total	mg/kg	0.435	0.340	116.	38-137	24.7	26	L593015-02	WG610695
4-Bromofluorobenzene				104.3	67-133				WG610695
Dibromofluoromethane				88.11	72-135				WG610695
Toluene-d8				100.3	90-113				WG610695

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
PCB 1016	mg/kg	0.162	0.159	97.0	10-165	1.96	33	L593051-02	WG610742
PCB 1260	mg/kg	0.171	0.169	102.	29-154	1.06	23	L593051-02	WG610742
Decachlorobiphenyl				96.16	18.9-115.8				WG610742
Tetrachloro-m-xylene				98.03	31.8-115.7				WG610742
Mercury	mg/kg	0.350	0.334	114.	80-120	4.68	20	L593046-04	WG610704
1,1,1,2-Tetrachloroethane	mg/kg	0.125	0.137	99.8	49-135	9.32	23	L593015-03	WG611208
1,1,1-Trichloroethane	mg/kg	0.105	0.111	83.9	43-142	5.91	24	L593015-03	WG611208
1,1,2,2-Tetrachloroethane	mg/kg	0.114	0.126	91.2	42-147	9.81	25	L593015-03	WG611208
1,1,2-Trichloroethane	mg/kg	0.126	0.141	100.	51-134	11.7	21	L593015-03	WG611208
1,1,2-Trichlorotrifluoroethane	mg/kg	0.117	0.127	93.9	25-156	8.10	29	L593015-03	WG611208
1,1-Dichloroethane	mg/kg	0.0975	0.101	78.0	50-131	3.16	21	L593015-03	WG611208
1,1-Dichloroethene	mg/kg	0.119	0.128	94.9	29-145	7.57	28	L593015-03	WG611208
1,1-Dichloropropene	mg/kg	0.102	0.111	81.7	40-136	8.38	24	L593015-03	WG611208
1,2,3-Trichlorobenzene	mg/kg	0.125	0.123	100.	13-142	1.40	33	L593015-03	WG611208
1,2,3-Trichloropropane	mg/kg	0.121	0.135	97.0	41-149	10.9	28	L593015-03	WG611208
1,2,3-Trimethylbenzene	mg/kg	0.120	0.126	95.7	33-146	4.84	27	L593015-03	WG611208
1,2,4-Trichlorobenzene	mg/kg	0.132	0.129	106.	12-140	2.42	32	L593015-03	WG611208
1,2,4-Trimethylbenzene	mg/kg	0.126	0.138	101.	29-143	8.84	30	L593015-03	WG611208
1,2-Dibromo-3-Chloropropane	mg/kg	0.127	0.138	102.	29-151	8.04	31	L593015-03	WG611208
1,2-Dibromoethane	mg/kg	0.129	0.136	103.	48-133	5.46	22	L593015-03	WG611208
1,2-Dichlorobenzene	mg/kg	0.128	0.130	103.	37-136	1.40	25	L593015-03	WG611208
1,2-Dichloroethane	mg/kg	0.105	0.107	83.9	49-131	2.10	20	L593015-03	WG611208
1,2-Dichloropropane	mg/kg	0.115	0.109	91.7	50-132	4.59	21	L593015-03	WG611208
1,3,5-Trimethylbenzene	mg/kg	0.127	0.139	102.	29-144	8.56	30	L593015-03	WG611208
1,3-Dichlorobenzene	mg/kg	0.130	0.137	104.	26-140	5.22	28	L593015-03	WG611208
1,3-Dichloropropane	mg/kg	0.118	0.126	94.5	50-126	6.66	22	L593015-03	WG611208
1,4-Dichlorobenzene	mg/kg	0.130	0.132	104.	34-132	1.15	26	L593015-03	WG611208
2,2-Dichloropropane	mg/kg	0.104	0.109	83.5	35-148	4.36	26	L593015-03	WG611208
2-Butanone (MEK)	mg/kg	0.692	0.780	111.	40-149	12.0	27	L593015-03	WG611208
2-Chloroethyl vinyl ether	mg/kg	0.599	0.615	95.8	10-173	2.66	33	L593015-03	WG611208
2-Chlorotoluene	mg/kg	0.122	0.132	97.6	34-136	7.98	28	L593015-03	WG611208
4-Chlorotoluene	mg/kg	0.129	0.135	103.	31-137	4.63	27	L593015-03	WG611208
4-Methyl-2-pentanone (MIBK)	mg/kg	0.628	0.654	100.	37-153	4.02	27	L593015-03	WG611208
Acetone	mg/kg	0.913	0.997	146.	10-177	8.76	28	L593015-03	WG611208
Acrylonitrile	mg/kg	0.506	0.552	80.9	33-159	8.83	26	L593015-03	WG611208
Benzene	mg/kg	0.106	0.114	85.1	44-131	6.54	21	L593015-03	WG611208
Bromobenzene	mg/kg	0.118	0.127	94.0	36-132	8.05	26	L593015-03	WG611208
Bromodichloromethane	mg/kg	0.112	0.113	89.9	48-134	0.820	20	L593015-03	WG611208
Bromoform	mg/kg	0.131	0.144	105.	34-141	9.11	24	L593015-03	WG611208
Bromomethane	mg/kg	0.127	0.133	102.	19-173	4.84	25	L593015-03	WG611208
Carbon tetrachloride	mg/kg	0.103	0.111	82.7	36-140	6.96	26	L593015-03	WG611208
Chlorobenzene	mg/kg	0.125	0.133	99.9	42-133	5.98	24	L593015-03	WG611208
Chlorodibromomethane	mg/kg	0.124	0.133	98.9	45-135	7.22	23	L593015-03	WG611208
Chloroethane	mg/kg	0.132	0.139	106.	16-178	4.85	25	L593015-03	WG611208
Chloroform	mg/kg	0.102	0.105	81.8	52-130	2.86	21	L593015-03	WG611208
Chloromethane	mg/kg	0.103	0.106	82.2	28-147	2.79	23	L593015-03	WG611208
cis-1,2-Dichloroethene	mg/kg	0.103	0.107	82.3	52-128	3.86	21	L593015-03	WG611208
cis-1,3-Dichloropropene	mg/kg	0.119	0.117	94.9	46-131	1.25	21	L593015-03	WG611208
Di-isopropyl ether	mg/kg	0.0961	0.100	76.9	46-134	4.35	20	L593015-03	WG611208
Dibromomethane	mg/kg	0.120	0.122	95.7	51-133	2.32	21	L593015-03	WG611208
Dichlorodifluoromethane	mg/kg	0.113	0.118	90.5	12-179	4.26	27	L593015-03	WG611208
Ethylbenzene	mg/kg	0.131	0.145	105.	38-139	10.4	27	L593015-03	WG611208
Hexachloro-1,3-butadiene	mg/kg	0.123	0.118	98.3	10-147	4.03	37	L593015-03	WG611208
Isopropylbenzene	mg/kg	0.140	0.160	112.	34-137	12.8	29	L593015-03	WG611208
Methyl tert-butyl ether	mg/kg	0.105	0.110	84.3	45-134	4.49	22	L593015-03	WG611208

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
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Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Methylene Chloride	mg/kg	0.0914	0.0937	73.1	41-133	2.50	28	L593015-03	WG611208
n-Butylbenzene	mg/kg	0.126	0.134	101.	19-149	6.11	32	L593015-03	WG611208
n-Propylbenzene	mg/kg	0.126	0.137	101.	27-142	8.09	29	L593015-03	WG611208
Naphthalene	mg/kg	0.127	0.131	101.	19-146	2.84	30	L593015-03	WG611208
p-Isopropyltoluene	mg/kg	0.135	0.146	108.	21-150	8.13	31	L593015-03	WG611208
sec-Butylbenzene	mg/kg	0.133	0.140	106.	25-148	5.33	31	L593015-03	WG611208
Styrene	mg/kg	0.128	0.134	102.	30-156	5.07	26	L593015-03	WG611208
tert-Butylbenzene	mg/kg	0.134	0.140	107.	32-146	4.80	30	L593015-03	WG611208
Tetrachloroethene	mg/kg	0.138	0.146	111.	35-139	5.05	27	L593015-03	WG611208
Toluene	mg/kg	0.118	0.120	94.1	43-127	2.40	21	L593015-03	WG611208
trans-1,2-Dichloroethene	mg/kg	0.108	0.112	86.7	41-132	3.41	23	L593015-03	WG611208
trans-1,3-Dichloropropene	mg/kg	0.121	0.121	96.7	43-129	0.0500	23	L593015-03	WG611208
Trichloroethene	mg/kg	0.125	0.131	99.8	42-136	4.61	23	L593015-03	WG611208
Trichlorofluoromethane	mg/kg	0.131	0.138	104.	20-178	5.55	30	L593015-03	WG611208
Vinyl chloride	mg/kg	0.128	0.132	102.	30-157	2.90	24	L593015-03	WG611208
Xylenes, Total	mg/kg	0.401	0.415	107.	38-137	3.58	26	L593015-03	WG611208
4-Bromofluorobenzene				95.99	67-133				WG611208
Dibromofluoromethane				85.46	72-135				WG611208
Toluene-d8				101.0	90-113				WG611208
4,4-DDD	mg/kg	0.0692	0.0689	104.	45-139	0.521	21	L593051-02	WG610742
4,4-DDE	mg/kg	0.0660	0.0642	99.0	47-134	2.84	21	L593051-02	WG610742
4,4-DDT	mg/kg	0.0686	0.0671	103.	11-148	2.27	21	L593051-02	WG610742
Aldrin	mg/kg	0.0638	0.0627	95.6	52-117	1.61	21	L593051-02	WG610742
Alpha BHC	mg/kg	0.0654	0.0640	98.0	51-120	2.09	20	L593051-02	WG610742
Beta BHC	mg/kg	0.0642	0.0633	96.2	48-124	1.44	21	L593051-02	WG610742
Delta BHC	mg/kg	0.0727	0.0714	109.	38-128	1.80	21	L593051-02	WG610742
Dieldrin	mg/kg	0.0655	0.0648	98.2	48-135	1.14	20	L593051-02	WG610742
Endosulfan I	mg/kg	0.0653	0.0645	97.8	51-129	1.23	20	L593051-02	WG610742
Endosulfan II	mg/kg	0.0659	0.0654	98.8	42-142	0.693	21	L593051-02	WG610742
Endosulfan sulfate	mg/kg	0.0834	0.0821	125.	38-140	1.62	22	L593051-02	WG610742
Endrin	mg/kg	0.0675	0.0668	101.	44-133	1.10	20	L593051-02	WG610742
Endrin aldehyde	mg/kg	0.0634	0.0628	95.1	16-116	1.08	23	L593051-02	WG610742
Endrin ketone	mg/kg	0.0761	0.0754	114.	33-131	0.870	21	L593051-02	WG610742
Gamma BHC	mg/kg	0.0663	0.0648	99.3	52-119	2.17	20	L593051-02	WG610742
Heptachlor	mg/kg	0.0677	0.0665	102.	47-121	1.74	20	L593051-02	WG610742
Heptachlor epoxide	mg/kg	0.0652	0.0645	97.8	54-120	1.05	20	L593051-02	WG610742
Hexachlorobenzene	mg/kg	0.0586	0.0577	87.8	58-115	1.53	20	L593051-02	WG610742
Methoxychlor	mg/kg	0.0738	0.0728	111.	9-153	1.37	22	L593051-02	WG610742
Decachlorobiphenyl				92.98	18.9-115.8				WG610742
Tetrachloro-m-xylene				96.28	31.8-115.7				WG610742
Arsenic	mg/kg	39.5	37.0	78.3	75-125	6.54	20	L593006-09	WG610909
Barium	mg/kg	55.2	54.3	80.4	75-125	1.64	20	L593006-09	WG610909
Cadmium	mg/kg	40.6	39.1	81.2	75-125	3.76	20	L593006-09	WG610909
Chromium	mg/kg	44.6	42.4	82.4	75-125	5.06	20	L593006-09	WG610909
Iron	mg/kg	4250	4540	0*	75-125	6.60	20	L593006-09	WG610909
Lead	mg/kg	43.9	41.7	82.4	75-125	5.14	20	L593006-09	WG610909
Selenium	mg/kg	38.6	36.8	77.2	75-125	4.77	20	L593006-09	WG610909
Silver	mg/kg	39.7	38.2	79.4	75-125	3.85	20	L593006-09	WG610909
1,2,4-Trichlorobenzene	mg/kg	0.216	0.217	64.9	27-118	0.230	23	L593015-03	WG610744
2,4,6-Trichlorophenol	mg/kg	0.242	0.242	72.7	18-140	0.104	26	L593015-03	WG610744
2,4-Dichlorophenol	mg/kg	0.242	0.255	72.8	30-134	5.04	23	L593015-03	WG610744
2,4-Dimethylphenol	mg/kg	0.211	0.226	63.2	13-147	6.93	27	L593015-03	WG610744
2,4-Dinitrophenol	mg/kg	0.100	0.107	30.0	10-110	7.20	40	L593015-03	WG610744

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
2,4-Dinitrotoluene	mg/kg	0.239	0.246	71.7	12-146	2.92	25	L593015-03	WG610744
2,6-Dinitrotoluene	mg/kg	0.239	0.242	71.9	10-150	1.23	23	L593015-03	WG610744
2-Chloronaphthalene	mg/kg	0.219	0.234	65.7	31-127	6.70	23	L593015-03	WG610744
2-Chlorophenol	mg/kg	0.227	0.239	68.1	26-120	5.20	21	L593015-03	WG610744
2-Nitrophenol	mg/kg	0.245	0.255	73.6	10-156	4.14	24	L593015-03	WG610744
3,3-Dichlorobenzidine	mg/kg	0.193	0.207	57.9	10-127	6.84	40	L593015-03	WG610744
4,6-Dinitro-2-methylphenol	mg/kg	0.166	0.184	49.9	10-124	10.1	40	L593015-03	WG610744
4-Bromophenyl-phenylether	mg/kg	0.223	0.231	67.1	27-150	3.14	20	L593015-03	WG610744
4-Chloro-3-methylphenol	mg/kg	0.237	0.249	71.1	24-140	5.16	22	L593015-03	WG610744
4-Chlorophenyl-phenylether	mg/kg	0.235	0.247	70.7	27-142	4.99	21	L593015-03	WG610744
4-Nitrophenol	mg/kg	0.249	0.259	74.8	10-166	4.00	35	L593015-03	WG610744
Acenaphthene	mg/kg	0.232	0.240	69.6	30-132	3.38	21	L593015-03	WG610744
Acenaphthylene	mg/kg	0.238	0.243	71.4	31-144	2.28	24	L593015-03	WG610744
Anthracene	mg/kg	0.234	0.253	70.3	27-140	7.92	20	L593015-03	WG610744
Benzidine	mg/kg	0.00528	0.00760	1.58*	10-55	36.1*	36	L593015-03	WG610744
Benzo(a)anthracene	mg/kg	0.237	0.247	71.1	22-139	4.28	22	L593015-03	WG610744
Benzo(a)pyrene	mg/kg	0.255	0.267	76.6	16-148	4.45	21	L593015-03	WG610744
Benzo(b)fluoranthene	mg/kg	0.245	0.252	73.6	13-152	2.83	24	L593015-03	WG610744
Benzo(g,h,i)perylene	mg/kg	0.246	0.266	74.0	10-137	7.66	32	L593015-03	WG610744
Benzo(k)fluoranthene	mg/kg	0.242	0.259	72.6	15-152	6.83	22	L593015-03	WG610744
Benzylbutyl phthalate	mg/kg	0.248	0.258	74.4	20-168	3.87	23	L593015-03	WG610744
Bis(2-chlorethoxy)methane	mg/kg	0.238	0.250	71.6	32-141	4.77	20	L593015-03	WG610744
Bis(2-chloroethyl)ether	mg/kg	0.251	0.263	75.4	25-139	4.59	26	L593015-03	WG610744
Bis(2-chloroisopropyl)ether	mg/kg	0.218	0.230	65.4	32-128	5.28	22	L593015-03	WG610744
Bis(2-ethylhexyl)phthalate	mg/kg	0.263	0.275	78.9	20-163	4.63	24	L593015-03	WG610744
Chrysene	mg/kg	0.243	0.252	73.1	20-139	3.62	23	L593015-03	WG610744
Di-n-butyl phthalate	mg/kg	0.234	0.240	70.3	24-149	2.62	24	L593015-03	WG610744
Di-n-octyl phthalate	mg/kg	0.269	0.275	80.7	14-164	2.29	24	L593015-03	WG610744
Dibenz(a,h)anthracene	mg/kg	0.259	0.277	77.8	10-137	6.69	29	L593015-03	WG610744
Diethyl phthalate	mg/kg	0.224	0.232	67.2	28-142	3.52	23	L593015-03	WG610744
Dimethyl phthalate	mg/kg	0.230	0.247	69.1	31-142	7.11	22	L593015-03	WG610744
Fluoranthene	mg/kg	0.234	0.242	70.3	24-145	3.41	29	L593015-03	WG610744
Fluorene	mg/kg	0.242	0.249	72.8	30-138	2.82	22	L593015-03	WG610744
Hexachloro-1,3-butadiene	mg/kg	0.204	0.218	61.3	29-136	6.37	22	L593015-03	WG610744
Hexachlorobenzene	mg/kg	0.191	0.204	57.4	26-136	6.39	20	L593015-03	WG610744
Hexachlorocyclopentadiene	mg/kg	0.146	0.160	43.8	10-124	9.25	33	L593015-03	WG610744
Hexachloroethane	mg/kg	0.207	0.220	62.0	21-107	6.20	27	L593015-03	WG610744
Indeno(1,2,3-cd)pyrene	mg/kg	0.257	0.274	77.3	10-139	6.27	32	L593015-03	WG610744
Isophorone	mg/kg	0.193	0.197	58.0	26-134	1.93	20	L593015-03	WG610744
n-Nitrosodi-n-propylamine	mg/kg	0.244	0.251	73.3	24-141	2.73	20	L593015-03	WG610744
n-Nitrosodimethylamine	mg/kg	0.187	0.200	56.0	18-126	7.13	27	L593015-03	WG610744
n-Nitrosodiphenylamine	mg/kg	0.224	0.240	67.4	16-128	6.85	25	L593015-03	WG610744
Naphthalene	mg/kg	0.225	0.229	67.6	31-124	1.84	25	L593015-03	WG610744
Nitrobenzene	mg/kg	0.226	0.235	68.0	22-122	3.86	20	L593015-03	WG610744
Pentachlorophenol	mg/kg	0.187	0.192	56.1	10-124	2.90	34	L593015-03	WG610744
Phenanthrene	mg/kg	0.239	0.255	71.9	25-139	6.18	25	L593015-03	WG610744
Phenol	mg/kg	0.237	0.250	71.1	22-129	5.48	25	L593015-03	WG610744
Pyrene	mg/kg	0.256	0.265	76.8	23-145	3.66	30	L593015-03	WG610744
2,4,6-Tribromophenol				62.95	16-136				WG610744
2-Fluorobiphenyl				70.75	37-119				WG610744
2-Fluorophenol				67.61	22-114				WG610744
Nitrobenzene-d5				67.78	20-114				WG610744
Phenol-d5				70.44	26-127				WG610744
p-Terphenyl-d14				71.33	15-174				WG610744
2,4,5-T	mg/kg	0.172	0.151	103.	18-111	13.0	29	L592812-02	WG610970
2,4,5-TP (Silvex)	mg/kg	0.178	0.174	107.	27-123	2.23	23	L592812-02	WG610970
2,4-D	mg/kg	0.164	0.137	98.0	10-137	18.0	40	L592812-02	WG610970

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L593015

September 11, 2012

Analyte	Units	Matrix Spike MSD	Matrix Spike Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
2,4-DB	mg/kg	0.179	0.153	107.	15-121	15.9	33	L592812-02	WG610970
Dalapon	mg/kg	0.174	0.179	104.	10-111	3.20	37	L592812-02	WG610970
Dicamba	mg/kg	0.185	0.171	110.	21-118	7.40	24	L592812-02	WG610970
Dichloroprop	mg/kg	0.187	0.155	112.	27-125	18.8	24	L592812-02	WG610970
Dinoseb	mg/kg	0.0956	0.125	57.3	10-95	26.6	40	L592812-02	WG610970
MCPA	mg/kg	16.1	15.2	96.2	10-164	5.82	40	L592812-02	WG610970
MCPP	mg/kg	28.9	27.1	173.	17-186	6.35	40	L592812-02	WG610970
2,4-Dichlorophenyl Acetic Acid				103.9*	37-99				WG610970

Batch number /Run number / Sample number cross reference

WG610693: R2328693: L593015-01
WG610742: R2329603: L593015-01 02 03 04
WG610695: R2329673: L593015-02 04
WG610704: R2330536: L593015-01 02 03 04
WG611208: R2331913: L593015-03
WG610909: R2334594: L593015-01 02 03 04
WG610744: R2337694: L593015-01 02 03 04
WG610970: R2338774: L593015-01 02 03 04

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW8, Samples at 0 ft. & 20 ft.
Monitoring Well YA-MW9, Samples at 5 ft. & 20 ft.
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Quality Assurance Report
Level II

L593015

September 11, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
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Denver, CO 80222

Report Summary

Tuesday September 11, 2012

Report Number: L593051
Samples Received: 09/01/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593051-01

Site ID :

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW4 15

Collected By : I P C
Collection Date : 08/31/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/05/12	1
Arsenic	BDL	1.0	mg/kg	6010B	09/06/12	1
Barium	110	0.25	mg/kg	6010B	09/06/12	1
Cadmium	BDL	0.50	mg/kg	6010B	09/06/12	2
Chromium	18.	0.50	mg/kg	6010B	09/06/12	1
Iron	20000	5.0	mg/kg	6010B	09/06/12	1
Lead	19.	0.25	mg/kg	6010B	09/06/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/06/12	1
Silver	BDL	0.50	mg/kg	6010B	09/06/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/05/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/05/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/05/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/05/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/05/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/05/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/05/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/05/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/05/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/05/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/05/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/05/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593051-01

Site ID :

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW4 15

Collected By : I P C
Collection Date : 08/31/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/05/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/05/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/05/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/05/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/05/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/05/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/05/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/05/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/05/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/05/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/05/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/05/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/05/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/05/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/05/12	5
Surrogate Recovery						
Toluene-d8	97.7		% Rec.	8260B	09/05/12	5
Dibromofluoromethane	89.9		% Rec.	8260B	09/05/12	5
4-Bromofluorobenzene	102.		% Rec.	8260B	09/05/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593051-01

Site ID :

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW4 15

Collected By : I P C
Collection Date : 08/31/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/06/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/06/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/06/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/06/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/05/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	79.9		% Rec.	8081/8082	09/05/12	1
Tetrachloro-m-xylene	84.4		% Rec.	8081/8082	09/05/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/10/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/10/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/10/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/10/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/10/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/10/12	1
MCPA	BDL	6.5	mg/kg	8151	09/10/12	1
MCPP	BDL	6.5	mg/kg	8151	09/10/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/10/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/10/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	50.8		% Rec.	8151	09/10/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593051-01

Site ID :

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW4 15

Collected By : I P C
Collection Date : 08/31/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/10/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/10/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/10/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/10/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/10/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/10/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/10/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/10/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/10/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/10/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/10/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/10/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593051-01

Site ID :

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW4 15

Collected By : I P C
Collection Date : 08/31/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Surrogate Recovery						
2-Fluorophenol	67.2		% Rec.	8270C	09/10/12	1
Phenol-d5	67.3		% Rec.	8270C	09/10/12	1
Nitrobenzene-d5	57.1		% Rec.	8270C	09/10/12	1
2-Fluorobiphenyl	60.9		% Rec.	8270C	09/10/12	1
2,4,6-Tribromophenol	49.6		% Rec.	8270C	09/10/12	1
p-Terphenyl-d14	60.4		% Rec.	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 09/11/12 14:56 Printed: 09/11/12 15:38

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593051-02

Site ID :

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW4 20

Collected By : I P C
Collection Date : 08/31/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/05/12	1
Arsenic	BDL	1.0	mg/kg	6010B	09/06/12	1
Barium	14.	0.25	mg/kg	6010B	09/06/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/06/12	1
Chromium	1.5	0.50	mg/kg	6010B	09/06/12	1
Iron	3300	5.0	mg/kg	6010B	09/06/12	1
Lead	4.1	0.25	mg/kg	6010B	09/06/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/06/12	1
Silver	BDL	0.50	mg/kg	6010B	09/06/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/05/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/05/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/05/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/05/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/05/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/05/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/05/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/05/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/05/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/05/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/05/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/05/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/05/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593051-02

Site ID :

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW4 20

Collected By : I P C
Collection Date : 08/31/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/05/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/05/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/05/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/05/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/05/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/05/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/05/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/05/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/05/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/05/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/05/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/05/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/05/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/05/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/05/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/05/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/05/12	5
Surrogate Recovery						
Toluene-d8	99.9		% Rec.	8260B	09/05/12	5
Dibromofluoromethane	88.3		% Rec.	8260B	09/05/12	5
4-Bromofluorobenzene	100.		% Rec.	8260B	09/05/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593051-02

Site ID :

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW4 20

Collected By : I P C
Collection Date : 08/31/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/06/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/06/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/06/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/06/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/06/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/05/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/05/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	93.2		% Rec.	8081/8082	09/05/12	1
Tetrachloro-m-xylene	98.0		% Rec.	8081/8082	09/05/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/10/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/10/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/10/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/10/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/10/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/10/12	1
MCPA	BDL	6.5	mg/kg	8151	09/10/12	1
MCPP	BDL	6.5	mg/kg	8151	09/10/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/10/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/10/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	70.3		% Rec.	8151	09/10/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593051-02

Site ID :

Project # : 212-137

Date Received : September 01, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW4 20

Collected By : I P C
Collection Date : 08/31/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/10/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/10/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/10/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/10/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/10/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/10/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/10/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/10/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/10/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/10/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/10/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/10/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/10/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/10/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/10/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/10/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/10/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/10/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/10/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/10/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 11, 2012

ESC Sample # : L593051-02

Date Received : September 01, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW4 20

Project # : 212-137

Collected By : I P C
Collection Date : 08/31/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/10/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/10/12	1
Surrogate Recovery						
2-Fluorophenol	68.6		% Rec.	8270C	09/10/12	1
Phenol-d5	71.0		% Rec.	8270C	09/10/12	1
Nitrobenzene-d5	62.0		% Rec.	8270C	09/10/12	1
2-Fluorobiphenyl	69.6		% Rec.	8270C	09/10/12	1
2,4,6-Tribromophenol	58.3		% Rec.	8270C	09/10/12	1
p-Terphenyl-d14	82.1		% Rec.	8270C	09/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 09/11/12 14:56 Printed: 09/11/12 15:38

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L593051-01	WG610744	SAMP	Benzidine	R2337694	J4
	WG610933	SAMP	Cadmium	R2333153	O
	WG610706	SAMP	Mercury	R2330537	J5
	WG610695	SAMP	Bromoform	R2329673	J4J3
	WG610970	SAMP	2,4-D	R2338774	J3
	WG610970	SAMP	2,4-DB	R2338774	J3
	WG610970	SAMP	Dicamba	R2338774	J3
	WG610970	SAMP	Dichloroprop	R2338774	J3L1
	WG610970	SAMP	MCPA	R2338774	J3
	WG610970	SAMP	MCPP	R2338774	J3
	WG610970	SAMP	2,4,5-T	R2338774	J3
L593051-02	WG610744	SAMP	Benzidine	R2337694	J4
	WG610695	SAMP	Bromoform	R2329673	J4J3
	WG610970	SAMP	2,4-D	R2338774	J3
	WG610970	SAMP	2,4-DB	R2338774	J3
	WG610970	SAMP	Dicamba	R2338774	J3
	WG610970	SAMP	Dichloroprop	R2338774	J3L1
	WG610970	SAMP	MCPA	R2338774	J3
	WG610970	SAMP	MCPP	R2338774	J3
	WG610970	SAMP	2,4,5-T	R2338774	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
L1	(ESC) The associated batch LCS exceeded the upper control limit, which indicates a high bias; The sample analyte was "not detected" and is therefore unaffected.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
09/11/12 at 15:38:54

TSR Signing Reports: 358

Sample: L593051-01 Account: YEHDCO Received: 09/01/12 09:00 Due Date: 09/12/12 00:00 RPT Date: 09/11/12 14:56

Sample: L593051-02 Account: YEHDCO Received: 09/01/12 09:00 Due Date: 09/12/12 00:00 RPT Date: 09/11/12 14:56

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L593051

September 11, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
PCB 1016	< .017	mg/kg			WG610742	09/05/12 10:59
PCB 1221	< .017	mg/kg			WG610742	09/05/12 10:59
PCB 1232	< .017	mg/kg			WG610742	09/05/12 10:59
PCB 1242	< .017	mg/kg			WG610742	09/05/12 10:59
PCB 1248	< .017	mg/kg			WG610742	09/05/12 10:59
PCB 1254	< .017	mg/kg			WG610742	09/05/12 10:59
PCB 1260	< .017	mg/kg			WG610742	09/05/12 10:59
Decachlorobiphenyl		% Rec.	100.7	18.9-115.8	WG610742	09/05/12 10:59
Tetrachloro-m-xylene		% Rec.	100.9	31.8-115.7	WG610742	09/05/12 10:59
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,1,1-Trichloroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,1,2-Trichloroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,1-Dichloroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,1-Dichloroethene	< .001	mg/kg			WG610695	09/05/12 02:37
1,1-Dichloropropene	< .001	mg/kg			WG610695	09/05/12 02:37
1,2,3-Trichlorobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,2,3-Trichloropropane	< .0025	mg/kg			WG610695	09/05/12 02:37
1,2,3-Trimethylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,2,4-Trichlorobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,2,4-Trimethylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG610695	09/05/12 02:37
1,2-Dibromoethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,2-Dichlorobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,2-Dichloroethane	< .001	mg/kg			WG610695	09/05/12 02:37
1,2-Dichloropropane	< .001	mg/kg			WG610695	09/05/12 02:37
1,3,5-Trimethylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,3-Dichlorobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
1,3-Dichloropropane	< .001	mg/kg			WG610695	09/05/12 02:37
1,4-Dichlorobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
2,2-Dichloropropane	< .001	mg/kg			WG610695	09/05/12 02:37
2-Butanone (MEK)	< .01	mg/kg			WG610695	09/05/12 02:37
2-Chloroethyl vinyl ether	< .05	mg/kg			WG610695	09/05/12 02:37
2-Chlorotoluene	< .001	mg/kg			WG610695	09/05/12 02:37
4-Chlorotoluene	< .001	mg/kg			WG610695	09/05/12 02:37
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG610695	09/05/12 02:37
Acetone	< .05	mg/kg			WG610695	09/05/12 02:37
Acrylonitrile	< .01	mg/kg			WG610695	09/05/12 02:37
Benzene	< .001	mg/kg			WG610695	09/05/12 02:37
Bromobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Bromodichloromethane	< .001	mg/kg			WG610695	09/05/12 02:37
Bromoform	< .001	mg/kg			WG610695	09/05/12 02:37
Bromomethane	< .005	mg/kg			WG610695	09/05/12 02:37
Carbon tetrachloride	< .001	mg/kg			WG610695	09/05/12 02:37
Chlorobenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Chlorodibromomethane	< .001	mg/kg			WG610695	09/05/12 02:37
Chloroethane	< .005	mg/kg			WG610695	09/05/12 02:37
Chloroform	< .005	mg/kg			WG610695	09/05/12 02:37
Chloromethane	< .0025	mg/kg			WG610695	09/05/12 02:37
cis-1,2-Dichloroethene	< .001	mg/kg			WG610695	09/05/12 02:37
cis-1,3-Dichloropropene	< .001	mg/kg			WG610695	09/05/12 02:37
Di-isopropyl ether	< .001	mg/kg			WG610695	09/05/12 02:37
Dibromomethane	< .001	mg/kg			WG610695	09/05/12 02:37
Dichlorodifluoromethane	< .005	mg/kg			WG610695	09/05/12 02:37
Ethylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Hexachloro-1,3-butadiene	< .001	mg/kg			WG610695	09/05/12 02:37

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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L593051

September 11, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Isopropylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Methyl tert-butyl ether	< .001	mg/kg			WG610695	09/05/12 02:37
Methylene Chloride	< .005	mg/kg			WG610695	09/05/12 02:37
n-Butylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
n-Propylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Naphthalene	< .005	mg/kg			WG610695	09/05/12 02:37
p-Isopropyltoluene	< .001	mg/kg			WG610695	09/05/12 02:37
sec-Butylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Styrene	< .001	mg/kg			WG610695	09/05/12 02:37
tert-Butylbenzene	< .001	mg/kg			WG610695	09/05/12 02:37
Tetrachloroethene	< .001	mg/kg			WG610695	09/05/12 02:37
Toluene	< .005	mg/kg			WG610695	09/05/12 02:37
trans-1,2-Dichloroethene	< .001	mg/kg			WG610695	09/05/12 02:37
trans-1,3-Dichloropropene	< .001	mg/kg			WG610695	09/05/12 02:37
Trichloroethene	< .001	mg/kg			WG610695	09/05/12 02:37
Trichlorofluoromethane	< .005	mg/kg			WG610695	09/05/12 02:37
Vinyl chloride	< .001	mg/kg			WG610695	09/05/12 02:37
Xylenes, Total	< .003	mg/kg			WG610695	09/05/12 02:37
4-Bromofluorobenzene		% Rec.	98.81	67-133	WG610695	09/05/12 02:37
Dibromofluoromethane		% Rec.	83.83	72-135	WG610695	09/05/12 02:37
Toluene-d8		% Rec.	96.27	90-113	WG610695	09/05/12 02:37
Mercury	< .02	mg/kg			WG610706	09/05/12 11:04
4,4-DDD	< .02	mg/kg			WG610742	09/06/12 10:45
4,4-DDE	< .02	mg/kg			WG610742	09/06/12 10:45
4,4-DDT	< .02	mg/kg			WG610742	09/06/12 10:45
Aldrin	< .02	mg/kg			WG610742	09/06/12 10:45
Alpha BHC	< .02	mg/kg			WG610742	09/06/12 10:45
Beta BHC	< .02	mg/kg			WG610742	09/06/12 10:45
Chlordane	< .2	mg/kg			WG610742	09/06/12 10:45
Delta BHC	< .02	mg/kg			WG610742	09/06/12 10:45
Dieldrin	< .02	mg/kg			WG610742	09/06/12 10:45
Endosulfan I	< .02	mg/kg			WG610742	09/06/12 10:45
Endosulfan II	< .02	mg/kg			WG610742	09/06/12 10:45
Endosulfan sulfate	< .02	mg/kg			WG610742	09/06/12 10:45
Endrin	< .02	mg/kg			WG610742	09/06/12 10:45
Endrin aldehyde	< .02	mg/kg			WG610742	09/06/12 10:45
Endrin ketone	< .02	mg/kg			WG610742	09/06/12 10:45
Gamma BHC	< .02	mg/kg			WG610742	09/06/12 10:45
Heptachlor	< .02	mg/kg			WG610742	09/06/12 10:45
Heptachlor epoxide	< .02	mg/kg			WG610742	09/06/12 10:45
Hexachlorobenzene	< .02	mg/kg			WG610742	09/06/12 10:45
Methoxychlor	< .02	mg/kg			WG610742	09/06/12 10:45
Toxaphene	< .4	mg/kg			WG610742	09/06/12 10:45
Decachlorobiphenyl		% Rec.	93.50	18.9-115.8	WG610742	09/06/12 10:45
Tetrachloro-m-xylene		% Rec.	95.02	31.8-115.7	WG610742	09/06/12 10:45
Arsenic	< 1	mg/kg			WG610933	09/06/12 17:55
Barium	< .25	mg/kg			WG610933	09/06/12 17:55
Cadmium	< .25	mg/kg			WG610933	09/06/12 17:55
Chromium	< .5	mg/kg			WG610933	09/06/12 17:55
Iron	< 5	mg/kg			WG610933	09/06/12 17:55
Lead	< .25	mg/kg			WG610933	09/06/12 17:55
Selenium	< 1	mg/kg			WG610933	09/06/12 17:55
Silver	< .5	mg/kg			WG610933	09/06/12 17:55

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Level II

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,2,4-Trichlorobenzene	< .333	mg/kg			WG610744	09/10/12 02:39
2,4,6-Trichlorophenol	< .333	mg/kg			WG610744	09/10/12 02:39
2,4-Dichlorophenol	< .333	mg/kg			WG610744	09/10/12 02:39
2,4-Dimethylphenol	< .333	mg/kg			WG610744	09/10/12 02:39
2,4-Dinitrophenol	< .333	mg/kg			WG610744	09/10/12 02:39
2,4-Dinitrotoluene	< .333	mg/kg			WG610744	09/10/12 02:39
2,6-Dinitrotoluene	< .333	mg/kg			WG610744	09/10/12 02:39
2-Chloronaphthalene	< .033	mg/kg			WG610744	09/10/12 02:39
2-Chlorophenol	< .333	mg/kg			WG610744	09/10/12 02:39
2-Nitrophenol	< .333	mg/kg			WG610744	09/10/12 02:39
3,3-Dichlorobenzidine	< .333	mg/kg			WG610744	09/10/12 02:39
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG610744	09/10/12 02:39
4-Bromophenyl-phenylether	< .333	mg/kg			WG610744	09/10/12 02:39
4-Chloro-3-methylphenol	< .333	mg/kg			WG610744	09/10/12 02:39
4-Chlorophenyl-phenylether	< .333	mg/kg			WG610744	09/10/12 02:39
4-Nitrophenol	< .333	mg/kg			WG610744	09/10/12 02:39
Acenaphthene	< .033	mg/kg			WG610744	09/10/12 02:39
Acenaphthylene	< .033	mg/kg			WG610744	09/10/12 02:39
Anthracene	< .033	mg/kg			WG610744	09/10/12 02:39
Benzidine	< .333	mg/kg			WG610744	09/10/12 02:39
Benzo(a)anthracene	< .033	mg/kg			WG610744	09/10/12 02:39
Benzo(a)pyrene	< .033	mg/kg			WG610744	09/10/12 02:39
Benzo(b)fluoranthene	< .033	mg/kg			WG610744	09/10/12 02:39
Benzo(g,h,i)perylene	< .033	mg/kg			WG610744	09/10/12 02:39
Benzo(k)fluoranthene	< .033	mg/kg			WG610744	09/10/12 02:39
Benzylbutyl phthalate	< .333	mg/kg			WG610744	09/10/12 02:39
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG610744	09/10/12 02:39
Bis(2-chloroethyl)ether	< .333	mg/kg			WG610744	09/10/12 02:39
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG610744	09/10/12 02:39
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG610744	09/10/12 02:39
Chrysene	< .033	mg/kg			WG610744	09/10/12 02:39
Di-n-butyl phthalate	< .333	mg/kg			WG610744	09/10/12 02:39
Di-n-octyl phthalate	< .333	mg/kg			WG610744	09/10/12 02:39
Dibenz(a,h)anthracene	< .033	mg/kg			WG610744	09/10/12 02:39
Diethyl phthalate	< .333	mg/kg			WG610744	09/10/12 02:39
Dimethyl phthalate	< .333	mg/kg			WG610744	09/10/12 02:39
Fluoranthene	< .033	mg/kg			WG610744	09/10/12 02:39
Fluorene	< .033	mg/kg			WG610744	09/10/12 02:39
Hexachloro-1,3-butadiene	< .333	mg/kg			WG610744	09/10/12 02:39
Hexachlorobenzene	< .333	mg/kg			WG610744	09/10/12 02:39
Hexachlorocyclopentadiene	< .333	mg/kg			WG610744	09/10/12 02:39
Hexachloroethane	< .333	mg/kg			WG610744	09/10/12 02:39
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG610744	09/10/12 02:39
Isophorone	< .333	mg/kg			WG610744	09/10/12 02:39
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG610744	09/10/12 02:39
n-Nitrosodimethylamine	< .333	mg/kg			WG610744	09/10/12 02:39
n-Nitrosodiphenylamine	< .333	mg/kg			WG610744	09/10/12 02:39
Naphthalene	< .033	mg/kg			WG610744	09/10/12 02:39
Nitrobenzene	< .333	mg/kg			WG610744	09/10/12 02:39
Pentachlorophenol	< .333	mg/kg			WG610744	09/10/12 02:39
Phenanthrene	< .033	mg/kg			WG610744	09/10/12 02:39
Phenol	< .333	mg/kg			WG610744	09/10/12 02:39
Pyrene	< .033	mg/kg			WG610744	09/10/12 02:39
2,4,6-Tribromophenol		% Rec.	47.93	16-136	WG610744	09/10/12 02:39
2-Fluorobiphenyl		% Rec.	59.73	37-119	WG610744	09/10/12 02:39
2-Fluorophenol		% Rec.	57.33	22-114	WG610744	09/10/12 02:39
Nitrobenzene-d5		% Rec.	49.86	20-114	WG610744	09/10/12 02:39
Phenol-d5		% Rec.	62.74	26-127	WG610744	09/10/12 02:39
p-Terphenyl-d14		% Rec.	72.29	15-174	WG610744	09/10/12 02:39

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Quality Assurance Report
Level II

L593051

September 11, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
2,4,5-T	< .07	mg/kg			WG610970	09/10/12 16:57
2,4,5-TP (Silvex)	< .07	mg/kg			WG610970	09/10/12 16:57
2,4-D	< .07	mg/kg			WG610970	09/10/12 16:57
2,4-DB	< .07	mg/kg			WG610970	09/10/12 16:57
Dalapon	< .8	mg/kg			WG610970	09/10/12 16:57
Dicamba	< .07	mg/kg			WG610970	09/10/12 16:57
Dichloroprop	< .07	mg/kg			WG610970	09/10/12 16:57
Dinoseb	< .07	mg/kg			WG610970	09/10/12 16:57
MCPA	< .68602	mg/kg			WG610970	09/10/12 16:57
MCPP	< 6.5	mg/kg			WG610970	09/10/12 16:57
2,4-Dichlorophenyl Acetic Acid		%	74.24	37-99	WG610970	09/10/12 16:57

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0	0	0	20	L593051-01	WG610706
Arsenic	mg/kg	0	0	0	20	L593066-04	WG610933
Barium	mg/kg	38.0	40.0	6.45	20	L593066-04	WG610933
Chromium	mg/kg	7.60	6.40	17.4	20	L593066-04	WG610933
Iron	mg/kg	17000	18600	7.24	20	L593066-04	WG610933
Lead	mg/kg	16.0	18.0	9.91	20	L593066-04	WG610933
Selenium	mg/kg	0	0	0	20	L593066-04	WG610933
Silver	mg/kg	0	0	0	20	L593066-04	WG610933
Cadmium	mg/kg	0	0	0	20	L593066-04	WG610933

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
PCB 1016	mg/kg	.167	0.158	94.8	64-120	WG610742
PCB 1260	mg/kg	.167	0.172	103.	72-130	WG610742
Decachlorobiphenyl				105.4	18.9-115.8	WG610742
Tetrachloro-m-xylene				96.06	31.8-115.7	WG610742
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0271	108.	77-129	WG610695
1,1,1-Trichloroethane	mg/kg	.025	0.0219	87.7	70-127	WG610695
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0225	89.9	76-133	WG610695
1,1,2-Trichloroethane	mg/kg	.025	0.0248	99.4	79-123	WG610695
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0195	78.1	52-145	WG610695
1,1-Dichloroethane	mg/kg	.025	0.0192	77.0	74-121	WG610695
1,1-Dichloroethene	mg/kg	.025	0.0188	75.2	53-135	WG610695
1,1-Dichloropropene	mg/kg	.025	0.0191	76.3	67-127	WG610695
1,2,3-Trichlorobenzene	mg/kg	.025	0.0258	103.	74-131	WG610695
1,2,3-Trichloropropane	mg/kg	.025	0.0260	104.	75-135	WG610695
1,2,3-Trimethylbenzene	mg/kg	.025	0.0218	87.2	76-128	WG610695
1,2,4-Trichlorobenzene	mg/kg	.025	0.0272	109.	72-130	WG610695
1,2,4-Trimethylbenzene	mg/kg	.025	0.0251	101.	75-131	WG610695
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0265	106.	55-142	WG610695
1,2-Dibromoethane	mg/kg	.025	0.0257	103.	77-126	WG610695
1,2-Dichlorobenzene	mg/kg	.025	0.0243	97.2	80-123	WG610695
1,2-Dichloroethane	mg/kg	.025	0.0203	81.3	70-128	WG610695
1,2-Dichloropropane	mg/kg	.025	0.0218	87.1	74-125	WG610695
1,3,5-Trimethylbenzene	mg/kg	.025	0.0248	99.1	77-129	WG610695
1,3-Dichlorobenzene	mg/kg	.025	0.0257	103.	76-128	WG610695
1,3-Dichloropropane	mg/kg	.025	0.0246	98.3	77-118	WG610695
1,4-Dichlorobenzene	mg/kg	.025	0.0235	93.8	77-119	WG610695
2,2-Dichloropropane	mg/kg	.025	0.0201	80.5	60-132	WG610695

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Quality Assurance Report
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September 11, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
2-Butanone (MEK)	mg/kg	.125	0.111	89.1	56-146	WG610695
2-Chloroethyl vinyl ether	mg/kg	.125	0.135	108.	17-179	WG610695
2-Chlorotoluene	mg/kg	.025	0.0235	94.1	76-125	WG610695
4-Chlorotoluene	mg/kg	.025	0.0241	96.4	76-125	WG610695
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.128	102.	55-148	WG610695
Acetone	mg/kg	.125	0.120	96.2	47-155	WG610695
Acrylonitrile	mg/kg	.125	0.0971	77.7	50-155	WG610695
Benzene	mg/kg	.025	0.0186	74.4	72-120	WG610695
Bromobenzene	mg/kg	.025	0.0232	92.9	74-122	WG610695
Bromodichloromethane	mg/kg	.025	0.0238	95.2	74-128	WG610695
Bromoform	mg/kg	.025	0.0296	119.	62-137	WG610695
Bromomethane	mg/kg	.025	0.0219	87.4	38-180	WG610695
Carbon tetrachloride	mg/kg	.025	0.0209	83.8	62-130	WG610695
Chlorobenzene	mg/kg	.025	0.0252	101.	77-124	WG610695
Chlorodibromomethane	mg/kg	.025	0.0281	112.	74-128	WG610695
Chloroethane	mg/kg	.025	0.0195	77.9	46-173	WG610695
Chloroform	mg/kg	.025	0.0204	81.6	76-122	WG610695
Chloromethane	mg/kg	.025	0.0187	74.9	49-143	WG610695
cis-1,2-Dichloroethene	mg/kg	.025	0.0196	78.5	73-123	WG610695
cis-1,3-Dichloropropene	mg/kg	.025	0.0230	92.1	73-126	WG610695
Di-isopropyl ether	mg/kg	.025	0.0189	75.6	64-131	WG610695
Dibromomethane	mg/kg	.025	0.0247	99.0	75-127	WG610695
Dichlorodifluoromethane	mg/kg	.025	0.0216	86.5	30-177	WG610695
Ethylbenzene	mg/kg	.025	0.0245	98.0	76-126	WG610695
Hexachloro-1,3-butadiene	mg/kg	.025	0.0244	97.6	71-134	WG610695
Isopropylbenzene	mg/kg	.025	0.0266	106.	70-128	WG610695
Methyl tert-butyl ether	mg/kg	.025	0.0203	81.4	66-127	WG610695
Methylene Chloride	mg/kg	.025	0.0188	75.1	67-124	WG610695
n-Butylbenzene	mg/kg	.025	0.0223	89.2	71-133	WG610695
n-Propylbenzene	mg/kg	.025	0.0246	98.2	76-126	WG610695
Naphthalene	mg/kg	.025	0.0237	94.9	68-136	WG610695
p-Isopropyltoluene	mg/kg	.025	0.0267	107.	75-134	WG610695
sec-Butylbenzene	mg/kg	.025	0.0253	101.	75-132	WG610695
Styrene	mg/kg	.025	0.0252	101.	68-148	WG610695
tert-Butylbenzene	mg/kg	.025	0.0257	103.	75-132	WG610695
Tetrachloroethene	mg/kg	.025	0.0273	109.	70-131	WG610695
Toluene	mg/kg	.025	0.0231	92.5	74-155	WG610695
trans-1,2-Dichloroethene	mg/kg	.025	0.0186	74.3	63-126	WG610695
trans-1,3-Dichloropropene	mg/kg	.025	0.0267	107.	68-126	WG610695
Trichloroethene	mg/kg	.025	0.0234	93.6	75-121	WG610695
Trichlorofluoromethane	mg/kg	.025	0.0216	86.5	48-170	WG610695
Vinyl chloride	mg/kg	.025	0.0193	77.2	54-144	WG610695
Xylenes, Total	mg/kg	.075	0.0755	101.	76-126	WG610695
4-Bromofluorobenzene				94.26	67-133	WG610695
Dibromofluoromethane				86.99	72-135	WG610695
Toluene-d8				96.61	90-113	WG610695
Mercury	mg/kg	12.4	14.3	115.	71.6-128	WG610706
4,4-DDD	mg/kg	.0667	0.0652	97.7	74-114	WG610742
4,4-DDE	mg/kg	.0667	0.0631	94.6	74-115	WG610742
4,4-DDT	mg/kg	.0667	0.0671	101.	62-124	WG610742
Aldrin	mg/kg	.0667	0.0618	92.7	69-110	WG610742
Alpha BHC	mg/kg	.0667	0.0614	92.0	68-111	WG610742
Beta BHC	mg/kg	.0667	0.0627	94.0	74-112	WG610742
Delta BHC	mg/kg	.0667	0.0633	94.9	71-110	WG610742
Dieldrin	mg/kg	.0667	0.0640	95.9	76-115	WG610742

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Quality Assurance Report
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L593051

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Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Endosulfan I	mg/kg	.0667	0.0640	95.9	76-119	WG610742
Endosulfan II	mg/kg	.0667	0.0632	94.7	75-116	WG610742
Endosulfan sulfate	mg/kg	.0667	0.0593	88.9	70-118	WG610742
Endrin	mg/kg	.0667	0.0656	98.4	68-115	WG610742
Endrin aldehyde	mg/kg	.0667	0.0611	91.6	48-92	WG610742
Endrin ketone	mg/kg	.0667	0.0606	90.9	70-112	WG610742
Gamma BHC	mg/kg	.0667	0.0624	93.6	70-112	WG610742
Heptachlor	mg/kg	.0667	0.0660	99.0	69-111	WG610742
Heptachlor epoxide	mg/kg	.0667	0.0637	95.6	72-115	WG610742
Hexachlorobenzene	mg/kg	.0667	0.0556	83.4	64-111	WG610742
Methoxychlor	mg/kg	.0667	0.0705	106.	65-123	WG610742
Decachlorobiphenyl				94.43	18.9-115.8	WG610742
Tetrachloro-m-xylene				92.80	31.8-115.7	WG610742
Arsenic	mg/kg	237	219.	92.4	83.1-117	WG610933
Barium	mg/kg	252	246.	97.6	84.1-116	WG610933
Cadmium	mg/kg	191	182.	95.3	83.2-117	WG610933
Chromium	mg/kg	128	125.	97.7	81.3-118	WG610933
Iron	mg/kg	13100	12500	95.4	50.8-150	WG610933
Lead	mg/kg	103	102.	99.0	83.1-117	WG610933
Selenium	mg/kg	110	104.	94.5	78.7-122	WG610933
Silver	mg/kg	47.3	43.5	92.0	66.2-134	WG610933
1,2,4-Trichlorobenzene	mg/kg	.333	0.200	60.2	48-87	WG610744
2,4,6-Trichlorophenol	mg/kg	.333	0.217	65.2	50-98	WG610744
2,4-Dichlorophenol	mg/kg	.333	0.228	68.4	56-96	WG610744
2,4-Dimethylphenol	mg/kg	.333	0.209	62.7	52-101	WG610744
2,4-Dinitrophenol	mg/kg	.333	0.0948	28.5	10-109	WG610744
2,4-Dinitrotoluene	mg/kg	.333	0.226	68.0	54-103	WG610744
2,6-Dinitrotoluene	mg/kg	.333	0.232	69.6	53-99	WG610744
2-Chloronaphthalene	mg/kg	.333	0.208	62.6	55-96	WG610744
2-Chlorophenol	mg/kg	.333	0.212	63.6	52-88	WG610744
2-Nitrophenol	mg/kg	.333	0.224	67.3	55-106	WG610744
3,3-Dichlorobenzidine	mg/kg	.333	0.173	52.0	36-84	WG610744
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.175	52.6	24-98	WG610744
4-Bromophenyl-phenylether	mg/kg	.333	0.210	62.9	58-111	WG610744
4-Chloro-3-methylphenol	mg/kg	.333	0.229	68.7	58-98	WG610744
4-Chlorophenyl-phenylether	mg/kg	.333	0.230	69.0	59-103	WG610744
4-Nitrophenol	mg/kg	.333	0.234	70.4	34-101	WG610744
Acenaphthene	mg/kg	.333	0.226	67.8	55-96	WG610744
Acenaphthylene	mg/kg	.333	0.229	68.8	61-107	WG610744
Anthracene	mg/kg	.333	0.239	71.8	58-105	WG610744
Benzidine	mg/kg	.333	0.00358	1.07*	10-21	WG610744
Benzo(a)anthracene	mg/kg	.333	0.227	68.0	56-103	WG610744
Benzo(a)pyrene	mg/kg	.333	0.246	73.9	57-103	WG610744
Benzo(b)fluoranthene	mg/kg	.333	0.233	70.1	52-106	WG610744
Benzo(g,h,i)perylene	mg/kg	.333	0.245	73.6	47-112	WG610744
Benzo(k)fluoranthene	mg/kg	.333	0.251	75.3	53-104	WG610744
Benzylbutyl phthalate	mg/kg	.333	0.236	70.8	61-118	WG610744
Bis(2-chlorethoxy)methane	mg/kg	.333	0.229	68.8	58-104	WG610744
Bis(2-chloroethyl)ether	mg/kg	.333	0.227	68.2	51-103	WG610744
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.204	61.2	56-95	WG610744
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.245	73.7	56-120	WG610744
Chrysene	mg/kg	.333	0.230	69.1	55-102	WG610744
Di-n-butyl phthalate	mg/kg	.333	0.234	70.4	59-114	WG610744
Di-n-octyl phthalate	mg/kg	.333	0.248	74.4	51-119	WG610744
Dibenz(a,h)anthracene	mg/kg	.333	0.249	74.8	49-111	WG610744

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Denver, CO 80222

Quality Assurance Report
Level II

L593051

September 11, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Diethyl phthalate	mg/kg	.333	0.213	63.9	61-105	WG610744
Dimethyl phthalate	mg/kg	.333	0.230	69.1	60-106	WG610744
Fluoranthene	mg/kg	.333	0.235	70.6	59-108	WG610744
Fluorene	mg/kg	.333	0.229	68.8	59-100	WG610744
Hexachloro-1,3-butadiene	mg/kg	.333	0.188	56.3	53-106	WG610744
Hexachlorobenzene	mg/kg	.333	0.190	57.1	50-108	WG610744
Hexachlorocyclopentadiene	mg/kg	.333	0.196	58.8	36-117	WG610744
Hexachloroethane	mg/kg	.333	0.189	56.9	45-83	WG610744
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.246	73.8	50-110	WG610744
Isophorone	mg/kg	.333	0.190	56.9	51-99	WG610744
n-Nitrosodi-n-propylamine	mg/kg	.333	0.233	69.9	52-103	WG610744
n-Nitrosodimethylamine	mg/kg	.333	0.184	55.2	31-107	WG610744
n-Nitrosodiphenylamine	mg/kg	.333	0.223	66.9	57-121	WG610744
Naphthalene	mg/kg	.333	0.203	61.1	55-91	WG610744
Nitrobenzene	mg/kg	.333	0.211	63.4	47-92	WG610744
Pentachlorophenol	mg/kg	.333	0.154	46.3	10-89	WG610744
Phenanthrene	mg/kg	.333	0.231	69.5	55-103	WG610744
Phenol	mg/kg	.333	0.231	69.4	49-99	WG610744
Pyrene	mg/kg	.333	0.245	73.7	54-104	WG610744
2,4,6-Tribromophenol				57.58	16-136	WG610744
2-Fluorobiphenyl				66.14	37-119	WG610744
2-Fluorophenol				64.37	22-114	WG610744
Nitrobenzene-d5				64.86	20-114	WG610744
Phenol-d5				67.73	26-127	WG610744
p-Terphenyl-d14				70.43	15-174	WG610744
2,4,5-T	mg/kg	.167	0.138	82.5	32.9-103	WG610970
2,4,5-TP (Silvex)	mg/kg	.167	0.148	88.6	46-116	WG610970
2,4-D	mg/kg	.167	0.116	69.2	28-98	WG610970
2,4-DB	mg/kg	.167	0.121	72.6	28.9-108	WG610970
Dalapon	mg/kg	.167	0.133	79.9	18.4-113	WG610970
Dicamba	mg/kg	.167	0.147	88.3	37.2-119	WG610970
Dichloroprop	mg/kg	.167	0.267	160.*	40.5-114	WG610970
Dinoseb	mg/kg	.167	0.0221	13.3	10-98	WG610970
MCPA	mg/kg	16.7	14.1	84.4	15.5-110	WG610970
MCPP	mg/kg	16.7	18.4	110.	40.1-177	WG610970
2,4-Dichlorophenyl Acetic Acid				91.38	37-99	WG610970

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
PCB 1016	mg/kg	0.169	0.158	101.	64-120	6.84	20	WG610742
PCB 1260	mg/kg	0.182	0.172	109.	72-130	5.65	20	WG610742
Decachlorobiphenyl				107.2	18.9-115.8			WG610742
Tetrachloro-m-xylene				100.7	31.8-115.7			WG610742
1,1,1,2-Tetrachloroethane	mg/kg	0.0309	0.0271	124.	77-129	13.3	20	WG610695
1,1,1-Trichloroethane	mg/kg	0.0223	0.0219	89.0	70-127	1.68	20	WG610695
1,1,2,2-Tetrachloroethane	mg/kg	0.0270	0.0225	108.	76-133	18.3	20	WG610695
1,1,2-Trichloroethane	mg/kg	0.0276	0.0248	110.	79-123	10.4	20	WG610695
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0199	0.0195	80.0	52-145	2.06	20	WG610695
1,1-Dichloroethane	mg/kg	0.0192	0.0192	77.0	74-121	0.0800	20	WG610695
1,1-Dichloroethene	mg/kg	0.0201	0.0188	80.0	53-135	6.46	20	WG610695
1,1-Dichloropropene	mg/kg	0.0196	0.0191	78.0	67-127	2.56	20	WG610695
1,2,3-Trichlorobenzene	mg/kg	0.0260	0.0258	104.	74-131	0.650	20	WG610695
1,2,3-Trichloropropane	mg/kg	0.0304	0.0260	122.	75-135	15.7	20	WG610695
1,2,3-Trimethylbenzene	mg/kg	0.0214	0.0218	86.0	76-128	1.73	20	WG610695

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Denver, CO 80222

Quality Assurance Report
Level II

L593051

September 11, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
1,2,4-Trichlorobenzene	mg/kg	0.0275	0.0272	110.	72-130	1.05	20	WG610695
1,2,4-Trimethylbenzene	mg/kg	0.0282	0.0251	113.	75-131	11.4	20	WG610695
1,2-Dibromo-3-Chloropropane	mg/kg	0.0269	0.0265	107.	55-142	1.48	20	WG610695
1,2-Dibromoethane	mg/kg	0.0284	0.0257	114.	77-126	9.94	20	WG610695
1,2-Dichlorobenzene	mg/kg	0.0234	0.0243	94.0	80-123	3.67	20	WG610695
1,2-Dichloroethane	mg/kg	0.0207	0.0203	83.0	70-128	2.05	20	WG610695
1,2-Dichloropropane	mg/kg	0.0228	0.0218	91.0	74-125	4.60	20	WG610695
1,3,5-Trimethylbenzene	mg/kg	0.0286	0.0248	114.	77-129	14.5	20	WG610695
1,3-Dichlorobenzene	mg/kg	0.0301	0.0257	120.	76-128	15.9	20	WG610695
1,3-Dichloropropane	mg/kg	0.0274	0.0246	110.	77-118	11.0	20	WG610695
1,4-Dichlorobenzene	mg/kg	0.0236	0.0235	94.0	77-119	0.770	20	WG610695
2,2-Dichloropropane	mg/kg	0.0206	0.0201	82.0	60-132	2.33	20	WG610695
2-Butanone (MEK)	mg/kg	0.121	0.111	97.0	56-146	8.57	20	WG610695
2-Chloroethyl vinyl ether	mg/kg	0.143	0.135	114.	17-179	5.61	22	WG610695
2-Chlorotoluene	mg/kg	0.0272	0.0235	109.	76-125	14.4	20	WG610695
4-Chlorotoluene	mg/kg	0.0276	0.0241	110.	76-125	13.3	20	WG610695
4-Methyl-2-pentanone (MIBK)	mg/kg	0.127	0.128	102.	55-148	0.210	20	WG610695
Acetone	mg/kg	0.135	0.120	108.	47-155	11.4	22	WG610695
Acrylonitrile	mg/kg	0.0995	0.0971	80.0	50-155	2.45	20	WG610695
Benzene	mg/kg	0.0190	0.0186	76.0	72-120	2.11	20	WG610695
Bromobenzene	mg/kg	0.0263	0.0232	105.	74-122	12.5	20	WG610695
Bromodichloromethane	mg/kg	0.0242	0.0238	97.0	74-128	1.42	20	WG610695
Bromoform	mg/kg	0.0370	0.0296	148*	62-137	22.1*	20	WG610695
Bromomethane	mg/kg	0.0229	0.0219	91.0	38-180	4.52	20	WG610695
Carbon tetrachloride	mg/kg	0.0212	0.0209	85.0	62-130	1.30	20	WG610695
Chlorobenzene	mg/kg	0.0291	0.0252	116.	77-124	14.7	20	WG610695
Chlorodibromomethane	mg/kg	0.0317	0.0281	127.	74-128	12.1	20	WG610695
Chloroethane	mg/kg	0.0201	0.0195	80.0	46-173	3.18	20	WG610695
Chloroform	mg/kg	0.0211	0.0204	84.0	76-122	3.47	20	WG610695
Chloromethane	mg/kg	0.0192	0.0187	77.0	49-143	2.51	20	WG610695
cis-1,2-Dichloroethene	mg/kg	0.0202	0.0196	81.0	73-123	2.96	20	WG610695
cis-1,3-Dichloropropene	mg/kg	0.0240	0.0230	96.0	73-126	4.11	20	WG610695
Di-isopropyl ether	mg/kg	0.0191	0.0189	76.0	64-131	0.960	20	WG610695
Dibromomethane	mg/kg	0.0244	0.0247	98.0	75-127	1.31	20	WG610695
Dichlorodifluoromethane	mg/kg	0.0223	0.0216	89.0	30-177	3.18	20	WG610695
Ethylbenzene	mg/kg	0.0288	0.0245	115.	76-126	16.2	20	WG610695
Hexachloro-1,3-butadiene	mg/kg	0.0243	0.0244	97.0	71-134	0.310	20	WG610695
Isopropylbenzene	mg/kg	0.0304	0.0266	121.	70-128	13.3	20	WG610695
Methyl tert-butyl ether	mg/kg	0.0211	0.0203	84.0	66-127	3.61	20	WG610695
Methylene Chloride	mg/kg	0.0197	0.0188	79.0	67-124	4.77	20	WG610695
n-Butylbenzene	mg/kg	0.0215	0.0223	86.0	71-133	3.82	20	WG610695
n-Propylbenzene	mg/kg	0.0273	0.0246	109.	76-126	10.5	20	WG610695
Naphthalene	mg/kg	0.0253	0.0237	101.	68-136	6.40	20	WG610695
p-Isopropyltoluene	mg/kg	0.0299	0.0267	120.	75-134	11.4	20	WG610695
sec-Butylbenzene	mg/kg	0.0306	0.0253	122.	75-132	19.0	20	WG610695
Styrene	mg/kg	0.0285	0.0252	114.	68-148	12.4	20	WG610695
tert-Butylbenzene	mg/kg	0.0292	0.0257	117.	75-132	12.9	20	WG610695
Tetrachloroethene	mg/kg	0.0310	0.0273	124.	70-131	12.7	20	WG610695
Toluene	mg/kg	0.0237	0.0231	95.0	74-155	2.34	20	WG610695
trans-1,2-Dichloroethene	mg/kg	0.0190	0.0186	76.0	63-126	2.34	20	WG610695
trans-1,3-Dichloropropene	mg/kg	0.0269	0.0267	108.	68-126	0.650	20	WG610695
Trichloroethene	mg/kg	0.0240	0.0234	96.0	75-121	2.43	20	WG610695
Trichlorofluoromethane	mg/kg	0.0227	0.0216	91.0	48-170	4.86	20	WG610695
Vinyl chloride	mg/kg	0.0194	0.0193	78.0	54-144	0.400	20	WG610695
Xylenes, Total	mg/kg	0.0854	0.0755	114.	76-126	12.2	20	WG610695
4-Bromofluorobenzene				107.4	67-133			WG610695
Dibromofluoromethane				89.51	72-135			WG610695
Toluene-d8				96.64	90-113			WG610695

* Performance of this Analyte is outside of established criteria.
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Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L593051

September 11, 2012

		Laboratory Control Sample				Duplicate		
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
4,4-DDD	mg/kg	0.0647	0.0652	97.0	74-114	0.755	20	WG610742
4,4-DDE	mg/kg	0.0625	0.0631	94.0	74-115	1.01	20	WG610742
4,4-DDT	mg/kg	0.0663	0.0671	99.0	62-124	1.14	20	WG610742
Aldrin	mg/kg	0.0618	0.0618	92.0	69-110	0.0784	20	WG610742
Alpha BHC	mg/kg	0.0616	0.0614	92.0	68-111	0.397	20	WG610742
Beta BHC	mg/kg	0.0625	0.0627	94.0	74-112	0.298	20	WG610742
Delta BHC	mg/kg	0.0629	0.0633	94.0	71-110	0.570	20	WG610742
Dieldrin	mg/kg	0.0635	0.0640	95.0	76-115	0.777	20	WG610742
Endosulfan I	mg/kg	0.0634	0.0640	95.0	76-119	0.997	20	WG610742
Endosulfan II	mg/kg	0.0628	0.0632	94.0	75-116	0.643	20	WG610742
Endosulfan sulfate	mg/kg	0.0589	0.0593	88.0	70-118	0.589	20	WG610742
Endrin	mg/kg	0.0648	0.0656	97.0	68-115	1.22	20	WG610742
Endrin aldehyde	mg/kg	0.0609	0.0611	91.0	48-92	0.424	20	WG610742
Endrin ketone	mg/kg	0.0601	0.0606	90.0	70-112	0.911	20	WG610742
Gamma BHC	mg/kg	0.0623	0.0624	93.0	70-112	0.277	20	WG610742
Heptachlor	mg/kg	0.0662	0.0660	99.0	69-111	0.287	20	WG610742
Heptachlor epoxide	mg/kg	0.0632	0.0637	95.0	72-115	0.905	20	WG610742
Hexachlorobenzene	mg/kg	0.0571	0.0556	86.0	64-111	2.60	20	WG610742
Methoxychlor	mg/kg	0.0697	0.0705	104.	65-123	1.07	20	WG610742
Decachlorobiphenyl				91.31	18.9-115.8			WG610742
Tetrachloro-m-xylene				92.86	31.8-115.7			WG610742
1,2,4-Trichlorobenzene	mg/kg	0.210	0.200	63.0	48-87	4.46	20	WG610744
2,4,6-Trichlorophenol	mg/kg	0.230	0.217	69.0	50-98	5.72	20	WG610744
2,4-Dichlorophenol	mg/kg	0.239	0.228	72.0	56-96	4.68	20	WG610744
2,4-Dimethylphenol	mg/kg	0.227	0.209	68.0	52-101	8.24	20	WG610744
2,4-Dinitrophenol	mg/kg	0.105	0.0948	32.0	10-109	10.5	39	WG610744
2,4-Dinitrotoluene	mg/kg	0.241	0.226	72.0	54-103	6.09	20	WG610744
2,6-Dinitrotoluene	mg/kg	0.246	0.232	74.0	53-99	6.15	20	WG610744
2-Chloronaphthalene	mg/kg	0.225	0.208	68.0	55-96	7.74	20	WG610744
2-Chlorophenol	mg/kg	0.226	0.212	68.0	52-88	6.57	20	WG610744
2-Nitrophenol	mg/kg	0.235	0.224	70.0	55-106	4.70	20	WG610744
3,3-Dichlorobenzidine	mg/kg	0.192	0.173	58.0	36-84	10.4	20	WG610744
4,6-Dinitro-2-methylphenol	mg/kg	0.179	0.175	54.0	24-98	1.87	32	WG610744
4-Bromophenyl-phenylether	mg/kg	0.211	0.210	63.0	58-111	0.821	20	WG610744
4-Chloro-3-methylphenol	mg/kg	0.241	0.229	72.0	58-98	5.05	20	WG610744
4-Chlorophenyl-phenylether	mg/kg	0.243	0.230	73.0	59-103	5.62	20	WG610744
4-Nitrophenol	mg/kg	0.246	0.234	74.0	34-101	4.83	26	WG610744
Acenaphthene	mg/kg	0.231	0.226	69.0	55-96	2.34	20	WG610744
Acenaphthylene	mg/kg	0.237	0.229	71.0	61-107	3.62	20	WG610744
Anthracene	mg/kg	0.240	0.239	72.0	58-105	0.252	20	WG610744
Benzidine	mg/kg	0.00382	0.00358	1*	10-21	6.41	40	WG610744
Benzo(a)anthracene	mg/kg	0.231	0.227	69.0	56-103	1.78	20	WG610744
Benzo(a)pyrene	mg/kg	0.257	0.246	77.0	57-103	4.43	20	WG610744
Benzo(b)fluoranthene	mg/kg	0.257	0.233	77.0	52-106	9.56	20	WG610744
Benzo(g,h,i)perylene	mg/kg	0.241	0.245	72.0	47-112	1.76	20	WG610744
Benzo(k)fluoranthene	mg/kg	0.250	0.251	75.0	53-104	0.461	20	WG610744
Benzylbutyl phthalate	mg/kg	0.250	0.236	75.0	61-118	5.71	20	WG610744
Bis(2-chlorethoxy)methane	mg/kg	0.239	0.229	72.0	58-104	4.21	20	WG610744
Bis(2-chloroethyl)ether	mg/kg	0.238	0.227	72.0	51-103	4.82	20	WG610744
Bis(2-chloroisopropyl)ether	mg/kg	0.212	0.204	64.0	56-95	3.88	20	WG610744
Bis(2-ethylhexyl)phthalate	mg/kg	0.253	0.245	76.0	56-120	3.19	20	WG610744
Chrysene	mg/kg	0.244	0.230	73.0	55-102	5.86	20	WG610744
Di-n-butyl phthalate	mg/kg	0.233	0.234	70.0	59-114	0.594	20	WG610744
Di-n-octyl phthalate	mg/kg	0.252	0.248	76.0	51-119	1.70	22	WG610744
Dibenz(a,h)anthracene	mg/kg	0.240	0.249	72.0	49-111	3.65	20	WG610744
Diethyl phthalate	mg/kg	0.231	0.213	69.0	61-105	8.37	20	WG610744

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Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L593051

September 11, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
Dimethyl phthalate	mg/kg	0.243	0.230	73.0	60-106	5.38	20	WG610744
Fluoranthene	mg/kg	0.240	0.235	72.0	59-108	2.23	20	WG610744
Fluorene	mg/kg	0.244	0.229	73.0	59-100	6.21	20	WG610744
Hexachloro-1,3-butadiene	mg/kg	0.199	0.188	60.0	53-106	5.70	20	WG610744
Hexachlorobenzene	mg/kg	0.195	0.190	58.0	50-108	2.44	20	WG610744
Hexachlorocyclopentadiene	mg/kg	0.207	0.196	62.0	36-117	5.40	20	WG610744
Hexachloroethane	mg/kg	0.199	0.189	60.0	45-83	4.94	20	WG610744
Indeno(1,2,3-cd)pyrene	mg/kg	0.242	0.246	73.0	50-110	1.37	20	WG610744
Isophorone	mg/kg	0.202	0.190	60.0	51-99	6.20	20	WG610744
n-Nitrosodi-n-propylamine	mg/kg	0.241	0.233	72.0	52-103	3.33	20	WG610744
n-Nitrosodimethylamine	mg/kg	0.187	0.184	56.0	31-107	1.79	23	WG610744
n-Nitrosodiphenylamine	mg/kg	0.224	0.223	67.0	57-121	0.426	20	WG610744
Naphthalene	mg/kg	0.215	0.203	64.0	55-91	5.44	20	WG610744
Nitrobenzene	mg/kg	0.218	0.211	65.0	47-92	3.25	20	WG610744
Pentachlorophenol	mg/kg	0.164	0.154	49.0	10-89	6.35	28	WG610744
Phenanthrene	mg/kg	0.231	0.231	69.0	55-103	0.102	20	WG610744
Phenol	mg/kg	0.236	0.231	71.0	49-99	2.18	20	WG610744
Pyrene	mg/kg	0.258	0.245	78.0	54-104	5.24	20	WG610744
2,4,6-Tribromophenol				57.72	16-136			WG610744
2-Fluorobiphenyl				68.86	37-119			WG610744
2-Fluorophenol				64.46	22-114			WG610744
Nitrobenzene-d5				65.10	20-114			WG610744
Phenol-d5				68.87	26-127			WG610744
p-Terphenyl-d14				76.01	15-174			WG610744
2,4,5-T	mg/kg	0.0708	0.138	42.0	32.9-103	64.2*	27.4	WG610970
2,4,5-TP (Silvex)	mg/kg	0.127	0.148	76.0	46-116	15.1	25.2	WG610970
2,4-D	mg/kg	0.0686	0.116	41.0	28-98	50.9*	24	WG610970
2,4-DB	mg/kg	0.0731	0.121	44.0	28.9-108	49.6*	30.3	WG610970
Dalapon	mg/kg	0.107	0.133	64.0	18.4-113	22.0	24.1	WG610970
Dicamba	mg/kg	0.0627	0.147	38.0	37.2-119	80.7*	21.2	WG610970
Dichloroprop	mg/kg	0.0948	0.267	57.0	40.5-114	95.2*	23.3	WG610970
Dinoseb	mg/kg	0.0310	0.0221	18.0	10-98	33.5	40	WG610970
MCPA	mg/kg	6.39	14.1	38.0	15.5-110	75.2*	40	WG610970
MCPP	mg/kg	9.94	18.4	60.0	40.1-177	59.7*	32.2	WG610970
2,4-Dichlorophenyl Acetic Acid				40.98	37-99			WG610970

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.122	0	.025	97.8	49-135	L593015-02	WG610695
1,1,1-Trichloroethane	mg/kg	0.0960	0	.025	76.8	43-142	L593015-02	WG610695
1,1,2,2-Tetrachloroethane	mg/kg	0.101	0	.025	80.4	42-147	L593015-02	WG610695
1,1,2-Trichloroethane	mg/kg	0.104	0	.025	82.8	51-134	L593015-02	WG610695
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0832	0	.025	66.5	25-156	L593015-02	WG610695
1,1-Dichloroethane	mg/kg	0.0780	0	.025	62.4	50-131	L593015-02	WG610695
1,1-Dichloroethene	mg/kg	0.0799	0	.025	63.9	29-145	L593015-02	WG610695
1,1-Dichloropropene	mg/kg	0.0808	0	.025	64.6	40-136	L593015-02	WG610695
1,2,3-Trichlorobenzene	mg/kg	0.0973	0	.025	77.8	13-142	L593015-02	WG610695
1,2,3-Trichloropropane	mg/kg	0.114	0	.025	91.0	41-149	L593015-02	WG610695
1,2,3-Trimethylbenzene	mg/kg	0.0890	0	.025	71.2	33-146	L593015-02	WG610695
1,2,4-Trichlorobenzene	mg/kg	0.106	0	.025	85.0	12-140	L593015-02	WG610695
1,2,4-Trimethylbenzene	mg/kg	0.111	0	.025	88.9	29-143	L593015-02	WG610695
1,2-Dibromo-3-Chloropropane	mg/kg	0.101	0	.025	81.0	29-151	L593015-02	WG610695
1,2-Dibromoethane	mg/kg	0.104	0	.025	83.4	48-133	L593015-02	WG610695
1,2-Dichlorobenzene	mg/kg	0.0959	0	.025	76.7	37-136	L593015-02	WG610695
1,2-Dichloroethane	mg/kg	0.0854	0	.025	68.4	49-131	L593015-02	WG610695
1,2-Dichloropropane	mg/kg	0.0926	0	.025	74.1	50-132	L593015-02	WG610695

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Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L593051

September 11, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,3,5-Trimethylbenzene	mg/kg	0.112	0	.025	89.9	29-144	L593015-02	WG610695
1,3-Dichlorobenzene	mg/kg	0.119	0	.025	94.8	26-140	L593015-02	WG610695
1,3-Dichloropropane	mg/kg	0.104	0	.025	83.4	50-126	L593015-02	WG610695
1,4-Dichlorobenzene	mg/kg	0.0955	0	.025	76.4	34-132	L593015-02	WG610695
2,2-Dichloropropane	mg/kg	0.0892	0	.025	71.4	35-148	L593015-02	WG610695
2-Butanone (MEK)	mg/kg	0.506	0	.125	81.0	40-149	L593015-02	WG610695
2-Chloroethyl vinyl ether	mg/kg	0.543	0	.125	86.9	10-173	L593015-02	WG610695
2-Chlorotoluene	mg/kg	0.104	0	.025	83.4	34-136	L593015-02	WG610695
4-Chlorotoluene	mg/kg	0.108	0	.025	86.3	31-137	L593015-02	WG610695
4-Methyl-2-pentanone (MIBK)	mg/kg	0.474	0	.125	75.9	37-153	L593015-02	WG610695
Acetone	mg/kg	0.544	0	.125	87.0	10-177	L593015-02	WG610695
Acrylonitrile	mg/kg	0.397	0	.125	63.5	33-159	L593015-02	WG610695
Benzene	mg/kg	0.0801	0	.025	64.1	44-131	L593015-02	WG610695
Bromobenzene	mg/kg	0.103	0	.025	82.3	36-132	L593015-02	WG610695
Bromodichloromethane	mg/kg	0.0988	0	.025	79.0	48-134	L593015-02	WG610695
Bromoform	mg/kg	0.132	0	.025	106.	34-141	L593015-02	WG610695
Bromomethane	mg/kg	0.0943	0	.025	75.4	19-173	L593015-02	WG610695
Carbon tetrachloride	mg/kg	0.0904	0	.025	72.3	36-140	L593015-02	WG610695
Chlorobenzene	mg/kg	0.114	0	.025	90.8	42-133	L593015-02	WG610695
Chlorodibromomethane	mg/kg	0.121	0	.025	96.9	45-135	L593015-02	WG610695
Chloroethane	mg/kg	0.0833	0	.025	66.6	16-178	L593015-02	WG610695
Chloroform	mg/kg	0.0877	0	.025	70.2	52-130	L593015-02	WG610695
Chloromethane	mg/kg	0.0820	0	.025	65.6	28-147	L593015-02	WG610695
cis-1,2-Dichloroethene	mg/kg	0.0822	0	.025	65.8	52-128	L593015-02	WG610695
cis-1,3-Dichloropropene	mg/kg	0.0958	0	.025	76.6	46-131	L593015-02	WG610695
Di-isopropyl ether	mg/kg	0.0777	0	.025	62.1	46-134	L593015-02	WG610695
Dibromomethane	mg/kg	0.0985	0	.025	78.8	51-133	L593015-02	WG610695
Dichlorodifluoromethane	mg/kg	0.0985	0	.025	78.8	12-179	L593015-02	WG610695
Ethylbenzene	mg/kg	0.114	0	.025	90.9	38-139	L593015-02	WG610695
Hexachloro-1,3-butadiene	mg/kg	0.0977	0	.025	78.2	10-147	L593015-02	WG610695
Isopropylbenzene	mg/kg	0.122	0	.025	97.5	34-137	L593015-02	WG610695
Methyl tert-butyl ether	mg/kg	0.0814	0	.025	65.2	45-134	L593015-02	WG610695
Methylene Chloride	mg/kg	0.0775	0	.025	62.0	41-133	L593015-02	WG610695
n-Butylbenzene	mg/kg	0.0885	0	.025	70.8	19-149	L593015-02	WG610695
n-Propylbenzene	mg/kg	0.109	0	.025	87.3	27-142	L593015-02	WG610695
Naphthalene	mg/kg	0.0905	0	.025	72.4	19-146	L593015-02	WG610695
p-Isopropyltoluene	mg/kg	0.122	0	.025	97.5	21-150	L593015-02	WG610695
sec-Butylbenzene	mg/kg	0.115	0	.025	92.3	25-148	L593015-02	WG610695
Styrene	mg/kg	0.113	0	.025	90.5	30-156	L593015-02	WG610695
tert-Butylbenzene	mg/kg	0.119	0	.025	95.2	32-146	L593015-02	WG610695
Tetrachloroethene	mg/kg	0.122	0	.025	97.4	35-139	L593015-02	WG610695
Toluene	mg/kg	0.0987	0	.025	79.0	43-127	L593015-02	WG610695
trans-1,2-Dichloroethene	mg/kg	0.0781	0	.025	62.5	41-132	L593015-02	WG610695
trans-1,3-Dichloropropene	mg/kg	0.112	0	.025	89.6	43-129	L593015-02	WG610695
Trichloroethene	mg/kg	0.101	0	.025	80.5	42-136	L593015-02	WG610695
Trichlorofluoromethane	mg/kg	0.0923	0	.025	73.8	20-178	L593015-02	WG610695
Vinyl chloride	mg/kg	0.0863	0	.025	69.1	30-157	L593015-02	WG610695
Xylenes, Total	mg/kg	0.340	0	.075	90.6	38-137	L593015-02	WG610695
4-Bromofluorobenzene					102.5	67-133		WG610695
Dibromofluoromethane					88.88	72-135		WG610695
Toluene-d8					97.22	90-113		WG610695
PCB 1016	mg/kg	0.159	0	.167	95.1	10-165	L593051-02	WG610742
PCB 1260	mg/kg	0.169	0	.167	101.	29-154	L593051-02	WG610742
Decachlorobiphenyl					94.95	18.9-115.8		WG610742
Tetrachloro-m-xylene					96.43	31.8-115.7		WG610742

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Quality Assurance Report
Level II

L593051

September 11, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Mercury	mg/kg	0.312	0	.25	125.*	80-120	L593051-01	WG610706
4,4-DDD	mg/kg	0.0689	0	.0667	103.	45-139	L593051-02	WG610742
4,4-DDE	mg/kg	0.0642	0	.0667	96.2	47-134	L593051-02	WG610742
4,4-DDT	mg/kg	0.0671	0	.0667	100.	11-148	L593051-02	WG610742
Aldrin	mg/kg	0.0627	0	.0667	94.0	52-117	L593051-02	WG610742
Alpha BHC	mg/kg	0.0640	0	.0667	96.0	51-120	L593051-02	WG610742
Beta BHC	mg/kg	0.0633	0	.0667	94.8	48-124	L593051-02	WG610742
Delta BHC	mg/kg	0.0714	0	.0667	107.	38-128	L593051-02	WG610742
Dieldrin	mg/kg	0.0648	0	.0667	97.1	48-135	L593051-02	WG610742
Endosulfan I	mg/kg	0.0645	0	.0667	96.6	51-129	L593051-02	WG610742
Endosulfan II	mg/kg	0.0654	0	.0667	98.1	42-142	L593051-02	WG610742
Endosulfan sulfate	mg/kg	0.0821	0	.0667	123.	38-140	L593051-02	WG610742
Endrin	mg/kg	0.0668	0	.0667	100.	44-133	L593051-02	WG610742
Endrin aldehyde	mg/kg	0.0628	0	.0667	94.1	16-116	L593051-02	WG610742
Endrin ketone	mg/kg	0.0754	0	.0667	113.	33-131	L593051-02	WG610742
Gamma BHC	mg/kg	0.0648	0	.0667	97.2	52-119	L593051-02	WG610742
Heptachlor	mg/kg	0.0665	0	.0667	99.7	47-121	L593051-02	WG610742
Heptachlor epoxide	mg/kg	0.0645	0	.0667	96.8	54-120	L593051-02	WG610742
Hexachlorobenzene	mg/kg	0.0577	0	.0667	86.5	58-115	L593051-02	WG610742
Methoxychlor	mg/kg	0.0728	0	.0667	109.	9-153	L593051-02	WG610742
Decachlorobiphenyl					93.11	18.9-115.8		WG610742
Tetrachloro-m-xylene					95.31	31.8-115.7		WG610742
Arsenic	mg/kg	47.8	0	50	95.6	75-125	L593066-04	WG610933
Barium	mg/kg	83.8	40.0	50	87.6	75-125	L593066-04	WG610933
Chromium	mg/kg	54.5	6.40	50	96.2	75-125	L593066-04	WG610933
Iron	mg/kg	17800	18600	50	0*	75-125	L593066-04	WG610933
Lead	mg/kg	64.5	18.0	50	93.0	75-125	L593066-04	WG610933
Selenium	mg/kg	43.0	0	50	86.0	75-125	L593066-04	WG610933
Silver	mg/kg	47.5	0	50	95.0	75-125	L593066-04	WG610933
Cadmium	mg/kg	51.4	0	50	103.	75-125	L593066-04	WG610933
1,2,4-Trichlorobenzene	mg/kg	0.217	0	.333	65.1	27-118	L593015-03	WG610744
2,4,6-Trichlorophenol	mg/kg	0.242	0	.333	72.7	18-140	L593015-03	WG610744
2,4-Dichlorophenol	mg/kg	0.255	0	.333	76.6	30-134	L593015-03	WG610744
2,4-Dimethylphenol	mg/kg	0.226	0	.333	67.8	13-147	L593015-03	WG610744
2,4-Dinitrophenol	mg/kg	0.107	0	.333	32.3	10-110	L593015-03	WG610744
2,4-Dinitrotoluene	mg/kg	0.246	0	.333	73.8	12-146	L593015-03	WG610744
2,6-Dinitrotoluene	mg/kg	0.242	0	.333	72.8	10-150	L593015-03	WG610744
2-Chloronaphthalene	mg/kg	0.234	0	.333	70.3	31-127	L593015-03	WG610744
2-Chlorophenol	mg/kg	0.239	0	.333	71.7	26-120	L593015-03	WG610744
2-Nitrophenol	mg/kg	0.255	0	.333	76.7	10-156	L593015-03	WG610744
3,3-Dichlorobenzidine	mg/kg	0.207	0	.333	62.0	10-127	L593015-03	WG610744
4,6-Dinitro-2-methylphenol	mg/kg	0.184	0	.333	55.2	10-124	L593015-03	WG610744
4-Bromophenyl-phenylether	mg/kg	0.231	0	.333	69.2	27-150	L593015-03	WG610744
4-Chloro-3-methylphenol	mg/kg	0.249	0	.333	74.9	24-140	L593015-03	WG610744
4-Chlorophenyl-phenylether	mg/kg	0.247	0	.333	74.3	27-142	L593015-03	WG610744
4-Nitrophenol	mg/kg	0.259	0	.333	77.9	10-166	L593015-03	WG610744
Acenaphthene	mg/kg	0.240	0	.333	72.0	30-132	L593015-03	WG610744
Acenaphthylene	mg/kg	0.243	0	.333	73.1	31-144	L593015-03	WG610744
Anthracene	mg/kg	0.253	0	.333	76.1	27-140	L593015-03	WG610744
Benzidine	mg/kg	0.00760	0	.333	2.28*	10-55	L593015-03	WG610744
Benzo(a)anthracene	mg/kg	0.247	0	.333	74.2	22-139	L593015-03	WG610744
Benzo(a)pyrene	mg/kg	0.267	0	.333	80.1	16-148	L593015-03	WG610744
Benzo(b)fluoranthene	mg/kg	0.252	0	.333	75.7	13-152	L593015-03	WG610744

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Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L593051

September 11, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzo(g,h,i)perylene	mg/kg	0.266	0	.333	79.9	10-137	L593015-03	WG610744
Benzo(k)fluoranthene	mg/kg	0.259	0	.333	77.7	15-152	L593015-03	WG610744
Benzylbutyl phthalate	mg/kg	0.258	0	.333	77.4	20-168	L593015-03	WG610744
Bis(2-chlorethoxy)methane	mg/kg	0.250	0	.333	75.1	32-141	L593015-03	WG610744
Bis(2-chloroethyl)ether	mg/kg	0.263	0	.333	78.9	25-139	L593015-03	WG610744
Bis(2-chloroisopropyl)ether	mg/kg	0.230	0	.333	69.0	32-128	L593015-03	WG610744
Bis(2-ethylhexyl)phthalate	mg/kg	0.275	0	.333	82.6	20-163	L593015-03	WG610744
Chrysene	mg/kg	0.252	0	.333	75.8	20-139	L593015-03	WG610744
Di-n-butyl phthalate	mg/kg	0.240	0	.333	72.2	24-149	L593015-03	WG610744
Di-n-octyl phthalate	mg/kg	0.275	0	.333	82.5	14-164	L593015-03	WG610744
Dibenz(a,h)anthracene	mg/kg	0.277	0	.333	83.1	10-137	L593015-03	WG610744
Diethyl phthalate	mg/kg	0.232	0	.333	69.6	28-142	L593015-03	WG610744
Dimethyl phthalate	mg/kg	0.247	0	.333	74.2	31-142	L593015-03	WG610744
Fluoranthene	mg/kg	0.242	0	.333	72.8	24-145	L593015-03	WG610744
Fluorene	mg/kg	0.249	0	.333	74.9	30-138	L593015-03	WG610744
Hexachloro-1,3-butadiene	mg/kg	0.218	0	.333	65.4	29-136	L593015-03	WG610744
Hexachlorobenzene	mg/kg	0.204	0	.333	61.1	26-136	L593015-03	WG610744
Hexachlorocyclopentadiene	mg/kg	0.160	0	.333	48.0	10-124	L593015-03	WG610744
Hexachloroethane	mg/kg	0.220	0	.333	66.0	21-107	L593015-03	WG610744
Indeno(1,2,3-cd)pyrene	mg/kg	0.274	0	.333	82.3	10-139	L593015-03	WG610744
Isophorone	mg/kg	0.197	0	.333	59.1	26-134	L593015-03	WG610744
n-Nitrosodi-n-propylamine	mg/kg	0.251	0	.333	75.3	24-141	L593015-03	WG610744
n-Nitrosodimethylamine	mg/kg	0.200	0	.333	60.2	18-126	L593015-03	WG610744
n-Nitrosodiphenylamine	mg/kg	0.240	0	.333	72.1	16-128	L593015-03	WG610744
Naphthalene	mg/kg	0.229	0	.333	68.9	31-124	L593015-03	WG610744
Nitrobenzene	mg/kg	0.235	0	.333	70.7	22-122	L593015-03	WG610744
Pentachlorophenol	mg/kg	0.192	0	.333	57.8	10-124	L593015-03	WG610744
Phenanthrene	mg/kg	0.255	0	.333	76.4	25-139	L593015-03	WG610744
Phenol	mg/kg	0.250	0	.333	75.1	22-129	L593015-03	WG610744
Pyrene	mg/kg	0.265	0	.333	79.7	23-145	L593015-03	WG610744
2,4,6-Tribromophenol					65.93	16-136		WG610744
2-Fluorobiphenyl					73.11	37-119		WG610744
2-Fluorophenol					72.49	22-114		WG610744
Nitrobenzene-d5					70.98	20-114		WG610744
Phenol-d5					74.56	26-127		WG610744
p-Terphenyl-d14					71.32	15-174		WG610744
2,4,5-T	mg/kg	0.151	0	.167	90.2	18-111	L592812-02	WG610970
2,4,5-TP (Silvex)	mg/kg	0.174	0	.167	104.	27-123	L592812-02	WG610970
2,4-D	mg/kg	0.137	0	.167	81.8	10-137	L592812-02	WG610970
2,4-DB	mg/kg	0.153	0	.167	91.6	15-121	L592812-02	WG610970
Dalapon	mg/kg	0.179	0	.167	107.	10-111	L592812-02	WG610970
Dicamba	mg/kg	0.171	0	.167	103.	21-118	L592812-02	WG610970
Dichloroprop	mg/kg	0.155	0	.167	92.6	27-125	L592812-02	WG610970
Dinoseb	mg/kg	0.125	0	.167	74.8	10-95	L592812-02	WG610970
MCPA	mg/kg	15.2	0	16.7	90.8	10-164	L592812-02	WG610970
MCPP	mg/kg	27.1	0	16.7	162.	17-186	L592812-02	WG610970
2,4-Dichlorophenyl Acetic Acid					94.49	37-99		WG610970

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.158	0.122	126.	49-135	25.4*	23	L593015-02	WG610695
1,1,1-Trichloroethane	mg/kg	0.119	0.0960	94.9	43-142	21.1	24	L593015-02	WG610695
1,1,2,2-Tetrachloroethane	mg/kg	0.128	0.101	103.	42-147	24.3	25	L593015-02	WG610695
1,1,2-Trichloroethane	mg/kg	0.134	0.104	108.	51-134	26.0*	21	L593015-02	WG610695
1,1,2-Trichlorotrifluoroethane	mg/kg	0.103	0.0832	82.6	25-156	21.6	29	L593015-02	WG610695
1,1-Dichloroethane	mg/kg	0.102	0.0780	81.9	50-131	27.0*	21	L593015-02	WG610695

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Quality Assurance Report
Level II

L593051

September 11, 2012

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1-Dichloroethene	mg/kg	0.101	0.0799	80.5	29-145	22.9	28	L593015-02	WG610695
1,1-Dichloropropene	mg/kg	0.102	0.0808	81.4	40-136	23.0	24	L593015-02	WG610695
1,2,3-Trichlorobenzene	mg/kg	0.138	0.0973	111.	13-142	34.8*	33	L593015-02	WG610695
1,2,3-Trichloropropane	mg/kg	0.141	0.114	113.	41-149	21.6	28	L593015-02	WG610695
1,2,3-Trimethylbenzene	mg/kg	0.117	0.0890	93.9	33-146	27.4*	27	L593015-02	WG610695
1,2,4-Trichlorobenzene	mg/kg	0.141	0.106	113.	12-140	28.4	32	L593015-02	WG610695
1,2,4-Trimethylbenzene	mg/kg	0.142	0.111	114.	29-143	24.4	30	L593015-02	WG610695
1,2-Dibromo-3-Chloropropane	mg/kg	0.133	0.101	106.	29-151	26.8	31	L593015-02	WG610695
1,2-Dibromoethane	mg/kg	0.132	0.104	106.	48-133	23.6*	22	L593015-02	WG610695
1,2-Dichlorobenzene	mg/kg	0.132	0.0959	105.	37-136	31.5*	25	L593015-02	WG610695
1,2-Dichloroethane	mg/kg	0.110	0.0854	88.3	49-131	25.5*	20	L593015-02	WG610695
1,2-Dichloropropane	mg/kg	0.115	0.0926	92.0	50-132	21.5*	21	L593015-02	WG610695
1,3,5-Trimethylbenzene	mg/kg	0.143	0.112	114.	29-144	23.6	30	L593015-02	WG610695
1,3-Dichlorobenzene	mg/kg	0.148	0.119	119.	26-140	22.3	28	L593015-02	WG610695
1,3-Dichloropropane	mg/kg	0.133	0.104	106.	50-126	24.2*	22	L593015-02	WG610695
1,4-Dichlorobenzene	mg/kg	0.128	0.0955	102.	34-132	29.2*	26	L593015-02	WG610695
2,2-Dichloropropane	mg/kg	0.113	0.0892	90.4	35-148	23.5	26	L593015-02	WG610695
2-Butanone (MEK)	mg/kg	0.651	0.506	104.	40-149	25.1	27	L593015-02	WG610695
2-Chloroethyl vinyl ether	mg/kg	0.707	0.543	113.	10-173	26.2	33	L593015-02	WG610695
2-Chlorotoluene	mg/kg	0.132	0.104	106.	34-136	23.9	28	L593015-02	WG610695
4-Chlorotoluene	mg/kg	0.136	0.108	109.	31-137	23.3	27	L593015-02	WG610695
4-Methyl-2-pentanone (MIBK)	mg/kg	0.629	0.474	101.	37-153	28.1*	27	L593015-02	WG610695
Acetone	mg/kg	0.711	0.544	114.	10-177	26.6	28	L593015-02	WG610695
Acrylonitrile	mg/kg	0.512	0.397	82.0	33-159	25.5	26	L593015-02	WG610695
Benzene	mg/kg	0.102	0.0801	81.8	44-131	24.3*	21	L593015-02	WG610695
Bromobenzene	mg/kg	0.140	0.103	112.	36-132	30.6*	26	L593015-02	WG610695
Bromodichloromethane	mg/kg	0.131	0.0988	105.	48-134	28.0*	20	L593015-02	WG610695
Bromoform	mg/kg	0.165	0.132	132.	34-141	22.3	24	L593015-02	WG610695
Bromomethane	mg/kg	0.121	0.0943	97.0	19-173	25.0*	25	L593015-02	WG610695
Carbon tetrachloride	mg/kg	0.115	0.0904	92.4	36-140	24.4	26	L593015-02	WG610695
Chlorobenzene	mg/kg	0.145	0.114	116.	42-133	24.0	24	L593015-02	WG610695
Chlorodibromomethane	mg/kg	0.157	0.121	126.	45-135	26.0*	23	L593015-02	WG610695
Chloroethane	mg/kg	0.107	0.0833	85.6	16-178	24.9	25	L593015-02	WG610695
Chloroform	mg/kg	0.113	0.0877	90.7	52-130	25.5*	21	L593015-02	WG610695
Chloromethane	mg/kg	0.103	0.0820	82.8	28-147	23.1*	23	L593015-02	WG610695
cis-1,2-Dichloroethene	mg/kg	0.104	0.0822	83.4	52-128	23.7*	21	L593015-02	WG610695
cis-1,3-Dichloropropene	mg/kg	0.130	0.0958	104.	46-131	30.2*	21	L593015-02	WG610695
Di-isopropyl ether	mg/kg	0.0998	0.0777	79.8	46-134	25.0*	20	L593015-02	WG610695
Dibromomethane	mg/kg	0.124	0.0985	99.1	51-133	22.8*	21	L593015-02	WG610695
Dichlorodifluoromethane	mg/kg	0.128	0.0985	102.	12-179	25.8	27	L593015-02	WG610695
Ethylbenzene	mg/kg	0.142	0.114	114.	38-139	22.4	27	L593015-02	WG610695
Hexachloro-1,3-butadiene	mg/kg	0.131	0.0977	105.	10-147	29.1	37	L593015-02	WG610695
Isopropylbenzene	mg/kg	0.154	0.122	123.	34-137	23.5	29	L593015-02	WG610695
Methyl tert-butyl ether	mg/kg	0.107	0.0814	85.4	45-134	26.9*	22	L593015-02	WG610695
Methylene Chloride	mg/kg	0.0972	0.0775	77.7	41-133	22.6	28	L593015-02	WG610695
n-Butylbenzene	mg/kg	0.120	0.0885	95.9	19-149	30.1	32	L593015-02	WG610695
n-Propylbenzene	mg/kg	0.148	0.109	118.	27-142	30.3*	29	L593015-02	WG610695
Naphthalene	mg/kg	0.128	0.0905	102.	19-146	34.3*	30	L593015-02	WG610695
p-Isopropyltoluene	mg/kg	0.151	0.122	121.	21-150	21.6	31	L593015-02	WG610695
sec-Butylbenzene	mg/kg	0.147	0.115	118.	25-148	24.2	31	L593015-02	WG610695
Styrene	mg/kg	0.145	0.113	116.	30-156	24.9	26	L593015-02	WG610695
tert-Butylbenzene	mg/kg	0.149	0.119	119.	32-146	22.4	30	L593015-02	WG610695
Tetrachloroethene	mg/kg	0.150	0.122	120.	35-139	20.9	27	L593015-02	WG610695
Toluene	mg/kg	0.123	0.0987	98.7	43-127	22.2*	21	L593015-02	WG610695
trans-1,2-Dichloroethene	mg/kg	0.0999	0.0781	80.0	41-132	24.5*	23	L593015-02	WG610695
trans-1,3-Dichloropropene	mg/kg	0.144	0.112	115.	43-129	24.8*	23	L593015-02	WG610695
Trichloroethene	mg/kg	0.125	0.101	99.9	42-136	21.5	23	L593015-02	WG610695
Trichlorofluoromethane	mg/kg	0.121	0.0923	96.5	20-178	26.7	30	L593015-02	WG610695
Vinyl chloride	mg/kg	0.110	0.0863	88.3	30-157	24.4*	24	L593015-02	WG610695

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Analyte	Units	Matrix Spike MSD	Matrix Spike Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Xylenes, Total	mg/kg	0.435	0.340	116.	38-137	24.7	26	L593015-02	WG610695
4-Bromofluorobenzene				104.3	67-133				WG610695
Dibromofluoromethane				88.11	72-135				WG610695
Toluene-d8				100.3	90-113				WG610695
PCB 1016	mg/kg	0.162	0.159	97.0	10-165	1.96	33	L593051-02	WG610742
PCB 1260	mg/kg	0.171	0.169	102.	29-154	1.06	23	L593051-02	WG610742
Decachlorobiphenyl				96.16	18.9-115.8				WG610742
Tetrachloro-m-xylene				98.03	31.8-115.7				WG610742
Mercury	mg/kg	0.263	0.312	105.	80-120	17.0	20	L593051-01	WG610706
4,4-DDD	mg/kg	0.0692	0.0689	104.	45-139	0.521	21	L593051-02	WG610742
4,4-DDE	mg/kg	0.0660	0.0642	99.0	47-134	2.84	21	L593051-02	WG610742
4,4-DDT	mg/kg	0.0686	0.0671	103.	11-148	2.27	21	L593051-02	WG610742
Aldrin	mg/kg	0.0638	0.0627	95.6	52-117	1.61	21	L593051-02	WG610742
Alpha BHC	mg/kg	0.0654	0.0640	98.0	51-120	2.09	20	L593051-02	WG610742
Beta BHC	mg/kg	0.0642	0.0633	96.2	48-124	1.44	21	L593051-02	WG610742
Delta BHC	mg/kg	0.0727	0.0714	109.	38-128	1.80	21	L593051-02	WG610742
Dieldrin	mg/kg	0.0655	0.0648	98.2	48-135	1.14	20	L593051-02	WG610742
Endosulfan I	mg/kg	0.0653	0.0645	97.8	51-129	1.23	20	L593051-02	WG610742
Endosulfan II	mg/kg	0.0659	0.0654	98.8	42-142	0.693	21	L593051-02	WG610742
Endosulfan sulfate	mg/kg	0.0834	0.0821	125.	38-140	1.62	22	L593051-02	WG610742
Endrin	mg/kg	0.0675	0.0668	101.	44-133	1.10	20	L593051-02	WG610742
Endrin aldehyde	mg/kg	0.0634	0.0628	95.1	16-116	1.08	23	L593051-02	WG610742
Endrin ketone	mg/kg	0.0761	0.0754	114.	33-131	0.870	21	L593051-02	WG610742
Gamma BHC	mg/kg	0.0663	0.0648	99.3	52-119	2.17	20	L593051-02	WG610742
Heptachlor	mg/kg	0.0677	0.0665	102.	47-121	1.74	20	L593051-02	WG610742
Heptachlor epoxide	mg/kg	0.0652	0.0645	97.8	54-120	1.05	20	L593051-02	WG610742
Hexachlorobenzene	mg/kg	0.0586	0.0577	87.8	58-115	1.53	20	L593051-02	WG610742
Methoxychlor	mg/kg	0.0738	0.0728	111.	9-153	1.37	22	L593051-02	WG610742
Decachlorobiphenyl				92.98	18.9-115.8				WG610742
Tetrachloro-m-xylene				96.28	31.8-115.7				WG610742
Arsenic	mg/kg	48.4	47.8	96.8	75-125	1.25	20	L593066-04	WG610933
Barium	mg/kg	85.1	83.8	90.2	75-125	1.54	20	L593066-04	WG610933
Chromium	mg/kg	55.4	54.5	98.0	75-125	1.64	20	L593066-04	WG610933
Iron	mg/kg	19800	17800	2400*	75-125	10.6	20	L593066-04	WG610933
Lead	mg/kg	66.2	64.5	96.4	75-125	2.60	20	L593066-04	WG610933
Selenium	mg/kg	43.8	43.0	87.6	75-125	1.84	20	L593066-04	WG610933
Silver	mg/kg	47.9	47.5	95.8	75-125	0.839	20	L593066-04	WG610933
Cadmium	mg/kg	51.4	51.4	103.	75-125	0	20	L593066-04	WG610933
1,2,4-Trichlorobenzene	mg/kg	0.216	0.217	64.9	27-118	0.230	23	L593015-03	WG610744
2,4,6-Trichlorophenol	mg/kg	0.242	0.242	72.7	18-140	0.104	26	L593015-03	WG610744
2,4-Dichlorophenol	mg/kg	0.242	0.255	72.8	30-134	5.04	23	L593015-03	WG610744
2,4-Dimethylphenol	mg/kg	0.211	0.226	63.2	13-147	6.93	27	L593015-03	WG610744
2,4-Dinitrophenol	mg/kg	0.100	0.107	30.0	10-110	7.20	40	L593015-03	WG610744
2,4-Dinitrotoluene	mg/kg	0.239	0.246	71.7	12-146	2.92	25	L593015-03	WG610744
2,6-Dinitrotoluene	mg/kg	0.239	0.242	71.9	10-150	1.23	23	L593015-03	WG610744
2-Chloronaphthalene	mg/kg	0.219	0.234	65.7	31-127	6.70	23	L593015-03	WG610744
2-Chlorophenol	mg/kg	0.227	0.239	68.1	26-120	5.20	21	L593015-03	WG610744
2-Nitrophenol	mg/kg	0.245	0.255	73.6	10-156	4.14	24	L593015-03	WG610744
3,3-Dichlorobenzidine	mg/kg	0.193	0.207	57.9	10-127	6.84	40	L593015-03	WG610744

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September 11, 2012

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
4,6-Dinitro-2-methylphenol	mg/kg	0.166	0.184	49.9	10-124	10.1	40	L593015-03	WG610744
4-Bromophenyl-phenylether	mg/kg	0.223	0.231	67.1	27-150	3.14	20	L593015-03	WG610744
4-Chloro-3-methylphenol	mg/kg	0.237	0.249	71.1	24-140	5.16	22	L593015-03	WG610744
4-Chlorophenyl-phenylether	mg/kg	0.235	0.247	70.7	27-142	4.99	21	L593015-03	WG610744
4-Nitrophenol	mg/kg	0.249	0.259	74.8	10-166	4.00	35	L593015-03	WG610744
Acenaphthene	mg/kg	0.232	0.240	69.6	30-132	3.38	21	L593015-03	WG610744
Acenaphthylene	mg/kg	0.238	0.243	71.4	31-144	2.28	24	L593015-03	WG610744
Anthracene	mg/kg	0.234	0.253	70.3	27-140	7.92	20	L593015-03	WG610744
Benzidine	mg/kg	0.00528	0.00760	1.58*	10-55	36.1*	36	L593015-03	WG610744
Benzo(a)anthracene	mg/kg	0.237	0.247	71.1	22-139	4.28	22	L593015-03	WG610744
Benzo(a)pyrene	mg/kg	0.255	0.267	76.6	16-148	4.45	21	L593015-03	WG610744
Benzo(b)fluoranthene	mg/kg	0.245	0.252	73.6	13-152	2.83	24	L593015-03	WG610744
Benzo(g,h,i)perylene	mg/kg	0.246	0.266	74.0	10-137	7.66	32	L593015-03	WG610744
Benzo(k)fluoranthene	mg/kg	0.242	0.259	72.6	15-152	6.83	22	L593015-03	WG610744
Benzylbutyl phthalate	mg/kg	0.248	0.258	74.4	20-168	3.87	23	L593015-03	WG610744
Bis(2-chlorethoxy)methane	mg/kg	0.238	0.250	71.6	32-141	4.77	20	L593015-03	WG610744
Bis(2-chloroethyl)ether	mg/kg	0.251	0.263	75.4	25-139	4.59	26	L593015-03	WG610744
Bis(2-chloroisopropyl)ether	mg/kg	0.218	0.230	65.4	32-128	5.28	22	L593015-03	WG610744
Bis(2-ethylhexyl)phthalate	mg/kg	0.263	0.275	78.9	20-163	4.63	24	L593015-03	WG610744
Chrysene	mg/kg	0.243	0.252	73.1	20-139	3.62	23	L593015-03	WG610744
Di-n-butyl phthalate	mg/kg	0.234	0.240	70.3	24-149	2.62	24	L593015-03	WG610744
Di-n-octyl phthalate	mg/kg	0.269	0.275	80.7	14-164	2.29	24	L593015-03	WG610744
Dibenz(a,h)anthracene	mg/kg	0.259	0.277	77.8	10-137	6.69	29	L593015-03	WG610744
Diethyl phthalate	mg/kg	0.224	0.232	67.2	28-142	3.52	23	L593015-03	WG610744
Dimethyl phthalate	mg/kg	0.230	0.247	69.1	31-142	7.11	22	L593015-03	WG610744
Fluoranthene	mg/kg	0.234	0.242	70.3	24-145	3.41	29	L593015-03	WG610744
Fluorene	mg/kg	0.242	0.249	72.8	30-138	2.82	22	L593015-03	WG610744
Hexachloro-1,3-butadiene	mg/kg	0.204	0.218	61.3	29-136	6.37	22	L593015-03	WG610744
Hexachlorobenzene	mg/kg	0.191	0.204	57.4	26-136	6.39	20	L593015-03	WG610744
Hexachlorocyclopentadiene	mg/kg	0.146	0.160	43.8	10-124	9.25	33	L593015-03	WG610744
Hexachloroethane	mg/kg	0.207	0.220	62.0	21-107	6.20	27	L593015-03	WG610744
Indeno(1,2,3-cd)pyrene	mg/kg	0.257	0.274	77.3	10-139	6.27	32	L593015-03	WG610744
Isophorone	mg/kg	0.193	0.197	58.0	26-134	1.93	20	L593015-03	WG610744
n-Nitrosodi-n-propylamine	mg/kg	0.244	0.251	73.3	24-141	2.73	20	L593015-03	WG610744
n-Nitrosodimethylamine	mg/kg	0.187	0.200	56.0	18-126	7.13	27	L593015-03	WG610744
n-Nitrosodiphenylamine	mg/kg	0.224	0.240	67.4	16-128	6.85	25	L593015-03	WG610744
Naphthalene	mg/kg	0.225	0.229	67.6	31-124	1.84	25	L593015-03	WG610744
Nitrobenzene	mg/kg	0.226	0.235	68.0	22-122	3.86	20	L593015-03	WG610744
Pentachlorophenol	mg/kg	0.187	0.192	56.1	10-124	2.90	34	L593015-03	WG610744
Phenanthrene	mg/kg	0.239	0.255	71.9	25-139	6.18	25	L593015-03	WG610744
Phenol	mg/kg	0.237	0.250	71.1	22-129	5.48	25	L593015-03	WG610744
Pyrene	mg/kg	0.256	0.265	76.8	23-145	3.66	30	L593015-03	WG610744
2,4,6-Tribromophenol				62.95	16-136				WG610744
2-Fluorobiphenyl				70.75	37-119				WG610744
2-Fluorophenol				67.61	22-114				WG610744
Nitrobenzene-d5				67.78	20-114				WG610744
Phenol-d5				70.44	26-127				WG610744
p-Terphenyl-d14				71.33	15-174				WG610744
2,4,5-T	mg/kg	0.172	0.151	103.	18-111	13.0	29	L592812-02	WG610970
2,4,5-TP (Silvex)	mg/kg	0.178	0.174	107.	27-123	2.23	23	L592812-02	WG610970
2,4-D	mg/kg	0.164	0.137	98.0	10-137	18.0	40	L592812-02	WG610970
2,4-DB	mg/kg	0.179	0.153	107.	15-121	15.9	33	L592812-02	WG610970
Dalapon	mg/kg	0.174	0.179	104.	10-111	3.20	37	L592812-02	WG610970
Dicamba	mg/kg	0.185	0.171	110.	21-118	7.40	24	L592812-02	WG610970
Dichloroprop	mg/kg	0.187	0.155	112.	27-125	18.8	24	L592812-02	WG610970
Dinoseb	mg/kg	0.0956	0.125	57.3	10-95	26.6	40	L592812-02	WG610970
MCPA	mg/kg	16.1	15.2	96.2	10-164	5.82	40	L592812-02	WG610970

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L593051

September 11, 2012

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
MCPP	mg/kg	28.9	27.1	173.	17-186	6.35	40	L592812-02	WG610970
2,4-Dichlorophenyl Acetic Acid				103.9*	37-99				WG610970

Batch number /Run number / Sample number cross reference

WG610742: R2329603: L593051-01 02
WG610695: R2329673: L593051-01 02
WG610706: R2330537: L593051-01 02
WG610933: R2333153: L593051-01 02
WG610744: R2337694: L593051-01 02
WG610970: R2338774: L593051-01 02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW4, Samples at 15 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L593051

September 11, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

Report Summary

Tuesday September 18, 2012

Report Number: L594042
Samples Received: 09/08/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 18, 2012

ESC Sample # : L594042-01

Site ID :

Project # : 212-137

Date Received : September 08, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW3 5

Collected By : I P C
Collection Date : 09/07/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/11/12	1
Arsenic	BDL	5.0	mg/kg	6010B	09/11/12	5
Barium	91.	0.25	mg/kg	6010B	09/11/12	1
Cadmium	BDL	1.2	mg/kg	6010B	09/11/12	5
Chromium	12.	0.50	mg/kg	6010B	09/11/12	1
Iron	13000	5.0	mg/kg	6010B	09/11/12	1
Lead	27.	0.25	mg/kg	6010B	09/11/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/11/12	1
Silver	BDL	0.50	mg/kg	6010B	09/11/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/11/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/11/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/11/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/11/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/11/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/11/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/11/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/11/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/11/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/11/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/11/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/11/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/11/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/11/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/11/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L594042-01 (SV8270BNA) - Dilution due to matrix

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 18, 2012

ESC Sample # : L594042-01

Site ID :

Project # : 212-137

Date Received : September 08, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW3 5

Collected By : I P C
Collection Date : 09/07/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/11/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/11/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/11/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/11/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/11/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/11/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/11/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/11/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/11/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/11/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/11/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/11/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/11/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/11/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/11/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/11/12	5
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	09/11/12	5
Dibromofluoromethane	99.5		% Rec.	8260B	09/11/12	5
4-Bromofluorobenzene	97.5		% Rec.	8260B	09/11/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/17/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L594042-01 (SV8270BNA) - Dilution due to matrix

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 18, 2012

ESC Sample # : L594042-01

Site ID :

Project # : 212-137

Date Received : September 08, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW3 5

Collected By : I P C
Collection Date : 09/07/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/17/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/17/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/17/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/17/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/14/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/14/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/14/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/14/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/14/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/14/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/14/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	83.0		% Rec.	8081/8082	09/14/12	1
Tetrachloro-m-xylene	84.1		% Rec.	8081/8082	09/14/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/12/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/12/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/12/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/12/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/12/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/12/12	1
MCPA	BDL	6.5	mg/kg	8151	09/12/12	1
MCPP	BDL	6.5	mg/kg	8151	09/12/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/12/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/12/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	45.6		% Rec.	8151	09/12/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.66	mg/kg	8270C	09/14/12	20

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L594042-01 (SV8270BNA) - Dilution due to matrix

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Mt. Juliet, TN 37122
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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 18, 2012

ESC Sample # : L594042-01

Site ID :

Project # : 212-137

Date Received : September 08, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW3 5

Collected By : I P C
Collection Date : 09/07/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.66	mg/kg	8270C	09/14/12	20
Anthracene	BDL	0.66	mg/kg	8270C	09/14/12	20
Benzidine	BDL	6.7	mg/kg	8270C	09/14/12	20
Benzo(a)anthracene	BDL	0.66	mg/kg	8270C	09/14/12	20
Benzo(b)fluoranthene	BDL	0.66	mg/kg	8270C	09/14/12	20
Benzo(k)fluoranthene	BDL	0.66	mg/kg	8270C	09/14/12	20
Benzo(g,h,i)perylene	BDL	0.66	mg/kg	8270C	09/14/12	20
Benzo(a)pyrene	BDL	0.66	mg/kg	8270C	09/14/12	20
Bis(2-chlorethoxy)methane	BDL	6.7	mg/kg	8270C	09/14/12	20
Bis(2-chloroethyl)ether	BDL	6.7	mg/kg	8270C	09/14/12	20
Bis(2-chloroisopropyl)ether	BDL	6.7	mg/kg	8270C	09/14/12	20
4-Bromophenyl-phenylether	BDL	6.7	mg/kg	8270C	09/14/12	20
2-Chloronaphthalene	BDL	0.66	mg/kg	8270C	09/14/12	20
4-Chlorophenyl-phenylether	BDL	6.7	mg/kg	8270C	09/14/12	20
Chrysene	BDL	0.66	mg/kg	8270C	09/14/12	20
Dibenz(a,h)anthracene	BDL	0.66	mg/kg	8270C	09/14/12	20
3,3-Dichlorobenzidine	BDL	6.7	mg/kg	8270C	09/14/12	20
2,4-Dinitrotoluene	BDL	6.7	mg/kg	8270C	09/14/12	20
2,6-Dinitrotoluene	BDL	6.7	mg/kg	8270C	09/14/12	20
Fluoranthene	BDL	0.66	mg/kg	8270C	09/14/12	20
Fluorene	BDL	0.66	mg/kg	8270C	09/14/12	20
Hexachlorobenzene	BDL	6.7	mg/kg	8270C	09/14/12	20
Hexachloro-1,3-butadiene	BDL	6.7	mg/kg	8270C	09/14/12	20
Hexachlorocyclopentadiene	BDL	6.7	mg/kg	8270C	09/14/12	20
Hexachloroethane	BDL	6.7	mg/kg	8270C	09/14/12	20
Indeno(1,2,3-cd)pyrene	BDL	0.66	mg/kg	8270C	09/14/12	20
Isophorone	BDL	6.7	mg/kg	8270C	09/14/12	20
Naphthalene	BDL	0.66	mg/kg	8270C	09/14/12	20
Nitrobenzene	BDL	6.7	mg/kg	8270C	09/14/12	20
n-Nitrosodimethylamine	BDL	6.7	mg/kg	8270C	09/14/12	20
n-Nitrosodiphenylamine	BDL	6.7	mg/kg	8270C	09/14/12	20
n-Nitrosodi-n-propylamine	BDL	6.7	mg/kg	8270C	09/14/12	20
Phenanthrene	BDL	0.66	mg/kg	8270C	09/14/12	20
Benzylbutyl phthalate	BDL	6.7	mg/kg	8270C	09/14/12	20
Bis(2-ethylhexyl)phthalate	BDL	6.7	mg/kg	8270C	09/14/12	20
Di-n-butyl phthalate	BDL	6.7	mg/kg	8270C	09/14/12	20
Diethyl phthalate	BDL	6.7	mg/kg	8270C	09/14/12	20
Dimethyl phthalate	BDL	6.7	mg/kg	8270C	09/14/12	20
Di-n-octyl phthalate	BDL	6.7	mg/kg	8270C	09/14/12	20
Pyrene	BDL	0.66	mg/kg	8270C	09/14/12	20
1,2,4-Trichlorobenzene	BDL	6.7	mg/kg	8270C	09/14/12	20
Acid Extractables						
4-Chloro-3-methylphenol	BDL	6.7	mg/kg	8270C	09/14/12	20
2-Chlorophenol	BDL	6.7	mg/kg	8270C	09/14/12	20

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L594042-01 (SV8270BNA) - Dilution due to matrix

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 18, 2012

ESC Sample # : L594042-01

Site ID :

Project # : 212-137

Date Received : September 08, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW3 5

Collected By : I P C
Collection Date : 09/07/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	6.7	mg/kg	8270C	09/14/12	20
2,4-Dimethylphenol	BDL	6.7	mg/kg	8270C	09/14/12	20
4,6-Dinitro-2-methylphenol	BDL	6.7	mg/kg	8270C	09/14/12	20
2,4-Dinitrophenol	BDL	6.7	mg/kg	8270C	09/14/12	20
2-Nitrophenol	BDL	6.7	mg/kg	8270C	09/14/12	20
4-Nitrophenol	BDL	6.7	mg/kg	8270C	09/14/12	20
Pentachlorophenol	BDL	6.7	mg/kg	8270C	09/14/12	20
Phenol	BDL	6.7	mg/kg	8270C	09/14/12	20
2,4,6-Trichlorophenol	BDL	6.7	mg/kg	8270C	09/14/12	20
Surrogate Recovery						
2-Fluorophenol	54.0		% Rec.	8270C	09/14/12	20
Phenol-d5	73.1		% Rec.	8270C	09/14/12	20
Nitrobenzene-d5	71.7		% Rec.	8270C	09/14/12	20
2-Fluorobiphenyl	88.9		% Rec.	8270C	09/14/12	20
2,4,6-Tribromophenol	85.4		% Rec.	8270C	09/14/12	20
p-Terphenyl-d14	126.		% Rec.	8270C	09/14/12	20

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 09/18/12 11:13 Printed: 09/18/12 11:13
L594042-01 (SV8270BNA) - Dilution due to matrix

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 18, 2012

ESC Sample # : L594042-02

Site ID :

Project # : 212-137

Date Received : September 08, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW3 15

Collected By : I P C
Collection Date : 09/07/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/11/12	1
Arsenic	BDL	1.0	mg/kg	6010B	09/11/12	1
Barium	36.	0.25	mg/kg	6010B	09/11/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/11/12	1
Chromium	4.2	0.50	mg/kg	6010B	09/11/12	1
Iron	6800	5.0	mg/kg	6010B	09/11/12	1
Lead	8.0	0.25	mg/kg	6010B	09/11/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/11/12	1
Silver	BDL	0.50	mg/kg	6010B	09/11/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/11/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/11/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/11/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/11/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/11/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/11/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/11/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/11/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/11/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/11/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/11/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/11/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/11/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/11/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/11/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 18, 2012

ESC Sample # : L594042-02

Date Received : September 08, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW3 15

Project # : 212-137

Collected By : I P C
Collection Date : 09/07/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/11/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/11/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/11/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/11/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/11/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/11/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/11/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/11/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/11/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/11/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/11/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/11/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/11/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/11/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/11/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/11/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/11/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/11/12	5
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	09/11/12	5
Dibromofluoromethane	103.		% Rec.	8260B	09/11/12	5
4-Bromofluorobenzene	102.		% Rec.	8260B	09/11/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/17/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 18, 2012

ESC Sample # : L594042-02

Site ID :

Project # : 212-137

Date Received : September 08, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW3 15

Collected By : I P C
Collection Date : 09/07/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/17/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/17/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/17/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/17/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/17/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/14/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/14/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/14/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/14/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/14/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/14/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/14/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	86.0		% Rec.	8081/8082	09/14/12	1
Tetrachloro-m-xylene	83.5		% Rec.	8081/8082	09/14/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/11/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/11/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/11/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/11/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/11/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/11/12	1
MCPA	BDL	6.5	mg/kg	8151	09/11/12	1
MCPP	BDL	6.5	mg/kg	8151	09/11/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/11/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/11/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	56.8		% Rec.	8151	09/11/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/14/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 18, 2012

ESC Sample # : L594042-02

Site ID :

Project # : 212-137

Date Received : September 08, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW3 15

Collected By : I P C
Collection Date : 09/07/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/14/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/14/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/14/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/14/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/14/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/14/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/14/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/14/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/14/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/14/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/14/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/14/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/14/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/14/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/14/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/14/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/14/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/14/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/14/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/14/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/14/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/14/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/14/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/14/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/14/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/14/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/14/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/14/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/14/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/14/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/14/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/14/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/14/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/14/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/14/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/14/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/14/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/14/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/14/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/14/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/14/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/14/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/14/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 18, 2012

ESC Sample # : L594042-02

Site ID :

Project # : 212-137

Date Received : September 08, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW3 15

Collected By : I P C
Collection Date : 09/07/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/14/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/14/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/14/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/14/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/14/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/14/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/14/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/14/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/14/12	1
Surrogate Recovery						
2-Fluorophenol	51.6		% Rec.	8270C	09/14/12	1
Phenol-d5	68.3		% Rec.	8270C	09/14/12	1
Nitrobenzene-d5	57.9		% Rec.	8270C	09/14/12	1
2-Fluorobiphenyl	87.7		% Rec.	8270C	09/14/12	1
2,4,6-Tribromophenol	106.		% Rec.	8270C	09/14/12	1
p-Terphenyl-d14	76.4		% Rec.	8270C	09/14/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 09/18/12 11:13 Printed: 09/18/12 11:13

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L594042-01	WG612454	SAMP	Acenaphthene	R2345653	O
	WG612454	SAMP	Acenaphthylene	R2345653	O
	WG612454	SAMP	Anthracene	R2345653	O
	WG612454	SAMP	Benzidine	R2345653	J3J4O
	WG612454	SAMP	Benzo(a)anthracene	R2345653	O
	WG612454	SAMP	Benzo(b)fluoranthene	R2345653	O
	WG612454	SAMP	Benzo(k)fluoranthene	R2345653	O
	WG612454	SAMP	Benzo(g,h,i)perylene	R2345653	O
	WG612454	SAMP	Benzo(a)pyrene	R2345653	O
	WG612454	SAMP	Bis(2-chlorethoxy)methane	R2345653	O
	WG612454	SAMP	Bis(2-chloroethyl)ether	R2345653	O
	WG612454	SAMP	Bis(2-chloroisopropyl)ether	R2345653	O
	WG612454	SAMP	4-Bromophenyl-phenylether	R2345653	O
	WG612454	SAMP	2-Chloronaphthalene	R2345653	O
	WG612454	SAMP	4-Chlorophenyl-phenylether	R2345653	O
	WG612454	SAMP	Chrysene	R2345653	O
	WG612454	SAMP	Dibenz(a,h)anthracene	R2345653	O
	WG612454	SAMP	3,3-Dichlorobenzidine	R2345653	J4O
	WG612454	SAMP	2,4-Dinitrotoluene	R2345653	O
	WG612454	SAMP	2,6-Dinitrotoluene	R2345653	O
	WG612454	SAMP	Fluoranthene	R2345653	O
	WG612454	SAMP	Fluorene	R2345653	O
	WG612454	SAMP	Hexachlorobenzene	R2345653	O
	WG612454	SAMP	Hexachloro-1,3-butadiene	R2345653	O
	WG612454	SAMP	Hexachlorocyclopentadiene	R2345653	O
	WG612454	SAMP	Hexachloroethane	R2345653	O
	WG612454	SAMP	Indeno(1,2,3-cd)pyrene	R2345653	O
	WG612454	SAMP	Isophorone	R2345653	O
	WG612454	SAMP	Naphthalene	R2345653	O
	WG612454	SAMP	Nitrobenzene	R2345653	O
	WG612454	SAMP	n-Nitrosodimethylamine	R2345653	O
	WG612454	SAMP	n-Nitrosodiphenylamine	R2345653	O
	WG612454	SAMP	n-Nitrosodi-n-propylamine	R2345653	O
	WG612454	SAMP	Phenanthrene	R2345653	O
	WG612454	SAMP	Benzylbutyl phthalate	R2345653	O
	WG612454	SAMP	Bis(2-ethylhexyl)phthalate	R2345653	O
	WG612454	SAMP	Di-n-butyl phthalate	R2345653	O
	WG612454	SAMP	Diethyl phthalate	R2345653	O
	WG612454	SAMP	Dimethyl phthalate	R2345653	O
	WG612454	SAMP	Di-n-octyl phthalate	R2345653	O
	WG612454	SAMP	Pyrene	R2345653	O
	WG612454	SAMP	1,2,4-Trichlorobenzene	R2345653	O
	WG612454	SAMP	4-Chloro-3-methylphenol	R2345653	O
	WG612454	SAMP	2-Chlorophenol	R2345653	O
	WG612454	SAMP	2,4-Dichlorophenol	R2345653	O
	WG612454	SAMP	2,4-Dimethylphenol	R2345653	O
	WG612454	SAMP	4,6-Dinitro-2-methylphenol	R2345653	O
	WG612454	SAMP	2,4-Dinitrophenol	R2345653	O
	WG612454	SAMP	2-Nitrophenol	R2345653	O
	WG612454	SAMP	4-Nitrophenol	R2345653	O
	WG612454	SAMP	Pentachlorophenol	R2345653	O
	WG612454	SAMP	Phenol	R2345653	O
	WG612454	SAMP	2,4,6-Trichlorophenol	R2345653	O
	WG612454	SAMP	2-Fluorophenol	R2345653	J7
	WG612454	SAMP	Phenol-d5	R2345653	J7
	WG612454	SAMP	Nitrobenzene-d5	R2345653	J7
	WG612454	SAMP	2-Fluorobiphenyl	R2345653	J7
	WG612454	SAMP	2,4,6-Tribromophenol	R2345653	J7
	WG612454	SAMP	p-Terphenyl-d14	R2345653	J7
	WG611674	SAMP	Arsenic	R2340393	O
	WG611674	SAMP	Cadmium	R2340393	O
	WG611946	SAMP	1,2-Dichloropropane	R2341853	J3
L594042-02	WG612454	SAMP	Benzidine	R2345653	J6J3J4
	WG612454	SAMP	3,3-Dichlorobenzidine	R2345653	J4
	WG611946	SAMP	1,2-Dichloropropane	R2341853	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
09/18/12 at 11:13:47

TSR Signing Reports: 358

Sample: L594042-01 Account: YEHDCO Received: 09/08/12 10:00 Due Date: 09/14/12 00:00 RPT Date: 09/18/12 11:13

Sample: L594042-02 Account: YEHDCO Received: 09/08/12 10:00 Due Date: 09/14/12 00:00 RPT Date: 09/18/12 11:13

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L594042

September 18, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Mercury	< .02	mg/kg			WG611660	09/11/12 09:57
Arsenic	< 1	mg/kg			WG611674	09/11/12 13:33
Barium	< .25	mg/kg			WG611674	09/11/12 13:33
Cadmium	< .25	mg/kg			WG611674	09/11/12 13:33
Chromium	< .5	mg/kg			WG611674	09/11/12 13:33
Iron	< 5	mg/kg			WG611674	09/11/12 13:33
Lead	< .25	mg/kg			WG611674	09/11/12 13:33
Selenium	< 1	mg/kg			WG611674	09/11/12 13:33
Silver	< .5	mg/kg			WG611674	09/11/12 13:33
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG611946	09/11/12 14:30
1,1,1-Trichloroethane	< .001	mg/kg			WG611946	09/11/12 14:30
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG611946	09/11/12 14:30
1,1,2-Trichloroethane	< .001	mg/kg			WG611946	09/11/12 14:30
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG611946	09/11/12 14:30
1,1-Dichloroethane	< .001	mg/kg			WG611946	09/11/12 14:30
1,1-Dichloroethene	< .001	mg/kg			WG611946	09/11/12 14:30
1,1-Dichloropropene	< .001	mg/kg			WG611946	09/11/12 14:30
1,2,3-Trichlorobenzene	< .001	mg/kg			WG611946	09/11/12 14:30
1,2,3-Trichloropropane	< .0025	mg/kg			WG611946	09/11/12 14:30
1,2,3-Trimethylbenzene	< .001	mg/kg			WG611946	09/11/12 14:30
1,2,4-Trichlorobenzene	< .001	mg/kg			WG611946	09/11/12 14:30
1,2,4-Trimethylbenzene	< .001	mg/kg			WG611946	09/11/12 14:30
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG611946	09/11/12 14:30
1,2-Dibromoethane	< .001	mg/kg			WG611946	09/11/12 14:30
1,2-Dichlorobenzene	< .001	mg/kg			WG611946	09/11/12 14:30
1,2-Dichloroethane	< .001	mg/kg			WG611946	09/11/12 14:30
1,2-Dichloropropane	< .001	mg/kg			WG611946	09/11/12 14:30
1,3,5-Trimethylbenzene	< .001	mg/kg			WG611946	09/11/12 14:30
1,3-Dichlorobenzene	< .001	mg/kg			WG611946	09/11/12 14:30
1,3-Dichloropropane	< .001	mg/kg			WG611946	09/11/12 14:30
1,4-Dichlorobenzene	< .001	mg/kg			WG611946	09/11/12 14:30
2,2-Dichloropropane	< .001	mg/kg			WG611946	09/11/12 14:30
2-Butanone (MEK)	< .01	mg/kg			WG611946	09/11/12 14:30
2-Chloroethyl vinyl ether	< .05	mg/kg			WG611946	09/11/12 14:30
2-Chlorotoluene	< .001	mg/kg			WG611946	09/11/12 14:30
4-Chlorotoluene	< .001	mg/kg			WG611946	09/11/12 14:30
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG611946	09/11/12 14:30
Acetone	< .05	mg/kg			WG611946	09/11/12 14:30
Acrylonitrile	< .01	mg/kg			WG611946	09/11/12 14:30
Benzene	< .001	mg/kg			WG611946	09/11/12 14:30
Bromobenzene	< .001	mg/kg			WG611946	09/11/12 14:30
Bromodichloromethane	< .001	mg/kg			WG611946	09/11/12 14:30
Bromoform	< .001	mg/kg			WG611946	09/11/12 14:30
Bromomethane	< .005	mg/kg			WG611946	09/11/12 14:30
Carbon tetrachloride	< .001	mg/kg			WG611946	09/11/12 14:30
Chlorobenzene	< .001	mg/kg			WG611946	09/11/12 14:30
Chlorodibromomethane	< .001	mg/kg			WG611946	09/11/12 14:30
Chloroethane	< .005	mg/kg			WG611946	09/11/12 14:30
Chloroform	< .005	mg/kg			WG611946	09/11/12 14:30
Chloromethane	< .0025	mg/kg			WG611946	09/11/12 14:30
cis-1,2-Dichloroethene	< .001	mg/kg			WG611946	09/11/12 14:30
cis-1,3-Dichloropropene	< .001	mg/kg			WG611946	09/11/12 14:30
Di-isopropyl ether	< .001	mg/kg			WG611946	09/11/12 14:30
Dibromomethane	< .001	mg/kg			WG611946	09/11/12 14:30
Dichlorodifluoromethane	< .005	mg/kg			WG611946	09/11/12 14:30

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
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Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L594042

September 18, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Ethylbenzene	< .001	mg/kg			WG611946	09/11/12 14:30
Hexachloro-1,3-butadiene	< .001	mg/kg			WG611946	09/11/12 14:30
Isopropylbenzene	< .001	mg/kg			WG611946	09/11/12 14:30
Methyl tert-butyl ether	< .001	mg/kg			WG611946	09/11/12 14:30
Methylene Chloride	< .005	mg/kg			WG611946	09/11/12 14:30
n-Butylbenzene	< .001	mg/kg			WG611946	09/11/12 14:30
n-Propylbenzene	< .001	mg/kg			WG611946	09/11/12 14:30
Naphthalene	< .005	mg/kg			WG611946	09/11/12 14:30
p-Isopropyltoluene	< .001	mg/kg			WG611946	09/11/12 14:30
sec-Butylbenzene	< .001	mg/kg			WG611946	09/11/12 14:30
Styrene	< .001	mg/kg			WG611946	09/11/12 14:30
tert-Butylbenzene	< .001	mg/kg			WG611946	09/11/12 14:30
Tetrachloroethene	< .001	mg/kg			WG611946	09/11/12 14:30
Toluene	< .005	mg/kg			WG611946	09/11/12 14:30
trans-1,2-Dichloroethene	< .001	mg/kg			WG611946	09/11/12 14:30
trans-1,3-Dichloropropene	< .001	mg/kg			WG611946	09/11/12 14:30
Trichloroethene	< .001	mg/kg			WG611946	09/11/12 14:30
Trichlorofluoromethane	< .005	mg/kg			WG611946	09/11/12 14:30
Vinyl chloride	< .001	mg/kg			WG611946	09/11/12 14:30
Xylenes, Total	< .003	mg/kg			WG611946	09/11/12 14:30
4-Bromofluorobenzene		% Rec.	101.3	67-133	WG611946	09/11/12 14:30
Dibromofluoromethane		% Rec.	102.3	72-135	WG611946	09/11/12 14:30
Toluene-d8		% Rec.	99.95	90-113	WG611946	09/11/12 14:30
2,4,5-T	< .07	mg/kg			WG611722	09/11/12 20:52
2,4,5-TP (Silvex)	< .07	mg/kg			WG611722	09/11/12 20:52
2,4-D	< .07	mg/kg			WG611722	09/11/12 20:52
2,4-DB	< .07	mg/kg			WG611722	09/11/12 20:52
Dalapon	< .8	mg/kg			WG611722	09/11/12 20:52
Dicamba	< .07	mg/kg			WG611722	09/11/12 20:52
Dichloroprop	< .07	mg/kg			WG611722	09/11/12 20:52
Dinoseb	< .07	mg/kg			WG611722	09/11/12 20:52
MCPA	< .68602	mg/kg			WG611722	09/11/12 20:52
MCPP	< 6.5	mg/kg			WG611722	09/11/12 20:52
2,4-Dichlorophenyl Acetic Acid		%	57.28	37-99	WG611722	09/11/12 20:52
1,2,4-Trichlorobenzene	< .333	mg/kg			WG612454	09/14/12 01:03
2,4,6-Trichlorophenol	< .333	mg/kg			WG612454	09/14/12 01:03
2,4-Dichlorophenol	< .333	mg/kg			WG612454	09/14/12 01:03
2,4-Dimethylphenol	< .333	mg/kg			WG612454	09/14/12 01:03
2,4-Dinitrophenol	< .333	mg/kg			WG612454	09/14/12 01:03
2,4-Dinitrotoluene	< .333	mg/kg			WG612454	09/14/12 01:03
2,6-Dinitrotoluene	< .333	mg/kg			WG612454	09/14/12 01:03
2-Chloronaphthalene	< .033	mg/kg			WG612454	09/14/12 01:03
2-Chlorophenol	< .333	mg/kg			WG612454	09/14/12 01:03
2-Nitrophenol	< .333	mg/kg			WG612454	09/14/12 01:03
3,3-Dichlorobenzidine	< .333	mg/kg			WG612454	09/14/12 01:03
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG612454	09/14/12 01:03
4-Bromophenyl-phenylether	< .333	mg/kg			WG612454	09/14/12 01:03
4-Chloro-3-methylphenol	< .333	mg/kg			WG612454	09/14/12 01:03
4-Chlorophenyl-phenylether	< .333	mg/kg			WG612454	09/14/12 01:03
4-Nitrophenol	< .333	mg/kg			WG612454	09/14/12 01:03
Acenaphthene	< .033	mg/kg			WG612454	09/14/12 01:03
Acenaphthylene	< .033	mg/kg			WG612454	09/14/12 01:03
Anthracene	< .033	mg/kg			WG612454	09/14/12 01:03
Benzidine	< .333	mg/kg			WG612454	09/14/12 01:03
Benzo(a)anthracene	< .033	mg/kg			WG612454	09/14/12 01:03

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Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Denver, CO 80222

Quality Assurance Report
Level II

L594042

September 18, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Benzo(a)pyrene	< .033	mg/kg			WG612454	09/14/12 01:03
Benzo(b)fluoranthene	< .033	mg/kg			WG612454	09/14/12 01:03
Benzo(g,h,i)perylene	< .033	mg/kg			WG612454	09/14/12 01:03
Benzo(k)fluoranthene	< .033	mg/kg			WG612454	09/14/12 01:03
Benzylbutyl phthalate	< .333	mg/kg			WG612454	09/14/12 01:03
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG612454	09/14/12 01:03
Bis(2-chloroethyl)ether	< .333	mg/kg			WG612454	09/14/12 01:03
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG612454	09/14/12 01:03
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG612454	09/14/12 01:03
Chrysene	< .033	mg/kg			WG612454	09/14/12 01:03
Di-n-butyl phthalate	< .333	mg/kg			WG612454	09/14/12 01:03
Di-n-octyl phthalate	< .333	mg/kg			WG612454	09/14/12 01:03
Dibenz(a,h)anthracene	< .033	mg/kg			WG612454	09/14/12 01:03
Diethyl phthalate	< .333	mg/kg			WG612454	09/14/12 01:03
Dimethyl phthalate	< .333	mg/kg			WG612454	09/14/12 01:03
Fluoranthene	< .033	mg/kg			WG612454	09/14/12 01:03
Fluorene	< .033	mg/kg			WG612454	09/14/12 01:03
Hexachloro-1,3-butadiene	< .333	mg/kg			WG612454	09/14/12 01:03
Hexachlorobenzene	< .333	mg/kg			WG612454	09/14/12 01:03
Hexachlorocyclopentadiene	< .333	mg/kg			WG612454	09/14/12 01:03
Hexachloroethane	< .333	mg/kg			WG612454	09/14/12 01:03
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG612454	09/14/12 01:03
Isophorone	< .333	mg/kg			WG612454	09/14/12 01:03
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG612454	09/14/12 01:03
n-Nitrosodimethylamine	< .333	mg/kg			WG612454	09/14/12 01:03
n-Nitrosodiphenylamine	< .333	mg/kg			WG612454	09/14/12 01:03
Naphthalene	< .033	mg/kg			WG612454	09/14/12 01:03
Nitrobenzene	< .333	mg/kg			WG612454	09/14/12 01:03
Pentachlorophenol	< .333	mg/kg			WG612454	09/14/12 01:03
Phenanthrene	< .033	mg/kg			WG612454	09/14/12 01:03
Phenol	< .333	mg/kg			WG612454	09/14/12 01:03
Pyrene	< .033	mg/kg			WG612454	09/14/12 01:03
2,4,6-Tribromophenol		% Rec.	106.4	16-136	WG612454	09/14/12 01:03
2-Fluorobiphenyl		% Rec.	88.76	37-119	WG612454	09/14/12 01:03
2-Fluorophenol		% Rec.	79.03	22-114	WG612454	09/14/12 01:03
Nitrobenzene-d5		% Rec.	71.28	20-114	WG612454	09/14/12 01:03
Phenol-d5		% Rec.	76.71	26-127	WG612454	09/14/12 01:03
p-Terphenyl-d14		% Rec.	84.30	15-174	WG612454	09/14/12 01:03
PCB 1016	< .017	mg/kg			WG612008	09/14/12 14:15
PCB 1221	< .017	mg/kg			WG612008	09/14/12 14:15
PCB 1232	< .017	mg/kg			WG612008	09/14/12 14:15
PCB 1242	< .017	mg/kg			WG612008	09/14/12 14:15
PCB 1248	< .017	mg/kg			WG612008	09/14/12 14:15
PCB 1254	< .017	mg/kg			WG612008	09/14/12 14:15
PCB 1260	< .017	mg/kg			WG612008	09/14/12 14:15
Decachlorobiphenyl		% Rec.	85.42	18.9-115.8	WG612008	09/14/12 14:15
Tetrachloro-m-xylene		% Rec.	82.12	31.8-115.7	WG612008	09/14/12 14:15
4,4-DDD	< .02	mg/kg			WG612008	09/17/12 10:53
4,4-DDE	< .02	mg/kg			WG612008	09/17/12 10:53
4,4-DDT	< .02	mg/kg			WG612008	09/17/12 10:53
Aldrin	< .02	mg/kg			WG612008	09/17/12 10:53
Alpha BHC	< .02	mg/kg			WG612008	09/17/12 10:53
Beta BHC	< .02	mg/kg			WG612008	09/17/12 10:53
Chlordane	< .2	mg/kg			WG612008	09/17/12 10:53
Delta BHC	< .02	mg/kg			WG612008	09/17/12 10:53
Dieldrin	< .02	mg/kg			WG612008	09/17/12 10:53
Endosulfan I	< .02	mg/kg			WG612008	09/17/12 10:53

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Quality Assurance Report
Level II

L594042

September 18, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Endosulfan II	< .02	mg/kg			WG612008	09/17/12 10:53
Endosulfan sulfate	< .02	mg/kg			WG612008	09/17/12 10:53
Endrin	< .02	mg/kg			WG612008	09/17/12 10:53
Endrin aldehyde	< .02	mg/kg			WG612008	09/17/12 10:53
Endrin ketone	< .02	mg/kg			WG612008	09/17/12 10:53
Gamma BHC	< .02	mg/kg			WG612008	09/17/12 10:53
Heptachlor	< .02	mg/kg			WG612008	09/17/12 10:53
Heptachlor epoxide	< .02	mg/kg			WG612008	09/17/12 10:53
Hexachlorobenzene	< .02	mg/kg			WG612008	09/17/12 10:53
Methoxychlor	< .02	mg/kg			WG612008	09/17/12 10:53
Toxaphene	< .4	mg/kg			WG612008	09/17/12 10:53
Decachlorobiphenyl		% Rec.	85.27	18.9-115.8	WG612008	09/17/12 10:53
Tetrachloro-m-xylene		% Rec.	87.97	31.8-115.7	WG612008	09/17/12 10:53

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0	0	0	20	L594042-02	WG611660
Arsenic	mg/kg	0	0	0	20	L594032-05	WG611674
Barium	mg/kg	82.0	80.0	3.08	20	L594032-05	WG611674
Chromium	mg/kg	12.0	13.0	9.68	20	L594032-05	WG611674
Iron	mg/kg	35000	25000	33.3*	20	L594032-05	WG611674
Lead	mg/kg	39.0	29.0	29.9*	20	L594032-05	WG611674
Selenium	mg/kg	0	0	0	20	L594032-05	WG611674
Silver	mg/kg	0	0	0	20	L594032-05	WG611674
Cadmium	mg/kg	0	0	0	20	L594032-05	WG611674

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Mercury	mg/kg	12.4	15.2	123.	71.6-128	WG611660
Arsenic	mg/kg	237	233.	98.3	83.1-117	WG611674
Barium	mg/kg	252	256.	102.	84.1-116	WG611674
Cadmium	mg/kg	191	182.	95.3	83.2-117	WG611674
Chromium	mg/kg	128	129.	101.	81.3-118	WG611674
Iron	mg/kg	13100	13000	99.2	50.8-150	WG611674
Lead	mg/kg	103	109.	106.	83.1-117	WG611674
Selenium	mg/kg	110	109.	99.1	78.7-122	WG611674
Silver	mg/kg	47.3	46.1	97.5	66.2-134	WG611674
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0279	112.	77-129	WG611946
1,1,1-Trichloroethane	mg/kg	.025	0.0270	108.	70-127	WG611946
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0234	93.7	76-133	WG611946
1,1,2-Trichloroethane	mg/kg	.025	0.0257	103.	79-123	WG611946
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0286	114.	52-145	WG611946
1,1-Dichloroethane	mg/kg	.025	0.0263	105.	74-121	WG611946
1,1-Dichloroethene	mg/kg	.025	0.0274	110.	53-135	WG611946
1,1-Dichloropropene	mg/kg	.025	0.0241	96.6	67-127	WG611946
1,2,3-Trichlorobenzene	mg/kg	.025	0.0277	111.	74-131	WG611946
1,2,3-Trichloropropane	mg/kg	.025	0.0271	109.	75-135	WG611946
1,2,3-Trimethylbenzene	mg/kg	.025	0.0256	102.	76-128	WG611946
1,2,4-Trichlorobenzene	mg/kg	.025	0.0279	112.	72-130	WG611946
1,2,4-Trimethylbenzene	mg/kg	.025	0.0271	109.	75-131	WG611946
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0256	102.	55-142	WG611946

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Quality Assurance Report
Level II

L594042

September 18, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,2-Dibromoethane	mg/kg	.025	0.0253	101.	77-126	WG611946
1,2-Dichlorobenzene	mg/kg	.025	0.0267	107.	80-123	WG611946
1,2-Dichloroethane	mg/kg	.025	0.0249	99.7	70-128	WG611946
1,2-Dichloropropane	mg/kg	.025	0.0233	93.4	74-125	WG611946
1,3,5-Trimethylbenzene	mg/kg	.025	0.0270	108.	77-129	WG611946
1,3-Dichlorobenzene	mg/kg	.025	0.0283	113.	76-128	WG611946
1,3-Dichloropropane	mg/kg	.025	0.0242	96.8	77-118	WG611946
1,4-Dichlorobenzene	mg/kg	.025	0.0247	98.9	77-119	WG611946
2,2-Dichloropropane	mg/kg	.025	0.0282	113.	60-132	WG611946
2-Butanone (MEK)	mg/kg	.125	0.119	95.0	56-146	WG611946
2-Chloroethyl vinyl ether	mg/kg	.125	0.0952	76.2	17-179	WG611946
2-Chlorotoluene	mg/kg	.025	0.0262	105.	76-125	WG611946
4-Chlorotoluene	mg/kg	.025	0.0269	107.	76-125	WG611946
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.115	92.3	55-148	WG611946
Acetone	mg/kg	.125	0.126	101.	47-155	WG611946
Acrylonitrile	mg/kg	.125	0.116	93.0	50-155	WG611946
Benzene	mg/kg	.025	0.0246	98.4	72-120	WG611946
Bromobenzene	mg/kg	.025	0.0258	103.	74-122	WG611946
Bromodichloromethane	mg/kg	.025	0.0256	102.	74-128	WG611946
Bromoform	mg/kg	.025	0.0269	108.	62-137	WG611946
Bromomethane	mg/kg	.025	0.0286	114.	38-180	WG611946
Carbon tetrachloride	mg/kg	.025	0.0242	96.8	62-130	WG611946
Chlorobenzene	mg/kg	.025	0.0261	104.	77-124	WG611946
Chlorodibromomethane	mg/kg	.025	0.0267	107.	74-128	WG611946
Chloroethane	mg/kg	.025	0.0258	103.	46-173	WG611946
Chloroform	mg/kg	.025	0.0268	107.	76-122	WG611946
Chloromethane	mg/kg	.025	0.0234	93.8	49-143	WG611946
cis-1,2-Dichloroethene	mg/kg	.025	0.0260	104.	73-123	WG611946
cis-1,3-Dichloropropene	mg/kg	.025	0.0241	96.2	73-126	WG611946
Di-isopropyl ether	mg/kg	.025	0.0246	98.5	64-131	WG611946
Dibromomethane	mg/kg	.025	0.0256	102.	75-127	WG611946
Dichlorodifluoromethane	mg/kg	.025	0.0279	112.	30-177	WG611946
Ethylbenzene	mg/kg	.025	0.0265	106.	76-126	WG611946
Hexachloro-1,3-butadiene	mg/kg	.025	0.0277	111.	71-134	WG611946
Isopropylbenzene	mg/kg	.025	0.0267	107.	70-128	WG611946
Methyl tert-butyl ether	mg/kg	.025	0.0255	102.	66-127	WG611946
Methylene Chloride	mg/kg	.025	0.0242	96.9	67-124	WG611946
n-Butylbenzene	mg/kg	.025	0.0263	105.	71-133	WG611946
n-Propylbenzene	mg/kg	.025	0.0263	105.	76-126	WG611946
Naphthalene	mg/kg	.025	0.0250	100.	68-136	WG611946
p-Isopropyltoluene	mg/kg	.025	0.0286	114.	75-134	WG611946
sec-Butylbenzene	mg/kg	.025	0.0271	109.	75-132	WG611946
Styrene	mg/kg	.025	0.0264	106.	68-148	WG611946
tert-Butylbenzene	mg/kg	.025	0.0281	113.	75-132	WG611946
Tetrachloroethene	mg/kg	.025	0.0254	101.	70-131	WG611946
Toluene	mg/kg	.025	0.0236	94.3	74-155	WG611946
trans-1,2-Dichloroethene	mg/kg	.025	0.0270	108.	63-126	WG611946
trans-1,3-Dichloropropene	mg/kg	.025	0.0252	101.	68-126	WG611946
Trichloroethene	mg/kg	.025	0.0251	100.	75-121	WG611946
Trichlorofluoromethane	mg/kg	.025	0.0267	107.	48-170	WG611946
Vinyl chloride	mg/kg	.025	0.0245	98.1	54-144	WG611946
Xylenes, Total	mg/kg	.075	0.0776	104.	76-126	WG611946
4-Bromofluorobenzene				102.6	67-133	WG611946
Dibromofluoromethane				105.0	72-135	WG611946
Toluene-d8				100.8	90-113	WG611946
2,4,5-T	mg/kg	.167	0.135	80.8	32.9-103	WG611722
2,4,5-TP (Silvex)	mg/kg	.167	0.135	80.8	46-116	WG611722

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Quality Assurance Report
Level II

L594042

September 18, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
2,4-D	mg/kg	.167	0.123	73.4	28-98	WG611722
2,4-DB	mg/kg	.167	0.128	76.5	28.9-108	WG611722
Dalapon	mg/kg	.167	0.137	82.0	18.4-113	WG611722
Dicamba	mg/kg	.167	0.129	77.2	37.2-119	WG611722
Dichloroprop	mg/kg	.167	0.144	86.0	40.5-114	WG611722
Dinoseb	mg/kg	.167	0.0836	50.1	10-98	WG611722
MCPA	mg/kg	16.7	14.3	85.5	15.5-110	WG611722
MCPP	mg/kg	16.7	19.0	114.	40.1-177	WG611722
2,4-Dichlorophenyl Acetic Acid				76.64	37-99	WG611722
1,2,4-Trichlorobenzene	mg/kg	.333	0.253	75.9	48-87	WG612454
2,4,6-Trichlorophenol	mg/kg	.333	0.285	85.4	50-98	WG612454
2,4-Dichlorophenol	mg/kg	.333	0.276	82.7	56-96	WG612454
2,4-Dimethylphenol	mg/kg	.333	0.260	78.1	52-101	WG612454
2,4-Dinitrophenol	mg/kg	.333	0.197	59.3	10-109	WG612454
2,4-Dinitrotoluene	mg/kg	.333	0.311	93.3	54-103	WG612454
2,6-Dinitrotoluene	mg/kg	.333	0.295	88.6	53-99	WG612454
2-Chloronaphthalene	mg/kg	.333	0.264	79.2	55-96	WG612454
2-Chlorophenol	mg/kg	.333	0.242	72.6	52-88	WG612454
2-Nitrophenol	mg/kg	.333	0.272	81.6	55-106	WG612454
3,3-Dichlorobenzidine	mg/kg	.333	0.271	81.3	36-84	WG612454
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.286	85.8	24-98	WG612454
4-Bromophenyl-phenylether	mg/kg	.333	0.338	101.	58-111	WG612454
4-Chloro-3-methylphenol	mg/kg	.333	0.282	84.6	58-98	WG612454
4-Chlorophenyl-phenylether	mg/kg	.333	0.296	88.9	59-103	WG612454
4-Nitrophenol	mg/kg	.333	0.240	72.2	34-101	WG612454
Acenaphthene	mg/kg	.333	0.286	86.0	55-96	WG612454
Acenaphthylene	mg/kg	.333	0.284	85.4	61-107	WG612454
Anthracene	mg/kg	.333	0.302	90.8	58-105	WG612454
Benzidine	mg/kg	.333	0.00801	2.40*	10-21	WG612454
Benzo(a)anthracene	mg/kg	.333	0.278	83.6	56-103	WG612454
Benzo(a)pyrene	mg/kg	.333	0.285	85.6	57-103	WG612454
Benzo(b)fluoranthene	mg/kg	.333	0.283	84.9	52-106	WG612454
Benzo(g,h,i)perylene	mg/kg	.333	0.308	92.4	47-112	WG612454
Benzo(k)fluoranthene	mg/kg	.333	0.279	83.7	53-104	WG612454
Benzylbutyl phthalate	mg/kg	.333	0.269	80.7	61-118	WG612454
Bis(2-chlorethoxy)methane	mg/kg	.333	0.248	74.5	58-104	WG612454
Bis(2-chloroethyl)ether	mg/kg	.333	0.223	67.1	51-103	WG612454
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.226	67.8	56-95	WG612454
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.293	88.0	56-120	WG612454
Chrysene	mg/kg	.333	0.282	84.7	55-102	WG612454
Di-n-butyl phthalate	mg/kg	.333	0.302	90.6	59-114	WG612454
Di-n-octyl phthalate	mg/kg	.333	0.299	89.9	51-119	WG612454
Dibenz(a,h)anthracene	mg/kg	.333	0.308	92.6	49-111	WG612454
Diethyl phthalate	mg/kg	.333	0.290	87.2	61-105	WG612454
Dimethyl phthalate	mg/kg	.333	0.279	83.9	60-106	WG612454
Fluoranthene	mg/kg	.333	0.311	93.3	59-108	WG612454
Fluorene	mg/kg	.333	0.294	88.2	59-100	WG612454
Hexachloro-1,3-butadiene	mg/kg	.333	0.290	87.2	53-106	WG612454
Hexachlorobenzene	mg/kg	.333	0.314	94.4	50-108	WG612454
Hexachlorocyclopentadiene	mg/kg	.333	0.237	71.3	36-117	WG612454
Hexachloroethane	mg/kg	.333	0.250	75.2	45-83	WG612454
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.310	93.2	50-110	WG612454
Isophorone	mg/kg	.333	0.205	61.6	51-99	WG612454
n-Nitrosodi-n-propylamine	mg/kg	.333	0.243	73.0	52-103	WG612454
n-Nitrosodimethylamine	mg/kg	.333	0.242	72.7	31-107	WG612454
n-Nitrosodiphenylamine	mg/kg	.333	0.291	87.5	57-121	WG612454
Naphthalene	mg/kg	.333	0.248	74.5	55-91	WG612454

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Yeh and Associates- Denver, CO
Michael Keifer
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Quality Assurance Report
Level II

L594042

September 18, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Nitrobenzene	mg/kg	.333	0.245	73.5	47-92	WG612454
Pentachlorophenol	mg/kg	.333	0.235	70.6	10-89	WG612454
Phenanthrene	mg/kg	.333	0.293	88.1	55-103	WG612454
Phenol	mg/kg	.333	0.245	73.5	49-99	WG612454
Pyrene	mg/kg	.333	0.263	79.0	54-104	WG612454
2,4,6-Tribromophenol				115.3	16-136	WG612454
2-Fluorobiphenyl				84.48	37-119	WG612454
2-Fluorophenol				75.98	22-114	WG612454
Nitrobenzene-d5				74.95	20-114	WG612454
Phenol-d5				73.07	26-127	WG612454
p-Terphenyl-d14				73.75	15-174	WG612454
PCB 1016	mg/kg	.167	0.163	97.7	64-120	WG612008
PCB 1260	mg/kg	.167	0.160	96.1	72-130	WG612008
Decachlorobiphenyl				97.38	18.9-115.8	WG612008
Tetrachloro-m-xylene				95.26	31.8-115.7	WG612008
4,4-DDD	mg/kg	.0667	0.0654	98.1	74-114	WG612008
4,4-DDE	mg/kg	.0667	0.0646	96.9	74-115	WG612008
4,4-DDT	mg/kg	.0667	0.0648	97.2	62-124	WG612008
Aldrin	mg/kg	.0667	0.0640	95.9	69-110	WG612008
Alpha BHC	mg/kg	.0667	0.0632	94.7	68-111	WG612008
Beta BHC	mg/kg	.0667	0.0632	94.7	74-112	WG612008
Delta BHC	mg/kg	.0667	0.0616	92.3	71-110	WG612008
Dieldrin	mg/kg	.0667	0.0647	97.0	76-115	WG612008
Endosulfan I	mg/kg	.0667	0.0652	97.7	76-119	WG612008
Endosulfan II	mg/kg	.0667	0.0634	95.0	75-116	WG612008
Endosulfan sulfate	mg/kg	.0667	0.0544	81.6	70-118	WG612008
Endrin	mg/kg	.0667	0.0639	95.8	68-115	WG612008
Endrin aldehyde	mg/kg	.0667	0.0615	92.2*	48-92	WG612008
Endrin ketone	mg/kg	.0667	0.0624	93.5	70-112	WG612008
Gamma BHC	mg/kg	.0667	0.0640	95.9	70-112	WG612008
Heptachlor	mg/kg	.0667	0.0638	95.7	69-111	WG612008
Heptachlor epoxide	mg/kg	.0667	0.0646	96.9	72-115	WG612008
Hexachlorobenzene	mg/kg	.0667	0.0575	86.2	64-111	WG612008
Methoxychlor	mg/kg	.0667	0.0663	99.4	65-123	WG612008
Decachlorobiphenyl				95.21	18.9-115.8	WG612008
Tetrachloro-m-xylene				95.53	31.8-115.7	WG612008

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0280	0.0279	112.	77-129	0.330	20	WG611946
1,1,1-Trichloroethane	mg/kg	0.0280	0.0270	112.	70-127	3.49	20	WG611946
1,1,2,2-Tetrachloroethane	mg/kg	0.0241	0.0234	96.0	76-133	2.68	20	WG611946
1,1,2-Trichloroethane	mg/kg	0.0249	0.0257	100.	79-123	3.11	20	WG611946
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0295	0.0286	118.	52-145	2.94	20	WG611946
1,1-Dichloroethane	mg/kg	0.0269	0.0263	108.	74-121	2.37	20	WG611946
1,1-Dichloroethene	mg/kg	0.0301	0.0274	120.	53-135	9.34	20	WG611946
1,1-Dichloropropene	mg/kg	0.0270	0.0241	108.	67-127	11.3	20	WG611946
1,2,3-Trichlorobenzene	mg/kg	0.0287	0.0277	115.	74-131	3.73	20	WG611946
1,2,3-Trichloropropane	mg/kg	0.0262	0.0271	105.	75-135	3.55	20	WG611946
1,2,3-Trimethylbenzene	mg/kg	0.0264	0.0256	106.	76-128	3.19	20	WG611946
1,2,4-Trichlorobenzene	mg/kg	0.0299	0.0279	120.	72-130	7.04	20	WG611946
1,2,4-Trimethylbenzene	mg/kg	0.0283	0.0271	113.	75-131	4.31	20	WG611946
1,2-Dibromo-3-Chloropropane	mg/kg	0.0256	0.0256	102.	55-142	0.180	20	WG611946
1,2-Dibromoethane	mg/kg	0.0246	0.0253	98.0	77-126	2.61	20	WG611946
1,2-Dichlorobenzene	mg/kg	0.0271	0.0267	108.	80-123	1.85	20	WG611946
1,2-Dichloroethane	mg/kg	0.0252	0.0249	101.	70-128	0.990	20	WG611946

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Quality Assurance Report
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Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
1,2-Dichloropropane	mg/kg	0.0301	0.0233	120.	74-125	25.3*	20	WG611946
1,3,5-Trimethylbenzene	mg/kg	0.0287	0.0270	115.	77-129	5.97	20	WG611946
1,3-Dichlorobenzene	mg/kg	0.0290	0.0283	116.	76-128	2.36	20	WG611946
1,3-Dichloropropane	mg/kg	0.0233	0.0242	93.0	77-118	3.79	20	WG611946
1,4-Dichlorobenzene	mg/kg	0.0253	0.0247	101.	77-119	2.40	20	WG611946
2,2-Dichloropropane	mg/kg	0.0308	0.0282	123.	60-132	8.75	20	WG611946
2-Butanone (MEK)	mg/kg	0.119	0.119	95.0	56-146	0.0400	20	WG611946
2-Chloroethyl vinyl ether	mg/kg	0.103	0.0952	83.0	17-179	8.22	22	WG611946
2-Chlorotoluene	mg/kg	0.0272	0.0262	109.	76-125	3.90	20	WG611946
4-Chlorotoluene	mg/kg	0.0278	0.0269	111.	76-125	3.45	20	WG611946
4-Methyl-2-pentanone (MIBK)	mg/kg	0.113	0.115	90.0	55-148	2.17	20	WG611946
Acetone	mg/kg	0.123	0.126	98.0	47-155	2.84	22	WG611946
Acrylonitrile	mg/kg	0.115	0.116	92.0	50-155	0.680	20	WG611946
Benzene	mg/kg	0.0252	0.0246	101.	72-120	2.41	20	WG611946
Bromobenzene	mg/kg	0.0266	0.0258	106.	74-122	2.99	20	WG611946
Bromodichloromethane	mg/kg	0.0251	0.0256	100.	74-128	1.85	20	WG611946
Bromoform	mg/kg	0.0260	0.0269	104.	62-137	3.42	20	WG611946
Bromomethane	mg/kg	0.0283	0.0286	113.	38-180	1.24	20	WG611946
Carbon tetrachloride	mg/kg	0.0273	0.0242	109.	62-130	12.0	20	WG611946
Chlorobenzene	mg/kg	0.0267	0.0261	107.	77-124	2.37	20	WG611946
Chlorodibromomethane	mg/kg	0.0260	0.0267	104.	74-128	2.46	20	WG611946
Chloroethane	mg/kg	0.0279	0.0258	112.	46-173	7.85	20	WG611946
Chloroform	mg/kg	0.0275	0.0268	110.	76-122	2.57	20	WG611946
Chloromethane	mg/kg	0.0238	0.0234	95.0	49-143	1.57	20	WG611946
cis-1,2-Dichloroethene	mg/kg	0.0260	0.0260	104.	73-123	0.0200	20	WG611946
cis-1,3-Dichloropropene	mg/kg	0.0264	0.0241	105.	73-126	9.15	20	WG611946
Di-isopropyl ether	mg/kg	0.0251	0.0246	100.	64-131	1.78	20	WG611946
Dibromomethane	mg/kg	0.0257	0.0256	103.	75-127	0.590	20	WG611946
Dichlorodifluoromethane	mg/kg	0.0274	0.0279	110.	30-177	1.94	20	WG611946
Ethylbenzene	mg/kg	0.0278	0.0265	111.	76-126	4.84	20	WG611946
Hexachloro-1,3-butadiene	mg/kg	0.0282	0.0277	113.	71-134	2.04	20	WG611946
Isopropylbenzene	mg/kg	0.0279	0.0267	112.	70-128	4.21	20	WG611946
Methyl tert-butyl ether	mg/kg	0.0251	0.0255	100.	66-127	1.34	20	WG611946
Methylene Chloride	mg/kg	0.0249	0.0242	99.0	67-124	2.61	20	WG611946
n-Butylbenzene	mg/kg	0.0283	0.0263	113.	71-133	7.10	20	WG611946
n-Propylbenzene	mg/kg	0.0272	0.0263	109.	76-126	3.63	20	WG611946
Naphthalene	mg/kg	0.0253	0.0250	101.	68-136	1.20	20	WG611946
p-Isopropyltoluene	mg/kg	0.0296	0.0286	118.	75-134	3.59	20	WG611946
sec-Butylbenzene	mg/kg	0.0280	0.0271	112.	75-132	2.96	20	WG611946
Styrene	mg/kg	0.0270	0.0264	108.	68-148	2.15	20	WG611946
tert-Butylbenzene	mg/kg	0.0291	0.0281	116.	75-132	3.52	20	WG611946
Tetrachloroethene	mg/kg	0.0261	0.0254	104.	70-131	2.76	20	WG611946
Toluene	mg/kg	0.0235	0.0236	94.0	74-155	0.320	20	WG611946
trans-1,2-Dichloroethene	mg/kg	0.0286	0.0270	114.	63-126	5.75	20	WG611946
trans-1,3-Dichloropropene	mg/kg	0.0241	0.0252	96.0	68-126	4.28	20	WG611946
Trichloroethene	mg/kg	0.0254	0.0251	102.	75-121	1.11	20	WG611946
Trichlorofluoromethane	mg/kg	0.0281	0.0267	112.	48-170	5.16	20	WG611946
Vinyl chloride	mg/kg	0.0258	0.0245	103.	54-144	5.05	20	WG611946
Xylenes, Total	mg/kg	0.0818	0.0776	109.	76-126	5.25	20	WG611946
4-Bromofluorobenzene				103.8	67-133			WG611946
Dibromofluoromethane				103.6	72-135			WG611946
Toluene-d8				99.27	90-113			WG611946
2,4,5-T	mg/kg	0.138	0.135	83.0	32.9-103	2.20	27.4	WG611722
2,4,5-TP (Silvex)	mg/kg	0.135	0.135	81.0	46-116	0.173	25.2	WG611722
2,4-D	mg/kg	0.124	0.123	74.0	28-98	1.45	24	WG611722
2,4-DB	mg/kg	0.129	0.128	77.0	28.9-108	1.17	30.3	WG611722
Dalapon	mg/kg	0.148	0.137	88.0	18.4-113	7.74	24.1	WG611722

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Quality Assurance Report
Level II

L594042

September 18, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
Dicamba	mg/kg	0.133	0.129	80.0	37.2-119	3.14	21.2	WG611722
Dichloroprop	mg/kg	0.147	0.144	88.0	40.5-114	2.26	23.3	WG611722
Dinoseb	mg/kg	0.0827	0.0836	50.0	10-98	1.08	40	WG611722
MCPA	mg/kg	14.8	14.3	88.0	15.5-110	3.35	40	WG611722
MCPP	mg/kg	19.2	19.0	115.	40.1-177	0.910	32.2	WG611722
2,4-Dichlorophenyl Acetic Acid				78.81	37-99			WG611722
1,2,4-Trichlorobenzene	mg/kg	0.237	0.253	71.0	48-87	6.38	20	WG612454
2,4,6-Trichlorophenol	mg/kg	0.258	0.285	77.0	50-98	9.87	20	WG612454
2,4-Dichlorophenol	mg/kg	0.272	0.276	82.0	56-96	1.31	20	WG612454
2,4-Dimethylphenol	mg/kg	0.253	0.260	76.0	52-101	2.83	20	WG612454
2,4-Dinitrophenol	mg/kg	0.174	0.197	52.0	10-109	12.4	39	WG612454
2,4-Dinitrotoluene	mg/kg	0.293	0.311	88.0	54-103	5.86	20	WG612454
2,6-Dinitrotoluene	mg/kg	0.270	0.295	81.0	53-99	8.78	20	WG612454
2-Chloronaphthalene	mg/kg	0.264	0.264	79.0	55-96	0.0236	20	WG612454
2-Chlorophenol	mg/kg	0.230	0.242	69.0	52-88	4.86	20	WG612454
2-Nitrophenol	mg/kg	0.271	0.272	81.0	55-106	0.148	20	WG612454
3,3-Dichlorobenzidine	mg/kg	0.299	0.271	90*	36-84	9.86	20	WG612454
4,6-Dinitro-2-methylphenol	mg/kg	0.253	0.286	76.0	24-98	12.1	32	WG612454
4-Bromophenyl-phenylether	mg/kg	0.299	0.338	90.0	58-111	12.3	20	WG612454
4-Chloro-3-methylphenol	mg/kg	0.258	0.282	78.0	58-98	8.64	20	WG612454
4-Chlorophenyl-phenylether	mg/kg	0.277	0.296	83.0	59-103	6.57	20	WG612454
4-Nitrophenol	mg/kg	0.219	0.240	66.0	34-101	9.33	26	WG612454
Acenaphthene	mg/kg	0.280	0.286	84.0	55-96	2.10	20	WG612454
Acenaphthylene	mg/kg	0.271	0.284	81.0	61-107	4.89	20	WG612454
Anthracene	mg/kg	0.272	0.302	82.0	58-105	10.7	20	WG612454
Benzidine	mg/kg	0.0124	0.00801	4*	10-21	42.7*	40	WG612454
Benzo(a)anthracene	mg/kg	0.279	0.278	84.0	56-103	0.334	20	WG612454
Benzo(a)pyrene	mg/kg	0.268	0.285	80.0	57-103	6.29	20	WG612454
Benzo(b)fluoranthene	mg/kg	0.267	0.283	80.0	52-106	5.81	20	WG612454
Benzo(g,h,i)perylene	mg/kg	0.297	0.308	89.0	47-112	3.66	20	WG612454
Benzo(k)fluoranthene	mg/kg	0.269	0.279	81.0	53-104	3.66	20	WG612454
Benzylbutyl phthalate	mg/kg	0.272	0.269	82.0	61-118	1.15	20	WG612454
Bis(2-chlorethoxy)methane	mg/kg	0.238	0.248	71.0	58-104	4.18	20	WG612454
Bis(2-chloroethyl)ether	mg/kg	0.220	0.223	66.0	51-103	1.59	20	WG612454
Bis(2-chloroisopropyl)ether	mg/kg	0.214	0.226	64.0	56-95	5.32	20	WG612454
Bis(2-ethylhexyl)phthalate	mg/kg	0.298	0.293	89.0	56-120	1.67	20	WG612454
Chrysene	mg/kg	0.288	0.282	86.0	55-102	2.06	20	WG612454
Di-n-butyl phthalate	mg/kg	0.278	0.302	83.0	59-114	8.31	20	WG612454
Di-n-octyl phthalate	mg/kg	0.296	0.299	89.0	51-119	0.935	22	WG612454
Dibenz(a,h)anthracene	mg/kg	0.291	0.308	88.0	49-111	5.65	20	WG612454
Diethyl phthalate	mg/kg	0.287	0.290	86.0	61-105	1.05	20	WG612454
Dimethyl phthalate	mg/kg	0.271	0.279	81.0	60-106	3.14	20	WG612454
Fluoranthene	mg/kg	0.279	0.311	84.0	59-108	10.9	20	WG612454
Fluorene	mg/kg	0.279	0.294	84.0	59-100	5.24	20	WG612454
Hexachloro-1,3-butadiene	mg/kg	0.269	0.290	81.0	53-106	7.54	20	WG612454
Hexachlorobenzene	mg/kg	0.276	0.314	83.0	50-108	12.9	20	WG612454
Hexachlorocyclopentadiene	mg/kg	0.233	0.237	70.0	36-117	1.82	20	WG612454
Hexachloroethane	mg/kg	0.220	0.250	66.0	45-83	12.7	20	WG612454
Indeno(1,2,3-cd)pyrene	mg/kg	0.295	0.310	89.0	50-110	4.97	20	WG612454
Isophorone	mg/kg	0.208	0.205	62.0	51-99	1.52	20	WG612454
n-Nitrosodi-n-propylamine	mg/kg	0.238	0.243	72.0	52-103	2.09	20	WG612454
n-Nitrosodimethylamine	mg/kg	0.233	0.242	70.0	31-107	3.66	23	WG612454
n-Nitrosodiphenylamine	mg/kg	0.266	0.291	80.0	57-121	9.17	20	WG612454
Naphthalene	mg/kg	0.247	0.248	74.0	55-91	0.653	20	WG612454
Nitrobenzene	mg/kg	0.244	0.245	73.0	47-92	0.373	20	WG612454
Pentachlorophenol	mg/kg	0.201	0.235	60.0	10-89	15.4	28	WG612454
Phenanthrene	mg/kg	0.259	0.293	78.0	55-103	12.5	20	WG612454

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Quality Assurance Report
Level II

L594042

September 18, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
Phenol	mg/kg	0.247	0.245	74.0	49-99	0.813	20	WG612454
Pyrene	mg/kg	0.266	0.263	80.0	54-104	1.21	20	WG612454
2,4,6-Tribromophenol				102.5	16-136			WG612454
2-Fluorobiphenyl				82.60	37-119			WG612454
2-Fluorophenol				69.90	22-114			WG612454
Nitrobenzene-d5				73.90	20-114			WG612454
Phenol-d5				68.82	26-127			WG612454
p-Terphenyl-d14				76.89	15-174			WG612454
PCB 1016	mg/kg	0.163	0.163	98.0	64-120	0.136	20	WG612008
PCB 1260	mg/kg	0.173	0.160	103.	72-130	7.42	20	WG612008
Decachlorobiphenyl				100.3	18.9-115.8			WG612008
Tetrachloro-m-xylene				93.78	31.8-115.7			WG612008
4,4-DDD	mg/kg	0.0650	0.0654	97.0	74-114	0.661	20	WG612008
4,4-DDE	mg/kg	0.0639	0.0646	96.0	74-115	1.06	20	WG612008
4,4-DDT	mg/kg	0.0644	0.0648	96.0	62-124	0.701	20	WG612008
Aldrin	mg/kg	0.0634	0.0640	95.0	69-110	0.949	20	WG612008
Alpha BHC	mg/kg	0.0629	0.0632	94.0	68-111	0.506	20	WG612008
Beta BHC	mg/kg	0.0623	0.0632	93.0	74-112	1.41	20	WG612008
Delta BHC	mg/kg	0.0607	0.0616	91.0	71-110	1.51	20	WG612008
Dieldrin	mg/kg	0.0643	0.0647	96.0	76-115	0.684	20	WG612008
Endosulfan I	mg/kg	0.0645	0.0652	97.0	76-119	1.02	20	WG612008
Endosulfan II	mg/kg	0.0628	0.0634	94.0	75-116	0.921	20	WG612008
Endosulfan sulfate	mg/kg	0.0532	0.0544	80.0	70-118	2.17	20	WG612008
Endrin	mg/kg	0.0630	0.0639	94.0	68-115	1.34	20	WG612008
Endrin aldehyde	mg/kg	0.0584	0.0615	88.0	48-92	5.14	20	WG612008
Endrin ketone	mg/kg	0.0620	0.0624	93.0	70-112	0.549	20	WG612008
Gamma BHC	mg/kg	0.0634	0.0640	95.0	70-112	0.827	20	WG612008
Heptachlor	mg/kg	0.0633	0.0638	95.0	69-111	0.771	20	WG612008
Heptachlor epoxide	mg/kg	0.0641	0.0646	96.0	72-115	0.822	20	WG612008
Hexachlorobenzene	mg/kg	0.0571	0.0575	86.0	64-111	0.672	20	WG612008
Methoxychlor	mg/kg	0.0657	0.0663	98.0	65-123	0.826	20	WG612008
Decachlorobiphenyl				92.22	18.9-115.8			WG612008
Tetrachloro-m-xylene				93.86	31.8-115.7			WG612008

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Mercury	mg/kg	0.262	0	.25	105.	80-120	L594042-02	WG611660
Arsenic	mg/kg	41.8	0	50	83.6	75-125	L594032-05	WG611674
Barium	mg/kg	122.	80.0	50	84.0	75-125	L594032-05	WG611674
Chromium	mg/kg	55.6	13.0	50	85.2	75-125	L594032-05	WG611674
Iron	mg/kg	25800	25000	50	1600*	75-125	L594032-05	WG611674
Lead	mg/kg	76.8	29.0	50	95.6	75-125	L594032-05	WG611674
Selenium	mg/kg	39.7	0	50	79.4	75-125	L594032-05	WG611674
Silver	mg/kg	44.4	0	50	88.8	75-125	L594032-05	WG611674
Cadmium	mg/kg	43.7	0	50	87.4	75-125	L594032-05	WG611674
2,4,5-T	mg/kg	0.131	0	.167	78.2	18-111	L594042-02	WG611722
2,4,5-TP (Silvex)	mg/kg	0.128	0	.167	76.9	27-123	L594042-02	WG611722
2,4-D	mg/kg	0.120	0	.167	72.0	10-137	L594042-02	WG611722
2,4-DB	mg/kg	0.128	0	.167	76.4	15-121	L594042-02	WG611722
Dalapon	mg/kg	0.128	0	.167	76.8	10-111	L594042-02	WG611722
Dicamba	mg/kg	0.132	0	.167	78.8	21-118	L594042-02	WG611722
Dichloroprop	mg/kg	0.144	0	.167	85.9	27-125	L594042-02	WG611722

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Denver, CO 80222

Quality Assurance Report
Level II

L594042

September 18, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Dinoseb	mg/kg	0.0526	0	.167	31.5	10-95	L594042-02	WG611722
MCPA	mg/kg	10.2	0	16.7	61.0	10-164	L594042-02	WG611722
MCPP	mg/kg	18.3	0	16.7	110.	17-186	L594042-02	WG611722
2,4-Dichlorophenyl Acetic Acid					74.92	37-99		WG611722
1,1,1,2-Tetrachloroethane	mg/kg	0.0263	0	.025	105.	49-135	L594177-02	WG611946
1,1,1-Trichloroethane	mg/kg	0.0359	0	.025	144.*	43-142	L594177-02	WG611946
1,1,2,2-Tetrachloroethane	mg/kg	0.0290	0	.025	116.	42-147	L594177-02	WG611946
1,1,2-Trichloroethane	mg/kg	0.0255	0	.025	102.	51-134	L594177-02	WG611946
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0361	0	.025	144.	25-156	L594177-02	WG611946
1,1-Dichloroethane	mg/kg	0.0305	0	.025	122.	50-131	L594177-02	WG611946
1,1-Dichloroethene	mg/kg	0.0361	0	.025	144.	29-145	L594177-02	WG611946
1,1-Dichloropropene	mg/kg	0.0292	0	.025	117.	40-136	L594177-02	WG611946
1,2,3-Trichlorobenzene	mg/kg	0.0231	0	.025	92.5	13-142	L594177-02	WG611946
1,2,3-Trichloropropane	mg/kg	0.0308	0	.025	123.	41-149	L594177-02	WG611946
1,2,3-Trimethylbenzene	mg/kg	0.0267	0	.025	107.	33-146	L594177-02	WG611946
1,2,4-Trichlorobenzene	mg/kg	0.0235	0	.025	93.9	12-140	L594177-02	WG611946
1,2,4-Trimethylbenzene	mg/kg	0.0299	0	.025	120.	29-143	L594177-02	WG611946
1,2-Dibromo-3-Chloropropane	mg/kg	0.0289	0	.025	116.	29-151	L594177-02	WG611946
1,2-Dibromoethane	mg/kg	0.0277	0	.025	111.	48-133	L594177-02	WG611946
1,2-Dichlorobenzene	mg/kg	0.0248	0	.025	99.3	37-136	L594177-02	WG611946
1,2-Dichloroethane	mg/kg	0.0295	0	.025	118.	49-131	L594177-02	WG611946
1,2-Dichloropropane	mg/kg	0.0282	0	.025	113.	50-132	L594177-02	WG611946
1,3,5-Trimethylbenzene	mg/kg	0.0295	0	.025	118.	29-144	L594177-02	WG611946
1,3-Dichlorobenzene	mg/kg	0.0257	0	.025	103.	26-140	L594177-02	WG611946
1,3-Dichloropropane	mg/kg	0.0249	0	.025	99.7	50-126	L594177-02	WG611946
1,4-Dichlorobenzene	mg/kg	0.0240	0	.025	96.1	34-132	L594177-02	WG611946
2,2-Dichloropropane	mg/kg	0.0405	0	.025	162.*	35-148	L594177-02	WG611946
2-Butanone (MEK)	mg/kg	0.273	0	.125	219.*	40-149	L594177-02	WG611946
2-Chloroethyl vinyl ether	mg/kg	0.0991	0	.125	79.3	10-173	L594177-02	WG611946
2-Chlorotoluene	mg/kg	0.0267	0	.025	107.	34-136	L594177-02	WG611946
4-Chlorotoluene	mg/kg	0.0252	0	.025	101.	31-137	L594177-02	WG611946
4-Methyl-2-pentanone (MIBK)	mg/kg	0.213	0	.125	170.*	37-153	L594177-02	WG611946
Acetone	mg/kg	0.443	0.00882	.125	348.*	10-177	L594177-02	WG611946
Acrylonitrile	mg/kg	0.194	0	.125	155.	33-159	L594177-02	WG611946
Benzene	mg/kg	0.0295	0	.025	118.	44-131	L594177-02	WG611946
Bromobenzene	mg/kg	0.0256	0	.025	102.	36-132	L594177-02	WG611946
Bromodichloromethane	mg/kg	0.0277	0	.025	111.	48-134	L594177-02	WG611946
Bromoform	mg/kg	0.0264	0	.025	106.	34-141	L594177-02	WG611946
Bromomethane	mg/kg	0.0400	0	.025	160.	19-173	L594177-02	WG611946
Carbon tetrachloride	mg/kg	0.0351	0	.025	140.*	36-140	L594177-02	WG611946
Chlorobenzene	mg/kg	0.0245	0	.025	98.0	42-133	L594177-02	WG611946
Chlorodibromomethane	mg/kg	0.0241	0	.025	96.2	45-135	L594177-02	WG611946
Chloroethane	mg/kg	0.0396	0	.025	158.	16-178	L594177-02	WG611946
Chloroform	mg/kg	0.0308	0.000604	.025	121.	52-130	L594177-02	WG611946
Chloromethane	mg/kg	0.0361	0	.025	144.	28-147	L594177-02	WG611946
cis-1,2-Dichloroethene	mg/kg	0.0295	0	.025	118.	52-128	L594177-02	WG611946
cis-1,3-Dichloropropene	mg/kg	0.0268	0	.025	107.	46-131	L594177-02	WG611946
Di-isopropyl ether	mg/kg	0.0321	0	.025	128.	46-134	L594177-02	WG611946
Dibromomethane	mg/kg	0.0295	0	.025	118.	51-133	L594177-02	WG611946
Dichlorodifluoromethane	mg/kg	0.0391	0	.025	156.	12-179	L594177-02	WG611946
Ethylbenzene	mg/kg	0.0263	0	.025	105.	38-139	L594177-02	WG611946
Hexachloro-1,3-butadiene	mg/kg	0.0239	0	.025	95.7	10-147	L594177-02	WG611946
Isopropylbenzene	mg/kg	0.0305	0	.025	122.	34-137	L594177-02	WG611946
Methyl tert-butyl ether	mg/kg	0.0357	0	.025	143.*	45-134	L594177-02	WG611946
Methylene Chloride	mg/kg	0.0293	0	.025	117.	41-133	L594177-02	WG611946
n-Butylbenzene	mg/kg	0.0259	0	.025	103.	19-149	L594177-02	WG611946
n-Propylbenzene	mg/kg	0.0268	0	.025	107.	27-142	L594177-02	WG611946

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Quality Assurance Report
Level II

L594042

September 18, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Naphthalene	mg/kg	0.0300	0	.025	120.	19-146	L594177-02	WG611946
p-Isopropyltoluene	mg/kg	0.0297	0	.025	119.	21-150	L594177-02	WG611946
sec-Butylbenzene	mg/kg	0.0302	0	.025	121.	25-148	L594177-02	WG611946
Styrene	mg/kg	0.0198	0	.025	79.2	30-156	L594177-02	WG611946
tert-Butylbenzene	mg/kg	0.0302	0	.025	121.	32-146	L594177-02	WG611946
Tetrachloroethene	mg/kg	0.0252	0	.025	101.	35-139	L594177-02	WG611946
Toluene	mg/kg	0.0291	0	.025	116.	43-127	L594177-02	WG611946
trans-1,2-Dichloroethene	mg/kg	0.0312	0	.025	125.	41-132	L594177-02	WG611946
trans-1,3-Dichloropropene	mg/kg	0.0277	0	.025	111.	43-129	L594177-02	WG611946
Trichloroethene	mg/kg	0.0267	0	.025	107.	42-136	L594177-02	WG611946
Trichlorofluoromethane	mg/kg	0.0376	0	.025	150.	20-178	L594177-02	WG611946
Vinyl chloride	mg/kg	0.0390	0	.025	156.	30-157	L594177-02	WG611946
Xylenes, Total	mg/kg	0.0796	0	.075	106.	38-137	L594177-02	WG611946
1,2,4-Trichlorobenzene	mg/kg	0.241	0	.333	72.3	27-118	L594042-02	WG612454
2,4,6-Trichlorophenol	mg/kg	0.286	0	.333	85.9	18-140	L594042-02	WG612454
2,4-Dichlorophenol	mg/kg	0.277	0	.333	83.3	30-134	L594042-02	WG612454
2,4-Dimethylphenol	mg/kg	0.241	0	.333	72.4	13-147	L594042-02	WG612454
2,4-Dinitrophenol	mg/kg	0.155	0	.333	46.4	10-110	L594042-02	WG612454
2,4-Dinitrotoluene	mg/kg	0.254	0	.333	76.4	12-146	L594042-02	WG612454
2,6-Dinitrotoluene	mg/kg	0.277	0	.333	83.3	10-150	L594042-02	WG612454
2-Chloronaphthalene	mg/kg	0.262	0	.333	78.8	31-127	L594042-02	WG612454
2-Chlorophenol	mg/kg	0.226	0	.333	68.0	26-120	L594042-02	WG612454
2-Nitrophenol	mg/kg	0.252	0	.333	75.8	10-156	L594042-02	WG612454
3,3-Dichlorobenzidine	mg/kg	0.223	0	.333	66.8	10-127	L594042-02	WG612454
4,6-Dinitro-2-methylphenol	mg/kg	0.212	0	.333	63.8	10-124	L594042-02	WG612454
4-Bromophenyl-phenylether	mg/kg	0.283	0	.333	84.9	27-150	L594042-02	WG612454
4-Chloro-3-methylphenol	mg/kg	0.253	0	.333	76.0	24-140	L594042-02	WG612454
4-Chlorophenyl-phenylether	mg/kg	0.269	0	.333	80.7	27-142	L594042-02	WG612454
4-Nitrophenol	mg/kg	0.211	0	.333	63.4	10-166	L594042-02	WG612454
Acenaphthene	mg/kg	0.253	0	.333	75.9	30-132	L594042-02	WG612454
Acenaphthylene	mg/kg	0.265	0	.333	79.7	31-144	L594042-02	WG612454
Anthracene	mg/kg	0.252	0	.333	75.6	27-140	L594042-02	WG612454
Benzidine	mg/kg	0.0148	0	.333	4.44*	10-55	L594042-02	WG612454
Benzo(a)anthracene	mg/kg	0.247	0	.333	74.3	22-139	L594042-02	WG612454
Benzo(a)pyrene	mg/kg	0.250	0	.333	75.1	16-148	L594042-02	WG612454
Benzo(b)fluoranthene	mg/kg	0.249	0	.333	74.8	13-152	L594042-02	WG612454
Benzo(g,h,i)perylene	mg/kg	0.242	0	.333	72.6	10-137	L594042-02	WG612454
Benzo(k)fluoranthene	mg/kg	0.243	0	.333	73.0	15-152	L594042-02	WG612454
Benzylbutyl phthalate	mg/kg	0.242	0	.333	72.7	20-168	L594042-02	WG612454
Bis(2-chlorethoxy)methane	mg/kg	0.242	0	.333	72.6	32-141	L594042-02	WG612454
Bis(2-chloroethyl)ether	mg/kg	0.203	0	.333	61.1	25-139	L594042-02	WG612454
Bis(2-chloroisopropyl)ether	mg/kg	0.226	0	.333	67.8	32-128	L594042-02	WG612454
Bis(2-ethylhexyl)phthalate	mg/kg	0.265	0	.333	79.7	20-163	L594042-02	WG612454
Chrysene	mg/kg	0.259	0	.333	77.9	20-139	L594042-02	WG612454
Di-n-butyl phthalate	mg/kg	0.264	0	.333	79.2	24-149	L594042-02	WG612454
Di-n-octyl phthalate	mg/kg	0.277	0	.333	83.0	14-164	L594042-02	WG612454
Dibenz(a,h)anthracene	mg/kg	0.271	0	.333	81.5	10-137	L594042-02	WG612454
Diethyl phthalate	mg/kg	0.261	0	.333	78.3	28-142	L594042-02	WG612454
Dimethyl phthalate	mg/kg	0.275	0	.333	82.7	31-142	L594042-02	WG612454
Fluoranthene	mg/kg	0.255	0	.333	76.5	24-145	L594042-02	WG612454
Fluorene	mg/kg	0.266	0	.333	80.0	30-138	L594042-02	WG612454
Hexachloro-1,3-butadiene	mg/kg	0.270	0	.333	81.2	29-136	L594042-02	WG612454
Hexachlorobenzene	mg/kg	0.279	0	.333	83.9	26-136	L594042-02	WG612454
Hexachlorocyclopentadiene	mg/kg	0.210	0	.333	63.1	10-124	L594042-02	WG612454
Hexachloroethane	mg/kg	0.215	0	.333	64.7	21-107	L594042-02	WG612454
Indeno(1,2,3-cd)pyrene	mg/kg	0.251	0	.333	75.4	10-139	L594042-02	WG612454
Isophorone	mg/kg	0.194	0	.333	58.2	26-134	L594042-02	WG612454

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Quality Assurance Report
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L594042

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Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
n-Nitrosodi-n-propylamine	mg/kg	0.218	0	.333	65.4	24-141	L594042-02	WG612454
n-Nitrosodimethylamine	mg/kg	0.186	0	.333	55.9	18-126	L594042-02	WG612454
n-Nitrosodiphenylamine	mg/kg	0.259	0	.333	77.8	16-128	L594042-02	WG612454
Naphthalene	mg/kg	0.240	0	.333	72.1	31-124	L594042-02	WG612454
Nitrobenzene	mg/kg	0.232	0	.333	69.6	22-122	L594042-02	WG612454
Pentachlorophenol	mg/kg	0.280	0	.333	84.0	10-124	L594042-02	WG612454
Phenanthrene	mg/kg	0.260	0	.333	78.2	25-139	L594042-02	WG612454
Phenol	mg/kg	0.218	0	.333	65.4	22-129	L594042-02	WG612454
Pyrene	mg/kg	0.242	0	.333	72.8	23-145	L594042-02	WG612454
2,4,6-Tribromophenol					100.7	16-136		WG612454
2-Fluorobiphenyl					84.31	37-119		WG612454
2-Fluorophenol					71.53	22-114		WG612454
Nitrobenzene-d5					69.71	20-114		WG612454
Phenol-d5					69.40	26-127		WG612454
p-Terphenyl-d14					72.66	15-174		WG612454
PCB 1016	mg/kg	0.169	0	.167	101.	10-165	L594095-39	WG612008
PCB 1260	mg/kg	0.0987	0	.167	59.1	29-154	L594095-39	WG612008
Decachlorobiphenyl					78.28	18.9-115.8		WG612008
Tetrachloro-m-xylene					72.06	31.8-115.7		WG612008
4,4-DDD	mg/kg	0.0659	0	.0667	98.8	45-139	L594223-25	WG612008
4,4-DDE	mg/kg	0.0495	0	.0667	74.2	47-134	L594223-25	WG612008
4,4-DDT	mg/kg	0.0514	0	.0667	77.0	11-148	L594223-25	WG612008
Aldrin	mg/kg	0.0513	0	.0667	76.8	52-117	L594223-25	WG612008
Alpha BHC	mg/kg	0.0547	0	.0667	81.9	51-120	L594223-25	WG612008
Beta BHC	mg/kg	0.0421	0	.0667	63.0	48-124	L594223-25	WG612008
Delta BHC	mg/kg	0.0516	0	.0667	77.4	38-128	L594223-25	WG612008
Dieldrin	mg/kg	0.0552	0	.0667	82.8	48-135	L594223-25	WG612008
Endosulfan I	mg/kg	0.0513	0	.0667	77.0	51-129	L594223-25	WG612008
Endosulfan II	mg/kg	0.0588	0	.0667	88.2	42-142	L594223-25	WG612008
Endosulfan sulfate	mg/kg	0.0689	0	.0667	103.	38-140	L594223-25	WG612008
Endrin	mg/kg	0.0572	0	.0667	85.8	44-133	L594223-25	WG612008
Endrin aldehyde	mg/kg	0.0484	0	.0667	72.6	16-116	L594223-25	WG612008
Endrin ketone	mg/kg	0.0584	0	.0667	87.6	33-131	L594223-25	WG612008
Gamma BHC	mg/kg	0.0581	0	.0667	87.1	52-119	L594223-25	WG612008
Heptachlor	mg/kg	0.0534	0	.0667	80.1	47-121	L594223-25	WG612008
Heptachlor epoxide	mg/kg	0.0557	0	.0667	83.6	54-120	L594223-25	WG612008
Hexachlorobenzene	mg/kg	0.0524	0	.0667	78.6	58-115	L594223-25	WG612008
Methoxychlor	mg/kg	0.0489	0	.0667	73.2	9-153	L594223-25	WG612008
Decachlorobiphenyl					103.9	18.9-115.8		WG612008
Tetrachloro-m-xylene					63.33	31.8-115.7		WG612008

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0.252	0.262	101.	80-120	3.89	20	L594042-02	WG611660
Arsenic	mg/kg	45.2	41.8	90.4	75-125	7.82	20	L594032-05	WG611674
Barium	mg/kg	127.	122.	94.0	75-125	4.02	20	L594032-05	WG611674
Chromium	mg/kg	59.6	55.6	93.2	75-125	6.94	20	L594032-05	WG611674
Iron	mg/kg	26100	25800	2200*	75-125	1.16	20	L594032-05	WG611674
Lead	mg/kg	78.8	76.8	99.6	75-125	2.57	20	L594032-05	WG611674
Selenium	mg/kg	42.8	39.7	85.6	75-125	7.52	20	L594032-05	WG611674
Silver	mg/kg	48.0	44.4	96.0	75-125	7.79	20	L594032-05	WG611674
Cadmium	mg/kg	47.6	43.7	95.2	75-125	8.54	20	L594032-05	WG611674

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L594042

September 18, 2012

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
2,4,5-T	mg/kg	0.131	0.131	78.4	18-111	0.187	29	L594042-02	WG611722
2,4,5-TP (Silvex)	mg/kg	0.133	0.128	79.8	27-123	3.60	23	L594042-02	WG611722
2,4-D	mg/kg	0.120	0.120	71.9	10-137	0.202	40	L594042-02	WG611722
2,4-DB	mg/kg	0.122	0.128	72.9	15-121	4.59	33	L594042-02	WG611722
Dalapon	mg/kg	0.134	0.128	80.4	10-111	4.57	37	L594042-02	WG611722
Dicamba	mg/kg	0.130	0.132	78.0	21-118	1.13	24	L594042-02	WG611722
Dichloroprop	mg/kg	0.147	0.144	88.3	27-125	2.69	24	L594042-02	WG611722
Dinoseb	mg/kg	0.0517	0.0526	31.0	10-95	1.77	40	L594042-02	WG611722
MCPA	mg/kg	12.5	10.2	74.7	10-164	20.1	40	L594042-02	WG611722
MCPP	mg/kg	17.9	18.3	107.	17-186	2.35	40	L594042-02	WG611722
2,4-Dichlorophenyl Acetic Acid				74.65	37-99				WG611722
1,1,1,2-Tetrachloroethane	mg/kg	0.0252	0.0263	101.	49-135	4.29	23	L594177-02	WG611946
1,1,1-Trichloroethane	mg/kg	0.0284	0.0359	114.	43-142	23.5	24	L594177-02	WG611946
1,1,2,2-Tetrachloroethane	mg/kg	0.0240	0.0290	96.0	42-147	18.9	25	L594177-02	WG611946
1,1,2-Trichloroethane	mg/kg	0.0245	0.0255	98.2	51-134	3.64	21	L594177-02	WG611946
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0276	0.0361	110.	25-156	26.6	29	L594177-02	WG611946
1,1-Dichloroethane	mg/kg	0.0263	0.0305	105.	50-131	14.8	21	L594177-02	WG611946
1,1-Dichloroethene	mg/kg	0.0273	0.0361	109.	29-145	27.8	28	L594177-02	WG611946
1,1-Dichloropropene	mg/kg	0.0268	0.0292	107.	40-136	8.62	24	L594177-02	WG611946
1,2,3-Trichlorobenzene	mg/kg	0.0197	0.0231	78.9	13-142	15.9	33	L594177-02	WG611946
1,2,3-Trichloropropane	mg/kg	0.0252	0.0308	101.	41-149	19.9	28	L594177-02	WG611946
1,2,3-Trimethylbenzene	mg/kg	0.0241	0.0267	96.3	33-146	10.2	27	L594177-02	WG611946
1,2,4-Trichlorobenzene	mg/kg	0.0209	0.0235	83.5	12-140	11.7	32	L594177-02	WG611946
1,2,4-Trimethylbenzene	mg/kg	0.0234	0.0299	93.5	29-143	24.5	30	L594177-02	WG611946
1,2-Dibromo-3-Chloropropane	mg/kg	0.0283	0.0289	113.	29-151	1.89	31	L594177-02	WG611946
1,2-Dibromoethane	mg/kg	0.0252	0.0277	101.	48-133	9.48	22	L594177-02	WG611946
1,2-Dichlorobenzene	mg/kg	0.0234	0.0248	93.6	37-136	5.94	25	L594177-02	WG611946
1,2-Dichloroethane	mg/kg	0.0262	0.0295	105.	49-131	12.0	20	L594177-02	WG611946
1,2-Dichloropropane	mg/kg	0.0253	0.0282	101.	50-132	10.7	21	L594177-02	WG611946
1,3,5-Trimethylbenzene	mg/kg	0.0238	0.0295	95.1	29-144	21.4	30	L594177-02	WG611946
1,3-Dichlorobenzene	mg/kg	0.0210	0.0257	83.9	26-140	20.3	28	L594177-02	WG611946
1,3-Dichloropropane	mg/kg	0.0245	0.0249	97.8	50-126	1.85	22	L594177-02	WG611946
1,4-Dichlorobenzene	mg/kg	0.0235	0.0240	93.9	34-132	2.32	26	L594177-02	WG611946
2,2-Dichloropropane	mg/kg	0.0278	0.0405	111.	35-148	37.0*	26	L594177-02	WG611946
2-Butanone (MEK)	mg/kg	0.188	0.273	151.*	40-149	36.9*	27	L594177-02	WG611946
2-Chloroethyl vinyl ether	mg/kg	0.142	0.0991	114.	10-173	35.8*	33	L594177-02	WG611946
2-Chlorotoluene	mg/kg	0.0233	0.0267	93.4	34-136	13.2	28	L594177-02	WG611946
4-Chlorotoluene	mg/kg	0.0225	0.0252	89.8	31-137	11.6	27	L594177-02	WG611946
4-Methyl-2-pentanone (MIBK)	mg/kg	0.153	0.213	122.	37-153	32.7*	27	L594177-02	WG611946
Acetone	mg/kg	0.241	0.443	186.*	10-177	59.2*	28	L594177-02	WG611946
Acrylonitrile	mg/kg	0.141	0.194	113.	33-159	31.5*	26	L594177-02	WG611946
Benzene	mg/kg	0.0257	0.0295	103.	44-131	13.6	21	L594177-02	WG611946
Bromobenzene	mg/kg	0.0224	0.0256	89.6	36-132	13.4	26	L594177-02	WG611946
Bromodichloromethane	mg/kg	0.0251	0.0277	100.	48-134	9.57	20	L594177-02	WG611946
Bromoform	mg/kg	0.0244	0.0264	97.7	34-141	7.72	24	L594177-02	WG611946
Bromomethane	mg/kg	0.0281	0.0400	112.	19-173	34.7*	25	L594177-02	WG611946
Carbon tetrachloride	mg/kg	0.0279	0.0351	112.	36-140	22.9	26	L594177-02	WG611946
Chlorobenzene	mg/kg	0.0234	0.0245	93.6	42-133	4.60	24	L594177-02	WG611946
Chlorodibromomethane	mg/kg	0.0245	0.0241	98.0	45-135	1.85	23	L594177-02	WG611946
Chloroethane	mg/kg	0.0295	0.0396	118.	16-178	29.1*	25	L594177-02	WG611946
Chloroform	mg/kg	0.0270	0.0308	106.	52-130	12.9	21	L594177-02	WG611946
Chloromethane	mg/kg	0.0285	0.0361	114.	28-147	23.6*	23	L594177-02	WG611946
cis-1,2-Dichloroethene	mg/kg	0.0247	0.0295	98.8	52-128	17.7	21	L594177-02	WG611946
cis-1,3-Dichloropropene	mg/kg	0.0250	0.0268	99.9	46-131	6.90	21	L594177-02	WG611946
Di-isopropyl ether	mg/kg	0.0270	0.0321	108.	46-134	17.1	20	L594177-02	WG611946
Dibromomethane	mg/kg	0.0255	0.0295	102.	51-133	14.8	21	L594177-02	WG611946
Dichlorodifluoromethane	mg/kg	0.0303	0.0391	121.	12-179	25.5	27	L594177-02	WG611946

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Quality Assurance Report
Level II

L594042

September 18, 2012

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Ethylbenzene	mg/kg	0.0248	0.0263	99.3	38-139	5.91	27	L594177-02	WG611946
Hexachloro-1,3-butadiene	mg/kg	0.0168	0.0239	67.2	10-147	35.0	37	L594177-02	WG611946
Isopropylbenzene	mg/kg	0.0271	0.0305	108.	34-137	11.7	29	L594177-02	WG611946
Methyl tert-butyl ether	mg/kg	0.0269	0.0357	108.	45-134	28.0*	22	L594177-02	WG611946
Methylene Chloride	mg/kg	0.0239	0.0293	95.6	41-133	20.2	28	L594177-02	WG611946
n-Butylbenzene	mg/kg	0.0235	0.0259	94.1	19-149	9.42	32	L594177-02	WG611946
n-Propylbenzene	mg/kg	0.0235	0.0268	94.0	27-142	13.2	29	L594177-02	WG611946
Naphthalene	mg/kg	0.0231	0.0300	92.4	19-146	25.9	30	L594177-02	WG611946
p-Isopropyltoluene	mg/kg	0.0232	0.0297	92.8	21-150	24.6	31	L594177-02	WG611946
sec-Butylbenzene	mg/kg	0.0228	0.0302	91.2	25-148	27.9	31	L594177-02	WG611946
Styrene	mg/kg	0.0238	0.0198	95.0	30-156	18.2	26	L594177-02	WG611946
tert-Butylbenzene	mg/kg	0.0238	0.0302	95.1	32-146	23.8	30	L594177-02	WG611946
Tetrachloroethene	mg/kg	0.0244	0.0252	97.5	35-139	3.37	27	L594177-02	WG611946
Toluene	mg/kg	0.0251	0.0291	100.	43-127	14.5	21	L594177-02	WG611946
trans-1,2-Dichloroethene	mg/kg	0.0250	0.0312	100.	41-132	21.8	23	L594177-02	WG611946
trans-1,3-Dichloropropene	mg/kg	0.0236	0.0277	94.5	43-129	15.9	23	L594177-02	WG611946
Trichloroethene	mg/kg	0.0241	0.0267	96.2	42-136	10.3	23	L594177-02	WG611946
Trichlorofluoromethane	mg/kg	0.0302	0.0376	121.	20-178	22.0	30	L594177-02	WG611946
Vinyl chloride	mg/kg	0.0299	0.0390	120.	30-157	26.4*	24	L594177-02	WG611946
Xylenes, Total	mg/kg	0.0736	0.0796	98.1	38-137	7.90	26	L594177-02	WG611946
1,2,4-Trichlorobenzene	mg/kg	0.258	0.241	77.4	27-118	6.89	23	L594042-02	WG612454
2,4,6-Trichlorophenol	mg/kg	0.300	0.286	90.0	18-140	4.74	26	L594042-02	WG612454
2,4-Dichlorophenol	mg/kg	0.287	0.277	86.1	30-134	3.26	23	L594042-02	WG612454
2,4-Dimethylphenol	mg/kg	0.237	0.241	71.1	13-147	1.76	27	L594042-02	WG612454
2,4-Dinitrophenol	mg/kg	0.183	0.155	54.8	10-110	16.7	40	L594042-02	WG612454
2,4-Dinitrotoluene	mg/kg	0.285	0.254	85.7	12-146	11.5	25	L594042-02	WG612454
2,6-Dinitrotoluene	mg/kg	0.286	0.277	86.0	10-150	3.15	23	L594042-02	WG612454
2-Chloronaphthalene	mg/kg	0.280	0.262	84.0	31-127	6.45	23	L594042-02	WG612454
2-Chlorophenol	mg/kg	0.254	0.226	76.3	26-120	11.6	21	L594042-02	WG612454
2-Nitrophenol	mg/kg	0.269	0.252	80.9	10-156	6.53	24	L594042-02	WG612454
3,3-Dichlorobenzidine	mg/kg	0.251	0.223	75.4	10-127	12.0	40	L594042-02	WG612454
4,6-Dinitro-2-methylphenol	mg/kg	0.255	0.212	76.5	10-124	18.2	40	L594042-02	WG612454
4-Bromophenyl-phenylether	mg/kg	0.302	0.283	90.6	27-150	6.45	20	L594042-02	WG612454
4-Chloro-3-methylphenol	mg/kg	0.258	0.253	77.6	24-140	2.10	22	L594042-02	WG612454
4-Chlorophenyl-phenylether	mg/kg	0.292	0.269	87.6	27-142	8.22	21	L594042-02	WG612454
4-Nitrophenol	mg/kg	0.233	0.211	70.1	10-166	10.1	35	L594042-02	WG612454
Acenaphthene	mg/kg	0.268	0.253	80.5	30-132	5.96	21	L594042-02	WG612454
Acenaphthylene	mg/kg	0.278	0.265	83.4	31-144	4.54	24	L594042-02	WG612454
Anthracene	mg/kg	0.271	0.252	81.4	27-140	7.44	20	L594042-02	WG612454
Benzidine	mg/kg	0.0329	0.0148	9.89*	10-55	76.1*	36	L594042-02	WG612454
Benzo(a)anthracene	mg/kg	0.269	0.247	80.7	22-139	8.27	22	L594042-02	WG612454
Benzo(a)pyrene	mg/kg	0.275	0.250	82.5	16-148	9.49	21	L594042-02	WG612454
Benzo(b)fluoranthene	mg/kg	0.275	0.249	82.4	13-152	9.68	24	L594042-02	WG612454
Benzo(g,h,i)perylene	mg/kg	0.268	0.242	80.6	10-137	10.4	32	L594042-02	WG612454
Benzo(k)fluoranthene	mg/kg	0.268	0.243	80.4	15-152	9.68	22	L594042-02	WG612454
Benzylbutyl phthalate	mg/kg	0.259	0.242	77.8	20-168	6.76	23	L594042-02	WG612454
Bis(2-chlorethoxy)methane	mg/kg	0.260	0.242	78.1	32-141	7.32	20	L594042-02	WG612454
Bis(2-chloroethyl)ether	mg/kg	0.215	0.203	64.7	25-139	5.76	26	L594042-02	WG612454
Bis(2-chloroisopropyl)ether	mg/kg	0.245	0.226	73.6	32-128	8.28	22	L594042-02	WG612454
Bis(2-ethylhexyl)phthalate	mg/kg	0.281	0.265	84.4	20-163	5.84	24	L594042-02	WG612454
Chrysene	mg/kg	0.283	0.259	84.9	20-139	8.66	23	L594042-02	WG612454
Di-n-butyl phthalate	mg/kg	0.277	0.264	83.3	24-149	5.05	24	L594042-02	WG612454
Di-n-octyl phthalate	mg/kg	0.293	0.277	88.1	14-164	5.86	24	L594042-02	WG612454
Dibenz(a,h)anthracene	mg/kg	0.294	0.271	88.3	10-137	8.04	29	L594042-02	WG612454
Diethyl phthalate	mg/kg	0.263	0.261	79.0	28-142	0.806	23	L594042-02	WG612454
Dimethyl phthalate	mg/kg	0.287	0.275	86.3	31-142	4.30	22	L594042-02	WG612454
Fluoranthene	mg/kg	0.268	0.255	80.5	24-145	5.14	29	L594042-02	WG612454

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Level II

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September 18, 2012

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Fluorene	mg/kg	0.272	0.266	81.6	30-138	1.95	22	L594042-02	WG612454
Hexachloro-1,3-butadiene	mg/kg	0.283	0.270	85.1	29-136	4.72	22	L594042-02	WG612454
Hexachlorobenzene	mg/kg	0.303	0.279	91.0	26-136	8.20	20	L594042-02	WG612454
Hexachlorocyclopentadiene	mg/kg	0.219	0.210	65.8	10-124	4.16	33	L594042-02	WG612454
Hexachloroethane	mg/kg	0.246	0.215	73.7	21-107	13.0	27	L594042-02	WG612454
Indeno(1,2,3-cd)pyrene	mg/kg	0.280	0.251	84.0	10-139	10.8	32	L594042-02	WG612454
Isophorone	mg/kg	0.196	0.194	58.7	26-134	0.786	20	L594042-02	WG612454
n-Nitrosodi-n-propylamine	mg/kg	0.244	0.218	73.3	24-141	11.3	20	L594042-02	WG612454
n-Nitrosodimethylamine	mg/kg	0.193	0.186	57.8	18-126	3.39	27	L594042-02	WG612454
n-Nitrosodiphenylamine	mg/kg	0.285	0.259	85.6	16-128	9.52	25	L594042-02	WG612454
Naphthalene	mg/kg	0.259	0.240	77.9	31-124	7.68	25	L594042-02	WG612454
Nitrobenzene	mg/kg	0.242	0.232	72.6	22-122	4.28	20	L594042-02	WG612454
Pentachlorophenol	mg/kg	0.282	0.280	84.8	10-124	0.905	34	L594042-02	WG612454
Phenanthrene	mg/kg	0.280	0.260	84.0	25-139	7.12	25	L594042-02	WG612454
Phenol	mg/kg	0.235	0.218	70.7	22-129	7.81	25	L594042-02	WG612454
Pyrene	mg/kg	0.264	0.242	79.1	23-145	8.39	30	L594042-02	WG612454
2,4,6-Tribromophenol				98.61	16-136				WG612454
2-Fluorobiphenyl				87.03	37-119				WG612454
2-Fluorophenol				78.33	22-114				WG612454
Nitrobenzene-d5				72.75	20-114				WG612454
Phenol-d5				75.91	26-127				WG612454
p-Terphenyl-d14				76.41	15-174				WG612454
PCB 1016	mg/kg	0.184	0.169	110.	10-165	8.54	33	L594095-39	WG612008
PCB 1260	mg/kg	0.0993	0.0987	59.5	29-154	0.693	23	L594095-39	WG612008
Decachlorobiphenyl				75.30	18.9-115.8				WG612008
Tetrachloro-m-xylene				73.38	31.8-115.7				WG612008
4,4-DDD	mg/kg	0.0765	0.0659	115.	45-139	14.9	21	L594223-25	WG612008
4,4-DDE	mg/kg	0.0491	0.0495	73.7	47-134	0.676	21	L594223-25	WG612008
4,4-DDT	mg/kg	0.244	0.0514	366.*	11-148	130.*	21	L594223-25	WG612008
Aldrin	mg/kg	0.0495	0.0513	74.2	52-117	3.44	21	L594223-25	WG612008
Alpha BHC	mg/kg	0.0529	0.0547	79.3	51-120	3.28	20	L594223-25	WG612008
Beta BHC	mg/kg	0.0403	0.0421	60.4	48-124	4.24	21	L594223-25	WG612008
Delta BHC	mg/kg	0.0377	0.0516	56.6	38-128	31.0*	21	L594223-25	WG612008
Dieldrin	mg/kg	0.0532	0.0552	79.7	48-135	3.80	20	L594223-25	WG612008
Endosulfan I	mg/kg	0.0497	0.0513	74.5	51-129	3.25	20	L594223-25	WG612008
Endosulfan II	mg/kg	0.0496	0.0588	74.3	42-142	17.1	21	L594223-25	WG612008
Endosulfan sulfate	mg/kg	0.0573	0.0689	85.9	38-140	18.4	22	L594223-25	WG612008
Endrin	mg/kg	0.0530	0.0572	79.4	44-133	7.63	20	L594223-25	WG612008
Endrin aldehyde	mg/kg	0.0382	0.0484	57.2	16-116	23.7*	23	L594223-25	WG612008
Endrin ketone	mg/kg	0.0507	0.0584	76.0	33-131	14.1	21	L594223-25	WG612008
Gamma BHC	mg/kg	0.0554	0.0581	83.0	52-119	4.78	20	L594223-25	WG612008
Heptachlor	mg/kg	0.0538	0.0534	80.7	47-121	0.741	20	L594223-25	WG612008
Heptachlor epoxide	mg/kg	0.0531	0.0557	79.6	54-120	4.78	20	L594223-25	WG612008
Hexachlorobenzene	mg/kg	0.0701	0.0524	105.	58-115	28.9*	20	L594223-25	WG612008
Methoxychlor	mg/kg	0.0608	0.0489	91.2	9-153	21.8	22	L594223-25	WG612008
Decachlorobiphenyl				96.37	18.9-115.8				WG612008
Tetrachloro-m-xylene				63.30	31.8-115.7				WG612008

Batch number /Run number / Sample number cross reference

WG611660: R2339355: L594042-01 02
WG611674: R2340393: L594042-01 02
WG611946: R2341853: L594042-01 02
WG611722: R2341993: L594042-01 02
WG612454: R2345653: L594042-01 02
WG612008: R2348315: L594042-01 02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW3, Samples at 5 ft. & 15 ft.
I-70 East Corridor EIS PCL

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L594042

September 18, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

Report Summary

Thursday September 20, 2012

Report Number: L594311
Samples Received: 09/11/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-01

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1 5FT

Collected By : IPC
Collection Date : 09/10/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/12/12	1
Arsenic	BDL	1.0	mg/kg	6010B	09/14/12	1
Barium	120	0.25	mg/kg	6010B	09/14/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/14/12	1
Chromium	6.4	0.50	mg/kg	6010B	09/14/12	1
Iron	8600	5.0	mg/kg	6010B	09/14/12	1
Lead	11.	0.25	mg/kg	6010B	09/14/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/14/12	1
Silver	BDL	0.50	mg/kg	6010B	09/14/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/12/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/12/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/12/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/12/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/12/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/12/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/12/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/12/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/12/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/12/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-01

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1 5FT

Collected By : IPC
Collection Date : 09/10/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/12/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/12/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/12/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/12/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/12/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/12/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/12/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/12/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/12/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/12/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/12/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/12/12	5
Surrogate Recovery						
Toluene-d8	98.8		% Rec.	8260B	09/12/12	5
Dibromofluoromethane	97.7		% Rec.	8260B	09/12/12	5
4-Bromofluorobenzene	102.		% Rec.	8260B	09/12/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-01

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1 5FT

Collected By : IPC
Collection Date : 09/10/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/19/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/19/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/19/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/19/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/17/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	79.0		% Rec.	8081/8082	09/17/12	1
Tetrachloro-m-xylene	84.6		% Rec.	8081/8082	09/17/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/18/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/18/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/18/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/18/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/18/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/18/12	1
MCPA	BDL	6.5	mg/kg	8151	09/18/12	1
MCPP	BDL	6.5	mg/kg	8151	09/18/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/18/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/18/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	64.8		% Rec.	8151	09/18/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/13/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-01

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1 5FT

Collected By : IPC
Collection Date : 09/10/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/13/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/13/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/13/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/13/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/13/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/13/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/13/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/13/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/13/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/13/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/13/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/13/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/13/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/13/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/13/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/13/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/13/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/13/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/13/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/13/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/13/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/13/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/13/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/13/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/13/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/13/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/13/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/19/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/13/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/13/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/13/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-01

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1 5FT

Collected By : IPC
Collection Date : 09/10/12 08:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/13/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
Surrogate Recovery						
2-Fluorophenol	39.3		% Rec.	8270C	09/19/12	1
2-Fluorophenol	62.2		% Rec.	8270C	09/19/12	1
Phenol-d5	70.1		% Rec.	8270C	09/19/12	1
Phenol-d5	50.9		% Rec.	8270C	09/19/12	1
Nitrobenzene-d5	42.9		% Rec.	8270C	09/19/12	1
Nitrobenzene-d5	57.8		% Rec.	8270C	09/19/12	1
2-Fluorobiphenyl	75.0		% Rec.	8270C	09/19/12	1
2-Fluorobiphenyl	60.0		% Rec.	8270C	09/19/12	1
2,4,6-Tribromophenol	65.4		% Rec.	8270C	09/19/12	1
2,4,6-Tribromophenol	67.8		% Rec.	8270C	09/19/12	1
p-Terphenyl-d14	53.2		% Rec.	8270C	09/19/12	1
p-Terphenyl-d14	90.8		% Rec.	8270C	09/19/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 09/20/12 12:02 Printed: 09/20/12 13:16

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-02

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1 15FT

Collected By : IPC
Collection Date : 09/10/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/12/12	1
Arsenic	BDL	1.0	mg/kg	6010B	09/14/12	1
Barium	21.	0.25	mg/kg	6010B	09/14/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/14/12	1
Chromium	4.2	0.50	mg/kg	6010B	09/14/12	1
Iron	5300	5.0	mg/kg	6010B	09/14/12	1
Lead	6.3	0.25	mg/kg	6010B	09/14/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/14/12	1
Silver	BDL	0.50	mg/kg	6010B	09/14/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/12/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/12/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/12/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/12/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/12/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/12/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/12/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/12/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/12/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/12/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-02

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1 15FT

Collected By : IPC
Collection Date : 09/10/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/12/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/12/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/12/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/12/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/12/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/12/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/12/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/12/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/12/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/12/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/12/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/12/12	5
Surrogate Recovery						
Toluene-d8	98.5		% Rec.	8260B	09/12/12	5
Dibromofluoromethane	105.		% Rec.	8260B	09/12/12	5
4-Bromofluorobenzene	105.		% Rec.	8260B	09/12/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-02

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1 15FT

Collected By : IPC
Collection Date : 09/10/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/19/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/19/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/19/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/19/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/17/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	83.7		% Rec.	8081/8082	09/17/12	1
Tetrachloro-m-xylene	85.8		% Rec.	8081/8082	09/17/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/19/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/19/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/19/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/19/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/19/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/19/12	1
MCPA	BDL	6.5	mg/kg	8151	09/19/12	1
MCPP	BDL	6.5	mg/kg	8151	09/19/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/19/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/19/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	66.7		% Rec.	8151	09/19/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/13/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-02

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1 15FT

Collected By : IPC
Collection Date : 09/10/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/13/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/13/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/13/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/13/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/13/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/13/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/13/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/13/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/13/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/13/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/13/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/13/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/13/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/13/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/13/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/13/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/13/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/13/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/13/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/13/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/13/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/13/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/13/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/13/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/13/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/13/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/13/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/13/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/13/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/13/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-02

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1 15FT

Collected By : IPC
Collection Date : 09/10/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/13/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
Surrogate Recovery						
2-Fluorophenol	71.4		% Rec.	8270C	09/13/12	1
Phenol-d5	79.2		% Rec.	8270C	09/13/12	1
Nitrobenzene-d5	65.3		% Rec.	8270C	09/13/12	1
2-Fluorobiphenyl	82.7		% Rec.	8270C	09/13/12	1
2,4,6-Tribromophenol	72.9		% Rec.	8270C	09/13/12	1
p-Terphenyl-d14	103.		% Rec.	8270C	09/13/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 09/20/12 12:02 Printed: 09/20/12 13:16

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-03

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10 5FT

Collected By : IPC
Collection Date : 09/10/12 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/12/12	1
Arsenic	BDL	1.0	mg/kg	6010B	09/14/12	1
Barium	86.	0.25	mg/kg	6010B	09/14/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/14/12	1
Chromium	8.6	0.50	mg/kg	6010B	09/14/12	1
Iron	11000	5.0	mg/kg	6010B	09/14/12	1
Lead	13.	0.25	mg/kg	6010B	09/14/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/14/12	1
Silver	BDL	0.50	mg/kg	6010B	09/14/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/12/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/12/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/12/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/12/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/12/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/12/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/12/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/12/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/12/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/12/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-03

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10 5FT

Collected By : IPC
Collection Date : 09/10/12 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/12/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/12/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/12/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/12/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/12/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/12/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/12/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/12/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/12/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/12/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/12/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/12/12	5
Surrogate Recovery						
Toluene-d8	99.1		% Rec.	8260B	09/12/12	5
Dibromofluoromethane	96.6		% Rec.	8260B	09/12/12	5
4-Bromofluorobenzene	103.		% Rec.	8260B	09/12/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-03

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10 5FT

Collected By : IPC
Collection Date : 09/10/12 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/19/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/19/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/19/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/19/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/17/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	76.8		% Rec.	8081/8082	09/17/12	1
Tetrachloro-m-xylene	73.3		% Rec.	8081/8082	09/17/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/19/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/19/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/19/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/19/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/19/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/19/12	1
MCPA	BDL	6.5	mg/kg	8151	09/19/12	1
MCPP	BDL	6.5	mg/kg	8151	09/19/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/19/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/19/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	65.6		% Rec.	8151	09/19/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/13/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-03

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10 5FT

Collected By : IPC
Collection Date : 09/10/12 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/13/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/13/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/13/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/13/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/13/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/13/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/13/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/13/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/13/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/13/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/13/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/13/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/13/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/13/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/13/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/13/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/13/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/13/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/13/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/13/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/13/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/13/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/13/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/13/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/13/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/13/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/13/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/13/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/13/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/13/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/13/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/13/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-03

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10 5FT

Collected By : IPC
Collection Date : 09/10/12 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/13/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/13/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/13/12	1
Surrogate Recovery						
2-Fluorophenol	70.6		% Rec.	8270C	09/13/12	1
Phenol-d5	76.0		% Rec.	8270C	09/13/12	1
Nitrobenzene-d5	63.3		% Rec.	8270C	09/13/12	1
2-Fluorobiphenyl	79.5		% Rec.	8270C	09/13/12	1
2,4,6-Tribromophenol	68.8		% Rec.	8270C	09/13/12	1
p-Terphenyl-d14	94.9		% Rec.	8270C	09/13/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 09/20/12 12:02 Printed: 09/20/12 13:17

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-04

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10 10FT

Collected By : IPC
Collection Date : 09/10/12 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/12/12	1
Arsenic	BDL	1.0	mg/kg	6010B	09/14/12	1
Barium	190	0.25	mg/kg	6010B	09/14/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/14/12	1
Chromium	9.9	0.50	mg/kg	6010B	09/14/12	1
Iron	9800	5.0	mg/kg	6010B	09/14/12	1
Lead	12.	0.25	mg/kg	6010B	09/14/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/14/12	1
Silver	BDL	0.50	mg/kg	6010B	09/14/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/12/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/12/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/12/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/12/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/12/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/12/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/12/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/12/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/12/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/12/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/12/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-04

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10 10FT

Collected By : IPC
Collection Date : 09/10/12 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/12/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/12/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/12/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/12/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/12/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/12/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/12/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/12/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/12/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/12/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/12/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/12/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/12/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/12/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/12/12	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	09/12/12	5
Dibromofluoromethane	96.8		% Rec.	8260B	09/12/12	5
4-Bromofluorobenzene	109.		% Rec.	8260B	09/12/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-04

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10 10FT

Collected By : IPC
Collection Date : 09/10/12 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/19/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/19/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/19/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/19/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/19/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/17/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/17/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	81.8		% Rec.	8081/8082	09/17/12	1
Tetrachloro-m-xylene	86.8		% Rec.	8081/8082	09/17/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/19/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/19/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/19/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/19/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/19/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/19/12	1
MCPA	BDL	6.5	mg/kg	8151	09/19/12	1
MCPP	BDL	6.5	mg/kg	8151	09/19/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/19/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/19/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	59.2		% Rec.	8151	09/19/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/18/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-04

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10 10FT

Collected By : IPC
Collection Date : 09/10/12 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/18/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/18/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/18/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/18/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/18/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/18/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/18/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/18/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/18/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/18/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/18/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/18/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/18/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/18/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/18/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/18/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/18/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/18/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/18/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/18/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/18/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/18/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/18/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/18/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/18/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/18/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/18/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/18/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/18/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/18/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/18/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/18/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/18/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/18/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/18/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/18/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/18/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/18/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/18/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/18/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/18/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/18/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/18/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 20, 2012

ESC Sample # : L594311-04

Site ID :

Project # : 212-137

Date Received : September 11, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10 10FT

Collected By : IPC
Collection Date : 09/10/12 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/18/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/18/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/18/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/18/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/18/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/18/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/18/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/18/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/18/12	1
Surrogate Recovery						
2-Fluorophenol	64.3		% Rec.	8270C	09/18/12	1
Phenol-d5	65.4		% Rec.	8270C	09/18/12	1
Nitrobenzene-d5	61.4		% Rec.	8270C	09/18/12	1
2-Fluorobiphenyl	70.7		% Rec.	8270C	09/18/12	1
2,4,6-Tribromophenol	63.3		% Rec.	8270C	09/18/12	1
p-Terphenyl-d14	71.8		% Rec.	8270C	09/18/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 09/20/12 12:02 Printed: 09/20/12 13:17

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L594311-01	WG612204	SAMP	Benzidine	R2344853	J4
	WG611999	SAMP	Iron	R2347833	B
	WG611999	SAMP	Lead	R2347833	B
	WG612046	SAMP	Acetone	R2342173	J4
L594311-02	WG612204	SAMP	Benzidine	R2344853	J4
	WG612204	SAMP	Bis(2-ethylhexyl)phthalate	R2344853	J3B3
	WG611999	SAMP	Iron	R2347833	B
	WG611999	SAMP	Lead	R2347833	B
	WG612046	SAMP	Acetone	R2342173	J4
L594311-03	WG612204	SAMP	Benzidine	R2344853	J4
	WG612204	SAMP	Bis(2-ethylhexyl)phthalate	R2344853	J3B3
	WG611999	SAMP	Iron	R2347833	B
	WG611999	SAMP	Lead	R2347833	B
	WG612046	SAMP	Acetone	R2342173	J4
L594311-04	WG613095	SAMP	Benzidine	R2354193	J4
	WG611999	SAMP	Iron	R2347833	B
	WG611999	SAMP	Lead	R2347833	B
	WG612046	SAMP	Acetone	R2342173	J4

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
B	(EPA) - The indicated compound was found in the associated method blank as well as the laboratory sample.
B3	(ESC) - The indicated compound was found in the associated method blank, but all reported samples were non-detect.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
09/20/12 at 13:17:08

TSR Signing Reports: 358

Sample: L594311-01 Account: YEHDCO Received: 09/11/12 09:00 Due Date: 09/18/12 00:00 RPT Date: 09/20/12 12:02

Sample: L594311-02 Account: YEHDCO Received: 09/11/12 09:00 Due Date: 09/18/12 00:00 RPT Date: 09/20/12 12:02

Sample: L594311-03 Account: YEHDCO Received: 09/11/12 09:00 Due Date: 09/18/12 00:00 RPT Date: 09/20/12 12:02

Sample: L594311-04 Account: YEHDCO Received: 09/11/12 09:00 Due Date: 09/18/12 00:00 RPT Date: 09/20/12 12:02

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L594311

September 20, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG612046	09/12/12 12:41
1,1,1-Trichloroethane	< .001	mg/kg			WG612046	09/12/12 12:41
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG612046	09/12/12 12:41
1,1,2-Trichloroethane	< .001	mg/kg			WG612046	09/12/12 12:41
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG612046	09/12/12 12:41
1,1-Dichloroethane	< .001	mg/kg			WG612046	09/12/12 12:41
1,1-Dichloroethene	< .001	mg/kg			WG612046	09/12/12 12:41
1,1-Dichloropropene	< .001	mg/kg			WG612046	09/12/12 12:41
1,2,3-Trichlorobenzene	< .001	mg/kg			WG612046	09/12/12 12:41
1,2,3-Trichloropropane	< .0025	mg/kg			WG612046	09/12/12 12:41
1,2,3-Trimethylbenzene	< .001	mg/kg			WG612046	09/12/12 12:41
1,2,4-Trichlorobenzene	< .001	mg/kg			WG612046	09/12/12 12:41
1,2,4-Trimethylbenzene	< .001	mg/kg			WG612046	09/12/12 12:41
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG612046	09/12/12 12:41
1,2-Dibromoethane	< .001	mg/kg			WG612046	09/12/12 12:41
1,2-Dichlorobenzene	< .001	mg/kg			WG612046	09/12/12 12:41
1,2-Dichloroethane	< .001	mg/kg			WG612046	09/12/12 12:41
1,2-Dichloropropane	< .001	mg/kg			WG612046	09/12/12 12:41
1,3,5-Trimethylbenzene	< .001	mg/kg			WG612046	09/12/12 12:41
1,3-Dichlorobenzene	< .001	mg/kg			WG612046	09/12/12 12:41
1,3-Dichloropropane	< .001	mg/kg			WG612046	09/12/12 12:41
1,4-Dichlorobenzene	< .001	mg/kg			WG612046	09/12/12 12:41
2,2-Dichloropropane	< .001	mg/kg			WG612046	09/12/12 12:41
2-Butanone (MEK)	< .01	mg/kg			WG612046	09/12/12 12:41
2-Chloroethyl vinyl ether	< .05	mg/kg			WG612046	09/12/12 12:41
2-Chlorotoluene	< .001	mg/kg			WG612046	09/12/12 12:41
4-Chlorotoluene	< .001	mg/kg			WG612046	09/12/12 12:41
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG612046	09/12/12 12:41
Acetone	< .05	mg/kg			WG612046	09/12/12 12:41
Acrylonitrile	< .01	mg/kg			WG612046	09/12/12 12:41
Benzene	< .001	mg/kg			WG612046	09/12/12 12:41
Bromobenzene	< .001	mg/kg			WG612046	09/12/12 12:41
Bromodichloromethane	< .001	mg/kg			WG612046	09/12/12 12:41
Bromoform	< .001	mg/kg			WG612046	09/12/12 12:41
Bromomethane	< .005	mg/kg			WG612046	09/12/12 12:41
Carbon tetrachloride	< .001	mg/kg			WG612046	09/12/12 12:41
Chlorobenzene	< .001	mg/kg			WG612046	09/12/12 12:41
Chlorodibromomethane	< .001	mg/kg			WG612046	09/12/12 12:41
Chloroethane	< .005	mg/kg			WG612046	09/12/12 12:41
Chloroform	< .005	mg/kg			WG612046	09/12/12 12:41
Chloromethane	< .0025	mg/kg			WG612046	09/12/12 12:41
cis-1,2-Dichloroethene	< .001	mg/kg			WG612046	09/12/12 12:41
cis-1,3-Dichloropropene	< .001	mg/kg			WG612046	09/12/12 12:41
Di-isopropyl ether	< .001	mg/kg			WG612046	09/12/12 12:41
Dibromomethane	< .001	mg/kg			WG612046	09/12/12 12:41
Dichlorodifluoromethane	< .005	mg/kg			WG612046	09/12/12 12:41
Ethylbenzene	< .001	mg/kg			WG612046	09/12/12 12:41
Hexachloro-1,3-butadiene	< .001	mg/kg			WG612046	09/12/12 12:41
Isopropylbenzene	< .001	mg/kg			WG612046	09/12/12 12:41
Methyl tert-butyl ether	< .001	mg/kg			WG612046	09/12/12 12:41
Methylene Chloride	< .005	mg/kg			WG612046	09/12/12 12:41
n-Butylbenzene	< .001	mg/kg			WG612046	09/12/12 12:41
n-Propylbenzene	< .001	mg/kg			WG612046	09/12/12 12:41
Naphthalene	< .005	mg/kg			WG612046	09/12/12 12:41
p-Isopropyltoluene	< .001	mg/kg			WG612046	09/12/12 12:41
sec-Butylbenzene	< .001	mg/kg			WG612046	09/12/12 12:41
Styrene	< .001	mg/kg			WG612046	09/12/12 12:41
tert-Butylbenzene	< .001	mg/kg			WG612046	09/12/12 12:41
Tetrachloroethene	< .001	mg/kg			WG612046	09/12/12 12:41

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L594311

September 20, 2012

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Toluene	< .005	mg/kg			WG612046	09/12/12 12:41
trans-1,2-Dichloroethene	< .001	mg/kg			WG612046	09/12/12 12:41
trans-1,3-Dichloropropene	< .001	mg/kg			WG612046	09/12/12 12:41
Trichloroethene	< .001	mg/kg			WG612046	09/12/12 12:41
Trichlorofluoromethane	< .005	mg/kg			WG612046	09/12/12 12:41
Vinyl chloride	< .001	mg/kg			WG612046	09/12/12 12:41
Xylenes, Total	< .003	mg/kg			WG612046	09/12/12 12:41
4-Bromofluorobenzene		% Rec.	102.5	67-133	WG612046	09/12/12 12:41
Dibromofluoromethane		% Rec.	95.81	72-135	WG612046	09/12/12 12:41
Toluene-d8		% Rec.	98.53	90-113	WG612046	09/12/12 12:41
Mercury	< .02	mg/kg			WG612071	09/12/12 13:23
1,2,4-Trichlorobenzene	< .333	mg/kg			WG612204	09/13/12 06:50
2,4,6-Trichlorophenol	< .333	mg/kg			WG612204	09/13/12 06:50
2,4-Dichlorophenol	< .333	mg/kg			WG612204	09/13/12 06:50
2,4-Dimethylphenol	< .333	mg/kg			WG612204	09/13/12 06:50
2,4-Dinitrophenol	< .333	mg/kg			WG612204	09/13/12 06:50
2,4-Dinitrotoluene	< .333	mg/kg			WG612204	09/13/12 06:50
2,6-Dinitrotoluene	< .333	mg/kg			WG612204	09/13/12 06:50
2-Chloronaphthalene	< .033	mg/kg			WG612204	09/13/12 06:50
2-Chlorophenol	< .333	mg/kg			WG612204	09/13/12 06:50
2-Nitrophenol	< .333	mg/kg			WG612204	09/13/12 06:50
3,3-Dichlorobenzidine	< .333	mg/kg			WG612204	09/13/12 06:50
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG612204	09/13/12 06:50
4-Bromophenyl-phenylether	< .333	mg/kg			WG612204	09/13/12 06:50
4-Chloro-3-methylphenol	< .333	mg/kg			WG612204	09/13/12 06:50
4-Chlorophenyl-phenylether	< .333	mg/kg			WG612204	09/13/12 06:50
4-Nitrophenol	< .333	mg/kg			WG612204	09/13/12 06:50
Acenaphthene	< .033	mg/kg			WG612204	09/13/12 06:50
Acenaphthylene	< .033	mg/kg			WG612204	09/13/12 06:50
Anthracene	< .033	mg/kg			WG612204	09/13/12 06:50
Benzidine	< .333	mg/kg			WG612204	09/13/12 06:50
Benzo(a)anthracene	< .033	mg/kg			WG612204	09/13/12 06:50
Benzo(a)pyrene	< .033	mg/kg			WG612204	09/13/12 06:50
Benzo(b)fluoranthene	< .033	mg/kg			WG612204	09/13/12 06:50
Benzo(g,h,i)perylene	< .033	mg/kg			WG612204	09/13/12 06:50
Benzo(k)fluoranthene	< .033	mg/kg			WG612204	09/13/12 06:50
Benzylbutyl phthalate	< .333	mg/kg			WG612204	09/13/12 06:50
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG612204	09/13/12 06:50
Bis(2-chloroethyl)ether	< .333	mg/kg			WG612204	09/13/12 06:50
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG612204	09/13/12 06:50
Bis(2-ethylhexyl)phthalate	1.30	mg/kg			WG612204	09/13/12 06:50
Chrysene	< .033	mg/kg			WG612204	09/13/12 06:50
Di-n-butyl phthalate	< .333	mg/kg			WG612204	09/13/12 06:50
Di-n-octyl phthalate	< .333	mg/kg			WG612204	09/13/12 06:50
Dibenz(a,h)anthracene	< .033	mg/kg			WG612204	09/13/12 06:50
Diethyl phthalate	< .333	mg/kg			WG612204	09/13/12 06:50
Dimethyl phthalate	< .333	mg/kg			WG612204	09/13/12 06:50
Fluoranthene	< .033	mg/kg			WG612204	09/13/12 06:50
Fluorene	< .033	mg/kg			WG612204	09/13/12 06:50
Hexachloro-1,3-butadiene	< .333	mg/kg			WG612204	09/13/12 06:50
Hexachlorobenzene	< .333	mg/kg			WG612204	09/13/12 06:50
Hexachlorocyclopentadiene	< .333	mg/kg			WG612204	09/13/12 06:50
Hexachloroethane	< .333	mg/kg			WG612204	09/13/12 06:50
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG612204	09/13/12 06:50
Isophorone	< .333	mg/kg			WG612204	09/13/12 06:50

* Performance of this Analyte is outside of established criteria.
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Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L594311

September 20, 2012

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG612204	09/13/12 06:50
n-Nitrosodimethylamine	< .333	mg/kg			WG612204	09/13/12 06:50
n-Nitrosodiphenylamine	< .333	mg/kg			WG612204	09/13/12 06:50
Naphthalene	< .033	mg/kg			WG612204	09/13/12 06:50
Nitrobenzene	< .333	mg/kg			WG612204	09/13/12 06:50
Pentachlorophenol	< .333	mg/kg			WG612204	09/13/12 06:50
Phenanthrene	< .033	mg/kg			WG612204	09/13/12 06:50
Phenol	< .333	mg/kg			WG612204	09/13/12 06:50
Pyrene	< .033	mg/kg			WG612204	09/13/12 06:50
2,4,6-Tribromophenol		% Rec.	66.42	16-136	WG612204	09/13/12 06:50
2-Fluorobiphenyl		% Rec.	83.93	37-119	WG612204	09/13/12 06:50
2-Fluorophenol		% Rec.	75.31	22-114	WG612204	09/13/12 06:50
Nitrobenzene-d5		% Rec.	72.38	20-114	WG612204	09/13/12 06:50
Phenol-d5		% Rec.	80.40	26-127	WG612204	09/13/12 06:50
p-Terphenyl-d14		% Rec.	100.5	15-174	WG612204	09/13/12 06:50
Arsenic	< 1	mg/kg			WG611999	09/14/12 22:29
Barium	< .25	mg/kg			WG611999	09/14/12 22:29
Cadmium	< .25	mg/kg			WG611999	09/14/12 22:29
Chromium	< .5	mg/kg			WG611999	09/14/12 22:29
Iron	< 5	mg/kg			WG611999	09/14/12 22:29
Lead	< .25	mg/kg			WG611999	09/14/12 22:29
Selenium	< 1	mg/kg			WG611999	09/14/12 22:29
Silver	< .5	mg/kg			WG611999	09/14/12 22:29
PCB 1016	< .017	mg/kg			WG612212	09/17/12 11:28
PCB 1221	< .017	mg/kg			WG612212	09/17/12 11:28
PCB 1232	< .017	mg/kg			WG612212	09/17/12 11:28
PCB 1242	< .017	mg/kg			WG612212	09/17/12 11:28
PCB 1248	< .017	mg/kg			WG612212	09/17/12 11:28
PCB 1254	< .017	mg/kg			WG612212	09/17/12 11:28
PCB 1260	< .017	mg/kg			WG612212	09/17/12 11:28
Decachlorobiphenyl		% Rec.	88.32	18.9-115.8	WG612212	09/17/12 11:28
Tetrachloro-m-xylene		% Rec.	65.09	31.8-115.7	WG612212	09/17/12 11:28
2,4,5-T	< .07	mg/kg			WG612944	09/18/12 21:34
2,4,5-TP (Silvex)	< .07	mg/kg			WG612944	09/18/12 21:34
2,4-D	< .07	mg/kg			WG612944	09/18/12 21:34
2,4-DB	< .07	mg/kg			WG612944	09/18/12 21:34
Dalapon	< .8	mg/kg			WG612944	09/18/12 21:34
Dicamba	< .07	mg/kg			WG612944	09/18/12 21:34
Dichloroprop	< .07	mg/kg			WG612944	09/18/12 21:34
Dinoseb	< .07	mg/kg			WG612944	09/18/12 21:34
MCPA	< .68602	mg/kg			WG612944	09/18/12 21:34
MCPP	< 6.5	mg/kg			WG612944	09/18/12 21:34
2,4-Dichlorophenyl Acetic Acid		%	64.59	37-99	WG612944	09/18/12 21:34
1,2,4-Trichlorobenzene	< .333	mg/kg			WG613095	09/18/12 13:39
2,4,6-Trichlorophenol	< .333	mg/kg			WG613095	09/18/12 13:39
2,4-Dichlorophenol	< .333	mg/kg			WG613095	09/18/12 13:39
2,4-Dimethylphenol	< .333	mg/kg			WG613095	09/18/12 13:39
2,4-Dinitrophenol	< .333	mg/kg			WG613095	09/18/12 13:39
2,4-Dinitrotoluene	< .333	mg/kg			WG613095	09/18/12 13:39
2,6-Dinitrotoluene	< .333	mg/kg			WG613095	09/18/12 13:39
2-Chloronaphthalene	< .033	mg/kg			WG613095	09/18/12 13:39

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Quality Assurance Report
Level II

L594311

September 20, 2012

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
2-Chlorophenol	< .333	mg/kg			WG613095	09/18/12 13:39
2-Nitrophenol	< .333	mg/kg			WG613095	09/18/12 13:39
3,3-Dichlorobenzidine	< .333	mg/kg			WG613095	09/18/12 13:39
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG613095	09/18/12 13:39
4-Bromophenyl-phenylether	< .333	mg/kg			WG613095	09/18/12 13:39
4-Chloro-3-methylphenol	< .333	mg/kg			WG613095	09/18/12 13:39
4-Chlorophenyl-phenylether	< .333	mg/kg			WG613095	09/18/12 13:39
4-Nitrophenol	< .333	mg/kg			WG613095	09/18/12 13:39
Acenaphthene	< .033	mg/kg			WG613095	09/18/12 13:39
Acenaphthylene	< .033	mg/kg			WG613095	09/18/12 13:39
Anthracene	< .033	mg/kg			WG613095	09/18/12 13:39
Benzidine	< .333	mg/kg			WG613095	09/18/12 13:39
Benzo(a)anthracene	< .033	mg/kg			WG613095	09/18/12 13:39
Benzo(a)pyrene	< .033	mg/kg			WG613095	09/18/12 13:39
Benzo(b)fluoranthene	< .033	mg/kg			WG613095	09/18/12 13:39
Benzo(g,h,i)perylene	< .033	mg/kg			WG613095	09/18/12 13:39
Benzo(k)fluoranthene	< .033	mg/kg			WG613095	09/18/12 13:39
Benzylbutyl phthalate	< .333	mg/kg			WG613095	09/18/12 13:39
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG613095	09/18/12 13:39
Bis(2-chloroethyl)ether	< .333	mg/kg			WG613095	09/18/12 13:39
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG613095	09/18/12 13:39
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG613095	09/18/12 13:39
Chrysene	< .033	mg/kg			WG613095	09/18/12 13:39
Di-n-butyl phthalate	< .333	mg/kg			WG613095	09/18/12 13:39
Di-n-octyl phthalate	< .333	mg/kg			WG613095	09/18/12 13:39
Dibenz(a,h)anthracene	< .033	mg/kg			WG613095	09/18/12 13:39
Diethyl phthalate	< .333	mg/kg			WG613095	09/18/12 13:39
Dimethyl phthalate	< .333	mg/kg			WG613095	09/18/12 13:39
Fluoranthene	< .033	mg/kg			WG613095	09/18/12 13:39
Fluorene	< .033	mg/kg			WG613095	09/18/12 13:39
Hexachloro-1,3-butadiene	< .333	mg/kg			WG613095	09/18/12 13:39
Hexachlorobenzene	< .333	mg/kg			WG613095	09/18/12 13:39
Hexachlorocyclopentadiene	< .333	mg/kg			WG613095	09/18/12 13:39
Hexachloroethane	< .333	mg/kg			WG613095	09/18/12 13:39
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG613095	09/18/12 13:39
Isophorone	< .333	mg/kg			WG613095	09/18/12 13:39
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG613095	09/18/12 13:39
n-Nitrosodimethylamine	< .333	mg/kg			WG613095	09/18/12 13:39
n-Nitrosodiphenylamine	< .333	mg/kg			WG613095	09/18/12 13:39
Naphthalene	< .033	mg/kg			WG613095	09/18/12 13:39
Nitrobenzene	< .333	mg/kg			WG613095	09/18/12 13:39
Pentachlorophenol	< .333	mg/kg			WG613095	09/18/12 13:39
Phenanthrene	< .033	mg/kg			WG613095	09/18/12 13:39
Phenol	< .333	mg/kg			WG613095	09/18/12 13:39
Pyrene	< .033	mg/kg			WG613095	09/18/12 13:39
2,4,6-Tribromophenol		% Rec.	58.25	16-136	WG613095	09/18/12 13:39
2-Fluorobiphenyl		% Rec.	63.53	37-119	WG613095	09/18/12 13:39
2-Fluorophenol		% Rec.	56.23	22-114	WG613095	09/18/12 13:39
Nitrobenzene-d5		% Rec.	53.18	20-114	WG613095	09/18/12 13:39
Phenol-d5		% Rec.	59.80	26-127	WG613095	09/18/12 13:39
p-Terphenyl-d14		% Rec.	68.30	15-174	WG613095	09/18/12 13:39
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG613094	09/18/12 19:11
2,4,6-Tribromophenol		% Rec.	70.03	16-136	WG613094	09/18/12 19:11
2-Fluorobiphenyl		% Rec.	69.77	37-119	WG613094	09/18/12 19:11
2-Fluorophenol		% Rec.	42.17	22-114	WG613094	09/18/12 19:11
Nitrobenzene-d5		% Rec.	49.26	20-114	WG613094	09/18/12 19:11
Phenol-d5		% Rec.	53.26	26-127	WG613094	09/18/12 19:11

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Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
p-Terphenyl-d14		% Rec.	71.30	15-174		09/18/12 19:11
4,4-DDD	< .02	mg/kg			WG612212	09/19/12 11:17
4,4-DDE	< .02	mg/kg			WG612212	09/19/12 11:17
4,4-DDT	< .02	mg/kg			WG612212	09/19/12 11:17
Aldrin	< .02	mg/kg			WG612212	09/19/12 11:17
Alpha BHC	< .02	mg/kg			WG612212	09/19/12 11:17
Beta BHC	< .02	mg/kg			WG612212	09/19/12 11:17
Chlordane	< .2	mg/kg			WG612212	09/19/12 11:17
Delta BHC	< .02	mg/kg			WG612212	09/19/12 11:17
Dieldrin	< .02	mg/kg			WG612212	09/19/12 11:17
Endosulfan I	< .02	mg/kg			WG612212	09/19/12 11:17
Endosulfan II	< .02	mg/kg			WG612212	09/19/12 11:17
Endosulfan sulfate	< .02	mg/kg			WG612212	09/19/12 11:17
Endrin	< .02	mg/kg			WG612212	09/19/12 11:17
Endrin aldehyde	< .02	mg/kg			WG612212	09/19/12 11:17
Endrin ketone	< .02	mg/kg			WG612212	09/19/12 11:17
Gamma BHC	< .02	mg/kg			WG612212	09/19/12 11:17
Heptachlor	< .02	mg/kg			WG612212	09/19/12 11:17
Heptachlor epoxide	< .02	mg/kg			WG612212	09/19/12 11:17
Hexachlorobenzene	< .02	mg/kg			WG612212	09/19/12 11:17
Methoxychlor	< .02	mg/kg			WG612212	09/19/12 11:17
Toxaphene	< .4	mg/kg			WG612212	09/19/12 11:17
Decachlorobiphenyl		% Rec.	90.83	18.9-115.8	WG612212	09/19/12 11:17
Tetrachloro-m-xylene		% Rec.	72.06	31.8-115.7	WG612212	09/19/12 11:17

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0	0	0	20	L594311-01	WG612071
Arsenic	mg/kg	2.10	3.70	54.3*	20	L594295-03	WG611999
Barium	mg/kg	95.0	100.	5.23	20	L594295-03	WG611999
Chromium	mg/kg	15.0	16.0	7.79	20	L594295-03	WG611999
Iron	mg/kg	15000	15300	4.68	20	L594295-03	WG611999
Lead	mg/kg	14.0	14.0	2.17	20	L594295-03	WG611999
Selenium	mg/kg	0	0	0	20	L594295-03	WG611999
Silver	mg/kg	0	0	0	20	L594295-03	WG611999
Cadmium	mg/kg	0	0	0	20	L594295-03	WG611999

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0254	102.	77-129	WG612046
1,1,1-Trichloroethane	mg/kg	.025	0.0230	91.9	70-127	WG612046
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0258	103.	76-133	WG612046
1,1,2-Trichloroethane	mg/kg	.025	0.0252	101.	79-123	WG612046
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0247	98.6	52-145	WG612046
1,1-Dichloroethane	mg/kg	.025	0.0224	89.5	74-121	WG612046
1,1-Dichloroethene	mg/kg	.025	0.0261	105.	53-135	WG612046
1,1-Dichloropropene	mg/kg	.025	0.0224	89.6	67-127	WG612046
1,2,3-Trichlorobenzene	mg/kg	.025	0.0237	94.6	74-131	WG612046
1,2,3-Trichloropropane	mg/kg	.025	0.0243	97.1	75-135	WG612046
1,2,3-Trimethylbenzene	mg/kg	.025	0.0218	87.2	76-128	WG612046
1,2,4-Trichlorobenzene	mg/kg	.025	0.0250	99.9	72-130	WG612046
1,2,4-Trimethylbenzene	mg/kg	.025	0.0256	102.	75-131	WG612046
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0209	83.6	55-142	WG612046
1,2-Dibromoethane	mg/kg	.025	0.0244	97.6	77-126	WG612046
1,2-Dichlorobenzene	mg/kg	.025	0.0245	98.1	80-123	WG612046

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Quality Assurance Report
Level II

L594311

September 20, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
1,2-Dichloroethane	mg/kg	.025	0.0218	87.3	70-128	WG612046
1,2-Dichloropropane	mg/kg	.025	0.0230	92.0	74-125	WG612046
1,3,5-Trimethylbenzene	mg/kg	.025	0.0260	104.	77-129	WG612046
1,3-Dichlorobenzene	mg/kg	.025	0.0273	109.	76-128	WG612046
1,3-Dichloropropane	mg/kg	.025	0.0246	98.4	77-118	WG612046
1,4-Dichlorobenzene	mg/kg	.025	0.0246	98.2	77-119	WG612046
2,2-Dichloropropane	mg/kg	.025	0.0223	89.3	60-132	WG612046
2-Butanone (MEK)	mg/kg	.125	0.150	120.	56-146	WG612046
2-Chloroethyl vinyl ether	mg/kg	.125	0.108	86.5	17-179	WG612046
2-Chlorotoluene	mg/kg	.025	0.0257	103.	76-125	WG612046
4-Chlorotoluene	mg/kg	.025	0.0262	105.	76-125	WG612046
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.118	94.3	55-148	WG612046
Acetone	mg/kg	.125	0.203	162.*	47-155	WG612046
Acrylonitrile	mg/kg	.125	0.108	86.4	50-155	WG612046
Benzene	mg/kg	.025	0.0225	90.0	72-120	WG612046
Bromobenzene	mg/kg	.025	0.0251	100.	74-122	WG612046
Bromodichloromethane	mg/kg	.025	0.0215	86.0	74-128	WG612046
Bromoform	mg/kg	.025	0.0255	102.	62-137	WG612046
Bromomethane	mg/kg	.025	0.0346	139.	38-180	WG612046
Carbon tetrachloride	mg/kg	.025	0.0237	95.0	62-130	WG612046
Chlorobenzene	mg/kg	.025	0.0254	101.	77-124	WG612046
Chlorodibromomethane	mg/kg	.025	0.0246	98.4	74-128	WG612046
Chloroethane	mg/kg	.025	0.0261	104.	46-173	WG612046
Chloroform	mg/kg	.025	0.0234	93.7	76-122	WG612046
Chloromethane	mg/kg	.025	0.0189	75.4	49-143	WG612046
cis-1,2-Dichloroethene	mg/kg	.025	0.0224	89.8	73-123	WG612046
cis-1,3-Dichloropropene	mg/kg	.025	0.0223	89.0	73-126	WG612046
Di-isopropyl ether	mg/kg	.025	0.0211	84.3	64-131	WG612046
Dibromomethane	mg/kg	.025	0.0227	90.7	75-127	WG612046
Dichlorodifluoromethane	mg/kg	.025	0.0193	77.3	30-177	WG612046
Ethylbenzene	mg/kg	.025	0.0253	101.	76-126	WG612046
Hexachloro-1,3-butadiene	mg/kg	.025	0.0238	95.2	71-134	WG612046
Isopropylbenzene	mg/kg	.025	0.0277	111.	70-128	WG612046
Methyl tert-butyl ether	mg/kg	.025	0.0226	90.6	66-127	WG612046
Methylene Chloride	mg/kg	.025	0.0229	91.4	67-124	WG612046
n-Butylbenzene	mg/kg	.025	0.0225	89.8	71-133	WG612046
n-Propylbenzene	mg/kg	.025	0.0257	103.	76-126	WG612046
Naphthalene	mg/kg	.025	0.0212	84.9	68-136	WG612046
p-Isopropyltoluene	mg/kg	.025	0.0266	107.	75-134	WG612046
sec-Butylbenzene	mg/kg	.025	0.0259	104.	75-132	WG612046
Styrene	mg/kg	.025	0.0253	101.	68-148	WG612046
tert-Butylbenzene	mg/kg	.025	0.0264	106.	75-132	WG612046
Tetrachloroethene	mg/kg	.025	0.0259	104.	70-131	WG612046
Toluene	mg/kg	.025	0.0238	95.1	74-155	WG612046
trans-1,2-Dichloroethene	mg/kg	.025	0.0221	88.2	63-126	WG612046
trans-1,3-Dichloropropene	mg/kg	.025	0.0224	89.5	68-126	WG612046
Trichloroethene	mg/kg	.025	0.0241	96.2	75-121	WG612046
Trichlorofluoromethane	mg/kg	.025	0.0259	104.	48-170	WG612046
Vinyl chloride	mg/kg	.025	0.0209	83.7	54-144	WG612046
Xylenes, Total	mg/kg	.075	0.0774	103.	76-126	WG612046
4-Bromofluorobenzene				104.8	67-133	WG612046
Dibromofluoromethane				95.33	72-135	WG612046
Toluene-d8				100.2	90-113	WG612046
Mercury	mg/kg	12.4	14.8	119.	71.6-128	WG612071
1,2,4-Trichlorobenzene	mg/kg	.333	0.217	65.2	48-87	WG612204

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Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L594311

September 20, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
2,4,6-Trichlorophenol	mg/kg	.333	0.247	74.3	50-98	WG612204
2,4-Dichlorophenol	mg/kg	.333	0.248	74.4	56-96	WG612204
2,4-Dimethylphenol	mg/kg	.333	0.227	68.0	52-101	WG612204
2,4-Dinitrophenol	mg/kg	.333	0.108	32.3	10-109	WG612204
2,4-Dinitrotoluene	mg/kg	.333	0.268	80.4	54-103	WG612204
2,6-Dinitrotoluene	mg/kg	.333	0.263	79.0	53-99	WG612204
2-Chloronaphthalene	mg/kg	.333	0.242	72.8	55-96	WG612204
2-Chlorophenol	mg/kg	.333	0.224	67.3	52-88	WG612204
2-Nitrophenol	mg/kg	.333	0.247	74.1	55-106	WG612204
3,3-Dichlorobenzidine	mg/kg	.333	0.223	66.9	36-84	WG612204
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.206	61.8	24-98	WG612204
4-Bromophenyl-phenylether	mg/kg	.333	0.245	73.5	58-111	WG612204
4-Chloro-3-methylphenol	mg/kg	.333	0.250	75.1	58-98	WG612204
4-Chlorophenyl-phenylether	mg/kg	.333	0.262	78.5	59-103	WG612204
4-Nitrophenol	mg/kg	.333	0.247	74.3	34-101	WG612204
Acenaphthene	mg/kg	.333	0.247	74.2	55-96	WG612204
Acenaphthylene	mg/kg	.333	0.259	77.9	61-107	WG612204
Anthracene	mg/kg	.333	0.270	81.1	58-105	WG612204
Benzidine	mg/kg	.333	0.0115	3.46*	10-21	WG612204
Benzo(a)anthracene	mg/kg	.333	0.256	76.9	56-103	WG612204
Benzo(a)pyrene	mg/kg	.333	0.275	82.6	57-103	WG612204
Benzo(b)fluoranthene	mg/kg	.333	0.267	80.0	52-106	WG612204
Benzo(g,h,i)perylene	mg/kg	.333	0.271	81.5	47-112	WG612204
Benzo(k)fluoranthene	mg/kg	.333	0.268	80.6	53-104	WG612204
Benzylbutyl phthalate	mg/kg	.333	0.262	78.6	61-118	WG612204
Bis(2-chlorethoxy)methane	mg/kg	.333	0.250	75.1	58-104	WG612204
Bis(2-chloroethyl)ether	mg/kg	.333	0.240	72.2	51-103	WG612204
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.223	67.0	56-95	WG612204
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.273	82.0	56-120	WG612204
Chrysene	mg/kg	.333	0.262	78.6	55-102	WG612204
Di-n-butyl phthalate	mg/kg	.333	0.255	76.7	59-114	WG612204
Di-n-octyl phthalate	mg/kg	.333	0.268	80.6	51-119	WG612204
Dibenz(a,h)anthracene	mg/kg	.333	0.275	82.6	49-111	WG612204
Diethyl phthalate	mg/kg	.333	0.255	76.7	61-105	WG612204
Dimethyl phthalate	mg/kg	.333	0.266	79.9	60-106	WG612204
Fluoranthene	mg/kg	.333	0.268	80.4	59-108	WG612204
Fluorene	mg/kg	.333	0.260	78.2	59-100	WG612204
Hexachloro-1,3-butadiene	mg/kg	.333	0.207	62.2	53-106	WG612204
Hexachlorobenzene	mg/kg	.333	0.205	61.5	50-108	WG612204
Hexachlorocyclopentadiene	mg/kg	.333	0.217	65.1	36-117	WG612204
Hexachloroethane	mg/kg	.333	0.202	60.7	45-83	WG612204
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.275	82.7	50-110	WG612204
Isophorone	mg/kg	.333	0.205	61.7	51-99	WG612204
n-Nitrosodi-n-propylamine	mg/kg	.333	0.244	73.2	52-103	WG612204
n-Nitrosodimethylamine	mg/kg	.333	0.189	56.6	31-107	WG612204
n-Nitrosodiphenylamine	mg/kg	.333	0.245	73.6	57-121	WG612204
Naphthalene	mg/kg	.333	0.222	66.7	55-91	WG612204
Nitrobenzene	mg/kg	.333	0.227	68.1	47-92	WG612204
Pentachlorophenol	mg/kg	.333	0.169	50.8	10-89	WG612204
Phenanthrene	mg/kg	.333	0.253	75.9	55-103	WG612204
Phenol	mg/kg	.333	0.241	72.2	49-99	WG612204
Pyrene	mg/kg	.333	0.270	81.0	54-104	WG612204
2,4,6-Tribromophenol				64.20	16-136	WG612204
2-Fluorobiphenyl				75.63	37-119	WG612204
2-Fluorophenol				66.77	22-114	WG612204
Nitrobenzene-d5				67.38	20-114	WG612204
Phenol-d5				70.10	26-127	WG612204
p-Terphenyl-d14				86.26	15-174	WG612204

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Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L594311

September 20, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Arsenic	mg/kg	237	220.	92.8	83.1-117	WG611999
Barium	mg/kg	252	243.	96.4	84.1-116	WG611999
Cadmium	mg/kg	191	185.	96.9	83.2-117	WG611999
Chromium	mg/kg	128	125.	97.7	81.3-118	WG611999
Iron	mg/kg	13100	12000	91.6	50.8-150	WG611999
Lead	mg/kg	103	103.	100.	83.1-117	WG611999
Selenium	mg/kg	110	104.	94.5	78.7-122	WG611999
Silver	mg/kg	47.3	44.5	94.1	66.2-134	WG611999
PCB 1016	mg/kg	.167	0.141	84.3	64-120	WG612212
PCB 1260	mg/kg	.167	0.160	95.9	72-130	WG612212
Decachlorobiphenyl				96.44	18.9-115.8	WG612212
Tetrachloro-m-xylene				71.73	31.8-115.7	WG612212
2,4,5-T	mg/kg	.167	0.140	84.1	32.9-103	WG612944
2,4,5-TP (Silvex)	mg/kg	.167	0.141	84.5	46-116	WG612944
2,4-D	mg/kg	.167	0.124	74.5	28-98	WG612944
2,4-DB	mg/kg	.167	0.149	89.0	28.9-108	WG612944
Dalapon	mg/kg	.167	0.135	80.6	18.4-113	WG612944
Dicamba	mg/kg	.167	0.142	85.2	37.2-119	WG612944
Dichloroprop	mg/kg	.167	0.154	92.4	40.5-114	WG612944
Dinoseb	mg/kg	.167	0.0903	54.0	10-98	WG612944
MCPA	mg/kg	16.7	14.8	88.9	15.5-110	WG612944
MCPP	mg/kg	16.7	19.7	118.	40.1-177	WG612944
2,4-Dichlorophenyl Acetic Acid				80.97	37-99	WG612944
1,2,4-Trichlorobenzene	mg/kg	.333	0.219	65.9	48-87	WG613095
2,4,6-Trichlorophenol	mg/kg	.333	0.227	68.2	50-98	WG613095
2,4-Dichlorophenol	mg/kg	.333	0.244	73.1	56-96	WG613095
2,4-Dimethylphenol	mg/kg	.333	0.244	73.2	52-101	WG613095
2,4-Dinitrophenol	mg/kg	.333	0.179	53.8	10-109	WG613095
2,4-Dinitrotoluene	mg/kg	.333	0.248	74.4	54-103	WG613095
2,6-Dinitrotoluene	mg/kg	.333	0.238	71.6	53-99	WG613095
2-Chloronaphthalene	mg/kg	.333	0.217	65.1	55-96	WG613095
2-Chlorophenol	mg/kg	.333	0.220	66.2	52-88	WG613095
2-Nitrophenol	mg/kg	.333	0.244	73.3	55-106	WG613095
3,3-Dichlorobenzidine	mg/kg	.333	0.177	53.3	36-84	WG613095
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.232	69.8	24-98	WG613095
4-Bromophenyl-phenylether	mg/kg	.333	0.223	67.0	58-111	WG613095
4-Chloro-3-methylphenol	mg/kg	.333	0.239	71.7	58-98	WG613095
4-Chlorophenyl-phenylether	mg/kg	.333	0.237	71.2	59-103	WG613095
4-Nitrophenol	mg/kg	.333	0.225	67.7	34-101	WG613095
Acenaphthene	mg/kg	.333	0.219	65.8	55-96	WG613095
Acenaphthylene	mg/kg	.333	0.231	69.4	61-107	WG613095
Anthracene	mg/kg	.333	0.231	69.3	58-105	WG613095
Benzidine	mg/kg	.333	0.0211	6.34*	10-21	WG613095
Benzo(a)anthracene	mg/kg	.333	0.224	67.2	56-103	WG613095
Benzo(a)pyrene	mg/kg	.333	0.244	73.2	57-103	WG613095
Benzo(b)fluoranthene	mg/kg	.333	0.234	70.4	52-106	WG613095
Benzo(g,h,i)perylene	mg/kg	.333	0.237	71.1	47-112	WG613095
Benzo(k)fluoranthene	mg/kg	.333	0.237	71.1	53-104	WG613095
Benzylbutyl phthalate	mg/kg	.333	0.231	69.4	61-118	WG613095
Bis(2-chlorethoxy)methane	mg/kg	.333	0.227	68.3	58-104	WG613095
Bis(2-chloroethyl)ether	mg/kg	.333	0.225	67.6	51-103	WG613095
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.215	64.7	56-95	WG613095

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Quality Assurance Report
Level II

L594311

September 20, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.248	74.4	56-120	WG613095
Chrysene	mg/kg	.333	0.236	70.8	55-102	WG613095
Di-n-butyl phthalate	mg/kg	.333	0.238	71.6	59-114	WG613095
Di-n-octyl phthalate	mg/kg	.333	0.245	73.6	51-119	WG613095
Dibenz(a,h)anthracene	mg/kg	.333	0.233	69.9	49-111	WG613095
Diethyl phthalate	mg/kg	.333	0.221	66.4	61-105	WG613095
Dimethyl phthalate	mg/kg	.333	0.234	70.4	60-106	WG613095
Fluoranthene	mg/kg	.333	0.230	69.1	59-108	WG613095
Fluorene	mg/kg	.333	0.225	67.5	59-100	WG613095
Hexachloro-1,3-butadiene	mg/kg	.333	0.228	68.4	53-106	WG613095
Hexachlorobenzene	mg/kg	.333	0.200	59.9	50-108	WG613095
Hexachlorocyclopentadiene	mg/kg	.333	0.169	50.7	36-117	WG613095
Hexachloroethane	mg/kg	.333	0.211	63.4	45-83	WG613095
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.237	71.2	50-110	WG613095
Isophorone	mg/kg	.333	0.191	57.4	51-99	WG613095
n-Nitrosodi-n-propylamine	mg/kg	.333	0.231	69.4	52-103	WG613095
n-Nitrosodimethylamine	mg/kg	.333	0.209	62.7	31-107	WG613095
n-Nitrosodiphenylamine	mg/kg	.333	0.226	67.7	57-121	WG613095
Naphthalene	mg/kg	.333	0.216	65.0	55-91	WG613095
Nitrobenzene	mg/kg	.333	0.225	67.5	47-92	WG613095
Pentachlorophenol	mg/kg	.333	0.166	49.7	10-89	WG613095
Phenanthrene	mg/kg	.333	0.218	65.6	55-103	WG613095
Phenol	mg/kg	.333	0.227	68.1	49-99	WG613095
Pyrene	mg/kg	.333	0.224	67.3	54-104	WG613095
2,4,6-Tribromophenol				65.36	16-136	WG613095
2-Fluorobiphenyl				72.50	37-119	WG613095
2-Fluorophenol				64.47	22-114	WG613095
Nitrobenzene-d5				70.90	20-114	WG613095
Phenol-d5				65.91	26-127	WG613095
p-Terphenyl-d14				76.51	15-174	WG613095
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.227	68.2	56-120	WG613094
2,4,6-Tribromophenol				76.91	16-136	WG613094
2-Fluorobiphenyl				62.36	37-119	WG613094
2-Fluorophenol				32.46	22-114	WG613094
Nitrobenzene-d5				44.06	20-114	WG613094
Phenol-d5				49.48	26-127	WG613094
p-Terphenyl-d14				71.97	15-174	WG613094
4,4-DDD	mg/kg	.0667	0.0640	96.0	74-114	WG612212
4,4-DDE	mg/kg	.0667	0.0599	89.8	74-115	WG612212
4,4-DDT	mg/kg	.0667	0.0629	94.3	62-124	WG612212
Aldrin	mg/kg	.0667	0.0557	83.6	69-110	WG612212
Alpha BHC	mg/kg	.0667	0.0580	87.0	68-111	WG612212
Beta BHC	mg/kg	.0667	0.0578	86.7	74-112	WG612212
Delta BHC	mg/kg	.0667	0.0613	91.8	71-110	WG612212
Dieldrin	mg/kg	.0667	0.0612	91.7	76-115	WG612212
Endosulfan I	mg/kg	.0667	0.0607	91.0	76-119	WG612212
Endosulfan II	mg/kg	.0667	0.0591	88.6	75-116	WG612212
Endosulfan sulfate	mg/kg	.0667	0.0671	101.	70-118	WG612212
Endrin	mg/kg	.0667	0.0615	92.2	68-115	WG612212
Endrin aldehyde	mg/kg	.0667	0.0593	88.9	48-92	WG612212
Endrin ketone	mg/kg	.0667	0.0668	100.	70-112	WG612212
Gamma BHC	mg/kg	.0667	0.0599	89.8	70-112	WG612212
Heptachlor	mg/kg	.0667	0.0596	89.3	69-111	WG612212
Heptachlor epoxide	mg/kg	.0667	0.0608	91.2	72-115	WG612212
Hexachlorobenzene	mg/kg	.0667	0.0469	70.3	64-111	WG612212

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For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Denver, CO 80222

Quality Assurance Report
Level II

L594311

September 20, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Methoxychlor	mg/kg	.0667	0.0684	103.	65-123	WG612212
Decachlorobiphenyl				91.36	18.9-115.8	WG612212
Tetrachloro-m-xylene				77.06	31.8-115.7	WG612212

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0255	0.0254	102.	77-129	0.320	20	WG612046
1,1,1-Trichloroethane	mg/kg	0.0233	0.0230	93.0	70-127	1.45	20	WG612046
1,1,2,2-Tetrachloroethane	mg/kg	0.0244	0.0258	98.0	76-133	5.57	20	WG612046
1,1,2-Trichloroethane	mg/kg	0.0252	0.0252	101.	79-123	0.0200	20	WG612046
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0240	0.0247	96.0	52-145	2.61	20	WG612046
1,1-Dichloroethane	mg/kg	0.0228	0.0224	91.0	74-121	1.99	20	WG612046
1,1-Dichloroethene	mg/kg	0.0255	0.0261	102.	53-135	2.53	20	WG612046
1,1-Dichloropropene	mg/kg	0.0222	0.0224	89.0	67-127	0.770	20	WG612046
1,2,3-Trichlorobenzene	mg/kg	0.0239	0.0237	96.0	74-131	1.07	20	WG612046
1,2,3-Trichloropropane	mg/kg	0.0224	0.0243	90.0	75-135	7.85	20	WG612046
1,2,3-Trimethylbenzene	mg/kg	0.0214	0.0218	85.0	76-128	2.03	20	WG612046
1,2,4-Trichlorobenzene	mg/kg	0.0243	0.0250	97.0	72-130	2.75	20	WG612046
1,2,4-Trimethylbenzene	mg/kg	0.0251	0.0256	100.	75-131	1.86	20	WG612046
1,2-Dibromo-3-Chloropropane	mg/kg	0.0203	0.0209	81.0	55-142	3.11	20	WG612046
1,2-Dibromoethane	mg/kg	0.0245	0.0244	98.0	77-126	0.280	20	WG612046
1,2-Dichlorobenzene	mg/kg	0.0235	0.0245	94.0	80-123	4.10	20	WG612046
1,2-Dichloroethane	mg/kg	0.0227	0.0218	91.0	70-128	4.15	20	WG612046
1,2-Dichloropropane	mg/kg	0.0238	0.0230	95.0	74-125	3.51	20	WG612046
1,3,5-Trimethylbenzene	mg/kg	0.0255	0.0260	102.	77-129	1.78	20	WG612046
1,3-Dichlorobenzene	mg/kg	0.0266	0.0273	106.	76-128	2.69	20	WG612046
1,3-Dichloropropane	mg/kg	0.0243	0.0246	97.0	77-118	1.18	20	WG612046
1,4-Dichlorobenzene	mg/kg	0.0237	0.0246	95.0	77-119	3.70	20	WG612046
2,2-Dichloropropane	mg/kg	0.0229	0.0223	92.0	60-132	2.65	20	WG612046
2-Butanone (MEK)	mg/kg	0.139	0.150	111.	56-146	7.65	20	WG612046
2-Chloroethyl vinyl ether	mg/kg	0.110	0.108	88.0	17-179	2.05	22	WG612046
2-Chlorotoluene	mg/kg	0.0250	0.0257	100.	76-125	2.61	20	WG612046
4-Chlorotoluene	mg/kg	0.0254	0.0262	102.	76-125	3.14	20	WG612046
4-Methyl-2-pentanone (MIBK)	mg/kg	0.110	0.118	88.0	55-148	6.85	20	WG612046
Acetone	mg/kg	0.188	0.203	150.	47-155	7.84	22	WG612046
Acrylonitrile	mg/kg	0.106	0.108	85.0	50-155	1.54	20	WG612046
Benzene	mg/kg	0.0231	0.0225	92.0	72-120	2.75	20	WG612046
Bromobenzene	mg/kg	0.0245	0.0251	98.0	74-122	2.06	20	WG612046
Bromodichloromethane	mg/kg	0.0221	0.0215	88.0	74-128	2.74	20	WG612046
Bromoform	mg/kg	0.0241	0.0255	96.0	62-137	5.97	20	WG612046
Bromomethane	mg/kg	0.0338	0.0346	135.	38-180	2.35	20	WG612046
Carbon tetrachloride	mg/kg	0.0215	0.0237	86.0	62-130	9.72	20	WG612046
Chlorobenzene	mg/kg	0.0255	0.0254	102.	77-124	0.720	20	WG612046
Chlorodibromomethane	mg/kg	0.0238	0.0246	95.0	74-128	3.29	20	WG612046
Chloroethane	mg/kg	0.0264	0.0261	106.	46-173	1.44	20	WG612046
Chloroform	mg/kg	0.0245	0.0234	98.0	76-122	4.52	20	WG612046
Chloromethane	mg/kg	0.0192	0.0189	77.0	49-143	1.61	20	WG612046
cis-1,2-Dichloroethene	mg/kg	0.0236	0.0224	94.0	73-123	4.85	20	WG612046
cis-1,3-Dichloropropene	mg/kg	0.0227	0.0223	91.0	73-126	1.80	20	WG612046
Di-isopropyl ether	mg/kg	0.0215	0.0211	86.0	64-131	2.17	20	WG612046
Dibromomethane	mg/kg	0.0229	0.0227	92.0	75-127	1.08	20	WG612046
Dichlorodifluoromethane	mg/kg	0.0201	0.0193	80.0	30-177	3.70	20	WG612046
Ethylbenzene	mg/kg	0.0252	0.0253	101.	76-126	0.440	20	WG612046
Hexachloro-1,3-butadiene	mg/kg	0.0229	0.0238	91.0	71-134	4.00	20	WG612046
Isopropylbenzene	mg/kg	0.0274	0.0277	110.	70-128	0.830	20	WG612046
Methyl tert-butyl ether	mg/kg	0.0231	0.0226	92.0	66-127	2.07	20	WG612046
Methylene Chloride	mg/kg	0.0237	0.0229	95.0	67-124	3.79	20	WG612046
n-Butylbenzene	mg/kg	0.0224	0.0225	90.0	71-133	0.140	20	WG612046

* Performance of this Analyte is outside of established criteria.
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Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L594311

September 20, 2012

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
n-Propylbenzene	mg/kg	0.0250	0.0257	100.	76-126	2.63	20	WG612046
Naphthalene	mg/kg	0.0208	0.0212	83.0	68-136	1.92	20	WG612046
p-Isopropyltoluene	mg/kg	0.0258	0.0266	103.	75-134	3.04	20	WG612046
sec-Butylbenzene	mg/kg	0.0257	0.0259	103.	75-132	0.920	20	WG612046
Styrene	mg/kg	0.0236	0.0253	94.0	68-148	6.91	20	WG612046
tert-Butylbenzene	mg/kg	0.0259	0.0264	104.	75-132	2.07	20	WG612046
Tetrachloroethene	mg/kg	0.0267	0.0259	107.	70-131	3.05	20	WG612046
Toluene	mg/kg	0.0246	0.0238	98.0	74-155	3.42	20	WG612046
trans-1,2-Dichloroethene	mg/kg	0.0232	0.0221	93.0	63-126	5.04	20	WG612046
trans-1,3-Dichloropropene	mg/kg	0.0221	0.0224	88.0	68-126	1.12	20	WG612046
Trichloroethene	mg/kg	0.0247	0.0241	99.0	75-121	2.45	20	WG612046
Trichlorofluoromethane	mg/kg	0.0261	0.0259	104.	48-170	0.850	20	WG612046
Vinyl chloride	mg/kg	0.0217	0.0209	87.0	54-144	3.82	20	WG612046
Xylenes, Total	mg/kg	0.0769	0.0774	102.	76-126	0.550	20	WG612046
4-Bromofluorobenzene				103.7	67-133			WG612046
Dibromofluoromethane				95.68	72-135			WG612046
Toluene-d8				99.58	90-113			WG612046
1,2,4-Trichlorobenzene	mg/kg	0.231	0.217	69.0	48-87	6.36	20	WG612204
2,4,6-Trichlorophenol	mg/kg	0.243	0.247	73.0	50-98	1.59	20	WG612204
2,4-Dichlorophenol	mg/kg	0.268	0.248	80.0	56-96	7.91	20	WG612204
2,4-Dimethylphenol	mg/kg	0.250	0.227	75.0	52-101	9.72	20	WG612204
2,4-Dinitrophenol	mg/kg	0.122	0.108	37.0	10-109	12.5	39	WG612204
2,4-Dinitrotoluene	mg/kg	0.270	0.268	81.0	54-103	0.951	20	WG612204
2,6-Dinitrotoluene	mg/kg	0.255	0.263	77.0	53-99	3.01	20	WG612204
2-Chloronaphthalene	mg/kg	0.236	0.242	71.0	55-96	2.61	20	WG612204
2-Chlorophenol	mg/kg	0.241	0.224	72.0	52-88	7.31	20	WG612204
2-Nitrophenol	mg/kg	0.267	0.247	80.0	55-106	8.02	20	WG612204
3,3-Dichlorobenzidine	mg/kg	0.221	0.223	66.0	36-84	0.645	20	WG612204
4,6-Dinitro-2-methylphenol	mg/kg	0.207	0.206	62.0	24-98	0.412	32	WG612204
4-Bromophenyl-phenylether	mg/kg	0.237	0.245	71.0	58-111	3.22	20	WG612204
4-Chloro-3-methylphenol	mg/kg	0.269	0.250	81.0	58-98	7.36	20	WG612204
4-Chlorophenyl-phenylether	mg/kg	0.258	0.262	78.0	59-103	1.24	20	WG612204
4-Nitrophenol	mg/kg	0.243	0.247	73.0	34-101	1.64	26	WG612204
Acenaphthene	mg/kg	0.253	0.247	76.0	55-96	2.50	20	WG612204
Acenaphthylene	mg/kg	0.258	0.259	77.0	61-107	0.512	20	WG612204
Anthracene	mg/kg	0.268	0.270	80.0	58-105	0.613	20	WG612204
Benzidine	mg/kg	0.0103	0.0115	3*	10-21	10.9	40	WG612204
Benzo(a)anthracene	mg/kg	0.252	0.256	76.0	56-103	1.63	20	WG612204
Benzo(a)pyrene	mg/kg	0.278	0.275	83.0	57-103	0.885	20	WG612204
Benzo(b)fluoranthene	mg/kg	0.273	0.267	82.0	52-106	2.55	20	WG612204
Benzo(g,h,i)perylene	mg/kg	0.271	0.271	81.0	47-112	0.181	20	WG612204
Benzo(k)fluoranthene	mg/kg	0.266	0.268	80.0	53-104	1.08	20	WG612204
Benzylbutyl phthalate	mg/kg	0.267	0.262	80.0	61-118	1.89	20	WG612204
Bis(2-chlorethoxy)methane	mg/kg	0.264	0.250	79.0	58-104	5.37	20	WG612204
Bis(2-chloroethyl)ether	mg/kg	0.247	0.240	74.0	51-103	2.85	20	WG612204
Bis(2-chloroisopropyl)ether	mg/kg	0.232	0.223	70.0	56-95	4.12	20	WG612204
Bis(2-ethylhexyl)phthalate	mg/kg	0.391	0.273	117.	56-120	35.5*	20	WG612204
Chrysene	mg/kg	0.263	0.262	79.0	55-102	0.522	20	WG612204
Di-n-butyl phthalate	mg/kg	0.257	0.255	77.0	59-114	0.763	20	WG612204
Di-n-octyl phthalate	mg/kg	0.268	0.268	80.0	51-119	0.0196	22	WG612204
Dibenz(a,h)anthracene	mg/kg	0.277	0.275	83.0	49-111	0.762	20	WG612204
Diethyl phthalate	mg/kg	0.247	0.255	74.0	61-105	3.44	20	WG612204
Dimethyl phthalate	mg/kg	0.260	0.266	78.0	60-106	2.25	20	WG612204
Fluoranthene	mg/kg	0.271	0.268	81.0	59-108	1.20	20	WG612204
Fluorene	mg/kg	0.263	0.260	79.0	59-100	0.862	20	WG612204
Hexachloro-1,3-butadiene	mg/kg	0.230	0.207	69.0	53-106	10.5	20	WG612204
Hexachlorobenzene	mg/kg	0.209	0.205	63.0	50-108	1.99	20	WG612204

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L594311

September 20, 2012

		Laboratory Control Sample				Duplicate		
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexachlorocyclopentadiene	mg/kg	0.211	0.217	63.0	36-117	2.79	20	WG612204
Hexachloroethane	mg/kg	0.207	0.202	62.0	45-83	2.46	20	WG612204
Indeno(1,2,3-cd)pyrene	mg/kg	0.275	0.275	83.0	50-110	0.00581	20	WG612204
Isophorone	mg/kg	0.217	0.205	65.0	51-99	5.69	20	WG612204
n-Nitrosodi-n-propylamine	mg/kg	0.250	0.244	75.0	52-103	2.45	20	WG612204
n-Nitrosodimethylamine	mg/kg	0.195	0.189	59.0	31-107	3.44	23	WG612204
n-Nitrosodiphenylamine	mg/kg	0.248	0.245	74.0	57-121	1.29	20	WG612204
Naphthalene	mg/kg	0.239	0.222	72.0	55-91	7.47	20	WG612204
Nitrobenzene	mg/kg	0.239	0.227	72.0	47-92	5.37	20	WG612204
Pentachlorophenol	mg/kg	0.172	0.169	52.0	10-89	1.76	28	WG612204
Phenanthrene	mg/kg	0.249	0.253	75.0	55-103	1.64	20	WG612204
Phenol	mg/kg	0.253	0.241	76.0	49-99	4.97	20	WG612204
Pyrene	mg/kg	0.276	0.270	83.0	54-104	2.15	20	WG612204
2,4,6-Tribromophenol				65.18	16-136			WG612204
2-Fluorobiphenyl				77.57	37-119			WG612204
2-Fluorophenol				69.23	22-114			WG612204
Nitrobenzene-d5				73.56	20-114			WG612204
Phenol-d5				75.02	26-127			WG612204
p-Terphenyl-d14				83.89	15-174			WG612204
PCB 1016	mg/kg	0.137	0.141	82.0	64-120	2.45	20	WG612212
PCB 1260	mg/kg	0.162	0.160	97.0	72-130	0.945	20	WG612212
Decachlorobiphenyl				96.36	18.9-115.8			WG612212
Tetrachloro-m-xylene				61.62	31.8-115.7			WG612212
2,4,5-T	mg/kg	0.134	0.140	80.0	32.9-103	4.56	27.4	WG612944
2,4,5-TP (Silvex)	mg/kg	0.134	0.141	80.0	46-116	5.00	25.2	WG612944
2,4-D	mg/kg	0.118	0.124	71.0	28-98	5.10	24	WG612944
2,4-DB	mg/kg	0.142	0.149	85.0	28.9-108	4.45	30.3	WG612944
Dalapon	mg/kg	0.121	0.135	72.0	18.4-113	10.8	24.1	WG612944
Dicamba	mg/kg	0.135	0.142	80.0	37.2-119	5.58	21.2	WG612944
Dichloroprop	mg/kg	0.146	0.154	87.0	40.5-114	5.80	23.3	WG612944
Dinoseb	mg/kg	0.116	0.0903	70.0	10-98	25.1	40	WG612944
MCPA	mg/kg	13.6	14.8	81.0	15.5-110	9.10	40	WG612944
MCPP	mg/kg	18.5	19.7	110.	40.1-177	6.40	32.2	WG612944
2,4-Dichlorophenyl Acetic Acid				75.65	37-99			WG612944
1,2,4-Trichlorobenzene	mg/kg	0.211	0.219	63.0	48-87	3.95	20	WG613095
2,4,6-Trichlorophenol	mg/kg	0.224	0.227	67.0	50-98	1.33	20	WG613095
2,4-Dichlorophenol	mg/kg	0.243	0.244	73.0	56-96	0.126	20	WG613095
2,4-Dimethylphenol	mg/kg	0.248	0.244	74.0	52-101	1.54	20	WG613095
2,4-Dinitrophenol	mg/kg	0.171	0.179	51.0	10-109	4.47	39	WG613095
2,4-Dinitrotoluene	mg/kg	0.243	0.248	73.0	54-103	2.14	20	WG613095
2,6-Dinitrotoluene	mg/kg	0.231	0.238	69.0	53-99	3.24	20	WG613095
2-Chloronaphthalene	mg/kg	0.212	0.217	64.0	55-96	2.20	20	WG613095
2-Chlorophenol	mg/kg	0.209	0.220	63.0	52-88	5.18	20	WG613095
2-Nitrophenol	mg/kg	0.237	0.244	71.0	55-106	2.99	20	WG613095
3,3-Dichlorobenzidine	mg/kg	0.166	0.177	50.0	36-84	6.81	20	WG613095
4,6-Dinitro-2-methylphenol	mg/kg	0.239	0.232	72.0	24-98	2.60	32	WG613095
4-Bromophenyl-phenylether	mg/kg	0.219	0.223	66.0	58-111	2.01	20	WG613095
4-Chloro-3-methylphenol	mg/kg	0.246	0.239	74.0	58-98	3.04	20	WG613095
4-Chlorophenyl-phenylether	mg/kg	0.237	0.237	71.0	59-103	0.124	20	WG613095
4-Nitrophenol	mg/kg	0.216	0.225	65.0	34-101	4.20	26	WG613095
Acenaphthene	mg/kg	0.221	0.219	66.0	55-96	0.960	20	WG613095
Acenaphthylene	mg/kg	0.231	0.231	69.0	61-107	0.0381	20	WG613095
Anthracene	mg/kg	0.231	0.231	69.0	58-105	0.212	20	WG613095

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Denver, CO 80222

Quality Assurance Report
Level II

L594311

September 20, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
Benzidine	mg/kg	0.0192	0.0211	6*	10-21	9.54	40	WG613095
Benzo(a)anthracene	mg/kg	0.218	0.224	66.0	56-103	2.50	20	WG613095
Benzo(a)pyrene	mg/kg	0.244	0.244	73.0	57-103	0.0769	20	WG613095
Benzo(b)fluoranthene	mg/kg	0.235	0.234	71.0	52-106	0.357	20	WG613095
Benzo(g,h,i)perylene	mg/kg	0.233	0.237	70.0	47-112	1.56	20	WG613095
Benzo(k)fluoranthene	mg/kg	0.234	0.237	70.0	53-104	1.25	20	WG613095
Benzylbutyl phthalate	mg/kg	0.226	0.231	68.0	61-118	2.17	20	WG613095
Bis(2-chlorethoxy)methane	mg/kg	0.229	0.227	69.0	58-104	0.714	20	WG613095
Bis(2-chloroethyl)ether	mg/kg	0.218	0.225	65.0	51-103	3.26	20	WG613095
Bis(2-chloroisopropyl)ether	mg/kg	0.209	0.215	63.0	56-95	2.94	20	WG613095
Bis(2-ethylhexyl)phthalate	mg/kg	0.237	0.248	71.0	56-120	4.50	20	WG613095
Chrysene	mg/kg	0.225	0.236	68.0	55-102	4.62	20	WG613095
Di-n-butyl phthalate	mg/kg	0.237	0.238	71.0	59-114	0.800	20	WG613095
Di-n-octyl phthalate	mg/kg	0.244	0.245	73.0	51-119	0.527	22	WG613095
Dibenz(a,h)anthracene	mg/kg	0.238	0.233	71.0	49-111	2.30	20	WG613095
Diethyl phthalate	mg/kg	0.228	0.221	68.0	61-105	3.30	20	WG613095
Dimethyl phthalate	mg/kg	0.223	0.234	67.0	60-106	5.11	20	WG613095
Fluoranthene	mg/kg	0.237	0.230	71.0	59-108	2.98	20	WG613095
Fluorene	mg/kg	0.228	0.225	68.0	59-100	1.29	20	WG613095
Hexachloro-1,3-butadiene	mg/kg	0.225	0.228	67.0	53-106	1.37	20	WG613095
Hexachlorobenzene	mg/kg	0.201	0.200	60.0	50-108	0.911	20	WG613095
Hexachlorocyclopentadiene	mg/kg	0.161	0.169	48.0	36-117	4.74	20	WG613095
Hexachloroethane	mg/kg	0.200	0.211	60.0	45-83	5.49	20	WG613095
Indeno(1,2,3-cd)pyrene	mg/kg	0.240	0.237	72.0	50-110	1.30	20	WG613095
Isophorone	mg/kg	0.190	0.191	57.0	51-99	0.501	20	WG613095
n-Nitrosodi-n-propylamine	mg/kg	0.232	0.231	70.0	52-103	0.287	20	WG613095
n-Nitrosodimethylamine	mg/kg	0.183	0.209	55.0	31-107	13.1	23	WG613095
n-Nitrosodiphenylamine	mg/kg	0.221	0.226	66.0	57-121	2.04	20	WG613095
Naphthalene	mg/kg	0.217	0.216	65.0	55-91	0.472	20	WG613095
Nitrobenzene	mg/kg	0.221	0.225	66.0	47-92	1.60	20	WG613095
Pentachlorophenol	mg/kg	0.172	0.166	52.0	10-89	3.52	28	WG613095
Phenanthrene	mg/kg	0.222	0.218	66.0	55-103	1.49	20	WG613095
Phenol	mg/kg	0.235	0.227	70.0	49-99	3.55	20	WG613095
Pyrene	mg/kg	0.228	0.224	68.0	54-104	1.94	20	WG613095
2,4,6-Tribromophenol				62.21	16-136			WG613095
2-Fluorobiphenyl				66.63	37-119			WG613095
2-Fluorophenol				59.21	22-114			WG613095
Nitrobenzene-d5				67.37	20-114			WG613095
Phenol-d5				61.73	26-127			WG613095
p-Terphenyl-d14				69.39	15-174			WG613095
Bis(2-ethylhexyl)phthalate	mg/kg	0.205	0.227	62.0	56-120	10.3	20	WG613094
2,4,6-Tribromophenol				69.36	16-136			WG613094
2-Fluorobiphenyl				54.94	37-119			WG613094
2-Fluorophenol				24.90	22-114			WG613094
Nitrobenzene-d5				35.83	20-114			WG613094
Phenol-d5				39.07	26-127			WG613094
p-Terphenyl-d14				54.23	15-174			WG613094
4,4-DDD	mg/kg	0.0653	0.0640	98.0	74-114	1.96	20	WG612212
4,4-DDE	mg/kg	0.0613	0.0599	92.0	74-115	2.23	20	WG612212
4,4-DDT	mg/kg	0.0647	0.0629	97.0	62-124	2.82	20	WG612212
Aldrin	mg/kg	0.0537	0.0557	80.0	69-110	3.69	20	WG612212
Alpha BHC	mg/kg	0.0515	0.0580	77.0	68-111	12.0	20	WG612212
Beta BHC	mg/kg	0.0569	0.0578	85.0	74-112	1.57	20	WG612212
Delta BHC	mg/kg	0.0612	0.0613	92.0	71-110	0.0467	20	WG612212
Dieldrin	mg/kg	0.0625	0.0612	94.0	76-115	2.20	20	WG612212

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Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L594311

September 20, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
Endosulfan I	mg/kg	0.0618	0.0607	93.0	76-119	1.78	20	WG612212
Endosulfan II	mg/kg	0.0600	0.0591	90.0	75-116	1.48	20	WG612212
Endosulfan sulfate	mg/kg	0.0677	0.0671	102.	70-118	0.943	20	WG612212
Endrin	mg/kg	0.0627	0.0615	94.0	68-115	1.87	20	WG612212
Endrin aldehyde	mg/kg	0.0609	0.0593	91.0	48-92	2.61	20	WG612212
Endrin ketone	mg/kg	0.0680	0.0668	102.	70-112	1.69	20	WG612212
Gamma BHC	mg/kg	0.0571	0.0599	86.0	70-112	4.73	20	WG612212
Heptachlor	mg/kg	0.0557	0.0596	83.0	69-111	6.80	20	WG612212
Heptachlor epoxide	mg/kg	0.0616	0.0608	92.0	72-115	1.29	20	WG612212
Hexachlorobenzene	mg/kg	0.0436	0.0469	65.0	64-111	7.19	20	WG612212
Methoxychlor	mg/kg	0.0701	0.0684	105.	65-123	2.47	20	WG612212
Decachlorobiphenyl				92.32	18.9-115.8			WG612212
Tetrachloro-m-xylene				68.52	31.8-115.7			WG612212

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.121	0	.025	96.8	49-135	L594033-02	WG612046
1,1,1-Trichloroethane	mg/kg	0.118	0	.025	94.2	43-142	L594033-02	WG612046
1,1,2,2-Tetrachloroethane	mg/kg	0.114	0	.025	91.4	42-147	L594033-02	WG612046
1,1,2-Trichloroethane	mg/kg	0.118	0	.025	94.6	51-134	L594033-02	WG612046
1,1,2-Trichlorotrifluoroethane	mg/kg	0.127	0	.025	101.	25-156	L594033-02	WG612046
1,1-Dichloroethane	mg/kg	0.110	0	.025	88.3	50-131	L594033-02	WG612046
1,1-Dichloroethene	mg/kg	0.130	0	.025	104.	29-145	L594033-02	WG612046
1,1-Dichloropropene	mg/kg	0.115	0	.025	92.3	40-136	L594033-02	WG612046
1,2,3-Trichlorobenzene	mg/kg	0.101	0	.025	80.8	13-142	L594033-02	WG612046
1,2,3-Trichloropropane	mg/kg	0.112	0	.025	90.0	41-149	L594033-02	WG612046
1,2,3-Trimethylbenzene	mg/kg	0.100	0	.025	80.0	33-146	L594033-02	WG612046
1,2,4-Trichlorobenzene	mg/kg	0.109	0	.025	87.5	12-140	L594033-02	WG612046
1,2,4-Trimethylbenzene	mg/kg	0.121	0	.025	97.0	29-143	L594033-02	WG612046
1,2-Dibromo-3-Chloropropane	mg/kg	0.0985	0	.025	78.8	29-151	L594033-02	WG612046
1,2-Dibromoethane	mg/kg	0.116	0	.025	92.4	48-133	L594033-02	WG612046
1,2-Dichlorobenzene	mg/kg	0.110	0	.025	88.3	37-136	L594033-02	WG612046
1,2-Dichloroethane	mg/kg	0.107	0	.025	86.0	49-131	L594033-02	WG612046
1,2-Dichloropropane	mg/kg	0.109	0	.025	87.5	50-132	L594033-02	WG612046
1,3,5-Trimethylbenzene	mg/kg	0.123	0	.025	98.4	29-144	L594033-02	WG612046
1,3-Dichlorobenzene	mg/kg	0.127	0	.025	102.	26-140	L594033-02	WG612046
1,3-Dichloropropane	mg/kg	0.115	0	.025	92.2	50-126	L594033-02	WG612046
1,4-Dichlorobenzene	mg/kg	0.111	0	.025	89.0	34-132	L594033-02	WG612046
2,2-Dichloropropane	mg/kg	0.118	0	.025	94.4	35-148	L594033-02	WG612046
2-Butanone (MEK)	mg/kg	0.761	0	.125	122.	40-149	L594033-02	WG612046
2-Chloroethyl vinyl ether	mg/kg	0.525	0	.125	84.0	10-173	L594033-02	WG612046
2-Chlorotoluene	mg/kg	0.121	0	.025	96.4	34-136	L594033-02	WG612046
4-Chlorotoluene	mg/kg	0.123	0	.025	98.3	31-137	L594033-02	WG612046
4-Methyl-2-pentanone (MIBK)	mg/kg	0.587	0	.125	94.0	37-153	L594033-02	WG612046
Acetone	mg/kg	1.06	0	.125	169.	10-177	L594033-02	WG612046
Acrylonitrile	mg/kg	0.545	0	.125	87.2	33-159	L594033-02	WG612046
Benzene	mg/kg	0.112	0	.025	89.8	44-131	L594033-02	WG612046
Bromobenzene	mg/kg	0.117	0	.025	93.5	36-132	L594033-02	WG612046
Bromodichloromethane	mg/kg	0.107	0	.025	85.6	48-134	L594033-02	WG612046
Bromoform	mg/kg	0.116	0	.025	92.9	34-141	L594033-02	WG612046
Bromomethane	mg/kg	0.173	0	.025	138.	19-173	L594033-02	WG612046
Carbon tetrachloride	mg/kg	0.112	0	.025	89.4	36-140	L594033-02	WG612046
Chlorobenzene	mg/kg	0.120	0	.025	95.8	42-133	L594033-02	WG612046
Chlorodibromomethane	mg/kg	0.116	0	.025	93.2	45-135	L594033-02	WG612046
Chloroethane	mg/kg	0.138	0	.025	110.	16-178	L594033-02	WG612046
Chloroform	mg/kg	0.119	0	.025	95.5	52-130	L594033-02	WG612046
Chloromethane	mg/kg	0.0938	0	.025	75.1	28-147	L594033-02	WG612046
cis-1,2-Dichloroethene	mg/kg	0.114	0	.025	91.0	52-128	L594033-02	WG612046

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Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
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Quality Assurance Report
Level II

L594311

September 20, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
cis-1,3-Dichloropropene	mg/kg	0.108	0	.025	86.2	46-131	L594033-02	WG612046
Di-isopropyl ether	mg/kg	0.103	0	.025	82.4	46-134	L594033-02	WG612046
Dibromomethane	mg/kg	0.110	0	.025	88.1	51-133	L594033-02	WG612046
Dichlorodifluoromethane	mg/kg	0.105	0	.025	83.9	12-179	L594033-02	WG612046
Ethylbenzene	mg/kg	0.122	0	.025	97.4	38-139	L594033-02	WG612046
Hexachloro-1,3-butadiene	mg/kg	0.103	0	.025	82.2	10-147	L594033-02	WG612046
Isopropylbenzene	mg/kg	0.132	0	.025	106.	34-137	L594033-02	WG612046
Methyl tert-butyl ether	mg/kg	0.112	0	.025	89.6	45-134	L594033-02	WG612046
Methylene Chloride	mg/kg	0.114	0	.025	91.2	41-133	L594033-02	WG612046
n-Butylbenzene	mg/kg	0.108	0	.025	86.5	19-149	L594033-02	WG612046
n-Propylbenzene	mg/kg	0.122	0	.025	98.0	27-142	L594033-02	WG612046
Naphthalene	mg/kg	0.0948	0	.025	75.8	19-146	L594033-02	WG612046
p-Isopropyltoluene	mg/kg	0.126	0	.025	101.	21-150	L594033-02	WG612046
sec-Butylbenzene	mg/kg	0.126	0	.025	101.	25-148	L594033-02	WG612046
Styrene	mg/kg	0.115	0	.025	91.9	30-156	L594033-02	WG612046
tert-Butylbenzene	mg/kg	0.127	0	.025	102.	32-146	L594033-02	WG612046
Tetrachloroethene	mg/kg	0.131	0	.025	105.	35-139	L594033-02	WG612046
Toluene	mg/kg	0.118	0	.025	94.1	43-127	L594033-02	WG612046
trans-1,2-Dichloroethene	mg/kg	0.113	0	.025	90.6	41-132	L594033-02	WG612046
trans-1,3-Dichloropropene	mg/kg	0.109	0	.025	86.8	43-129	L594033-02	WG612046
Trichloroethene	mg/kg	0.127	0	.025	102.	42-136	L594033-02	WG612046
Trichlorofluoromethane	mg/kg	0.139	0	.025	111.	20-178	L594033-02	WG612046
Vinyl chloride	mg/kg	0.111	0	.025	89.2	30-157	L594033-02	WG612046
Xylenes, Total	mg/kg	0.370	0	.075	98.8	38-137	L594033-02	WG612046
4-Bromofluorobenzene					102.1	67-133		WG612046
Dibromofluoromethane					99.34	72-135		WG612046
Toluene-d8					99.80	90-113		WG612046
Mercury	mg/kg	0.243	0	.25	97.2	80-120	L594311-01	WG612071
Arsenic	mg/kg	45.7	3.70	50	84.0	75-125	L594295-03	WG611999
Barium	mg/kg	140.	100.	50	80.0	75-125	L594295-03	WG611999
Chromium	mg/kg	58.6	16.0	50	85.2	75-125	L594295-03	WG611999
Iron	mg/kg	14700	15300	50	0*	75-125	L594295-03	WG611999
Lead	mg/kg	57.2	14.0	50	86.4	75-125	L594295-03	WG611999
Selenium	mg/kg	40.3	0	50	80.6	75-125	L594295-03	WG611999
Silver	mg/kg	43.2	0	50	86.4	75-125	L594295-03	WG611999
Cadmium	mg/kg	45.4	0	25	90.8	75-125	L594295-03	WG611999
PCB 1016	mg/kg	0.147	0	.167	88.2	10-165	L594311-03	WG612212
PCB 1260	mg/kg	0.139	0	.167	83.4	29-154	L594311-03	WG612212
Decachlorobiphenyl					87.34	18.9-115.8		WG612212
Tetrachloro-m-xylene					83.66	31.8-115.7		WG612212
2,4,5-T	mg/kg	0.132	0	.167	78.8	18-111	L594311-01	WG612944
2,4,5-TP (Silvex)	mg/kg	0.140	0	.167	83.7	27-123	L594311-01	WG612944
2,4-D	mg/kg	0.107	0	.167	63.9	10-137	L594311-01	WG612944
2,4-DB	mg/kg	0.148	0	.167	88.7	15-121	L594311-01	WG612944
Dalapon	mg/kg	0.130	0	.167	77.6	10-111	L594311-01	WG612944
Dicamba	mg/kg	0.142	0	.167	84.9	21-118	L594311-01	WG612944
Dichloroprop	mg/kg	0.137	0	.167	81.9	27-125	L594311-01	WG612944
Dinoseb	mg/kg	0.0984	0	.167	58.9	10-95	L594311-01	WG612944
MCPA	mg/kg	16.2	0	16.7	96.9	10-164	L594311-01	WG612944
MCPP	mg/kg	22.2	0	16.7	133.	17-186	L594311-01	WG612944
2,4-Dichlorophenyl Acetic Acid					70.21	37-99		WG612944

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Quality Assurance Report
Level II

L594311

September 20, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,2,4-Trichlorobenzene	mg/kg	0.296	0	.333	89.0	27-118	L595431-04	WG613095
2,4,6-Trichlorophenol	mg/kg	0.290	0	.333	87.2	18-140	L595431-04	WG613095
2,4-Dichlorophenol	mg/kg	0.321	0	.333	96.4	30-134	L595431-04	WG613095
2,4-Dimethylphenol	mg/kg	0.314	0	.333	94.2	13-147	L595431-04	WG613095
2,4-Dinitrophenol	mg/kg	0.0762	0	.333	22.9	10-110	L595431-04	WG613095
2,4-Dinitrotoluene	mg/kg	0.315	0	.333	94.7	12-146	L595431-04	WG613095
2,6-Dinitrotoluene	mg/kg	0.312	0	.333	93.6	10-150	L595431-04	WG613095
2-Chloronaphthalene	mg/kg	0.293	0	.333	87.9	31-127	L595431-04	WG613095
2-Chlorophenol	mg/kg	0.281	0	.333	84.3	26-120	L595431-04	WG613095
2-Nitrophenol	mg/kg	0.299	0	.333	89.9	10-156	L595431-04	WG613095
3,3-Dichlorobenzidine	mg/kg	0.251	0	.333	75.3	10-127	L595431-04	WG613095
4,6-Dinitro-2-methylphenol	mg/kg	0.244	0	.333	73.3	10-124	L595431-04	WG613095
4-Bromophenyl-phenylether	mg/kg	0.309	0	.333	92.9	27-150	L595431-04	WG613095
4-Chloro-3-methylphenol	mg/kg	0.316	0	.333	94.7	24-140	L595431-04	WG613095
4-Chlorophenyl-phenylether	mg/kg	0.312	0	.333	93.7	27-142	L595431-04	WG613095
4-Nitrophenol	mg/kg	0.257	0	.333	77.1	10-166	L595431-04	WG613095
Acenaphthene	mg/kg	0.294	0	.333	88.2	30-132	L595431-04	WG613095
Acenaphthylene	mg/kg	0.311	0	.333	93.3	31-144	L595431-04	WG613095
Anthracene	mg/kg	0.328	0	.333	98.5	27-140	L595431-04	WG613095
Benzidine	mg/kg	0.0177	0	.333	5.31*	10-55	L595431-04	WG613095
Benzo(a)anthracene	mg/kg	0.292	0	.333	87.8	22-139	L595431-04	WG613095
Benzo(a)pyrene	mg/kg	0.316	0	.333	94.9	16-148	L595431-04	WG613095
Benzo(b)fluoranthene	mg/kg	0.298	0	.333	89.6	13-152	L595431-04	WG613095
Benzo(g,h,i)perylene	mg/kg	0.320	0	.333	96.0	10-137	L595431-04	WG613095
Benzo(k)fluoranthene	mg/kg	0.310	0	.333	93.2	15-152	L595431-04	WG613095
Benzylbutyl phthalate	mg/kg	0.318	0	.333	95.4	20-168	L595431-04	WG613095
Bis(2-chlorethoxy)methane	mg/kg	0.297	0	.333	89.2	32-141	L595431-04	WG613095
Bis(2-chloroethyl)ether	mg/kg	0.295	0	.333	88.6	25-139	L595431-04	WG613095
Bis(2-chloroisopropyl)ether	mg/kg	0.273	0	.333	82.1	32-128	L595431-04	WG613095
Bis(2-ethylhexyl)phthalate	mg/kg	0.329	0	.333	98.8	20-163	L595431-04	WG613095
Chrysene	mg/kg	0.307	0	.333	92.1	20-139	L595431-04	WG613095
Di-n-butyl phthalate	mg/kg	0.320	0	.333	96.2	24-149	L595431-04	WG613095
Di-n-octyl phthalate	mg/kg	0.335	0	.333	100.	14-164	L595431-04	WG613095
Dibenz(a,h)anthracene	mg/kg	0.316	0	.333	95.0	10-137	L595431-04	WG613095
Diethyl phthalate	mg/kg	0.302	0	.333	90.8	28-142	L595431-04	WG613095
Dimethyl phthalate	mg/kg	0.306	0	.333	91.8	31-142	L595431-04	WG613095
Fluoranthene	mg/kg	0.313	0	.333	94.0	24-145	L595431-04	WG613095
Fluorene	mg/kg	0.300	0	.333	90.0	30-138	L595431-04	WG613095
Hexachloro-1,3-butadiene	mg/kg	0.298	0	.333	89.6	29-136	L595431-04	WG613095
Hexachlorobenzene	mg/kg	0.266	0	.333	79.9	26-136	L595431-04	WG613095
Hexachlorocyclopentadiene	mg/kg	0.183	0	.333	54.9	10-124	L595431-04	WG613095
Hexachloroethane	mg/kg	0.262	0	.333	78.8	21-107	L595431-04	WG613095
Indeno(1,2,3-cd)pyrene	mg/kg	0.319	0	.333	95.9	10-139	L595431-04	WG613095
Isophorone	mg/kg	0.249	0	.333	74.7	26-134	L595431-04	WG613095
n-Nitrosodi-n-propylamine	mg/kg	0.304	0	.333	91.2	24-141	L595431-04	WG613095
n-Nitrosodimethylamine	mg/kg	0.241	0	.333	72.3	18-126	L595431-04	WG613095
n-Nitrosodiphenylamine	mg/kg	0.310	0	.333	93.0	16-128	L595431-04	WG613095
Naphthalene	mg/kg	0.287	0	.333	86.0	31-124	L595431-04	WG613095
Nitrobenzene	mg/kg	0.305	0	.333	91.7	22-122	L595431-04	WG613095
Pentachlorophenol	mg/kg	0.209	0	.333	62.6	10-124	L595431-04	WG613095
Phenanthrene	mg/kg	0.308	0	.333	92.6	25-139	L595431-04	WG613095
Phenol	mg/kg	0.307	0	.333	92.2	22-129	L595431-04	WG613095
Pyrene	mg/kg	0.309	0	.333	92.8	23-145	L595431-04	WG613095
2,4,6-Tribromophenol					91.28	16-136		WG613095
2-Fluorobiphenyl					90.76	37-119		WG613095
2-Fluorophenol					78.56	22-114		WG613095
Nitrobenzene-d5					90.43	20-114		WG613095
Phenol-d5					81.76	26-127		WG613095
p-Terphenyl-d14					86.12	15-174		WG613095

* Performance of this Analyte is outside of established criteria.
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Denver, CO 80222

Quality Assurance Report
Level II

L594311

September 20, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Bis(2-ethylhexyl)phthalate	mg/kg	0.230	0	.333	69.0	20-163	L594311-01	WG613094
2,4,6-Tribromophenol					84.34	16-136		WG613094
2-Fluorobiphenyl					72.79	37-119		WG613094
2-Fluorophenol					49.57	22-114		WG613094
Nitrobenzene-d5					60.14	20-114		WG613094
Phenol-d5					64.19	26-127		WG613094
p-Terphenyl-d14					70.40	15-174		WG613094

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.148	0.121	118.	49-135	19.9	23	L594033-02	WG612046
1,1,1-Trichloroethane	mg/kg	0.143	0.118	114.	43-142	19.4	24	L594033-02	WG612046
1,1,2,2-Tetrachloroethane	mg/kg	0.145	0.114	116.	42-147	23.8	25	L594033-02	WG612046
1,1,2-Trichloroethane	mg/kg	0.152	0.118	121.	51-134	24.7*	21	L594033-02	WG612046
1,1,2-Trichlorotrifluoroethane	mg/kg	0.144	0.127	115.	25-156	13.2	29	L594033-02	WG612046
1,1-Dichloroethane	mg/kg	0.130	0.110	104.	50-131	16.7	21	L594033-02	WG612046
1,1-Dichloroethene	mg/kg	0.156	0.130	124.	29-145	18.1	28	L594033-02	WG612046
1,1-Dichloropropene	mg/kg	0.132	0.115	105.	40-136	13.2	24	L594033-02	WG612046
1,2,3-Trichlorobenzene	mg/kg	0.127	0.101	101.	13-142	22.7	33	L594033-02	WG612046
1,2,3-Trichloropropane	mg/kg	0.151	0.112	120.	41-149	29.0*	28	L594033-02	WG612046
1,2,3-Trimethylbenzene	mg/kg	0.122	0.100	97.9	33-146	20.1	27	L594033-02	WG612046
1,2,4-Trichlorobenzene	mg/kg	0.132	0.109	106.	12-140	18.9	32	L594033-02	WG612046
1,2,4-Trimethylbenzene	mg/kg	0.149	0.121	119.	29-143	20.7	30	L594033-02	WG612046
1,2-Dibromo-3-Chloropropane	mg/kg	0.137	0.0985	110.	29-151	33.0*	31	L594033-02	WG612046
1,2-Dibromoethane	mg/kg	0.152	0.116	121.	48-133	27.0*	22	L594033-02	WG612046
1,2-Dichlorobenzene	mg/kg	0.137	0.110	109.	37-136	21.3	25	L594033-02	WG612046
1,2-Dichloroethane	mg/kg	0.133	0.107	106.	49-131	21.3*	20	L594033-02	WG612046
1,2-Dichloropropane	mg/kg	0.140	0.109	112.	50-132	24.8*	21	L594033-02	WG612046
1,3,5-Trimethylbenzene	mg/kg	0.152	0.123	122.	29-144	21.4	30	L594033-02	WG612046
1,3-Dichlorobenzene	mg/kg	0.159	0.127	127.	26-140	22.2	28	L594033-02	WG612046
1,3-Dichloropropane	mg/kg	0.151	0.115	121.	50-126	26.7*	22	L594033-02	WG612046
1,4-Dichlorobenzene	mg/kg	0.138	0.111	110.	34-132	21.2	26	L594033-02	WG612046
2,2-Dichloropropane	mg/kg	0.153	0.118	122.	35-148	26.0	26	L594033-02	WG612046
2-Butanone (MEK)	mg/kg	1.07	0.761	171.*	40-149	33.7*	27	L594033-02	WG612046
2-Chloroethyl vinyl ether	mg/kg	0.652	0.525	104.	10-173	21.6	33	L594033-02	WG612046
2-Chlorotoluene	mg/kg	0.150	0.121	120.	34-136	21.6	28	L594033-02	WG612046
4-Chlorotoluene	mg/kg	0.154	0.123	123.	31-137	22.2	27	L594033-02	WG612046
4-Methyl-2-pentanone (MIBK)	mg/kg	0.830	0.587	133.	37-153	34.3*	27	L594033-02	WG612046
Acetone	mg/kg	1.47	1.06	236.*	10-177	32.9*	28	L594033-02	WG612046
Acrylonitrile	mg/kg	0.759	0.545	121.	33-159	32.8*	26	L594033-02	WG612046
Benzene	mg/kg	0.134	0.112	107.	44-131	17.3	21	L594033-02	WG612046
Bromobenzene	mg/kg	0.144	0.117	115.	36-132	20.8	26	L594033-02	WG612046
Bromodichloromethane	mg/kg	0.134	0.107	107.	48-134	22.3*	20	L594033-02	WG612046
Bromoform	mg/kg	0.148	0.116	119.	34-141	24.5*	24	L594033-02	WG612046
Bromomethane	mg/kg	0.192	0.173	154.	19-173	10.7	25	L594033-02	WG612046
Carbon tetrachloride	mg/kg	0.133	0.112	106.	36-140	17.0	26	L594033-02	WG612046
Chlorobenzene	mg/kg	0.151	0.120	121.	42-133	23.2	24	L594033-02	WG612046
Chlorodibromomethane	mg/kg	0.146	0.116	117.	45-135	22.8	23	L594033-02	WG612046
Chloroethane	mg/kg	0.144	0.138	115.	16-178	4.31	25	L594033-02	WG612046
Chloroform	mg/kg	0.146	0.119	117.	52-130	20.0	21	L594033-02	WG612046
Chloromethane	mg/kg	0.102	0.0938	81.9	28-147	8.75	23	L594033-02	WG612046
cis-1,2-Dichloroethene	mg/kg	0.135	0.114	108.	52-128	17.0	21	L594033-02	WG612046
cis-1,3-Dichloropropene	mg/kg	0.133	0.108	106.	46-131	20.9	21	L594033-02	WG612046
Di-isopropyl ether	mg/kg	0.123	0.103	98.6	46-134	17.9	20	L594033-02	WG612046
Dibromomethane	mg/kg	0.142	0.110	114.	51-133	25.3*	21	L594033-02	WG612046
Dichlorodifluoromethane	mg/kg	0.112	0.105	89.9	12-179	6.86	27	L594033-02	WG612046
Ethylbenzene	mg/kg	0.150	0.122	120.	38-139	21.2	27	L594033-02	WG612046
Hexachloro-1,3-butadiene	mg/kg	0.118	0.103	94.6	10-147	14.1	37	L594033-02	WG612046

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L594311

September 20, 2012

		Matrix Spike Duplicate							
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Isopropylbenzene	mg/kg	0.166	0.132	133.	34-137	22.5	29	L594033-02	WG612046
Methyl tert-butyl ether	mg/kg	0.140	0.112	112.	45-134	22.1*	22	L594033-02	WG612046
Methylene Chloride	mg/kg	0.131	0.114	105.	41-133	14.0	28	L594033-02	WG612046
n-Butylbenzene	mg/kg	0.129	0.108	103.	19-149	17.5	32	L594033-02	WG612046
n-Propylbenzene	mg/kg	0.153	0.122	122.	27-142	22.0	29	L594033-02	WG612046
Naphthalene	mg/kg	0.123	0.0948	98.7	19-146	26.3	30	L594033-02	WG612046
p-Isopropyltoluene	mg/kg	0.154	0.126	123.	21-150	19.7	31	L594033-02	WG612046
sec-Butylbenzene	mg/kg	0.155	0.126	124.	25-148	20.4	31	L594033-02	WG612046
Styrene	mg/kg	0.141	0.115	113.	30-156	20.3	26	L594033-02	WG612046
tert-Butylbenzene	mg/kg	0.156	0.127	125.	32-146	20.2	30	L594033-02	WG612046
Tetrachloroethene	mg/kg	0.158	0.131	127.	35-139	18.8	27	L594033-02	WG612046
Toluene	mg/kg	0.147	0.118	118.	43-127	22.3*	21	L594033-02	WG612046
trans-1,2-Dichloroethene	mg/kg	0.131	0.113	105.	41-132	14.7	23	L594033-02	WG612046
trans-1,3-Dichloropropene	mg/kg	0.137	0.109	110.	43-129	23.3*	23	L594033-02	WG612046
Trichloroethene	mg/kg	0.162	0.127	129.	42-136	23.8*	23	L594033-02	WG612046
Trichlorofluoromethane	mg/kg	0.148	0.139	118.	20-178	6.18	30	L594033-02	WG612046
Vinyl chloride	mg/kg	0.121	0.111	96.8	30-157	8.18	24	L594033-02	WG612046
Xylenes, Total	mg/kg	0.460	0.370	122.	38-137	21.5	26	L594033-02	WG612046
4-Bromofluorobenzene				105.6	67-133				WG612046
Dibromofluoromethane				96.72	72-135				WG612046
Toluene-d8				100.9	90-113				WG612046
Mercury	mg/kg	0.241	0.243	96.4	80-120	0.826	20	L594311-01	WG612071
Arsenic	mg/kg	45.0	45.7	82.6	75-125	1.54	20	L594295-03	WG611999
Barium	mg/kg	143.	140.	86.0	75-125	2.12	20	L594295-03	WG611999
Chromium	mg/kg	59.4	58.6	86.8	75-125	1.36	20	L594295-03	WG611999
Iron	mg/kg	14500	14700	0*	75-125	1.37	20	L594295-03	WG611999
Lead	mg/kg	58.5	57.2	89.0	75-125	2.25	20	L594295-03	WG611999
Selenium	mg/kg	41.3	40.3	82.6	75-125	2.45	20	L594295-03	WG611999
Silver	mg/kg	44.6	43.2	89.2	75-125	3.19	20	L594295-03	WG611999
Cadmium	mg/kg	46.2	45.4	92.4	75-125	1.75	20	L594295-03	WG611999
PCB 1016	mg/kg	0.148	0.147	88.8	10-165	0.643	33	L594311-03	WG612212
PCB 1260	mg/kg	0.142	0.139	85.2	29-154	2.17	23	L594311-03	WG612212
Decachlorobiphenyl				85.77	18.9-115.8				WG612212
Tetrachloro-m-xylene				87.63	31.8-115.7				WG612212
2,4,5-T	mg/kg	0.130	0.132	77.9	18-111	1.04	29	L594311-01	WG612944
2,4,5-TP (Silvex)	mg/kg	0.133	0.140	79.9	27-123	4.65	23	L594311-01	WG612944
2,4-D	mg/kg	0.119	0.107	71.1	10-137	10.6	40	L594311-01	WG612944
2,4-DB	mg/kg	0.130	0.148	77.6	15-121	13.4	33	L594311-01	WG612944
Dalapon	mg/kg	0.128	0.130	76.6	10-111	1.28	37	L594311-01	WG612944
Dicamba	mg/kg	0.127	0.142	76.3	21-118	10.6	24	L594311-01	WG612944
Dichloroprop	mg/kg	0.132	0.137	79.2	27-125	3.31	24	L594311-01	WG612944
Dinoseb	mg/kg	0.0830	0.0984	49.7	10-95	17.0	40	L594311-01	WG612944
MCPA	mg/kg	17.3	16.2	104.	10-164	6.69	40	L594311-01	WG612944
MCPP	mg/kg	21.8	22.2	130.	17-186	1.73	40	L594311-01	WG612944
2,4-Dichlorophenyl Acetic Acid				64.99	37-99				WG612944
1,2,4-Trichlorobenzene	mg/kg	0.231	0.296	69.5	27-118	24.6*	23	L595431-04	WG613095
2,4,6-Trichlorophenol	mg/kg	0.252	0.290	75.6	18-140	14.3	26	L595431-04	WG613095
2,4-Dichlorophenol	mg/kg	0.252	0.321	75.6	30-134	24.2*	23	L595431-04	WG613095
2,4-Dimethylphenol	mg/kg	0.251	0.314	75.4	13-147	22.1	27	L595431-04	WG613095

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
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Quality Assurance Report
Level II

L594311

September 20, 2012

Analyte	Units	Matrix Spike MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
2,4-Dinitrophenol	mg/kg	0.0486	0.0762	14.6	10-110	44.3*	40	L595431-04	WG613095
2,4-Dinitrotoluene	mg/kg	0.275	0.315	82.7	12-146	13.6	25	L595431-04	WG613095
2,6-Dinitrotoluene	mg/kg	0.272	0.312	81.8	10-150	13.5	23	L595431-04	WG613095
2-Chloronaphthalene	mg/kg	0.248	0.293	74.4	31-127	16.7	23	L595431-04	WG613095
2-Chlorophenol	mg/kg	0.204	0.281	61.3	26-120	31.6*	21	L595431-04	WG613095
2-Nitrophenol	mg/kg	0.256	0.299	77.0	10-156	15.5	24	L595431-04	WG613095
3,3-Dichlorobenzidine	mg/kg	0.213	0.251	63.9	10-127	16.4	40	L595431-04	WG613095
4,6-Dinitro-2-methylphenol	mg/kg	0.169	0.244	50.6	10-124	36.5	40	L595431-04	WG613095
4-Bromophenyl-phenylether	mg/kg	0.249	0.309	74.7	27-150	21.7*	20	L595431-04	WG613095
4-Chloro-3-methylphenol	mg/kg	0.256	0.316	76.8	24-140	20.9	22	L595431-04	WG613095
4-Chlorophenyl-phenylether	mg/kg	0.275	0.312	82.4	27-142	12.8	21	L595431-04	WG613095
4-Nitrophenol	mg/kg	0.221	0.257	66.4	10-166	14.9	35	L595431-04	WG613095
Acenaphthene	mg/kg	0.258	0.294	77.5	30-132	12.8	21	L595431-04	WG613095
Acenaphthylene	mg/kg	0.258	0.311	77.5	31-144	18.6	24	L595431-04	WG613095
Anthracene	mg/kg	0.263	0.328	79.1	27-140	21.8*	20	L595431-04	WG613095
Benzidine	mg/kg	0.0276	0.0177	8.28*	10-55	43.7*	36	L595431-04	WG613095
Benzo(a)anthracene	mg/kg	0.241	0.292	72.3	22-139	19.4	22	L595431-04	WG613095
Benzo(a)pyrene	mg/kg	0.269	0.316	80.8	16-148	16.1	21	L595431-04	WG613095
Benzo(b)fluoranthene	mg/kg	0.248	0.298	74.4	13-152	18.5	24	L595431-04	WG613095
Benzo(g,h,i)perylene	mg/kg	0.259	0.320	77.9	10-137	20.9	32	L595431-04	WG613095
Benzo(k)fluoranthene	mg/kg	0.258	0.310	77.6	15-152	18.3	22	L595431-04	WG613095
Benzylbutyl phthalate	mg/kg	0.246	0.318	73.8	20-168	25.4*	23	L595431-04	WG613095
Bis(2-chlorethoxy)methane	mg/kg	0.239	0.297	71.8	32-141	21.7*	20	L595431-04	WG613095
Bis(2-chloroethyl)ether	mg/kg	0.201	0.295	60.4	25-139	37.9*	26	L595431-04	WG613095
Bis(2-chloroisopropyl)ether	mg/kg	0.212	0.273	63.7	32-128	25.3*	22	L595431-04	WG613095
Bis(2-ethylhexyl)phthalate	mg/kg	0.266	0.329	79.8	20-163	21.3	24	L595431-04	WG613095
Chrysene	mg/kg	0.245	0.307	73.5	20-139	22.5	23	L595431-04	WG613095
Di-n-butyl phthalate	mg/kg	0.262	0.320	78.8	24-149	19.9	24	L595431-04	WG613095
Di-n-octyl phthalate	mg/kg	0.269	0.335	80.6	14-164	22.0	24	L595431-04	WG613095
Dibenz(a,h)anthracene	mg/kg	0.263	0.316	79.1	10-137	18.3	29	L595431-04	WG613095
Diethyl phthalate	mg/kg	0.266	0.302	79.9	28-142	12.8	23	L595431-04	WG613095
Dimethyl phthalate	mg/kg	0.271	0.306	81.3	31-142	12.1	22	L595431-04	WG613095
Fluoranthene	mg/kg	0.255	0.313	76.6	24-145	20.4	29	L595431-04	WG613095
Fluorene	mg/kg	0.267	0.300	80.1	30-138	11.6	22	L595431-04	WG613095
Hexachloro-1,3-butadiene	mg/kg	0.234	0.298	70.2	29-136	24.4*	22	L595431-04	WG613095
Hexachlorobenzene	mg/kg	0.223	0.266	66.8	26-136	17.8	20	L595431-04	WG613095
Hexachlorocyclopentadiene	mg/kg	0.143	0.183	42.9	10-124	24.5	33	L595431-04	WG613095
Hexachloroethane	mg/kg	0.198	0.262	59.4	21-107	28.0*	27	L595431-04	WG613095
Indeno(1,2,3-cd)pyrene	mg/kg	0.265	0.319	79.5	10-139	18.7	32	L595431-04	WG613095
Isophorone	mg/kg	0.199	0.249	59.9	26-134	22.0*	20	L595431-04	WG613095
n-Nitrosodi-n-propylamine	mg/kg	0.239	0.304	71.6	24-141	24.0*	20	L595431-04	WG613095
n-Nitrosodimethylamine	mg/kg	0.171	0.241	51.3	18-126	34.0*	27	L595431-04	WG613095
n-Nitrosodiphenylamine	mg/kg	0.250	0.310	75.2	16-128	21.2	25	L595431-04	WG613095
Naphthalene	mg/kg	0.230	0.287	69.0	31-124	22.0	25	L595431-04	WG613095
Nitrobenzene	mg/kg	0.233	0.305	70.1	22-122	26.8*	20	L595431-04	WG613095
Pentachlorophenol	mg/kg	0.170	0.209	51.0	10-124	20.6	34	L595431-04	WG613095
Phenanthrene	mg/kg	0.244	0.308	73.2	25-139	23.4	25	L595431-04	WG613095
Phenol	mg/kg	0.227	0.307	68.1	22-129	30.1*	25	L595431-04	WG613095
Pyrene	mg/kg	0.240	0.309	72.0	23-145	25.2	30	L595431-04	WG613095
2,4,6-Tribromophenol				72.92	16-136				WG613095
2-Fluorobiphenyl				75.50	37-119				WG613095
2-Fluorophenol				57.26	22-114				WG613095
Nitrobenzene-d5				69.89	20-114				WG613095
Phenol-d5				62.09	26-127				WG613095
p-Terphenyl-d14				73.38	15-174				WG613095
Bis(2-ethylhexyl)phthalate	mg/kg	0.232	0.230	69.6	20-163	0.746	24	L594311-01	WG613094
2,4,6-Tribromophenol				80.24	16-136				WG613094

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L594311

September 20, 2012

Analyte	Units	MSD Ref	Matrix Spike Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
2-Fluorobiphenyl			66.62	37-119				
2-Fluorophenol			43.93	22-114				
Nitrobenzene-d5			55.84	20-114				
Phenol-d5			57.85	26-127				
p-Terphenyl-d14			71.57	15-174				

Batch number /Run number / Sample number cross reference

WG612046: R2342173: L594311-01 02 03 04
WG612071: R2342737: L594311-01 02 03 04
WG612204: R2344853: L594311-01 02 03
WG611999: R2347833: L594311-01 02 03 04
WG612212: R2349133: L594311-01 02 03 04
WG612944: R2352973: L594311-01 02 03 04
WG613095: R2354193: L594311-04
WG613094: R2354273: L594311-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW1, Samples at 5 ft. & 15 ft.
Monitoring Well YA-MW10, Samples at 5 ft. & 10 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L594311

September 20, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

Report Summary

Tuesday September 25, 2012

Report Number: L595432
Samples Received: 09/15/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 25, 2012

ESC Sample # : L595432-01

Site ID :

Project # : 212-137

Date Received : September 15, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW5 10FT

Collected By : I-Ping Chen
Collection Date : 09/14/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/18/12	1
Arsenic	2.4	1.0	mg/kg	6010B	09/19/12	1
Barium	84.	0.25	mg/kg	6010B	09/19/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/19/12	1
Chromium	8.6	0.50	mg/kg	6010B	09/19/12	1
Iron	7400	5.0	mg/kg	6010B	09/19/12	1
Lead	10.	0.25	mg/kg	6010B	09/19/12	1
Selenium	BDL	1.0	mg/kg	6010B	09/19/12	1
Silver	BDL	0.50	mg/kg	6010B	09/19/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/20/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/20/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/20/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/20/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/20/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/20/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/20/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/20/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/20/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/20/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/20/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/20/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/20/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/20/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/20/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L595432-01 (SV8270BNA) - matrix dark/viscous

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 25, 2012

ESC Sample # : L595432-01

Site ID :

Project # : 212-137

Date Received : September 15, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW5 10FT

Collected By : I-Ping Chen
Collection Date : 09/14/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/20/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/20/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/20/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/20/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/20/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/20/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/20/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/20/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/20/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/20/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/20/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/20/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/20/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/20/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/20/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/20/12	5
Surrogate Recovery						
Toluene-d8	97.8		% Rec.	8260B	09/20/12	5
Dibromofluoromethane	99.2		% Rec.	8260B	09/20/12	5
4-Bromofluorobenzene	91.8		% Rec.	8260B	09/20/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/25/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L595432-01 (SV8270BNA) - matrix dark/viscous

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
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REPORT OF ANALYSIS

Michael Keifer
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5700 E. Evans Avenue
Denver, CO 80222

September 25, 2012

ESC Sample # : L595432-01

Site ID :

Project # : 212-137

Date Received : September 15, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW5 10FT

Collected By : I-Ping Chen
Collection Date : 09/14/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/25/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/25/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/25/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/25/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/20/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/20/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/20/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/20/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/20/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/20/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/20/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	91.4		% Rec.	8081/8082	09/20/12	1
Tetrachloro-m-xylene	93.6		% Rec.	8081/8082	09/20/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/21/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/21/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/21/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/21/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/21/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/21/12	1
MCPA	BDL	6.5	mg/kg	8151	09/21/12	1
MCPP	BDL	6.5	mg/kg	8151	09/21/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/21/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/21/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	60.9		% Rec.	8151	09/21/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.16	mg/kg	8270C	09/18/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L595432-01 (SV8270BNA) - matrix dark/viscous

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 25, 2012

ESC Sample # : L595432-01

Site ID :

Project # : 212-137

Date Received : September 15, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW5 10FT

Collected By : I-Ping Chen
Collection Date : 09/14/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.16	mg/kg	8270C	09/18/12	5
Anthracene	BDL	0.16	mg/kg	8270C	09/18/12	5
Benzidine	BDL	1.7	mg/kg	8270C	09/18/12	5
Benzo(a)anthracene	BDL	0.16	mg/kg	8270C	09/18/12	5
Benzo(b)fluoranthene	BDL	0.16	mg/kg	8270C	09/18/12	5
Benzo(k)fluoranthene	BDL	0.16	mg/kg	8270C	09/18/12	5
Benzo(g,h,i)perylene	BDL	0.16	mg/kg	8270C	09/18/12	5
Benzo(a)pyrene	BDL	0.16	mg/kg	8270C	09/18/12	5
Bis(2-chlorethoxy)methane	BDL	1.7	mg/kg	8270C	09/18/12	5
Bis(2-chloroethyl)ether	BDL	1.7	mg/kg	8270C	09/18/12	5
Bis(2-chloroisopropyl)ether	BDL	1.7	mg/kg	8270C	09/18/12	5
4-Bromophenyl-phenylether	BDL	1.7	mg/kg	8270C	09/18/12	5
2-Chloronaphthalene	BDL	0.16	mg/kg	8270C	09/18/12	5
4-Chlorophenyl-phenylether	BDL	1.7	mg/kg	8270C	09/18/12	5
Chrysene	BDL	0.16	mg/kg	8270C	09/18/12	5
Dibenz(a,h)anthracene	BDL	0.16	mg/kg	8270C	09/18/12	5
3,3-Dichlorobenzidine	BDL	1.7	mg/kg	8270C	09/18/12	5
2,4-Dinitrotoluene	BDL	1.7	mg/kg	8270C	09/18/12	5
2,6-Dinitrotoluene	BDL	1.7	mg/kg	8270C	09/18/12	5
Fluoranthene	BDL	0.16	mg/kg	8270C	09/18/12	5
Fluorene	BDL	0.16	mg/kg	8270C	09/18/12	5
Hexachlorobenzene	BDL	1.7	mg/kg	8270C	09/18/12	5
Hexachloro-1,3-butadiene	BDL	1.7	mg/kg	8270C	09/18/12	5
Hexachlorocyclopentadiene	BDL	1.7	mg/kg	8270C	09/18/12	5
Hexachloroethane	BDL	1.7	mg/kg	8270C	09/18/12	5
Indeno(1,2,3-cd)pyrene	BDL	0.16	mg/kg	8270C	09/18/12	5
Isophorone	BDL	1.7	mg/kg	8270C	09/18/12	5
Naphthalene	BDL	0.16	mg/kg	8270C	09/18/12	5
Nitrobenzene	BDL	1.7	mg/kg	8270C	09/18/12	5
n-Nitrosodimethylamine	BDL	1.7	mg/kg	8270C	09/18/12	5
n-Nitrosodiphenylamine	BDL	1.7	mg/kg	8270C	09/18/12	5
n-Nitrosodi-n-propylamine	BDL	1.7	mg/kg	8270C	09/18/12	5
Phenanthrene	BDL	0.16	mg/kg	8270C	09/18/12	5
Benzylbutyl phthalate	BDL	1.7	mg/kg	8270C	09/18/12	5
Bis(2-ethylhexyl)phthalate	BDL	1.7	mg/kg	8270C	09/18/12	5
Di-n-butyl phthalate	BDL	1.7	mg/kg	8270C	09/18/12	5
Diethyl phthalate	BDL	1.7	mg/kg	8270C	09/18/12	5
Dimethyl phthalate	BDL	1.7	mg/kg	8270C	09/18/12	5
Di-n-octyl phthalate	BDL	1.7	mg/kg	8270C	09/18/12	5
Pyrene	BDL	0.16	mg/kg	8270C	09/18/12	5
1,2,4-Trichlorobenzene	BDL	1.7	mg/kg	8270C	09/18/12	5
Acid Extractables						
4-Chloro-3-methylphenol	BDL	1.7	mg/kg	8270C	09/18/12	5
2-Chlorophenol	BDL	1.7	mg/kg	8270C	09/18/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L595432-01 (SV8270BNA) - matrix dark/viscous

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 25, 2012

ESC Sample # : L595432-01

Site ID :

Project # : 212-137

Date Received : September 15, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW5 10FT

Collected By : I-Ping Chen
Collection Date : 09/14/12 08:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	1.7	mg/kg	8270C	09/18/12	5
2,4-Dimethylphenol	BDL	1.7	mg/kg	8270C	09/18/12	5
4,6-Dinitro-2-methylphenol	BDL	1.7	mg/kg	8270C	09/18/12	5
2,4-Dinitrophenol	BDL	1.7	mg/kg	8270C	09/18/12	5
2-Nitrophenol	BDL	1.7	mg/kg	8270C	09/18/12	5
4-Nitrophenol	BDL	1.7	mg/kg	8270C	09/18/12	5
Pentachlorophenol	BDL	1.7	mg/kg	8270C	09/18/12	5
Phenol	BDL	1.7	mg/kg	8270C	09/18/12	5
2,4,6-Trichlorophenol	BDL	1.7	mg/kg	8270C	09/18/12	5
Surrogate Recovery						
2-Fluorophenol	75.1		% Rec.	8270C	09/18/12	5
Phenol-d5	79.7		% Rec.	8270C	09/18/12	5
Nitrobenzene-d5	86.2		% Rec.	8270C	09/18/12	5
2-Fluorobiphenyl	90.3		% Rec.	8270C	09/18/12	5
2,4,6-Tribromophenol	75.4		% Rec.	8270C	09/18/12	5
p-Terphenyl-d14	86.8		% Rec.	8270C	09/18/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 09/25/12 16:29 Printed: 09/25/12 16:44
L595432-01 (SV8270BNA) - matrix dark/viscous

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 25, 2012

ESC Sample # : L595432-02

Site ID :

Project # : 212-137

Date Received : September 15, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW5 20FT

Collected By : I-Ping Chen
Collection Date : 09/14/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.020	mg/kg	7471	09/18/12	1
Arsenic	3.6	1.0	mg/kg	6010B	09/19/12	1
Barium	99.	0.25	mg/kg	6010B	09/19/12	1
Cadmium	BDL	0.25	mg/kg	6010B	09/19/12	1
Chromium	9.7	0.50	mg/kg	6010B	09/19/12	1
Iron	12000	5.0	mg/kg	6010B	09/19/12	1
Lead	14.	0.25	mg/kg	6010B	09/19/12	1
Selenium	BDL	5.0	mg/kg	6010B	09/19/12	5
Silver	BDL	0.50	mg/kg	6010B	09/19/12	1
Volatile Organics						
Acetone	BDL	0.25	mg/kg	8260B	09/20/12	5
Acrylonitrile	BDL	0.050	mg/kg	8260B	09/20/12	5
Benzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Bromobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Bromodichloromethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
Bromoform	BDL	0.0050	mg/kg	8260B	09/20/12	5
Bromomethane	BDL	0.025	mg/kg	8260B	09/20/12	5
n-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
sec-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
tert-Butylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Carbon tetrachloride	BDL	0.0050	mg/kg	8260B	09/20/12	5
Chlorobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Chlorodibromomethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
Chloroethane	BDL	0.025	mg/kg	8260B	09/20/12	5
2-Chloroethyl vinyl ether	BDL	0.25	mg/kg	8260B	09/20/12	5
Chloroform	BDL	0.025	mg/kg	8260B	09/20/12	5
Chloromethane	BDL	0.012	mg/kg	8260B	09/20/12	5
2-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/20/12	5
4-Chlorotoluene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,2-Dibromo-3-Chloropropane	BDL	0.025	mg/kg	8260B	09/20/12	5
1,2-Dibromoethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
Dibromomethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,2-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,3-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,4-Dichlorobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Dichlorodifluoromethane	BDL	0.025	mg/kg	8260B	09/20/12	5
1,1-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,2-Dichloroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,1-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/20/12	5
cis-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/20/12	5
trans-1,2-Dichloroethene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/20/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 25, 2012

ESC Sample # : L595432-02

Date Received : September 15, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW5 20FT

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 09/14/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
1,1-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,3-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/20/12	5
cis-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/20/12	5
trans-1,3-Dichloropropene	BDL	0.0050	mg/kg	8260B	09/20/12	5
2,2-Dichloropropane	BDL	0.0050	mg/kg	8260B	09/20/12	5
Di-isopropyl ether	BDL	0.0050	mg/kg	8260B	09/20/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Hexachloro-1,3-butadiene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Isopropylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
p-Isopropyltoluene	BDL	0.0050	mg/kg	8260B	09/20/12	5
2-Butanone (MEK)	BDL	0.050	mg/kg	8260B	09/20/12	5
Methylene Chloride	BDL	0.025	mg/kg	8260B	09/20/12	5
4-Methyl-2-pentanone (MIBK)	BDL	0.050	mg/kg	8260B	09/20/12	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	09/20/12	5
Naphthalene	BDL	0.025	mg/kg	8260B	09/20/12	5
n-Propylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Styrene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,1,1,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,1,2,2-Tetrachloroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,1,2-Trichlorotrifluoroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
Tetrachloroethene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Toluene	BDL	0.025	mg/kg	8260B	09/20/12	5
1,2,3-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,2,4-Trichlorobenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,1,1-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,1,2-Trichloroethane	BDL	0.0050	mg/kg	8260B	09/20/12	5
Trichloroethene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Trichlorofluoromethane	BDL	0.025	mg/kg	8260B	09/20/12	5
1,2,3-Trichloropropane	BDL	0.012	mg/kg	8260B	09/20/12	5
1,2,4-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,2,3-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
1,3,5-Trimethylbenzene	BDL	0.0050	mg/kg	8260B	09/20/12	5
Vinyl chloride	BDL	0.0050	mg/kg	8260B	09/20/12	5
Xylenes, Total	BDL	0.015	mg/kg	8260B	09/20/12	5
Surrogate Recovery						
Toluene-d8	98.1		% Rec.	8260B	09/20/12	5
Dibromofluoromethane	94.6		% Rec.	8260B	09/20/12	5
4-Bromofluorobenzene	99.4		% Rec.	8260B	09/20/12	5
Pesticide/PCBs						
Aldrin	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Alpha BHC	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Beta BHC	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Delta BHC	BDL	0.020	mg/kg	8081/8082	09/25/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 25, 2012

ESC Sample # : L595432-02

Site ID :

Project # : 212-137

Date Received : September 15, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW5 20FT

Collected By : I-Ping Chen
Collection Date : 09/14/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Gamma BHC	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Chlordane	BDL	0.20	mg/kg	8081/8082	09/25/12	1
4,4-DDD	BDL	0.020	mg/kg	8081/8082	09/25/12	1
4,4-DDE	BDL	0.020	mg/kg	8081/8082	09/25/12	1
4,4-DDT	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Dieldrin	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Endosulfan I	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Endosulfan II	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Endosulfan sulfate	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Endrin	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Endrin aldehyde	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Endrin ketone	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Heptachlor	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Heptachlor epoxide	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Hexachlorobenzene	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Methoxychlor	BDL	0.020	mg/kg	8081/8082	09/25/12	1
Toxaphene	BDL	0.40	mg/kg	8081/8082	09/25/12	1
PCB 1016	BDL	0.017	mg/kg	8081/8082	09/20/12	1
PCB 1221	BDL	0.017	mg/kg	8081/8082	09/20/12	1
PCB 1232	BDL	0.017	mg/kg	8081/8082	09/20/12	1
PCB 1242	BDL	0.017	mg/kg	8081/8082	09/20/12	1
PCB 1248	BDL	0.017	mg/kg	8081/8082	09/20/12	1
PCB 1254	BDL	0.017	mg/kg	8081/8082	09/20/12	1
PCB 1260	BDL	0.017	mg/kg	8081/8082	09/20/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	81.2		% Rec.	8081/8082	09/20/12	1
Tetrachloro-m-xylene	89.4		% Rec.	8081/8082	09/20/12	1
Herbicides						
2,4-D	BDL	0.070	mg/kg	8151	09/21/12	1
Dalapon	BDL	0.80	mg/kg	8151	09/21/12	1
2,4-DB	BDL	0.070	mg/kg	8151	09/21/12	1
Dicamba	BDL	0.070	mg/kg	8151	09/21/12	1
Dichloroprop	BDL	0.070	mg/kg	8151	09/21/12	1
Dinoseb	BDL	0.070	mg/kg	8151	09/21/12	1
MCPA	BDL	6.5	mg/kg	8151	09/21/12	1
MCPP	BDL	6.5	mg/kg	8151	09/21/12	1
2,4,5-T	BDL	0.070	mg/kg	8151	09/21/12	1
2,4,5-TP (Silvex)	BDL	0.070	mg/kg	8151	09/21/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	66.5		% Rec.	8151	09/21/12	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.033	mg/kg	8270C	09/18/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 25, 2012

ESC Sample # : L595432-02

Site ID :

Project # : 212-137

Date Received : September 15, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW5 20FT

Collected By : I-Ping Chen
Collection Date : 09/14/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Acenaphthylene	BDL	0.033	mg/kg	8270C	09/18/12	1
Anthracene	BDL	0.033	mg/kg	8270C	09/18/12	1
Benzidine	BDL	0.33	mg/kg	8270C	09/18/12	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	09/18/12	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	09/18/12	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	09/18/12	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	09/18/12	1
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	09/18/12	1
Bis(2-chlorethoxy)methane	BDL	0.33	mg/kg	8270C	09/18/12	1
Bis(2-chloroethyl)ether	BDL	0.33	mg/kg	8270C	09/18/12	1
Bis(2-chloroisopropyl)ether	BDL	0.33	mg/kg	8270C	09/18/12	1
4-Bromophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/18/12	1
2-Chloronaphthalene	BDL	0.033	mg/kg	8270C	09/18/12	1
4-Chlorophenyl-phenylether	BDL	0.33	mg/kg	8270C	09/18/12	1
Chrysene	BDL	0.033	mg/kg	8270C	09/18/12	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	09/18/12	1
3,3-Dichlorobenzidine	BDL	0.33	mg/kg	8270C	09/18/12	1
2,4-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/18/12	1
2,6-Dinitrotoluene	BDL	0.33	mg/kg	8270C	09/18/12	1
Fluoranthene	BDL	0.033	mg/kg	8270C	09/18/12	1
Fluorene	BDL	0.033	mg/kg	8270C	09/18/12	1
Hexachlorobenzene	BDL	0.33	mg/kg	8270C	09/18/12	1
Hexachloro-1,3-butadiene	BDL	0.33	mg/kg	8270C	09/18/12	1
Hexachlorocyclopentadiene	BDL	0.33	mg/kg	8270C	09/18/12	1
Hexachloroethane	BDL	0.33	mg/kg	8270C	09/18/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	09/18/12	1
Isophorone	BDL	0.33	mg/kg	8270C	09/18/12	1
Naphthalene	BDL	0.033	mg/kg	8270C	09/18/12	1
Nitrobenzene	BDL	0.33	mg/kg	8270C	09/18/12	1
n-Nitrosodimethylamine	BDL	0.33	mg/kg	8270C	09/18/12	1
n-Nitrosodiphenylamine	BDL	0.33	mg/kg	8270C	09/18/12	1
n-Nitrosodi-n-propylamine	BDL	0.33	mg/kg	8270C	09/18/12	1
Phenanthrene	BDL	0.033	mg/kg	8270C	09/18/12	1
Benzylbutyl phthalate	BDL	0.33	mg/kg	8270C	09/18/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.33	mg/kg	8270C	09/18/12	1
Di-n-butyl phthalate	BDL	0.33	mg/kg	8270C	09/18/12	1
Diethyl phthalate	BDL	0.33	mg/kg	8270C	09/18/12	1
Dimethyl phthalate	BDL	0.33	mg/kg	8270C	09/18/12	1
Di-n-octyl phthalate	BDL	0.33	mg/kg	8270C	09/18/12	1
Pyrene	BDL	0.033	mg/kg	8270C	09/18/12	1
1,2,4-Trichlorobenzene	BDL	0.33	mg/kg	8270C	09/18/12	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.33	mg/kg	8270C	09/18/12	1
2-Chlorophenol	BDL	0.33	mg/kg	8270C	09/18/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

September 25, 2012

ESC Sample # : L595432-02

Site ID :

Project # : 212-137

Date Received : September 15, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW5 20FT

Collected By : I-Ping Chen
Collection Date : 09/14/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2,4-Dichlorophenol	BDL	0.33	mg/kg	8270C	09/18/12	1
2,4-Dimethylphenol	BDL	0.33	mg/kg	8270C	09/18/12	1
4,6-Dinitro-2-methylphenol	BDL	0.33	mg/kg	8270C	09/18/12	1
2,4-Dinitrophenol	BDL	0.33	mg/kg	8270C	09/18/12	1
2-Nitrophenol	BDL	0.33	mg/kg	8270C	09/18/12	1
4-Nitrophenol	BDL	0.33	mg/kg	8270C	09/18/12	1
Pentachlorophenol	BDL	0.33	mg/kg	8270C	09/18/12	1
Phenol	BDL	0.33	mg/kg	8270C	09/18/12	1
2,4,6-Trichlorophenol	BDL	0.33	mg/kg	8270C	09/18/12	1
Surrogate Recovery						
2-Fluorophenol	59.1		% Rec.	8270C	09/18/12	1
Phenol-d5	61.6		% Rec.	8270C	09/18/12	1
Nitrobenzene-d5	59.2		% Rec.	8270C	09/18/12	1
2-Fluorobiphenyl	74.3		% Rec.	8270C	09/18/12	1
2,4,6-Tribromophenol	68.8		% Rec.	8270C	09/18/12	1
p-Terphenyl-d14	77.3		% Rec.	8270C	09/18/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 09/25/12 16:29 Printed: 09/25/12 16:44

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L595432-01	WG613095	SAMP	Acenaphthene	R2354193	O
	WG613095	SAMP	Acenaphthylene	R2354193	O
	WG613095	SAMP	Anthracene	R2354193	O
	WG613095	SAMP	Benzidine	R2354193	OJ4
	WG613095	SAMP	Benzo(a)anthracene	R2354193	O
	WG613095	SAMP	Benzo(b)fluoranthene	R2354193	O
	WG613095	SAMP	Benzo(k)fluoranthene	R2354193	O
	WG613095	SAMP	Benzo(g,h,i)perylene	R2354193	O
	WG613095	SAMP	Benzo(a)pyrene	R2354193	O
	WG613095	SAMP	Bis(2-chlorethoxy)methane	R2354193	O
	WG613095	SAMP	Bis(2-chloroethyl)ether	R2354193	O
	WG613095	SAMP	Bis(2-chloroisopropyl)ether	R2354193	O
	WG613095	SAMP	4-Bromophenyl-phenylether	R2354193	O
	WG613095	SAMP	2-Chloronaphthalene	R2354193	O
	WG613095	SAMP	4-Chlorophenyl-phenylether	R2354193	O
	WG613095	SAMP	Chrysene	R2354193	O
	WG613095	SAMP	Dibenz(a,h)anthracene	R2354193	O
	WG613095	SAMP	3,3-Dichlorobenzidine	R2354193	O
	WG613095	SAMP	2,4-Dinitrotoluene	R2354193	O
	WG613095	SAMP	2,6-Dinitrotoluene	R2354193	O
	WG613095	SAMP	Fluoranthene	R2354193	O
	WG613095	SAMP	Fluorene	R2354193	O
	WG613095	SAMP	Hexachlorobenzene	R2354193	O
	WG613095	SAMP	Hexachloro-1,3-butadiene	R2354193	O
	WG613095	SAMP	Hexachlorocyclopentadiene	R2354193	O
	WG613095	SAMP	Hexachloroethane	R2354193	O
	WG613095	SAMP	Indeno(1,2,3-cd)pyrene	R2354193	O
	WG613095	SAMP	Isophorone	R2354193	O
	WG613095	SAMP	Naphthalene	R2354193	O
	WG613095	SAMP	Nitrobenzene	R2354193	O
	WG613095	SAMP	n-Nitrosodimethylamine	R2354193	O
	WG613095	SAMP	n-Nitrosodiphenylamine	R2354193	O
	WG613095	SAMP	n-Nitrosodi-n-propylamine	R2354193	O
	WG613095	SAMP	Phenanthrene	R2354193	O
	WG613095	SAMP	Benzylbutyl phthalate	R2354193	O
	WG613095	SAMP	Bis(2-ethylhexyl)phthalate	R2354193	O
	WG613095	SAMP	Di-n-butyl phthalate	R2354193	O
	WG613095	SAMP	Diethyl phthalate	R2354193	O
	WG613095	SAMP	Dimethyl phthalate	R2354193	O
	WG613095	SAMP	Di-n-octyl phthalate	R2354193	O
	WG613095	SAMP	Pyrene	R2354193	O
	WG613095	SAMP	1,2,4-Trichlorobenzene	R2354193	O
	WG613095	SAMP	4-Chloro-3-methylphenol	R2354193	O
	WG613095	SAMP	2-Chlorophenol	R2354193	O
	WG613095	SAMP	2,4-Dichlorophenol	R2354193	O
	WG613095	SAMP	2,4-Dimethylphenol	R2354193	O
	WG613095	SAMP	4,6-Dinitro-2-methylphenol	R2354193	O
	WG613095	SAMP	2,4-Dinitrophenol	R2354193	O
	WG613095	SAMP	2-Nitrophenol	R2354193	O
	WG613095	SAMP	4-Nitrophenol	R2354193	O
	WG613095	SAMP	Pentachlorophenol	R2354193	O
	WG613095	SAMP	Phenol	R2354193	O
	WG613095	SAMP	2,4,6-Trichlorophenol	R2354193	O
	WG612848	SAMP	Acetone	R2356677	J5
	WG613639	SAMP	Dinoseb	R2361273	J3
L595432-02	WG613095	SAMP	Benzidine	R2354193	J4
	WG613261	SAMP	Iron	R2354675	V
	WG613261	SAMP	Selenium	R2354675	O
	WG612848	SAMP	Chloroethane	R2356677	J3
	WG612848	SAMP	2-Chloroethyl vinyl ether	R2356677	J3
	WG612848	SAMP	trans-1,3-Dichloropropene	R2356677	J3
	WG613639	SAMP	Dinoseb	R2361273	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
09/25/12 at 16:44:12

TSR Signing Reports: 358

Sample: L595432-01 Account: YEHDCO Received: 09/15/12 09:00 Due Date: 09/21/12 00:00 RPT Date: 09/25/12 16:29

Sample: L595432-02 Account: YEHDCO Received: 09/15/12 09:00 Due Date: 09/21/12 00:00 RPT Date: 09/25/12 16:29

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L595432

September 25, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Mercury	< .02	mg/kg			WG612833	09/18/12 19:29
1,2,4-Trichlorobenzene	< .333	mg/kg			WG613095	09/18/12 13:39
2,4,6-Trichlorophenol	< .333	mg/kg			WG613095	09/18/12 13:39
2,4-Dichlorophenol	< .333	mg/kg			WG613095	09/18/12 13:39
2,4-Dimethylphenol	< .333	mg/kg			WG613095	09/18/12 13:39
2,4-Dinitrophenol	< .333	mg/kg			WG613095	09/18/12 13:39
2,4-Dinitrotoluene	< .333	mg/kg			WG613095	09/18/12 13:39
2,6-Dinitrotoluene	< .333	mg/kg			WG613095	09/18/12 13:39
2-Chloronaphthalene	< .033	mg/kg			WG613095	09/18/12 13:39
2-Chlorophenol	< .333	mg/kg			WG613095	09/18/12 13:39
2-Nitrophenol	< .333	mg/kg			WG613095	09/18/12 13:39
3,3-Dichlorobenzidine	< .333	mg/kg			WG613095	09/18/12 13:39
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG613095	09/18/12 13:39
4-Bromophenyl-phenylether	< .333	mg/kg			WG613095	09/18/12 13:39
4-Chloro-3-methylphenol	< .333	mg/kg			WG613095	09/18/12 13:39
4-Chlorophenyl-phenylether	< .333	mg/kg			WG613095	09/18/12 13:39
4-Nitrophenol	< .333	mg/kg			WG613095	09/18/12 13:39
Acenaphthene	< .033	mg/kg			WG613095	09/18/12 13:39
Acenaphthylene	< .033	mg/kg			WG613095	09/18/12 13:39
Anthracene	< .033	mg/kg			WG613095	09/18/12 13:39
Benzidine	< .333	mg/kg			WG613095	09/18/12 13:39
Benzo(a)anthracene	< .033	mg/kg			WG613095	09/18/12 13:39
Benzo(a)pyrene	< .033	mg/kg			WG613095	09/18/12 13:39
Benzo(b)fluoranthene	< .033	mg/kg			WG613095	09/18/12 13:39
Benzo(g,h,i)perylene	< .033	mg/kg			WG613095	09/18/12 13:39
Benzo(k)fluoranthene	< .033	mg/kg			WG613095	09/18/12 13:39
Benzylbutyl phthalate	< .333	mg/kg			WG613095	09/18/12 13:39
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG613095	09/18/12 13:39
Bis(2-chloroethyl)ether	< .333	mg/kg			WG613095	09/18/12 13:39
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG613095	09/18/12 13:39
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG613095	09/18/12 13:39
Chrysene	< .033	mg/kg			WG613095	09/18/12 13:39
Di-n-butyl phthalate	< .333	mg/kg			WG613095	09/18/12 13:39
Di-n-octyl phthalate	< .333	mg/kg			WG613095	09/18/12 13:39
Dibenz(a,h)anthracene	< .033	mg/kg			WG613095	09/18/12 13:39
Diethyl phthalate	< .333	mg/kg			WG613095	09/18/12 13:39
Dimethyl phthalate	< .333	mg/kg			WG613095	09/18/12 13:39
Fluoranthene	< .033	mg/kg			WG613095	09/18/12 13:39
Fluorene	< .033	mg/kg			WG613095	09/18/12 13:39
Hexachloro-1,3-butadiene	< .333	mg/kg			WG613095	09/18/12 13:39
Hexachlorobenzene	< .333	mg/kg			WG613095	09/18/12 13:39
Hexachlorocyclopentadiene	< .333	mg/kg			WG613095	09/18/12 13:39
Hexachloroethane	< .333	mg/kg			WG613095	09/18/12 13:39
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG613095	09/18/12 13:39
Isophorone	< .333	mg/kg			WG613095	09/18/12 13:39
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG613095	09/18/12 13:39
n-Nitrosodimethylamine	< .333	mg/kg			WG613095	09/18/12 13:39
n-Nitrosodiphenylamine	< .333	mg/kg			WG613095	09/18/12 13:39
Naphthalene	< .033	mg/kg			WG613095	09/18/12 13:39
Nitrobenzene	< .333	mg/kg			WG613095	09/18/12 13:39
Pentachlorophenol	< .333	mg/kg			WG613095	09/18/12 13:39
Phenanthrene	< .033	mg/kg			WG613095	09/18/12 13:39
Phenol	< .333	mg/kg			WG613095	09/18/12 13:39
Pyrene	< .033	mg/kg			WG613095	09/18/12 13:39
2,4,6-Tribromophenol		% Rec.	58.25	16-136	WG613095	09/18/12 13:39
2-Fluorobiphenyl		% Rec.	63.53	37-119	WG613095	09/18/12 13:39
2-Fluorophenol		% Rec.	56.23	22-114	WG613095	09/18/12 13:39

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L595432

September 25, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Nitrobenzene-d5		% Rec.	53.18	20-114		09/18/12 13:39
Phenol-d5		% Rec.	59.80	26-127		09/18/12 13:39
p-Terphenyl-d14		% Rec.	68.30	15-174		09/18/12 13:39
Arsenic	< 1	mg/kg			WG613261	09/19/12 14:36
Barium	< .25	mg/kg			WG613261	09/19/12 14:36
Cadmium	< .25	mg/kg			WG613261	09/19/12 14:36
Chromium	< .5	mg/kg			WG613261	09/19/12 14:36
Iron	< 5	mg/kg			WG613261	09/19/12 14:36
Lead	< .25	mg/kg			WG613261	09/19/12 14:36
Selenium	< 1	mg/kg			WG613261	09/19/12 14:36
Silver	< .5	mg/kg			WG613261	09/19/12 14:36
PCB 1016	< .017	mg/kg			WG612915	09/20/12 10:37
PCB 1221	< .017	mg/kg			WG612915	09/20/12 10:37
PCB 1232	< .017	mg/kg			WG612915	09/20/12 10:37
PCB 1242	< .017	mg/kg			WG612915	09/20/12 10:37
PCB 1248	< .017	mg/kg			WG612915	09/20/12 10:37
PCB 1254	< .017	mg/kg			WG612915	09/20/12 10:37
PCB 1260	< .017	mg/kg			WG612915	09/20/12 10:37
Decachlorobiphenyl		% Rec.	87.72	18.9-115.8	WG612915	09/20/12 10:37
Tetrachloro-m-xylene		% Rec.	84.63	31.8-115.7	WG612915	09/20/12 10:37
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG612848	09/20/12 16:43
1,1,1-Trichloroethane	< .001	mg/kg			WG612848	09/20/12 16:43
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG612848	09/20/12 16:43
1,1,2-Trichloroethane	< .001	mg/kg			WG612848	09/20/12 16:43
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG612848	09/20/12 16:43
1,1-Dichloroethane	< .001	mg/kg			WG612848	09/20/12 16:43
1,1-Dichloroethene	< .001	mg/kg			WG612848	09/20/12 16:43
1,1-Dichloropropene	< .001	mg/kg			WG612848	09/20/12 16:43
1,2,3-Trichlorobenzene	< .001	mg/kg			WG612848	09/20/12 16:43
1,2,3-Trichloropropane	< .0025	mg/kg			WG612848	09/20/12 16:43
1,2,3-Trimethylbenzene	< .001	mg/kg			WG612848	09/20/12 16:43
1,2,4-Trichlorobenzene	< .001	mg/kg			WG612848	09/20/12 16:43
1,2,4-Trimethylbenzene	< .001	mg/kg			WG612848	09/20/12 16:43
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG612848	09/20/12 16:43
1,2-Dibromoethane	< .001	mg/kg			WG612848	09/20/12 16:43
1,2-Dichlorobenzene	< .001	mg/kg			WG612848	09/20/12 16:43
1,2-Dichloroethane	< .001	mg/kg			WG612848	09/20/12 16:43
1,2-Dichloropropane	< .001	mg/kg			WG612848	09/20/12 16:43
1,3,5-Trimethylbenzene	< .001	mg/kg			WG612848	09/20/12 16:43
1,3-Dichlorobenzene	< .001	mg/kg			WG612848	09/20/12 16:43
1,3-Dichloropropane	< .001	mg/kg			WG612848	09/20/12 16:43
1,4-Dichlorobenzene	< .001	mg/kg			WG612848	09/20/12 16:43
2,2-Dichloropropane	< .001	mg/kg			WG612848	09/20/12 16:43
2-Butanone (MEK)	< .01	mg/kg			WG612848	09/20/12 16:43
2-Chloroethyl vinyl ether	< .05	mg/kg			WG612848	09/20/12 16:43
2-Chlorotoluene	< .001	mg/kg			WG612848	09/20/12 16:43
4-Chlorotoluene	< .001	mg/kg			WG612848	09/20/12 16:43
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG612848	09/20/12 16:43
Acetone	< .05	mg/kg			WG612848	09/20/12 16:43
Acrylonitrile	< .01	mg/kg			WG612848	09/20/12 16:43
Benzene	< .001	mg/kg			WG612848	09/20/12 16:43
Bromobenzene	< .001	mg/kg			WG612848	09/20/12 16:43
Bromodichloromethane	< .001	mg/kg			WG612848	09/20/12 16:43
Bromoform	< .001	mg/kg			WG612848	09/20/12 16:43
Bromomethane	< .005	mg/kg			WG612848	09/20/12 16:43

* Performance of this Analyte is outside of established criteria.
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Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L595432

September 25, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Carbon tetrachloride	< .001	mg/kg			WG612848	09/20/12 16:43
Chlorobenzene	< .001	mg/kg			WG612848	09/20/12 16:43
Chlorodibromomethane	< .001	mg/kg			WG612848	09/20/12 16:43
Chloroethane	< .005	mg/kg			WG612848	09/20/12 16:43
Chloroform	< .005	mg/kg			WG612848	09/20/12 16:43
Chloromethane	< .0025	mg/kg			WG612848	09/20/12 16:43
cis-1,2-Dichloroethene	< .001	mg/kg			WG612848	09/20/12 16:43
cis-1,3-Dichloropropene	< .001	mg/kg			WG612848	09/20/12 16:43
Di-isopropyl ether	< .001	mg/kg			WG612848	09/20/12 16:43
Dibromomethane	< .001	mg/kg			WG612848	09/20/12 16:43
Dichlorodifluoromethane	< .005	mg/kg			WG612848	09/20/12 16:43
Ethylbenzene	< .001	mg/kg			WG612848	09/20/12 16:43
Hexachloro-1,3-butadiene	< .001	mg/kg			WG612848	09/20/12 16:43
Isopropylbenzene	< .001	mg/kg			WG612848	09/20/12 16:43
Methyl tert-butyl ether	< .001	mg/kg			WG612848	09/20/12 16:43
Methylene Chloride	< .005	mg/kg			WG612848	09/20/12 16:43
n-Butylbenzene	< .001	mg/kg			WG612848	09/20/12 16:43
n-Propylbenzene	< .001	mg/kg			WG612848	09/20/12 16:43
Naphthalene	< .005	mg/kg			WG612848	09/20/12 16:43
p-Isopropyltoluene	< .001	mg/kg			WG612848	09/20/12 16:43
sec-Butylbenzene	< .001	mg/kg			WG612848	09/20/12 16:43
Styrene	< .001	mg/kg			WG612848	09/20/12 16:43
tert-Butylbenzene	< .001	mg/kg			WG612848	09/20/12 16:43
Tetrachloroethene	< .001	mg/kg			WG612848	09/20/12 16:43
Toluene	< .005	mg/kg			WG612848	09/20/12 16:43
trans-1,2-Dichloroethene	< .001	mg/kg			WG612848	09/20/12 16:43
trans-1,3-Dichloropropene	< .001	mg/kg			WG612848	09/20/12 16:43
Trichloroethene	< .001	mg/kg			WG612848	09/20/12 16:43
Trichlorofluoromethane	< .005	mg/kg			WG612848	09/20/12 16:43
Vinyl chloride	< .001	mg/kg			WG612848	09/20/12 16:43
Xylenes, Total	< .003	mg/kg			WG612848	09/20/12 16:43
4-Bromofluorobenzene		% Rec.	93.09	67-133	WG612848	09/20/12 16:43
Dibromofluoromethane		% Rec.	98.24	72-135	WG612848	09/20/12 16:43
Toluene-d8		% Rec.	100.6	90-113	WG612848	09/20/12 16:43
2,4,5-T	< .07	mg/kg			WG613639	09/21/12 16:36
2,4,5-TP (Silvex)	< .07	mg/kg			WG613639	09/21/12 16:36
2,4-D	< .07	mg/kg			WG613639	09/21/12 16:36
2,4-DB	< .07	mg/kg			WG613639	09/21/12 16:36
Dalapon	< .8	mg/kg			WG613639	09/21/12 16:36
Dicamba	< .07	mg/kg			WG613639	09/21/12 16:36
Dichloroprop	< .07	mg/kg			WG613639	09/21/12 16:36
Dinoseb	< .07	mg/kg			WG613639	09/21/12 16:36
MCPA	< .68602	mg/kg			WG613639	09/21/12 16:36
MCPP	< 6.5	mg/kg			WG613639	09/21/12 16:36
2,4-Dichlorophenyl Acetic Acid		%	69.27	37-99	WG613639	09/21/12 16:36

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0	0	0	20	L595432-02	WG612833
Arsenic	mg/kg	3.20	3.60	10.5	20	L595432-02	WG613261
Barium	mg/kg	97.0	99.0	1.83	20	L595432-02	WG613261
Cadmium	mg/kg	0	0	0	20	L595432-02	WG613261
Chromium	mg/kg	9.00	9.70	7.15	20	L595432-02	WG613261
Iron	mg/kg	11000	12000	6.01	20	L595432-02	WG613261

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Quality Assurance Report
Level II

L595432

September 25, 2012

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
			Duplicate				
Lead	mg/kg	14.0	14.0	2.17	20	L595432-02	WG613261
Silver	mg/kg	0	0	0	20	L595432-02	WG613261
Selenium	mg/kg	0	0	0	20	L595432-02	WG613261

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
			Laboratory Control Sample			
Mercury	mg/kg	12.4	14.6	118.	71.6-128	WG612833
1,2,4-Trichlorobenzene	mg/kg	.333	0.219	65.9	48-87	WG613095
2,4,6-Trichlorophenol	mg/kg	.333	0.227	68.2	50-98	WG613095
2,4-Dichlorophenol	mg/kg	.333	0.244	73.1	56-96	WG613095
2,4-Dimethylphenol	mg/kg	.333	0.244	73.2	52-101	WG613095
2,4-Dinitrophenol	mg/kg	.333	0.179	53.8	10-109	WG613095
2,4-Dinitrotoluene	mg/kg	.333	0.248	74.4	54-103	WG613095
2,6-Dinitrotoluene	mg/kg	.333	0.238	71.6	53-99	WG613095
2-Chloronaphthalene	mg/kg	.333	0.217	65.1	55-96	WG613095
2-Chlorophenol	mg/kg	.333	0.220	66.2	52-88	WG613095
2-Nitrophenol	mg/kg	.333	0.244	73.3	55-106	WG613095
3,3-Dichlorobenzidine	mg/kg	.333	0.177	53.3	36-84	WG613095
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.232	69.8	24-98	WG613095
4-Bromophenyl-phenylether	mg/kg	.333	0.223	67.0	58-111	WG613095
4-Chloro-3-methylphenol	mg/kg	.333	0.239	71.7	58-98	WG613095
4-Chlorophenyl-phenylether	mg/kg	.333	0.237	71.2	59-103	WG613095
4-Nitrophenol	mg/kg	.333	0.225	67.7	34-101	WG613095
Acenaphthene	mg/kg	.333	0.219	65.8	55-96	WG613095
Acenaphthylene	mg/kg	.333	0.231	69.4	61-107	WG613095
Anthracene	mg/kg	.333	0.231	69.3	58-105	WG613095
Benzidine	mg/kg	.333	0.0211	6.34*	10-21	WG613095
Benzo(a)anthracene	mg/kg	.333	0.224	67.2	56-103	WG613095
Benzo(a)pyrene	mg/kg	.333	0.244	73.2	57-103	WG613095
Benzo(b)fluoranthene	mg/kg	.333	0.234	70.4	52-106	WG613095
Benzo(g,h,i)perylene	mg/kg	.333	0.237	71.1	47-112	WG613095
Benzo(k)fluoranthene	mg/kg	.333	0.237	71.1	53-104	WG613095
Benzylbutyl phthalate	mg/kg	.333	0.231	69.4	61-118	WG613095
Bis(2-chlorethoxy)methane	mg/kg	.333	0.227	68.3	58-104	WG613095
Bis(2-chloroethyl)ether	mg/kg	.333	0.225	67.6	51-103	WG613095
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.215	64.7	56-95	WG613095
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.248	74.4	56-120	WG613095
Chrysene	mg/kg	.333	0.236	70.8	55-102	WG613095
Di-n-butyl phthalate	mg/kg	.333	0.238	71.6	59-114	WG613095
Di-n-octyl phthalate	mg/kg	.333	0.245	73.6	51-119	WG613095
Dibenz(a,h)anthracene	mg/kg	.333	0.233	69.9	49-111	WG613095
Diethyl phthalate	mg/kg	.333	0.221	66.4	61-105	WG613095
Dimethyl phthalate	mg/kg	.333	0.234	70.4	60-106	WG613095
Fluoranthene	mg/kg	.333	0.230	69.1	59-108	WG613095
Fluorene	mg/kg	.333	0.225	67.5	59-100	WG613095
Hexachloro-1,3-butadiene	mg/kg	.333	0.228	68.4	53-106	WG613095
Hexachlorobenzene	mg/kg	.333	0.200	59.9	50-108	WG613095
Hexachlorocyclopentadiene	mg/kg	.333	0.169	50.7	36-117	WG613095
Hexachloroethane	mg/kg	.333	0.211	63.4	45-83	WG613095
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.237	71.2	50-110	WG613095
Isophorone	mg/kg	.333	0.191	57.4	51-99	WG613095
n-Nitrosodi-n-propylamine	mg/kg	.333	0.231	69.4	52-103	WG613095
n-Nitrosodimethylamine	mg/kg	.333	0.209	62.7	31-107	WG613095
n-Nitrosodiphenylamine	mg/kg	.333	0.226	67.7	57-121	WG613095
Naphthalene	mg/kg	.333	0.216	65.0	55-91	WG613095
Nitrobenzene	mg/kg	.333	0.225	67.5	47-92	WG613095

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Quality Assurance Report
Level II

L595432

September 25, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Pentachlorophenol	mg/kg	.333	0.166	49.7	10-89	WG613095
Phenanthrene	mg/kg	.333	0.218	65.6	55-103	WG613095
Phenol	mg/kg	.333	0.227	68.1	49-99	WG613095
Pyrene	mg/kg	.333	0.224	67.3	54-104	WG613095
2,4,6-Tribromophenol				65.36	16-136	WG613095
2-Fluorobiphenyl				72.50	37-119	WG613095
2-Fluorophenol				64.47	22-114	WG613095
Nitrobenzene-d5				70.90	20-114	WG613095
Phenol-d5				65.91	26-127	WG613095
p-Terphenyl-d14				76.51	15-174	WG613095
Arsenic	mg/kg	237	225.	94.9	83.1-117	WG613261
Barium	mg/kg	252	249.	98.8	84.1-116	WG613261
Cadmium	mg/kg	191	173.	90.6	83.2-117	WG613261
Chromium	mg/kg	128	120.	93.8	81.3-118	WG613261
Iron	mg/kg	13100	12500	95.4	50.8-150	WG613261
Lead	mg/kg	103	104.	101.	83.1-117	WG613261
Selenium	mg/kg	110	101.	91.8	78.7-122	WG613261
Silver	mg/kg	47.3	42.5	89.9	66.2-134	WG613261
PCB 1016	mg/kg	.167	0.147	88.1	64-120	WG612915
PCB 1260	mg/kg	.167	0.153	91.6	72-130	WG612915
Decachlorobiphenyl				86.92	18.9-115.8	WG612915
Tetrachloro-m-xylene				86.11	31.8-115.7	WG612915
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0302	121.	77-129	WG612848
1,1,1-Trichloroethane	mg/kg	.025	0.0274	110.	70-127	WG612848
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0276	110.	76-133	WG612848
1,1,2-Trichloroethane	mg/kg	.025	0.0284	114.	79-123	WG612848
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0280	112.	52-145	WG612848
1,1-Dichloroethane	mg/kg	.025	0.0269	108.	74-121	WG612848
1,1-Dichloroethene	mg/kg	.025	0.0265	106.	53-135	WG612848
1,1-Dichloropropene	mg/kg	.025	0.0279	112.	67-127	WG612848
1,2,3-Trichlorobenzene	mg/kg	.025	0.0296	119.	74-131	WG612848
1,2,3-Trichloropropane	mg/kg	.025	0.0284	114.	75-135	WG612848
1,2,3-Trimethylbenzene	mg/kg	.025	0.0275	110.	76-128	WG612848
1,2,4-Trichlorobenzene	mg/kg	.025	0.0262	105.	72-130	WG612848
1,2,4-Trimethylbenzene	mg/kg	.025	0.0298	119.	75-131	WG612848
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0254	102.	55-142	WG612848
1,2-Dibromoethane	mg/kg	.025	0.0290	116.	77-126	WG612848
1,2-Dichlorobenzene	mg/kg	.025	0.0276	110.	80-123	WG612848
1,2-Dichloroethane	mg/kg	.025	0.0266	107.	70-128	WG612848
1,2-Dichloropropane	mg/kg	.025	0.0290	116.	74-125	WG612848
1,3,5-Trimethylbenzene	mg/kg	.025	0.0282	113.	77-129	WG612848
1,3-Dichlorobenzene	mg/kg	.025	0.0287	115.	76-128	WG612848
1,3-Dichloropropane	mg/kg	.025	0.0279	112.	77-118	WG612848
1,4-Dichlorobenzene	mg/kg	.025	0.0269	108.	77-119	WG612848
2,2-Dichloropropane	mg/kg	.025	0.0275	110.	60-132	WG612848
2-Butanone (MEK)	mg/kg	.125	0.141	113.	56-146	WG612848
2-Chloroethyl vinyl ether	mg/kg	.125	0.158	127.	17-179	WG612848
2-Chlorotoluene	mg/kg	.025	0.0291	116.	76-125	WG612848
4-Chlorotoluene	mg/kg	.025	0.0287	115.	76-125	WG612848
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.143	114.	55-148	WG612848
Acetone	mg/kg	.125	0.137	109.	47-155	WG612848
Acrylonitrile	mg/kg	.125	0.136	108.	50-155	WG612848
Benzene	mg/kg	.025	0.0269	108.	72-120	WG612848

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Quality Assurance Report
Level II

L595432

September 25, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Bromobenzene	mg/kg	.025	0.0289	116.	74-122	WG612848
Bromodichloromethane	mg/kg	.025	0.0273	109.	74-128	WG612848
Bromoform	mg/kg	.025	0.0287	115.	62-137	WG612848
Bromomethane	mg/kg	.025	0.0258	103.	38-180	WG612848
Carbon tetrachloride	mg/kg	.025	0.0267	107.	62-130	WG612848
Chlorobenzene	mg/kg	.025	0.0286	114.	77-124	WG612848
Chlorodibromomethane	mg/kg	.025	0.0296	118.	74-128	WG612848
Chloroethane	mg/kg	.025	0.0292	117.	46-173	WG612848
Chloroform	mg/kg	.025	0.0275	110.	76-122	WG612848
Chloromethane	mg/kg	.025	0.0261	104.	49-143	WG612848
cis-1,2-Dichloroethene	mg/kg	.025	0.0288	115.	73-123	WG612848
cis-1,3-Dichloropropene	mg/kg	.025	0.0284	114.	73-126	WG612848
Di-isopropyl ether	mg/kg	.025	0.0284	113.	64-131	WG612848
Dibromomethane	mg/kg	.025	0.0301	120.	75-127	WG612848
Dichlorodifluoromethane	mg/kg	.025	0.0254	102.	30-177	WG612848
Ethylbenzene	mg/kg	.025	0.0295	118.	76-126	WG612848
Hexachloro-1,3-butadiene	mg/kg	.025	0.0273	109.	71-134	WG612848
Isopropylbenzene	mg/kg	.025	0.0296	118.	70-128	WG612848
Methyl tert-butyl ether	mg/kg	.025	0.0277	111.	66-127	WG612848
Methylene Chloride	mg/kg	.025	0.0251	101.	67-124	WG612848
n-Butylbenzene	mg/kg	.025	0.0294	118.	71-133	WG612848
n-Propylbenzene	mg/kg	.025	0.0291	116.	76-126	WG612848
Naphthalene	mg/kg	.025	0.0257	103.	68-136	WG612848
p-Isopropyltoluene	mg/kg	.025	0.0304	122.	75-134	WG612848
sec-Butylbenzene	mg/kg	.025	0.0297	119.	75-132	WG612848
Styrene	mg/kg	.025	0.0316	126.	68-148	WG612848
tert-Butylbenzene	mg/kg	.025	0.0294	118.	75-132	WG612848
Tetrachloroethene	mg/kg	.025	0.0293	117.	70-131	WG612848
Toluene	mg/kg	.025	0.0268	107.	74-155	WG612848
trans-1,2-Dichloroethene	mg/kg	.025	0.0259	104.	63-126	WG612848
trans-1,3-Dichloropropene	mg/kg	.025	0.0274	109.	68-126	WG612848
Trichloroethene	mg/kg	.025	0.0272	109.	75-121	WG612848
Trichlorofluoromethane	mg/kg	.025	0.0254	102.	48-170	WG612848
Vinyl chloride	mg/kg	.025	0.0271	109.	54-144	WG612848
Xylenes, Total	mg/kg	.075	0.0875	117.	76-126	WG612848
4-Bromofluorobenzene				103.0	67-133	WG612848
Dibromofluoromethane				95.85	72-135	WG612848
Toluene-d8				102.7	90-113	WG612848
2,4,5-T	mg/kg	.167	0.134	80.4	32.9-103	WG613639
2,4,5-TP (Silvex)	mg/kg	.167	0.133	79.5	46-116	WG613639
2,4-D	mg/kg	.167	0.126	75.2	28-98	WG613639
2,4-DB	mg/kg	.167	0.147	87.8	28.9-108	WG613639
Dalapon	mg/kg	.167	0.143	85.4	18.4-113	WG613639
Dicamba	mg/kg	.167	0.138	82.4	37.2-119	WG613639
Dichloroprop	mg/kg	.167	0.157	93.9	40.5-114	WG613639
Dinoseb	mg/kg	.167	0.0408	24.5	10-98	WG613639
MCPA	mg/kg	16.7	13.8	82.5	15.5-110	WG613639
MCPP	mg/kg	16.7	18.9	113.	40.1-177	WG613639
2,4-Dichlorophenyl Acetic Acid				81.50	37-99	WG613639

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,2,4-Trichlorobenzene	mg/kg	0.211	0.219	63.0	48-87	3.95	20	WG613095
2,4,6-Trichlorophenol	mg/kg	0.224	0.227	67.0	50-98	1.33	20	WG613095
2,4-Dichlorophenol	mg/kg	0.243	0.244	73.0	56-96	0.126	20	WG613095
2,4-Dimethylphenol	mg/kg	0.248	0.244	74.0	52-101	1.54	20	WG613095

* Performance of this Analyte is outside of established criteria.
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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L595432

September 25, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
2,4-Dinitrophenol	mg/kg	0.171	0.179	51.0	10-109	4.47	39	WG613095
2,4-Dinitrotoluene	mg/kg	0.243	0.248	73.0	54-103	2.14	20	WG613095
2,6-Dinitrotoluene	mg/kg	0.231	0.238	69.0	53-99	3.24	20	WG613095
2-Chloronaphthalene	mg/kg	0.212	0.217	64.0	55-96	2.20	20	WG613095
2-Chlorophenol	mg/kg	0.209	0.220	63.0	52-88	5.18	20	WG613095
2-Nitrophenol	mg/kg	0.237	0.244	71.0	55-106	2.99	20	WG613095
3,3-Dichlorobenzidine	mg/kg	0.166	0.177	50.0	36-84	6.81	20	WG613095
4,6-Dinitro-2-methylphenol	mg/kg	0.239	0.232	72.0	24-98	2.60	32	WG613095
4-Bromophenyl-phenylether	mg/kg	0.219	0.223	66.0	58-111	2.01	20	WG613095
4-Chloro-3-methylphenol	mg/kg	0.246	0.239	74.0	58-98	3.04	20	WG613095
4-Chlorophenyl-phenylether	mg/kg	0.237	0.237	71.0	59-103	0.124	20	WG613095
4-Nitrophenol	mg/kg	0.216	0.225	65.0	34-101	4.20	26	WG613095
Acenaphthene	mg/kg	0.221	0.219	66.0	55-96	0.960	20	WG613095
Acenaphthylene	mg/kg	0.231	0.231	69.0	61-107	0.0381	20	WG613095
Anthracene	mg/kg	0.231	0.231	69.0	58-105	0.212	20	WG613095
Benzidine	mg/kg	0.0192	0.0211	6*	10-21	9.54	40	WG613095
Benzo(a)anthracene	mg/kg	0.218	0.224	66.0	56-103	2.50	20	WG613095
Benzo(a)pyrene	mg/kg	0.244	0.244	73.0	57-103	0.0769	20	WG613095
Benzo(b)fluoranthene	mg/kg	0.235	0.234	71.0	52-106	0.357	20	WG613095
Benzo(g,h,i)perylene	mg/kg	0.233	0.237	70.0	47-112	1.56	20	WG613095
Benzo(k)fluoranthene	mg/kg	0.234	0.237	70.0	53-104	1.25	20	WG613095
Benzylbutyl phthalate	mg/kg	0.226	0.231	68.0	61-118	2.17	20	WG613095
Bis(2-chlorethoxy)methane	mg/kg	0.229	0.227	69.0	58-104	0.714	20	WG613095
Bis(2-chloroethyl)ether	mg/kg	0.218	0.225	65.0	51-103	3.26	20	WG613095
Bis(2-chloroisopropyl)ether	mg/kg	0.209	0.215	63.0	56-95	2.94	20	WG613095
Bis(2-ethylhexyl)phthalate	mg/kg	0.237	0.248	71.0	56-120	4.50	20	WG613095
Chrysene	mg/kg	0.225	0.236	68.0	55-102	4.62	20	WG613095
Di-n-butyl phthalate	mg/kg	0.237	0.238	71.0	59-114	0.800	20	WG613095
Di-n-octyl phthalate	mg/kg	0.244	0.245	73.0	51-119	0.527	22	WG613095
Dibenz(a,h)anthracene	mg/kg	0.238	0.233	71.0	49-111	2.30	20	WG613095
Diethyl phthalate	mg/kg	0.228	0.221	68.0	61-105	3.30	20	WG613095
Dimethyl phthalate	mg/kg	0.223	0.234	67.0	60-106	5.11	20	WG613095
Fluoranthene	mg/kg	0.237	0.230	71.0	59-108	2.98	20	WG613095
Fluorene	mg/kg	0.228	0.225	68.0	59-100	1.29	20	WG613095
Hexachloro-1,3-butadiene	mg/kg	0.225	0.228	67.0	53-106	1.37	20	WG613095
Hexachlorobenzene	mg/kg	0.201	0.200	60.0	50-108	0.911	20	WG613095
Hexachlorocyclopentadiene	mg/kg	0.161	0.169	48.0	36-117	4.74	20	WG613095
Hexachloroethane	mg/kg	0.200	0.211	60.0	45-83	5.49	20	WG613095
Indeno(1,2,3-cd)pyrene	mg/kg	0.240	0.237	72.0	50-110	1.30	20	WG613095
Isophorone	mg/kg	0.190	0.191	57.0	51-99	0.501	20	WG613095
n-Nitrosodi-n-propylamine	mg/kg	0.232	0.231	70.0	52-103	0.287	20	WG613095
n-Nitrosodimethylamine	mg/kg	0.183	0.209	55.0	31-107	13.1	23	WG613095
n-Nitrosodiphenylamine	mg/kg	0.221	0.226	66.0	57-121	2.04	20	WG613095
Naphthalene	mg/kg	0.217	0.216	65.0	55-91	0.472	20	WG613095
Nitrobenzene	mg/kg	0.221	0.225	66.0	47-92	1.60	20	WG613095
Pentachlorophenol	mg/kg	0.172	0.166	52.0	10-89	3.52	28	WG613095
Phenanthrene	mg/kg	0.222	0.218	66.0	55-103	1.49	20	WG613095
Phenol	mg/kg	0.235	0.227	70.0	49-99	3.55	20	WG613095
Pyrene	mg/kg	0.228	0.224	68.0	54-104	1.94	20	WG613095
2,4,6-Tribromophenol				62.21	16-136			WG613095
2-Fluorobiphenyl				66.63	37-119			WG613095
2-Fluorophenol				59.21	22-114			WG613095
Nitrobenzene-d5				67.37	20-114			WG613095
Phenol-d5				61.73	26-127			WG613095
p-Terphenyl-d14				69.39	15-174			WG613095
PCB 1016	mg/kg	0.155	0.147	93.0	64-120	5.25	20	WG612915
PCB 1260	mg/kg	0.168	0.153	100.	72-130	9.30	20	WG612915

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Quality Assurance Report
Level II

L595432

September 25, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
Decachlorobiphenyl				87.51	18.9-115.8			
Tetrachloro-m-xylene				87.72	31.8-115.7			
1,1,1,2-Tetrachloroethane	mg/kg	0.0260	0.0302	104.	77-129	14.7	20	WG612848
1,1,1-Trichloroethane	mg/kg	0.0252	0.0274	101.	70-127	8.38	20	WG612848
1,1,2,2-Tetrachloroethane	mg/kg	0.0250	0.0276	100.	76-133	10.0	20	WG612848
1,1,2-Trichloroethane	mg/kg	0.0260	0.0284	104.	79-123	8.59	20	WG612848
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0250	0.0280	100.	52-145	11.3	20	WG612848
1,1-Dichloroethane	mg/kg	0.0251	0.0269	100.	74-121	6.90	20	WG612848
1,1-Dichloroethene	mg/kg	0.0241	0.0265	96.0	53-135	9.75	20	WG612848
1,1-Dichloropropene	mg/kg	0.0259	0.0279	103.	67-127	7.55	20	WG612848
1,2,3-Trichlorobenzene	mg/kg	0.0280	0.0296	112.	74-131	5.56	20	WG612848
1,2,3-Trichloropropane	mg/kg	0.0277	0.0284	111.	75-135	2.60	20	WG612848
1,2,3-Trimethylbenzene	mg/kg	0.0258	0.0275	103.	76-128	6.74	20	WG612848
1,2,4-Trichlorobenzene	mg/kg	0.0247	0.0262	99.0	72-130	5.83	20	WG612848
1,2,4-Trimethylbenzene	mg/kg	0.0267	0.0298	107.	75-131	11.1	20	WG612848
1,2-Dibromo-3-Chloropropane	mg/kg	0.0250	0.0254	100.	55-142	1.88	20	WG612848
1,2-Dibromoethane	mg/kg	0.0266	0.0290	106.	77-126	8.71	20	WG612848
1,2-Dichlorobenzene	mg/kg	0.0262	0.0276	105.	80-123	5.06	20	WG612848
1,2-Dichloroethane	mg/kg	0.0240	0.0266	96.0	70-128	10.2	20	WG612848
1,2-Dichloropropane	mg/kg	0.0242	0.0290	97.0	74-125	17.8	20	WG612848
1,3,5-Trimethylbenzene	mg/kg	0.0253	0.0282	101.	77-129	10.9	20	WG612848
1,3-Dichlorobenzene	mg/kg	0.0261	0.0287	104.	76-128	9.25	20	WG612848
1,3-Dichloropropane	mg/kg	0.0247	0.0279	99.0	77-118	12.4	20	WG612848
1,4-Dichlorobenzene	mg/kg	0.0248	0.0269	99.0	77-119	8.13	20	WG612848
2,2-Dichloropropane	mg/kg	0.0246	0.0275	98.0	60-132	11.2	20	WG612848
2-Butanone (MEK)	mg/kg	0.126	0.141	100.	56-146	11.9	20	WG612848
2-Chloroethyl vinyl ether	mg/kg	0.116	0.158	93.0	17-179	30.8*	22	WG612848
2-Chlorotoluene	mg/kg	0.0256	0.0291	102.	76-125	12.7	20	WG612848
4-Chlorotoluene	mg/kg	0.0260	0.0287	104.	76-125	9.95	20	WG612848
4-Methyl-2-pentanone (MIBK)	mg/kg	0.131	0.143	105.	55-148	8.75	20	WG612848
Acetone	mg/kg	0.119	0.137	95.0	47-155	13.6	22	WG612848
Acrylonitrile	mg/kg	0.127	0.136	102.	50-155	6.54	20	WG612848
Benzene	mg/kg	0.0247	0.0269	99.0	72-120	8.64	20	WG612848
Bromobenzene	mg/kg	0.0255	0.0289	102.	74-122	12.5	20	WG612848
Bromodichloromethane	mg/kg	0.0245	0.0273	98.0	74-128	10.8	20	WG612848
Bromoform	mg/kg	0.0263	0.0287	105.	62-137	8.57	20	WG612848
Bromomethane	mg/kg	0.0226	0.0258	90.0	38-180	13.0	20	WG612848
Carbon tetrachloride	mg/kg	0.0241	0.0267	96.0	62-130	10.3	20	WG612848
Chlorobenzene	mg/kg	0.0267	0.0286	107.	77-124	6.87	20	WG612848
Chlorodibromomethane	mg/kg	0.0262	0.0296	105.	74-128	12.1	20	WG612848
Chloroethane	mg/kg	0.0225	0.0292	90.0	46-173	26.2*	20	WG612848
Chloroform	mg/kg	0.0252	0.0275	101.	76-122	8.95	20	WG612848
Chloromethane	mg/kg	0.0243	0.0261	97.0	49-143	7.04	20	WG612848
cis-1,2-Dichloroethene	mg/kg	0.0262	0.0288	105.	73-123	9.50	20	WG612848
cis-1,3-Dichloropropene	mg/kg	0.0247	0.0284	99.0	73-126	14.0	20	WG612848
Di-isopropyl ether	mg/kg	0.0256	0.0284	102.	64-131	10.2	20	WG612848
Dibromomethane	mg/kg	0.0256	0.0301	102.	75-127	16.3	20	WG612848
Dichlorodifluoromethane	mg/kg	0.0224	0.0254	89.0	30-177	12.9	20	WG612848
Ethylbenzene	mg/kg	0.0267	0.0295	107.	76-126	9.88	20	WG612848
Hexachloro-1,3-butadiene	mg/kg	0.0257	0.0273	103.	71-134	6.18	20	WG612848
Isopropylbenzene	mg/kg	0.0261	0.0296	104.	70-128	12.5	20	WG612848
Methyl tert-butyl ether	mg/kg	0.0253	0.0277	101.	66-127	8.99	20	WG612848
Methylene Chloride	mg/kg	0.0237	0.0251	95.0	67-124	5.68	20	WG612848
n-Butylbenzene	mg/kg	0.0274	0.0294	109.	71-133	7.29	20	WG612848
n-Propylbenzene	mg/kg	0.0266	0.0291	106.	76-126	8.93	20	WG612848
Naphthalene	mg/kg	0.0250	0.0257	100.	68-136	2.96	20	WG612848
p-Isopropyltoluene	mg/kg	0.0275	0.0304	110.	75-134	10.0	20	WG612848
sec-Butylbenzene	mg/kg	0.0261	0.0297	104.	75-132	12.7	20	WG612848
Styrene	mg/kg	0.0274	0.0316	109.	68-148	14.3	20	WG612848

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Level II

L595432

September 25, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
tert-Butylbenzene	mg/kg	0.0269	0.0294	108.	75-132	8.80	20	WG612848
Tetrachloroethene	mg/kg	0.0254	0.0293	102.	70-131	14.4	20	WG612848
Toluene	mg/kg	0.0238	0.0268	95.0	74-155	12.0	20	WG612848
trans-1,2-Dichloroethene	mg/kg	0.0240	0.0259	96.0	63-126	7.69	20	WG612848
trans-1,3-Dichloropropene	mg/kg	0.0218	0.0274	87.0	68-126	22.6*	20	WG612848
Trichloroethene	mg/kg	0.0238	0.0272	95.0	75-121	13.2	20	WG612848
Trichlorofluoromethane	mg/kg	0.0228	0.0254	91.0	48-170	11.0	20	WG612848
Vinyl chloride	mg/kg	0.0240	0.0271	96.0	54-144	12.2	20	WG612848
Xylenes, Total	mg/kg	0.0809	0.0875	108.	76-126	7.82	20	WG612848
4-Bromofluorobenzene				100.4	67-133			WG612848
Dibromofluoromethane				97.22	72-135			WG612848
Toluene-d8				100.0	90-113			WG612848
2,4,5-T	mg/kg	0.136	0.134	81.0	32.9-103	1.25	27.4	WG613639
2,4,5-TP (Silvex)	mg/kg	0.134	0.133	80.0	46-116	1.05	25.2	WG613639
2,4-D	mg/kg	0.125	0.126	75.0	28-98	0.332	24	WG613639
2,4-DB	mg/kg	0.148	0.147	89.0	28.9-108	1.07	30.3	WG613639
Dalapon	mg/kg	0.117	0.143	70.0	18.4-113	20.1	24.1	WG613639
Dicamba	mg/kg	0.139	0.138	83.0	37.2-119	1.01	21.2	WG613639
Dichloroprop	mg/kg	0.154	0.157	92.0	40.5-114	1.84	23.3	WG613639
Dinoseb	mg/kg	0.0719	0.0408	43.0	10-98	55.1*	40	WG613639
MCPA	mg/kg	14.6	13.8	88.0	15.5-110	5.99	40	WG613639
MCPP	mg/kg	18.8	18.9	112.	40.1-177	0.815	32.2	WG613639
2,4-Dichlorophenyl Acetic Acid				81.83	37-99			WG613639

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Mercury	mg/kg	0.230	0	.25	92.0	80-120	L595432-02	WG612833
1,2,4-Trichlorobenzene	mg/kg	0.296	0	.333	89.0	27-118	L595431-04	WG613095
2,4,6-Trichlorophenol	mg/kg	0.290	0	.333	87.2	18-140	L595431-04	WG613095
2,4-Dichlorophenol	mg/kg	0.321	0	.333	96.4	30-134	L595431-04	WG613095
2,4-Dimethylphenol	mg/kg	0.314	0	.333	94.2	13-147	L595431-04	WG613095
2,4-Dinitrophenol	mg/kg	0.0762	0	.333	22.9	10-110	L595431-04	WG613095
2,4-Dinitrotoluene	mg/kg	0.315	0	.333	94.7	12-146	L595431-04	WG613095
2,6-Dinitrotoluene	mg/kg	0.312	0	.333	93.6	10-150	L595431-04	WG613095
2-Chloronaphthalene	mg/kg	0.293	0	.333	87.9	31-127	L595431-04	WG613095
2-Chlorophenol	mg/kg	0.281	0	.333	84.3	26-120	L595431-04	WG613095
2-Nitrophenol	mg/kg	0.299	0	.333	89.9	10-156	L595431-04	WG613095
3,3-Dichlorobenzidine	mg/kg	0.251	0	.333	75.3	10-127	L595431-04	WG613095
4,6-Dinitro-2-methylphenol	mg/kg	0.244	0	.333	73.3	10-124	L595431-04	WG613095
4-Bromophenyl-phenylether	mg/kg	0.309	0	.333	92.9	27-150	L595431-04	WG613095
4-Chloro-3-methylphenol	mg/kg	0.316	0	.333	94.7	24-140	L595431-04	WG613095
4-Chlorophenyl-phenylether	mg/kg	0.312	0	.333	93.7	27-142	L595431-04	WG613095
4-Nitrophenol	mg/kg	0.257	0	.333	77.1	10-166	L595431-04	WG613095
Acenaphthene	mg/kg	0.294	0	.333	88.2	30-132	L595431-04	WG613095
Acenaphthylene	mg/kg	0.311	0	.333	93.3	31-144	L595431-04	WG613095
Anthracene	mg/kg	0.328	0	.333	98.5	27-140	L595431-04	WG613095
Benzidine	mg/kg	0.0177	0	.333	5.31*	10-55	L595431-04	WG613095
Benzo(a)anthracene	mg/kg	0.292	0	.333	87.8	22-139	L595431-04	WG613095
Benzo(a)pyrene	mg/kg	0.316	0	.333	94.9	16-148	L595431-04	WG613095
Benzo(b)fluoranthene	mg/kg	0.298	0	.333	89.6	13-152	L595431-04	WG613095
Benzo(g,h,i)perylene	mg/kg	0.320	0	.333	96.0	10-137	L595431-04	WG613095
Benzo(k)fluoranthene	mg/kg	0.310	0	.333	93.2	15-152	L595431-04	WG613095
Benzylbutyl phthalate	mg/kg	0.318	0	.333	95.4	20-168	L595431-04	WG613095
Bis(2-chlorethoxy)methane	mg/kg	0.297	0	.333	89.2	32-141	L595431-04	WG613095

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Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L595432

September 25, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Bis(2-chloroethyl)ether	mg/kg	0.295	0	.333	88.6	25-139	L595431-04	WG613095
Bis(2-chloroisopropyl)ether	mg/kg	0.273	0	.333	82.1	32-128	L595431-04	WG613095
Bis(2-ethylhexyl)phthalate	mg/kg	0.329	0	.333	98.8	20-163	L595431-04	WG613095
Chrysene	mg/kg	0.307	0	.333	92.1	20-139	L595431-04	WG613095
Di-n-butyl phthalate	mg/kg	0.320	0	.333	96.2	24-149	L595431-04	WG613095
Di-n-octyl phthalate	mg/kg	0.335	0	.333	100.	14-164	L595431-04	WG613095
Dibenz(a,h)anthracene	mg/kg	0.316	0	.333	95.0	10-137	L595431-04	WG613095
Diethyl phthalate	mg/kg	0.302	0	.333	90.8	28-142	L595431-04	WG613095
Dimethyl phthalate	mg/kg	0.306	0	.333	91.8	31-142	L595431-04	WG613095
Fluoranthene	mg/kg	0.313	0	.333	94.0	24-145	L595431-04	WG613095
Fluorene	mg/kg	0.300	0	.333	90.0	30-138	L595431-04	WG613095
Hexachloro-1,3-butadiene	mg/kg	0.298	0	.333	89.6	29-136	L595431-04	WG613095
Hexachlorobenzene	mg/kg	0.266	0	.333	79.9	26-136	L595431-04	WG613095
Hexachlorocyclopentadiene	mg/kg	0.183	0	.333	54.9	10-124	L595431-04	WG613095
Hexachloroethane	mg/kg	0.262	0	.333	78.8	21-107	L595431-04	WG613095
Indeno(1,2,3-cd)pyrene	mg/kg	0.319	0	.333	95.9	10-139	L595431-04	WG613095
Isophorone	mg/kg	0.249	0	.333	74.7	26-134	L595431-04	WG613095
n-Nitrosodi-n-propylamine	mg/kg	0.304	0	.333	91.2	24-141	L595431-04	WG613095
n-Nitrosodimethylamine	mg/kg	0.241	0	.333	72.3	18-126	L595431-04	WG613095
n-Nitrosodiphenylamine	mg/kg	0.310	0	.333	93.0	16-128	L595431-04	WG613095
Naphthalene	mg/kg	0.287	0	.333	86.0	31-124	L595431-04	WG613095
Nitrobenzene	mg/kg	0.305	0	.333	91.7	22-122	L595431-04	WG613095
Pentachlorophenol	mg/kg	0.209	0	.333	62.6	10-124	L595431-04	WG613095
Phenanthrene	mg/kg	0.308	0	.333	92.6	25-139	L595431-04	WG613095
Phenol	mg/kg	0.307	0	.333	92.2	22-129	L595431-04	WG613095
Pyrene	mg/kg	0.309	0	.333	92.8	23-145	L595431-04	WG613095
2,4,6-Tribromophenol					91.28	16-136		WG613095
2-Fluorobiphenyl					90.76	37-119		WG613095
2-Fluorophenol					78.56	22-114		WG613095
Nitrobenzene-d5					90.43	20-114		WG613095
Phenol-d5					81.76	26-127		WG613095
p-Terphenyl-d14					86.12	15-174		WG613095
Arsenic	mg/kg	44.5	3.60	50	81.8	75-125	L595432-02	WG613261
Barium	mg/kg	155.	99.0	50	112.	75-125	L595432-02	WG613261
Cadmium	mg/kg	42.9	0	50	85.8	75-125	L595432-02	WG613261
Chromium	mg/kg	52.4	9.70	50	85.4	75-125	L595432-02	WG613261
Iron	mg/kg	11300	12000	50	0*	75-125	L595432-02	WG613261
Lead	mg/kg	57.2	14.0	50	86.4	75-125	L595432-02	WG613261
Silver	mg/kg	41.9	0	50	83.8	75-125	L595432-02	WG613261
Selenium	mg/kg	44.5	0	10	89.0	75-125	L595432-02	WG613261
PCB 1016	mg/kg	0.141	0	.167	84.7	10-165	L595432-02	WG612915
PCB 1260	mg/kg	0.136	0	.167	81.2	29-154	L595432-02	WG612915
Decachlorobiphenyl					84.46	18.9-115.8		WG612915
Tetrachloro-m-xylene					90.81	31.8-115.7		WG612915
1,1,1,2-Tetrachloroethane	mg/kg	0.108	0	.025	86.3	49-135	L595432-01	WG612848
1,1,1-Trichloroethane	mg/kg	0.113	0	.025	90.6	43-142	L595432-01	WG612848
1,1,2,2-Tetrachloroethane	mg/kg	0.0659	0	.025	52.8	42-147	L595432-01	WG612848
1,1,2-Trichloroethane	mg/kg	0.111	0	.025	88.9	51-134	L595432-01	WG612848
1,1,2-Trichlorotrifluoroethane	mg/kg	0.108	0	.025	86.6	25-156	L595432-01	WG612848
1,1-Dichloroethane	mg/kg	0.114	0	.025	91.2	50-131	L595432-01	WG612848
1,1-Dichloroethene	mg/kg	0.112	0	.025	89.4	29-145	L595432-01	WG612848
1,1-Dichloropropene	mg/kg	0.106	0	.025	84.8	40-136	L595432-01	WG612848
1,2,3-Trichlorobenzene	mg/kg	0.0724	0	.025	57.9	13-142	L595432-01	WG612848

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Level II

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Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,2,3-Trichloropropane	mg/kg	0.117	0	.025	93.4	41-149	L595432-01	WG612848
1,2,3-Trimethylbenzene	mg/kg	0.0888	0	.025	71.1	33-146	L595432-01	WG612848
1,2,4-Trichlorobenzene	mg/kg	0.0485	0	.025	38.8	12-140	L595432-01	WG612848
1,2,4-Trimethylbenzene	mg/kg	0.0724	0	.025	57.9	29-143	L595432-01	WG612848
1,2-Dibromo-3-Chloropropane	mg/kg	0.108	0	.025	86.7	29-151	L595432-01	WG612848
1,2-Dibromoethane	mg/kg	0.107	0	.025	85.7	48-133	L595432-01	WG612848
1,2-Dichlorobenzene	mg/kg	0.0880	0	.025	70.4	37-136	L595432-01	WG612848
1,2-Dichloroethane	mg/kg	0.112	0	.025	89.3	49-131	L595432-01	WG612848
1,2-Dichloropropane	mg/kg	0.113	0	.025	90.5	50-132	L595432-01	WG612848
1,3,5-Trimethylbenzene	mg/kg	0.0781	0	.025	62.4	29-144	L595432-01	WG612848
1,3-Dichlorobenzene	mg/kg	0.0708	0	.025	56.7	26-140	L595432-01	WG612848
1,3-Dichloropropane	mg/kg	0.106	0	.025	84.9	50-126	L595432-01	WG612848
1,4-Dichlorobenzene	mg/kg	0.0726	0	.025	58.1	34-132	L595432-01	WG612848
2,2-Dichloropropane	mg/kg	0.0926	0	.025	74.1	35-148	L595432-01	WG612848
2-Butanone (MEK)	mg/kg	0.719	0	.125	115.	40-149	L595432-01	WG612848
2-Chloroethyl vinyl ether	mg/kg	0.575	0	.125	92.0	10-173	L595432-01	WG612848
2-Chlorotoluene	mg/kg	0.0841	0	.025	67.2	34-136	L595432-01	WG612848
4-Chlorotoluene	mg/kg	0.0740	0	.025	59.2	31-137	L595432-01	WG612848
4-Methyl-2-pentanone (MIBK)	mg/kg	0.450	0	.125	71.9	37-153	L595432-01	WG612848
Acetone	mg/kg	1.10	0	.125	176.	10-177	L595432-01	WG612848
Acrylonitrile	mg/kg	0.636	0	.125	102.	33-159	L595432-01	WG612848
Benzene	mg/kg	0.105	0	.025	84.2	44-131	L595432-01	WG612848
Bromobenzene	mg/kg	0.0906	0	.025	72.5	36-132	L595432-01	WG612848
Bromodichloromethane	mg/kg	0.109	0	.025	87.5	48-134	L595432-01	WG612848
Bromoform	mg/kg	0.108	0	.025	86.6	34-141	L595432-01	WG612848
Bromomethane	mg/kg	0.112	0	.025	89.5	19-173	L595432-01	WG612848
Carbon tetrachloride	mg/kg	0.108	0	.025	86.7	36-140	L595432-01	WG612848
Chlorobenzene	mg/kg	0.0956	0	.025	76.5	42-133	L595432-01	WG612848
Chlorodibromomethane	mg/kg	0.106	0	.025	85.0	45-135	L595432-01	WG612848
Chloroethane	mg/kg	0.127	0	.025	101.	16-178	L595432-01	WG612848
Chloroform	mg/kg	0.114	0	.025	91.5	52-130	L595432-01	WG612848
Chloromethane	mg/kg	0.117	0	.025	93.9	28-147	L595432-01	WG612848
cis-1,2-Dichloroethene	mg/kg	0.112	0	.025	89.2	52-128	L595432-01	WG612848
cis-1,3-Dichloropropene	mg/kg	0.101	0	.025	81.0	46-131	L595432-01	WG612848
Di-isopropyl ether	mg/kg	0.120	0	.025	95.6	46-134	L595432-01	WG612848
Dibromomethane	mg/kg	0.119	0	.025	95.0	51-133	L595432-01	WG612848
Dichlorodifluoromethane	mg/kg	0.106	0	.025	85.0	12-179	L595432-01	WG612848
Ethylbenzene	mg/kg	0.0983	0	.025	78.6	38-139	L595432-01	WG612848
Hexachloro-1,3-butadiene	mg/kg	0.0577	0	.025	46.2	10-147	L595432-01	WG612848
Isopropylbenzene	mg/kg	0.101	0	.025	80.5	34-137	L595432-01	WG612848
Methyl tert-butyl ether	mg/kg	0.116	0	.025	92.8	45-134	L595432-01	WG612848
Methylene Chloride	mg/kg	0.107	0	.025	85.4	41-133	L595432-01	WG612848
n-Butylbenzene	mg/kg	0.0613	0	.025	49.1	19-149	L595432-01	WG612848
n-Propylbenzene	mg/kg	0.0806	0	.025	64.4	27-142	L595432-01	WG612848
Naphthalene	mg/kg	0.0902	0	.025	72.2	19-146	L595432-01	WG612848
p-Isopropyltoluene	mg/kg	0.0748	0	.025	59.8	21-150	L595432-01	WG612848
sec-Butylbenzene	mg/kg	0.0848	0	.025	67.8	25-148	L595432-01	WG612848
Styrene	mg/kg	0.0949	0	.025	75.9	30-156	L595432-01	WG612848
tert-Butylbenzene	mg/kg	0.0987	0	.025	79.0	32-146	L595432-01	WG612848
Tetrachloroethene	mg/kg	0.0820	0	.025	65.6	35-139	L595432-01	WG612848
Toluene	mg/kg	0.0994	0	.025	79.6	43-127	L595432-01	WG612848
trans-1,2-Dichloroethene	mg/kg	0.101	0	.025	80.6	41-132	L595432-01	WG612848
trans-1,3-Dichloropropene	mg/kg	0.0939	0	.025	75.1	43-129	L595432-01	WG612848
Trichloroethene	mg/kg	0.128	0	.025	103.	42-136	L595432-01	WG612848
Trichlorofluoromethane	mg/kg	0.107	0	.025	85.7	20-178	L595432-01	WG612848
Vinyl chloride	mg/kg	0.116	0	.025	93.1	30-157	L595432-01	WG612848
Xylenes, Total	mg/kg	0.277	0	.075	74.0	38-137	L595432-01	WG612848
4-Bromofluorobenzene					93.63	67-133		WG612848
Dibromofluoromethane					95.53	72-135		WG612848

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Level II

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		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Toluene-d8					100.0	90-113		
2,4,5-T	mg/kg	0.115	0	.167	68.8	18-111	L595294-10	WG613639
2,4,5-TP (Silvex)	mg/kg	0.131	0	.167	78.4	27-123	L595294-10	WG613639
2,4-D	mg/kg	0.126	0	.167	75.7	10-137	L595294-10	WG613639
2,4-DB	mg/kg	0.111	0	.167	66.5	15-121	L595294-10	WG613639
Dalapon	mg/kg	0.130	0	.167	77.7	10-111	L595294-10	WG613639
Dicamba	mg/kg	0.133	0	.167	79.3	21-118	L595294-10	WG613639
Dichloroprop	mg/kg	0.126	0	.167	75.4	27-125	L595294-10	WG613639
Dinoseb	mg/kg	0.0913	0	.167	54.7	10-95	L595294-10	WG613639
MCPA	mg/kg	8.81	0	16.7	52.8	10-164	L595294-10	WG613639
MCPP	mg/kg	17.8	0	16.7	106.	17-186	L595294-10	WG613639
2,4-Dichlorophenyl Acetic Acid					71.20	37-99		WG613639
4,4-DDD	mg/kg	0.0733	0	.0667	110.	45-139	L595432-02	WG612915
4,4-DDE	mg/kg	0.0666	0	.0667	99.8	47-134	L595432-02	WG612915
4,4-DDT	mg/kg	0.0605	0	.0667	90.7	11-148	L595432-02	WG612915
Aldrin	mg/kg	0.0656	0	.0667	98.4	52-117	L595432-02	WG612915
Alpha BHC	mg/kg	0.0634	0	.0667	95.0	51-120	L595432-02	WG612915
Beta BHC	mg/kg	0.0645	0	.0667	96.7	48-124	L595432-02	WG612915
Delta BHC	mg/kg	0.0689	0	.0667	103.	38-128	L595432-02	WG612915
Dieldrin	mg/kg	0.0680	0	.0667	102.	48-135	L595432-02	WG612915
Endosulfan I	mg/kg	0.0688	0	.0667	103.	51-129	L595432-02	WG612915
Endosulfan II	mg/kg	0.0694	0	.0667	104.	42-142	L595432-02	WG612915
Endosulfan sulfate	mg/kg	0.0843	0	.0667	126.	38-140	L595432-02	WG612915
Endrin	mg/kg	0.0614	0	.0667	92.1	44-133	L595432-02	WG612915
Endrin aldehyde	mg/kg	0.0718	0	.0667	108.	16-116	L595432-02	WG612915
Endrin ketone	mg/kg	0.0763	0	.0667	114.	33-131	L595432-02	WG612915
Gamma BHC	mg/kg	0.0653	0	.0667	98.0	52-119	L595432-02	WG612915
Heptachlor	mg/kg	0.0683	0	.0667	102.	47-121	L595432-02	WG612915
Heptachlor epoxide	mg/kg	0.0684	0	.0667	102.	54-120	L595432-02	WG612915
Hexachlorobenzene	mg/kg	0.0568	0	.0667	85.1	58-115	L595432-02	WG612915
Methoxychlor	mg/kg	0.0680	0	.0667	102.	9-153	L595432-02	WG612915
Decachlorobiphenyl					96.23	18.9-115.8		WG612915
Tetrachloro-m-xylene					92.66	31.8-115.7		WG612915

		Matrix Spike Duplicate							
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0.225	0.230	90.0	80-120	2.20	20	L595432-02	WG612833
1,2,4-Trichlorobenzene	mg/kg	0.231	0.296	69.5	27-118	24.6*	23	L595431-04	WG613095
2,4,6-Trichlorophenol	mg/kg	0.252	0.290	75.6	18-140	14.3	26	L595431-04	WG613095
2,4-Dichlorophenol	mg/kg	0.252	0.321	75.6	30-134	24.2*	23	L595431-04	WG613095
2,4-Dimethylphenol	mg/kg	0.251	0.314	75.4	13-147	22.1	27	L595431-04	WG613095
2,4-Dinitrophenol	mg/kg	0.0486	0.0762	14.6	10-110	44.3*	40	L595431-04	WG613095
2,4-Dinitrotoluene	mg/kg	0.275	0.315	82.7	12-146	13.6	25	L595431-04	WG613095
2,6-Dinitrotoluene	mg/kg	0.272	0.312	81.8	10-150	13.5	23	L595431-04	WG613095
2-Chloronaphthalene	mg/kg	0.248	0.293	74.4	31-127	16.7	23	L595431-04	WG613095
2-Chlorophenol	mg/kg	0.204	0.281	61.3	26-120	31.6*	21	L595431-04	WG613095
2-Nitrophenol	mg/kg	0.256	0.299	77.0	10-156	15.5	24	L595431-04	WG613095
3,3-Dichlorobenzidine	mg/kg	0.213	0.251	63.9	10-127	16.4	40	L595431-04	WG613095
4,6-Dinitro-2-methylphenol	mg/kg	0.169	0.244	50.6	10-124	36.5	40	L595431-04	WG613095
4-Bromophenyl-phenylether	mg/kg	0.249	0.309	74.7	27-150	21.7*	20	L595431-04	WG613095
4-Chloro-3-methylphenol	mg/kg	0.256	0.316	76.8	24-140	20.9	22	L595431-04	WG613095
4-Chlorophenyl-phenylether	mg/kg	0.275	0.312	82.4	27-142	12.8	21	L595431-04	WG613095
4-Nitrophenol	mg/kg	0.221	0.257	66.4	10-166	14.9	35	L595431-04	WG613095
Acenaphthene	mg/kg	0.258	0.294	77.5	30-132	12.8	21	L595431-04	WG613095

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Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Acenaphthylene	mg/kg	0.258	0.311	77.5	31-144	18.6	24	L595431-04	WG613095
Anthracene	mg/kg	0.263	0.328	79.1	27-140	21.8*	20	L595431-04	WG613095
Benzidine	mg/kg	0.0276	0.0177	8.28*	10-55	43.7*	36	L595431-04	WG613095
Benzo(a)anthracene	mg/kg	0.241	0.292	72.3	22-139	19.4	22	L595431-04	WG613095
Benzo(a)pyrene	mg/kg	0.269	0.316	80.8	16-148	16.1	21	L595431-04	WG613095
Benzo(b)fluoranthene	mg/kg	0.248	0.298	74.4	13-152	18.5	24	L595431-04	WG613095
Benzo(g,h,i)perylene	mg/kg	0.259	0.320	77.9	10-137	20.9	32	L595431-04	WG613095
Benzo(k)fluoranthene	mg/kg	0.258	0.310	77.6	15-152	18.3	22	L595431-04	WG613095
Benzylbutyl phthalate	mg/kg	0.246	0.318	73.8	20-168	25.4*	23	L595431-04	WG613095
Bis(2-chlorethoxy)methane	mg/kg	0.239	0.297	71.8	32-141	21.7*	20	L595431-04	WG613095
Bis(2-chloroethyl)ether	mg/kg	0.201	0.295	60.4	25-139	37.9*	26	L595431-04	WG613095
Bis(2-chloroisopropyl)ether	mg/kg	0.212	0.273	63.7	32-128	25.3*	22	L595431-04	WG613095
Bis(2-ethylhexyl)phthalate	mg/kg	0.266	0.329	79.8	20-163	21.3	24	L595431-04	WG613095
Chrysene	mg/kg	0.245	0.307	73.5	20-139	22.5	23	L595431-04	WG613095
Di-n-butyl phthalate	mg/kg	0.262	0.320	78.8	24-149	19.9	24	L595431-04	WG613095
Di-n-octyl phthalate	mg/kg	0.269	0.335	80.6	14-164	22.0	24	L595431-04	WG613095
Dibenz(a,h)anthracene	mg/kg	0.263	0.316	79.1	10-137	18.3	29	L595431-04	WG613095
Diethyl phthalate	mg/kg	0.266	0.302	79.9	28-142	12.8	23	L595431-04	WG613095
Dimethyl phthalate	mg/kg	0.271	0.306	81.3	31-142	12.1	22	L595431-04	WG613095
Fluoranthene	mg/kg	0.255	0.313	76.6	24-145	20.4	29	L595431-04	WG613095
Fluorene	mg/kg	0.267	0.300	80.1	30-138	11.6	22	L595431-04	WG613095
Hexachloro-1,3-butadiene	mg/kg	0.234	0.298	70.2	29-136	24.4*	22	L595431-04	WG613095
Hexachlorobenzene	mg/kg	0.223	0.266	66.8	26-136	17.8	20	L595431-04	WG613095
Hexachlorocyclopentadiene	mg/kg	0.143	0.183	42.9	10-124	24.5	33	L595431-04	WG613095
Hexachloroethane	mg/kg	0.198	0.262	59.4	21-107	28.0*	27	L595431-04	WG613095
Indeno(1,2,3-cd)pyrene	mg/kg	0.265	0.319	79.5	10-139	18.7	32	L595431-04	WG613095
Isophorone	mg/kg	0.199	0.249	59.9	26-134	22.0*	20	L595431-04	WG613095
n-Nitrosodi-n-propylamine	mg/kg	0.239	0.304	71.6	24-141	24.0*	20	L595431-04	WG613095
n-Nitrosodimethylamine	mg/kg	0.171	0.241	51.3	18-126	34.0*	27	L595431-04	WG613095
n-Nitrosodiphenylamine	mg/kg	0.250	0.310	75.2	16-128	21.2	25	L595431-04	WG613095
Naphthalene	mg/kg	0.230	0.287	69.0	31-124	22.0	25	L595431-04	WG613095
Nitrobenzene	mg/kg	0.233	0.305	70.1	22-122	26.8*	20	L595431-04	WG613095
Pentachlorophenol	mg/kg	0.170	0.209	51.0	10-124	20.6	34	L595431-04	WG613095
Phenanthrene	mg/kg	0.244	0.308	73.2	25-139	23.4	25	L595431-04	WG613095
Phenol	mg/kg	0.227	0.307	68.1	22-129	30.1*	25	L595431-04	WG613095
Pyrene	mg/kg	0.240	0.309	72.0	23-145	25.2	30	L595431-04	WG613095
2,4,6-Tribromophenol				72.92	16-136				WG613095
2-Fluorobiphenyl				75.50	37-119				WG613095
2-Fluorophenol				57.26	22-114				WG613095
Nitrobenzene-d5				69.89	20-114				WG613095
Phenol-d5				62.09	26-127				WG613095
p-Terphenyl-d14				73.38	15-174				WG613095
Arsenic	mg/kg	44.4	44.5	81.6	75-125	0.225	20	L595432-02	WG613261
Barium	mg/kg	161.	155.	124.	75-125	3.80	20	L595432-02	WG613261
Cadmium	mg/kg	42.6	42.9	85.2	75-125	0.702	20	L595432-02	WG613261
Chromium	mg/kg	51.5	52.4	83.6	75-125	1.73	20	L595432-02	WG613261
Iron	mg/kg	10800	11300	0*	75-125	4.52	20	L595432-02	WG613261
Lead	mg/kg	56.4	57.2	84.8	75-125	1.41	20	L595432-02	WG613261
Silver	mg/kg	41.7	41.9	83.4	75-125	0.478	20	L595432-02	WG613261
Selenium	mg/kg	44.0	44.5	88.0	75-125	1.13	20	L595432-02	WG613261
PCB 1016	mg/kg	0.144	0.141	86.1	10-165	1.71	33	L595432-02	WG612915
PCB 1260	mg/kg	0.144	0.136	86.1	29-154	5.95	23	L595432-02	WG612915
Decachlorobiphenyl				86.06	18.9-115.8				WG612915
Tetrachloro-m-xylene				88.81	31.8-115.7				WG612915

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L595432

September 25, 2012

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.123	0.108	98.3	49-135	13.0	23	L595432-01	WG612848
1,1,1-Trichloroethane	mg/kg	0.120	0.113	95.7	43-142	5.50	24	L595432-01	WG612848
1,1,2,2-Tetrachloroethane	mg/kg	0.0757	0.0659	60.6	42-147	13.8	25	L595432-01	WG612848
1,1,2-Trichloroethane	mg/kg	0.127	0.111	102.	51-134	13.3	21	L595432-01	WG612848
1,1,2-Trichlorotrifluoroethane	mg/kg	0.110	0.108	88.0	25-156	1.60	29	L595432-01	WG612848
1,1-Dichloroethane	mg/kg	0.118	0.114	94.1	50-131	3.12	21	L595432-01	WG612848
1,1-Dichloroethene	mg/kg	0.115	0.112	91.9	29-145	2.74	28	L595432-01	WG612848
1,1-Dichloropropene	mg/kg	0.112	0.106	89.5	40-136	5.38	24	L595432-01	WG612848
1,2,3-Trichlorobenzene	mg/kg	0.0750	0.0724	60.0	13-142	3.52	33	L595432-01	WG612848
1,2,3-Trichloropropane	mg/kg	0.121	0.117	96.9	41-149	3.70	28	L595432-01	WG612848
1,2,3-Trimethylbenzene	mg/kg	0.0991	0.0888	79.3	33-146	10.9	27	L595432-01	WG612848
1,2,4-Trichlorobenzene	mg/kg	0.0548	0.0485	43.8	12-140	12.2	32	L595432-01	WG612848
1,2,4-Trimethylbenzene	mg/kg	0.0920	0.0724	73.6	29-143	23.8	30	L595432-01	WG612848
1,2-Dibromo-3-Chloropropane	mg/kg	0.119	0.108	95.6	29-151	9.71	31	L595432-01	WG612848
1,2-Dibromoethane	mg/kg	0.125	0.107	99.9	48-133	15.2	22	L595432-01	WG612848
1,2-Dichlorobenzene	mg/kg	0.0957	0.0880	76.6	37-136	8.41	25	L595432-01	WG612848
1,2-Dichloroethane	mg/kg	0.113	0.112	90.1	49-131	0.860	20	L595432-01	WG612848
1,2-Dichloropropane	mg/kg	0.120	0.113	96.2	50-132	6.07	21	L595432-01	WG612848
1,3,5-Trimethylbenzene	mg/kg	0.0917	0.0781	73.3	29-144	16.0	30	L595432-01	WG612848
1,3-Dichlorobenzene	mg/kg	0.0831	0.0708	66.5	26-140	16.0	28	L595432-01	WG612848
1,3-Dichloropropane	mg/kg	0.119	0.106	94.8	50-126	11.0	22	L595432-01	WG612848
1,4-Dichlorobenzene	mg/kg	0.0816	0.0726	65.3	34-132	11.7	26	L595432-01	WG612848
2,2-Dichloropropane	mg/kg	0.0980	0.0926	78.4	35-148	5.70	26	L595432-01	WG612848
2-Butanone (MEK)	mg/kg	0.725	0.719	116.	40-149	0.750	27	L595432-01	WG612848
2-Chloroethyl vinyl ether	mg/kg	0.572	0.575	91.4	10-173	0.610	33	L595432-01	WG612848
2-Chlorotoluene	mg/kg	0.0956	0.0841	76.4	34-136	12.8	28	L595432-01	WG612848
4-Chlorotoluene	mg/kg	0.0864	0.0740	69.1	31-137	15.5	27	L595432-01	WG612848
4-Methyl-2-pentanone (MIBK)	mg/kg	0.526	0.450	84.2	37-153	15.7	27	L595432-01	WG612848
Acetone	mg/kg	1.12	1.10	180.*	10-177	1.77	28	L595432-01	WG612848
Acrylonitrile	mg/kg	0.645	0.636	103.	33-159	1.48	26	L595432-01	WG612848
Benzene	mg/kg	0.108	0.105	86.5	44-131	2.73	21	L595432-01	WG612848
Bromobenzene	mg/kg	0.101	0.0906	80.8	36-132	10.8	26	L595432-01	WG612848
Bromodichloromethane	mg/kg	0.115	0.109	91.9	48-134	4.97	20	L595432-01	WG612848
Bromoform	mg/kg	0.126	0.108	101.	34-141	15.1	24	L595432-01	WG612848
Bromomethane	mg/kg	0.114	0.112	90.8	19-173	1.48	25	L595432-01	WG612848
Carbon tetrachloride	mg/kg	0.112	0.108	90.0	36-140	3.72	26	L595432-01	WG612848
Chlorobenzene	mg/kg	0.108	0.0956	86.0	42-133	11.8	24	L595432-01	WG612848
Chlorodibromomethane	mg/kg	0.120	0.106	96.2	45-135	12.3	23	L595432-01	WG612848
Chloroethane	mg/kg	0.127	0.127	101.	16-178	0.0100	25	L595432-01	WG612848
Chloroform	mg/kg	0.118	0.114	94.7	52-130	3.45	21	L595432-01	WG612848
Chloromethane	mg/kg	0.121	0.117	97.1	28-147	3.33	23	L595432-01	WG612848
cis-1,2-Dichloroethene	mg/kg	0.114	0.112	91.6	52-128	2.57	21	L595432-01	WG612848
cis-1,3-Dichloropropene	mg/kg	0.110	0.101	88.2	46-131	8.56	21	L595432-01	WG612848
Di-isopropyl ether	mg/kg	0.122	0.120	97.6	46-134	2.08	20	L595432-01	WG612848
Dibromomethane	mg/kg	0.124	0.119	99.6	51-133	4.72	21	L595432-01	WG612848
Dichlorodifluoromethane	mg/kg	0.109	0.106	87.1	12-179	2.43	27	L595432-01	WG612848
Ethylbenzene	mg/kg	0.110	0.0983	87.7	38-139	10.9	27	L595432-01	WG612848
Hexachloro-1,3-butadiene	mg/kg	0.0640	0.0577	51.2	10-147	10.4	37	L595432-01	WG612848
Isopropylbenzene	mg/kg	0.113	0.101	90.3	34-137	11.5	29	L595432-01	WG612848
Methyl tert-butyl ether	mg/kg	0.122	0.116	97.5	45-134	4.96	22	L595432-01	WG612848
Methylene Chloride	mg/kg	0.110	0.107	87.9	41-133	2.88	28	L595432-01	WG612848
n-Butylbenzene	mg/kg	0.0605	0.0613	48.4	19-149	1.36	32	L595432-01	WG612848
n-Propylbenzene	mg/kg	0.0844	0.0806	67.5	27-142	4.63	29	L595432-01	WG612848
Naphthalene	mg/kg	0.0976	0.0902	78.1	19-146	7.90	30	L595432-01	WG612848
p-Isopropyltoluene	mg/kg	0.0876	0.0748	70.0	21-150	15.7	31	L595432-01	WG612848
sec-Butylbenzene	mg/kg	0.0913	0.0848	73.0	25-148	7.34	31	L595432-01	WG612848
Styrene	mg/kg	0.111	0.0949	88.7	30-156	15.5	26	L595432-01	WG612848
tert-Butylbenzene	mg/kg	0.113	0.0987	90.2	32-146	13.3	30	L595432-01	WG612848

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Quality Assurance Report
Level II

L595432

September 25, 2012

Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Tetrachloroethene	mg/kg	0.0969	0.0820	77.5	35-139	16.7	27	L595432-01	WG612848
Toluene	mg/kg	0.106	0.0994	84.6	43-127	6.21	21	L595432-01	WG612848
trans-1,2-Dichloroethene	mg/kg	0.105	0.101	84.1	41-132	4.28	23	L595432-01	WG612848
trans-1,3-Dichloropropene	mg/kg	0.106	0.0939	84.8	43-129	12.1	23	L595432-01	WG612848
Trichloroethene	mg/kg	0.134	0.128	107.	42-136	4.15	23	L595432-01	WG612848
Trichlorofluoromethane	mg/kg	0.113	0.107	90.2	20-178	5.15	30	L595432-01	WG612848
Vinyl chloride	mg/kg	0.120	0.116	95.6	30-157	2.70	24	L595432-01	WG612848
Xylenes, Total	mg/kg	0.317	0.277	84.6	38-137	13.4	26	L595432-01	WG612848
4-Bromofluorobenzene				98.71	67-133				WG612848
Dibromofluoromethane				95.68	72-135				WG612848
Toluene-d8				100.5	90-113				WG612848
2,4,5-T	mg/kg	0.129	0.115	77.4	18-111	11.8	29	L595294-10	WG613639
2,4,5-TP (Silvex)	mg/kg	0.126	0.131	75.4	27-123	3.86	23	L595294-10	WG613639
2,4-D	mg/kg	0.135	0.126	80.8	10-137	6.47	40	L595294-10	WG613639
2,4-DB	mg/kg	0.134	0.111	80.4	15-121	19.0	33	L595294-10	WG613639
Dalapon	mg/kg	0.124	0.130	74.1	10-111	4.69	37	L595294-10	WG613639
Dicamba	mg/kg	0.143	0.133	85.6	21-118	7.59	24	L595294-10	WG613639
Dichloroprop	mg/kg	0.140	0.126	83.9	27-125	10.7	24	L595294-10	WG613639
Dinoseb	mg/kg	0.0889	0.0913	53.2	10-95	2.68	40	L595294-10	WG613639
MCPA	mg/kg	11.9	8.81	71.4	10-164	30.1	40	L595294-10	WG613639
MCPP	mg/kg	19.2	17.8	115.	17-186	7.72	40	L595294-10	WG613639
2,4-Dichlorophenyl Acetic Acid				82.77	37-99				WG613639
4,4-DDD	mg/kg	0.0743	0.0733	111.	45-139	1.38	21	L595432-02	WG612915
4,4-DDE	mg/kg	0.0675	0.0666	101.	47-134	1.34	21	L595432-02	WG612915
4,4-DDT	mg/kg	0.0603	0.0605	90.4	11-148	0.340	21	L595432-02	WG612915
Aldrin	mg/kg	0.0664	0.0656	99.5	52-117	1.14	21	L595432-02	WG612915
Alpha BHC	mg/kg	0.0636	0.0634	95.3	51-120	0.299	20	L595432-02	WG612915
Beta BHC	mg/kg	0.0654	0.0645	98.0	48-124	1.37	21	L595432-02	WG612915
Delta BHC	mg/kg	0.0697	0.0689	104.	38-128	1.16	21	L595432-02	WG612915
Dieldrin	mg/kg	0.0690	0.0680	103.	48-135	1.45	20	L595432-02	WG612915
Endosulfan I	mg/kg	0.0695	0.0688	104.	51-129	1.15	20	L595432-02	WG612915
Endosulfan II	mg/kg	0.0701	0.0694	105.	42-142	1.03	21	L595432-02	WG612915
Endosulfan sulfate	mg/kg	0.0832	0.0843	125.	38-140	1.40	22	L595432-02	WG612915
Endrin	mg/kg	0.0584	0.0614	87.5	44-133	5.08	20	L595432-02	WG612915
Endrin aldehyde	mg/kg	0.0748	0.0718	112.	16-116	4.12	23	L595432-02	WG612915
Endrin ketone	mg/kg	0.0779	0.0763	117.	33-131	2.05	21	L595432-02	WG612915
Gamma BHC	mg/kg	0.0657	0.0653	98.5	52-119	0.554	20	L595432-02	WG612915
Heptachlor	mg/kg	0.0687	0.0683	103.	47-121	0.591	20	L595432-02	WG612915
Heptachlor epoxide	mg/kg	0.0691	0.0684	104.	54-120	1.05	20	L595432-02	WG612915
Hexachlorobenzene	mg/kg	0.0569	0.0568	85.3	58-115	0.259	20	L595432-02	WG612915
Methoxychlor	mg/kg	0.0660	0.0680	99.0	9-153	2.95	22	L595432-02	WG612915
Decachlorobiphenyl				95.52	18.9-115.8				WG612915
Tetrachloro-m-xylene				90.19	31.8-115.7				WG612915

Batch number /Run number / Sample number cross reference

WG612833: R2352593: L595432-01 02
WG613095: R2354193: L595432-01 02
WG613261: R2354675: L595432-01 02
WG612915: R2355933: L595432-01 02
WG612848: R2356677: L595432-01 02
WG613639: R2361273: L595432-01 02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Soil Analyses, Monitoring Well YA-MW5, Samples at 10 ft. & 20 ft.
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L595432

September 25, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Appendix G, Groundwater Chemical Analyses Reports

- **ESC Report Number L598664, Groundwater Analyses, Monitoring Wells YA-MW8 & YA-MW9**
- **ESC Report Number L598943, Groundwater Analyses, Monitoring Wells YA-MW-1, YA-MW2, YA-MW3, YA-MW5 & YA-MW6**
- **ESC Report Number L599199, Groundwater Analyses, Monitoring Wells YA-MW-4, YA-MW7, & YA-MW10**
- **ESC Report Number L600554, Groundwater Analyses, Monitoring Well YA-MW7, Herbicides Analyses**
- **ESC Report Number L602175, Groundwater Analyses, Uranium**

Groundwater Analyses, Monitoring Wells YA-MW8 & YA-MW9
I-70 East Corridor EIS PCL

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Report Summary

Monday October 15, 2012

Report Number: L598664
Samples Received: 10/03/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

Groundwater Analyses, Monitoring Wells YA-MW8 & YA-MW9
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598664-01

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 9

Collected By : I-Ping Chen
Collection Date : 10/02/12 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Nitrate	12.	0.20	mg/l	300.0	10/03/12	2
Chromium,Hexavalent	BDL	0.010	mg/l	3500Cr-D	10/03/12	1
Chromium,Trivalent	0.17	0.10	mg/l	Calc.	10/10/12	10
pH	7.2		su	4500H-B	10/05/12	1
Dissolved Solids	1300	10.	mg/l	2540C	10/10/12	1
Suspended Solids	10000	1.0	mg/l	2540D	10/10/12	1
Antimony	BDL	0.0010	mg/l	200.8	10/09/12	1
Antimony,Dissolved	BDL	0.0010	mg/l	200.8	10/11/12	1
Arsenic	0.061	0.010	mg/l	200.8	10/10/12	10
Arsenic,Dissolved	0.0096	0.0010	mg/l	200.8	10/10/12	1
Barium	2.2	0.10	mg/l	200.8	10/09/12	50
Barium,Dissolved	0.49	0.020	mg/l	200.8	10/10/12	10
Beryllium	0.012	0.0010	mg/l	200.8	10/09/12	1
Beryllium,Dissolved	0.0068	0.0010	mg/l	200.8	10/10/12	1
Cadmium	0.0020	0.00050	mg/l	200.8	10/09/12	1
Cadmium,Dissolved	0.0016	0.00050	mg/l	200.8	10/10/12	1
Chromium	0.17	0.010	mg/l	200.8	10/10/12	10
Chromium,Dissolved	0.011	0.0010	mg/l	200.8	10/10/12	1
Copper	0.24	0.010	mg/l	200.8	10/10/12	10
Copper,Dissolved	0.050	0.0010	mg/l	200.8	10/10/12	1
Lead	0.14	0.0010	mg/l	200.8	10/09/12	1
Lead,Dissolved	0.023	0.0010	mg/l	200.8	10/10/12	1
Manganese	9.5	0.20	mg/l	200.8	10/10/12	100
Manganese,Dissolved	9.4	0.20	mg/l	200.8	10/10/12	100
Nickel	0.12	0.010	mg/l	200.8	10/10/12	10
Nickel,Dissolved	0.043	0.0010	mg/l	200.8	10/10/12	1
Selenium	BDL	0.010	mg/l	200.8	10/10/12	10
Selenium,Dissolved	0.011	0.0010	mg/l	200.8	10/10/12	1
Silver	0.00079	0.00050	mg/l	200.8	10/09/12	1
Silver,Dissolved	BDL	0.00050	mg/l	200.8	10/10/12	1
Thallium	0.0058	0.0010	mg/l	200.8	10/09/12	1
Thallium,Dissolved	BDL	0.0010	mg/l	200.8	10/10/12	1
Zinc	0.76	0.10	mg/l	200.8	10/10/12	10
Zinc,Dissolved	0.13	0.010	mg/l	200.8	10/10/12	1
Mercury	0.00030	0.00020	mg/l	245.1	10/04/12	1
Aluminum	160	0.10	mg/l	200.7	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598664-01 (PH) - 7.2@12.2c

Groundwater Analyses, Monitoring Wells YA-MW8 & YA-MW9
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598664-01

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 9

Collected By : I-Ping Chen
Collection Date : 10/02/12 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum,Dissolved	18.	0.10	mg/l	200.7	10/07/12	1
Iron	230	0.10	mg/l	200.7	10/09/12	1
Iron,Dissolved	27.	0.10	mg/l	200.7	10/07/12	1
PP Volatile Organics						
Benzene	BDL	0.0010	mg/l	624	10/03/12	1
Bromodichloromethane	BDL	0.0010	mg/l	624	10/03/12	1
Bromoform	BDL	0.0010	mg/l	624	10/03/12	1
Bromomethane	BDL	0.0050	mg/l	624	10/03/12	1
Carbon tetrachloride	BDL	0.0010	mg/l	624	10/03/12	1
Chlorobenzene	BDL	0.0010	mg/l	624	10/03/12	1
Chlorodibromomethane	BDL	0.0010	mg/l	624	10/03/12	1
Chloroethane	BDL	0.0050	mg/l	624	10/03/12	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	624	10/03/12	1
Chloroform	BDL	0.0050	mg/l	624	10/03/12	1
Chloromethane	BDL	0.0025	mg/l	624	10/03/12	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	624	10/03/12	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	624	10/03/12	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	624	10/03/12	1
1,1-Dichloroethane	BDL	0.0010	mg/l	624	10/03/12	1
1,2-Dichloroethane	BDL	0.0010	mg/l	624	10/03/12	1
1,1-Dichloroethene	BDL	0.0010	mg/l	624	10/03/12	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	624	10/03/12	1
1,2-Dichloropropane	BDL	0.0010	mg/l	624	10/03/12	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/03/12	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/03/12	1
Ethylbenzene	BDL	0.0010	mg/l	624	10/03/12	1
Methylene Chloride	BDL	0.0050	mg/l	624	10/03/12	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	624	10/03/12	1
Tetrachloroethene	BDL	0.0010	mg/l	624	10/03/12	1
Toluene	BDL	0.0050	mg/l	624	10/03/12	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	624	10/03/12	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	624	10/03/12	1
Trichloroethene	BDL	0.0010	mg/l	624	10/03/12	1
Vinyl chloride	BDL	0.0010	mg/l	624	10/03/12	1
Surrogate Recovery						
Toluene-d8	105.		% Rec.	624	10/03/12	1
Dibromofluoromethane	102.		% Rec.	624	10/03/12	1
a,a,a-Trifluorotoluene	100.		% Rec.	624	10/03/12	1
4-Bromofluorobenzene	102.		% Rec.	624	10/03/12	1
Pesticide/PCBs						
Aldrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Alpha BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598664-01 (PH) - 7.2@12.2c

Groundwater Analyses, Monitoring Wells YA-MW8 & YA-MW9
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598664-01

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 9

Collected By : I-Ping Chen
Collection Date : 10/02/12 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Beta BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Delta BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Gamma BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Chlordane	BDL	0.00050	mg/l	8081A/8082	10/09/12	1
4,4-DDD	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
4,4-DDE	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
4,4-DDT	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Dieldrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan I	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan II	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan sulfate	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin aldehyde	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin ketone	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Heptachlor	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Heptachlor epoxide	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Hexachlorobenzene	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Methoxychlor	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Toxaphene	BDL	0.00050	mg/l	8081A/8082	10/09/12	1
PCB 1016	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1221	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1232	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1242	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1248	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1254	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1260	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	53.3		% Rec.	8081A/8082	10/08/12	1
Tetrachloro-m-xylene	74.7		% Rec.	8081A/8082	10/08/12	1
PP Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	625	10/08/12	1
Acenaphthylene	BDL	0.0010	mg/l	625	10/08/12	1
Anthracene	BDL	0.0010	mg/l	625	10/08/12	1
Benzidine	BDL	0.010	mg/l	625	10/08/12	1
Benzo(a)anthracene	BDL	0.0010	mg/l	625	10/08/12	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	625	10/08/12	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	625	10/08/12	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	625	10/08/12	1
Benzo(a)pyrene	BDL	0.0010	mg/l	625	10/08/12	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	625	10/08/12	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	625	10/08/12	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	625	10/08/12	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	625	10/08/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598664-01 (PH) - 7.2@12.2c

Groundwater Analyses, Monitoring Wells YA-MW8 & YA-MW9
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598664-01

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 9

Collected By : I-Ping Chen
Collection Date : 10/02/12 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloronaphthalene	BDL	0.0010	mg/l	625	10/08/12	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	625	10/08/12	1
Chrysene	BDL	0.0010	mg/l	625	10/08/12	1
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	625	10/08/12	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	625	10/08/12	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	625	10/08/12	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	625	10/08/12	1
Fluoranthene	BDL	0.0010	mg/l	625	10/08/12	1
Fluorene	BDL	0.0010	mg/l	625	10/08/12	1
Hexachlorobenzene	BDL	0.0010	mg/l	625	10/08/12	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	625	10/08/12	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	625	10/08/12	1
Hexachloroethane	BDL	0.010	mg/l	625	10/08/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	625	10/08/12	1
Isophorone	BDL	0.010	mg/l	625	10/08/12	1
Naphthalene	BDL	0.0010	mg/l	625	10/08/12	1
Nitrobenzene	BDL	0.010	mg/l	625	10/08/12	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	625	10/08/12	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	625	10/08/12	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	625	10/08/12	1
Phenanthrene	BDL	0.0010	mg/l	625	10/08/12	1
Benzylbutyl phthalate	BDL	0.0010	mg/l	625	10/08/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.0010	mg/l	625	10/08/12	1
Di-n-butyl phthalate	BDL	0.0010	mg/l	625	10/08/12	1
Diethyl phthalate	BDL	0.0010	mg/l	625	10/08/12	1
Dimethyl phthalate	BDL	0.0010	mg/l	625	10/08/12	1
Di-n-octyl phthalate	BDL	0.0010	mg/l	625	10/08/12	1
Pyrene	BDL	0.0010	mg/l	625	10/08/12	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	625	10/08/12	1
PP Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	625	10/08/12	1
2-Chlorophenol	BDL	0.010	mg/l	625	10/08/12	1
2,4-Dichlorophenol	BDL	0.010	mg/l	625	10/08/12	1
2,4-Dimethylphenol	BDL	0.010	mg/l	625	10/08/12	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	625	10/08/12	1
2,4-Dinitrophenol	BDL	0.010	mg/l	625	10/08/12	1
2-Nitrophenol	BDL	0.010	mg/l	625	10/08/12	1
4-Nitrophenol	BDL	0.010	mg/l	625	10/08/12	1
Pentachlorophenol	BDL	0.010	mg/l	625	10/08/12	1
Phenol	BDL	0.010	mg/l	625	10/08/12	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	625	10/08/12	1
1,2-Diphenylhydrazine	BDL	0.010	mg/l	625	10/08/12	1
Surrogate Recovery						
2-Fluorophenol	6.64		% Rec.	625	10/08/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598664-01 (PH) - 7.2@12.2c

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598664-01

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 9

Collected By : I-Ping Chen
Collection Date : 10/02/12 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phenol-d5	2.63		% Rec.	625	10/08/12	1
Nitrobenzene-d5	74.5		% Rec.	625	10/08/12	1
2-Fluorobiphenyl	90.5		% Rec.	625	10/08/12	1
2,4,6-Tribromophenol	47.0		% Rec.	625	10/08/12	1
p-Terphenyl-d14	73.9		% Rec.	625	10/08/12	1
Herbicides						
2,4-D	BDL	0.0020	mg/l	8151	10/09/12	1
Dalapon	BDL	0.20	mg/l	8151	10/09/12	1
2,4-DB	BDL	0.0020	mg/l	8151	10/09/12	1
Dicamba	BDL	0.0020	mg/l	8151	10/09/12	1
Dichloroprop	BDL	0.0020	mg/l	8151	10/09/12	1
Dinoseb	BDL	0.0020	mg/l	8151	10/09/12	1
MCPA	BDL	0.10	mg/l	8151	10/09/12	1
MCPP	BDL	0.10	mg/l	8151	10/09/12	1
2,4,5-T	BDL	0.0020	mg/l	8151	10/09/12	1
2,4,5-TP (Silvex)	BDL	0.0020	mg/l	8151	10/09/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	82.6		% Rec.	8151	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 10/15/12 17:47 Printed: 10/15/12 17:47
L598664-01 (PH) - 7.2@12.2c

Groundwater Analyses, Monitoring Wells YA-MW8 & YA-MW9
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598664-02

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8

Collected By : I-Ping Chen
Collection Date : 10/02/12 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Nitrate	11.	0.20	mg/l	300.0	10/03/12	2
Chromium,Hexavalent	BDL	0.010	mg/l	3500Cr-D	10/03/12	1
Chromium,Trivalent	0.22	0.10	mg/l	Calc.	10/10/12	10
pH	7.5		su	4500H-B	10/05/12	1
Dissolved Solids	1300	10.	mg/l	2540C	10/10/12	1
Suspended Solids	30000	1.0	mg/l	2540D	10/10/12	1
Antimony	BDL	0.0010	mg/l	200.8	10/09/12	1
Antimony,Dissolved	BDL	0.0010	mg/l	200.8	10/11/12	1
Arsenic	0.092	0.010	mg/l	200.8	10/10/12	10
Arsenic,Dissolved	0.0078	0.0010	mg/l	200.8	10/10/12	1
Barium	4.6	0.10	mg/l	200.8	10/09/12	50
Barium,Dissolved	0.51	0.020	mg/l	200.8	10/10/12	10
Beryllium	0.033	0.0010	mg/l	200.8	10/09/12	1
Beryllium,Dissolved	0.0055	0.0010	mg/l	200.8	10/10/12	1
Cadmium	0.0053	0.00050	mg/l	200.8	10/09/12	1
Cadmium,Dissolved	0.00069	0.00050	mg/l	200.8	10/10/12	1
Chromium	0.22	0.010	mg/l	200.8	10/10/12	10
Chromium,Dissolved	0.0034	0.0010	mg/l	200.8	10/10/12	1
Copper	0.67	0.010	mg/l	200.8	10/10/12	10
Copper,Dissolved	0.045	0.0010	mg/l	200.8	10/10/12	1
Lead	0.33	0.0010	mg/l	200.8	10/09/12	1
Lead,Dissolved	0.012	0.0010	mg/l	200.8	10/10/12	1
Manganese	19.	0.40	mg/l	200.8	10/10/12	200
Manganese,Dissolved	1.5	0.040	mg/l	200.8	10/10/12	20
Nickel	0.22	0.010	mg/l	200.8	10/10/12	10
Nickel,Dissolved	0.017	0.0010	mg/l	200.8	10/10/12	1
Selenium	0.022	0.010	mg/l	200.8	10/10/12	10
Selenium,Dissolved	0.013	0.0010	mg/l	200.8	10/10/12	1
Silver	0.0015	0.00050	mg/l	200.8	10/09/12	1
Silver,Dissolved	BDL	0.00050	mg/l	200.8	10/10/12	1
Thallium	0.0072	0.0010	mg/l	200.8	10/09/12	1
Thallium,Dissolved	BDL	0.0010	mg/l	200.8	10/10/12	1
Zinc	1.8	0.10	mg/l	200.8	10/10/12	10
Zinc,Dissolved	0.097	0.010	mg/l	200.8	10/10/12	1
Mercury	0.0011	0.00020	mg/l	245.1	10/04/12	1
Aluminum	410	0.10	mg/l	200.7	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598664-02 (PH) - 7.5@12.3c

Groundwater Analyses, Monitoring Wells YA-MW8 & YA-MW9
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598664-02

Date Received : October 03, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 8

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/02/12 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum,Dissolved	10.	0.10	mg/l	200.7	10/07/12	1
Iron	500	0.10	mg/l	200.7	10/09/12	1
Iron,Dissolved	5.5	0.10	mg/l	200.7	10/07/12	1
PP Volatile Organics						
Benzene	BDL	0.0010	mg/l	624	10/04/12	1
Bromodichloromethane	BDL	0.0010	mg/l	624	10/04/12	1
Bromoform	BDL	0.0010	mg/l	624	10/04/12	1
Bromomethane	BDL	0.0050	mg/l	624	10/04/12	1
Carbon tetrachloride	BDL	0.0010	mg/l	624	10/04/12	1
Chlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
Chlorodibromomethane	BDL	0.0010	mg/l	624	10/04/12	1
Chloroethane	BDL	0.0050	mg/l	624	10/04/12	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	624	10/04/12	1
Chloroform	BDL	0.0050	mg/l	624	10/04/12	1
Chloromethane	BDL	0.0025	mg/l	624	10/04/12	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,1-Dichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,2-Dichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,1-Dichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
1,2-Dichloropropane	BDL	0.0010	mg/l	624	10/04/12	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/04/12	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/04/12	1
Ethylbenzene	BDL	0.0010	mg/l	624	10/04/12	1
Methylene Chloride	BDL	0.0050	mg/l	624	10/04/12	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	624	10/04/12	1
Tetrachloroethene	BDL	0.0010	mg/l	624	10/04/12	1
Toluene	BDL	0.0050	mg/l	624	10/04/12	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
Trichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
Vinyl chloride	BDL	0.0010	mg/l	624	10/04/12	1
Surrogate Recovery						
Toluene-d8	106.		% Rec.	624	10/04/12	1
Dibromofluoromethane	108.		% Rec.	624	10/04/12	1
a,a,a-Trifluorotoluene	106.		% Rec.	624	10/04/12	1
4-Bromofluorobenzene	110.		% Rec.	624	10/04/12	1
Pesticide/PCBs						
Aldrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Alpha BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598664-02 (PH) - 7.5@12.3c

Groundwater Analyses, Monitoring Wells YA-MW8 & YA-MW9
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598664-02

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8

Collected By : I-Ping Chen
Collection Date : 10/02/12 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Beta BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Delta BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Gamma BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Chlordane	BDL	0.00050	mg/l	8081A/8082	10/09/12	1
4,4-DDD	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
4,4-DDE	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
4,4-DDT	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Dieldrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan I	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan II	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan sulfate	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin aldehyde	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin ketone	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Heptachlor	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Heptachlor epoxide	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Hexachlorobenzene	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Methoxychlor	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Toxaphene	BDL	0.00050	mg/l	8081A/8082	10/09/12	1
PCB 1016	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1221	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1232	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1242	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1248	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1254	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1260	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	65.6		% Rec.	8081A/8082	10/08/12	1
Tetrachloro-m-xylene	78.6		% Rec.	8081A/8082	10/08/12	1
PP Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	625	10/08/12	1
Acenaphthylene	BDL	0.0010	mg/l	625	10/08/12	1
Anthracene	BDL	0.0010	mg/l	625	10/08/12	1
Benzidine	BDL	0.010	mg/l	625	10/08/12	1
Benzo(a)anthracene	BDL	0.0010	mg/l	625	10/08/12	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	625	10/08/12	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	625	10/08/12	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	625	10/08/12	1
Benzo(a)pyrene	BDL	0.0010	mg/l	625	10/08/12	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	625	10/08/12	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	625	10/08/12	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	625	10/08/12	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	625	10/08/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598664-02 (PH) - 7.5@12.3c

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598664-02

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8

Collected By : I-Ping Chen
Collection Date : 10/02/12 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloronaphthalene	BDL	0.0010	mg/l	625	10/08/12	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	625	10/08/12	1
Chrysene	BDL	0.0010	mg/l	625	10/08/12	1
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	625	10/08/12	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	625	10/08/12	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	625	10/08/12	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	625	10/08/12	1
Fluoranthene	BDL	0.0010	mg/l	625	10/08/12	1
Fluorene	BDL	0.0010	mg/l	625	10/08/12	1
Hexachlorobenzene	BDL	0.0010	mg/l	625	10/08/12	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	625	10/08/12	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	625	10/08/12	1
Hexachloroethane	BDL	0.010	mg/l	625	10/08/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	625	10/08/12	1
Isophorone	BDL	0.010	mg/l	625	10/08/12	1
Naphthalene	BDL	0.0010	mg/l	625	10/08/12	1
Nitrobenzene	BDL	0.010	mg/l	625	10/08/12	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	625	10/08/12	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	625	10/08/12	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	625	10/08/12	1
Phenanthrene	BDL	0.0010	mg/l	625	10/08/12	1
Benzylbutyl phthalate	BDL	0.0010	mg/l	625	10/08/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.0010	mg/l	625	10/08/12	1
Di-n-butyl phthalate	BDL	0.0010	mg/l	625	10/08/12	1
Diethyl phthalate	BDL	0.0010	mg/l	625	10/08/12	1
Dimethyl phthalate	BDL	0.0010	mg/l	625	10/08/12	1
Di-n-octyl phthalate	BDL	0.0010	mg/l	625	10/08/12	1
Pyrene	BDL	0.0010	mg/l	625	10/08/12	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	625	10/08/12	1
PP Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	625	10/08/12	1
2-Chlorophenol	BDL	0.010	mg/l	625	10/08/12	1
2,4-Dichlorophenol	BDL	0.010	mg/l	625	10/08/12	1
2,4-Dimethylphenol	BDL	0.010	mg/l	625	10/08/12	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	625	10/08/12	1
2,4-Dinitrophenol	BDL	0.010	mg/l	625	10/08/12	1
2-Nitrophenol	BDL	0.010	mg/l	625	10/08/12	1
4-Nitrophenol	BDL	0.010	mg/l	625	10/08/12	1
Pentachlorophenol	BDL	0.010	mg/l	625	10/08/12	1
Phenol	BDL	0.010	mg/l	625	10/08/12	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	625	10/08/12	1
1,2-Diphenylhydrazine	BDL	0.010	mg/l	625	10/08/12	1
Surrogate Recovery						
2-Fluorophenol	42.4		% Rec.	625	10/08/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598664-02 (PH) - 7.5@12.3c

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598664-02

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8

Collected By : I-Ping Chen
Collection Date : 10/02/12 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phenol-d5	29.5		% Rec.	625	10/08/12	1
Nitrobenzene-d5	73.8		% Rec.	625	10/08/12	1
2-Fluorobiphenyl	90.1		% Rec.	625	10/08/12	1
2,4,6-Tribromophenol	75.2		% Rec.	625	10/08/12	1
p-Terphenyl-d14	75.3		% Rec.	625	10/08/12	1
Herbicides						
2,4-D	BDL	0.0020	mg/l	8151	10/09/12	1
Dalapon	BDL	0.20	mg/l	8151	10/09/12	1
2,4-DB	BDL	0.0020	mg/l	8151	10/09/12	1
Dicamba	BDL	0.0020	mg/l	8151	10/09/12	1
Dichloroprop	BDL	0.0020	mg/l	8151	10/09/12	1
Dinoseb	BDL	0.0020	mg/l	8151	10/09/12	1
MCPA	BDL	0.10	mg/l	8151	10/09/12	1
MCPP	BDL	0.10	mg/l	8151	10/09/12	1
2,4,5-T	BDL	0.0020	mg/l	8151	10/09/12	1
2,4,5-TP (Silvex)	BDL	0.0020	mg/l	8151	10/09/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	82.6		% Rec.	8151	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 10/15/12 17:47 Printed: 10/15/12 17:48
L598664-02 (PH) - 7.5@12.3c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L598664-01	WG616370	SAMP	pH	R2377714	T8
	WG616751	SAMP	Selenium	R2382680	O
	WG615983	SAMP	4-Chloro-3-methylphenol	R2380557	L2
	WG615983	SAMP	2-Chlorophenol	R2380557	L2
	WG615983	SAMP	2,4-Dichlorophenol	R2380557	L2
	WG615983	SAMP	2,4-Dimethylphenol	R2380557	L2
	WG615983	SAMP	4,6-Dinitro-2-methylphenol	R2380557	L2
	WG615983	SAMP	2,4-Dinitrophenol	R2380557	L2
	WG615983	SAMP	2-Nitrophenol	R2380557	L2
	WG615983	SAMP	4-Nitrophenol	R2380557	L2
	WG615983	SAMP	Pentachlorophenol	R2380557	L2
	WG615983	SAMP	Phenol	R2380557	L2
	WG615983	SAMP	2,4,6-Trichlorophenol	R2380557	L2
	WG615983	SAMP	2-Fluorophenol	R2380557	J2
	WG615983	SAMP	Phenol-d5	R2380557	J2
	WG616225	SAMP	Endrin aldehyde	R2381101	J4
	WG616225	SAMP	PCB 1016	R2381101	J3
	WG616404	SAMP	Dinoseb	R2382039	J3
	WG616404	SAMP	MCPA	R2382039	L1
L598664-02	WG616370	SAMP	pH	R2377714	T8
	WG616225	SAMP	Endrin aldehyde	R2381101	J4
	WG616225	SAMP	PCB 1016	R2381101	J3
	WG616404	SAMP	Dinoseb	R2382039	J3
	WG616404	SAMP	MCPA	R2382039	L1

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
L1	(ESC) The associated batch LCS exceeded the upper control limit, which indicates a high bias; The sample analyte was "not detected" and is therefore unaffected.
L2	(ESC) The associated surrogate compound falls below 10%. The data should be used with caution. A re-extraction was not possible due to limited sample volume.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Groundwater Analyses, Monitoring Wells YA-MW8 & YA-MW9
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
10/15/12 at 17:48:05

TSR Signing Reports: 358
RX - Priority Rush

Sample: L598664-01 Account: YEHDCO Received: 10/03/12 09:00 Due Date: 10/15/12 00:00 RPT Date: 10/15/12 17:47
POT DISS= filter Diss (preserved cont) 8-96 hours after preservation and before prep.
Sample: L598664-02 Account: YEHDCO Received: 10/03/12 09:00 Due Date: 10/15/12 00:00 RPT Date: 10/15/12 17:47
POT DISS= filter Diss (preserved cont) 8-96 hours after preservation and before prep.

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Tax I.D. 62-0814289

Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L598664

October 15, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1-Trichloroethane	< .001	mg/l			WG616006	10/03/12 11:08
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG616006	10/03/12 11:08
1,1,2-Trichloroethane	< .001	mg/l			WG616006	10/03/12 11:08
1,1-Dichloroethane	< .001	mg/l			WG616006	10/03/12 11:08
1,1-Dichloroethene	< .001	mg/l			WG616006	10/03/12 11:08
1,2-Dichlorobenzene	< .001	mg/l			WG616006	10/03/12 11:08
1,2-Dichloroethane	< .001	mg/l			WG616006	10/03/12 11:08
1,2-Dichloropropane	< .001	mg/l			WG616006	10/03/12 11:08
1,3-Dichlorobenzene	< .001	mg/l			WG616006	10/03/12 11:08
1,4-Dichlorobenzene	< .001	mg/l			WG616006	10/03/12 11:08
2-Chloroethyl vinyl ether	< .05	mg/l			WG616006	10/03/12 11:08
Benzene	< .001	mg/l			WG616006	10/03/12 11:08
Bromodichloromethane	< .001	mg/l			WG616006	10/03/12 11:08
Bromoform	< .001	mg/l			WG616006	10/03/12 11:08
Bromomethane	< .005	mg/l			WG616006	10/03/12 11:08
Carbon tetrachloride	< .001	mg/l			WG616006	10/03/12 11:08
Chlorobenzene	< .001	mg/l			WG616006	10/03/12 11:08
Chlorodibromomethane	< .001	mg/l			WG616006	10/03/12 11:08
Chloroethane	< .005	mg/l			WG616006	10/03/12 11:08
Chloroform	< .005	mg/l			WG616006	10/03/12 11:08
Chloromethane	< .0025	mg/l			WG616006	10/03/12 11:08
cis-1,3-Dichloropropene	< .001	mg/l			WG616006	10/03/12 11:08
Ethylbenzene	< .001	mg/l			WG616006	10/03/12 11:08
Methylene Chloride	< .005	mg/l			WG616006	10/03/12 11:08
Tetrachloroethene	< .001	mg/l			WG616006	10/03/12 11:08
Toluene	< .005	mg/l			WG616006	10/03/12 11:08
trans-1,2-Dichloroethene	< .001	mg/l			WG616006	10/03/12 11:08
trans-1,3-Dichloropropene	< .001	mg/l			WG616006	10/03/12 11:08
Trichloroethene	< .001	mg/l			WG616006	10/03/12 11:08
Vinyl chloride	< .001	mg/l			WG616006	10/03/12 11:08
4-Bromofluorobenzene		% Rec.	103.4	82-120	WG616006	10/03/12 11:08
Dibromofluoromethane		% Rec.	102.1	82-126	WG616006	10/03/12 11:08
Toluene-d8		% Rec.	104.3	92-112	WG616006	10/03/12 11:08
a,a,a-Trifluorotoluene		% Rec.	99.54	90-116	WG616006	10/03/12 11:08
Nitrate	< .1	mg/l			WG616010	10/03/12 09:42
Chromium,Hexavalent	< .01	mg/l			WG616042	10/03/12 14:05
Chromium,Hexavalent	< .01	mg/l			WG616009	10/03/12 12:02
Mercury	< .0002	mg/l			WG616043	10/04/12 19:48
Aluminum,Dissolved	< .1	mg/l			WG616679	10/07/12 21:45
Iron,Dissolved	< .1	mg/l			WG616679	10/07/12 21:45
1,1,1-Trichloroethane	< .001	mg/l			WG616106	10/04/12 00:04
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG616106	10/04/12 00:04
1,1,2-Trichloroethane	< .001	mg/l			WG616106	10/04/12 00:04
1,1-Dichloroethane	< .001	mg/l			WG616106	10/04/12 00:04
1,1-Dichloroethene	< .001	mg/l			WG616106	10/04/12 00:04
1,2-Dichlorobenzene	< .001	mg/l			WG616106	10/04/12 00:04
1,2-Dichloroethane	< .001	mg/l			WG616106	10/04/12 00:04

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,2-Dichloropropane	< .001	mg/l			WG616106	10/04/12 00:04
1,3-Dichlorobenzene	< .001	mg/l			WG616106	10/04/12 00:04
1,4-Dichlorobenzene	< .001	mg/l			WG616106	10/04/12 00:04
2-Chloroethyl vinyl ether	< .05	mg/l			WG616106	10/04/12 00:04
Benzene	< .001	mg/l			WG616106	10/04/12 00:04
Bromodichloromethane	< .001	mg/l			WG616106	10/04/12 00:04
Bromoform	< .001	mg/l			WG616106	10/04/12 00:04
Bromomethane	< .005	mg/l			WG616106	10/04/12 00:04
Carbon tetrachloride	< .001	mg/l			WG616106	10/04/12 00:04
Chlorobenzene	< .001	mg/l			WG616106	10/04/12 00:04
Chlorodibromomethane	< .001	mg/l			WG616106	10/04/12 00:04
Chloroethane	< .005	mg/l			WG616106	10/04/12 00:04
Chloroform	< .005	mg/l			WG616106	10/04/12 00:04
Chloromethane	< .0025	mg/l			WG616106	10/04/12 00:04
cis-1,3-Dichloropropene	< .001	mg/l			WG616106	10/04/12 00:04
Ethylbenzene	< .001	mg/l			WG616106	10/04/12 00:04
Methylene Chloride	< .005	mg/l			WG616106	10/04/12 00:04
Tetrachloroethene	< .001	mg/l			WG616106	10/04/12 00:04
Toluene	< .005	mg/l			WG616106	10/04/12 00:04
trans-1,2-Dichloroethene	< .001	mg/l			WG616106	10/04/12 00:04
trans-1,3-Dichloropropene	< .001	mg/l			WG616106	10/04/12 00:04
Trichloroethene	< .001	mg/l			WG616106	10/04/12 00:04
Vinyl chloride	< .001	mg/l			WG616106	10/04/12 00:04
4-Bromofluorobenzene		% Rec.	107.6	82-120	WG616106	10/04/12 00:04
Dibromofluoromethane		% Rec.	101.4	82-126	WG616106	10/04/12 00:04
Toluene-d8		% Rec.	107.4	92-112	WG616106	10/04/12 00:04
a,a,a-Trifluorotoluene		% Rec.	104.4	90-116	WG616106	10/04/12 00:04
1,2,4-Trichlorobenzene	< .01	mg/l			WG615983	10/08/12 11:24
2,4,6-Trichlorophenol	< .01	mg/l			WG615983	10/08/12 11:24
2,4-Dichlorophenol	< .01	mg/l			WG615983	10/08/12 11:24
2,4-Dimethylphenol	< .01	mg/l			WG615983	10/08/12 11:24
2,4-Dinitrophenol	< .01	mg/l			WG615983	10/08/12 11:24
2,4-Dinitrotoluene	< .01	mg/l			WG615983	10/08/12 11:24
2,6-Dinitrotoluene	< .01	mg/l			WG615983	10/08/12 11:24
2-Chloronaphthalene	< .001	mg/l			WG615983	10/08/12 11:24
2-Chlorophenol	< .01	mg/l			WG615983	10/08/12 11:24
2-Nitrophenol	< .01	mg/l			WG615983	10/08/12 11:24
3,3-Dichlorobenzidine	< .01	mg/l			WG615983	10/08/12 11:24
4,6-Dinitro-2-methylphenol	< .01	mg/l			WG615983	10/08/12 11:24
4-Bromophenyl-phenylether	< .01	mg/l			WG615983	10/08/12 11:24
4-Chloro-3-methylphenol	< .01	mg/l			WG615983	10/08/12 11:24
4-Chlorophenyl-phenylether	< .01	mg/l			WG615983	10/08/12 11:24
4-Nitrophenol	< .01	mg/l			WG615983	10/08/12 11:24
Acenaphthene	< .001	mg/l			WG615983	10/08/12 11:24
Acenaphthylene	< .001	mg/l			WG615983	10/08/12 11:24
Anthracene	< .001	mg/l			WG615983	10/08/12 11:24
1,2-Diphenylhydrazine	< .01	mg/l			WG615983	10/08/12 11:24
Benzidine	< .01	mg/l			WG615983	10/08/12 11:24
Benzo(a)anthracene	< .001	mg/l			WG615983	10/08/12 11:24
Benzo(a)pyrene	< .001	mg/l			WG615983	10/08/12 11:24
Benzo(b)fluoranthene	< .001	mg/l			WG615983	10/08/12 11:24
Benzo(g,h,i)perylene	< .001	mg/l			WG615983	10/08/12 11:24
Benzo(k)fluoranthene	< .001	mg/l			WG615983	10/08/12 11:24
Benzylbutyl phthalate	< .001	mg/l			WG615983	10/08/12 11:24
Bis(2-chlorethoxy)methane	< .01	mg/l			WG615983	10/08/12 11:24
Bis(2-chloroethyl)ether	< .01	mg/l			WG615983	10/08/12 11:24
Bis(2-chloroisopropyl)ether	< .01	mg/l			WG615983	10/08/12 11:24

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Bis(2-ethylhexyl)phthalate	< .001	mg/l			WG615983	10/08/12 11:24
Chrysene	< .001	mg/l			WG615983	10/08/12 11:24
Di-n-butyl phthalate	< .001	mg/l			WG615983	10/08/12 11:24
Di-n-octyl phthalate	< .001	mg/l			WG615983	10/08/12 11:24
Dibenz(a,h)anthracene	< .001	mg/l			WG615983	10/08/12 11:24
Diethyl phthalate	< .001	mg/l			WG615983	10/08/12 11:24
Dimethyl phthalate	< .001	mg/l			WG615983	10/08/12 11:24
Fluoranthene	< .001	mg/l			WG615983	10/08/12 11:24
Fluorene	< .001	mg/l			WG615983	10/08/12 11:24
Hexachloro-1,3-butadiene	< .01	mg/l			WG615983	10/08/12 11:24
Hexachlorobenzene	< .001	mg/l			WG615983	10/08/12 11:24
Hexachlorocyclopentadiene	< .01	mg/l			WG615983	10/08/12 11:24
Hexachloroethane	< .01	mg/l			WG615983	10/08/12 11:24
Indeno(1,2,3-cd)pyrene	< .001	mg/l			WG615983	10/08/12 11:24
Isophorone	< .01	mg/l			WG615983	10/08/12 11:24
n-Nitrosodi-n-propylamine	< .01	mg/l			WG615983	10/08/12 11:24
n-Nitrosodimethylamine	< .01	mg/l			WG615983	10/08/12 11:24
n-Nitrosodiphenylamine	< .01	mg/l			WG615983	10/08/12 11:24
Naphthalene	< .001	mg/l			WG615983	10/08/12 11:24
Nitrobenzene	< .01	mg/l			WG615983	10/08/12 11:24
Pentachlorophenol	< .001	mg/l			WG615983	10/08/12 11:24
Phenanthrene	< .001	mg/l			WG615983	10/08/12 11:24
Phenol	< .01	mg/l			WG615983	10/08/12 11:24
Pyrene	< .001	mg/l			WG615983	10/08/12 11:24
2,4,6-Tribromophenol		% Rec.	79.49	16-147	WG615983	10/08/12 11:24
2-Fluorobiphenyl		% Rec.	79.58	29-127	WG615983	10/08/12 11:24
2-Fluorophenol		% Rec.	37.21	10-75	WG615983	10/08/12 11:24
Nitrobenzene-d5		% Rec.	66.01	17-119	WG615983	10/08/12 11:24
Phenol-d5		% Rec.	23.13	10-63	WG615983	10/08/12 11:24
p-Terphenyl-d14		% Rec.	75.51	40-174	WG615983	10/08/12 11:24
Aluminum	< .1	mg/l			WG616729	10/09/12 01:10
Iron	< .1	mg/l			WG616729	10/09/12 01:10
PCB 1016	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1221	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1232	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1242	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1248	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1254	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1260	< .0005	mg/l			WG616225	10/08/12 13:39
Decachlorobiphenyl		% Rec.	109.0	10-122.6	WG616225	10/08/12 13:39
Tetrachloro-m-xylene		% Rec.	66.40	15.3-114.2	WG616225	10/08/12 13:39
4,4-DDD	< .00005	mg/l			WG616225	10/09/12 10:38
4,4-DDE	< .00005	mg/l			WG616225	10/09/12 10:38
4,4-DDT	< .00005	mg/l			WG616225	10/09/12 10:38
Aldrin	< .00005	mg/l			WG616225	10/09/12 10:38
Alpha BHC	< .00005	mg/l			WG616225	10/09/12 10:38
Beta BHC	< .00005	mg/l			WG616225	10/09/12 10:38
Chlordane	< .0005	mg/l			WG616225	10/09/12 10:38
Delta BHC	< .00005	mg/l			WG616225	10/09/12 10:38
Dieldrin	< .00005	mg/l			WG616225	10/09/12 10:38
Endosulfan I	< .00005	mg/l			WG616225	10/09/12 10:38
Endosulfan II	< .00005	mg/l			WG616225	10/09/12 10:38
Endosulfan sulfate	< .00005	mg/l			WG616225	10/09/12 10:38
Endrin	< .00005	mg/l			WG616225	10/09/12 10:38
Endrin aldehyde	< .00005	mg/l			WG616225	10/09/12 10:38

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Endrin ketone	< .00005	mg/l			WG616225	10/09/12 10:38
Gamma BHC	< .00005	mg/l			WG616225	10/09/12 10:38
Heptachlor	< .00005	mg/l			WG616225	10/09/12 10:38
Heptachlor epoxide	< .00005	mg/l			WG616225	10/09/12 10:38
Hexachlorobenzene	< .00005	mg/l			WG616225	10/09/12 10:38
Methoxychlor	< .00005	mg/l			WG616225	10/09/12 10:38
Toxaphene	< .0005	mg/l			WG616225	10/09/12 10:38
Decachlorobiphenyl		% Rec.	76.32	10-122.6	WG616225	10/09/12 10:38
Tetrachloro-m-xylene		% Rec.	70.03	15.3-114.2	WG616225	10/09/12 10:38
2,4,5-T	< .002	mg/l			WG616404	10/09/12 02:54
2,4,5-TP (Silvex)	< .002	mg/l			WG616404	10/09/12 02:54
2,4-D	< .002	mg/l			WG616404	10/09/12 02:54
2,4-DB	< .002	mg/l			WG616404	10/09/12 02:54
Dalapon	< .002	mg/l			WG616404	10/09/12 02:54
Dicamba	< .002	mg/l			WG616404	10/09/12 02:54
Dichloroprop	< .002	mg/l			WG616404	10/09/12 02:54
Dinoseb	< .002	mg/l			WG616404	10/09/12 02:54
MCPA	< .1	mg/l			WG616404	10/09/12 02:54
MCPP	< .1	mg/l			WG616404	10/09/12 02:54
2,4-Dichlorophenyl Acetic Acid		%	72.07	42-112	WG616404	10/09/12 02:54
Antimony	< .001	mg/l			WG616751	10/09/12 17:47
Arsenic	< .001	mg/l			WG616751	10/09/12 17:47
Barium	< .002	mg/l			WG616751	10/09/12 17:47
Beryllium	< .001	mg/l			WG616751	10/09/12 17:47
Cadmium	< .0005	mg/l			WG616751	10/09/12 17:47
Chromium	< .001	mg/l			WG616751	10/09/12 17:47
Copper	< .001	mg/l			WG616751	10/09/12 17:47
Lead	< .001	mg/l			WG616751	10/09/12 17:47
Manganese	< .002	mg/l			WG616751	10/09/12 17:47
Nickel	< .001	mg/l			WG616751	10/09/12 17:47
Selenium	< .001	mg/l			WG616751	10/09/12 17:47
Silver	< .0005	mg/l			WG616751	10/09/12 17:47
Thallium	< .001	mg/l			WG616751	10/09/12 17:47
Zinc	< .01	mg/l			WG616751	10/09/12 17:47
Suspended Solids	< 1	mg/l			WG616897	10/10/12 10:29
Dissolved Solids	< 10	mg/l			WG616901	10/10/12 14:17
Arsenic,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Barium,Dissolved	< .002	mg/l			WG617056	10/10/12 10:20
Beryllium,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Cadmium,Dissolved	< .0005	mg/l			WG617056	10/10/12 10:20
Chromium,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Copper,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Lead,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Manganese,Dissolved	< .002	mg/l			WG617056	10/10/12 10:20
Nickel,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Selenium,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Thallium,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Zinc,Dissolved	< .01	mg/l			WG617056	10/10/12 10:20

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Silver,Dissolved	< .0005	mg/l			WG617240	10/10/12 18:54
Antimony,Dissolved	< .001	mg/l			WG617056	10/12/12 14:47

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Nitrate	mg/l	0	0	0	20	L598701-01	WG616010
Nitrate	mg/l	1.90	1.90	1.06	20	L598764-02	WG616010
Chromium,Hexavalent	mg/l	0	0	0	20	L598664-02	WG616042
Chromium,Hexavalent	mg/l	0	0	0	20	L598666-02	WG616009
Mercury	mg/l	0.000200	0.000210	4.88	20	L598641-01	WG616043
pH	su	7.30	7.40	0.950	1	L598638-02	WG616370
pH	su	9.00	9.00	0.111	1	L599113-02	WG616370
Aluminum,Dissolved	mg/l	0	0	0	20	L598652-01	WG616679
Iron,Dissolved	mg/l	0	0	0	20	L598652-01	WG616679
Aluminum	mg/l	0.160	0.150	3.92	20	L598649-01	WG616729
Iron	mg/l	0	0.0215	NA	20	L598649-01	WG616729
Antimony	mg/l	0	0.000740	NA	20	L598728-01	WG616751
Arsenic	mg/l	0.00120	0.00120	2.47	20	L598728-01	WG616751
Barium	mg/l	0.00720	0.00721	0.277	20	L598728-01	WG616751
Beryllium	mg/l	0	0	0	20	L598728-01	WG616751
Cadmium	mg/l	0	0	0	20	L598728-01	WG616751
Chromium	mg/l	0	0	0	20	L598728-01	WG616751
Copper	mg/l	0.0590	0.0583	1.19	20	L598728-01	WG616751
Lead	mg/l	0	0.000310	NA	20	L598728-01	WG616751
Manganese	mg/l	0	0.00165	NA	20	L598728-01	WG616751
Nickel	mg/l	0	0	0	20	L598728-01	WG616751
Selenium	mg/l	0	0	0	20	L598728-01	WG616751
Silver	mg/l	0.000540	0.000500	7.69	20	L598728-01	WG616751
Thallium	mg/l	0	0.0000700	NA	20	L598728-01	WG616751
Zinc	mg/l	0.300	0.298	0.673	20	L598728-01	WG616751
Suspended Solids	mg/l	77.0	75.0	2.63	5	L598651-01	WG616897
Suspended Solids	mg/l	50.0	49.3	1.34	5	L598677-01	WG616897
Dissolved Solids	mg/l	4400	4430	0.362	5	L599118-01	WG616901
Arsenic,Dissolved	mg/l	0.00320	0.00330	3.70	20	L598390-02	WG617056
Beryllium,Dissolved	mg/l	0	0	0	20	L598390-02	WG617056

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Level II

L598664

October 15, 2012

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
			Duplicate				
Cadmium,Dissolved	mg/l	0.00100	0.000960	8.00	20	L598390-02	WG617056
Chromium,Dissolved	mg/l	0	0	0	20	L598390-02	WG617056
Copper,Dissolved	mg/l	0.00150	0.00120	21.6*	20	L598390-02	WG617056
Lead,Dissolved	mg/l	0	0	0	20	L598390-02	WG617056
Manganese,Dissolved	mg/l	0.0170	0.0166	3.55	20	L598390-02	WG617056
Nickel,Dissolved	mg/l	0.00780	0.00720	8.64	20	L598390-02	WG617056
Selenium,Dissolved	mg/l	0.0340	0.0340	0	20	L598390-02	WG617056
Thallium,Dissolved	mg/l	0	0	0	20	L598390-02	WG617056
Zinc,Dissolved	mg/l	0.0120	0	NA	20	L598390-02	WG617056
Barium,Dissolved	mg/l	0.0790	0.0800	1.77	20	L598390-02	WG617056
Silver,Dissolved	mg/l	0.000730	0.000550	28.1*	20	L598645-01	WG617240
Antimony,Dissolved	mg/l	0.00460	0.00490	7.41	20	L598390-02	WG617056

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
			Laboratory Control Sample			
1,1,1-Trichloroethane	mg/l	.025	0.0246	98.5	71-126	WG616006
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0273	109.	78-130	WG616006
1,1,2-Trichloroethane	mg/l	.025	0.0256	103.	81-121	WG616006
1,1-Dichloroethane	mg/l	.025	0.0260	104.	73-123	WG616006
1,1-Dichloroethene	mg/l	.025	0.0188	75.3	54-134	WG616006
1,2-Dichlorobenzene	mg/l	.025	0.0254	101.	82-121	WG616006
1,2-Dichloroethane	mg/l	.025	0.0269	108.	69-128	WG616006
1,2-Dichloropropane	mg/l	.025	0.0277	111.	77-121	WG616006
1,3-Dichlorobenzene	mg/l	.025	0.0246	98.3	77-127	WG616006
1,4-Dichlorobenzene	mg/l	.025	0.0247	98.9	79-117	WG616006
2-Chloroethyl vinyl ether	mg/l	.125	0.136	109.	26-172	WG616006
Benzene	mg/l	.025	0.0239	95.6	72-119	WG616006
Bromodichloromethane	mg/l	.025	0.0265	106.	75-127	WG616006
Bromoform	mg/l	.025	0.0233	93.2	61-136	WG616006
Bromomethane	mg/l	.025	0.0156	62.4	42-172	WG616006
Carbon tetrachloride	mg/l	.025	0.0253	101.	63-129	WG616006
Chlorobenzene	mg/l	.025	0.0248	99.3	78-123	WG616006
Chlorodibromomethane	mg/l	.025	0.0250	100.	73-128	WG616006
Chloroethane	mg/l	.025	0.0192	76.9	52-164	WG616006
Chloroform	mg/l	.025	0.0250	100.	76-122	WG616006
Chloromethane	mg/l	.025	0.0261	105.	50-141	WG616006
cis-1,3-Dichloropropene	mg/l	.025	0.0263	105.	74-124	WG616006
Ethylbenzene	mg/l	.025	0.0251	100.	77-124	WG616006
Methylene Chloride	mg/l	.025	0.0220	88.1	67-122	WG616006
Tetrachloroethene	mg/l	.025	0.0240	95.8	69-131	WG616006
Toluene	mg/l	.025	0.0249	99.6	75-114	WG616006
trans-1,2-Dichloroethene	mg/l	.025	0.0224	89.5	63-127	WG616006
trans-1,3-Dichloropropene	mg/l	.025	0.0255	102.	69-124	WG616006
Trichloroethene	mg/l	.025	0.0242	96.7	69-131	WG616006
Vinyl chloride	mg/l	.025	0.0229	91.6	55-142	WG616006
4-Bromofluorobenzene				103.1	82-120	WG616006
Dibromofluoromethane				100.2	82-126	WG616006
Toluene-d8				105.0	92-112	WG616006
a,a,a-Trifluorotoluene				100.2	90-116	WG616006
Nitrate	mg/l	8	8.23	103.	90-110	WG616010

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Quality Assurance Report
Level II

L598664

October 15, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Chromium,Hexavalent	mg/l	.6	0.576	96.0	85-115	WG616042
Chromium,Hexavalent	mg/l	.6	0.578	96.3	85-115	WG616009
Mercury	mg/l	.003	0.00280	93.3	85-115	WG616043
pH	su	6.03	6.01	99.7	98-101	WG616370
Aluminum,Dissolved	mg/l	1	0.987	98.7	85-115	WG616679
Iron,Dissolved	mg/l	1	0.935	93.5	85-115	WG616679
1,1,1-Trichloroethane	mg/l	.025	0.0238	95.3	71-126	WG616106
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0234	93.6	78-130	WG616106
1,1,2-Trichloroethane	mg/l	.025	0.0255	102.	81-121	WG616106
1,1-Dichloroethane	mg/l	.025	0.0232	92.8	73-123	WG616106
1,1-Dichloroethene	mg/l	.025	0.0198	79.2	54-134	WG616106
1,2-Dichlorobenzene	mg/l	.025	0.0256	102.	82-121	WG616106
1,2-Dichloroethane	mg/l	.025	0.0271	108.	69-128	WG616106
1,2-Dichloropropane	mg/l	.025	0.0247	98.7	77-121	WG616106
1,3-Dichlorobenzene	mg/l	.025	0.0247	98.8	77-127	WG616106
1,4-Dichlorobenzene	mg/l	.025	0.0251	101.	79-117	WG616106
2-Chloroethyl vinyl ether	mg/l	.125	0.119	95.3	26-172	WG616106
Benzene	mg/l	.025	0.0237	94.8	72-119	WG616106
Bromodichloromethane	mg/l	.025	0.0263	105.	75-127	WG616106
Bromoform	mg/l	.025	0.0272	109.	61-136	WG616106
Bromomethane	mg/l	.025	0.0260	104.	42-172	WG616106
Carbon tetrachloride	mg/l	.025	0.0224	89.5	63-129	WG616106
Chlorobenzene	mg/l	.025	0.0250	100.	78-123	WG616106
Chlorodibromomethane	mg/l	.025	0.0270	108.	73-128	WG616106
Chloroethane	mg/l	.025	0.0239	95.5	52-164	WG616106
Chloroform	mg/l	.025	0.0253	101.	76-122	WG616106
Chloromethane	mg/l	.025	0.0232	92.9	50-141	WG616106
cis-1,3-Dichloropropene	mg/l	.025	0.0266	107.	74-124	WG616106
Ethylbenzene	mg/l	.025	0.0249	99.8	77-124	WG616106
Methylene Chloride	mg/l	.025	0.0205	82.0	67-122	WG616106
Tetrachloroethene	mg/l	.025	0.0251	100.	69-131	WG616106
Toluene	mg/l	.025	0.0249	99.6	75-114	WG616106
trans-1,2-Dichloroethene	mg/l	.025	0.0211	84.3	63-127	WG616106
trans-1,3-Dichloropropene	mg/l	.025	0.0274	110.	69-124	WG616106
Trichloroethene	mg/l	.025	0.0238	95.1	69-131	WG616106
Vinyl chloride	mg/l	.025	0.0235	93.9	55-142	WG616106
4-Bromofluorobenzene				104.4	82-120	WG616106
Dibromofluoromethane				102.5	82-126	WG616106
Toluene-d8				105.7	92-112	WG616106
a,a,a-Trifluorotoluene				104.1	90-116	WG616106
1,2,4-Trichlorobenzene	mg/l	.01	0.00696	69.6	34-97	WG615983
2,4,6-Trichlorophenol	mg/l	.01	0.00723	72.3	38-113	WG615983
2,4-Dichlorophenol	mg/l	.01	0.00809	80.9	46-105	WG615983
2,4-Dimethylphenol	mg/l	.01	0.00744	74.4	47-108	WG615983
2,4-Dinitrophenol	mg/l	.01	0.00205	20.5	10-121	WG615983
2,4-Dinitrotoluene	mg/l	.01	0.00863	86.3	59-117	WG615983
2,6-Dinitrotoluene	mg/l	.01	0.00857	85.7	57-110	WG615983

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Quality Assurance Report
Level II

L598664

October 15, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
2-Chloronaphthalene	mg/l	.01	0.00796	79.6	47-106	WG615983
2-Chlorophenol	mg/l	.01	0.00620	62.0	37-90	WG615983
2-Nitrophenol	mg/l	.01	0.00810	81.0	40-112	WG615983
3,3-Dichlorobenzidine	mg/l	.01	0.00734	73.4	58-116	WG615983
4,6-Dinitro-2-methylphenol	mg/l	.01	0.00381	38.1	21-119	WG615983
4-Bromophenyl-phenylether	mg/l	.01	0.00835	83.5	63-120	WG615983
4-Chloro-3-methylphenol	mg/l	.01	0.00760	76.0	50-105	WG615983
4-Chlorophenyl-phenylether	mg/l	.01	0.00795	79.5	58-115	WG615983
4-Nitrophenol	mg/l	.01	0.00270	27.0	10-53	WG615983
Acenaphthene	mg/l	.01	0.00798	79.8	52-107	WG615983
Acenaphthylene	mg/l	.01	0.00853	85.3	55-119	WG615983
Anthracene	mg/l	.01	0.00911	91.1	65-114	WG615983
1,2-Diphenylhydrazine	mg/l	.01	0.00841	84.1	52-113	WG615983
Benzidine	mg/l	.01	0.00246	24.6	10-55	WG615983
Benzo(a)anthracene	mg/l	.01	0.00913	91.3	68-113	WG615983
Benzo(a)pyrene	mg/l	.01	0.00953	95.3	68-115	WG615983
Benzo(b)fluoranthene	mg/l	.01	0.00947	94.7	67-114	WG615983
Benzo(g,h,i)perylene	mg/l	.01	0.00592	59.2	52-132	WG615983
Benzo(k)fluoranthene	mg/l	.01	0.0101	101.	62-116	WG615983
Benzylbutyl phthalate	mg/l	.01	0.00826	82.6	12-166	WG615983
Bis(2-chlorethoxy)methane	mg/l	.01	0.00792	79.2	56-116	WG615983
Bis(2-chloroethyl)ether	mg/l	.01	0.00667	66.7	39-109	WG615983
Bis(2-chloroisopropyl)ether	mg/l	.01	0.00680	68.0	43-108	WG615983
Bis(2-ethylhexyl)phthalate	mg/l	.01	0.00938	93.8	61-147	WG615983
Chrysene	mg/l	.01	0.00965	96.5	65-114	WG615983
Di-n-butyl phthalate	mg/l	.01	0.00907	90.7	56-133	WG615983
Di-n-octyl phthalate	mg/l	.01	0.00859	85.9	59-143	WG615983
Dibenz(a,h)anthracene	mg/l	.01	0.00738	73.8	54-130	WG615983
Diethyl phthalate	mg/l	.01	0.00823	82.3	33-136	WG615983
Dimethyl phthalate	mg/l	.01	0.00628	62.8	10-152	WG615983
Fluoranthene	mg/l	.01	0.00916	91.6	66-120	WG615983
Fluorene	mg/l	.01	0.00861	86.1	58-110	WG615983
Hexachloro-1,3-butadiene	mg/l	.01	0.00711	71.1	34-115	WG615983
Hexachlorobenzene	mg/l	.01	0.00731	73.1	55-117	WG615983
Hexachlorocyclopentadiene	mg/l	.01	0.00596	59.6	20-121	WG615983
Hexachloroethane	mg/l	.01	0.00619	61.9	24-93	WG615983
Indeno(1,2,3-cd)pyrene	mg/l	.01	0.00703	70.3	56-129	WG615983
Isophorone	mg/l	.01	0.00671	67.1	55-108	WG615983
n-Nitrosodi-n-propylamine	mg/l	.01	0.00770	77.0	50-115	WG615983
n-Nitrosodimethylamine	mg/l	.01	0.00334	33.4	12-68	WG615983
n-Nitrosodiphenylamine	mg/l	.01	0.00844	84.4	55-98	WG615983
Naphthalene	mg/l	.01	0.00750	75.0	42-103	WG615983
Nitrobenzene	mg/l	.01	0.00711	71.1	39-102	WG615983
Pentachlorophenol	mg/l	.01	0.00433	43.3	10-101	WG615983
Phenanthrene	mg/l	.01	0.00850	85.0	61-110	WG615983
Phenol	mg/l	.01	0.00253	25.3	10-53	WG615983
Pyrene	mg/l	.01	0.00812	81.2	65-116	WG615983
2,4,6-Tribromophenol				72.98	16-147	WG615983
2-Fluorobiphenyl				77.70	29-127	WG615983
2-Fluorophenol				36.50	10-75	WG615983
Nitrobenzene-d5				73.94	17-119	WG615983
Phenol-d5				25.11	10-63	WG615983
p-Terphenyl-d14				79.11	40-174	WG615983
Aluminum	mg/l	1	0.939	93.9	85-115	WG616729
Iron	mg/l	1	0.983	98.3	85-115	WG616729

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Quality Assurance Report
Level II

L598664

October 15, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
PCB 1016	mg/l	.0005	0.000443	88.5	32-126	WG616225
PCB 1260	mg/l	.0005	0.000423	84.7	58-128	WG616225
Decachlorobiphenyl				98.65	10-122.6	WG616225
Tetrachloro-m-xylene				73.13	15.3-114.2	WG616225
4,4-DDD	mg/l	.0002	0.000186	92.8	60-123	WG616225
4,4-DDE	mg/l	.0002	0.000173	86.4	50-120	WG616225
4,4-DDT	mg/l	.0002	0.000193	96.5	61-121	WG616225
Aldrin	mg/l	.0002	0.000104	52.0	10-136	WG616225
Alpha BHC	mg/l	.0002	0.000183	91.6	58-114	WG616225
Beta BHC	mg/l	.0002	0.000171	85.6	61-120	WG616225
Delta BHC	mg/l	.0002	0.000170	85.2	57-120	WG616225
Dieldrin	mg/l	.0002	0.000183	91.6	62-123	WG616225
Endosulfan I	mg/l	.0002	0.000182	91.0	63-123	WG616225
Endosulfan II	mg/l	.0002	0.000209	104.	63-124	WG616225
Endosulfan sulfate	mg/l	.0002	0.000199	99.7	59-125	WG616225
Endrin	mg/l	.0002	0.000182	91.2	60-123	WG616225
Endrin aldehyde	mg/l	.0002	0.000183	91.7	42-92	WG616225
Endrin ketone	mg/l	.0002	0.000211	105.	60-117	WG616225
Gamma BHC	mg/l	.0002	0.000185	92.3	59-116	WG616225
Heptachlor	mg/l	.0002	0.000133	66.4	10-131	WG616225
Heptachlor epoxide	mg/l	.0002	0.000180	90.1	61-118	WG616225
Hexachlorobenzene	mg/l	.0002	0.000120	59.8	28-116	WG616225
Methoxychlor	mg/l	.0002	0.000201	101.	66-122	WG616225
Decachlorobiphenyl				86.76	10-122.6	WG616225
Tetrachloro-m-xylene				79.57	15.3-114.2	WG616225
2,4,5-T	mg/l	.005	0.00525	105.	46-116	WG616404
2,4,5-TP (Silvex)	mg/l	.005	0.00524	105.	53.6-122	WG616404
2,4-D	mg/l	.005	0.00467	93.3	47.4-113	WG616404
2,4-DB	mg/l	.005	0.00328	65.6	48.4-118	WG616404
Dalapon	mg/l	.005	0.00400	79.9	40.5-102	WG616404
Dicamba	mg/l	.005	0.00488	97.7	57.2-111	WG616404
Dichloroprop	mg/l	.005	0.00564	113.	55.8-128	WG616404
Dinoseb	mg/l	.005	0.00248	49.6	41-121	WG616404
MCPA	mg/l	.5	0.752	150.*	24.1-143	WG616404
MCPP	mg/l	.5	0.691	138.	49-198	WG616404
2,4-Dichlorophenyl Acetic Acid				85.29	42-112	WG616404
Antimony	mg/l	.05	0.0538	108.	85-115	WG616751
Arsenic	mg/l	.05	0.0501	100.	85-115	WG616751
Barium	mg/l	.05	0.0522	104.	85-115	WG616751
Beryllium	mg/l	.05	0.0523	105.	85-115	WG616751
Cadmium	mg/l	.05	0.0518	104.	85-115	WG616751
Chromium	mg/l	.05	0.0530	106.	85-115	WG616751
Copper	mg/l	.05	0.0523	105.	85-115	WG616751
Lead	mg/l	.05	0.0513	103.	85-115	WG616751
Manganese	mg/l	.05	0.0502	100.	85-115	WG616751
Nickel	mg/l	.05	0.0505	101.	85-115	WG616751
Selenium	mg/l	.05	0.0501	100.	85-115	WG616751
Silver	mg/l	.05	0.0506	101.	85-115	WG616751
Thallium	mg/l	.05	0.0493	98.6	85-115	WG616751
Zinc	mg/l	.05	0.0562	112.	85-115	WG616751
Suspended Solids	mg/l	773	756.	97.8	85-115	WG616897

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Quality Assurance Report
Level II

L598664

October 15, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Dissolved Solids	mg/l	8800	8630	98.1	85-115	WG616901
Arsenic,Dissolved	mg/l	.05	0.0498	99.6	85-115	WG617056
Barium,Dissolved	mg/l	.05	0.0519	104.	85-115	WG617056
Beryllium,Dissolved	mg/l	.05	0.0524	105.	85-115	WG617056
Cadmium,Dissolved	mg/l	.05	0.0506	101.	85-115	WG617056
Chromium,Dissolved	mg/l	.05	0.0531	106.	85-115	WG617056
Copper,Dissolved	mg/l	.05	0.0534	107.	85-115	WG617056
Lead,Dissolved	mg/l	.05	0.0523	105.	85-115	WG617056
Manganese,Dissolved	mg/l	.05	0.0533	107.	85-115	WG617056
Nickel,Dissolved	mg/l	.05	0.0527	105.	85-115	WG617056
Selenium,Dissolved	mg/l	.05	0.0518	104.	85-115	WG617056
Thallium,Dissolved	mg/l	.05	0.0504	101.	85-115	WG617056
Zinc,Dissolved	mg/l	.05	0.0559	112.	85-115	WG617056
Silver,Dissolved	mg/l	.05	0.0511	102.	85-115	WG617240
Antimony,Dissolved	mg/l	.05	0.0473	94.6	85-115	WG617056

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1-Trichloroethane	mg/l	0.0246	0.0246	98.0	71-126	0.250	20	WG616006
1,1,2,2-Tetrachloroethane	mg/l	0.0278	0.0273	111.	78-130	1.73	20	WG616006
1,1,2-Trichloroethane	mg/l	0.0260	0.0256	104.	81-121	1.20	20	WG616006
1,1-Dichloroethane	mg/l	0.0262	0.0260	105.	73-123	0.620	20	WG616006
1,1-Dichloroethene	mg/l	0.0186	0.0188	74.0	54-134	0.980	20	WG616006
1,2-Dichlorobenzene	mg/l	0.0257	0.0254	103.	82-121	1.26	20	WG616006
1,2-Dichloroethane	mg/l	0.0275	0.0269	110.	69-128	1.89	20	WG616006
1,2-Dichloropropane	mg/l	0.0279	0.0277	112.	77-121	0.550	20	WG616006
1,3-Dichlorobenzene	mg/l	0.0249	0.0246	100.	77-127	1.28	20	WG616006
1,4-Dichlorobenzene	mg/l	0.0249	0.0247	100.	79-117	0.690	20	WG616006
2-Chloroethyl vinyl ether	mg/l	0.139	0.136	112.	26-172	2.12	22	WG616006
Benzene	mg/l	0.0241	0.0239	96.0	72-119	0.800	20	WG616006
Bromodichloromethane	mg/l	0.0263	0.0265	105.	75-127	0.620	20	WG616006
Bromoform	mg/l	0.0237	0.0233	95.0	61-136	1.55	20	WG616006
Bromomethane	mg/l	0.0156	0.0156	62.0	42-172	0.320	20	WG616006
Carbon tetrachloride	mg/l	0.0251	0.0253	100.	63-129	1.06	20	WG616006
Chlorobenzene	mg/l	0.0248	0.0248	99.0	78-123	0.130	20	WG616006
Chlorodibromomethane	mg/l	0.0253	0.0250	101.	73-128	1.10	20	WG616006
Chloroethane	mg/l	0.0191	0.0192	76.0	52-164	0.500	20	WG616006
Chloroform	mg/l	0.0256	0.0250	102.	76-122	2.18	20	WG616006
Chloromethane	mg/l	0.0261	0.0261	104.	50-141	0.330	20	WG616006
cis-1,3-Dichloropropene	mg/l	0.0260	0.0263	104.	74-124	1.02	20	WG616006
Ethylbenzene	mg/l	0.0247	0.0251	99.0	77-124	1.50	20	WG616006
Methylene Chloride	mg/l	0.0222	0.0220	89.0	67-122	1.05	20	WG616006
Tetrachloroethene	mg/l	0.0236	0.0240	94.0	69-131	1.31	20	WG616006
Toluene	mg/l	0.0245	0.0249	98.0	75-114	1.58	20	WG616006
trans-1,2-Dichloroethene	mg/l	0.0222	0.0224	89.0	63-127	0.990	20	WG616006
trans-1,3-Dichloropropene	mg/l	0.0252	0.0255	101.	69-124	1.07	20	WG616006
Trichloroethene	mg/l	0.0238	0.0242	95.0	69-131	1.57	20	WG616006
Vinyl chloride	mg/l	0.0231	0.0229	92.0	55-142	0.810	20	WG616006
4-Bromofluorobenzene				103.5	82-120			WG616006
Dibromofluoromethane				101.3	82-126			WG616006
Toluene-d8				104.4	92-112			WG616006
a,a,a-Trifluorotoluene				98.69	90-116			WG616006

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Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L598664

October 15, 2012

		Laboratory Control Sample				Duplicate		
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Nitrate	mg/l	8.07	8.23	101.	90-110	1.96	20	WG616010
Chromium,Hexavalent	mg/l	0.565	0.576	94.0	85-115	1.93	20	WG616042
Chromium,Hexavalent	mg/l	0.577	0.578	96.0	85-115	0.173	20	WG616009
pH	su	6.04	6.01	100.	98-101	0.498	20	WG616370
1,1,1-Trichloroethane	mg/l	0.0226	0.0238	90.0	71-126	5.22	20	WG616106
1,1,2,2-Tetrachloroethane	mg/l	0.0240	0.0234	96.0	78-130	2.62	20	WG616106
1,1,2-Trichloroethane	mg/l	0.0260	0.0255	104.	81-121	2.15	20	WG616106
1,1-Dichloroethane	mg/l	0.0237	0.0232	95.0	73-123	2.17	20	WG616106
1,1-Dichloroethene	mg/l	0.0202	0.0198	81.0	54-134	2.07	20	WG616106
1,2-Dichlorobenzene	mg/l	0.0262	0.0256	105.	82-121	2.25	20	WG616106
1,2-Dichloroethane	mg/l	0.0260	0.0271	104.	69-128	3.88	20	WG616106
1,2-Dichloropropane	mg/l	0.0253	0.0247	101.	77-121	2.34	20	WG616106
1,3-Dichlorobenzene	mg/l	0.0249	0.0247	100.	77-127	0.780	20	WG616106
1,4-Dichlorobenzene	mg/l	0.0255	0.0251	102.	79-117	1.64	20	WG616106
2-Chloroethyl vinyl ether	mg/l	0.121	0.119	97.0	26-172	1.67	22	WG616106
Benzene	mg/l	0.0240	0.0237	96.0	72-119	1.13	20	WG616106
Bromodichloromethane	mg/l	0.0267	0.0263	107.	75-127	1.36	20	WG616106
Bromoform	mg/l	0.0274	0.0272	110.	61-136	0.750	20	WG616106
Bromomethane	mg/l	0.0246	0.0260	98.0	42-172	5.65	20	WG616106
Carbon tetrachloride	mg/l	0.0226	0.0224	90.0	63-129	1.02	20	WG616106
Chlorobenzene	mg/l	0.0259	0.0250	104.	78-123	3.39	20	WG616106
Chlorodibromomethane	mg/l	0.0279	0.0270	112.	73-128	3.27	20	WG616106
Chloroethane	mg/l	0.0258	0.0239	103.	52-164	7.70	20	WG616106
Chloroform	mg/l	0.0250	0.0253	100.	76-122	1.44	20	WG616106
Chloromethane	mg/l	0.0242	0.0232	97.0	50-141	3.90	20	WG616106
cis-1,3-Dichloropropene	mg/l	0.0275	0.0266	110.	74-124	3.41	20	WG616106
Ethylbenzene	mg/l	0.0253	0.0249	101.	77-124	1.46	20	WG616106
Methylene Chloride	mg/l	0.0201	0.0205	80.0	67-122	2.09	20	WG616106
Tetrachloroethene	mg/l	0.0257	0.0251	103.	69-131	2.51	20	WG616106
Toluene	mg/l	0.0254	0.0249	102.	75-114	2.06	20	WG616106
trans-1,2-Dichloroethene	mg/l	0.0203	0.0211	81.0	63-127	3.72	20	WG616106
trans-1,3-Dichloropropene	mg/l	0.0280	0.0274	112.	69-124	2.08	20	WG616106
Trichloroethene	mg/l	0.0249	0.0238	100.	69-131	4.76	20	WG616106
Vinyl chloride	mg/l	0.0223	0.0235	89.0	55-142	5.23	20	WG616106
4-Bromofluorobenzene				105.0	82-120			WG616106
Dibromofluoromethane				101.6	82-126			WG616106
Toluene-d8				108.2	92-112			WG616106
a,a,a-Trifluorotoluene				104.5	90-116			WG616106
1,2,4-Trichlorobenzene	mg/l	0.00716	0.00696	72.0	34-97	2.94	21	WG615983
2,4,6-Trichlorophenol	mg/l	0.00761	0.00723	76.0	38-113	5.14	29	WG615983
2,4-Dichlorophenol	mg/l	0.00807	0.00809	81.0	46-105	0.248	20	WG615983
2,4-Dimethylphenol	mg/l	0.00738	0.00744	74.0	47-108	0.794	20	WG615983
2,4-Dinitrophenol	mg/l	0.00225	0.00205	22.0	10-121	9.17	40	WG615983
2,4-Dinitrotoluene	mg/l	0.00915	0.00863	91.0	59-117	5.88	20	WG615983
2,6-Dinitrotoluene	mg/l	0.00902	0.00857	90.0	57-110	5.09	20	WG615983
2-Chloronaphthalene	mg/l	0.00816	0.00796	82.0	47-106	2.45	20	WG615983
2-Chlorophenol	mg/l	0.00662	0.00620	66.0	37-90	6.54	21	WG615983
2-Nitrophenol	mg/l	0.00804	0.00810	80.0	40-112	0.785	22	WG615983
3,3-Dichlorobenzidine	mg/l	0.00743	0.00734	74.0	58-116	1.22	20	WG615983

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Quality Assurance Report
Level II

L598664

October 15, 2012

		Laboratory Control Sample				Duplicate		
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
4,6-Dinitro-2-methylphenol	mg/l	0.00442	0.00381	44.0	21-119	14.9	40	WG615983
4-Bromophenyl-phenylether	mg/l	0.00876	0.00835	88.0	63-120	4.76	20	WG615983
4-Chloro-3-methylphenol	mg/l	0.00767	0.00760	77.0	50-105	0.915	20	WG615983
4-Chlorophenyl-phenylether	mg/l	0.00832	0.00795	83.0	58-115	4.60	20	WG615983
4-Nitrophenol	mg/l	0.00281	0.00270	28.0	10-53	3.95	40	WG615983
Acenaphthene	mg/l	0.00817	0.00798	82.0	52-107	2.37	20	WG615983
Acenaphthylene	mg/l	0.00875	0.00853	88.0	55-119	2.54	20	WG615983
Anthracene	mg/l	0.00960	0.00911	96.0	65-114	5.28	20	WG615983
1,2-Diphenylhydrazine	mg/l	0.00851	0.00841	85.0	52-113	1.18	20	WG615983
Benzidine	mg/l	0.00245	0.00246	24.0	10-55	0.283	40	WG615983
Benzo(a)anthracene	mg/l	0.00942	0.00913	94.0	68-113	3.10	20	WG615983
Benzo(a)pyrene	mg/l	0.00949	0.00953	95.0	68-115	0.443	20	WG615983
Benzo(b)fluoranthene	mg/l	0.00975	0.00947	98.0	67-114	2.90	20	WG615983
Benzo(g,h,i)perylene	mg/l	0.00585	0.00592	58.0	52-132	1.14	20	WG615983
Benzo(k)fluoranthene	mg/l	0.0102	0.0101	102.	62-116	1.16	20	WG615983
Benzylbutyl phthalate	mg/l	0.00828	0.00826	83.0	12-166	0.268	20	WG615983
Bis(2-chlorethoxy)methane	mg/l	0.00786	0.00792	79.0	56-116	0.717	20	WG615983
Bis(2-chloroethyl)ether	mg/l	0.00669	0.00667	67.0	39-109	0.282	23	WG615983
Bis(2-chloroisopropyl)ether	mg/l	0.00717	0.00680	72.0	43-108	5.30	20	WG615983
Bis(2-ethylhexyl)phthalate	mg/l	0.00932	0.00938	93.0	61-147	0.714	20	WG615983
Chrysene	mg/l	0.00966	0.00965	96.0	65-114	0.0942	20	WG615983
Di-n-butyl phthalate	mg/l	0.00929	0.00907	93.0	56-133	2.41	20	WG615983
Di-n-octyl phthalate	mg/l	0.00864	0.00859	86.0	59-143	0.622	20	WG615983
Dibenz(a,h)anthracene	mg/l	0.00731	0.00738	73.0	54-130	0.935	20	WG615983
Diethyl phthalate	mg/l	0.00804	0.00823	80.0	33-136	2.41	20	WG615983
Dimethyl phthalate	mg/l	0.00654	0.00628	65.0	10-152	4.04	22	WG615983
Fluoranthene	mg/l	0.00957	0.00916	96.0	66-120	4.40	20	WG615983
Fluorene	mg/l	0.00850	0.00861	85.0	58-110	1.28	20	WG615983
Hexachloro-1,3-butadiene	mg/l	0.00722	0.00711	72.0	34-115	1.48	22	WG615983
Hexachlorobenzene	mg/l	0.00751	0.00731	75.0	55-117	2.65	20	WG615983
Hexachlorocyclopentadiene	mg/l	0.00618	0.00596	62.0	20-121	3.67	27	WG615983
Hexachloroethane	mg/l	0.00668	0.00619	67.0	24-93	7.73	25	WG615983
Indeno(1,2,3-cd)pyrene	mg/l	0.00698	0.00703	70.0	56-129	0.727	20	WG615983
Isophorone	mg/l	0.00687	0.00671	69.0	55-108	2.39	20	WG615983
n-Nitrosodi-n-propylamine	mg/l	0.00779	0.00770	78.0	50-115	1.09	20	WG615983
n-Nitrosodimethylamine	mg/l	0.00339	0.00334	34.0	12-68	1.60	31	WG615983
n-Nitrosodiphenylamine	mg/l	0.00896	0.00844	90.0	55-98	6.07	20	WG615983
Naphthalene	mg/l	0.00763	0.00750	76.0	42-103	1.74	20	WG615983
Nitrobenzene	mg/l	0.00706	0.00711	71.0	39-102	0.655	20	WG615983
Pentachlorophenol	mg/l	0.00426	0.00433	43.0	10-101	1.60	40	WG615983
Phenanthrene	mg/l	0.00895	0.00850	89.0	61-110	5.17	20	WG615983
Phenol	mg/l	0.00263	0.00253	26.0	10-53	3.98	20	WG615983
Pyrene	mg/l	0.00831	0.00812	83.0	65-116	2.30	20	WG615983
2,4,6-Tribromophenol				80.55	16-147			WG615983
2-Fluorobiphenyl				83.52	29-127			WG615983
2-Fluorophenol				38.72	10-75			WG615983
Nitrobenzene-d5				74.04	17-119			WG615983
Phenol-d5				26.29	10-63			WG615983
p-Terphenyl-d14				81.25	40-174			WG615983
PCB 1016	mg/l	0.000579	0.000443	116.	32-126	26.7*	22	WG616225
PCB 1260	mg/l	0.000392	0.000423	78.0	58-128	7.60	20	WG616225
Decachlorobiphenyl				92.85	10-122.6			WG616225
Tetrachloro-m-xylene				76.43	15.3-114.2			WG616225
4,4-DDD	mg/l	0.000181	0.000186	90.0	60-123	2.55	20	WG616225
4,4-DDE	mg/l	0.000174	0.000173	87.0	50-120	0.658	22	WG616225
4,4-DDT	mg/l	0.000200	0.000193	100.	61-121	3.68	20	WG616225
Aldrin	mg/l	0.000113	0.000104	56.0	10-136	8.11	33	WG616225

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Quality Assurance Report
Level II

L598664

October 15, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
Alpha BHC	mg/l	0.000187	0.000183	93.0	58-114	1.88	21	WG616225
Beta BHC	mg/l	0.000187	0.000171	94.0	61-120	8.80	20	WG616225
Delta BHC	mg/l	0.000170	0.000170	85.0	57-120	0.207	21	WG616225
Dieldrin	mg/l	0.000184	0.000183	92.0	62-123	0.453	20	WG616225
Endosulfan I	mg/l	0.000183	0.000182	92.0	63-123	0.741	20	WG616225
Endosulfan II	mg/l	0.000207	0.000209	104.	63-124	0.734	20	WG616225
Endosulfan sulfate	mg/l	0.000202	0.000199	101.	59-125	1.42	21	WG616225
Endrin	mg/l	0.000181	0.000182	90.0	60-123	0.947	20	WG616225
Endrin aldehyde	mg/l	0.000194	0.000183	97*	42-92	5.69	21	WG616225
Endrin ketone	mg/l	0.000215	0.000211	107.	60-117	1.86	20	WG616225
Gamma BHC	mg/l	0.000188	0.000185	94.0	59-116	1.67	20	WG616225
Heptachlor	mg/l	0.000137	0.000133	68.0	10-131	3.20	28	WG616225
Heptachlor epoxide	mg/l	0.000184	0.000180	92.0	61-118	1.95	20	WG616225
Hexachlorobenzene	mg/l	0.000115	0.000120	58.0	28-116	3.75	27	WG616225
Methoxychlor	mg/l	0.000207	0.000201	103.	66-122	2.59	20	WG616225
Decachlorobiphenyl				83.36	10-122.6			WG616225
Tetrachloro-m-xylene				70.67	15.3-114.2			WG616225
2,4,5-T	mg/l	0.00538	0.00525	108.	46-116	2.55	20	WG616404
2,4,5-TP (Silvex)	mg/l	0.00537	0.00524	107.	53.6-122	2.45	20	WG616404
2,4-D	mg/l	0.00479	0.00467	96.0	47.4-113	2.63	20	WG616404
2,4-DB	mg/l	0.00338	0.00328	68.0	48.4-118	2.97	20	WG616404
Dalapon	mg/l	0.00427	0.00400	85.0	40.5-102	6.72	20	WG616404
Dicamba	mg/l	0.00505	0.00488	101.	57.2-111	3.40	20	WG616404
Dichloroprop	mg/l	0.00564	0.00564	113.	55.8-128	0.0722	20	WG616404
Dinoseb	mg/l	0.00309	0.00248	62.0	41-121	21.7*	20.4	WG616404
MCPA	mg/l	0.726	0.752	145*	24.1-143	3.53	23.9	WG616404
MCPP	mg/l	0.706	0.691	141.	49-198	2.17	20	WG616404
2,4-Dichlorophenyl Acetic Acid				88.09	42-112			WG616404
Suspended Solids	mg/l	732.	756.	95.0	85-115	3.23	5	WG616897
Dissolved Solids	mg/l	8620	8630	98.0	85-115	0.0927	5	WG616901

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1-Trichloroethane	mg/l	0.0245	0	.025	98.1	58-137	L598618-02	WG616006
1,1,2,2-Tetrachloroethane	mg/l	0.0321	0	.025	128.	64-149	L598618-02	WG616006
1,1,2-Trichloroethane	mg/l	0.0265	0	.025	106.	73-128	L598618-02	WG616006
1,1-Dichloroethane	mg/l	0.0252	0	.025	101.	58-133	L598618-02	WG616006
1,1-Dichloroethene	mg/l	0.0183	0	.025	73.2	32-152	L598618-02	WG616006
1,2-Dichlorobenzene	mg/l	0.0273	0	.025	109.	75-125	L598618-02	WG616006
1,2-Dichloroethane	mg/l	0.0274	0	.025	110.	59-135	L598618-02	WG616006
1,2-Dichloropropane	mg/l	0.0275	0	.025	110.	68-126	L598618-02	WG616006
1,3-Dichlorobenzene	mg/l	0.0252	0	.025	101.	69-131	L598618-02	WG616006
1,4-Dichlorobenzene	mg/l	0.0260	0	.025	104.	70-123	L598618-02	WG616006
2-Chloroethyl vinyl ether	mg/l	0.00132	0	.125	1.06*	10-161	L598618-02	WG616006
Benzene	mg/l	0.0239	0	.025	95.4	51-134	L598618-02	WG616006
Bromodichloromethane	mg/l	0.0261	0	.025	104.	67-132	L598618-02	WG616006
Bromoform	mg/l	0.0257	0	.025	103.	59-137	L598618-02	WG616006
Bromomethane	mg/l	0.0154	0	.025	61.4	23-177	L598618-02	WG616006
Carbon tetrachloride	mg/l	0.0248	0	.025	99.1	49-140	L598618-02	WG616006
Chlorobenzene	mg/l	0.0240	0	.025	96.2	69-126	L598618-02	WG616006
Chlorodibromomethane	mg/l	0.0255	0	.025	102.	68-130	L598618-02	WG616006
Chloroethane	mg/l	0.0187	0	.025	74.7	32-177	L598618-02	WG616006

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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L598664

October 15, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chloroform	mg/l	0.0323	0.00740	.025	99.6	64-130	L598618-02	WG616006
Chloromethane	mg/l	0.0251	0	.025	100.	27-155	L598618-02	WG616006
cis-1,3-Dichloropropene	mg/l	0.0258	0	.025	103.	63-127	L598618-02	WG616006
Ethylbenzene	mg/l	0.0242	0	.025	96.6	64-135	L598618-02	WG616006
Methylene Chloride	mg/l	0.0241	0	.025	96.2	52-130	L598618-02	WG616006
Tetrachloroethene	mg/l	0.0225	0	.025	89.9	56-139	L598618-02	WG616006
Toluene	mg/l	0.0252	0	.025	101.	61-126	L598618-02	WG616006
trans-1,2-Dichloroethene	mg/l	0.0215	0	.025	85.9	45-137	L598618-02	WG616006
trans-1,3-Dichloropropene	mg/l	0.0257	0	.025	103.	59-130	L598618-02	WG616006
Trichloroethene	mg/l	0.0229	0	.025	91.5	40-155	L598618-02	WG616006
Vinyl chloride	mg/l	0.0216	0	.025	86.4	32-159	L598618-02	WG616006
4-Bromofluorobenzene					102.2	82-120		WG616006
Dibromofluoromethane					102.4	82-126		WG616006
Toluene-d8					104.7	92-112		WG616006
a,a,a-Trifluorotoluene					99.46	90-116		WG616006
Nitrate	mg/l	4.82	0	5	96.4	80-120	L598693-01	WG616010
Chromium,Hexavalent	mg/l	0.511	0	.5	102.	85-115	L598664-02	WG616042
Chromium,Hexavalent	mg/l	0.482	0	.5	96.4	85-115	L598630-01	WG616009
Mercury	mg/l	0.00338	0.000210	.003	106.	70-130	L598641-01	WG616043
Aluminum,Dissolved	mg/l	1.03	0	1	103.	75-125	L598652-01	WG616679
Iron,Dissolved	mg/l	0.933	0	1	93.3	75-125	L598652-01	WG616679
1,1,1-Trichloroethane	mg/l	0.0262	0	.025	105.	58-137	L598836-27	WG616106
1,1,2,2-Tetrachloroethane	mg/l	0.0254	0	.025	102.	64-149	L598836-27	WG616106
1,1,2-Trichloroethane	mg/l	0.0266	0	.025	106.	73-128	L598836-27	WG616106
1,1-Dichloroethane	mg/l	0.0237	0	.025	94.9	58-133	L598836-27	WG616106
1,1-Dichloroethene	mg/l	0.0238	0.00290	.025	83.8	32-152	L598836-27	WG616106
1,2-Dichlorobenzene	mg/l	0.0258	0	.025	103.	75-125	L598836-27	WG616106
1,2-Dichloroethane	mg/l	0.0261	0	.025	104.	59-135	L598836-27	WG616106
1,2-Dichloropropane	mg/l	0.0243	0	.025	97.1	68-126	L598836-27	WG616106
1,3-Dichlorobenzene	mg/l	0.0260	0	.025	104.	69-131	L598836-27	WG616106
1,4-Dichlorobenzene	mg/l	0.0252	0	.025	101.	70-123	L598836-27	WG616106
2-Chloroethyl vinyl ether	mg/l	0.00199	0	.125	1.59*	10-161	L598836-27	WG616106
Benzene	mg/l	0.0234	0	.025	93.5	51-134	L598836-27	WG616106
Bromodichloromethane	mg/l	0.0265	0	.025	106.	67-132	L598836-27	WG616106
Bromoform	mg/l	0.0273	0	.025	109.	59-137	L598836-27	WG616106
Bromomethane	mg/l	0.0217	0	.025	86.7	23-177	L598836-27	WG616106
Carbon tetrachloride	mg/l	0.0244	0	.025	97.4	49-140	L598836-27	WG616106
Chlorobenzene	mg/l	0.0264	0	.025	105.	69-126	L598836-27	WG616106
Chlorodibromomethane	mg/l	0.0277	0	.025	111.	68-130	L598836-27	WG616106
Chloroethane	mg/l	0.0229	0	.025	91.7	32-177	L598836-27	WG616106
Chloroform	mg/l	0.0256	0	.025	102.	64-130	L598836-27	WG616106
Chloromethane	mg/l	0.0205	0	.025	82.1	27-155	L598836-27	WG616106
cis-1,3-Dichloropropene	mg/l	0.0251	0	.025	100.	63-127	L598836-27	WG616106
Ethylbenzene	mg/l	0.0263	0	.025	105.	64-135	L598836-27	WG616106
Methylene Chloride	mg/l	0.0202	0	.025	80.9	52-130	L598836-27	WG616106
Tetrachloroethene	mg/l	0.0260	0	.025	104.	56-139	L598836-27	WG616106
Toluene	mg/l	0.0253	0	.025	101.	61-126	L598836-27	WG616106

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Quality Assurance Report
Level II

L598664

October 15, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
trans-1,2-Dichloroethene	mg/l	0.0215	0	.025	86.1	45-137	L598836-27	WG616106
trans-1,3-Dichloropropene	mg/l	0.0264	0	.025	106.	59-130	L598836-27	WG616106
Trichloroethene	mg/l	0.0238	0	.025	95.3	40-155	L598836-27	WG616106
Vinyl chloride	mg/l	0.0217	0	.025	86.8	32-159	L598836-27	WG616106
4-Bromofluorobenzene					106.0	82-120		WG616106
Dibromofluoromethane					102.5	82-126		WG616106
Toluene-d8					105.0	92-112		WG616106
a,a,a-Trifluorotoluene					105.3	90-116		WG616106
Aluminum	mg/l	1.16	0.150	1	101.	75-125	L598649-01	WG616729
Iron	mg/l	1.01	0.0215	1	98.8	75-125	L598649-01	WG616729
Antimony	mg/l	0.0540	0.000740	.05	106.	75-125	L598728-01	WG616751
Arsenic	mg/l	0.0516	0.00120	.05	101.	75-125	L598728-01	WG616751
Barium	mg/l	0.0584	0.00721	.05	102.	75-125	L598728-01	WG616751
Beryllium	mg/l	0.0530	0	.05	106.	75-125	L598728-01	WG616751
Cadmium	mg/l	0.0528	0	.05	106.	75-125	L598728-01	WG616751
Chromium	mg/l	0.0532	0	.05	106.	75-125	L598728-01	WG616751
Copper	mg/l	0.109	0.0583	.05	101.	75-125	L598728-01	WG616751
Lead	mg/l	0.0498	0.000310	.05	99.0	75-125	L598728-01	WG616751
Manganese	mg/l	0.0510	0.00165	.05	98.7	75-125	L598728-01	WG616751
Nickel	mg/l	0.0518	0	.05	104.	75-125	L598728-01	WG616751
Selenium	mg/l	0.0491	0	.05	98.2	75-125	L598728-01	WG616751
Silver	mg/l	0.0503	0.000500	.05	99.6	75-125	L598728-01	WG616751
Thallium	mg/l	0.0496	0.0000700	.05	99.1	75-125	L598728-01	WG616751
Zinc	mg/l	0.351	0.298	.05	106.	75-125	L598728-01	WG616751
Arsenic,Dissolved	mg/l	0.0539	0.00330	.05	101.	75-125	L598390-02	WG617056
Beryllium,Dissolved	mg/l	0.0477	0	.05	95.4	75-125	L598390-02	WG617056
Cadmium,Dissolved	mg/l	0.0551	0.000960	.05	108.	75-125	L598390-02	WG617056
Chromium,Dissolved	mg/l	0.0508	0	.05	102.	75-125	L598390-02	WG617056
Copper,Dissolved	mg/l	0.0497	0.00120	.05	97.0	75-125	L598390-02	WG617056
Lead,Dissolved	mg/l	0.0526	0	.05	105.	75-125	L598390-02	WG617056
Manganese,Dissolved	mg/l	0.0659	0.0166	.05	98.6	75-125	L598390-02	WG617056
Nickel,Dissolved	mg/l	0.0560	0.00720	.05	97.6	75-125	L598390-02	WG617056
Selenium,Dissolved	mg/l	0.0864	0.0340	.05	105.	75-125	L598390-02	WG617056
Thallium,Dissolved	mg/l	0.0515	0	.05	103.	75-125	L598390-02	WG617056
Zinc,Dissolved	mg/l	0.0594	0	.05	119.	75-125	L598390-02	WG617056
Barium,Dissolved	mg/l	0.127	0.0800	.025	94.0	75-125	L598390-02	WG617056
Silver,Dissolved	mg/l	0.0515	0.000550	.05	102.	75-125	L598645-01	WG617240
Antimony,Dissolved	mg/l	0.0549	0.00490	.05	100.	75-125	L598390-02	WG617056

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1-Trichloroethane	mg/l	0.0238	0.0245	95.2	58-137	3.04	20	L598618-02	WG616006
1,1,2,2-Tetrachloroethane	mg/l	0.0283	0.0321	113.	64-149	12.7	20	L598618-02	WG616006
1,1,2-Trichloroethane	mg/l	0.0259	0.0265	103.	73-128	2.58	20	L598618-02	WG616006
1,1-Dichloroethane	mg/l	0.0253	0.0252	101.	58-133	0.530	20	L598618-02	WG616006
1,1-Dichloroethene	mg/l	0.0182	0.0183	72.8	32-152	0.540	20	L598618-02	WG616006
1,2-Dichlorobenzene	mg/l	0.0254	0.0273	101.	75-125	7.28	20	L598618-02	WG616006
1,2-Dichloroethane	mg/l	0.0273	0.0274	109.	59-135	0.600	20	L598618-02	WG616006

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		Matrix Spike							
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,2-Dichloropropane	mg/l	0.0271	0.0275	108.	68-126	1.61	20	L598618-02	WG616006
1,3-Dichlorobenzene	mg/l	0.0238	0.0252	95.4	69-131	5.37	20	L598618-02	WG616006
1,4-Dichlorobenzene	mg/l	0.0243	0.0260	97.3	70-123	6.52	20	L598618-02	WG616006
2-Chloroethyl vinyl ether	mg/l	0.000444	0.00132	0.355*	10-161	99.3*	40	L598618-02	WG616006
Benzene	mg/l	0.0238	0.0239	95.2	51-134	0.310	20	L598618-02	WG616006
Bromodichloromethane	mg/l	0.0262	0.0261	105.	67-132	0.500	20	L598618-02	WG616006
Bromoform	mg/l	0.0238	0.0257	95.0	59-137	8.00	20	L598618-02	WG616006
Bromomethane	mg/l	0.0149	0.0154	59.6	23-177	2.92	21	L598618-02	WG616006
Carbon tetrachloride	mg/l	0.0239	0.0248	95.5	49-140	3.70	20	L598618-02	WG616006
Chlorobenzene	mg/l	0.0237	0.0240	94.7	69-126	1.53	20	L598618-02	WG616006
Chlorodibromomethane	mg/l	0.0249	0.0255	99.4	68-130	2.39	20	L598618-02	WG616006
Chloroethane	mg/l	0.0181	0.0187	72.6	32-177	2.95	21	L598618-02	WG616006
Chloroform	mg/l	0.0319	0.0323	97.8	64-130	1.39	20	L598618-02	WG616006
Chloromethane	mg/l	0.0255	0.0251	102.	27-155	1.79	20	L598618-02	WG616006
cis-1,3-Dichloropropene	mg/l	0.0250	0.0258	100.	63-127	3.01	20	L598618-02	WG616006
Ethylbenzene	mg/l	0.0234	0.0242	93.6	64-135	3.21	20	L598618-02	WG616006
Methylene Chloride	mg/l	0.0241	0.0241	96.4	52-130	0.200	20	L598618-02	WG616006
Tetrachloroethene	mg/l	0.0219	0.0225	87.6	56-139	2.58	20	L598618-02	WG616006
Toluene	mg/l	0.0244	0.0252	97.5	61-126	3.26	20	L598618-02	WG616006
trans-1,2-Dichloroethene	mg/l	0.0216	0.0215	86.3	45-137	0.510	20	L598618-02	WG616006
trans-1,3-Dichloropropene	mg/l	0.0250	0.0257	99.9	59-130	3.00	20	L598618-02	WG616006
Trichloroethene	mg/l	0.0228	0.0229	91.2	40-155	0.340	20	L598618-02	WG616006
Vinyl chloride	mg/l	0.0218	0.0216	87.0	32-159	0.670	21	L598618-02	WG616006
4-Bromofluorobenzene				102.4	82-120				WG616006
Dibromofluoromethane				102.3	82-126				WG616006
Toluene-d8				104.2	92-112				WG616006
a,a,a-Trifluorotoluene				98.74	90-116				WG616006
Nitrate	mg/l	4.81	4.82	96.2	80-120	0.208	20	L598693-01	WG616010
Chromium,Hexavalent	mg/l	0.482	0.511	96.4	85-115	5.84	20	L598664-02	WG616042
Chromium,Hexavalent	mg/l	0.491	0.482	98.2	85-115	1.85	20	L598630-01	WG616009
Mercury	mg/l	0.00355	0.00338	111.	70-130	4.91	20	L598641-01	WG616043
Aluminum,Dissolved	mg/l	1.03	1.03	103.	75-125	0	20	L598652-01	WG616679
Iron,Dissolved	mg/l	0.944	0.933	94.4	75-125	1.17	20	L598652-01	WG616679
1,1,1-Trichloroethane	mg/l	0.0254	0.0262	101.	58-137	3.41	20	L598836-27	WG616106
1,1,2,2-Tetrachloroethane	mg/l	0.0259	0.0254	104.	64-149	1.97	20	L598836-27	WG616106
1,1,2-Trichloroethane	mg/l	0.0267	0.0266	107.	73-128	0.520	20	L598836-27	WG616106
1,1-Dichloroethane	mg/l	0.0241	0.0237	96.3	58-133	1.50	20	L598836-27	WG616106
1,1-Dichloroethene	mg/l	0.0241	0.0238	84.8	32-152	1.03	20	L598836-27	WG616106
1,2-Dichlorobenzene	mg/l	0.0260	0.0258	104.	75-125	0.790	20	L598836-27	WG616106
1,2-Dichloroethane	mg/l	0.0256	0.0261	102.	59-135	2.05	20	L598836-27	WG616106
1,2-Dichloropropane	mg/l	0.0257	0.0243	103.	68-126	5.67	20	L598836-27	WG616106
1,3-Dichlorobenzene	mg/l	0.0259	0.0260	104.	69-131	0.470	20	L598836-27	WG616106
1,4-Dichlorobenzene	mg/l	0.0249	0.0252	99.7	70-123	1.07	20	L598836-27	WG616106
2-Chloroethyl vinyl ether	mg/l	0.000533	0.00199	0.426*	10-161	115.*	40	L598836-27	WG616106
Benzene	mg/l	0.0232	0.0234	92.8	51-134	0.760	20	L598836-27	WG616106
Bromodichloromethane	mg/l	0.0261	0.0265	104.	67-132	1.80	20	L598836-27	WG616106
Bromoform	mg/l	0.0270	0.0273	108.	59-137	1.01	20	L598836-27	WG616106

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		Matrix Spike Duplicate							
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Bromomethane	mg/l	0.0217	0.0217	86.7	23-177	0.0300	21	L598836-27	WG616106
Carbon tetrachloride	mg/l	0.0243	0.0244	97.2	49-140	0.270	20	L598836-27	WG616106
Chlorobenzene	mg/l	0.0262	0.0264	105.	69-126	0.490	20	L598836-27	WG616106
Chlorodibromomethane	mg/l	0.0281	0.0277	112.	68-130	1.61	20	L598836-27	WG616106
Chloroethane	mg/l	0.0227	0.0229	90.8	32-177	1.09	21	L598836-27	WG616106
Chloroform	mg/l	0.0253	0.0256	101.	64-130	1.14	20	L598836-27	WG616106
Chloromethane	mg/l	0.0201	0.0205	80.5	27-155	2.02	20	L598836-27	WG616106
cis-1,3-Dichloropropene	mg/l	0.0254	0.0251	102.	63-127	1.36	20	L598836-27	WG616106
Ethylbenzene	mg/l	0.0261	0.0263	104.	64-135	0.870	20	L598836-27	WG616106
Methylene Chloride	mg/l	0.0186	0.0202	74.2	52-130	8.61	20	L598836-27	WG616106
Tetrachloroethene	mg/l	0.0275	0.0260	110.	56-139	5.53	20	L598836-27	WG616106
Toluene	mg/l	0.0249	0.0253	99.7	61-126	1.63	20	L598836-27	WG616106
trans-1,2-Dichloroethene	mg/l	0.0203	0.0215	81.1	45-137	6.00	20	L598836-27	WG616106
trans-1,3-Dichloropropene	mg/l	0.0261	0.0264	104.	59-130	1.47	20	L598836-27	WG616106
Trichloroethene	mg/l	0.0244	0.0238	97.7	40-155	2.52	20	L598836-27	WG616106
Vinyl chloride	mg/l	0.0211	0.0217	84.6	32-159	2.64	21	L598836-27	WG616106
4-Bromofluorobenzene				107.8	82-120				WG616106
Dibromofluoromethane				101.3	82-126				WG616106
Toluene-d8				106.2	92-112				WG616106
a,a,a-Trifluorotoluene				104.3	90-116				WG616106
Aluminum	mg/l	1.12	1.16	97.0	75-125	3.51	20	L598649-01	WG616729
Iron	mg/l	1.00	1.01	97.8	75-125	0.995	20	L598649-01	WG616729
Antimony	mg/l	0.0557	0.0540	110.	75-125	3.10	20	L598728-01	WG616751
Arsenic	mg/l	0.0523	0.0516	102.	75-125	1.35	20	L598728-01	WG616751
Barium	mg/l	0.0590	0.0584	104.	75-125	1.02	20	L598728-01	WG616751
Beryllium	mg/l	0.0535	0.0530	107.	75-125	0.939	20	L598728-01	WG616751
Cadmium	mg/l	0.0530	0.0528	106.	75-125	0.378	20	L598728-01	WG616751
Chromium	mg/l	0.0531	0.0532	106.	75-125	0.188	20	L598728-01	WG616751
Copper	mg/l	0.110	0.109	103.	75-125	0.913	20	L598728-01	WG616751
Lead	mg/l	0.0508	0.0498	101.	75-125	1.99	20	L598728-01	WG616751
Manganese	mg/l	0.0515	0.0510	99.7	75-125	0.976	20	L598728-01	WG616751
Nickel	mg/l	0.0523	0.0518	105.	75-125	0.961	20	L598728-01	WG616751
Selenium	mg/l	0.0508	0.0491	102.	75-125	3.40	20	L598728-01	WG616751
Silver	mg/l	0.0507	0.0503	100.	75-125	0.792	20	L598728-01	WG616751
Thallium	mg/l	0.0499	0.0496	99.7	75-125	0.603	20	L598728-01	WG616751
Zinc	mg/l	0.352	0.351	108.	75-125	0.284	20	L598728-01	WG616751
Arsenic,Dissolved	mg/l	0.0541	0.0539	102.	75-125	0.370	20	L598390-02	WG617056
Beryllium,Dissolved	mg/l	0.0480	0.0477	96.0	75-125	0.627	20	L598390-02	WG617056
Cadmium,Dissolved	mg/l	0.0541	0.0551	106.	75-125	1.83	20	L598390-02	WG617056
Chromium,Dissolved	mg/l	0.0506	0.0508	101.	75-125	0.394	20	L598390-02	WG617056
Copper,Dissolved	mg/l	0.0500	0.0497	97.6	75-125	0.602	20	L598390-02	WG617056
Lead,Dissolved	mg/l	0.0515	0.0526	103.	75-125	2.11	20	L598390-02	WG617056
Manganese,Dissolved	mg/l	0.0666	0.0659	100.	75-125	1.06	20	L598390-02	WG617056
Nickel,Dissolved	mg/l	0.0559	0.0560	97.4	75-125	0.179	20	L598390-02	WG617056
Selenium,Dissolved	mg/l	0.0877	0.0864	107.	75-125	1.49	20	L598390-02	WG617056
Thallium,Dissolved	mg/l	0.0513	0.0515	103.	75-125	0.389	20	L598390-02	WG617056
Zinc,Dissolved	mg/l	0.0586	0.0594	117.	75-125	1.36	20	L598390-02	WG617056
Barium,Dissolved	mg/l	0.131	0.127	102.	75-125	3.10	20	L598390-02	WG617056
Silver,Dissolved	mg/l	0.0516	0.0515	102.	75-125	0.194	20	L598645-01	WG617240

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L598664

October 15, 2012

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Antimony,Dissolved	mg/l	0.0542	0.0549	98.6	75-125	1.28	20	L598390-02	WG617056

Batch number /Run number / Sample number cross reference

WG616006: R2374713: L598664-01
WG616010: R2375474: L598664-01 02
WG616042: R2376578: L598664-02
WG616106: R2376579: L598664-02
WG616009: R2376615: L598664-01
WG616043: R2376657: L598664-01 02
WG616370: R2377714: L598664-01 02
WG616679: R2378680: L598664-01 02
WG615983: R2380557: L598664-01 02
WG616729: R2381057: L598664-01 02
WG616225: R2381101: L598664-01 02
WG616404: R2382039: L598664-01 02
WG616751: R2382680: L598664-01 02
WG616897: R2383038: L598664-01 02
WG616901: R2383777: L598664-01 02
WG617056: R2385397: L598664-01 02
WG617240: R2385438: L598664-01 02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L598664

October 15, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

Report Summary

Monday October 15, 2012

Report Number: L598943
Samples Received: 10/04/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-01

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1

Collected By : I-Ping Chen
Collection Date : 10/03/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Nitrate	7.7	0.50	mg/l	300.0	10/04/12	5
Chromium,Hexavalent	BDL	0.010	mg/l	3500Cr-D	10/04/12	1
Chromium,Trivalent	0.26	0.020	mg/l	Calc.	10/10/12	20
pH	7.3		su	4500H-B	10/05/12	1
Dissolved Solids	1600	10.	mg/l	2540C	10/10/12	1
Suspended Solids	40000	1.0	mg/l	2540D	10/11/12	1
Antimony	BDL	0.0010	mg/l	200.8	10/09/12	1
Antimony,Dissolved	BDL	0.0010	mg/l	200.8	10/11/12	1
Arsenic	0.18	0.020	mg/l	200.8	10/10/12	20
Arsenic,Dissolved	0.0094	0.0010	mg/l	200.8	10/10/12	1
Barium	2.5	0.20	mg/l	200.8	10/10/12	100
Barium,Dissolved	0.57	0.020	mg/l	200.8	10/10/12	10
Beryllium	0.033	0.0010	mg/l	200.8	10/09/12	1
Beryllium,Dissolved	0.020	0.0010	mg/l	200.8	10/10/12	1
Cadmium	0.0088	0.00050	mg/l	200.8	10/09/12	1
Cadmium,Dissolved	0.0074	0.00050	mg/l	200.8	10/10/12	1
Chromium	0.26	0.020	mg/l	200.8	10/10/12	20
Chromium,Dissolved	0.030	0.0010	mg/l	200.8	10/10/12	1
Copper	0.97	0.020	mg/l	200.8	10/10/12	20
Copper,Dissolved	0.20	0.0010	mg/l	200.8	10/10/12	1
Lead	0.44	0.0010	mg/l	200.8	10/09/12	1
Lead,Dissolved	0.067	0.0010	mg/l	200.8	10/10/12	1
Manganese	49.	1.0	mg/l	200.8	10/10/12	500
Manganese,Dissolved	28.	0.60	mg/l	200.8	10/10/12	300
Nickel	0.41	0.020	mg/l	200.8	10/10/12	20
Nickel,Dissolved	0.17	0.0010	mg/l	200.8	10/10/12	1
Selenium	0.023	0.020	mg/l	200.8	10/10/12	20
Selenium,Dissolved	0.010	0.0010	mg/l	200.8	10/10/12	1
Silver	0.0011	0.00050	mg/l	200.8	10/09/12	1
Silver,Dissolved	0.00052	0.00050	mg/l	200.8	10/10/12	1
Thallium	0.0047	0.0010	mg/l	200.8	10/09/12	1
Thallium,Dissolved	BDL	0.0010	mg/l	200.8	10/10/12	1
Zinc	1.8	0.20	mg/l	200.8	10/10/12	20
Zinc,Dissolved	0.38	0.010	mg/l	200.8	10/10/12	1
Mercury	BDL	0.00020	mg/l	245.1	10/04/12	1
Aluminum	440	0.10	mg/l	200.7	10/11/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-01 (PH) - 7.3@14.6c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-01

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 1

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum,Dissolved	25.	0.10	mg/l	200.7	10/09/12	1
Iron	480	0.10	mg/l	200.7	10/11/12	1
Iron,Dissolved	20.	0.10	mg/l	200.7	10/09/12	1
PP Volatile Organics						
Benzene	BDL	0.0010	mg/l	624	10/04/12	1
Bromodichloromethane	BDL	0.0010	mg/l	624	10/04/12	1
Bromoform	BDL	0.0010	mg/l	624	10/04/12	1
Bromomethane	BDL	0.0050	mg/l	624	10/04/12	1
Carbon tetrachloride	BDL	0.0010	mg/l	624	10/04/12	1
Chlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
Chlorodibromomethane	BDL	0.0010	mg/l	624	10/04/12	1
Chloroethane	BDL	0.0050	mg/l	624	10/04/12	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	624	10/04/12	1
Chloroform	BDL	0.0050	mg/l	624	10/04/12	1
Chloromethane	BDL	0.0025	mg/l	624	10/04/12	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,1-Dichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,2-Dichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,1-Dichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
1,2-Dichloropropane	BDL	0.0010	mg/l	624	10/04/12	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/04/12	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/04/12	1
Ethylbenzene	BDL	0.0010	mg/l	624	10/04/12	1
Methylene Chloride	BDL	0.0050	mg/l	624	10/04/12	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	624	10/04/12	1
Tetrachloroethene	0.0096	0.0010	mg/l	624	10/04/12	1
Toluene	BDL	0.0050	mg/l	624	10/04/12	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
Trichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
Vinyl chloride	BDL	0.0010	mg/l	624	10/04/12	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	624	10/04/12	1
Dibromofluoromethane	92.9		% Rec.	624	10/04/12	1
a,a,a-Trifluorotoluene	99.9		% Rec.	624	10/04/12	1
4-Bromofluorobenzene	98.0		% Rec.	624	10/04/12	1
Pesticide/PCBs						
Aldrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Alpha BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-01 (PH) - 7.3@14.6c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-01

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1

Collected By : I-Ping Chen
Collection Date : 10/03/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Beta BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Delta BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Gamma BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Chlordane	BDL	0.00050	mg/l	8081A/8082	10/09/12	1
4,4-DDD	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
4,4-DDE	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
4,4-DDT	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Dieldrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan I	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan II	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan sulfate	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin aldehyde	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin ketone	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Heptachlor	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Heptachlor epoxide	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Hexachlorobenzene	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Methoxychlor	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Toxaphene	BDL	0.00050	mg/l	8081A/8082	10/09/12	1
PCB 1016	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1221	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1232	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1242	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1248	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1254	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1260	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	67.9		% Rec.	8081A/8082	10/08/12	1
Tetrachloro-m-xylene	86.1		% Rec.	8081A/8082	10/08/12	1
PP Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	625	10/05/12	1
Acenaphthylene	BDL	0.0010	mg/l	625	10/05/12	1
Anthracene	BDL	0.0010	mg/l	625	10/05/12	1
Benzidine	BDL	0.010	mg/l	625	10/05/12	1
Benzo(a)anthracene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(a)pyrene	BDL	0.0010	mg/l	625	10/05/12	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	625	10/05/12	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	625	10/05/12	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	625	10/05/12	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	625	10/05/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-01 (PH) - 7.3@14.6c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-01

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 1

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloronaphthalene	BDL	0.0010	mg/l	625	10/05/12	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	625	10/05/12	1
Chrysene	BDL	0.0010	mg/l	625	10/05/12	1
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	625	10/05/12	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	625	10/05/12	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	625	10/05/12	1
Fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Fluorene	BDL	0.0010	mg/l	625	10/05/12	1
Hexachlorobenzene	BDL	0.0010	mg/l	625	10/05/12	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	625	10/05/12	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	625	10/05/12	1
Hexachloroethane	BDL	0.010	mg/l	625	10/05/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	625	10/05/12	1
Isophorone	BDL	0.010	mg/l	625	10/05/12	1
Naphthalene	BDL	0.0010	mg/l	625	10/05/12	1
Nitrobenzene	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	625	10/05/12	1
Phenanthrene	BDL	0.0010	mg/l	625	10/05/12	1
Benzylbutyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Di-n-butyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Diethyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Dimethyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Di-n-octyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Pyrene	BDL	0.0010	mg/l	625	10/05/12	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	625	10/05/12	1
PP Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	625	10/05/12	1
2-Chlorophenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dichlorophenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dimethylphenol	BDL	0.010	mg/l	625	10/05/12	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dinitrophenol	BDL	0.010	mg/l	625	10/05/12	1
2-Nitrophenol	BDL	0.010	mg/l	625	10/05/12	1
4-Nitrophenol	BDL	0.010	mg/l	625	10/05/12	1
Pentachlorophenol	BDL	0.010	mg/l	625	10/05/12	1
Phenol	BDL	0.010	mg/l	625	10/05/12	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	625	10/05/12	1
1,2-Diphenylhydrazine	BDL	0.010	mg/l	625	10/05/12	1
Surrogate Recovery						
2-Fluorophenol	0.420		% Rec.	625	10/05/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-01 (PH) - 7.3@14.6c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-01

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 1

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phenol-d5	0.100		% Rec.	625	10/05/12	1
Nitrobenzene-d5	76.1		% Rec.	625	10/05/12	1
2-Fluorobiphenyl	92.1		% Rec.	625	10/05/12	1
2,4,6-Tribromophenol	3.33		% Rec.	625	10/05/12	1
p-Terphenyl-d14	91.7		% Rec.	625	10/05/12	1
Herbicides						
2,4-D	BDL	0.0025	mg/l	8151	10/09/12	1.25
Dalapon	BDL	0.25	mg/l	8151	10/09/12	1.25
2,4-DB	BDL	0.0025	mg/l	8151	10/09/12	1.25
Dicamba	BDL	0.0025	mg/l	8151	10/09/12	1.25
Dichloroprop	BDL	0.0025	mg/l	8151	10/09/12	1.25
Dinoseb	BDL	0.0025	mg/l	8151	10/09/12	1.25
MCPA	BDL	0.12	mg/l	8151	10/09/12	1.25
MCPP	BDL	0.12	mg/l	8151	10/09/12	1.25
2,4,5-T	BDL	0.0025	mg/l	8151	10/09/12	1.25
2,4,5-TP (Silvex)	BDL	0.0025	mg/l	8151	10/09/12	1.25
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	83.3		% Rec.	8151	10/09/12	1.25

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 10/15/12 08:42 Revised: 10/15/12 13:07
L598943-01 (PH) - 7.3@14.6c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-02

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 2

Collected By : I-Ping Chen
Collection Date : 10/03/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Nitrate	21.	0.50	mg/l	300.0	10/04/12	5
Chromium,Hexavalent	0.010	0.010	mg/l	3500Cr-D	10/04/12	1
Chromium,Trivalent	0.22	0.020	mg/l	Calc.	10/10/12	20
pH	7.5		su	4500H-B	10/05/12	1
Dissolved Solids	1200	10.	mg/l	2540C	10/10/12	1
Suspended Solids	28000	1.0	mg/l	2540D	10/11/12	1
Antimony	BDL	0.0010	mg/l	200.8	10/09/12	1
Antimony,Dissolved	BDL	0.0010	mg/l	200.8	10/11/12	1
Arsenic	0.039	0.020	mg/l	200.8	10/10/12	20
Arsenic,Dissolved	0.0083	0.0010	mg/l	200.8	10/10/12	1
Barium	2.1	0.10	mg/l	200.8	10/10/12	50
Barium,Dissolved	0.51	0.020	mg/l	200.8	10/10/12	10
Beryllium	0.023	0.0010	mg/l	200.8	10/09/12	1
Beryllium,Dissolved	0.010	0.0010	mg/l	200.8	10/10/12	1
Cadmium	0.0024	0.00050	mg/l	200.8	10/09/12	1
Cadmium,Dissolved	0.0010	0.00050	mg/l	200.8	10/10/12	1
Chromium	0.23	0.020	mg/l	200.8	10/10/12	20
Chromium,Dissolved	0.0065	0.0010	mg/l	200.8	10/10/12	1
Copper	0.46	0.020	mg/l	200.8	10/10/12	20
Copper,Dissolved	0.044	0.0010	mg/l	200.8	10/10/12	1
Lead	0.32	0.0010	mg/l	200.8	10/09/12	1
Lead,Dissolved	0.046	0.0010	mg/l	200.8	10/10/12	1
Manganese	11.	0.40	mg/l	200.8	10/10/12	200
Manganese,Dissolved	5.9	0.20	mg/l	200.8	10/10/12	100
Nickel	0.26	0.020	mg/l	200.8	10/10/12	20
Nickel,Dissolved	0.050	0.0010	mg/l	200.8	10/10/12	1
Selenium	BDL	0.020	mg/l	200.8	10/10/12	20
Selenium,Dissolved	0.0070	0.0010	mg/l	200.8	10/10/12	1
Silver	0.0012	0.00050	mg/l	200.8	10/09/12	1
Silver,Dissolved	BDL	0.00050	mg/l	200.8	10/10/12	1
Thallium	0.0064	0.0010	mg/l	200.8	10/09/12	1
Thallium,Dissolved	BDL	0.0010	mg/l	200.8	10/10/12	1
Zinc	1.3	0.20	mg/l	200.8	10/10/12	20
Zinc,Dissolved	0.084	0.010	mg/l	200.8	10/10/12	1
Mercury	BDL	0.00020	mg/l	245.1	10/04/12	1
Aluminum	360	0.10	mg/l	200.7	10/11/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-02 (PH) - 7.5@14.8c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-02

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 2

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum,Dissolved	12.	0.10	mg/l	200.7	10/09/12	1
Iron	360	0.10	mg/l	200.7	10/11/12	1
Iron,Dissolved	46.	0.10	mg/l	200.7	10/09/12	1
PP Volatile Organics						
Benzene	BDL	0.0010	mg/l	624	10/04/12	1
Bromodichloromethane	BDL	0.0010	mg/l	624	10/04/12	1
Bromoform	BDL	0.0010	mg/l	624	10/04/12	1
Bromomethane	BDL	0.0050	mg/l	624	10/04/12	1
Carbon tetrachloride	BDL	0.0010	mg/l	624	10/04/12	1
Chlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
Chlorodibromomethane	BDL	0.0010	mg/l	624	10/04/12	1
Chloroethane	BDL	0.0050	mg/l	624	10/04/12	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	624	10/04/12	1
Chloroform	BDL	0.0050	mg/l	624	10/04/12	1
Chloromethane	BDL	0.0025	mg/l	624	10/04/12	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,1-Dichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,2-Dichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,1-Dichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
1,2-Dichloropropane	BDL	0.0010	mg/l	624	10/04/12	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/04/12	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/04/12	1
Ethylbenzene	BDL	0.0010	mg/l	624	10/04/12	1
Methylene Chloride	BDL	0.0050	mg/l	624	10/04/12	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	624	10/04/12	1
Tetrachloroethene	0.0014	0.0010	mg/l	624	10/04/12	1
Toluene	BDL	0.0050	mg/l	624	10/04/12	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
Trichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
Vinyl chloride	BDL	0.0010	mg/l	624	10/04/12	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	624	10/04/12	1
Dibromofluoromethane	95.3		% Rec.	624	10/04/12	1
a,a,a-Trifluorotoluene	103.		% Rec.	624	10/04/12	1
4-Bromofluorobenzene	99.3		% Rec.	624	10/04/12	1
Pesticide/PCBs						
Aldrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Alpha BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-02 (PH) - 7.5@14.8c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-02

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 2

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Beta BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Delta BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Gamma BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Chlordane	BDL	0.00050	mg/l	8081A/8082	10/09/12	1
4,4-DDD	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
4,4-DDE	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
4,4-DDT	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Dieldrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan I	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan II	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan sulfate	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin aldehyde	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin ketone	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Heptachlor	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Heptachlor epoxide	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Hexachlorobenzene	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Methoxychlor	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Toxaphene	BDL	0.00050	mg/l	8081A/8082	10/09/12	1
PCB 1016	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1221	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1232	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1242	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1248	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1254	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1260	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	74.0		% Rec.	8081A/8082	10/08/12	1
Tetrachloro-m-xylene	86.7		% Rec.	8081A/8082	10/08/12	1
PP Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	625	10/05/12	1
Acenaphthylene	BDL	0.0010	mg/l	625	10/05/12	1
Anthracene	BDL	0.0010	mg/l	625	10/05/12	1
Benzidine	BDL	0.010	mg/l	625	10/05/12	1
Benzo(a)anthracene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(a)pyrene	BDL	0.0010	mg/l	625	10/05/12	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	625	10/05/12	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	625	10/05/12	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	625	10/05/12	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	625	10/05/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-02 (PH) - 7.5@14.8c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-02

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 2

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloronaphthalene	BDL	0.0010	mg/l	625	10/05/12	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	625	10/05/12	1
Chrysene	BDL	0.0010	mg/l	625	10/05/12	1
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	625	10/05/12	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	625	10/05/12	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	625	10/05/12	1
Fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Fluorene	BDL	0.0010	mg/l	625	10/05/12	1
Hexachlorobenzene	BDL	0.0010	mg/l	625	10/05/12	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	625	10/05/12	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	625	10/05/12	1
Hexachloroethane	BDL	0.010	mg/l	625	10/05/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	625	10/05/12	1
Isophorone	BDL	0.010	mg/l	625	10/05/12	1
Naphthalene	BDL	0.0010	mg/l	625	10/05/12	1
Nitrobenzene	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	625	10/05/12	1
Phenanthrene	BDL	0.0010	mg/l	625	10/05/12	1
Benzylbutyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Di-n-butyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Diethyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Dimethyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Di-n-octyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Pyrene	BDL	0.0010	mg/l	625	10/05/12	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	625	10/05/12	1
PP Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	625	10/05/12	1
2-Chlorophenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dichlorophenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dimethylphenol	BDL	0.010	mg/l	625	10/05/12	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dinitrophenol	BDL	0.010	mg/l	625	10/05/12	1
2-Nitrophenol	BDL	0.010	mg/l	625	10/05/12	1
4-Nitrophenol	BDL	0.010	mg/l	625	10/05/12	1
Pentachlorophenol	BDL	0.010	mg/l	625	10/05/12	1
Phenol	BDL	0.010	mg/l	625	10/05/12	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	625	10/05/12	1
1,2-Diphenylhydrazine	BDL	0.010	mg/l	625	10/05/12	1
Surrogate Recovery						
2-Fluorophenol	17.2		% Rec.	625	10/05/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-02 (PH) - 7.5@14.8c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-02

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 2

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phenol-d5	10.5		% Rec.	625	10/05/12	1
Nitrobenzene-d5	80.6		% Rec.	625	10/05/12	1
2-Fluorobiphenyl	91.9		% Rec.	625	10/05/12	1
2,4,6-Tribromophenol	72.9		% Rec.	625	10/05/12	1
p-Terphenyl-d14	92.3		% Rec.	625	10/05/12	1
Herbicides						
2,4-D	BDL	0.0020	mg/l	8151	10/09/12	1
Dalapon	BDL	0.20	mg/l	8151	10/09/12	1
2,4-DB	BDL	0.0020	mg/l	8151	10/09/12	1
Dicamba	BDL	0.0020	mg/l	8151	10/09/12	1
Dichloroprop	BDL	0.0020	mg/l	8151	10/09/12	1
Dinoseb	BDL	0.0020	mg/l	8151	10/09/12	1
MCPA	BDL	0.10	mg/l	8151	10/09/12	1
MCPP	BDL	0.10	mg/l	8151	10/09/12	1
2,4,5-T	BDL	0.0020	mg/l	8151	10/09/12	1
2,4,5-TP (Silvex)	BDL	0.0020	mg/l	8151	10/09/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	81.0		% Rec.	8151	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 10/15/12 08:42 Revised: 10/15/12 13:07
L598943-02 (PH) - 7.5@14.8c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-03

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 3

Collected By : I-Ping Chen
Collection Date : 10/03/12 11:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Nitrate	23.	0.50	mg/l	300.0	10/04/12	5
Chromium,Hexavalent	BDL	0.010	mg/l	3500Cr-D	10/04/12	1
Chromium,Trivalent	0.090	0.020	mg/l	Calc.	10/10/12	20
pH	7.2		su	4500H-B	10/05/12	1
Dissolved Solids	830	10.	mg/l	2540C	10/11/12	1
Suspended Solids	7700	1.0	mg/l	2540D	10/11/12	1
Antimony	BDL	0.0010	mg/l	200.8	10/09/12	1
Antimony,Dissolved	BDL	0.0010	mg/l	200.8	10/11/12	1
Arsenic	0.042	0.020	mg/l	200.8	10/10/12	20
Arsenic,Dissolved	0.0077	0.0010	mg/l	200.8	10/10/12	1
Barium	1.3	0.040	mg/l	200.8	10/10/12	20
Barium,Dissolved	0.60	0.020	mg/l	200.8	10/10/12	10
Beryllium	0.010	0.0010	mg/l	200.8	10/09/12	1
Beryllium,Dissolved	0.0063	0.0010	mg/l	200.8	10/10/12	1
Cadmium	0.0012	0.00050	mg/l	200.8	10/09/12	1
Cadmium,Dissolved	0.00069	0.00050	mg/l	200.8	10/10/12	1
Chromium	0.090	0.020	mg/l	200.8	10/10/12	20
Chromium,Dissolved	0.0038	0.0010	mg/l	200.8	10/10/12	1
Copper	0.21	0.020	mg/l	200.8	10/10/12	20
Copper,Dissolved	0.052	0.0010	mg/l	200.8	10/10/12	1
Lead	0.15	0.0010	mg/l	200.8	10/09/12	1
Lead,Dissolved	0.055	0.0010	mg/l	200.8	10/10/12	1
Manganese	7.6	0.20	mg/l	200.8	10/10/12	100
Manganese,Dissolved	5.0	0.20	mg/l	200.8	10/10/12	100
Nickel	0.093	0.020	mg/l	200.8	10/10/12	20
Nickel,Dissolved	0.033	0.0010	mg/l	200.8	10/10/12	1
Selenium	BDL	0.020	mg/l	200.8	10/10/12	20
Selenium,Dissolved	0.0062	0.0010	mg/l	200.8	10/10/12	1
Silver	BDL	0.00050	mg/l	200.8	10/09/12	1
Silver,Dissolved	BDL	0.00050	mg/l	200.8	10/10/12	1
Thallium	0.0023	0.0010	mg/l	200.8	10/09/12	1
Thallium,Dissolved	BDL	0.0010	mg/l	200.8	10/10/12	1
Zinc	0.56	0.20	mg/l	200.8	10/10/12	20
Zinc,Dissolved	0.12	0.010	mg/l	200.8	10/10/12	1
Mercury	BDL	0.00020	mg/l	245.1	10/04/12	1
Aluminum	240	0.10	mg/l	200.7	10/11/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-03 (PH) - 7.2@14.9c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-03

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 3

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 11:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum,Dissolved	8.2	0.10	mg/l	200.7	10/10/12	1
Iron	230	0.10	mg/l	200.7	10/11/12	1
Iron,Dissolved	15.	0.10	mg/l	200.7	10/11/12	1
PP Volatile Organics						
Benzene	BDL	0.0010	mg/l	624	10/04/12	1
Bromodichloromethane	BDL	0.0010	mg/l	624	10/04/12	1
Bromoform	BDL	0.0010	mg/l	624	10/04/12	1
Bromomethane	BDL	0.0050	mg/l	624	10/04/12	1
Carbon tetrachloride	BDL	0.0010	mg/l	624	10/04/12	1
Chlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
Chlorodibromomethane	BDL	0.0010	mg/l	624	10/04/12	1
Chloroethane	BDL	0.0050	mg/l	624	10/04/12	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	624	10/04/12	1
Chloroform	BDL	0.0050	mg/l	624	10/04/12	1
Chloromethane	BDL	0.0025	mg/l	624	10/04/12	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,1-Dichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,2-Dichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,1-Dichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
1,2-Dichloropropane	BDL	0.0010	mg/l	624	10/04/12	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/04/12	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/04/12	1
Ethylbenzene	BDL	0.0010	mg/l	624	10/04/12	1
Methylene Chloride	BDL	0.0050	mg/l	624	10/04/12	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	624	10/04/12	1
Tetrachloroethene	0.0016	0.0010	mg/l	624	10/04/12	1
Toluene	BDL	0.0050	mg/l	624	10/04/12	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
Trichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
Vinyl chloride	BDL	0.0010	mg/l	624	10/04/12	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	624	10/04/12	1
Dibromofluoromethane	93.8		% Rec.	624	10/04/12	1
a,a,a-Trifluorotoluene	105.		% Rec.	624	10/04/12	1
4-Bromofluorobenzene	92.3		% Rec.	624	10/04/12	1
Pesticide/PCBs						
Aldrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Alpha BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-03 (PH) - 7.2@14.9c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-03

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 3

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 11:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Beta BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Delta BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Gamma BHC	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Chlordane	BDL	0.00050	mg/l	8081A/8082	10/09/12	1
4,4-DDD	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
4,4-DDE	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
4,4-DDT	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Dieldrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan I	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan II	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endosulfan sulfate	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin aldehyde	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Endrin ketone	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Heptachlor	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Heptachlor epoxide	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Hexachlorobenzene	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Methoxychlor	BDL	0.000050	mg/l	8081A/8082	10/09/12	1
Toxaphene	BDL	0.00050	mg/l	8081A/8082	10/09/12	1
PCB 1016	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1221	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1232	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1242	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1248	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1254	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1260	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	70.6		% Rec.	8081A/8082	10/08/12	1
Tetrachloro-m-xylene	78.9		% Rec.	8081A/8082	10/08/12	1
PP Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	625	10/05/12	1
Acenaphthylene	BDL	0.0010	mg/l	625	10/05/12	1
Anthracene	BDL	0.0010	mg/l	625	10/05/12	1
Benzidine	BDL	0.010	mg/l	625	10/05/12	1
Benzo(a)anthracene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(a)pyrene	BDL	0.0010	mg/l	625	10/05/12	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	625	10/05/12	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	625	10/05/12	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	625	10/05/12	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	625	10/05/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-03 (PH) - 7.2@14.9c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-03

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 3

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 11:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloronaphthalene	BDL	0.0010	mg/l	625	10/05/12	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	625	10/05/12	1
Chrysene	BDL	0.0010	mg/l	625	10/05/12	1
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	625	10/05/12	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	625	10/05/12	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	625	10/05/12	1
Fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Fluorene	BDL	0.0010	mg/l	625	10/05/12	1
Hexachlorobenzene	BDL	0.0010	mg/l	625	10/05/12	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	625	10/05/12	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	625	10/05/12	1
Hexachloroethane	BDL	0.010	mg/l	625	10/05/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	625	10/05/12	1
Isophorone	BDL	0.010	mg/l	625	10/05/12	1
Naphthalene	BDL	0.0010	mg/l	625	10/05/12	1
Nitrobenzene	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	625	10/05/12	1
Phenanthrene	BDL	0.0010	mg/l	625	10/05/12	1
Benzylbutyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Di-n-butyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Diethyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Dimethyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Di-n-octyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Pyrene	BDL	0.0010	mg/l	625	10/05/12	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	625	10/05/12	1
PP Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	625	10/05/12	1
2-Chlorophenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dichlorophenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dimethylphenol	BDL	0.010	mg/l	625	10/05/12	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dinitrophenol	BDL	0.010	mg/l	625	10/05/12	1
2-Nitrophenol	BDL	0.010	mg/l	625	10/05/12	1
4-Nitrophenol	BDL	0.010	mg/l	625	10/05/12	1
Pentachlorophenol	BDL	0.010	mg/l	625	10/05/12	1
Phenol	BDL	0.010	mg/l	625	10/05/12	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	625	10/05/12	1
1,2-Diphenylhydrazine	BDL	0.010	mg/l	625	10/05/12	1
Surrogate Recovery						
2-Fluorophenol	12.1		% Rec.	625	10/05/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-03 (PH) - 7.2@14.9c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-03

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 3

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 11:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phenol-d5	7.00		% Rec.	625	10/05/12	1
Nitrobenzene-d5	66.3		% Rec.	625	10/05/12	1
2-Fluorobiphenyl	84.8		% Rec.	625	10/05/12	1
2,4,6-Tribromophenol	71.7		% Rec.	625	10/05/12	1
p-Terphenyl-d14	82.8		% Rec.	625	10/05/12	1
Herbicides						
2,4-D	BDL	0.0020	mg/l	8151	10/09/12	1
Dalapon	BDL	0.20	mg/l	8151	10/09/12	1
2,4-DB	BDL	0.0020	mg/l	8151	10/09/12	1
Dicamba	BDL	0.0020	mg/l	8151	10/09/12	1
Dichloroprop	BDL	0.0020	mg/l	8151	10/09/12	1
Dinoseb	BDL	0.0020	mg/l	8151	10/09/12	1
MCPA	BDL	0.10	mg/l	8151	10/09/12	1
MCPP	BDL	0.10	mg/l	8151	10/09/12	1
2,4,5-T	BDL	0.0020	mg/l	8151	10/09/12	1
2,4,5-TP (Silvex)	BDL	0.0020	mg/l	8151	10/09/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	80.3		% Rec.	8151	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 10/15/12 08:42 Revised: 10/15/12 13:07
L598943-03 (PH) - 7.2@14.9c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-04

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 5

Collected By : I-Ping Chen
Collection Date : 10/03/12 13:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Nitrate	0.47	0.10	mg/l	300.0	10/04/12	1
Chromium,Hexavalent	BDL	0.010	mg/l	3500Cr-D	10/04/12	1
Chromium,Trivalent	0.36	0.020	mg/l	Calc.	10/10/12	20
pH	8.2		su	4500H-B	10/05/12	1
Dissolved Solids	460	10.	mg/l	2540C	10/11/12	1
Suspended Solids	18000	1.0	mg/l	2540D	10/11/12	1
Antimony	BDL	0.0010	mg/l	200.8	10/09/12	1
Antimony,Dissolved	BDL	0.0010	mg/l	200.8	10/11/12	1
Arsenic	0.032	0.020	mg/l	200.8	10/10/12	20
Arsenic,Dissolved	0.0053	0.0010	mg/l	200.8	10/10/12	1
Barium	1.3	0.040	mg/l	200.8	10/10/12	20
Barium,Dissolved	0.43	0.020	mg/l	200.8	10/10/12	10
Beryllium	0.016	0.0010	mg/l	200.8	10/09/12	1
Beryllium,Dissolved	0.0099	0.0010	mg/l	200.8	10/10/12	1
Cadmium	0.0020	0.00050	mg/l	200.8	10/09/12	1
Cadmium,Dissolved	0.00092	0.00050	mg/l	200.8	10/10/12	1
Chromium	0.36	0.020	mg/l	200.8	10/10/12	20
Chromium,Dissolved	0.032	0.0010	mg/l	200.8	10/10/12	1
Copper	0.37	0.020	mg/l	200.8	10/10/12	20
Copper,Dissolved	0.014	0.0010	mg/l	200.8	10/10/12	1
Lead	0.28	0.0010	mg/l	200.8	10/09/12	1
Lead,Dissolved	0.049	0.0010	mg/l	200.8	10/10/12	1
Manganese	6.3	0.10	mg/l	200.8	10/10/12	50
Manganese,Dissolved	4.1	0.10	mg/l	200.8	10/10/12	50
Nickel	0.24	0.020	mg/l	200.8	10/10/12	20
Nickel,Dissolved	0.070	0.0010	mg/l	200.8	10/10/12	1
Selenium	BDL	0.020	mg/l	200.8	10/10/12	20
Selenium,Dissolved	0.0031	0.0010	mg/l	200.8	10/10/12	1
Silver	0.00097	0.00050	mg/l	200.8	10/09/12	1
Silver,Dissolved	BDL	0.00050	mg/l	200.8	10/10/12	1
Thallium	0.0050	0.0010	mg/l	200.8	10/09/12	1
Thallium,Dissolved	BDL	0.0010	mg/l	200.8	10/10/12	1
Zinc	1.0	0.20	mg/l	200.8	10/10/12	20
Zinc,Dissolved	0.082	0.010	mg/l	200.8	10/10/12	1
Mercury	BDL	0.00020	mg/l	245.1	10/04/12	1
Aluminum	250	0.10	mg/l	200.7	10/11/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-04 (PH) - 8.2@15.5c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-04

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 5

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 13:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum,Dissolved	20.	0.10	mg/l	200.7	10/10/12	1
Iron	310	0.10	mg/l	200.7	10/11/12	1
Iron,Dissolved	130	0.10	mg/l	200.7	10/11/12	1
PP Volatile Organics						
Benzene	BDL	0.0010	mg/l	624	10/04/12	1
Bromodichloromethane	BDL	0.0010	mg/l	624	10/04/12	1
Bromoform	BDL	0.0010	mg/l	624	10/04/12	1
Bromomethane	BDL	0.0050	mg/l	624	10/04/12	1
Carbon tetrachloride	BDL	0.0010	mg/l	624	10/04/12	1
Chlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
Chlorodibromomethane	BDL	0.0010	mg/l	624	10/04/12	1
Chloroethane	BDL	0.0050	mg/l	624	10/04/12	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	624	10/04/12	1
Chloroform	BDL	0.0050	mg/l	624	10/04/12	1
Chloromethane	BDL	0.0025	mg/l	624	10/04/12	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,1-Dichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,2-Dichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,1-Dichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
1,2-Dichloropropane	BDL	0.0010	mg/l	624	10/04/12	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/04/12	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/04/12	1
Ethylbenzene	BDL	0.0010	mg/l	624	10/04/12	1
Methylene Chloride	BDL	0.0050	mg/l	624	10/04/12	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	624	10/04/12	1
Tetrachloroethene	BDL	0.0010	mg/l	624	10/04/12	1
Toluene	BDL	0.0050	mg/l	624	10/04/12	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
Trichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
Vinyl chloride	BDL	0.0010	mg/l	624	10/04/12	1
Surrogate Recovery						
Toluene-d8	99.7		% Rec.	624	10/04/12	1
Dibromofluoromethane	91.8		% Rec.	624	10/04/12	1
a,a,a-Trifluorotoluene	102.		% Rec.	624	10/04/12	1
4-Bromofluorobenzene	87.5		% Rec.	624	10/04/12	1
Pesticide/PCBs						
Aldrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Alpha BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-04 (PH) - 8.2@15.5c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-04

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 5

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 13:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Beta BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Delta BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Gamma BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Chlordane	BDL	0.00050	mg/l	8081A/8082	10/11/12	1
4,4-DDD	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
4,4-DDE	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
4,4-DDT	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Dieldrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan I	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan II	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan sulfate	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin aldehyde	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin ketone	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Heptachlor	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Heptachlor epoxide	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Hexachlorobenzene	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Methoxychlor	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Toxaphene	BDL	0.00050	mg/l	8081A/8082	10/11/12	1
PCB 1016	0.00051	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1221	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1232	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1242	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1248	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1254	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1260	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	74.3		% Rec.	8081A/8082	10/08/12	1
Tetrachloro-m-xylene	84.8		% Rec.	8081A/8082	10/08/12	1
PP Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	625	10/05/12	1
Acenaphthylene	BDL	0.0010	mg/l	625	10/05/12	1
Anthracene	BDL	0.0010	mg/l	625	10/05/12	1
Benzidine	BDL	0.010	mg/l	625	10/05/12	1
Benzo(a)anthracene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(a)pyrene	BDL	0.0010	mg/l	625	10/05/12	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	625	10/05/12	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	625	10/05/12	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	625	10/05/12	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	625	10/05/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-04 (PH) - 8.2@15.5c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-04

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 5

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 13:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloronaphthalene	BDL	0.0010	mg/l	625	10/05/12	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	625	10/05/12	1
Chrysene	BDL	0.0010	mg/l	625	10/05/12	1
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	625	10/05/12	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	625	10/05/12	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	625	10/05/12	1
Fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Fluorene	BDL	0.0010	mg/l	625	10/05/12	1
Hexachlorobenzene	BDL	0.0010	mg/l	625	10/05/12	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	625	10/05/12	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	625	10/05/12	1
Hexachloroethane	BDL	0.010	mg/l	625	10/05/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	625	10/05/12	1
Isophorone	BDL	0.010	mg/l	625	10/05/12	1
Naphthalene	BDL	0.0010	mg/l	625	10/05/12	1
Nitrobenzene	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	625	10/05/12	1
Phenanthrene	BDL	0.0010	mg/l	625	10/05/12	1
Benzylbutyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Di-n-butyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Diethyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Dimethyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Di-n-octyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Pyrene	BDL	0.0010	mg/l	625	10/05/12	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	625	10/05/12	1
PP Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	625	10/05/12	1
2-Chlorophenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dichlorophenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dimethylphenol	BDL	0.010	mg/l	625	10/05/12	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dinitrophenol	BDL	0.010	mg/l	625	10/05/12	1
2-Nitrophenol	BDL	0.010	mg/l	625	10/05/12	1
4-Nitrophenol	BDL	0.010	mg/l	625	10/05/12	1
Pentachlorophenol	BDL	0.010	mg/l	625	10/05/12	1
Phenol	BDL	0.010	mg/l	625	10/05/12	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	625	10/05/12	1
1,2-Diphenylhydrazine	BDL	0.010	mg/l	625	10/05/12	1
Surrogate Recovery						
2-Fluorophenol	23.2		% Rec.	625	10/05/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-04 (PH) - 8.2@15.5c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-04

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 5

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 13:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phenol-d5	15.0		% Rec.	625	10/05/12	1
Nitrobenzene-d5	74.1		% Rec.	625	10/05/12	1
2-Fluorobiphenyl	86.7		% Rec.	625	10/05/12	1
2,4,6-Tribromophenol	53.2		% Rec.	625	10/05/12	1
p-Terphenyl-d14	63.7		% Rec.	625	10/05/12	1
Herbicides						
2,4-D	BDL	0.0020	mg/l	8151	10/09/12	1
Dalapon	BDL	0.20	mg/l	8151	10/09/12	1
2,4-DB	BDL	0.0020	mg/l	8151	10/09/12	1
Dicamba	BDL	0.0020	mg/l	8151	10/09/12	1
Dichloroprop	BDL	0.0020	mg/l	8151	10/09/12	1
Dinoseb	BDL	0.0020	mg/l	8151	10/09/12	1
MCPA	BDL	0.10	mg/l	8151	10/09/12	1
MCPP	BDL	0.10	mg/l	8151	10/09/12	1
2,4,5-T	BDL	0.0020	mg/l	8151	10/09/12	1
2,4,5-TP (Silvex)	BDL	0.0020	mg/l	8151	10/09/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	74.8		% Rec.	8151	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 10/15/12 08:42 Revised: 10/15/12 13:07
L598943-04 (PH) - 8.2@15.5c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-05

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 6

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 14:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Nitrate	6.8	0.50	mg/l	300.0	10/04/12	5
Chromium,Hexavalent	BDL	0.010	mg/l	3500Cr-D	10/04/12	1
Chromium,Trivalent	0.20	0.020	mg/l	Calc.	10/10/12	20
pH	7.2		su	4500H-B	10/05/12	1
Dissolved Solids	630	10.	mg/l	2540C	10/11/12	1
Suspended Solids	27000	1.0	mg/l	2540D	10/11/12	1
Antimony	BDL	0.0010	mg/l	200.8	10/09/12	1
Antimony,Dissolved	BDL	0.0010	mg/l	200.8	10/12/12	1
Arsenic	0.076	0.020	mg/l	200.8	10/10/12	20
Arsenic,Dissolved	BDL	0.010	mg/l	200.8	10/11/12	10
Barium	4.5	0.20	mg/l	200.8	10/10/12	100
Barium,Dissolved	0.84	0.020	mg/l	200.8	10/11/12	10
Beryllium	0.021	0.0010	mg/l	200.8	10/09/12	1
Beryllium,Dissolved	0.014	0.0010	mg/l	200.8	10/11/12	1
Cadmium	0.0056	0.00050	mg/l	200.8	10/09/12	1
Cadmium,Dissolved	0.0019	0.00050	mg/l	200.8	10/11/12	1
Chromium	0.20	0.020	mg/l	200.8	10/10/12	20
Chromium,Dissolved	0.024	0.010	mg/l	200.8	10/11/12	10
Copper	0.34	0.020	mg/l	200.8	10/10/12	20
Copper,Dissolved	0.17	0.010	mg/l	200.8	10/11/12	10
Lead	0.24	0.0010	mg/l	200.8	10/09/12	1
Lead,Dissolved	0.093	0.0010	mg/l	200.8	10/11/12	1
Manganese	20.	0.40	mg/l	200.8	10/10/12	200
Manganese,Dissolved	9.2	0.20	mg/l	200.8	10/11/12	100
Nickel	0.27	0.020	mg/l	200.8	10/10/12	20
Nickel,Dissolved	0.045	0.0010	mg/l	200.8	10/14/12	1
Selenium	BDL	0.020	mg/l	200.8	10/10/12	20
Selenium,Dissolved	0.011	0.010	mg/l	200.8	10/11/12	10
Silver	0.00086	0.00050	mg/l	200.8	10/09/12	1
Silver,Dissolved	BDL	0.00050	mg/l	200.8	10/11/12	1
Thallium	0.0056	0.0010	mg/l	200.8	10/09/12	1
Thallium,Dissolved	BDL	0.0010	mg/l	200.8	10/11/12	1
Zinc	1.8	0.20	mg/l	200.8	10/10/12	20
Zinc,Dissolved	0.50	0.10	mg/l	200.8	10/11/12	10
Mercury	BDL	0.00020	mg/l	245.1	10/04/12	1
Aluminum	2100	0.50	mg/l	200.7	10/11/12	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-05 (PH) - 7.2@16.1c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-05

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 6

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 14:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum,Dissolved	38.	0.10	mg/l	200.7	10/10/12	1
Iron	2900	0.50	mg/l	200.7	10/11/12	5
Iron,Dissolved	25.	0.10	mg/l	200.7	10/11/12	1
PP Volatile Organics						
Benzene	BDL	0.0010	mg/l	624	10/04/12	1
Bromodichloromethane	BDL	0.0010	mg/l	624	10/04/12	1
Bromoform	BDL	0.0010	mg/l	624	10/04/12	1
Bromomethane	BDL	0.0050	mg/l	624	10/04/12	1
Carbon tetrachloride	BDL	0.0010	mg/l	624	10/04/12	1
Chlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
Chlorodibromomethane	BDL	0.0010	mg/l	624	10/04/12	1
Chloroethane	BDL	0.0050	mg/l	624	10/04/12	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	624	10/04/12	1
Chloroform	0.0056	0.0050	mg/l	624	10/04/12	1
Chloromethane	BDL	0.0025	mg/l	624	10/04/12	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	624	10/04/12	1
1,1-Dichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,2-Dichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,1-Dichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
1,2-Dichloropropane	BDL	0.0010	mg/l	624	10/04/12	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/04/12	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/04/12	1
Ethylbenzene	BDL	0.0010	mg/l	624	10/04/12	1
Methylene Chloride	BDL	0.0050	mg/l	624	10/04/12	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	624	10/04/12	1
Tetrachloroethene	BDL	0.0010	mg/l	624	10/04/12	1
Toluene	BDL	0.0050	mg/l	624	10/04/12	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	624	10/04/12	1
Trichloroethene	BDL	0.0010	mg/l	624	10/04/12	1
Vinyl chloride	BDL	0.0010	mg/l	624	10/04/12	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	624	10/04/12	1
Dibromofluoromethane	98.5		% Rec.	624	10/04/12	1
a,a,a-Trifluorotoluene	104.		% Rec.	624	10/04/12	1
4-Bromofluorobenzene	105.		% Rec.	624	10/04/12	1
Pesticide/PCBs						
Aldrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Alpha BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-05 (PH) - 7.2@16.1c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-05

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 6

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 14:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Beta BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Delta BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Gamma BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Chlordane	BDL	0.00050	mg/l	8081A/8082	10/11/12	1
4,4-DDD	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
4,4-DDE	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
4,4-DDT	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Dieldrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan I	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan II	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan sulfate	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin aldehyde	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin ketone	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Heptachlor	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Heptachlor epoxide	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Hexachlorobenzene	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Methoxychlor	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Toxaphene	BDL	0.00050	mg/l	8081A/8082	10/11/12	1
PCB 1016	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1221	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1232	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1242	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1248	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1254	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1260	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	73.7		% Rec.	8081A/8082	10/08/12	1
Tetrachloro-m-xylene	85.9		% Rec.	8081A/8082	10/08/12	1
PP Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	625	10/05/12	1
Acenaphthylene	BDL	0.0010	mg/l	625	10/05/12	1
Anthracene	BDL	0.0010	mg/l	625	10/05/12	1
Benzidine	BDL	0.010	mg/l	625	10/05/12	1
Benzo(a)anthracene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	625	10/05/12	1
Benzo(a)pyrene	BDL	0.0010	mg/l	625	10/05/12	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	625	10/05/12	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	625	10/05/12	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	625	10/05/12	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	625	10/05/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-05 (PH) - 7.2@16.1c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-05

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 6

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 14:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloronaphthalene	BDL	0.0010	mg/l	625	10/05/12	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	625	10/05/12	1
Chrysene	BDL	0.0010	mg/l	625	10/05/12	1
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	625	10/05/12	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	625	10/05/12	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	625	10/05/12	1
Fluoranthene	BDL	0.0010	mg/l	625	10/05/12	1
Fluorene	BDL	0.0010	mg/l	625	10/05/12	1
Hexachlorobenzene	BDL	0.0010	mg/l	625	10/05/12	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	625	10/05/12	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	625	10/05/12	1
Hexachloroethane	BDL	0.010	mg/l	625	10/05/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	625	10/05/12	1
Isophorone	BDL	0.010	mg/l	625	10/05/12	1
Naphthalene	BDL	0.0010	mg/l	625	10/05/12	1
Nitrobenzene	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	625	10/05/12	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	625	10/05/12	1
Phenanthrene	BDL	0.0010	mg/l	625	10/05/12	1
Benzylbutyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Di-n-butyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Diethyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Dimethyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Di-n-octyl phthalate	BDL	0.0010	mg/l	625	10/05/12	1
Pyrene	BDL	0.0010	mg/l	625	10/05/12	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	625	10/05/12	1
PP Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	625	10/05/12	1
2-Chlorophenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dichlorophenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dimethylphenol	BDL	0.010	mg/l	625	10/05/12	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	625	10/05/12	1
2,4-Dinitrophenol	BDL	0.010	mg/l	625	10/05/12	1
2-Nitrophenol	BDL	0.010	mg/l	625	10/05/12	1
4-Nitrophenol	BDL	0.010	mg/l	625	10/05/12	1
Pentachlorophenol	BDL	0.010	mg/l	625	10/05/12	1
Phenol	BDL	0.010	mg/l	625	10/05/12	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	625	10/05/12	1
1,2-Diphenylhydrazine	BDL	0.010	mg/l	625	10/05/12	1
Surrogate Recovery						
2-Fluorophenol	37.3		% Rec.	625	10/05/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L598943-05 (PH) - 7.2@16.1c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L598943-05

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 6

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 14:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phenol-d5	24.8		% Rec.	625	10/05/12	1
Nitrobenzene-d5	76.5		% Rec.	625	10/05/12	1
2-Fluorobiphenyl	93.8		% Rec.	625	10/05/12	1
2,4,6-Tribromophenol	94.1		% Rec.	625	10/05/12	1
p-Terphenyl-d14	85.7		% Rec.	625	10/05/12	1
Herbicides						
2,4-D	BDL	0.0020	mg/l	8151	10/09/12	1
Dalapon	BDL	0.20	mg/l	8151	10/09/12	1
2,4-DB	BDL	0.0020	mg/l	8151	10/09/12	1
Dicamba	BDL	0.0020	mg/l	8151	10/09/12	1
Dichloroprop	BDL	0.0020	mg/l	8151	10/09/12	1
Dinoseb	BDL	0.0020	mg/l	8151	10/09/12	1
MCPA	BDL	0.10	mg/l	8151	10/09/12	1
MCPP	BDL	0.10	mg/l	8151	10/09/12	1
2,4,5-T	BDL	0.0020	mg/l	8151	10/09/12	1
2,4,5-TP (Silvex)	BDL	0.0020	mg/l	8151	10/09/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	77.7		% Rec.	8151	10/09/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 10/15/12 08:42 Revised: 10/15/12 13:07
L598943-05 (PH) - 7.2@16.1c

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L598943-01	WG616230	SAMP	Chromium,Hexavalent	R2376613	T8
	WG616370	SAMP	pH	R2377714	T8
	WG616293	SAMP	Bis(2-chlorethoxy)methane	R2377053	J3
	WG616293	SAMP	Bis(2-chloroethyl)ether	R2377053	J3
	WG616293	SAMP	Bis(2-chloroisopropyl)ether	R2377053	J3
	WG616293	SAMP	Hexachloro-1,3-butadiene	R2377053	J3
	WG616293	SAMP	Hexachloroethane	R2377053	J3
	WG616293	SAMP	Isophorone	R2377053	J4J3
	WG616293	SAMP	Naphthalene	R2377053	J3
	WG616293	SAMP	Nitrobenzene	R2377053	J3
	WG616293	SAMP	n-Nitrosodimethylamine	R2377053	J3
	WG616293	SAMP	1,2,4-Trichlorobenzene	R2377053	J3
	WG616293	SAMP	4-Chloro-3-methylphenol	R2377053	L2
	WG616293	SAMP	2-Chlorophenol	R2377053	J3L2
	WG616293	SAMP	2,4-Dichlorophenol	R2377053	J3L2
	WG616293	SAMP	2,4-Dimethylphenol	R2377053	J3L2
	WG616293	SAMP	4,6-Dinitro-2-methylphenol	R2377053	L2
	WG616293	SAMP	2,4-Dinitrophenol	R2377053	L2
	WG616293	SAMP	2-Nitrophenol	R2377053	L2
	WG616293	SAMP	4-Nitrophenol	R2377053	L2
	WG616293	SAMP	Pentachlorophenol	R2377053	L2
	WG616293	SAMP	Phenol	R2377053	J3L2
	WG616293	SAMP	2,4,6-Trichlorophenol	R2377053	L2
	WG616293	SAMP	2-Fluorophenol	R2377053	J2
	WG616293	SAMP	Phenol-d5	R2377053	J2
	WG616293	SAMP	2,4,6-Tribromophenol	R2377053	J2
	WG616225	SAMP	Endrin aldehyde	R2381101	J4
	WG616225	SAMP	PCB 1016	R2381101	J3
	WG616404	SAMP	Dinoseb	R2382039	J3
	WG616404	SAMP	MCPA	R2382039	L1
L598943-02	WG616370	SAMP	pH	R2377714	T8
	WG616934	SAMP	Selenium	R2383318	O
	WG616293	SAMP	Bis(2-chlorethoxy)methane	R2377053	J3
	WG616293	SAMP	Bis(2-chloroethyl)ether	R2377053	J3
	WG616293	SAMP	Bis(2-chloroisopropyl)ether	R2377053	J3
	WG616293	SAMP	Hexachloro-1,3-butadiene	R2377053	J3
	WG616293	SAMP	Hexachloroethane	R2377053	J3
	WG616293	SAMP	Isophorone	R2377053	J4J3
	WG616293	SAMP	Naphthalene	R2377053	J3
	WG616293	SAMP	Nitrobenzene	R2377053	J3
	WG616293	SAMP	n-Nitrosodimethylamine	R2377053	J3
	WG616293	SAMP	1,2,4-Trichlorobenzene	R2377053	J3
	WG616293	SAMP	2-Chlorophenol	R2377053	J3
	WG616293	SAMP	2,4-Dichlorophenol	R2377053	J3
	WG616293	SAMP	2,4-Dimethylphenol	R2377053	J3
	WG616293	SAMP	Phenol	R2377053	J3
	WG616225	SAMP	Endrin aldehyde	R2381101	J4
	WG616225	SAMP	PCB 1016	R2381101	J3
	WG616404	SAMP	Dinoseb	R2382039	J3
	WG616404	SAMP	MCPA	R2382039	L1
L598943-03	WG617047	SAMP	Dissolved Solids	R2387717	B
	WG616370	SAMP	pH	R2377714	T8
	WG616934	SAMP	Selenium	R2383318	O
	WG616293	SAMP	Bis(2-chlorethoxy)methane	R2377053	J3
	WG616293	SAMP	Bis(2-chloroethyl)ether	R2377053	J3
	WG616293	SAMP	Bis(2-chloroisopropyl)ether	R2377053	J3
	WG616293	SAMP	Hexachloro-1,3-butadiene	R2377053	J3
	WG616293	SAMP	Hexachloroethane	R2377053	J3
	WG616293	SAMP	Isophorone	R2377053	J4J3
	WG616293	SAMP	Naphthalene	R2377053	J3
	WG616293	SAMP	Nitrobenzene	R2377053	J3
	WG616293	SAMP	n-Nitrosodimethylamine	R2377053	J3
	WG616293	SAMP	1,2,4-Trichlorobenzene	R2377053	J3
	WG616293	SAMP	4-Chloro-3-methylphenol	R2377053	L2
	WG616293	SAMP	2-Chlorophenol	R2377053	J3L2
	WG616293	SAMP	2,4-Dichlorophenol	R2377053	J3L2
	WG616293	SAMP	2,4-Dimethylphenol	R2377053	J3L2
	WG616293	SAMP	4,6-Dinitro-2-methylphenol	R2377053	L2
	WG616293	SAMP	2,4-Dinitrophenol	R2377053	L2

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
	WG616293	SAMP	2-Nitrophenol	R2377053	L2
	WG616293	SAMP	4-Nitrophenol	R2377053	L2
	WG616293	SAMP	Pentachlorophenol	R2377053	L2
	WG616293	SAMP	Phenol	R2377053	J3L2
	WG616293	SAMP	2,4,6-Trichlorophenol	R2377053	L2
	WG616293	SAMP	Phenol-d5	R2377053	J2
	WG616225	SAMP	Endrin aldehyde	R2381101	J4
	WG616225	SAMP	PCB 1016	R2381101	J3
	WG616404	SAMP	Dinoseb	R2382039	J3
	WG616404	SAMP	MCPA	R2382039	L1
L598943-04	WG617047	SAMP	Dissolved Solids	R2387717	B
	WG616370	SAMP	pH	R2377714	T8
	WG616934	SAMP	Selenium	R2383318	O
	WG616293	SAMP	Bis(2-chlorethoxy)methane	R2377053	J3
	WG616293	SAMP	Bis(2-chloroethyl)ether	R2377053	J3
	WG616293	SAMP	Bis(2-chloroisopropyl)ether	R2377053	J3
	WG616293	SAMP	Hexachloro-1,3-butadiene	R2377053	J3
	WG616293	SAMP	Hexachloroethane	R2377053	J3
	WG616293	SAMP	Isophorone	R2377053	J4J3
	WG616293	SAMP	Naphthalene	R2377053	J3
	WG616293	SAMP	Nitrobenzene	R2377053	J3
	WG616293	SAMP	n-Nitrosodimethylamine	R2377053	J3
	WG616293	SAMP	1,2,4-Trichlorobenzene	R2377053	J3
	WG616293	SAMP	2-Chlorophenol	R2377053	J3
	WG616293	SAMP	2,4-Dichlorophenol	R2377053	J3
	WG616293	SAMP	2,4-Dimethylphenol	R2377053	J3
	WG616293	SAMP	Phenol	R2377053	J3
	WG616225	SAMP	Endrin aldehyde	R2381101	J4
	WG616225	SAMP	PCB 1016	R2381101	J3
	WG616404	SAMP	Dinoseb	R2382039	J3
	WG616404	SAMP	MCPA	R2382039	L1
L598943-05	WG617047	SAMP	Dissolved Solids	R2387717	B
	WG616370	SAMP	pH	R2377714	T8
	WG617325	SAMP	Arsenic,Dissolved	R2389257	O
	WG617325	SAMP	Manganese,Dissolved	R2389257	B
	WG616934	SAMP	Selenium	R2383318	O
	WG617255	SAMP	Iron,Dissolved	R2386237	V
	WG616293	SAMP	Bis(2-chlorethoxy)methane	R2377053	J3
	WG616293	SAMP	Bis(2-chloroethyl)ether	R2377053	J3
	WG616293	SAMP	Bis(2-chloroisopropyl)ether	R2377053	J3
	WG616293	SAMP	Hexachloro-1,3-butadiene	R2377053	J3
	WG616293	SAMP	Hexachloroethane	R2377053	J3
	WG616293	SAMP	Isophorone	R2377053	J4J3
	WG616293	SAMP	Naphthalene	R2377053	J3
	WG616293	SAMP	Nitrobenzene	R2377053	J3
	WG616293	SAMP	n-Nitrosodimethylamine	R2377053	J3
	WG616293	SAMP	1,2,4-Trichlorobenzene	R2377053	J3
	WG616293	SAMP	2-Chlorophenol	R2377053	J3
	WG616293	SAMP	2,4-Dichlorophenol	R2377053	J3
	WG616293	SAMP	2,4-Dimethylphenol	R2377053	J3
	WG616293	SAMP	Phenol	R2377053	J3
	WG616225	SAMP	Endrin aldehyde	R2381101	J4
	WG616225	SAMP	PCB 1016	R2381101	J3
	WG616404	SAMP	Dinoseb	R2382039	J3
	WG616404	SAMP	MCPA	R2382039	L1

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
B	(EPA) - The indicated compound was found in the associated method blank as well as the laboratory sample.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
L1	(ESC) The associated batch LCS exceeded the upper control limit, which indicates a high bias; The sample analyte was "not detected" and is therefore unaffected.
L2	(ESC) The associated surrogate compound falls below 10%. The data should be used with caution. A re-extraction was not possible due to limited sample volume.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
10/15/12 at 13:07:22

TSR Signing Reports: 358
RX - Priority Rush

Sample: L598943-01 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/15/12 00:00 RPT Date: 10/15/12 08:42
POT DISS= filter Diss (preserved cont) 8-96 hours after preservation and before prep.
Sample: L598943-02 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/15/12 00:00 RPT Date: 10/15/12 08:42
POT DISS= filter Diss (preserved cont) 8-96 hours after preservation and before prep.
Sample: L598943-03 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/15/12 00:00 RPT Date: 10/15/12 08:42
POT DISS= filter Diss (preserved cont) 8-96 hours after preservation and before prep.
Sample: L598943-04 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/15/12 00:00 RPT Date: 10/15/12 08:42
POT DISS= filter Diss (preserved cont) 8-96 hours after preservation and before prep.
Sample: L598943-05 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/15/12 00:00 RPT Date: 10/15/12 08:42
POT DISS= filter Diss (preserved cont) 8-96 hours after preservation and before prep.

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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Michael Keifer
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Denver, CO 80222

Quality Assurance Report
Level II

L598943

October 15, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Nitrate	< .1	mg/l			WG616205	10/04/12 08:58
Chromium,Hexavalent	< .01	mg/l			WG616230	10/04/12 12:31
Chromium,Hexavalent	< .01	mg/l			WG616171	10/04/12 10:11
Mercury	< .0002	mg/l			WG616214	10/04/12 21:06
1,1,1-Trichloroethane	< .001	mg/l			WG616299	10/04/12 17:05
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG616299	10/04/12 17:05
1,1,2-Trichloroethane	< .001	mg/l			WG616299	10/04/12 17:05
1,1-Dichloroethane	< .001	mg/l			WG616299	10/04/12 17:05
1,1-Dichloroethene	< .001	mg/l			WG616299	10/04/12 17:05
1,2-Dichlorobenzene	< .001	mg/l			WG616299	10/04/12 17:05
1,2-Dichloroethane	< .001	mg/l			WG616299	10/04/12 17:05
1,2-Dichloropropane	< .001	mg/l			WG616299	10/04/12 17:05
1,3-Dichlorobenzene	< .001	mg/l			WG616299	10/04/12 17:05
1,4-Dichlorobenzene	< .001	mg/l			WG616299	10/04/12 17:05
2-Chloroethyl vinyl ether	< .05	mg/l			WG616299	10/04/12 17:05
Benzene	< .001	mg/l			WG616299	10/04/12 17:05
Bromodichloromethane	< .001	mg/l			WG616299	10/04/12 17:05
Bromoform	< .001	mg/l			WG616299	10/04/12 17:05
Bromomethane	< .005	mg/l			WG616299	10/04/12 17:05
Carbon tetrachloride	< .001	mg/l			WG616299	10/04/12 17:05
Chlorobenzene	< .001	mg/l			WG616299	10/04/12 17:05
Chlorodibromomethane	< .001	mg/l			WG616299	10/04/12 17:05
Chloroethane	< .005	mg/l			WG616299	10/04/12 17:05
Chloroform	< .005	mg/l			WG616299	10/04/12 17:05
Chloromethane	< .0025	mg/l			WG616299	10/04/12 17:05
cis-1,3-Dichloropropene	< .001	mg/l			WG616299	10/04/12 17:05
Ethylbenzene	< .001	mg/l			WG616299	10/04/12 17:05
Methylene Chloride	< .005	mg/l			WG616299	10/04/12 17:05
Tetrachloroethene	< .001	mg/l			WG616299	10/04/12 17:05
Toluene	< .005	mg/l			WG616299	10/04/12 17:05
trans-1,2-Dichloroethene	< .001	mg/l			WG616299	10/04/12 17:05
trans-1,3-Dichloropropene	< .001	mg/l			WG616299	10/04/12 17:05
Trichloroethene	< .001	mg/l			WG616299	10/04/12 17:05
Vinyl chloride	< .001	mg/l			WG616299	10/04/12 17:05
4-Bromofluorobenzene		% Rec.	95.10	82-120	WG616299	10/04/12 17:05
Dibromofluoromethane		% Rec.	93.71	82-126	WG616299	10/04/12 17:05
Toluene-d8		% Rec.	104.8	92-112	WG616299	10/04/12 17:05
a,a,a-Trifluorotoluene		% Rec.	103.9	90-116	WG616299	10/04/12 17:05
1,2,4-Trichlorobenzene	< .01	mg/l			WG616293	10/05/12 01:15
2,4,6-Trichlorophenol	< .01	mg/l			WG616293	10/05/12 01:15
2,4-Dichlorophenol	< .01	mg/l			WG616293	10/05/12 01:15
2,4-Dimethylphenol	< .01	mg/l			WG616293	10/05/12 01:15
2,4-Dinitrophenol	< .01	mg/l			WG616293	10/05/12 01:15
2,4-Dinitrotoluene	< .01	mg/l			WG616293	10/05/12 01:15
2,6-Dinitrotoluene	< .01	mg/l			WG616293	10/05/12 01:15
2-Chloronaphthalene	< .001	mg/l			WG616293	10/05/12 01:15
2-Chlorophenol	< .01	mg/l			WG616293	10/05/12 01:15
2-Nitrophenol	< .01	mg/l			WG616293	10/05/12 01:15
3,3-Dichlorobenzidine	< .01	mg/l			WG616293	10/05/12 01:15

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Denver, CO 80222

Quality Assurance Report
Level II

L598943

October 15, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
4,6-Dinitro-2-methylphenol	< .01	mg/l			WG616293	10/05/12 01:15
4-Bromophenyl-phenylether	< .01	mg/l			WG616293	10/05/12 01:15
4-Chloro-3-methylphenol	< .01	mg/l			WG616293	10/05/12 01:15
4-Chlorophenyl-phenylether	< .01	mg/l			WG616293	10/05/12 01:15
4-Nitrophenol	< .01	mg/l			WG616293	10/05/12 01:15
Acenaphthene	< .001	mg/l			WG616293	10/05/12 01:15
Acenaphthylene	< .001	mg/l			WG616293	10/05/12 01:15
Anthracene	< .001	mg/l			WG616293	10/05/12 01:15
1,2-Diphenylhydrazine	< .01	mg/l			WG616293	10/05/12 01:15
Benzidine	< .01	mg/l			WG616293	10/05/12 01:15
Benzo(a)anthracene	< .001	mg/l			WG616293	10/05/12 01:15
Benzo(a)pyrene	< .001	mg/l			WG616293	10/05/12 01:15
Benzo(b)fluoranthene	< .001	mg/l			WG616293	10/05/12 01:15
Benzo(g,h,i)perylene	< .001	mg/l			WG616293	10/05/12 01:15
Benzo(k)fluoranthene	< .001	mg/l			WG616293	10/05/12 01:15
Benzylbutyl phthalate	< .001	mg/l			WG616293	10/05/12 01:15
Bis(2-chlorethoxy)methane	< .01	mg/l			WG616293	10/05/12 01:15
Bis(2-chloroethyl)ether	< .01	mg/l			WG616293	10/05/12 01:15
Bis(2-chloroisopropyl)ether	< .01	mg/l			WG616293	10/05/12 01:15
Bis(2-ethylhexyl)phthalate	< .001	mg/l			WG616293	10/05/12 01:15
Chrysene	< .001	mg/l			WG616293	10/05/12 01:15
Di-n-butyl phthalate	< .001	mg/l			WG616293	10/05/12 01:15
Di-n-octyl phthalate	< .001	mg/l			WG616293	10/05/12 01:15
Dibenz(a,h)anthracene	< .001	mg/l			WG616293	10/05/12 01:15
Diethyl phthalate	< .001	mg/l			WG616293	10/05/12 01:15
Dimethyl phthalate	< .001	mg/l			WG616293	10/05/12 01:15
Fluoranthene	< .001	mg/l			WG616293	10/05/12 01:15
Fluorene	< .001	mg/l			WG616293	10/05/12 01:15
Hexachloro-1,3-butadiene	< .01	mg/l			WG616293	10/05/12 01:15
Hexachlorobenzene	< .001	mg/l			WG616293	10/05/12 01:15
Hexachlorocyclopentadiene	< .01	mg/l			WG616293	10/05/12 01:15
Hexachloroethane	< .01	mg/l			WG616293	10/05/12 01:15
Indeno(1,2,3-cd)pyrene	< .001	mg/l			WG616293	10/05/12 01:15
Isophorone	< .01	mg/l			WG616293	10/05/12 01:15
n-Nitrosodi-n-propylamine	< .01	mg/l			WG616293	10/05/12 01:15
n-Nitrosodimethylamine	< .01	mg/l			WG616293	10/05/12 01:15
n-Nitrosodiphenylamine	< .01	mg/l			WG616293	10/05/12 01:15
Naphthalene	< .001	mg/l			WG616293	10/05/12 01:15
Nitrobenzene	< .01	mg/l			WG616293	10/05/12 01:15
Pentachlorophenol	< .001	mg/l			WG616293	10/05/12 01:15
Phenanthrene	< .001	mg/l			WG616293	10/05/12 01:15
Phenol	< .01	mg/l			WG616293	10/05/12 01:15
Pyrene	< .001	mg/l			WG616293	10/05/12 01:15
2,4,6-Tribromophenol		% Rec.	96.10	16-147	WG616293	10/05/12 01:15
2-Fluorobiphenyl		% Rec.	84.80	29-127	WG616293	10/05/12 01:15
2-Fluorophenol		% Rec.	64.44	10-75	WG616293	10/05/12 01:15
Nitrobenzene-d5		% Rec.	75.86	17-119	WG616293	10/05/12 01:15
Phenol-d5		% Rec.	42.99	10-63	WG616293	10/05/12 01:15
p-Terphenyl-d14		% Rec.	83.43	40-174	WG616293	10/05/12 01:15
PCB 1016	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1221	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1232	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1242	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1248	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1254	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1260	< .0005	mg/l			WG616225	10/08/12 13:39
Decachlorobiphenyl		% Rec.	109.0	10-122.6	WG616225	10/08/12 13:39

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L598943

October 15, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Tetrachloro-m-xylene		% Rec.	66.40	15.3-114.2		10/08/12 13:39
4,4-DDD	< .00005	mg/l			WG616225	10/09/12 10:38
4,4-DDE	< .00005	mg/l			WG616225	10/09/12 10:38
4,4-DDT	< .00005	mg/l			WG616225	10/09/12 10:38
Aldrin	< .00005	mg/l			WG616225	10/09/12 10:38
Alpha BHC	< .00005	mg/l			WG616225	10/09/12 10:38
Beta BHC	< .00005	mg/l			WG616225	10/09/12 10:38
Chlordane	< .0005	mg/l			WG616225	10/09/12 10:38
Delta BHC	< .00005	mg/l			WG616225	10/09/12 10:38
Dieldrin	< .00005	mg/l			WG616225	10/09/12 10:38
Endosulfan I	< .00005	mg/l			WG616225	10/09/12 10:38
Endosulfan II	< .00005	mg/l			WG616225	10/09/12 10:38
Endosulfan sulfate	< .00005	mg/l			WG616225	10/09/12 10:38
Endrin	< .00005	mg/l			WG616225	10/09/12 10:38
Endrin aldehyde	< .00005	mg/l			WG616225	10/09/12 10:38
Endrin ketone	< .00005	mg/l			WG616225	10/09/12 10:38
Gamma BHC	< .00005	mg/l			WG616225	10/09/12 10:38
Heptachlor	< .00005	mg/l			WG616225	10/09/12 10:38
Heptachlor epoxide	< .00005	mg/l			WG616225	10/09/12 10:38
Hexachlorobenzene	< .00005	mg/l			WG616225	10/09/12 10:38
Methoxychlor	< .00005	mg/l			WG616225	10/09/12 10:38
Toxaphene	< .0005	mg/l			WG616225	10/09/12 10:38
Decachlorobiphenyl		% Rec.	76.32	10-122.6	WG616225	10/09/12 10:38
Tetrachloro-m-xylene		% Rec.	70.03	15.3-114.2	WG616225	10/09/12 10:38
2,4,5-T	< .002	mg/l			WG616404	10/09/12 02:54
2,4,5-TP (Silvex)	< .002	mg/l			WG616404	10/09/12 02:54
2,4-D	< .002	mg/l			WG616404	10/09/12 02:54
2,4-DB	< .002	mg/l			WG616404	10/09/12 02:54
Dalapon	< .002	mg/l			WG616404	10/09/12 02:54
Dicamba	< .002	mg/l			WG616404	10/09/12 02:54
Dichloroprop	< .002	mg/l			WG616404	10/09/12 02:54
Dinoseb	< .002	mg/l			WG616404	10/09/12 02:54
MCPA	< .1	mg/l			WG616404	10/09/12 02:54
MCPP	< .1	mg/l			WG616404	10/09/12 02:54
2,4-Dichlorophenyl Acetic Acid		%	72.07	42-112	WG616404	10/09/12 02:54
Antimony	< .001	mg/l			WG616934	10/09/12 22:33
Arsenic	< .001	mg/l			WG616934	10/09/12 22:33
Barium	< .002	mg/l			WG616934	10/09/12 22:33
Cadmium	< .0005	mg/l			WG616934	10/09/12 22:33
Chromium	< .001	mg/l			WG616934	10/09/12 22:33
Copper	< .001	mg/l			WG616934	10/09/12 22:33
Lead	< .001	mg/l			WG616934	10/09/12 22:33
Manganese	< .002	mg/l			WG616934	10/09/12 22:33
Nickel	< .001	mg/l			WG616934	10/09/12 22:33
Selenium	< .001	mg/l			WG616934	10/09/12 22:33
Silver	< .0005	mg/l			WG616934	10/09/12 22:33
Thallium	< .001	mg/l			WG616934	10/09/12 22:33
Beryllium	< .001	mg/l			WG616934	10/09/12 20:56
Zinc	< .01	mg/l			WG616934	10/09/12 20:56
Dissolved Solids	< 10	mg/l			WG616901	10/10/12 14:17
Aluminum,Dissolved	< .1	mg/l			WG617064	10/10/12 02:14

* Performance of this Analyte is outside of established criteria.
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Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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Quality Assurance Report
Level II

L598943

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Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Aluminum,Dissolved	< .1	mg/l			WG616983	10/09/12 14:53
Iron,Dissolved	< .1	mg/l			WG616983	10/09/12 14:53
Arsenic,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Barium,Dissolved	< .002	mg/l			WG617056	10/10/12 10:20
Beryllium,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Cadmium,Dissolved	< .0005	mg/l			WG617056	10/10/12 10:20
Chromium,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Copper,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Lead,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Manganese,Dissolved	< .002	mg/l			WG617056	10/10/12 10:20
Nickel,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Selenium,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Thallium,Dissolved	< .001	mg/l			WG617056	10/10/12 10:20
Zinc,Dissolved	< .01	mg/l			WG617056	10/10/12 10:20
Silver,Dissolved	< .0005	mg/l			WG617240	10/10/12 18:54
Suspended Solids	< 1	mg/l			WG617043	10/11/12 13:47
Iron,Dissolved	< .1	mg/l			WG617255	10/11/12 11:14
Aluminum	< .1	mg/l			WG617243	10/11/12 15:35
Iron	< .1	mg/l			WG617243	10/11/12 15:35
Aluminum	< .1	mg/l			WG617083	10/11/12 17:11
Iron	< .1	mg/l			WG617083	10/11/12 17:11
Dissolved Solids	< 10	mg/l			WG617047	10/11/12 15:43
Antimony,Dissolved	< .001	mg/l			WG617056	10/12/12 14:47
Arsenic,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Barium,Dissolved	< .002	mg/l			WG617325	10/11/12 22:40
Beryllium,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Cadmium,Dissolved	< .0005	mg/l			WG617325	10/11/12 22:40
Chromium,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Copper,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Lead,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Manganese,Dissolved	< .002	mg/l			WG617325	10/11/12 22:40
Selenium,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Silver,Dissolved	< .0005	mg/l			WG617325	10/11/12 22:40
Thallium,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Zinc,Dissolved	< .01	mg/l			WG617325	10/11/12 22:40
Antimony,Dissolved	< .001	mg/l			WG617325	10/12/12 15:42
Nickel,Dissolved	< .001	mg/l			WG617752	10/14/12 11:14

* Performance of this Analyte is outside of established criteria.
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Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L598943

October 15, 2012

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Nitrate	mg/l	0.240	0.240	0	20	L598992-01	WG616205
Chromium,Hexavalent	mg/l	0	0	0	20	L598943-05	WG616230
Chromium,Hexavalent	mg/l	0.0970	0.100	3.05	20	L598887-02	WG616171
Chromium,Hexavalent	mg/l	0	0	0	20	L598872-02	WG616171
Mercury	mg/l	0	0	0	20	L598944-01	WG616214
pH	su	7.30	7.40	0.950	1	L598638-02	WG616370
pH	su	9.00	9.00	0.111	1	L599113-02	WG616370
Antimony	mg/l	0.00210	0.00214	2.36	20	L598961-01	WG616934
Arsenic	mg/l	0.00200	0.00189	6.15	20	L598961-01	WG616934
Barium	mg/l	0.00790	0.00765	3.22	20	L598961-01	WG616934
Cadmium	mg/l	0	0	0	20	L598961-01	WG616934
Chromium	mg/l	0.00470	0.00430	8.68	20	L598961-01	WG616934
Copper	mg/l	0.0130	0.0130	2.33	20	L598961-01	WG616934
Lead	mg/l	0	0	0	20	L598961-01	WG616934
Manganese	mg/l	0.0460	0.0448	1.77	20	L598961-01	WG616934
Nickel	mg/l	0.110	0.110	0	20	L598961-01	WG616934
Selenium	mg/l	0	0	0	20	L598961-01	WG616934
Silver	mg/l	0	0	0	20	L598961-01	WG616934
Thallium	mg/l	0	0.000110	NA	20	L598961-01	WG616934
Beryllium	mg/l	0	0	0	20	L598961-01	WG616934
Zinc	mg/l	0.120	0.120	0.830	20	L598961-01	WG616934
Dissolved Solids	mg/l	4400	4430	0.362	5	L599118-01	WG616901
Aluminum,Dissolved	mg/l	0	0	0	20	L598390-01	WG616983
Iron,Dissolved	mg/l	0	0	0	20	L598390-01	WG616983
Arsenic,Dissolved	mg/l	0.00320	0.00330	3.70	20	L598390-02	WG617056
Beryllium,Dissolved	mg/l	0	0	0	20	L598390-02	WG617056
Cadmium,Dissolved	mg/l	0.00100	0.000960	8.00	20	L598390-02	WG617056
Chromium,Dissolved	mg/l	0	0	0	20	L598390-02	WG617056
Copper,Dissolved	mg/l	0.00150	0.00120	21.6*	20	L598390-02	WG617056
Lead,Dissolved	mg/l	0	0	0	20	L598390-02	WG617056
Manganese,Dissolved	mg/l	0.0170	0.0166	3.55	20	L598390-02	WG617056
Nickel,Dissolved	mg/l	0.00780	0.00720	8.64	20	L598390-02	WG617056
Selenium,Dissolved	mg/l	0.0340	0.0340	0	20	L598390-02	WG617056
Thallium,Dissolved	mg/l	0	0	0	20	L598390-02	WG617056
Zinc,Dissolved	mg/l	0.0120	0	NA	20	L598390-02	WG617056
Nitrate	mg/l	0.240	0.240	0	20	L598992-01	WG616205
Barium,Dissolved	mg/l	0.0790	0.0800	1.77	20	L598390-02	WG617056
Silver,Dissolved	mg/l	0.000730	0.000550	28.1*	20	L598645-01	WG617240

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Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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Denver, CO 80222

Quality Assurance Report
Level II

L598943

October 15, 2012

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
			Duplicate				
Suspended Solids	mg/l	66.0	65.0	1.53	5	L598540-01	WG617043
Suspended Solids	mg/l	0.890	0.667	0	5	L598953-01	WG617043
Iron,Dissolved	mg/l	25.0	25.0	1.21	20	L598943-05	WG617255
Aluminum	mg/l	0.110	0.100	10.4	20	L599113-01	WG617243
Iron	mg/l	0.130	0.119	9.60	20	L599113-01	WG617243
Aluminum	mg/l	0.490	0.440	11.4	20	L598924-01	WG617083
Iron	mg/l	0	0.0217	NA	20	L598924-01	WG617083
Dissolved Solids	mg/l	1600	1660	2.99	5	L599066-01	WG617047
Antimony,Dissolved	mg/l	0.00460	0.00490	7.41	20	L598390-02	WG617056
Arsenic,Dissolved	mg/l	0	0	0	20	L599455-03	WG617325
Barium,Dissolved	mg/l	0.0110	0.00987	8.07	20	L599455-03	WG617325
Beryllium,Dissolved	mg/l	0	0	0	20	L599455-03	WG617325
Cadmium,Dissolved	mg/l	0	0	0	20	L599455-03	WG617325
Chromium,Dissolved	mg/l	0	0.000110	NA	20	L599455-03	WG617325
Copper,Dissolved	mg/l	0.00370	0.00400	6.72	20	L599455-03	WG617325
Lead,Dissolved	mg/l	0	0	0	20	L599455-03	WG617325
Manganese,Dissolved	mg/l	0	0.000540	NA	20	L599455-03	WG617325
Selenium,Dissolved	mg/l	0.00160	0.00154	5.06	20	L599455-03	WG617325
Silver,Dissolved	mg/l	0.000510	0.000440	14.7	20	L599455-03	WG617325
Thallium,Dissolved	mg/l	0	0.0000600	NA	20	L599455-03	WG617325
Zinc,Dissolved	mg/l	0	0.00714	NA	20	L599455-03	WG617325
Antimony,Dissolved	mg/l	0.00120	0	NA	20	L599455-03	WG617325
Nickel,Dissolved	mg/l	0.00120	0.00130	12.2	20	L599455-02	WG617752

Analyte	Units	Known Val	Laboratory Control Sample Result	% Rec	Limit	Batch
Nitrate	mg/l	8	8.12	102.	90-110	WG616205
Chromium,Hexavalent	mg/l	.6	0.594	99.0	85-115	WG616230
Chromium,Hexavalent	mg/l	.6	0.598	99.7	85-115	WG616171
Mercury	mg/l	.003	0.00293	97.7	85-115	WG616214
1,1,1-Trichloroethane	mg/l	.025	0.0226	90.2	71-126	WG616299
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0252	101.	78-130	WG616299
1,1,2-Trichloroethane	mg/l	.025	0.0270	108.	81-121	WG616299
1,1-Dichloroethane	mg/l	.025	0.0221	88.3	73-123	WG616299
1,1-Dichloroethene	mg/l	.025	0.0222	89.0	54-134	WG616299
1,2-Dichlorobenzene	mg/l	.025	0.0249	99.6	82-121	WG616299

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Quality Assurance Report
Level II

L598943

October 15, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,2-Dichloroethane	mg/l	.025	0.0225	89.9	69-128	WG616299
1,2-Dichloropropane	mg/l	.025	0.0245	98.0	77-121	WG616299
1,3-Dichlorobenzene	mg/l	.025	0.0277	111.	77-127	WG616299
1,4-Dichlorobenzene	mg/l	.025	0.0239	95.6	79-117	WG616299
2-Chloroethyl vinyl ether	mg/l	.125	0.148	118.	26-172	WG616299
Benzene	mg/l	.025	0.0230	92.0	72-119	WG616299
Bromodichloromethane	mg/l	.025	0.0240	96.1	75-127	WG616299
Bromoform	mg/l	.025	0.0246	98.3	61-136	WG616299
Bromomethane	mg/l	.025	0.0271	108.	42-172	WG616299
Carbon tetrachloride	mg/l	.025	0.0226	90.3	63-129	WG616299
Chlorobenzene	mg/l	.025	0.0271	108.	78-123	WG616299
Chlorodibromomethane	mg/l	.025	0.0248	99.1	73-128	WG616299
Chloroethane	mg/l	.025	0.0302	121.	52-164	WG616299
Chloroform	mg/l	.025	0.0239	95.7	76-122	WG616299
Chloromethane	mg/l	.025	0.0200	80.1	50-141	WG616299
cis-1,3-Dichloropropene	mg/l	.025	0.0243	97.2	74-124	WG616299
Ethylbenzene	mg/l	.025	0.0264	106.	77-124	WG616299
Methylene Chloride	mg/l	.025	0.0205	82.0	67-122	WG616299
Tetrachloroethene	mg/l	.025	0.0259	104.	69-131	WG616299
Toluene	mg/l	.025	0.0243	97.1	75-114	WG616299
trans-1,2-Dichloroethene	mg/l	.025	0.0212	84.9	63-127	WG616299
trans-1,3-Dichloropropene	mg/l	.025	0.0255	102.	69-124	WG616299
Trichloroethene	mg/l	.025	0.0240	95.9	69-131	WG616299
Vinyl chloride	mg/l	.025	0.0222	88.8	55-142	WG616299
4-Bromofluorobenzene				100.0	82-120	WG616299
Dibromofluoromethane				95.65	82-126	WG616299
Toluene-d8				100.7	92-112	WG616299
a,a,a-Trifluorotoluene				101.7	90-116	WG616299
Nitrate	mg/l	8	8.12	102.	90-110	WG616205
1,2,4-Trichlorobenzene	mg/l	.01	0.00453	45.3	34-97	WG616293
2,4,6-Trichlorophenol	mg/l	.01	0.00814	81.4	38-113	WG616293
2,4-Dichlorophenol	mg/l	.01	0.00632	63.2	46-105	WG616293
2,4-Dimethylphenol	mg/l	.01	0.00611	61.1	47-108	WG616293
2,4-Dinitrophenol	mg/l	.01	0.00703	70.3	10-121	WG616293
2,4-Dinitrotoluene	mg/l	.01	0.00924	92.4	59-117	WG616293
2,6-Dinitrotoluene	mg/l	.01	0.00822	82.2	57-110	WG616293
2-Chloronaphthalene	mg/l	.01	0.00641	64.1	47-106	WG616293
2-Chlorophenol	mg/l	.01	0.00499	49.9	37-90	WG616293
2-Nitrophenol	mg/l	.01	0.00605	60.5	40-112	WG616293
3,3-Dichlorobenzidine	mg/l	.01	0.00924	92.4	58-116	WG616293
4,6-Dinitro-2-methylphenol	mg/l	.01	0.00933	93.3	21-119	WG616293
4-Bromophenyl-phenylether	mg/l	.01	0.00826	82.6	63-120	WG616293
4-Chloro-3-methylphenol	mg/l	.01	0.00749	74.9	50-105	WG616293
4-Chlorophenyl-phenylether	mg/l	.01	0.00726	72.6	58-115	WG616293
4-Nitrophenol	mg/l	.01	0.00448	44.8	10-53	WG616293
Acenaphthene	mg/l	.01	0.00736	73.6	52-107	WG616293
Acenaphthylene	mg/l	.01	0.00732	73.2	55-119	WG616293
Anthracene	mg/l	.01	0.00908	90.8	65-114	WG616293
1,2-Diphenylhydrazine	mg/l	.01	0.00820	82.0	52-113	WG616293
Benzidine	mg/l	.01	0.00527	52.7	10-55	WG616293
Benzo(a)anthracene	mg/l	.01	0.00896	89.6	68-113	WG616293
Benzo(a)pyrene	mg/l	.01	0.00915	91.5	68-115	WG616293
Benzo(b)fluoranthene	mg/l	.01	0.00950	95.0	67-114	WG616293
Benzo(g,h,i)perylene	mg/l	.01	0.00872	87.2	52-132	WG616293
Benzo(k)fluoranthene	mg/l	.01	0.00931	93.1	62-116	WG616293

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October 15, 2012

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Benzylbutyl phthalate	mg/l	.01	0.00941	94.1	12-166	WG616293
Bis(2-chlorethoxy)methane	mg/l	.01	0.00629	62.9	56-116	WG616293
Bis(2-chloroethyl)ether	mg/l	.01	0.00516	51.6	39-109	WG616293
Bis(2-chloroisopropyl)ether	mg/l	.01	0.00547	54.7	43-108	WG616293
Bis(2-ethylhexyl)phthalate	mg/l	.01	0.00972	97.2	61-147	WG616293
Chrysene	mg/l	.01	0.00929	92.9	65-114	WG616293
Di-n-butyl phthalate	mg/l	.01	0.00989	98.9	56-133	WG616293
Di-n-octyl phthalate	mg/l	.01	0.00992	99.2	59-143	WG616293
Dibenz(a,h)anthracene	mg/l	.01	0.00885	88.5	54-130	WG616293
Diethyl phthalate	mg/l	.01	0.00916	91.6	33-136	WG616293
Dimethyl phthalate	mg/l	.01	0.00841	84.1	10-152	WG616293
Fluoranthene	mg/l	.01	0.00948	94.8	66-120	WG616293
Fluorene	mg/l	.01	0.00778	77.8	58-110	WG616293
Hexachloro-1,3-butadiene	mg/l	.01	0.00459	45.9	34-115	WG616293
Hexachlorobenzene	mg/l	.01	0.00723	72.3	55-117	WG616293
Hexachlorocyclopentadiene	mg/l	.01	0.00474	47.4	20-121	WG616293
Hexachloroethane	mg/l	.01	0.00425	42.5	24-93	WG616293
Indeno(1,2,3-cd)pyrene	mg/l	.01	0.00884	88.4	56-129	WG616293
Isophorone	mg/l	.01	0.00531	53.1*	55-108	WG616293
n-Nitrosodi-n-propylamine	mg/l	.01	0.00677	67.7	50-115	WG616293
n-Nitrosodimethylamine	mg/l	.01	0.00320	32.0	12-68	WG616293
n-Nitrosodiphenylamine	mg/l	.01	0.00868	86.8	55-98	WG616293
Naphthalene	mg/l	.01	0.00541	54.1	42-103	WG616293
Nitrobenzene	mg/l	.01	0.00573	57.3	39-102	WG616293
Pentachlorophenol	mg/l	.01	0.00930	93.0	10-101	WG616293
Phenanthrene	mg/l	.01	0.00881	88.1	61-110	WG616293
Phenol	mg/l	.01	0.00277	27.7	10-53	WG616293
Pyrene	mg/l	.01	0.00845	84.5	65-116	WG616293
2,4,6-Tribromophenol				90.33	16-147	WG616293
2-Fluorobiphenyl				66.10	29-127	WG616293
2-Fluorophenol				37.66	10-75	WG616293
Nitrobenzene-d5				58.11	17-119	WG616293
Phenol-d5				27.84	10-63	WG616293
p-Terphenyl-d14				83.04	40-174	WG616293
pH	su	6.03	6.01	99.7	98-101	WG616370
PCB 1016	mg/l	.0005	0.000443	88.5	32-126	WG616225
PCB 1260	mg/l	.0005	0.000423	84.7	58-128	WG616225
Decachlorobiphenyl				98.65	10-122.6	WG616225
Tetrachloro-m-xylene				73.13	15.3-114.2	WG616225
4,4-DDD	mg/l	.0002	0.000186	92.8	60-123	WG616225
4,4-DDE	mg/l	.0002	0.000173	86.4	50-120	WG616225
4,4-DDT	mg/l	.0002	0.000193	96.5	61-121	WG616225
Aldrin	mg/l	.0002	0.000104	52.0	10-136	WG616225
Alpha BHC	mg/l	.0002	0.000183	91.6	58-114	WG616225
Beta BHC	mg/l	.0002	0.000171	85.6	61-120	WG616225
Delta BHC	mg/l	.0002	0.000170	85.2	57-120	WG616225
Dieldrin	mg/l	.0002	0.000183	91.6	62-123	WG616225
Endosulfan I	mg/l	.0002	0.000182	91.0	63-123	WG616225
Endosulfan II	mg/l	.0002	0.000209	104.	63-124	WG616225
Endosulfan sulfate	mg/l	.0002	0.000199	99.7	59-125	WG616225
Endrin	mg/l	.0002	0.000182	91.2	60-123	WG616225
Endrin aldehyde	mg/l	.0002	0.000183	91.7	42-92	WG616225
Endrin ketone	mg/l	.0002	0.000211	105.	60-117	WG616225
Gamma BHC	mg/l	.0002	0.000185	92.3	59-116	WG616225
Heptachlor	mg/l	.0002	0.000133	66.4	10-131	WG616225

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Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Heptachlor epoxide	mg/l	.0002	0.000180	90.1	61-118	WG616225
Hexachlorobenzene	mg/l	.0002	0.000120	59.8	28-116	WG616225
Methoxychlor	mg/l	.0002	0.000201	101.	66-122	WG616225
Decachlorobiphenyl				86.76	10-122.6	WG616225
Tetrachloro-m-xylene				79.57	15.3-114.2	WG616225
2,4,5-T	mg/l	.005	0.00525	105.	46-116	WG616404
2,4,5-TP (Silvex)	mg/l	.005	0.00524	105.	53.6-122	WG616404
2,4-D	mg/l	.005	0.00467	93.3	47.4-113	WG616404
2,4-DB	mg/l	.005	0.00328	65.6	48.4-118	WG616404
Dalapon	mg/l	.005	0.00400	79.9	40.5-102	WG616404
Dicamba	mg/l	.005	0.00488	97.7	57.2-111	WG616404
Dichloroprop	mg/l	.005	0.00564	113.	55.8-128	WG616404
Dinoseb	mg/l	.005	0.00248	49.6	41-121	WG616404
MCPA	mg/l	.5	0.752	150.*	24.1-143	WG616404
MCPP	mg/l	.5	0.691	138.	49-198	WG616404
2,4-Dichlorophenyl Acetic Acid				85.29	42-112	WG616404
Antimony	mg/l	.05	0.0504	101.	85-115	WG616934
Arsenic	mg/l	.05	0.0471	94.2	85-115	WG616934
Barium	mg/l	.05	0.0483	96.6	85-115	WG616934
Cadmium	mg/l	.05	0.0484	96.8	85-115	WG616934
Chromium	mg/l	.05	0.0505	101.	85-115	WG616934
Copper	mg/l	.05	0.0502	100.	85-115	WG616934
Lead	mg/l	.05	0.0497	99.4	85-115	WG616934
Manganese	mg/l	.05	0.0507	101.	85-115	WG616934
Nickel	mg/l	.05	0.0492	98.4	85-115	WG616934
Selenium	mg/l	.05	0.0469	93.8	85-115	WG616934
Silver	mg/l	.05	0.0492	98.4	85-115	WG616934
Thallium	mg/l	.05	0.0485	97.0	85-115	WG616934
Beryllium	mg/l	.05	0.0507	101.	85-115	WG616934
Zinc	mg/l	.05	0.0568	114.	85-115	WG616934
Dissolved Solids	mg/l	8800	8630	98.1	85-115	WG616901
Aluminum,Dissolved	mg/l	1	0.928	92.8	85-115	WG617064
Aluminum,Dissolved	mg/l	1	1.04	104.	85-115	WG616983
Iron,Dissolved	mg/l	1	1.06	106.	85-115	WG616983
Arsenic,Dissolved	mg/l	.05	0.0498	99.6	85-115	WG617056
Barium,Dissolved	mg/l	.05	0.0519	104.	85-115	WG617056
Beryllium,Dissolved	mg/l	.05	0.0524	105.	85-115	WG617056
Cadmium,Dissolved	mg/l	.05	0.0506	101.	85-115	WG617056
Chromium,Dissolved	mg/l	.05	0.0531	106.	85-115	WG617056
Copper,Dissolved	mg/l	.05	0.0534	107.	85-115	WG617056
Lead,Dissolved	mg/l	.05	0.0523	105.	85-115	WG617056
Manganese,Dissolved	mg/l	.05	0.0533	107.	85-115	WG617056
Nickel,Dissolved	mg/l	.05	0.0527	105.	85-115	WG617056
Selenium,Dissolved	mg/l	.05	0.0518	104.	85-115	WG617056
Thallium,Dissolved	mg/l	.05	0.0504	101.	85-115	WG617056
Zinc,Dissolved	mg/l	.05	0.0559	112.	85-115	WG617056

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Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L598943

October 15, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Silver,Dissolved	mg/l	.05	0.0511	102.	85-115	WG617240
Suspended Solids	mg/l	773	792.	102.	85-115	WG617043
Iron,Dissolved	mg/l	1	1.13	113.	85-115	WG617255
Aluminum	mg/l	1	1.08	108.	85-115	WG617243
Iron	mg/l	1	1.08	108.	85-115	WG617243
Aluminum	mg/l	1	1.06	106.	85-115	WG617083
Iron	mg/l	1	1.11	111.	85-115	WG617083
Dissolved Solids	mg/l	8800	8640	98.1	85-115	WG617047
Antimony,Dissolved	mg/l	.05	0.0473	94.6	85-115	WG617056
Arsenic,Dissolved	mg/l	.05	0.0462	92.4	85-115	WG617325
Barium,Dissolved	mg/l	.05	0.0483	96.6	85-115	WG617325
Beryllium,Dissolved	mg/l	.05	0.0483	96.6	85-115	WG617325
Cadmium,Dissolved	mg/l	.05	0.0497	99.4	85-115	WG617325
Chromium,Dissolved	mg/l	.05	0.0512	102.	85-115	WG617325
Copper,Dissolved	mg/l	.05	0.0492	98.4	85-115	WG617325
Lead,Dissolved	mg/l	.05	0.0474	94.8	85-115	WG617325
Manganese,Dissolved	mg/l	.05	0.0498	99.6	85-115	WG617325
Selenium,Dissolved	mg/l	.05	0.0471	94.2	85-115	WG617325
Silver,Dissolved	mg/l	.05	0.0494	98.8	85-115	WG617325
Thallium,Dissolved	mg/l	.05	0.0470	94.0	85-115	WG617325
Zinc,Dissolved	mg/l	.05	0.0519	104.	85-115	WG617325
Antimony,Dissolved	mg/l	.05	0.0464	92.8	85-115	WG617325
Nickel,Dissolved	mg/l	.05	0.0528	106.	85-115	WG617752

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Nitrate	mg/l	8.14	8.12	102.	90-110	0.246	20	WG616205
Chromium,Hexavalent	mg/l	0.594	0.594	99.0	85-115	0	20	WG616230
Chromium,Hexavalent	mg/l	0.598	0.598	100.	85-115	0	20	WG616171
1,1,1-Trichloroethane	mg/l	0.0232	0.0226	93.0	71-126	2.86	20	WG616299
1,1,2,2-Tetrachloroethane	mg/l	0.0235	0.0252	94.0	78-130	6.87	20	WG616299
1,1,2-Trichloroethane	mg/l	0.0250	0.0270	100.	81-121	7.78	20	WG616299
1,1-Dichloroethane	mg/l	0.0228	0.0221	91.0	73-123	3.13	20	WG616299
1,1-Dichloroethene	mg/l	0.0216	0.0222	86.0	54-134	3.01	20	WG616299
1,2-Dichlorobenzene	mg/l	0.0271	0.0249	108.	82-121	8.26	20	WG616299

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Quality Assurance Report
Level II

L598943

October 15, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
1,2-Dichloroethane	mg/l	0.0236	0.0225	94.0	69-128	4.78	20	WG616299
1,2-Dichloropropane	mg/l	0.0274	0.0245	110.	77-121	11.1	20	WG616299
1,3-Dichlorobenzene	mg/l	0.0266	0.0277	106.	77-127	4.22	20	WG616299
1,4-Dichlorobenzene	mg/l	0.0252	0.0239	101.	79-117	5.51	20	WG616299
2-Chloroethyl vinyl ether	mg/l	0.150	0.148	120.	26-172	1.72	22	WG616299
Benzene	mg/l	0.0237	0.0230	95.0	72-119	3.14	20	WG616299
Bromodichloromethane	mg/l	0.0248	0.0240	99.0	75-127	3.36	20	WG616299
Bromoform	mg/l	0.0235	0.0246	94.0	61-136	4.29	20	WG616299
Bromomethane	mg/l	0.0274	0.0271	110.	42-172	1.15	20	WG616299
Carbon tetrachloride	mg/l	0.0234	0.0226	94.0	63-129	3.55	20	WG616299
Chlorobenzene	mg/l	0.0255	0.0271	102.	78-123	5.96	20	WG616299
Chlorodibromomethane	mg/l	0.0237	0.0248	95.0	73-128	4.26	20	WG616299
Chloroethane	mg/l	0.0296	0.0302	118.	52-164	2.19	20	WG616299
Chloroform	mg/l	0.0234	0.0239	94.0	76-122	2.19	20	WG616299
Chloromethane	mg/l	0.0208	0.0200	83.0	50-141	3.94	20	WG616299
cis-1,3-Dichloropropene	mg/l	0.0246	0.0243	98.0	74-124	1.28	20	WG616299
Ethylbenzene	mg/l	0.0262	0.0264	105.	77-124	0.890	20	WG616299
Methylene Chloride	mg/l	0.0213	0.0205	85.0	67-122	3.80	20	WG616299
Tetrachloroethene	mg/l	0.0246	0.0259	98.0	69-131	5.03	20	WG616299
Toluene	mg/l	0.0253	0.0243	101.	75-114	4.07	20	WG616299
trans-1,2-Dichloroethene	mg/l	0.0205	0.0212	82.0	63-127	3.28	20	WG616299
trans-1,3-Dichloropropene	mg/l	0.0263	0.0255	105.	69-124	2.86	20	WG616299
Trichloroethene	mg/l	0.0249	0.0240	99.0	69-131	3.67	20	WG616299
Vinyl chloride	mg/l	0.0233	0.0222	93.0	55-142	4.79	20	WG616299
4-Bromofluorobenzene				97.42	82-120			WG616299
Dibromofluoromethane				93.29	82-126			WG616299
Toluene-d8				101.2	92-112			WG616299
a,a,a-Trifluorotoluene				102.4	90-116			WG616299
Nitrate	mg/l	8.14	8.12	102.	90-110	0.246	20	WG616205
1,2,4-Trichlorobenzene	mg/l	0.00595	0.00453	60.0	34-97	27.2*	21	WG616293
2,4,6-Trichlorophenol	mg/l	0.00845	0.00814	84.0	38-113	3.66	29	WG616293
2,4-Dichlorophenol	mg/l	0.00805	0.00632	80.0	46-105	24.0*	20	WG616293
2,4-Dimethylphenol	mg/l	0.00776	0.00611	78.0	47-108	23.7*	20	WG616293
2,4-Dinitrophenol	mg/l	0.00638	0.00703	64.0	10-121	9.68	40	WG616293
2,4-Dinitrotoluene	mg/l	0.00914	0.00924	91.0	59-117	1.04	20	WG616293
2,6-Dinitrotoluene	mg/l	0.00805	0.00822	80.0	57-110	2.15	20	WG616293
2-Chloronaphthalene	mg/l	0.00718	0.00641	72.0	47-106	11.3	20	WG616293
2-Chlorophenol	mg/l	0.00714	0.00499	71.0	37-90	35.4*	21	WG616293
2-Nitrophenol	mg/l	0.00750	0.00605	75.0	40-112	21.4	22	WG616293
3,3-Dichlorobenzidine	mg/l	0.00959	0.00924	96.0	58-116	3.74	20	WG616293
4,6-Dinitro-2-methylphenol	mg/l	0.00879	0.00933	88.0	21-119	5.99	40	WG616293
4-Bromophenyl-phenylether	mg/l	0.00762	0.00826	76.0	63-120	8.01	20	WG616293
4-Chloro-3-methylphenol	mg/l	0.00863	0.00749	86.0	50-105	14.1	20	WG616293
4-Chlorophenyl-phenylether	mg/l	0.00762	0.00726	76.0	58-115	4.81	20	WG616293
4-Nitrophenol	mg/l	0.00423	0.00448	42.0	10-53	5.62	40	WG616293
Acenaphthene	mg/l	0.00754	0.00736	75.0	52-107	2.45	20	WG616293
Acenaphthylene	mg/l	0.00773	0.00732	77.0	55-119	5.56	20	WG616293
Anthracene	mg/l	0.00804	0.00908	80.0	65-114	12.2	20	WG616293
1,2-Diphenylhydrazine	mg/l	0.00838	0.00820	84.0	52-113	2.06	20	WG616293
Benzidine	mg/l	0.00539	0.00527	54.0	10-55	2.17	40	WG616293
Benzo(a)anthracene	mg/l	0.00872	0.00896	87.0	68-113	2.65	20	WG616293
Benzo(a)pyrene	mg/l	0.00878	0.00915	88.0	68-115	4.14	20	WG616293
Benzo(b)fluoranthene	mg/l	0.00856	0.00950	86.0	67-114	10.4	20	WG616293
Benzo(g,h,i)perylene	mg/l	0.00840	0.00872	84.0	52-132	3.82	20	WG616293
Benzo(k)fluoranthene	mg/l	0.00915	0.00931	92.0	62-116	1.73	20	WG616293

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Michael Keifer
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Quality Assurance Report
Level II

L598943

October 15, 2012

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
Benzylbutyl phthalate	mg/l	0.00918	0.00941	92.0	12-166	2.51	20	WG616293
Bis(2-chlorethoxy)methane	mg/l	0.00784	0.00629	78.0	56-116	21.9*	20	WG616293
Bis(2-chloroethyl)ether	mg/l	0.00722	0.00516	72.0	39-109	33.2*	23	WG616293
Bis(2-chloroisopropyl)ether	mg/l	0.00707	0.00547	71.0	43-108	25.5*	20	WG616293
Bis(2-ethylhexyl)phthalate	mg/l	0.00907	0.00972	91.0	61-147	6.94	20	WG616293
Chrysene	mg/l	0.00940	0.00929	94.0	65-114	1.14	20	WG616293
Di-n-butyl phthalate	mg/l	0.00903	0.00989	90.0	56-133	9.13	20	WG616293
Di-n-octyl phthalate	mg/l	0.00954	0.00992	95.0	59-143	3.90	20	WG616293
Dibenz(a,h)anthracene	mg/l	0.00861	0.00885	86.0	54-130	2.81	20	WG616293
Diethyl phthalate	mg/l	0.00923	0.00916	92.0	33-136	0.665	20	WG616293
Dimethyl phthalate	mg/l	0.00857	0.00841	86.0	10-152	1.96	22	WG616293
Fluoranthene	mg/l	0.00850	0.00948	85.0	66-120	10.9	20	WG616293
Fluorene	mg/l	0.00794	0.00778	79.0	58-110	1.95	20	WG616293
Hexachloro-1,3-butadiene	mg/l	0.00617	0.00459	62.0	34-115	29.5*	22	WG616293
Hexachlorobenzene	mg/l	0.00696	0.00723	70.0	55-117	3.89	20	WG616293
Hexachlorocyclopentadiene	mg/l	0.00560	0.00474	56.0	20-121	16.6	27	WG616293
Hexachloroethane	mg/l	0.00587	0.00425	59.0	24-93	31.9*	25	WG616293
Indeno(1,2,3-cd)pyrene	mg/l	0.00853	0.00884	85.0	56-129	3.56	20	WG616293
Isophorone	mg/l	0.00664	0.00531	66.0	55-108	22.2*	20	WG616293
n-Nitrosodi-n-propylamine	mg/l	0.00787	0.00677	79.0	50-115	15.0	20	WG616293
n-Nitrosodimethylamine	mg/l	0.00445	0.00320	44.0	12-68	32.5*	31	WG616293
n-Nitrosodiphenylamine	mg/l	0.00835	0.00868	83.0	55-98	3.89	20	WG616293
Naphthalene	mg/l	0.00675	0.00541	68.0	42-103	22.0*	20	WG616293
Nitrobenzene	mg/l	0.00734	0.00573	73.0	39-102	24.6*	20	WG616293
Pentachlorophenol	mg/l	0.00935	0.00930	94.0	10-101	0.588	40	WG616293
Phenanthrene	mg/l	0.00809	0.00881	81.0	61-110	8.56	20	WG616293
Phenol	mg/l	0.00365	0.00277	36.0	10-53	27.5*	20	WG616293
Pyrene	mg/l	0.00841	0.00845	84.0	65-116	0.467	20	WG616293
2,4,6-Tribromophenol				87.54	16-147			WG616293
2-Fluorobiphenyl				77.62	29-127			WG616293
2-Fluorophenol				52.35	10-75			WG616293
Nitrobenzene-d5				75.44	17-119			WG616293
Phenol-d5				37.52	10-63			WG616293
p-Terphenyl-d14				77.25	40-174			WG616293
pH	su	6.04	6.01	100.	98-101	0.498	20	WG616370
PCB 1016	mg/l	0.000579	0.000443	116.	32-126	26.7*	22	WG616225
PCB 1260	mg/l	0.000392	0.000423	78.0	58-128	7.60	20	WG616225
Decachlorobiphenyl				92.85	10-122.6			WG616225
Tetrachloro-m-xylene				76.43	15.3-114.2			WG616225
4,4-DDD	mg/l	0.000181	0.000186	90.0	60-123	2.55	20	WG616225
4,4-DDE	mg/l	0.000174	0.000173	87.0	50-120	0.658	22	WG616225
4,4-DDT	mg/l	0.000200	0.000193	100.	61-121	3.68	20	WG616225
Aldrin	mg/l	0.000113	0.000104	56.0	10-136	8.11	33	WG616225
Alpha BHC	mg/l	0.000187	0.000183	93.0	58-114	1.88	21	WG616225
Beta BHC	mg/l	0.000187	0.000171	94.0	61-120	8.80	20	WG616225
Delta BHC	mg/l	0.000170	0.000170	85.0	57-120	0.207	21	WG616225
Dieldrin	mg/l	0.000184	0.000183	92.0	62-123	0.453	20	WG616225
Endosulfan I	mg/l	0.000183	0.000182	92.0	63-123	0.741	20	WG616225
Endosulfan II	mg/l	0.000207	0.000209	104.	63-124	0.734	20	WG616225
Endosulfan sulfate	mg/l	0.000202	0.000199	101.	59-125	1.42	21	WG616225
Endrin	mg/l	0.000181	0.000182	90.0	60-123	0.947	20	WG616225
Endrin aldehyde	mg/l	0.000194	0.000183	97*	42-92	5.69	21	WG616225
Endrin ketone	mg/l	0.000215	0.000211	107.	60-117	1.86	20	WG616225
Gamma BHC	mg/l	0.000188	0.000185	94.0	59-116	1.67	20	WG616225
Heptachlor	mg/l	0.000137	0.000133	68.0	10-131	3.20	28	WG616225

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Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
Heptachlor epoxide	mg/l	0.000184	0.000180	92.0	61-118	1.95	20	WG616225
Hexachlorobenzene	mg/l	0.000115	0.000120	58.0	28-116	3.75	27	WG616225
Methoxychlor	mg/l	0.000207	0.000201	103.	66-122	2.59	20	WG616225
Decachlorobiphenyl				83.36	10-122.6			WG616225
Tetrachloro-m-xylene				70.67	15.3-114.2			WG616225
2,4,5-T	mg/l	0.00538	0.00525	108.	46-116	2.55	20	WG616404
2,4,5-TP (Silvex)	mg/l	0.00537	0.00524	107.	53.6-122	2.45	20	WG616404
2,4-D	mg/l	0.00479	0.00467	96.0	47.4-113	2.63	20	WG616404
2,4-DB	mg/l	0.00338	0.00328	68.0	48.4-118	2.97	20	WG616404
Dalapon	mg/l	0.00427	0.00400	85.0	40.5-102	6.72	20	WG616404
Dicamba	mg/l	0.00505	0.00488	101.	57.2-111	3.40	20	WG616404
Dichloroprop	mg/l	0.00564	0.00564	113.	55.8-128	0.0722	20	WG616404
Dinoseb	mg/l	0.00309	0.00248	62.0	41-121	21.7*	20.4	WG616404
MCPA	mg/l	0.726	0.752	145*	24.1-143	3.53	23.9	WG616404
MCPP	mg/l	0.706	0.691	141.	49-198	2.17	20	WG616404
2,4-Dichlorophenyl Acetic Acid				88.09	42-112			WG616404
Dissolved Solids	mg/l	8620	8630	98.0	85-115	0.0927	5	WG616901
Suspended Solids	mg/l	808.	792.	104.	85-115	2.00	5	WG617043
Dissolved Solids	mg/l	8620	8640	98.0	85-115	0.230	5	WG617047

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Nitrate	mg/l	5.28	0.470	5	96.2	80-120	L598943-04	WG616205
Chromium,Hexavalent	mg/l	0.510	0	.5	102.	85-115	L598943-05	WG616230
Chromium,Hexavalent	mg/l	0.514	0	.5	103.	85-115	L598872-02	WG616171
Mercury	mg/l	0.00342	0	.003	114.	70-130	L598944-01	WG616214
1,1,1-Trichloroethane	mg/l	0.0278	0	.025	111.	58-137	L598909-02	WG616299
1,1,2,2-Tetrachloroethane	mg/l	0.0312	0	.025	125.	64-149	L598909-02	WG616299
1,1,2-Trichloroethane	mg/l	0.0283	0	.025	113.	73-128	L598909-02	WG616299
1,1-Dichloroethane	mg/l	0.0248	0	.025	99.2	58-133	L598909-02	WG616299
1,1-Dichloroethene	mg/l	0.0270	0	.025	108.	32-152	L598909-02	WG616299
1,2-Dichlorobenzene	mg/l	0.0272	0	.025	109.	75-125	L598909-02	WG616299
1,2-Dichloroethane	mg/l	0.0242	0	.025	96.7	59-135	L598909-02	WG616299
1,2-Dichloropropane	mg/l	0.0256	0	.025	102.	68-126	L598909-02	WG616299
1,3-Dichlorobenzene	mg/l	0.0272	0	.025	109.	69-131	L598909-02	WG616299
1,4-Dichlorobenzene	mg/l	0.0268	0	.025	107.	70-123	L598909-02	WG616299
2-Chloroethyl vinyl ether	mg/l	0.0649	0	.125	51.9	10-161	L598909-02	WG616299
Benzene	mg/l	0.0410	0.0140	.025	108.	51-134	L598909-02	WG616299
Bromodichloromethane	mg/l	0.0250	0	.025	100.	67-132	L598909-02	WG616299
Bromoform	mg/l	0.0255	0	.025	102.	59-137	L598909-02	WG616299
Bromomethane	mg/l	0.0323	0	.025	129.	23-177	L598909-02	WG616299
Carbon tetrachloride	mg/l	0.0273	0	.025	109.	49-140	L598909-02	WG616299

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Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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Quality Assurance Report
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L598943

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Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chlorobenzene	mg/l	0.0273	0	.025	109.	69-126	L598909-02	WG616299
Chlorodibromomethane	mg/l	0.0257	0	.025	103.	68-130	L598909-02	WG616299
Chloroethane	mg/l	0.0352	0	.025	141.	32-177	L598909-02	WG616299
Chloroform	mg/l	0.0259	0	.025	104.	64-130	L598909-02	WG616299
Chloromethane	mg/l	0.0230	0	.025	92.2	27-155	L598909-02	WG616299
cis-1,3-Dichloropropene	mg/l	0.0243	0	.025	97.2	63-127	L598909-02	WG616299
Ethylbenzene	mg/l	0.0390	0.00970	.025	117.	64-135	L598909-02	WG616299
Methylene Chloride	mg/l	0.0223	0	.025	89.2	52-130	L598909-02	WG616299
Tetrachloroethene	mg/l	0.0301	0	.025	120.	56-139	L598909-02	WG616299
Toluene	mg/l	0.0908	0.0610	.025	119.	61-126	L598909-02	WG616299
trans-1,2-Dichloroethene	mg/l	0.0260	0	.025	104.	45-137	L598909-02	WG616299
trans-1,3-Dichloropropene	mg/l	0.0258	0	.025	103.	59-130	L598909-02	WG616299
Trichloroethene	mg/l	0.0270	0	.025	108.	40-155	L598909-02	WG616299
Vinyl chloride	mg/l	0.0283	0	.025	113.	32-159	L598909-02	WG616299
4-Bromofluorobenzene					98.68	82-120		WG616299
Dibromofluoromethane					94.55	82-126		WG616299
Toluene-d8					99.57	92-112		WG616299
a,a,a-Trifluorotoluene					103.2	90-116		WG616299
Antimony	mg/l	0.0540	0.00214	.05	104.	75-125	L598961-01	WG616934
Arsenic	mg/l	0.0484	0.00189	.05	93.0	75-125	L598961-01	WG616934
Barium	mg/l	0.0561	0.00765	.05	96.9	75-125	L598961-01	WG616934
Cadmium	mg/l	0.0494	0	.05	98.8	75-125	L598961-01	WG616934
Chromium	mg/l	0.0506	0.00430	.05	92.6	75-125	L598961-01	WG616934
Copper	mg/l	0.0574	0.0130	.05	88.8	75-125	L598961-01	WG616934
Lead	mg/l	0.0467	0	.05	93.4	75-125	L598961-01	WG616934
Manganese	mg/l	0.0912	0.0448	.05	92.8	75-125	L598961-01	WG616934
Nickel	mg/l	0.153	0.110	.05	86.0	75-125	L598961-01	WG616934
Selenium	mg/l	0.0436	0	.05	87.2	75-125	L598961-01	WG616934
Silver	mg/l	0.0474	0	.05	94.8	75-125	L598961-01	WG616934
Thallium	mg/l	0.0454	0.000110	.05	90.6	75-125	L598961-01	WG616934
Beryllium	mg/l	0.0493	0	.05	98.6	75-125	L598961-01	WG616934
Zinc	mg/l	0.172	0.120	.05	104.	75-125	L598961-01	WG616934
Aluminum,Dissolved	mg/l	1.16	0	1	116.	75-125	L598390-01	WG616983
Iron,Dissolved	mg/l	1.08	0	1	108.	75-125	L598390-01	WG616983
Arsenic,Dissolved	mg/l	0.0539	0.00330	.05	101.	75-125	L598390-02	WG617056
Beryllium,Dissolved	mg/l	0.0477	0	.05	95.4	75-125	L598390-02	WG617056
Cadmium,Dissolved	mg/l	0.0551	0.000960	.05	108.	75-125	L598390-02	WG617056
Chromium,Dissolved	mg/l	0.0508	0	.05	102.	75-125	L598390-02	WG617056
Copper,Dissolved	mg/l	0.0497	0.00120	.05	97.0	75-125	L598390-02	WG617056
Lead,Dissolved	mg/l	0.0526	0	.05	105.	75-125	L598390-02	WG617056
Manganese,Dissolved	mg/l	0.0659	0.0166	.05	98.6	75-125	L598390-02	WG617056
Nickel,Dissolved	mg/l	0.0560	0.00720	.05	97.6	75-125	L598390-02	WG617056
Selenium,Dissolved	mg/l	0.0864	0.0340	.05	105.	75-125	L598390-02	WG617056
Thallium,Dissolved	mg/l	0.0515	0	.05	103.	75-125	L598390-02	WG617056
Zinc,Dissolved	mg/l	0.0594	0	.05	119.	75-125	L598390-02	WG617056
Barium,Dissolved	mg/l	0.127	0.0800	.025	94.0	75-125	L598390-02	WG617056
Silver,Dissolved	mg/l	0.0515	0.000550	.05	102.	75-125	L598645-01	WG617240
Iron,Dissolved	mg/l	25.2	25.0	1	20.0*	75-125	L598943-05	WG617255

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Quality Assurance Report
Level II

L598943

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Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Aluminum	mg/l	1.20	0.100	1	110.	75-125	L599113-01	WG617243
Iron	mg/l	1.21	0.119	1	109.	75-125	L599113-01	WG617243
Aluminum	mg/l	1.53	0.440	1	109.	75-125	L598924-01	WG617083
Iron	mg/l	1.10	0.0217	1	108.	75-125	L598924-01	WG617083
Antimony,Dissolved	mg/l	0.0549	0.00490	.05	100.	75-125	L598390-02	WG617056
Arsenic,Dissolved	mg/l	0.0453	0	.05	90.6	75-125	L599455-03	WG617325
Barium,Dissolved	mg/l	0.0529	0.00987	.05	86.1	75-125	L599455-03	WG617325
Beryllium,Dissolved	mg/l	0.0451	0	.05	90.2	75-125	L599455-03	WG617325
Cadmium,Dissolved	mg/l	0.0458	0	.05	91.6	75-125	L599455-03	WG617325
Chromium,Dissolved	mg/l	0.0444	0.000110	.05	88.6	75-125	L599455-03	WG617325
Copper,Dissolved	mg/l	0.0474	0.00400	.05	86.8	75-125	L599455-03	WG617325
Lead,Dissolved	mg/l	0.0438	0	.05	87.6	75-125	L599455-03	WG617325
Manganese,Dissolved	mg/l	0.0436	0.000540	.05	86.1	75-125	L599455-03	WG617325
Selenium,Dissolved	mg/l	0.0435	0.00154	.05	83.9	75-125	L599455-03	WG617325
Silver,Dissolved	mg/l	0.0449	0.000440	.05	88.9	75-125	L599455-03	WG617325
Thallium,Dissolved	mg/l	0.0423	0.0000600	.05	84.5	75-125	L599455-03	WG617325
Zinc,Dissolved	mg/l	0.0542	0.00714	.05	94.1	75-125	L599455-03	WG617325
Antimony,Dissolved	mg/l	0.0493	0	.05	98.6	75-125	L599455-03	WG617325
Nickel,Dissolved	mg/l	0.0549	0.00130	.05	107.	75-125	L599455-02	WG617752

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Nitrate	mg/l	5.53	5.28	101.	80-120	4.63	20	L598943-04	WG616205
Chromium,Hexavalent	mg/l	0.517	0.510	103.	85-115	1.36	20	L598943-05	WG616230
Chromium,Hexavalent	mg/l	0.521	0.514	104.	85-115	1.35	20	L598872-02	WG616171
Mercury	mg/l	0.00342	0.00342	114.	70-130	0	20	L598944-01	WG616214
1,1,1-Trichloroethane	mg/l	0.0265	0.0278	106.	58-137	4.95	20	L598909-02	WG616299
1,1,2,2-Tetrachloroethane	mg/l	0.0278	0.0312	111.	64-149	11.2	20	L598909-02	WG616299
1,1,2-Trichloroethane	mg/l	0.0250	0.0283	99.8	73-128	12.6	20	L598909-02	WG616299
1,1-Dichloroethane	mg/l	0.0239	0.0248	95.7	58-133	3.58	20	L598909-02	WG616299
1,1-Dichloroethene	mg/l	0.0245	0.0270	97.9	32-152	9.81	20	L598909-02	WG616299
1,2-Dichlorobenzene	mg/l	0.0262	0.0272	105.	75-125	3.76	20	L598909-02	WG616299
1,2-Dichloroethane	mg/l	0.0238	0.0242	95.2	59-135	1.55	20	L598909-02	WG616299
1,2-Dichloropropane	mg/l	0.0249	0.0256	99.8	68-126	2.78	20	L598909-02	WG616299
1,3-Dichlorobenzene	mg/l	0.0261	0.0272	104.	69-131	4.26	20	L598909-02	WG616299
1,4-Dichlorobenzene	mg/l	0.0249	0.0268	99.7	70-123	7.29	20	L598909-02	WG616299
2-Chloroethyl vinyl ether	mg/l	0.0169	0.0649	13.5	10-161	118.*	40	L598909-02	WG616299
Benzene	mg/l	0.0389	0.0410	99.6	51-134	5.37	20	L598909-02	WG616299
Bromodichloromethane	mg/l	0.0236	0.0250	94.4	67-132	5.79	20	L598909-02	WG616299
Bromoform	mg/l	0.0228	0.0255	91.3	59-137	11.0	20	L598909-02	WG616299
Bromomethane	mg/l	0.0290	0.0323	116.	23-177	10.7	21	L598909-02	WG616299

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Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
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Quality Assurance Report
Level II

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October 15, 2012

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Carbon tetrachloride	mg/l	0.0259	0.0273	104.	49-140	5.25	20	L598909-02	WG616299
Chlorobenzene	mg/l	0.0260	0.0273	104.	69-126	4.76	20	L598909-02	WG616299
Chlorodibromomethane	mg/l	0.0232	0.0257	92.7	68-130	10.4	20	L598909-02	WG616299
Chloroethane	mg/l	0.0330	0.0352	132.	32-177	6.50	21	L598909-02	WG616299
Chloroform	mg/l	0.0244	0.0259	97.7	64-130	5.77	20	L598909-02	WG616299
Chloromethane	mg/l	0.0213	0.0230	85.4	27-155	7.67	20	L598909-02	WG616299
cis-1,3-Dichloropropene	mg/l	0.0226	0.0243	90.6	63-127	7.12	20	L598909-02	WG616299
Ethylbenzene	mg/l	0.0369	0.0390	109.	64-135	5.58	20	L598909-02	WG616299
Methylene Chloride	mg/l	0.0211	0.0223	84.6	52-130	5.26	20	L598909-02	WG616299
Tetrachloroethene	mg/l	0.0269	0.0301	107.	56-139	11.5	20	L598909-02	WG616299
Toluene	mg/l	0.0895	0.0908	114.	61-126	1.43	20	L598909-02	WG616299
trans-1,2-Dichloroethene	mg/l	0.0235	0.0260	93.9	45-137	10.4	20	L598909-02	WG616299
trans-1,3-Dichloropropene	mg/l	0.0229	0.0258	91.5	59-130	12.1	20	L598909-02	WG616299
Trichloroethene	mg/l	0.0258	0.0270	103.	40-155	4.43	20	L598909-02	WG616299
Vinyl chloride	mg/l	0.0267	0.0283	107.	32-159	5.66	21	L598909-02	WG616299
4-Bromofluorobenzene				100.1	82-120				WG616299
Dibromofluoromethane				94.96	82-126				WG616299
Toluene-d8				100.5	92-112				WG616299
a,a,a-Trifluorotoluene				104.4	90-116				WG616299
Antimony	mg/l	0.0534	0.0540	102.	75-125	1.12	20	L598961-01	WG616934
Arsenic	mg/l	0.0487	0.0484	93.6	75-125	0.618	20	L598961-01	WG616934
Barium	mg/l	0.0557	0.0561	96.1	75-125	0.716	20	L598961-01	WG616934
Cadmium	mg/l	0.0488	0.0494	97.6	75-125	1.22	20	L598961-01	WG616934
Chromium	mg/l	0.0508	0.0506	93.0	75-125	0.394	20	L598961-01	WG616934
Copper	mg/l	0.0575	0.0574	89.0	75-125	0.174	20	L598961-01	WG616934
Lead	mg/l	0.0463	0.0467	92.6	75-125	0.860	20	L598961-01	WG616934
Manganese	mg/l	0.0932	0.0912	96.8	75-125	2.17	20	L598961-01	WG616934
Nickel	mg/l	0.156	0.153	92.0	75-125	1.94	20	L598961-01	WG616934
Selenium	mg/l	0.0440	0.0436	88.0	75-125	0.913	20	L598961-01	WG616934
Silver	mg/l	0.0470	0.0474	94.0	75-125	0.847	20	L598961-01	WG616934
Thallium	mg/l	0.0452	0.0454	90.2	75-125	0.442	20	L598961-01	WG616934
Beryllium	mg/l	0.0495	0.0493	99.0	75-125	0.405	20	L598961-01	WG616934
Zinc	mg/l	0.169	0.172	98.0	75-125	1.76	20	L598961-01	WG616934
Aluminum,Dissolved	mg/l	1.16	1.16	116.	75-125	0	20	L598390-01	WG616983
Iron,Dissolved	mg/l	1.08	1.08	108.	75-125	0	20	L598390-01	WG616983
Arsenic,Dissolved	mg/l	0.0541	0.0539	102.	75-125	0.370	20	L598390-02	WG617056
Beryllium,Dissolved	mg/l	0.0480	0.0477	96.0	75-125	0.627	20	L598390-02	WG617056
Cadmium,Dissolved	mg/l	0.0541	0.0551	106.	75-125	1.83	20	L598390-02	WG617056
Chromium,Dissolved	mg/l	0.0506	0.0508	101.	75-125	0.394	20	L598390-02	WG617056
Copper,Dissolved	mg/l	0.0500	0.0497	97.6	75-125	0.602	20	L598390-02	WG617056
Lead,Dissolved	mg/l	0.0515	0.0526	103.	75-125	2.11	20	L598390-02	WG617056
Manganese,Dissolved	mg/l	0.0666	0.0659	100.	75-125	1.06	20	L598390-02	WG617056
Nickel,Dissolved	mg/l	0.0559	0.0560	97.4	75-125	0.179	20	L598390-02	WG617056
Selenium,Dissolved	mg/l	0.0877	0.0864	107.	75-125	1.49	20	L598390-02	WG617056
Thallium,Dissolved	mg/l	0.0513	0.0515	103.	75-125	0.389	20	L598390-02	WG617056
Zinc,Dissolved	mg/l	0.0586	0.0594	117.	75-125	1.36	20	L598390-02	WG617056
Nitrate	mg/l	5.53	5.28	101.	80-120	4.63	20	L598943-04	WG616205
Barium,Dissolved	mg/l	0.131	0.127	102.	75-125	3.10	20	L598390-02	WG617056

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Quality Assurance Report
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Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Silver,Dissolved	mg/l	0.0516	0.0515	102.	75-125	0.194	20	L598645-01	WG617240
Iron,Dissolved	mg/l	25.7	25.2	70.0*	75-125	1.96	20	L598943-05	WG617255
Aluminum	mg/l	1.24	1.20	114.	75-125	3.28	20	L599113-01	WG617243
Iron	mg/l	1.25	1.21	113.	75-125	3.25	20	L599113-01	WG617243
Aluminum	mg/l	1.45	1.53	101.	75-125	5.37	20	L598924-01	WG617083
Iron	mg/l	2.09	1.10	207.*	75-125	62.1*	20	L598924-01	WG617083
Antimony,Dissolved	mg/l	0.0542	0.0549	98.6	75-125	1.28	20	L598390-02	WG617056
Arsenic,Dissolved	mg/l	0.0483	0.0453	96.6	75-125	6.41	20	L599455-03	WG617325
Barium,Dissolved	mg/l	0.0568	0.0529	93.9	75-125	7.11	20	L599455-03	WG617325
Beryllium,Dissolved	mg/l	0.0483	0.0451	96.6	75-125	6.85	20	L599455-03	WG617325
Cadmium,Dissolved	mg/l	0.0491	0.0458	98.2	75-125	6.95	20	L599455-03	WG617325
Chromium,Dissolved	mg/l	0.0474	0.0444	94.6	75-125	6.54	20	L599455-03	WG617325
Copper,Dissolved	mg/l	0.0504	0.0474	92.8	75-125	6.13	20	L599455-03	WG617325
Lead,Dissolved	mg/l	0.0477	0.0438	95.4	75-125	8.52	20	L599455-03	WG617325
Manganese,Dissolved	mg/l	0.0469	0.0436	92.7	75-125	7.29	20	L599455-03	WG617325
Selenium,Dissolved	mg/l	0.0453	0.0435	87.5	75-125	4.05	20	L599455-03	WG617325
Silver,Dissolved	mg/l	0.0482	0.0449	95.5	75-125	7.09	20	L599455-03	WG617325
Thallium,Dissolved	mg/l	0.0461	0.0423	92.1	75-125	8.60	20	L599455-03	WG617325
Zinc,Dissolved	mg/l	0.0570	0.0542	99.7	75-125	5.04	20	L599455-03	WG617325
Antimony,Dissolved	mg/l	0.0500	0.0493	100.	75-125	1.41	20	L599455-03	WG617325
Nickel,Dissolved	mg/l	0.0534	0.0549	104.	75-125	2.77	20	L599455-02	WG617752

Batch number /Run number / Sample number cross reference

WG616205: R2376233: L598943-01 02 03 04 05
WG616230: R2376613: L598943-01 04 05
WG616171: R2376614: L598943-02 03
WG616214: R2376655: L598943-01 02 03 04 05
WG616299: R2376754: L598943-01 02 03 04 05
WG616293: R2377053: L598943-01 02 03 04 05
WG616370: R2377714: L598943-01 02 03 04 05
WG616225: R2381101: L598943-01 02 03 04 05
WG616404: R2382039: L598943-01 02 03 04 05
WG616934: R2383318: L598943-01 02 03 04 05
WG616901: R2383777: L598943-01 02
WG617064: R2384277: L598943-03 04 05
WG616983: R2384317: L598943-01 02
WG617056: R2385397: L598943-01 02 03 04
WG617240: R2385438: L598943-01 02 03 04
WG617043: R2386197: L598943-01 02 03 04 05
WG617255: R2386237: L598943-03 04 05
WG617243: R2386477: L598943-04 05
WG617083: R2387378: L598943-01 02 03
WG617047: R2387717: L598943-03 04 05
WG617325: R2389257: L598943-05

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L598943

October 15, 2012

WG617752: R2389597: L598943-05

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Groundwater Analyses, Monitoring Wells YA-MW1, YA-MW2, YA-MW3, YA-MW5, & YA-MW6
I-70 East Corridor EIS PCL

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Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L598943

October 15, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

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Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

Report Summary

Monday October 15, 2012

Report Number: L599199
Samples Received: 10/05/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

Date Received : October 05, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 4

Collected By : I-Ping Chen
Collection Date : 10/04/12 11:30

ESC Sample # : L599199-01

Site ID :

Project # : 212-137

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Nitrate	8.2	0.50	mg/l	300.0	10/05/12	5
Chromium,Hexavalent	BDL	0.010	mg/l	3500Cr-D	10/05/12	1
Chromium,Trivalent	0.24	0.010	mg/l	Calc.	10/14/12	1
pH	7.5		su	4500H-B	10/06/12	1
Dissolved Solids	740	10.	mg/l	2540C	10/11/12	1
Suspended Solids	5700	1.0	mg/l	2540D	10/12/12	1
Antimony	BDL	0.010	mg/l	200.8	10/14/12	10
Antimony,Dissolved	BDL	0.0010	mg/l	200.8	10/12/12	1
Arsenic	0.072	0.050	mg/l	200.8	10/14/12	50
Arsenic,Dissolved	0.0075	0.0010	mg/l	200.8	10/11/12	1
Barium	3.5	0.10	mg/l	200.8	10/14/12	50
Barium,Dissolved	0.84	0.020	mg/l	200.8	10/11/12	10
Beryllium	0.013	0.0010	mg/l	200.8	10/14/12	1
Beryllium,Dissolved	0.0027	0.0010	mg/l	200.8	10/11/12	1
Cadmium	0.0053	0.00050	mg/l	200.8	10/14/12	1
Cadmium,Dissolved	0.0026	0.00050	mg/l	200.8	10/11/12	1
Chromium	0.24	0.050	mg/l	200.8	10/14/12	50
Chromium,Dissolved	0.011	0.0010	mg/l	200.8	10/11/12	1
Copper	0.42	0.050	mg/l	200.8	10/14/12	50
Copper,Dissolved	0.068	0.0010	mg/l	200.8	10/11/12	1
Lead	0.26	0.0010	mg/l	200.8	10/14/12	1
Lead,Dissolved	0.064	0.0010	mg/l	200.8	10/11/12	1
Manganese	13.	1.0	mg/l	200.8	10/14/12	500
Manganese,Dissolved	8.3	0.20	mg/l	200.8	10/11/12	100
Nickel	0.20	0.050	mg/l	200.8	10/14/12	50
Nickel,Dissolved	0.072	0.0010	mg/l	200.8	10/14/12	1
Selenium	BDL	0.050	mg/l	200.8	10/14/12	50
Selenium,Dissolved	0.0057	0.0010	mg/l	200.8	10/11/12	1
Silver	BDL	0.0050	mg/l	200.8	10/14/12	10
Silver,Dissolved	BDL	0.00050	mg/l	200.8	10/11/12	1
Thallium	0.0051	0.0010	mg/l	200.8	10/14/12	1
Thallium,Dissolved	BDL	0.0010	mg/l	200.8	10/11/12	1
Zinc	1.2	0.50	mg/l	200.8	10/14/12	50
Zinc,Dissolved	0.11	0.010	mg/l	200.8	10/11/12	1
Mercury	0.00038	0.00020	mg/l	245.1	10/06/12	1
Aluminum	90.	0.10	mg/l	200.7	10/12/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L599199-01 (PH) - 7.5@19.1c

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-01

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 4

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 11:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum,Dissolved	10.	0.10	mg/l	200.7	10/13/12	1
Iron	130	0.10	mg/l	200.7	10/12/12	1
Iron,Dissolved	16.	0.10	mg/l	200.7	10/13/12	1
PP Volatile Organics						
Benzene	BDL	0.0010	mg/l	624	10/05/12	1
Bromodichloromethane	BDL	0.0010	mg/l	624	10/05/12	1
Bromoform	BDL	0.0010	mg/l	624	10/05/12	1
Bromomethane	BDL	0.0050	mg/l	624	10/05/12	1
Carbon tetrachloride	BDL	0.0010	mg/l	624	10/05/12	1
Chlorobenzene	BDL	0.0010	mg/l	624	10/05/12	1
Chlorodibromomethane	BDL	0.0010	mg/l	624	10/05/12	1
Chloroethane	BDL	0.0050	mg/l	624	10/05/12	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	624	10/05/12	1
Chloroform	BDL	0.0050	mg/l	624	10/05/12	1
Chloromethane	BDL	0.0025	mg/l	624	10/05/12	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	624	10/05/12	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	624	10/05/12	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	624	10/05/12	1
1,1-Dichloroethane	BDL	0.0010	mg/l	624	10/05/12	1
1,2-Dichloroethane	BDL	0.0010	mg/l	624	10/05/12	1
1,1-Dichloroethene	BDL	0.0010	mg/l	624	10/05/12	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	624	10/05/12	1
1,2-Dichloropropane	BDL	0.0010	mg/l	624	10/05/12	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/05/12	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/05/12	1
Ethylbenzene	BDL	0.0010	mg/l	624	10/05/12	1
Methylene Chloride	BDL	0.0050	mg/l	624	10/05/12	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	624	10/05/12	1
Tetrachloroethene	0.0012	0.0010	mg/l	624	10/05/12	1
Toluene	BDL	0.0050	mg/l	624	10/05/12	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	624	10/05/12	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	624	10/05/12	1
Trichloroethene	BDL	0.0010	mg/l	624	10/05/12	1
Vinyl chloride	BDL	0.0010	mg/l	624	10/05/12	1
Surrogate Recovery						
Toluene-d8	92.1		% Rec.	624	10/05/12	1
Dibromofluoromethane	91.1		% Rec.	624	10/05/12	1
a,a,a-Trifluorotoluene	101.		% Rec.	624	10/05/12	1
4-Bromofluorobenzene	102.		% Rec.	624	10/05/12	1
Pesticide/PCBs						
Aldrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Alpha BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L599199-01 (PH) - 7.5@19.1c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-01

Site ID :

Project # : 212-137

Date Received : October 05, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 4

Collected By : I-Ping Chen
Collection Date : 10/04/12 11:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Beta BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Delta BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Gamma BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Chlordane	BDL	0.00050	mg/l	8081A/8082	10/11/12	1
4,4-DDD	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
4,4-DDE	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
4,4-DDT	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Dieldrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan I	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan II	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan sulfate	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin aldehyde	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin ketone	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Heptachlor	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Heptachlor epoxide	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Hexachlorobenzene	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Methoxychlor	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Toxaphene	BDL	0.00050	mg/l	8081A/8082	10/11/12	1
PCB 1016	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1221	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1232	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1242	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1248	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1254	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1260	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	60.6		% Rec.	8081A/8082	10/08/12	1
Tetrachloro-m-xylene	78.3		% Rec.	8081A/8082	10/08/12	1
PP Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	625	10/10/12	1
Acenaphthylene	BDL	0.0010	mg/l	625	10/10/12	1
Anthracene	BDL	0.0010	mg/l	625	10/10/12	1
Benzidine	BDL	0.010	mg/l	625	10/10/12	1
Benzo(a)anthracene	BDL	0.0010	mg/l	625	10/10/12	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	625	10/10/12	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	625	10/10/12	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	625	10/10/12	1
Benzo(a)pyrene	BDL	0.0010	mg/l	625	10/10/12	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	625	10/10/12	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	625	10/10/12	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	625	10/10/12	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	625	10/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L599199-01 (PH) - 7.5@19.1c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-01

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 4

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 11:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloronaphthalene	BDL	0.0010	mg/l	625	10/10/12	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	625	10/10/12	1
Chrysene	BDL	0.0010	mg/l	625	10/10/12	1
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	625	10/10/12	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	625	10/10/12	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	625	10/10/12	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	625	10/10/12	1
Fluoranthene	BDL	0.0010	mg/l	625	10/10/12	1
Fluorene	BDL	0.0010	mg/l	625	10/10/12	1
Hexachlorobenzene	BDL	0.0010	mg/l	625	10/10/12	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	625	10/10/12	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	625	10/10/12	1
Hexachloroethane	BDL	0.010	mg/l	625	10/10/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	625	10/10/12	1
Isophorone	BDL	0.010	mg/l	625	10/10/12	1
Naphthalene	BDL	0.0010	mg/l	625	10/10/12	1
Nitrobenzene	BDL	0.010	mg/l	625	10/10/12	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	625	10/10/12	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	625	10/10/12	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	625	10/10/12	1
Phenanthrene	BDL	0.0010	mg/l	625	10/10/12	1
Benzylbutyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Di-n-butyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Diethyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Dimethyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Di-n-octyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Pyrene	BDL	0.0010	mg/l	625	10/10/12	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	625	10/10/12	1
PP Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	625	10/10/12	1
2-Chlorophenol	BDL	0.010	mg/l	625	10/10/12	1
2,4-Dichlorophenol	BDL	0.010	mg/l	625	10/10/12	1
2,4-Dimethylphenol	BDL	0.010	mg/l	625	10/10/12	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	625	10/10/12	1
2,4-Dinitrophenol	BDL	0.010	mg/l	625	10/10/12	1
2-Nitrophenol	BDL	0.010	mg/l	625	10/10/12	1
4-Nitrophenol	BDL	0.010	mg/l	625	10/10/12	1
Pentachlorophenol	BDL	0.010	mg/l	625	10/10/12	1
Phenol	BDL	0.010	mg/l	625	10/10/12	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	625	10/10/12	1
1,2-Diphenylhydrazine	BDL	0.010	mg/l	625	10/10/12	1
Surrogate Recovery						
2-Fluorophenol	22.9		% Rec.	625	10/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L599199-01 (PH) - 7.5@19.1c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-01

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 4

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 11:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phenol-d5	16.2		% Rec.	625	10/10/12	1
Nitrobenzene-d5	58.1		% Rec.	625	10/10/12	1
2-Fluorobiphenyl	84.0		% Rec.	625	10/10/12	1
2,4,6-Tribromophenol	92.5		% Rec.	625	10/10/12	1
p-Terphenyl-d14	87.2		% Rec.	625	10/10/12	1
Herbicides						
2,4-D	BDL	0.0020	mg/l	8151	10/11/12	1
Dalapon	BDL	0.20	mg/l	8151	10/11/12	1
2,4-DB	BDL	0.0020	mg/l	8151	10/11/12	1
Dicamba	BDL	0.0020	mg/l	8151	10/11/12	1
Dichloroprop	BDL	0.0020	mg/l	8151	10/11/12	1
Dinoseb	BDL	0.0020	mg/l	8151	10/11/12	1
MCPA	BDL	0.10	mg/l	8151	10/11/12	1
MCPP	BDL	0.10	mg/l	8151	10/11/12	1
2,4,5-T	BDL	0.0020	mg/l	8151	10/11/12	1
2,4,5-TP (Silvex)	BDL	0.0020	mg/l	8151	10/11/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	67.2		% Rec.	8151	10/11/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 10/15/12 14:57 Printed: 10/15/12 14:58
L599199-01 (PH) - 7.5@19.1c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-02

Site ID :

Project # : 212-137

Date Received : October 05, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10

Collected By : I-Ping Chen
Collection Date : 10/04/12 13:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Nitrate	9.6	0.50	mg/l	300.0	10/05/12	5
Chromium,Hexavalent	BDL	0.010	mg/l	3500Cr-D	10/05/12	1
Chromium,Trivalent	0.31	0.010	mg/l	Calc.	10/14/12	1
pH	7.4		su	4500H-B	10/06/12	1
Dissolved Solids	1700	10.	mg/l	2540C	10/11/12	1
Suspended Solids	18000	1.0	mg/l	2540D	10/12/12	1
Antimony	BDL	0.010	mg/l	200.8	10/14/12	10
Antimony,Dissolved	BDL	0.0010	mg/l	200.8	10/12/12	1
Arsenic	0.11	0.10	mg/l	200.8	10/14/12	100
Arsenic,Dissolved	0.013	0.0010	mg/l	200.8	10/11/12	1
Barium	7.0	0.20	mg/l	200.8	10/14/12	100
Barium,Dissolved	0.29	0.010	mg/l	200.8	10/11/12	5
Beryllium	0.034	0.0010	mg/l	200.8	10/14/12	1
Beryllium,Dissolved	0.012	0.0010	mg/l	200.8	10/11/12	1
Cadmium	0.0034	0.00050	mg/l	200.8	10/14/12	1
Cadmium,Dissolved	0.00077	0.00050	mg/l	200.8	10/11/12	1
Chromium	0.31	0.10	mg/l	200.8	10/14/12	100
Chromium,Dissolved	0.019	0.0010	mg/l	200.8	10/11/12	1
Copper	0.69	0.10	mg/l	200.8	10/14/12	100
Copper,Dissolved	0.040	0.0010	mg/l	200.8	10/11/12	1
Lead	0.32	0.0010	mg/l	200.8	10/14/12	1
Lead,Dissolved	0.037	0.0010	mg/l	200.8	10/11/12	1
Manganese	11.	1.0	mg/l	200.8	10/14/12	500
Manganese,Dissolved	3.5	0.10	mg/l	200.8	10/11/12	50
Nickel	0.33	0.10	mg/l	200.8	10/14/12	100
Nickel,Dissolved	0.046	0.0010	mg/l	200.8	10/14/12	1
Selenium	BDL	0.10	mg/l	200.8	10/14/12	100
Selenium,Dissolved	0.028	0.0010	mg/l	200.8	10/11/12	1
Silver	BDL	0.0050	mg/l	200.8	10/14/12	10
Silver,Dissolved	BDL	0.00050	mg/l	200.8	10/11/12	1
Thallium	0.0068	0.0010	mg/l	200.8	10/14/12	1
Thallium,Dissolved	BDL	0.0010	mg/l	200.8	10/11/12	1
Zinc	2.0	1.0	mg/l	200.8	10/14/12	100
Zinc,Dissolved	0.085	0.010	mg/l	200.8	10/11/12	1
Mercury	0.00033	0.00020	mg/l	245.1	10/06/12	1
Aluminum	270	0.10	mg/l	200.7	10/12/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L599199-02 (PH) - 7.4@18.8c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-02

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 10

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 13:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum,Dissolved	17.	0.10	mg/l	200.7	10/13/12	1
Iron	370	0.10	mg/l	200.7	10/12/12	1
Iron,Dissolved	14.	0.10	mg/l	200.7	10/13/12	1
PP Volatile Organics						
Benzene	BDL	0.0010	mg/l	624	10/05/12	1
Bromodichloromethane	BDL	0.0010	mg/l	624	10/05/12	1
Bromoform	BDL	0.0010	mg/l	624	10/05/12	1
Bromomethane	BDL	0.0050	mg/l	624	10/05/12	1
Carbon tetrachloride	BDL	0.0010	mg/l	624	10/05/12	1
Chlorobenzene	BDL	0.0010	mg/l	624	10/05/12	1
Chlorodibromomethane	BDL	0.0010	mg/l	624	10/05/12	1
Chloroethane	BDL	0.0050	mg/l	624	10/05/12	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	624	10/05/12	1
Chloroform	BDL	0.0050	mg/l	624	10/05/12	1
Chloromethane	BDL	0.0025	mg/l	624	10/05/12	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	624	10/05/12	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	624	10/05/12	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	624	10/05/12	1
1,1-Dichloroethane	BDL	0.0010	mg/l	624	10/05/12	1
1,2-Dichloroethane	BDL	0.0010	mg/l	624	10/05/12	1
1,1-Dichloroethene	BDL	0.0010	mg/l	624	10/05/12	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	624	10/05/12	1
1,2-Dichloropropane	BDL	0.0010	mg/l	624	10/05/12	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/05/12	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/05/12	1
Ethylbenzene	BDL	0.0010	mg/l	624	10/05/12	1
Methylene Chloride	BDL	0.0050	mg/l	624	10/05/12	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	624	10/05/12	1
Tetrachloroethene	BDL	0.0010	mg/l	624	10/05/12	1
Toluene	BDL	0.0050	mg/l	624	10/05/12	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	624	10/05/12	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	624	10/05/12	1
Trichloroethene	BDL	0.0010	mg/l	624	10/05/12	1
Vinyl chloride	BDL	0.0010	mg/l	624	10/05/12	1
Surrogate Recovery						
Toluene-d8	91.0		% Rec.	624	10/05/12	1
Dibromofluoromethane	91.4		% Rec.	624	10/05/12	1
a,a,a-Trifluorotoluene	102.		% Rec.	624	10/05/12	1
4-Bromofluorobenzene	100.		% Rec.	624	10/05/12	1
Pesticide/PCBs						
Aldrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Alpha BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L599199-02 (PH) - 7.4@18.8c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-02

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 10

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 13:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Beta BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Delta BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Gamma BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Chlordane	BDL	0.00050	mg/l	8081A/8082	10/11/12	1
4,4-DDD	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
4,4-DDE	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
4,4-DDT	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Dieldrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan I	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan II	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan sulfate	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin aldehyde	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin ketone	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Heptachlor	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Heptachlor epoxide	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Hexachlorobenzene	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Methoxychlor	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Toxaphene	BDL	0.00050	mg/l	8081A/8082	10/11/12	1
PCB 1016	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1221	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1232	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1242	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1248	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1254	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1260	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	62.2		% Rec.	8081A/8082	10/08/12	1
Tetrachloro-m-xylene	77.0		% Rec.	8081A/8082	10/08/12	1
PP Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	625	10/10/12	1
Acenaphthylene	BDL	0.0010	mg/l	625	10/10/12	1
Anthracene	BDL	0.0010	mg/l	625	10/10/12	1
Benzidine	BDL	0.010	mg/l	625	10/10/12	1
Benzo(a)anthracene	BDL	0.0010	mg/l	625	10/10/12	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	625	10/10/12	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	625	10/10/12	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	625	10/10/12	1
Benzo(a)pyrene	BDL	0.0010	mg/l	625	10/10/12	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	625	10/10/12	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	625	10/10/12	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	625	10/10/12	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	625	10/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L599199-02 (PH) - 7.4@18.8c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-02

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 10

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 13:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloronaphthalene	BDL	0.0010	mg/l	625	10/10/12	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	625	10/10/12	1
Chrysene	BDL	0.0010	mg/l	625	10/10/12	1
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	625	10/10/12	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	625	10/10/12	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	625	10/10/12	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	625	10/10/12	1
Fluoranthene	BDL	0.0010	mg/l	625	10/10/12	1
Fluorene	BDL	0.0010	mg/l	625	10/10/12	1
Hexachlorobenzene	BDL	0.0010	mg/l	625	10/10/12	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	625	10/10/12	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	625	10/10/12	1
Hexachloroethane	BDL	0.010	mg/l	625	10/10/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	625	10/10/12	1
Isophorone	BDL	0.010	mg/l	625	10/10/12	1
Naphthalene	BDL	0.0010	mg/l	625	10/10/12	1
Nitrobenzene	BDL	0.010	mg/l	625	10/10/12	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	625	10/10/12	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	625	10/10/12	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	625	10/10/12	1
Phenanthrene	BDL	0.0010	mg/l	625	10/10/12	1
Benzylbutyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Di-n-butyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Diethyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Dimethyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Di-n-octyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Pyrene	BDL	0.0010	mg/l	625	10/10/12	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	625	10/10/12	1
PP Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	625	10/10/12	1
2-Chlorophenol	BDL	0.010	mg/l	625	10/10/12	1
2,4-Dichlorophenol	BDL	0.010	mg/l	625	10/10/12	1
2,4-Dimethylphenol	BDL	0.010	mg/l	625	10/10/12	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	625	10/10/12	1
2,4-Dinitrophenol	BDL	0.010	mg/l	625	10/10/12	1
2-Nitrophenol	BDL	0.010	mg/l	625	10/10/12	1
4-Nitrophenol	BDL	0.010	mg/l	625	10/10/12	1
Pentachlorophenol	BDL	0.010	mg/l	625	10/10/12	1
Phenol	BDL	0.010	mg/l	625	10/10/12	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	625	10/10/12	1
1,2-Diphenylhydrazine	BDL	0.010	mg/l	625	10/10/12	1
Surrogate Recovery						
2-Fluorophenol	20.6		% Rec.	625	10/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L599199-02 (PH) - 7.4@18.8c

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I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-02

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 10

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 13:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phenol-d5	12.4		% Rec.	625	10/10/12	1
Nitrobenzene-d5	76.2		% Rec.	625	10/10/12	1
2-Fluorobiphenyl	92.4		% Rec.	625	10/10/12	1
2,4,6-Tribromophenol	93.7		% Rec.	625	10/10/12	1
p-Terphenyl-d14	84.4		% Rec.	625	10/10/12	1
Herbicides						
2,4-D	BDL	0.0020	mg/l	8151	10/11/12	1
Dalapon	BDL	0.20	mg/l	8151	10/11/12	1
2,4-DB	BDL	0.0020	mg/l	8151	10/11/12	1
Dicamba	BDL	0.0020	mg/l	8151	10/11/12	1
Dichloroprop	BDL	0.0020	mg/l	8151	10/11/12	1
Dinoseb	BDL	0.0020	mg/l	8151	10/11/12	1
MCPA	BDL	0.10	mg/l	8151	10/11/12	1
MCPP	BDL	0.10	mg/l	8151	10/11/12	1
2,4,5-T	BDL	0.0020	mg/l	8151	10/11/12	1
2,4,5-TP (Silvex)	BDL	0.0020	mg/l	8151	10/11/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	69.5		% Rec.	8151	10/11/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 10/15/12 14:57 Printed: 10/15/12 14:58
L599199-02 (PH) - 7.4@18.8c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-03

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 7

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Nitrate	10.	0.50	mg/l	300.0	10/05/12	5
Chromium,Hexavalent	0.027	0.010	mg/l	3500Cr-D	10/05/12	1
Chromium,Trivalent	0.89	0.010	mg/l	Calc.	10/14/12	1
pH	7.2		su	4500H-B	10/06/12	1
Dissolved Solids	910	10.	mg/l	2540C	10/12/12	1
Suspended Solids	26000	1.0	mg/l	2540D	10/12/12	1
Antimony	BDL	0.010	mg/l	200.8	10/14/12	10
Antimony,Dissolved	BDL	0.0010	mg/l	200.8	10/12/12	1
Arsenic	BDL	0.50	mg/l	200.8	10/14/12	500
Arsenic,Dissolved	0.018	0.0010	mg/l	200.8	10/11/12	1
Barium	39.	1.0	mg/l	200.8	10/14/12	500
Barium,Dissolved	0.76	0.10	mg/l	200.8	10/11/12	50
Beryllium	0.082	0.0010	mg/l	200.8	10/14/12	1
Beryllium,Dissolved	0.013	0.0010	mg/l	200.8	10/11/12	1
Cadmium	0.024	0.00050	mg/l	200.8	10/14/12	1
Cadmium,Dissolved	0.0028	0.00050	mg/l	200.8	10/11/12	1
Chromium	0.92	0.50	mg/l	200.8	10/14/12	500
Chromium,Dissolved	0.034	0.0010	mg/l	200.8	10/11/12	1
Copper	4.2	0.50	mg/l	200.8	10/14/12	500
Copper,Dissolved	0.11	0.0010	mg/l	200.8	10/11/12	1
Lead	1.1	0.0010	mg/l	200.8	10/14/12	1
Lead,Dissolved	0.0081	0.0010	mg/l	200.8	10/11/12	1
Manganese	150	4.0	mg/l	200.8	10/14/12	2000
Manganese,Dissolved	5.6	0.20	mg/l	200.8	10/14/12	100
Nickel	1.8	0.50	mg/l	200.8	10/14/12	500
Nickel,Dissolved	0.064	0.0010	mg/l	200.8	10/14/12	1
Selenium	BDL	0.50	mg/l	200.8	10/14/12	500
Selenium,Dissolved	0.010	0.0010	mg/l	200.8	10/11/12	1
Silver	BDL	0.0050	mg/l	200.8	10/14/12	10
Silver,Dissolved	BDL	0.00050	mg/l	200.8	10/11/12	1
Thallium	0.0014	0.0010	mg/l	200.8	10/14/12	1
Thallium,Dissolved	BDL	0.0010	mg/l	200.8	10/11/12	1
Zinc	9.2	5.0	mg/l	200.8	10/14/12	500
Zinc,Dissolved	0.18	0.010	mg/l	200.8	10/11/12	1
Mercury	0.0015	0.00020	mg/l	245.1	10/06/12	1
Aluminum	400	0.10	mg/l	200.7	10/12/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L599199-03 (PH) - 7.2@19.1c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

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Est. 1970

REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-03

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 7

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Aluminum,Dissolved	31.	0.10	mg/l	200.7	10/13/12	1
Iron	560	0.10	mg/l	200.7	10/12/12	1
Iron,Dissolved	7.8	0.10	mg/l	200.7	10/13/12	1
PP Volatile Organics						
Benzene	BDL	0.0010	mg/l	624	10/05/12	1
Bromodichloromethane	BDL	0.0010	mg/l	624	10/05/12	1
Bromoform	BDL	0.0010	mg/l	624	10/05/12	1
Bromomethane	BDL	0.0050	mg/l	624	10/05/12	1
Carbon tetrachloride	BDL	0.0010	mg/l	624	10/05/12	1
Chlorobenzene	BDL	0.0010	mg/l	624	10/05/12	1
Chlorodibromomethane	BDL	0.0010	mg/l	624	10/05/12	1
Chloroethane	BDL	0.0050	mg/l	624	10/05/12	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	624	10/05/12	1
Chloroform	BDL	0.0050	mg/l	624	10/05/12	1
Chloromethane	BDL	0.0025	mg/l	624	10/05/12	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	624	10/05/12	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	624	10/05/12	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	624	10/05/12	1
1,1-Dichloroethane	BDL	0.0010	mg/l	624	10/05/12	1
1,2-Dichloroethane	BDL	0.0010	mg/l	624	10/05/12	1
1,1-Dichloroethene	BDL	0.0010	mg/l	624	10/05/12	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	624	10/05/12	1
1,2-Dichloropropane	BDL	0.0010	mg/l	624	10/05/12	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/05/12	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	624	10/05/12	1
Ethylbenzene	BDL	0.0010	mg/l	624	10/05/12	1
Methylene Chloride	BDL	0.0050	mg/l	624	10/05/12	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	624	10/05/12	1
Tetrachloroethene	BDL	0.0010	mg/l	624	10/05/12	1
Toluene	BDL	0.0050	mg/l	624	10/05/12	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	624	10/05/12	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	624	10/05/12	1
Trichloroethene	BDL	0.0010	mg/l	624	10/05/12	1
Vinyl chloride	BDL	0.0010	mg/l	624	10/05/12	1
Surrogate Recovery						
Toluene-d8	91.3		% Rec.	624	10/05/12	1
Dibromofluoromethane	92.4		% Rec.	624	10/05/12	1
a,a,a-Trifluorotoluene	102.		% Rec.	624	10/05/12	1
4-Bromofluorobenzene	98.3		% Rec.	624	10/05/12	1
Pesticide/PCBs						
Aldrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Alpha BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L599199-03 (PH) - 7.2@19.1c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-03

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 7

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Beta BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Delta BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Gamma BHC	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Chlordane	BDL	0.00050	mg/l	8081A/8082	10/11/12	1
4,4-DDD	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
4,4-DDE	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
4,4-DDT	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Dieldrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan I	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan II	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endosulfan sulfate	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin aldehyde	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Endrin ketone	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Heptachlor	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Heptachlor epoxide	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Hexachlorobenzene	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Methoxychlor	BDL	0.000050	mg/l	8081A/8082	10/11/12	1
Toxaphene	BDL	0.00050	mg/l	8081A/8082	10/11/12	1
PCB 1016	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1221	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1232	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1242	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1248	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1254	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
PCB 1260	BDL	0.00050	mg/l	8081A/8082	10/08/12	1
Pest/PCBs Surrogates						
Decachlorobiphenyl	69.8		% Rec.	8081A/8082	10/08/12	1
Tetrachloro-m-xylene	80.3		% Rec.	8081A/8082	10/08/12	1
PP Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	625	10/10/12	1
Acenaphthylene	BDL	0.0010	mg/l	625	10/10/12	1
Anthracene	BDL	0.0010	mg/l	625	10/10/12	1
Benzidine	BDL	0.010	mg/l	625	10/10/12	1
Benzo(a)anthracene	BDL	0.0010	mg/l	625	10/10/12	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	625	10/10/12	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	625	10/10/12	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	625	10/10/12	1
Benzo(a)pyrene	BDL	0.0010	mg/l	625	10/10/12	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	625	10/10/12	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	625	10/10/12	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	625	10/10/12	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	625	10/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L599199-03 (PH) - 7.2@19.1c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-03

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 7

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Chloronaphthalene	BDL	0.0010	mg/l	625	10/10/12	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	625	10/10/12	1
Chrysene	BDL	0.0010	mg/l	625	10/10/12	1
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	625	10/10/12	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	625	10/10/12	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	625	10/10/12	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	625	10/10/12	1
Fluoranthene	BDL	0.0010	mg/l	625	10/10/12	1
Fluorene	BDL	0.0010	mg/l	625	10/10/12	1
Hexachlorobenzene	BDL	0.0010	mg/l	625	10/10/12	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	625	10/10/12	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	625	10/10/12	1
Hexachloroethane	BDL	0.010	mg/l	625	10/10/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	625	10/10/12	1
Isophorone	BDL	0.010	mg/l	625	10/10/12	1
Naphthalene	BDL	0.0010	mg/l	625	10/10/12	1
Nitrobenzene	BDL	0.010	mg/l	625	10/10/12	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	625	10/10/12	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	625	10/10/12	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	625	10/10/12	1
Phenanthrene	BDL	0.0010	mg/l	625	10/10/12	1
Benzylbutyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Bis(2-ethylhexyl)phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Di-n-butyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Diethyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Dimethyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Di-n-octyl phthalate	BDL	0.0010	mg/l	625	10/10/12	1
Pyrene	BDL	0.0010	mg/l	625	10/10/12	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	625	10/10/12	1
PP Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	625	10/10/12	1
2-Chlorophenol	BDL	0.010	mg/l	625	10/10/12	1
2,4-Dichlorophenol	BDL	0.010	mg/l	625	10/10/12	1
2,4-Dimethylphenol	BDL	0.010	mg/l	625	10/10/12	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	625	10/10/12	1
2,4-Dinitrophenol	BDL	0.010	mg/l	625	10/10/12	1
2-Nitrophenol	BDL	0.010	mg/l	625	10/10/12	1
4-Nitrophenol	BDL	0.010	mg/l	625	10/10/12	1
Pentachlorophenol	BDL	0.010	mg/l	625	10/10/12	1
Phenol	BDL	0.010	mg/l	625	10/10/12	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	625	10/10/12	1
1,2-Diphenylhydrazine	BDL	0.010	mg/l	625	10/10/12	1
Surrogate Recovery						
2-Fluorophenol	31.7		% Rec.	625	10/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L599199-03 (PH) - 7.2@19.1c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 15, 2012

ESC Sample # : L599199-03

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 7

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Phenol-d5	20.9		% Rec.	625	10/10/12	1
Nitrobenzene-d5	67.8		% Rec.	625	10/10/12	1
2-Fluorobiphenyl	84.8		% Rec.	625	10/10/12	1
2,4,6-Tribromophenol	96.4		% Rec.	625	10/10/12	1
p-Terphenyl-d14	77.2		% Rec.	625	10/10/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: 10/15/12 14:57 Printed: 10/15/12 14:58
L599199-03 (PH) - 7.2@19.1c

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L599199-01	WG616544	SAMP	pH	R2378653	T8
	WG617500	SAMP	Antimony	R2390540	O
	WG617325	SAMP	Manganese,Dissolved	R2389257	B
	WG617500	SAMP	Selenium	R2390540	O
	WG617500	SAMP	Silver	R2390540	O
	WG616705	SAMP	Benzidine	R2385617	J4
	WG616225	SAMP	Endrin aldehyde	R2381101	J4
	WG616225	SAMP	PCB 1016	R2381101	J3
	WG617103	SAMP	MCPA	R2388557	L1J3
L599199-02	WG616544	SAMP	pH	R2378653	T8
	WG617500	SAMP	Antimony	R2390540	O
	WG617325	SAMP	Manganese,Dissolved	R2389257	B
	WG617500	SAMP	Selenium	R2390540	O
	WG617500	SAMP	Silver	R2390540	O
	WG616705	SAMP	Benzidine	R2385617	J4
	WG616225	SAMP	Endrin aldehyde	R2381101	J4
	WG616225	SAMP	PCB 1016	R2381101	J3
	WG617103	SAMP	MCPA	R2388557	L1J3
L599199-03	WG616544	SAMP	pH	R2378653	T8
	WG617500	SAMP	Antimony	R2390540	O
	WG617500	SAMP	Arsenic	R2390540	O
	WG617325	SAMP	Manganese,Dissolved	R2389257	B
	WG617500	SAMP	Selenium	R2390540	O
	WG617500	SAMP	Silver	R2390540	O
	WG616705	SAMP	Benzidine	R2385617	J4
	WG616225	SAMP	Endrin aldehyde	R2381101	J4
	WG616225	SAMP	PCB 1016	R2381101	J3

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
B	(EPA) - The indicated compound was found in the associated method blank as well as the laboratory sample.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
L1	(ESC) The associated batch LCS exceeded the upper control limit, which indicates a high bias; The sample analyte was "not detected" and is therefore unaffected.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
10/15/12 at 14:58:50

TSR Signing Reports: 358

Sample: L599199-01 Account: YEHDCO Received: 10/05/12 09:00 Due Date: 10/12/12 00:00 RPT Date: 10/15/12 14:57
POT DISS= filter Diss (preserved cont) 8-96 hours after preservation and before prep.
Sample: L599199-02 Account: YEHDCO Received: 10/05/12 09:00 Due Date: 10/12/12 00:00 RPT Date: 10/15/12 14:57
POT DISS= filter Diss (preserved cont) 8-96 hours after preservation and before prep.
Sample: L599199-03 Account: YEHDCO Received: 10/05/12 09:00 Due Date: 10/12/12 00:00 RPT Date: 10/15/12 14:57
POT DISS= filter Diss (preserved cont) 8-96 hours after preservation and before prep. - removed
SV8151 due to lab accident

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

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Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L599199

October 15, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< .01	mg/l			WG616420	10/05/12 11:06
Nitrate	< .1	mg/l			WG616432	10/05/12 06:35
1,1,1-Trichloroethane	< .001	mg/l			WG616400	10/05/12 12:56
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG616400	10/05/12 12:56
1,1,2-Trichloroethane	< .001	mg/l			WG616400	10/05/12 12:56
1,1-Dichloroethane	< .001	mg/l			WG616400	10/05/12 12:56
1,1-Dichloroethene	< .001	mg/l			WG616400	10/05/12 12:56
1,2-Dichlorobenzene	< .001	mg/l			WG616400	10/05/12 12:56
1,2-Dichloroethane	< .001	mg/l			WG616400	10/05/12 12:56
1,2-Dichloropropane	< .001	mg/l			WG616400	10/05/12 12:56
1,3-Dichlorobenzene	< .001	mg/l			WG616400	10/05/12 12:56
1,4-Dichlorobenzene	< .001	mg/l			WG616400	10/05/12 12:56
2-Chloroethyl vinyl ether	< .05	mg/l			WG616400	10/05/12 12:56
Benzene	< .001	mg/l			WG616400	10/05/12 12:56
Bromodichloromethane	< .001	mg/l			WG616400	10/05/12 12:56
Bromoform	< .001	mg/l			WG616400	10/05/12 12:56
Bromomethane	< .005	mg/l			WG616400	10/05/12 12:56
Carbon tetrachloride	< .001	mg/l			WG616400	10/05/12 12:56
Chlorobenzene	< .001	mg/l			WG616400	10/05/12 12:56
Chlorodibromomethane	< .001	mg/l			WG616400	10/05/12 12:56
Chloroethane	< .005	mg/l			WG616400	10/05/12 12:56
Chloroform	< .005	mg/l			WG616400	10/05/12 12:56
Chloromethane	< .0025	mg/l			WG616400	10/05/12 12:56
cis-1,3-Dichloropropene	< .001	mg/l			WG616400	10/05/12 12:56
Ethylbenzene	< .001	mg/l			WG616400	10/05/12 12:56
Methylene Chloride	< .005	mg/l			WG616400	10/05/12 12:56
Tetrachloroethene	< .001	mg/l			WG616400	10/05/12 12:56
Toluene	< .005	mg/l			WG616400	10/05/12 12:56
trans-1,2-Dichloroethene	< .001	mg/l			WG616400	10/05/12 12:56
trans-1,3-Dichloropropene	< .001	mg/l			WG616400	10/05/12 12:56
Trichloroethene	< .001	mg/l			WG616400	10/05/12 12:56
Vinyl chloride	< .001	mg/l			WG616400	10/05/12 12:56
4-Bromofluorobenzene		% Rec.	100.5	82-120	WG616400	10/05/12 12:56
Dibromofluoromethane		% Rec.	88.49	82-126	WG616400	10/05/12 12:56
Toluene-d8		% Rec.	94.21	92-112	WG616400	10/05/12 12:56
a,a,a-Trifluorotoluene		% Rec.	101.4	90-116	WG616400	10/05/12 12:56
Mercury	< .0002	mg/l			WG616441	10/06/12 16:46
PCB 1016	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1221	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1232	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1242	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1248	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1254	< .0005	mg/l			WG616225	10/08/12 13:39
PCB 1260	< .0005	mg/l			WG616225	10/08/12 13:39
Decachlorobiphenyl		% Rec.	109.0	10-122.6	WG616225	10/08/12 13:39
Tetrachloro-m-xylene		% Rec.	66.40	15.3-114.2	WG616225	10/08/12 13:39
4,4-DDD	< .00005	mg/l			WG616225	10/09/12 10:38
4,4-DDE	< .00005	mg/l			WG616225	10/09/12 10:38
4,4-DDT	< .00005	mg/l			WG616225	10/09/12 10:38
Aldrin	< .00005	mg/l			WG616225	10/09/12 10:38
Alpha BHC	< .00005	mg/l			WG616225	10/09/12 10:38

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Level II

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Beta BHC	< .00005	mg/l			WG616225	10/09/12 10:38
Chlordane	< .0005	mg/l			WG616225	10/09/12 10:38
Delta BHC	< .00005	mg/l			WG616225	10/09/12 10:38
Dieldrin	< .00005	mg/l			WG616225	10/09/12 10:38
Endosulfan I	< .00005	mg/l			WG616225	10/09/12 10:38
Endosulfan II	< .00005	mg/l			WG616225	10/09/12 10:38
Endosulfan sulfate	< .00005	mg/l			WG616225	10/09/12 10:38
Endrin	< .00005	mg/l			WG616225	10/09/12 10:38
Endrin aldehyde	< .00005	mg/l			WG616225	10/09/12 10:38
Endrin ketone	< .00005	mg/l			WG616225	10/09/12 10:38
Gamma BHC	< .00005	mg/l			WG616225	10/09/12 10:38
Heptachlor	< .00005	mg/l			WG616225	10/09/12 10:38
Heptachlor epoxide	< .00005	mg/l			WG616225	10/09/12 10:38
Hexachlorobenzene	< .00005	mg/l			WG616225	10/09/12 10:38
Methoxychlor	< .00005	mg/l			WG616225	10/09/12 10:38
Toxaphene	< .0005	mg/l			WG616225	10/09/12 10:38
Decachlorobiphenyl		% Rec.	76.32	10-122.6	WG616225	10/09/12 10:38
Tetrachloro-m-xylene		% Rec.	70.03	15.3-114.2	WG616225	10/09/12 10:38
1,2,4-Trichlorobenzene	< .01	mg/l			WG616705	10/10/12 03:45
2,4,6-Trichlorophenol	< .01	mg/l			WG616705	10/10/12 03:45
2,4-Dichlorophenol	< .01	mg/l			WG616705	10/10/12 03:45
2,4-Dimethylphenol	< .01	mg/l			WG616705	10/10/12 03:45
2,4-Dinitrophenol	< .01	mg/l			WG616705	10/10/12 03:45
2,4-Dinitrotoluene	< .01	mg/l			WG616705	10/10/12 03:45
2,6-Dinitrotoluene	< .01	mg/l			WG616705	10/10/12 03:45
2-Chloronaphthalene	< .001	mg/l			WG616705	10/10/12 03:45
2-Chlorophenol	< .01	mg/l			WG616705	10/10/12 03:45
2-Nitrophenol	< .01	mg/l			WG616705	10/10/12 03:45
3,3-Dichlorobenzidine	< .01	mg/l			WG616705	10/10/12 03:45
4,6-Dinitro-2-methylphenol	< .01	mg/l			WG616705	10/10/12 03:45
4-Bromophenyl-phenylether	< .01	mg/l			WG616705	10/10/12 03:45
4-Chloro-3-methylphenol	< .01	mg/l			WG616705	10/10/12 03:45
4-Chlorophenyl-phenylether	< .01	mg/l			WG616705	10/10/12 03:45
4-Nitrophenol	< .01	mg/l			WG616705	10/10/12 03:45
Acenaphthene	< .001	mg/l			WG616705	10/10/12 03:45
Acenaphthylene	< .001	mg/l			WG616705	10/10/12 03:45
Anthracene	< .001	mg/l			WG616705	10/10/12 03:45
1,2-Diphenylhydrazine	< .01	mg/l			WG616705	10/10/12 03:45
Benzidine	< .01	mg/l			WG616705	10/10/12 03:45
Benzo(a)anthracene	< .001	mg/l			WG616705	10/10/12 03:45
Benzo(a)pyrene	< .001	mg/l			WG616705	10/10/12 03:45
Benzo(b)fluoranthene	< .001	mg/l			WG616705	10/10/12 03:45
Benzo(g,h,i)perylene	< .001	mg/l			WG616705	10/10/12 03:45
Benzo(k)fluoranthene	< .001	mg/l			WG616705	10/10/12 03:45
Benzylbutyl phthalate	< .001	mg/l			WG616705	10/10/12 03:45
Bis(2-chlorethoxy)methane	< .01	mg/l			WG616705	10/10/12 03:45
Bis(2-chloroethyl)ether	< .01	mg/l			WG616705	10/10/12 03:45
Bis(2-chloroisopropyl)ether	< .01	mg/l			WG616705	10/10/12 03:45
Bis(2-ethylhexyl)phthalate	< .001	mg/l			WG616705	10/10/12 03:45
Chrysene	< .001	mg/l			WG616705	10/10/12 03:45
Di-n-butyl phthalate	< .001	mg/l			WG616705	10/10/12 03:45
Di-n-octyl phthalate	< .001	mg/l			WG616705	10/10/12 03:45
Dibenz(a,h)anthracene	< .001	mg/l			WG616705	10/10/12 03:45
Diethyl phthalate	< .001	mg/l			WG616705	10/10/12 03:45
Dimethyl phthalate	< .001	mg/l			WG616705	10/10/12 03:45
Fluoranthene	< .001	mg/l			WG616705	10/10/12 03:45
Fluorene	< .001	mg/l			WG616705	10/10/12 03:45

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Quality Assurance Report
Level II

L599199

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexachloro-1,3-butadiene	< .01	mg/l			WG616705	10/10/12 03:45
Hexachlorobenzene	< .001	mg/l			WG616705	10/10/12 03:45
Hexachlorocyclopentadiene	< .01	mg/l			WG616705	10/10/12 03:45
Hexachloroethane	< .01	mg/l			WG616705	10/10/12 03:45
Indeno(1,2,3-cd)pyrene	< .001	mg/l			WG616705	10/10/12 03:45
Isophorone	< .01	mg/l			WG616705	10/10/12 03:45
n-Nitrosodi-n-propylamine	< .01	mg/l			WG616705	10/10/12 03:45
n-Nitrosodimethylamine	< .01	mg/l			WG616705	10/10/12 03:45
n-Nitrosodiphenylamine	< .01	mg/l			WG616705	10/10/12 03:45
Naphthalene	< .001	mg/l			WG616705	10/10/12 03:45
Nitrobenzene	< .01	mg/l			WG616705	10/10/12 03:45
Pentachlorophenol	< .001	mg/l			WG616705	10/10/12 03:45
Phenanthrene	< .001	mg/l			WG616705	10/10/12 03:45
Phenol	< .01	mg/l			WG616705	10/10/12 03:45
Pyrene	< .001	mg/l			WG616705	10/10/12 03:45
2,4,6-Tribromophenol		% Rec.	97.09	16-147	WG616705	10/10/12 03:45
2-Fluorobiphenyl		% Rec.	93.58	29-127	WG616705	10/10/12 03:45
2-Fluorophenol		% Rec.	50.72	10-75	WG616705	10/10/12 03:45
Nitrobenzene-d5		% Rec.	74.85	17-119	WG616705	10/10/12 03:45
Phenol-d5		% Rec.	36.58	10-63	WG616705	10/10/12 03:45
p-Terphenyl-d14		% Rec.	87.58	40-174	WG616705	10/10/12 03:45
Suspended Solids	< 1	mg/l			WG617258	10/12/12 11:45
2,4,5-T	< .002	mg/l			WG617103	10/11/12 17:50
2,4,5-TP (Silvex)	< .002	mg/l			WG617103	10/11/12 17:50
2,4-D	< .002	mg/l			WG617103	10/11/12 17:50
2,4-DB	< .002	mg/l			WG617103	10/11/12 17:50
Dalapon	< .002	mg/l			WG617103	10/11/12 17:50
Dicamba	< .002	mg/l			WG617103	10/11/12 17:50
Dichloroprop	< .002	mg/l			WG617103	10/11/12 17:50
Dinoseb	< .002	mg/l			WG617103	10/11/12 17:50
MCPA	< .1	mg/l			WG617103	10/11/12 17:50
MCPP	< .1	mg/l			WG617103	10/11/12 17:50
2,4-Dichlorophenyl Acetic Acid		%	70.53	42-112	WG617103	10/11/12 17:50
Dissolved Solids	< 10	mg/l			WG617259	10/12/12 16:32
Aluminum	< .1	mg/l			WG617570	10/12/12 22:19
Iron	< .1	mg/l			WG617570	10/12/12 22:19
Arsenic,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Barium,Dissolved	< .002	mg/l			WG617325	10/11/12 22:40
Beryllium,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Cadmium,Dissolved	< .0005	mg/l			WG617325	10/11/12 22:40
Chromium,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Copper,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Lead,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Manganese,Dissolved	< .002	mg/l			WG617325	10/11/12 22:40
Selenium,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Silver,Dissolved	< .0005	mg/l			WG617325	10/11/12 22:40
Thallium,Dissolved	< .001	mg/l			WG617325	10/11/12 22:40
Zinc,Dissolved	< .01	mg/l			WG617325	10/11/12 22:40

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Aluminum,Dissolved	< .1	mg/l			WG617617	10/13/12 23:16
Iron,Dissolved	< .1	mg/l			WG617617	10/13/12 23:16
Antimony,Dissolved	< .001	mg/l			WG617325	10/12/12 15:42
Nickel,Dissolved	< .001	mg/l			WG617752	10/14/12 11:14
Arsenic	< .001	mg/l			WG617500	10/12/12 10:50
Barium	< .002	mg/l			WG617500	10/12/12 10:50
Beryllium	< .001	mg/l			WG617500	10/12/12 10:50
Cadmium	< .0005	mg/l			WG617500	10/12/12 10:50
Chromium	< .001	mg/l			WG617500	10/12/12 10:50
Copper	< .001	mg/l			WG617500	10/12/12 10:50
Lead	< .001	mg/l			WG617500	10/12/12 10:50
Manganese	< .002	mg/l			WG617500	10/12/12 10:50
Nickel	< .001	mg/l			WG617500	10/12/12 10:50
Selenium	< .001	mg/l			WG617500	10/12/12 10:50
Thallium	< .001	mg/l			WG617500	10/12/12 10:50
Zinc	< .01	mg/l			WG617500	10/12/12 10:50
Antimony	< .001	mg/l			WG617500	10/14/12 17:10
Silver	< .0005	mg/l			WG617500	10/14/12 17:10
Dissolved Solids	< 10	mg/l			WG617048	10/11/12 15:00

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/l	0	0	0	20	L599206-01	WG616420
Nitrate	mg/l	8.10	8.20	1.60	20	L599199-01	WG616432
Mercury	mg/l	0	0	0	20	L599172-01	WG616441
pH	su	6.40	6.40	0.784	1	L598880-03	WG616544
pH	su	8.50	8.50	0.352	1	L599066-10	WG616544
Suspended Solids	mg/l	21.0	21.3	3.17	5	L599189-01	WG617258
Suspended Solids	mg/l	31.0	33.0	6.25*	5	L599242-01	WG617258
Dissolved Solids	mg/l	60.0	57.0	5.13*	5	L599467-03	WG617259
Aluminum	mg/l	32.0	31.6	1.26	20	L599230-01	WG617570
Iron	mg/l	0.180	0.0887	67.0*	20	L599230-01	WG617570
Arsenic,Dissolved	mg/l	0	0	0	20	L599455-03	WG617325
Barium,Dissolved	mg/l	0.0110	0.00987	8.07	20	L599455-03	WG617325
Beryllium,Dissolved	mg/l	0	0	0	20	L599455-03	WG617325

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Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
			Duplicate				
Cadmium,Dissolved	mg/l	0	0	0	20	L599455-03	WG617325
Chromium,Dissolved	mg/l	0	0.000110	NA	20	L599455-03	WG617325
Copper,Dissolved	mg/l	0.00370	0.00400	6.72	20	L599455-03	WG617325
Lead,Dissolved	mg/l	0	0	0	20	L599455-03	WG617325
Manganese,Dissolved	mg/l	0	0.000540	NA	20	L599455-03	WG617325
Selenium,Dissolved	mg/l	0.00160	0.00154	5.06	20	L599455-03	WG617325
Silver,Dissolved	mg/l	0.000510	0.000440	14.7	20	L599455-03	WG617325
Thallium,Dissolved	mg/l	0	0.0000600	NA	20	L599455-03	WG617325
Zinc,Dissolved	mg/l	0	0.00714	NA	20	L599455-03	WG617325
Aluminum,Dissolved	mg/l	0	0.0337	NA	20	L599520-01	WG617617
Iron,Dissolved	mg/l	0	0	0	20	L599520-01	WG617617
Antimony,Dissolved	mg/l	0.00120	0	NA	20	L599455-03	WG617325
Nickel,Dissolved	mg/l	0.00120	0.00130	12.2	20	L599455-02	WG617752
Arsenic	mg/l	0	0	0	20	L599455-03	WG617500
Barium	mg/l	0.0110	0.0105	4.65	20	L599455-03	WG617500
Beryllium	mg/l	0	0	0	20	L599455-03	WG617500
Cadmium	mg/l	0	0	0	20	L599455-03	WG617500
Chromium	mg/l	0	0	0	20	L599455-03	WG617500
Copper	mg/l	0.00400	0.00400	0	20	L599455-03	WG617500
Lead	mg/l	0	0	0	20	L599455-03	WG617500
Manganese	mg/l	0	0.000140	NA	20	L599455-03	WG617500
Nickel	mg/l	0	0	0	20	L599455-03	WG617500
Selenium	mg/l	0	0.000850	NA	20	L599455-03	WG617500
Thallium	mg/l	0	0	0	20	L599455-03	WG617500
Zinc	mg/l	0	0.00710	NA	20	L599455-03	WG617500
Antimony	mg/l	0	0.00146	NA	20	L599455-03	WG617500
Silver	mg/l	0	0.000290	NA	20	L599455-03	WG617500
Dissolved Solids	mg/l	290.	283.	1.05	5	L599133-01	WG617048

Analyte	Units	Known Val	Laboratory Control Sample Result	% Rec	Limit	Batch
Chromium,Hexavalent	mg/l	.6	0.553	92.2	85-115	WG616420
Nitrate	mg/l	8	7.97	99.6	90-110	WG616432
1,1,1-Trichloroethane	mg/l	.025	0.0198	79.1	71-126	WG616400
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0245	98.1	78-130	WG616400
1,1,2-Trichloroethane	mg/l	.025	0.0267	107.	81-121	WG616400
1,1-Dichloroethane	mg/l	.025	0.0188	75.3	73-123	WG616400
1,1-Dichloroethene	mg/l	.025	0.0232	93.0	54-134	WG616400
1,2-Dichlorobenzene	mg/l	.025	0.0267	107.	82-121	WG616400
1,2-Dichloroethane	mg/l	.025	0.0193	77.3	69-128	WG616400
1,2-Dichloropropane	mg/l	.025	0.0217	86.7	77-121	WG616400
1,3-Dichlorobenzene	mg/l	.025	0.0266	106.	77-127	WG616400
1,4-Dichlorobenzene	mg/l	.025	0.0263	105.	79-117	WG616400
2-Chloroethyl vinyl ether	mg/l	.125	0.117	93.4	26-172	WG616400

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Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

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Michael Keifer
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Quality Assurance Report
Level II

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Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Benzene	mg/l	.025	0.0205	82.0	72-119	WG616400
Bromodichloromethane	mg/l	.025	0.0220	87.9	75-127	WG616400
Bromoform	mg/l	.025	0.0267	107.	61-136	WG616400
Bromomethane	mg/l	.025	0.0289	116.	42-172	WG616400
Carbon tetrachloride	mg/l	.025	0.0187	75.0	63-129	WG616400
Chlorobenzene	mg/l	.025	0.0267	107.	78-123	WG616400
Chlorodibromomethane	mg/l	.025	0.0264	106.	73-128	WG616400
Chloroethane	mg/l	.025	0.0259	104.	52-164	WG616400
Chloroform	mg/l	.025	0.0206	82.6	76-122	WG616400
Chloromethane	mg/l	.025	0.0163	65.3	50-141	WG616400
cis-1,3-Dichloropropene	mg/l	.025	0.0226	90.5	74-124	WG616400
Ethylbenzene	mg/l	.025	0.0262	105.	77-124	WG616400
Methylene Chloride	mg/l	.025	0.0187	74.6	67-122	WG616400
Tetrachloroethene	mg/l	.025	0.0275	110.	69-131	WG616400
Toluene	mg/l	.025	0.0228	91.3	75-114	WG616400
trans-1,2-Dichloroethene	mg/l	.025	0.0198	79.3	63-127	WG616400
trans-1,3-Dichloropropene	mg/l	.025	0.0255	102.	69-124	WG616400
Trichloroethene	mg/l	.025	0.0232	92.8	69-131	WG616400
Vinyl chloride	mg/l	.025	0.0227	90.6	55-142	WG616400
4-Bromofluorobenzene				94.47	82-120	WG616400
Dibromofluoromethane				88.92	82-126	WG616400
Toluene-d8				94.14	92-112	WG616400
a,a,a-Trifluorotoluene				100.6	90-116	WG616400
Mercury	mg/l	.003	0.00291	97.0	85-115	WG616441
pH	su	6.03	6.03	100.	98-101	WG616544
PCB 1016	mg/l	.0005	0.000443	88.5	32-126	WG616225
PCB 1260	mg/l	.0005	0.000423	84.7	58-128	WG616225
Decachlorobiphenyl				98.65	10-122.6	WG616225
Tetrachloro-m-xylene				73.13	15.3-114.2	WG616225
4,4-DDD	mg/l	.0002	0.000186	92.8	60-123	WG616225
4,4-DDE	mg/l	.0002	0.000173	86.4	50-120	WG616225
4,4-DDT	mg/l	.0002	0.000193	96.5	61-121	WG616225
Aldrin	mg/l	.0002	0.000104	52.0	10-136	WG616225
Alpha BHC	mg/l	.0002	0.000183	91.6	58-114	WG616225
Beta BHC	mg/l	.0002	0.000171	85.6	61-120	WG616225
Delta BHC	mg/l	.0002	0.000170	85.2	57-120	WG616225
Dieldrin	mg/l	.0002	0.000183	91.6	62-123	WG616225
Endosulfan I	mg/l	.0002	0.000182	91.0	63-123	WG616225
Endosulfan II	mg/l	.0002	0.000209	104.	63-124	WG616225
Endosulfan sulfate	mg/l	.0002	0.000199	99.7	59-125	WG616225
Endrin	mg/l	.0002	0.000182	91.2	60-123	WG616225
Endrin aldehyde	mg/l	.0002	0.000183	91.7	42-92	WG616225
Endrin ketone	mg/l	.0002	0.000211	105.	60-117	WG616225
Gamma BHC	mg/l	.0002	0.000185	92.3	59-116	WG616225
Heptachlor	mg/l	.0002	0.000133	66.4	10-131	WG616225
Heptachlor epoxide	mg/l	.0002	0.000180	90.1	61-118	WG616225
Hexachlorobenzene	mg/l	.0002	0.000120	59.8	28-116	WG616225
Methoxychlor	mg/l	.0002	0.000201	101.	66-122	WG616225
Decachlorobiphenyl				86.76	10-122.6	WG616225
Tetrachloro-m-xylene				79.57	15.3-114.2	WG616225
1,2,4-Trichlorobenzene	mg/l	.01	0.00732	73.2	34-97	WG616705

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Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
2,4,6-Trichlorophenol	mg/l	.01	0.00885	88.5	38-113	WG616705
2,4-Dichlorophenol	mg/l	.01	0.00836	83.6	46-105	WG616705
2,4-Dimethylphenol	mg/l	.01	0.00821	82.1	47-108	WG616705
2,4-Dinitrophenol	mg/l	.01	0.00532	53.2	10-121	WG616705
2,4-Dinitrotoluene	mg/l	.01	0.00917	91.7	59-117	WG616705
2,6-Dinitrotoluene	mg/l	.01	0.00911	91.1	57-110	WG616705
2-Chloronaphthalene	mg/l	.01	0.00819	81.9	47-106	WG616705
2-Chlorophenol	mg/l	.01	0.00694	69.4	37-90	WG616705
2-Nitrophenol	mg/l	.01	0.00852	85.2	40-112	WG616705
3,3-Dichlorobenzidine	mg/l	.01	0.0104	104.	58-116	WG616705
4,6-Dinitro-2-methylphenol	mg/l	.01	0.00904	90.4	21-119	WG616705
4-Bromophenyl-phenylether	mg/l	.01	0.00853	85.3	63-120	WG616705
4-Chloro-3-methylphenol	mg/l	.01	0.00879	87.9	50-105	WG616705
4-Chlorophenyl-phenylether	mg/l	.01	0.00887	88.7	58-115	WG616705
4-Nitrophenol	mg/l	.01	0.00381	38.1	10-53	WG616705
Acenaphthene	mg/l	.01	0.00873	87.3	52-107	WG616705
Acenaphthylene	mg/l	.01	0.00902	90.2	55-119	WG616705
Anthracene	mg/l	.01	0.00927	92.7	65-114	WG616705
1,2-Diphenylhydrazine	mg/l	.01	0.00878	87.8	52-113	WG616705
Benzidine	mg/l	.01	0.00619	61.9*	10-55	WG616705
Benzo(a)anthracene	mg/l	.01	0.00929	92.9	68-113	WG616705
Benzo(a)pyrene	mg/l	.01	0.00918	91.8	68-115	WG616705
Benzo(b)fluoranthene	mg/l	.01	0.00913	91.3	67-114	WG616705
Benzo(g,h,i)perylene	mg/l	.01	0.00861	86.1	52-132	WG616705
Benzo(k)fluoranthene	mg/l	.01	0.00945	94.5	62-116	WG616705
Benzylbutyl phthalate	mg/l	.01	0.00992	99.2	12-166	WG616705
Bis(2-chlorethoxy)methane	mg/l	.01	0.00841	84.1	56-116	WG616705
Bis(2-chloroethyl)ether	mg/l	.01	0.00680	68.0	39-109	WG616705
Bis(2-chloroisopropyl)ether	mg/l	.01	0.00724	72.4	43-108	WG616705
Bis(2-ethylhexyl)phthalate	mg/l	.01	0.00988	98.8	61-147	WG616705
Chrysene	mg/l	.01	0.00945	94.5	65-114	WG616705
Di-n-butyl phthalate	mg/l	.01	0.00951	95.1	56-133	WG616705
Di-n-octyl phthalate	mg/l	.01	0.00867	86.7	59-143	WG616705
Dibenz(a,h)anthracene	mg/l	.01	0.00941	94.1	54-130	WG616705
Diethyl phthalate	mg/l	.01	0.00919	91.9	33-136	WG616705
Dimethyl phthalate	mg/l	.01	0.00882	88.2	10-152	WG616705
Fluoranthene	mg/l	.01	0.00925	92.5	66-120	WG616705
Fluorene	mg/l	.01	0.00921	92.1	58-110	WG616705
Hexachloro-1,3-butadiene	mg/l	.01	0.00811	81.1	34-115	WG616705
Hexachlorobenzene	mg/l	.01	0.00785	78.5	55-117	WG616705
Hexachlorocyclopentadiene	mg/l	.01	0.00769	76.9	20-121	WG616705
Hexachloroethane	mg/l	.01	0.00652	65.2	24-93	WG616705
Indeno(1,2,3-cd)pyrene	mg/l	.01	0.00908	90.8	56-129	WG616705
Isophorone	mg/l	.01	0.00716	71.6	55-108	WG616705
n-Nitrosodi-n-propylamine	mg/l	.01	0.00775	77.5	50-115	WG616705
n-Nitrosodimethylamine	mg/l	.01	0.00378	37.8	12-68	WG616705
n-Nitrosodiphenylamine	mg/l	.01	0.00874	87.4	55-98	WG616705
Naphthalene	mg/l	.01	0.00798	79.8	42-103	WG616705
Nitrobenzene	mg/l	.01	0.00792	79.2	39-102	WG616705
Pentachlorophenol	mg/l	.01	0.00743	74.3	10-101	WG616705
Phenanthrene	mg/l	.01	0.00867	86.7	61-110	WG616705
Phenol	mg/l	.01	0.00337	33.7	10-53	WG616705
Pyrene	mg/l	.01	0.00873	87.3	65-116	WG616705
2,4,6-Tribromophenol				92.18	16-147	WG616705
2-Fluorobiphenyl				91.36	29-127	WG616705
2-Fluorophenol				48.38	10-75	WG616705
Nitrobenzene-d5				79.89	17-119	WG616705
Phenol-d5				33.52	10-63	WG616705
p-Terphenyl-d14				85.93	40-174	WG616705

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Quality Assurance Report
Level II

L599199

October 15, 2012

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Suspended Solids	mg/l	773	796.	103.	85-115	WG617258
2,4,5-T	mg/l	.005	0.00476	95.1	46-116	WG617103
2,4,5-TP (Silvex)	mg/l	.005	0.00480	96.0	53.6-122	WG617103
2,4-D	mg/l	.005	0.00409	81.8	47.4-113	WG617103
2,4-DB	mg/l	.005	0.00334	66.9	48.4-113	WG617103
Dalapon	mg/l	.005	0.00386	77.1	40.5-102	WG617103
Dicamba	mg/l	.005	0.00439	87.8	57.2-111	WG617103
Dichloroprop	mg/l	.005	0.00506	101.	55.8-128	WG617103
Dinoseb	mg/l	.005	0.00317	63.5	41-121	WG617103
MCPA	mg/l	.5	0.925	185.*	24.1-143	WG617103
MCPP	mg/l	.5	0.606	121.	49-198	WG617103
2,4-Dichlorophenyl Acetic Acid				74.86	45.6-117	WG617103
Dissolved Solids	mg/l	8800	8370	95.1	85-115	WG617259
Aluminum	mg/l	1	0.984	98.4	85-115	WG617570
Iron	mg/l	1	1.05	105.	85-115	WG617570
Arsenic,Dissolved	mg/l	.05	0.0462	92.4	85-115	WG617325
Barium,Dissolved	mg/l	.05	0.0483	96.6	85-115	WG617325
Beryllium,Dissolved	mg/l	.05	0.0483	96.6	85-115	WG617325
Cadmium,Dissolved	mg/l	.05	0.0497	99.4	85-115	WG617325
Chromium,Dissolved	mg/l	.05	0.0512	102.	85-115	WG617325
Copper,Dissolved	mg/l	.05	0.0492	98.4	85-115	WG617325
Lead,Dissolved	mg/l	.05	0.0474	94.8	85-115	WG617325
Manganese,Dissolved	mg/l	.05	0.0498	99.6	85-115	WG617325
Selenium,Dissolved	mg/l	.05	0.0471	94.2	85-115	WG617325
Silver,Dissolved	mg/l	.05	0.0494	98.8	85-115	WG617325
Thallium,Dissolved	mg/l	.05	0.0470	94.0	85-115	WG617325
Zinc,Dissolved	mg/l	.05	0.0519	104.	85-115	WG617325
Aluminum,Dissolved	mg/l	1	1.07	107.	85-115	WG617617
Iron,Dissolved	mg/l	1	1.00	100.	85-115	WG617617
Antimony,Dissolved	mg/l	.05	0.0464	92.8	85-115	WG617325
Nickel,Dissolved	mg/l	.05	0.0528	106.	85-115	WG617752
Arsenic	mg/l	.05	0.0480	96.0	85-115	WG617500
Barium	mg/l	.05	0.0487	97.4	85-115	WG617500
Beryllium	mg/l	.05	0.0500	100.	85-115	WG617500
Cadmium	mg/l	.05	0.0492	98.4	85-115	WG617500
Chromium	mg/l	.05	0.0495	99.0	85-115	WG617500
Copper	mg/l	.05	0.0498	99.6	85-115	WG617500
Lead	mg/l	.05	0.0508	102.	85-115	WG617500
Manganese	mg/l	.05	0.0500	100.	85-115	WG617500
Nickel	mg/l	.05	0.0497	99.4	85-115	WG617500
Selenium	mg/l	.05	0.0481	96.2	85-115	WG617500
Thallium	mg/l	.05	0.0483	96.6	85-115	WG617500
Zinc	mg/l	.05	0.0493	98.6	85-115	WG617500

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Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Antimony	mg/l	.05	0.0518	104.	85-115	WG617500
Silver	mg/l	.05	0.0508	102.	85-115	WG617500
Dissolved Solids	mg/l	8800	8540	97.1	85-115	WG617048

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chromium,Hexavalent	mg/l	0.563	0.553	94.0	85-115	1.79	20	WG616420
Nitrate	mg/l	8.02	7.97	100.	90-110	0.625	20	WG616432
1,1,1-Trichloroethane	mg/l	0.0202	0.0198	81.0	71-126	2.12	20	WG616400
1,1,2,2-Tetrachloroethane	mg/l	0.0238	0.0245	95.0	78-130	2.82	20	WG616400
1,1,2-Trichloroethane	mg/l	0.0263	0.0267	105.	81-121	1.76	20	WG616400
1,1-Dichloroethane	mg/l	0.0190	0.0188	76.0	73-123	0.850	20	WG616400
1,1-Dichloroethene	mg/l	0.0242	0.0232	97.0	54-134	3.98	20	WG616400
1,2-Dichlorobenzene	mg/l	0.0271	0.0267	108.	82-121	1.72	20	WG616400
1,2-Dichloroethane	mg/l	0.0197	0.0193	79.0	69-128	2.00	20	WG616400
1,2-Dichloropropane	mg/l	0.0211	0.0217	84.0	77-121	2.52	20	WG616400
1,3-Dichlorobenzene	mg/l	0.0262	0.0266	105.	77-127	1.30	20	WG616400
1,4-Dichlorobenzene	mg/l	0.0263	0.0263	105.	79-117	0.170	20	WG616400
2-Chloroethyl vinyl ether	mg/l	0.113	0.117	90.0	26-172	3.09	22	WG616400
Benzene	mg/l	0.0207	0.0205	83.0	72-119	1.17	20	WG616400
Bromodichloromethane	mg/l	0.0215	0.0220	86.0	75-127	2.15	20	WG616400
Bromoform	mg/l	0.0267	0.0267	107.	61-136	0.180	20	WG616400
Bromomethane	mg/l	0.0283	0.0289	113.	42-172	2.21	20	WG616400
Carbon tetrachloride	mg/l	0.0190	0.0187	76.0	63-129	1.16	20	WG616400
Chlorobenzene	mg/l	0.0264	0.0267	106.	78-123	1.10	20	WG616400
Chlorodibromomethane	mg/l	0.0264	0.0264	106.	73-128	0.190	20	WG616400
Chloroethane	mg/l	0.0268	0.0259	107.	52-164	3.23	20	WG616400
Chloroform	mg/l	0.0207	0.0206	83.0	76-122	0.220	20	WG616400
Chloromethane	mg/l	0.0166	0.0163	66.0	50-141	1.74	20	WG616400
cis-1,3-Dichloropropene	mg/l	0.0225	0.0226	90.0	74-124	0.800	20	WG616400
Ethylbenzene	mg/l	0.0262	0.0262	105.	77-124	0.0300	20	WG616400
Methylene Chloride	mg/l	0.0189	0.0187	75.0	67-122	1.17	20	WG616400
Tetrachloroethene	mg/l	0.0277	0.0275	111.	69-131	0.880	20	WG616400
Toluene	mg/l	0.0225	0.0228	90.0	75-114	1.49	20	WG616400
trans-1,2-Dichloroethene	mg/l	0.0202	0.0198	81.0	63-127	2.03	20	WG616400
trans-1,3-Dichloropropene	mg/l	0.0244	0.0255	98.0	69-124	4.15	20	WG616400
Trichloroethene	mg/l	0.0232	0.0232	93.0	69-131	0.0200	20	WG616400
Vinyl chloride	mg/l	0.0244	0.0227	98.0	55-142	7.33	20	WG616400
4-Bromofluorobenzene				94.73	82-120			WG616400
Dibromofluoromethane				90.98	82-126			WG616400
Toluene-d8				93.10	92-112			WG616400
a,a,a-Trifluorotoluene				100.8	90-116			WG616400
pH	su	6.04	6.03	100.	98-101	0.166	20	WG616544
PCB 1016	mg/l	0.000579	0.000443	116.	32-126	26.7*	22	WG616225
PCB 1260	mg/l	0.000392	0.000423	78.0	58-128	7.60	20	WG616225
Decachlorobiphenyl				92.85	10-122.6			WG616225
Tetrachloro-m-xylene				76.43	15.3-114.2			WG616225
4,4-DDD	mg/l	0.000181	0.000186	90.0	60-123	2.55	20	WG616225

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Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

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Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L599199

October 15, 2012

		Laboratory Control Sample				Duplicate		
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
4,4-DDE	mg/l	0.000174	0.000173	87.0	50-120	0.658	22	WG616225
4,4-DDT	mg/l	0.000200	0.000193	100.	61-121	3.68	20	WG616225
Aldrin	mg/l	0.000113	0.000104	56.0	10-136	8.11	33	WG616225
Alpha BHC	mg/l	0.000187	0.000183	93.0	58-114	1.88	21	WG616225
Beta BHC	mg/l	0.000187	0.000171	94.0	61-120	8.80	20	WG616225
Delta BHC	mg/l	0.000170	0.000170	85.0	57-120	0.207	21	WG616225
Dieldrin	mg/l	0.000184	0.000183	92.0	62-123	0.453	20	WG616225
Endosulfan I	mg/l	0.000183	0.000182	92.0	63-123	0.741	20	WG616225
Endosulfan II	mg/l	0.000207	0.000209	104.	63-124	0.734	20	WG616225
Endosulfan sulfate	mg/l	0.000202	0.000199	101.	59-125	1.42	21	WG616225
Endrin	mg/l	0.000181	0.000182	90.0	60-123	0.947	20	WG616225
Endrin aldehyde	mg/l	0.000194	0.000183	97*	42-92	5.69	21	WG616225
Endrin ketone	mg/l	0.000215	0.000211	107.	60-117	1.86	20	WG616225
Gamma BHC	mg/l	0.000188	0.000185	94.0	59-116	1.67	20	WG616225
Heptachlor	mg/l	0.000137	0.000133	68.0	10-131	3.20	28	WG616225
Heptachlor epoxide	mg/l	0.000184	0.000180	92.0	61-118	1.95	20	WG616225
Hexachlorobenzene	mg/l	0.000115	0.000120	58.0	28-116	3.75	27	WG616225
Methoxychlor	mg/l	0.000207	0.000201	103.	66-122	2.59	20	WG616225
Decachlorobiphenyl				83.36	10-122.6			WG616225
Tetrachloro-m-xylene				70.67	15.3-114.2			WG616225
1,2,4-Trichlorobenzene	mg/l	0.00690	0.00732	69.0	34-97	5.91	21	WG616705
2,4,6-Trichlorophenol	mg/l	0.00850	0.00885	85.0	38-113	4.02	29	WG616705
2,4-Dichlorophenol	mg/l	0.00814	0.00836	81.0	46-105	2.75	20	WG616705
2,4-Dimethylphenol	mg/l	0.00791	0.00821	79.0	47-108	3.74	20	WG616705
2,4-Dinitrophenol	mg/l	0.00571	0.00532	57.0	10-121	7.03	40	WG616705
2,4-Dinitrotoluene	mg/l	0.00842	0.00917	84.0	59-117	8.49	20	WG616705
2,6-Dinitrotoluene	mg/l	0.00878	0.00911	88.0	57-110	3.70	20	WG616705
2-Chloronaphthalene	mg/l	0.00791	0.00819	79.0	47-106	3.42	20	WG616705
2-Chlorophenol	mg/l	0.00656	0.00694	66.0	37-90	5.71	21	WG616705
2-Nitrophenol	mg/l	0.00832	0.00852	83.0	40-112	2.31	22	WG616705
3,3-Dichlorobenzidine	mg/l	0.00970	0.0104	97.0	58-116	6.67	20	WG616705
4,6-Dinitro-2-methylphenol	mg/l	0.00909	0.00904	91.0	21-119	0.482	40	WG616705
4-Bromophenyl-phenylether	mg/l	0.00907	0.00853	91.0	63-120	6.10	20	WG616705
4-Chloro-3-methylphenol	mg/l	0.00877	0.00879	88.0	50-105	0.202	20	WG616705
4-Chlorophenyl-phenylether	mg/l	0.00819	0.00887	82.0	58-115	8.02	20	WG616705
4-Nitrophenol	mg/l	0.00383	0.00381	38.0	10-53	0.656	40	WG616705
Acenaphthene	mg/l	0.00789	0.00873	79.0	52-107	10.0	20	WG616705
Acenaphthylene	mg/l	0.00857	0.00902	86.0	55-119	5.14	20	WG616705
Anthracene	mg/l	0.00884	0.00927	88.0	65-114	4.78	20	WG616705
1,2-Diphenylhydrazine	mg/l	0.00800	0.00878	80.0	52-113	9.26	20	WG616705
Benzidine	mg/l	0.00523	0.00619	52.0	10-55	16.8	40	WG616705
Benzo(a)anthracene	mg/l	0.00878	0.00929	88.0	68-113	5.70	20	WG616705
Benzo(a)pyrene	mg/l	0.00917	0.00918	92.0	68-115	0.00935	20	WG616705
Benzo(b)fluoranthene	mg/l	0.00923	0.00913	92.0	67-114	1.06	20	WG616705
Benzo(g,h,i)perylene	mg/l	0.00845	0.00861	84.0	52-132	1.84	20	WG616705
Benzo(k)fluoranthene	mg/l	0.00917	0.00945	92.0	62-116	3.07	20	WG616705
Benzylbutyl phthalate	mg/l	0.00914	0.00992	91.0	12-166	8.25	20	WG616705
Bis(2-chlorethoxy)methane	mg/l	0.00782	0.00841	78.0	56-116	7.37	20	WG616705
Bis(2-chloroethyl)ether	mg/l	0.00673	0.00680	67.0	39-109	0.935	23	WG616705
Bis(2-chloroisopropyl)ether	mg/l	0.00651	0.00724	65.0	43-108	10.8	20	WG616705
Bis(2-ethylhexyl)phthalate	mg/l	0.00918	0.00988	92.0	61-147	7.26	20	WG616705
Chrysene	mg/l	0.00909	0.00945	91.0	65-114	3.89	20	WG616705
Di-n-butyl phthalate	mg/l	0.00871	0.00951	87.0	56-133	8.74	20	WG616705
Di-n-octyl phthalate	mg/l	0.00810	0.00867	81.0	59-143	6.83	20	WG616705
Dibenz(a,h)anthracene	mg/l	0.00931	0.00941	93.0	54-130	1.16	20	WG616705
Diethyl phthalate	mg/l	0.00849	0.00919	85.0	33-136	7.98	20	WG616705
Dimethyl phthalate	mg/l	0.00867	0.00882	87.0	10-152	1.81	22	WG616705

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October 15, 2012

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Fluoranthene	mg/l	0.00899	0.00925	90.0	66-120	2.88	20	WG616705
Fluorene	mg/l	0.00887	0.00921	89.0	58-110	3.68	20	WG616705
Hexachloro-1,3-butadiene	mg/l	0.00754	0.00811	75.0	34-115	7.32	22	WG616705
Hexachlorobenzene	mg/l	0.00744	0.00785	74.0	55-117	5.45	20	WG616705
Hexachlorocyclopentadiene	mg/l	0.00694	0.00769	69.0	20-121	10.4	27	WG616705
Hexachloroethane	mg/l	0.00645	0.00652	64.0	24-93	1.00	25	WG616705
Indeno(1,2,3-cd)pyrene	mg/l	0.00905	0.00908	90.0	56-129	0.410	20	WG616705
Isophorone	mg/l	0.00634	0.00716	63.0	55-108	12.1	20	WG616705
n-Nitrosodi-n-propylamine	mg/l	0.00762	0.00775	76.0	50-115	1.67	20	WG616705
n-Nitrosodimethylamine	mg/l	0.00359	0.00378	36.0	12-68	5.18	31	WG616705
n-Nitrosodiphenylamine	mg/l	0.00869	0.00874	87.0	55-98	0.574	20	WG616705
Naphthalene	mg/l	0.00747	0.00798	75.0	42-103	6.53	20	WG616705
Nitrobenzene	mg/l	0.00748	0.00792	75.0	39-102	5.79	20	WG616705
Pentachlorophenol	mg/l	0.00738	0.00743	74.0	10-101	0.688	40	WG616705
Phenanthrene	mg/l	0.00880	0.00867	88.0	61-110	1.46	20	WG616705
Phenol	mg/l	0.00335	0.00337	33.0	10-53	0.628	20	WG616705
Pyrene	mg/l	0.00832	0.00873	83.0	65-116	4.82	20	WG616705
2,4,6-Tribromophenol				94.52	16-147			WG616705
2-Fluorobiphenyl				88.21	29-127			WG616705
2-Fluorophenol				47.00	10-75			WG616705
Nitrobenzene-d5				75.80	17-119			WG616705
Phenol-d5				33.24	10-63			WG616705
p-Terphenyl-d14				82.05	40-174			WG616705
Suspended Solids	mg/l	784.	796.	101.	85-115	1.52	5	WG617258
2,4,5-T	mg/l	0.00471	0.00476	94.0	46-116	1.00	20	WG617103
2,4,5-TP (Silvex)	mg/l	0.00484	0.00480	97.0	53.6-122	0.736	20	WG617103
2,4-D	mg/l	0.00401	0.00409	80.0	47.4-113	2.02	20	WG617103
2,4-DB	mg/l	0.00336	0.00334	67.0	48.4-113	0.635	20	WG617103
Dalapon	mg/l	0.00384	0.00386	77.0	40.5-102	0.439	20	WG617103
Dicamba	mg/l	0.00447	0.00439	89.0	57.2-111	1.74	20	WG617103
Dichloroprop	mg/l	0.00502	0.00506	100.	55.8-128	0.800	20	WG617103
Dinoseb	mg/l	0.00299	0.00317	60.0	41-121	5.88	20.4	WG617103
MCPA	mg/l	0.673	0.925	135.	24.1-143	31.5*	23.9	WG617103
MCPP	mg/l	0.603	0.606	120.	49-198	0.501	20	WG617103
2,4-Dichlorophenyl Acetic Acid				73.61	45.6-117			WG617103
Dissolved Solids	mg/l	8400	8370	95.0	85-115	0.334	5	WG617259
Dissolved Solids	mg/l	8630	8540	98.0	85-115	1.02	5	WG617048

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/l	0.536	0	.5	107.	85-115	L599205-01	WG616420
Nitrate	mg/l	5.02	0.0690	5	99.0	80-120	L599234-01	WG616432
1,1,1-Trichloroethane	mg/l	0.0192	0	.025	76.8	58-137	L599171-02	WG616400
1,1,2,2-Tetrachloroethane	mg/l	0.0249	0	.025	99.7	64-149	L599171-02	WG616400
1,1,2-Trichloroethane	mg/l	0.0264	0	.025	106.	73-128	L599171-02	WG616400
1,1-Dichloroethane	mg/l	0.0178	0	.025	71.1	58-133	L599171-02	WG616400

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October 15, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1-Dichloroethene	mg/l	0.0227	0	.025	90.7	32-152	L599171-02	WG616400
1,2-Dichlorobenzene	mg/l	0.0262	0	.025	105.	75-125	L599171-02	WG616400
1,2-Dichloroethane	mg/l	0.0192	0	.025	76.7	59-135	L599171-02	WG616400
1,2-Dichloropropane	mg/l	0.0209	0	.025	83.6	68-126	L599171-02	WG616400
1,3-Dichlorobenzene	mg/l	0.0264	0	.025	106.	69-131	L599171-02	WG616400
1,4-Dichlorobenzene	mg/l	0.0267	0	.025	107.	70-123	L599171-02	WG616400
2-Chloroethyl vinyl ether	mg/l	0.000320	0	.125	0.256*	10-161	L599171-02	WG616400
Benzene	mg/l	0.0200	0	.025	80.0	51-134	L599171-02	WG616400
Bromodichloromethane	mg/l	0.0253	0.00320	.025	88.4	67-132	L599171-02	WG616400
Bromoform	mg/l	0.0277	0	.025	111.	59-137	L599171-02	WG616400
Bromomethane	mg/l	0.0261	0	.025	104.	23-177	L599171-02	WG616400
Carbon tetrachloride	mg/l	0.0183	0	.025	73.2	49-140	L599171-02	WG616400
Chlorobenzene	mg/l	0.0265	0	.025	106.	69-126	L599171-02	WG616400
Chlorodibromomethane	mg/l	0.0272	0	.025	109.	68-130	L599171-02	WG616400
Chloroethane	mg/l	0.0248	0	.025	99.1	32-177	L599171-02	WG616400
Chloroform	mg/l	0.0278	0.00700	.025	83.3	64-130	L599171-02	WG616400
Chloromethane	mg/l	0.0178	0	.025	71.3	27-155	L599171-02	WG616400
cis-1,3-Dichloropropene	mg/l	0.0228	0	.025	91.2	63-127	L599171-02	WG616400
Ethylbenzene	mg/l	0.0263	0	.025	105.	64-135	L599171-02	WG616400
Methylene Chloride	mg/l	0.0174	0	.025	69.7	52-130	L599171-02	WG616400
Tetrachloroethene	mg/l	0.0278	0	.025	111.	56-139	L599171-02	WG616400
Toluene	mg/l	0.0229	0	.025	91.8	61-126	L599171-02	WG616400
trans-1,2-Dichloroethene	mg/l	0.0196	0	.025	78.4	45-137	L599171-02	WG616400
trans-1,3-Dichloropropene	mg/l	0.0256	0	.025	102.	59-130	L599171-02	WG616400
Trichloroethene	mg/l	0.0233	0	.025	93.3	40-155	L599171-02	WG616400
Vinyl chloride	mg/l	0.0258	0	.025	103.	32-159	L599171-02	WG616400
4-Bromofluorobenzene					94.61	82-120		WG616400
Dibromofluoromethane					87.11	82-126		WG616400
Toluene-d8					94.88	92-112		WG616400
a,a,a-Trifluorotoluene					101.6	90-116		WG616400
Mercury	mg/l	0.00292	0	.003	97.3	70-130	L599172-01	WG616441
Aluminum	mg/l	33.3	31.6	1	170.*	75-125	L599230-01	WG617570
Iron	mg/l	1.20	0.0887	1	111.	75-125	L599230-01	WG617570
Arsenic,Dissolved	mg/l	0.0453	0	.05	90.6	75-125	L599455-03	WG617325
Barium,Dissolved	mg/l	0.0529	0.00987	.05	86.1	75-125	L599455-03	WG617325
Beryllium,Dissolved	mg/l	0.0451	0	.05	90.2	75-125	L599455-03	WG617325
Cadmium,Dissolved	mg/l	0.0458	0	.05	91.6	75-125	L599455-03	WG617325
Chromium,Dissolved	mg/l	0.0444	0.000110	.05	88.6	75-125	L599455-03	WG617325
Copper,Dissolved	mg/l	0.0474	0.00400	.05	86.8	75-125	L599455-03	WG617325
Lead,Dissolved	mg/l	0.0438	0	.05	87.6	75-125	L599455-03	WG617325
Manganese,Dissolved	mg/l	0.0436	0.000540	.05	86.1	75-125	L599455-03	WG617325
Selenium,Dissolved	mg/l	0.0435	0.00154	.05	83.9	75-125	L599455-03	WG617325
Silver,Dissolved	mg/l	0.0449	0.000440	.05	88.9	75-125	L599455-03	WG617325
Thallium,Dissolved	mg/l	0.0423	0.0000600	.05	84.5	75-125	L599455-03	WG617325
Zinc,Dissolved	mg/l	0.0542	0.00714	.05	94.1	75-125	L599455-03	WG617325
Aluminum,Dissolved	mg/l	1.08	0.0337	1	105.	75-125	L599520-01	WG617617
Iron,Dissolved	mg/l	0.964	0	1	96.4	75-125	L599520-01	WG617617
Antimony,Dissolved	mg/l	0.0493	0	.05	98.6	75-125	L599455-03	WG617325

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Quality Assurance Report
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L599199

October 15, 2012

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Nickel,Dissolved	mg/l	0.0549	0.00130	.05	107.	75-125	L599455-02	WG617752
Arsenic	mg/l	0.0522	0	.05	104.	75-125	L599455-03	WG617500
Barium	mg/l	0.0615	0.0105	.05	102.	75-125	L599455-03	WG617500
Beryllium	mg/l	0.0536	0	.05	107.	75-125	L599455-03	WG617500
Cadmium	mg/l	0.0522	0	.05	104.	75-125	L599455-03	WG617500
Chromium	mg/l	0.0504	0	.05	101.	75-125	L599455-03	WG617500
Copper	mg/l	0.0552	0.00400	.05	102.	75-125	L599455-03	WG617500
Lead	mg/l	0.0515	0	.05	103.	75-125	L599455-03	WG617500
Manganese	mg/l	0.0507	0.000140	.05	101.	75-125	L599455-03	WG617500
Nickel	mg/l	0.0520	0	.05	104.	75-125	L599455-03	WG617500
Selenium	mg/l	0.0518	0.000850	.05	102.	75-125	L599455-03	WG617500
Thallium	mg/l	0.0501	0	.05	100.	75-125	L599455-03	WG617500
Zinc	mg/l	0.0581	0.00710	.05	102.	75-125	L599455-03	WG617500
Antimony	mg/l	0.0536	0.00146	.05	104.	75-125	L599455-03	WG617500
Silver	mg/l	0.0505	0.000290	.05	100.	75-125	L599455-03	WG617500

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/l	0.512	0.536	102.	85-115	4.58	20	L599205-01	WG616420
Nitrate	mg/l	4.91	5.02	96.8	80-120	2.22	20	L599234-01	WG616432
1,1,1-Trichloroethane	mg/l	0.0199	0.0192	79.5	58-137	3.46	20	L599171-02	WG616400
1,1,2,2-Tetrachloroethane	mg/l	0.0250	0.0249	99.9	64-149	0.220	20	L599171-02	WG616400
1,1,2-Trichloroethane	mg/l	0.0267	0.0264	107.	73-128	0.960	20	L599171-02	WG616400
1,1-Dichloroethane	mg/l	0.0184	0.0178	73.6	58-133	3.37	20	L599171-02	WG616400
1,1-Dichloroethene	mg/l	0.0231	0.0227	92.6	32-152	2.06	20	L599171-02	WG616400
1,2-Dichlorobenzene	mg/l	0.0267	0.0262	107.	75-125	1.70	20	L599171-02	WG616400
1,2-Dichloroethane	mg/l	0.0191	0.0192	76.6	59-135	0.120	20	L599171-02	WG616400
1,2-Dichloropropane	mg/l	0.0212	0.0209	84.8	68-126	1.35	20	L599171-02	WG616400
1,3-Dichlorobenzene	mg/l	0.0269	0.0264	108.	69-131	1.77	20	L599171-02	WG616400
1,4-Dichlorobenzene	mg/l	0.0271	0.0267	108.	70-123	1.27	20	L599171-02	WG616400
2-Chloroethyl vinyl ether	mg/l	0.000402	0.000320	0.322*	10-161	22.7	40	L599171-02	WG616400
Benzene	mg/l	0.0206	0.0200	82.2	51-134	2.68	20	L599171-02	WG616400
Bromodichloromethane	mg/l	0.0254	0.0253	88.9	67-132	0.420	20	L599171-02	WG616400
Bromoform	mg/l	0.0276	0.0277	110.	59-137	0.350	20	L599171-02	WG616400
Bromomethane	mg/l	0.0281	0.0261	112.	23-177	7.43	21	L599171-02	WG616400
Carbon tetrachloride	mg/l	0.0190	0.0183	76.2	49-140	4.06	20	L599171-02	WG616400
Chlorobenzene	mg/l	0.0270	0.0265	108.	69-126	1.79	20	L599171-02	WG616400
Chlorodibromomethane	mg/l	0.0279	0.0272	112.	68-130	2.45	20	L599171-02	WG616400
Chloroethane	mg/l	0.0259	0.0248	104.	32-177	4.54	21	L599171-02	WG616400
Chloroform	mg/l	0.0284	0.0278	85.8	64-130	2.22	20	L599171-02	WG616400
Chloromethane	mg/l	0.0180	0.0178	72.1	27-155	1.12	20	L599171-02	WG616400
cis-1,3-Dichloropropene	mg/l	0.0225	0.0228	89.8	63-127	1.59	20	L599171-02	WG616400
Ethylbenzene	mg/l	0.0266	0.0263	106.	64-135	1.39	20	L599171-02	WG616400
Methylene Chloride	mg/l	0.0178	0.0174	71.3	52-130	2.28	20	L599171-02	WG616400
Tetrachloroethene	mg/l	0.0287	0.0278	115.	56-139	3.18	20	L599171-02	WG616400
Toluene	mg/l	0.0230	0.0229	92.2	61-126	0.470	20	L599171-02	WG616400
trans-1,2-Dichloroethene	mg/l	0.0199	0.0196	79.6	45-137	1.53	20	L599171-02	WG616400
trans-1,3-Dichloropropene	mg/l	0.0252	0.0256	101.	59-130	1.68	20	L599171-02	WG616400
Trichloroethene	mg/l	0.0236	0.0233	94.4	40-155	1.16	20	L599171-02	WG616400
Vinyl chloride	mg/l	0.0252	0.0258	101.	32-159	2.38	21	L599171-02	WG616400
4-Bromofluorobenzene				94.84	82-120				WG616400

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
I-70 East Corridor EIS PCL

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Michael Keifer
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Quality Assurance Report
Level II

L599199

October 15, 2012

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Dibromofluoromethane				88.82	82-126				
Toluene-d8				93.07	92-112				
a,a,a-Trifluorotoluene				100.7	90-116				
Mercury	mg/l	0.00292	0.00292	97.3	70-130	0	20	L599172-01	WG616441
Aluminum	mg/l	33.3	33.3	170.*	75-125	0	20	L599230-01	WG617570
Iron	mg/l	1.17	1.20	108.	75-125	2.53	20	L599230-01	WG617570
Arsenic,Dissolved	mg/l	0.0483	0.0453	96.6	75-125	6.41	20	L599455-03	WG617325
Barium,Dissolved	mg/l	0.0568	0.0529	93.9	75-125	7.11	20	L599455-03	WG617325
Beryllium,Dissolved	mg/l	0.0483	0.0451	96.6	75-125	6.85	20	L599455-03	WG617325
Cadmium,Dissolved	mg/l	0.0491	0.0458	98.2	75-125	6.95	20	L599455-03	WG617325
Chromium,Dissolved	mg/l	0.0474	0.0444	94.6	75-125	6.54	20	L599455-03	WG617325
Copper,Dissolved	mg/l	0.0504	0.0474	92.8	75-125	6.13	20	L599455-03	WG617325
Lead,Dissolved	mg/l	0.0477	0.0438	95.4	75-125	8.52	20	L599455-03	WG617325
Manganese,Dissolved	mg/l	0.0469	0.0436	92.7	75-125	7.29	20	L599455-03	WG617325
Selenium,Dissolved	mg/l	0.0453	0.0435	87.5	75-125	4.05	20	L599455-03	WG617325
Silver,Dissolved	mg/l	0.0482	0.0449	95.5	75-125	7.09	20	L599455-03	WG617325
Thallium,Dissolved	mg/l	0.0461	0.0423	92.1	75-125	8.60	20	L599455-03	WG617325
Zinc,Dissolved	mg/l	0.0570	0.0542	99.7	75-125	5.04	20	L599455-03	WG617325
Aluminum,Dissolved	mg/l	1.06	1.08	103.	75-125	1.87	20	L599520-01	WG617617
Iron,Dissolved	mg/l	0.971	0.964	97.1	75-125	0.724	20	L599520-01	WG617617
Antimony,Dissolved	mg/l	0.0500	0.0493	100.	75-125	1.41	20	L599455-03	WG617325
Nickel,Dissolved	mg/l	0.0534	0.0549	104.	75-125	2.77	20	L599455-02	WG617752
Arsenic	mg/l	0.0511	0.0522	102.	75-125	2.13	20	L599455-03	WG617500
Barium	mg/l	0.0625	0.0615	104.	75-125	1.61	20	L599455-03	WG617500
Beryllium	mg/l	0.0529	0.0536	106.	75-125	1.31	20	L599455-03	WG617500
Cadmium	mg/l	0.0522	0.0522	104.	75-125	0	20	L599455-03	WG617500
Chromium	mg/l	0.0520	0.0504	104.	75-125	3.13	20	L599455-03	WG617500
Copper	mg/l	0.0548	0.0552	102.	75-125	0.727	20	L599455-03	WG617500
Lead	mg/l	0.0523	0.0515	105.	75-125	1.54	20	L599455-03	WG617500
Manganese	mg/l	0.0514	0.0507	102.	75-125	1.37	20	L599455-03	WG617500
Nickel	mg/l	0.0516	0.0520	103.	75-125	0.772	20	L599455-03	WG617500
Selenium	mg/l	0.0502	0.0518	98.7	75-125	3.14	20	L599455-03	WG617500
Thallium	mg/l	0.0508	0.0501	102.	75-125	1.39	20	L599455-03	WG617500
Zinc	mg/l	0.0586	0.0581	103.	75-125	0.857	20	L599455-03	WG617500
Antimony	mg/l	0.0545	0.0536	106.	75-125	1.67	20	L599455-03	WG617500
Silver	mg/l	0.0512	0.0505	102.	75-125	1.38	20	L599455-03	WG617500

Batch number /Run number / Sample number cross reference

WG616420: R2378115: L599199-01 02 03
WG616432: R2378133: L599199-01 02 03
WG616400: R2378217: L599199-01 02 03
WG616544: R2378653: L599199-01 02 03
WG616441: R2379018: L599199-01 02 03
WG616225: R2381101: L599199-01 02 03
WG616705: R2385617: L599199-01 02 03

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L599199

October 15, 2012

WG617258: R2387497: L599199-01 02 03
WG617103: R2388557: L599199-01 02
WG617259: R2388598: L599199-03
WG617048: R2388657: L599199-01 02
WG617570: R2389218: L599199-01 02 03
WG617325: R2389257: L599199-01 02 03
WG617617: R2389363: L599199-01 02 03
WG617752: R2389597: L599199-01 02 03
WG617500: R2390540: L599199-01 02 03

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Groundwater Analyses, Monitoring Wells YA-MW4, YA-MW7, & YA-MW10
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Level II

L599199

October 15, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Groundwater Analyses, Monitoring Well YA-MW7 Herbicides
I-70 East Corridor EIS PCL

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Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

Report Summary

Thursday October 18, 2012

Report Number: L600554
Samples Received: 10/12/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

Groundwater Analyses, Monitoring Well YA-MW7 Herbicides
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 18, 2012

ESC Sample # : L600554-01

Date Received : October 12, 2012
Description : I-70 East PCL

Site ID :

Sample ID : YAMW7

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/11/12 09:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Herbicides						
2,4-D	BDL	0.0020	mg/l	8151	10/17/12	1
Dalapon	BDL	0.20	mg/l	8151	10/17/12	1
2,4-DB	BDL	0.0020	mg/l	8151	10/17/12	1
Dicamba	BDL	0.0020	mg/l	8151	10/17/12	1
Dichloroprop	BDL	0.0020	mg/l	8151	10/17/12	1
Dinoseb	BDL	0.0020	mg/l	8151	10/17/12	1
MCPA	BDL	0.10	mg/l	8151	10/17/12	1
MCPP	BDL	0.10	mg/l	8151	10/17/12	1
2,4,5-T	BDL	0.0020	mg/l	8151	10/17/12	1
2,4,5-TP (Silvex)	BDL	0.0020	mg/l	8151	10/17/12	1
Surrogate Recovery						
2,4-Dichlorophenyl Acetic Acid	80.0		% Rec.	8151	10/17/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 10/18/12 13:38 Printed: 10/18/12 13:39

Groundwater Analyses, Monitoring Well YA-MW7 Herbicides
I-70 East Corridor EIS PCL

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L600554-01	WG617920	SAMP	MCPA	R2396777	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Groundwater Analyses, Monitoring Well YA-MW7 Herbicides
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
10/18/12 at 13:39:06

TSR Signing Reports: 358
RX - Priority Rush

Sample: L600554-01 Account: YEHDCO Received: 10/12/12 09:00 Due Date: 10/18/12 00:00 RPT Date: 10/18/12 13:38

Groundwater Analyses, Monitoring Well YA-MW7 Herbicides
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L600554

October 18, 2012

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
2,4,5-T	< .002	mg/l			WG617920	10/17/12 16:32
2,4,5-TP (Silvex)	< .002	mg/l			WG617920	10/17/12 16:32
2,4-D	< .002	mg/l			WG617920	10/17/12 16:32
2,4-DB	< .002	mg/l			WG617920	10/17/12 16:32
Dalapon	< .002	mg/l			WG617920	10/17/12 16:32
Dicamba	< .002	mg/l			WG617920	10/17/12 16:32
Dichloroprop	< .002	mg/l			WG617920	10/17/12 16:32
Dinoseb	< .002	mg/l			WG617920	10/17/12 16:32
MCPA	< .1	mg/l			WG617920	10/17/12 16:32
MCPP	< .1	mg/l			WG617920	10/17/12 16:32
2,4-Dichlorophenyl Acetic Acid		%	100.8	42-112	WG617920	10/17/12 16:32

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
2,4,5-T	mg/l	.005	0.00495	98.9	46-116	WG617920
2,4,5-TP (Silvex)	mg/l	.005	0.00499	99.7	53.6-122	WG617920
2,4-D	mg/l	.005	0.00424	84.7	47.4-113	WG617920
2,4-DB	mg/l	.005	0.00291	58.1	48.4-113	WG617920
Dalapon	mg/l	.005	0.00297	59.5	40.5-102	WG617920
Dicamba	mg/l	.005	0.00448	89.7	57.2-111	WG617920
Dichloroprop	mg/l	.005	0.00521	104.	55.8-128	WG617920
Dinoseb	mg/l	.005	0.00413	82.6	41-121	WG617920
MCPA	mg/l	.5	0.628	126.	24.1-143	WG617920
MCPP	mg/l	.5	0.610	122.	49-198	WG617920
2,4-Dichlorophenyl Acetic Acid				72.65	45.6-117	WG617920

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
2,4,5-T	mg/l	0.00497	0.00495	99.0	46-116	0.484	20	WG617920
2,4,5-TP (Silvex)	mg/l	0.00510	0.00499	102.	53.6-122	2.26	20	WG617920
2,4-D	mg/l	0.00420	0.00424	84.0	47.4-113	0.867	20	WG617920
2,4-DB	mg/l	0.00283	0.00291	56.0	48.4-113	2.69	20	WG617920
Dalapon	mg/l	0.00311	0.00297	62.0	40.5-102	4.61	20	WG617920
Dicamba	mg/l	0.00461	0.00448	92.0	57.2-111	2.73	20	WG617920
Dichloroprop	mg/l	0.00535	0.00521	107.	55.8-128	2.67	20	WG617920
Dinoseb	mg/l	0.00403	0.00413	80.0	41-121	2.51	20.4	WG617920
MCPA	mg/l	0.460	0.628	92.0	24.1-143	30.8*	23.9	WG617920
MCPP	mg/l	0.698	0.610	140.	49-198	13.5	20	WG617920
2,4-Dichlorophenyl Acetic Acid				66.25	45.6-117			WG617920

Batch number /Run number / Sample number cross reference

WG617920: R2396777: L600554-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Groundwater Analyses, Monitoring Well YA-MW7 Herbicides
I-70 East Corridor EIS PCL

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Quality Assurance Report
Level II

L600554

October 18, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

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Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

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Tax I.D. 62-0814289

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Report Summary

Monday October 29, 2012

Report Number: L602175
Samples Received: 10/05/12
Client Project: 212-137

Description: I-70 East PCL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-01

Site ID :

Project # : 212-137

Date Received : October 05, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 4 TOTAL

Collected By : I-Ping Chen
Collection Date : 10/04/12 11:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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L602175-01 (MISC-SUB) - subcontracted to GEL Labs

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-02

Site ID :

Project # : 212-137

Date Received : October 05, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 4 POT DISS

Collected By : I-Ping Chen
Collection Date : 10/04/12 11:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-03

Site ID :

Project # : 212-137

Date Received : October 05, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10 TOTAL

Collected By : I-Ping Chen
Collection Date : 10/04/12 13:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-04

Site ID :

Project # : 212-137

Date Received : October 05, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 10 POT DISS

Collected By : I-Ping Chen
Collection Date : 10/04/12 13:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Michael Keifer
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5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-05

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 7 TOTAL

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Groundwater Analyses, Uranium
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-06

Date Received : October 05, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 7 POT DISS

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/04/12 14:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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L602175-06 (MISC-SUB) - subcontracted to GEL Labs

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-07

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1 TOTAL

Collected By : I-Ping Chen
Collection Date : 10/03/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 10/29/12 16:48 Printed: 10/29/12 16:49
L602175-07 (MISC-SUB) - subcontracted to GEL Labs

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-08

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 1 POT DISS

Collected By : I-Ping Chen
Collection Date : 10/03/12 09:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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L602175-08 (MISC-SUB) - subcontracted to GEL Labs

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-09

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 2 TOTAL

Collected By : I-Ping Chen
Collection Date : 10/03/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 10/29/12 16:48 Printed: 10/29/12 16:49
L602175-09 (MISC-SUB) - subcontracted to GEL Labs

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REPORT OF ANALYSIS

Michael Keifer
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October 29, 2012

ESC Sample # : L602175-10

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 2 POT DISS

Collected By : I-Ping Chen
Collection Date : 10/03/12 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-11

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 3 TOTAL

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 11:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-12

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 3 POT DISS

Collected By : I-Ping Chen
Collection Date : 10/03/12 11:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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L602175-12 (MISC-SUB) - subcontracted to GEL Labs

Groundwater Analyses, Uranium
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-13

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 5 TOTAL

Collected By : I-Ping Chen
Collection Date : 10/03/12 13:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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L602175-13 (MISC-SUB) - subcontracted to GEL Labs

Groundwater Analyses, Uranium
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-14

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 5 POT DISS

Collected By : I-Ping Chen
Collection Date : 10/03/12 13:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-15

Site ID :

Project # : 212-137

Date Received : October 04, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 6 TOTAL

Collected By : I-Ping Chen
Collection Date : 10/03/12 14:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-16

Date Received : October 04, 2012
Description : I-70 East PCL Project

Site ID :

Sample ID : YA-MW 6 POT DISS

Project # : 212-137

Collected By : I-Ping Chen
Collection Date : 10/03/12 14:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-17

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 9 TOTAL

Collected By : I-Ping Chen
Collection Date : 10/02/12 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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L602175-17 (MISC-SUB) - subcontracted to GEL Labs

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-18

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 9 POT DISS

Collected By : I-Ping Chen
Collection Date : 10/02/12 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 10/29/12 16:48 Printed: 10/29/12 16:49
L602175-18 (MISC-SUB) - subcontracted to GEL Labs

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-19

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8 TOTAL

Collected By : I-Ping Chen
Collection Date : 10/02/12 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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L602175-19 (MISC-SUB) - subcontracted to GEL Labs

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REPORT OF ANALYSIS

Michael Keifer
Yeh and Associates- Denver, CO
5700 E. Evans Avenue
Denver, CO 80222

October 29, 2012

ESC Sample # : L602175-20

Site ID :

Project # : 212-137

Date Received : October 03, 2012
Description : I-70 East PCL Project

Sample ID : YA-MW 8 POT DISS

Collected By : I-Ping Chen
Collection Date : 10/02/12 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Miscellaneous	ATTACH TO COC				10/26/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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L602175-20 (MISC-SUB) - subcontracted to GEL Labs

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Summary of Remarks For Samples Printed
10/29/12 at 16:49:33

TSR Signing Reports: 358
RX - Priority Rush

Sample: L602175-01 Account: YEHDCO Received: 10/05/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Total Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-02 Account: YEHDCO Received: 10/05/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Pot Diss Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-03 Account: YEHDCO Received: 10/05/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Total Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-04 Account: YEHDCO Received: 10/05/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Pot Diss Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-05 Account: YEHDCO Received: 10/05/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Total Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-06 Account: YEHDCO Received: 10/05/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Pot Diss Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-07 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Total Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-08 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Pot Dissolved Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-09 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Total Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-10 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Pot Dissolved Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-11 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Total Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-12 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Pot Dissolved Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-13 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Total Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-14 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Pot Dissolved Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-15 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Total Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-16 Account: YEHDCO Received: 10/04/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Pot Dissolved Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-17 Account: YEHDCO Received: 10/03/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Total Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-18 Account: YEHDCO Received: 10/03/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Pot Dissolved Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-19 Account: YEHDCO Received: 10/03/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Total Uranium Subbed to GEL jlc 10/23/12 PO#S17209
Sample: L602175-20 Account: YEHDCO Received: 10/03/12 09:00 Due Date: 10/30/12 00:00 RPT Date: 10/29/12 16:48
Pot Dissolved Uranium Subbed to GEL jlc 10/23/12 PO#S17209

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

ESC LAB SCIENCES
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L602175

October 29, 2012

Batch number /Run number / Sample number cross reference

WG619365: R2413117: L602175-01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

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(615) 758-5858
1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

Yeh and Associates- Denver, CO
Michael Keifer
5700 E. Evans Avenue

Denver, CO 80222

Quality Assurance Report
Level II

L602175

October 29, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

C016

Chain of Custody
Page___of___

Company Name/Address

Yeh and Associates

12477 W. Cedar Dr.
Lakewood, CO 80228

Alternate Billing

YEHASCDCO051512S

COCs Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Report to: Michael Kiefer / I-Ping Chen

E-mail to: mkiefer@yeh-eng.com / ipchen@yeh-eng.com

Project Description: I-70 EAST PCL PROJECT

PHONE: 303-737-9590 FAX:

Client Project No. 212-137

Lab Project #

Collected by: I-Ping Chen

Site/Facility ID#

P.O.#

Collected by(signature):

Packed on Ice N___Y___

Rush? (Lab MUST be Notified)
_____Same Day.....200%
_____Next Day.....100%
_____Two Day.....50%

Date Results Needed

Email?___No___Yes
FAX?___No___Yes

No. of Cntrs

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	SV8151 = (2) 1L amb No Pres	Pest 8081/PCB 8082 - (2) 100ml amb No Pres	TSS - 1L HDPE No Pres	Total Metals* + Hg - 500ml HDPE HNO3	Pot. Dissolved Metals* + Hg - 500ml HDPE HNO3	VOC 624 Priority Pollutant List - (3) 40ml amb HCl	SVOC 625 Priority Pollutant List - (2) 100ml amb No Pres	pH, Nitrate, TDS - 500ml HDPE No Pres	Remarks/contaminant	Sample # (lab only)
YA-MW 4	Grab			10/4/12	11:30	14	X	X	X	X	X	X	X	X	659702	01/02
YA-MW 10	Grab			10.4.12	13:00	19	X	X	X	X	X	X	X	X		03/04
YA-MW 7	Grab			10.4.12	14:30	14	X	X	X	X	X	X	X	X		05/06

Prepared by: L62175

ENVIRONMENTAL SCIENCE CORP
12065 Lebanon Road
Mt. Juliet TN 37122
Phone (615)758-5858
Phone (800) 767-5859
FAX (615)758-5859

CoCode (lab use only)
YEHDCO
Template/Prelogin

Shipped Via: Denver Service Center

*Matrix: SS-Soil/Solid GW-Groundwater WW-Wastewater DW-Drinking Water OT- Other_____

pH_____ Temp_____

Remarks: Total & Pot. Dissolved Metals*: 200.7- Al, Fe 200.8- Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, Tl, U, Zn 527187980678 Flow_____ Other_____

Relinquisher by:(Signature)	Date:	Time:	Received by:(Signature)	Samples returned via: FedEx UPS Other	Condition	(lab use only)
Chen O P	10.4.12	16:20				
Relinquisher by:(Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1°C	Bottles Received: 42 #113	
Relinquisher by:(Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10-5-12	Time: 0900	pH Checked: CR NCF:

Company Name/Address	Alternate Billing	Analysis/Container/Preservative	Chain of Custody Page___of___
Yeh and Associates **12477 W. Cedar Dr.** **Lakewood, CO 80228**	YEHASCDCO051512S		B223

COCs Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Report to: Michael Kiefer / I-Ping Chen
E-mail to: mkiefer@yeh-eng.com / ipchen@yeh-eng.com

Prepared by: L60217S

ENVIRONMENTAL SCIENCE CORP
12065 Lebanon Road
Mt. Juliet TN 37122
Phone (615)758-5858
Phone (800) 767-5859
FAX (615)758-5859

Project Description: I-70 EAST PCL PROJECT

PHONE: FAX:	Client Project No.	Lab Project #
303-781-9590	212-137	
Collected by: I Ping Chen	Site/Facility ID#	P.O.#
Collected by(signature): H'ing Chen	Rush? (Lab MUST be Notified) ____Same Day.....200% ____Next Day.....100% ____Two Day.....50%	Date Results Needed Email?__No__Yes FAX?__No__Yes

Packed on Ice N__ Y__

CoCode (lab use only)
YEHDCO
Template/Prelogin
Shipped Via: Denver Service Center

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No of Cntrs	SV8151 = (2) 1L amb No Pres	Pest 8081/PCB 8082 - (2) 100ml amb No Pres	TSS - 1L HDPE No Pres	Total Metals* + Hg - 500ml HDPE HNO3 <2	Pot. Dissolved Metals* + Hg - 500ml HDPE HNO3 <2	VOC 624 Priority Pollutant List - (3) 40ml amb HCl	SVOC 625 Priority Pollutant List - (2) 100ml amb No Pres	pH, Nitrate, TDS - 500ml HDPE No Pres	Remarks/contaminant	Sample # (lab only)
YA-MW1	Grab			10.3.12	9:00	14	X	X	X	X	X	X	X	X	~~[illegible]~~	07/08
YA-MW2	Grab			10.3.12	10:30	14	X	X	X	X	X	X	X	X		03/04 09/10
YA-MW3	Grab			10.3.12	11:40	14	X	X	X	X	X	X	X	X		05/06 -11/12
YA-MW5	Grab			10.3.12	13:30	14	X	X	X	X	X	X	X	X		07/08 -13/14
YA-MW6	Grab			10.3.12	14:40	14	X	X	X	X	X	X	X	X		09/10 -15/16

*Matrix: SS-Soil/Solid GW-Groundwater WW-Wastewater DW-Drinking Water OT- Other_____ pH_____ Temp_____

Remarks: Total & Pot. Dissolved Metals*: 200.7- Al, Fe 200.8- Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, Tl, U, Zn 5274879807.2 Flow_____ Other_____

Relinquisher by:(Signature	Date:	Time:	Received by:(Signature)	Samples returned via: FedEx__ UPS__Other__		Condition (lab use only)
Chen J P	10.3.12	15:40	Jennifer Bobrowski			MS
Relinquisher by:(Signature	Date:	Time:	Received by: (Signature)	Temp: 3.2°C	Bottles Received: 70	
Relinquisher by:(Signature	Date:	Time:	Received for lab by: (Signature)	Date: 10-4-12	Time: 0900	pH Checked: <2 NCF:

Company Name/Address

Yeh and Associates

12477 W. Cedar Dr.
Lakewood, CO 80228

Alternate Billing

YEHASCDCO051512S

COCs Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Report to: Michael Kiefer / I-Ping Chen

E-mail to: mkiefer@yeh-eng.com / ipchen@yeh-eng.com

Project Description: I-70 EAST PCL PROJECT

PHONE: 303-781-9590 FAX:

Client Project No: 212-137

Lab Project #

Collected by: I-Ping Chen

Site/Facility ID#

P.O.#

Collected by(signature):

Packed on Ice N (Y)

Rush? (Lab MUST be Notified)
_____Same Day....200%
_____Next Day.....100%
_____Two Day.....50%

Date Results Needed

Email? ___No ___Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No of Cntrs	SV8151 = (2) 1L amb No Pres	Pest 8081/PCB 8082 - (2) 100ml amb No Pres	TSS - 1L HDPE No Pres	Total Metals* + Hg - 500ml HDPE HNO3	Pot. Dissolved Metals* + Hg - 500ml HDPE HNO3	VOC 624 Priority Pollutant List - (3) 40ml amb HCl	SVOC 625 Priority Pollutant List - (2) 100ml amb No Pres	pH, Nitrate, TDS - 500ml HDPE No Pres	Remarks/contaminant	Sample # (lab only)
YA-MW9	Grab			10.2.12	12:00	14	X	X	X	X	X	X	X	X	05/09	1549805-01/-02/-03/-04/-11/-12
YA-MW8	Grab			10.2.12	14:00	14	X	X	X	X	X	X	X	X	05/09	1549806-01/-02/-03/-04/-11/-12

Chain of Custody
Page ___ of ___

L602175

E218

Prepared by:

ENVIRONMENTAL SCIENCE CORP
12065 Lebanon Road
Mt. Juliet TN 37122
Phone (615)758-5858
Phone (800) 767-5859
FAX (615)758-5859

CoCode (lab use only)
YEHDCO
Template/Prelogin

Shipped Via: Denver Service Center

*Matrix: SS-Soil/Solid GW-Groundwater WW-Wastewater DW-Drinking Water OT- Other_____

pH_____ Temp_____

Remarks: Total & Pot. Dissolved Metals*: 200.7- Al, Fe 200.8- Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, Tl, U, Zn 541347214642

Flow_____ Other_____

Relinquisher by:(Signature	Date:	Time:	Received by:(Signature)	Samples returned via: FedEx___UPS___Other___	Condition	(lab use only)
Chen I P	10.2.12	5:15	Jennifer Brown	527487990410	OK	
Relinquisher by:(Signature	Date:	Time:	Received by: (Signature)	Temp: 3.7	Bottles Received: 28	
Relinquisher by:(Signature	Date:	Time:	Received for lab by: (Signature)	Date: 10/3/12	Time: 0900	pH Checked: <2 NCF:

L602175

Jasen Estes

From: Jarred Willis
Sent: Monday, October 22, 2012 10:43 AM
To: Login; Subouts
Cc: Tom Mellette
Subject: Samples from *YEHDCO* to be subbed to GEL in SC for Uranium by 200.8 - ship out today

Importance: High

LOGIN:
Please relog the following samples from ***YEHDCO*** to new L#s for UTOT, and sub them to GEL in SC for Uranium by 200.8. Relog all 20 of the samples to just one new L#. Samples need to be shipped out today.

L599202-01 through -06 - these are the same samples as L599199-01, -02, -03
L598949-01 through -10 - these are the same samples as L598143-01 through -05
L598885-01 through -04 - these are the same samples as L598664-01, -02

Please also change the cocode on L599202, L598949, and L598885 to ENVSCI-TOM.

SUBOUTS:
We MUST have these sample results no later than Tuesday, 10/30. Please get GEL to log them on whatever rush TAT is needed to get the results by then.

Thanks,
Jarred Willis
Technical Service Representative (TSR)
E-mail: jwillis@esclabsciences.com
Phone: 800-767-5859 Ext. 9678
Direct: (615) 773-9678
www.esclabsciences.com

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

GEL Laboratories LLC
a member of The GEL Group INC

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171 F 843.766.1178
www.gel.com

October 29, 2012

Ms. Janice Cozby
Environmental Science Corporation
12065 Lebanon Road
Mount Juliet, Tennessee 37122

Re: Routine Analytical
Work Order: 313841

Dear Ms. Cozby:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 24, 2012. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4300.

Sincerely,

Julie Robinson for
Client Services Team
Project Manager

Purchase Order: S17209
Chain of Custody: WG619365
Enclosures

problem solved

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 − (843) 556−8171 − www.gel.com

Certificate of Analysis Report
for

ENVL001 Environmental Science Corporation

Client SDG: 313841 GEL Work Order: 313841

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Client Services Team.

Reviewed by Julie Roberson

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-01 YA-MW4 Total
Sample ID: 313841001
Matrix: WW
Collect Date: 04-OCT-12 11:30
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		28.1	0.067	0.200	ug/L	1	SKJ	10/26/12	0432	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-02 YA-MW 4 Pot Diss
Sample ID: 313841002
Matrix: WW
Collect Date: 04-OCT-12 11:30
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		27.1	0.067	0.200	ug/L	1	SKJ	10/26/12	0456	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-03 YA-MW10 Total
Sample ID: 313841003
Matrix: WW
Collect Date: 04-OCT-12 13:00
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		57.7	0.067	0.200	ug/L	1	SKJ	10/26/12	1504	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-04 YA-MW10 Pot Diss
Sample ID: 313841004
Matrix: WW
Collect Date: 04-OCT-12 13:00
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		52.5	0.067	0.200	ug/L	1	SKJ	10/26/12	1518	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

GEL LABORATORIES LLC
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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-05 YA-MW7 Total
Sample ID: 313841005
Matrix: WW
Collect Date: 04-OCT-12 14:30
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		52.0	0.335	1.00	ug/L	5	SKJ	10/26/12	1612	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-06 YA-MW7 Pot Diss
Sample ID: 313841006
Matrix: WW
Collect Date: 04-OCT-12 14:30
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		39.9	0.067	0.200	ug/L	1	SKJ	10/26/12	1522	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-07 YA-MW-1 Total
Sample ID: 313841007
Matrix: WW
Collect Date: 03-OCT-12 09:00
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		117	0.335	1.00	ug/L	5	SKJ	10/26/12	1614	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-08 YA-MW1 Pot Diss
Sample ID: 313841008
Matrix: WW
Collect Date: 03-OCT-12 09:00
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		44.4	0.067	0.200	ug/L	1	SKJ	10/26/12	1621	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-09 YA-MW2 Total
Sample ID: 313841009
Matrix: WW
Collect Date: 03-OCT-12 10:30
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		44.4	0.067	0.200	ug/L	1	SKJ	10/26/12	1623	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-10 YA-MW2 Pot Diss
Sample ID: 313841010
Matrix: WW
Collect Date: 03-OCT-12 10:30
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		41.4	0.067	0.200	ug/L	1	SKJ	10/26/12	1625	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-11 YA-MW3 Total
Sample ID: 313841011
Matrix: WW
Collect Date: 03-OCT-12 11:40
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		44.0	0.067	0.200	ug/L	1	SKJ	10/26/12	0642	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-12 YA-MW3 Pot Diss
Sample ID: 313841012
Matrix: WW
Collect Date: 03-OCT-12 11:40
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		34.2	0.067	0.200	ug/L	1	SKJ	10/26/12	0648	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-13 YA-MW5 Total
Sample ID: 313841013
Matrix: WW
Collect Date: 03-OCT-12 13:30
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		19.7	0.067	0.200	ug/L	1	SKJ	10/26/12	0654	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-14 YA-MW5 Pot Diss
Sample ID: 313841014
Matrix: WW
Collect Date: 03-OCT-12 13:30
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		10.6	0.067	0.200	ug/L	1	SKJ	10/26/12	0700	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-15 YA-MW6 Total
Sample ID: 313841015
Matrix: WW
Collect Date: 03-OCT-12 14:40
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		33.2	0.335	1.00	ug/L	5	SKJ	10/26/12	1628	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company :	Environmental Science Corporation
Address :	12065 Lebanon Road
	Mount Juliet, Tennessee 37122
Contact:	Ms. Janice Cozby
Project:	Routine Analytical

Client Sample ID:	L602175-16 YA-MW6 Pot Diss	Project:	ENVL00507
Sample ID:	313841016	Client ID:	ENVL001
Matrix:	WW		
Collect Date:	03-OCT-12 14:40		
Receive Date:	24-OCT-12		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		18.3	0.067	0.200	ug/L	1	SKJ	10/26/12	0724	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-17 YA-MW9 Total
Sample ID: 313841017
Matrix: WW
Collect Date: 02-OCT-12 12:00
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		50.3	0.067	0.200	ug/L	1	SKJ	10/26/12	0730	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

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Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-18 YA-MW9 Pot Diss
Sample ID: 313841018
Matrix: WW
Collect Date: 02-OCT-12 12:00
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		52.1	0.067	0.200	ug/L	1	SKJ	10/26/12	0736	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-19 YA-MW 8 Total
Sample ID: 313841019
Matrix: WW
Collect Date: 02-OCT-12 14:00
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		50.3	0.067	0.200	ug/L	1	SKJ	10/26/12	0742	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Certificate of Analysis

Report Date: October 29, 2012

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID: L602175-20 YA-MW8 Pot Diss
Sample ID: 313841020
Matrix: WW
Collect Date: 02-OCT-12 14:00
Receive Date: 24-OCT-12
Collector: Client

Project: ENVL00507
Client ID: ENVL001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
200.2/200.8 Uranium "As Received"											
Uranium		49.9	0.067	0.200	ug/L	1	SKJ	10/26/12	0748	1257185	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 200.2	ICP-MS 200.2 PREP	BXA1	10/24/12	2116	1257184

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 200.8	

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

QC Summary

Environmental Science Corporation
12065 Lebanon Road
Mount Juliet, Tennessee

Contact: **Ms. Janice Cozby**

Workorder: **313841**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1257185										
QC1202765484 313841001 DUP										
Uranium		28.1		28.7	ug/L	2.14		(0%-20%)	SKJ	10/26/12 04:38
QC1202765490 313841003 DUP										
Uranium		57.7		57.3	ug/L	0.760		(0%-20%)		10/26/12 15:07
QC1202765483 LCS										
Uranium	50.0			51.8	ug/L		104	(85%-115%)		10/26/12 04:14
QC1202765482 MB										
Uranium			U	ND	ug/L					10/26/12 04:08
QC1202765485 313841001 MS										
Uranium	50.0	28.1		77.6	ug/L		99	(75%-125%)		10/26/12 04:44
QC1202765492 313841003 MS										
Uranium	50.0	57.7		101	ug/L		85.7	(75%-125%)		10/26/12 15:09
QC1202765486 313841001 SDILT										
Uranium		28.1		5.99	ug/L	6.47		(0%-10%)		10/26/12 04:50
QC1202765491 313841003 SDILT										
Uranium		57.7		13.0	ug/L	12.3*		(0%-10%)		10/26/12 15:11

Notes:
The Qualifiers in this report are defined as follows:

**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
A	The TIC is a suspected aldol-condensation product
B	For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
E	Metals--%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
F	Estimated Value
FB	Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
H	Analytical holding time was exceeded
J	Value is estimated
M	Matrix Related Failure
N	Metals--The Matrix spike sample recovery is not within specified control limits
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

QC Summary

Workorder: **313841**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

There are no "Data Exception Reports" associated with this analytical report.

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

List of current GEL Certifications as of 29 October 2012

State	Certification
Arkansas	88−0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC00012
DoD ELAP A2LA ISO 17025	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−12−00283, P330−12−00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA120008
Maryland	270
Massachusetts	M−SC012
Mississippi	SC00012
Nevada	SC000122011−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
Plant Material Permit	PDEP−12−00260
South Carolina Chemistry	10120001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−12−7
Utah NELAP	SC00012
Vermont	VT87156
Virginia NELAP	460202
Washington	C780−12
Wisconsin	999887790

Sub-Contract Chain of Custody

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Environmental Science Corp
12065 Lebanon Road
Mt. Juliet, TN 37122
(615) 773-9756 (615) 758-5859 fax

313841

Sub-Contract Lab : __GEL____
City / State : _____Charleston, SC_____
Results Needed by : ___RUSH - 10/30/12 - RUSH____
ESC Purchase Order # : __S17209_____

WORKGROUP	**WG619365**
Date Created :	10/23/2012

Send Reports To : ____Janice Cozby jcozby@esclabsciences.com____

SAMPLENO / Container #	MATRIX	Date / Time Collected	PARAMETER	Code	METHOD	Comments
L602175-01	WW	10/4/2012 11:30	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247346						
L602175-02	WW	10/4/2012 11:30	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247347						
L602175-03	WW	10/4/2012 13:00	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247348						
L602175-04	WW	10/4/2012 13:00	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247349						
L602175-05	WW	10/4/2012 14:30	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247350						
L602175-06	WW	10/4/2012 14:30	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247351						
L602175-07	WW	10/3/2012 9:00	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247474						
L602175-08	WW	10/3/2012 9:00	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247475						
L602175-09	WW	10/3/2012 10:30	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247476						
L602175-10	WW	10/3/2012 10:30	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247477						
L602175-11	WW	10/3/2012 11:40	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247478						
L602175-12	WW	10/3/2012 11:40	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247479						

Relinquished by J Cozby Date: 102312
Received by : [signature] Date: 10-24-12 0905
Relinquished by _____ Date: _____
Received by : _____ Date: _____

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

Sub-Contract Lab : __GEL____
City / State : _____Charleston, SC_____
Results Needed by : ___RUSH - 10/30/12 - RUSH_____
ESC Purchase Order # : __S17209_____

WORKGROUP **WG619365**
Date Created : 10/23/2012

Send Reports To : ____Janice Cozby jcozby@esclabsciences.com____

SAMPLENO / Container #	MATRIX	Date / Time Collected	PARAMETER	Code	METHOD	Comments
L602175-13	WW	10/3/2012 13:30	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247480						
L602175-14	WW	10/3/2012 13:30	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247481						
L602175-15	WW	10/3/2012 14:40	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247482						
L602175-16	WW	10/3/2012 14:40	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247483						
L602175-17	WW	10/2/2012 12:00	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247485						
L602175-18	WW	10/2/2012 12:00	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247486						
L602175-19	WW	10/2/2012 14:00	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247487						
L602175-20	WW	10/2/2012 14:00	Miscellaneous Analyses	MISC-SUB	200.8	TOTAL URANIUM
14247488						

Relinquished by _____ Date: _____
Received by : _____ Date: 10-24-12 0905
Relinquished by _____ Date: _____
Received by : _____ Date: _____

Groundwater Analyses, Uranium
I-70 East Corridor EIS PCL

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: ENVL	**SDG/AR/COC/Work Order:** 313841
Received By: JP	**Date Received:** 10-24-12

Suspected Hazard Information	**Yes**	**No**	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0cpm
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?		✓	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		✓	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	**Yes**	**NA**	**No**	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: (Ice bags) Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 4
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: 41302209 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	✓			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?			✓	Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: one per ID
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
14	Carrier and tracking number.				Circle Applicable: (FedEx Air) FedEx Ground UPS Field Services Courier Other 5413 4730 0980

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials JM Date 10-24-12 Page 1 of 1

Appendix C. Preliminary Subsurface Investigation Report for Partial Cover Lowered Alternative with Managed Lanes Option, Brighton Boulevard to Chambers Road

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Yeh and Associates, Inc.
Consulting Engineers & Scientists

WORKING DRAFT
Preliminary Subsurface Investigation Report
I-70 East Corridor Project
Partial Cover Lowered Alternative with Managed Lanes Option
Brighton Boulevard to Chambers Road
Denver, Colorado
CDOT Project No: FBR 0704-234 (19631)

Yeh Project No.: 213-208

July 17, 2015

Prepared for:

Atkins North America, Inc.
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Denver, Colorado 80237

Prepared by:

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Yeh and Associates, Inc.
Consulting Engineers & Scientists

WORKING DRAFT

Preliminary Subsurface Investigation Report

I-70 East Corridor Project

Partial Cover Lowered Alternative with Managed Lanes Option

Brighton Boulevard to Chambers Road

Denver, Colorado

CDOT Project No: FBR 0704-234 (19631)

Yeh Project No.: 213-208

July 17, 2015

Prepared by:

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Shan-Tai Yeh, P.E.
President

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Executive Summary

The purpose of this subsurface investigation and report is to provide preliminary geotechnical reference information for the I-70 East Project. The anticipated construction work involves the preliminary preferred alternative known as the "Partial Covered Lowered Alternative". It is anticipated that these improvements will be completed in phases. The Phase I work is anticipated to involve reconstruction of I-70 to the ultimate identified improvements from Brighton Boulevard to Quebec Street. Between Quebec Street and Chambers Road, the existing roadway will be widened to accommodate one additional managed lane in each direction.

This preliminary investigation covered the area along I-70 corridor between Brighton Boulevard and Chambers Road and included drilling 128 borings, 156 pavement cores and installing 18 temporary monitoring wells to obtain preliminary subsurface information.

The project is located in the geologic area identified as the Denver Basin along the Front Range Urban Corridor. The Denver Basin is underlain by the Paleocene / upper Cretaceous age Denver and Arapahoe Formations. The Denver and Arapahoe Formations primarily consist of claystone and siltstone interbedded with sandstone. These bedrock units are typically described as hard and indurated with a slight regional dip to the northeast.

The surface soils in the project area consist of granular soils that are underlain by residuum to very hard bedrock described as claystone, sandstone, interbedded sandstone and claystone. Based on the available data at the time of the report, bedrock was encountered at depths ranging from 17 to 127 feet below existing grade, approximately elevation 5110 to 5262 feet. The depth to groundwater ranged from 10 to 89 feet below existing grade, approximately elevation 5141 to 5289 feet.

1. Purpose and Scope of Study

The Colorado Department of Transportation (CDOT) is evaluating improvements along the Interstate 70 (I-70) corridor between Interstate 25 (I-25) and Tower Road. At this time CDOT is evaluating the preliminary preferred technical solution known as the "Partial Cover lowered Alternative" based on the on-going environmental review process. This report presents the results of the preliminary subsurface investigation between Brighton Boulevard and Chambers Road.

The scope of services for the subsurface investigation for the segment between Brighton Boulevard and Chamber Road included the following:

- Drilling a total of 79 borings for structures, including:
  - Forty borings for bridges.
  - Twenty seven borings for retaining walls.
  - Eight borings for the on-site drainage system.
  - Four borings for the off-site drainage outfall.
- Coring the existing pavement in all I-70 traffic lanes and shoulders at about ¼ to ½ mile intervals, resulting in 156 pavement cores located east of Interstate 270 (I-270).
- Obtaining 23 subgrade soil samples for pavement subgrade conditions along I-70 eastbound and westbound shoulders, east of I-270.
- Obtaining 26 subgrade soil samples for pavement subgrade conditions for streets crossing I-70.
- Installing 18 temporary monitoring wells and taking periodic water level readings after installation of the temporary wells. The monitoring wells will be decommissioned after completion of the subsurface investigation.
- Geophysical survey along the on-site drainage system by Olson Engineering, Inc.
- Assigning and performing geotechnical laboratory tests on representative soil and bedrock samples collected during the subsurface investigation.
- Preparing a report summarizing the field and laboratory information that was obtained.

2. Proposed Construction

The Partial Cover Lowered Alternative will include:

- Removal of the existing I-70 viaduct between Brighton Boulevard and Colorado Boulevard;

- Construction of the I-70 East Corridor, with a portion below the existing ground level;
- Constructing a landscape highway "cover" above one segment of the reconstructed highway;
- Constructing new bridges to maintain similar number of north-south through streets;
- Replacing the existing UPRR Bridge that currently crosses over 46th Avenue;
- Installing drainage systems to accommodate the new roadway design; and
- Adding additional lanes in each direction to improve commuter safety and improve traffic flow.
- Reconstruction of the I-270 southbound flyover bridge.
- Construction of BNSF Market Lead over lowered I-70.
- On-Site storm drainage outfall for lowered I-70.

3. Site Description

The proposed alignment from I-25 to Chambers Road is shown on Sheet A.1, Project Location Plan, included in Appendix A. Between I-25 and Colorado Boulevard, I-70 is currently an elevated, six lane freeway. East of Brighton Boulevard, 46th Avenue runs directly beneath the I-70 viaduct. Three active Union Pacific Railroad tracks pass beneath I-70 in the northeast and southwest directions between Brighton Boulevard and York Street.

The area surrounding the project location generally consists of residential dwellings and commercial and industrial buildings. The Denver Coliseum is located to the west of Brighton Boulevard just south of I-70.

The proposed off-site drainage outfall system alignment will run south of the Coliseum before emptying into the South Platte River less than one mile to the north of I-70, adjacent to the existing single track BNSF Railroad. The proposed on-site drainage system alignment, which begins at I-70, west of York Street, and extends north to the South Platte River and is adjacent to the southwest side of the Riverside Cemetery.

4. Geologic Setting

The project area is located in the Denver Basin along the Front Range Urban Corridor. A United States Geologic Survey (USGS) geologic map showing the project area is included as Figure 1. The project area is underlain by Paleocene and Upper Cretaceous aged bedrock units, which have been mapped by the USGS as being Denver and Arapahoe formations.

These bedrock formations generally consist of yellowish-brown, gray, and bluish-gray, interbedded sandstones, siltstone, claystone, and conglomerates and are present at varying depths below the surficial soil deposits. Typically, the Denver and Arapahoe formations are described as indurated and hard and may have a slight dip towards the northeast. For the borings between I-25 and Chambers Road, bedrock was not present at the ground surface.

The surficial soils along the I-70 corridor have been mapped by the USGS as Broadway Alluvium (Qb) of Pleistocene age west of about Columbine Street, Eolian Sand (Qes) of Holocene and Pleistocene age east of about Columbine Street, and artificial fill (af) generally near existing bridges as shown on Figure 1. A band of Piney Creek Alluvium (Qp) was mapped between Colorado Boulevard and Dahlia Street (see Figure 1). The artificial fill appears to be generally related to roadway construction.

The alluvial deposits are younger and less consolidated than the bedrock deposits. These deposits are the result of geomorphic activity that has shaped the present landforms and vary in thickness (ranging up to about 100 feet thick at the boring locations). This geomorphic activity is primarily related to alluvial processes involving the modern and ancient channels of the South Platte River. These soils are generally well graded sand and gravel overlain by clayey and silty sands, associated with well-defined terrace deposits resulting from the South Platte River.

On the east end of the project, Eolian Sand (Qes) has been mapped as the surface soil deposit and overlies the alluvial soils. This is a wind-blown deposit and is generally silty sand.

The samples collected during our subsurface investigation generally appear to be consistent with the geologic units and descriptions shown in the geologic map presented as Figure 1.

5. Subsurface Investigation

Additional subsurface information is presented in the following reports:

- Results of the Sampling and Analysis Program, CDOT I-70 East between Brighton Boulevard and Colorado Boulevard, Project No. 13599, prepared by Colorado Department of Transportation (CDOT), 2012. This investigation provides preliminary indication of potential subsurface pollutants between Brighton Boulevard and Colorado Boulevard by: 1) drilling 6 borings (B1 through B6), 2) installing temporary wells in each borehole and 3) performing chemical analyses on soil and groundwater samples. The

locations of the borings are shown on the attached Boring Location Plans (Sheets A.2-3 through A.2-7).

- Preliminary Subsurface Investigation Report, Partial Covered Lowered Alternative, I-70 East Corridor EIS, CDOT Region 6, prepared by Yeh and Associates, Inc., October 31, 2012. This investigation provides preliminary subsurface information between Brighton Boulevard and Colorado Boulevard by 1) drilling 10 widely spaced borings (YA-B1 through YA-B10), 2) installing monitoring wells near each boring (YA-MW1 through YA-MW10) and 3) performing chemical analyses of select soil and groundwater samples obtained from the borings and monitoring wells. The locations of the borings and monitoring wells are shown on the attached Boring Location Plans (Sheets A.2-2 through A.2-7).
- Addendum, Preliminary Subsurface Investigation Report, Partial Covered Lowered Alternative, I-70 East Corridor EIS, CDOT Region 6, prepared by Yeh and Associates, Inc., April 9, 2015. This addendum includes groundwater observations in the 10 monitoring wells installed in 2012.

5.1 Field Exploration

This report presents the results of the preliminary subsurface investigation and laboratory tests for borings drilled between Brighton Boulevard and Chambers Road. This subsurface investigation program included a total of 128 borings and 156 pavement cores. Among the 128 borings, 79 borings were drilled for structures (proposed bridges, retaining walls and drainage systems) and 49 borings were drilled for pavement subgrade conditions as indicated in Section 1 of this report. The structure borings were drilled by the CDOT Geotechnical Program Drill Shop between March 17, 2014 and April 9, 2015. The pavement borings and cores are discussed in Section 5.2.

The boring locations for the bridges and retaining walls are shown on the Boring Location Plans, Sheets A-3.1 through A-3.16. The locations of the borings drilled for the proposed drainage systems are shown on Sheets A.2-1 through A.2- 12. A representative from Yeh and Associates (Yeh) obtained CDOT and City and County of Denver (CCD) access permits, staked the boring locations, completed utility locates at each boring location, and was on-site to observe drilling operations and log the subsurface conditions. Traffic control, as required by the CDOT and CCD access permits, was provided by Warning Lites, Inc. of Colorado as a subcontractor to Yeh. After the structure borings were drilled, the locations were surveyed by Atkins North America, Inc., who provided coordinates and ground surface elevations.

The boring logs for structures are included in Appendix B, Legend and Boring Logs. The boring identifications include letter designations to indicate the type of structure and number designations. Borings drilled as part of a bridge investigations are designated with the letter "B" followed by letter(s) indicating the through street that is carried over or under I-70 by the proposed bridge. For example, borings drilled as part of the Brighton Boulevard bridge investigation are identified as "YA-BB". Retaining wall borings start on the western end of the project alignment with YA-RW-1, and the numbers generally increase moving eastbound along the alignment. Borings for the proposed drainage systems are designated both a "DON" for on-site drainage systems and "DOF" for off-site drainage systems. The boring designations are described below.

- YA-B: Borings drilled for proposed bridges. YA-B with letters identifying specific bridges.
    - YA-BB-1 & 2, Borings for proposed Brighton Boulevard Bridge.
    - YA-BJ-1 & 2, Borings for proposed Josephine Street Bridge.
    - YA-BCO-1 & 2, Borings for proposed Columbine Street Bridge.
    - YA-BCL-1 & 2, Borings for proposed Clayton Street Bridge.
    - YA-BF-1 & 2, Borings for proposed Fillmore Street Bridge (To be added).
    - YA-BS-1 & 2, Borings for proposed Steele Street Bridge.
    - YA-BCK-1 & 2, Borings for proposed Cook Street Bridge (To be added).
    - YA-BML-1 & 2, Borings for proposed Market Lead Overpass Bridge.
    - YA-BMO-1, Borings for proposed Monroe Street (To be added).
    - YA-BCB-1 & 2, Borings for proposed Colorado Boulevard Bridge.
    - YA-BD-1 & 2, Borings for proposed Dahlia Street Bridge.
    - YA-BH-1 & 2, Borings for proposed Holly Street Bridge.
    - YA-BM-1 & 2, Borings for proposed Monaco Street Bridge.
    - YA-BRI-1 & 2, Borings for proposed Rock Island Railroad Bridge.
    - YA-BQ-1 & 2, Borings for proposed Quebec Street Bridge.
    - YA-B270-1 & 2, Borings for proposed I-270 Bridge.
    - YA-BP-1 & 2, Borings for proposed Peoria Street Bridge.
    - YA-UP: Borings drilled for the proposed Union Pacific Railroad Bridge (YA-UP-1 through YA-UP-7).
- YA-RW: Borings drilled for proposed retaining walls (YA-RW-1 through YA-RW-27). (Borings YA-RW-26 and YA-RW-27 are to be added)

- YA-DON: Borings drilled for the proposed on-site drainage system (YA-DON-1 through YA-DON-8).
- YA-DOF: Borings drilled for the proposed off-site outfall (YA-DOF-3 through YA-DOF-6). YA-DOF-1 and YA-DOF-2 were not drilled.

The structure borings were drilled in landscaped areas when possible and were backfilled with cuttings from the boreholes. In paved areas, approximately the top one foot of the boreholes were patched using non-shrink, rapid set, cementitious grout after they were backfilled with cuttings. Excess cutting materials were placed in 55-gallon drums and transported to and stored in a secure CDOT fenced area. The drummed cuttings were disposed at a State of Colorado licensed landfill by Custom Environmental Services.

Modified California (MC) tube samples were obtained during drilling. When sampling with a MC sampler, the penetration resistance was recorded. The Modified California penetration resistance value (N_{MC}) is recorded as the total number of blows required to advance the modified California sampler the final two 6-inches of penetration using a 140-pound hammer falling from a height of 30 inches generally following ASTM D1586, “Standard Test Method for Standard Penetration Test (SPT) and Split Spoon Barrel Sampling of Soils”. The Modified California penetration resistance value (N_{MC}) is identified as “N” on the boring logs.

Groundwater conditions were observed during drilling for all borings. In addition, temporary monitoring wells were installed in 18 boreholes (Borings YA-BB-2, YA-BCL-1, YA-BML-1, YA-BCB-2, YA-BD-2, YA-BRI-1, YA-BQ-2, YA-B270-2, YA-UP-5, YA-RW-2, YA-RW-13, YA-RW-14, YA-RW-18, YA-RW-21, YA-RW-24, YA-DON-2, YA-DON-3, and YA-DOF-6). The temporary monitoring wells consist of solid 1-inch diameter PVC pipe from the bottom of the borehole to the top of bedrock and are screened from the top of bedrock to about 10 to 20 feet above the observed groundwater level. Groundwater levels at each monitoring well were recorded by a Yeh representative between March 31, 2014 and July 10, 2015. The groundwater depths observed at the times that the borings were drilled and the additional depth observations in the temporary monitoring wells are shown on Table 5-4.

The surveyed ground surface elevation at the boring locations, boring depths and approximate elevation of the top of bedrock for the structure borings are presented in Tables 5-1 through 5-3. Approximate groundwater elevations, observed in temporary monitoring wells, are presented in Table 5-4.

Table 5-1 Bridges - Boring Depths and Approximate Elevations of Top of Bedrock

Boring No.	Ground Surface Elevation (ft)	Boring Depth (ft)	Approximate Depth to Bedrock (ft)	Approximate Elevation Top of Bedrock (ft)
YA-BB-1	5188.1	89.4	49.5	5138.5
YA-BB-2	5187.4	90.4	47.5	5140
YA-BJ-1	5185.3	89.3	48	5137
YA-BJ-2	5186.5	95.2	52	5134.5
YA-BCO-1	5186.5	115.3	72.5	5114
YA-BCO-2	5187.5	119.4	77	5110.5
YA-BCL-1	5195.8	80.2	39	5156.5
YA-BCL-2	5198.0	79.4	37	5161
YA-BF-1	TBD	TBD	TBD	TBD
YA-BF-2	TBD	TBD	TBD	TBD
YA-BS-1	5206.7	89.4	49.5	5157
YA-BS-2	5205.8	89	47	5158.5
YA-BCK-1	TBD	TBD	TBD	TBD
YA-BCK-2	TBD	TBD	TBD	TBD
YA-BML-1	5223.4	104.5	63.5	5160
YA-BML-2	5219.9	99.3	59	5161
YA-BMO-1	TBD	TBD	TBD	TBD
YA-BCB-1	5257.1	139.2	98.5	5158.5
YA-BCB-2	5237.0	119.3	79	5158
YA-BD-1	5271.8	170.3	127.5	5144
YA-BD-2	5269.3	149.5	110	5159
YA-BH-1	5270.9	119.5	77	5194
YA-BH-2	5273.0	119.2	77	5196
YA-BM-1	5291.9	129.4	85	5207
YA-BM-2	5292.1	124.4	84	5208
YA-BRI-1	5272.7	99.4	58.5	5214
YA-BRI-2	5280.5	109.4	69	5211.5
YA-BQ-1	5276.9	89.9	49	5228
YA-BQ-2	5274.0	84.4	44	5230
YA-B270-1	5267.3	89.5	52	5215.5
YA-B270-2	5235.2	59.8	17	5218
YA-BP-1	5346.0	129.5	89.5	5256.5
YA-BP-2	5349.9	130	88.0	5262

YA-UP-1	5187.9	80.4	38	5150
YA-UP-2	5186.3	79.4	39	5147.5
YA-UP-3	5187.3	78.4	39	5148.5
YA-UP-4	5186.1	80.3	37	5149
YA-UP-5	5187.0	78.4	37.5	5149.5
YA-UP-6	5168.1	29.3	20	5148
YA-UP-7	5168.3	30.5	20.5	5148

Notes: 1) Bedrock depths and elevations are presented to the nearest 0.5 foot.
2) NE: Bedrock was not encountered.
3) TBD: To be determined.

Table 5-2 Retaining Walls - Boring Depths and Approximate Elevations of Top of Bedrock

Boring No.	Ground Surface Elevation (ft)	Boring Depth (ft)	Approximate Depth to Bedrock (ft)	Approximate Elevation Top of Bedrock (ft)
YA-RW-1	5183.3	65.9	41	5142.5
YA-RW-2	5184.7	69.4	39.5	5145
YA-RW-3	5185.2	49.4	41	5144
YA-RW-4	5187.9	48.4	38	5150
YA-RW-5	5185.8	65.3	42	5144
YA-RW-6	5187.8	64.5	52	5135.5
YA-RW-7	5193.0	45.5	36	5157
YA-RW-8	5204.0	54.8	43	5161
YA-RW-9	5211.0	55.5	48	5163
YA-RW-10	5239.1	89.4	79.5	5159.5
YA-RW-11	5243.6	94.9	84.5	5159
YA-RW-12	5236.6	90.5	77	5159.5
YA-RW-13	5240.4	75	63	5177.5
YA-RW-14	5242.0	64.3	50	5192
YA-RW-15	5244.5	68.3	54.5	5190
YA-RW-16	5250.7	74.8	62	5188.5
YA-RW-17	5250.8	74.4	60	5191
YA-RW-18	5249.9	89.4	77	5173
YA-RW-19	5253.8	89.3	79.5	5174.5
YA-RW-20	5266.0	70.8	56	5210

Boring No.	Ground Surface Elevation (ft)	Boring Depth (ft)	Approximate Depth to Bedrock (ft)	Approximate Elevation Top of Bedrock (ft)
YA-RW-21	5269.9	74.4	64.5	5205.5
YA-RW-22	5273.5	74.4	62	5211.5
YA-RW-23	5275.5	75.0	63	5212.5
YA-RW-24	5271.1	65.0	54.5	5216.5
YA-RW-25	5274.7	65.0	54	5220.5
YA-RW-26	5260.2	105.3	TBD	TBD
YA-RW-27	5235.8	90.2	TBD	TBD

Notes: 1) Bedrock depths and elevations are presented to the nearest 0.5 foot.
2) TBD: To be determined.

Table 5-3 Drainage Systems - Boring Depths and Approximate Elevations of Top of Bedrock

Boring No.	Ground Surface Elevation (ft)	Boring Depth (ft)	Approximate Depth to Bedrock (ft)	Approximate Elevation Top of Bedrock (ft)
YA-DON-1	5186.1	63.4	38	5148
YA-DON-2	5181.0	54.4	41	5140
YA-DON-3	5179.9	53.2	44	5136
YA-DON-4	5176.4	49.5	41	5135.5
YA-DON-5	5163.8	38.4	31	5133
YA-DON-6	5146.1	31.0	8.5	5137.5
YA-DON-7	5160.1	30.5	24	5136
YA-DON-8	5180 (est.)	53	47	5133 (est.)
YA-DOF-3	5168.1	30.8	27.0	5141
YA-DOF-4	5186.5	30.0	NE	NE
YA-DOF-5	5186.8	29.0	NE	NE
YA-DOF-6	5188.5	30.0	NE	NE

Notes: 1) Bedrock depths and elevations are presented to the nearest 0.5 foot.
2) NE: Bedrock was not encountered.

Table 5-4 Groundwater Observations in Temporary Monitoring Wells

Monitoring Well	Ground Surface Elevation	Date Installed	Groundwater Observations - Elevation (ft)													
			Date Installed	3/31/14	4/9/14	4/18/14	5/8/14	5/23/14	6/20/14	7/23/14	11/26/14	3/6/15	3/19/15	4/1/15	7/9/15	7/10/15
YA-BB-2	5187.4	3/21/14	5152	5155	5155	5155	5157	5155	5156	5155	5155			5155	5156	
YA-BCL-1	5195.8	4/24/14	5160					5161	5161	5161	5161			5161	5161	
YA-BML-1	5223.4	6/10/14	5163						5164	5164	5164			5164	5165	
YA-BCB-2	5237.0	5/13/14	5169					5170	5170	5170	5170			5171	5171	
YA-BD-2	5269.3	5/30/14	5201						5210	5210	5210			5210		
YA-BRI-1	5272.7	1/28/15	5224									5228		5227		5227
YA-BQ-2	5274.0	1/7/15	5232									5228		5231	5233	
YA-B270-2	5235.2	1/27/15	5225										5228	5228		5231
YA-UP-5	5187.0	3/18/14	5158			5158	5158	5158	5158	5158	5158			5158	5159	
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YA-RW-13	5240.4	5/2/14	5178					5193	5193	5193	5194			5193	5193	
YA-RW-14	5242.0	5/5/14	5203					5203	5202	5203	5204			5204	5203	
YA-RW-18	5249.9	2/13/15	5215									5212		5215		5216
YA-RW-21	5269.9	2/19/15	5237									5223		5223		5223
YA-RW-24	5271.1	2/11/15	5222									5222		5222	5223	
YA-DON-2	5181.0	4/2/14	5154	5155	5155	5155	5155	5155	5155	5155	5155			5155		
YA-DON-3	5179.9	4/2/14	5153	5151	5151	5151	5151	5151	5151	5151	5151			5152		
YA-DOF-6	5188.5	4/1/14	5160			5160	5160	5160	5160	5160	5160					

Notes: Groundwater elevations are presented to the nearest 1 foot.

5.2 Preliminary Pavement Investigation

The preliminary subsurface investigation included a total of 23 pavement borings that were drilled along I-70 shoulders, east of I-270 and 156 pavement cores obtained east of I-270 between April 13, 2015 and June 8, 2015. In addition, 26 pavement borings were drilled for streets crossing I-70 between June 24, 2015 and July 1, 2015.

These cores were taken to determine the condition and thickness of the existing pavement. The pavement boring and core locations are shown on the Pavement Boring Location Plans Sheets A.4-1 through A.4-19 and Pavement Coring Location Plans Sheets A.5-1 through A.5-9 included in Appendix A.

A representative from Yeh and Associates (Yeh) obtained a CDOT access permit, determined core and boring locations, completed utility locates at each core and boring locations, and was on-site to observe the pavement coring and drilling operations and to log the subsurface conditions. The pavement boring logs and lab results are presented in Appendix D.1, Pavement Boring Logs and Laboratory Test Results. The pavement coring results are presented in Appendix D.2, Pavement Core Summary and Photographs.

Traffic control, as required by the CDOT access permit, was provided by Warning Lites, Inc. of Colorado during the drilling operations as a subcontractor to Yeh. Borings and most cores were drilled by CDOT drill crews and equipment consisting of a truck mounted CME 75 drill rig and 4-inch diameter solid stem augers or 1.87 inch (NQ) diameter core barrel. Twenty cores were drilled by Yeh using a truck-mounted coring machine.

Drilling occurred within the westbound (WB) lanes (49 cores), within the eastbound (EB) travel lanes (58 cores), and in the paved shoulders adjacent to the WB and EB travel lanes (49 cores and all 23 borings). The core locations were generally drilled at about ¼ to ½ mile intervals in each lane, with an approximate 200 foot offset between adjacent lanes. The shoulder borings were generally drilled to a depth of 5 to 10 feet below existing grade. These borings were added to obtain pavement subgrade information. Thirteen locations have both a core sample and a pavement boring, which is noted on the core photo and the boring log.

The core and shoulder boring identification includes letters designations to indicate the specific lane and direction of the roadway in which they were drilled. Cores are designated on the location plan maps with only the lane or shoulder and station number. Pavement shoulder

borings are designated with "YA", the direction, lane or shoulder, and station number. In addition, the borings were identified with approximate stationing. Station numbers increase west to east. The pavement borings drilled for streets crossing I-70 are designated with the letter "P" followed by letter(s) indicating the through street that is carried over or under I-70. Cores and pavement borings designations are described as follows:

- EB: Cores and borings drilled in the EB travel lanes and shoulders
- WB: Cores and borings drilled in the WB travel lanes and shoulders
- L1, L2, etc.: Cores drilled in named lane; Lane 1 is the left or fast lane, higher numbered lanes are sequentially to the right.
- LS: Cores drilled in the left shoulder
- RS: Cores drilled in the right shoulder
- YA-PB-1& 2, Pavement Borings for Brighton Boulevard (To be added).
- YA-PY-1, 2 & 3, Pavement Borings for York Street (To be added).
- YA-PS-1, 2 & 3, Pavement Borings for Steele Street (To be added).
- YA-PMO-1, Pavement Borings for Monroe Street (To be added).
- YA-PJ-1, Pavement Borings for Jackson Street (To be added).
- YA-CO-1, 2, 3 & 4, Pavement Borings for Colorado Boulevard (To be added).
- YA-PH-1, 2 & 3, Pavement Borings for Holly Street (To be added).
- YA-PM-1 & 2, Pavement Borings for Monaco Street (To be added).
- YA-PQ-1, 2, & 3, Pavement Borings for Quebec Street (To be added).
- YA-P270-1, 2, & 3, Pavement Borings for I-270 (To be added).

The approximate pavement boring and coring locations were determined in the field during drilling by using a surveyors wheel and measuring from known stationing locations. Coordinates and elevations for all pavement borings will be estimated from topographical files by Atkins and will be approximate. Coordinates and elevations for the pavement core were not determined and the approximate locations are based on field measurement and are considered approximate for this investigation.

Please note that the measured asphalt at three of the 13 locations with both a core sample and a pavement boring varies between the core and boring up to 4.75 inches. The field engineer noted a layer of poor asphalt at these locations. This material was lost during sampling of the

core. Thicknesses of pavement, fill, and soil material represent conditions at each drilled location but vary between drilled locations.

Bulk (grab) samples of the subsurface materials encountered during drilling were obtained from the borings to characterize the subgrade materials present from the bottom of the pavement section to a depth of approximately 5 feet below existing grade. Modified California tube samples were also generally obtained from the borings at depths of about 2 feet, 5 feet, and 10 feet. While sampling using the Modified California sampler, the penetration resistance required to drive the modified California sampler into the subsurface materials using a 140-pound hammer falling from a height of 30 inches was recorded for each 6-inches of penetration. The penetration resistance value (N) is calculated as the total number of blows required to advance the sampler the final two 6-inches of penetration. Similar to ASTM D1586, "Standard Test Method for Standard Penetration Test (SPT) and Split Spoon Barrel Sampling of Soils," the penetration resistance is a useful index in evaluating the consistency and relative density or hardness of the materials encountered.

Groundwater conditions were observed during drilling for all borings. Due to the shallow nature of the borings, groundwater was not encountered. After drilling was complete, the boreholes and core holes were backfilled using the soil cuttings and on-site materials. When drilling through a paved section of road, the existing pavement was patched using non-shrink, rapid set, cementitious grout after they were backfilled with cuttings.

5.3 Laboratory Testing

The samples collected during the subsurface investigation were transported to our laboratory in Denver, Colorado, where they were reviewed, and laboratory tests were assigned to samples representative of the subsurface materials encountered in the borings. The geotechnical laboratory tests included sieve analyses, Atterberg limits, natural moisture content, and dry density. In addition, select samples were subjected to chemical analyses to determine the water soluble sulfate content, water soluble chloride content, pH, and resistivity.

The results of the sieve analyses and Atterberg limits were used to classify the soils according to AASHTO and Unified Soil Classification System (USCS). Atterberg limits were performed in general accordance with AASHTO T89 and T90, and sieve analyses were performed in general accordance with ASTM D421. Dry density tests and moisture content tests were performed in general accordance with ASTM D2937 and ASTM D2216, respectively.

Chemical tests were/will be performed by Colorado Analytical Laboratories, Inc. on the samples that were considered representative of the subsurface materials along this portion of the alignment. The samples were/will be tested to determine the concentrations of water soluble sulfates, water soluble chlorides, pH, and resistivity.

All the test results for structure borings are presented in the Summary of Laboratory Test Results in Appendix C and on applicable structure boring logs included in Appendix B. The test results for pavement shoulder borings are presented in Summary of Laboratory Test Results and pavement boring logs, both included in Appendix D.1.

5.4 Geophysical Investigation

Olson Engineering, Inc. conducted a geophysical investigation along the on-site drainage system alignment between April 15, 2014 and April 17, 2014. The objective of the geophysical investigation was to image the depth to bedrock along the proposed on-site drainage system alignment. The geophysical survey was completed using Multi-channel Analysis of Surface Waves (MASW) to acquire shear (S-) wave data. The Olson Engineering report, which presents the results of the geophysical survey, is included in Appendix E. The location of the geophysical survey is shown on Sheets A.2-2, A.2-3, A.2-8, A.2-9, A.2-10, A.2-11 and A.2-12.

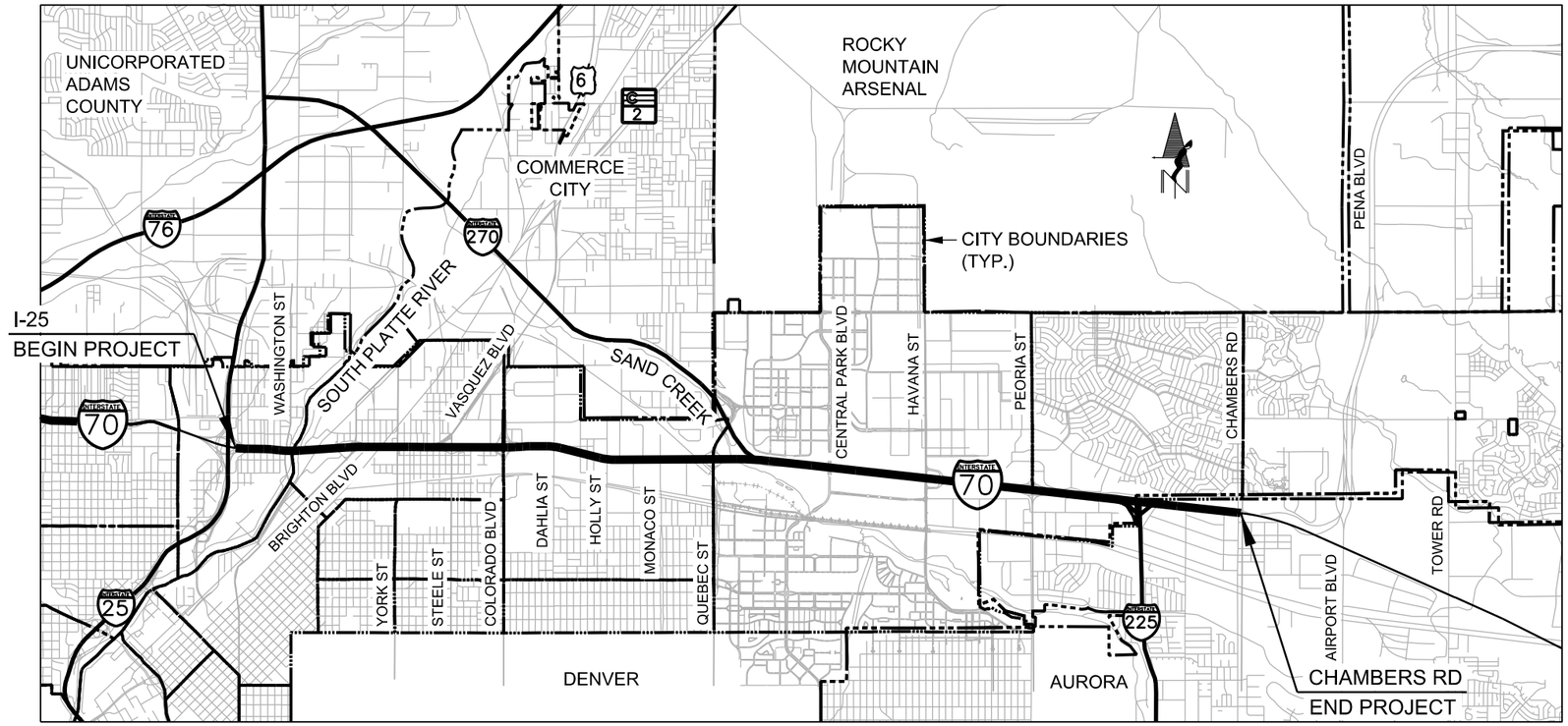
6. Limitations

This Preliminary Subsurface Investigation Report was prepared for the evaluation of the Partial Cover Lowered (PCL) Alternative in the I-70 East Corridor EIS. The data presented in this report are based on the exploratory borings, laboratory testing and field reconnaissance included in our investigation and the proposed type of construction. This study has been conducted in accordance with generally accepted geotechnical engineering practices in this area. Additional geotechnical and environmental investigation will be required during the design of this project. No warranty, expressed or implied, is made.

Appendix A

Project Location Plan (Sheet A.1)
Boring Location Plans, CDOT & Yeh 2012 Borings and Drainage System Borings (Sheets A.2-1 through A.2-12)
Engineering Geology Sheets for Structure Borings (Sheets A.3-1 through A.3-16)
Pavement Boring Location Plans (Sheets A.4-1 through A.4-19)
Pavement Coring Location Plans (Sheets A.5-1 through A.5-9)

I-70 East



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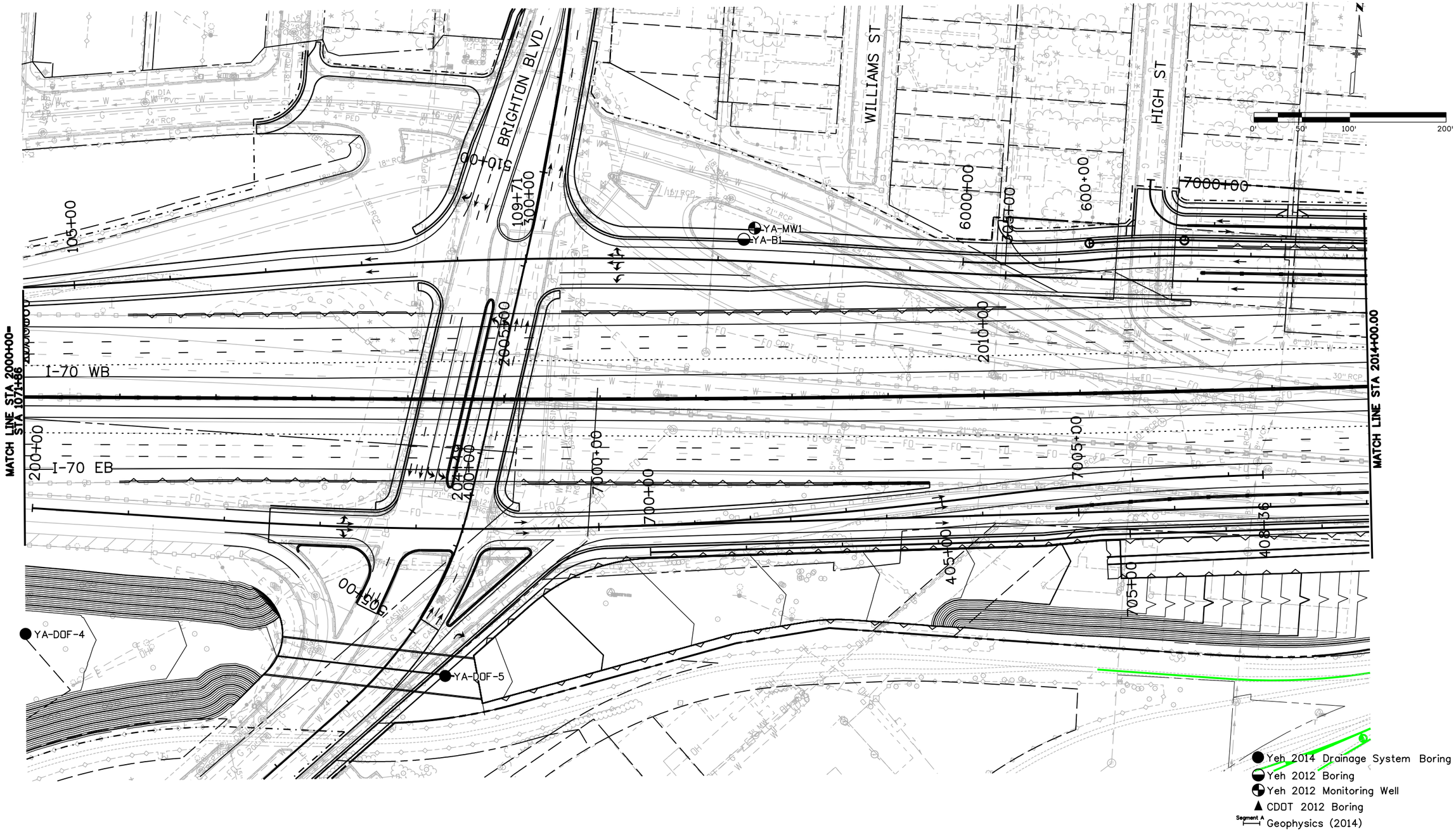

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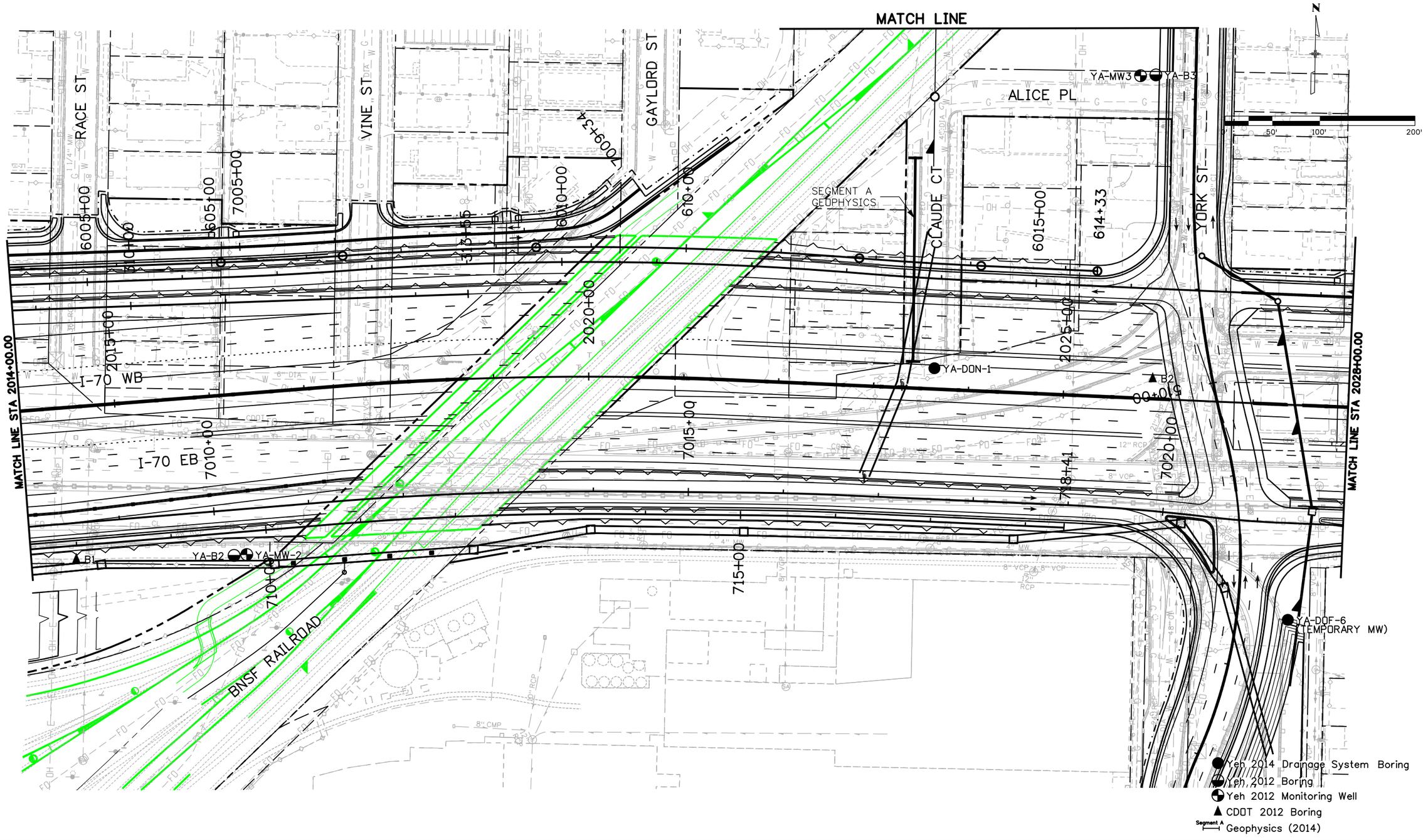

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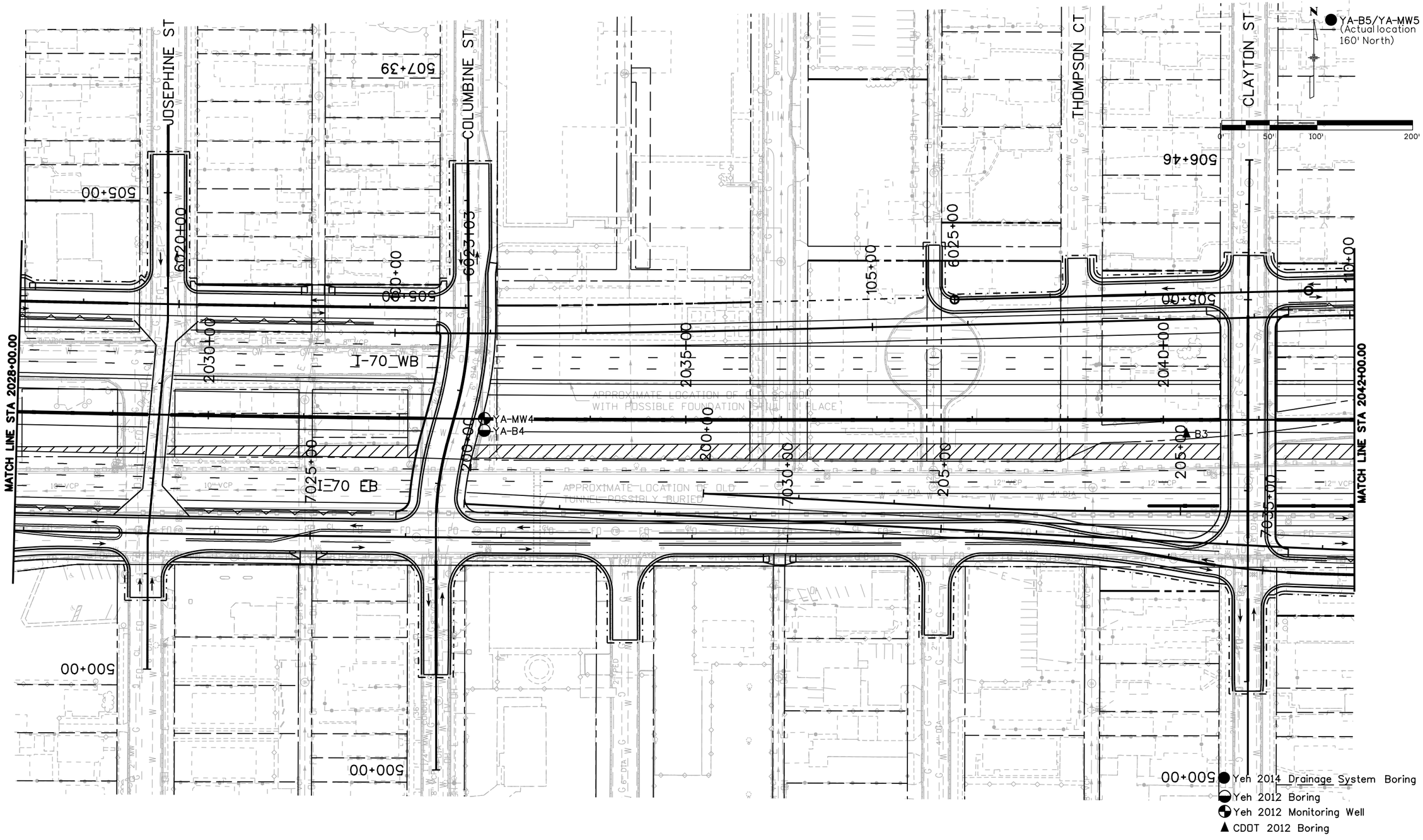

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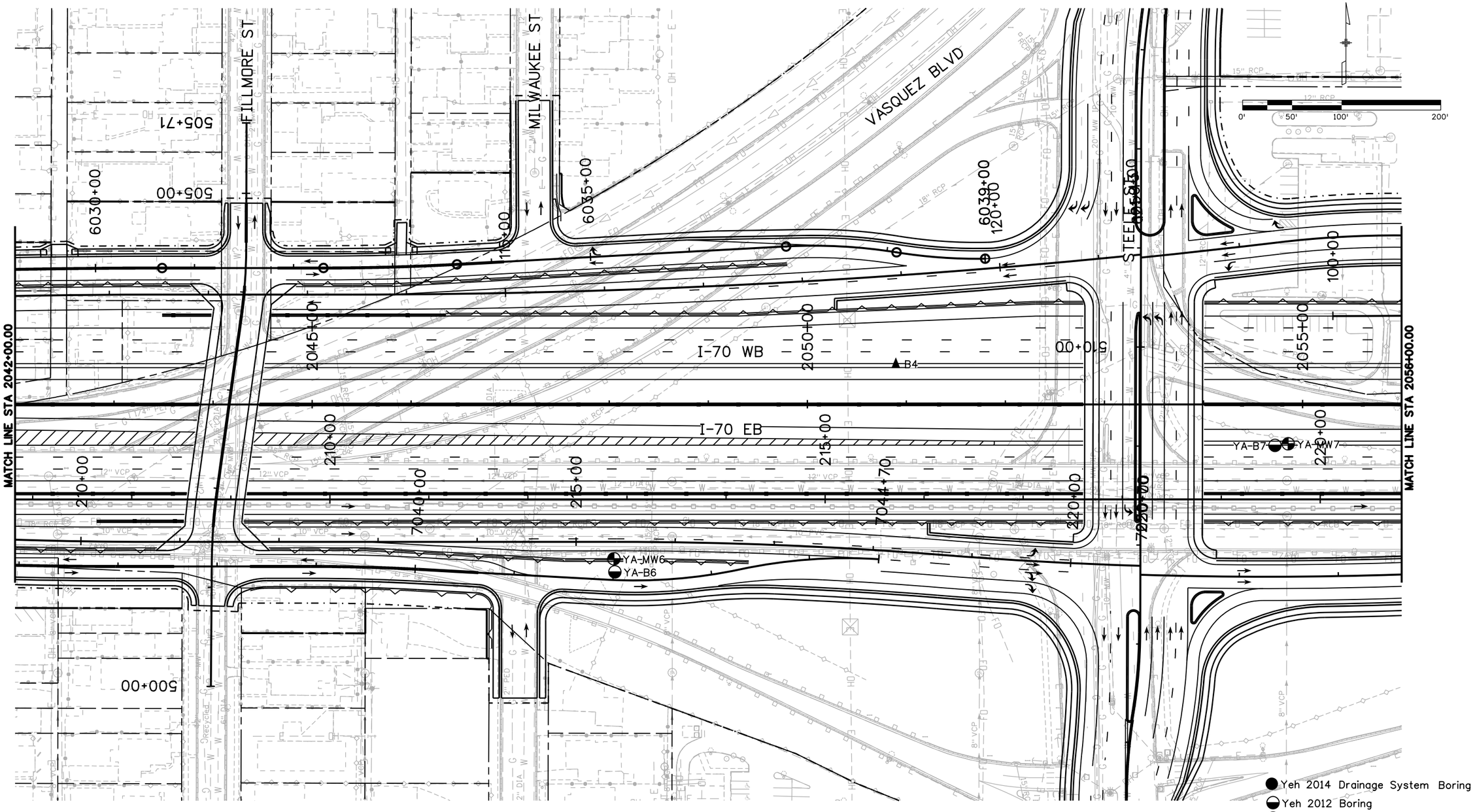

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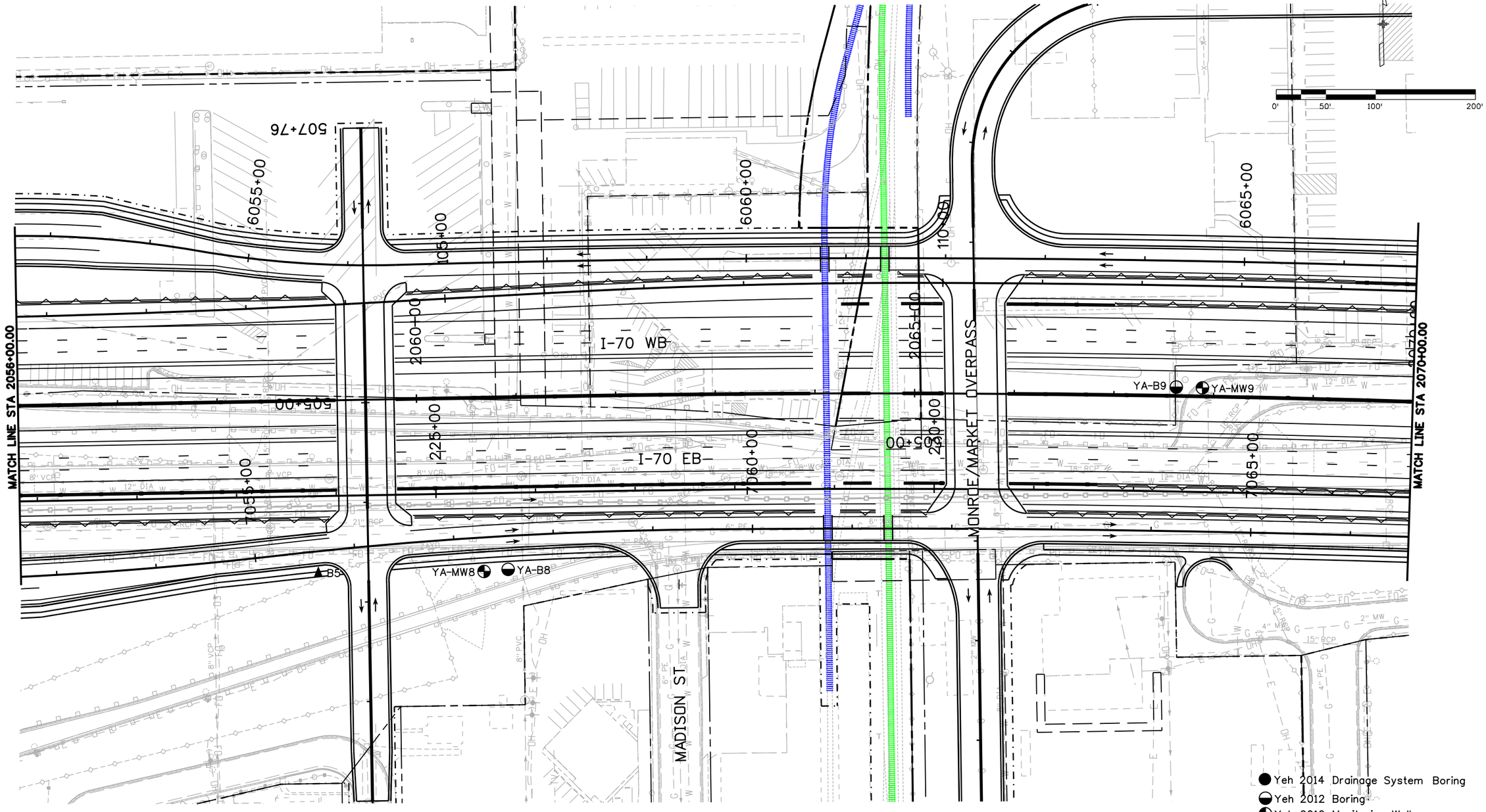

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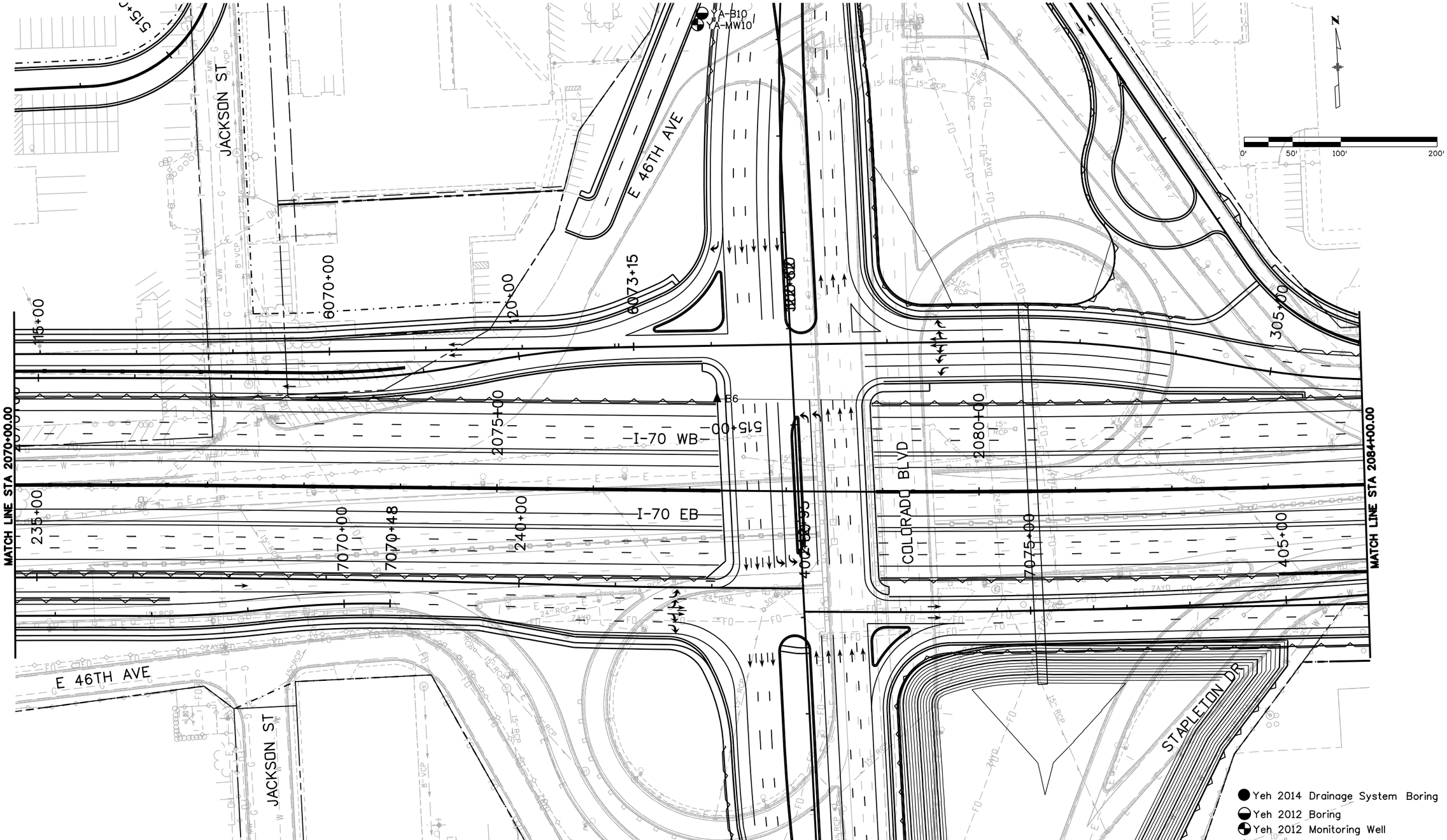

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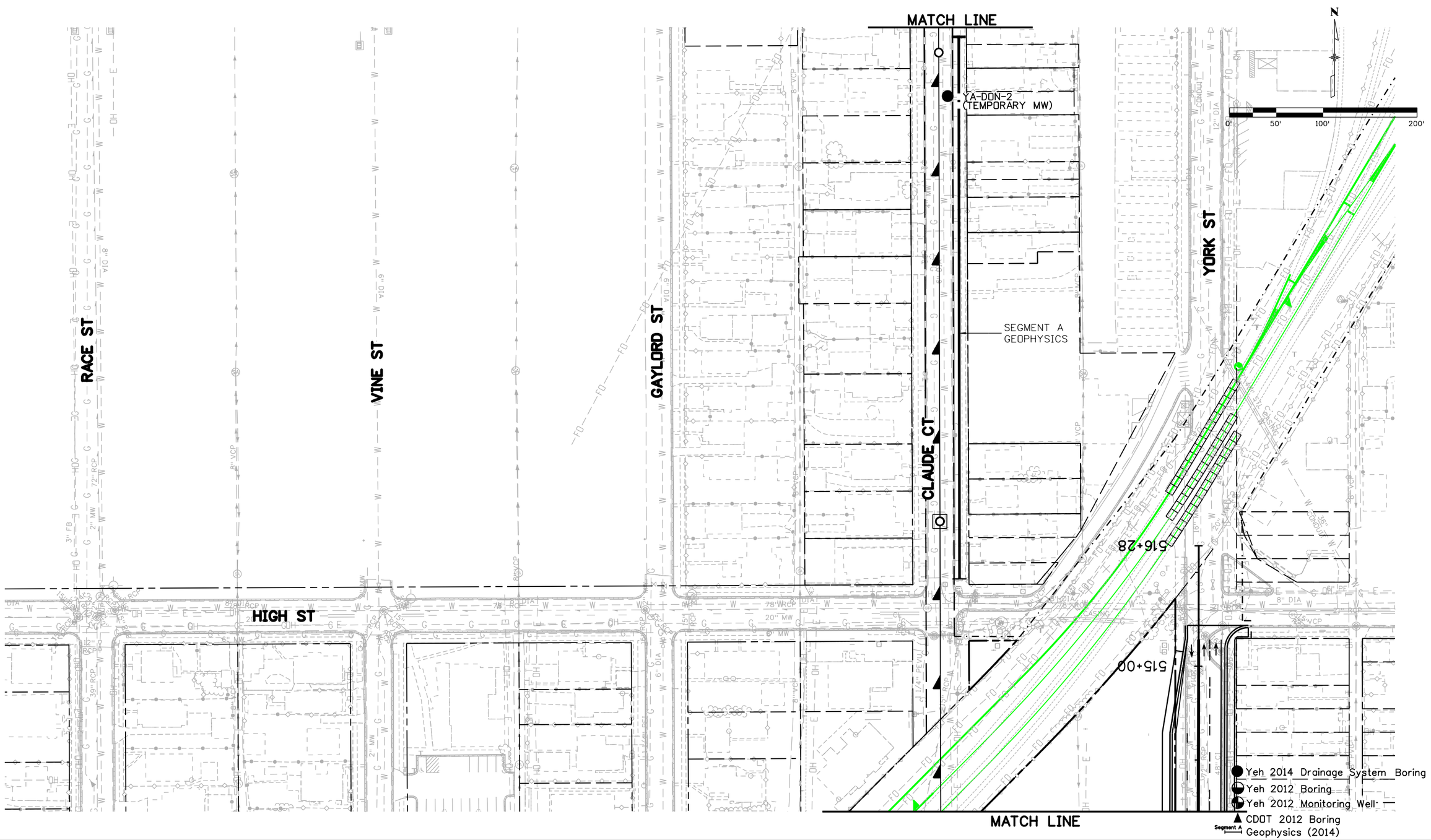

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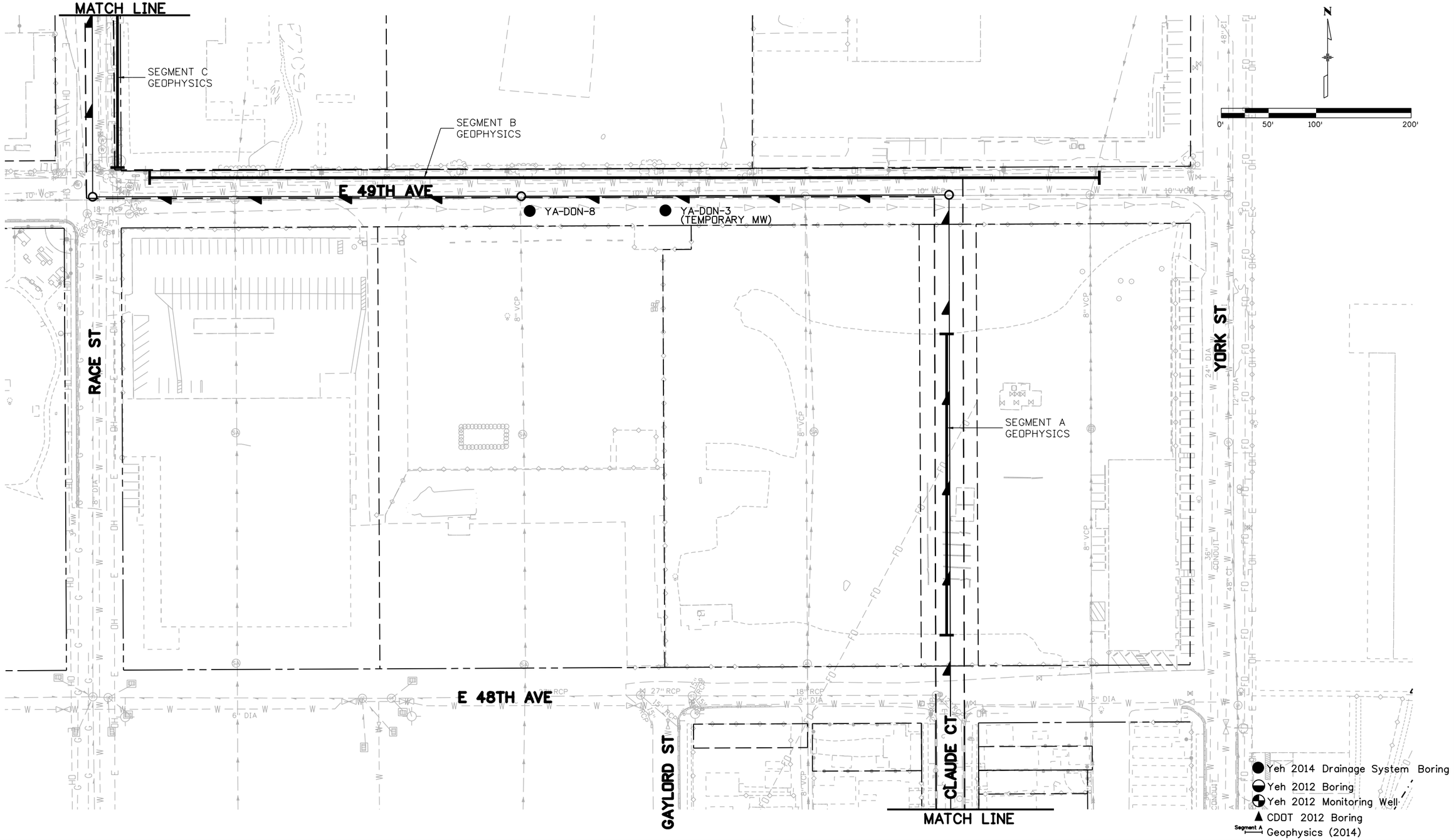

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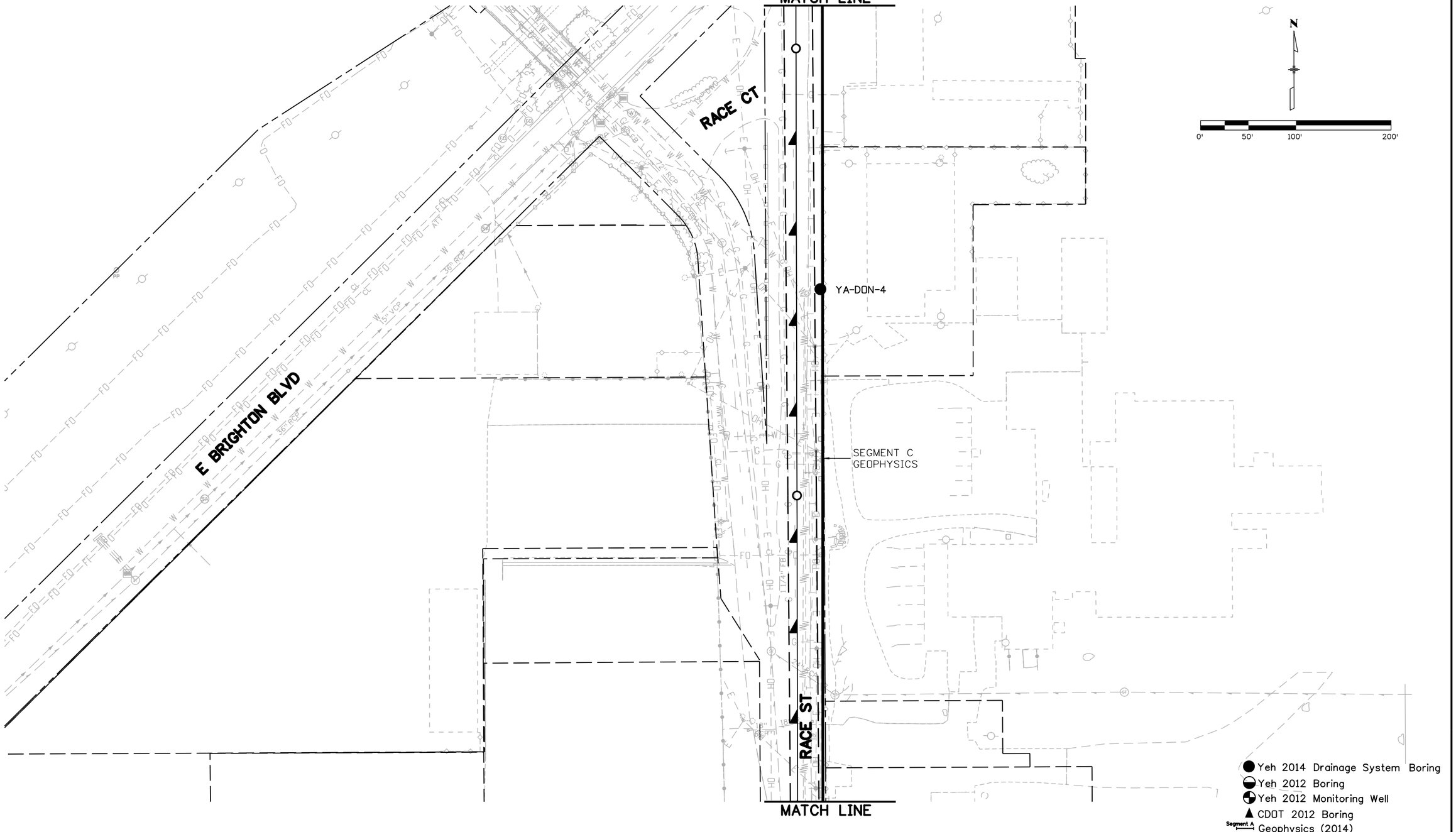

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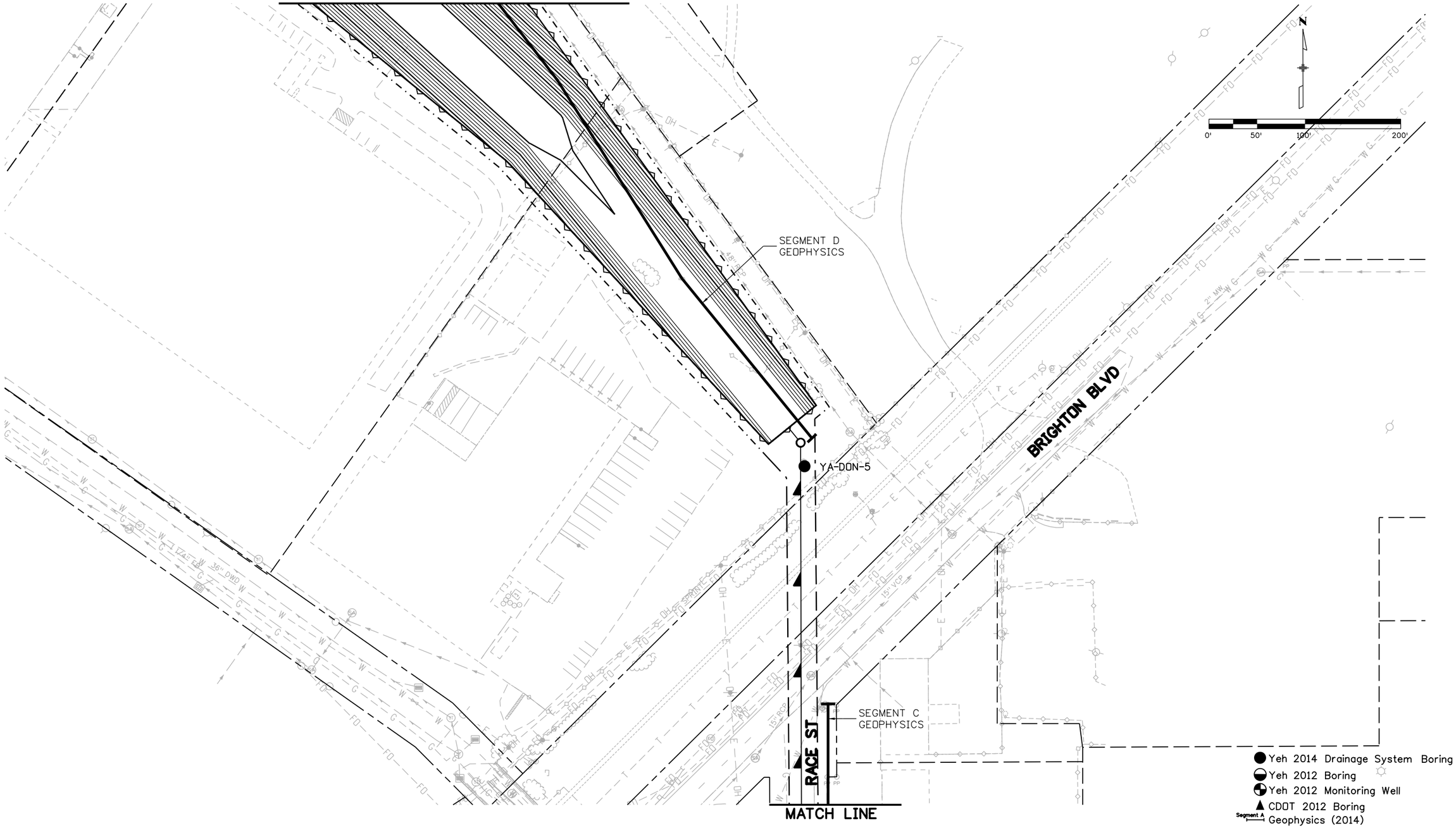

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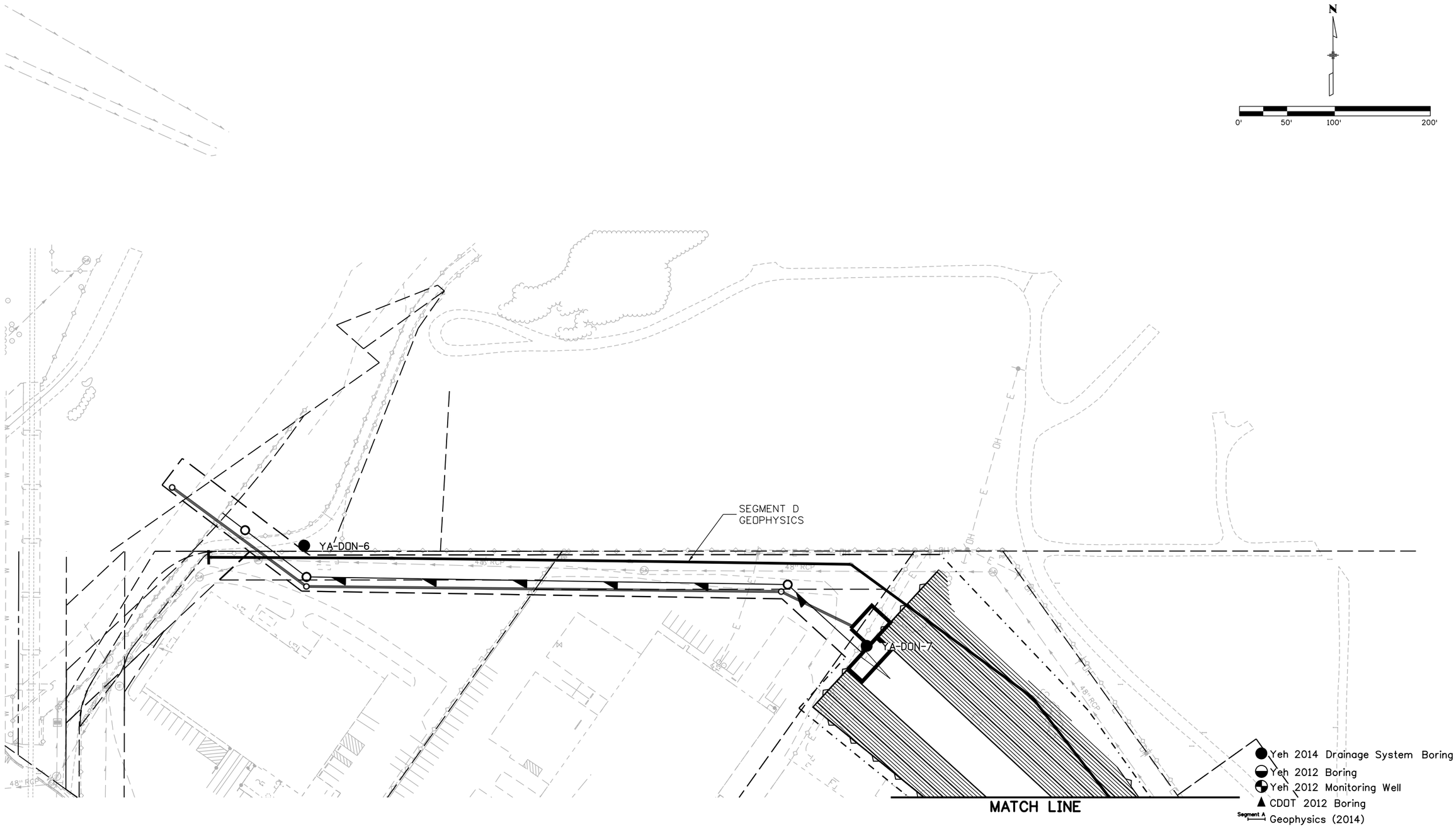

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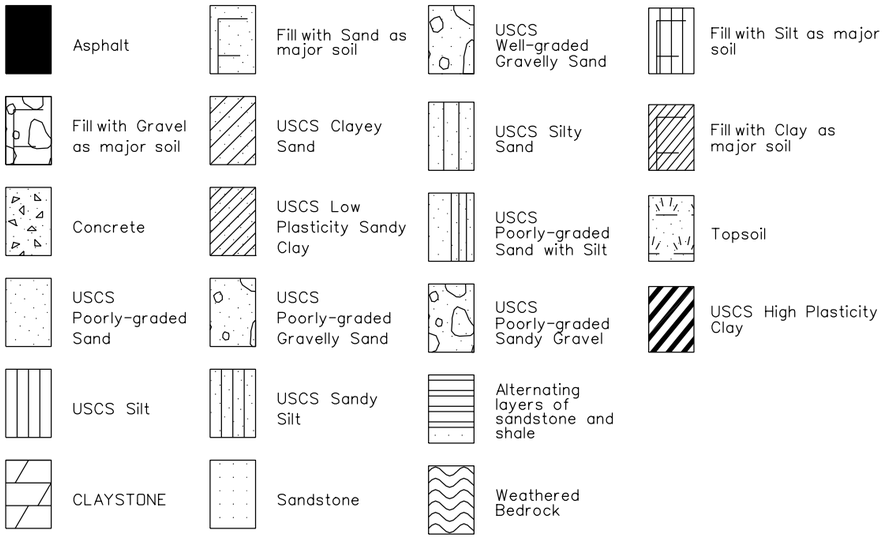
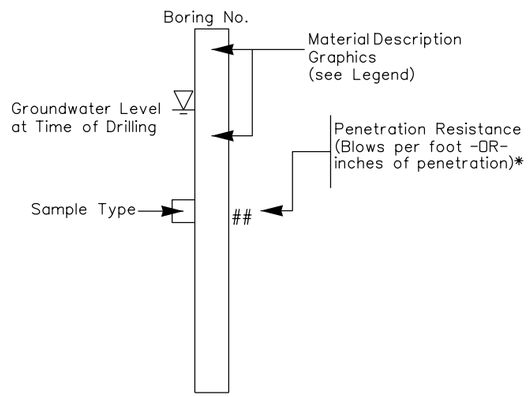
Project No./Code

Sheet Number A.2-12



TYPICAL TEST HOLE LOG



*e.g. A value of 50/3 or 50:3 indicates 50 blows were applied to the sampler, with a penetration of 3 inches, in the last increment.
A value of 75/8 or 75:8 indicates that 50 blows were applied with a penetration of 2 inches for the last increment, and 25 blows were applied for the second-to-last 6-inch increment.

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 4/4/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consolidation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BB-1	4	CA	6.6	110.0	34	50	16	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SM
YA-BB-1	19	CA	2.0	113.5	8	87	5	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW
YA-BB-1	39	CA	8.8	124.6	45	50	5	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW-SM
YA-BB-1	49.5	CA	20.4	109.1	0	44	56	44	22	22	_	_	_	_	_	BEDROCK	
YA-BB-1	74	CA	16.8	111.9	0	51	49	52	26	26	_	_	_	_	_	BEDROCK	
YA-BB-1	89	CA	16.8	105.8	0	52	48	50	18	32	_	_	_	_	_	BEDROCK	
YA-BB-2	5	CA	5.6	_	0	83	17	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BB-2	10	CA	_	_	_	_	_	_	_	_	8.1	0.002	2513	0.0148	_	_	_
YA-BB-2	20	CA	1.9	106.0	32	64	4	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW
YA-BB-2	35	CA	14.8	118.4	4	90	6	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-BB-2	50	CA	18.2	113.0	0	70	30	35	23	12	_	_	_	_	_	BEDROCK	
YA-BB-2	55	CA	_	_	_	_	_	_	_	_	8.0	0.011	1242	0.0009	_	_	_
YA-BB-2	60	CA	18.3	114.7	0	78	22	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-BB-2	75	CA	17.1	115.4	0	52	48	44	25	19	_	_	_	_	_	BEDROCK	
YA-BJ-1	4	CA	8.1	108.9	0	75	25	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BJ-1	14	CA	6.3	115.0	_	_	_	_	_	_	7.2	0.015	3155	0.0205	_	_	_
YA-BJ-1	19	CA	1.7	_	47	49	4	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW
YA-BJ-1	39	CA	22.9	100.3	1	64	35	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BJ-1	49	CA	21.9	106.0	_	_	79	58	26	32	_	_	_	_	_	BEDROCK	
YA-BJ-1	59	CA	17.7	111.4	_	_	51	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-BJ-1	69	CA	18.0	110.5	_	_	77	53	26	27	_	_	_	_	_	BEDROCK	
YA-BJ-2	5	CA	5.7	107.6	0	84	16	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BJ-2	15	CA	22.2	102.2	0	22	78	41	17	24	_	_	_	_	_	A-7-6 (18)	CL
YA-BJ-2	25	CA	1.8	_	10	88	2	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-BJ-2	40	CA	9.8	_	10	78	12	45	22	23	_	_	_	_	_	A-2-7 (0)	SP-SC
YA-BJ-2	50	CA	8.4	121.1	32	57	11	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-BJ-2	55	CA	18.3	111.2	0	50	50	35	19	16	_	_	_	_	_	BEDROCK	
YA-BJ-2	65	CA	17.9	108.2	0	80	20	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-BJ-2	85	CA	15.9	115.9	0	37	63	44	26	18	_	_	_	_	_	BEDROCK	
YA-BCO-1	5	CA	7.1	109.0	0	75	25	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BCO-1	20	CA	1.7	_	47	49	4	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SP
YA-BCO-1	40	CA	11.8	137.0	7	90	3	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-BCO-1	55	CA	9.5	119.3	11	81	1	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-BCO-1	75	CA	24.5	102.5	0	60	40	52	27	25	_	_	_	_	_	BEDROCK	
YA-BCO-1	95	CA	17.8	111.8	7	61	32	39	26	13	_	_	_	_	_	BEDROCK	
YA-BCO-1	115	CA	15.2	116.5	0	65	35	45	25	20	_	_	_	_	_	BEDROCK	
YA-BCO-2	4	CA	7.8	112.7	0	76	24	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BCO-2	19	CA	2.1	_	45	49	6	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SP-SM
YA-BCO-2	34	CA	8.8	127.0	21	69	10	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-BCO-2	49	CA	8.0	111.3	17	80	3	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-BCO-2	67	CA	26.6	95.8	0	90	10	NV	NP	NP	_	_	_	_	_	A-3 (0)	SP-SM
YA-BCO-2	78	CA	21.3	103.1	1	38	61	39	21	18	_	_	_	_	_	BEDROCK	
YA-BCO-2	99	CA	15.8	114.9	_	_	94	49	19	30	_	_	_	_	_	BEDROCK	
YA-BCO-2	119	CA	17.8	112.3	_	_	92	47	21	26	_	_	_	_	_	BEDROCK	
YA-BCL-1	5	CA	6.0	107.8	0	85	15	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BCL-1	20	CA	2.2	_	34	63	3	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SP
YA-BCL-1	25	CA	22.7	97.9	0	39	61	NV	NP	NP	_	_	_	_	_	A-4 (0)	ML
YA-BCL-1	40	CA	33.3	85.9	0	59	41	65	30	35	_	_	_	_	_	BEDROCK	
YA-BCL-1	60	CA	16.7	114.2	_	_	60	48	25	23	_	_	_	_	_	BEDROCK	
YA-BCL-1	75	CA	16.6	114.6	0	53	47	35	20	15	_	_	_	_	_	BEDROCK	
YA-BCL-2	4	CA	4.5	_	0	84	16	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BCL-2	14	CA	9.2	111.9	2	71	27	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BCL-2	29	CA	2.2	_	4	91	5	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-BCL-2	39	CA	25.2	90.2	0	52	48	43	24	19	_	_	_	_	_	BEDROCK	
YA-BCL-2	74	CA	15.0	_	_	_	77	46	21	25	_	_	_	_	_	BEDROCK	
YA-BF-1	5	CA															
YA-BF-1	10	CA															
YA-BF-1	20	CA															
YA-BF-1	25	CA															
YA-BF-1	35	CA															
YA-BF-1	45	CA															
YA-BF-1	60	CA															
YA-BF-1	65	CA															
YA-BF-1	80	CA															

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Unit Information Unit Leader Initials

ATKINS

Yeh and Associates, Inc.
Consulting Engineers & Scientists

Sheet Revisions		
Date:	Comments	Init.

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PRELIMINARY
No Revisions:
Revised:
Void:

I-70 ROADWAY PROCUREMENT PHASE 1
ENGINEERING GEOLOGY
LEGEND AND LABORATORY DATA

Designer: MLK
Detailer: MJW
Sheet Subset: Geot
Structure Numbers:
Subset Sheets: 1 of

Project No./Code

Sheet Number A.3-1

Mike Walz 12:19:34 PM W:\2013 Projects\213-208B 1-70 East Corridor, Dahlia to Pena\Dwg\from Client\13599GEOT_EngGeology_Plan_Legend_Lab01.dgn

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Data: 4/4/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consolidation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BF-2	10	CA															
YA-BF-2	20	CA															
YA-BF-2	25	CA															
YA-BF-2	35	CA															
YA-BF-2	45	CA															
YA-BF-2	50	CA															
YA-BF-2	60	CA															
YA-BF-2	75	CA															
YA-BS-1	4	CA	6.5	110.3	0	81	19	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BS-1	14	CA	6.8	103.9	0	67	33	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BS-1	24	CA	13.3	108.7	3	40	57	NV	NP	NP	_	_	_	_	_	A-4 (0)	ML
YA-BS-1	39	CA	2.7	_	37	60	3	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SP
YA-BS-1	49	CA	23.2	_	2	56	42	39	25	14	_	_	_	_	_	BEDROCK	
YA-BS-1	79	CA	19.0	_	1	18	81	58	26	32	_	_	_	_	_	BEDROCK	
YA-BS-2	3	CA	2.3	98.5	0	83	17	35	19	16	_	_	_	_	_	A-2-4 (0)	SM
YA-BS-2	18	CA	12.0	106.0	3	45	52	25	14	11	_	_	_	_	_	A-6 (2)	CL
YA-BS-2	23	CA	_	_	_	_	_	_	_	_	7.6	0.005	1506.0	0.0127	_	_	_
YA-BS-2	38	CA	3.4	_	49	46	5	NV	NP	NP	_	_	_	_	_	A-1-a (0)	GW-GM
YA-BS-2	48	CA	31.4	89.1	_	_	82	57	26	31	_	_	_	_	_	BEDROCK	
YA-BS-2	63	CA	17.7	110.5	_	_	80	39	18	21	_	_	_	_	_	BEDROCK	
YA-BS-2	83	CA	20.2	107.3	_	_	90	40	23	17	_	_	_	_	_	BEDROCK	
YA-BCK-1	5	CA															
YA-BCK-1	15	CA															
YA-BCK-1	30	CA															
YA-BCK-1	40	CA															
YA-BCK-1	50	CA															
YA-BCK-1	60	CA															
YA-BCK-1	75	CA															
YA-BCK-2	2	CA															
YA-BCK-2	5	CA															
YA-BCK-2	10	CA															
YA-BCK-2	15	CA															
YA-BCK-2	25	CA															
YA-BCK-2	40	CA															
YA-BCK-2	50	CA															
YA-BCK-2	60	CA															
YA-BCK-2	75	CA															
YA-BML-1	3	CA	12.2	107.0	0	52	48	25	14	11	_	_	_	_	_	A-6 (2)	SC
YA-BML-1	14	CA	7.0	_	0	67	33	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BML-1	24	CA	10.6	103.5	1	61	38	NV	NP	NP	_	_	_	_	_	A-4 (0)	SM
YA-BML-1	44	CA	8.1	105.3	9	68	23	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SM
YA-BML-1	54	CA	2.1	_	31	67	2	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-BML-1	64	CA	20.6	101.9	_	_	97	48	21	27	_	_	_	_	_	BEDROCK	
YA-BML-1	79	CA	26.9	92.2	_	_	69	53	27	26	_	_	_	_	_	BEDROCK	
YA-BML-1	94	CA	20.2	102.1	_	_	89	60	26	34	_	_	_	_	_	BEDROCK	
YA-BML-2	9	CA	3.7	117.9	4	79	17	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BML-2	19	CA	10.7	112.4	1	47	52	26	17	9	_	_	_	_	_	A-4 (0)	CL
YA-BML-2	24	CA	9.4	118.1	_	_	_	_	_	_	7.7	0.003	982	0.0164	_	_	_
YA-BML-2	29	CA	3.5	116.5	14	73	13	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SM
YA-BML-2	39	CA	11.1	121.1	8	53	39	33	14	19	_	_	_	_	_	A-6 (3)	SC
YA-BML-2	49	CA	1.2	_	19	79	2	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW
YA-BML-2	59	CA	21.9	103.0	_	_	93	52	21	31	_	_	_	_	_	BEDROCK	
YA-BML-2	79	CA	21.9	103.2	_	_	92	51	22	29	_	_	_	_	_	BEDROCK	
YA-BML-2	99	CA	18.5	_	_	_	86	58	25	33	_	_	_	_	_	BEDROCK	
YA-BMO-1	5	CA															
YA-BMO-1	10	CA															
YA-BMO-1	25	CA															
YA-BMO-1	30	CA															
YA-BMO-1	45	CA															
YA-BMO-1	55	CA															
YA-BMO-1	65	CA															
YA-BMO-1	75	CA															
YA-BMO-1	85	CA															
YA-BCB-1	4	CA	12.3	118.9	0	67	33	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BCB-1	19	CA	12.3	119.4	0	37	63	27	17	10	_	_	_	_	_	A-4 (4)	CL
YA-BCB-1	39	CA	3.4	115.5	11	82	7	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW-SM
YA-BCB-1	54	CA	29.8	92.0	_	_	83	41	19	22	_	_	_	_	_	A-7-6 (18)	CL
YA-BCB-1	64	CA	4.1	_	21	71	8	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW-SM
YA-BCB-1	89	CA	22.7	100.9	0	29	71	37	22	15	_	_	_	_	_	A-6 (9)	CL
YA-BCB-1	94	CA	6.6	124.3	20	64	6	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-BCB-1	99	CA	28.7	95.4	0	39	61	56	23	33	_	_	_	_	_	BEDROCK	
YA-BCB-1	119	CA	25.4	_	4	67	29	47	26	21	_	_	_	_	_	BEDROCK	
YA-BCB-1	129	CA	18.4	106.0	_	_	74	45	26	20	_	_	_	_	_	BEDROCK	
YA-BCB-2	4	CA	12.9	120.0	0	31	69	32	14	18	_	_	_	_	_	A-6 (10)	CL
YA-BCB-2	19	CA	4.6	124.0	18	73	9	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 4/4/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consolidation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BCB-2	25	CA	2.3	111.1	_	_	_	_	_	_	8.0	0.003	6640	0.0028	_	_	_
YA-BCB-2	39	CA	3.3	_	25	69	6	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-BCB-2	54	CA	16.0	112.6	4	54	42	NV	NP	NP	_	_	_	_	_	A-4 (0)	SM
YA-BCB-2	69	CA	22.4	100.0	0	21	79	40	19	21	_	_	_	_	_	A-6 (16)	CL
YA-BCB-2	84	CA	31.7	83.4	0	43	57	63	25	38	_	_	_	_	_	BEDROCK	
YA-BCB-2	114	CA	29.3	89.1	_	_	81	59	25	34	_	_	_	_	_	BEDROCK	
YA-BD-1	5	CA	11.8	113.9	5	62	33	28	14	14	_	_	_	_	_	A-2-6 (0)	SC
YA-BD-1	15	CA	10.5	107.3	1	75	24	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BD-1	20	CA	_	_	_	_	_	_	_	_	7.5	0.009	1577	0.0093	_	_	_
YA-BD-1	25	CA	6.7	106.4	0	68	32	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BD-1	35	CA	10.5	103.7	0	61	39	25	16	9	_	_	_	_	_	A-4 (0)	SC
YA-BD-1	50	CA	3.3	_	13	84	3	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-BD-1	65	CA	23.4	102.8	0	47	53	33	18	15	_	_	_	_	_	A-6 (5)	CL
YA-BD-1	85	CA	25.5	99.9	0	21	79	57	22	35	_	_	_	_	_	A-7-6 (29)	CH
YA-BD-1	105	CA	14.1	124.6	13	66	21	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BD-1	120	CA	15.9	114.2	13	63	24	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SM
YA-BD-1	135	CA	35.7	80.5	_	_	72	59	21	38	_	_	_	_	_	BEDROCK	
YA-BD-1	165	CA	18.2	108.0	_	_	77	47	26	21	_	_	_	_	_	BEDROCK	
YA-BD-2	4	CA	17.8	95.2	0	55	45	36	15	21	_	_	_	_	_	A-6 (5)	SC
YA-BD-2	14	CA	11.3	116.6	0	78	22	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BD-2	29	CA	12.3	89.9	0	51	49	27	15	12	_	_	_	_	_	A-6 (3)	SC
YA-BD-2	44	CA	2.2	_	7	90	3	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-BD-2	59	CA	22.8	102.8	0	49	51	34	17	17	_	_	_	_	_	A-6 (5)	CL
YA-BD-2	79	CA	28.0	94.2	0	30	70	53	21	32	_	_	_	_	_	A-7-6 (21)	CH
YA-BD-2	94	CA	28.0	94.4	0	29	71	57	22	35	_	_	_	_	_	A-7-6 (24)	CH
YA-BD-2	104	CA	17.3	116.1	4	86	11	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-BD-2	114	CA	30.4	85.7	0	59	41	50	25	25	_	_	_	_	_	BEDROCK	
YA-BD-2	139	CA	23.3	96.5	_	_	81	59	25	34	_	_	_	_	_	BEDROCK	
YA-BH-1	4	CA	8.9	103.8	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-BH-1	14	CA	11.2	125.5	0	68	32	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BH-1	29	CA	8.1	122.2	0	58	42	NV	NP	NP	_	_	_	_	_	A-4 (0)	SM
YA-BH-1	39	CA	4.5	_	0	84	16	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BH-1	49	CA	11.9	107.8	1	69	30	34	18	16	_	_	_	_	_	A-2-6 (0)	SC
YA-BH-1	59	CA	12.1	117.6	0	84	16	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BH-1	74	CA	12.4	_	7	85	8	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-BH-1	79	CA	26.1	96.2	0	21	79	59	24	35	_	_	_	_	_	BEDROCK	
YA-BH-1	99	CA	26.6	95.3	0	67	33	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-BH-1	114	CA	24.9	96.8	0	74	26	39	24	15	_	_	_	_	_	BEDROCK	
YA-BH-2	4	CA	9.8	107.7	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-BH-2	9	CA	10.9	127.1	0	70	30	37	18	19	_	_	_	_	_	A-2-6 (0)	SC
YA-BH-2	24	CA	4.3	_	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-BH-2	29	CA	5.3	_	0	81	19	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SM
YA-BH-2	59	CA	25.1	99.8	0	47	53	NV	NP	NP	_	_	_	_	_	A-4 (0)	ML
YA-BH-2	64	CA	23.9	99.3	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-BH-2	79	CA	25.3	93.9	0	13	87	59	29	30	_	_	_	_	_	BEDROCK	
YA-BH-2	94	CA	20.6	99.3	3	71	26	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-BH-2	109	CA	22.6	95.5	0	66	34	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-BM-1	4	CA	13.2	117.6	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-BM-1	14	CA	14.9	115.5	4	65	31	40	19	21	_	_	_	_	_	A-2-6 (1)	SC
YA-BM-1	24	CA	3.6	119.2	0	88	12	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SP-SM
YA-BM-1	29	CA	13.2	119.5	0	46	54	34	14	20	_	_	_	_	_	A-6 (7)	CL
YA-BM-1	54	CA	15.1	115.3	0	55	45	47	18	29	_	_	_	_	_	A-7-6 (8)	SC
YA-BM-1	64	CA	2.0	_	6	90	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-BM-1	79	CA	10.5	130.2	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-BM-1	89	CA	27.5	95.5	0	58	42	64	26	30	_	_	_	_	_	BEDROCK	
YA-BM-1	109	CA	21.6	104.4	0	77	23	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-BM-1	124	CA	18.4	105.3	0	80	20	62	27	35	_	_	_	_	_	BEDROCK	
YA-BM-2	4	CA	13.1	116.6	_	_	_	_	_	_	8.0	0.005	1131	0.0296	_	_	_
YA-BM-2	14	CA	11.6	117.6	5	63	32	32	12	20	_	_	_	_	_	A-2-6 (1)	SC
YA-BM-2	24	CA	11.8	90.8	0	55	45	30	13	17	_	_	_	_	_	A-6 (4)	SC
YA-BM-2	29	CA	12.3	110.6	0	25	75	NV	NP	NP	_	_	_	_	_	A-4 (0)	ML
YA-BM-2	44	CA	12.9	97.4	2	65	33	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BM-2	64	CA	13.7	109.6	2	51	47	45	16	29	_	_	_	_	_	A-7-6 (9)	SC
YA-BM-2	69	CA	5.3	_	12	85	3	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW
YA-BM-2	89	CA	33.2	90.3	0	48	52	61	25	36	_	_	_	_	_	BEDROCK	
YA-BM-2	94	CA	22.6	_	0	76	24	56	24	32	_	_	_	_	_	BEDROCK	
YA-BM-2	114	CA	26.4	99.1	0	12	88	62	27	35	_	_	_	_	_	BEDROCK	
YA-BM-2	119	CA	22.8	101.7	_	_	_	_	_	_	_	_	_	_	_	BEDROCK	
YA-BRI-1	3	CA	2.8	_	0	91	9	NV	NP	NP	_	_	_	_	_	A-3 (0)	SW-SM
YA-BRI-1	6	CA	2.8	_	_	_	_	_	_	_	8.0	0.004	2309	0.0031	_	_	_
YA-BRI-1	14	CA	6.8	_	0	83	17	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BRI-1	24	CA	5.6	114.1	0	84	16	26	14	12	_	_	_	_	_	A-2-6 (0)	SC
YA-BRI-1	39	CA	14.9	104.7	0	59	41	38	24	14	_	_	_	_	_	A-6 (2)	SC
YA-BRI-1	44	CA	5.7	126.9	9	79	12	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-BRI-1	54	CA	31.5	91.0	0	16	84	61	28	33	_	_	_	_	_	A-7-6 (31)	CH

Print Date: 7/17/2015
File Name: 13599GEOT_EngGeology_Plan_Legend_Lab02.dgn
Horiz. Scale: 1:1 Vert. Scale: As Noted
Unit Information Unit Leader Initials

ATKINS

Yeh and Associates, Inc.
Consulting Engineers & Scientists

Sheet Revisions		
Date:	Comments	Init.

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PRELIMINARY
No Revisions:
Revised:
Void:

I-70 ROADWAY PROCUREMENT PHASE 1
ENGINEERING GEOLOGY
LEGEND AND LABORATORY DATA

Designer: MLK
Detailer: MJW
Sheet Subset: Geot
Structure Numbers
Subset Sheets: 2 of

Project No./Code

Sheet Number A.3-2

Mike Walz 12:24:25 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Peno\Dwg\from Client\13599GEOT_EngGeology_Plan_Legend_Lab02.dgn

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 4/4/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consolidation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BRI-1	59	CA	23.4	104.6	0	43	57	50	20	30	_	_	_	_	_	BEDROCK	
YA-BRI-1	64	CA	32.1	91.5	0	18	82	69	27	42	_	_	_	_	_	BEDROCK	
YA-BRI-1	74	CA	21.0	97.9	0	89	11	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-BRI-1	89	CA	22.8	105.4	9	58	33	44	24	20	_	_	_	_	_	BEDROCK	
YA-BRI-2	4	CA	13.1	117.8	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-BRI-2	9	CA	11.5	115.9	0	55	45	32	15	17	_	_	_	_	_	A-6 (4)	SC
YA-BRI-2	19	CA	5.2	115.9	0	81	19	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BRI-2	24	CA	15.6	113.9	0	44	56	50	21	29	_	_	_	_	_	A-7-6 (13)	CH
YA-BRI-2	34	CA	10.7	112.6	0	54	46	28	16	12	_	_	_	_	_	A-6 (2)	SC
YA-BRI-2	44	CA	5.2	125.2	3	86	11	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-BRI-2	49	CA	23.1	98.3	0	38	62	57	21	36	_	_	_	_	_	A-7-6 (20)	CH
YA-BRI-2	69	CA	21.0	107.3	0	47	53	45	20	25	_	_	_	_	_	BEDROCK	
YA-BRI-2	74	CA	28.2	95.9	0	18	82	61	28	33	_	_	_	_	_	BEDROCK	
YA-BRI-2	94	CA	18.0	106.0	0	18	82	51	21	30	_	_	_	_	_	BEDROCK	
YA-BRI-2	104	CA	20.1	109.0	0	21	79	60	22	38	_	_	_	_	_	BEDROCK	
YA-BQ-1	4	CA	11.4	114.7	_	_	_	_	_	_	7.7	0.003	615	0.0492	_	_	_
YA-BQ-1	9	CA	15.6	110.3	0	63	37	37	16	21	_	_	_	_	_	A-6 (3)	SC
YA-BQ-1	19	CA	6.2	108.7	0	78	22	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BQ-1	24	CA	8.0	115.0	0	37	63	41	20	21	_	_	_	_	_	A-7-6 (11)	CL
YA-BQ-1	34	CA	17.5	109.0	0	28	72	40	17	23	_	_	_	_	_	A-6 (15)	CL
YA-BQ-1	44	CA	11.0	_	7	83	10	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-BQ-1	49	CA	27.0	93.0	0	25	75	58	23	35	_	_	_	_	_	BEDROCK	
YA-BQ-1	69	CA	23.0	_	0	78	22	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-BQ-1	79	CA	18.0	103.4	0	91	9	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-BQ-2	4	CA	18.4	109.2	_	_	_	_	_	_	7.5	0.021	426	0.0751	_	_	_
YA-BQ-2	9	CA	17.4	112.2	1	64	35	42	15	27	_	_	_	_	_	A-2-7 (3)	SC
YA-BQ-2	19	CA	9.9	125.0	1	75	24	27	14	13	_	_	_	_	_	A-2-6 (0)	SC
YA-BQ-2	24	CA	11.8	102.5	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-BQ-2	29	CA	9.3	112.8	0	56	44	NV	NP	NP	_	_	_	_	_	A-4 (0)	SM
YA-BQ-2	39	CA	3.6	113.8	0	93	7	NV	NP	NP	_	_	_	_	_	A-3 (0)	SP-SM
YA-BQ-2	44	CA	36.5	83.3	0	12	88	68	29	39	_	_	_	_	_	BEDROCK	
YA-BQ-2	59	CA	31.5	90.4	0	10	90	64	28	36	_	_	_	_	_	BEDROCK	
YA-BQ-2	64	CA	32.9	88.3	_	_	_	_	_	_	_	_	_	_	_	BEDROCK	
YA-BQ-2	69	CA	21.2	109.6	0	13	87	64	28	36	_	_	_	_	_	BEDROCK	
YA B270 1	4	CA	6.6	111.5	_	_	_	_	_	_	7.8	0.002	719	0.0351	_	_	_
YA-B270-1	9	CA	8.5	101.8	0	92	8	NV	NP	NP	_	_	_	_	_	A-3 (0)	SP-SM
YA-B270-1	19	CA	9.1	120.5	0	92	8	NV	NP	NP	_	_	_	_	_	A-3 (0)	SP-SM
YA-B270-1	24	CA	8.0	117.6	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-B270-1	29	CA	8.9	115.2	0	90	10	NV	NP	NP	_	_	_	_	_	A-3 (0)	SP-SM
YA-B270-1	39	CA	16.9	98.3	0	70	30	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-B270-1	44	CA	12.1	118.4	1	95	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-B270-1	59	CA	26.5	96.3	1	63	36	54	22	32	_	_	_	_	_	BEDROCK	
YA-B270-1	64	CA	23.3	102.4	_	_	_	_	_	_	_	_	_	_	_	BEDROCK	
YA-B270-1	69	CA	30.6	85.1	0	14	86	63	27	36	_	_	_	_	_	BEDROCK	
YA-B270-2	3	CA	22.2	101.4	0	52	48	42	17	25	_	_	_	_	_	A-7-6 (8)	SC
YA-B270-2	6	CA	6.7	_	0	95	5	NV	NP	NP	_	_	_	_	_	A-3 (0)	SP-SM
YA-B270-2	9	CA	7.1	122.5	9	88	3	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-B270-2	14	CA	22.1	107.0	15	52	33	56	23	33	_	_	_	_	_	A-2-7 (4)	SC
YA-B270-2	29	CA	32.2	_	0	19	81	59	22	37	_	_	_	_	_	BEDROCK	
YA-B270-2	39	CA	27.0	95.4	0	5	85	55	24	31	_	_	_	_	_	BEDROCK	
YA-B270-2	49	CA	36.6	76.1	0	18	82	66	29	37	_	_	_	_	_	BEDROCK	
YA-B270-2	59	CA	17.7	111.6	0	71	29	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-BP-1	4	CA	12.2	109.4	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-BP-1	19	CA	5.2	113.8	0	89	11	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SP-SM
YA-BP-1	29	CA	9.5	113.8	0	67	33	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BP-1	39	CA	18.7	107.8	0	30	70	46.0	16.0	30	_	_	_	_	_	A-7-6 (19)	CL
YA-BP-1	54	CA	5.6	110.5	1	89	10	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-BP-1	64	CA	20.2	109.1	0	67	33	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BP-1	79	CA	13.7	116.8	1	89	10	NV	NP	NP	_	_	_	_	_	A-3 (0)	SW-SM
YA-BP-1	89	CA	28.3	93.6	0	29	71	52.0	23.0	29	_	_	_	_	_	BEDROCK	
YA-BP-1	94	CA	28.9	94.2	0	62	38	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-BP-1	109	CA	26.9	95.4	0	61	39	46	18	28	_	_	_	_	_	BEDROCK	
YA-BP-1	124	CA	30.9	91.6	0	20	80	46	18	28	_	_	_	_	_	BEDROCK	
YA-BP-2	4	CA	9.9	112.4	0	90	10	NV	NP	NP	_	_	_	_	_	A-3 (0)	SP-SM
YA-BP-2	14	CA	10.1	115.5	0	89	11	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-BP-2	29	CA	4.6	106.3	0	93	7	NV	NP	NP	_	_	_	_	_	A-3 (0)	SP-SM
YA-BP-2	44	CA	23.1	101.5	0	32	68	49	17	32	_	_	_	_	_	A-7-6 (20)	CL
YA-BP-2	54	CA	13.2	118.0	1	61	38	35.0	14.0	21	_	_	_	_	_	A-6 (3)	SC
YA-BP-2	64	CA	9.0	116.1	6	89	5	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-BP-2	79	CA	8.6	122.4	9	83	8	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-BP-2	89	CA	26.7	97.5	0	11	89	56.0	26.0	30	_	_	_	_	_	BEDROCK	
YA-BP-2	104	CA	36.2	85.0	0	16	84	53.0	26.0	27	_	_	_	_	_	BEDROCK	
YA-BP-2	119	CA	24.4	100.1	0	73	27	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-UP-1	5	CA	3.5	112.4	41	47	12	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SM
YA-UP-1	10	CA	_	_	_	_	_	_	_	_	7.6	0.011	2198	0.0041	_	_	_

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 4/4/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consolidation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-UP-1	15	CA	5.6	106.2	28	61	11	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SP-SM
YA-UP-1	20	CA	2.7	118.7	34	62	4	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SP
YA-UP-1	35	CA	9.0	124.5	29	64	7	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW-SM
YA-UP-1	40	CA	22.2	107.6	0	25	75	48	30	18	_	_	_	_	_	BEDROCK	
YA-UP-1	50	CA	_	_	_	_	_	_	_	_	8.2	0.002	872	0.0007	_	_	_
YA-UP-1	60	CA	19.7	98.3	0	15	85	49	32	17	_	_	_	_	_	BEDROCK	
YA-UP-2	4	CA	21.1	95.4	1	17	81	33	24	9	_	_	_	_	_	A-4 (7)	ML
YA-UP-2	9	CA	2.2	121.9	46	50	4	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SP
YA-UP-2	19	CA	1.5	-	27	66	7	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW-SM
YA-UP-2	34	CA	8.7	124.6	26	67	7	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW-SM
YA-UP-2	39	CA	17.1	111.8	0	26	74	39	28	11	_	_	_	_	_	BEDROCK	
YA-UP-2	59	CA	20.8	94.9	0	41	59	47	36	11	_	_	_	_	_	BEDROCK	
YA-UP-3	3	CA	18.0	108.4	0	32	68	36	16	20	_	_	_	_	_	A-6 (11)	CL
YA-UP-3	8	CA	1.9	101.9	1	95	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-UP-3	23	CA	2.3	112.6	14	82	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW
YA-UP-3	38	CA	7.4	122.3	17	76	7	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW-SM
YA-UP-3	43	CA	17.7	114.7	0	28	72	46	31	15	_	_	_	_	_	BEDROCK	
YA-UP-3	58	CA	20.7	106.0	0	66	34	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-UP-4	5	CA	9.2	119.1	0	38	62	31	16	15	_	_	_	_	_	A-6 (7)	CL
YA-UP-4	15	CA	7.6	132.6	10	66	24	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SM
YA-UP-4	20	CA	_	_	_	_	_	_	_	_	7.9	<0.001	11765	0.0003	_	_	_
YA-UP-4	35	CA	9.3	128.8	27	67	6	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW-SM
YA-UP-4	40	CA	21.9	106.4	0	42	58	60	27	33	_	_	_	_	_	BEDROCK	
YA-UP-4	55	CA	_	_	_	_	_	_	_	_	8.0	0.009	951	0.0007	_	_	_
YA-UP-4	60	CA	16.5	109.6	0	59	41	49	22	27	_	_	_	_	_	BEDROCK	
YA-UP-4	75	CA	14.3	114.7	0	50	50	56	29	27	_	_	_	_	_	BEDROCK	
YA-UP-5	3	CA	4.6	111.3	0	82	18	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-UP-5	18	CA	1.6	111.5	9	87	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-UP-5	38	CA	25.0	100.5	0	50	50	56	28	28	_	_	_	_	_	BEDROCK	
YA-UP-5	53	CA	18.1	98.2	2	82	16	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-UP-5	63	CA	22.0	106.5	0	66	34	46	25	21	_	_	_	_	_	BEDROCK	
YA-UP-6	4	CA	2.8	_	31	58	11	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SP-SM
YA-UP-6	14	CA	5.2	133.3	53	42	5	NV	NP	NP	_	_	_	_	_	A-1-a (0)	GP
YA-UP-6	24	CA	14.3	116.6	_	_	89	53	24	29	_	_	_	_	_	BEDROCK	
YA-UP-7	5	CA	3.0	_	51	45	4	NV	NP	NP	_	_	_	_	_	A-1-a (0)	GP
YA-UP-7	15	CA	11.1	127.0	16	79	5	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW
YA-UP-7	20	CA	21.7	104.2	_	_	94	67	29	38	_	_	_	_	_	BEDROCK	
YA-UP-7	25	CA	15.6	104.3	_	_	87	49	23	26	_	_	_	_	_	BEDROCK	
YA-RW1	5	CA	9.9	105.0	1	76	23	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW1	20	CA	1.9	116.1	8	86	6	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-RW1	35	CA	12.1	123.6	9	85	6	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-RW1	45	CA	16.0	118.2	_	_	84	51	25	26	_	_	_	_	_	BEDROCK	
YA-RW1	60	CA	20.9	110.4	_	_	85	55	29	260	_	_	_	_	_	BEDROCK	
YA-RW2	4	CA	15.2	107.2	3	45	52	37	21	16	_	_	_	_	_	A-6 (5)	CL
YA-RW2	29	CA	7.9	_	36	62	2	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SP
YA-RW2	44	CA	16.5	116.5	_	_	84	41	21	20	_	_	_	_	_	BEDROCK	
YA-RW2	59	CA	17.7	111.5	0	80	20	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-RW3	5	CA	10.8	_	11	46	43	25	17	8	_	_	_	_	_	A-4 (0)	SC
YA-RW3	10	CA	4.3	107.8	4	90	6	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-RW3	15	CA	_	_	_	_	_	_	_	_	7.7	0.002	10929	0.0005	_	_	_
YA-RW3	30	CA	9.2	119.7	40	55	5	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW-SM
YA-RW3	45	CA	19.0	111.0	0	56	44	51	26	25	_	_	_	_	_	BEDROCK	
YA-RW3	50	CA	_	_	_	_	_	_	_	_	8.0	0.009	818	0.0004	_	_	_
YA-RW4	3	CA	11.3	111.3	0	52	48	NV	NP	NP	_	_	_	_	_	A-4 (0)	SM
YA-RW4	13	CA	2.4	117.8	29	67	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-RW4	28	CA	6.2	115.5	13	84	3	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-RW4	38	CA	21.6	107.3	0	67	33	56	25	31	_	_	_	_	_	BEDROCK	
YA-RW4	60	CA	16.9	104.7	0	72	28	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-RW5	5	CA	7.8	114.5	0	79	21	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW5	10	CA	_	_	_	_	_	_	_	_	7.8	<0.001	8251	0.0019	_	_	_
YA-RW5	20	CA	1.8	_	33	64	3	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW
YA-RW5	35	CA	30	104.6	0	51	49	44	22	22	_	_	_	_	_	A-7-6 (7)	SC
YA-RW5	45	CA	_	_	_	_	_	_	_	_	8.2	0.011	556	0.0005	_	_	_
YA-RW5	50	CA	17.7	112.7	_	_	80	48	27	21	_	_	_	_	_	BEDROCK	
YA-RW5	65	CA	20.2	104.4	0	39	61	34	22	12	_	_	_	_	_	BEDROCK	
YA-RW-6	2	CA	8.0	145.4	0	75	25	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-6	14	CA	24.1	98.0	0	24	76	NV	NP	NP	_	_	_	_	_	A-4 (0)	ML
YA-RW-6	19	CA	9.6	_	19	46	35	32	14	18	_	_	_	_	_	A-2-6 (2)	SC
YA-RW-6	39	CA	10.3	_	16	76	8	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-RW-6	59	CA	16.7	112.8	_	_	72	49	22	27	_	_	_	_	_	BEDROCK	
YA-RW-7	2	CA	6.3	108.9	2	79	19	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-7	7	CA	13.8	105.6	_	_	_	_	_	_	7.6	0.008	704	0.0326	_	_	_
YA-RW-7	9	CA	5.8	121.7	22	64	14	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SM
YA-RW-7	25	CA	1.8	_	18	80	2	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-RW-7	35	CA	10.5	130.0	19	76	5	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM

Print Date: 7/17/2015
File Name: 13599GEOT_EngGeology_Plan_Legend_Lab03.dgn
Horiz. Scale: 1:1 Vert. Scale: As Noted
Unit Information Unit Leader Initials

ATKINS

Yeh and Associates, Inc.
Consulting Engineers & Scientists

Sheet Revisions		
Date:	Comments	Init.

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PRELIMINARY
No Revisions:
Revised:
Void:

I-70 ROADWAY PROCUREMENT PHASE 1
ENGINEERING GEOLOGY
LEGEND AND LABORATORY DATA

Designer: MLK
Detailer: MJW
Sheet Subset: Geot
Structure Numbers
Subset Sheets: 3 of

Project No./Code

Sheet Number A.3-3

Mike Walz 12:24:01 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\from Client\13599GEOT_EngGeology_Plan_Legend_Lab03.dgn

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 4/4/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consolidation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-7	40	CA	19.5	106.5	0	28	72	45	18	27	_	_	_	_	_	BEDROCK	
YA-RW-8	2	CA	3.2	130.7	_	_	_	_	_	_	7.7	0.004	2165	0.0291	_	_	_
YA-RW-8	4	CA	13.3	119.7	7	52	41	NV	NP	NP	_	_	_	_	_	A-4 (0)	SM
YA-RW-8	14	CA	5.0	108.6	0	72	28	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-8	24	CA	5.7	120.8	3	51	46	NV	NP	NP	_	_	_	_	_	A-4 (0)	SM
YA-RW-8	34	CA	3.2	116.0	14	81	5	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-RW-8	54	CA	16.9	115.3	_	_	75	45	21	24	_	_	_	_	_	BEDROCK	
YA-RW-9	2	CA	5.0	117.7	_	_	_	_	_	_	7.5	0.006	1631	0.0148	_	_	_
YA-RW-9	7	CA	3.6	101.8	0	65	35	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-9	20	CA	3.4	100.3	0	69	31	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-9	35	CA	13.1	_	0	8	92	41	21	20	_	_	_	_	_	A-7-6 (19)	CL
YA-RW-9	45	CA	2.7	_	21	76	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-RW-9	50	CA	37.8	77.1	0	24	76	69	32	37	_	_	_	_	_	BEDROCK	
YA-RW-10	2	CA	7.1	111.5	0	69	31	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-10	4	CA	9.9	_	0	59	41	NV	NP	NP	_	_	_	_	_	A-4 (0)	SM
YA-RW-10	9	CA	16.6	112.0	_	_	_	_	_	_	7.8	0.016	980	0.0041	_	_	_
YA-RW-10	19	CA	5.1	114.0	6	86	8	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-RW-10	34	CA	19.8	106.1	0	71	29	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-10	49	CA	3.1	123.4	31	66	4	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW
YA-RW-10	64	CA	3.0	111.8	6	90	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-RW-10	84	CA	29.8	_	0	69	31	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-RW-11	2	CA	8.3	103.4	2	80	18	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-11	9	CA	10.9	98.9	0	62	38	NV	NP	NP	_	_	_	_	_	A-4 (0)	SM
YA-RW-11	14	CA	19.8	95.4	3	51	46	NV	NP	NP	_	_	_	_	_	A-4 (0)	SM
YA-RW-11	24	CA	2.9	_	16	79	5	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW-SM
YA-RW-11	34	CA	10.3	100.3	0	69	31	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-11	44	CA	19.0	106.4	6	43	51	40	18	22	_	_	_	_	_	A-6 (8)	CL
YA-RW-11	59	CA	5.7	_	4	88	8	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-RW-11	74	CA	2.4	_	14	82	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW
YA-RW-11	89	CA	28.2	81.0	0	60	40	45	21	24	_	_	_	_	_	BEDROCK	
YA-RW-12	3	CA	5.7	144.4	0	78	22	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-12	5	CA	4.8	120.2	_	_	_	_	_	_	8.0	0.007	2212	0.0062	_	_	_
YA-RW-12	15	CA	13.3	117.7	0	32	68	NV	NP	NP	_	_	_	_	_	A-4 (0)	ML
YA-RW-12	30	CA	3.1	112.1	8	86	6	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-RW-12	40	CA	3.6	116.6	13	79	8	NV	NP	NP	_	_	_	_	_	A-3 (0)	SP-SM
YA-RW-12	55	CA	13.6	116.7	1	73	26	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-12	65	CA	19.6	109.0	0	70	30	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-12	85	CA	26.9	94.3	0	60	40	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-RW-13	4	CA	15.1	107.3	0	24	76	NV	NP	NP	_	_	_	_	_	A-4 (0)	ML
YA-RW-13	19	CA	5.1	118.0	13	79	8	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-RW-13	34	CA	18.0	106.2	4	50	46	NV	NP	NP	_	_	_	_	_	A-4 (0)	SM
YA-RW-13	49	CA	23.8	101.8	0	45	55	44	20	24	_	_	_	_	_	A-7-6 (10)	CL
YA-RW-13	59	CA	18.6	109.6	7	66	27	36	16	20	_	_	_	_	_	A-2-6 (0)	SC
YA-RW-13	69	CA	38.8	82.7	0	23	77	61	28	33	_	_	_	_	_	BEDROCK	
YA-RW-14	4	CA	8.5	116.8	3	69	28	22	14	8	_	_	_	_	_	A-2-4 (0)	SC
YA-RW-14	9	CA	5.7	111.3	2	82	16	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-14	24	CA	3.7	116.7	15	80	5	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-RW-14	39	CA	12.3	_	5	87	8	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-RW-14	44	CA	24.3	101.4	0	42	58	32	15	17	_	_	_	_	_	A-6 (7)	CL
YA-RW-15	3	CA	14.3	117.2	0	50	50	28	12	16	_	_	_	_	_	A-6 (4)	SC
YA-RW-15	5	CA	13.8	113.3	_	_	_	_	_	_	7.8	0.012	939	0.0314	_	_	_
YA-RW-15	10	CA	12.3	118.8	3	54	42	35	18	17	_	_	_	_	_	A-6 (3)	SC
YA-RW-15	25	CA	2.5	_	11	85	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW
YA-RW-15	35	CA	11.8	121.7	0	78	22	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SM
YA-RW-15	50	CA	20.2	108.2	1	71	28	33	14	19	_	_	_	_	_	A-2-6 (0)	SC
YA-RW-15	60	CA	25.3	98.9	0	64	36	54	28	26	_	_	_	_	_	BEDROCK	
YA-RW-16	2	CA	10.2	116.2	1	42	57	NV	NP	NP	_	_	_	_	_	A-4 (0)	ML
YA-RW-16	9	CA	11.7	114.2	1	45	54	26	18	8	_	_	_	_	_	A-4 (2)	CL
YA-RW-16	19	CA	3.3	_	10	84	6	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-RW-16	29	CA	5.0	_	17	76	7	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-RW-16	39	CA	8.2	120.2	31	61	8	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW-SM
YA-RW-16	54	CA	21.1	105.8	0	75	25	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-16	59	CA	24.4	102.3	2	56	42	47	20	27	_	_	_	_	_	A-7-6 (6)	SC
YA-RW-16	69	CA	41.5	83.4	0	59	41	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-RW-17	2	CA	4.8	112.0	0	76	24	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-17	6	CA	10.8	110.7	2	40	58	29	15	14	_	_	_	_	_	A-6 (5)	CL
YA-RW-17	14	CA	10.6	121.9	2	62	36	26	14	12	_	_	_	_	_	A-6 (1)	SC
YA-RW-17	19	CA	2.5	_	16	79	5	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-RW-17	29	CA	4.7	_	13	84	3	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW
YA-RW-17	34	CA	19.5	104.6	1	69	30	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-17	44	CA	6.8	139.5	20	76	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW
YA-RW-17	49	CA	14.0	_	2	79	19	45	16	29	_	_	_	_	_	A-2-7 (0)	SC
YA-RW-17	64	CA	29.7	96.4	8	66	26	50	23	27	_	_	_	_	_	BEDROCK	
YA-RW-18	2	CA	4.8	108.6	0	71	29	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-18	9	CA	10.1	114.4	0	60	40	29	13	16	_	_	_	_	_	A-6 (2)	SC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 4/4/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consolidation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-18	24	CA	2.4	120.8	9	87	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-RW-18	39	CA	28.5	95.6	0	19	81	46	23	23	_	_	_	_	_	A-7-6 (19)	CL
YA-RW-18	44	CA	18.4	108.8	0	87	13	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-18	59	CA	32.3	91.2	0	17	83	68	21	47	_	_	_	_	_	A-7-6 (41)	CH
YA-RW-18	69	CA	21.6	102.6	5	57	38	NV	NP	NP	_	_	_	_	_	A-4 (0)	SM
YA-RW-18	79	CA	28.2	92.2	0	54	46	59	26	33	_	_	_	_	_	BEDROCK	
YA-RW-18	89	CA	27.4	87.0	0	20	80	60	25	35	_	_	_	_	_	BEDROCK	
YA-RW-19	2	CA	6.4	111.7	0	60	40	24	14	10	_	_	_	_	_	A-4 (1)	SC
YA-RW-19	5	CA	4.5	118.2	1	70	29	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-19	14	CA	5.9	105.9	0	84	16	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SM
YA-RW-19	24	CA	1.8	_	12	85	3	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-RW-19	39	CA	20.8	106.2	0	75	25	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-19	54	CA	8.4	_	17	75	8	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-RW-19	59	CA	33.6	88.9	0	22	78	73	21	52	_	_	_	_	_	A-7-6 (42)	CH
YA-RW-19	74	CA	20.0	110.5	20	52	28	36	17	19	_	_	_	_	_	A-2-6 (0)	SC
YA-RW-19	79	CA	32.2	90.9	0	28	72	61	26	35	_	_	_	_	_	BEDROCK	
YA-RW-19	84	CA	25.0	98.2	0	28	72	52	25	27	_	_	_	_	_	BEDROCK	
YA-RW-20	4	CA	10.2	119.9	0	42	58	29	15	14	_	_	_	_	_	A-6 (5)	CL
YA-RW-20	10	CA	9.1	110.0	0	53	47	33	12	21	_	_	_	_	_	A-6 (6)	SC
YA-RW-20	15	CA	5.7	110.7	1	78	21	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-20	25	CA	11.1	121.7	0	55	45	34	14	20	_	_	_	_	_	A-6 (5)	SC
YA-RW-20	35	CA	4.6	_	0	88	12	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SP-SM
YA-RW-20	45	CA	33.7	90.9	0	9	91	NV	NP	NP	_	_	_	_	_	A-4 (0)	ML
YA-RW-20	60	CA	31.7	90.5	0	10	90	66	25	41	_	_	_	_	_	BEDROCK	
YA-RW-20	65	CA	25.9	98.6	0	26	74	53	24	29	_	_	_	_	_	BEDROCK	
YA-RW-21	3	CA	8.0	107.2	0	77	23	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-21	9	CA	6.5	107.0	0	75	25	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-21	19	CA	12.7	118.9	8	42	50	41	18	23	_	_	_	_	_	A-7-6 (8)	SC
YA-RW-21	24	CA	8.6	123.1	0	74	26	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-21	29	CA	7.3	122.7	0	75	25	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-21	44	CA	8.7	110.4	5	87	8	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-RW-21	49	CA	23.7	101.9	0	51	49	50	17	33	_	_	_	_	_	A-7-6 (11)	SC
YA-RW-21	59	CA	11.4	122.0	7	87	6	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-RW-21	69	CA	23.4	106.0	0	35	65	59	29	30	_	_	_	_	_	BEDROCK	
YA-RW-22	5	CA	11.5	112.0	0	49	51	NV	NP	NP	_	_	_	_	_	A-4 (0)	ML
YA-RW-22	14	CA	11.4	121.2	0	68	32	31	14	17	_	_	_	_	_	A-2-6 (1)	SC
YA-RW-22	24	CA	3.5	_	12	85	3	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-RW-22	44	CA	13.5	115.2	0	70	30	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-22	49	CA	3.1	_	2	95	3	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-RW-22	59	CA	32.0	91.7	2	29	69	56	21	35	_	_	_	_	_	A-7-6 (23)	CH
YA-RW-22	69	CA	26.6	100.8	0	24	76	53	28	25	_	_	_	_	_	BEDROCK	
YA-RW-23	2	CA	4.0	_	0	78	22	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-23	9	CA	12.7	113.6	0	42	58	28	14	14	_	_	_	_	_	A-6 (5)	CL
YA-RW-23	14	CA	16.7	99.1	0	35	65	35	14	21	_	_	_	_	_	A-6 (11)	CL
YA-RW-23	24	CA	12.3	118.0	6	54	40	27	12	15	_	_	_	_	_	A-6 (2)	SC
YA-RW-23	39	CA	3.0	118.1	10	85	5	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP-SM
YA-RW-23	49	CA	12.4	111.6	0	65	35	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-23	54	CA	36.1	87.5	0	6	94	45	17	28	_	_	_	_	_	A-7-6 (27)	CL
YA-RW-23	64	CA	25.8	99.9	0	14	86	47	16	31	_	_	_	_	_	BEDROCK	
YA-RW-23	69	CA	31.9	92.6	0	18	82	69	28	41	_	_	_	_	_	BEDROCK	
YA-RW-24	3	CA	10.7	118.4	1	59	40	32	13	19	_	_	_	_	_	A-6 (3)	SC
YA-RW-24	9	CA	13.2	117.6	3	41	56	32	12	20	_	_	_	_	_	A-6 (7)	CL
YA-RW-24	14	CA	13.7	116.7	2	49	49	36	14	22	_	_	_	_	_	A-6 (7)	SC
YA-RW-24	24	CA	2.9	_	9	84	7	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-RW-24	39	CA	13.1	112.1	0	65	35	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-24	44	CA	14.0	106.2	0	66	34	33	12	21	_	_	_	_	_	A-2-6 (2)	SC
YA-RW-24	54	CA	24.2	103.4	0	21	79	50	22	28	_	_	_	_	_	BEDROCK	
YA-RW-25	5	CA	12.4	123.0	1	58	41	33	15	18	_	_	_	_	_	A-6 (3)	SC
YA-RW-25	14	CA	18.3	109.8	0	23	77	46	15	31	_	_	_	_	_	A-7-6 (23)	CL
YA-RW-25	24	CA	9.3	132.1	11	64	25	35	15	20	_	_	_	_	_	A-2-6 (0)	SC
YA-RW-25	34	CA	0.7	_	15	83	2	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-RW-25	39	CA	2.6	_	1	96	3	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-RW-25	49	CA	14.2	113.2	0	76	24	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-RW-25	54	CA	23.0	102.3	0	12	88	57	25	32	_	_	_	_	_	BEDROCK	
YA-RW-25	64	CA	32.2	89.0	0	10	90	65	29	36	_	_	_	_	_	BEDROCK	
YA-RW-26	5	CA															
YA-RW-26	25	CA															
YA-RW-26	35	CA															
YA-RW-26	65	CA															
YA-RW-26	85	CA															
YA-RW-26	100	CA															
YA-RW-27	5	CA															
YA-RW-27	10	CA															
YA-RW-27	25	CA															
YA-RW-27	35	CA															

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I-70 ROADWAY PROCUREMENT PHASE 1
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Sheet Number A.3-4

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Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 4/4/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consolidation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-27	40	CA															
YA-RW-27	50	CA															
YA-RW-27	60	CA															
YA-RW-27	70	CA															
YA-RW-27	80	CA															
YA-DON-1	3	CA	5.6	107.6	0	81	19	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-DON-1	13	CA	2.0	113.4	15	81	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-DON-1	28	CA	7.2	130.6	48	47	5	NV	NP	NP	_	_	_	_	_	A-1-a (0)	GP
YA-DON-1	38	CA	19.5	111.5	_	_	98	57	27	30	_	_	_	_	_	BEDROCK	
YA-DON-1	53	CA	17.4	109.1	4	54	42	39	21	18	_	_	_	_	_	BEDROCK	
YA-DON-2	3	CA	14.1	113.9	10	42	48	32	16	16	_	_	_	_	_	A-6 (4)	SC
YA-DON-2	19	CA	3.8	117.0	28	68	4	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SP
YA-DON-2	34	CA	12.4	120.1	17	75	8	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-DON-2	39	CA	_	_	_	_	_	_	_	_	7.7	0.004	4274	0.0031	_	_	_
YA-DON-2	44	CA	17.8	110.9	0	59	41	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-DON-2	54	CA	19.1	108.9	0	47	53	36	24	12	_	_	_	_	_	BEDROCK	
YA-DON-3	2	CA	13.4	117.7	0	52	48	26	13	13	_	_	_	_	_	A-6 (3)	SC
YA-DON-3	4	CA	10.6	110.7	0	68	32	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-DON-3	18	CA	2.2	_	38	59	3	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SP
YA-DON-3	33	CA	15.3	114.5	0	90	10	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-DON-3	38	CA	_	_	_	_	_	_	_	_	7.9	0.003	7519	0.0019	_	_	_
YA-DON-3	48	CA	16.3	115.4	0	64	36	NV	NP	NP	_	_			_	BEDROCK	
YA-DON-4	3	CA	1.9	_	34	64	2	NV	NP	NP	_	_			_	A-1-a (0)	SP
YA-DON-4	6	CA	11.9	116.1	0	59	41	33	16	17	_	_			_	A-6 (3)	SC
YA-DON-4	14	CA	4.0	_	11	84	5	NV	NP	NP	_	_			_	A-1-b (0)	SP
YA-DON-4	29	CA	13.6	121.5	17	78	5	NV	NP	NP	_	_			_	A-1-b (0)	SW
YA-DON-4	39	CA	_	_	_	_	_	_	_	_	7.8	0.008	4717	0.0026	_	_	_
YA-DON-4	44	CA	14.1	118.0	_	_	78	48	24	24	_	_			_	BEDROCK	
YA-DON-5	3	CA	2.7	_	18	80	2	NV	NP	NP	_	_			_	A-1-b (0)	SP
YA-DON-5	13	CA	4.0	135.9	51	44	5	NV	NP	NP	_	_			_	A-1-a (0)	GP
YA-DON-5	18	CA	_	_	_	_	_	_	_	_	7.7	0.007	2538	0.0106	_	_	_
YA-DON-5	23	CA	24.7	101.0	0	89	11	NV	NP	NP	_	_			_	A-2-4 (0)	SP-SM
YA-DON-5	38	CA	14.3	116.0	_	_	89	42	23	19	_	_			_	BEDROCK	
YA-DON-6	5	CA	9.3	118.3	8	67	25	25	21	4	_	_			_	A-1-b (0)	SM-SC
YA-DON-6	10	CA	23.7	103.0	_	_	73	44	26	18	_	_			_	BEDROCK	
YA-DON-6	15	CA	17.8	114.8	_	_	75	45	26	19	_	_			_	BEDROCK	
YA-DON-6	20	CA	_	_	_	_	_	_	_	_	8.1	0.009	868	0.0025	_	_	_
YA-DON-6	30	CA	22.0	108.0	_	_	84	61	29	32	_	_	_	_	_	BEDROCK	
YA-DON-7	4	CA	2.0	_	12	86	2	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SP
YA-DON-7	10	CA	4.1	111.1	0	90	10	NV	NP	NP	_	_	_	_	_	A-3 (0)	SP-SM
YA-DON-7	15	CA	16.2	116.9	0	71	29	32	18	14	_	_	_	_	_	A-2-6 (0)	SC
YA-DON-7	20	CA	18.6	109.5	1	85	14	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SM
YA-DON-7	25	CA	19.8	107.2	_	_	78	53	25	28	_	_	_	_	_	BEDROCK	
YA-DON-8	2	CA	5.8	120.6	22	64	14	25	15	10	_	_	_	_	_	A-2-4 (0)	SC
YA-DON-8	5	CA	9.4	116.0	9	92	29	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-DON-8	20	CA	5.0	115.0	15	81	4	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW
YA-DON-8	26	CA	8.9	128.3	26	67	7	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW-SM
YA-DON-8	38	CA	12.8	122.8	10	86	4	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW
YA-DON-8	50	CA	16.6	113.2	0	50	50	NV	NP	NP	_	_	_	_	_	BEDROCK	
YA-DOF-3	5	CA	10.6	124.9	11	54	35	28	19	9	_	_	_	_	_	A-4 (0)	SC
YA-DOF-3	10	CA	_	_	_	_	_	_	_	_	8.3	0.005	2146	0.0049	_	_	_
YA-DOF-3	15	CA	34.6	87.2	_	_	88	65	27	38	_	_	_	_	_	A-7-6 (38)	CH
YA-DOF-3	20	CA	21.8	100.7	0	89	11	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SP-SM
YA-DOF-3	30	CA	21.0	108.0	_	_	89	56	25	31	_	_	_	_	_	BEDROCK	
YA-DOF-4	3	CA	8.7	105.7	0	73	27	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-DOF-4	14	CA	14.8	103.5	6	53	41	30	19	11	_	_	_	_	_	A-6 (1)	SC
YA-DOF-4	24	CA	_	_	_	_	_	_	_	_	7.7	<0.001	12225	0.0008	_	_	_
YA-DOF-4	29	CA	4.2	_	62	33	5	NV	NP	NP	_	_	_	_	_	A-1-a (0)	GW-GM
YA-DOF-5	2	CA	23.4	100.5	2	45	53	55	20	33	_	_	_	_	_	A-7-6 (14)	CH
YA-DOF-5	13	CA	13.5	114.5	3	47	50	30	15	15	_	_	_	_	_	A-6 (4)	CL
YA-DOF-5	18	CA	2.3	113.6	31	66	3	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SW
YA-DOF-5	23	CA	_	_	_	_	_	_	_	_	7.7	0.012	2445	0.0077	_	_	_
YA-DOF-5	28.5	CA	34.3	88.1	0	27	73	56	22	34	_	_	_	_	_	A-7-6 (24)	CH
YA-DOF-6	3	CA	7.8	101.3	0	73	27	NV	NP	NP	_	_	_	_	_	A-2-4 (0)	SM
YA-DOF-6	14	CA	2.6	121.8	24	66	10	NV	NP	NP	_	_	_	_	_	A-1-b (0)	SW-SM
YA-DOF-6	29	CA	9.3	128.4	43	52	5	NV	NP	NP	_	_	_	_	_	A-1-a (0)	SP-SM

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Designer: MLK Structure Numbers
Detailer: MJW
Sheet Subset: Geot Subset Sheets: 5 of

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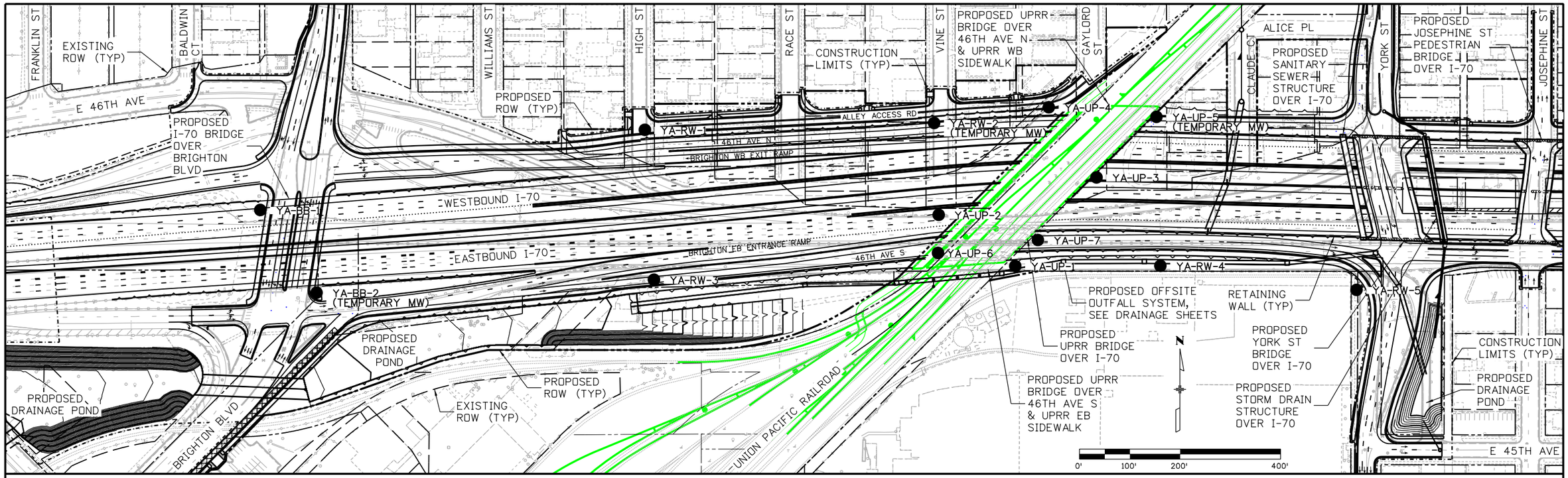
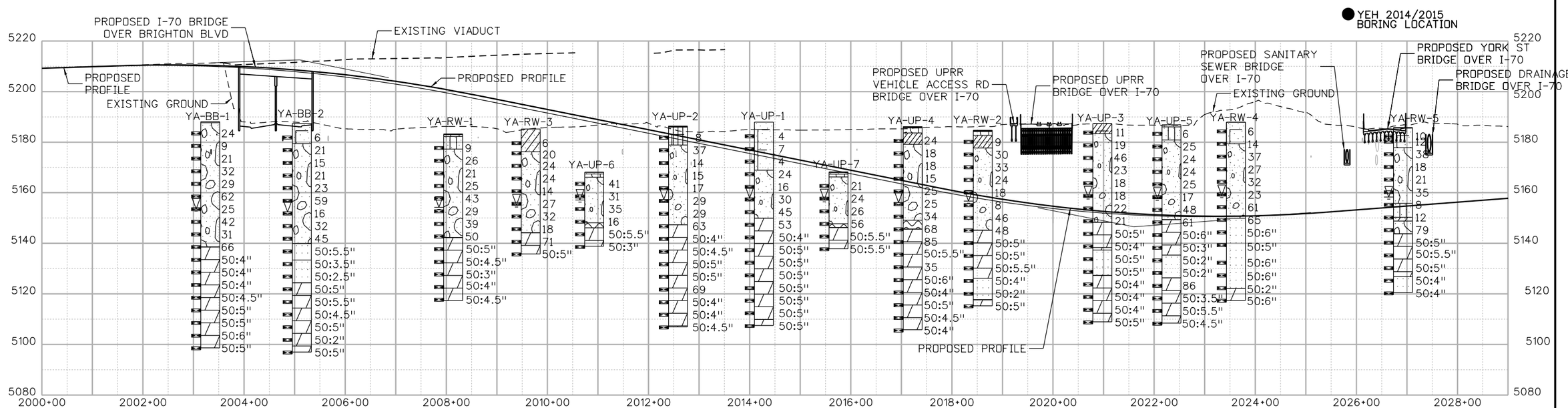
Sheet Number A.3-5





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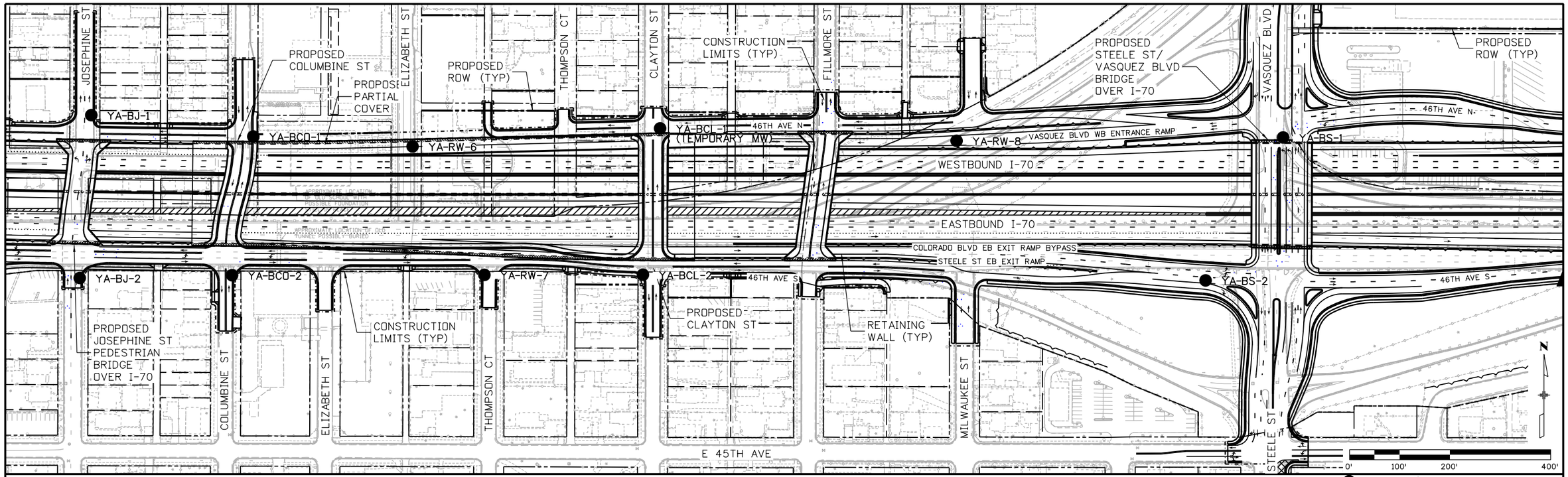

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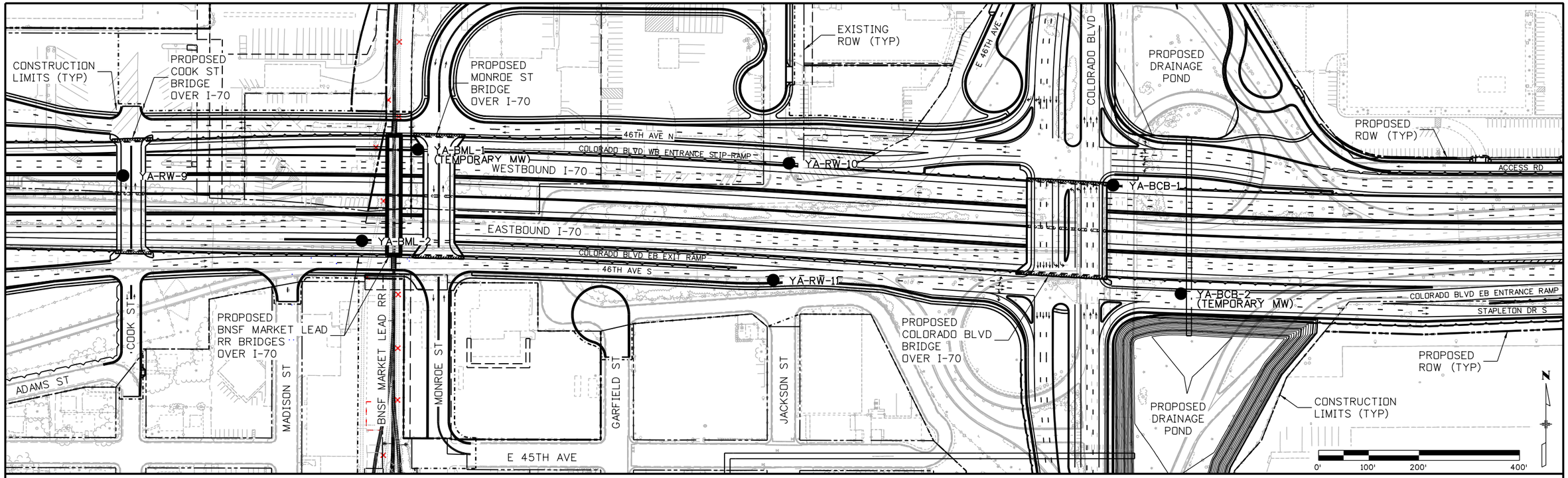

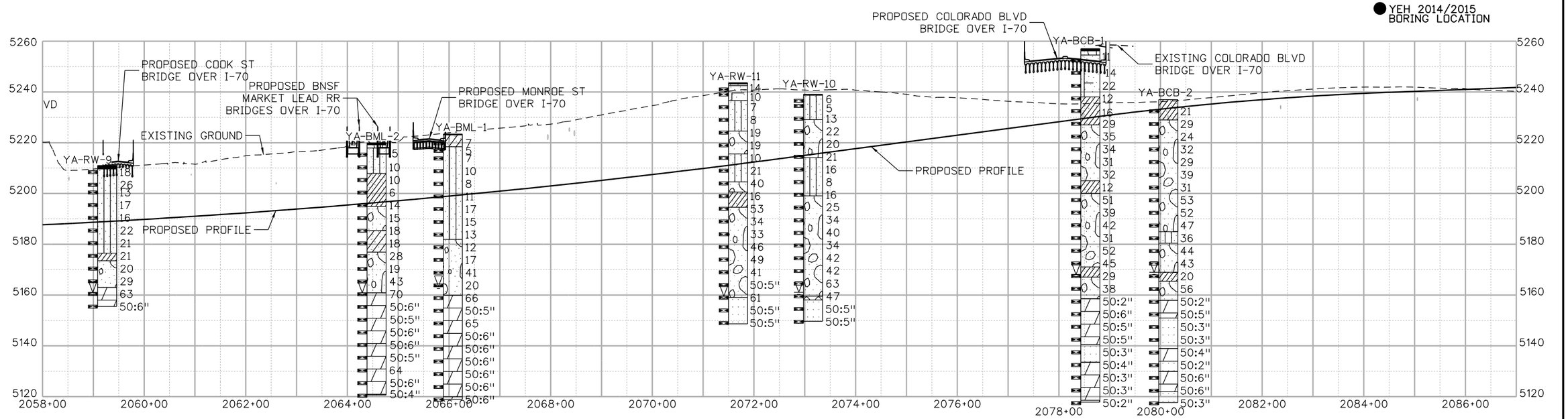

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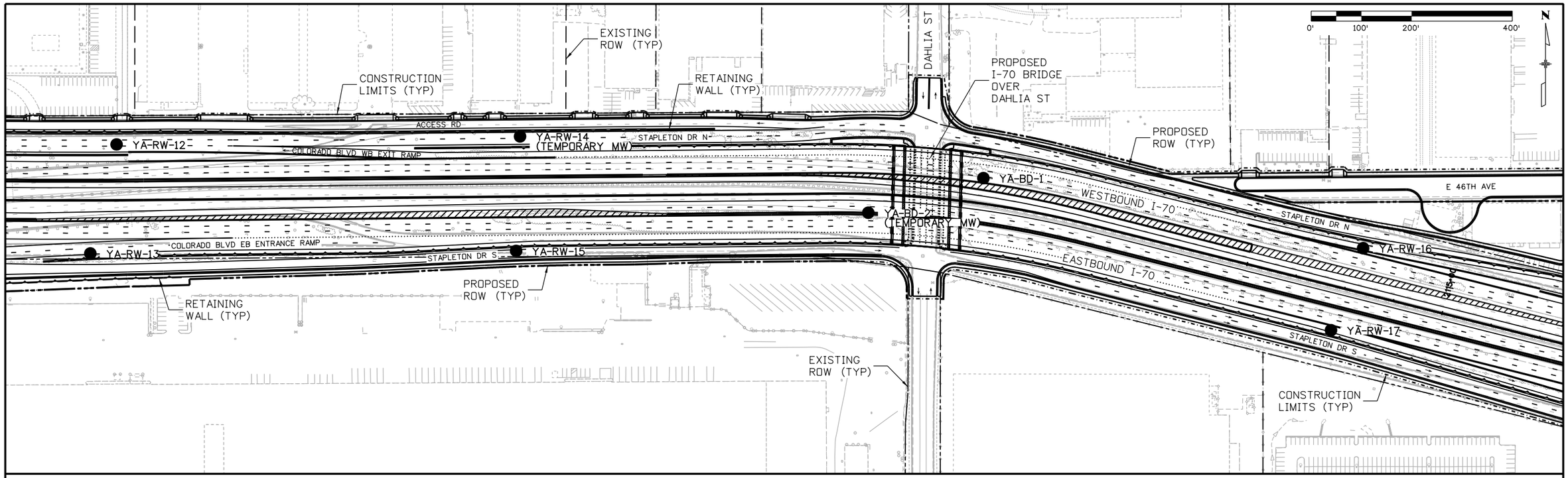

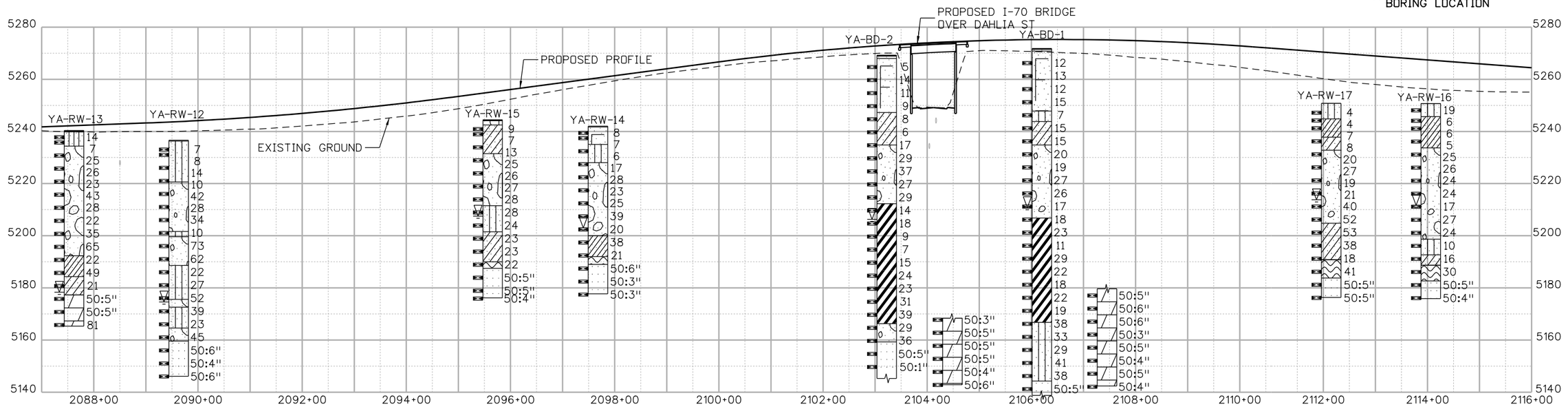

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Sheet Number A.3-9

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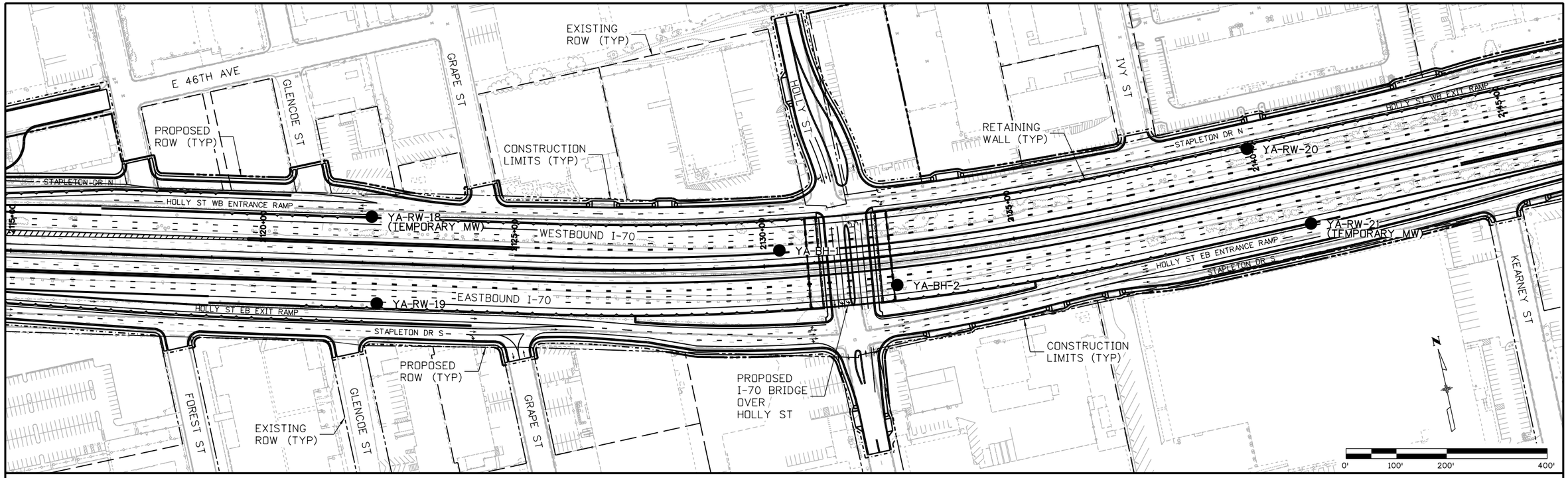

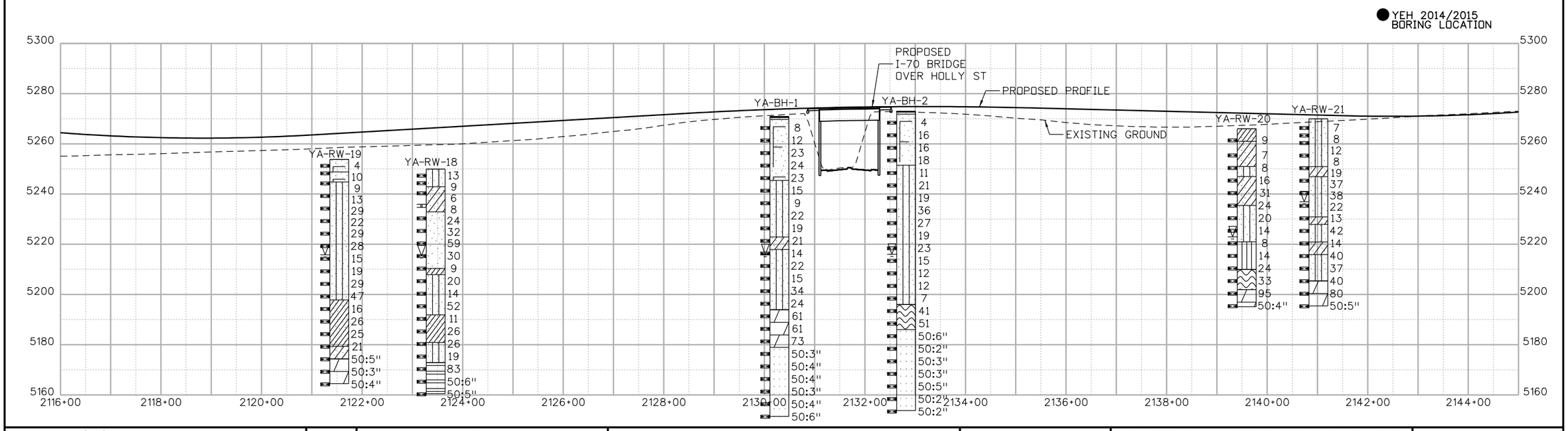

Print Date: 7/17/2015
File Name: 13599GEDT_EngGeology_Plan 06_170 Mainline.dgn
Horiz. Scale: 1:200 Vert. Scale: As Noted
Unit Information Unit Leader Initials

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Region 1

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No Revisions:
Revised:
Void:

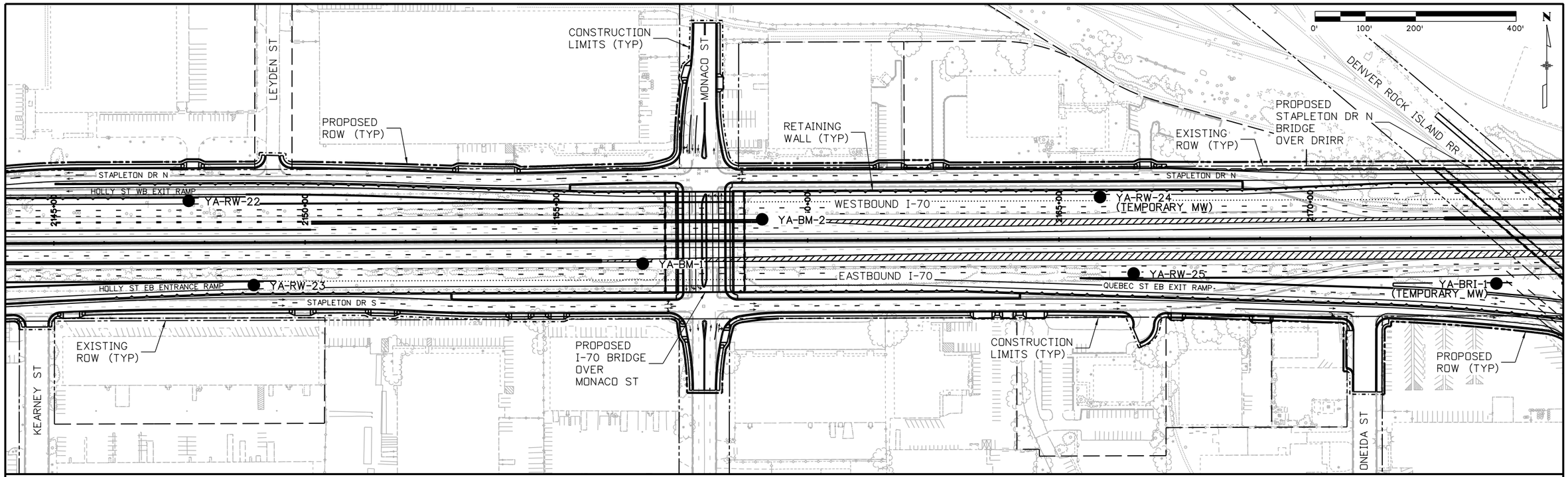
I-70 ROADWAY PROCUREMENT PHASE 1
ENGINEERING GEOLOGY
STA 2116+00 TO 2145+00

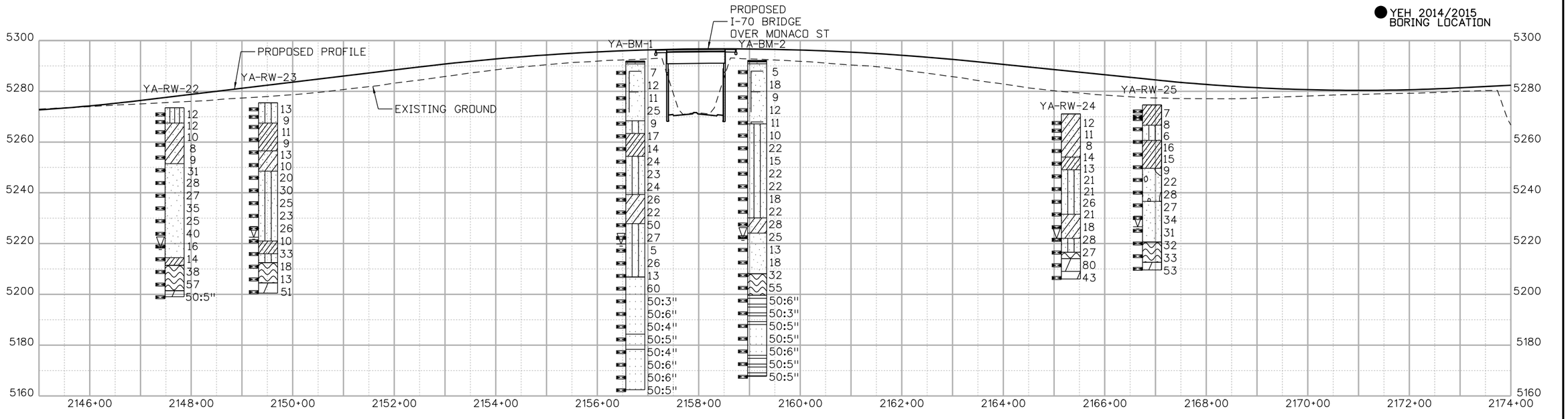
Designer: MLK
Detailer: MJW
Sheet Subset: Geology
Structure Numbers:
Subset Sheets: 9 of

Project No./Code

Sheet Number A.3-10

Mike Walz 6:57:11 AM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\from Client\13599GEDT_EngGeology_Plan 06_170 Mainline.dgn





Print Date: 7/17/2015	Sheet Revisions		
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Horiz. Scale: 1:200 Vert. Scale: As Noted			
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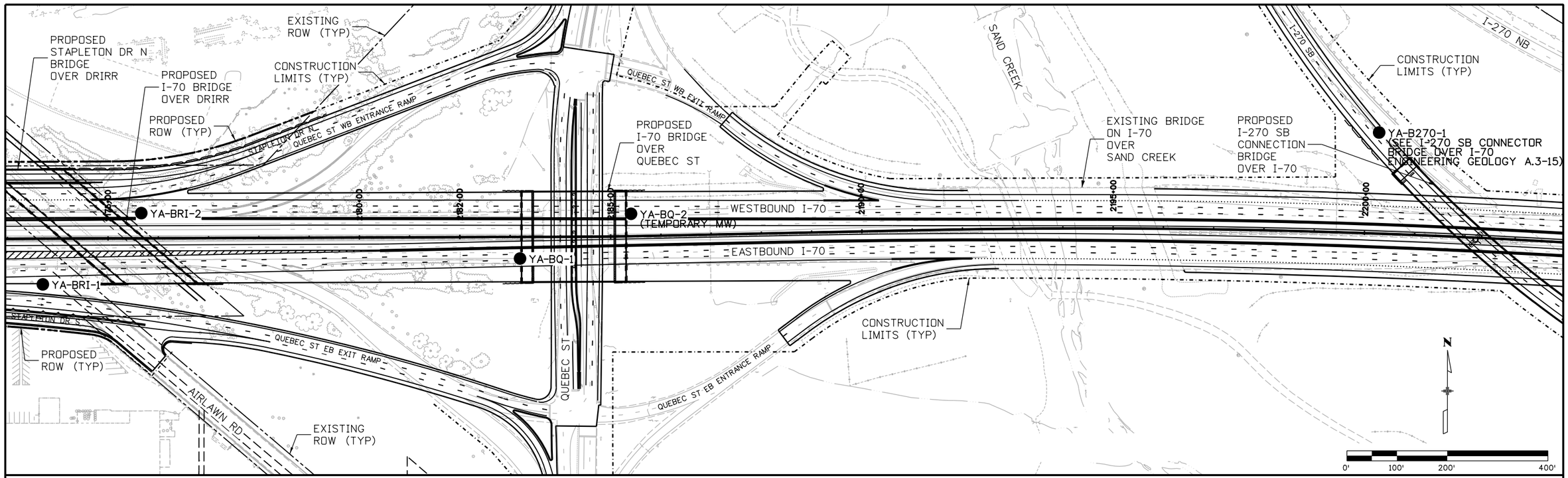
I-70 ROADWAY PROCUREMENT PHASE 1
ENGINEERING GEOLOGY
STA 2145+00 TO 2174+00

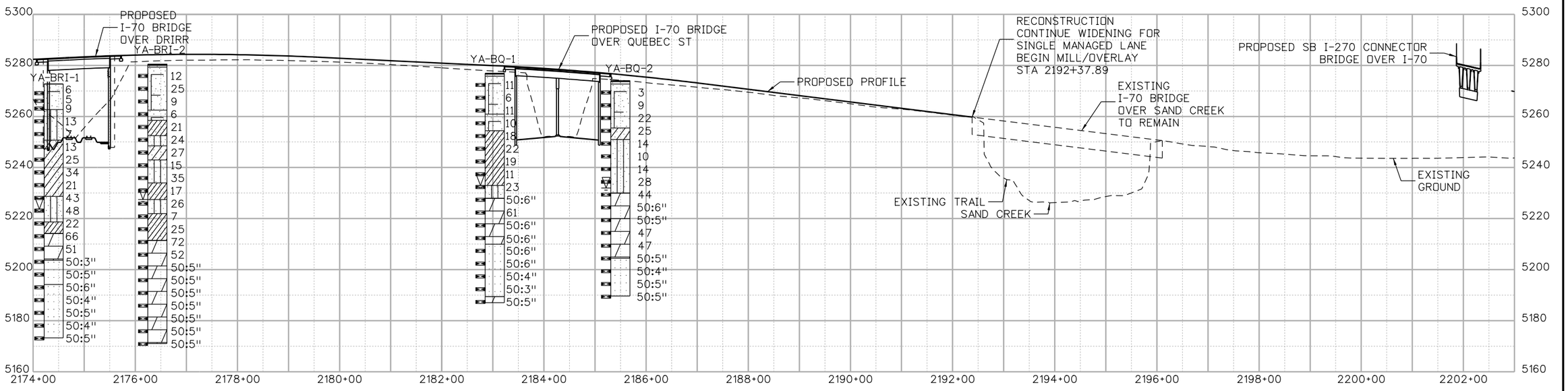
Designer: MLK
Detailer: MJW
Sheet Subset: Geology
Structure Numbers
Subset Sheets: 10 of

Project No./Code

Sheet Number A.3-11

Mike Walz 6:57:14 AM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Peno\Dwg\from Client\13599GEOT_EngGeology_Plan 07_I70 Mainline.dgn





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Horiz. Scale: 1:200 Vert. Scale: As Noted			
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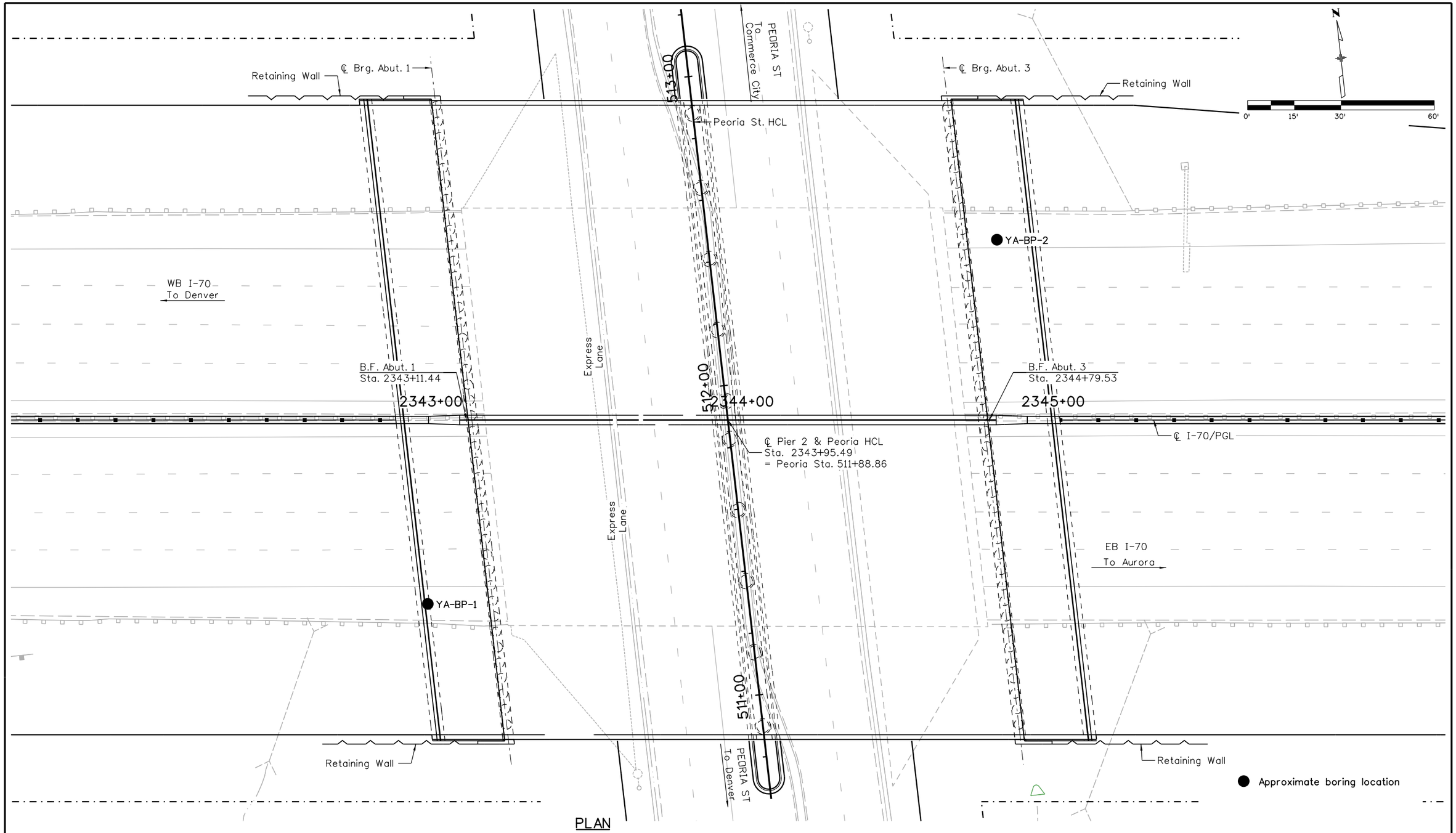
I-70 ROADWAY PROCUREMENT PHASE 1
ENGINEERING GEOLOGY
STA 2174+00 TO 2203+00

Designer: MLK
Detailer: MJW
Sheet Subset: Geology
Structure Numbers
Subset Sheets: 11 of

Project No./Code

Sheet Number A.3-12

Mike Walz 12:28:52 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\from Client\13599GEOT_EngGeology_Plan 08_I70 Mainline.dgn



PLAN

Mike Walz 11:26:59 AM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\13599BRDG_Engineering Geology_Peoria01.dgn

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	INITIAL	DATE		INITIAL	DATE		INITIAL	DATE
Designed By			Detailed By			Quantities By		
Checked By			Checked By			Checked By		

Print Date: 7/16/2015	
File Name: 13599BRDG_Engineering Geology_Peoria01.dgn	
Horiz. Scale: 1:30	Vert. Scale: 1:30
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Revised:

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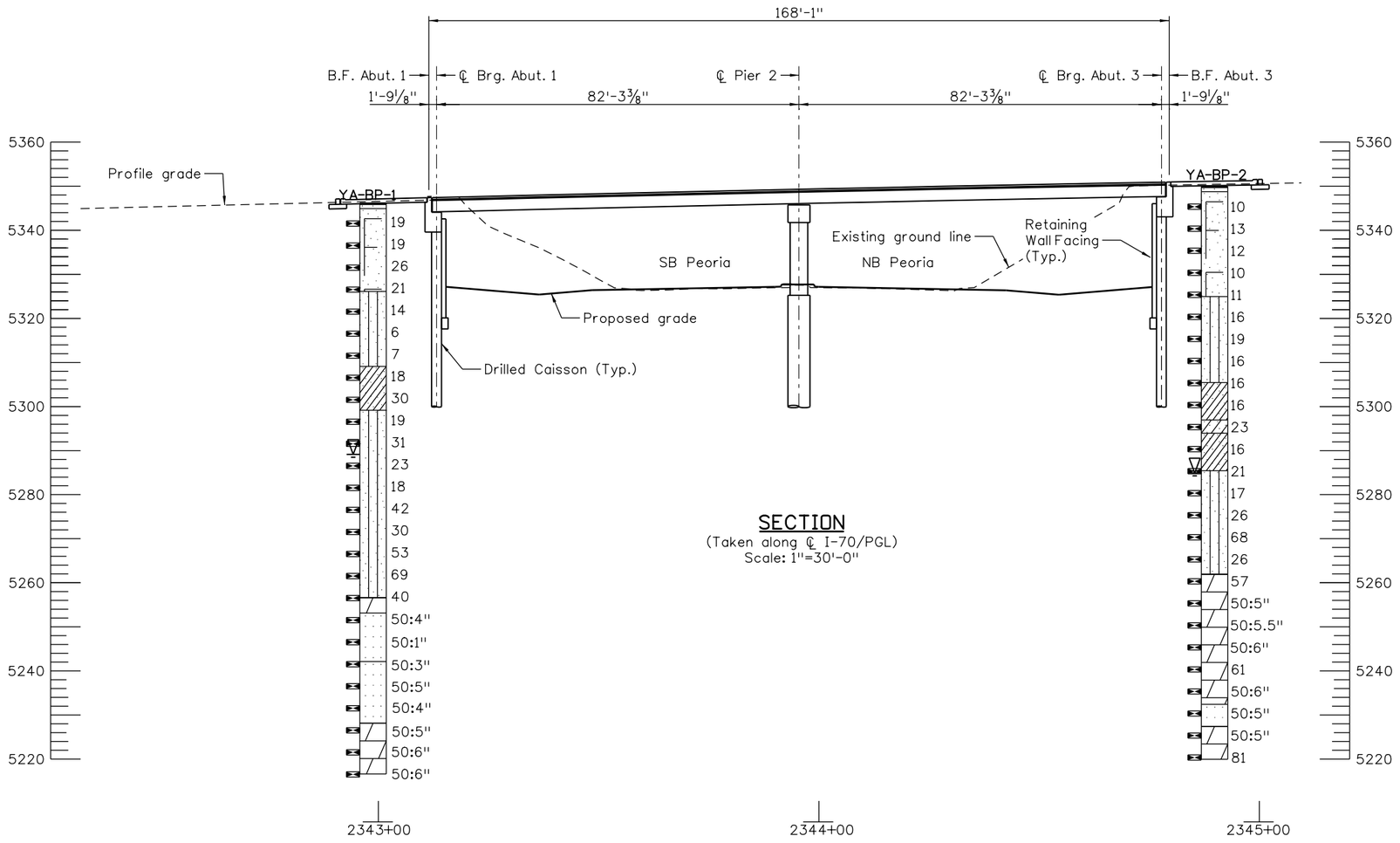
I-70 BRIDGE
OVER PEORIA ST
ENGINEERING GEOLOGY

Designer:	MLK	Structure Numbers	E-17-AFT WB
Detailer:	MJW		E-17-AFU EB
Sheet Subset:	Bridge	Subset Sheets:	B01 of 02

Project No./Code

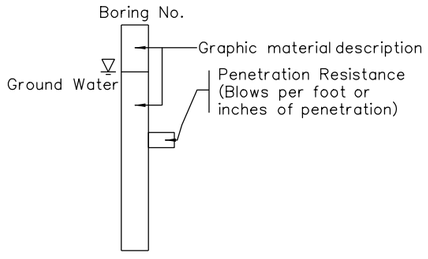
Sheet Number A.3-13

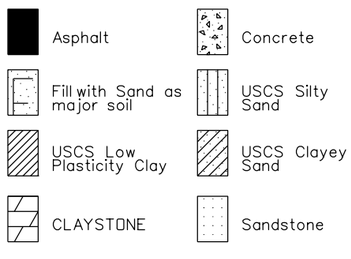


SECTION

(Taken along ℄ I-70/PGL)
Scale: 1"=30'-0"

TYPICAL TEST HOLE LOG





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	INITIAL	DATE			INITIAL	DATE			INITIAL	DATE
Designed By				Detailed By				Quantities By		
Checked By				Checked By				Checked By		

Print Date: 7/17/2015
File Name: 13599BRDG_Engineering Geology_Peoria02.dgn
Horiz. Scale: As Noted Vert. Scale: As Noted
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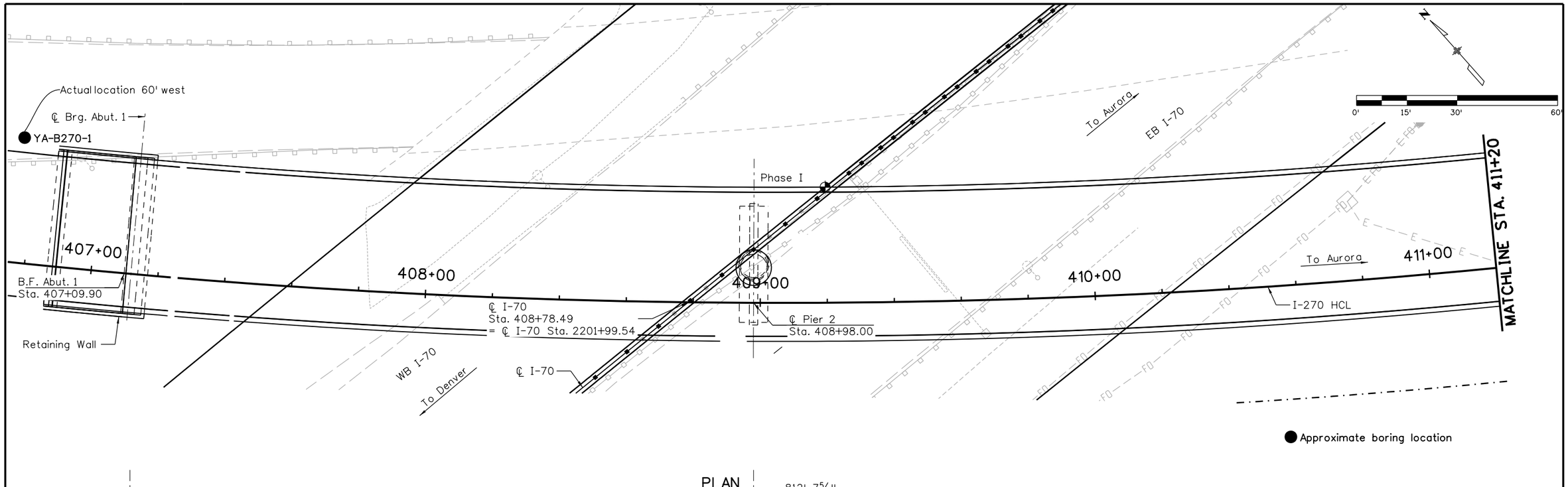
I-70 BRIDGE
OVER PEORIA ST
ENGINEERING GEOLOGY

Designer: MLK
Detailer: MJW
Sheet Subset: Bridge
Structure Numbers: E-17-AFT
Subset Sheets: B02 of 02

Project No./Code

Sheet Number A.3-14

Mike Walz 12:42:47 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\13599BRDG_Engineering Geology_Peoria02.dgn



Mike Walz 12:45:56 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\13599BRDG_Engineering Geology_I-270EBConn01.dgn

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Designed By			Detailed By			Quantities By		
Checked By			Checked By			Checked By		

Print Date: 7/17/2015	
File Name: 13599BRDG_Engineering Geology_I-270EBConn01.dgn	
Horiz. Scale: 1:30	Vert. Scale: As Noted
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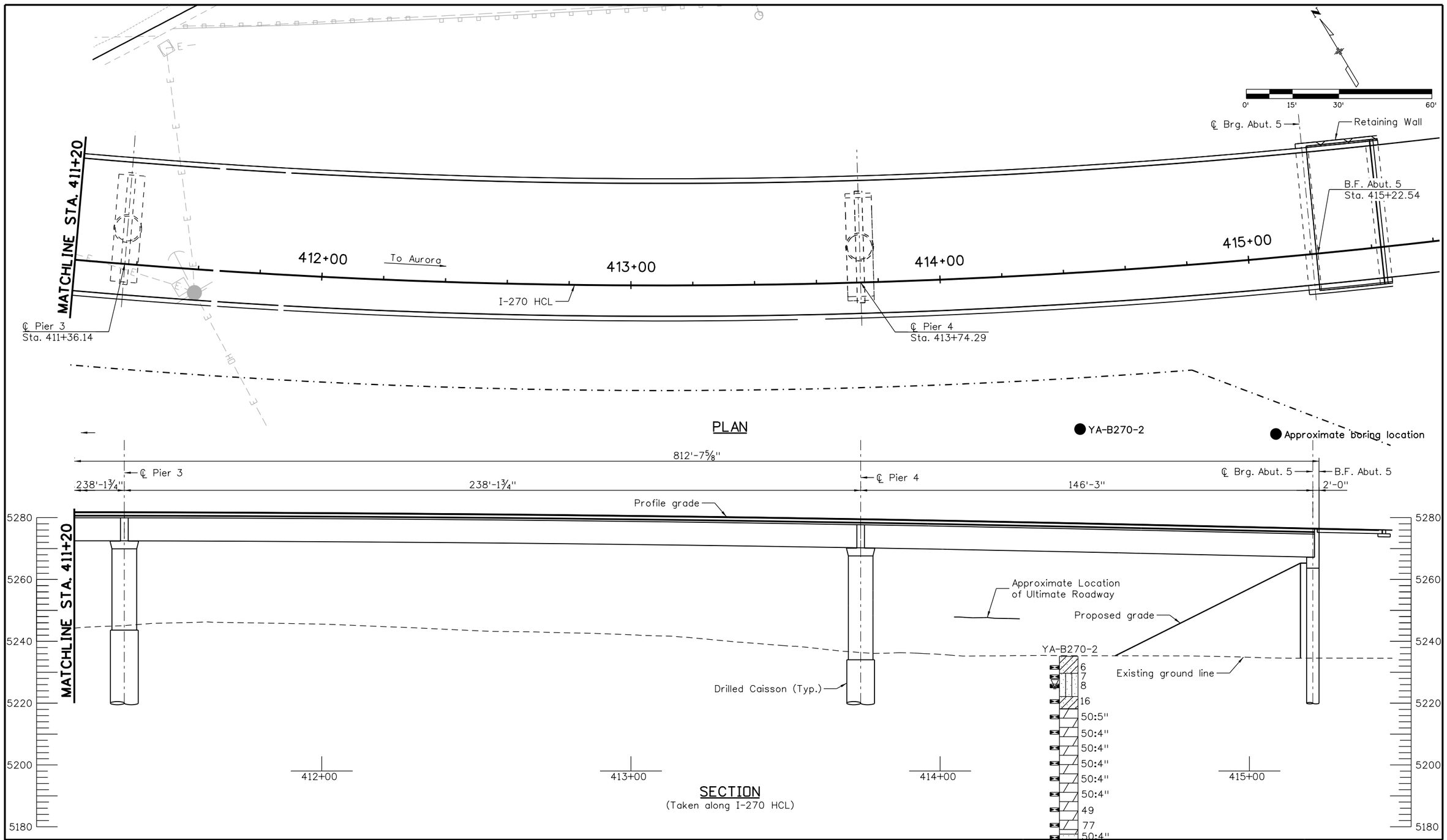
Revised:	
Void:	

I-270 SB CONNECTOR BRIDGE OVER I-70 ENGINEERING GEOLOGY

Designer:	MLK	Structure Numbers	E-17-AFS
Detailer:	MJW		
Sheet Subset:	Bridge	Subset Sheets:	B01 of 3

Project No./Code

Sheet Number A.3-15



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Checked By			Checked By			Checked By		

Print Date: 7/17/2015	
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Horiz. Scale: 1:30	Vert. Scale: As Noted
Unit Information	Unit Leader Initials

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Revised:	
Void:	

I-270 SB CONNECTOR BRIDGE OVER I-70 ENGINEERING GEOLOGY			
Designer: MLK	Structure Numbers	E-17-AFS	
Detailer: MJW			
Sheet Subset: Bridge	Subset Sheets: B02 of 3		Sheet Number A.3-16

Project No./Code

Mike Walz 12:48:08 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\13599BRDG_Engineering Geology_I-270EBConn02.dgn

Summary of Laboratory Test Results

Project No: 213-208 Project Name: I-70 PCL (Phase 4) Date: 6/4/2015

Sample Location			Natural	Natural	Gradation			Atterberg				Water						CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type	Moisture Content (%)	Dry Density (pcf)	Gravel > #4 (%)	Sand (%)	Fines < #200	LL	PL	PI	pH	Soluble Sulfate %	Resistivity ohm.cm	Chloride %	% Swell (+) / Consoli-dation (-)	Unconf. Comp. Strength (psf)	R-VALUE	AASHTO	USCS
YA-PB-1	3-5	Bulk	7.2	_	16	57	27	NV	NP	NP	_	_	_	_	_	_	_	A-2-4 (0)	SM
YA-PB-1	5	CA																	
YA-PB-2	3-4.5	Bulk	10.3	_	9	61	30	35	21	14	_	_	_	_	_	_	_	A-2-6 (0)	SC
YA-PB-2	3	CA																	
YA-PY-1	0.75-5	Bulk	5.1	_	11	71	18	NV	NP	NP	_	_	_	_	_	_	_	A-1-b (0)	SM
YA-PY-1	3	CA																	
YA-PY-1	10	CA																	
YA-PY-2	3-5	Bulk	3.9	_	29	57	14	NV	NP	NP	_	_	_	_	_	_	_	A-1-b (0)	SM
YA-PY-2	3																		
YA-PY-3	3-5	Bulk	5.4	_	21	54	25	NV	NP	NP	_	_	_	_	_	_	_	A-2-4 (0)	SM
YA-PY-3	3	CA																	
YA-PY-3	10	CA																	
YA-PS-1	2-5	Bulk	1.7	_	15	60	25	NV	NP	NP	_	_	_	_	_	_	_	A-2-4 (0)	SM
YA-PS-1	2	CA																	
YA-PS-2	2-5	Bulk	1.3	_	27	56	17	NV	NP	NP	_	_	_	_	_	_	_	A-1-b (0)	SM
YA-PS-2	5	CA																	
YA-PS-3	2-5	Bulk	3.1	_	24	59	17	NV	NP	NP	_	_	_	_	_	_	_	A-1-b (0)	SM
YA-PS-3	2	CA																	
YA-PS-3	5	CA																	
YA-PS-4	2-5	Bulk	3.1	_	5	70	25	NV	NP	NP	_	_	_	_	_	_	_	A-2-4 (0)	SM
YA-PS-4	2	CA																	
YA-PS-4	5	CA																	
YA-PMO-1	2-5	Bulk	4.1	_	10	57	33	NV	NP	NP	_	_	_	_	_	_	_	A-2-4 (0)	SM
YA-PMO-1	2	CA																	
YA-PMO-1	5	CA																	
YA-PJ-1	2-5	Bulk	6.5	_	2	66	2	NV	NP	NP	_	_	_	_	_	_	_	A-2-4 (0)	SM
YA-PJ-1	2	CA																	
YA-PCO-1	2-5	Bulk	3.9	_	18	65	17	NV	NP	NP	_	_	_	_	_	_	_	A-1-b (0)	SM
YA-PCO-1	2	CA																	
YA-PCO-1	5	CA																	
YA-PCO-2	2-5	Bulk	17.4	_	1	41	58	36	12	24	_	_	_	_	_	_	_	A-6 (10)	CL
YA-PCO-2	2	CA																	
YA-PCO-2	5	CA																	
YA-PCO-3	2-5	Bulk	5.3	_	21	57	22	NV	NP	NP	_	_	_	_	_	_	_	A-2-4 (0)	SM
YA-PCO-3	2	CA																	
YA-PCO-3	5	CA																	
YA-PCO-4	3-5	Bulk	4.3	_	22	59	19	NV	NP	NP	_	_	_	_	_	_	_	A-1-b (0)	SM
YA-PCO-4	2	CA																	
YA-PCO-4	5	CA																	
YA-PH-1	2-5	Bulk	2.9	_	9	63	28	21	15	6	_	_	_	_	_	_	_	A-2-4 (0)	SM-SC
YA-PH-1	2	CA																	
YA-PH-1	5	CA																	
YA-PH-2	2-5	Bulk	2.4	_	13	62	25	27	13	14	_	_	_	_	_	_	_	A-2-6 (0)	SC
YA-PH-2	2	CA																	
YA-PH-2	5	CA																	
YA-PH-3	2-5	Bulk	4.2	_	11	65	24	NV	NP	NP	_	_	_	_	_	_	_	A-2-4 (0)	SM
YA-PH-3	2	CA																	
YA-PH-3	5	CA																	
YA-PM-1	2-5	Bulk	1.9	_	17	63	20	NV	NP	NP	_	_	_	_	_	_	_	A-2-4 (0)	SM
YA-PM-1	2	CA																	
YA-PM-2	3-5	Bulk	3.4	_	15	58	27	23	16	7	_	_	_	_	_	_	_	A-2-4 (0)	SM-SC
YA-PM-2	2	CA																	
YA-PQ-1	2-5	Bulk	10.6	_	14	46	40	36	14	22	_	_	_	_	_	_	_	A-6 (4)	SC
YA-PQ-1	2	CA																	
YA-PQ-1	5	CA																	
YA-PQ-1	10	CA																	
YA-PQ-2	2-5	Bulk	6.8	_	15	59	26	NV	NP	NP	_	_	_	_	_	_	_	A-2-4 (0)	SM
YA-PQ-2	2	CA																	
YA-PQ-2	5	CA																	
YA-PQ-3	2-5	Bulk	9.0	_	19	52	29	36	13	23	_	_	_	_	_	_	_	A-2-6 (1)	SC
YA-PQ-3	2	CA																	
YA-PQ-3	5	CA																	
YA-P270-1	3-5	Bulk	4.9	_	5	83	12	NV	NP	NP	_	_	_	_	_	_	_	A-2-4 (0)	SP-SM
YA-P270-1	3	CA																	
YA-P270-1	5	CA																	
YA-P270-2	3-5	Bulk	9.5	_	0	85	15	NV	NP	NP	_	_	_	_	_	_	_	A-2-4 (0)	SM
YA-P270-2	3	CA																	
YA-P270-2	5	CA																	
YA-P270-3	3-5	Bulk	19.2	_	1	43	56	43	15	28	_	_	_	_	_	_	_	A-7-6 (12)	CL
YA-P270-3	3	CA																	
YA-P270-3	5	CA																	

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Print Date: 7/16/2015	Sheet Revisions		
File Name: 13599GEOT_Lab Data 01_Pave Cores.dgn	Date:	Comments	Init.
Horiz. Scale: 1:1 Vert. Scale: As Noted			
Unit Information Unit Leader Initials			
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276			

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I-70 MAINLINE
LABORATORY DATA
PAVEMENT BORINGS

Designer: MLK
Detailer: MJW
Sheet Subset:
Structure Numbers
Subset Sheets: of

Project No./Code

Sheet Number A.4-1

Mike Walz 3:31:08 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Peno\Dwg\Pavement Cores\13599GEOT_Lab Data 01_Pave Cores.dgn

Summary of Laboratory Test Results

Project No: 213-208 PS Project Name: I-70 PCL (Phase 3) Date: 6/4/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Chloride %	% Swell (+) / Consoli-dation (-)	R-VALUE	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI							AASHTO	USCS
YA-EB LS 2204+00	2.1-5	Bulk	_	_	9	63	28	27	11	16	7.4	0.008	420	0.097	_	_	A-2-6 (0)	SC
YA-EB LS 2204+00	3	CA	10.8	121.2	0	69	31	NV	NP	NP	_	_	_	_	-0.3	_	A-2-4 (0)	SM
YA-EB LS 2256+80	2-5	Bulk	_	_	2	52	46	28	13	15	_	_	_	_	_	_	A-6 (3)	SC
YA-EB LS 2256+80	5	CA	6.9	110.5	0	80	20	NV	NP	NP	_	_	_	_	_	_	A-2-4 (0)	SM
YA-EB LS 2256+80	10	CA	8.7	116.2	_	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-EB LS 2309+60	1.2-5	Bulk	_	_	3	75	22	NV	NP	NP	7.7	0.012	852	0.0337	_	58	A-2-4 (0)	SM
YA-EB LS 2309+60	2	CA	9.1	116.9	0	83	17	NV	NP	NP	_	_	_	_	_	_	A-2-4 (0)	SM
YA-EB LS 2362+40	3-5	Bulk	_	_	4	66	30	25	15	10	_	_	_	_	_	_	A-2-4 (0)	SC
YA-EB LS 2362+40	5	CA	11.1	121.3	2	81	17	NV	NP	NP	_	_	_	_	_	_	A-1-b (0)	SM
YA-EB LS 2362+40	10	CA	11.2	115.0	_	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-EB LS 2415+20	1-5	Bulk	_	_	46	30	24	26	16	10	_	_	_	_	_	_	A-2-4 (0)	GC
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YA-EB LS 2490+50	5	CA	5.4	109.9	0	83	17	NV	NP	NP	_	_	_	_	_	_	A-2-4 (0)	SM
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YA-EB RS 2270+00	1.1-5	Bulk	_	_	3	62	35	22	15	7	8.4	0.012	1202	0.0185	_	_	A-4 (0)	SM-SC
YA-EB RS 2270+00	2	CA	7.3	121.0	0	87	13	NV	NP	NP	_	_	_	_	_	_	A-2-4 (0)	SM
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YA-EB RS 2336+00	2	CA	7.9	114.0	0	90	10	NV	NP	NP	_	_	_	_	-0.5	_	A-2-4 (0)	SM
YA-EB RS 2336+00	10	CA	4.7	112	_	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-EB RS 2388+80	2	CA	8.3	123	_	_	_	_	_	_	_	_	_	_	_	_	_	_
YA-EB RS 2388+80	2-5	Bulk	_	_	1	71	28	25	14	11	_	_	_	_	_	_	A-2-6 (0)	SC
YA-EB RS 2388+80	5	CA	10.6	121	4	69	27	NV	NP	NP	_	_	_	_	_	_	A-2-4 (0)	SM
YA-EB RS 2441+60	1.1-5	Bulk	_	_	6	41	53	28	13	15	7.8	0.005	646	0.0353	_	_	A-6 (4)	CL
YA-EB RS 2441+60	2	CA	14.2	118	8	37	55	34	14	20	_	_	_	_	0.3	_	A-6 (7)	CL
YA-EB RS 2441+60	5	CA	19.2	110.6	3	11	86	35	17	18	_	_	_	_	_	_	A-6 (15)	CL
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YA-WB LS 2227+00	1.3-5	Bulk	_	_	2	70	28	26	14	12	8.1	0.005	1608	0.0144	_	34	A-2-6 (0)	SC
YA-EB RS 2227+00	5	CA	15.1	112.5	9	47	44	34	15	19	_	_	_	_	-0.3	_	A-6 (4)	SC
YA-WB LS 2279+80	2	CA	8.6	109.2	0	81	19	NV	NP	NP	_	_	_	_	_	_	A-2-4 (0)	SM
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YA-WB LS 2332+60	2	CA	9.4	115.8	0	86	14	NV	NP	NP	_	_	_	_	_	_	A-2-4 (0)	SM
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YA-WB LS 2385+40	0.8-5	Bulk	_	_	13	55	32	25	17	8	8.2	0.017	971	0.022	_	_	A-2-4 (0)	SC
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YA-WB LS 2438+20	2	CA	10.7	118	0	66	34	NV	NP	NP	_	_	_	_	_	_	A-2-4 (0)	SM
YA-WB LS 2438+20	2-5	Bulk	_	_	1	66	33	NV	NP	NP	_	_	_	_	_	_	A-2-4 (0)	SM
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I-70 MAINLINE
LABORATORY DATA
SHOULDER BORINGS

Designer: MLK Structure Numbers
Detailer: MJW
Sheet Subset: Subset Sheets: of

Project No./Code

Sheet Number A.4-2

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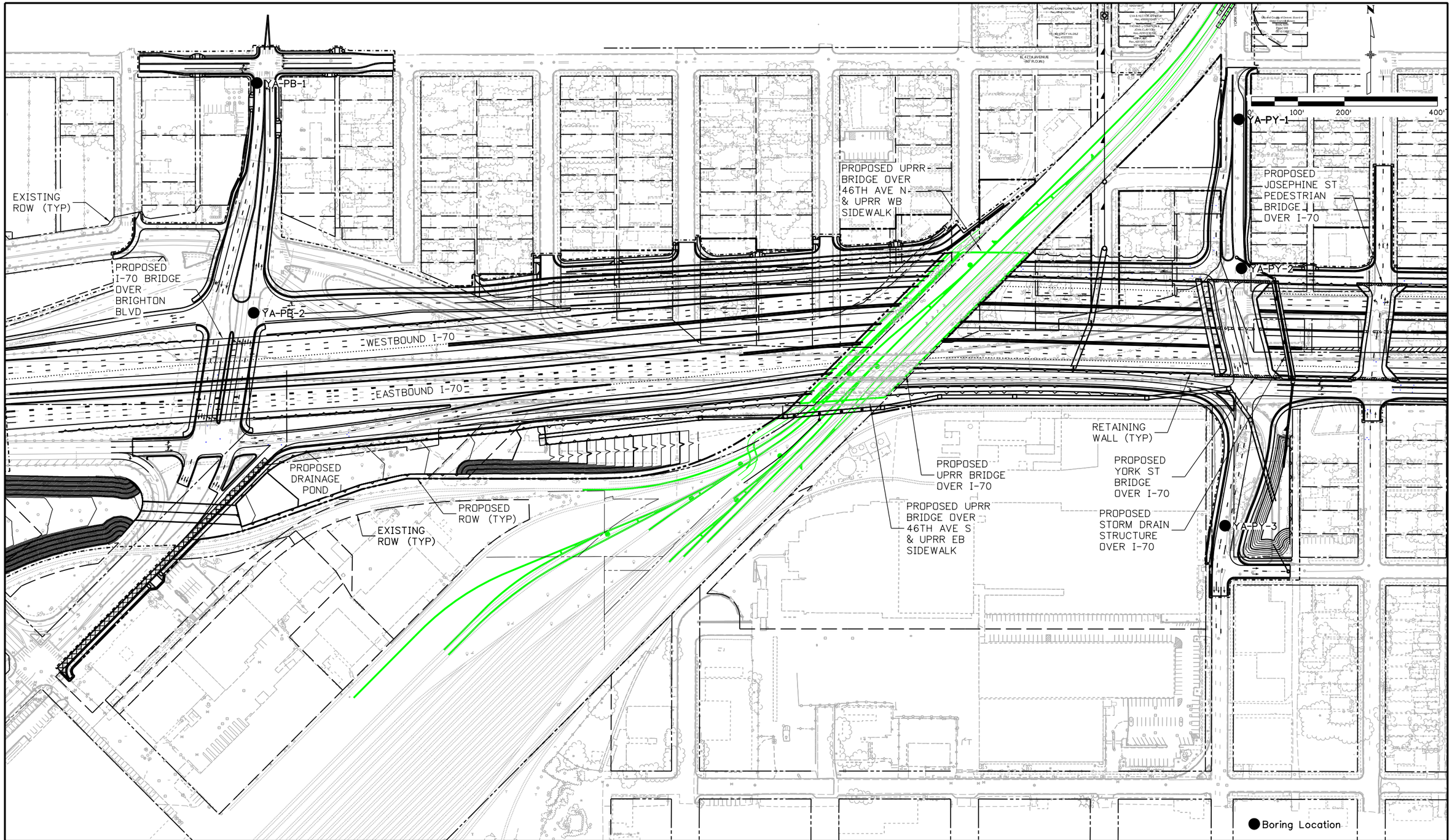

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File Name: 13599GEOT_BH Plan 01_Pavement.dgn
Horiz. Scale: 1:200 Vert. Scale: As Noted
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I-70 MAINLINE BORING LOCATION PLAN PAVEMENT BORINGS

Designer: MLK
Detailer: MJW
Sheet Subset:
Structure Numbers
Subset Sheets: of

Project No./Code

Sheet Number A.4-3

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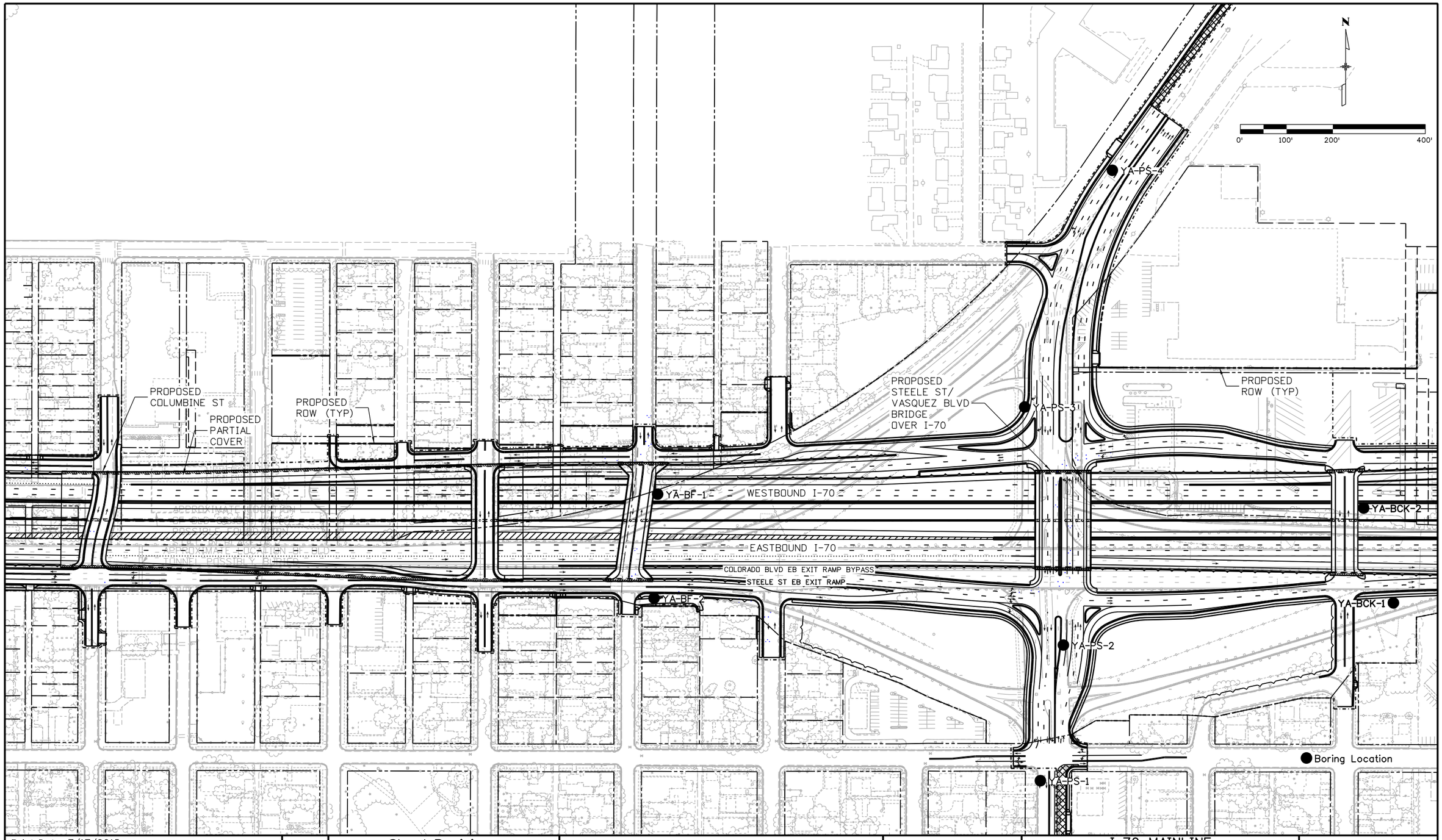

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I-70 MAINLINE BORING LOCATION PLAN PAVEMENT BORINGS

Designer: MLK	Structure Numbers		Project No./Code
Detailer: MJW			
Sheet Subset:	Subset Sheets: of		Sheet Number A.4-4

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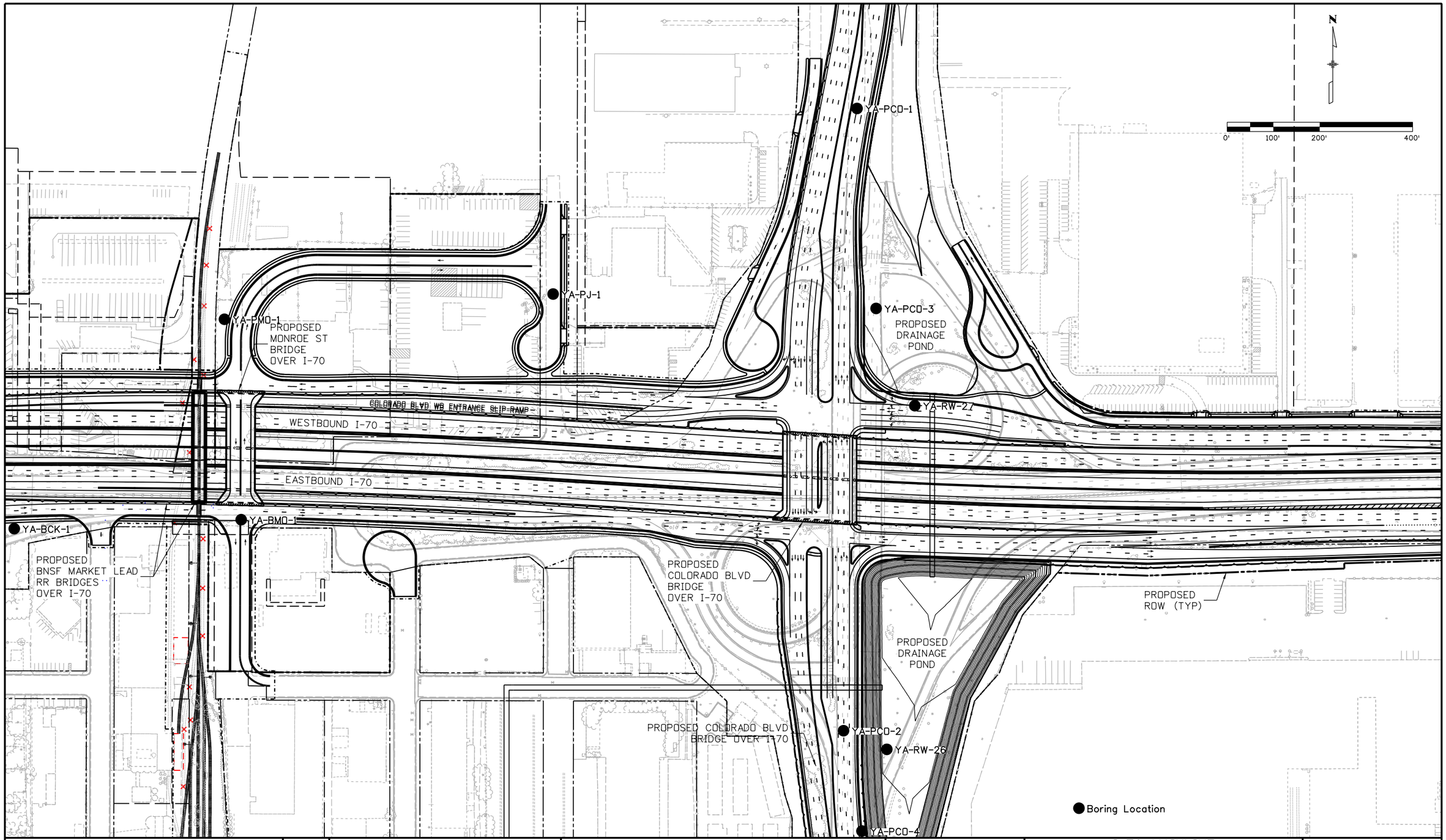

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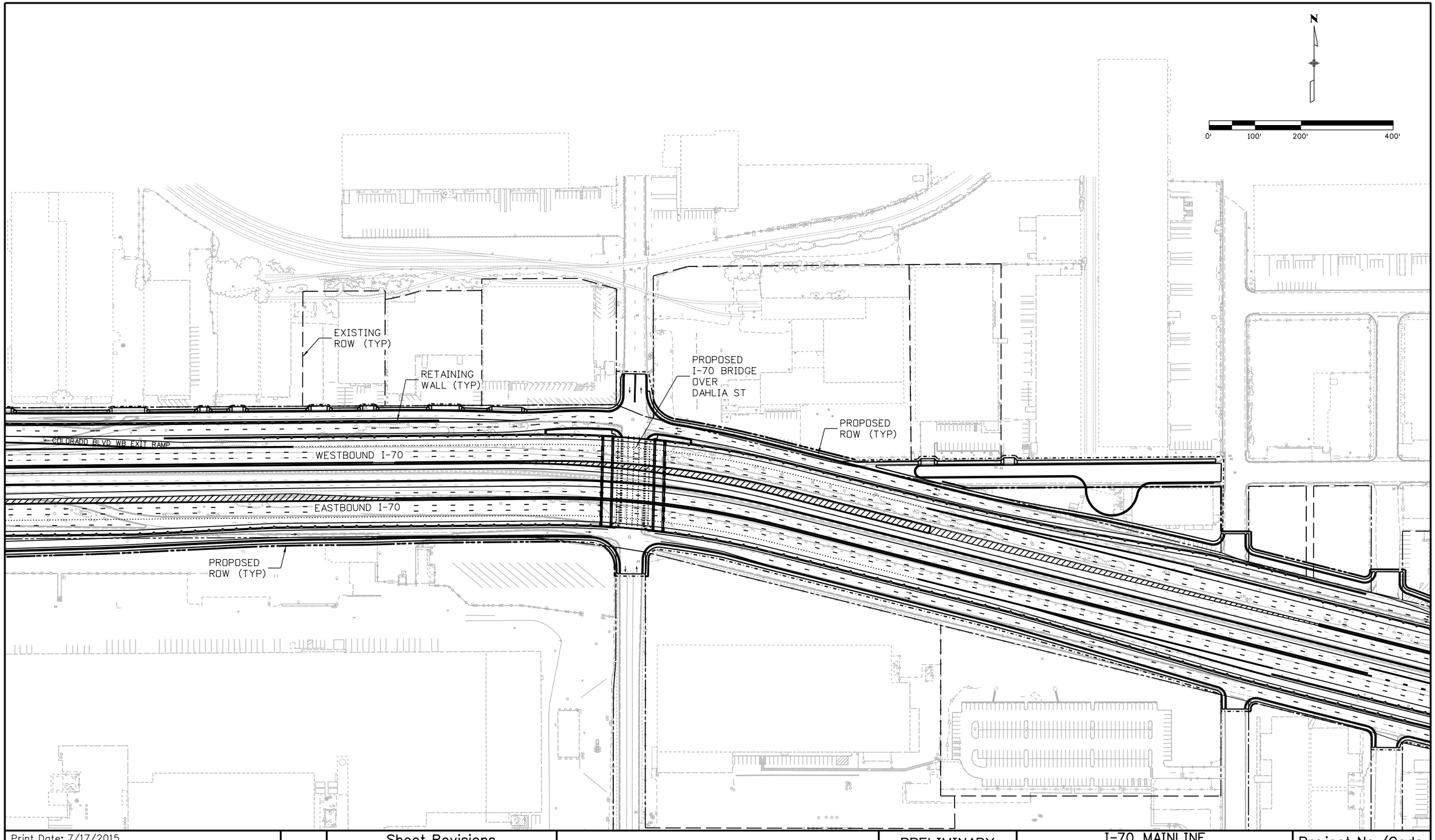
I-70 MAINLINE
BORING LOCATION PLAN
PAVEMENT BORINGS

Designer: MLK
Detailer: MJW
Sheet Subset:
Structure Numbers
Subset Sheets: of

Project No./Code

Sheet Number A.4-5

Mike Walz 1:01:47 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\Pavement\13599GEOT_BH Plan 03_Pavement.dgn



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BORING LOCATION PLAN
PAVEMENT BORINGS

Designer: MLK
Detailer: MJW
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Structure Numbers
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Project No./Code

Sheet Number A.4-6

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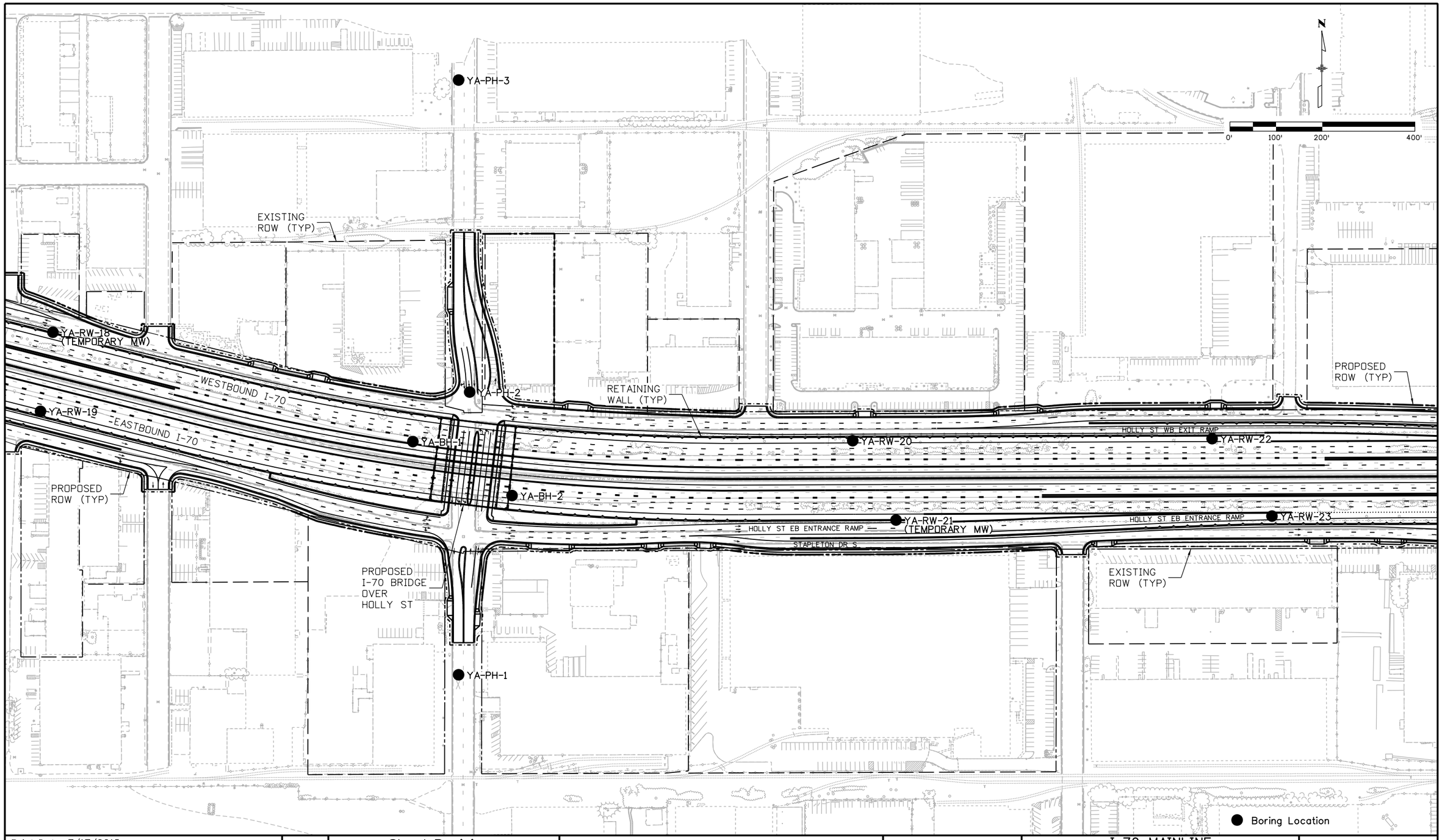

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PAVEMENT BORINGS

Designer: MLK
Detailer: MJW
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Subset Sheets: of

Project No./Code

Sheet Number A.4-7

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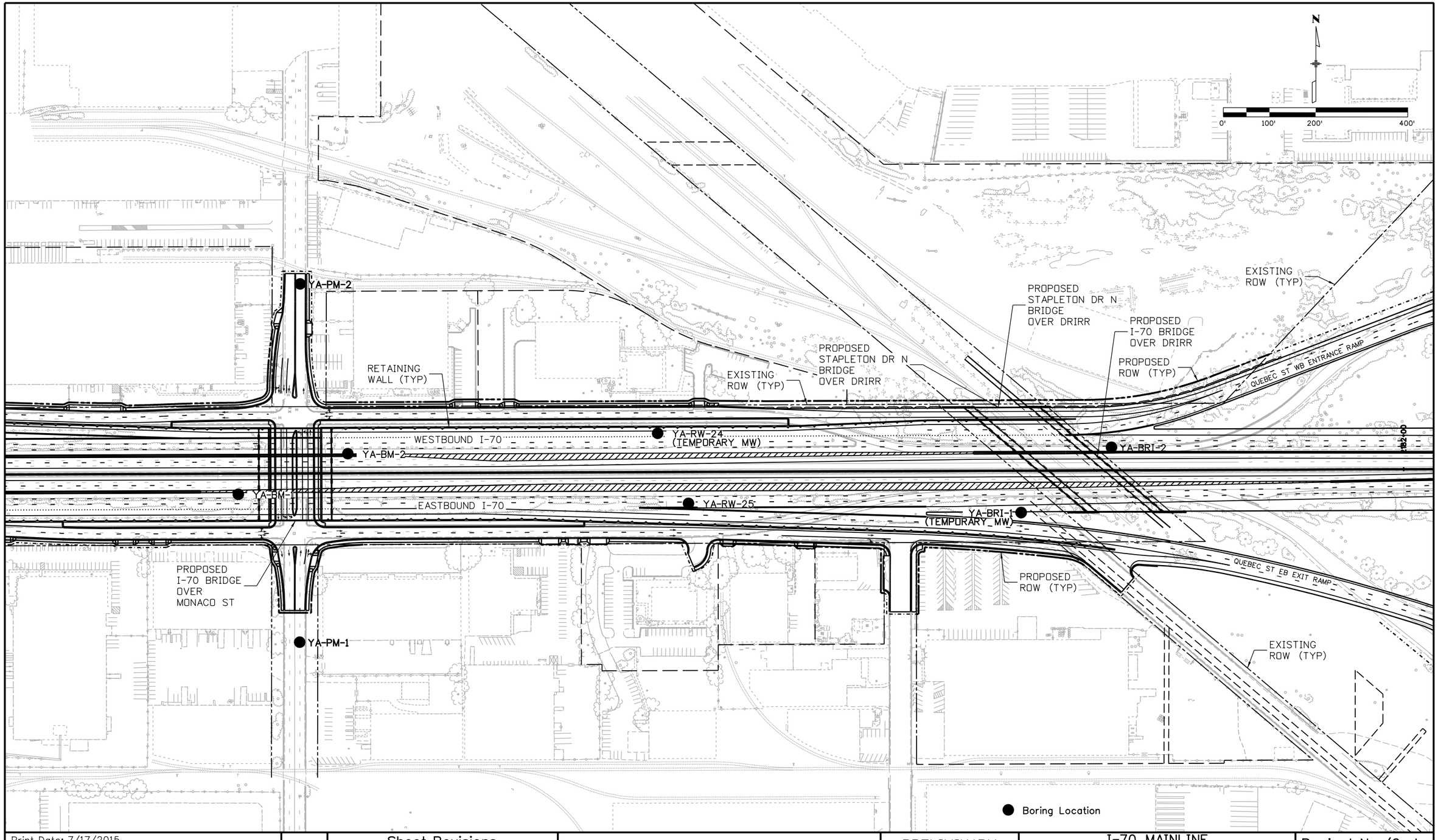

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BORING LOCATION PLAN
PAVEMENT BORINGS

Designer: MLK
Detailer: MJW
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Project No./Code

Sheet Number A.4-8

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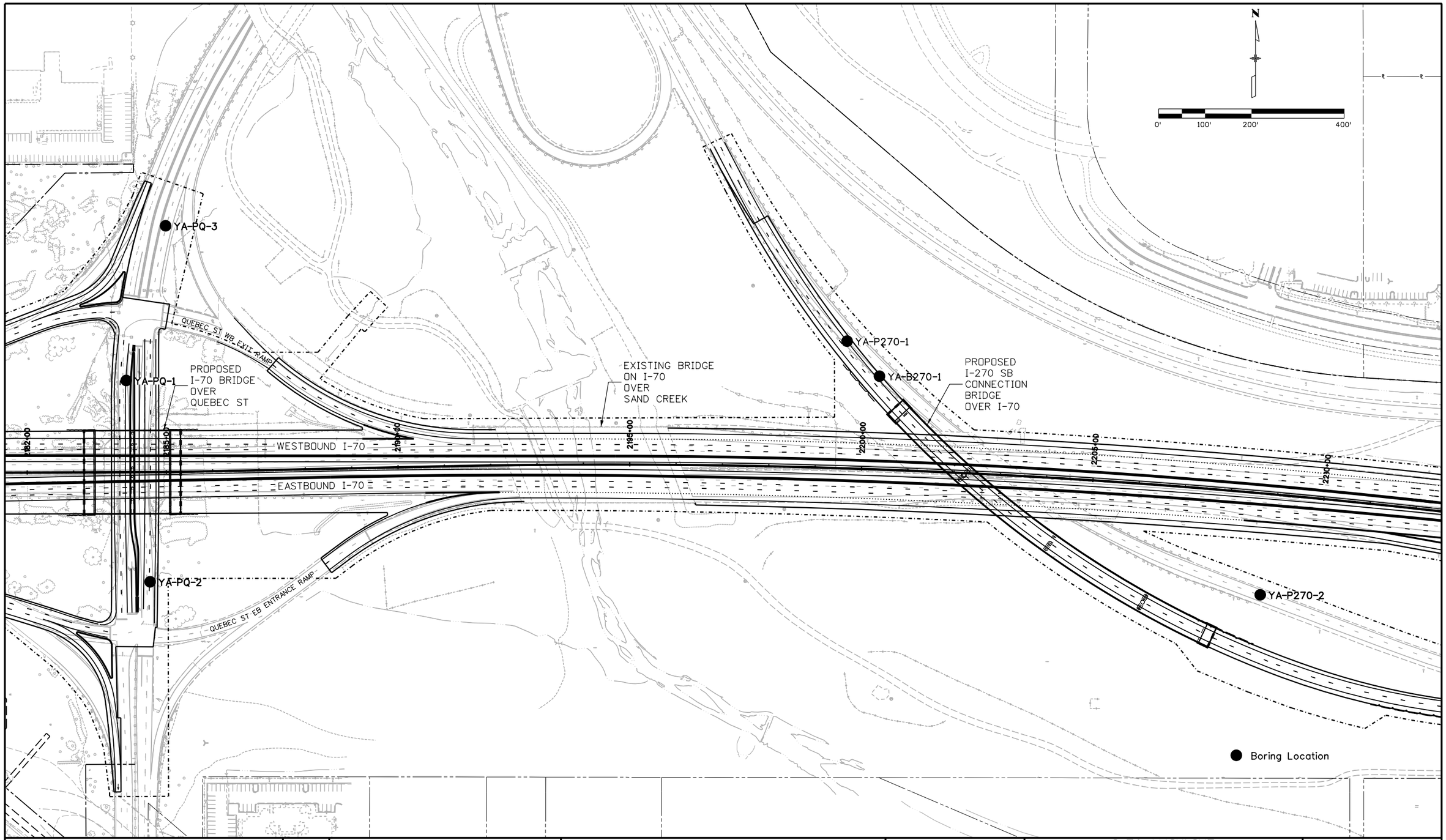

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I-70 MAINLINE BORING LOCATION PLAN PAVEMENT BORINGS			Project No./Code
Designer: MLK	Structure Numbers		
Detailer: MJW			
Sheet Subset:	Subset Sheets: of		Sheet Number A.4-9

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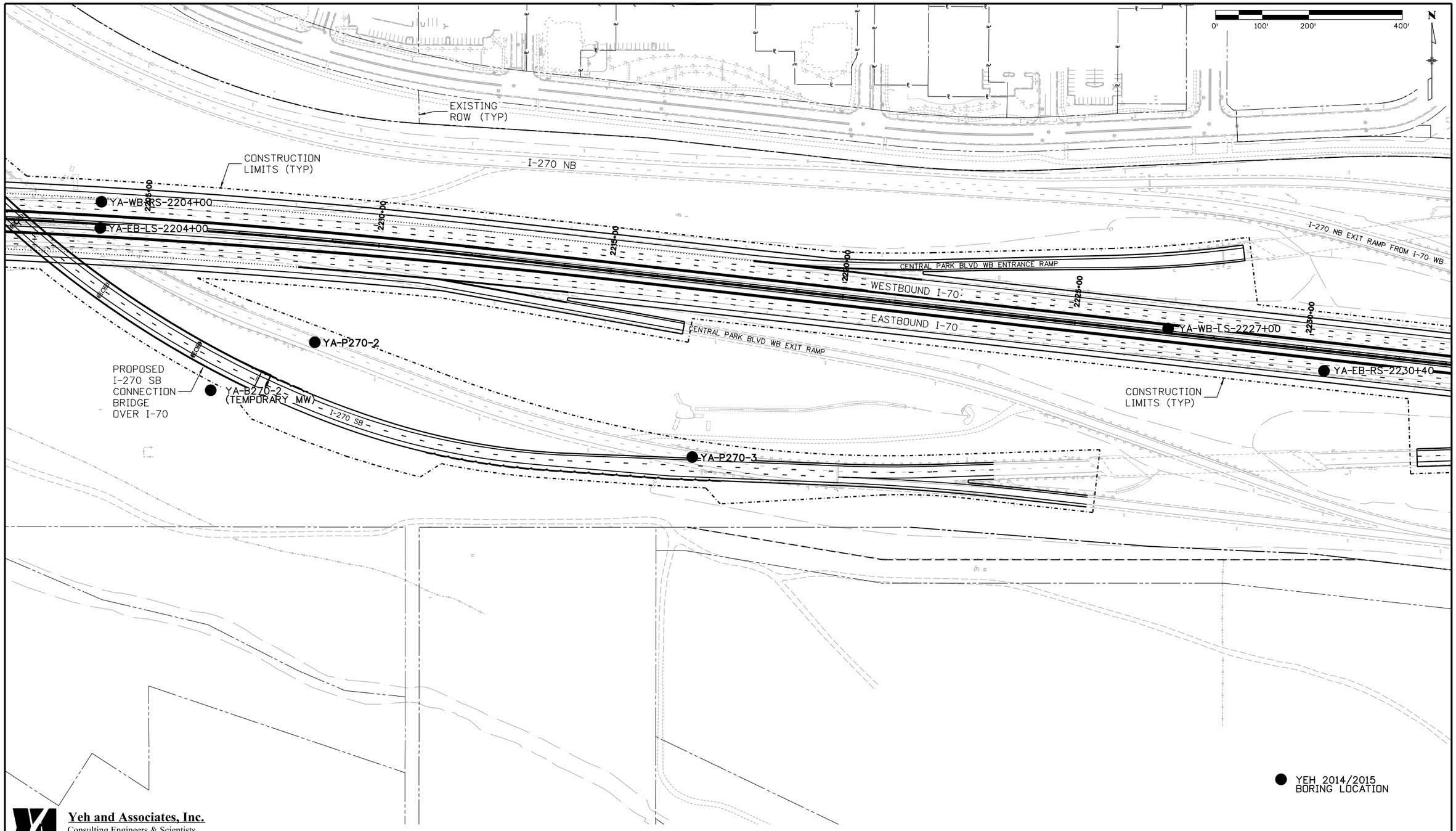

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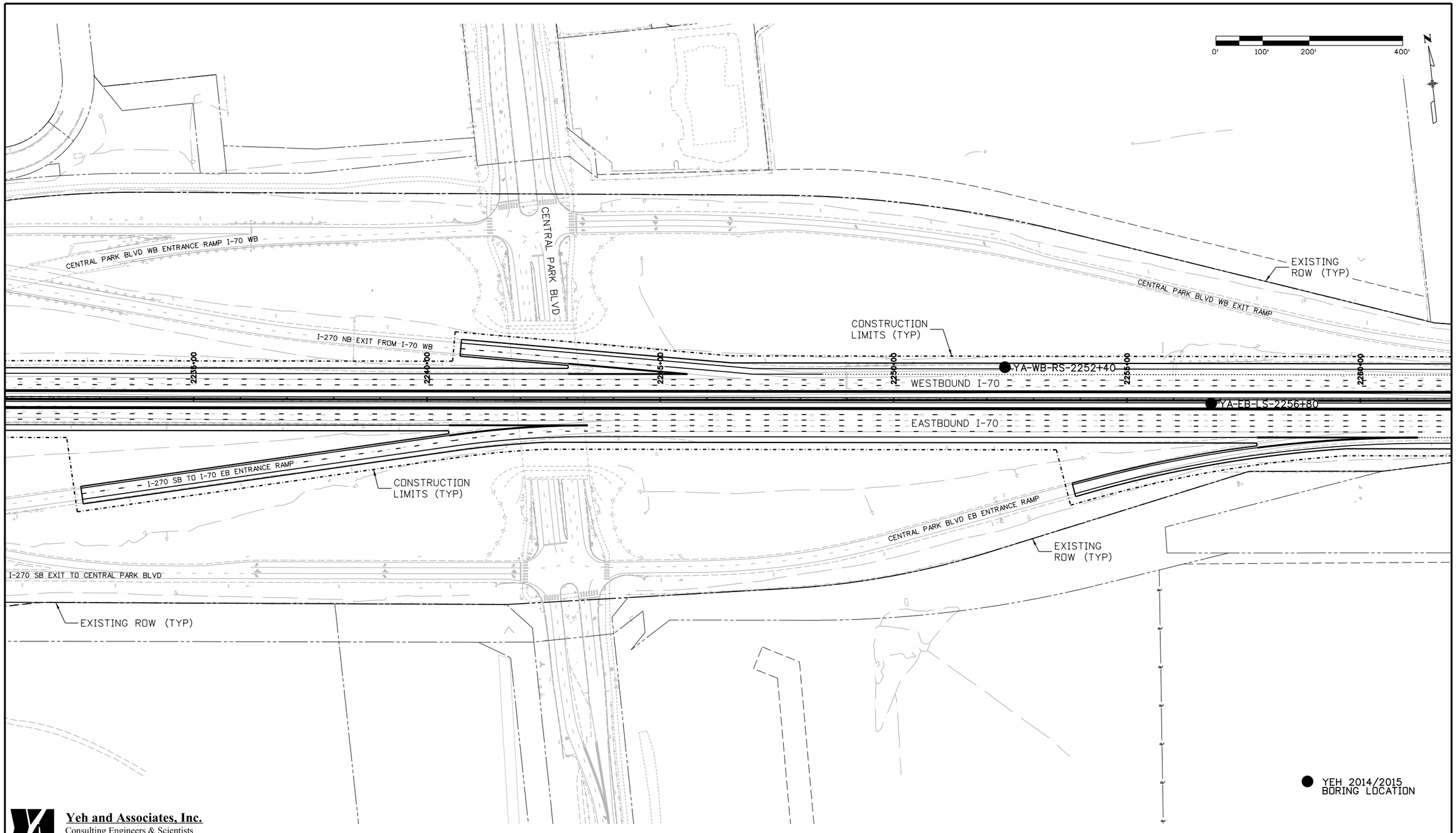
Sheet Number A.4-10

Mike Walz 3:41:48 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\Shoulder Boring\13599GEOT_BH Plan 01_Shoulder.dgn



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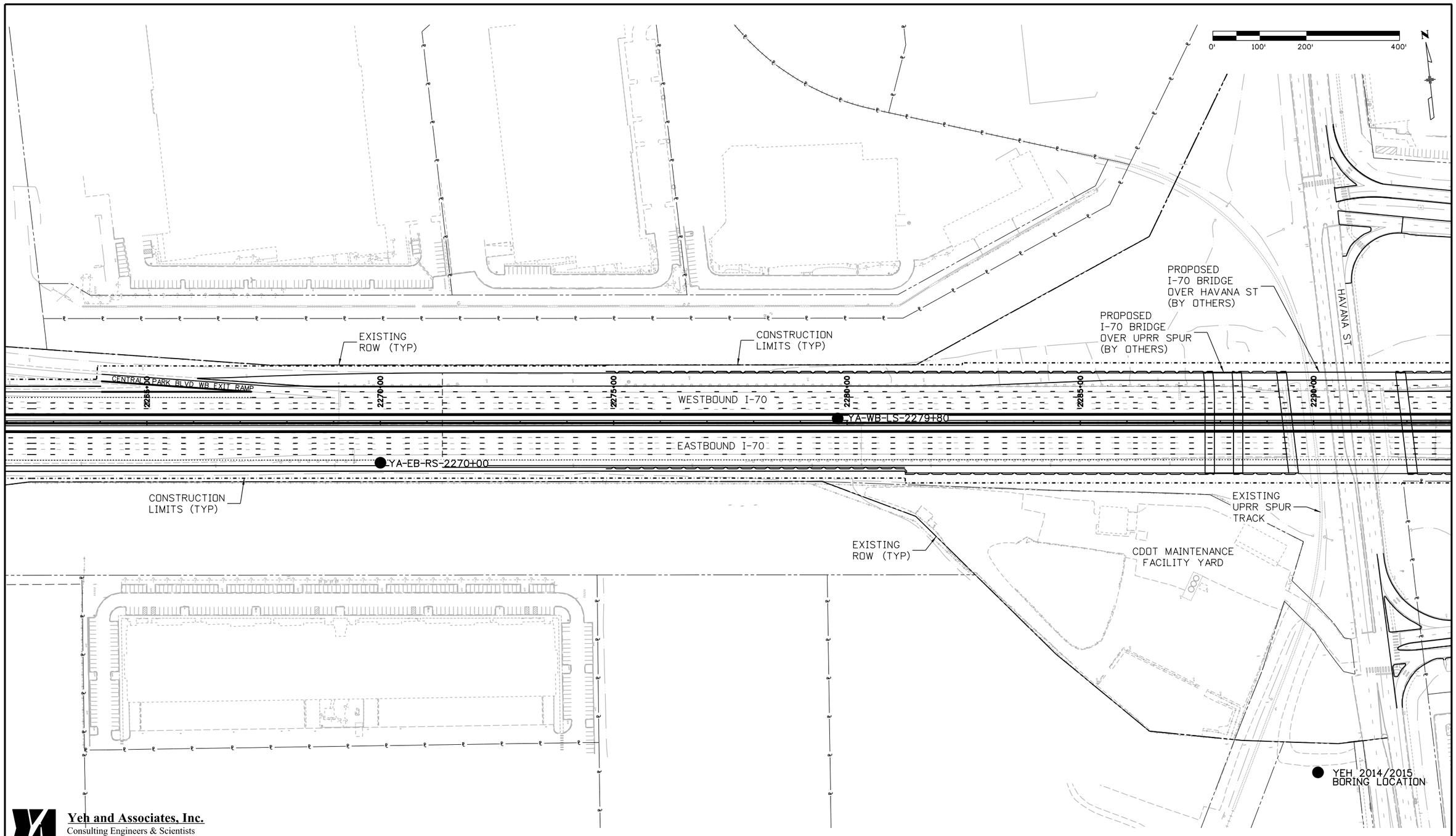
Project No./Code

Sheet Number A.4-11

Mike Walz 3:41:54 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\Shoulder Boring\13599GEOT_BH Plan 02_Shoulder.dgn



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BORING LOCATION PLAN

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Detailer:	MJW		
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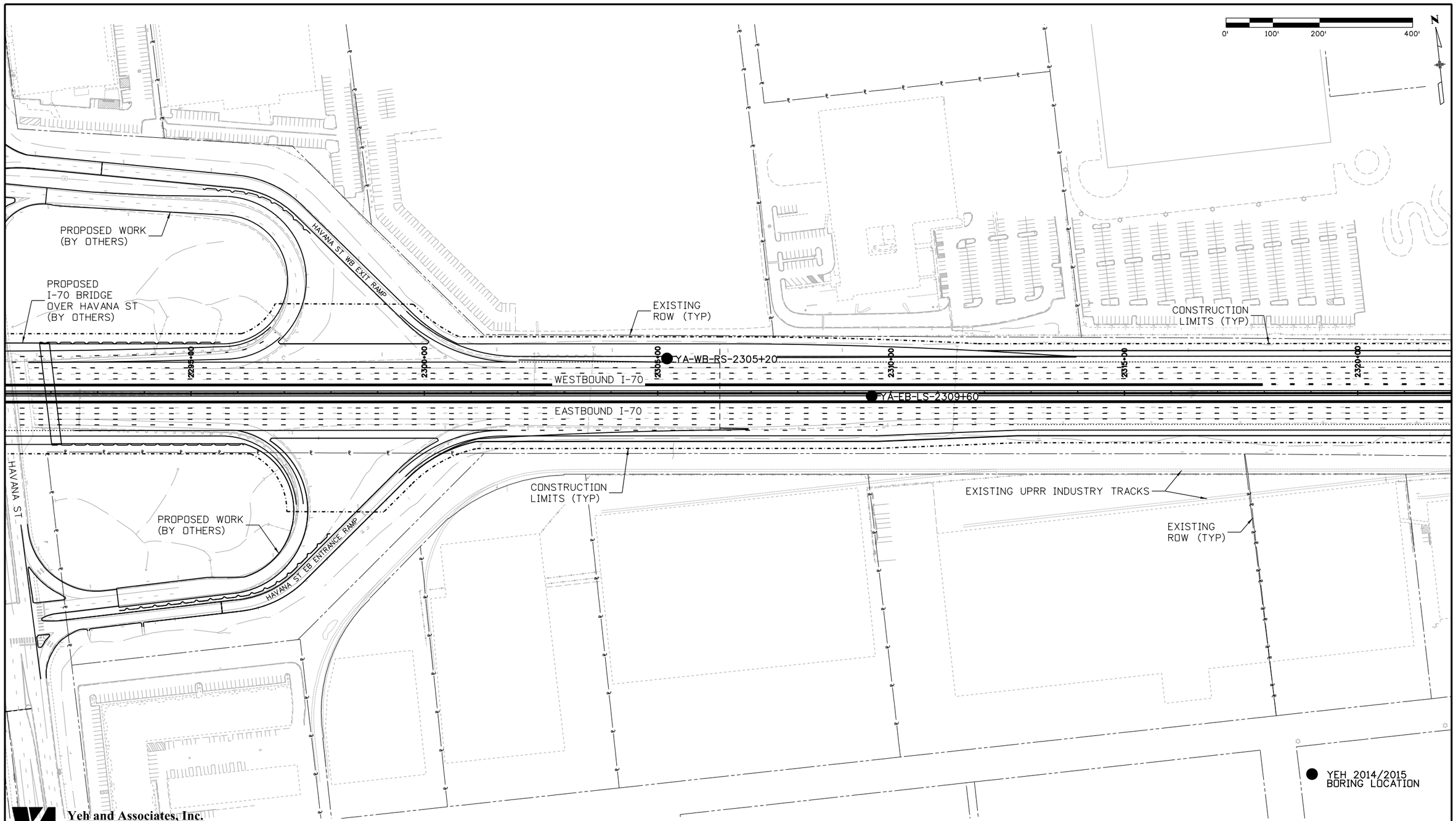
Project No./Code

Sheet Number A.4-12

Mike Walz 3:41:57 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\Shoulder Boring\13599GEOT_BH Plan



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Print Date: 7/15/2015	Sheet Revisions		
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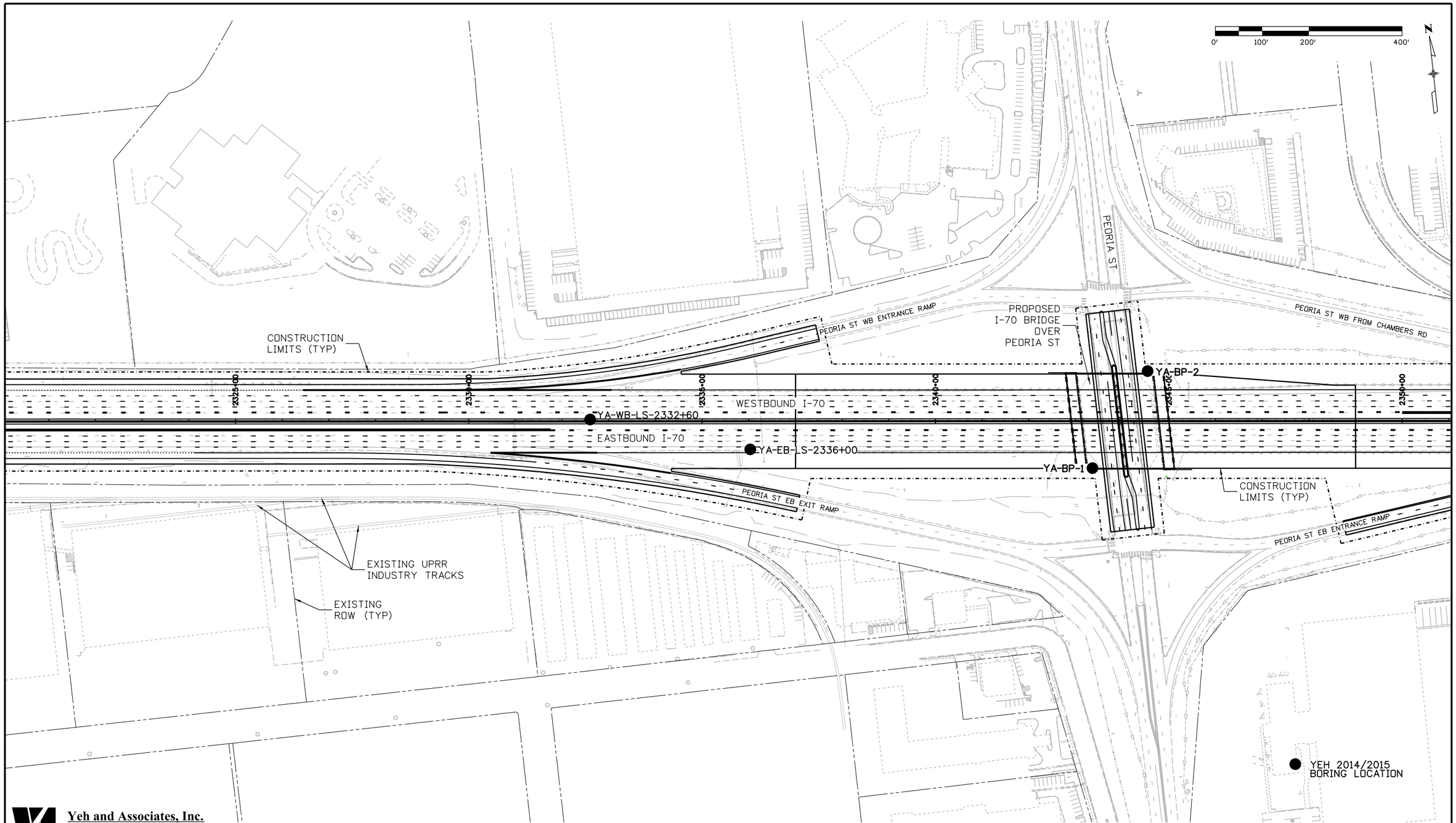
BORING LOCATION PLAN

Designer:	MLK	Structure Numbers	
Detailer:	MJW		
Sheet Subset:		Subset Sheets: of	

Project No./Code

Sheet Number A.4-13

Mike Walz 3:42:02 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\Shoulder Boring\13599GEOT_BH Plan 04_Shoulder.dgn



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Detailer:	MJW		
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Sheet Number A.4-14

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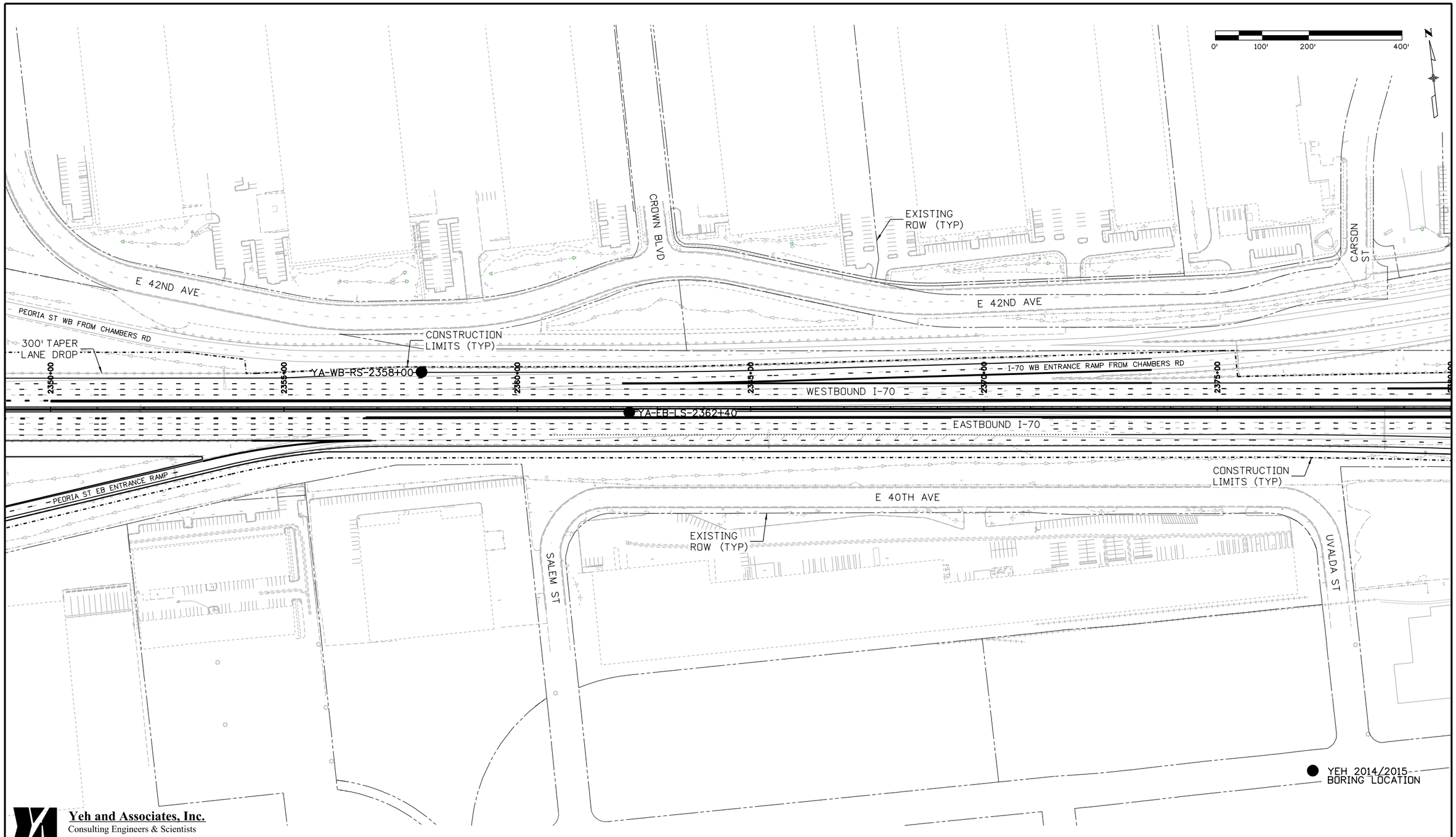

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Detailer: MJW
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Subset Sheets: of

Project No./Code

Sheet Number A.4-15

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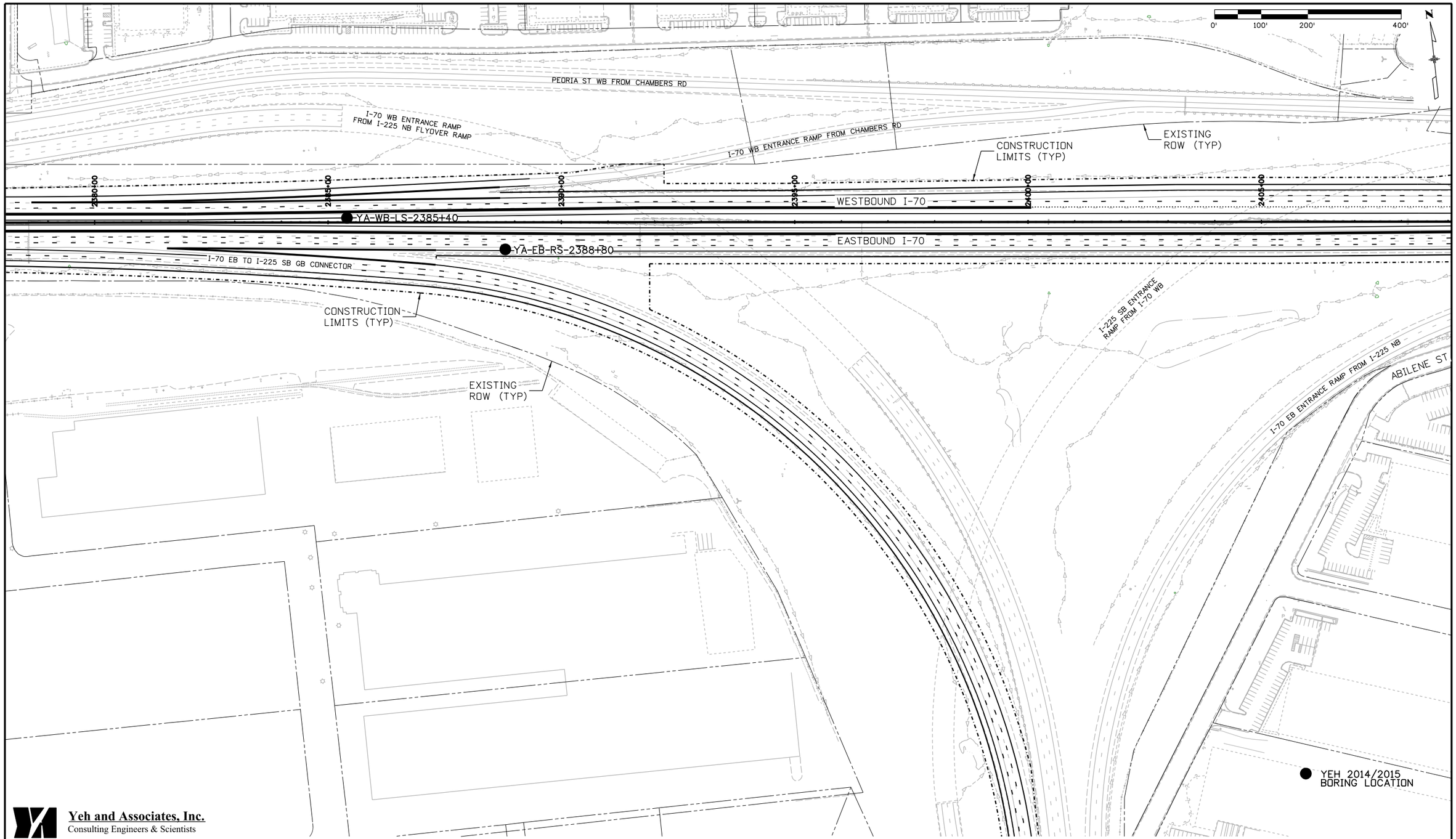

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File Name: 13599GEOT_BH Plan 07_Shoulder.dgn			
Horiz. Scale: 1:200	Vert. Scale: As Noted		
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Detailer:	MJW		
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Project No./Code

Sheet Number A.4-16

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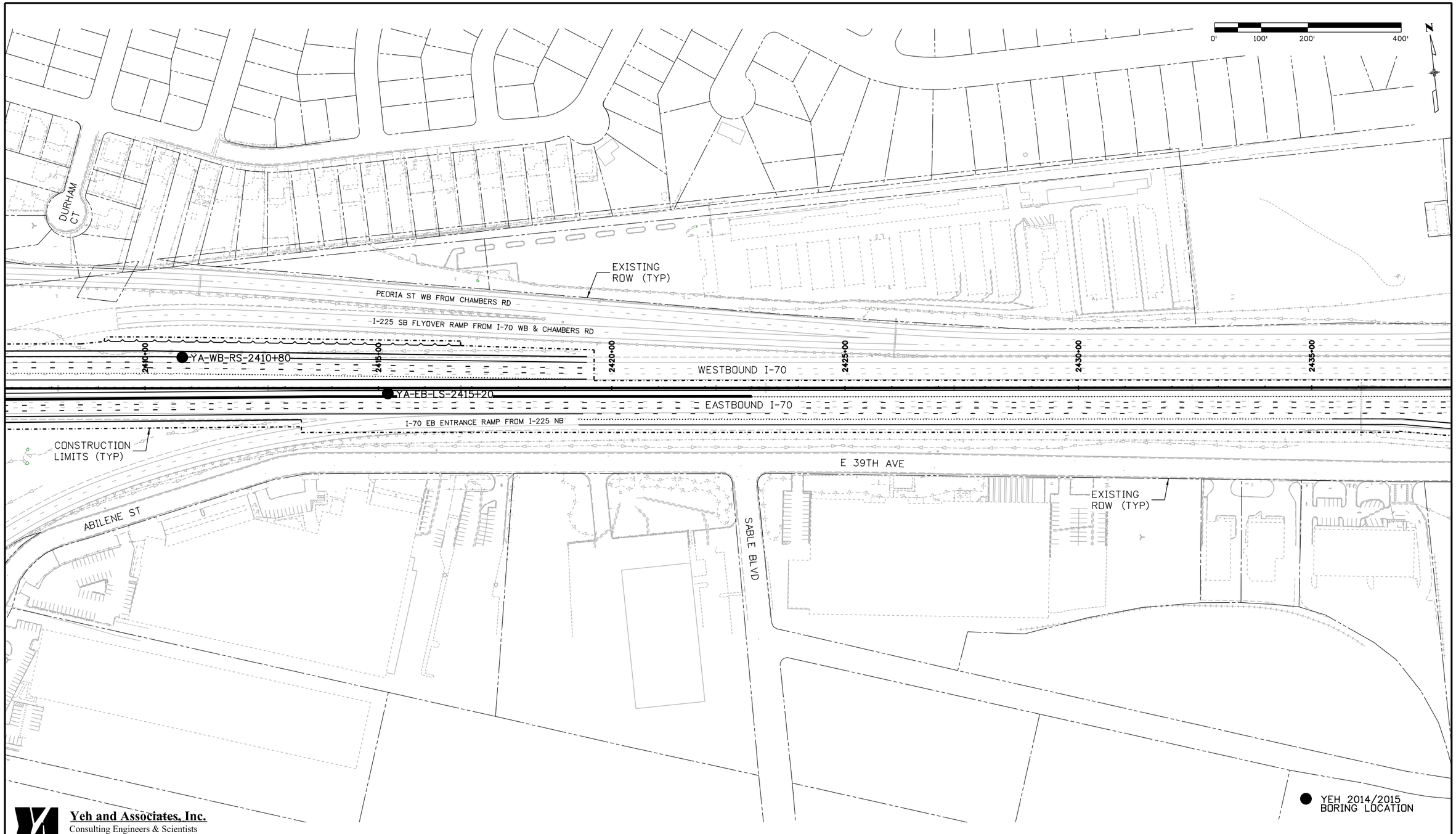

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Detailer: MJW
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Sheet Number A.4-17

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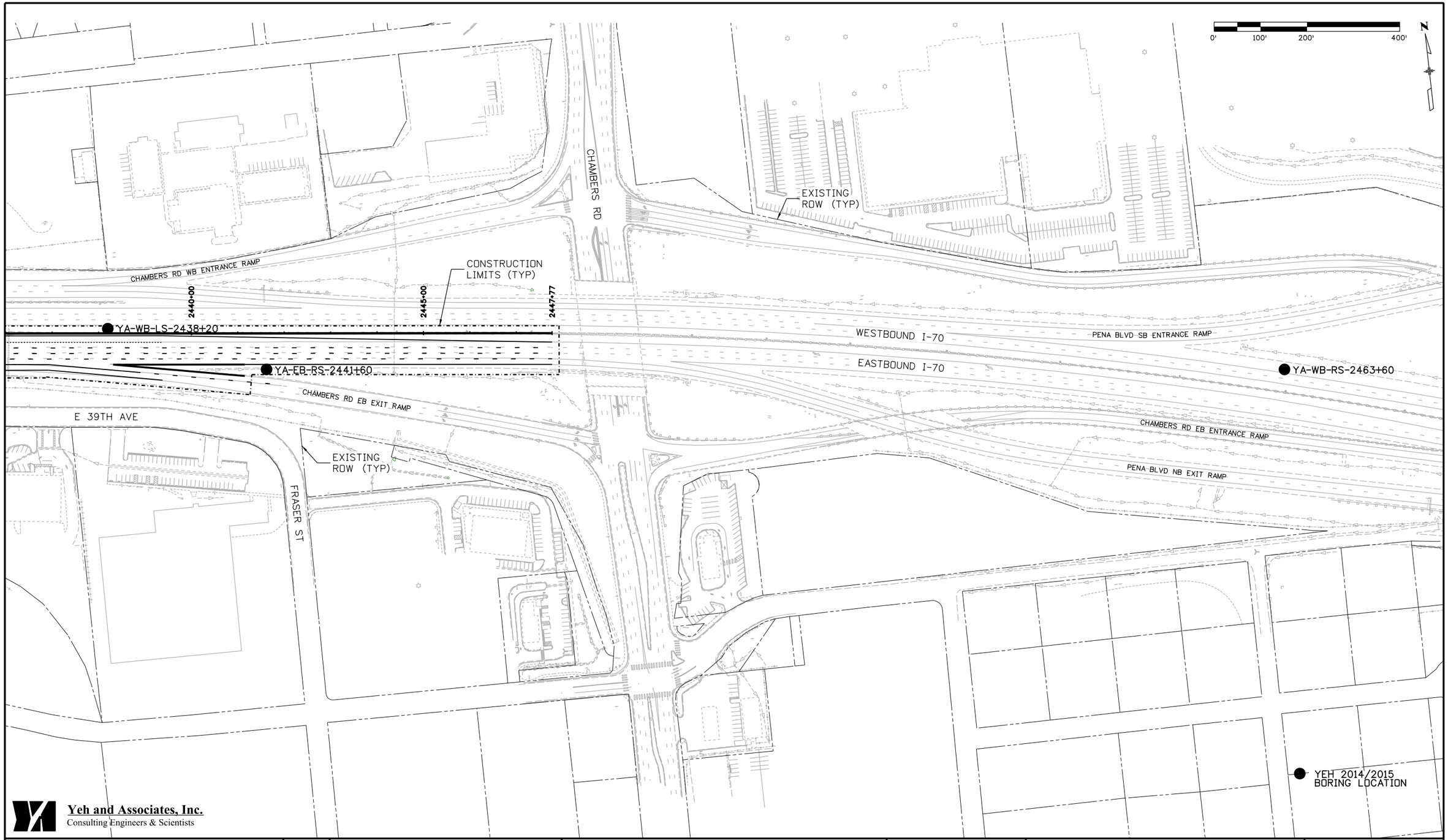

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Detailer: MJW
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Project No./Code

Sheet Number A.4-18

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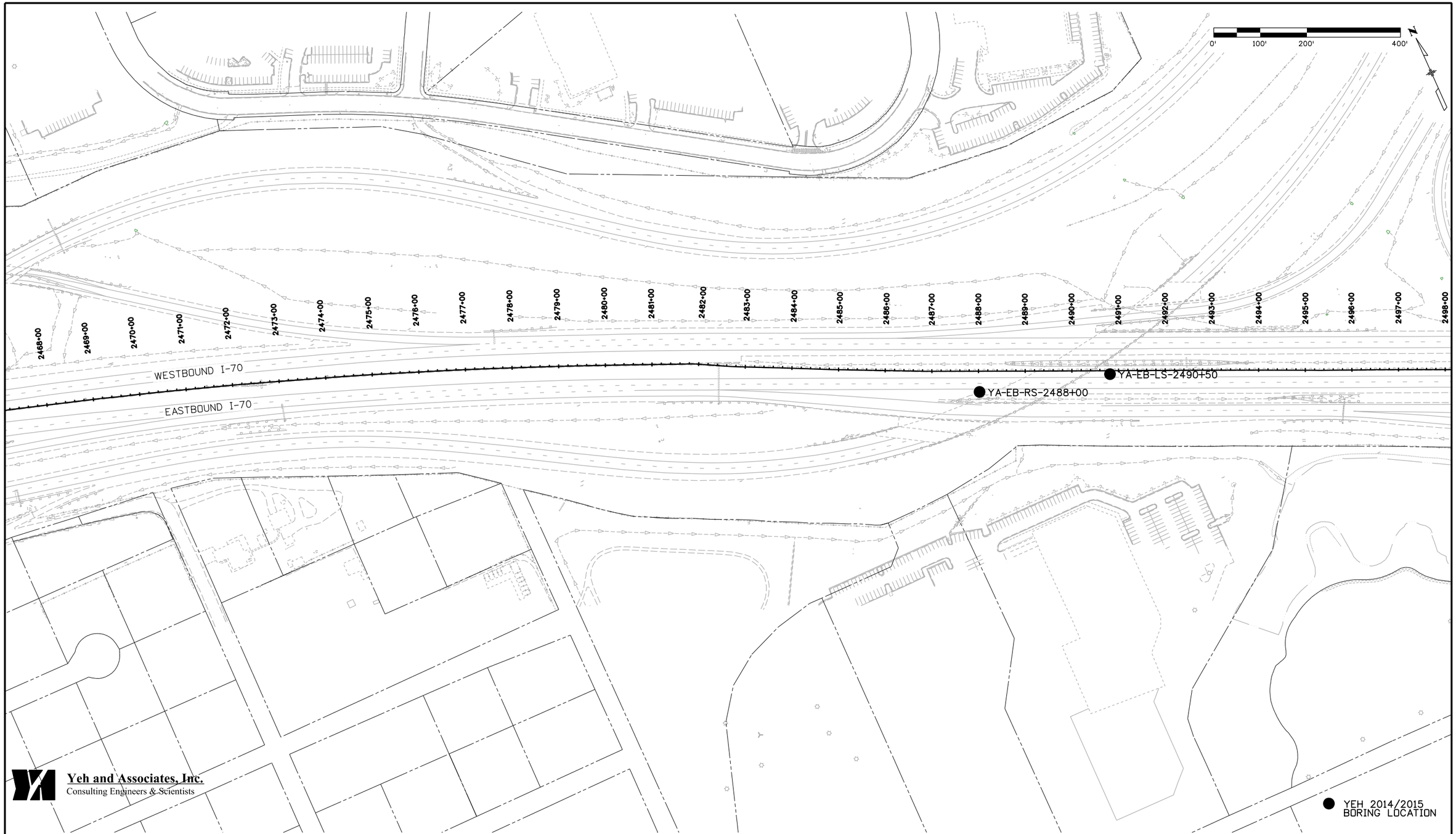

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Structure Numbers
Subset Sheets: of

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Sheet Number A.4-19

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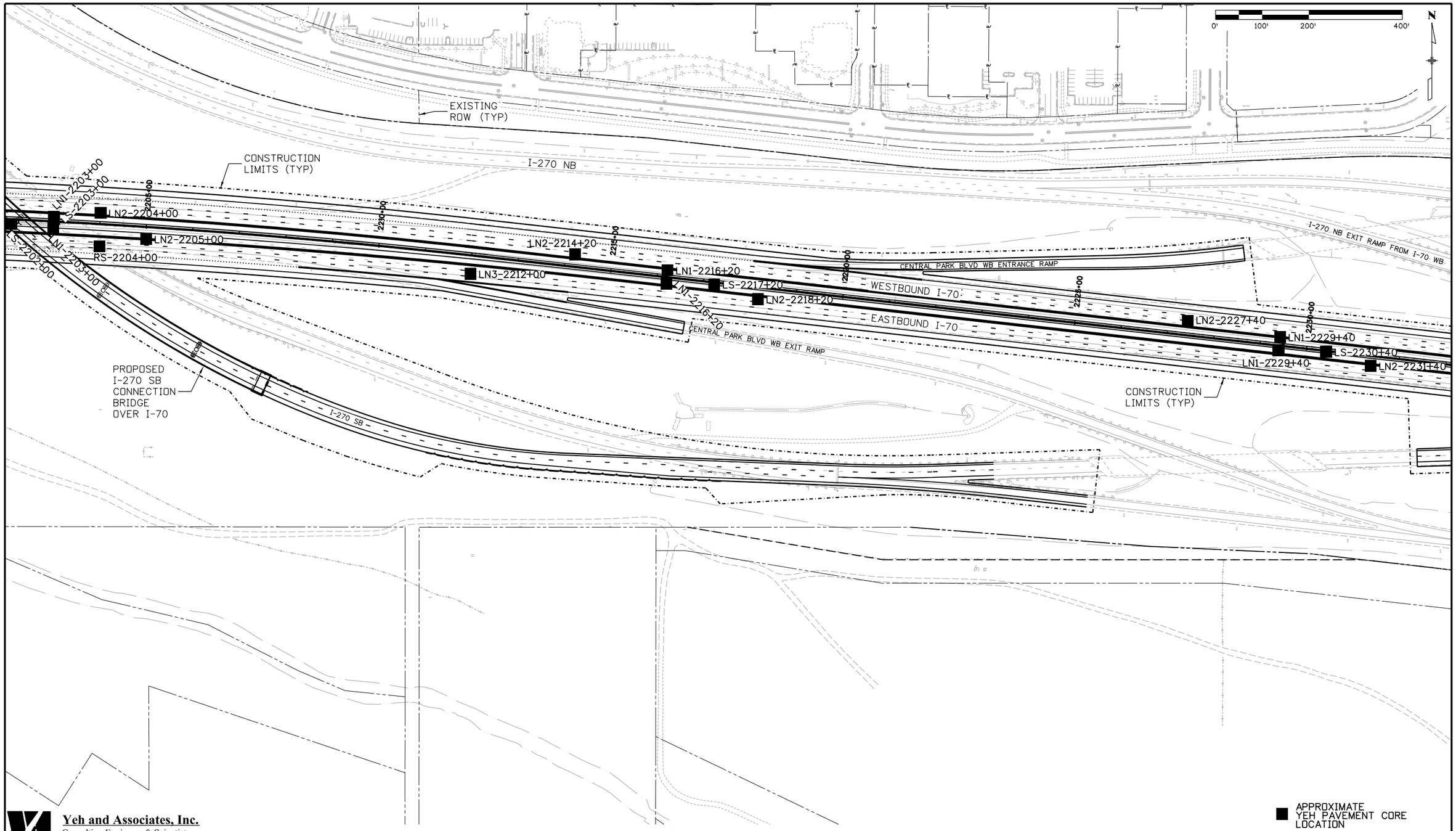

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PAVEMENT CORES

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Detailer: MJW
Sheet Subset:
Structure Numbers
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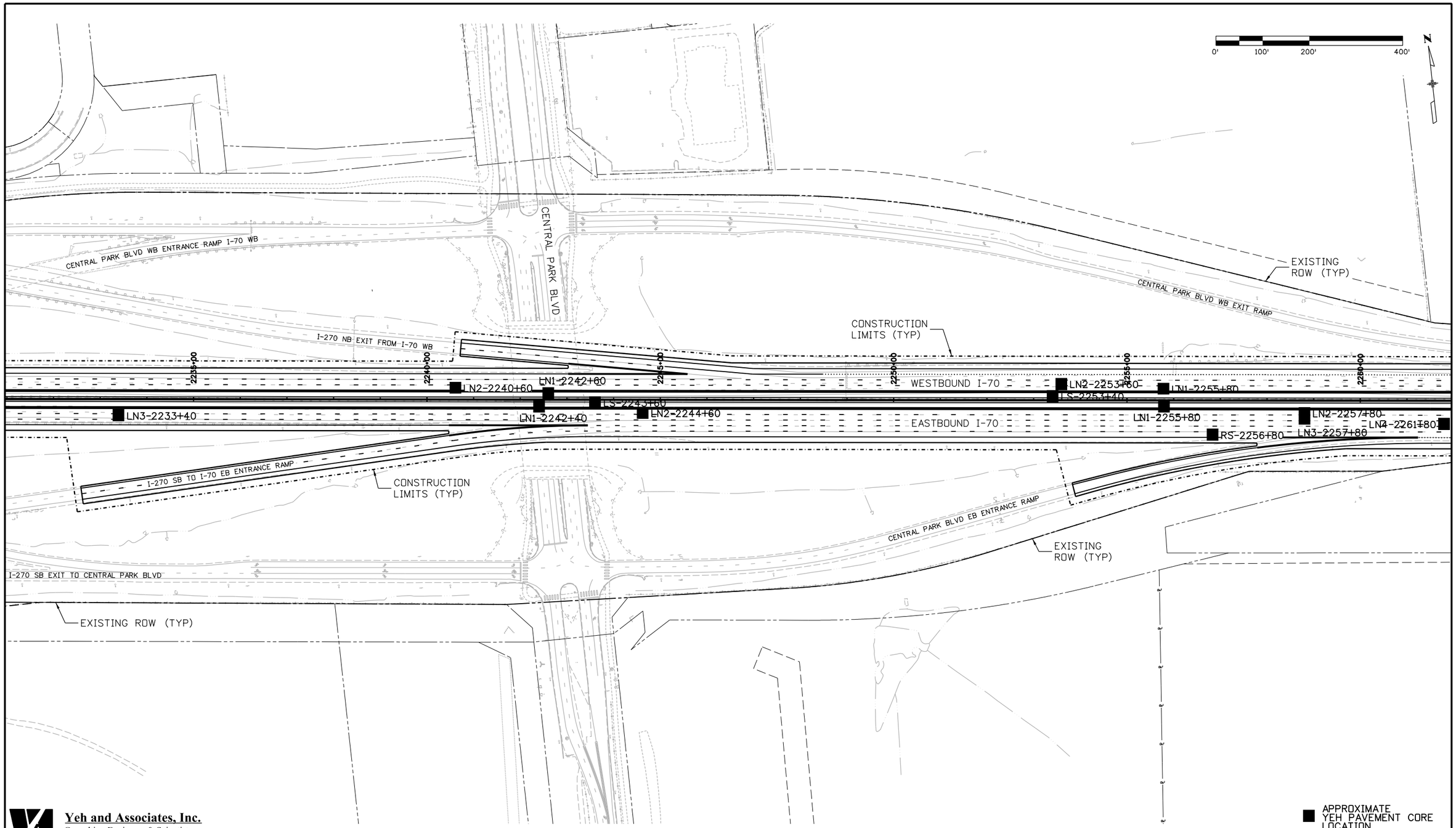
Sheet Number A.5-1

Mike Walz 2:34:41 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\Pavement Cores\13599GEOT_BH Plan 01_Pave Cores.dgn



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Print Date: 7/15/2015	Sheet Revisions		
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Project No./Code

Sheet Number A.5-2

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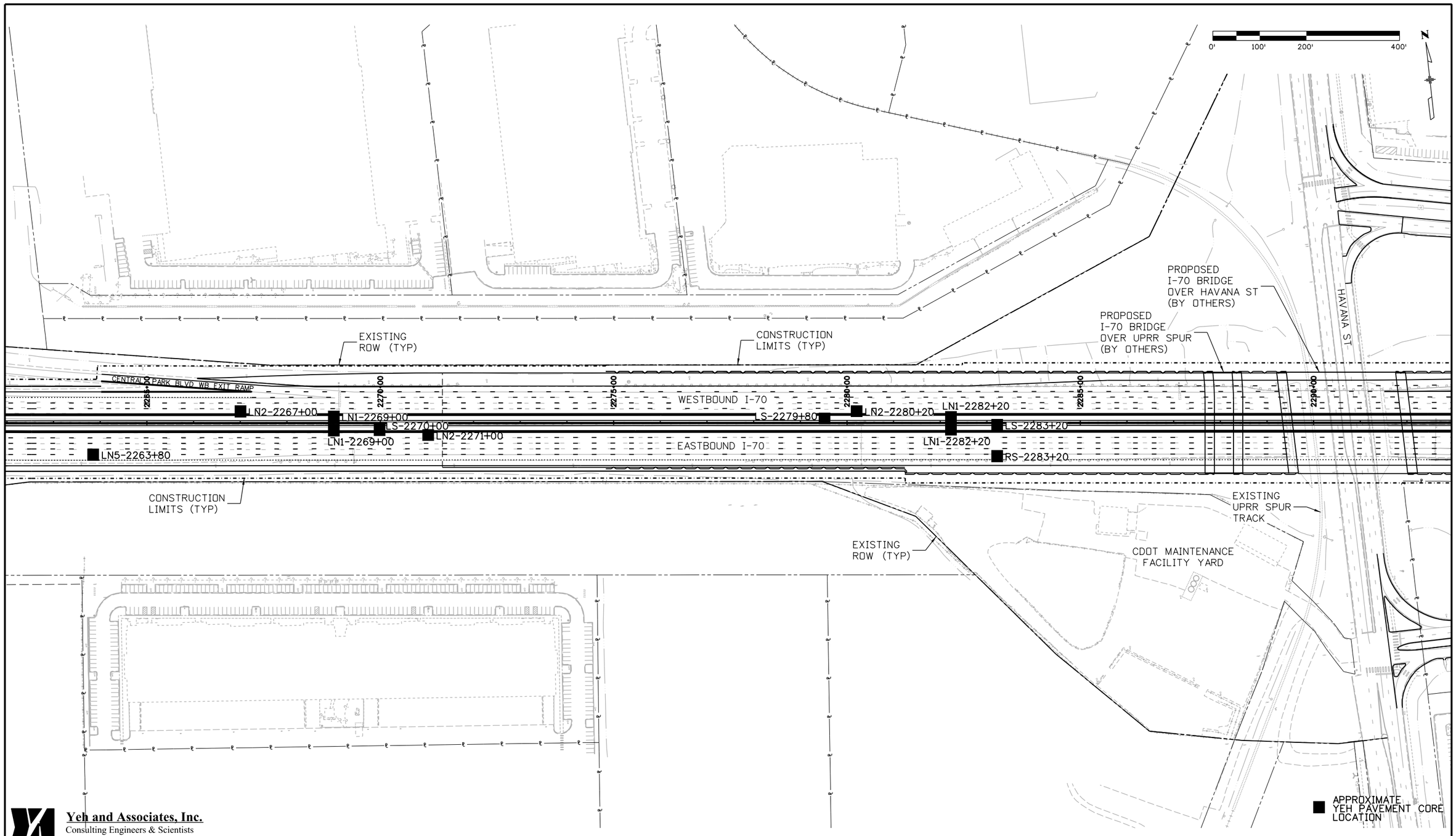

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Print Date: 7/15/2015	Sheet Revisions		
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Sheet Number A.5-3

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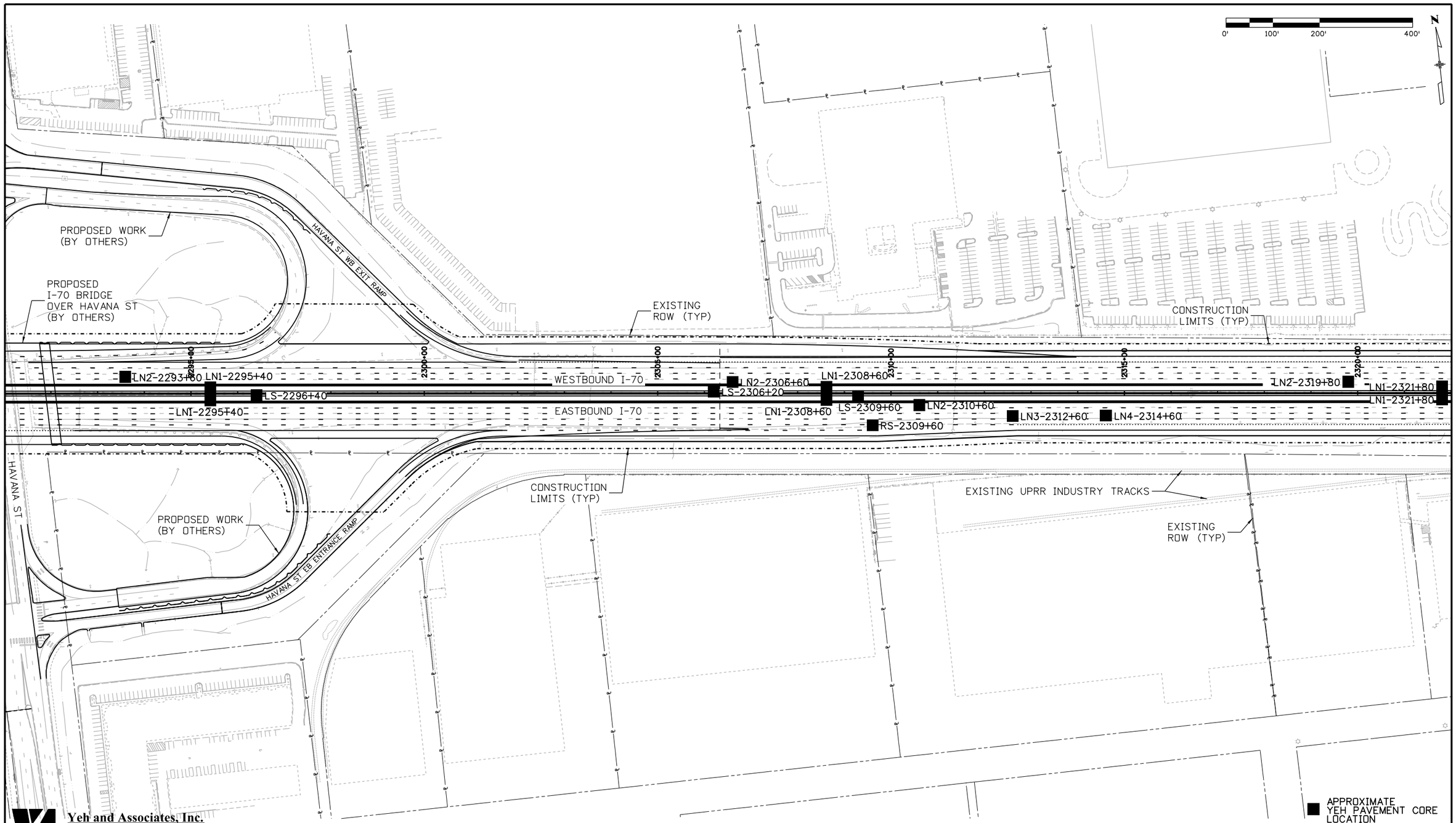

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Project No./Code

Sheet Number A.5-4

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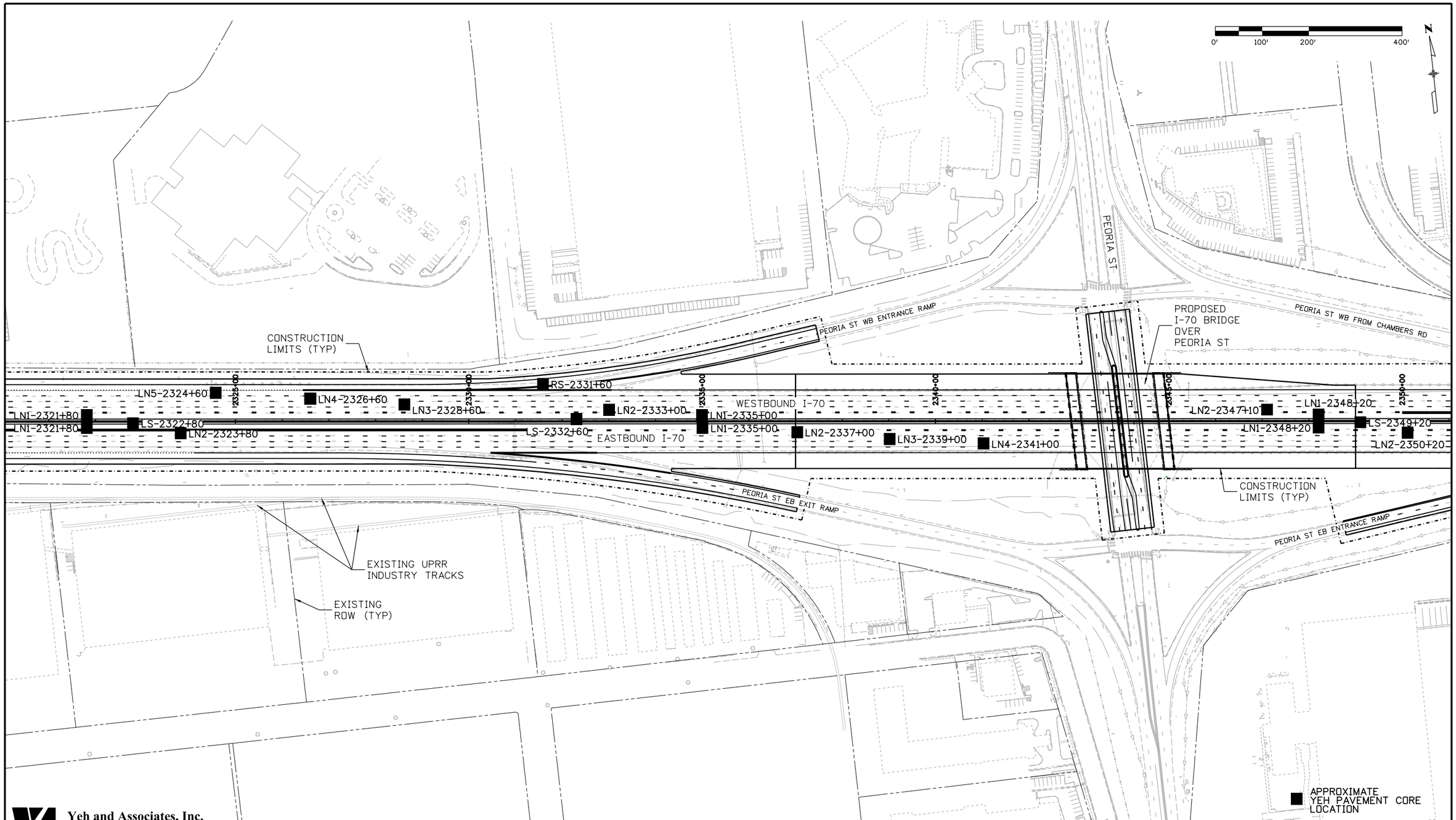

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PAVEMENT CORES

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Detailer: MJW
Sheet Subset:
Structure Numbers
Subset Sheets: of

Project No./Code

Sheet Number A.5-5

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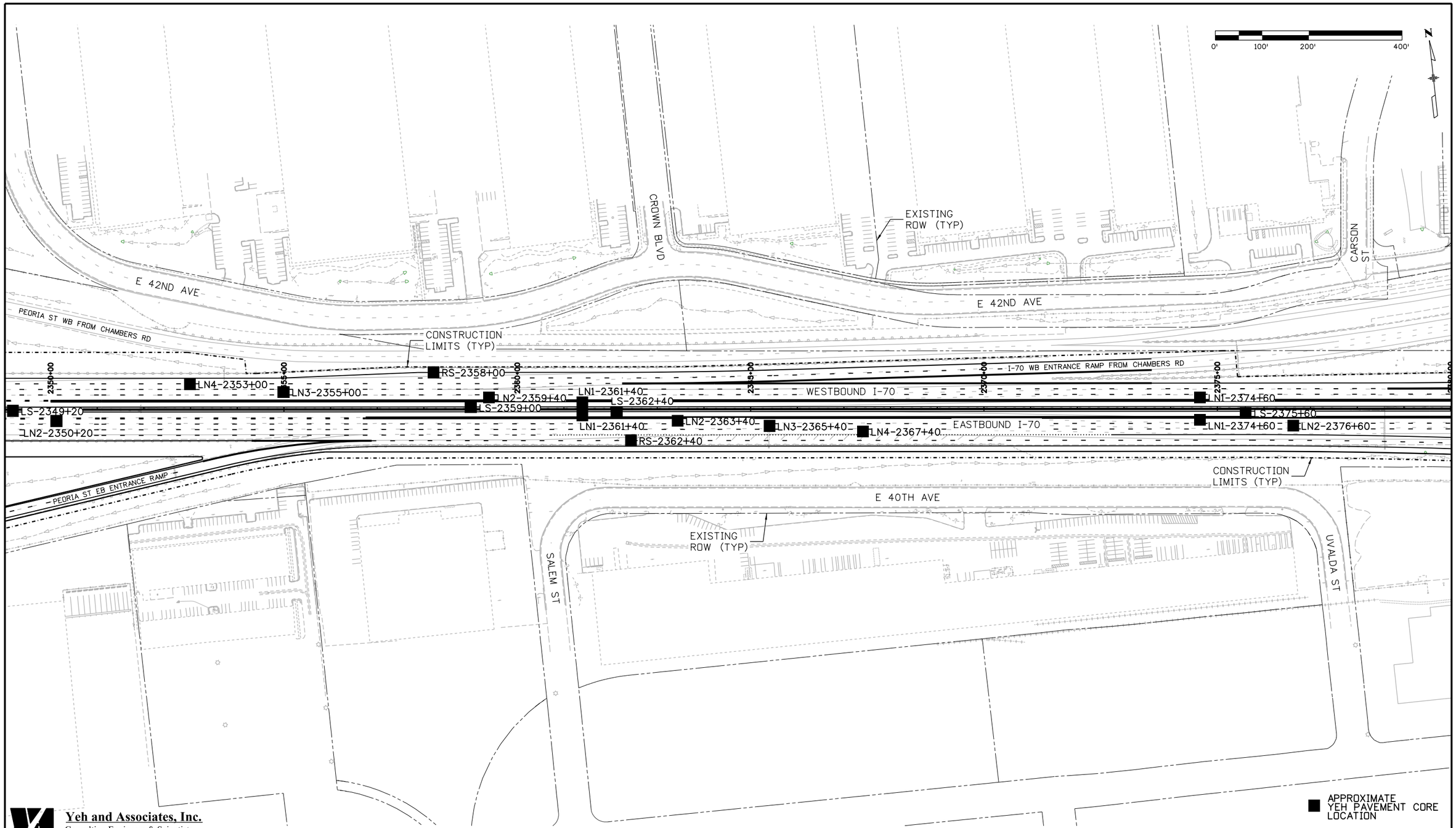

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Print Date: 7/15/2015	Sheet Revisions		
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Detailer: MJW
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Structure Numbers
Subset Sheets: of

Project No./Code

Sheet Number A.5-6

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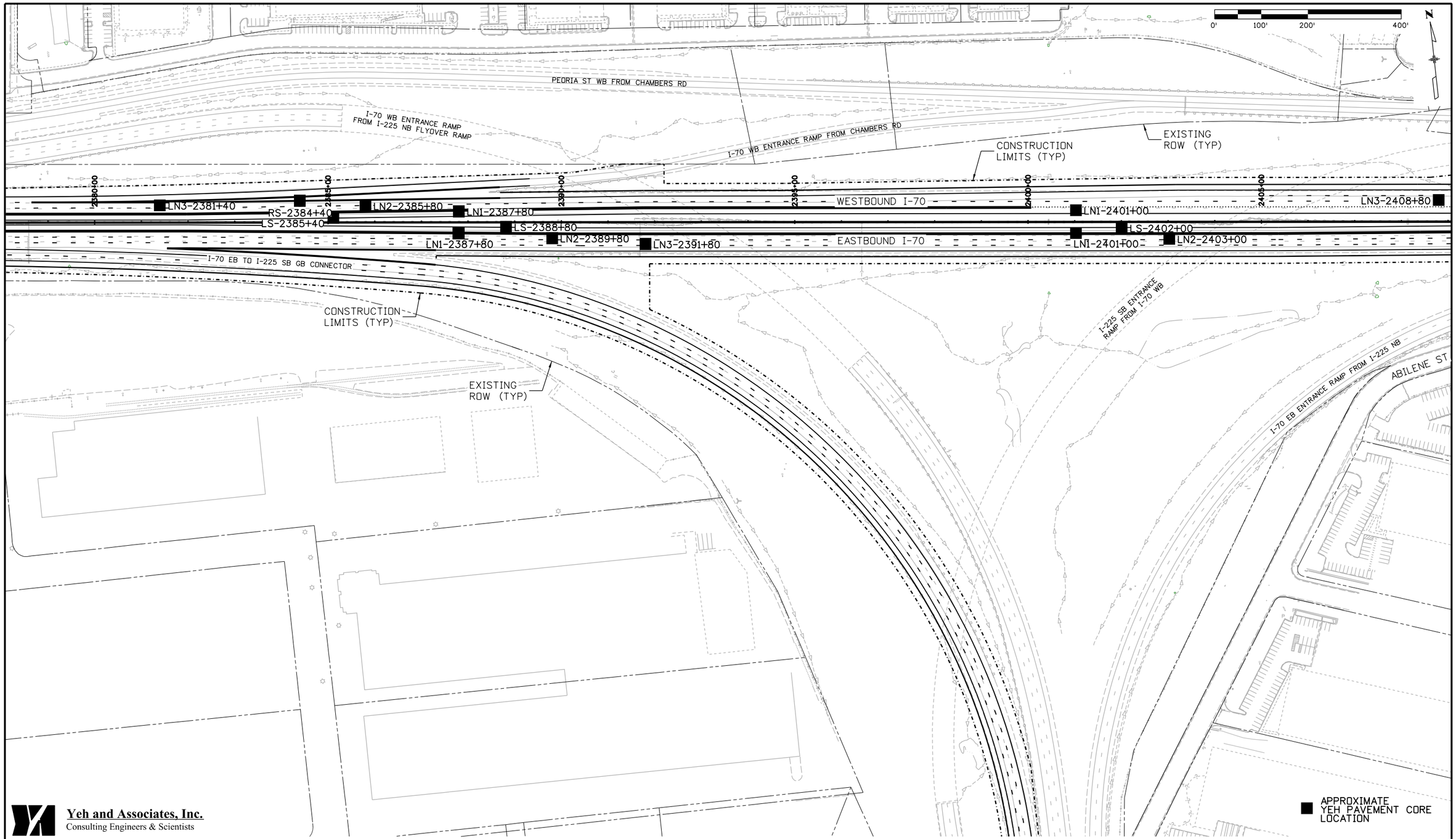

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Detailer: MJW
Sheet Subset: Geology
Structure Numbers
Subset Sheets: of

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Sheet Number A.5-7

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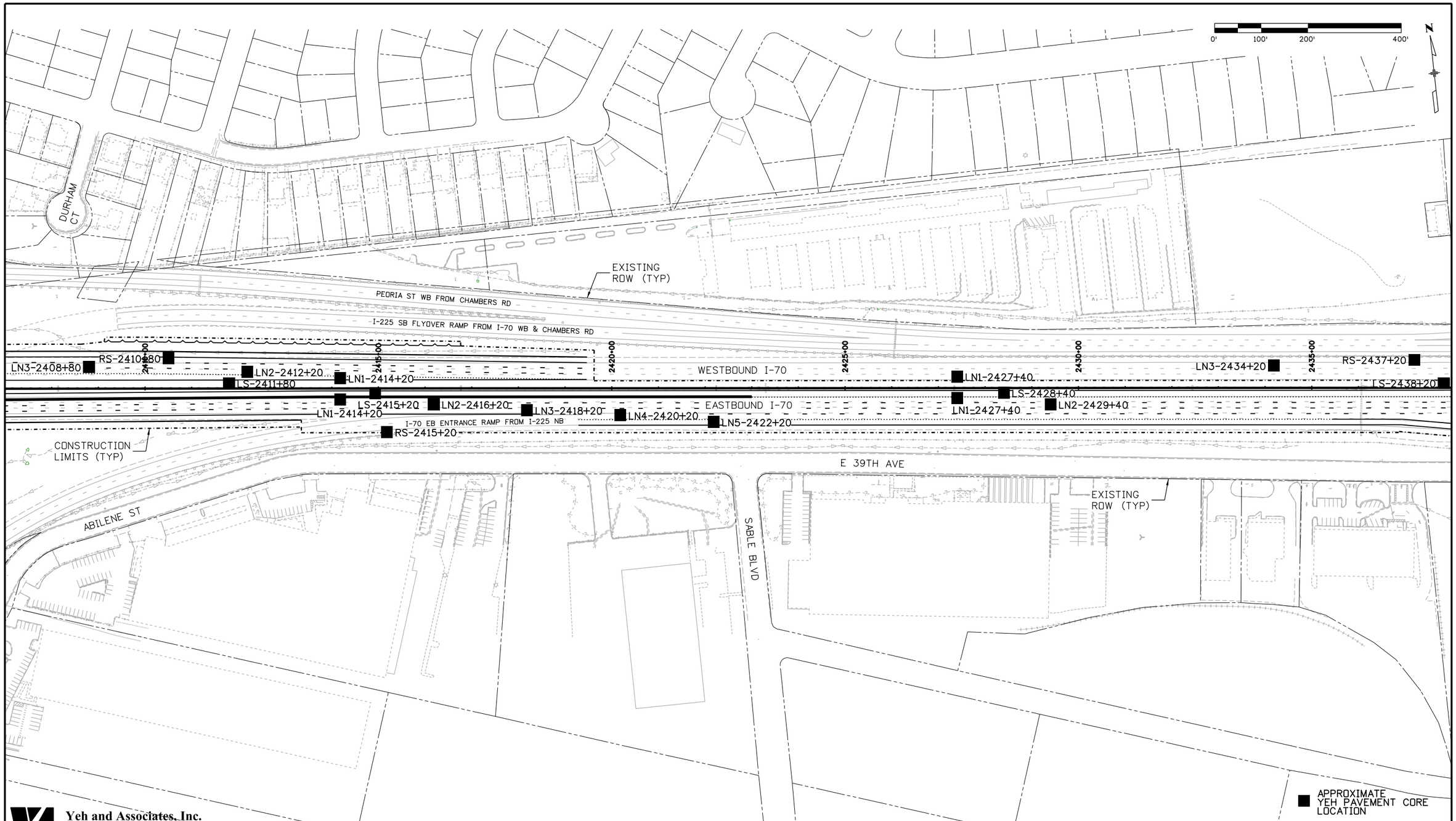

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Print Date: 7/15/2015	Sheet Revisions		
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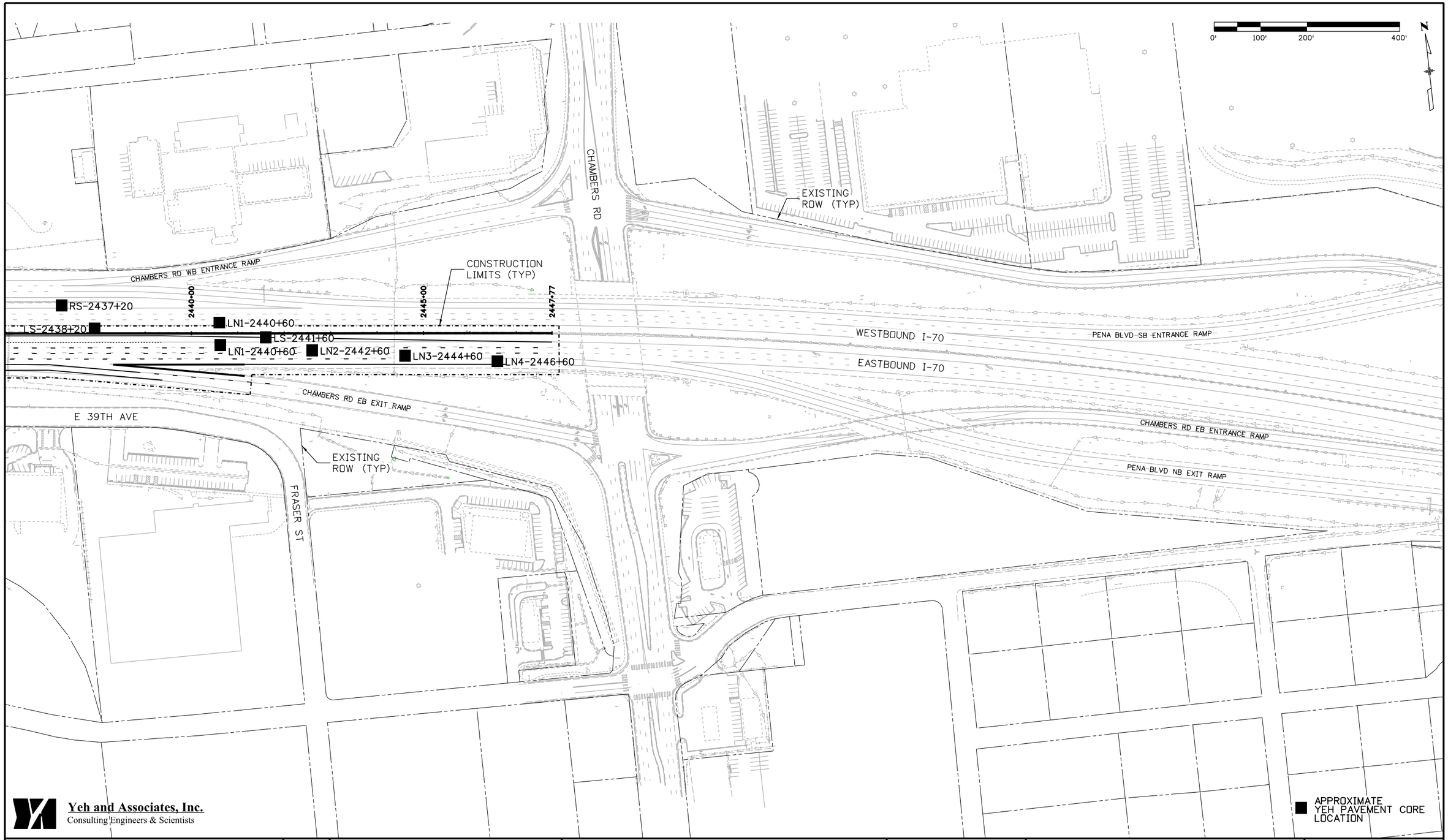
Sheet Number A.5-8

Mike Walz 2:35:01 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\Pavement Cores\13599GEOT_BH Plan 08_Pave Cores.dgn



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Sheet Number A.5-9

Mike Walz 2:35:04 PM W:\2013 Projects\213-208B I-70 East Corridor, Dahlia to Pena\Dwg\Pavement Cores\13599GEOT_BH Plan 09_Pave Cores.dgn

Appendix B

Legend and Structure Boring Logs

Key to Boring Identification

- YA-BB-1 & 2, Borings for proposed Brighton Boulevard Bridge
- YA-BJ-1 & 2, Borings for proposed Josephine Street Bridge
- YA-BCO 1& 2, Borings for proposed Columbine Street Bridge
- YA-BCL-1 & 2, Borings for proposed Clayton Street Bridge
- YA-BF-1 & 2, Borings for proposed Fillmore Street Bridge (To be added).
- YA-BS-1 & 2, Borings for proposed Steele Street Bridge
- YA-BCK-1 & 2, Borings for proposed Cook Street Bridge (To be added).
- YA-BML-1 & 2, Borings for proposed Market Lead Overpass Bridge
- YA-BMO-1, Borings for proposed Monroe Street (To be added).
- YA-BCB-1 & 2, Borings for proposed Colorado Boulevard Bridge
- YA-BD-1 & 2: Borings for proposed Dahlia Street Bridge
- YA-BH-1 & 2, Borings for proposed Holly Street Bridge
- YA-BM-1 & 2, Borings for proposed Monaco Street Bridge
- YA-BRI-1 & 2, Borings for proposed Rock Island Railroad Bridge
- YA-BQ-1 & 2, Borings for proposed Quebec Street Bridge
- YA-B270-1 & 2, Borings for proposed I-270 Bridge
- YA-BP-1 & 2, Borings for proposed Peoria Street Bridge
- YA-UP-1 through YA-UP-7, Borings for proposed Union Pacific Railroad Bridge
- YA-RW-1 through YA-RW-27, Borings drilled for proposed retaining walls
- YA-DON-1 through YA-DON-8, Borings drilled for proposed on-site drainage system
- YA-DOF-3 through YA-DOF-6, Borings drilled for proposed off-site outfall. Borings YA-DOF-1 and YA-DOF-2 were not drilled.

Legend for Symbols Used on Borehole Logs

Sample Types

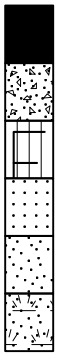
Auger Cuttings

Rock Core

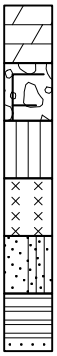
Grab Sample

Modified California Sampler

Soil and Bedrock Lithology


Asphalt
Concrete
Fill with Silt as major soil
Sandstone
USCS Poorly-graded Sand
Topsoil

USCS High Plasticity Clay
Fill with Clay as major soil
USCS Poorly-graded Sandy Gravel
USCS Clayey Sand
USCS Poorly-graded Gravelly Sand
Weathered Bedrock


CLAYSTONE
Fill with Gravel as major soil
USCS Silt
Siltstone
USCS Poorly-graded Sand with Silt
Alternating layers of sandstone and shale

USCS Low Plasticity Sandy Clay
Fill with Sand as major soil
USCS Sandy Silt
USCS Silty Sand
USCS Well-graded Gravelly Sand

Lab Test Abbreviations

MC-Moisture Content
DD-Dry Density
#200-Percent Passing #200 Sieve
LL-Liquid Limit
PL-Plastic Limit
PI-Plasticity Index
S-Sulfate Content
Chl-Chloride Content
S/C-Swell/Consolidation
UCCS-Unconfined Compressive Strength
Re-Resistivity
PtL-Point Load Test
AASHTO-AASHTO Classification
USCS-USCS Classification

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BB-1**
Sheet 1 of 3

Boring Began: 3/24/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/24/2014
Drill Bit:
Casing:
Weather: Partly cloudy, 20's

Total Depth: 89.4 ft
Ground Elevation: 5188.1 ft
Location: Brighton Boulevard
Coordinates: N: 456,114.1 E: 650,698.2

Ground Water Notes:

Depth	▽ 34.5 ft	-	-	-
Date	3/24/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 0.4 ft. 5 inches Fill**, construction fill, concrete and construction debris in upper 5 inches. **0.4 - 49.5 ft. well graded SAND** with variable amounts of gravel and silt, brown and black, loose to very dense, scattered organics at about 4 ft.	
	5				10/14	24			**CA Sample @ 4 ft** MC= 6.6 % DD= 110.0 pcf #200= 16 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SM
5180									
	10				4/5	9			
5175									
	15				7/14	21			
5170									
	20				14/18	32			**CA Sample @ 19 ft** MC= 2 % DD= 113.5 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW
5165									
	25				12/17	29			
5160									
	30				20/42	62			
5155									
	▽				13/12	25			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BB-1**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150									
	40				20/22	42			**CA Sample @ 39 ft** MC= 8.8 % DD= 124.6 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
5145									
	45				13/18	31			
5140									
	50				21/45	66		**49.5 - 89.4 ft. sandy CLAYSTONE**, gray to brown, hard to very hard, rust stains observed at about 49 ft.	**CA Sample @ 49.5 ft** MC= 20.4 % DD= 109.1 pcf #200= 56 % LL= 44 PL= 22 PI= 22
5135									
	55				50:4"	50:4"			
5130									
	60				42/50:4"	50:4"		Lignite inclusions observed at about 59 ft.	
5125									
	65				50:4"	50:4"			
5120									
	70				50:4.5"	50:4.5"		Lignite inclusions observed at about 69 ft.	
5115									**CA Sample @ 74 ft** MC= 16.8 % DD= 111.9 pcf #200= 49 % LL= 52 PL= 26 PI= 26
	75				50:5"	50:5"			

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BB-1**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5110									
	80				50:5"	50:5"		Lignite inclusions observed at about 79 ft.	
5105									
	85				50:6"	50:6"			
5100									**CA Sample @ 89 ft** MC= 16.8 % DD= 105.8 pcf #200= 48 % LL= 50 PL= 18 PI= 32
	90				50:5"	50:5"		Bottom of Hole at 89.4 ft.	
5095									
	95								
5090									
	100								
5085									
	105								
5080									
	110								
5075									
	115								
5070									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BB-2**
Sheet 1 of 3

Boring Began: 3/21/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/21/2014
Drill Bit:
Casing:
Weather: Clear, 30's

Total Depth: 90.4 ft
Ground Elevation: 5187.4 ft
Location: Brighton Boulevard
Coordinates: N: 455,949.5 E: 650,810.3

Ground Water Notes: Temporary monitoring well installed to a depth of about 90 ft

Depth	▽ 35.0 ft	-	-	-
Date	3/21/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 8.0 ft. silty SAND Fill**, dark gray to brown, loose.	
	5				4/2	6			**CA Sample @ 5 ft** MC= 5.6 % #200= 17 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5180								**8.0 - 47.5 ft. well graded SAND** with variable amounts of gravel and silt, brown to dark brown, medium dense to dense.	
	10				9/12	21			**CA Sample @ 10 ft** pH= 8.1 S= 0.002 % Re= 2513 ohms-cm CL = 0.0148%
5175									
	15				7/8	15			
5170									
	20				9/12	21			**CA Sample @ 20 ft** MC= 1.9 % DD= 106.0 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW
5165									
	25				11/12	23			
5160									
	30				37/22	59			
5155									

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BB-2**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					7/9	16			**CA Sample @ 35 ft** MC= 14.8 % DD= 118.4 pcf #200= 6 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5150									
	40				14/18	32			
5145									
	45				24/21	45			
5140									
	50				50:5.5"	50:5.5"		**47.5 - 54.0 ft. clayey SANDSTONE**, yellowish brown to brownish gray, very hard. Lignite inclusions, rust stains observed at about 50 ft.	**CA Sample @ 50 ft** MC= 18.2 % DD= 113.0 pcf #200= 30 % LL= 35 PL= 23 PI= 12
5135									
	55				50:3.5"	50:3.5"		**54.0 - 63.0 ft. silty SANDSTONE**, dark gray, very hard, rust stains observed at about 55 ft.	**CA Sample @ 55 ft** pH= 8 S= 0.011 % Re= 1242 ohms-cm CL = 0.0009%
5130									
	60				50:2.5"	50:2.5"			**CA Sample @ 60 ft** MC= 18.3 % DD= 114.7 pcf #200= 22 % LL= NV PL= NP PI= NP
5125									
	65				50:5"	50:5"		**63.0 - 90.4 ft. sandy CLAYSTONE**, dark gray, very hard.	
5120									
	70				50:5.5"	50:5.5"			
5115									**CA Sample @ 75 ft** MC= 17.1 % DD= 115.4 pcf #200= 48 % LL= 44 PL= 25 PI= 19
	75				50:4.5"	50:4.5"			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BB-2**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5105	80				50:5"	50:5"			
5100	85				50:2"	50:2"			
5095	90				50:5"	50:5"		Bottom of Hole at 90.4 ft.	
5090	95								
5085	100								
5080	105								
5075	110								
5070	115								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BJ-1**
Sheet 1 of 3

Boring Began: 4/22/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/25/2014
Drill Bit:
Casing:
Weather: Party cloudy

Total Depth: 89.3 ft
Ground Elevation: 5185.3 ft
Location: Josephine Street
Coordinates: N: 456,303.0 E: 653,261.9

Ground Water Notes:

Depth	▽ 28.0 ft	-	-	-
Date	4/22/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 0.5 ft. 6 inches asphalt**.	
								0.5 - 2.5 ft. 24 inches base course.	
								2.5 - 8.0 ft. silty SAND trace tree roots, brown, loose.	
					3/2	5			**CA Sample @ 4 ft** MC= 8.1 % DD= 108.9 pcf #200= 25 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5180	5								
					10/20	30		**8.0 - 39.0 ft. well graded SAND** with variable amounts of gravel and silt, brown and reddish brown, medium dense to dense.	
5175	10								
					7/23	30		Rust stains observed at about 14 ft.	
5170	15							Approximately 3 to 6 inch, fine sand interbeds observed at about 16 ft.	
					11/18	29			**CA Sample @ 19 ft** MC= 1.7 % #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW
5165	20								
					15/21	36			
5160	25								
					17/34	51			
5155	30								
					19/39	58			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BJ-1**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150									
	40				5/9	14		**39.0 - 43.5 ft. silty SAND** trace gravel, brown, medium dense.	**CA Sample @ 39 ft** MC= 22.9 % DD= 100.3 pcf #200= 35 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5145									
	45				13/39	52		**43.5 - 48.0 ft. poorly graded SAND** with variable amounts of gravel and silt, dark brown and black, dense. Gravel and small cobbles at about 47 ft.	
5140									
	50				21/37	58		**48.0 - 52.0 ft. sandy CLAYSTONE**, brown, very hard, laminated, lignite inclusions at about 49 ft.	**CA Sample @ 49 ft** MC= 21.9 % DD= 106.0 pcf #200= 79 % LL= 58 PL= 26 PI= 32
5135									
	55				50:5"	50:5"		**52.0 - 68.0 ft. silty SANDSTONE**, gray and dark gray, very hard.	
5130									
	60				50:5"	50:5"			**CA Sample @ 59 ft** MC= 17.7 % DD= 111.4 pcf #200= 51 % LL= NV PL= NP PI= NP
5125								Approximately 3 to 6 inch sandy claystone interbeds observed at about 60 ft.	
	65				50:4"	50:4"			
5120									
	70				39/50:2"	50:2"		**68.0 - 89.3 ft. sandy CLAYSTONE**, dark brown and gray, very hard, lignite inclusions at about 69 ft.	**CA Sample @ 69 ft** MC= 18 % DD= 110.5 pcf #200= 77 % LL= 53 PL= 26 PI= 27
5115									
	75				50:5"	50:5"			
5110									

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BJ-1**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5105	80				50:6"	50:6"			
5100	85				50:5"	50:5"			
5095	90				50:3"	50:3"		Bottom of Hole at 89.3 ft.	
5090	95								
5085	100								
5080	105								
5075	110								
5070	115								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BJ-2**
Sheet 1 of 3

Boring Began: 5/15/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 5/15/2014
Drill Bit:
Casing:
Weather: Partly cloudy, windy, 40's

Total Depth: 95.2 ft
Ground Elevation: 5186.5 ft
Location: Josephine Street
Coordinates: N: 455,978.9 E: 653,238.9

Ground Water Notes:

Depth	▽ 30.0 ft	-	-	-
Date	5/15/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 0.3 ft. 4 inches asphalt**.	
								0.3 - 2.5 ft. 26 inches base course.	
								2.5 - 7.0 ft. silty SAND, brown, loose.	
	5				3/2	5			**CA Sample @ 5 ft** MC= 5.7 % DD= 107.6 pcf #200= 16 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5180								**7.0 - 14.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense.	
	10				10/20	30			
5175									
								14.0 - 18.0 ft. sandy CLAY rust stained, calcareous, brown to light brown, stiff.	
	15				4/6	10			**CA Sample @ 15 ft** MC= 22.2 % DD= 102.2 pcf #200= 78 % LL= 41 PL= 17 PI= 24 AASHTO: A-7-6 (18) USCS: CL
5170								**18.0 - 40.5 ft. poorly graded SAND** with variable amounts of gravel and silt, brown to reddish brown, loose to medium dense. Rust stains observed at about 20 ft.	
	20				10/19	29			
5165									
	25				6/9	15			**CA Sample @ 25 ft** MC= 1.8 % #200= 2 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5160									
	30 ▽				20/23	43			
5155									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BJ-2**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150					4/5	9			
	40				22/12	34		**40.5 - 47.0 ft. clayey SAND** with gravel, brown, medium dense.	**CA Sample @ 40 ft** MC= 9.8 % #200= 12 % LL= 45 PL= 22 PI= 23 AASHTO: A-2-7 (0) USCS: SP-SC
5145									
	45				6/7	13			
5140								**47.0 - 52.0 ft. poorly graded SAND** with variable amounts of gravel and silt, brown, dense.	
	50				30/40	70			**CA Sample @ 50 ft** MC= 8.4 % DD= 121.1 pcf #200= 11 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5135								**52.0 - 57.5 ft. sandy CLAYSTONE**, brown to brown-gray, very hard.	
	55				22/50:2"	50:2"		Lignite inclusions, rust stains observed at about 55 ft.	**CA Sample @ 55 ft** MC= 18.3 % DD= 111.2 pcf #200= 50 % LL= 35 PL= 19 PI= 16
5130								**57.5 - 69.0 ft. silty SANDSTONE**, gray, very hard.	
	60				50:5"	50:5"		Lignite inclusions observed at about 60 ft.	
5125									
	65				50:3"	50:3"			**CA Sample @ 65 ft** MC= 17.9 % DD= 108.2 pcf #200= 20 % LL= NV PL= NP PI= NP
5120									
	70				38/50:3"	50:3"		**69.0 - 87.0 ft. sandy CLAYSTONE**, dark gray, very hard. Lignite inclusions observed at about 70 ft.	
5115									
	75				50:4"	50:4"			
5110									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BJ-2**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5105	80				35/50:2"	50:2"			
5100	85				50:5"	50:5"			**CA Sample @ 85 ft** MC= 15.9 % DD= 115.9 pcf #200= 63 % LL= 44 PL= 26 PI= 18
5095	90				50:4"	50:4"		**87.0 - 95.2 ft. silty SANDSTONE**, dark gray, very hard.	
5090	95				50:2"	50:2"		Bottom of Hole at 95.2 ft.	
5085	100								
5080	105								
5075	110								
5070	115								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCO-1**
Sheet 1 of 3

Boring Began: 5/3/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 5/3/2014
Drill Bit:
Casing:
Weather: Partly cloudy, 50's

Total Depth: 115.3 ft
Ground Elevation: 5186.5 ft
Location: Columbine Street
Coordinates: N: 456,260.6 E: 653,584.3

Ground Water Notes:

Depth	▽ 30.0 ft	-	-	-
Date	5/3/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 3.0 ft. silty SAND Fill**, some concrete and asphalt debris, brown.	
								3.0 - 9.0 ft. silty SAND, brown, loose.	
	5				4/3	7			**CA Sample @ 5 ft** MC= 7.1 % DD= 109.0 pcf #200= 25 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5180									
	10				7/16	23		**9.0 - 72.5 ft. poorly graded SAND** with variable amounts of gravel and silt, brown to reddish brown, medium dense to dense. Rust stains observed at about 10 ft.	
5175									
	15				14/13	27			
5170									
	20				19/25	44			**CA Sample @ 20 ft** MC= 1.7 % #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SP
5165									
	25				17/33	50			
5160									
	30 ▽				25/33	58			
5155									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCO-1**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150					10/20	30			
	40				15/34	49			**CA Sample @ 40 ft** MC= 11.8 % DD= 137.0 pcf #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5145									
	45				11/23	34			
5140									
	50				14/23	37			
5135									
	55				9/16	25			**CA Sample @ 55 ft** MC= 9.5 % DD= 119.3 pcf #200= 1 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5130									
	60				5/12	17			
5125									
	65				8/20	28			
5120									
	70				20/50:5"	50:5"			
5115								**72.5 - 115.3 ft. clayey SANDSTONE**, brown to gray, very hard. Lignite inclusions, rust stains observed at about 75 ft.	
	75				35/50:3"	50:3"			**CA Sample @ 75 ft** MC= 24.5 % DD= 102.5 pcf #200= 40 % LL= 52 PL= 25 PI= 27
5110									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCO-1**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5105	80				50:3"	50:3"			
	85				50:3"	50:3"			
5100									
	90				50:6"	50:6"			
5095									
	95				50:5"	50:5"			**CA Sample @ 95 ft** MC= 17.8 % DD= 111.8 pcf #200= 32 % LL= 39 PL= 26 PI= 13
5090									
	100				50:4"	50:4"			
5085									
	105				50:4"	50:4"			
5080									
	110				38/50:4"	50:4"		Lignite inclusions observed at about 110 ft.	
5075									
	115				50:4"	50:4"			**CA Sample @ 115 ft** MC= 15.2 % DD= 116.5 pcf #200= 35 % LL= 45 PL= 25 PI= 20
5070								Bottom of Hole at 115.3 ft.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCO-2**
Sheet 1 of 3

Boring Began: 5/17/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: M. Boyd/R. Miller
Final By: C. Yeh
Inclination: Vertical

Completed: 5/17/2014
Drill Bit:
Casing:
Weather: Overcast, cool

Total Depth: 119.4 ft
Ground Elevation: 5187.5 ft
Location: Columbine Street
Coordinates: N: 455,984.5 E: 653,542.2

Ground Water Notes:

Depth	▽ 27.0 ft	-	-	-
Date	5/17/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 0.5 ft. 6 inches asphalt**.	
								0.5 - 13.0 ft. silty SAND, light brown to brown, loose.	
	5				2/3	5			**CA Sample @ 4 ft** MC= 7.8 % DD= 112.7 pcf #200= 24 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5180									
	10				4/4	8			
5175									
								13.0 - 64.0 ft. well graded SAND with variable amounts of silt and gravel, brown to reddish brown, loose to dense.	
	15				8/7	15			
5170									
	20				25/47	72			**CA Sample @ 19 ft** MC= 2.1 % #200= 6 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5165									
	25				6/5	11		Rust stains observed at about 24 ft.	
5160	▽								
	30				13/20	33			**CA Sample @ 34 ft** MC= 8.8 % DD= 127.0 pcf #200= 10 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5155									
					10/21	31			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCO-2**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150									
	40				10/21	31			
5145									
	45				14/21	35			
5140									
	50				16/26	42			**CA Sample @ 49 ft** MC= 8 % DD= 111.3 pcf #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5135									
	55				14/24	38			
5130									
	60				20/22	42			
5125									
	65				6/9	15		**64.0 - 77.0 ft. silty SAND**, brown, medium dense.	
5120					10/19	29			**CA Sample @ 67 ft** MC= 26.6 % DD= 95.8 pcf #200= 10 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SP-SM
	70								
5115									
	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCO-2**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					41/50:5"	50:5"		**77.0 - 119.4 ft. sandy CLAYSTONE**, gray to dark gray, very hard, interbedded sandstone between about 77 ft to 80 ft.	**CA Sample @ 78 ft** MC= 21.3 % DD= 103.1 pcf #200= 61 % LL= 39 PL= 21 PI= 18
5105	80								
					50:5"	50:5"			
5100	85								
					50:2"	50:2"			
5095	90								
	95				50:4"	50:4"		Decreased sand content after about 95 ft.	
5090									
					50:2"	50:2"			**CA Sample @ 99 ft** MC= 15.8 % DD= 114.9 pcf #200= 94 % LL= 49 PL= 19 PI= 30
5085	100								
					50:5"	50:5"			
5080	105								
					50:5"	50:5"			
5075	110								
					50:5"	50:5"			
5070	115								**CA Sample @ 119 ft** MC= 17.8 % DD= 112.3 pcf #200= 92 % LL= 47 PL= 21 PI= 26
					50:5"	50:5"		Bottom of Hole at 119.4 ft.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCL-1**
Sheet 1 of 3

Boring Began: 4/24/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/24/2014
Drill Bit:
Casing:
Weather: Clear, upper 40's

Total Depth: 80.2 ft
Ground Elevation: 5195.8 ft
Location: Clayton Street
Coordinates: N: 456,276.6 E: 654,393.7

Ground Water Notes: Temporary monitoring well installed to a depth of about 80 ft

Depth	▽ 36.0 ft	-	-	-
Date	4/24/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5195								**0.0 - 0.3 ft. 3 inches asphalt**.	
								0.3 - 0.5 ft. 3 inches base course.	
								0.5 - 15.5 ft. silty SAND, brown, loose, rust stains observed at about 5 ft.	
	5								
5190					3/3	6			**CA Sample @ 5 ft** MC= 6 % DD= 107.8 pcf #200= 15 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	10								
5185					4/4	8			
	15								
5180					4/5	9		**15.5 - 22.0 ft. poorly graded SAND** with variable amounts of gravel and silt, brown, loose to medium dense, rust stains observed at about 15 ft.	
	20								**CA Sample @ 20 ft** MC= 2.2 % #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SP
5175					14/19	33			
								22.0 - 28.0 ft. sandy SILT, brownish gray, medium dense, rust stains observed at about 25 ft.	
	25								**CA Sample @ 25 ft** MC= 22.7 % DD= 97.9 pcf #200= 61 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: ML
5170					7/7	14			
								28.0 - 39.0 ft. well graded SAND with variable amounts of gravel and silt, brown, dense.	
	30								
5165					14/23	37			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCL-1**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5160 ▽					7/6	13			
	40							**39.0 - 43.5 ft. clayey SANDSTONE**, brownish gray, hard, rust stains, lignite inclusions observed at about 40 ft.	**CA Sample @ 40 ft** MC= 33.3 % DD= 85.9 pcf #200= 41 % LL= 65 PL= 30 PI= 35
5155					24/42	66			
	45				50:6"	50:6"		**43.5 - 68.0 ft. sandy CLAYSTONE**, gray, very hard. Lignite inclusions observed at about 45 ft.	
5150									
	50				50:6"	50:6"			
5145									
	55				50:3"	50:3"			
5140									
	60				48/50:2"	50:2"			**CA Sample @ 60 ft** MC= 16.7 % DD= 114.2 pcf #200= 60 % LL= 48 PL= 25 PI= 23
5135									
	65				50:6"	50:6"			
5130									
								68.0 - 80.2 ft. clayey SANDSTONE, brown to brownish gray, very hard.	
	70				50:4"	50:4"			
5125									
									CA Sample @ 75 ft MC= 16.6 % DD= 114.6 pcf #200= 47 % LL= 35 PL= 20 PI= 15
	75				50:4"	50:4"			
5120									

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCL-1**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5115	80				80:2"	80:2"		Bottom of Hole at 80.2 ft.	
5110	85								
5105	90								
5100	95								
5095	100								
5090	105								
5085	110								
5080	115								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCL-2**
Sheet 1 of 3

Boring Began: 5/14/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 5/14/2014
Drill Bit:
Casing:
Weather: Party cloudy, upper 40's

Total Depth: 79.4 ft
Ground Elevation: 5198.0 ft
Location: Clayton Street
Coordinates: N: 455,985.4 E: 654,359.6

Ground Water Notes:

Depth	▽ 37.0 ft	-	-	-
Date	5/14/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 2.5 ft. silty SAND Fill with grassy roots, dark brown.	
5195								**2.5 - 17.0 ft. silty SAND** trace gravel, brown, very loose to loose.	
	5				2/1	3			**CA Sample @ 4 ft** MC= 4.5 % #200= 16 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5190									
	10				5/6	11			
5185									
	15				3/4	7			**CA Sample @ 14 ft** MC= 9.2 % DD= 111.9 pcf #200= 27 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5180								**17.0 - 37.0 ft. poorly graded SAND** with variable amounts gravel and silt, brown, medium dense.	
	20				10/18	28			
5175									
	25				7/8	15			
5170									
	30				9/18	27			**CA Sample @ 29 ft** MC= 2.2 % #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5165									
					11/16	27			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCL-2**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								37.0 - 39.0 ft. weathered CLAYSTONE, brown.	
5160									
	40				15/34	49		**39.0 - 42.5 ft. sandy CLAYSTONE**, brown to reddish brown, medium hard to very hard, rust stains observed at about 39 ft.	**CA Sample @ 39 ft** MC= 25.2 % DD= 90.2 pcf #200= 48 % LL= 43 PL= 24 PI= 19
5155								**42.5 - 47.0 ft. silty SANDSTONE**, dark gray, very hard.	
	45				50:5"	50:5"			
5150								**47.0 - 52.5 ft. sandy CLAYSTONE**, dark gray, medium hard.	
	50				17/23	40			
5145								**52.5 - 58.0 ft. silty SANDSTONE**, dark gray, very hard.	
	55				50:5"	50:5"			
5140								**58.0 - 79.4 ft. sandy CLAYSTONE**, gray to dark gray, very hard. Lignite inclusions observed at about 59 ft.	
	60				45/50:3"	50:3"			
5135									
	65				50:4"	50:4"		Lignite inclusions, rust stains observed at about 64 ft.	
5130									
	70				50:4"	50:4"			
5125									
	75				50:5"	50:5"			**CA Sample @ 74 ft** MC= 15 % #200= 77 % LL= 46 PL= 21 PI= 25

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCL-2**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5120									
					50:4"	50:4"		Bottom of Hole at 79.4 ft.	
	80								
5115									
	85								
5110									
	90								
5105									
	95								
5100									
	100								
5095									
	105								
5090									
	110								
5085									
	115								
5080									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BS-1**
Sheet 1 of 3

Boring Began: 6/5/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 6/5/2014
Drill Bit:
Casing:
Weather: Party cloudy, 70's

Total Depth: 89.4 ft
Ground Elevation: 5206.7 ft
Location: Steele Street
Coordinates: N: 456,258.6 E: 655,633.4

Ground Water Notes:

Depth	▽ 44.0 ft	-	-	-
Date	6/5/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5205								**0.0 - 0.4 ft. 5 inches asphalt**.	
								0.4 - 2.5 ft. 25 inches base course.	
								2.5 - 16.5 ft. silty SAND, brown, very loose to loose.	
	5				3/3	6			**CA Sample @ 4 ft** MC= 6.5 % DD= 110.3 pcf #200= 19 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5200									
	10				2/3	5			
5195									
	15				3/4	7			**CA Sample @ 14 ft** MC= 6.8 % DD= 103.9 pcf #200= 33 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5190								**16.5 - 27.0 ft. sandy SILT** trace gravel, light brown, loose.	
	20				4/5	9			
5185									
	25				4/5	9			**CA Sample @ 24 ft** MC= 13.3 % DD= 108.7 pcf #200= 57 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: ML
5180								**27.0 - 49.3 ft. poorly graded SAND** with variable amounts of gravel and silt, light brown to brown, medium dense.	
	30				8/18	26		Rust stains observed at about 29 ft.	
5175									
					15/16	31			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BS-1**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5170									
	40				12/16	28			**CA Sample @ 39 ft** MC= 2.7 % #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SP
5165									
	45				6/10	16			
5160									
	50				42/50:1"	50:1"		**49.3 - 59.0 ft. clayey SANDSTONE**, brown and gray, very hard, rust stains observed at about 50 ft.	**CA Sample @ 49 ft** MC= 23.2 % #200= 42 % LL= 39 PL= 25 PI= 14
5155									
	55				50:3"	50:3"			
5150									
	60				50:6"	50:6"		**59.0 - 89.4 ft. sandy CLAYSTONE**, brown, very hard.	
5145									
	65				36/50:5"	50:5"			
5140									
	70				38/50:3"	50:3"			
5135									
	75				50:5"	50:5"			
5130									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BS-1**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					50:6"	50:6"			**CA Sample @ 79 ft** MC= 19 % #200= 81 % LL= 58 PL= 26 PI= 32
5125	80								
					50:5"	50:5"			
5120	85								
					50:5"	50:5"			
5115	90							Bottom of Hole at 89.4 ft.	
	95								
5110									
	100								
5105									
	105								
5100									
	110								
5095									
	115								
5090									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BS-2**
Sheet 1 of 3

Boring Began: 6/9/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 6/9/2014
Drill Bit:
Casing:
Weather: Clear, 50's

Total Depth: 89.0 ft
Ground Elevation: 5205.8 ft
Location: Steele Street
Coordinates: N: 455,974.2 E: 655,479.1

Ground Water Notes:

Depth	▽ 42.0 ft	-	-	-
Date	6/9/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5205								**0.0 - 1.5 ft. gravelly SAND Fill**, dark brown.	
								1.5 - 13.0 ft. silty SAND, brown, very loose to loose.	
					3/2	5			**CA Sample @ 3 ft** MC= 2.3 % DD= 98.5 pcf #200= 17 % LL= 35 PL= 19 PI= 16 AASHTO: A-2-4 (0) USCS: SM
5200	5								
					3/4	7			
5195	10								
					4/4	8		**13.0 - 24.0 ft. sandy CLAY** trace gravel, brown, medium stiff to stiff.	
5190	15								
					3/4	7			**CA Sample @ 18 ft** MC= 12 % DD= 106.0 pcf #200= 52 % LL= 25 PL= 14 PI= 11 AASHTO: A-6 (2) USCS: CL
5185	20								
					4/5	9			**CA Sample @ 23 ft** pH= 7.6 S= 0.005 % Re= 1506 ohms-cm CL = 0.0127%
	25							**24.0 - 47.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense.	
5180					15/22	37			
	30								
5175									
					11/15	26			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BS-2**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5170									
					28/31	59		More gravel, rust stains observed at about 38 ft.	**CA Sample @ 38 ft** MC= 3.4 % #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: GW-GM
	40								
5165									
					20/23	43			
	45								
5160									
								47.0 - 52.0 ft. sandy CLAYSTONE, gray to dark gray, medium hard. Rust stains observed at about 48 ft.	
					14/22	36			**CA Sample @ 48 ft** MC= 31.4 % DD= 89.1 pcf #200= 82 % LL= 57 PL= 26 PI= 31
	50								
5155									
								52.0 - 89.0 ft. sandy CLAYSTONE, gray to dark gray, hard to very hard.	
					30/50	80			
	55								
5150									
					25/46	71			
	60								
5145									
					50:4"	50:4"			**CA Sample @ 63 ft** MC= 17.7 % DD= 110.6 pcf #200= 80 % LL= 39 PL= 18 PI= 21
	65								
5140									
					18/39	57			
	70								
5135									
					38/50:4"	50:4"			
	75								
5130									

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BS-2**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					38/50:4"	50:4"		Lignite inclusions observed at about 78 ft.	
5125	80								
					36/47	83			**CA Sample @ 83 ft** MC= 20.2 % DD= 107.3 pcf #200= 90 % LL= 40 PL= 23 PI= 17
5120	85								
					35/50	85			
5115	90							Bottom of Hole at 89.0 ft.	
5110	95								
5105	100								
5100	105								
5095	110								
5090	115								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BML-1**
Sheet 1 of 3

Boring Began: 6/10/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 6/1/110
Drill Bit:
Casing:
Weather: Clear, 70's

Total Depth: 104.5 ft
Ground Elevation: 5223.4 ft
Location: Market Lead BNSF
Coordinates: N: 456,233.5 E: 656,810.7

Ground Water Notes: Temporary monitoring well installed to a depth of about 104 ft

Depth	▽ 60.0 ft	-	-	-
Date	6/10/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.4 ft. 5 inches asphalt.	
								0.4 - 5.0 ft. clayey SAND, brown, loose.	
5220					4/3	7			**CA Sample @ 3 ft** MC= 12.2 % DD= 107.0 pcf #200= 48 % LL= 25 PL= 14 PI= 11 AASHTO: A-6 (2) USCS: SC
	5							**5.0 - 41.5 ft. silty SAND**, brown, very loose to medium dense.	
					3/2	5			
5215									
					3/4	7			
	10								
5210									
					4/6	10			**CA Sample @ 14 ft** MC= 7 % #200= 33 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	15								
5205									
					4/4	8			
	20								
5200									
					5/6	11			**CA Sample @ 24 ft** MC= 10.6 % DD= 103.5 pcf #200= 38 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: SM
	25								
5195									
					8/9	17			
	30								
5190									
					8/7	15			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BML-1**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5185									
	40				6/7	13			
5180								**41.5 - 63.5 ft. poorly graded SAND** with variable amounts of gravel and silt, brown, loose to dense.	
	45				7/5	12			**CA Sample @ 44 ft** MC= 8.1 % DD= 105.6 pcf #200= 23 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SM
5175									
	50				7/10	17		Rust stains observed at abotu 49 ft.	
5170									
	55				17/24	41			**CA Sample @ 54 ft** MC= 2.1 % #200= 2 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5165									
	60				8/12	20			
5160								**63.5 - 104.5 ft. sandy CLAYSTONE**, brown and gray, hard to very hard.	
	65				20/46	66		Rust stains observed at about 65 ft.	**CA Sample @ 64 ft** MC= 20.6 % DD= 101.9 pcf #200= 97 % LL= 48 PL= 21 PI= 27
5155									
	70				37/50:5"	50:5"		Lignite inclusions observed at about 69 ft.	
5150									
	75				20/45	65			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BML-1**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5145									
	80				50:6"	50:6"			**CA Sample @ 79 ft** MC= 26.9 % DD= 92.2 pcf #200= 69 % LL= 53 PL= 27 PI= 26
5140									
	85				50:6"	50:6"			
5135									
	90				50:6"	50:6"			
5130									
	95				50:6"	50:6"			**CA Sample @ 94 ft** MC= 20.2 % DD= 102.1 pcf #200= 89 % LL= 60 PL= 26 PI= 34
5125									
	100				50:6"	50:6"			
5120									
	105				50:6"	50:6"		Bottom of Hole at 104.5 ft.	
5115									
	110								
5110									
	115								
5105									

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BML-2**
Sheet 1 of 3

Boring Began: 5/8/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 5/8/2014
Drill Bit:
Casing:
Weather: Cloudy, 40's

Total Depth: 99.3 ft
Ground Elevation: 5219.9 ft
Location: Market Lead BNSF
Coordinates: N: 456,052.1 E: 656,699.1

Ground Water Notes:

Depth	▽ 59.0 ft	-	-	-
Date	5/8/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.7 ft. 8 inches asphalt.	
								0.7 - 2.0 ft. 16 inches base course.	
								2.0 - 12.0 ft. silty SAND trace gravel, brown, very loose to loose.	
5215	5				3/2	5			
5210	10				4/6	10			**CA Sample @ 9 ft** MC= 3.7 % DD= 117.9 pcf #200= 17 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
								12.0 - 25.0 ft. sandy CLAY calcareous, brown, medium stiff to stiff.	
5205	15				4/6	10			
5200	20				3/3	6			**CA Sample @ 19 ft** MC= 10.7 % DD= 112.4 pcf #200= 52 % LL= 26 PL= 17 PI= 9 AASHTO: A-4 (0) USCS: CL
5195	25				6/8	14		**25.0 - 34.5 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense.	**CA Sample @ 24 ft** pH= 7.7 S= 0.003 % Re= 982 ohms-cm CL = 0.0164%
5190	30				8/7	15			**CA Sample @ 29 ft** MC= 3.5 % DD= 116.5 pcf #200= 13 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SM
					8/10	18			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								34.5 - 43.0 ft. clayey SAND, brown, medium dense.	
5180	40				7/11	18			**CA Sample @ 39 ft** MC= 11.1 % DD= 121.1 pcf #200= 39 % LL= 33 PL= 14 PI= 19 AASHTO: A-6 (3) USCS: SC
5175	45				12/16	28		**43.0 - 59.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense. Rust stains observed at about 44 ft.	
5170	50				9/10	19			**CA Sample @ 49 ft** MC= 1.2 % #200= 2 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW
5165	55				18/25	43			
5160	60				20/50	70		**59.0 - 99.3 ft. sandy CLAYSTONE**, brown and dark gray, hard to very hard.	**CA Sample @ 59 ft** MC= 21.9 % DD= 103.0 pcf #200= 93 % LL= 52 PL= 21 PI= 31
5155	65				50:6"	50:6"			
5150	70				50:5"	50:5"			
5145	75				50:6"	50:6"			

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BML-2**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5140	80				50:6"	50:6"			**CA Sample @ 79 ft** MC= 21.9 % DD= 103.2 pcf #200= 92 % LL= 51 PL= 22 PI= 29
5135	85				50:5"	50:5"			
5130	90				27/37	64			
5125	95				50:6"	50:6"			
5120	100				50:4"	50:4"		Bottom of Hole at 99.3 ft.	**CA Sample @ 99 ft** MC= 18.5 % #200= 86 % LL= 58 PL= 25 PI= 33
5115	105								
5110	110								
5105	115								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCB-1**
Sheet 1 of 4

Boring Began: 5/19/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 5/20/2014
Drill Bit:
Casing:
Weather: Party cloudy, 60's

Total Depth: 139.2 ft
Ground Elevation: 5257.1 ft
Location: Colorado Boulevard
Coordinates: N: 456,162.5 E: 658,193.9

Ground Water Notes:

Depth	▽ 89.0 ft	-	-	-
Date	5/20/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5255								**0.0 - 0.9 ft. 11 inches asphalt**.	
								0.9 - 2.5 ft. 19 inches base course.	
								2.5 - 19.0 ft. silty SAND Fill, brown, loose to medium dense.	
	5				3/8	11			**CA Sample @ 4 ft** MC= 12.3 % DD= 118.9 pcf #200= 33 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5250									
	10				6/8	14			
5245									
	15				9/13	22			
5240									
	20				5/7	12		**19.0 - 30.0 ft. sandy CLAY** , calcareous, brown, stiff.	**CA Sample @ 19 ft** MC= 12.3 % DD= 119.4 pcf #200= 63 % LL= 27 PL= 17 PI= 10 AASHTO: A-4 (4) USCS: CL
5235									
	25				7/9	16			
5230									
	30				10/19	29			
5225								**30.0 - 52.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense.	
	35				15/20	35			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCB-1**
Sheet 2 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5220									
					15/19	34			**CA Sample @ 39 ft** MC= 3.4 % DD= 115.6 pcf #200= 7 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
	40								
5215									
					13/18	31			
	45								
5210									
					12/20	32			
	50								
5205								**52.0 - 57.0 ft. sandy CLAY** , calcareous, light brown, stiff.	
					5/7	12			**CA Sample @ 54 ft** MC= 29.8 % DD= 92.0 pcf #200= 83 % LL= 41 PL= 19 PI= 22 AASHTO: A-7-6 (18) USCS: CL
	55								
5200								**57.0 - 86.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense.	
					20/31	51			
	60								
5195									
					17/22	39			**CA Sample @ 64 ft** MC= 4.1 % #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
	65								
5190									
					15/27	42			
	70								
5185									
					16/15	31			
	75								
5180									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCB-1**
Sheet 3 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	80				17/35	52			
5175									
	85				17/28	45			
5170								**86.0 - 90.0 ft. sandy CLAY**, brown to gray - brown, very stiff.	**CA Sample @ 89 ft** MC= 22.7 % DD= 100.9 pcf #200= 71 % LL= 37 PL= 22 PI= 15 AASHTO: A-6 (9) USCS: CL
	90				12/17	29		Rust stains observed at about 89 ft.	
5165								**90.0 - 98.5 ft. well graded SAND** with variable amounts of gravel and silt, brown, dense.	**CA Sample @ 94 ft** MC= 6.6 % DD= 124.8 pcf #200= 6 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
	95				13/25	38			
5160									
	100				39/50:2"	50:2"		**98.5 - 116.5 ft. sandy CLAYSTONE**, gray to dark gray, very hard.	**CA Sample @ 99 ft** MC= 28.7 % DD= 95.4 pcf #200= 61 % LL= 56 PL= 23 PI= 33
5155									
	105				50:6"	50:6"			
5150									
	110				50:5"	50:5"			
5145									
	115				50:5"	50:5"			
5140								**116.5 - 123.5 ft. clayey SANDSTONE**, dark gray, very hard.	**CA Sample @ 119 ft** MC= 25.4 % #200= 29 % LL= 47 PL= 26 PI= 21
	120				50:3"	50:3"			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCB-1**
Sheet 4 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5135									
	125				50:4"	50:4"		**123.5 - 139.2 ft. sandy CLAYSTONE**, dark gray, very hard.	
5130									
	130				50:3"	50:3"			**CA Sample @ 129 ft** MC= 18.4 % DD= 106.0 pcf #200= 74 % LL= 45 PL= 26 PI= 20
5125									
	135				50:3"	50:3"			
5120									
	140				50:2"	50:2"		Bottom of Hole at 139.2 ft.	
5115									
	145								
5110									
	150								
5105									
	155								
5100									
	160								
5095									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCB-2**
Sheet 1 of 3

Boring Began: 5/7/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 5/13/2014
Drill Bit:
Casing:
Weather: Cloudy, 30's

Total Depth: 119.3 ft
Ground Elevation: 5237.0 ft
Location: Colorado Boulevard
Coordinates: N: 455,947.0 E: 658,328.7

Ground Water Notes: Temporary monitoring well installed to a depth of about 119 ft

Depth	▽ 68.0 ft	-	-	-
Date	5/13/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5235								**0.0 - 8.0 ft. sandy CLAY** calcareous, brown, very stiff.	
	5				8/13	21			**CA Sample @ 4 ft** MC= 12.9 % DD= 120.0 pcf #200= 69 % LL= 32 PL= 14 PI= 18 AASHTO: A-6 (10) USCS: CL
5230								**8.0 - 52.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense.	
	10				13/16	29			
5225									
	15				11/13	24			
5220									
	20				14/18	32		Approximately 1 inch thick, interbedded clay layers observed between about 19 to 20 ft.	**CA Sample @ 19 ft** MC= 4.6 % DD= 124.0 pcf #200= 9 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5215									
	25				13/16	29			**CA Sample @ 25 ft** MC= 2.3 % DD= 111.1 pcf pH= 8 S= 0.003 % Re= 6640 ohms-cm CL = 0.0028%
5210									
	30				18/21	39		Rust stains observed at about 29 ft.	
5205									
					14/17	31		Approximately 3 to 5 inch thick, interbedded clay layers observed between about 34 and 38 ft.	

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCB-2**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5200									
	40				20/33	53			**CA Sample @ 39 ft** MC= 3.3 % #200= 6 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5195									
	45				20/32	52			
5190									
	50				19/28	47			
5185								**52.0 - 56.5 ft. silty SAND**, brown to gray - brown, dense.	
	55				9/27	36		Rust stains observed at about 54 ft.	**CA Sample @ 54 ft** MC= 16 % DD= 112.6 pcf #200= 42 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: SM
5180								**56.5 - 68.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, dense.	
	60				16/28	44		Rust stains observed at about 59 ft.	
5175									
	65				18/25	43			
5170									
	70				8/12	20		**68.0 - 71.5 ft. sandy CLAY**, gray - brown, very stiff. Rust stains observed at about 69 ft.	**CA Sample @ 69 ft** MC= 22.4 % DD= 100.0 pcf #200= 79 % LL= 40 PL= 19 PI= 21 AASHTO: A-6 (16) USCS: CL
5165								**71.5 - 79.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, dense.	
	75				18/38	56		Rust stains observed at about 74 ft.	
5160									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BCB-2**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					28/50:2"	50:2"		**79.0 - 86.0 ft. sandy CLAYSTONE**, brown and dark gray, very hard.	
5155	80								
	85				50:5"	50:5"			**CA Sample @ 84 ft** MC= 31.7 % DD= 83.4 pcf #200= 57 % LL= 63 PL= 25 PI= 38
5150								**86.0 - 98.0 ft. clayey SANDSTONE**, dark gray, very hard.	
	90				50:3"	50:3"		Lignite inclusions observed at about 89 ft.	
5145									
	95				50:3"	50:3"			
5140									
								98.0 - 103.0 ft. sandy CLAYSTONE, dark gray, very hard.	
	100				32/50:4"	50:4"			
5135									
								103.0 - 107.0 ft. silty SANDSTONE, dark gray, very hard.	
	105				50:2"	50:2"			
5130								**107.0 - 115.0 ft. sandy CLAYSTONE**, dark gray, very hard.	
	110				50:6"	50:6"			
5125									
	115				50:6"	50:6"			**CA Sample @ 114 ft** MC= 29.3 % DD= 89.1 pcf #200= 81 % LL= 59 PL= 25 PI= 34
5120								**115.0 - 119.3 ft. silty SANDSTONE**, dark gray, very hard.	
					50:3"	50:3"		Bottom of Hole at 119.3 ft.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BD-1**
Sheet 1 of 5

Boring Began: 6/1/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 6/3/2014
Drill Bit:
Casing:
Weather: Party cloudy, 70's

Total Depth: 170.3 ft
Ground Elevation: 5271.8 ft
Location: Dahlia Street
Coordinates: N: 456,093.6 E: 660,813.1

Ground Water Notes:

Depth	▽ 61.0 ft	-	-	-
Date	6/1/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5270								**0.0 - 0.3 ft. 4 inches asphalt**.	
								0.3 - 1.0 ft. 8 inches concrete.	
								1.0 - 24.0 ft. Interbedded silty SAND and clayey SAND Fill, trace gravel, brown, loose to medium dense.	
	5				6/6	12			**CA Sample @ 5 ft** MC= 11.8 % DD= 113.9 pcf #200= 33 % LL= 28 PL= 14 PI= 14 AASHTO: A-2-6 (0) USCS: SC
5265									
	10				4/9	13			
5260									
	15				5/7	12			**CA Sample @ 15 ft** MC= 10.5 % DD= 107.3 pcf #200= 24 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5255									
	20				7/8	15			**CA Sample @ 20 ft** pH= 7.5 S= 0.009 % Re= 1577 ohms-cm CL = 0.0093%
5250									
								24.0 - 28.0 ft. silty SAND, brown, loose.	
	25				4/3	7			**CA Sample @ 25 ft** MC= 6.7 % DD= 106.4 pcf #200= 32 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5245									
								28.0 - 37.0 ft. clayey SAND , calcareous, brown, medium dense.	
	30				7/8	15			
5240									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BD-1**
Sheet 2 of 5

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					8/7	15			**CA Sample @ 35 ft** MC= 10.5 % DD= 103.7 pcf #200= 39 % LL= 25 PL= 16 PI= 9 AASHTO: A-4 (0) USCS: SC
5235								**37.0 - 65.0 ft. poorly graded SAND** with variable amounts of gravel and silt, brown, medium dense.	
	40				8/12	20			
5230									
	45				7/12	19		Rust stains observed at about 45 ft.	
5225									
	50				11/16	27			**CA Sample @ 50 ft** MC= 3.3 % #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5220									
	55				13/13	26			
5215									
	60				8/9	17			
5210									
	65				7/11	18		**65.0 - 105.0 ft. sandy CLAY**, brown to dark brown, stiff to very stiff, rust stains observed at about 65 ft.	**CA Sample @ 65 ft** MC= 23.4 % DD= 102.8 pcf #200= 53 % LL= 33 PL= 18 PI= 15 AASHTO: A-6 (5) USCS: CL
5205									
	70				8/15	23		Approximately 2-4 inch thick, interbedded fine grained sand layers observed at about 70 to 80 ft.	
5200									
	75				4/7	11			
5195									

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	80				11/18	29			
5190									
	85				9/13	22			**CA Sample @ 85 ft** MC= 25.5 % DD= 99.9 pcf #200= 79 % LL= 57 PL= 22 PI= 35 AASHTO: A-7-6 (29) USCS: CH
5185									
	90				7/11	18			
5180									
	95				9/13	22			
5175									
	100				8/11	19			
5170									
	105				12/26	38		**105.0 - 127.5 ft. silty SAND**, dark brown, medium dense to dense.	**CA Sample @ 105 ft** MC= 14.1 % DD= 124.6 pcf #200= 21 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5165									
	110				14/19	33			
5160									
	115				8/21	29			
5155									

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BD-1**
Sheet 4 of 5

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150					13/28	41		Rust stained at about 120 ft.	**CA Sample @ 120 ft** MC= 15.9 % DD= 114.2 pcf #200= 24 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SM
	125				19/19	38			
5145								**127.5 - 133.0 ft. silty SANDSTONE**, dark brown, very hard.	
	130				50:5"	50:5"			
5140								**133.0 - 170.3 ft. sandy CLAYSTONE**, gray to dark gray, very hard.	
	135				32/50:5"	50:5"			**CA Sample @ 135 ft** MC= 35.7 % DD= 80.5 pcf #200= 72 % LL= 59 PL= 21 PI= 38
5135									
	140				50:6"	50:6"			
5130									
	145				50:6"	50:6"		Lignite inclusions observed at about 145 ft.	
5125									
	150				50:3"	50:3"			
5120									
	155				50:5"	50:5"		Approximately 2 inch thick, interbedded sandy layers observed at about 155 ft to 160 ft.	
5115									
	160				45/50:4"	50:4"			
5110									

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BD-1**
Sheet 5 of 5

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5105	165				50:5"	50:5"			**CA Sample @ 165 ft** MC= 18.2 % DD= 108.0 pcf #200= 77 % LL= 47 PL= 26 PI= 21
5100	170				50:4"	50:4"		Bottom of Hole at 170.3 ft.	
5095	175								
5090	180								
5085	185								
5080	190								
5075	195								
5070	200								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BD-2**
Sheet 1 of 4

Boring Began: 5/27/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 5/29/2014
Drill Bit:
Casing:
Weather: Clear, 60's

Total Depth: 149.5 ft
Ground Elevation: 5269.3 ft
Location: Dahlia Street
Coordinates: N: 456,024.7 E: 660,583.9

Ground Water Notes: Temporary monitoring well installed to a depth of about 149 ft

Depth	▽ 63.0 ft	-	-	-
Date	5/28/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.4 ft. 5 inches asphalt.	
								0.4 - 1.3 ft. 10 inches concrete.	
								1.3 - 22.0 ft. Interbedded silty SAND and clayey SAND Fill, trace gravel, brown to dark gray, very loose to medium dense.	
					2/3	5			**CA Sample @ 4 ft** MC= 17.8 % DD= 95.2 pcf #200= 45 % LL= 36 PL= 15 PI= 21 AASHTO: A-6 (5) USCS: SC
5260	10				4/10	14			
					5/6	11			**CA Sample @ 14 ft** MC= 11.3 % DD= 116.6 pcf #200= 22 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5250	20				8/1	9			
								22.0 - 34.5 ft. clayey SAND, light brown, loose.	
					4/4	8			
5240	30				3/3	6			**CA Sample @ 29 ft** MC= 12.3 % DD= 89.9 pcf #200= 49 % LL= 27 PL= 15 PI= 12 AASHTO: A-6 (3) USCS: SC
					4/13	17			
								34.5 - 57.0 ft. poorly graded SAND with variable amounts of gravel and silt, brown, medium dense to dense, rust stains observed at about 35 ft.	

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BD-2**
Sheet 2 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5230	40				13/16	29			
					17/20	37			**CA Sample @ 44 ft** MC= 2.2 % #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5220	50				12/15	27			
					14/15	29			
								57.0 - 103.0 ft. sandy CLAY, brown to gray, medium stiff to hard.	
5210	60				5/9	14		Rust stains observed at about 59 ft.	**CA Sample @ 59 ft** MC= 22.8 % DD= 102.8 pcf #200= 51 % LL= 34 PL= 17 PI= 17 AASHTO: A-6 (5) USCS: CL
					8/10	18		Approximately 1 inch thick, interbedded silty sand layers at about 64 ft to 74 ft.	
5200	70				2/7	9			
					3/4	7			
5190	80				7/8	15			**CA Sample @ 79 ft** MC= 28 % DD= 94.2 pcf #200= 70 % LL= 53 PL= 21 PI= 32 AASHTO: A-7-6 (21) USCS: CH

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BD-2**
Sheet 3 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					9/15	24			
5180	90				10/13	23			
					14/17	31			**CA Sample @ 94 ft** MC= 28 % DD= 94.4 pcf #200= 71 % LL= 57 PL= 22 PI= 35 AASHTO: A-7-6 (24) USCS: CH
5170	100				20/19	39			
					12/17	29		**103.0 - 110.0 ft. poorly graded SAND** with variable amounts of gravel and silt, dark brown, medium dense to dense.	**CA Sample @ 104 ft** MC= 17.3 % DD= 116.1 pcf #200= 11 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5160	110				12/24	36		**110.0 - 124.0 ft. clayey SANDSTONE**, brown, very hard.	
					50:5"	50:5"		Rust stains observed at about 114 ft.	**CA Sample @ 114 ft** MC= 30.4 % DD= 85.7 pcf #200= 41 % LL= 50 PL= 25 PI= 25
5150	120				50:1"	50:1"			
					50:3"	50:3"		**124.0 - 149.5 ft. sandy CLAYSTONE**, brown and dark gray, very hard.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BD-2**
Sheet 4 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5140	130				50:5"	50:5"			
					50:5"	50:5"			
5130	140				50:5"	50:5"			**CA Sample @ 139 ft** MC= 23.3 % DD= 96.5 pcf #200= 81 % LL= 59 PL= 25 PI= 34
					50:4"	50:4"			
5120	150				50:6"	50:6"		Bottom of Hole at 149.5 ft.	
5110	160								
5100	170								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BH-1**
Sheet 1 of 3

Boring Began: 12/15/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: M. Boyd
Inclination: Vertical

Completed: 12/16/2014
Drill Bit:
Casing:
Weather: Clear, 28 degrees

Total Depth: 119.5 ft
Ground Elevation: 5270.9 ft
Location: I70 at Holly St.
Coordinates: N: 455,502.9 E: 663,220.5

Ground Water Notes:

Depth	▽ 55.0 ft	-	-	-
Date	12/15/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5270								**0.0 - 0.5 ft. 6 inches asphalt**.	
								0.5 - 1.2 ft. 8 inches concrete.	
								1.2 - 25.5 ft. silty SAND, brown, loose to medium dense.	
					4/4	8			**CA Sample @ 4 ft** MC= 8.9 % DD= 103.8 pcf
					5/7	12			
	10								
5260									
					9/14	23			**CA Sample @ 14 ft** MC= 11.2 % DD= 125.5 pcf #200= 32 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
					9/15	24			
	20								
5250									
					9/14	23			
								25.5 - 48.0 ft. silty SAND, brown, loose to medium dense, rust stained.	
					8/7	15			**CA Sample @ 29 ft** MC= 8.1 % DD= 122.2 pcf #200= 42 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: SM
	30								
5240									
					4/5	9			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BH-1**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					8/14	22			**CA Sample @ 39 ft** MC= 4.5 % #200= 16 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5230	40								
					7/12	19			
								48.0 - 53.0 ft. clayey SAND, brown, medium dense, rust stained.	
					6/15	21			**CA Sample @ 49 ft** MC= 11.9 % DD= 107.8 pcf #200= 30 % LL= 34 PL= 18 PI= 16 AASHTO: A-2-6 (0) USCS: SC
5220	50								
								53.0 - 77.0 ft. silty SAND, brown, medium dense, rust stained.	
					6/8	14			
					6/16	22			**CA Sample @ 59 ft** MC= 12.1 % DD= 117.6 pcf #200= 16 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5210	60								
					3/12	15			
					14/20	34			
5200	70								
					10/14	24			**CA Sample @ 73 ft** MC= 12.4 % #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
								77.0 - 92.0 ft. SANDY CLAYSTONE, brown to gray, hard, rust stained.	
					27/34	61			**CA Sample @ 79 ft** MC= 26.1 % DD= 96.2 pcf #200= 79 %
5190	80								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BH-1**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
									LL= 59 PL= 24 PI= 35
					25/36	61			
					25/48	73			
	90								
5180									
					40/50:3"	50:3"		**92.0 - 119.5 ft. SILTY SANDSTONE INTERBEDDED WITH CLAYEY SANDSTONE**, gray, very hard.	
					50:4"	50:4"			**CA Sample @ 99 ft** MC= 26.6 % DD= 95.3 pcf #200= 33 % LL= NV PL= NP PI= NP
	100								
5170									
					38/50:4"	50:4"			
					50:3"	50:3"			
	110								
5160									
					50:4"	50:4"			**CA Sample @ 114 ft** MC= 24.9 % DD= 96.8 pcf #200= 26 % LL= 39 PL= 24 PI= 15
					50:6"	50:6"			
	120							Bottom of Hole at 119.5 ft.	
5150								Pinyon monitored envirnomental conditions during drilling. No PID measurements were above screening threshold. No visual or olfactory indications of impacts to soils.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BH-2**
Sheet 1 of 3

Boring Began: 12/9/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: M. Boyd
Inclination: Vertical

Completed: 12/10/2014
Drill Bit:
Casing:
Weather: Cloudy

Total Depth: 119.2 ft
Ground Elevation: 5273.0 ft
Location: I70 at Holly St.
Coordinates: N: 455,386.1 E: 663,435.2

Ground Water Notes:

Depth	▽ 57.0 ft	-	-	-
Date	12/9/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.4 ft. 5 inches asphalt.	
								0.4 - 1.2 ft. 9 inches concrete.	
								1.2 - 21.5 ft. clayey SAND FILL, brown, very loose to medium dense.	
5270									
					2/2	4			**CA Sample @ 4 ft** MC= 9.8 % DD= 107.7 pcf
	10				5/11	16			**CA Sample @ 9 ft** MC= 10.9 % DD= 127.1 pcf #200= 30 % LL= 37 PL= 18 PI= 19 AASHTO: A-2-6 (0) USCS: SC
5260									
					8/8	16			
	20				7/11	18			
								21.5 - 77.0 ft. silty SAND, light brown to brown, loose to medium dense.	
5250									
					5/6	11			**CA Sample @ 24 ft** MC= 4.3 %
	30				9/12	21			**CA Sample @ 29 ft** MC= 5.3 % #200= 19 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SM
5240									
					9/10	19			

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BH-2**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					15/21	36			
	40								
5230									
					11/16	27			
					10/9	19			
	50								
5220									
					12/11	23			
					6/9	15			**CA Sample @ 59 ft** MC= 25.1 % DD= 99.8 pcf #200= 53 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: ML
	60								
5210									
					4/8	12			**CA Sample @ 64 ft** MC= 23.9 % DD= 99.3 pcf
					4/8	12			
	70								
5200									
					4/3	7			
								77.0 - 87.0 ft. SANDY CLAYSTONE, brown to gray, medium hard to very hard, lignite lenses.	
					16/25	41			**CA Sample @ 79 ft** MC= 25.3 % DD= 93.9 pcf #200= 87 %
	80								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BH-2**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5190									LL= 59 PL= 29 PI= 30
					21/30	51			
								87.0 - 119.2 ft. SILTY SANDSTONE, gray, very hard.	
					50:6"	50:6"			
	90								
5180									
					50:2"	50:2"			**CA Sample @ 94 ft** MC= 20.6 % DD= 99.3 pcf #200= 26 % LL= NV PL= NP PI= NP
					50:3"	50:3"			
	100								
5170									
					50:3"	50:3"			
					50:5"	50:5"			**CA Sample @ 109 ft** MC= 22.6 % DD= 95.5 pcf #200= 34 % LL= NV PL= NP PI= NP
	110								
5160									
					50:2"	50:2"			
					50:2"	50:2"			
	120							Bottom of Hole at 119.2 ft.	
5150									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BM-1**
Sheet 1 of 4

Boring Began: 12/17/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: M. Boyd
Inclination: Vertical

Completed: 12/17/2014
Drill Bit:
Casing:
Weather: Cold

Total Depth: 129.4 ft
Ground Elevation: 5291.9 ft
Location: I70 at Monaco St.
Coordinates: N: 455,384.3 E: 665,853.3

Ground Water Notes:

Depth	▽ 72.0 ft	-	-	-
Date	12/17/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5290								**0.0 - 0.4 ft. 5 inches asphalt**.	
								0.4 - 1.1 ft. 8 inches concrete.	
								1.1 - 23.5 ft. clayey SAND FILL with gravel, brown to dark brown, loose to medium dense.	
	5				1/6	7			**CA Sample @ 4 ft** MC= 13.2 % DD= 117.6 pcf
5285									
	10				6/6	12			
5280									
	15				3/8	11			**CA Sample @ 14 ft** MC= 14.9 % DD= 115.5 pcf #200= 31 % LL= 40 PL= 19 PI= 21 AASHTO: A-2-6 (0) USCS: SC
5275									
	20				11/14	25			
5270									
	25				4/5	9		**23.5 - 28.5 ft. silty SAND**, brown, loose.	**CA Sample @ 24 ft** MC= 3.6 % DD= 119.2 pcf #200= 12 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SP-SM
5265									
	30				7/10	17		**28.5 - 37.5 ft. sandy CLAY**, brown, medium dense, stiff to very stiff.	**CA Sample @ 29 ft** MC= 13.2 % DD= 119.5 pcf #200= 54 % LL= 34 PL= 14 PI= 20 AASHTO: A-6 (7) USCS: CL
5260									
	35				7/7	14			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BM-1**
Sheet 2 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5255									
								37.5 - 52.5 ft. silty SAND, light brown, medium dense.	
	40				14/10	24			
5250									
	45				14/9	23			
5245									
	50				9/15	24			
5240									
								52.5 - 64.0 ft. clayey SAND, brown, medium dense.	
	55				11/15	26			**CA Sample @ 54 ft** MC= 15.1 % DD= 115.3 pcf #200= 45 % LL= 47 PL= 18 PI= 29 AASHTO: A-7-6 (8) USCS: SC
5235									
	60				9/13	22			
5230									
	65				23/27	50		**64.0 - 85.0 ft. silty SAND** with gravel, brown, medium dense.	**CA Sample @ 64 ft** MC= 2 % #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5225									
	70				12/15	27			
5220 ▽									
	75				2/3	5			
5215									

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BM-1**
Sheet 3 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	80				12/14	26			**CA Sample @ 79 ft** MC= 10.5 % DD= 130.2 pcf
5210									
	85				8/5	13		**85.0 - 107.5 ft. CLAYEY SANDSTONE**, brown to gray, hard to very hard.	
5205									
	90				25/35	60			**CA Sample @ 89 ft** MC= 27.5 % DD= 95.5 pcf #200= 42 % LL= 64 PL= 26 PI= 38
5200									
	95				38/50:3"	50:3"			
5195									
	100				50:6"	50:6"			
5190									
	105				50:4"	50:4"			
5185								**107.5 - 113.5 ft. SILTY SANDSTONE**, dark gray, very hard, calcareous.	
	110				50:5"	50:5"			**CA Sample @ 109 ft** MC= 21.6 % DD= 104.4 pcf #200= 23 % LL= NV PL= NP PI= NP
5180									
	115				25/50:4"	50:4"		**113.5 - 129.4 ft. CLAYEY SANDSTONE**, dark brown, very hard.	
5175									
	120				50:6"	50:6"			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BM-1**
Sheet 4 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					50:6"	50:6"			**CA Sample @ 124 ft** MC= 18.4 % DD= 105.5 pcf #200= 20 % LL= 62 PL= 27 PI= 35
5165	125								
					50:5"	50:5"			
5160	130							Bottom of Hole at 129.4 ft. Pinyon monitored envirnomental conditions during drilling. No PID measurements were above screening threshold. No visual or olfactory indications of impacts to soils.	
5155	135								
5150	140								
5145	145								
5140	150								
5135	155								
5130	160								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BM-2**
Sheet 1 of 4

Boring Began: 12/21/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: M. Boyd
Inclination: Vertical

Completed: 12/21/2014
Drill Bit:
Casing:
Weather: Sprinkling rain, cloudy

Total Depth: 124.4 ft
Ground Elevation: 5292.1 ft
Location: I70 at Monaco St.
Coordinates: N: 455,472.5 E: 666,090.8

Ground Water Notes:

Depth	▽ 70.0 ft	-	-	-
Date	12/21/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5290								**0.0 - 0.6 ft. 7 inches asphalt**.	
								0.6 - 1.3 ft. 8 inches concrete.	
								1.3 - 25.0 ft. clayey SAND FILL with gravel, brown, loose to medium dense.	
	5				3/2	5			**CA Sample @ 4 ft** MC= 13.1 % DD= 116.6 pcf pH= 8 S= 0.005 % Chl= 0.0296 % Re= 1131 ohms-cm
5285									
	10				9/9	18			
5280									
	15				4/5	9			**CA Sample @ 14 ft** MC= 11.6 % DD= 117.6 pcf #200= 32 % LL= 32 PL= 12 PI= 20 AASHTO: A-2-6 (1) USCS: SC
5275									
	20				5/7	12			
5270									
	25				5/6	11			**CA Sample @ 24 ft** MC= 11.8 % DD= 90.8 pcf #200= 45 % LL= 30 PL= 13 PI= 17 AASHTO: A-6 (4) USCS: SC
								25.0 - 62.0 ft. silty SAND with variable amounts of clay and gravel, light brown to brown, medium dense, rust stained.	
5265									
	30				4/6	10			**CA Sample @ 29 ft** MC= 12.3 % DD= 110.6 pcf #200= 75 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: ML
5260									
	35				9/13	22			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BM-2**
Sheet 2 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5255									
	40				5/10	15			
5250									
	45				11/11	22			**CA Sample @ 44 ft** MC= 12.9 % DD= 97.4 pcf #200= 33 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5245									
	50				9/13	22			
5240									
	55				8/10	18			
5235									
	60				9/13	22			
5230								**62.0 - 68.0 ft. clayey SAND**, light brown to brown, medium dense, rust stained.	
	65				10/18	28			**CA Sample @ 64 ft** MC= 13.7 % DD= 109.6 pcf #200= 47 % LL= 45 PL= 16 PI= 29 AASHTO: A-7-6 (9) USCS: SC
5225								**68.0 - 84.0 ft. SAND** with variable amounts of gravel and silt, light brown to brown, medium dense, rust stained.	
	70				11/14	25			**CA Sample @ 69 ft** MC= 5.3 % #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW
5220									
	75				4/9	13			
5215									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BM-2**
Sheet 3 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	80				7/11	18			
5210									
	85				14/18	32		**84.0 - 92.5 ft. WEATHERED SANDY CLAYSTONE**, dark brown to gray, medium hard to hard, rust stained.	
5205									
	90				25/30	55			**CA Sample @ 89 ft** MC= 33.2 % DD= 90.3 pcf #200= 52 % LL= 61 PL= 25 PI= 36
5200								**92.5 - 124.4 ft. INTERBEDDED CLAYEY SANDSTONE AND SANDY CLAYSTONE**, gray, very hard.	
	95				50:6"	50:6"			**CA Sample @ 94 ft** MC= 22.6 % #200= 24 % LL= 56 PL= 24 PI= 32
5195									
	100				50:3"	50:3"			
5190									
	105				50:5"	50:5"			
5185									
	110				50:5"	50:5"			
5180									
	115				50:6"	50:6"			**CA Sample @ 114 ft** MC= 26.4 % DD= 99.1 pcf #200= 88 % LL= 62 PL= 27 PI= 35
5175									
	120				50:5"	50:5"			**CA Sample @ 119 ft** MC= 22.8 % DD= 101.7 pcf

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BM-2**
Sheet 4 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5170									
					50:5"	50:5"		Bottom of Hole at 124.4 ft.	
	125								
5165									
	130								
5160									
	135								
5155									
	140								
5150									
	145								
5145									
	150								
5140									
	155								
5135									
	160								
5130									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BRI-1**
Sheet 1 of 3

Boring Began: 1/28/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: R. Borst
Inclination: Vertical

Completed: 1/28/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 99.4 ft
Ground Elevation: 5272.7 ft
Location: East Bound I-70 at Rock Island
Coordinates: N: 455,344.8 E: 667,551.7

Ground Water Notes: Temporary Monitoring Well Installed

Depth	▽ 49.0 ft	-	-	-
Date	1/28/15	-	-	-
Time	During	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5270								**0.0 - 10.0 ft. silty SAND FILL**, brown, loose.	
					2/4	6			**CA Sample @ 3 ft** MC= 2.8 % #200= 9 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SW-SM
	5								
					2/3	5			
5265									**CA Sample @ 6 ft** MC= 2.8 % pH= 8 S= 0.004 % Chl= 0.0031 % Re= 2309 ohms-cm
					3/6	9			
	10							**10.0 - 22.0 ft. silty SAND**, brown, loose.	
5260									
					6/7	13			**CA Sample @ 14 ft** MC= 6.8 % #200= 17 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	15								
5255									
					3/4	7			
	20								
5250								**22.0 - 44.0 ft. clayey SAND**, light brown to tan, medium dense to dense.	
					6/7	13			**CA Sample @ 24 ft** MC= 5.6 % DD= 114.1 pcf #200= 16 % LL= 26 PL= 14 PI= 12 AASHTO: A-2-6 (0) USCS: SC
	25								
5245									
					9/16	25			
	30								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BRI-1**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5240									
	35				12/22	34			
5235									
	40				9/12	21			**CA Sample @ 39 ft** MC= 14.9 % DD= 104.7 pcf #200= 41 % LL= 38 PL= 24 PI= 14 AASHTO: A-6 (2) USCS: SC
5230									
	45				8/35	43		**44.0 - 54.0 ft. silty SAND** with gravel, light brown, dense.	**CA Sample @ 44 ft** MC= 5.7 % DD= 126.9 pcf #200= 12 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5225									
	50				13/35	48			
5220									
	55				9/13	22		**54.0 - 58.5 ft. sandy CLAY**, brown, very stiff.	**CA Sample @ 54 ft** MC= 31.5 % DD= 91.0 pcf #200= 84 % LL= 61 PL= 28 PI= 33 AASHTO: A-7-6 (31) USCS: CH
5215									
	60				26/40	66		**58.5 - 69.0 ft. SANDY CLAYSTONE**, brown to gray, hard.	**CA Sample @ 59 ft** MC= 23.4 % DD= 104.6 pcf #200= 57 % LL= 50 PL= 20 PI= 30
5210									
	65				19/32	51			**CA Sample @ 64 ft** MC= 32.1 % DD= 91.5 pcf #200= 82 % LL= 69 PL= 27 PI= 42
5205									
	70				40/50:3"	50:3"		**69.0 - 78.5 ft. SILTY SANDSTONE**, gray, very hard.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BRI-1**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5200									
	75				40/50:5"	50:5"			**CA Sample @ 74 ft** MC= 21 % DD= 97.9 pcf #200= 11 % LL= NV PL= NP PI= NP
5195									
	80				50:6"	50:6"		**78.5 - 99.4 ft. CLAYEY SANDSTONE**, gray to dark gray, very hard, rust stained, lignite lenses.	
5190									
	85				42/50:4"	50:4"			
5185									
	90				50:5"	50:5"			**CA Sample @ 89 ft** MC= 22.8 % DD= 105.4 pcf #200= 33 % LL= 44 PL= 24 PI= 20
5180									
	95				50:4"	50:4"			
5175									
	100				50:5"	50:5"		Bottom of Hole at 99.4 ft. Pinyon monitored envirnomental conditions during drilling. No PID measurements were above screening threshold. No visual or olfactory indications of impacts to soils.	
5170									
	105								
5165									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BRI-2**
Sheet 1 of 3

Boring Began: 1/14/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: R. Borst
Inclination: Vertical

Completed: 1/15/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 109.4 ft
Ground Elevation: 5280.5 ft
Location: Near sta 2174+00
Coordinates: N: 455,486.5 E: 667,747.6

Ground Water Notes:

Depth	▽ 53.0 ft	-	-	-
Date	1/15/15	-	-	-
Time	During	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5280								**0.0 - 0.4 ft. 5 inches asphalt**.	
								0.4 - 1.1 ft. 8.5 inches concrete.	
								1.1 - 18.0 ft. clayey SAND FILL, olive-brown, loose to medium dense.	
					4/8	12			**CA Sample @ 4 ft** MC= 13.1 % DD= 117.8 pcf
5275	5								
					9/16	25			**CA Sample @ 9 ft** MC= 11.5 % DD= 115.9 pcf #200= 45 % LL= 32 PL= 15 PI= 17 AASHTO: A-6 (4) USCS: SC
5270	10								
					4/5	9			
5265	15								
					3/3	6		**18.0 - 22.0 ft. silty SAND FILL**, light brown, loose.	**CA Sample @ 19 ft** MC= 5.2 % DD= 115.9 pcf #200= 19 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5260	20							**22.0 - 28.0 ft. sandy CLAY**, reddish brown, very stiff.	**CA Sample @ 24 ft** MC= 15.6 % DD= 113.9 pcf #200= 56 % LL= 50 PL= 21 PI= 29 AASHTO: A-7-6 (13) USCS: CH
					9/12	21			
5255	25								
					9/15	24		**28.0 - 32.0 ft. silty SAND**, light brown, calcareous.	
5250	30							**32.0 - 37.5 ft. clayey SAND**, brown, medium dense.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BRI-2**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	35				12/15	27			**CA Sample @ 34 ft** MC= 10.7 % DD= 112.6 pcf #200= 46 % LL= 28 PL= 16 PI= 12 AASHTO: A-6 (2) USCS: SC
5245								**37.5 - 46.5 ft. silty SAND** with gravel, brown, medium dense.	
	40				9/6	15			
5240									
	45				16/19	35			**CA Sample @ 44 ft** MC= 5.2 % DD= 125.2 pcf #200= 11 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5235								**46.5 - 53.0 ft. sandy CLAY**, brown, very stiff, calcareous, rust stained.	
	50				7/10	17			**CA Sample @ 49 ft** MC= 23.1 % DD= 98.3 pcf #200= 62 % LL= 57 PL= 21 PI= 36 AASHTO: A-7-6 (20) USCS: CH
5230									
	55				11/15	26		**53.0 - 58.5 ft. silty SAND**, brown, medium dense.	
5225									
	60				2/5	7		**58.5 - 69.0 ft. sandy CLAY**, brown, medium stiff.	
5220									
	65				9/16	25			
5215									
	70				27/45	72		**69.0 - 109.4 ft. SANDY CLAYSTONE**, brown to gray, hard to very hard, rust stained, lignite lenses.	**CA Sample @ 69 ft** MC= 21 % DD= 107.3 pcf #200= 53 % LL= 45 PL= 20 PI= 25
5210									**CA Sample @ 74 ft**

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BRI-2**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5205	75				22/30	52			MC= 28.2 % DD= 95.9 pcf #200= 82 % LL= 61 PL= 28 PI= 33
5200	80				43/50:5"	50:5"			
5195	85				50:5"	50:5"			
5190	90				50:5"	50:5"			
5185	95				50:5"	50:5"			**CA Sample @ 94 ft** MC= 18 % DD= 106.0 pcf #200= 82 % LL= 51 PL= 21 PI= 30
5180	100				50:5"	50:5"			
5175	105				50:5"	50:5"			**CA Sample @ 104 ft** MC= 20.1 % DD= 109.0 pcf #200= 79 % LL= 60 PL= 22 PI= 38
5170	110				50:5"	50:5"		Bottom of Hole at 109.4 ft. Pinyon monitored envirnomental conditions during drilling. No PID measurements were above screening threshold. No visual or olfactory indications of impacts to soils.	
	115								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BQ-1**
Sheet 1 of 3

Boring Began: 1/5/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: M. Boyd
Inclination: Vertical

Completed: 1/6/2015
Drill Bit:
Casing:
Weather: Windy, cloudy

Total Depth: 89.9 ft
Ground Elevation: 5276.9 ft
Location: I70 at Quebec
Coordinates: N: 455,396.1 E: 668,501.0

Ground Water Notes:

Depth	▽ 44.0 ft	-	-	-
Date	1/5/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5275								**0.0 - 0.4 ft. 5 inches asphalt**.	
								0.4 - 1.2 ft. 9 inches concrete.	
								1.2 - 16.0 ft. clayey SAND FILL, brown, loose.	
	5				4/7	11			**CA Sample @ 4 ft** MC= 11.4 % DD= 114.7 pcf pH= 7.7 S= 0.003 % Chl= 0.0492 % Re= 615 ohms-cm
5270									
	10				2/4	6			**CA Sample @ 9 ft** MC= 15.6 % DD= 110.3 pcf #200= 37 % LL= 37 PL= 16 PI= 21 AASHTO: A-6 (3) USCS: SC
5265									
	15				4/7	11			
5260								**16.0 - 22.5 ft. silty SAND FILL**, brown, loose.	
	20				4/6	10			**CA Sample @ 19 ft** MC= 6.2 % DD= 108.7 pcf #200= 22 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5255								**22.5 - 44.0 ft. sandy CLAY**, stiff to very stiff, calcareous.	
	25				8/10	18			**CA Sample @ 24 ft** MC= 8 % DD= 115.0 pcf #200= 63 % LL= 41 PL= 20 PI= 21 AASHTO: A-7-6 (11) USCS: CL
5250									
	30				9/13	22			
5245									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BQ-1**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					8/11	19			**CA Sample @ 34 ft** MC= 17.5 % DD= 109.0 pcf #200= 72 % LL= 40 PL= 17 PI= 23 AASHTO: A-6 (15) USCS: CL
5240	35								
					5/6	11			
5235	40								
					9/14	23		**44.0 - 49.0 ft. silty SAND** with gravel, brown, medium dense.	**CA Sample @ 44 ft** MC= 11 % #200= 10 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5230	45								
					20/50:6"	50:6"		**49.0 - 67.0 ft. SANDY CLAYSTONE**, brown to gray, hard to very hard, rust stained.	**CA Sample @ 49 ft** MC= 27 % DD= 93.0 pcf #200= 75 % LL= 58 PL= 23 PI= 35
5225	50								
					18/43	61			
5220	55								
					50:6"	50:6"			
5215	60								
					27/50:6"	50:6"			
5210	65								
					50:6"	50:6"		**67.0 - 87.5 ft. SILTY SANDSTONE**, gray, very hard, rust stained.	**CA Sample @ 69 ft** MC= 23 % #200= 22 % LL= NV PL= NP PI= NP
5205	70								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BQ-1**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	75				24/50:6"	50:6"			
5200									
	80				50:4"	50:4"			**CA Sample @ 79 ft** MC= 18 % DD= 103.4 pcf #200= 9 % LL= NV PL= NP PI= NP
5195									
	85				50:3"	50:3"			
5190								**87.5 - 89.9 ft. SANDY CLAYSTONE**, gray, very hard, rust stained.	
	90				24/50:5"	50:5"		Bottom of Hole at 89.9 ft.	
5185									
	95								
5180									
	100								
5175									
	105								
5170									
	110								
5165									

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BQ-2**
Sheet 1 of 3

Boring Began: 1/7/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: M. Boyd
Inclination: Vertical

Completed: 1/8/2015
Drill Bit:
Casing:
Weather: Cloudy

Total Depth: 84.4 ft
Ground Elevation: 5274.0 ft
Location: I70 at Quebec
Coordinates: N: 455,485.2 E: 668,722.0

Ground Water Notes: Temporary Monitoring Well Installed

Depth	▽ 42.0 ft	-	-	-
Date	1/7/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.4 ft. 5 inches asphalt.	
								0.4 - 1.3 ft. 10 inches concrete.	
								1.3 - 18.5 ft. clayey SAND FILL, dark brown, loose to medium dense.	
5270									
	5				0/3	3			**CA Sample @ 4 ft** MC= 18.4 % DD= 109.2 pcf pH= 7.5 S= 0.021 % Chl= 0.0751 % Re= 426 ohms-cm
5265									
	10				3/6	9			**CA Sample @ 9 ft** MC= 17.4 % DD= 112.2 pcf #200= 35 % LL= 42 PL= 15 PI= 27 AASHTO: A-2-7 (3) USCS: SC
5260									
	15				9/13	22			
5255								**18.5 - 23.0 ft. clayey SAND**, brown to dark brown, medium dense.	
	20				9/16	25			**CA Sample @ 19 ft** MC= 9.9 % DD= 125.0 pcf #200= 24 % LL= 27 PL= 15 PI= 13 AASHTO: A-2-6 (0) USCS: SC
5250								**23.0 - 44.0 ft. silty SAND**, brown, loose to medium dense.	
	25				7/7	14			**CA Sample @ 24 ft** MC= 11.8 % DD= 102.5 pcf
5245									
	30				4/6	10			**CA Sample @ 29 ft** MC= 9.3 % DD= 112.8 pcf #200= 44 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: SM
5240					6/8	14			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BQ-2**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5235	40				10/18	28			**CA Sample @ 39 ft** MC= 3.6 % DD= 113.8 pcf #200= 7 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SP-SM
5230	45				17/27	44		**44.0 - 69.5 ft. SANDY CLAYSTONE**, brown to dark gray, medium hard to very hard.	**CA Sample @ 44 ft** MC= 36.5 % DD= 83.3 pcf #200= 88 % LL= 68 PL= 29 PI= 39
5225	50				50:6"	50:6"			
5220	55				50:5"	50:5"			
5215	60				20/27	47			**CA Sample @ 59 ft** MC= 31.5 % DD= 90.4 pcf #200= 90 % LL= 64 PL= 28 PI= 36
5210	65				20/27	47			**CA Sample @ 64 ft** MC= 32.9 % DD= 88.3 pcf
5205	70				50:5"	50:5"		**69.5 - 84.3 ft. CLAYEY SANDSTONE**, gray, very hard.	**CA Sample @ 69 ft** MC= 21.2 % DD= 109.6 pcf #200= 87 % LL= 64 PL= 28 PI= 36
5200	75				50:4"	50:4"			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BQ-2**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5195	80				35/50:5"	50:5"			
5190	85				50:5"	50:5"		Bottom of Hole at 84.4 ft.	
5185	90							Pinyon monitored envirnomental conditions during drilling. No PID measurements were above screening threshold. No visual or olfactory indications of impacts to soils.	
5180	95								
5175	100								
5170	105								
5165	110								
5160	115								
5155									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-B270-1**
Sheet 1 of 3

Boring Began: 1/22/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: R. Borst
Inclination: Vertical

Completed: 1/23/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 89.5 ft
Ground Elevation: 5267.3 ft
Location: Intersection of I-70 & I-270, 50ft S of bridge
Coordinates: N: 455,646.7 E: 670,220.1

Ground Water Notes:

Depth	▽ 45.0 ft	-	-	-
Date	1/23/15	-	-	-
Time	During	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5265								**0.0 - 0.5 ft. 6 inches asphalt**.	
								0.5 - 34.5 ft. silty SAND FILL, brown, medium dense to dense.	
	5				13/15	28			**CA Sample @ 4 ft** MC= 6.6 % DD= 111.5 pcf pH= 7.8 S= 0.002 % Chl= 0.0351 % Re= 719 ohms-cm
5260									
	10				12/10	22			**CA Sample @ 9 ft** MC= 8.5 % DD= 101.8 pcf #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SP-SM
5255									
	15				16/26	42			
5250									
	20				11/22	33			**CA Sample @ 19 ft** MC= 9.1 % DD= 120.5 pcf #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SP-SM
5245									
	25				13/30	43			**CA Sample @ 24 ft** MC= 8 % DD= 117.6 pcf
5240									
	30				17/24	41			**CA Sample @ 29 ft** MC= 8.9 % DD= 115.2 pcf #200= 10 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SP-SM
5235									
					4/6	10			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5230								**34.5 - 52.0 ft. silty SAND** with gravel, brown, loose to dense.	
	40				4/8	12			**CA Sample @ 39 ft** MC= 16.9 % DD= 98.3 pcf #200= 30 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5225									
	45				6/10	16			**CA Sample @ 44 ft** MC= 12.1 % DD= 118.4 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5220									
	50				13/25	38			
5215								**52.0 - 89.5 ft. SANDY CLAYSTONE WITH CLAYEY SANDSTONE LENSES**, brown to gray, hard to very hard, rust stained, lignite lenses.	
	55				42/43	85			
5210									
	60				32/50:5"	50:5"			**CA Sample @ 59 ft** MC= 26.5 % DD= 96.3 pcf #200= 36 % LL= 54 PL= 22 PI= 32
5205									
	65				50:3"	50:3"			**CA Sample @ 64 ft** MC= 23.3 % DD= 102.4 pcf
5200									
	70				25/45	70			**CA Sample @ 69 ft** MC= 30.6 % DD= 85.1 pcf #200= 86 % LL= 63 PL= 27 PI= 36
5195									
	75				45/45	90			

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-B270-1**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					49/50:3"	50:3"			
5185	80								
					50:6"	50:6"			
5180	85								
					50:6"	50:6"			
5175	90							Bottom of Hole at 89.5 ft.	
	95								
5170									
	100								
5165									
	105								
5160									
	110								
5155									
	115								
5150									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-B270-2**
Sheet 1 of 2

Boring Began: 1/27/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: R. Borst
Inclination: Vertical

Completed: 1/27/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 59.8 ft
Ground Elevation: 5235.2 ft
Location: SE Bound 270, S of I-70
Coordinates: N: 455,072.2 E: 670,818.3

Ground Water Notes: Temporary Monitoring Well Installed

Depth	▽ 10.0 ft	-	-	-
Date	1/27/15	-	-	-
Time	During	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 5.5 ft. clayey SAND, dark brown, loose.	
					2/4	6			**CA Sample @ 3 ft** MC= 22.2 % DD= 101.4 pcf #200= 48 % LL= 42 PL= 17 PI= 25 AASHTO: A-7-6 (8) USCS: SC
5230	5								
					3/4	7		**5.5 - 13.0 ft. silty SAND** with gravel, brown, loose, rust stained, lignite lenses.	**CA Sample @ 6 ft** MC= 6.7 % #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SP-SM
5225	10				3/5	8			
					6/10	16		**13.0 - 17.0 ft. clayey SAND** with gravel, brown, medium dense.	**CA Sample @ 9 ft** MC= 7.1 % DD= 122.5 pcf #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5220	15								
					30/50:5"	50:5"		**17.0 - 57.5 ft. SANDY CLAYSTONE**, brown to gray, medium hard to very hard, rust stained.	**CA Sample @ 14 ft** MC= 22.1 % DD= 107.0 pcf #200= 33 % LL= 56 PL= 23 PI= 33 AASHTO: A-2-7 (4) USCS: SC
5215	20								
					25/50:4"	50:4"			
5210	25								
					50:4"	50:4"			**CA Sample @ 29 ft** MC= 32.2 % #200= 81 % LL= 59 PL= 22 PI= 37
5205	30								
					50:4"	50:4"			
5200	35								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-B270-2**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5195	40				33/50:4"	50:4"			**CA Sample @ 39 ft** MC= 27 % DD= 95.4 pcf #200= 85 % LL= 55 PL= 24 PI= 31
5190	45				25/50:4"	50:4"			
5185	50				15/34	49			**CA Sample @ 49 ft** MC= 36.6 % DD= 76.1 pcf #200= 82 % LL= 66 PL= 29 PI= 37
5180	55				29/48	77			
5175	60				45/50:4"	50:4"		**57.5 - 59.8 ft. SILTY SANDSTONE**, gray, very hard. Bottom of Hole at 59.8 ft. Pinyon monitored envirnomental conditions during drilling. No PID measurements were above screening threshold. No visual or olfactory indications of impacts to soils.	**CA Sample @ 59 ft** MC= 17.7 % DD= 111.6 pcf #200= 29 % LL= NV PL= NP PI= NP
5170	65								
5165	70								
5160	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BP-1**
Sheet 1 of 4

Boring Began: 4/6/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 4/7/2015
Drill Bit:
Casing:
Weather: Clear (6th), Partly Cloudy (7th)

Total Depth: 129.5 ft
Ground Elevation: 5346.0 ft
Location: EB I-70 16' west of bridge over Peoria
Coordinates: N: 453,860.4 E: 684,390.8

Ground Water Notes:

Depth	▽ 57.0 ft	-	-	-
Date	4/6/15	-	-	-
Time	During	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5345								**0.0 - 0.3 ft. 4" ASPHALT**.	
								0.3 - 1.2 ft. 11" CONCRETE.	
								1.2 - 20.0 ft. silty SAND FILL, light brown, medium dense.	
	5				6/13	19			**CA Sample @ 4 ft** MC= 12.2 % DD= 109.4 pcf
5340									
	10				6/13	19			
5335									
	15				10/16	26			
5330									
	20				10/11	21			**CA Sample @ 19 ft** MC= 5.2 % DD= 113.8 pcf #200= 11 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SP-SM
5325								**20.0 - 37.0 ft. silty SAND**, brown, loose to medium dense.	
	25				6/8	14			
5320									
	30				3/3	6			**CA Sample @ 29 ft** MC= 9.5 % DD= 113.8 pcf #200= 33 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5315									
	35				2/5	7			

BORING LOG COMBINED PCL PHASE 1.2.3 GINT REPORT_0716.GPJ YEH ASSOCIATES.GDT 7/16/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BP-1**
Sheet 2 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5310									
								37.0 - 47.0 ft. sandy CLAY, brown, very stiff, calcareous.	
	40				7/11	18			**CA Sample @ 39 ft** MC= 18.7 % DD= 107.8 pcf #200= 70 % LL= 46 PL= 16 PI= 30 AASHTO: A-7-6 (19) USCS: CL
5305									
	45				12/18	30			
5300								**47.0 - 89.5 ft. silty SAND** with some gravel, light brown to brown, medium dense to dense.	
	50				7/12	19			
5295									
	55				13/18	31			**CA Sample @ 54 ft** MC= 5.6 % DD= 110.5 pcf #200= 10 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5290									
	60				12/11	23			
5285									
	65				7/11	18			**CA Sample @ 64 ft** MC= 20.2 % DD= 109.1 pcf #200= 33 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5280									
	70				13/29	42			
5275									
	75				12/18	30			
5270									

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BP-1**
Sheet 3 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5265	80				18/35	53			**CA Sample @ 79 ft** MC= 13.7 % DD= 116.8 pcf #200= 10 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SW-SM
5260	85				25/44	69			
5255	90				14/26	40		**89.5 - 93.0 ft. SANDY CLAYSTONE**, gray with brown, hard, calcareous.	**CA Sample @ 89 ft** MC= 28.3 % DD= 93.6 pcf #200= 71 % LL= 52 PL= 23 PI= 29
5250	95				50:4"	50:4"		**93.0 - 104.0 ft. SILTY SANDSTONE**, gray, very hard.	**CA Sample @ 94 ft** MC= 28.9 % DD= 94.2 pcf #200= 38 % LL= NV PL= NP PI= NP
5245	100				50:1"	50:1"			
5240	105				41/50:3"	50:3"		**104.0 - 118.0 ft. CLAYEY SANDSTONE**, brownish gray, very hard.	
5235	110				50:5"	50:5"			**CA Sample @ 109 ft** MC= 26.9 % DD= 95.4 pcf #200= 39 % LL= 46 PL= 18 PI= 28
5230	115				50:4"	50:4"			
5225	120				50:5"	50:5"		**118.0 - 129.5 ft. SANDY CLAYSTONE**, brownish gray, very hard.	

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BP-1**
Sheet 4 of 4

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	125				50:6"	50:6"			**CA Sample @ 124 ft** MC= 30.9 % DD= 91.6 pcf #200= 80 % LL= 46 PL= 18 PI= 28
5220									
	130				50:6"	50:6"		Bottom of Hole at 129.5 ft.	
5215									
	135								
5210									
	140								
5205									
	145								
5200									
	150								
5195									
	155								
5190									
	160								
5185									

BORING LOG COMBINED PCL PHASE 1.2.3 GINT REPORT_0716.GPJ YEH ASSOCIATES.GDT 7/16/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BP-2**
Sheet 1 of 3

Boring Began: 4/8/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: I. Chen
Inclination: Vertical

Completed: 4/9/2015
Drill Bit:
Casing:
Weather: Cloudy

Total Depth: 130.0 ft
Ground Elevation: 5349.9 ft
Location: WB I70, 19' E of Peoria
Coordinates: N: 453,956.7 E: 684,585.4

Ground Water Notes:

Depth	▽ 65.0 ft	-	-	-
Date	4/9/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.3 ft. 3 inches asphalt.	
								0.3 - 1.2 ft. 11 inches concrete.	
								1.2 - 25.0 ft. silty SAND FILL, brown, loose to medium dense.	
					5/5	10			**CA Sample @ 4 ft** MC= 9.9 % DD= 112.4 pcf #200= 10 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SP-SM
5340	10				6/7	13			
					7/5	12			**CA Sample @ 14 ft** MC= 10.1 % DD= 115.5 pcf #200= 11 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5330	20				5/5	10			
					5/6	11			
								25.0 - 44.5 ft. silty SAND, brown, medium dense.	
					6/10	16			**CA Sample @ 29 ft** MC= 4.6 % DD= 106.3 pcf #200= 7 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SP-SM
5320	30				9/10	19			

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BP-2**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5310	40				8/8	16			
					6/10	16		**44.5 - 53.0 ft. sandy CLAY**, brown, stiff to very stiff, calcareous.	**CA Sample @ 44 ft** MC= 23.1 % DD= 101.5 pcf #200= 68 % LL= 49 PL= 17 PI= 32 AASHTO: A-7-6 (20) USCS: CL
5300	50				6/10	16			
					10/13	23		**53.0 - 56.0 ft. clayey SAND**, brown, medium dense.	**CA Sample @ 54 ft** MC= 13.2 % DD= 118.0 pcf #200= 38 % LL= 35 PL= 14 PI= 21 AASHTO: A-6 (3) USCS: SC
5290	60				7/9	16		**56.0 - 64.5 ft. sandy CLAY**, brown, stiff to very stiff, calcareous.	
					7/14	21		**64.5 - 88.0 ft. silty SAND** with some gravel, brownish gray, medium dense to very dense.	**CA Sample @ 64 ft** MC= 9 % DD= 116.1 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5280	70				7/10	17			
					9/17	26			
5270	80				28/40	68			**CA Sample @ 79 ft** MC= 8.6 % DD= 112.4 pcf #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
					12/14	26			

BORING LOG COMBINED PCL PHASE 1.2.3 GINT REPORT_0716.GPJ YEH ASSOCIATES.GDT 7/16/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-BP-2**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								88.0 - 117.5 ft. SANDY CLAYSTONE, brownish gray, hard to very hard, rust stained, calcareous.	
5260	90				23/34	57			**CA Sample @ 89 ft** MC= 26.7 % DD= 97.5 pcf #200= 89 % LL= 56 PL= 26 PI= 30
					38/50:5"	50:5"			
5250	100				50:5.5"	50:5.5"			
					25/50:6"	50:6"			**CA Sample @ 104 ft** MC= 36.2 % DD= 85.0 pcf #200= 84 % LL= 53 PL= 26 PI= 27
5240	110				26/35	61			
					50:6"	50:6"			
								117.5 - 122.5 ft. SILTY SANDSTONE, brownish gray, very hard.	
5230	120				50:5"	50:5"			**CA Sample @ 119 ft** MC= 24.4 % DD= 100.1 pcf #200= 27 % LL= NV PL= NP PI= NP
								122.5 - 130.0 ft. SANDY CLAYSTONE, brownish gray, very hard.	
					30/50:5"	50:5"			
5220	130				36/45	81			
								Bottom of Hole at 130.0 ft.	

BORING LOG COMBINED PCL PHASE 1.2.3 GINT REPORT_0716.GPJ YEH ASSOCIATES.GDT 7/16/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-1**
Sheet 1 of 3

Boring Began: 3/17/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/17/2014
Drill Bit:
Casing:
Weather: Cloudy

Total Depth: 80.4 ft
Ground Elevation: 5187.9 ft
Location: Union Pacific Railroad Bridge
Coordinates: N: 456,002.6 E: 652,200.5

Ground Water Notes:

Depth	▽ 30.0 ft	-	-	-
Date	3/17/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 19.0 ft. gravelly SAND Fill**, slightly silty to silty, dark brown, very loose to loose, asphalt debris in upper 5 ft.	
	5				2/2	4			**CA Sample @ 5 ft** MC= 3.5 % DD= 112.4 pcf #200= 12 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SM
5180									
	10				3/4	7			**CA Sample @ 10 ft** pH= 7.6 S= 0.011 % Re= 2198 ohms-cm CL = 0.0041 %
5175									
	15				2/2	4			**CA Sample @ 15 ft** MC= 5.6 % DD= 106.2 pcf #200= 11 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SP-SM
5170								**19.0 - 38.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense.	
	20				11/13	24			**CA Sample @ 20 ft** MC= 2.7 % DD= 118.7 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SP
5165									
	25				8/8	16			
5160									
	30 ▽				16/14	30			
5155									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-1**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					22/23	45			**CA Sample @ 35 ft** MC= 9 % DD= 124.5 pcf #200= 7 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
5150								**38.0 - 80.4 ft. sandy CLAYSTONE**, gray, hard to very hard, calcareous, rust stains observed at about 40 ft.	
	40				20/33	53			**CA Sample @ 40 ft** MC= 22.2 % DD= 107.6 pcf #200= 75 % LL= 48 PL= 30 PI= 18
5145									
	45				50:4"	50:4"			
5140									
	50				50:5"	50:5"			**CA Sample @ 50 ft** pH= 8.2 S= 0.002 % Re= 872 ohms-cm CL = 0.0007 %
5135									
	55				50:5"	50:5"			
5130									
	60				50:5"	50:5"			**CA Sample @ 60 ft** MC= 19.7 % DD= 98.3 pcf #200= 85 % LL= 49 PL= 32 PI= 17
5125									
	65				50:5"	50:5"			
5120									
	70				50:5"	50:5"			
5115									
	75				50:5"	50:5"			

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-1**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5110									
	80				50:5"	50:5"		Bottom of Hole at 80.4 ft.	
5105									
	85								
5100									
	90								
5095									
	95								
5090									
	100								
5085									
	105								
5080									
	110								
5075									
	115								
5070									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-2**
Sheet 1 of 3

Boring Began: 3/19/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/19/2014
Drill Bit:
Casing:
Weather: Clear, upper 30's

Total Depth: 79.4 ft
Ground Elevation: 5186.3 ft
Location: Union Pacific Railroad Bridge
Coordinates: N: 456,104.4 E: 652,048.1

Ground Water Notes:

Depth	▽ 29.0 ft	-	-	-
Date	3/19/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 0.4 ft. 5 inches gravel/HMA**.	
								0.4 - 7.5 ft. sandy SILT Fill, with clay and trace gravel, dark brown, medium stiff.	**CA Sample @ 3 ft** MC= 21.1 % DD= 95.4 pcf #200= 81 % LL= 33 PL= 24 PI= 9 AASHTO: A-4 (7) USCS: ML
	5				3/5	8			
5180									
								7.5 - 39.0 ft. well graded SAND with variable amounts of gravel and silt, brown, medium dense to dense.	**CA Sample @ 9 ft** MC= 2.2 % DD= 121.9 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SP
	10				14/23	37			
5175									
								Up to 7-inch thick clay interbeds observed at about 13 ft.	
	15				7/7	14			
5170									
									CA Sample @ 19 ft MC= 1.5 % #200= 7 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
	20				6/9	15			
5165									
	25				9/8	17			
5160									
	30				12/17	29			**CA Sample @ 34 ft** MC= 8.7 % DD= 124.6 pcf #200= 7 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
5155									
					13/16	29			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-2**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150									
	40				26/37	63		**39.0 - 79.4 ft. sandy CLAYSTONE**, gray to brown, hard to very hard, rust stains observed at about 40 ft.	**CA Sample @ 39 ft** MC= 17.1 % DD= 111.8 pcf #200= 74 % LL= 39 PL= 28 PI= 11
5145									
	45				50:4"	50:4"			
5140									
	50				50:4.5"	50:4.5"			
5135									
	55				50:5"	50:5"			
5130									
	60				50:5"	50:5"			**CA Sample @ 59 ft** MC= 20.8 % DD= 94.9 pcf #200= 59 % LL= 47 PL= 36 PI= 11
5125									
	65				26/43	69			
5120									
	70				30/50:4"	50:4"			
5115									
	75				50:4"	50:4"			
5110									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-2**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					50:4.5"	50:4.5"		Bottom of Hole at 79.4 ft.	
5105	80								
5100	85								
5095	90								
5090	95								
5085	100								
5080	105								
5075	110								
5070	115								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-3**
Sheet 1 of 3

Boring Began: 3/18/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/18/2014
Drill Bit:
Casing:
Weather: Flurries, low 30's

Total Depth: 78.4 ft
Ground Elevation: 5187.3 ft
Location: Union Pacific Railroad Bridge
Coordinates: N: 456,179.0 E: 652,362.1

Ground Water Notes:

Depth	▽ 29.0 ft	-	-	-
Date	3/18/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 4.0 ft. sandy CLAY Fill**, dark brown, stiff, trace organics.	**CA Sample @ 3 ft** MC= 18 % DD= 108.4 pcf #200= 68 % LL= 36 PL= 16 PI= 20 AASHTO: A-6 (11) USCS: CL
					5/6	11			
	5							**4.0 - 39.0 ft. well graded SAND** with variable amounts of gravel and silt, yellowish red to brown, medium dense to dense.	
5180					8/11	19			**CA Sample @ 8 ft** MC= 1.9 % DD= 101.9 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
	10								
5175					17/29	46			
	15								
5170					10/13	23			
	20								
5165					8/10	18			**CA Sample @ 23 ft** MC= 2.3 % DD= 112.6 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW
	25								
5160					8/10	18			
	30								
5155					8/14	22			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-3**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150									**CA Sample @ 38 ft** MC= 7.4 % DD= 122.3 pcf #200= 7 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
					9/12	21			
	40							**39.0 - 50.0 ft. sandy CLAYSTONE**, gray, hard to very hard.	
5145					37/50:5"	50:5"			**CA Sample @ 43 ft** MC= 17.7 % DD= 114.7 pcf #200= 72 % LL= 46 PL= 31 PI= 15
	45								
5140					42/50:4"	50:4"			
	50							**50.0 - 70.0 ft. silty SANDSTONE**, gray, very hard.	
5135					50:5"	50:5"			
	55								
5130					50:5"	50:5"			**CA Sample @ 58 ft** MC= 20.7 % DD= 106.0 pcf #200= 34 % LL= NV PL= NP PI= NP
	60								
5125					49/50:4"	50:4"			
	65								
5120					44/50:4"	50:4"			
	70							**70.0 - 78.4 ft. sandy CLAYSTONE**, brown to gray, very hard.	
5115					50:4"	50:4"			
	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-3**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					50:5"	50:5"		Bottom of Hole at 78.4 ft.	
	80								
5105									
	85								
5100									
	90								
5095									
	95								
5090									
	100								
5085									
	105								
5080									
	110								
5075									
	115								
5070									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-4**
Sheet 1 of 3

Boring Began: 3/25/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: I. Chen
Inclination: Vertical

Completed: 3/25/2014
Drill Bit:
Casing:
Weather: Clear

Total Depth: 80.3 ft
Ground Elevation: 5186.1 ft
Location: Union Pacific Railroad Bridge
Coordinates: N: 456,318.5 E: 652,267.2

Ground Water Notes:

Depth	▽ 30.0 ft	-	-	-
Date	3/25/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 0.5 ft. 6 inches Asphalt.**	
								0.5 - 2.5 ft. 24 inches base course.	
								2.5 - 7.0 ft. sandy CLAY, reddish brown, very stiff, calcareous.	
	5				13/11	24			**CA Sample @ 5 ft** MC= 9.2 % DD= 119.1 pcf #200= 62 % LL= 31 PL= 16 PI= 15 AASHTO: A-6 (7) USCS: CL
5180									
								7.0 - 37.0 ft. well graded SAND with variable amounts of gravel and silt, brown, medium dense.	
	10				7/11	18			
5175									
								Approximately 5 to 7 inch clay interbeds at about 14 ft, calcareous.	
	15				6/12	18			**CA Sample @ 15 ft** MC= 7.6 % DD= 132.6 pcf #200= 24 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SM
5170									
	20				7/8	15			**CA Sample @ 20 ft** pH= 7.9 S= 0.001 % Re= 11765 ohms-cm CL = 0.0003 %
5165									
	25				12/13	25			
5160									
	▽ 30				12/13	25			
5155									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-4**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150					14/20	34			**CA Sample @ 35 ft** MC= 9.3 % DD= 128.8 pcf #200= 6 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
								37.0 - 40.5 ft. weathered sandy CLAYSTONE, gray to brown, medium hard.	
	40				22/46	68		Rust stains observed at about 40 ft.	**CA Sample @ 40 ft** MC= 21.9 % DD= 106.4 pcf #200= 58 % LL= 60 PL= 27 PI= 33
5145								**40.5 - 60.0 ft. sandy CLAYSTONE**, gray to brown, hard to very hard.	
	45				35/50	85			
5140									
	50				50:5.5"	50:5.5"			
5135									
	55				13/22	35			**CA Sample at 55 ft** pH= 8 S= 0.009 % Re= 951 ohms-cm CL = 0.0007 %
5130									
	60				50:6"	50:6"		**60.0 - 62.0 ft. clayey SANDSTONE**, gray, very hard.	**CA Sample @ 60 ft** MC= 16.5 % DD= 109.6 pcf #200= 41 % LL= 49 PL= 22 PI= 27
5125								**62.0 - 80.3 ft. sandy CLAYSTONE**, gray to brown, very hard.	
	65				41/50:4"	50:4"		Lignite inclusions observed at about 65 ft.	
5120									
	70				50:5"	50:5"		Lignite inclusions observed at about 70 ft.	
5115									
	75				50:4.5"	50:4.5"			**CA Sample @ 75 ft** MC= 14.3 % DD= 114.7 pcf #200= 50 % LL= 56 PL= 29 PI= 27
5110									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-4**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	80				50:4"	50:4"		Bottom of Hole at 80.3 ft.	
5105									
	85								
5100									
	90								
5095									
	95								
5090									
	100								
5085									
	105								
5080									
	110								
5075									
	115								
5070									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-5**
Sheet 1 of 3

Boring Began: 3/18/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/18/2014
Drill Bit:
Casing:
Weather: Partly cloudy, windy

Total Depth: 78.4 ft
Ground Elevation: 5187.0 ft
Location: Union Pacific Railroad Bridge
Coordinates: N: 456,299.5 E: 652,481.4

Ground Water Notes: Temporary monitoring well installed to a depth of about 78 ft

Depth	▽ 29.0 ft	-	-	-
Date	3/18/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.8 ft. 9 inches base course.	
5185								**0.8 - 6.0 ft. silty SAND**, yellowish red and brown, loose.	
					2/4	6			**CA Sample @ 3 ft** MC= 4.6 % DD= 111.3 pcf #200= 18 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	5								
5180								**6.0 - 37.5 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense.	
					10/15	25			
	10								
5175									
					9/15	24			
	15								
5170									
					10/14	24			**CA Sample @ 18 ft** MC= 1.6 % DD= 111.5 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
	20								
5165								Approximately 2 to 4 inch thick clay interbeds observerd at about 22 ft.	
					7/18	25			
	25								
5160									
					6/11	17			
	30								
5155									
					25/23	48			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-5**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150									
					22/39	61		**37.5 - 51.5 ft. sandy CLAYSTONE**, yellowish brown to gray, hard to very hard, rust stains observed at about 38 ft.	**CA Sample @ 38 ft** MC= 25 % DD= 100.5 pcf #200= 50 % LL= 56 PL= 28 PI= 28
	40								
5145					50:6"	50:6"			
	45								
5140									
					44/50:3"	50:3"			
	50								
5135								**51.5 - 60.0 ft. silty SANDSTONE**, dark gray, very hard.	
					50:2"	50:2"			**CA Sample @ 53 ft** MC= 18.1 % DD= 98.2 pcf #200= 16 % LL= NV PL= NP PI= NP
	55								
5130					50:2"	50:2"			
								Lignite inclusions observed at about 59 ft.	
	60							**60.0 - 78.4 ft. clayey SANDSTONE**, dark gray, very hard.	
5125									
					36/50	86			**CA Sample @ 63 ft** MC= 22 % DD= 106.5 pcf #200= 34 % LL= 46 PL= 25 PI= 21
	65								
5120					50:3.5"	50:3.5"			
	70								
5115									
					50:5.5"	50:5.5"			
	75								
5110									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-5**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					50:4.5"	50:4.5"		Bottom of Hole at 78.4 ft.	
5105	80								
5100	85								
5095	90								
5090	95								
5085	100								
5080	105								
5075	110								
5070	115								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-6**
Sheet 1 of 1

Boring Began: 3/31/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/31/2014
Drill Bit:
Casing:
Weather: Partly cloudy, 40's

Total Depth: 29.3 ft
Ground Elevation: 5168.1 ft
Location: Union Pacific Railroad Bridge
Coordinates: N: 456,028.3 E: 652,047.5

Ground Water Notes:

Depth	▽ 11.0 ft	-	-	-
Date	4/7/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5165								**0.0 - 0.1 ft. 1.5 inches asphalt**.	
								0.1 - 0.7 ft. 6.5 inches concrete.	
								0.7 - 2.0 ft. 16 inches base course.	
								2.0 - 20.0 ft. well graded SAND with variable amounts of gravel and silt, brown, medium dense to dense.	**CA Sample @ 4 ft** MC= 2.8 % #200= 11 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SP-SM
	5				30/11	41			
5160									
	10				14/17	31			
5155									**CA Sample @ 14 ft** MC= 5.2 % DD= 133.3 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: GP
	15				14/21	35			
5150									
	20				4/12	16			
								20.0 - 22.0 ft. weathered sandy CLAYSTONE, brown and gray, residuum.	
5145								**22.0 - 29.3 ft. sandy CLAYSTONE**, gray, very hard.	
	25				50:5.5"	50:5.5"		Rust stains observed at about 24 ft.	**CA Sample @ 24 ft** MC= 14.3 % DD= 116.6 pcf #200= 89 % LL= 53 PL= 24 PI= 29
5140									
	30				50:3"	50:3"		Bottom of Hole at 29.3 ft.	
5135									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-UP-7**
Sheet 1 of 1

Boring Began: 4/7/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/11/2014
Drill Bit:
Casing:
Weather: Partly cloudy, upper 40's

Total Depth: 30.5 ft
Ground Elevation: 5168.3 ft
Location: Union Pacific Railroad Bridge
Coordinates: N: 456,054.3 E: 652,245.6

Ground Water Notes:

Depth	▽ 11.0 ft	-	-	-
Date	4/11/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.3 ft. 3 inches asphalt.	
								0.3 - 0.9 ft. 8 inches concrete.	
								0.9 - 2.0 ft. 12 inches base course.	
5165								**2.0 - 20.5 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense.	
	5				8/13	21		Rust stains observed at about 5 ft.	**CA Sample @ 5 ft** MC= 3 % #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: GP
5160									
	10				11/13	24			
5155									
	15				10/16	26			**CA Sample @ 15 ft** MC= 11.1 % DD= 127.0 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW
5150									
	20				16/40	56		**20.5 - 22.0 ft. weathered sandy CLAYSTONE**, brown to yellowish brown, medium hard to hard.	**CA Sample @ 20 ft** MC= 21.7 % DD= 104.2 pcf #200= 94 % LL= 67 PL= 29 PI= 38
5145								**22.0 - 30.4 ft. sandy CLAYSTONE**, brown to gray, very hard.	
	25				50:5.5"	50:5.5"			**CA Sample @ 25 ft** MC= 15.6 % DD= 104.3 pcf #200= 87 % LL= 49 PL= 23 PI= 26
5140									
	30				50:5.5"	50:5.5"		Bottom of Hole at 30.5 ft.	
5135									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-1**
Sheet 1 of 2

Boring Began: 3/28/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/28/2014
Drill Bit:
Casing:
Weather: Sunny, 30's

Total Depth: 65.9 ft
Ground Elevation: 5183.3 ft
Location: Retaining Wall
Coordinates: N: 456,273.7 E: 651,463.5

Ground Water Notes:

Depth	▽ 29.0 ft	-	-	-
Date	3/28/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.3 ft. 3 inches asphalt.	
								0.3 - 1.0 ft. sandy GRAVEL Fill, light brown, loose.	
								1.0 - 6.0 ft. silty SAND trace gravel, light brown, loose.	
5180									
	5				4/5	9			**CA Sample @ 5 ft** MC= 9.9 % DD= 105.0 pcf #200= 23 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5175								**6.0 - 41.0 ft. well graded SAND** with variable amounts of gravel and silt, brown to light brown, medium dense to dense.	
	10				11/15	26			
5170									
	15				10/11	21			
5165									
	20				12/13	25			**CA Sample @ 20 ft** MC= 1.9 % DD= 116.1 pcf #200= 6 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5160									
	25				18/25	43			
5155	▽								
	30				15/14	29			
5150									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-1**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5145					15/24	39			**CA Sample @ 35 ft** MC= 12.1 % DD= 123.6 pcf #200= 6 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
	40				20/30	50			
5140								**41.0 - 65.9 ft. sandy CLAYSTONE**, gray to blue-gray, hard to very hard, rust stains observed at 41 ft.	
	45				50:5"	50:5"			**CA Sample @ 45 ft** MC= 16 % DD= 118.2 pcf #200= 84 % LL= 51 PL= 25 PI= 26
5135								Lignite inclusions observed at about 46 ft.	
	50				50:4.5"	50:4.5"			
5130									
	55				45/50:3"	50:3"			
5125									
	60				44/50:4"	50:4"			**CA Sample @ 60 ft** MC= 20.9 % DD= 110.4 pcf #200= 85 % LL= 55 PL= 29 PI= 26
5120									
	65				44/50:4.5"	50:4.5"			
5115								Bottom of Hole at 65.9 ft.	
	70								
5110									
	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-2**
Sheet 1 of 2

Boring Began: 3/28/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/28/2014
Drill Bit:
Casing:
Weather: Clear, mid 30's

Total Depth: 69.4 ft
Ground Elevation: 5184.7 ft
Location: Retaining Wall
Coordinates: N: 456,287.3 E: 652,039.0

Ground Water Notes: Temporary monitoring well installed to a depth of about 69 ft

Depth	▽ 28.0 ft	-	-	-
Date	3/28/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.5 ft. 6 inches Asphalt.	
								0.5 - 2.0 ft. 18 inches base course.	
								2.0 - 7.0 ft. sandy CLAY trace gravel, calcareous, brown to yellowish brown, stiff.	**CA Sample @ 4 ft** MC= 15.2 % DD= 107.2 pcf #200= 52 % LL= 37 PL= 21 PI= 16 AASHTO: A-6 (5) USCS: CL
5180	5				4/5	9			
5175	10				12/18	30		**7.0 - 39.5 ft. well graded SAND** with variable amounts of gravel and silt, brown to light brown, loose to dense.	
5170	15				14/19	33			
5165	20				10/14	24			
5160	25				6/12	18			
5155	30				6/2	8			**CA Sample @ 29 ft** MC= 7.9 % #200= 2 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SP
5150					16/30	46			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-2**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5145	40				14/34	48		**39.5 - 58.5 ft. sandy CLAYSTONE**, brown to gray, medium hard to very hard, rust stains observed at about 40 ft.	
5140	45				50:5"	50:5"			**CA Sample @ 44 ft** MC= 16.5 % DD= 116.5 pcf #200= 84 % LL= 41 PL= 21 PI= 20
5135	50				50:5"	50:5"			
5130	55				50:5.5"	50:5.5"		Lignite inclusions observed at about 54 ft.	
5125	60				50:4"	50:4"		**58.5 - 67.0 ft. silty SANDSTONE**, dark gray, very hard.	**CA Sample @ 59 ft** MC= 17.7 % DD= 111.5 pcf #200= 20 % LL= NV PL= NP PI= NP
5120	65				50:2"	50:2"			
5115	70				50:5"	50:5"		**67.0 - 69.4 ft. sandy CLAYSTONE**, dark brown, very hard, rust stains observed at about 69 ft. Bottom of Hole at 69.4 ft.	
5110	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-3**
Sheet 1 of 2

Boring Began: 3/17/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/17/2014
Drill Bit:
Casing:
Weather: Partly cloudy, mid 50's

Total Depth: 49.4 ft
Ground Elevation: 5185.2 ft
Location: Retaining Wall
Coordinates: N: 455,975.3 E: 651,481.6

Ground Water Notes:

Depth	▽ 30.0 ft	-	-	-
Date	3/17/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 9.0 ft. clayey SAND** with gravel, dark brown to brown, loose.	
5180	5				3/3	6			**CA Sample @ 5 ft** MC= 10.8 % #200= 43 % LL= 25 PL= 17 PI= 8 AASHTO: A-4 (0) USCS: SC
					8/12	20		**9.0 - 41.0 ft. well graded SAND** with variable amounts of gravel and silt, yellowish brown to brown, medium dense.	**CA Sample @ 10 ft** MC= 4.3 % DD= 107.8 pcf #200= 6 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5175	10								
					9/15	24			**CA Sample @ 15 ft** pH= 7.7 S= 0.002 % Re= 10929 ohms-cm CL = 0.0005%
5170	15								
					8/16	24			
5165	20								
					5/9	14			
5160	25								
					9/18	27			**CA Sample @ 30 ft** MC= 9.2 % DD= 119.7 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
5155	30 ▽								
					10/22	32			

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-3**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150									
	40				4/14	18			
5145								**41.0 - 49.4 ft. sandy CLAYSTONE**, gray, hard to very hard.	
	45				23/48	71			**CA Sample @ 45 ft** MC= 19 % DD= 111.0 pcf #200= 44 % LL= 51 PL= 26 PI= 25
5140									
					50:5"	50:5"			
5135	50							Bottom of Hole at 49.4 ft.	**CA Sample @ 50 ft** pH= 8 S= 0.009 % Re= 818 ohms-cm CL = 0.0004%
	55								
5130									
	60								
5125									
	65								
5120									
	70								
5115									
	75								
5110									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-4**
Sheet 1 of 2

Boring Began: 3/18/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/18/2014
Drill Bit:
Casing:
Weather: Partly cloudy, windy

Total Depth: 70.5 ft
Ground Elevation: 5187.9 ft
Location: Retaining Wall
Coordinates: N: 456,003.0 E: 652,489.2

Ground Water Notes:

Depth	▽ 29.0 ft	-	-	-
Date	3/18/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 8.5 ft. silty SAND Fill, dark brown, loose, gap graded.	
5185					3/3	6			**CA Sample @ 3 ft** MC= 11.3 % DD= 111.3 pcf #200= 48 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: SM
	5								
5180					4/10	14			
								8.5 - 38.0 ft. poorly graded SAND with variable amounts of gravel and silt, brown, medium dense to dense.	
	10								
5175					17/20	37			**CA Sample @ 13 ft** MC= 2.4 % DD= 117.8 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
	15								
5170					13/14	27			
	20								
5165					10/22	32			
	25								
5160					9/14	23			**CA Sample @ 28 ft** MC= 6.2 % DD= 115.5 pcf #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
	30								
5155					28/33	61			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/9/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-4**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150									**CA Sample @ 38 ft** MC= 21.6 % DD= 107.3 pcf #200= 33 % LL= 56 PL= 25 PI= 31
					15/50	65		**38.0 - 65.7 ft. clayey SANDSTONE**, yellowish brown to gray, hard to very hard, rust stains observed at about 38 ft.	
	40								
5145					50:6"	50:6"			
	45								
5140					50:5"	50:5"			
	50								
5135									
	55				40/50:6"	50:6"			
5130									
	60				50:6"	50:6"			
5125									
	65				44/50:2"	50:2"			
5120								**65.7 - 70.5 ft. sandy CLAYSTONE**, dark gray, very hard, lignite inclusions observed at about 70 ft.	
	70				50:6"	50:6"			
								Bottom of Hole at 70.5 ft.	
5115									
	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/9/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-5**
Sheet 1 of 2

Boring Began: 3/31/2014
Completed: 3/31/2014
Total Depth: 65.3 ft
Drilling Method: Hollow-Stem Auger
Drill Bit:
Ground Elevation: 5185.8 ft
Drill: CME 55, Automatic Hammer
Casing:
Location: Retaining Wall
Driller: CDOT Geot. Dept.
Weather: Partly cloudy, windy, upper 40'sCoordinates: N: 455,955.0 E: 652,879.4
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Ground Water Notes:

Depth	▽ 27.5 ft	-	-	-
Date	3/31/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 0.3 ft. 3 inches Asphalt**.	
								0.3 - 8.0 ft. silty SAND Fill, yellowish red, loose, rust stains observed at about 3 ft.	
					4/6	10			
	5								**CA Sample @ 5 ft**
					5/7	12			MC= 7.8 %
5180									DD= 114.5 pcf
									#200= 21 %
									LL= NV
									PL= NP
									PI= NP
									AASHTO: A-2-4 (0)
									USCS: SM
	10							**8.0 - 30.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense.	**CA Sample @ 10 ft**
5175					17/21	38			pH= 7.8
									S= 0.001 %
									Re= 8251 ohms-cm
									CL = 0.0019%
	15							Approximately 7 inch thick, clay interbeds obesrved at about 14 ft, gray, medium plasticity.	
5170					5/13	18			
	20								**CA Sample @ 20 ft**
5165					9/12	21			MC= 1.8 %
									#200= 3 %
									LL= NV
									PL= NP
									PI= NP
									AASHTO: A-1-a (0)
									USCS: SW
	25								
5160					15/20	35			
	▽								
	30								
5155					3/5	8		**30.0 - 35.5 ft. silty SAND**, brown, loose.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-5**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150					6/6	12		**35.5 - 37.0 ft. clayey SAND**, gray, stiff, rust stains observed at about 36 ft.	**CA Sample @ 35 ft** MC= 30 % DD= 104.6 pcf #200= 49 % LL= 44 PL= 22 PI= 22 AASHTO: A-7-6 (7) USCS: SC
								37.0 - 42.0 ft. well graded SAND with variable amounts of gravel and silt, brown, very dense.	
	40								
5145					29/50	79			
								42.0 - 65.3 ft. sandy CLAYSTONE, yellowish brown to gray, very hard.	
	45				50:5"	50:5"		Rust stains observed at about 45 ft.	**CA Sample @ 45 ft** pH= 8.2 S= 0.011 % Re= 556 ohms-cm CL = 0.0005%
5140									
	50				50:5.5"	50:5.5"			**CA Sample @ 50 ft** MC= 17.7 % DD= 112.7 pcf #200= 80 % LL= 48 PL= 27 PI= 21
5135									
	55				50:5"	50:5"			
5130									
								Lignite inclusions observed at about 59 ft.	
	60				50:4"	50:4"		Increased sand after about 60 ft.	
5125									**CA Sample @ 65 ft** MC= 20.2 % DD= 104.4 pcf #200= 61 % LL= 34 PL= 22 PI= 12
	65				50:4"	50:4"			
5120								Bottom of Hole at 65.3 ft.	
	70								
5115									
	75								
5110									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-6**
Sheet 1 of 2

Boring Began: 4/23/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/23/2014
Drill Bit:
Casing:
Weather: Partly cloudy, 60's

Total Depth: 64.5 ft
Ground Elevation: 5187.8 ft
Location: Retaining Wall
Coordinates: N: 456,240.7 E: 653,901.3

Ground Water Notes:

Depth	▽ 32.0 ft	-	-	-
Date	4/23/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.7 ft. 8 inches asphalt.	
								0.7 - 2.0 ft. 16 inches base course.	
5185					2/2	4		**2.0 - 14.0 ft. silty SAND**, brown, very loose to loose.	**CA Sample @ 2 ft** MC= 8 % DD= 145.4 pcf #200= 25 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	5				1/2	3		Trace roots at about 4 ft.	
5180									
	10				3/4	7			
5175									
	15				3/5	8		**14.0 - 19.0 ft. sandy SILT** , calcareous, non-plastic, reddish brown to brown-gray, loose to medium dense, rust stains observed at about 14 ft.	**CA Sample @ 14 ft** MC= 24.1 % DD= 98.0 pcf #200= 76 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: ML
5170									
	20				12/17	29		**19.0 - 30.5 ft. clayey SAND** with gravel, brown-gray, loose to medium dense.	**CA Sample @ 19 ft** MC= 9.6 % #200= 35 % LL= 32 PL= 14 PI= 18 AASHTO: A-2-6 (2) USCS: SC
5165									
	25				12/14	26			
5160									
	30				5/7	12		Rust stains observed at about 29 ft.	
								30.5 - 52.0 ft. well graded SAND with variable amounts of gravel and silt, brown, medium dense to dense.	
5155									
					9/11	20			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-6**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150									
	40				14/23	37		Rust stains observed at about 39 ft.	**CA Sample @ 39 ft** MC= 10.3 % #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5145									
	45				13/16	29			
5140									
	50				10/12	22			
5135								**52.0 - 64.5 ft. sandy CLAYSTONE**, brown-gray to dark gray, hard to very hard.	
	55				23/44	67		Lignite inclusions and rust stains observed at about 54 ft.	
5130									
	60				50:5"	50:5"			**CA Sample @ 59 ft** MC= 16.7 % DD= 112.8 pcf #200= 72 % LL= 49 PL= 22 PI= 27
5125									
	65				50:6"	50:6"		Bottom of Hole at 64.5 ft.	
5120									
	70								
5115									
	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-7**
Sheet 1 of 2

Boring Began: 6/11/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: R. Beach
Final By: C. Yeh
Inclination: Vertical

Completed: 6/11/2014
Drill Bit:
Casing:
Weather: Cool, calm

Total Depth: 45.5 ft
Ground Elevation: 5193.0 ft
Location: Retaining Wall
Coordinates: N: 455,985.2 E: 654,044.3

Ground Water Notes:

Depth	▽ 32.0 ft	-	-	-
Date	6/11/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.4 ft. 5 inches asphalt.	**CA Sample @ 2 ft**
								0.4 - 2.0 ft. 19 inches base course.	MC= 6.3 %
									DD= 108.9 pcf
					3/4	7		**2.0 - 15.0 ft. silty SAND** with variable amounts of gravel, light brown to reddish brown, loose.	#200= 19 %
5190									LL= NV
									PL= NP
	5								PI= NP
									AASHTO: A-2-4 (0)
									USCS: SM
					4/4	8			**CA Sample @ 7 ft**
5185									MC= 13.8 %
									DD= 105.6 pcf
									pH= 7.6
									S= 0.008 %
					4/7	11			Re= 704 ohms-cm
	10								CL = 0.0326%
									CA Sample @ 9 ft
									MC= 5.8 %
5180									DD= 121.7 pcf
									#200= 14 %
									LL= NV
									PL= NP
									PI= NP
	15								AASHTO: A-1-b (0)
					11/16	27		**15.0 - 36.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense.	USCS: SM
5175									
	20								
					7/13	20			
5170									
	25								**CA Sample @ 25 ft**
					8/8	16			MC= 1.8 %
5165									#200= 2 %
									LL= NV
									PL= NP
									PI= NP
	30								AASHTO: A-1-b (0)
					9/14	23			USCS: SP
	▽								
5160									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-7**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					7/12	19			**CA Sample @ 35 ft** MC= 10.5 % DD= 130.0 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
					33/30	63		**36.0 - 40.0 ft. clayey SANDSTONE**, dark gray, hard to very hard.	
5155									
	40				37/50	87		**40.0 - 45.5 ft. sandy SILTSTONE**, dark gray, very hard.	**CA Sample @ 40 ft** MC= 19.5 % DD= 106.5 pcf #200= 72 % LL= NV PL= NP PI= NP
5150									
	45				50:6"	50:6"		Bottom of Hole at 45.5 ft.	
5145									
	50								
5140									
	55								
5135									
	60								
5130									
	65								
5125									
	70								
5120									
	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-8**
Sheet 1 of 2

Boring Began: 4/30/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/30/2014
Drill Bit:
Casing:
Weather: Party cloudy, windy, 40's

Total Depth: 54.8 ft
Ground Elevation: 5204.0 ft
Location: Retaining Wall
Coordinates: N: 456,252.0 E: 654,983.7

Ground Water Notes:

Depth	▽ 43.0 ft	-	-	-
Date	4/30/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.5 ft. 6 inches asphalt.	**CA Sample @ 2 ft**
								0.5 - 7.5 ft. silty SAND Fill, slightly gravelly with recycled asphalt debris, brown and dark gray, medium dense to dense.	MC= 3.2 % DD= 130.7 pcf pH= 7.7 S= 0.004 % Re= 2165 ohms-cm CL = 0.0291%
					13/23	36			
5200									
					6/16	22			**CA Sample @ 4 ft**
	5								MC= 13.3 % DD= 119.7 pcf #200= 41 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: SM
5195								**7.5 - 27.0 ft. silty SAND**, light brown to brown, loose to medium dense.	
					3/4	7			
	10								
5190									
					5/6	11			**CA Sample @ 14 ft**
	15								MC= 5 % DD= 108.6 pcf #200= 28 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5185									
					7/10	17		Trace gravel after about 19 ft.	
	20								
5180									**CA Sample @ 24 ft**
					14/19	33		Rust stains observed at about 24 ft.	MC= 5.7 % DD= 120.8 pcf #200= 46 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: SM
	25								
5175								**27.0 - 43.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense.	
					10/10	20		Rust stains observed at about 29 ft.	**CA Sample @ 34 ft**
	30								MC= 3.2 % DD= 116.0 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5170					17/20	37			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-8**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5165	40				9/12	21			
5160	45				24/50:4"	50:4"		**43.0 - 46.0 ft. silty SANDSTONE**, brown to reddish brown, very hard, rust stains observed at about 44 ft.	
5155	50				18/31	49		**46.0 - 54.8 ft. sandy CLAYSTONE**, dark gray, medium hard to very hard. Lignite inclusions observed at about 49 ft.	**CA Sample @ 54 ft** MC= 16.9 % DD= 115.3 pcf #200= 75 % LL= 45 PL= 21 PI= 24
5150	55				28/50:3"	50:3"		Bottom of Hole at 54.8 ft.	
5145	60								
5140	65								
5135	70								
5130	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-9**
Sheet 1 of 2

Boring Began: 6/11/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: R. Beach
Final By: C. Yeh
Inclination: Vertical

Completed: 6/11/2014
Drill Bit:
Casing:
Weather: Clear, warm

Total Depth: 55.5 ft
Ground Elevation: 5211.0 ft
Location: Retaining Wall
Coordinates: N: 456,181.8 E: 656,224.1

Ground Water Notes:

Depth	▽ 50.0 ft	-	-	-
Date	6/11/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5210								**0.0 - 1.4 ft. 17 inches asphalt**.	
					7/11	18		**1.4 - 34.5 ft. silty SAND**, light brown to brown, medium dense.	**CA Sample @ 2 ft** MC= 5 % DD= 117.7 pcf pH= 7.5 S= 0.006 % Re= 1631 ohms-cm CL = 0.0148%
	5								
5205					13/13	26			**CA Sample @ 7 ft** MC= 3.6 % DD= 101.8 pcf #200= 35 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	10							Coarser material after about 8 ft.	
5200					4/9	13			
	15								
5195					6/11	17			
	20								**CA Sample @ 20 ft** MC= 3.4 % DD= 100.3 pcf #200= 31 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5190					6/10	16			
	25								
5185					9/13	22			
	30								
5180					10/11	21			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-9**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5175					8/13	21		**34.5 - 37.5 ft. sandy CLAY**, brown, very stiff.	**CA Sample @ 35 ft** MC= 13.1 % #200= 92 % LL= 41 PL= 21 PI= 20 AASHTO: A-7-6 (19) USCS: CL
	40				7/13	20		**37.5 - 48.0 ft. poorly graded SAND** with variable amounts of gravel and silt, brown, medium dense.	
5170									
	45				12/17	29			**CA Sample @ 45 ft** MC= 2.7 % #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5165									
	50				33/30	63		**48.0 - 55.5 ft. sandy CLAYSTONE**, dark gray to dark brown, hard to very hard.	**CA Sample @ 50 ft** MC= 37.8 % DD= 77.1 pcf #200= 76 % LL= 69 PL= 32 PI= 37
5160									
	55				50:6"	50:6"		Bottom of Hole at 55.5 ft.	
5155									
	60								
5150									
	65								
5145									
	70								
5140									
	75								
5135									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-10**
Sheet 1 of 3

Boring Began: 5/7/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: R. Miller
Final By: C. Yeh
Inclination: Vertical

Completed: 5/7/2014
Drill Bit:
Casing:
Weather: Partly cloudy

Total Depth: 89.4 ft
Ground Elevation: 5239.1 ft
Location: Retaining Wall
Coordinates: N: 456,206.2 E: 657,548.8

Ground Water Notes:

Depth	▽ 78.0 ft	-	-	-
Date	5/7/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.4 ft. 5 inches asphalt.	**CA Sample @ 2 ft**
								0.4 - 10.0 ft. silty SAND with gravel, brown, loose.	MC= 7.1 %
					3/3	6			DD= 111.5 pcf
									#200= 31 %
									LL= NV
									PL= NP
5235									PI= NP
					2/3	5		Rust stains observed at about 4 ft.	AASHTO: A-2-4 (0)
	5								USCS: SM
									CA Sample @ 4 ft
									MC= 9.9 %
									#200= 41 %
									LL= NV
									PL= NP
5230									PI= NP
					5/8	13			AASHTO: A-4 (0)
	10								USCS: SM
								10.0 - 25.0 ft. well graded SAND with variable amounts of gravel and silt, brown, medium dense.	**CA Sample @ 9 ft**
									MC= 16.6 %
									DD= 112.0 pcf
									pH= 7.8
									S= 0.016 %
5225									Re= 980 ohms-cm
					10/12	22			CL = 0.0041%
	15								
5220									**CA Sample @ 19 ft**
					8/12	20			MC= 5.1 %
	20								DD= 114.0 pcf
									#200= 8 %
									LL= NV
									PL= NP
5215									PI= NP
					8/13	21			AASHTO: A-1-b (0)
	25								USCS: SW-SM
								25.0 - 40.0 ft. silty SAND, brown, loose to medium dense.	
5210									
					6/10	16			**CA Sample @ 34 ft**
	30								MC= 19.8 %
									DD= 106.1 pcf
									#200= 29 %
									LL= NV
									PL= NP
5205									PI= NP
					4/4	8			AASHTO: A-2-4 (0)
									USCS: SM

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-10**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5200	40				5/11	16			
								40.0 - 79.5 ft. well graded SAND with variable amounts of gravel and silt, brown and reddish brown, medium dense to dense.	
5195	45				7/18	25			
5190	50				11/23	34			**CA Sample @ 49 ft** MC= 3.1 % DD= 123.4 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW
5185	55				12/28	40			
5180	60				14/20	34			
5175	65				18/24	42			**CA Sample @ 64 ft** MC= 3 % DD= 111.8 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5170	70				16/26	42			
5165	75				18/45	63		Higher blow counts may be due to cemented gravel stuck in sampler.	

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-10**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5160	80				13/34	47		**79.5 - 81.0 ft. weathered SANDSTONE**, medium hard.	
								81.0 - 89.4 ft. silty SANDSTONE, brown, very hard.	
5155	85				50/50:5"	50:5"			**CA Sample @ 84 ft** MC= 29.8 % #200= 31 % LL= NV PL= NP PI= NP
5150	90				50:5"	50:5"		Bottom of Hole at 89.4 ft.	
5145	95								
5140	100								
5135	105								
5130	110								
5125	115								
5120									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-11**
Sheet 1 of 3

Boring Began: 6/4/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 6/5/2014
Drill Bit:
Casing:
Weather: Partly cloudy, 70's

Total Depth: 94.9 ft
Ground Elevation: 5243.6 ft
Location: Retaining Wall
Coordinates: N: 455,974.0 E: 657,517.4

Ground Water Notes:

Depth	▽ 84.0 ft	-	-	-
Date	6/5/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.4 ft. 5 inches asphalt.	
								0.4 - 1.1 ft. 8 inches concrete.	
								1.1 - 7.0 ft. silty SAND Fill, trace gravel, brown and gray, loose to medium dense.	**CA Sample @ 2 ft** MC= 8.3 % DD= 103.4 pcf #200= 18 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
					6/8	14			
5240									
	5				4/6	10			
								7.0 - 19.0 ft. silty SAND, brown to light brown, loose.	
5235									
	10				3/4	7			**CA Sample @ 9 ft** MC= 10.9 % DD= 98.9 pcf #200= 38 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: SM
5230									
	15				3/5	8			**CA Sample @ 14 ft** MC= 19.8 % DD= 95.4 pcf #200= 46 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: SM
5225									
	20				7/12	19		**19.0 - 28.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense, rust stains observed at about 20 ft.	
5220									
	25				9/10	19			**CA Sample @ 24 ft** MC= 2.9 % #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
5215									
	30				4/6	10		**28.0 - 39.0 ft. silty SAND**, brown, loose to medium dense, calcareous.	**CA Sample @ 34 ft** MC= 10.3 % DD= 100.3 pcf #200= 31 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5210									
					10/11	21			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-11**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								Rust stains observed at about 35 ft.	
5205									
	40				17/23	40		**39.0 - 43.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, dense.	
5200								**43.0 - 49.0 ft. sandy CLAY**, brown, stiff.	
	45				8/8	16		1 to 3 inch thick, fine sand interbeds observed at about 45 ft.	**CA Sample @ 44 ft** MC= 19 % DD= 106.4 pcf #200= 51 % LL= 40 PL= 18 PI= 22 AASHTO: A-6 (8) USCS: CL
5195									
	50				23/30	53		**49.0 - 84.5 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to very dense.	
5190									
	55				12/22	34			
5185									
	60				12/21	33			**CA Sample @ 59 ft** MC= 5.7 % #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5180									
	65				18/28	46			
5175									
	70				18/31	49			
5170									
	75				16/25	41			**CA Sample @ 74 ft** MC= 2.4 % #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-11**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5165	80				41/50:5"	50:5"			
5160 ▽	85				22/39	61		**84.5 - 94.9 ft. clayey SANDSTONE**, brown to dark gray, hard to very hard, rust stained at about 85 ft.	
5155	90				50:5"	50:5"		Liginite inclusions observed at about 89 ft.	**CA Sample @ 89 ft** MC= 28.2 % DD= 81.0 pcf #200= 40 % LL= 45 PL= 21 PI= 24
5150	95				34/50:5"	50:5"		Bottom of Hole at 94.9 ft.	
5145	100								
5140	105								
5135	110								
5130	115								
5125									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-12**
Sheet 1 of 3

Boring Began: 5/1/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 5/1/2014
Drill Bit:
Casing:
Weather: Clear, 40's

Total Depth: 90.5 ft
Ground Elevation: 5236.6 ft
Location: Retaining Wall
Coordinates: N: 456,160.7 E: 659,088.3

Ground Water Notes:

Depth	▽ 62.0 ft	-	-	-
Date	5/1/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5235								**0.0 - 0.3 ft. 3 inches topsoil**.	
								0.3 - 16.0 ft. silty SAND with scattered grass and roots in upper 12 inches, brown to light brown, loose to medium dense.	**CA Sample @ 3 ft** MC= 5.7 % DD= 144.4 pcf #200= 22 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
					4/3	7			
	5				4/4	8			
5230								Increased silt content after about 6 ft.	**CA Sample @ 5 ft** MC= 4.8 % DD= 120.2 pcf pH= 8 S= 0.007 % Re= 2212 ohms-cm CL = 0.0062%
	10				5/9	14			
5225									
	15				5/5	10			**CA Sample @ 15 ft** MC= 13.3 % DD= 117.7 pcf #200= 68 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: ML
5220								**16.0 - 35.0 ft. poorly graded SAND** with variable amounts of gravel and silt, brown and reddish brown, medium dense to dense.	
	20				21/21	42			
5215									
	25				11/17	28			
5210									
	30				13/21	34		Rust stains observed at about 30 ft.	**CA Sample @ 30 ft** MC= 3.1 % DD= 112.1 pcf #200= 6 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5205									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-12**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					9/1	10		**35.0 - 37.0 ft. silty SAND** with clay inclusions, light brown, medium dense, rust stains observed at about 35 ft.	
5200								**37.0 - 48.0 ft. poorly graded SAND** with variable amounts of gravel and silt, light brown, very dense.	
	40				27/46	73		Rust stains observed at about 40 ft.	**CA Sample @ 40 ft** MC= 3.6 % DD= 118.6 pcf #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SP-SM
5195									
	45				23/39	62			
5190									
								48.0 - 61.0 ft. silty SAND, brown to reddish brown, medium dense.	
	50				11/11	22			
5185									
	55				10/17	27			**CA Sample @ 55 ft** MC= 13.6 % DD= 116.7 pcf #200= 26 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5180									
	60				15/37	52			
5175 ▽								**61.0 - 64.0 ft. poorly graded SAND** with variable amounts of gravel and silt, reddish brown to brown-gray, dense, rust stains observed at about 60 ft.	
								64.0 - 72.0 ft. silty SAND, brown to reddish brown, medium dense, rust stains observed at about 65 ft.	
	65				14/25	39			**CA Sample @ 65 ft** MC= 19.6 % DD= 109.0 pcf #200= 30 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5170									
	70				8/15	23			
5165									
								72.0 - 77.0 ft. poorly graded SAND with variable amounts of gravel and silt, brown, dense.	
	75				19/26	45			
5160									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-12**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								77.0 - 90.5 ft. silty SANDSTONE, gray to dark gray, very hard.	
	80				50:6"	50:6"		Rust stains observed at about 80 ft.	
5155									
	85				50:4"	50:4"			**CA Sample @ 85 ft** MC= 26.9 % DD= 94.3 pcf #200= 40 % LL= NV PL= NP PI= NP
5150									
	90				50:6"	50:6"			
5145								Bottom of Hole at 90.5 ft.	
	95								
5140									
	100								
5135									
	105								
5130									
	110								
5125									
	115								
5120									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-13**
Sheet 1 of 2

Boring Began: 5/2/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: M. Boyd
Final By: C. Yeh
Inclination: Vertical

Completed: 5/2/2014
Drill Bit:
Casing:
Weather: Sunny

Total Depth: 75.0 ft
Ground Elevation: 5240.4 ft
Location: Retaining Wall
Coordinates: N: 455,943.5 E: 659,036.1

Ground Water Notes: Temporary monitoring well installed to a depth of about 75 ft

Depth	▽ 62.0 ft	-	-	-
Date	5/2/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5240								**0.0 - 0.5 ft. 6 inches asphalt**.	
								0.5 - 6.0 ft. sandy SILT, light brown, loose to medium dense.	
					7/7	14			
					3/4	7			**CA Sample @ 4 ft** MC= 15.1 % DD= 107.3 pcf #200= 76 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: ML
5235	5								
								6.0 - 48.0 ft. well graded SAND with variable amounts of gravel and silt, brown to reddish brown, medium dense to very dense.	
					9/16	25			
5230	10								
					11/15	26			
5225	15								
					10/13	23			**CA Sample @ 19 ft** MC= 5.1 % DD= 118.0 pcf #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5220	20								
					20/23	43			
5215	25								
					11/17	28			**CA Sample @ 34 ft** MC= 18 % DD= 106.2 pcf #200= 46 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: SM
5210	30								
					9/13	22			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-13**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5205									
	40				17/18	35			
5200									
	45				21/44	65			
5195									
								48.0 - 56.0 ft. sandy CLAY, brown, very stiff.	
	50				9/13	22			**CA Sample @ 49 ft** MC= 23.8 % DD= 101.8 pcf #200= 55 % LL= 44 PL= 20 PI= 24 AASHTO: A-7-6 (10) USCS: CL
5190									
	55				19/30	49			
5185									
								56.0 - 63.0 ft. clayey SAND slightly gravelly, brown, medium dense to dense.	
	60				9/12	21		Rust stains observed at 59 ft.	**CA Sample @ 59 ft** MC= 18.6 % DD= 109.6 pcf #200= 27 % LL= 36 PL= 16 PI= 20 AASHTO: A-2-6 (0) USCS: SC
5180									
								63.0 - 75.0 ft. sandy CLAYSTONE, brown and gray, very hard.	
	65				36/50:5"	50:5"		Rust stains observed at about 64 ft.	
5175									
	70				31/50:5"	50:5"			**CA Sample @ 69 ft** MC= 38.8 % DD= 82.7 pcf #200= 77 % LL= 61 PL= 28 PI= 33
5170									
	75				31/50	81			
5165								Bottom of Hole at 75.0 ft.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-14**
Sheet 1 of 2

Boring Began: 5/5/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 5/5/2014
Drill Bit:
Casing:
Weather: Partly cloudy

Total Depth: 64.3 ft
Ground Elevation: 5242.0 ft
Location: Retaining Wall
Coordinates: N: 456,176.7 E: 659,891.1

Ground Water Notes: Temporary monitoring well installed to a depth of about 64 ft

Depth	▽ 39.0 ft	-	-	-
Date	5/5/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.3 ft. 4 inches topsoil.	
								0.3 - 7.0 ft. clayey SAND Fill, calcareous, brown, loose.	
5240					4/4	8			**CA Sample @ 4 ft** MC= 8.5 % DD= 116.8 pcf #200= 28 % LL= 22 PL= 14 PI= 8 AASHTO: A-2-4 (0) USCS: SC
	5				3/4	7			
5235								**7.0 - 14.0 ft. silty SAND**, brown, loose.	
	10				3/3	6			**CA Sample @ 9 ft** MC= 5.7 % DD= 111.3 pcf #200= 16 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5230									
	15				7/10	17		**14.0 - 42.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense.	
5225									
	20				14/14	28			
5220									
	25				9/14	23			**CA Sample @ 24 ft** MC= 3.7 % DD= 116.7 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5215									
	30				11/14	25			
5210									
					15/24	39			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-14**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5205									
	40				7/13	20			**CA Sample @ 39 ft** MC= 12.3 % #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5200								**42.0 - 50.0 ft. sandy CLAY** calcareous, brown, hard.	
	45				15/23	38			**CA Sample @ 44 ft** MC= 24.3 % DD= 101.4 pcf #200= 58 % LL= 32 PL= 15 PI= 17 AASHTO: A-6 (7) USCS: CL
5195									
	50				8/13	21			
5190								**50.0 - 53.0 ft. weathered clayey SANDSTONE**, brown, firm.	
	55				50:6"	50:6"		**53.0 - 64.3 ft. clayey SANDSTONE**, reddish brown to brown, very hard. Rust stains observed at about 54 ft.	
5185									
	60				50:3"	50:3"			
5180									
	65				50:3"	50:3"		Bottom of Hole at 64.3 ft.	
5175									
	70								
5170									
	75								
5165									

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-15**
Sheet 1 of 2

Boring Began: 5/6/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 5/6/2014
Drill Bit:
Casing:
Weather: Mostly cloudy, 60's

Total Depth: 68.3 ft
Ground Elevation: 5244.5 ft
Location: Retaining Wall
Coordinates: N: 455,948.7 E: 659,883.3

Ground Water Notes:

Depth	▽ 37.0 ft	-	-	-
Date	5/6/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.4 ft. 5 inches asphalt.	**CA Sample @ 3 ft**
								0.4 - 2.0 ft. 19 inches base course.	MC= 14.3 %
								2.0 - 13.0 ft. clayey SAND trace gravel, brown, loose to medium dense.	DD= 117.2 pcf
					4/5	9			#200= 50 %
5240	5								LL= 28
					3/4	7			PL= 12
									PI= 16
									AASHTO: A-6 (4)
5235									USCS: SC
	10				5/8	13			**CA Sample @ 5 ft**
									MC= 13.8 %
									DD= 113.3 pcf
									pH= 7.8
5230									S= 0.012 %
	15				10/15	25			Re= 939 ohms-cm
									CL = 0.0314%
									CA Sample @ 10 ft
5225									MC= 12.3 %
	20				12/14	26			DD= 118.8 pcf
									#200= 42 %
									LL= 35
5220									PL= 18
	25				12/15	27			PI= 17
									AASHTO: A-6 (3)
5215									USCS: SC
	30				9/19	28			**CA Sample @ 25 ft**
									MC= 2.5 %
									#200= 4 %
									LL= NV
									PL= NP
									PI= NP
									AASHTO: A-1-b (0)
									USCS: SW
5210								**33.0 - 43.0 ft. silty SAND**, brown and black, medium dense.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-15**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					8/20	28		Sandy clay interbeds observed at about 36 ft.	**CA Sample @ 35 ft** MC= 11.8 % DD= 121.7 pcf #200= 22 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SM
5205	40				8/16	24			
								43.0 - 54.5 ft. clayey SAND trace gravel, brown, medium dense.	
5200	45				8/15	23			
5195	50				10/13	23			**CA Sample @ 50 ft** MC= 20.2 % DD= 108.2 pcf #200= 28 % LL= 33 PL= 14 PI= 19 AASHTO: A-2-6 (0) USCS: SC
5190	55				9/13	22		**54.5 - 57.0 ft. weathered silty SANDSTONE**, dark brown, firm, rust stains observed at about 55 ft.	
								57.0 - 68.3 ft. clayey SANDSTONE, brown, very hard.	
5185	60				36/50:5"	50:5"		Lignite inclusions, rust stains observed at about 60 ft.	**CA Sample @ 60 ft** MC= 25.3 % DD= 98.9 pcf #200= 36 % LL= 54 PL= 28 PI= 26
5180	65				50:5"	50:5"			
					50:4"	50:4"		Bottom of Hole at 68.3 ft.	
5175	70								
5170	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-16**
Sheet 1 of 2

Boring Began: 2/11/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: J. El-Hehiawy
Inclination: Vertical

Completed: 2/11/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 74.8 ft
Ground Elevation: 5250.7 ft
Location: WB I-70 Embankment (~ Sta 2113+00)
Coordinates: N: 455,954.3 E: 661,568.4

Ground Water Notes:

Depth	▽ 39.0 ft	-	-	-
Date	2/11/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5250								**0.0 - 5.0 ft. silty SAND** with gravel, brown, medium dense, organics in upper two feet.	
					9/10	19			**CA Sample @ 2 ft** MC= 10.2 % DD= 116.2 pcf #200= 57 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: ML
					3/3	6		**5.0 - 17.0 ft. sandy CLAY** with gravel, brown, medium stiff.	
	10				3/3	6			**CA Sample @ 9 ft** MC= 11.7 % DD= 114.2 pcf #200= 54 % LL= 26 PL= 18 PI= 8 AASHTO: A-4 (2) USCS: CL
5240					2/3	5			
								17.0 - 52.0 ft. gravelly SAND with silt, brown, medium dense.	
	20				10/15	25			**CA Sample @ 19 ft** MC= 3.3 % #200= 6 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5230					11/15	26			
	30				8/16	24			**CA Sample @ 29 ft** MC= 5 % #200= 7 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5220					11/13	24			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-16**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	40				7/10	17			**CA Sample @ 39 ft** MC= 8.2 % DD= 120.2 pcf #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
5210					6/21	27			
	50				9/15	24			
5200								**52.0 - 58.0 ft. silty SAND**, brown, loose.	
					3/7	10			**CA Sample @ 54 ft** MC= 21.1 % DD= 105.8 pcf #200= 25 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	60				7/9	16		**58.0 - 62.0 ft. clayey SAND** with gravel, medium dense.	**CA Sample @ 59 ft** MC= 24.4 % DD= 102.3 pcf #200= 42 % LL= 47 PL= 20 PI= 27 AASHTO: A-7-6 (6) USCS: SC
5190								**62.0 - 68.0 ft. WEATHERED SILTY SANDSTONE**, yellowish brown dark brown, firm, lignite lenses.	
					12/18	30			
	70				33/50:5"	50:5"		**68.0 - 74.8 ft. SILTY SANDSTONE**, dark brown, very hard, lignite lenses.	**CA Sample @ 69 ft** MC= 41.5 % DD= 83.4 pcf #200= 41 % LL= NV PL= NP PI= NP
5180									
					32/50:4"	50:4"			
								Bottom of Hole at 74.8 ft.	
	80							Pinyon monitored envirnomental conditions during drilling. No PID measurements were above screening threshold. No visual or olfactory indications of impacts to soils.	
5170									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-17**
Sheet 1 of 2

Boring Began: 2/3/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: J. El-Hehiawy
Inclination: Vertical

Completed: 2/3/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 74.4 ft
Ground Elevation: 5250.8 ft
Location: EB I-70 Embankment (~ Sta 2113+00)
Coordinates: N: 455,791.0 E: 661,504.4

Ground Water Notes:

Depth	▽ 37.0 ft	-	-	-
Date	2/3/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5250								**0.0 - 6.0 ft. silty SAND**, dark brown, loose.	**CA Sample @ 2 ft** MC= 4.8 % DD= 112.0 pcf #200= 24 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
					3/1	4			
	5								
5245					2/2	4		**6.0 - 13.0 ft. sandy CLAY** with gravel, brown, medium stiff.	**CA Sample @ 6 ft** MC= 10.8 % DD= 110.7 pcf #200= 58 % LL= 29 PL= 15 PI= 14 AASHTO: A-6 (5) USCS: CL
					3/4	7			
	10								
5240								**13.0 - 18.0 ft. clayey SAND** with gravel, brown, loose.	**CA Sample @ 14 ft** MC= 10.6 % DD= 121.9 pcf #200= 36 % LL= 26 PL= 14 PI= 12 AASHTO: A-6 (1) USCS: SC
					3/5	8			
	15								
5235								**18.0 - 46.0 ft. gravelly SAND** with variable amounts of silt, brown, medium dense to dense.	**CA Sample @ 19 ft** MC= 2.5 % #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
					9/11	20			
	20								
5230									
					12/15	27			
	25								
5225									
					8/11	19			**CA Sample @ 29 ft** MC= 4.7 % #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW
	30								
5220									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-17**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5215	35				9/12	21			**CA Sample @ 34 ft** MC= 19.5 % DD= 104.6 pcf #200= 30 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5210	40				16/24	40			
5205	45				26/26	52			**CA Sample @ 44 ft** MC= 6.8 % DD= 139.5 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW
								46.0 - 60.0 ft. clayey SAND with gravel, brown, medium dense to dense, rust stained, lignite lenses.	
5200	50				16/37	53			**CA Sample @ 49 ft** MC= 14 % #200= 19 % LL= 45 PL= 16 PI= 29 AASHTO: A-2-7 (0) USCS: SC
5195	55				16/22	38			
	60				7/11	18			
5190								**60.0 - 67.0 ft. WEATHERED CLAYEY SANDSTONE**, brown, medium hard, rust stained.	
5185	65				15/26	41			**CA Sample @ 64 ft** MC= 29.7 % DD= 96.4 pcf #200= 26 % LL= 50 PL= 23 PI= 27
								67.0 - 74.4 ft. CLAYEY SANDSTONE, brown, very hard.	
5180	70				50:5"	50:5"			
	75				50:5"	50:5"		Bottom of Hole at 74.4 ft.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-18**
Sheet 1 of 3

Boring Began: 2/13/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: J. El-Hehiawy
Inclination: Vertical

Completed: 2/13/2015
Drill Bit:
Casing:
Weather: Cleat

Total Depth: 89.4 ft
Ground Elevation: 5249.9 ft
Location: WB I-70 Embankment (~ Sta 2122+00)
Coordinates: N: 455,739.4 E: 662,441.9

Ground Water Notes: Temporary Monitoring Well Installed

Depth	▽ 34.5 ft	-	-	-
Date	2/13/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 7.0 ft. silty SAND, brown, loose to medium dense, organic odor in upper two feet.	
					6/7	13			**CA Sample @ 2 ft** MC= 4.8 % DD= 108.6 pcf #200= 29 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5245	5				5/4	9			
								7.0 - 17.0 ft. clayey SAND, brown, loose.	
5240	10				2/4	6			**CA Sample @ 9 ft** MC= 10.1 % DD= 114.4 pcf #200= 40 % LL= 29 PL= 13 PI= 16 AASHTO: A-6 (2) USCS: SC
5235	15				3/5	8			
								17.0 - 39.5 ft. SAND with variable amounts of gravel and silt, light brown, medium dense to dense.	
5230	20				7/17	24			
5225	25				12/20	32			**CA Sample @ 24 ft** MC= 2.4 % DD= 120.8 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5220	30				29/30	59			
	▽				12/18	30			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-18**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5210	40				4/5	9		**39.5 - 42.0 ft. sandy CLAY**, brown-gray, stiff, rust stained.	**CA Sample @ 39 ft** MC= 28.5 % DD= 95.6 pcf #200= 81 % LL= 46 PL= 23 PI= 23 AASHTO: A-7-6 (19) USCS: CL
5205	45				8/12	20		**42.0 - 58.0 ft. silty SAND**, light brown, medium dense to dense, fine grained, poorly graded.	**CA Sample @ 44 ft** MC= 18.4 % DD= 108.8 pcf #200= 13 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5200	50				4/10	14			
5195	55				18/34	52			
5190	60				4/7	11		**58.0 - 69.0 ft. sandy CLAY**, brown, stiff to very stiff, calcareous.	**CA Sample @ 59 ft** MC= 32.3 % DD= 91.2 pcf #200= 83 % LL= 68 PL= 21 PI= 47 AASHTO: A-7-6 (41) USCS: CH
5185	65				12/14	26			
5180	70				11/15	26		**69.0 - 77.0 ft. silty SAND** with gravel, brown, medium dense.	**CA Sample @ 69 ft** MC= 21.6 % DD= 102.6 pcf #200= 38 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: SM
5175	75				7/12	19			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-18**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								77.0 - 89.4 ft. INTERBEDDED CLAYEY SANDSTONE AND SANDY CLAYSTONE, brown to gray, very hard, rust stained, lignite lenses.	
5170	80				33/50	83			**CA Sample @ 79 ft** MC= 28.2 % DD= 92.2 pcf #200= 46 % LL= 59 PL= 26 PI= 33
5165	85				50:6"	50:6"			
5160	90				50:5"	50:5"		Bottom of Hole at 89.4 ft.	**CA Sample @ 89 ft** MC= 27.4 % DD= 87.0 pcf #200= 80 % LL= 60 PL= 25 PI= 35
5155	95								
5150	100								
5145	105								
5140	110								
5135	115								

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-19**
Sheet 1 of 3

Boring Began: 2/5/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: J. El-Hehiawy
Inclination: Vertical

Completed: 2/5/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 89.3 ft
Ground Elevation: 5253.8 ft
Location: EB I-70 Embankment (~ Sta 2122+00)
Coordinates: N: 455,568.4 E: 662,415.0

Ground Water Notes:

Depth	▽ 38.0 ft	-	-	-
Date	2/5/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 5.0 ft. clayey SAND FILL, brown, loose, organics in upper 2 ft.	
					3/1	4			**CA Sample @ 2 ft** MC= 6.4 % DD= 111.7 pcf #200= 40 % LL= 24 PL= 14 PI= 10 AASHTO: A-4 (1) USCS: SC
5250									
	5				6/4	10		**5.0 - 9.0 ft. silty SAND FILL** with gravel, brown, loose.	**CA Sample @ 5 ft** MC= 4.5 % DD= 118.2 pcf #200= 29 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5245									
	10				4/5	9		**9.0 - 56.0 ft. silty SAND** with variable amounts of gravel and silt, brown, loose to medium dense, rust stained.	
5240									
	15				6/7	13			**CA Sample @ 14 ft** MC= 5.9 % DD= 105.9 pcf #200= 16 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SM
5235									
	20				12/17	29			
5230									
	25				9/13	22			**CA Sample @ 24 ft** MC= 1.8 % #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5225									
	30				13/16	29			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-19**
Sheet 2 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5220									
	35				11/17	28			
5215									**CA Sample @ 39 ft** MC= 20.8 % DD= 106.2 pcf #200= 25 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	40				7/8	15			
5210									
	45				7/12	19			
5205									
	50				12/17	29			
5200									
	55				17/30	47			**CA Sample @ 54 ft** MC= 8.4 % #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5195								**56.0 - 74.5 ft. sandy CLAY**, brown, stiff to very stiff.	
	60				7/9	16			**CA Sample @ 59 ft** MC= 33.6 % DD= 88.9 pcf #200= 78 % LL= 73 PL= 21 PI= 52 AASHTO: A-7-6 (42) USCS: CH
5190									
	65				9/17	26			
5185									
	70				9/16	25			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-19**
Sheet 3 of 3

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5180									**CA Sample @ 74 ft** MC= 20 % DD= 110.5 pcf #200= 28 % LL= 36 PL= 17 PI= 19 AASHTO: A-2-6 (0) USCS: SC
	75				9/12	21		**74.5 - 79.5 ft. clayey SAND**, brown, medium dense.	
5175					30/50:5"	50:5"			**CA Sample @ 79 ft** MC= 32.2 % DD= 90.9 pcf #200= 72 % LL= 61 PL= 26 PI= 35
	80							**79.5 - 89.3 ft. SANDY CLAYSTONE**, brown to gray, very hard.	
5170					50:3"	50:3"			**CA Sample @ 84 ft** MC= 25 % DD= 98.2 pcf #200= 72 % LL= 52 PL= 25 PI= 27
	85								
5165					50:4"	50:4"			
	90							Bottom of Hole at 89.3 ft.	
5160								Pinyon monitored envirnomental conditions during drilling. No PID measurements were above screening threshold. No visual or olfactory indications of impacts to soils.	
	95								
5155									
	100								
5150									
	105								
5145									
	110								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-20**
Sheet 1 of 2

Boring Began: 2/6/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: J. El-Hehiawy
Inclination: Vertical

Completed: 2/6/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 70.8 ft
Ground Elevation: 5266.0 ft
Location: WB I-70 Embankment (~ Sta 2140+00)
Coordinates: N: 455,504.7 E: 664,172.1

Ground Water Notes:

Depth	▽ 43.0 ft	-	-	-
Date	2/6/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5265								**0.0 - 5.0 ft. sandy CLAY**, brown, stiff.	
	5				4/5	9			**CA Sample @ 4 ft** MC= 10.2 % DD= 119.9 pcf #200= 58 % LL= 29 PL= 15 PI= 14 AASHTO: A-6 (5) USCS: CL
5260								**5.0 - 15.0 ft. clayey SAND**, brown, loose.	
	10				4/3	7			**CA Sample @ 10 ft** MC= 9.1 % DD= 110.0 pcf #200= 47 % LL= 33 PL= 12 PI= 21 AASHTO: A-6 (6) USCS: SC
5255									
	15				4/4	8		**15.0 - 19.0 ft. silty SAND** with gravel, brown, loose.	**CA Sample @ 15 ft** MC= 5.7 % DD= 110.7 pcf #200= 21 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5250									
	20				7/9	16		**19.0 - 30.5 ft. clayey SAND**, brown, medium dense, calcareous.	
5245									
	25				12/19	31			**CA Sample @ 25 ft** MC= 11.1 % DD= 121.7 pcf #200= 45 % LL= 34 PL= 14 PI= 20 AASHTO: A-6 (5) USCS: SC
5240									
	30				10/14	24			
5235								**30.5 - 45.0 ft. silty SAND**, brown, medium dense, rust stained.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-20**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5230					9/11	20			**CA Sample @ 35 ft** MC= 4.6 % #200= 12 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SP-SM
5225	40				5/9	14			
5220	45				3/5	8		**45.0 - 56.0 ft. SILT** with sand, brown to gray, stiff to very stiff.	**CA Sample @ 45 ft** MC= 33.7 % DD= 90.9 pcf #200= 91 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: ML
5215	50				4/10	14			
5210	55				7/17	24			
5205	60				13/20	33		**56.0 - 64.0 ft. WEATHERED SANDY CLAYSTONE**, brown to gray, medium hard, rust stained.	**CA Sample @ 60 ft** MC= 31.7 % DD= 90.5 pcf #200= 90 % LL= 66 PL= 25 PI= 41
5200	65				45/50	95		**64.0 - 70.8 ft. SANDY CLAYSTONE**, gray, very hard, rust stained, lignite lenses.	**CA Sample @ 65 ft** MC= 25.9 % DD= 98.6 pcf #200= 74 % LL= 53 PL= 24 PI= 29
5195	70				37/50:4"	50:4"		Bottom of Hole at 70.8 ft.	
5190	75							Pinyon monitored envirnomental conditions during drilling. No PID measurements were above screening threshold. No visual or olfactory indications of impacts to soils.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-21**
Sheet 1 of 2

Boring Began: 2/19/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: J. El-Hehiawy
Inclination: Vertical

Completed: 2/19/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 74.4 ft
Ground Elevation: 5269.9 ft
Location: EB I-70 Embankment (~ Sta 2141+00)
Coordinates: N: 455,332.3 E: 664,265.7

Ground Water Notes: Temporary Monitoring Well Installed

Depth	▽ 33.0 ft	-	-	-
Date	2/19/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 19.0 ft. silty SAND, brown, loose.	
					4/3	7			**CA Sample @ 3 ft** MC= 8 % DD= 107.2 pcf #200= 23 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5265	5								
					3/5	8			
					7/5	12			**CA Sample @ 9 ft** MC= 6.5 % DD= 107.0 pcf #200= 25 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5260	10								
					4/4	8			
5255	15								
					7/12	19		**19.0 - 23.0 ft. clayey SAND** with gravel, brown, medium dense.	**CA Sample @ 19 ft** MC= 12.7 % DD= 118.9 pcf #200= 50 % LL= 41 PL= 18 PI= 23 AASHTO: A-7-6 (8) USCS: SC
5250	20							**23.0 - 39.0 ft. silty SAND**, brown, medium dense to dense.	
					14/23	37			**CA Sample @ 24 ft** MC= 8.6 % DD= 123.1 pcf #200= 26 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5245	25								
					11/27	38			**CA Sample @ 29 ft** MC= 7.3 % DD= 122.7 pcf #200= 25 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5240	30								
		▽			10/12	22			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-21**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5230	40				6/7	13		**39.0 - 42.0 ft. clayey SAND**, brown-gray, medium dense, rust stained.	
								42.0 - 49.0 ft. silty SAND with gravel, brown, dense, rust stained.	
5225	45				17/25	42			**CA Sample @ 44 ft** MC= 8.7 % DD= 110.4 pcf #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
5220	50				5/9	14		**49.0 - 54.0 ft. clayey SAND**, brown-gray, medium dense, rust stained.	**CA Sample @ 49 ft** MC= 23.7 % DD= 101.9 pcf #200= 49 % LL= 50 PL= 17 PI= 33 AASHTO: A-7-6 (11) USCS: SC
5215	55				10/30	40		**54.0 - 64.5 ft. silty SAND** with gravel, light brown, dense.	
5210	60				17/20	37			**CA Sample @ 59 ft** MC= 11.4 % DD= 122.0 pcf #200= 6 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5205	65				17/23	40		**64.5 - 74.4 ft. SANDY CLAYSTONE**, brown to gray, hard to very hard, lignite lenses.	
5200	70				30/50	80			**CA Sample @ 69 ft** MC= 23.4 % DD= 106.0 pcf #200= 65 % LL= 59 PL= 29 PI= 30
5195	75				50:5"	50:5"		Bottom of Hole at 74.4 ft.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-22**
Sheet 1 of 2

Boring Began: 2/18/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: J. El-Hehiawy
Inclination: Vertical

Completed: 2/18/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 74.4 ft
Ground Elevation: 5273.5 ft
Location: WB I-70 Embankment (~ Sta 2148+00)
Coordinates: N: 455,509.2 E: 664,949.8

Ground Water Notes:

Depth	▽ 55.0 ft	-	-	-
Date	2/18/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 6.0 ft. sandy SILT, brown, loose, organics in upper 2 ft.	
					5/7	12			
5270									
	5				5/7	12			**CA Sample @ 5 ft** MC= 11.5 % DD= 112.0 pcf #200= 51 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: ML
								6.0 - 22.0 ft. clayey SAND, brown, loose.	
5265									
	10				5/5	10			
5260									
	15				3/5	8			**CA Sample @ 14 ft** MC= 11.4 % DD= 121.2 pcf #200= 32 % LL= 31 PL= 14 PI= 17 AASHTO: A-2-6 (1) USCS: SC
5255									
	20				4/5	9			
								22.0 - 59.0 ft. SAND with variable amounts of gravel and silt, brown, medium dense to dense.	
5250									
	25				12/19	31			**CA Sample @ 24 ft** MC= 3.5 % #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5245									
	30				11/17	28			
5240									
					12/15	27			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-22**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5235									
	40				13/22	35			
5230									
	45				7/18	25			**CA Sample @ 44 ft** MC= 13.5 % DD= 115.2 pcf #200= 30 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5225									
	50				17/23	40			**CA Sample @ 49 ft** MC= 3.1 % #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5220									
	55				7/9	16			
5215									
	60				7/7	14		**59.0 - 62.0 ft. sandy CLAY** with gravel, brown, stiff, rust stained.	**CA Sample @ 59 ft** MC= 32 % DD= 91.7 pcf #200= 69 % LL= 56 PL= 21 PI= 35 AASHTO: A-7-6 (23) USCS: CH
5210								**62.0 - 72.0 ft. WEATHERED SANDY CLAYSTONE**, yellowish brown to gray, medium hard to hard.	
	65				14/24	38			
5205									
	70				14/43	57			**CA Sample @ 69 ft** MC= 26.6 % DD= 100.8 pcf #200= 76 % LL= 53 PL= 28 PI= 25
5200								**72.0 - 74.4 ft. SANDY CLAYSTONE**, gray, very hard.	
	75				50:5"	50:5"		Bottom of Hole at 74.4 ft.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-23**
Sheet 1 of 2

Boring Began: 2/10/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: J. El-Hehiawy
Inclination: Vertical

Completed: 2/10/2015
Drill Bit:
Casing:
Weather: Partly Cloudy/Windy

Total Depth: 75.0 ft
Ground Elevation: 5275.5 ft
Location: EB I-70 Embankment (~Sta 2149+00)
Coordinates: N: 455,341.6 E: 665,079.3

Ground Water Notes:

Depth	▽ 53.0 ft	-	-	-
Date	2/10/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 8.0 ft. silty SAND, brown, loose to medium dense, rust stained.	
					4/9	13			**CA Sample @ 2 ft** MC= 4 % #200= 22 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5270					4/5	9			
								8.0 - 19.0 ft. sandy CLAY, brown, stiff.	
	10				5/6	11			**CA Sample @ 9 ft** MC= 12.7 % DD= 113.6 pcf #200= 58 % LL= 28 PL= 14 PI= 14 AASHTO: A-6 (5) USCS: CL
					4/5	9			**CA Sample @ 14 ft** MC= 16.7 % DD= 99.1 pcf #200= 65 % LL= 35 PL= 14 PI= 21 AASHTO: A-6 (11) USCS: CL
5260									
	20				6/7	13		**19.0 - 27.0 ft. clayey SAND** with gravel, brown, loose to medium dense.	
					4/6	10			**CA Sample @ 24 ft** MC= 12.3 % DD= 118.0 pcf #200= 40 % LL= 27 PL= 12 PI= 15 AASHTO: A-6 (2) USCS: SC
5250									
								27.0 - 54.5 ft. silty SAND with gravel, brown to tan, medium dense.	
	30				8/12	20			
					14/16	30			
5240									

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-23**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					12/13	25			**CA Sample @ 39 ft** MC= 3 % DD= 118.1 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP-SM
	40								
					9/14	23			
5230									
					10/16	26			**CA Sample @ 49 ft** MC= 12.4 % DD= 111.6 pcf #200= 35 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	50								
					4/6	10		**54.5 - 59.5 ft. sandy CLAY**, gray, stiff, rust stained.	**CA Sample @ 54 ft** MC= 36.1 % DD= 87.5 pcf #200= 94 % LL= 45 PL= 17 PI= 28 AASHTO: A-7-6 (27) USCS: CL
5220									
					15/18	33		**59.5 - 63.0 ft. silty SAND**, brown, medium dense.	
	60								
					7/11	18		**63.0 - 71.0 ft. WEATHERED SANDY CLAYSTONE**, brown, residuum, rust stained.	**CA Sample @ 64 ft** MC= 25.8 % DD= 99.9 pcf #200= 86 % LL= 47 PL= 16 PI= 31
5210									
					4/9	13			**CA Sample @ 69 ft** MC= 31.9 % DD= 92.6 pcf #200= 82 % LL= 69 PL= 28 PI= 41
	70								
					16/35	51		**71.0 - 75.0 ft. SANDY CLAYSTONE**, gray, hard.	
5200								Bottom of Hole at 75.0 ft.	
	80							Pinyon monitored envirnomental conditions during drilling. No PID measurements were above screening threshold. No visual or olfactory indications of impacts to soils.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-24**
Sheet 1 of 2

Boring Began: 2/11/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: J. El-Hehiawy
Inclination: Vertical

Completed: 2/11/2015
Drill Bit:
Casing:
Weather: Partly Cloudy

Total Depth: 65.0 ft
Ground Elevation: 5271.1 ft
Location: WB I-70 Embankment (~ Sta 2166+00)
Coordinates: N: 455,516.8 E: 666,763.1

Ground Water Notes: Temporary Monitoring Well Installed

Depth	▽ 49.0 ft	-	-	-
Date	2/11/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5270								**0.0 - 17.0 ft. clayey SAND** with gravel and sandy clay lenses, brown, loose to medium dense.	
					6/6	12			**CA Sample @ 3 ft** MC= 10.7 % DD= 118.4 pcf #200= 40 % LL= 32 PL= 13 PI= 19 AASHTO: A-6 (3) USCS: SC
	5								
5265					6/5	11			
					4/4	8			
	10								**CA Sample @ 9 ft** MC= 13.2 % DD= 117.6 pcf #200= 56 % LL= 32 PL= 12 PI= 20 AASHTO: A-6 (7) USCS: CL
5260									
					5/9	14			**CA Sample @ 14 ft** MC= 13.7 % DD= 116.7 pcf #200= 49 % LL= 36 PL= 14 PI= 22 AASHTO: A-6 (7) USCS: SC
	15								
5255								**17.0 - 22.0 ft. sandy CLAY** with gravel, brown, stiff.	
					5/8	13			
	20								
5250								**22.0 - 39.5 ft. silty SAND** with gravel, tan to brown-tan, medium dense.	
					8/13	21			**CA Sample @ 24 ft** MC= 2.9 % #200= 7 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
	25								
5245									
					7/14	21			
	30								
5240									
					11/15	26			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-24**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5235									
					8/13	21			**CA Sample @ 39 ft** MC= 13.1 % DD= 112.1 pcf #200= 35 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	40							**39.5 - 49.0 ft. clayey SAND**, brown, medium dense.	
5230									
					7/11	18			**CA Sample @ 44 ft** MC= 14 % DD= 106.2 pcf #200= 34 % LL= 33 PL= 12 PI= 21 AASHTO: A-2-6 (2) USCS: SC
	45								
5225									
					11/17	28		**49.0 - 54.5 ft. silty SAND**, brown, medium dense.	
	50								
5220									
					10/17	27			**CA Sample @ 54 ft** MC= 24.2 % DD= 103.4 pcf #200= 79 % LL= 50 PL= 22 PI= 28
	55							**54.5 - 57.0 ft. WEATHERED SANDY CLAYSTONE**, yellowish brown to gray, firm, lignite lenses.	
5215								**57.0 - 65.0 ft. SANDY CLAYSTONE**, brown to gray, medium hard to hard.	
					30/50	80			
	60								
5210									
					18/25	43			
	65							Bottom of Hole at 65.0 ft.	
5205								Pinyon monitored envirnomental conditions during drilling. No PID measurements were above screening threshold. No visual or olfactory indications of impacts to soils.	
	70								
5200									
	75								
5195									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-25**
Sheet 1 of 2

Boring Began: 2/25/2015
Drilling Method: Hollow-Stem Auger
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: S. Hume
Final By: J. El-Hehiawy
Inclination: Vertical

Completed: 2/25/2015
Drill Bit:
Casing:
Weather: Cloudy

Total Depth: 65.0 ft
Ground Elevation: 5274.7 ft
Location: EB I-70 Embankment (~ Sta 2166+00)
Coordinates: N: 455,364.7 E: 666,829.9

Ground Water Notes:

Depth	▽ 48.0 ft	-	-	-
Date	2/25/15	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 8.0 ft. sandy CLAY with gravel, brown, loose, organics in upper 2 ft.	
					3/4	7			
5270	5				3/5	8			**CA Sample @ 5 ft** MC= 12.4 % DD= 123.0 pcf #200= 41 % LL= 33 PL= 15 PI= 18 AASHTO: A-6 (3) USCS: SC
								8.0 - 14.0 ft. silty SAND, brown, loose.	
5265	10				3/3	6			
					5/11	16		**14.0 - 25.0 ft. sandy CLAY** with clayey sand lenses, brown, stiff.	**CA Sample @ 14 ft** MC= 18.3 % DD= 109.8 pcf #200= 77 % LL= 46 PL= 15 PI= 31 AASHTO: A-7-6 (23) USCS: CL
5260	15								
5255	20				6/9	15			
					2/7	9			**CA Sample @ 24 ft** MC= 9.3 % DD= 132.1 pcf #200= 25 % LL= 35 PL= 15 PI= 20 AASHTO: A-2-6 (0) USCS: SC
5250	25							**25.0 - 38.0 ft. gravelly SAND** with variable amounts of silt, brown, medium dense, rust stained.	
5245	30				4/18	22			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-RW-25**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5240	35				13/15	28			**CA Sample @ 34 ft** MC= 0.7 % #200= 2 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5235	40				10/17	27		**38.0 - 54.0 ft. SAND** with variable amounts of gravel and silt, brown, medium dense, rust stained.	**CA Sample @ 39 ft** MC= 2.6 % #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5230	45				12/22	34			
5225	50				11/20	31			**CA Sample @ 49 ft** MC= 14.2 % DD= 113.2 pcf #200= 24 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5220	55				11/21	32		**54.0 - 62.0 ft. WEATHERED SANDY CLAYSTONE**, brown to gray, medium hard, rust stained, lignite lenses.	**CA Sample @ 54 ft** MC= 23 % DD= 102.3 pcf #200= 88 % LL= 57 PL= 25 PI= 32
5215	60				13/20	33			
5210	65				21/32	53		**62.0 - 65.0 ft. SANDY CLAYSTONE**, gray, hard. Bottom of Hole at 65.0 ft.	**CA Sample @ 64 ft** MC= 32.2 % DD= 89.0 pcf #200= 90 % LL= 65 PL= 29 PI= 36
5205	70								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-1**
Sheet 1 of 2

Boring Began: 3/29/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/29/2014
Drill Bit:
Casing:
Weather: Partly cloudy

Total Depth: 63.4 ft
Ground Elevation: 5186.1 ft
Location: On-Site Drainage System
Coordinates: N: 456,187.5 E: 652,654.9

Ground Water Notes:

Depth	▽ 28.0 ft	-	-	-
Date	3/29/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5185								**0.0 - 0.5 ft. 6 inches asphalt**.	
								0.5 - 1.5 ft. 12 inches base course.	
								1.5 - 7.0 ft. silty SAND, reddish brown, loose.	
					2/2	4			**CA Sample @ 3 ft** MC= 5.6 % DD= 107.6 pcf #200= 19 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5180	5								
					11/20	31		**7.0 - 38.0 ft. poorly graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense.	
5175	10								
					12/23	35			**CA Sample @ 13 ft** MC= 2 % DD= 113.4 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5170	15								
					12/14	26			
5165	20								
					12/9	21		More gravel after about 23 ft.	
5160	25								
					10/12	22			**CA Sample @ 28 ft** MC= 7.2 % DD= 130.6 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: GP
5155	30								
					23/25	48			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-1**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5150									
					30/50:5"	50:5"		**38.0 - 48.0 ft. CLAYSTONE**, yellowish brown to dark gray, very hard, rust stains observed at about 38 ft.	**CA Sample @ 38 ft** MC= 19.5 % DD= 111.5 pcf #200= 98 % LL= 57 PL= 27 PI= 30
	40								
5145									
					50:6"	50:6"		Lignite inclusions observed at about 43 ft.	
	45								
5140									
					50:4"	50:4"		**48.0 - 63.4 ft. clayey SANDSTONE**, dark gray to brown, very hard, lignite inclusions observed at about 48 ft.	
	50								
5135									
					50:3.5"	50:3.5"			**CA Sample @ 53 ft** MC= 17.4 % DD= 109.1 pcf #200= 42 % LL= 39 PL= 21 PI= 18
	55								
5130									
					50:1"	50:1"			
	60								
5125									
					50:5"	50:5"		Lignite inclusions observed at about 63 ft. Bottom of Hole at 63.4 ft.	
	65								
5120									
	70								
5115									
	75								
5110									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-2**
Sheet 1 of 2

Boring Began: 4/2/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/2/2014
Drill Bit:
Casing:
Weather: Cloudy, upper 30's

Total Depth: 54.4 ft
Ground Elevation: 5181.0 ft
Location: On-Site Drainage System
Coordinates: N: 457,283.8 E: 652,659.3

Ground Water Notes: Temporary monitoring well installed to a depth of about 54 ft

Depth	▽ 27.0 ft	-	-	-
Date	4/2/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5180								**0.0 - 0.2 ft. 2.5 inches Asphalt**.	
								0.2 - 1.0 ft. 9.5 inces base course.	
								1.0 - 6.0 ft. clayey SAND calcareous, dark brown, loose.	
					3/4	7			**CA Sample @ 3 ft** MC= 14.1 % DD= 113.9 pcf #200= 48 % LL= 32 PL= 16 PI= 16 AASHTO: A-6 (4) USCS: SC
	5				4/2	6			
5175								**6.0 - 41.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense.	
					14/18	32			
	10								
5170									
					10/14	24			
	15								
5165									
					11/12	23			**CA Sample @ 19 ft** MC= 3.8 % DD= 117.0 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SP
	20								
5160									
					19/30	49			
	25								
5155		▽							
					8/15	23			**CA Sample @ 34 ft** MC= 12.4 % DD= 120.1 pcf #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
	30								
5150									
					15/20	35			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-2**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5145									
	40				50:5"	50:5"			**CA Sample @ 39 ft** pH= 7.7 S= 0.004 % Re= 4274 ohms-cm CL = 0.0031%
5140								**41.0 - 51.0 ft. silty SANDSTONE**, yellowish brown to gray, very hard, rust stains observed at about 44 ft.	
	45				50:5"	50:5"			**CA Sample @ 44 ft** MC= 17.8 % DD= 110.9 pcf #200= 41 % LL= NV PL= NP PI= NP
5135									
	50				50:1"	50:1"		Lignite inclusions observed at about 49 ft.	
5130								**51.0 - 54.4 ft. sandy CLAYSTONE**, dark gray, very hard, lignite inclusions observed at about 54 ft.	**CA Sample @ 54 ft** MC= 19.1 % DD= 108.9 pcf #200= 53 % LL= 36 PL= 24 PI= 12
	55				50:4.5"	50:4.5"		Bottom of Hole at 54.4 ft.	
5125									
	60								
5120									
	65								
5115									
	70								
5110									
	75								
5105									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-3**
Sheet 1 of 2

Boring Began: 4/2/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/2/2014
Drill Bit:
Casing:
Weather: Partly cloudy, mid 40's

Total Depth: 53.2 ft
Ground Elevation: 5179.9 ft
Location: On-Site Drainage System
Coordinates: N: 457,904.0 E: 652,351.0

Ground Water Notes: Temporary monitoring well installed to a depth of about 53 ft

Depth	▽ 27.0 ft	-	-	-
Date	4/2/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 4.5 ft. clayey SAND calcareous, dark brown, loose.	**CA Sample @ 2 ft** MC= 13.4 % DD= 117.7 pcf #200= 48 % LL= 26 PL= 13 PI= 13 AASHTO: A-6 (3) USCS: SC
					3/4	7			
					3/4	7		**4.5 - 7.5 ft. silty SAND**, brown to brownish yellow, loose, rust stains observed at about 5 ft.	**CA Sample @ 4 ft** MC= 10.6 % DD= 110.7 pcf #200= 32 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
5175	5								
					7/11	18		**7.5 - 44.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense, rust stains observed at about 8 ft.	
5170	10				9/14	23			
					19/32	51			
5165	15								
					11/20	31			**CA Sample @ 18 ft** MC= 2.2 % #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SP
5160	20								
					10/17	27			
5155	25								
					8/13	21			
5150	30							Approximate 3 inch thick clay interbeds observed at about 32 ft.	**CA Sample @ 33 ft** MC= 15.3 % DD= 114.5 pcf #200= 10 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
					13/15	28			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-3**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					10/8	18			**CA Sample @ 38 ft** pH= 7.9 S= 0.003 % Re= 7519 ohms-cm CL = 0.0019%
5140	40								
					22/31	53			
5135	45							**44.0 - 53.2 ft. silty SANDSTONE**, gray, very hard.	
					50:4.5"	50:4.5"			**CA Sample @ 48 ft** MC= 16.3 % DD= 115.4 pcf #200= 36 % LL= NV PL= NP PI= NP
5130	50								
					50:2"	50:2"		Bottom of Hole at 53.2 ft.	
5125	55								
5120	60								
5115	65								
5110	70								
5105	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-4**
Sheet 1 of 2

Boring Began: 4/3/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/3/2014
Drill Bit:
Casing:
Weather: Cloudy, mid 30's

Total Depth: 49.5 ft
Ground Elevation: 5176.4 ft
Location: On-Site Drainage System
Coordinates: N: 458,649.0 E: 651,773.1

Ground Water Notes:

Depth	▽ 29.0 ft	-	-	-
Date	4/3/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5175								**0.0 - 0.1 ft. 1 inch asphalt**.	**CA Sample @ 3 ft**
								0.1 - 1.0 ft. silty SAND Fill, dark brown.	MC= 1.9 %
								1.0 - 6.0 ft. poorly graded SAND with variable amounts of gravel and silt, brown, medium dense, rust stains observed at about 3 ft.	#200= 2 %
					7/11	18			LL= NV
	5								PL= NP
5170					5/7	12		**6.0 - 10.0 ft. clayey SAND** calcareous, brown, loose to medium dense.	PI= NP
									AASHTO: A-1-a (0)
					9/8	17			USCS: SP
	10								**CA Sample @ 6 ft**
5165								**10.0 - 41.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense.	MC= 11.9 %
									DD= 116.1 pcf
									#200= 41 %
					8/12	20		Rust stains observed at about 14 ft.	LL= 33
	15								PL= 16
5160									PI= 17
									AASHTO: A-6 (3)
					11/14	25			USCS: SC
	20								**CA Sample @ 14 ft**
5155									MC= 4 %
									#200= 5 %
									LL= NV
					14/14	28			PL= NP
	25								PI= NP
5150									AASHTO: A-1-b (0)
									USCS: SP
	▽								
					11/12	23			**CA Sample @ 29 ft**
	30								MC= 13.6 %
5145									DD= 121.5 pcf
									#200= 5 %
									LL= NV
									PL= NP
									PI= NP
									AASHTO: A-1-b (0)
					16/17	33			USCS: SW

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-4**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5140									
	40				20/29	49			**CA Sample @ 39 ft** pH= 7.8 S= 0.008 % Re= 4717 ohms-cm CL = 0.0026%
5135								**41.0 - 49.4 ft. sandy CLAYSTONE**, dark gray, very hard.	
	45				50:5.5"	50:5.5"		Rust stains observed at about 44 ft.	**CA Sample @ 44 ft** MC= 14.1 % DD= 118.0 pcf #200= 78 % LL= 48 PL= 24 PI= 24
5130									
	50				50:5.5"	50:5.5"		Bottom of Hole at 49.5 ft.	
5125									
	55								
5120									
	60								
5115									
	65								
5110									
	70								
5105									
	75								
5100									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-5**
Sheet 1 of 2

Boring Began: 4/15/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/15/2014
Drill Bit:
Casing:
Weather: Partly cloudy

Total Depth: 38.4 ft
Ground Elevation: 5163.8 ft
Location: On-Site Drainage System
Coordinates: N: 459,300.2 E: 651,752.0

Ground Water Notes:

Depth	▽ 20.5 ft	-	-	-
Date	4/15/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.5 ft. 6 inches topsoil.	
								0.5 - 22.0 ft. poorly graded SAND with variable amounts of gravel and silt, brown, loose to medium dense.	
5160					3/2	5			**CA Sample @ 3 ft** MC= 2.7 % #200= 2 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
	5				17/17	34			
5155					8/12	20			
	10							Increased gravel content after about 10 ft.	
5150					15/23	38		Rust stains observed at about 13 ft.	**CA Sample @ 13 ft** MC= 4 % DD= 135.9 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: GP
	15								
5145					12/16	28			**CA Sample @ 18 ft** pH= 7.7 S= 0.007 % Re= 2538 ohms-cm CL = 0.0106%
	20 ▽								
								22.0 - 31.0 ft. silty SAND, brown, medium dense.	
5140					6/11	17		Rust stains observed at about 23 ft.	**CA Sample @ 23 ft** MC= 24.7 % DD= 101.0 pcf #200= 11 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SP-SM
	25								
5135					11/10	21			
	30								
								31.0 - 38.4 ft. sandy CLAYSTONE, dark gray, very hard.	
5130					50:5"	50:5"		Rust stains observed at about 33 ft.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-5**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
					50:5"	50:5"		Bottom of Hole at 38.4 ft.	**CA Sample @ 38 ft** MC= 14.3 % DD= 116.0 pcf #200= 89 % LL= 42 PL= 23 PI= 19
5125	40								
5120	45								
5115	50								
5110	55								
5105	60								
5100	65								
5095	70								
5090	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-6**
Sheet 1 of 1

Boring Began: 3/31/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 3/31/2014
Drill Bit:
Casing:
Weather: Clear, windy, mid 40's

Total Depth: 31.0 ft
Ground Elevation: 5146.1 ft
Location: On-Site Drainage System
Coordinates: N: 460,049.6 E: 650,590.3

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5145								**0.0 - 0.3 ft. 4 inches topsoil**.	
								0.3 - 8.5 ft. clayey SAND trace gravel, brown-gray, loose.	
	5				4/3	7			**CA Sample @ 5 ft** MC= 9.3 % DD= 118.3 pcf #200= 25 % LL= 25 PL= 21 PI= 4 AASHTO: A-1-b (0) USCS: SM-SC
5140									
								8.5 - 13.0 ft. weathered sandy CLAYSTONE, yellowish brown, firm, calcareous.	
	10				6/15	21			**CA Sample @ 10 ft** MC= 23.7 % DD= 103.0 pcf #200= 73 % LL= 44 PL= 26 PI= 18
5135									
								13.0 - 31.0 ft. sandy CLAYSTONE, yellowish brown to dark gray, hard to very hard.	
	15				50:5.5"	50:5.5"		Rust stains observed at about 15 ft.	**CA Sample @ 15 ft** MC= 17.8 % DD= 114.8 pcf #200= 75 % LL= 45 PL= 26 PI= 19
5130									
	20				50:5"	50:5"			**CA Sample @ 20 ft** pH= 8.1 S= 0.009 % Re= 868 ohms-cm CL = 0.0025%
5125									
	25				50:2"	50:2"			
5120									
	30				28/50	78		Lignite inclusions observed at about 30 ft.	**CA Sample @ 30 ft** MC= 22 % DD= 108.0 pcf #200= 84 % LL= 61 PL= 29 PI= 32
5115								Bottom of Hole at 31.0 ft.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-7**
Sheet 1 of 1

Boring Began: 4/15/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/15/2014
Drill Bit:
Casing:
Weather: Partly cloudy, 60's

Total Depth: 30.5 ft
Ground Elevation: 5160.1 ft
Location: On-Site Drainage System
Coordinates: N: 459,943.2 E: 651,179.7

Ground Water Notes:

Depth	▽ 19.0 ft	-	-	-
Date	4/15/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.1 ft. 1 inch topsoil and weeds.	
								0.1 - 10.0 ft. poorly graded SAND with variable amounts of gravel and silt, brown, loose to medium dense.	
					5/5	10		Rust stains observed at about 4 ft.	**CA Sample @ 4 ft** MC= 2 % #200= 10 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SP
5155	5								
					8/14	22			
5150	10				14/15	29		**10.0 - 14.5 ft. silty SAND**, yellowish brown to brown, medium dense, rust stains observed at about 10 ft.	**CA Sample @ 10 ft** MC= 4.1 % DD= 111.1 pcf #200= 2 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SP-SM
5145	15				7/7	14		**14.5 - 18.5 ft. clayey SAND**, brown to dark brown, medium dense. Lignite inclusions, rust stains observed at about 15 ft.	**CA Sample @ 15 ft** MC= 16.2 % DD= 116.9 pcf #200= 29 % LL= 32 PL= 18 PI= 14 AASHTO: A-2-6 (0) USCS: SC
								18.5 - 24.0 ft. silty SAND trace gravel, brown, medium dense.	
5140	20				6/8	14			**CA Sample @ 20 ft** MC= 18.6 % DD= 109.5 pcf #200= 14 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SM
								24.0 - 30.5 ft. sandy CLAYSTONE, brown to gray, hard to very hard.	
5135	25				16/42	58			**CA Sample @ 25 ft** MC= 19.8 % DD= 107.2 pcf #200= 78 % LL= 53 PL= 25 PI= 28
5130	30				50:6"	50:6"		Lignite inclusions observed at about 30 ft. Bottom of Hole at 30.5 ft.	

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-8**
Sheet 1 of 2

Boring Began: 5/22/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: I. Chen
Inclination: Vertical

Completed: 5/22/2014
Drill Bit:
Casing:
Weather: Cloudy

Total Depth: 53.0 ft
Ground Elevation: 5180.3 ft
Location: On-Site Drainage System
Coordinates: N: 457,913.6 E: 652,206.0

Ground Water Notes:

Depth	▽ 29.0 ft	-	-	-
Date	5/22/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
5180								**0.0 - 0.3 ft. 3 inches asphalt**. **0.3 - 2.0 ft. 21 inches base course**.	
					4/3	7		**2.0 - 4.0 ft. clayey SAND Fill**, with gravel, brown, loose.	**CA Sample @ 2 ft** MC= 5.8 % DD= 120.6 pcf #200= 14 % LL= 25 PL= 15 PI= 10 AASHTO: A-2-4 (0) USCS: SC
5175	5				3/3	6		**4.0 - 8.0 ft. silty SAND Fill**, with gravel, brown, loose.	**CA Sample @ 5 ft** MC= 9.4 % DD= 116.0 pcf #200= 29 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
					2/2	4		**8.0 - 47.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense.	
5170	10				2/12	14			
					11/18	29			
5165	15				10/17	27			
5160	20				7/12	19			**CA Sample @ 20 ft** MC= 5 % DD= 115.0 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW
					11/13	24			
5155	25				16/19	35			**CA Sample @ 26 ft** MC= 8.9 % DD= 128.3 pcf #200= 7 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW-SM
					10/20	30			
5150	30				9/12	21			

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DON-8**
Sheet 2 of 2

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
5145					5/8	13			
					13/21	34			**CA Sample @ 38 ft** MC= 12.8 % DD= 122.8 pcf #200= 4 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW
5140	40								
					9/21	30			
					11/19	30			
5135	45								
					50:4"	50:4"		**47.0 - 53.0 ft. silty SANDSTONE**, brown to gray, very hard, rust stains observed at about 47 ft.	
5130	50				50:3"	50:3"			**CA Sample @ 50 ft** MC= 16.6 % DD= 113.2 pcf #200= 50 % LL= NV PL= NP PI= NP
					50:0.01"	50:0.01"		Bottom of Hole at 53.0 ft.	
5125	55								
5120	60								
5115	65								
5110	70								
5105	75								

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DOF-3**
Sheet 1 of 1

Boring Began: 4/11/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/11/2014
Drill Bit:
Casing:
Weather: Clear, mid 60's

Total Depth: 30.8 ft
Ground Elevation: 5168.1 ft
Location: Off-Site Outfall
Coordinates: N: 455,531.2 E: 649,454.2

Ground Water Notes:

Depth	▽ 15.0 ft	-	-	-
Date	4/11/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.3 ft. 3 inches asphalt.	
								0.3 - 1.5 ft. 15 inches base course.	
								1.5 - 15.0 ft. clayey SAND Fill, slightly gravelly, dark brown, medium dense, asphalt debris at about 5 ft.	
5165					12/11	23			
	5				8/10	18			**CA Sample @ 5 ft** MC= 10.6 % DD= 124.9 pcf #200= 35 % LL= 28 PL= 19 PI= 9 AASHTO: A-4 (0) USCS: SC
5160									
	10				10/15	25			**CA Sample @ 10 ft** pH= 8.3 S= 0.005 % Re= 2146 ohms-cm CL = 0.0049%
5155									
	15 ▽				4/3	7		**15.0 - 19.0 ft. sandy CLAY**, black, medium stiff, calcareous, mica inclusions observed at about 15 ft.	**CA Sample @ 15 ft** MC= 34.6 % DD= 87.2 pcf #200= 88 % LL= 65 PL= 27 PI= 38 AASHTO: A-7-6 (38) USCS: CH
5150									
	20				8/14	22		**19.0 - 27.0 ft. silty SAND**, light brown to brown, medium dense.	**CA Sample @ 20 ft** MC= 21.8 % DD= 100.7 pcf #200= 11 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SP-SM
5145									
	25				15/14	29			
5140								**27.0 - 30.8 ft. sandy CLAYSTONE**, dark gray, very hard.	**CA Sample @ 30 ft** MC= 21 % DD= 108.0 pcf #200= 89 % LL= 56 PL= 25 PI= 31
	30				37/50:3"	50:3"		Rust stains observed at about 30 ft. Bottom of Hole at 30.8 ft.	
5135									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DOF-4**
Sheet 1 of 1

Boring Began: 4/1/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/1/2014
Drill Bit:
Casing:
Weather: Partly cloudy, 40's

Total Depth: 30.0 ft
Ground Elevation: 5186.5 ft
Location: Off-Site Outfall
Coordinates: N: 455,770.8 E: 650,314.5

Ground Water Notes:

Depth	▽ 28.0 ft	-	-	-
Date	4/1/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.7 ft. 8 inches gravel/HMA.	
								0.7 - 1.5 ft. 10 inches base course.	
5185								**1.5 - 6.8 ft. silty SAND**, yellowish red, very loose to loose.	
					2/2	4			**CA Sample @ 3ft** MC= 8.7 % DD= 105.7 pcf #200= 27 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	5								
5180					2/6	8			
								6.8 - 13.0 ft. poorly graded SAND with variable amounts of gravel and silt, brown, loose to medium dense.	
					7/10	17			
	10								
5175									
								13.0 - 17.0 ft. clayey SAND slightly gravelly, calcareous, brown, loose.	**CA Sample @ 14 ft** MC= 14.8 % DD= 103.5 pcf #200= 41 % LL= 30 PL= 19 PI= 11 AASHTO: A-6 (1) USCS: SC
					3/5	8			
	15								
5170									
								17.0 - 27.5 ft. well graded SAND with variable amounts of gravel and silt, brown, medium dense to dense.	
					14/15	29			
	20								
5165									**CA Sample @ 24 ft** pH= 7.7 S= 0.001 % Re= 12225 ohms-cm CL = 0.0008%
					8/14	22			
	25								
5160									
	▽							**27.5 - 30.0 ft. sandy GRAVEL** slightly silty, brown, dense.	**CA Sample @ 29 ft** MC= 4.2 % #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: GW-GM
					17/34	51			
	30							Bottom of Hole at 30.0 ft.	
5155									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DOF-5**
Sheet 1 of 1

Boring Began: 4/1/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/1/2014
Drill Bit:
Casing:
Weather: Party cloudy, 50's

Total Depth: 29.0 ft
Ground Elevation: 5186.8 ft
Location: Off-Site Outfall
Coordinates: N: 455,757.9 E: 650,755.5

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.3 ft. 3 inches Recycled Asphalt/Gravel.	
5185								**0.3 - 6.5 ft. sandy CLAY Fill**, trace gravel, asphalt debris, calcareous, brown to brownish gray, medium stiff to stiff.	**CA Sample @ 2 ft** MC= 23.4 % DD= 100.5 pcf #200= 53 % LL= 55 PL= 20 PI= 33 AASHTO: A-7-6 (14) USCS: CH
					4/6	10			
	5				3/4	7			
5180								**6.5 - 12.5 ft. poorly graded SAND** with variable amounts of gravel and silt, brown, medium dense. Rust stains observed at about 8 ft.	
					7/15	22			
	10								
5175									**CA Sample @ 13 ft** MC= 13.5 % DD= 114.5 pcf #200= 50 % LL= 30 PL= 15 PI= 15 AASHTO: A-6 (4) USCS: CL
					4/6	10		**12.5 - 17.0 ft. sandy CLAY** trace gravel, calcareous, brown, stiff.	
	15								
5170								**17.0 - 28.5 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense. Rust stains observed at about 18 ft.	**CA Sample @ 18 ft** MC= 2.3 % DD= 113.6 pcf #200= 3 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SW
					7/14	21			
	20								
5165									**CA Sample @ 23 ft** pH= 7.7 S= 0.012 % Re= 2445 ohms-cm CL = 0.0077%
					10/15	25			
	25								
5160									**CA Sample @ 28.5 ft** MC= 34.3 % DD= 88.1 pcf #200= 73 % LL= 56 PL= 22 PI= 34 AASHTO: A-7-6 (24) USCS: CH
					22/6	28		**28.5 - 29.0 ft. sandy CLAY** calcareous, brownish gray, stiff.	
	30							Bottom of Hole at 29.0 ft.	
5155									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1.2.3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I-70 East, PCL Alternative
Project Number: 213-208B Date:

Boring: **YA-DOF-6**
Sheet 1 of 1

Boring Began: 4/1/2014
Drilling Method: Hollow-Stem Auger
Drill: CME 55, Automatic Hammer
Driller: CDOT Geot. Dept.
Logged By: J.El-hehiawy
Final By: C. Yeh
Inclination: Vertical

Completed: 4/1/2014
Drill Bit:
Casing:
Weather: Partly cloudy, 40's

Total Depth: 30.0 ft
Ground Elevation: 5188.5 ft
Location: Off-Site Outfall
Coordinates: N: 653,031.4 E: 455,929.1

Ground Water Notes: Temporary monitoring well installed to a depth of about 30 ft

Depth	▽ 29.0 ft	-	-	-
Date	4/1/14	-	-	-
Time	During Drilling	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.2 ft. 2 inches topsoil.	
								0.2 - 3.0 ft. silty SAND Fill, with gravel, black.	
5185					3/3	6		**3.0 - 8.0 ft. silty SAND**, brown, loose.	**CA Sample @ ft** MC= 7.8 % DD= 101.3 pcf #200= 27 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	5				4/8	12			
5180								**8.0 - 17.0 ft. well graded SAND** with variable amounts of gravel and silt, brown, medium dense to dense.	
	10				5/10	15			
5175									
	15				21/29	50			**CA Sample @ 14 ft** MC= 2.6 % DD= 121.8 pcf #200= 10 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SW-SM
5170								**17.0 - 19.5 ft. sandy CLAY** with gravel, calcareous, brown, stiff.	
	20				6/22	28		**19.5 - 30.0 ft. poorly graded SAND** with variable amounts of gravel and silt, fine to medium grained, brown, medium dense. Rust stains observed at about 20 ft.	
5165									
	25				10/10	20			
5160									
	30				9/12	21			**CA Sample @ 29 ft** MC= 9.3 % DD= 128.4 pcf #200= 5 % LL= NV PL= NP PI= NP AASHTO: A-1-a (0) USCS: SP-SM
								Bottom of Hole at 30.0 ft.	
5155									

BORING LOG W/ LONG NOTES COMBINED PCL PHASE 1,2,3 GINT.GPJ YEH ASSOCIATES W LONG NOTES.GDT 4/8/15

Appendix C

Laboratory Test Results for Structure Borings

Key to Boring Identification

- YA-BB-1 & 2, Borings for proposed Brighton Boulevard Bridge
- YA-BJ-1 & 2, Borings for proposed Josephine Street Bridge
- YA-BCO 1& 2, Borings for proposed Columbine Street Bridge
- YA-BCL-1 & 2, Borings for proposed Clayton Street Bridge
- YA-BF-1 & 2, Borings for proposed Fillmore Street Bridge (To be added).
- YA-BS-1 & 2, Borings for proposed Steele Street Bridge
- YA-BCK-1 & 2, Borings for proposed Cook Street Bridge (To be added).
- YA-BML-1 & 2, Borings for proposed Market Lead Overpass Bridge
- YA-BMO-1, Borings for proposed Monroe Street (To be added).
- YA-BCB-1 & 2, Borings for proposed Colorado Boulevard Bridge
- YA-BD-1 & 2: Borings for proposed Dahlia Street Bridge
- YA-BH-1 & 2, Borings for proposed Holly Street Bridge
- YA-BM-1 & 2, Borings for proposed Monaco Street Bridge
- YA-BRI-1 & 2, Borings for proposed Rock Island Railroad Bridge
- YA-BQ-1 & 2, Borings for proposed Quebec Street Bridge
- YA-B270-1 & 2, Borings for proposed I-270 Bridge
- YA-BP-1 & 2, Borings for proposed Peoria Street Bridge
- YA-UP-1 through YA-UP-7, Borings for proposed Union Pacific Railroad Bridge
- YA-RW-1 through YA-RW-27, Borings drilled for proposed retaining walls
- YA-DON-1 through YA-DON-8, Borings drilled for proposed on-site drainage system
- YA-DOF-3 through YA-DOF-6, Borings drilled for proposed off-site outfall. Borings YA-DOF-1 and YA-DOF-2 were not drilled.

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 4/4/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BB-1	4	CA	6.6	110.0	34	50	16	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SM
YA-BB-1	19	CA	2.0	113.5	8	87	5	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW
YA-BB-1	39	CA	8.8	124.6	45	50	5	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW-SM
YA-BB-1	49.5	CA	20.4	109.1	0	44	56	44	22	22	–	–	–	–	–	BEDROCK	
YA-BB-1	74	CA	16.8	111.9	0	51	49	52	26	26	–	–	–	–	–	BEDROCK	
YA-BB-1	89	CA	16.8	105.8	0	52	48	50	18	32	–	–	–	–	–	BEDROCK	
YA-BB-2	5	CA	5.6	–	0	83	17	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BB-2	10	CA	–	–	–	–	–	–	–	–	8.1	0.002	2513	0.0148	–	–	–
YA-BB-2	20	CA	1.9	106.0	32	64	4	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW
YA-BB-2	35	CA	14.8	118.4	4	90	6	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-BB-2	50	CA	18.2	113.0	0	70	30	35	23	12	–	–	–	–	–	BEDROCK	
YA-BB-2	55	CA	–	–	–	–	–	–	–	–	8.0	0.011	1242	0.0009	–	–	–
YA-BB-2	60	CA	18.3	114.7	0	78	22	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-BB-2	75	CA	17.1	115.4	0	52	48	44	25	19	–	–	–	–	–	BEDROCK	
YA-BJ-1	4	CA	8.1	108.9	0	75	25	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BJ-1	14	CA	6.3	115.0	–	–	–	–	–	–	7.2	0.015	3155	0.0205	–	–	–

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 5/2/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BJ-1	19	CA	1.7	–	47	49	4	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW
YA-BJ-1	39	CA	22.9	100.3	1	64	35	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BJ-1	49	CA	21.9	106.0	–	–	79	58	26	32	–	–	–	–	–	BEDROCK	
YA-BJ-1	59	CA	17.7	111.4	–	–	51	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-BJ-1	69	CA	18.0	110.5	–	–	77	53	26	27	–	–	–	–	–	BEDROCK	
YA-BJ-2	5	CA	5.7	107.6	0	84	16	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BJ-2	15	CA	22.2	102.2	0	22	78	41	17	24	–	–	–	–	–	A-7-6 (18)	CL
YA-BJ-2	25	CA	1.8	–	10	88	2	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-BJ-2	40	CA	9.8	–	10	78	12	45	22	23	–	–	–	–	–	A-2-7 (0)	SP-SC
YA-BJ-2	50	CA	8.4	121.1	32	57	11	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-BJ-2	55	CA	18.3	111.2	0	50	50	35	19	16	–	–	–	–	–	BEDROCK	
YA-BJ-2	65	CA	17.9	108.2	0	80	20	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-BJ-2	85	CA	15.9	115.9	0	37	63	44	26	18	–	–	–	–	–	BEDROCK	
YA-BCO-1	5	CA	7.1	109.0	0	75	25	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BCO-1	20	CA	1.7	–	47	49	4	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SP
YA-BCO-1	40	CA	11.8	137.0	7	90	3	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 7/16/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BCO-1	55	CA	9.5	119.3	11	81	1	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-BCO-1	75	CA	24.5	102.5	0	60	40	52	27	25	–	–	–	–	–	BEDROCK	
YA-BCO-1	95	CA	17.8	111.8	7	61	32	39	26	13	–	–	–	–	–	BEDROCK	
YA-BCO-1	115	CA	15.2	116.5	0	65	35	45	25	20	–	–	–	–	–	BEDROCK	
YA-BCO-2	4	CA	7.8	112.7	0	76	24	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BCO-2	19	CA	2.1	–	45	49	6	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SP-SM
YA-BCO-2	34	CA	8.8	127.0	21	69	10	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-BCO-2	49	CA	8.0	111.3	17	80	3	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-BCO-2	67	CA	26.6	95.8	0	90	10	NV	NP	NP	–	–	–	–	–	A-3 (0)	SP-SM
YA-BCO-2	78	CA	21.3	103.1	1	38	61	39	21	18	–	–	–	–	–	BEDROCK	
YA-BCO-2	99	CA	15.8	114.9	–	–	94	49	19	30	–	–	–	–	–	BEDROCK	
YA-BCO-2	119	CA	17.8	112.3	–	–	92	47	21	26	–	–	–	–	–	BEDROCK	
YA-BCL-1	5	CA	6.0	107.8	0	85	15	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BCL-1	20	CA	2.2	–	34	63	3	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SP
YA-BCL-1	25	CA	22.7	97.9	0	39	61	NV	NP	NP	–	–	–	–	–	A-4 (0)	ML
YA-BCL-1	40	CA	33.3	85.9	0	59	41	65	30	35	–	–	–	–	–	BEDROCK	

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 7/16/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BCL-1	60	CA	16.7	114.2	–	–	60	48	25	23	–	–	–	–	–	BEDROCK	
YA-BCL-1	75	CA	16.6	114.6	0	53	47	35	20	15	–	–	–	–	–	BEDROCK	
YA-BCL-2	4	CA	4.5	–	0	84	16	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BCL-2	14	CA	9.2	111.9	2	71	27	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BCL-2	29	CA	2.2	–	4	91	5	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-BCL-2	39	CA	25.2	90.2	0	52	48	43	24	19	–	–	–	–	–	BEDROCK	
YA-BCL-2	74	CA	15.0	–	–	–	77	46	21	25	–	–	–	–	–	BEDROCK	
YA-BF-1	5	CA															
YA-BF-1	10	CA															
YA-BF-1	20	CA															
YA-BF-1	25	CA															
YA-BF-1	35	CA															
YA-BF-1	45	CA															
YA-BF-1	60	CA															
YA-BF-1	65	CA															
YA-BF-1	80	CA															

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 7/16/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BF-2	10	CA															
YA-BF-2	20	CA															
YA-BF-2	25	CA															
YA-BF-2	35	CA															
YA-BF-2	45	CA															
YA-BF-2	50	CA															
YA-BF-2	60	CA															
YA-BF-2	75	CA															
YA-BS-1	4	CA	6.5	110.3	0	81	19	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BS-1	14	CA	6.8	103.9	0	67	33	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BS-1	24	CA	13.3	108.7	3	40	57	NV	NP	NP	–	–	–	–	–	A-4 (0)	ML
YA-BS-1	39	CA	2.7	–	37	60	3	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SP
YA-BS-1	49	CA	23.2	–	2	56	42	39	25	14	–	–	–	–	–	BEDROCK	
YA-BS-1	79	CA	19.0	–	1	18	81	58	26	32	–	–	–	–	–	BEDROCK	
YA-BS-2	3	CA	2.3	98.5	0	83	17	35	19	16	–	–	–	–	–	A-2-4 (0)	SM
YA-BS-2	18	CA	12.0	106.0	3	45	52	25	14	11	–	–	–	–	–	A-6 (2)	CL

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 7/16/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BS-2	23	CA	–	–	–	–	–	–	–	–	7.6	0.005	1506.0	0.0127	–	–	–
YA-BS-2	38	CA	3.4	–	49	46	5	NV	NP	NP	–	–	–	–	–	A-1-a (0)	GW-GM
YA-BS-2	48	CA	31.4	89.1	–	–	82	57	26	31	–	–	–	–	–	BEDROCK	
YA-BS-2	63	CA	17.7	110.6	–	–	80	39	18	21	–	–	–	–	–	BEDROCK	
YA-BS-2	83	CA	20.2	107.3	–	–	90	40	23	17	–	–	–	–	–	BEDROCK	
YA-BCK-1	5	CA															
YA-BCK-1	15	CA															
YA-BCK-1	30	CA															
YA-BCK-1	40	CA															
YA-BCK-1	50	CA															
YA-BCK-1	60	CA															
YA-BCK-1	75	CA															
YA-BCK-2	2	CA															
YA-BCK-2	5	CA															
YA-BCK-2	10	CA															
YA-BCK-2	15	CA															

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 7/16/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BCK-2	25	CA															
YA-BCK-2	40	CA															
YA-BCK-2	50	CA															
YA-BCK-2	60	CA															
YA-BCK-2	75	CA															
YA-BML-1	3	CA	12.2	107.0	0	52	48	25	14	11	–	–	–	–	–	A-6 (2)	SC
YA-BML-1	14	CA	7.0	–	0	67	33	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BML-1	24	CA	10.6	103.5	1	61	38	NV	NP	NP	–	–	–	–	–	A-4 (0)	SM
YA-BML-1	44	CA	8.1	105.6	9	68	23	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SM
YA-BML-1	54	CA	2.1	–	31	67	2	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-BML-1	64	CA	20.6	101.9	–	–	97	48	21	27	–	–	–	–	–	BEDROCK	
YA-BML-1	79	CA	26.9	92.2	–	–	69	53	27	26	–	–	–	–	–	BEDROCK	
YA-BML-1	94	CA	20.2	102.1	–	–	89	60	26	34	–	–	–	–	–	BEDROCK	
YA-BML-2	9	CA	3.7	117.9	4	79	17	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BML-2	19	CA	10.7	112.4	1	47	52	26	17	9	–	–	–	–	–	A-4 (0)	CL
YA-BML-2	24	CA	9.4	118.1	–	–	–	–	–	–	7.7	0.003	982	0.0164	–	–	–

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 7/16/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BML-2	29	CA	3.5	116.5	14	73	13	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SM
YA-BML-2	39	CA	11.1	121.1	8	53	39	33	14	19	–	–	–	–	–	A-6 (3)	SC
YA-BML-2	49	CA	1.2	–	19	79	2	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW
YA-BML-2	59	CA	21.9	103.0	–	–	93	52	21	31	–	–	–	–	–	BEDROCK	
YA-BML-2	79	CA	21.9	103.2	–	–	92	51	22	29	–	–	–	–	–	BEDROCK	
YA-BML-2	99	CA	18.5	–	–	–	86	58	25	33	–	–	–	–	–	BEDROCK	
YA-BMO-1	5	CA															
YA-BMO-1	10	CA															
YA-BMO-1	25	CA															
YA-BMO-1	30	CA															
YA-BMO-1	45	CA															
YA-BMO-1	55	CA															
YA-BMO-1	65	CA															
YA-BMO-1	75	CA															
YA-BMO-1	85	CA															
YA-BCB-1	4	CA	12.3	118.9	0	67	33	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 5/2/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BCB-1	19	CA	12.3	119.4	0	37	63	27	17	10	–	–	–	–	–	A-4 (4)	CL
YA-BCB-1	39	CA	3.4	115.6	11	92	7	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW-SM
YA-BCB-1	54	CA	29.8	92.0	–	–	83	41	19	22	–	–	–	–	–	A-7-6 (18)	CL
YA-BCB-1	64	CA	4.1	–	21	71	8	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW-SM
YA-BCB-1	89	CA	22.7	100.9	0	29	71	37	22	15	–	–	–	–	–	A-6 (9)	CL
YA-BCB-1	94	CA	6.6	124.8	20	64	6	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-BCB-1	99	CA	28.7	95.4	0	39	61	56	23	33	–	–	–	–	–	BEDROCK	
YA-BCB-1	119	CA	25.4	–	4	67	29	47	26	21	–	–	–	–	–	BEDROCK	
YA-BCB-1	129	CA	18.4	106.0	–	–	74	45	26	20	–	–	–	–	–	BEDROCK	
YA-BCB-2	4	CA	12.9	120.0	0	31	69	32	14	18	–	–	–	–	–	A-6 (10)	CL
YA-BCB-2	19	CA	4.6	124.0	18	73	9	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-BCB-2	25	CA	2.3	111.1	–	–	–	–	–	–	8.0	0.003	6640	0.0028	–	–	–
YA-BCB-2	39	CA	3.3	–	25	69	6	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-BCB-2	54	CA	16.0	112.6	4	54	42	NV	NP	NP	–	–	–	–	–	A-4 (0)	SM
YA-BCB-2	69	CA	22.4	100.0	0	21	79	40	19	21	–	–	–	–	–	A-6 (16)	CL
YA-BCB-2	84	CA	31.7	83.4	0	43	57	63	25	38	–	–	–	–	–	BEDROCK	

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 5/2/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BCB-2	114	CA	29.3	89.1	–	–	81	59	25	34	–	–	–	–	–	BEDROCK	
YA-BD-1	5	CA	11.8	113.9	5	62	33	28	14	14	–	–	–	–	–	A-2-6 (0)	SC
YA-BD-1	15	CA	10.5	107.3	1	75	24	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BD-1	20	CA	–	–	–	–	–	–	–	–	7.5	0.009	1577	0.0093	–	–	–
YA-BD-1	25	CA	6.7	106.4	0	68	32	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BD-1	35	CA	10.5	103.7	0	61	39	25	16	9	–	–	–	–	–	A-4 (0)	SC
YA-BD-1	50	CA	3.3	–	13	84	3	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-BD-1	65	CA	23.4	102.8	0	47	53	33	18	15	–	–	–	–	–	A-6 (5)	CL
YA-BD-1	85	CA	25.5	99.9	0	21	79	57	22	35	–	–	–	–	–	A-7-6 (29)	CH
YA-BD-1	105	CA	14.1	124.6	13	66	21	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BD-1	120	CA	15.9	114.2	13	63	24	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SM
YA-BD-1	135	CA	35.7	80.5	–	–	72	59	21	38	–	–	–	–	–	BEDROCK	
YA-BD-1	165	CA	18.2	108.0	–	–	77	47	26	21	–	–	–	–	–	BEDROCK	
YA-BD-2	4	CA	17.8	95.2	0	55	45	36	15	21	–	–	–	–	–	A-6 (5)	SC
YA-BD-2	14	CA	11.3	116.6	0	78	22	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BD-2	29	CA	12.3	89.9	0	51	49	27	15	12	–	–	–	–	–	A-6 (3)	SC

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 5/2/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BD-2	44	CA	2.2	–	7	90	3	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-BD-2	59	CA	22.8	102.8	0	49	51	34	17	17	–	–	–	–	–	A-6 (5)	CL
YA-BD-2	79	CA	28.0	94.2	0	30	70	53	21	32	–	–	–	–	–	A-7-6 (21)	CH
YA-BD-2	94	CA	28.0	94.4	0	29	71	57	22	35	–	–	–	–	–	A-7-6 (24)	CH
YA-BD-2	104	CA	17.3	116.1	4	86	11	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-BD-2	114	CA	30.4	85.7	0	59	41	50	25	25	–	–	–	–	–	BEDROCK	
YA-BD-2	139	CA	23.3	96.5	–	–	81	59	25	34	–	–	–	–	–	BEDROCK	
YA-BH-1	4	CA	8.9	103.8	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-BH-1	14	CA	11.2	125.5	0	68	32	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BH-1	29	CA	8.1	122.2	0	58	42	NV	NP	NP	–	–	–	–	–	A-4 (0)	SM
YA-BH-1	39	CA	4.5	–	0	84	16	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BH-1	49	CA	11.9	107.8	1	69	30	34	18	16	–	–	–	–	–	A-2-6 (0)	SC
YA-BH-1	59	CA	12.1	117.6	0	84	16	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BH-1	74	CA	12.4	–	7	85	8	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-BH-1	79	CA	26.1	96.2	0	21	79	59	24	35	–	–	–	–	–	BEDROCK	
YA-BH-1	99	CA	26.6	95.3	0	67	33	NV	NP	NP	–	–	–	–	–	BEDROCK	

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 4/1/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BH-1	114	CA	24.9	96.8	0	74	26	39	24	15	–	–	–	–	–	BEDROCK	
YA-BH-2	4	CA	9.8	107.7	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-BH-2	9	CA	10.9	127.1	0	70	30	37	18	19	–	–	–	–	–	A-2-6 (0)	SC
YA-BH-2	24	CA	4.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-BH-2	29	CA	5.3	–	0	81	19	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SM
YA-BH-2	59	CA	25.1	99.8	0	47	53	NV	NP	NP	–	–	–	–	–	A-4 (0)	ML
YA-BH-2	64	CA	23.9	99.3	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-BH-2	79	CA	25.3	93.9	0	13	87	59	29	30	–	–	–	–	–	BEDROCK	
YA-BH-2	94	CA	20.6	99.3	3	71	26	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-BH-2	109	CA	22.6	95.5	0	66	34	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-BM-1	4	CA	13.2	117.6	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-BM-1	14	CA	14.9	115.5	4	65	31	40	19	21	–	–	–	–	–	A-2-6 (1)	SC
YA-BM-1	24	CA	3.6	119.2	0	88	12	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SP-SM
YA-BM-1	29	CA	13.2	119.5	0	46	54	34	14	20	–	–	–	–	–	A-6 (7)	CL
YA-BM-1	54	CA	15.1	115.3	0	55	45	47	18	29	–	–	–	–	–	A-7-6 (8)	SC
YA-BM-1	64	CA	2.0	–	6	90	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP

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Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 4/1/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BM-1	79	CA	10.5	130.2	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-BM-1	89	CA	27.5	95.5	0	58	42	64	26	30	–	–	–	–	–	BEDROCK	
YA-BM-1	109	CA	21.6	104.4	0	77	23	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-BM-1	124	CA	18.4	105.5	0	80	20	62	27	35	–	–	–	–	–	BEDROCK	
YA-BM-2	4	CA	13.1	116.6	–	–	–	–	–	–	8.0	0.005	1131	0.0296	–	–	–
YA-BM-2	14	CA	11.6	117.6	5	63	32	32	12	20	–	–	–	–	–	A-2-6 (1)	SC
YA-BM-2	24	CA	11.8	90.8	0	55	45	30	13	17	–	–	–	–	–	A-6 (4)	SC
YA-BM-2	29	CA	12.3	110.6	0	25	75	NV	NP	NP	–	–	–	–	–	A-4 (0)	ML
YA-BM-2	44	CA	12.9	97.4	2	65	33	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BM-2	64	CA	13.7	109.6	2	51	47	45	16	29	–	–	–	–	–	A-7-6 (9)	SC
YA-BM-2	69	CA	5.3	–	12	85	3	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW
YA-BM-2	89	CA	33.2	90.3	0	48	52	61	25	36	–	–	–	–	–	BEDROCK	
YA-BM-2	94	CA	22.6	–	0	76	24	56	24	32	–	–	–	–	–	BEDROCK	
YA-BM-2	114	CA	26.4	99.1	0	12	88	62	27	35	–	–	–	–	–	BEDROCK	
YA-BM-2	119	CA	22.8	101.7	–	–	–	–	–	–	–	–	–	–	–	BEDROCK	
YA-BRI-1	3	CA	2.8	–	0	91	9	NV	NP	NP	–	–	–	–	–	A-3 (0)	SW-SM

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Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 4/1/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BRI-1	6	CA	2.8	–	–	–	–	–	–	–	8.0	0.004	2309	0.0031	–	–	–
YA-BRI-1	14	CA	6.8	–	0	83	17	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BRI-1	24	CA	5.6	114.1	0	84	16	26	14	12	–	–	–	–	–	A-2-6 (0)	SC
YA-BRI-1	39	CA	14.9	104.7	0	59	41	38	24	14	–	–	–	–	–	A-6 (2)	SC
YA-BRI-1	44	CA	5.7	126.9	9	79	12	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-BRI-1	54	CA	31.5	91.0	0	16	84	61	28	33	–	–	–	–	–	A-7-6 (31)	CH
YA-BRI-1	59	CA	23.4	104.6	0	43	57	50	20	30	–	–	–	–	–	BEDROCK	
YA-BRI-1	64	CA	32.1	91.5	0	18	82	69	27	42	–	–	–	–	–	BEDROCK	
YA-BRI-1	74	CA	21.0	97.9	0	89	11	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-BRI-1	89	CA	22.8	105.4	9	58	33	44	24	20	–	–	–	–	–	BEDROCK	
YA-BRI-2	4	CA	13.1	117.8	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-BRI-2	9	CA	11.5	115.9	0	55	45	32	15	17	–	–	–	–	–	A-6 (4)	SC
YA-BRI-2	19	CA	5.2	115.9	0	81	19	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BRI-2	24	CA	15.6	113.9	0	44	56	50	21	29	–	–	–	–	–	A-7-6 (13)	CH
YA-BRI-2	34	CA	10.7	112.6	0	54	46	28	16	12	–	–	–	–	–	A-6 (2)	SC
YA-BRI-2	44	CA	5.2	125.2	3	86	11	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 4/1/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BRI-2	49	CA	23.1	98.3	0	38	62	57	21	36	–	–	–	–	–	A-7-6 (20)	CH
YA-BRI-2	69	CA	21.0	107.3	0	47	53	45	20	25	–	–	–	–	–	BEDROCK	
YA-BRI-2	74	CA	28.2	95.9	0	18	82	61	28	33	–	–	–	–	–	BEDROCK	
YA-BRI-2	94	CA	18.0	106.0	0	18	82	51	21	30	–	–	–	–	–	BEDROCK	
YA-BRI-2	104	CA	20.1	109.0	0	21	79	60	22	38	–	–	–	–	–	BEDROCK	
YA-BQ-1	4	CA	11.4	114.7	–	–	–	–	–	–	7.7	0.003	615	0.0492	–	–	–
YA-BQ-1	9	CA	15.6	110.3	0	63	37	37	16	21	–	–	–	–	–	A-6 (3)	SC
YA-BQ-1	19	CA	6.2	108.7	0	78	22	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BQ-1	24	CA	8.0	115.0	0	37	63	41	20	21	–	–	–	–	–	A-7-6 (11)	CL
YA-BQ-1	34	CA	17.5	109.0	0	28	72	40	17	23	–	–	–	–	–	A-6 (15)	CL
YA-BQ-1	44	CA	11.0	–	7	83	10	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-BQ-1	49	CA	27.0	93.0	0	25	75	58	23	35	–	–	–	–	–	BEDROCK	
YA-BQ-1	69	CA	23.0	–	0	78	22	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-BQ-1	79	CA	18.0	103.4	0	91	9	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-BQ-2	4	CA	18.4	109.2	–	–	–	–	–	–	7.5	0.021	426	0.0751	–	–	–
YA-BQ-2	9	CA	17.4	112.2	1	64	35	42	15	27	–	–	–	–	–	A-2-7 (3)	SC

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Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 4/1/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BQ-2	19	CA	9.9	125.0	1	75	24	27	14	13	–	–	–	–	–	A-2-6 (0)	SC
YA-BQ-2	24	CA	11.8	102.5	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-BQ-2	29	CA	9.3	112.8	0	56	44	NV	NP	NP	–	–	–	–	–	A-4 (0)	SM
YA-BQ-2	39	CA	3.6	113.8	0	93	7	NV	NP	NP	–	–	–	–	–	A-3 (0)	SP-SM
YA-BQ-2	44	CA	36.5	83.3	0	12	88	68	29	39	–	–	–	–	–	BEDROCK	
YA-BQ-2	59	CA	31.5	90.4	0	10	90	64	28	36	–	–	–	–	–	BEDROCK	
YA-BQ-2	64	CA	32.9	88.3	–	–	–	–	–	–	–	–	–	–	–	BEDROCK	
YA-BQ-2	69	CA	21.2	109.6	0	13	87	64	28	36	–	–	–	–	–	BEDROCK	
YA-B270-1	4	CA	6.6	111.5	–	–	–	–	–	–	7.8	0.002	719	0.0351	–	–	–
YA-B270-1	9	CA	8.5	101.8	0	92	8	NV	NP	NP	–	–	–	–	–	A-3 (0)	SP-SM
YA-B270-1	19	CA	9.1	120.5	0	92	8	NV	NP	NP	–	–	–	–	–	A-3 (0)	SP-SM
YA-B270-1	24	CA	8.0	117.6	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-B270-1	29	CA	8.9	115.2	0	90	10	NV	NP	NP	–	–	–	–	–	A-3 (0)	SP-SM
YA-B270-1	39	CA	16.9	98.3	0	70	30	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-B270-1	44	CA	12.1	118.4	1	95	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-B270-1	59	CA	26.5	96.3	1	63	36	54	22	32	–	–	–	–	–	BEDROCK	

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Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 7/16/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-B270-1	64	CA	23.3	102.4	–	–	–	–	–	–	–	–	–	–	–	BEDROCK	
YA-B270-1	69	CA	30.6	85.1	0	14	86	63	27	36	–	–	–	–	–	BEDROCK	
YA-B270-2	3	CA	22.2	101.4	0	52	48	42	17	25	–	–	–	–	–	A-7-6 (8)	SC
YA-B270-2	6	CA	6.7	–	0	95	5	NV	NP	NP	–	–	–	–	–	A-3 (0)	SP-SM
YA-B270-2	9	CA	7.1	122.5	9	88	3	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-B270-2	14	CA	22.1	107.0	15	52	33	56	23	33	–	–	–	–	–	A-2-7 (4)	SC
YA-B270-2	29	CA	32.2	–	0	19	81	59	22	37	–	–	–	–	–	BEDROCK	
YA-B270-2	39	CA	27.0	95.4	0	5	85	55	24	31	–	–	–	–	–	BEDROCK	
YA-B270-2	49	CA	36.6	76.1	0	18	82	66	29	37	–	–	–	–	–	BEDROCK	
YA-B270-2	59	CA	17.7	111.6	0	71	29	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-BP-1	4	CA	12.2	109.4	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-BP-1	19	CA	5.2	113.8	0	89	11	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SP-SM
YA-BP-1	29	CA	9.5	113.8	0	67	33	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BP-1	39	CA	18.7	107.8	0	30	70	46.0	16.0	30	–	–	–	–	–	A-7-6 (19)	CL
YA-BP-1	54	CA	5.6	110.5	1	89	10	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-BP-1	64	CA	20.2	109.1	0	67	33	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM

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Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 7/16/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-BP-1	79	CA	13.7	116.8	1	89	10	NV	NP	NP	–	–	–	–	–	A-3 (0)	SW-SM
YA-BP-1	89	CA	28.3	93.6	0	29	71	52.0	23.0	29	–	–	–	–	–	BEDROCK	
YA-BP-1	94	CA	28.9	94.2	0	62	38	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-BP-1	109	CA	26.9	95.4	0	61	39	46	18	28	–	–	–	–	–	BEDROCK	
YA-BP-1	124	CA	30.9	91.6	0	20	80	46	18	28	–	–	–	–	–	BEDROCK	
YA-BP-2	4	CA	9.9	112.4	0	90	10	NV	NP	NP	–	–	–	–	–	A-3 (0)	SP-SM
YA-BP-2	14	CA	10.1	115.5	0	89	11	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-BP-2	29	CA	4.6	106.3	0	93	7	NV	NP	NP	–	–	–	–	–	A-3 (0)	SP-SM
YA-BP-2	44	CA	23.1	101.5	0	32	68	49	17	32	–	–	–	–	–	A-7-6 (20)	CL
YA-BP-2	54	CA	13.2	118.0	1	61	38	35.0	14.0	21	–	–	–	–	–	A-6 (3)	SC
YA-BP-2	64	CA	9.0	116.1	6	89	5	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-BP-2	79	CA	8.6	122.4	9	83	8	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-BP-2	89	CA	26.7	97.5	0	11	89	56.0	26.0	30	–	–	–	–	–	BEDROCK	
YA-BP-2	104	CA	36.2	85.0	0	16	84	53.0	26.0	27	–	–	–	–	–	BEDROCK	
YA-BP-2	119	CA	24.4	100.1	0	73	27	NV	NP	NP	–	–	–	–	–	BEDROCK	

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 3/28/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-UP-1	5	CA	3.5	112.4	41	47	12	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SM
YA-UP-1	10	CA	–	–	–	–	–	–	–	–	7.6	0.011	2198	0.0041	–	–	–
YA-UP-1	15	CA	5.6	106.2	28	61	11	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SP-SM
YA-UP-1	20	CA	2.7	118.7	34	62	4	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SP
YA-UP-1	35	CA	9.0	124.5	29	64	7	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW-SM
YA-UP-1	40	CA	22.2	107.6	0	25	75	48	30	18	–	–	–	–	–	BEDROCK	
YA-UP-1	50	CA	–	–	–	–	–	–	–	–	8.2	0.002	872	0.0007	–	–	–
YA-UP-1	60	CA	19.7	98.3	0	15	85	49	32	17	–	–	–	–	–	BEDROCK	
YA-UP-2	4	CA	21.1	95.4	1	17	81	33	24	9	–	–	–	–	–	A-4 (7)	ML
YA-UP-2	9	CA	2.2	121.9	46	50	4	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SP
YA-UP-2	19	CA	1.5	-	27	66	7	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW-SM
YA-UP-2	34	CA	8.7	124.6	26	67	7	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW-SM
YA-UP-2	39	CA	17.1	111.8	0	26	74	39	28	11	–	–	–	–	–	BEDROCK	
YA-UP-2	59	CA	20.8	94.9	0	41	59	47	36	11	–	–	–	–	–	BEDROCK	
YA-UP-3	3	CA	18.0	108.4	0	32	68	36	16	20	–	–	–	–	–	A-6 (11)	CL
YA-UP-3	8	CA	1.9	101.9	1	95	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 3/28/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-UP-3	23	CA	2.3	112.6	14	82	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW
YA-UP-3	38	CA	7..4	122.3	17	76	7	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW-SM
YA-UP-3	43	CA	17.7	114.7	0	28	72	46	31	15	–	–	–	–	–	BEDROCK	
YA-UP-3	58	CA	20.7	106.0	0	66	34	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-UP-4	5	CA	9.2	119.1	0	38	62	31	16	15	–	–	–	–	–	A-6 (7)	CL
YA-UP-4	15	CA	7.6	132.6	10	66	24	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SM
YA-UP-4	20	CA	–	–	–	–	–	–	–	–	7.9	<0.001	11765	0.0003	–	–	–
YA-UP-4	35	CA	9.3	128.8	27	67	6	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW-SM
YA-UP-4	40	CA	21.9	106.4	0	42	58	60	27	33	–	–	–	–	–	BEDROCK	
YA-UP-4	55	CA	–	–	–	–	–	–	–	–	8.0	0.009	951	0.0007	–	–	–
YA-UP-4	60	CA	16.5	109.6	0	59	41	49	22	27	–	–	–	–	–	BEDROCK	
YA-UP-4	75	CA	14.3	114.7	0	50	50	56	29	27	–	–	–	–	–	BEDROCK	
YA-UP-5	3	CA	4.6	111.3	0	82	18	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-UP-5	18	CA	1.6	111.5	9	87	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-UP-5	38	CA	25.0	100.5	0	50	50	56	28	28	–	–	–	–	–	BEDROCK	
YA-UP-5	53	CA	18.1	98.2	2	82	16	NV	NP	NP	–	–	–	–	–	BEDROCK	

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 3/28/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-UP-5	63	CA	22.0	106.5	0	66	34	46	25	21	–	–	–	–	–	BEDROCK	
YA-UP-6	4	CA	2.8	–	31	58	11	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SP-SM
YA-UP-6	14	CA	5.2	133.3	53	42	5	NV	NP	NP	–	–	–	–	–	A-1-a (0)	GP
YA-UP-6	24	CA	14.3	116.6	–	–	89	53	24	29	–	–	–	–	–	BEDROCK	
YA-UP-7	5	CA	3.0	–	51	45	4	NV	NP	NP	–	–	–	–	–	A-1-a (0)	GP
YA-UP-7	15	CA	11.1	127.0	16	79	5	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW
YA-UP-7	20	CA	21.7	104.2	–	–	94	67	29	38	–	–	–	–	–	BEDROCK	
YA-UP-7	25	CA	15.6	104.3	–	–	87	49	23	26	–	–	–	–	–	BEDROCK	

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 4/14/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW1	5	CA	9.9	105.0	1	76	23	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW1	20	CA	1.9	116.1	8	86	6	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-RW1	35	CA	12.1	123.6	9	85	6	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-RW1	45	CA	16.0	118.2	–	–	84	51	25	26	–	–	–	–	–	BEDROCK	
YA-RW1	60	CA	20.9	110.4	–	–	85	55	29	260	–	–	–	–	–	BEDROCK	
YA-RW2	4	CA	15.2	107.2	3	45	52	37	21	16	–	–	–	–	–	A-6 (5)	CL
YA-RW2	29	CA	7.9	_	36	62	2	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SP
YA-RW2	44	CA	16.5	116.5	–	–	84	41	21	20	–	–	–	–	–	BEDROCK	
YA-RW2	59	CA	17.7	111.5	0	80	20	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-RW3	5	CA	10.8	–	11	46	43	25	17	8	–	–	–	–	–	A-4 (0)	SC
YA-RW3	10	CA	4.3	107.8	4	90	6	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-RW3	15	CA	–	–	–	–	–	–	–	–	7.7	0.002	10929	0.0005	–	–	–
YA-RW3	30	CA	9.2	119.7	40	55	5	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW-SM
YA-RW3	45	CA	19.0	111.0	0	56	44	51	26	25	–	–	–	–	–	BEDROCK	
YA-RW3	50	CA	–	–	–	–	–	–	–	–	8.0	0.009	818	0.0004	–	–	–
YA-RW4	3	CA	11.3	111.3	0	52	48	NV	NP	NP	–	–	–	–	–	A-4 (0)	SM

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 4/2/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW4	13	CA	2.4	117.8	29	67	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-RW4	28	CA	6.2	115.5	13	84	3	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-RW4	38	CA	21.6	107.3	0	67	33	56	25	31	–	–	–	–	–	BEDROCK	
YA-RW4	60	CA	16.9	104.7	0	72	28	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-RW5	5	CA	7.8	114.5	0	79	21	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW5	10	CA	–	–	–	–	–	–	–	–	7.8	<0.001	8251	0.0019	–	–	–
YA-RW5	20	CA	1.8	–	33	64	3	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW
YA-RW5	35	CA	30	104.6	0	51	49	44	22	22	–	–	–	–	–	A-7-6 (7)	SC
YA-RW5	45	CA	–	–	–	–	–	–	–	–	8.2	0.011	556	0.0005	–	–	–
YA-RW5	50	CA	17.7	112.7	–	–	80	48	27	21	–	–	–	–	–	BEDROCK	
YA-RW5	65	CA	20.2	104.4	0	39	61	34	22	12	–	–	–	–	–	BEDROCK	
YA-RW-6	2	CA	8.0	145.4	0	75	25	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-6	14	CA	24.1	98.0	0	24	76	NV	NP	NP	–	–	–	–	–	A-4 (0)	ML
YA-RW-6	19	CA	9.6	–	19	46	35	32	14	18	–	–	–	–	–	A-2-6 (2)	SC
YA-RW-6	39	CA	10.3	–	16	76	8	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-RW-6	59	CA	16.7	112.8	–	–	72	49	22	27	–	–	–	–	–	BEDROCK	

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 5/2/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-7	2	CA	6.3	108.9	2	79	19	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-7	7	CA	13.8	105.6	–	–	–	–	–	–	7.6	0.008	704	0.0326	–	–	–
YA-RW-7	9	CA	5.8	121.7	22	64	14	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SM
YA-RW-7	25	CA	1.8	–	18	80	2	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-RW-7	35	CA	10.5	130.0	19	76	5	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-RW-7	40	CA	19.5	106.5	0	28	72	45	18	27	–	–	–	–	–	BEDROCK	
YA-RW-8	2	CA	3.2	130.7	–	–	–	–	–	–	7.7	0.004	2165	0.0291	–	–	–
YA-RW-8	4	CA	13.3	119.7	7	52	41	NV	NP	NP	–	–	–	–	–	A-4 (0)	SM
YA-RW-8	14	CA	5.0	108.6	0	72	28	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-8	24	CA	5.7	120.8	3	51	46	NV	NP	NP	–	–	–	–	–	A-4 (0)	SM
YA-RW-8	34	CA	3.2	116.0	14	81	5	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-RW-8	54	CA	16.9	115.3	–	–	75	45	21	24	–	–	–	–	–	BEDROCK	
YA-RW-9	2	CA	5.0	117.7	–	–	–	–	–	–	7.5	0.006	1631	0.0148	–	–	–
YA-RW-9	7	CA	3.6	101.8	0	65	35	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-9	20	CA	3.4	100.3	0	69	31	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-9	35	CA	13.1	–	0	8	92	41	21	20	–	–	–	–	–	A-7-6 (19)	CL

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 5/2/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-9	45	CA	2.7	–	21	76	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-RW-9	50	CA	37.8	77.1	0	24	76	69	32	37	–	–	–	–	–	BEDROCK	
YA-RW-10	2	CA	7.1	111.5	0	69	31	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-10	4	CA	9.9	–	0	59	41	NV	NP	NP	–	–	–	–	–	A-4 (0)	SM
YA-RW-10	9	CA	16.6	112.0	–	–	–	–	–	–	7.8	0.016	980	0.0041	–	–	–
YA-RW-10	19	CA	5.1	114.0	6	86	8	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-RW-10	34	CA	19.8	106.1	0	71	29	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-10	49	CA	3.1	123.4	31	66	4	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW
YA-RW-10	64	CA	3.0	111.8	6	90	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-RW-10	84	CA	29.8	–	0	69	31	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-RW-11	2	CA	8.3	103.4	2	80	18	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-11	9	CA	10.9	98.9	0	62	38	NV	NP	NP	–	–	–	–	–	A-4 (0)	SM
YA-RW-11	14	CA	19.8	95.4	3	51	46	NV	NP	NP	–	–	–	–	–	A-4 (0)	SM
YA-RW-11	24	CA	2.9	–	16	79	5	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW-SM
YA-RW-11	34	CA	10.3	100.3	0	69	31	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-11	44	CA	19.0	106.4	6	43	51	40	18	22	–	–	–	–	–	A-6 (8)	CL

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 5/2/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-11	59	CA	5.7	–	4	88	8	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-RW-11	74	CA	2.4	–	14	82	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW
YA-RW-11	89	CA	28.2	81.0	0	60	40	45	21	24	–	–	–	–	–	BEDROCK	
YA-RW-12	3	CA	5.7	144.4	0	78	22	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-12	5	CA	4.8	120.2	–	–	–	–	–	–	8.0	0.007	2212	0.0062	–	–	–
YA-RW-12	15	CA	13.3	117.7	0	32	68	NV	NP	NP	–	–	–	–	–	A-4 (0)	ML
YA-RW-12	30	CA	3.1	112.1	8	86	6	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-RW-12	40	CA	3.6	118.6	13	79	8	NV	NP	NP	–	–	–	–	–	A-3 (0)	SP-SM
YA-RW-12	55	CA	13.6	116.7	1	73	26	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-12	65	CA	19.6	109.0	0	70	30	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-12	85	CA	26.9	94.3	0	60	40	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-RW-13	4	CA	15.1	107.3	0	24	76	NV	NP	NP	–	–	–	–	–	A-4 (0)	ML
YA-RW-13	19	CA	5.1	118.0	13	79	8	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-RW-13	34	CA	18.0	106.2	4	50	46	NV	NP	NP	–	–	–	–	–	A-4 (0)	SM
YA-RW-13	49	CA	23.8	101.8	0	45	55	44	20	24	–	–	–	–	–	A-7-6 (10)	CL
YA-RW-13	59	CA	18.6	109.6	7	66	27	36	16	20	–	–	–	–	–	A-2-6 (0)	SC

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East Corridor Date: 5/2/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-13	69	CA	38.8	82.7	0	23	77	61	28	33	–	–	–	–	–	BEDROCK	
YA-RW-14	4	CA	8.5	116.8	3	69	28	22	14	8	–	–	–	–	–	A-2-4 (0)	SC
YA-RW-14	9	CA	5.7	111.3	2	82	16	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-14	24	CA	3.7	116.7	15	80	5	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-RW-14	39	CA	12.3	–	5	87	8	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-RW-14	44	CA	24.3	101.4	0	42	58	32	15	17	–	–	–	–	–	A-6 (7)	CL
YA-RW-15	3	CA	14.3	117.2	0	50	50	28	12	16	–	–	–	–	–	A-6 (4)	SC
YA-RW-15	5	CA	13.8	113.3	–	–	–	–	–	–	7.8	0.012	939	0.0314	–	–	–
YA-RW-15	10	CA	12.3	118.8	3	54	42	35	18	17	–	–	–	–	–	A-6 (3)	SC
YA-RW-15	25	CA	2.5	–	11	85	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW
YA-RW-15	35	CA	11.8	121.7	0	78	22	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SM
YA-RW-15	50	CA	20.2	108.2	1	71	28	33	14	19	–	–	–	–	–	A-2-6 (0)	SC
YA-RW-15	60	CA	25.3	98.9	0	64	36	54	28	26	–	–	–	–	–	BEDROCK	
YA-RW-16	2	CA	10.2	116.2	1	42	57	NV	NP	NP	–	–	–	–	–	A-4 (0)	ML
YA-RW-16	9	CA	11.7	114.2	1	45	54	26	18	8	–	–	–	–	–	A-4 (2)	CL
YA-RW-16	19	CA	3.3	–	10	84	6	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 4/1/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-16	29	CA	5.0	–	17	76	7	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-RW-16	39	CA	8.2	120.2	31	61	8	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW-SM
YA-RW-16	54	CA	21.1	105.8	0	75	25	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-16	59	CA	24.4	102.3	2	56	42	47	20	27	–	–	–	–	–	A-7-6 (6)	SC
YA-RW-16	69	CA	41.5	83.4	0	59	41	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-RW-17	2	CA	4.8	112.0	0	76	24	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-17	6	CA	10.8	110.7	2	40	58	29	15	14	–	–	–	–	–	A-6 (5)	CL
YA-RW-17	14	CA	10.6	121.9	2	62	36	26	14	12	–	–	–	–	–	A-6 (1)	SC
YA-RW-17	19	CA	2.5	–	16	79	5	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-RW-17	29	CA	4.7	–	13	84	3	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW
YA-RW-17	34	CA	19.5	104.6	1	69	30	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-17	44	CA	6.8	139.5	20	76	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW
YA-RW-17	49	CA	14.0	–	2	79	19	45	16	29	–	–	–	–	–	A-2-7 (0)	SC
YA-RW-17	64	CA	29.7	96.4	8	66	26	50	23	27	–	–	–	–	–	BEDROCK	
YA-RW-18	2	CA	4.8	108.6	0	71	29	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-18	9	CA	10.1	114.4	0	60	40	29	13	16	–	–	–	–	–	A-6 (2)	SC

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 4/1/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-18	24	CA	2.4	120.8	9	87	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-RW-18	39	CA	28.5	95.6	0	19	81	46	23	23	–	–	–	–	–	A-7-6 (19)	CL
YA-RW-18	44	CA	18.4	108.8	0	87	13	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-18	59	CA	32.3	91.2	0	17	83	68	21	47	–	–	–	–	–	A-7-6 (41)	CH
YA-RW-18	69	CA	21.6	102.6	5	57	38	NV	NP	NP	–	–	–	–	–	A-4 (0)	SM
YA-RW-18	79	CA	28.2	92.2	0	54	46	59	26	33	–	–	–	–	–	BEDROCK	
YA-RW-18	89	CA	27.4	87.0	0	20	80	60	25	35	–	–	–	–	–	BEDROCK	
YA-RW-19	2	CA	6.4	111.7	0	60	40	24	14	10	–	–	–	–	–	A-4 (1)	SC
YA-RW-19	5	CA	4.5	118.2	1	70	29	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-19	14	CA	5.9	105.9	0	84	16	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SM
YA-RW-19	24	CA	1.8	–	12	85	3	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-RW-19	39	CA	20.8	106.2	0	75	25	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-19	54	CA	8.4	–	17	75	8	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-RW-19	59	CA	33.6	88.9	0	22	78	73	21	52	–	–	–	–	–	A-7-6 (42)	CH
YA-RW-19	74	CA	20.0	110.5	20	52	28	36	17	19	–	–	–	–	–	A-2-6 (0)	SC
YA-RW-19	79	CA	32.2	90.9	0	28	72	61	26	35	–	–	–	–	–	BEDROCK	

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 4/1/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-19	84	CA	25.0	98.2	0	28	72	52	25	27	–	–	–	–	–	BEDROCK	
YA-RW-20	4	CA	10.2	119.9	0	42	58	29	15	14	–	–	–	–	–	A-6 (5)	CL
YA-RW-20	10	CA	9.1	110.0	0	53	47	33	12	21	–	–	–	–	–	A-6 (6)	SC
YA-RW-20	15	CA	5.7	110.7	1	78	21	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-20	25	CA	11.1	121.7	0	55	45	34	14	20	–	–	–	–	–	A-6 (5)	SC
YA-RW-20	35	CA	4.6	–	0	88	12	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SP-SM
YA-RW-20	45	CA	33.7	90.9	0	9	91	NV	NP	NP	–	–	–	–	–	A-4 (0)	ML
YA-RW-20	60	CA	31.7	90.5	0	10	90	66	25	41	–	–	–	–	–	BEDROCK	
YA-RW-20	65	CA	25.9	98.6	0	26	74	53	24	29	–	–	–	–	–	BEDROCK	
YA-RW-21	3	CA	8.0	107.2	0	77	23	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-21	9	CA	6.5	107.0	0	75	25	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-21	19	CA	12.7	118.9	8	42	50	41	18	23	–	–	–	–	–	A-7-6 (8)	SC
YA-RW-21	24	CA	8.6	123.1	0	74	26	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-21	29	CA	7.3	122.7	0	75	25	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-21	44	CA	8.7	110.4	5	87	8	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-RW-21	49	CA	23.7	101.9	0	51	49	50	17	33	–	–	–	–	–	A-7-6 (11)	SC

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 4/1/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-21	59	CA	11.4	122.0	7	87	6	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-RW-21	69	CA	23.4	106.0	0	35	65	59	29	30	–	–	–	–	–	BEDROCK	
YA-RW-22	5	CA	11.5	112.0	0	49	51	NV	NP	NP	–	–	–	–	–	A-4 (0)	ML
YA-RW-22	14	CA	11.4	121.2	0	68	32	31	14	17	–	–	–	–	–	A-2-6 (1)	SC
YA-RW-22	24	CA	3.5	–	12	85	3	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-RW-22	44	CA	13.5	115.2	0	70	30	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-22	49	CA	3.1	–	2	95	3	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-RW-22	59	CA	32.0	91.7	2	29	69	56	21	35	–	–	–	–	–	A-7-6 (23)	CH
YA-RW-22	69	CA	26.6	100.8	0	24	76	53	28	25	–	–	–	–	–	BEDROCK	
YA-RW-23	2	CA	4.0	–	0	78	22	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-23	9	CA	12.7	113.6	0	42	58	28	14	14	–	–	–	–	–	A-6 (5)	CL
YA-RW-23	14	CA	16.7	99.1	0	35	65	35	14	21	–	–	–	–	–	A-6 (11)	CL
YA-RW-23	24	CA	12.3	118.0	6	54	40	27	12	15	–	–	–	–	–	A-6 (2)	SC
YA-RW-23	39	CA	3.0	118.1	10	85	5	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP-SM
YA-RW-23	49	CA	12.4	111.6	0	65	35	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-23	54	CA	36.1	87.5	0	6	94	45	17	28	–	–	–	–	–	A-7-6 (27)	CL

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 4/1/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-23	64	CA	25.8	99.9	0	14	86	47	16	31	–	–	–	–	–	BEDROCK	
YA-RW-23	69	CA	31.9	92.6	0	18	82	69	28	41	–	–	–	–	–	BEDROCK	
YA-RW-24	3	CA	10.7	118.4	1	59	40	32	13	19	–	–	–	–	–	A-6 (3)	SC
YA-RW-24	9	CA	13.2	117.6	3	41	56	32	12	20	–	–	–	–	–	A-6 (7)	CL
YA-RW-24	14	CA	13.7	116.7	2	49	49	36	14	22	–	–	–	–	–	A-6 (7)	SC
YA-RW-24	24	CA	2.9	_	9	84	7	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-RW-24	39	CA	13.1	112.1	0	65	35	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-24	44	CA	14.0	106.2	0	66	34	33	12	21	–	–	–	–	–	A-2-6 (2)	SC
YA-RW-24	54	CA	24.2	103.4	0	21	79	50	22	28	–	–	–	–	–	BEDROCK	
YA-RW-25	5	CA	12.4	123.0	1	58	41	33	15	18	–	–	–	–	–	A-6 (3)	SC
YA-RW-25	14	CA	18.3	109.8	0	23	77	46	15	31	–	–	–	–	–	A-7-6 (23)	CL
YA-RW-25	24	CA	9.3	132.1	11	64	25	35	15	20	–	–	–	–	–	A-2-6 (0)	SC
YA-RW-25	34	CA	0.7	–	15	83	2	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-RW-25	39	CA	2.6	–	1	96	3	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-RW-25	49	CA	14.2	113.2	0	76	24	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-RW-25	54	CA	23.0	102.3	0	12	88	57	25	32	–	–	–	–	–	BEDROCK	

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 B Project Name: I-70 East, PCL Alternative Date: 4/1/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	Unconf. Comp. Strength (psf)	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-RW-25	64	CA	32.2	89.0	0	10	90	65	29	36	–	–	–	–	–	BEDROCK	
YA-RW-26	5	CA															
YA-RW-26	25	CA															
YA-RW-26	35	CA															
YA-RW-26	65	CA															
YA-RW-26	85	CA															
YA-RW-26	100	CA															
YA-RW-27	5	CA															
YA-RW-27	10	CA															
YA-RW-27	25	CA															
YA-RW-27	35	CA															
YA-RW-27	40	CA															
YA-RW-27	50	CA															
YA-RW-27	60	CA															
YA-RW-27	70	CA															
YA-RW-27	80	CA															

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 DRON Project Name: I-70 East Corridor Date: 4/14/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-DON-1	3	CA	5.6	107.6	0	81	19	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-DON-1	13	CA	2.0	113.4	15	81	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-DON-1	28	CA	7.2	130.6	48	47	5	NV	NP	NP	–	–	–	–	–	A-1-a (0)	GP
YA-DON-1	38	CA	19.5	111.5	–	–	98	57	27	30	–	–	–	–	–	BEDROCK	
YA-DON-1	53	CA	17.4	109.1	4	54	42	39	21	18	–	–	–	–	–	BEDROCK	
YA-DON-2	3	CA	14.1	113.9	10	42	48	32	16	16	–	–	–	–	–	A-6 (4)	SC
YA-DON-2	19	CA	3.8	117.0	28	68	4	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SP
YA-DON-2	34	CA	12.4	120.1	17	75	8	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-DON-2	39	CA	–	–	–	–	–	–	–	–	7.7	0.004	4274	0.0031	–	–	–
YA-DON-2	44	CA	17.8	110.9	0	59	41	NV	NP	NP	–	–	–	–	–	BEDROCK	
YA-DON-2	54	CA	19.1	108.9	0	47	53	36	24	12	–	–	–	–	–	BEDROCK	
YA-DON-3	2	CA	13.4	117.7	0	52	48	26	13	13	–	–	–	–	–	A-6 (3)	SC
YA-DON-3	4	CA	10.6	110.7	0	68	32	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-DON-3	18	CA	2.2	–	38	59	3	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SP
YA-DON-3	33	CA	15.3	114.5	0	90	10	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-DON-3	38	CA	–	–	–	–	–	–	–	–	7.9	0.003	7519	0.0019	–	–	–

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 DRON Project Name: I-70 East Corridor Date: 4/14/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-DON-3	48	CA	16.3	115.4	0	64	36	NV	NP	NP	–	–			–	BEDROCK	
YA-DON-4	3	CA	1.9	–	34	64	2	NV	NP	NP	–	–			–	A-1-a (0)	SP
YA-DON-4	6	CA	11.9	116.1	0	59	41	33	16	17	–	–			–	A-6 (3)	SC
YA-DON-4	14	CA	4.0	–	11	84	5	NV	NP	NP	–	–			–	A-1-b (0)	SP
YA-DON-4	29	CA	13.6	121.5	17	78	5	NV	NP	NP	–	–			–	A-1-b (0)	SW
YA-DON-4	39	CA	–	–	–	–	–	–	–	–	7.8	0.008	4717	0.0026	–	–	–
YA-DON-4	44	CA	14.1	118.0	–	–	78	48	24	24	–	–			–	BEDROCK	
YA-DON-5	3	CA	2.7	–	18	80	2	NV	NP	NP	–	–			–	A-1-b (0)	SP
YA-DON-5	13	CA	4.0	135.9	51	44	5	NV	NP	NP	–	–			–	A-1-a (0)	GP
YA-DON-5	18	CA	–	–	–	–	–	–	–	–	7.7	0.007	2538	0.0106	–	–	–
YA-DON-5	23	CA	24.7	101.0	0	89	11	NV	NP	NP	–	–			–	A-2-4 (0)	SP-SM
YA-DON-5	38	CA	14.3	116.0	–	–	89	42	23	19	–	–			–	BEDROCK	
YA-DON-6	5	CA	9.3	118.3	8	67	25	25	21	4	–	–			–	A-1-b (0)	SM-SC
YA-DON-6	10	CA	23.7	103.0	–	–	73	44	26	18	–	–			–	BEDROCK	
YA-DON-6	15	CA	17.8	114.8	–	–	75	45	26	19	–	–			–	BEDROCK	
YA-DON-6	20	CA	–	–	–	–	–	–	–	–	8.1	0.009	868	0.0025	–	–	–

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Summary of Laboratory Test Results

Project No: 213-208 DRON Project Name: I-70 East Corridor Date: 4/14/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-DON-6	30	CA	22.0	108.0	–	–	84	61	29	32	–	–	–	–	–	BEDROCK	
YA-DON-7	4	CA	2.0	–	12	86	2	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SP
YA-DON-7	10	CA	4.1	111.1	0	90	10	NV	NP	NP	–	–	–	–	–	A-3 (0)	SP-SM
YA-DON-7	15	CA	16.2	116.9	0	71	29	32	18	14	–	–	–	–	–	A-2-6 (0)	SC
YA-DON-7	20	CA	18.6	109.5	1	85	14	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SM
YA-DON-7	25	CA	19.8	107.2	–	–	78	53	25	28	–	–	–	–	–	BEDROCK	
YA-DON-8	2	CA	5.8	120.6	22	64	14	25	15	10	–	–	–	–	–	A-2-4 (0)	SC
YA-DON-8	5	CA	9.4	116.0	9	92	29	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-DON-8	20	CA	5.0	115.0	15	81	4	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW
YA-DON-8	26	CA	8.9	128.3	26	67	7	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW-SM
YA-DON-8	38	CA	12.8	122.8	10	86	4	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW
YA-DON-8	50	CA	16.6	113.2	0	50	50	NV	NP	NP	–	–	–	–	–	BEDROCK	

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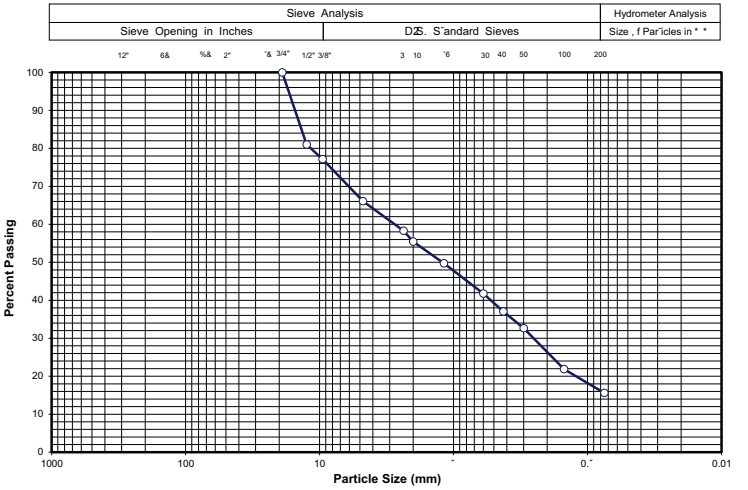
Summary of Laboratory Test Results

Project No: 213-208 DOF Project Name: I-70 East Corridor Date: 4/2/2014

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Water Soluble Chloride %	% Swell (+) / Consoli-dation (-)	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI						AASHTO	USCS
YA-DOF-3	5	CA	10.6	124.9	11	54	35	28	19	9	–	–	–	–	–	A-4 (0)	SC
YA-DOF-3	10	CA	–	–	–	–	–	–	–	–	8.3	0.005	2146	0.0049	–	–	–
YA-DOF-3	15	CA	34.6	87.2	–	–	88	65	27	38	–	–	–	–	–	A-7-6 (38)	CH
YA-DOF-3	20	CA	21.8	100.7	0	89	11	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SP-SM
YA-DOF-3	30	CA	21.0	108.0	–	–	89	56	25	31	–	–	–	–	–	BEDROCK	
YA-DOF-4	3	CA	8.7	105.7	0	73	27	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-DOF-4	14	CA	14.8	103.5	6	53	41	30	19	11	–	–	–	–	–	A-6 (1)	SC
YA-DOF-4	24	CA	–	–	–	–	–	–	–	–	7.7	<0.001	12225	0.0008	–	–	–
YA-DOF-4	29	CA	4.2	–	62	33	5	NV	NP	NP	–	–	–	–	–	A-1-a (0)	GW-GM
YA-DOF-5	2	CA	23.4	100.5	2	45	53	55	20	33	–	–	–	–	–	A-7-6 (14)	CH
YA-DOF-5	13	CA	13.5	114.5	3	47	50	30	15	15	–	–	–	–	–	A-6 (4)	CL
YA-DOF-5	18	CA	2.3	113.6	31	66	3	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SW
YA-DOF-5	23	CA	–	–	–	–	–	–	–	–	7.7	0.012	2445	0.0077	–	–	–
YA-DOF-5	28.5	CA	34.3	88.1	0	27	73	56	22	34	–	–	–	–	–	A-7-6 (24)	CH
YA-DOF-6	3	CA	7.8	101.3	0	73	27	NV	NP	NP	–	–	–	–	–	A-2-4 (0)	SM
YA-DOF-6	14	CA	2.6	121.8	24	66	10	NV	NP	NP	–	–	–	–	–	A-1-b (0)	SW-SM
YA-DOF-6	29	CA	9.3	128.4	43	52	5	NV	NP	NP	–	–	–	–	–	A-1-a (0)	SP-SM



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	3¯
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)	66
#10	>>
#40	%
#200	¯6

= ravel (¯/	%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	50	,.:	1,	Sample ID:	; A-BB-¯
Fines (¯/	¯6	, 7	1,	Sample Depth (ft.):	
Sample Descri+¯i, n:	A-1-b (0) / SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 BB
¯ ec"ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

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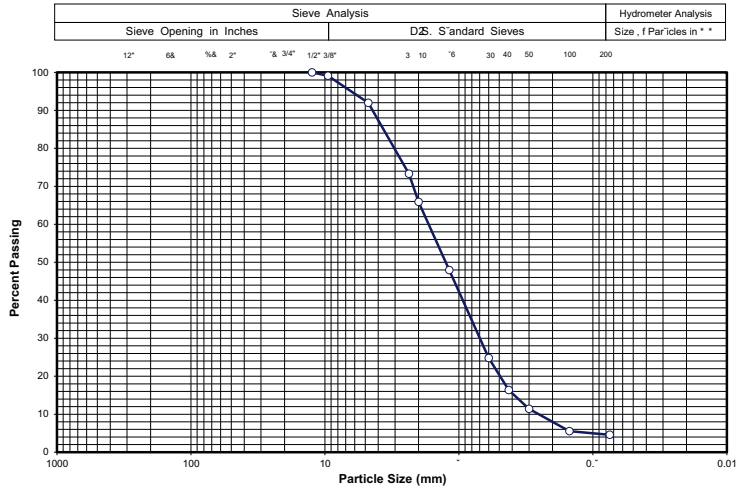

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	AA
)	92
#10	66
#40	¯6
#200	>

= ravel (¯/	3	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3	,.:	1,	Sample ID:	; A-BB-¯
Fines (¯/	>	,7	1,	Sample Depth (ft.):	¯A
Sample Descri+¯i, n:	A-1-b (0) / SW				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 BB
¯ ec"ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

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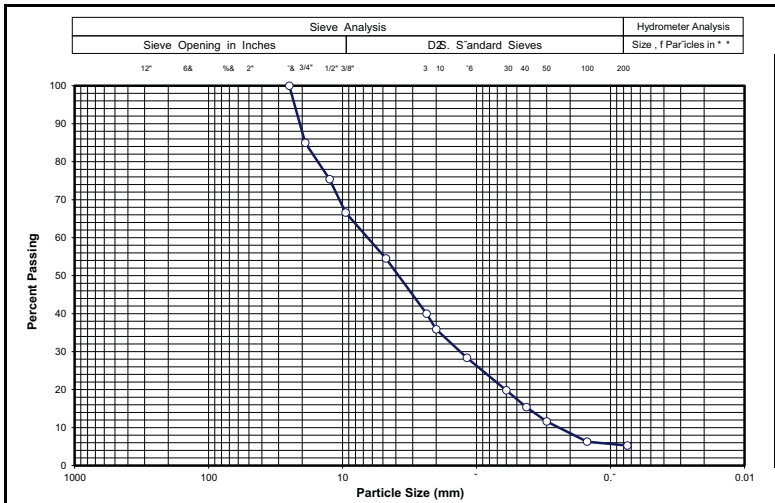

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	100
¾ &	3>
' &	>
⅜&&	6
)	>>
#10	%6
#40	¯>
#200	>

= ravel (¯/	>	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	50	,.:	1,	Sample ID:	; A-BB-¯
Fines (¯/	>	,7	1,	Sample Depth (ft.):	%A
Sample Descri+¯i, n:	A-1-a (0) / SW$SM				

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Drawn By:	MA	Pr,0ect No.:	213-208 BB
¯ ec"ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

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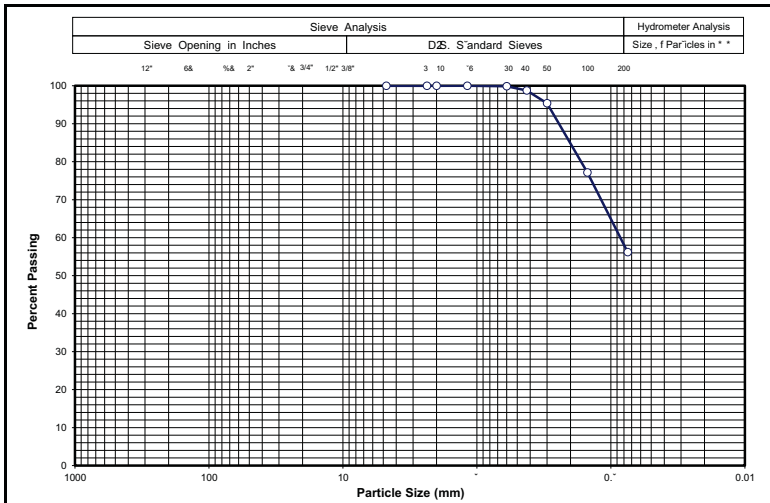

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	AA
#200	>6

= ravel (¯/	0	::		Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /		,.:	22	Sample ID:	; A-BB-¯
Fines (¯/	>6	, 7	22	Sample Depth (ft.):	A2>
Sample Descri+¯i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 BB
¯ ec"ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

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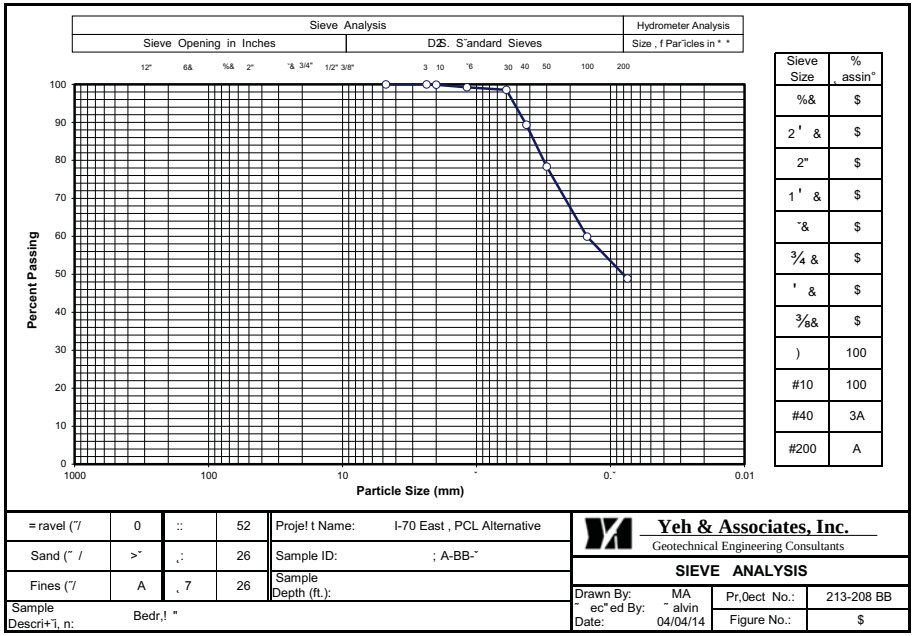

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3A
#200	A

= ravel (˝/	0	::	52	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	>¯	,.:	26	Sample ID:	; A-BB-¯
Fines (˝/	A	, 7	26	Sample Depth (ft.):	
Sample Descri+ī, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 BB
˜ ec" ed By:	˜ alvin		
Date:	04/04/14	Figure No.:	$

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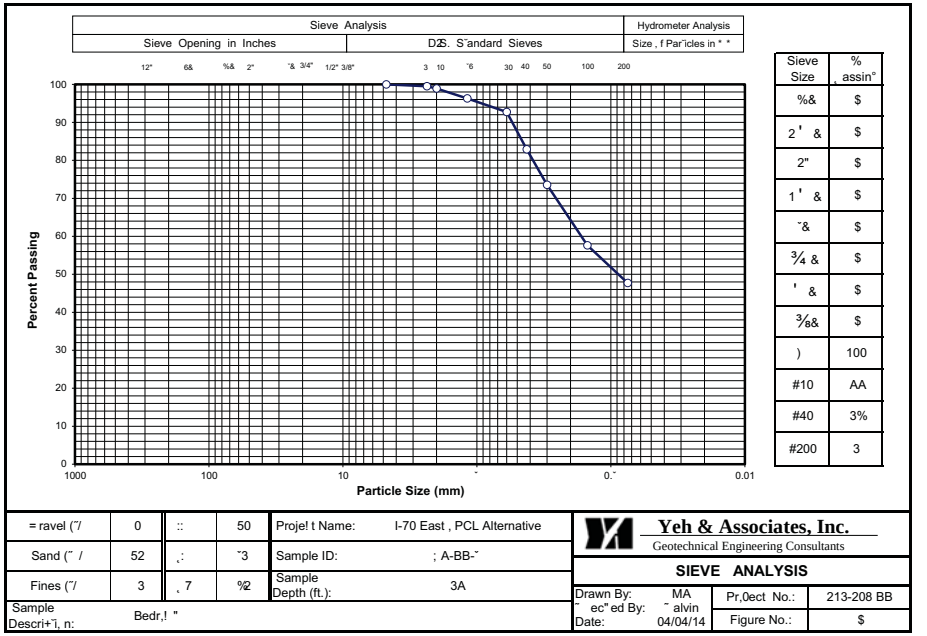

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	3%
#200	3

= ravel (˝/	0	::	50	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	52	,.:	¯3	Sample ID:	; A-BB-¯
Fines (˝/	3	, 7	%2	Sample Depth (ft.):	3A
Sample Descri+ī, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 BB
˜ ec" ed By:	˜ alvin		
Date:	04/04/14	Figure No.:	$

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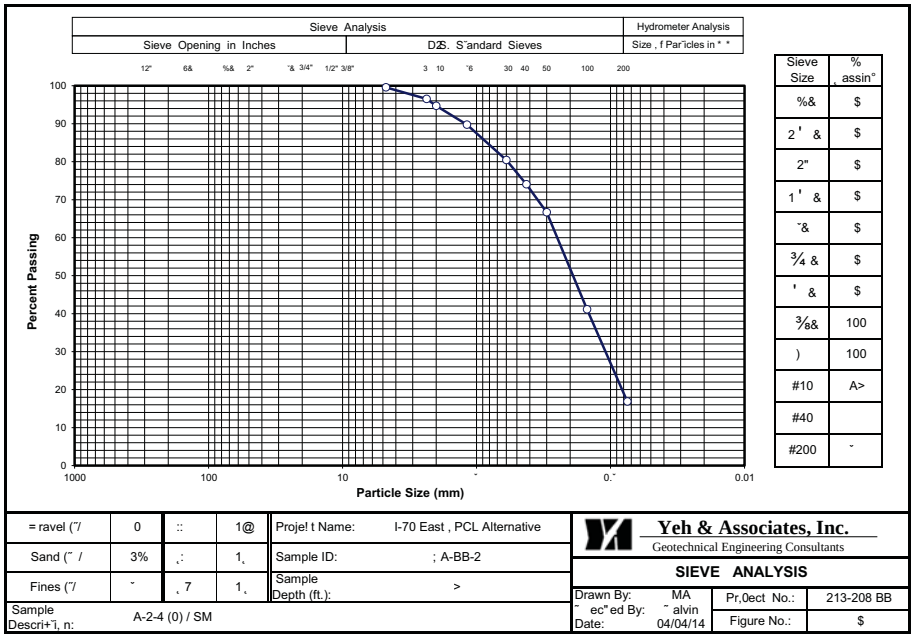

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	A>
#40	
#200	¯

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3%	,.:	1,	Sample ID:	; A-BB-2
Fines (˝/	¯	, 7	1,	Sample Depth (ft.):	>
Sample Descri+ī, n:	A-2-4 (0) / SM				

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Drawn By:	MA	Pr,0ect No.:	213-208 BB
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Date:	04/04/14	Figure No.:	$

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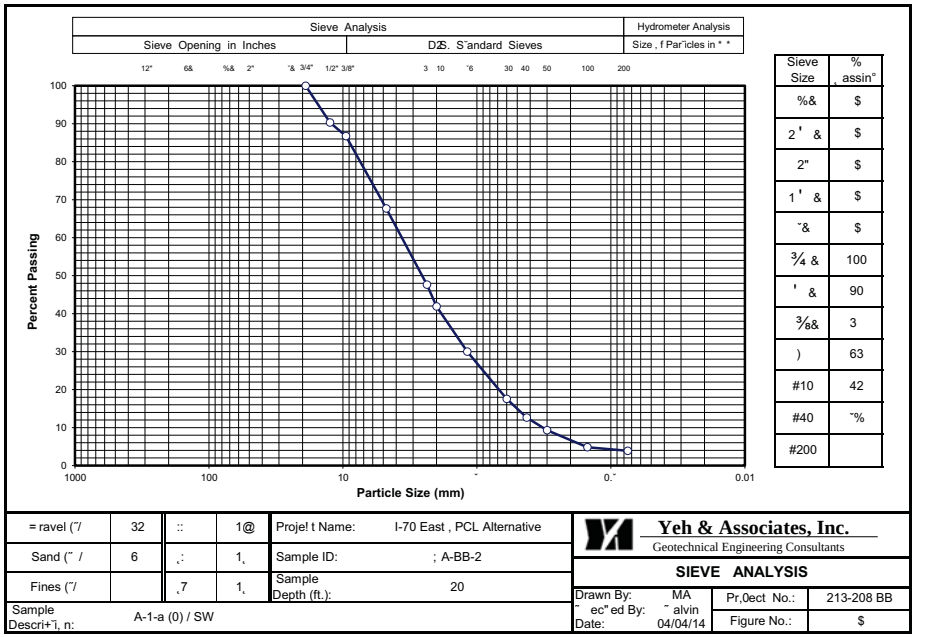

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	90
⅜&&	3
)	63
#10	42
#40	¯%
#200	

= ravel (˝/	32	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	,.:	1,	Sample ID:	; A-BB-2
Fines (˝/		,7	1,	Sample Depth (ft.):	20
Sample Descri+ī, n:	A-1-a (0) / SW				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 BB
˜ ec" ed By:	˜ alvin		
Date:	04/04/14	Figure No.:	$

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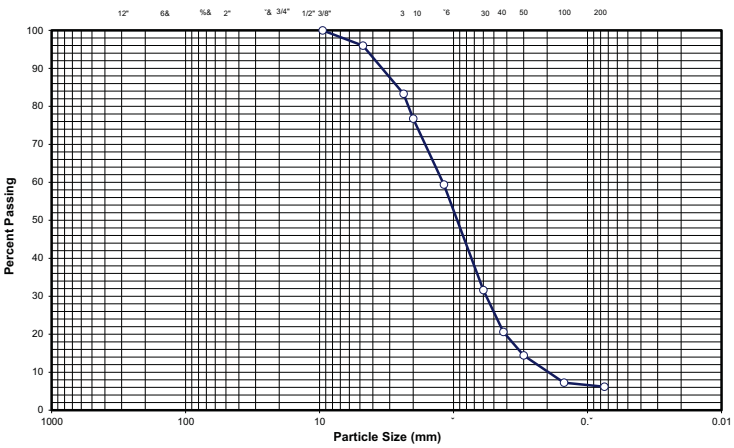
Sieve Analysis		Hydrometer Analysis
Sieve Opening in Inches	D2S. S`andard Sieves	Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	A6
#10	
#40	21
#200	6

= ravel ("/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	90	,.:	1,	Sample ID:	; A-BB-2
Fines ("/	6	,7	1,	Sample Depth (ft.):	%>
Sample Descri+¯i, n:	A-¯$b (0/ / SP-SM				

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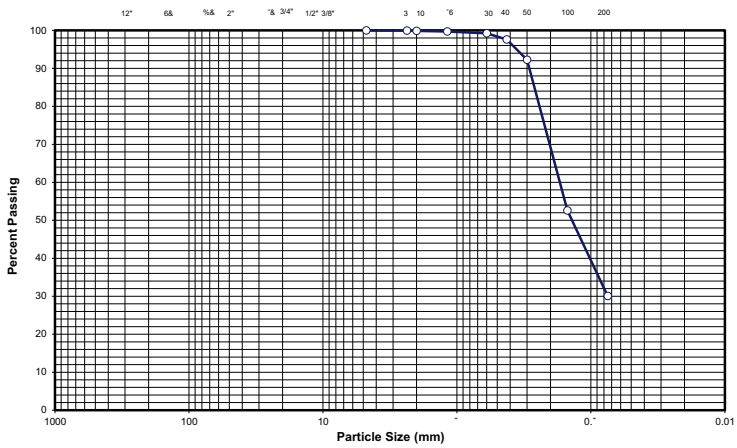
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 BB
¯ ec"ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis		Hydrometer Analysis
Sieve Opening in Inches	D2S. S`andard Sieves	Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A3
#200	30

= ravel ("/	0	::	%>	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	70	,.:	23	Sample ID:	; A-BB-2
Fines ("/	%0	, 7	¯2	Sample Depth (ft.):	50
Sample Descri+¯i, n:	Bedr,! "				

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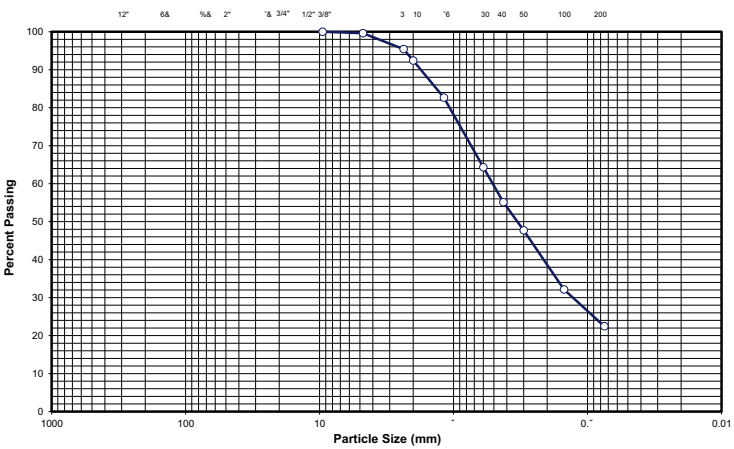
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 BB
¯ ec"ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis		Hydrometer Analysis
Sieve Opening in Inches	D2S. S`andard Sieves	Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	92
#40	>>
#200	22

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3	,.:	1,	Sample ID:	; A-BB-2
Fines ("/	22	, 7	1,	Sample Depth (ft.):	60
Sample Descri+¯i, n:	Bedr,! "				

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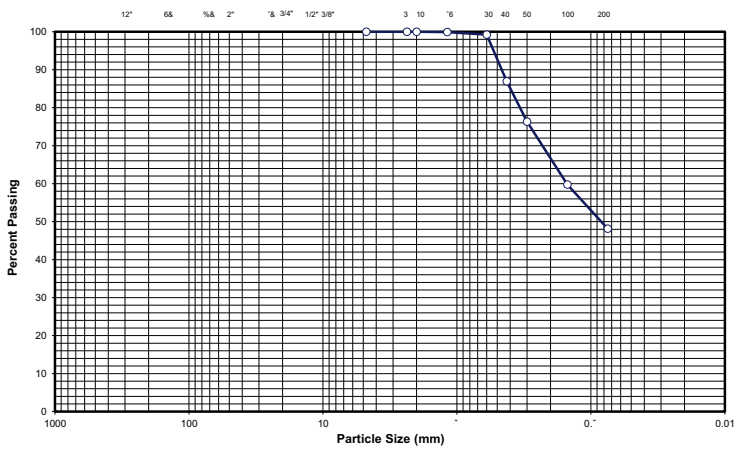
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 BB
¯ ec"ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis		Hydrometer Analysis
Sieve Opening in Inches	D2S. S`andard Sieves	Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3
#200	3

= ravel ("/	0	::		Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	52	,.:	25	Sample ID:	; A-BB-2
Fines ("/	3	, 7	¯A	Sample Depth (ft.):	>
Sample Descri+¯i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 BB
¯ ec"ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

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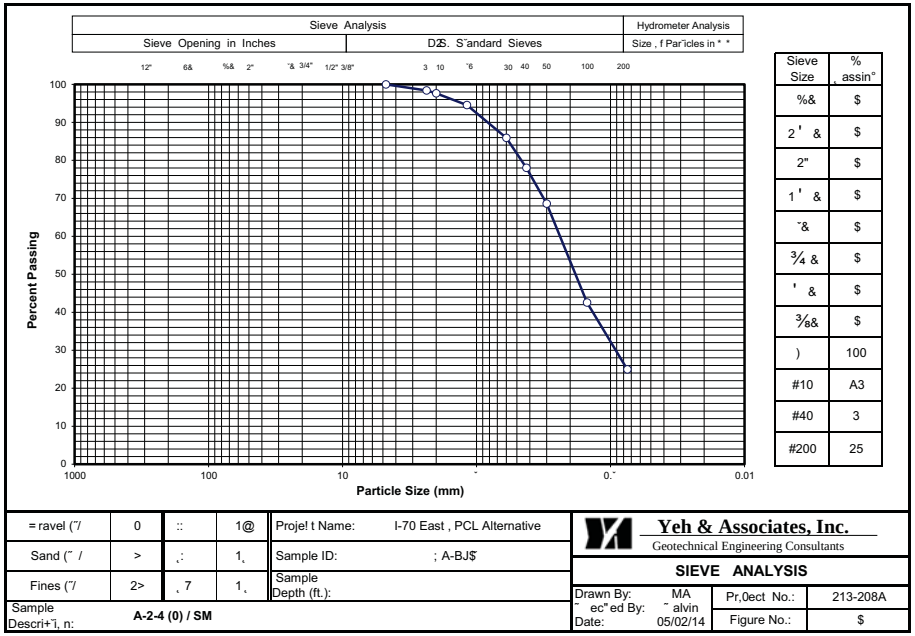

Sieve Size	% ,assin°
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2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A3
#40	3
#200	25

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	>	,.:	1,	Sample ID:	; A-BJ$
Fines (˝/	2>	, 7	1,	Sample Depth (ft.):	
Sample Descri+ī, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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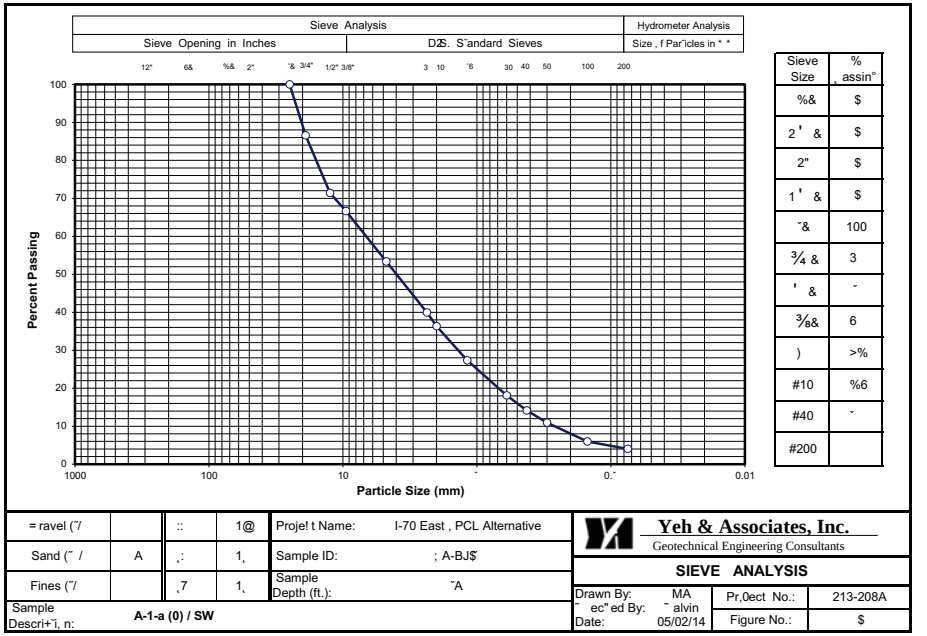

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	100
¾ &	3
' &	¯
⅜&&	6
)	>%
#10	%6
#40	¯
#200	

= ravel (˝/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	A	,.:	1,	Sample ID:	; A-BJ$
Fines (˝/		,7	1,	Sample Depth (ft.):	¯A
Sample Descri+ī, n:	**A-1-a (0) / SW**				

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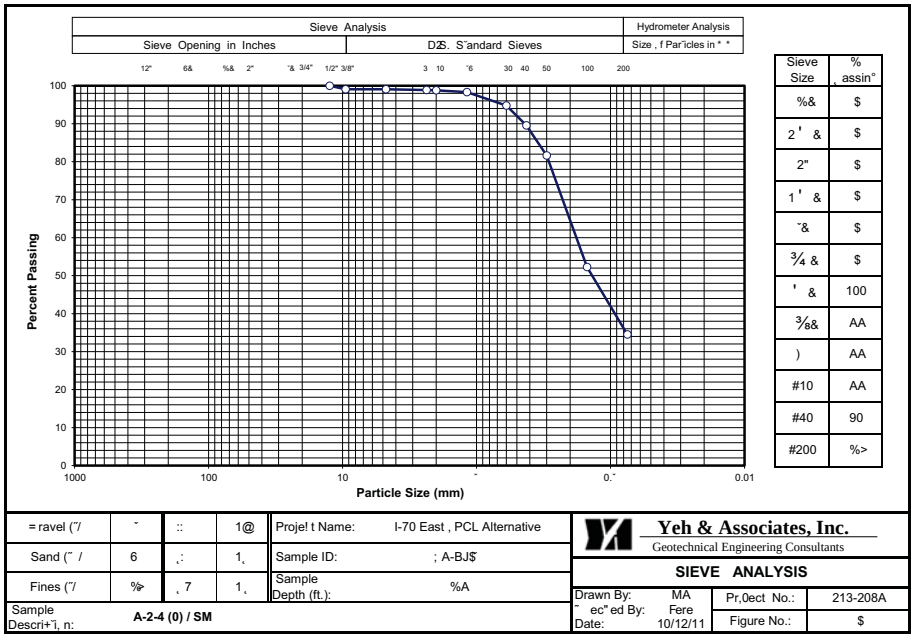
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	AA
)	AA
#10	AA
#40	90
#200	%>

= ravel (˝/	¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	,.:	1,	Sample ID:	; A-BJ$
Fines (˝/	%>	, 7	1,	Sample Depth (ft.):	%A
Sample Descri+ī, n:	**A-2-4 (0) / SM**				

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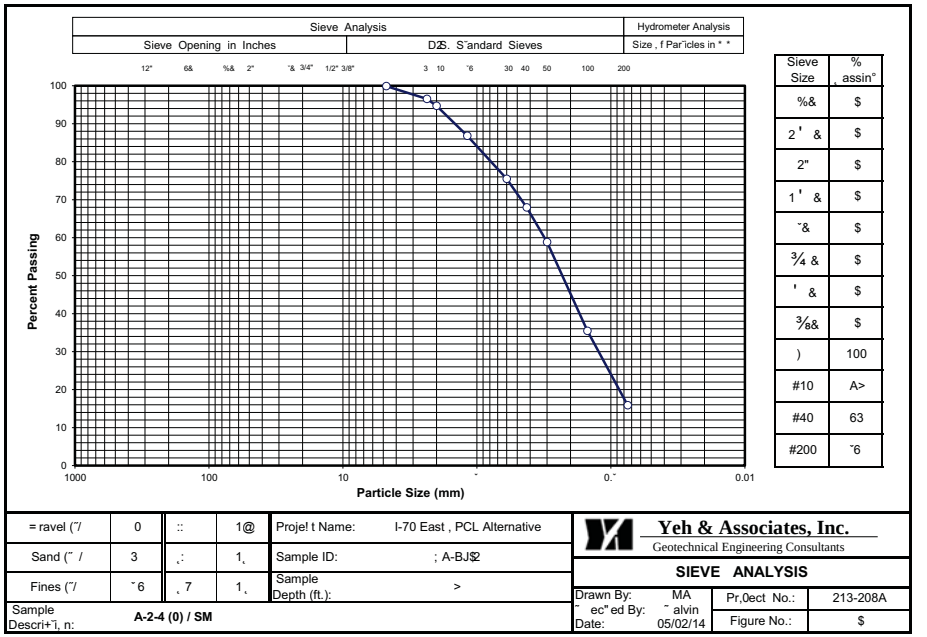
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A>
#40	63
#200	¯6

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3	,.:	1,	Sample ID:	; A-BJ$2
Fines (˝/	¯6	, 7	1,	Sample Depth (ft.):	>
Sample Descri+ī, n:	**A-2-4 (0) / SM**				

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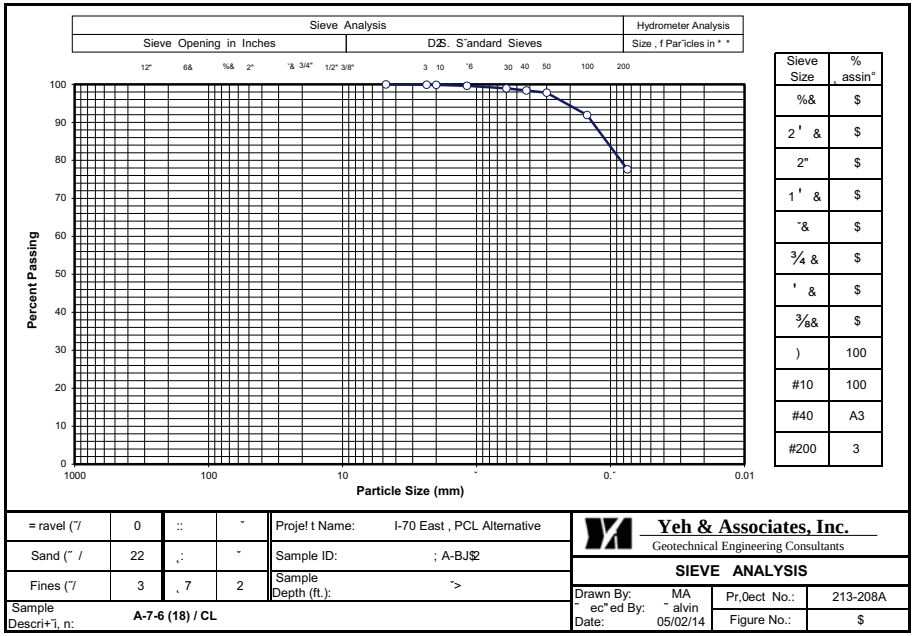
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A3
#200	3

= ravel ("/	0	::	ˇ	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	22	,.:	ˇ	Sample ID:	; A-BJ$2
Fines ("/	3	, 7	2	Sample Depth (ft.):	¯>
Sample Descri+¯i, n:	**A-7-6 (18) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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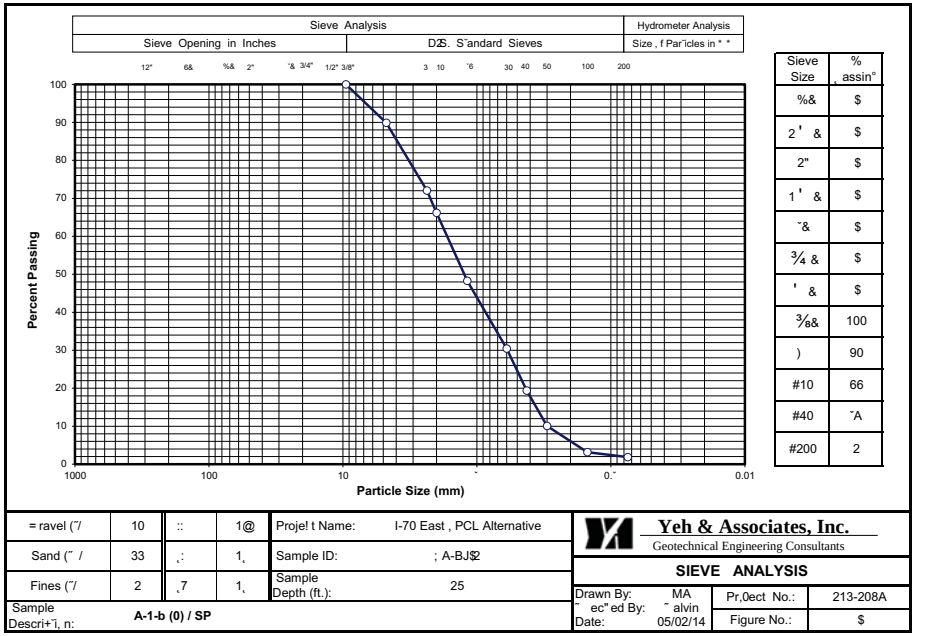

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	90
#10	66
#40	¯A
#200	2

= ravel ("/	10	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	33	,.:	1,	Sample ID:	; A-BJ$2
Fines ("/	2	,7	1,	Sample Depth (ft.):	25
Sample Descri+¯i, n:	**A-1-b (0) / SP**				

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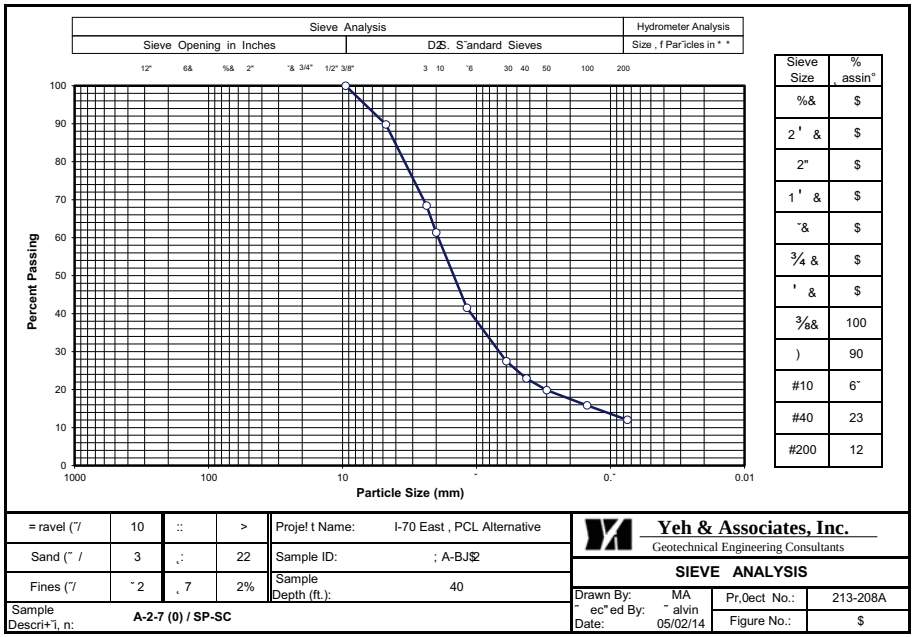
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	90
#10	6¯
#40	23
#200	12

= ravel ("/	10	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3	,.:	22	Sample ID:	; A-BJ$2
Fines ("/	¯2	, 7	2%	Sample Depth (ft.):	40
Sample Descri+¯i, n:	**A-2-7 (0) / SP-SC**				

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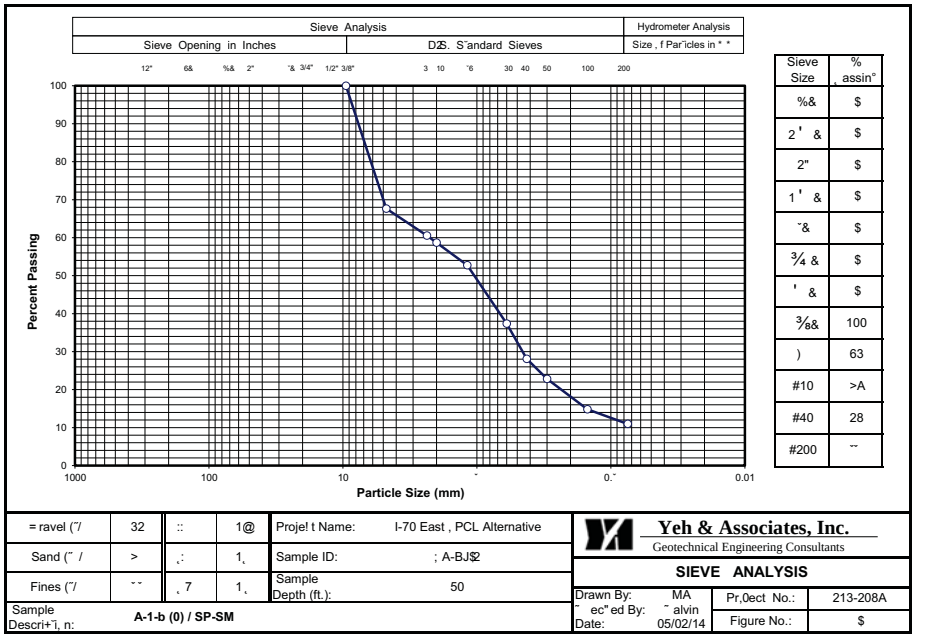
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	63
#10	>A
#40	28
#200	¯¯

= ravel ("/	32	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>	,.:	1,	Sample ID:	; A-BJ$2
Fines ("/	¯¯	, 7	1,	Sample Depth (ft.):	50
Sample Descri+¯i, n:	**A-1-b (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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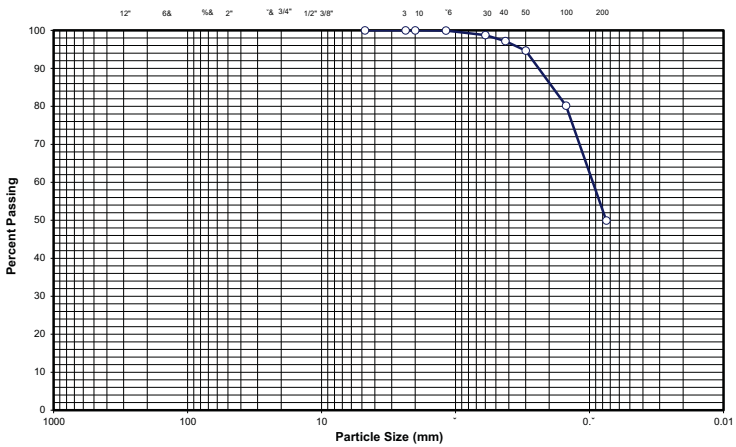
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A
#200	50

= ravel ("/	0	::	%>	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	50	,.:	¯A	Sample ID:	; A-BJ$2
Fines ("/	>0	, 7	¯6	Sample Depth (ft.):	>>
Sample Descri+¯i, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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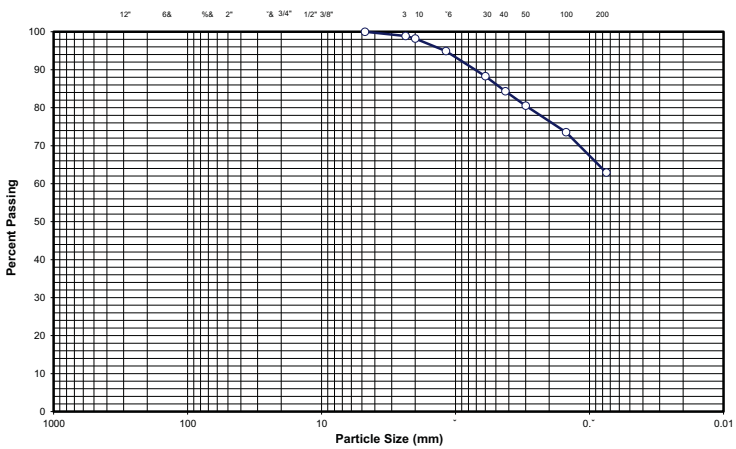
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A3
#40	3
#200	6%

= ravel ("/	0	::		Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	%	,.:	26	Sample ID:	; A-BJ$2
Fines ("/	6%	, 7	¯3	Sample Depth (ft.):	3>
Sample Descri+¯i, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A
#40	A
#200	20

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	80	,.:	1,	Sample ID:	; A-BJ$2
Fines ("/	20	, 7	1,	Sample Depth (ft.):	6>
Sample Descri+¯i, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A3
#40	>
#200	25

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>	,.:	1,	Sample ID:	; A-BCO$
Fines ("/	2>	, 7	1,	Sample Depth (ft.):	>
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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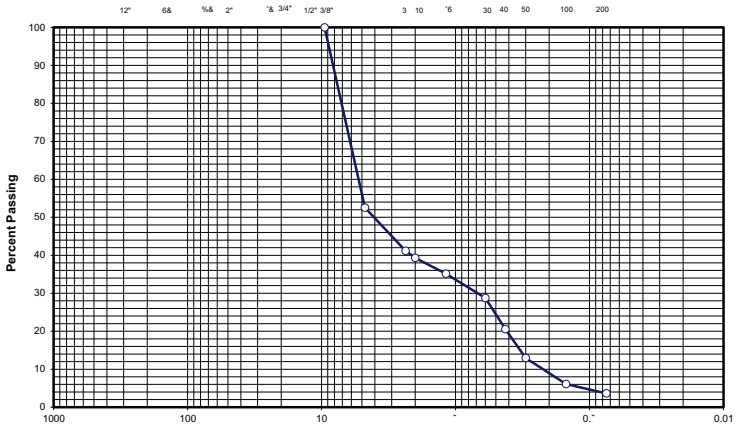
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	>%
#10	%A
#40	21
#200	

= ravel (¨/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	A	,.:	1,	Sample ID:	; A-BCO$
Fines (¨/		,7	1,	Sample Depth (ft.):	20
Sample Descri+¨i, n:	**A-1a (0) / SP**				

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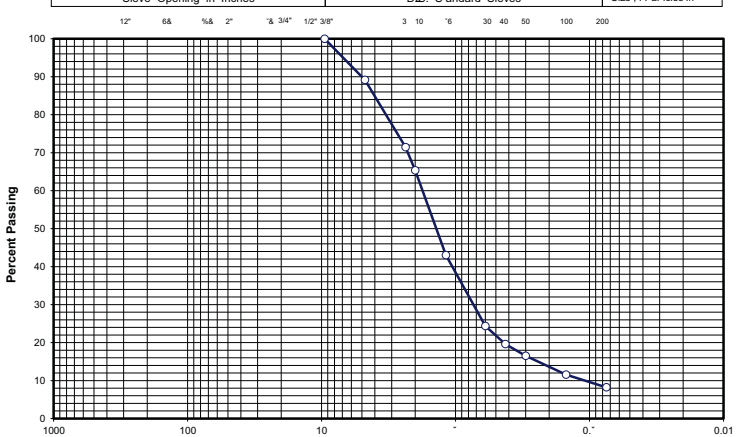
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¨ ec" ed By:	¨ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	3A
#10	6>
#40	20
#200	3

= ravel (¨/	¨¨	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3¨	,.:	1,	Sample ID:	; A-BCO$
Fines (¨/	3	,7	1,	Sample Depth (ft.):	>>
Sample Descri+¨i, n:	**A-1-b (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¨ ec" ed By:	¨ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	A%
#10	>3
#40	12
#200	%

= ravel (¨/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	90	,.:	1,	Sample ID:	; A-BCO$
Fines (¨/	%	,7	1,	Sample Depth (ft.):	40
Sample Descri+¨i, n:	**A-1-b (0) / SP**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¨ ec" ed By:	¨ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	AA
#40	33
#200	40

= ravel (¨/	0	::	52	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	60	,.:	25	Sample ID:	; A-BCO$
Fines (¨/	0	, 7	2	Sample Depth (ft.):	>
Sample Descri+¨i, n:	**Bedrock**				

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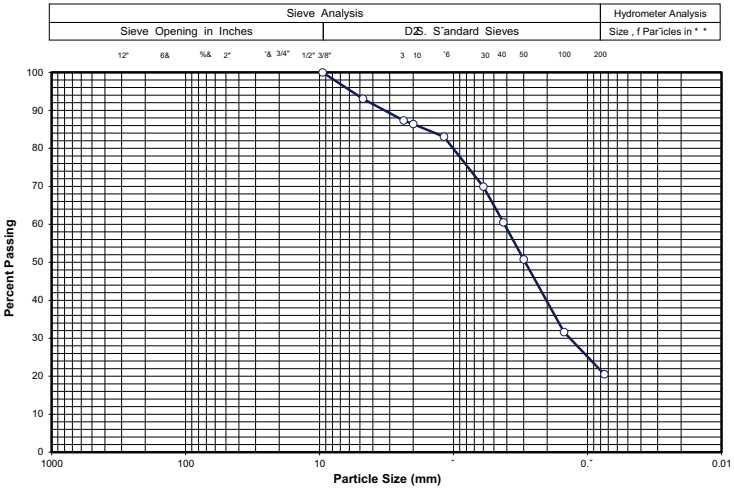
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¨ ec" ed By:	¨ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	A%
#10	36
#40	6¯
#200	21

= ravel (˜/		::	%A	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	72	,.:	24	Sample ID:	; A-BCO$
Fines (˜/	2˜	, 7	¯ >	Sample Depth (ft.):	A>
Sample Descri+ī, n:	**Bedrock**				

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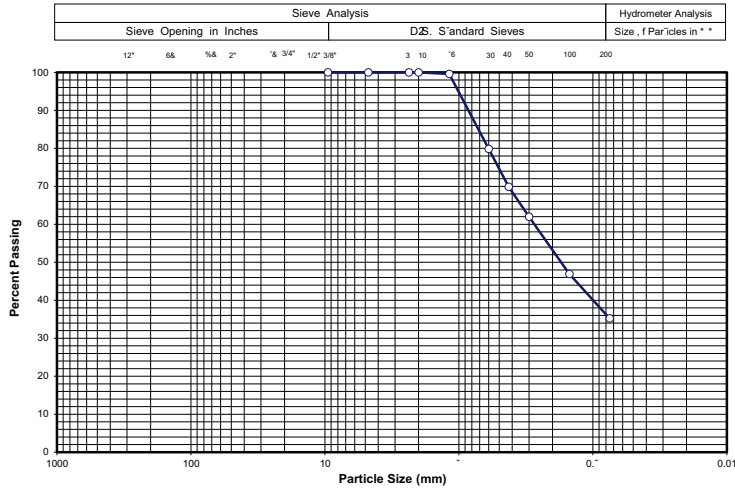
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	100
#40	70
#200	%>

= ravel (˜/	0	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6>	,.:	25	Sample ID:	; A-BCO$
Fines (˜/	%>	, 7	20	Sample Depth (ft.):	¯">
Sample Descri+ī, n:	**Bedrock**				

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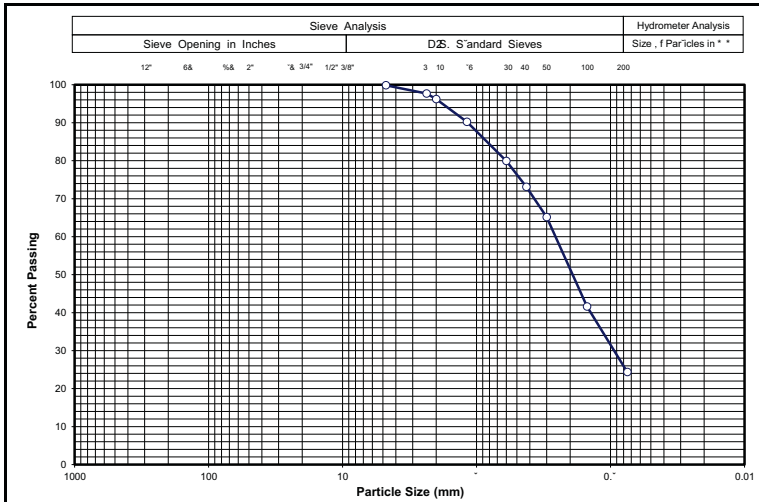
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A6
#40	%
#200	24

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	,.:	1,	Sample ID:	; A-BCO$2
Fines (˜/	2	, 7	1,	Sample Depth (ft.):	
Sample Descri+ī, n:	**A-2-4 (0) / SM**				

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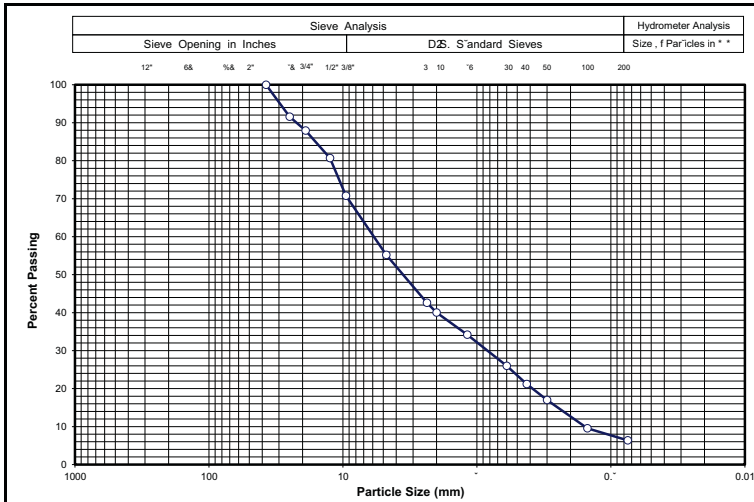
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	100
¯&	92
¾ &	33
' &	3¯
⅜&&	-
)	>>
#10	40
#40	21
#200	6

= ravel (˜/	>	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	A	,.:	1,	Sample ID:	; A-BCO$2
Fines (˜/	6	,7	1,	Sample Depth (ft.):	¯A
Sample Descri+ī, n:	**A-1-a (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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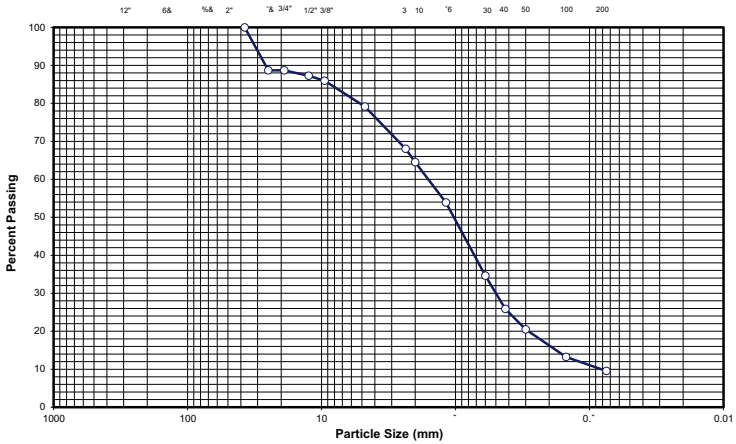
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	100
¯&	3A
¾ &	3A
' &	3
⅜&&	36
)	A
#10	6>
#40	26
#200	10

= ravel ("/	21	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6A	,.:	1,	Sample ID:	; A-BCOS2
Fines ("/	¯0	, 7	1,	Sample Depth (ft.):	%
Sample Descri+¯i, n:	**A-1-b (0) / SW-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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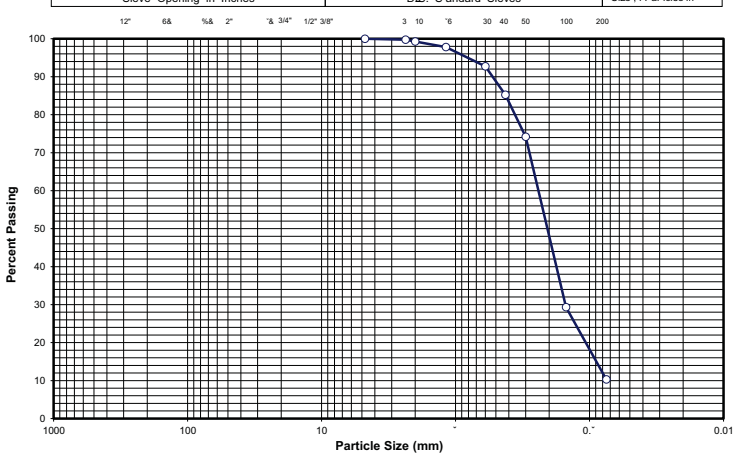
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	3>
#200	10

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	90	,.:	1,	Sample ID:	; A-BCOS2
Fines ("/	¯0	, 7	1,	Sample Depth (ft.):	6
Sample Descri+¯i, n:	**A-3 (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A6
⅜&&	90
)	3%
#10	%
#40	24
#200	%

= ravel ("/	¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	80	,.:	1,	Sample ID:	; A-BCOS2
Fines ("/	%	,7	1,	Sample Depth (ft.):	A
Sample Descri+¯i, n:	**A-1-b (0) / SP**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A
#40	
#200	6¯

= ravel ("/	¯	::	%A	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	%3	,.:	21	Sample ID:	; A-BCOS2
Fines ("/	6¯	, 7	¯3	Sample Depth (ft.):	3
Sample Descri+¯i, n:	**Bedrock**				

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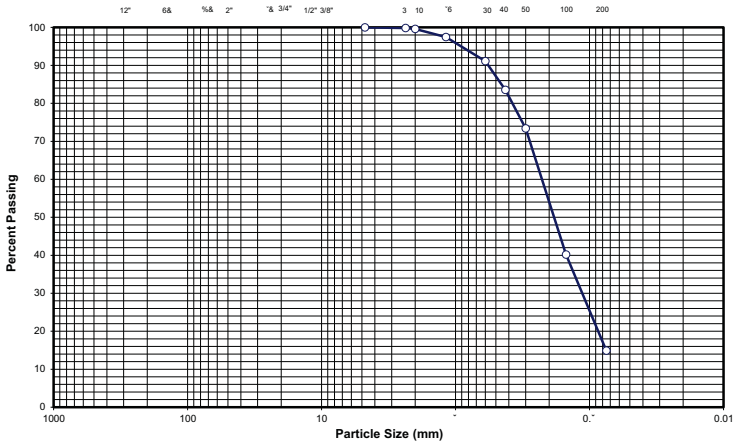
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3
#200	¯>

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	3>	,.:	1,	Sample ID:	; A-BCL-¯
Fines (˝/	¯ >	, 7	1,	Sample Depth (ft.):	>
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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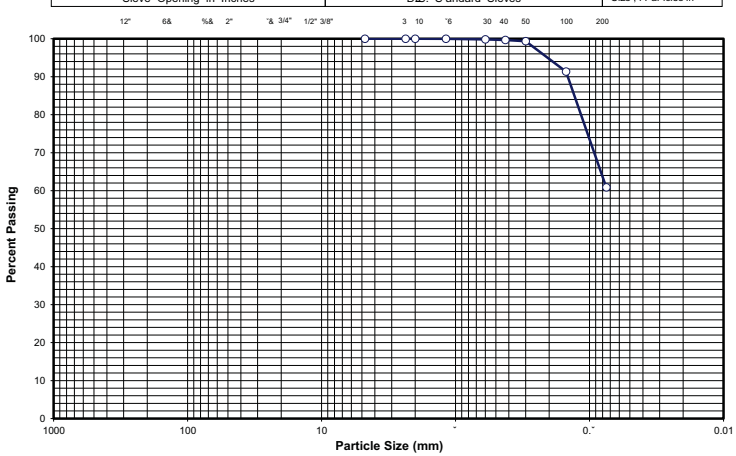
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˝ ec" ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	100
#200	6¯

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	%A	,.:	1,	Sample ID:	; A-BCL-¯
Fines (˝/	6¯	, 7	1,	Sample Depth (ft.):	25
Sample Descri+¯i, n:	**A-4 (0) / ML**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˝ ec" ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	36
⅜&&	82
)	66
#10	
#40	¯
#200	%

= ravel (˝/	%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	6%	,.:	1,	Sample ID:	; A-BCL-¯
Fines (˝/	%	,7	1,	Sample Depth (ft.):	20
Sample Descri+¯i, n:	**A-1-a (0) / SP**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˝ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A%
#200	¯

= ravel (˝/	0	::	6>	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	>A	,.:	30	Sample ID:	; A-BCL-¯
Fines (˝/	¯	, 7	%>	Sample Depth (ft.):	40
Sample Descri+¯i, n:	**Bedrock**				

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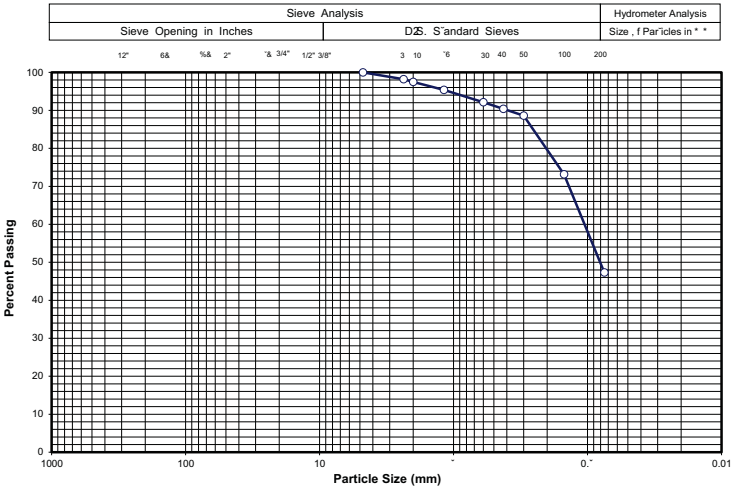
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˝ ec" ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A
#40	90
#200	

= ravel (`/	0	::	%>	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	>%	,.:	20	Sample ID:	; A-BCL-`
Fines (`/		, 7	` >	Sample Depth (ft.):	>
Sample Descri+`i, n:	**Bedrock**				

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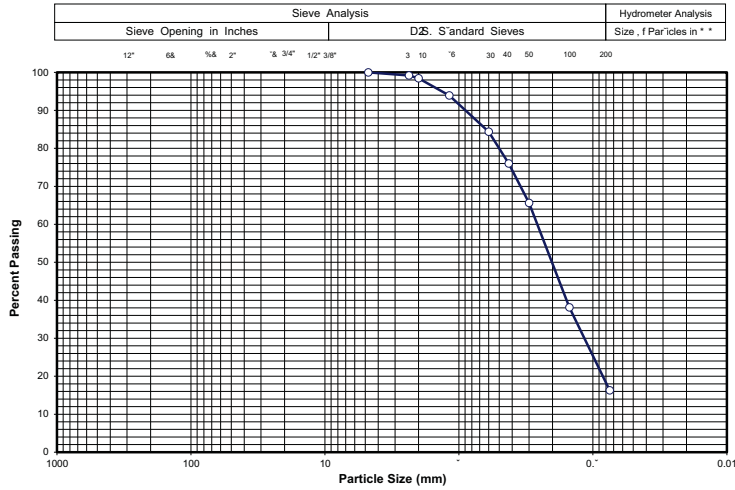
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A3
#40	6
#200	`6

= ravel (`/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	3	,.:	1,	Sample ID:	; A-BCL-2
Fines (`/	` 6	, 7	1,	Sample Depth (ft.):	
Sample Descri+`i, n:	**A-2-4 (0) / SM**				

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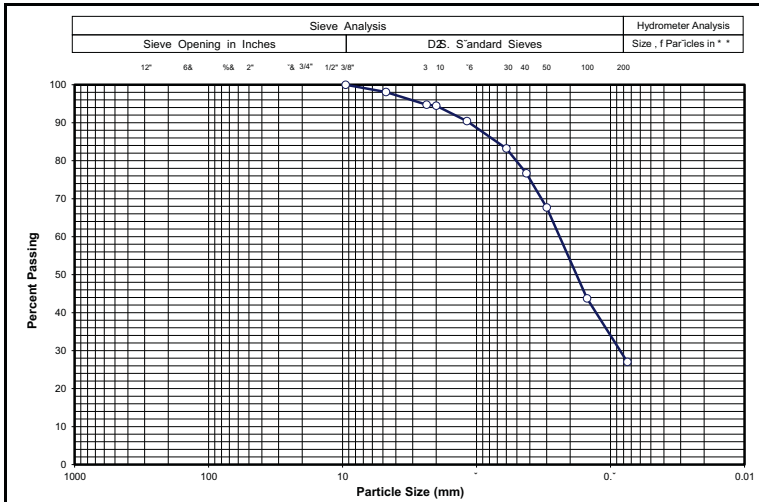
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	A3
#10	A
#40	
#200	27

= ravel (`/	2	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	`	,.:	1,	Sample ID:	; A-BCL-2
Fines (`/	2	, 7	1,	Sample Depth (ft.):	`
Sample Descri+`i, n:	**A-2-4 (0) / SM**				

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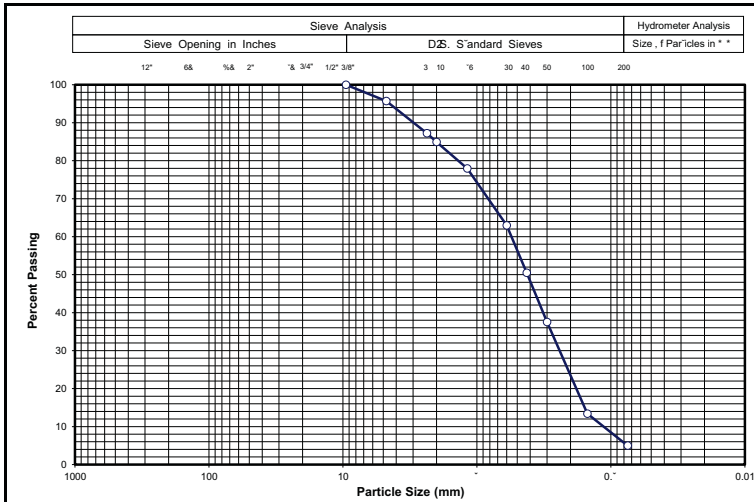
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	A6
#10	3>
#40	50
#200	>

= ravel (`/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	A`	,.:	1,	Sample ID:	; A-BCL-2
Fines (`/	>	,7	1,	Sample Depth (ft.):	29
Sample Descri+`i, n:	**A-1-b (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

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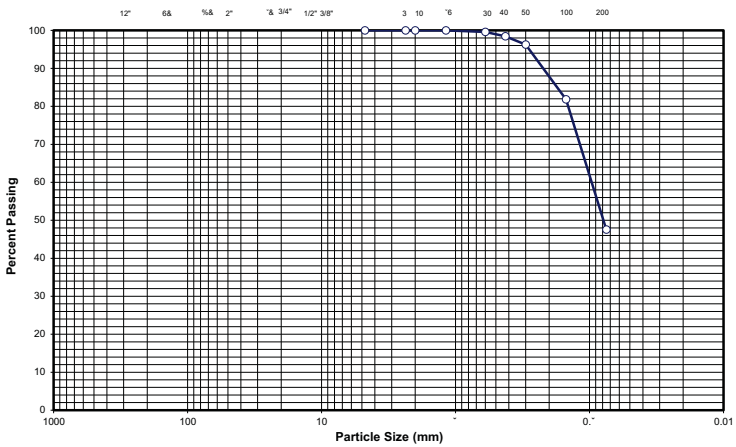
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A3
#200	3

= ravel ("/	0	::	%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	52	,.:	24	Sample ID:	; A-BCL-2
Fines ("/	3	, 7	¯A	Sample Depth (ft.):	%A
Sample Descri+¯i, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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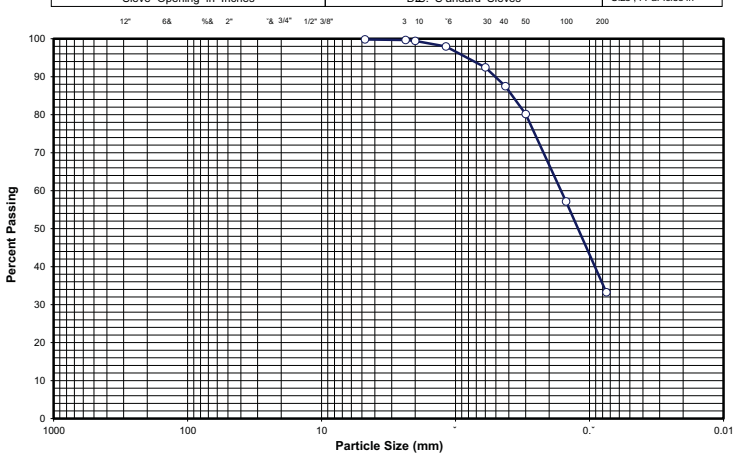
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	33
#200	%%

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6	,.:	1,	Sample ID:	; A-BS-¯
Fines ("/	%%	, 7	1,	Sample Depth (ft.):	-
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A3
#40	¯
#200	¯A

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3¯	,.:	1,	Sample ID:	; A-BS-¯
Fines ("/	¯A	, 7	1,	Sample Depth (ft.):	
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	A
#10	92
#40	A
#200	>

= ravel ("/	%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	40	,.:	1,	Sample ID:	; A-BS-¯
Fines ("/	>	, 7	1,	Sample Depth (ft.):	24
Sample Descri+¯i, n:	**A-4 (0) / ML**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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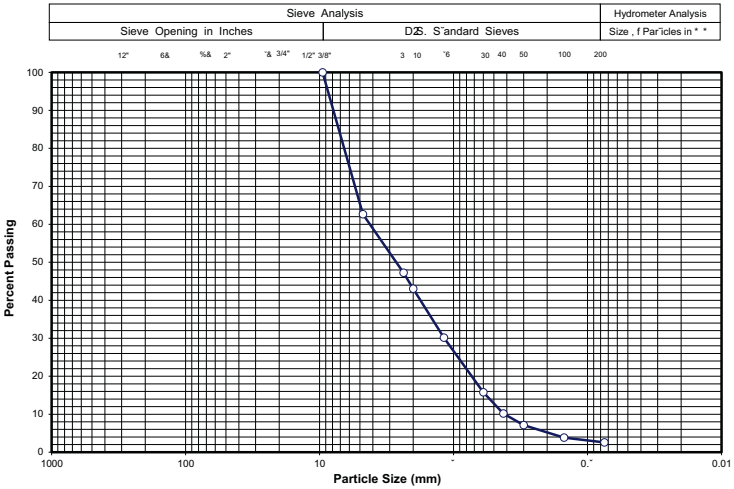

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	6%
#10	%
#40	10
#200	%

= ravel ("/	%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	60	¸.:	1¸	Sample ID:	; A-BS-¨
Fines ("/	%	¸7	1¸	Sample Depth (ft.):	%A
Sample Descri+¨i, n:	**A-1-a (0) / SP**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¨ ec"ed By:	¨ alvin		
Date:	05/02/14	Figure No.:	$

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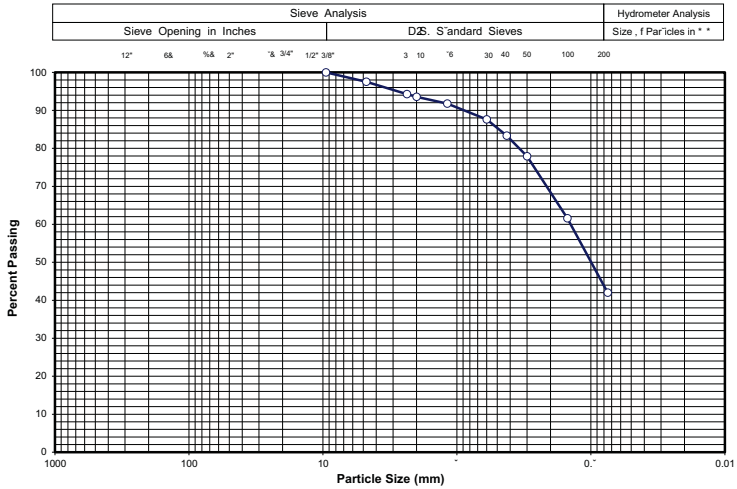

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	A3
#10	A
#40	3%
#200	42

= ravel ("/	2	::	%A	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>6	¸.:	25	Sample ID:	; A-BS-¨
Fines ("/	2	¸7	¨	Sample Depth (ft.):	A
Sample Descri+¨i, n:	**Bedrock**				

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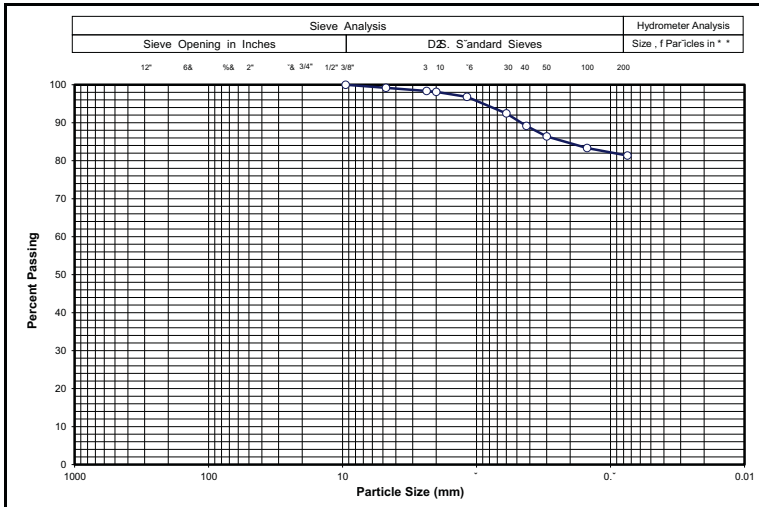
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¨ ec"ed By:	¨ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A3
#40	3A
#200	3¨

= ravel ("/	¨	::	>3	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	¨3	¸.:	26	Sample ID:	; A-BS-¨
Fines ("/	3¨	¸ 7	%2	Sample Depth (ft.):	A
Sample Descri+¨i, n:	**Bedrock**				

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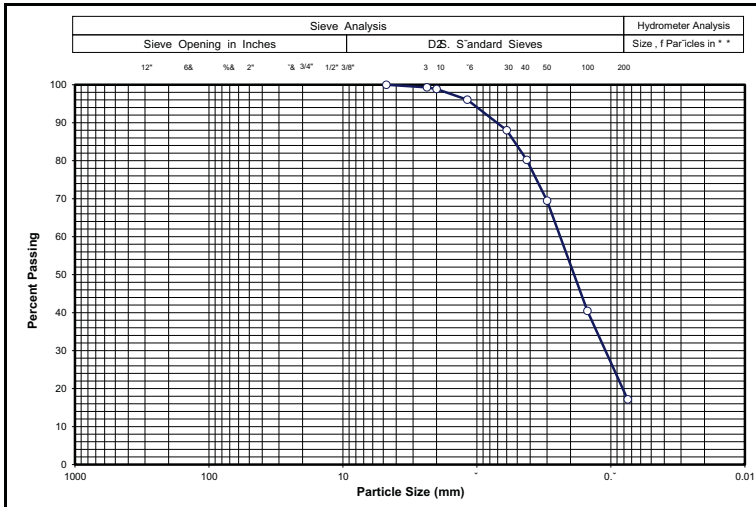
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¨ ec"ed By:	¨ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	80
#200	¨

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3%	¸.:	1¸	Sample ID:	; A-BS-2
Fines ("/	¨	¸7	1¸	Sample Depth (ft.):	%
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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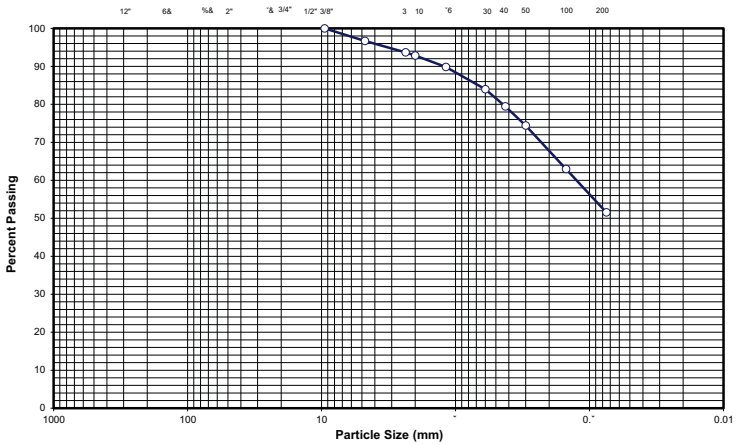
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¨ ec"ed By:	¨ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	A
#10	A%
#40	A
#200	52

= ravel (˝/	%	::	25	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	>	,.:	˜	Sample ID:	; A-BS-2
Fines (˝/	>2	, 7	˜˜	Sample Depth (ft.):	¯3
Sample Descri+¯i, n:	**A-6 (2) / CL**				

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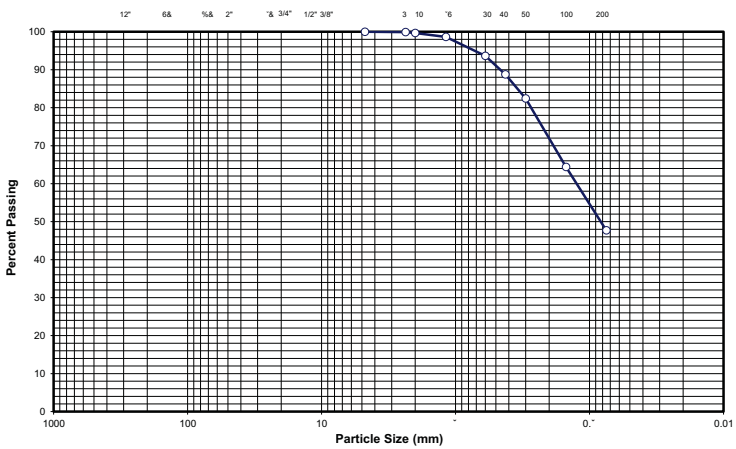
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3A
#200	3

= ravel (˝/	0	::	25	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	52	,.:	˜	Sample ID:	; A-BML-˜
Fines (˝/	3	, 7	˜˜	Sample Depth (ft.):	%
Sample Descri+¯i, n:	**A-6 (2) / SC**				

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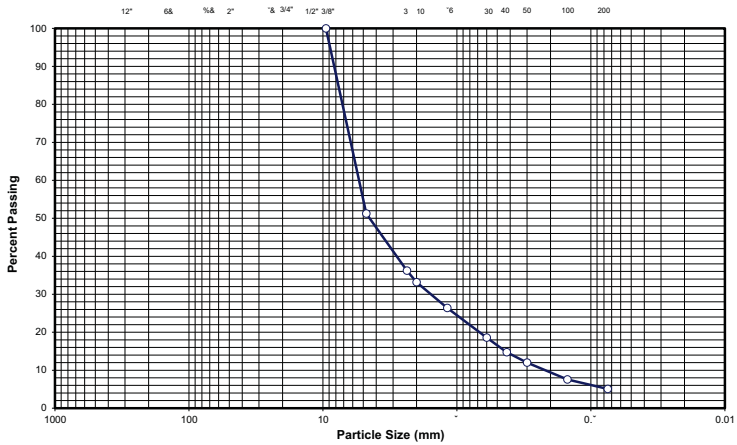
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	>˜
#10	%%
#40	˜>
#200	>

= ravel (˝/	A	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	,.:	1,	Sample ID:	; A-BS-2
Fines (˝/	>	,7	1,	Sample Depth (ft.):	%3
Sample Descri+¯i, n:	**A-1-a (0) / GW-GM**				

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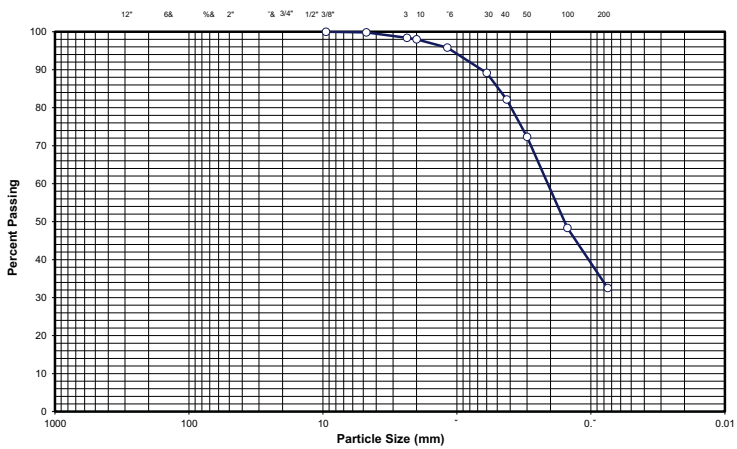
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	A3
#40	82
#200	%%

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	,.:	1,	Sample ID:	; A-BML-˜
Fines (˝/	%%	, 7	1,	Sample Depth (ft.):	˜
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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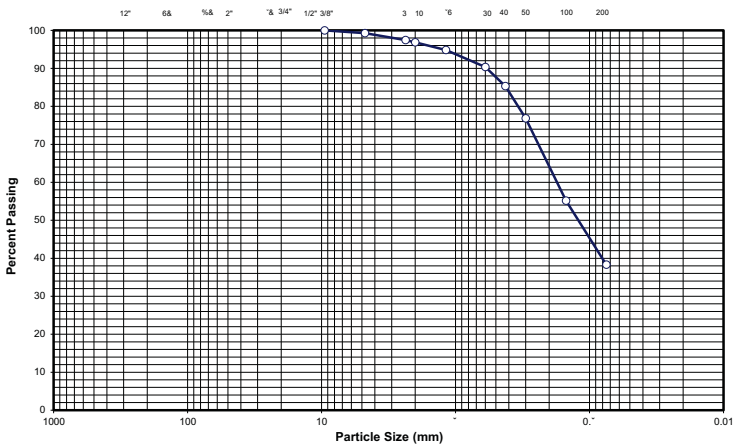
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A
#40	3>
#200	%3

= ravel ("/	¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6¯	,.:	1,	Sample ID:	; A-BML-¯
Fines ("/	%3	, 7	1,	Sample Depth (ft.):	24
Sample Descri+¯i, n:	**A-4 (0) / SM**				

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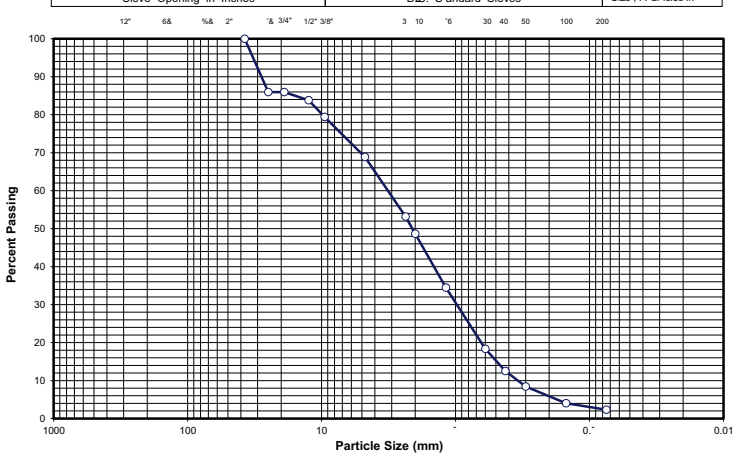
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	100
¯&	36
¾ &	36
' &	3
⅜&&	A
)	6A
#10	A
#40	¯%
#200	2

= ravel ("/	%¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6	,.:	1,	Sample ID:	; A-BML-¯
Fines ("/	2	,7	1,	Sample Depth (ft.):	>
Sample Descri+¯i, n:	**A-1-b (0) / SP**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	AA
)	A¯
#10	%
#40	42
#200	23

= ravel ("/	A	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	63	,.:	1,	Sample ID:	; A-BML-¯
Fines ("/	2%	, 7	1,	Sample Depth (ft.):	
Sample Descri+¯i, n:	**A-1-b (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	AA
⅜&&	AA
)	A6
#10	A¯
#40	6%
#200	¯

= ravel ("/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	A	,.:	1,	Sample ID:	; A-BML-2
Fines ("/	¯	, 7	1,	Sample Depth (ft.):	A
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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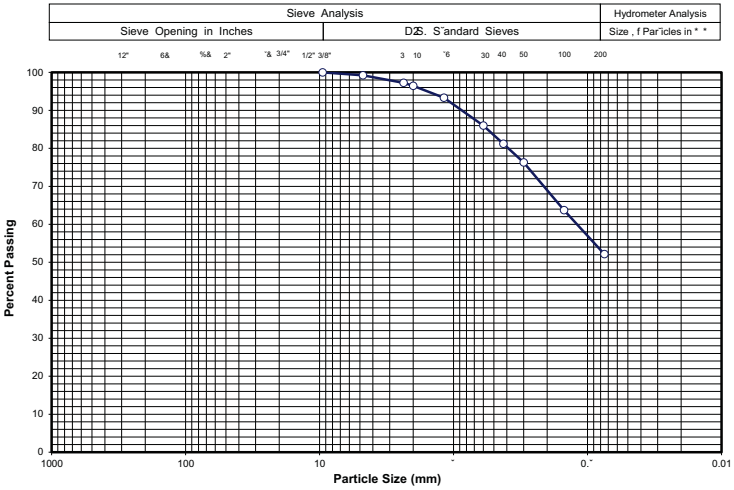
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A6
#40	3¯
#200	52

= ravel (¯/	¯	::	26	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /		,.:	¯	Sample ID:	; A-BML-2
Fines (¯/	>2	, 7	A	Sample Depth (ft.):	¯A
Sample Descri+¯i, n:	**A-4 (2) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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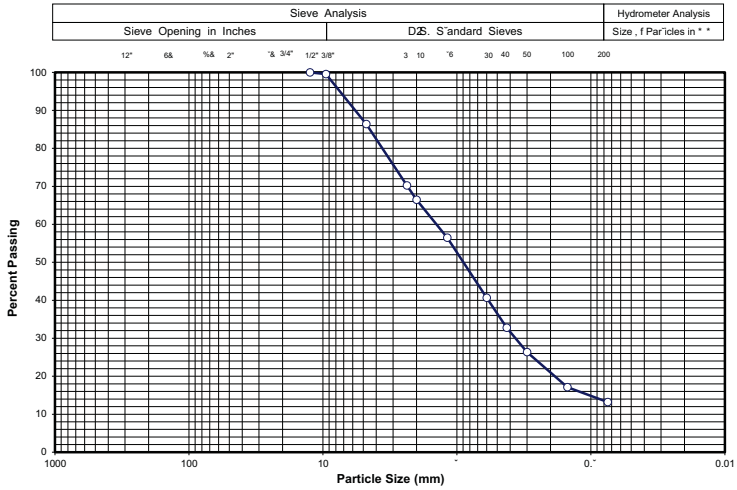

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	100
)	36
#10	66
#40	%%
#200	¯%

= ravel (¯/	¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	%	,.:	1,	Sample ID:	; A-BML-2
Fines (¯/	¯%	, 7	1,	Sample Depth (ft.):	29
Sample Descri+¯i, n:	**A-1-b (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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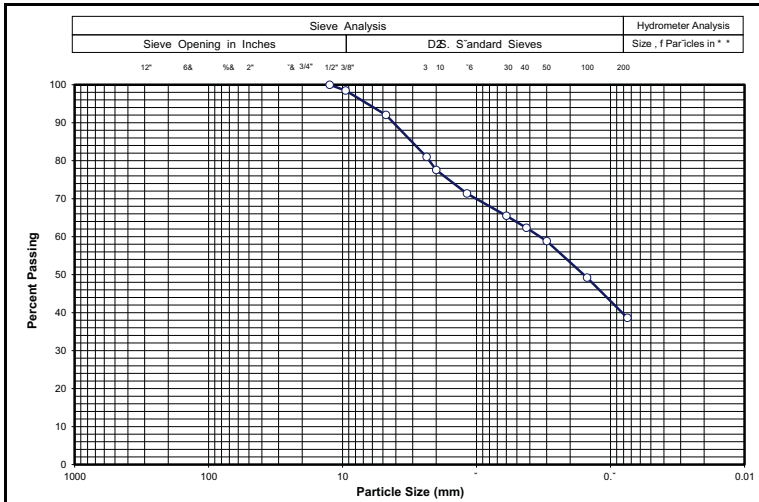

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	A3
)	92
#10	3
#40	62
#200	%A

= ravel (¯/	3	::	%%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>%	,.:	¯	Sample ID:	; A-BML-2
Fines (¯/	%A	, 7	¯A	Sample Depth (ft.):	%A
Sample Descri+¯i, n:	**A-6 (3) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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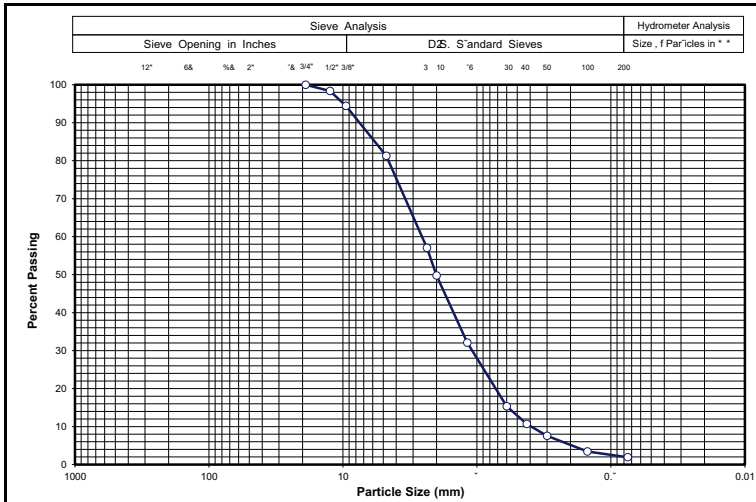

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A3
⅜&&	A
)	3¯
#10	50
#40	¯¯
#200	2

= ravel (¯/	¯A	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	A	,.:	1,	Sample ID:	; A-BML-2
Fines (¯/	2	,7	1,	Sample Depth (ft.):	A
Sample Descri+¯i, n:	**A-1-a (0) / SW**				

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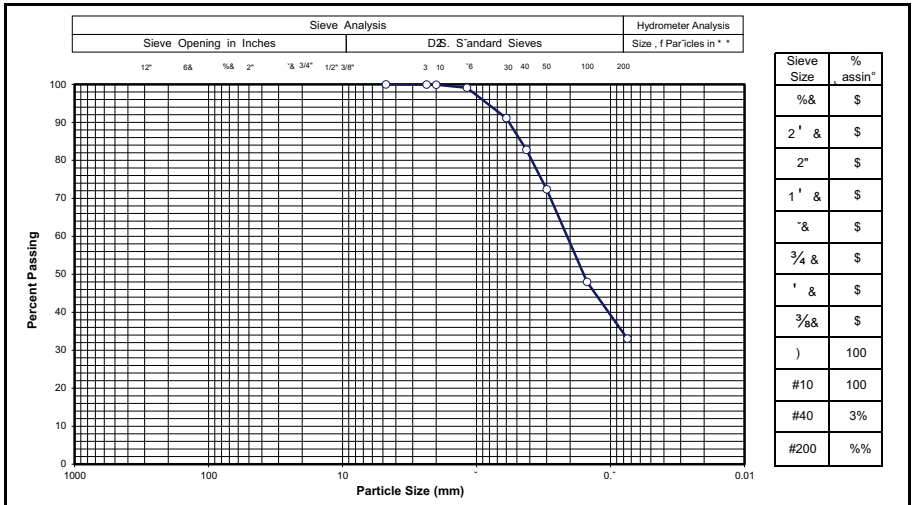
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3%
#200	%%

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6	,.:	1¸	Sample ID:	; A-BCB-¯
Fines ("/	%%	, 7	1¸	Sample Depth (ft.):	
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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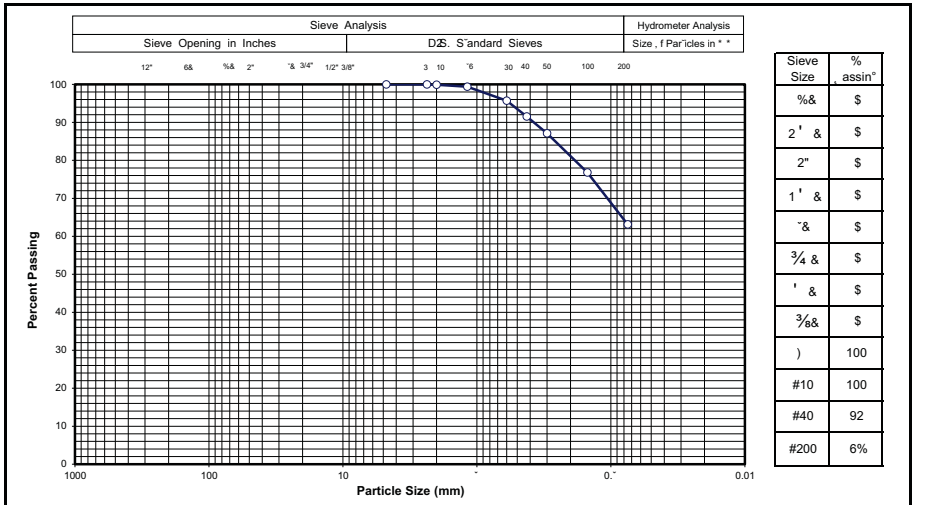
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	92
#200	6%

= ravel ("/	0	::	27	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	%	,.:	¯	Sample ID:	; A-BCB-¯
Fines ("/	6%	, 7	¯0	Sample Depth (ft.):	¯A
Sample Descri+¯i, n:	**A-4 (4) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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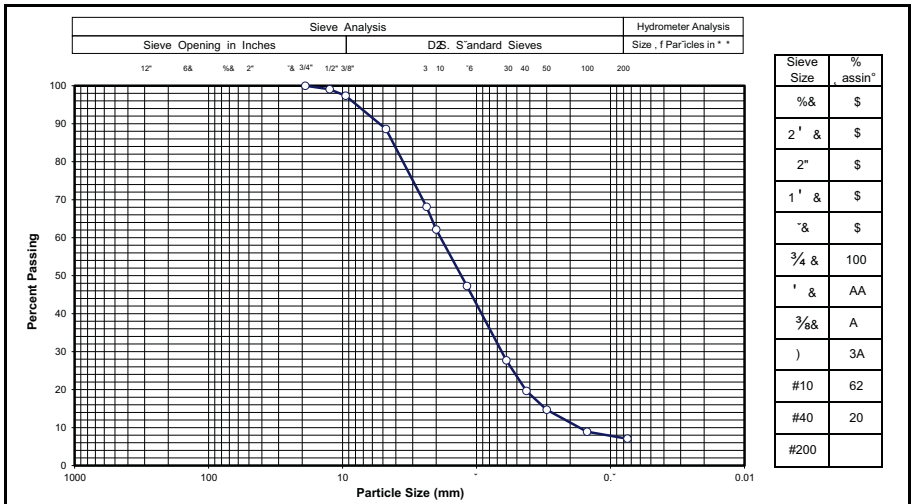

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	AA
⅜&&	A
)	3A
#10	62
#40	20
#200	

= ravel ("/	¯¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	82	,.:	1¸	Sample ID:	; A-BCB-¯
Fines ("/		,7	1¸	Sample Depth (ft.):	%A
Sample Descri+¯i, n:	**A-1-a (0) / SW-SM**				

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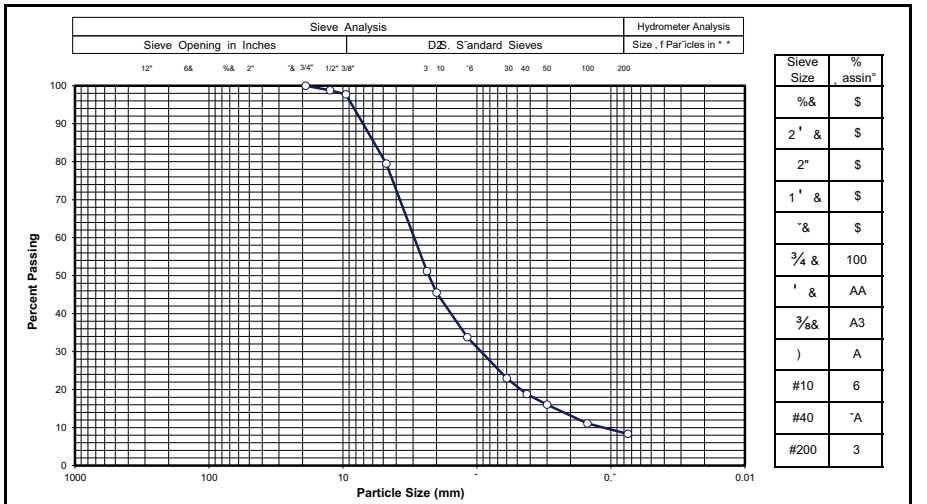
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	AA
⅜&&	A3
)	A
#10	6
#40	¯A
#200	3

= ravel ("/	21	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	¯	,.:	1¸	Sample ID:	; A-BCB-¯
Fines ("/	3	,7	1¸	Sample Depth (ft.):	6
Sample Descri+¯i, n:	**A-1-a (0) / SW-SM**				

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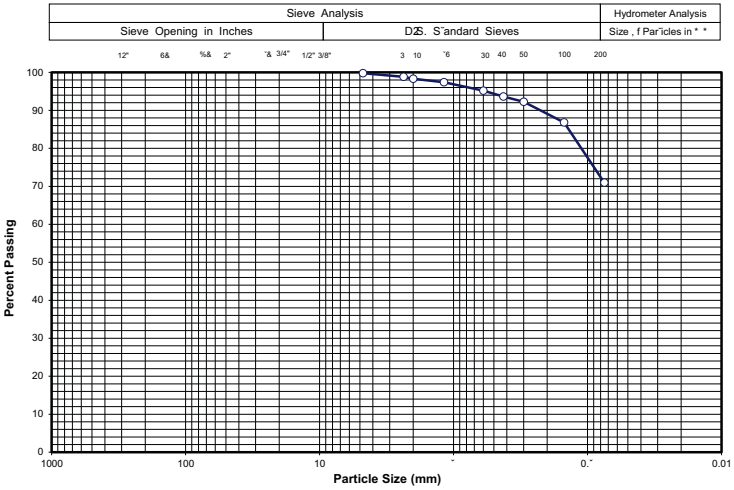
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A3
#40	A
#200	`

= ravel (`/	0	::	%	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	29	,.:	22	Sample ID:	; A-BCB-`
Fines (`/	`	, 7	` >	Sample Depth (ft.):	3A
Sample Descri+`i, n:	**A-6 (9) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

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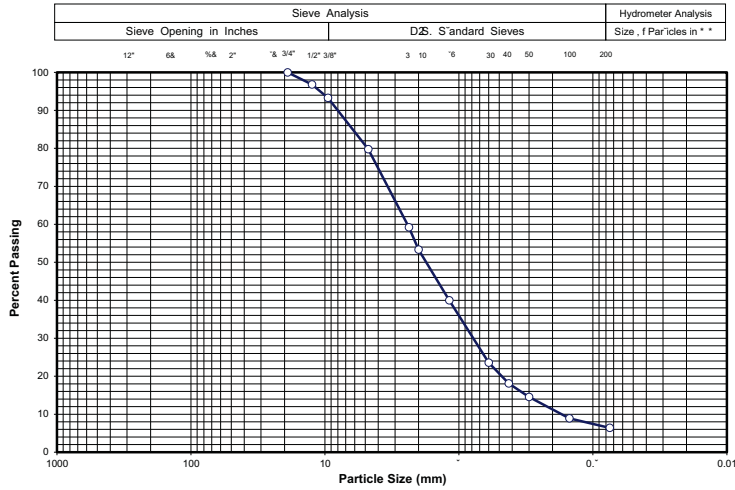

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	100
' &	A
⅜&&	A%
)	80
#10	>%
#40	`3
#200	6

= ravel (`/	20	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /		,.:	1,	Sample ID:	; A-BCB-`
Fines (`/	6	,7	1,	Sample Depth (ft.):	A
Sample Descri+`i, n:	**A-1-b (0) / SW-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

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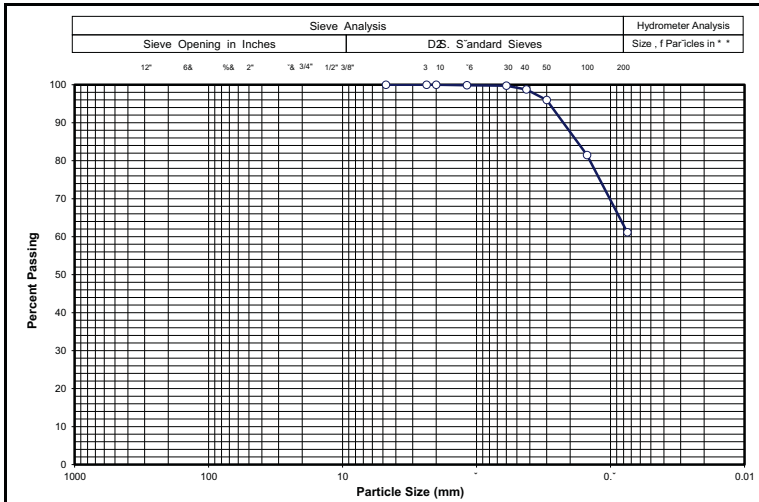

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	AA
#200	6`

= ravel (`/	0	::	>6	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	%A	,.:	23	Sample ID:	; A-BCB-`
Fines (`/	6`	, 7	%%	Sample Depth (ft.):	AA
Sample Descri+`i, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

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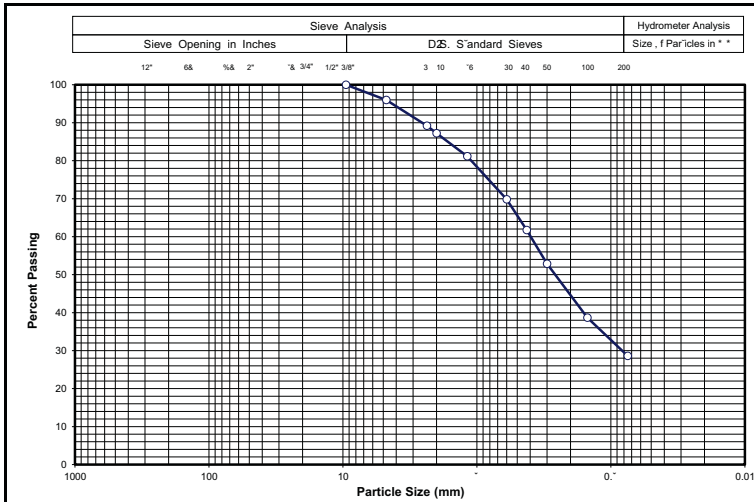

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	A6
#10	3
#40	62
#200	29

= ravel (`/		::		Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	6	,.:	26	Sample ID:	; A-BCB-`
Fines (`/	2A	, 7	2`	Sample Depth (ft.):	``A
Sample Descri+`i, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

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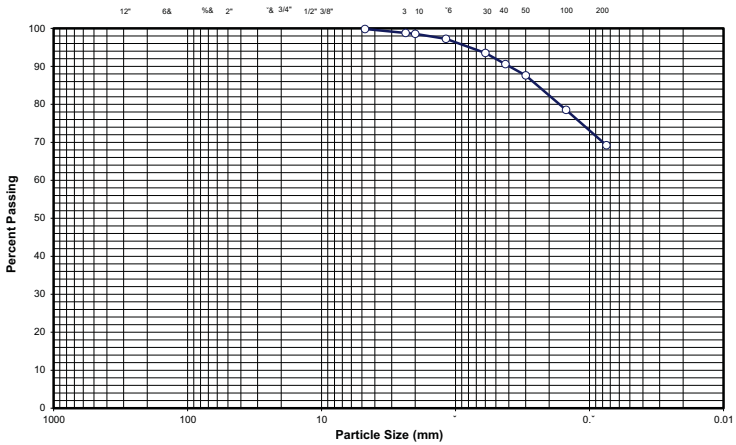
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	A¯
#200	6A

= ravel ("/	0	::	32	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	%¯	,.:	¯	Sample ID:	; A-BCB-2
Fines ("/	6A	, 7	¯3	Sample Depth (ft.):	
Sample Descri+¯i, n:	**A-6 (10) / CL**				

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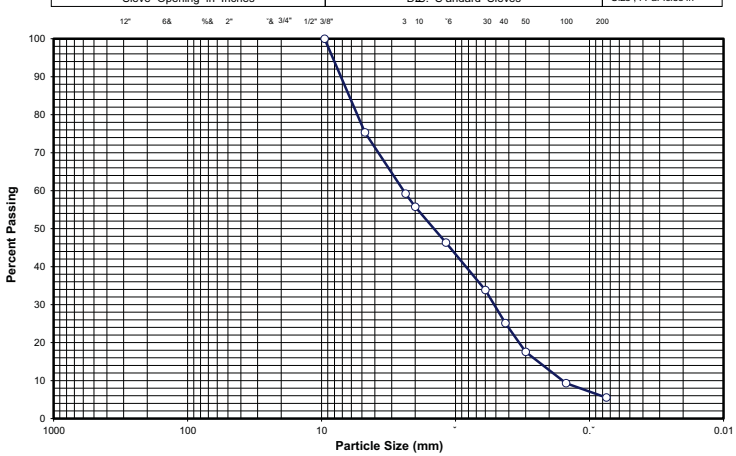
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	>
#10	>6
#40	25
#200	6

= ravel ("/	25	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6A	,.:	1,	Sample ID:	; A-BCB-2
Fines ("/	6	,7	1,	Sample Depth (ft.):	%A
Sample Descri+¯i, n:	**A-1-b (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	82
#10	>6
#40	24
#200	A

= ravel ("/	¯3	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	%	,.:	1,	Sample ID:	; A-BCB-2
Fines ("/	A	,7	1,	Sample Depth (ft.):	¯A
Sample Descri+¯i, n:	**A-1-b (0) / SW-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	A6
#10	3
#40	70
#200	42

= ravel ("/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>	,.:	1,	Sample ID:	; A-BCB-2
Fines ("/	2	, 7	1,	Sample Depth (ft.):	>
Sample Descri+¯i, n:	**A-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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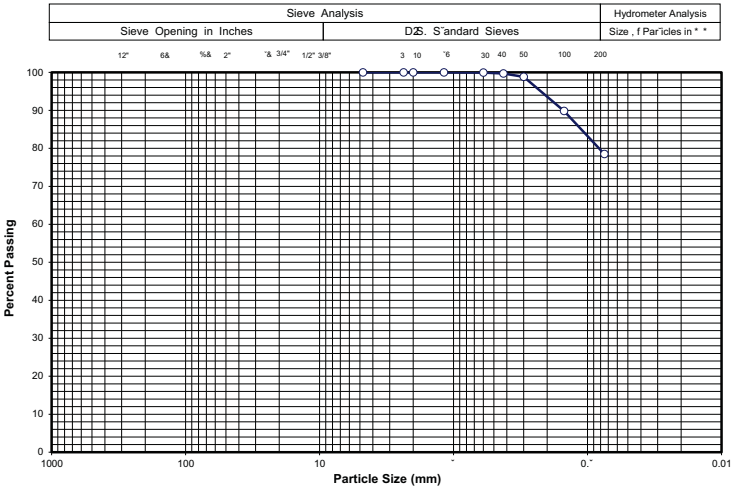

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	100
#200	A

= ravel ("/	0	::	40	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	21	,.:	¯A	Sample ID:	; A-BCB-2
Fines ("/	A	, 7	2¯	Sample Depth (ft.):	6A
Sample Descri+¯i, n:	**A-6 (16) / CL**				

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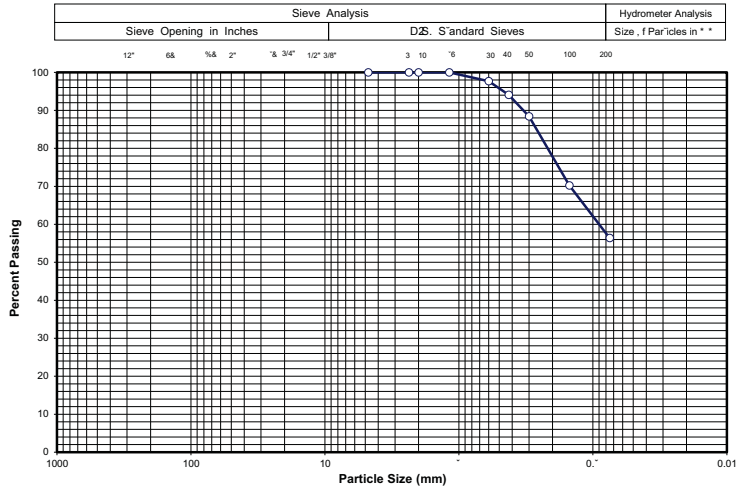
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A
#200	>6

= ravel ("/	0	::	6%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /		,.:	25	Sample ID:	; A-BCB-2
Fines ("/	>6	, 7	%@	Sample Depth (ft.):	3
Sample Descri+¯i, n:	**Bedrock**				

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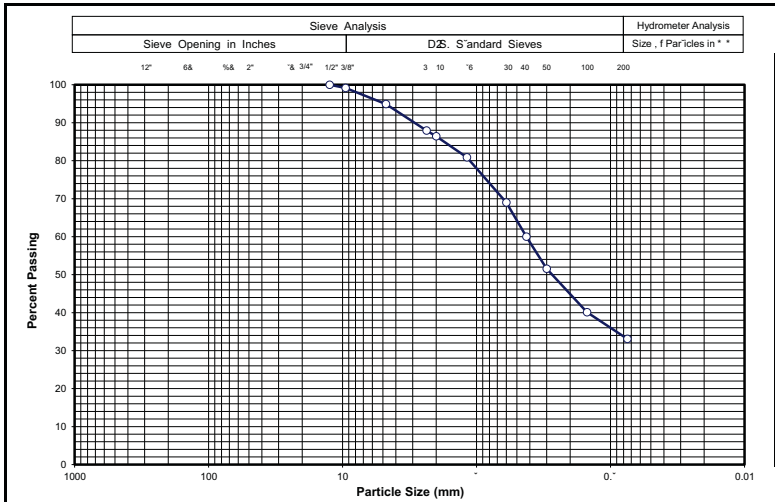
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	AA
)	A>
#10	36
#40	60
#200	%%

= ravel ("/	>	::	28	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	62	,.:	¯	Sample ID:	; A-BD-¯
Fines ("/	%%	, 7	¯	Sample Depth (ft.):	>
Sample Descri+¯i, n:	**A-2-6 (0) / SC**				

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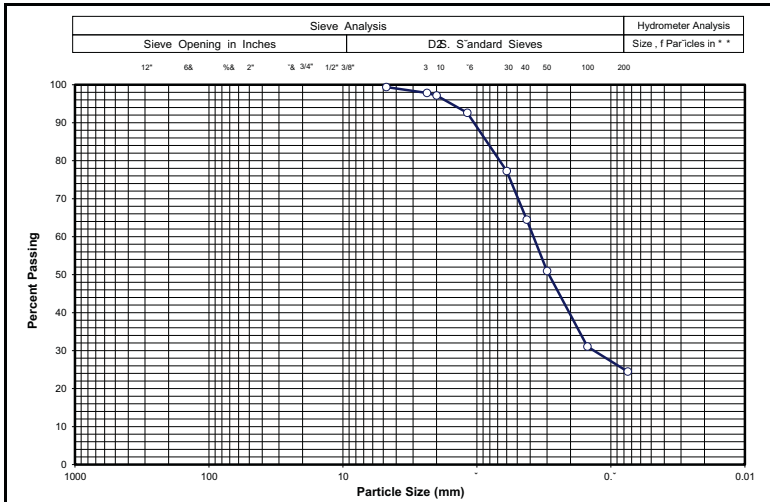
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	AA
#10	A
#40	6
#200	24

= ravel ("/	¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>	,.:	1,	Sample ID:	; A-BD-¯
Fines ("/	2	, 7	1,	Sample Depth (ft.):	¯>
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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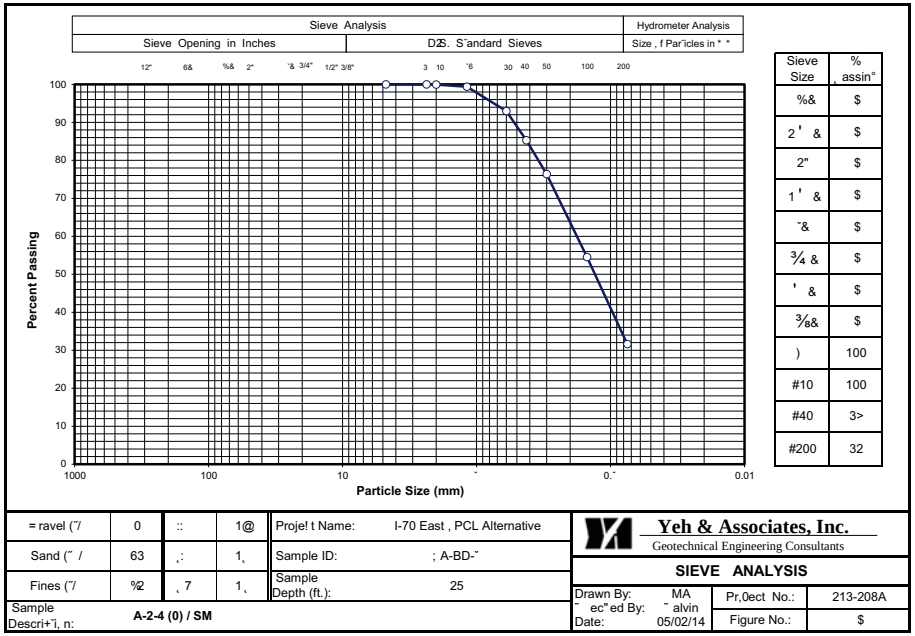
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
˜&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3>
#200	32

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	63	,.:	1,	Sample ID:	; A-BD-˜
Fines ("/	%2	, 7	1,	Sample Depth (ft.):	25
Sample Descri+`i, n:	**A-2-4 (0) / SM**				

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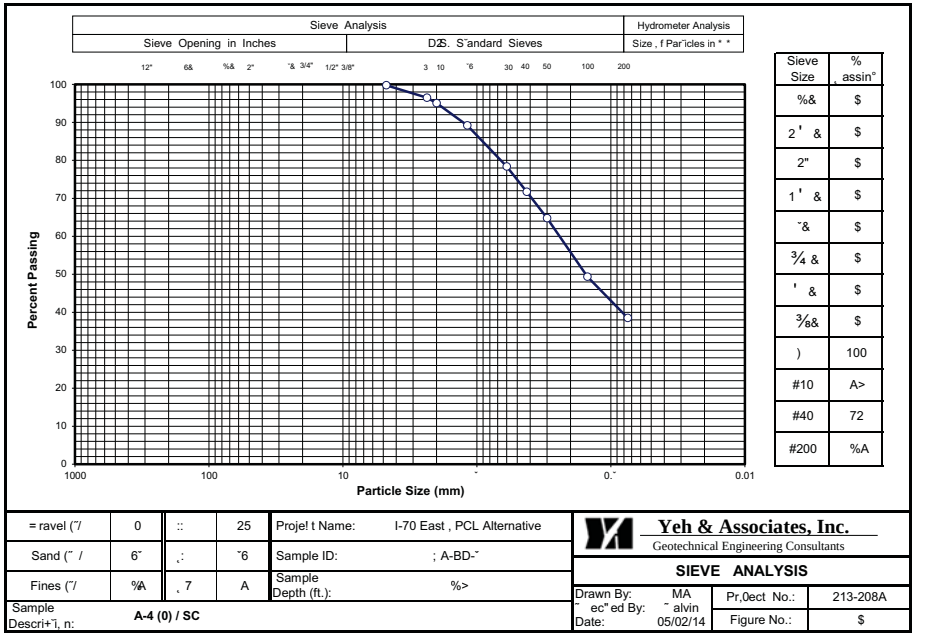
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
˜&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A>
#40	72
#200	%A

= ravel ("/	0	::	25	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6˜	,.:	˜6	Sample ID:	; A-BD-˜
Fines ("/	%A	, 7	A	Sample Depth (ft.):	%>
Sample Descri+`i, n:	**A-4 (0) / SC**				

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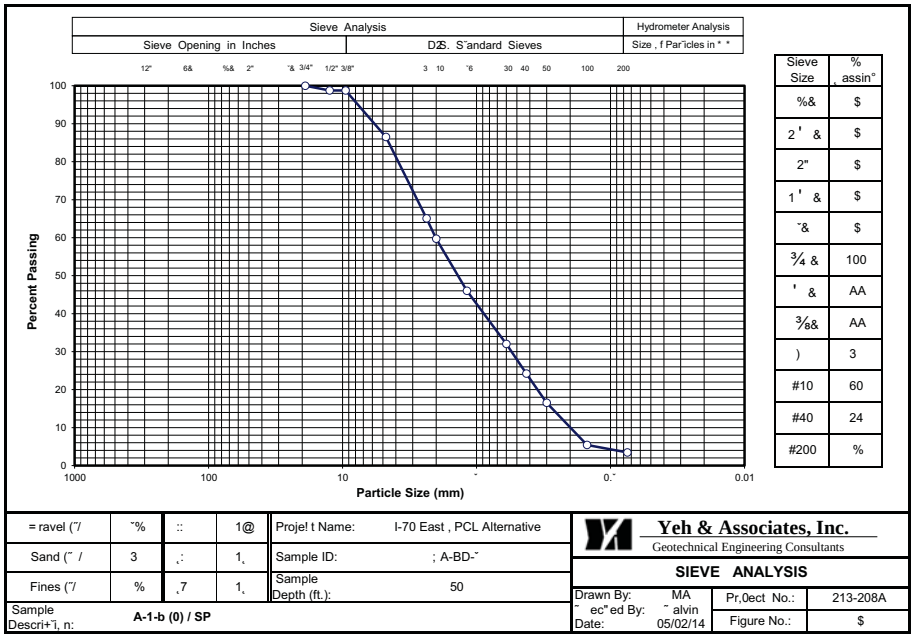
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
˜&	$
¾ &	100
' &	AA
⅜&&	AA
)	3
#10	60
#40	24
#200	%

= ravel ("/	˜%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3	,.:	1,	Sample ID:	; A-BD-˜
Fines ("/	%	,7	1,	Sample Depth (ft.):	50
Sample Descri+`i, n:	**A-1-b (0) / SP**				

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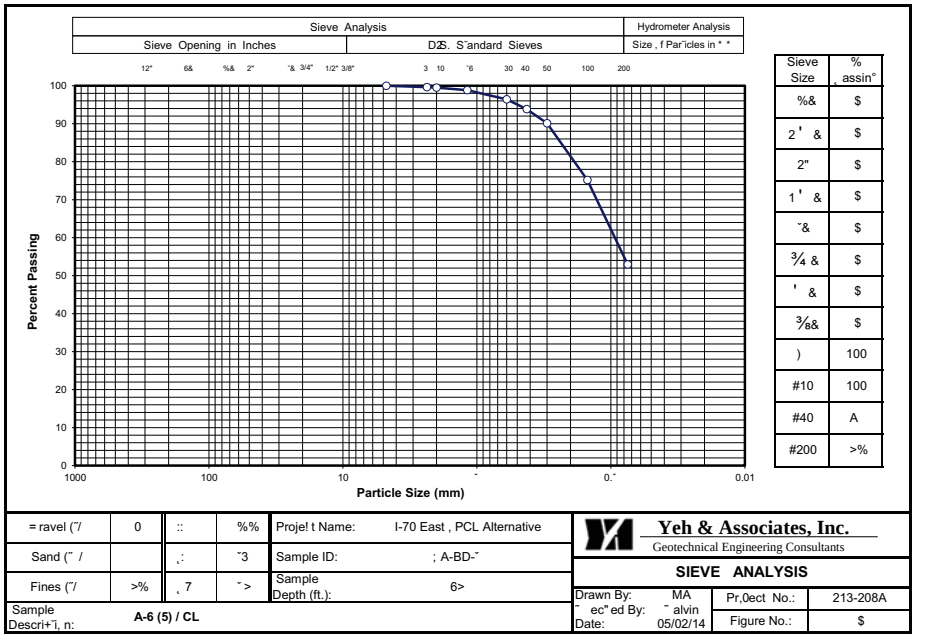
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
˜&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A
#200	>%

= ravel ("/	0	::	%%	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /		,.:	˜3	Sample ID:	; A-BD-˜
Fines ("/	>%	, 7	˜ >	Sample Depth (ft.):	6>
Sample Descri+`i, n:	**A-6 (5) / CL**				

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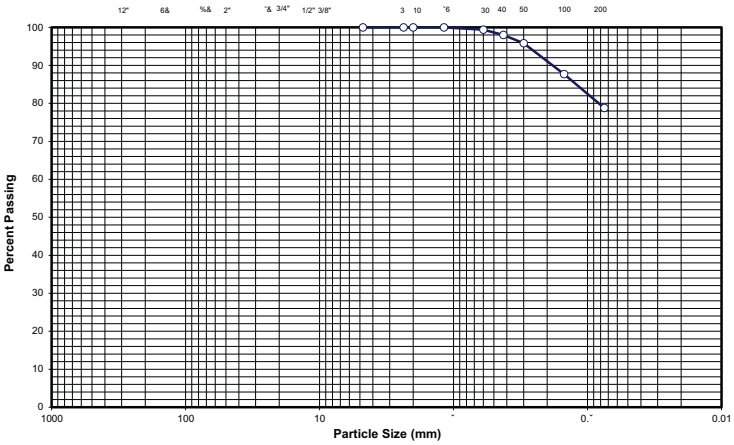
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A3
#200	A

= ravel (˜/	0	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	21	,.:	22	Sample ID:	; A-BD-˜
Fines (˜/	A	, 7	%>	Sample Depth (ft.):	3>
Sample Descri+`i, n:	**A-7-6 (29) / CH**				

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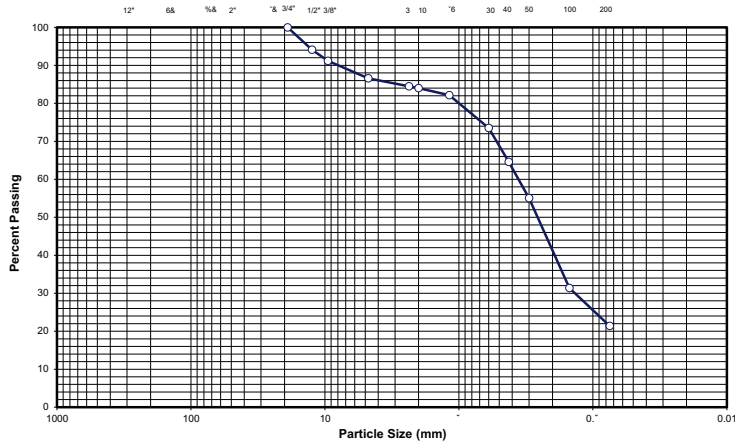
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A
⅜&&	A¯
)	3
#10	3
#40	6>
#200	21

= ravel (˜/	¯%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	66	,.:	1,	Sample ID:	; A-BD-˜
Fines (˜/	2˜	, 7	1,	Sample Depth (ft.):	105
Sample Descri+`i, n:	**A-2-4 (0) / SM**				

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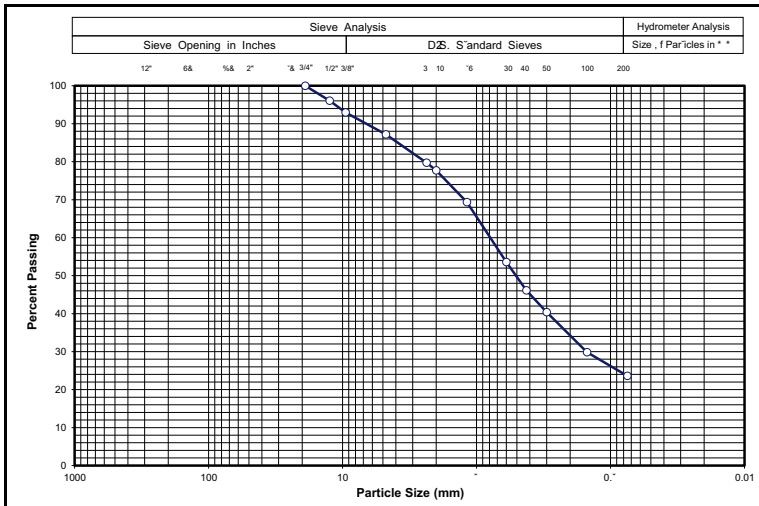
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A6
⅜&&	A%
)	3
#10	3
#40	6
#200	24

= ravel (˜/	¯%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6%	,.:	1,	Sample ID:	; A-BD-˜
Fines (˜/	2	, 7	1,	Sample Depth (ft.):	120
Sample Descri+`i, n:	**A-1-b (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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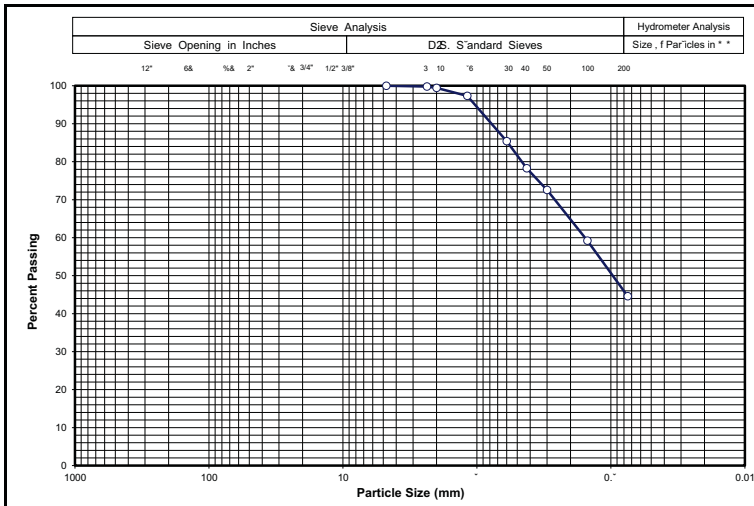

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	3
#200	>

= ravel (˜/	0	::	%6	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	>>	,.:	¯>	Sample ID:	; A-BD-2
Fines (˜/	>	, 7	2˜	Sample Depth (ft.):	>
Sample Descri+`i, n:	**A-6 (5) / SC**				

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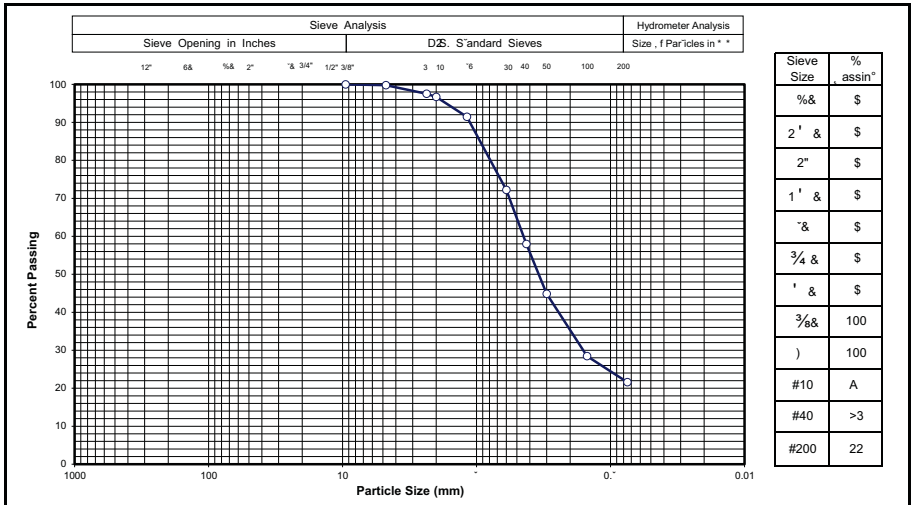
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
3/4 &	$
' &	$
3/8&	100
)	100
#10	A
#40	>3
#200	22

= ravel (`/	0	::	1@
Sand (` /	3	,.:	1,
Fines (`/	22	, 7	1,
Sample Descri+`i, n:	**A-2-4 (0) / SM**		

Proje! t Name: I-70 East , PCL Alternative
Sample ID: ; A-BD-2
Sample Depth (ft.): -

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	~ alvin		
Date:	05/02/14	Figure No.:	$

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Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
3/4 &	$
' &	$
3/8&	100
)	100
#10	AA
#40	3`
#200	A

= ravel (`/	0	::	27
Sand (` /	>`	,.:	`>
Fines (`/	A	, 7	`2
Sample Descri+`i, n:	**A-6 (3) / SC**		

Proje! t Name: I-70 East , PCL Alternative
Sample ID: ; A-BD-2
Sample Depth (ft.): 29

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	~ alvin		
Date:	05/02/14	Figure No.:	$

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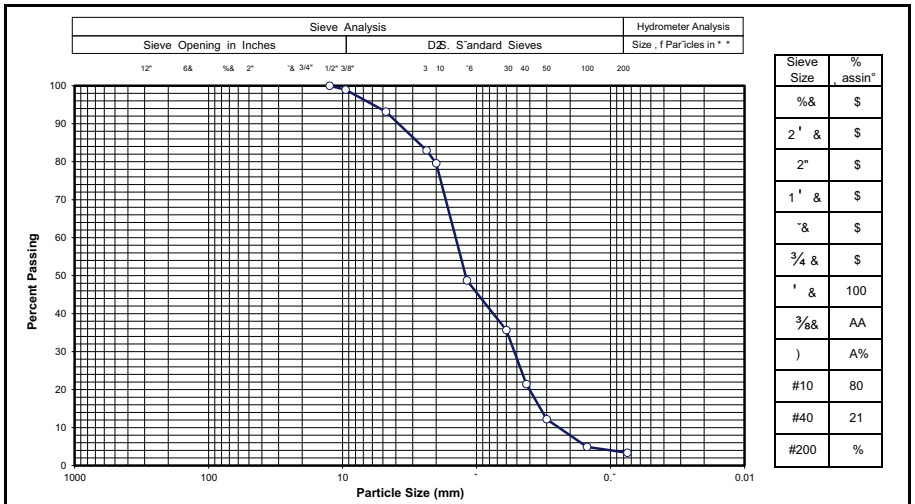

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
3/4 &	$
' &	100
3/8&	AA
)	A%
#10	80
#40	21
#200	%

= ravel (`/		::	1@
Sand (` /	90	,.:	1,
Fines (`/	%	,7	1,
Sample Descri+`i, n:	**A-1-b (0) / SP**		

Proje! t Name: I-70 East , PCL Alternative
Sample ID: ; A-BD-2
Sample Depth (ft.):

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	~ alvin		
Date:	05/02/14	Figure No.:	$

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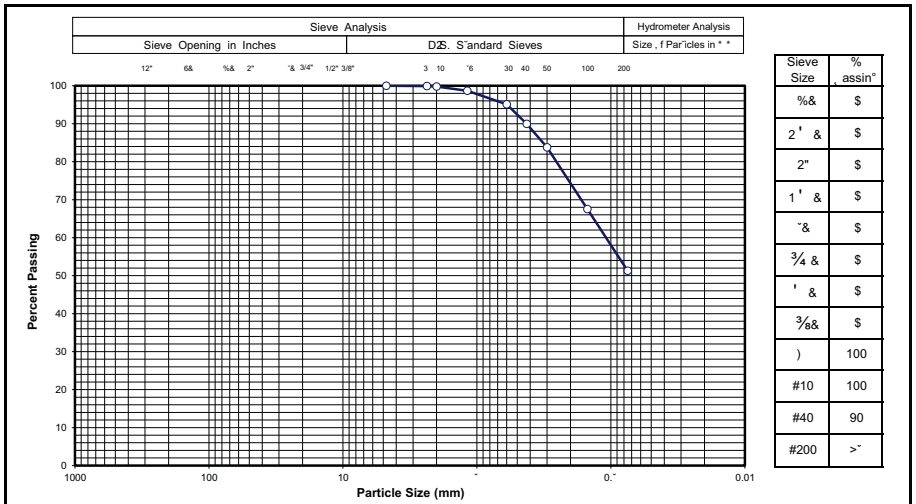

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
3/4 &	$
' &	$
3/8&	$
)	100
#10	100
#40	90
#200	>`

= ravel (`/	0	::	%
Sand (` /	A	,.:	`
Fines (`/	>`	, 7	`
Sample Descri+`i, n:	**A-6 (5) / CL**		

Proje! t Name: I-70 East , PCL Alternative
Sample ID: ; A-BD-2
Sample Depth (ft.): >A

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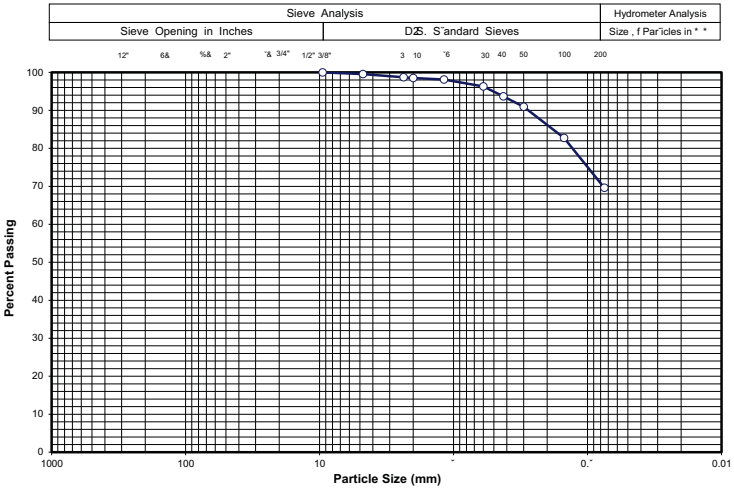
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	~ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	AA
#40	A
#200	70

= ravel ("/	0	::	>%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	30	,.:	21	Sample ID:	; A-BD-2
Fines ("/	0	, 7	%2	Sample Depth (ft.):	A
Sample Descri+¯i, n:	**A-7-6 (21) / CH**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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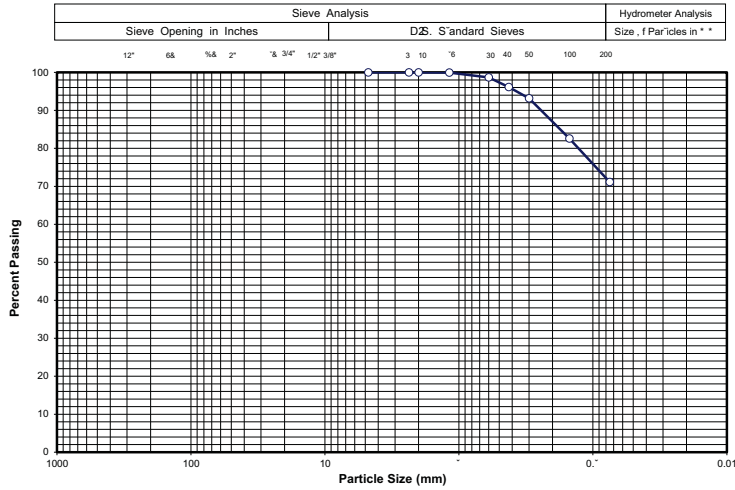

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A6
#200	¯

= ravel ("/	0	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	29	,.:	22	Sample ID:	; A-BD-2
Fines ("/	¯	, 7	%>	Sample Depth (ft.):	A
Sample Descri+¯i, n:	**A-7-6 (24) / CH**				

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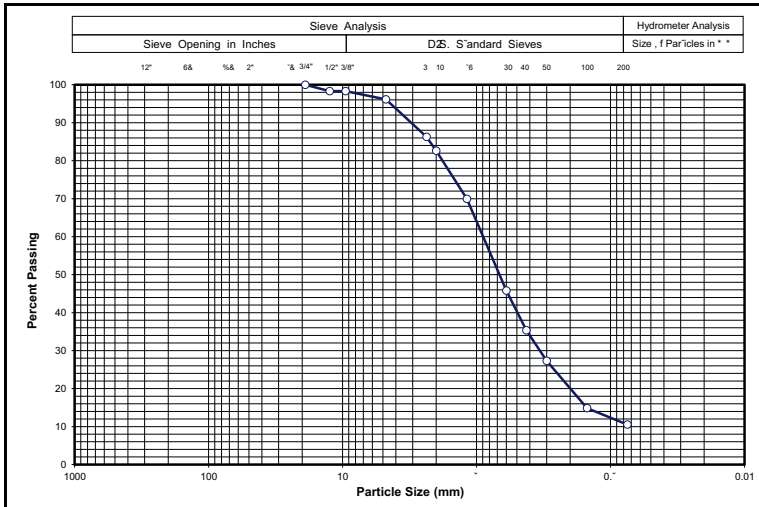
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A3
⅜&&	A3
)	A6
#10	3%
#40	%>
#200	¨

= ravel ("/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3>	,.:	1,	Sample ID:	; A-BD-2
Fines ("/	¨ ¨	, 7	1,	Sample Depth (ft.):	104
Sample Descri+¯i, n:	**A-1-b (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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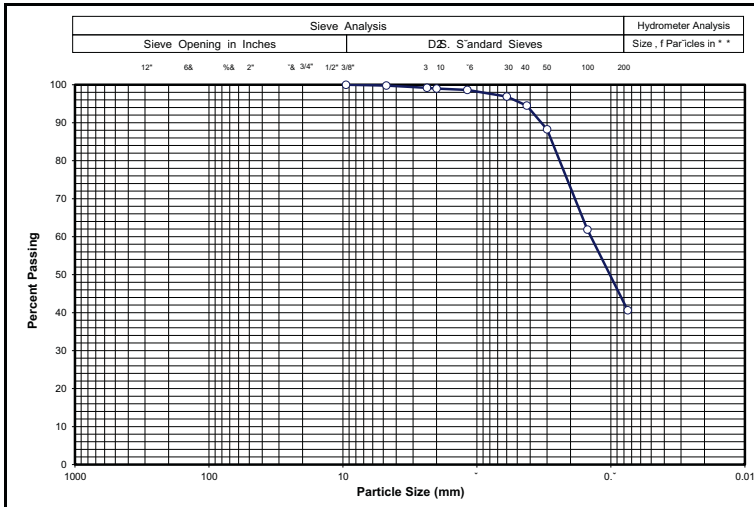

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	AA
#40	A
#200	¯

= ravel ("/	0	::	50	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>A	,.:	25	Sample ID:	; A-BD-2
Fines ("/	¯	, 7	2>	Sample Depth (ft.):	¨
Sample Descri+¯i, n:	**Bedrock**				

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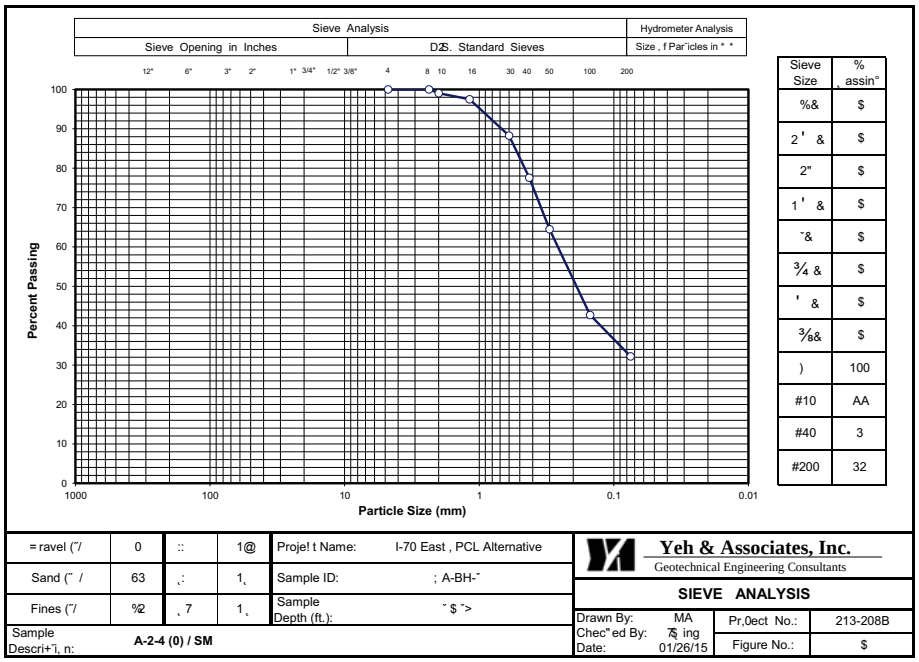
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec"ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	AA
#40	3
#200	32

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	63	,:	1,	Sample ID:	; A-BH-¯
Fines (˝/	%2	, 7	1,	Sample Depth (ft.):	¯ $ ¯>
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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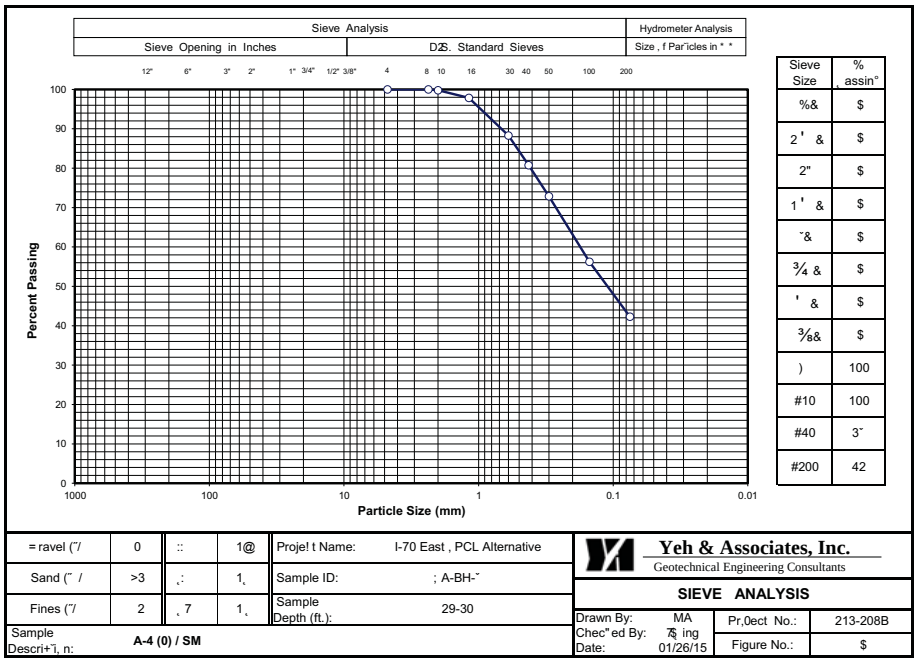
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/26/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3¯
#200	42

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	>3	,:	1,	Sample ID:	; A-BH-¯
Fines (˝/	2	, 7	1,	Sample Depth (ft.):	29-30
Sample Descri+¯i, n:	**A-4 (0) / SM**				

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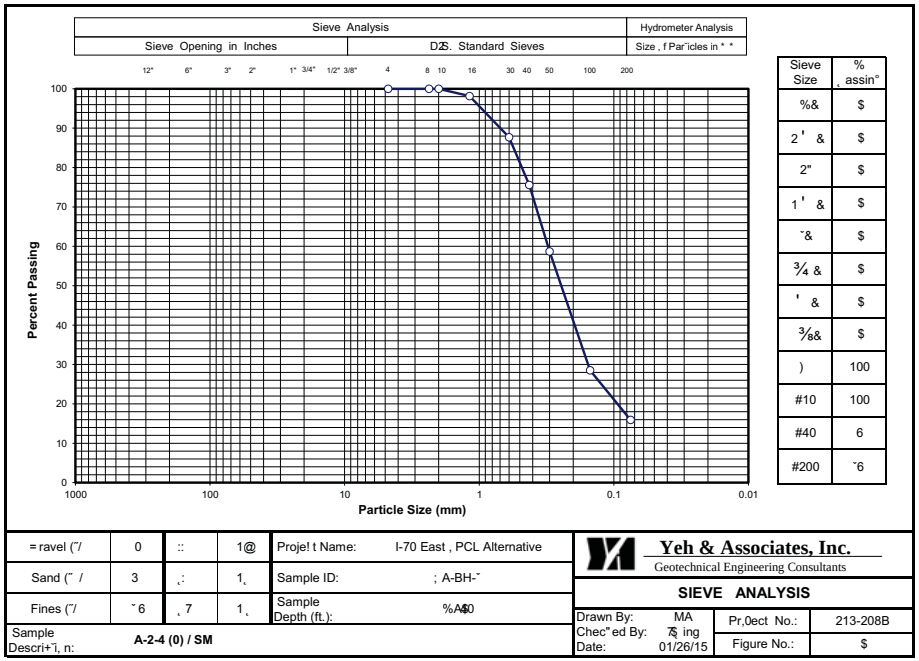
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/26/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	6
#200	¯6

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	3	,:	1,	Sample ID:	; A-BH-¯
Fines (˝/	¯6	, 7	1,	Sample Depth (ft.):	%A$0
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/26/15	Figure No.:	$

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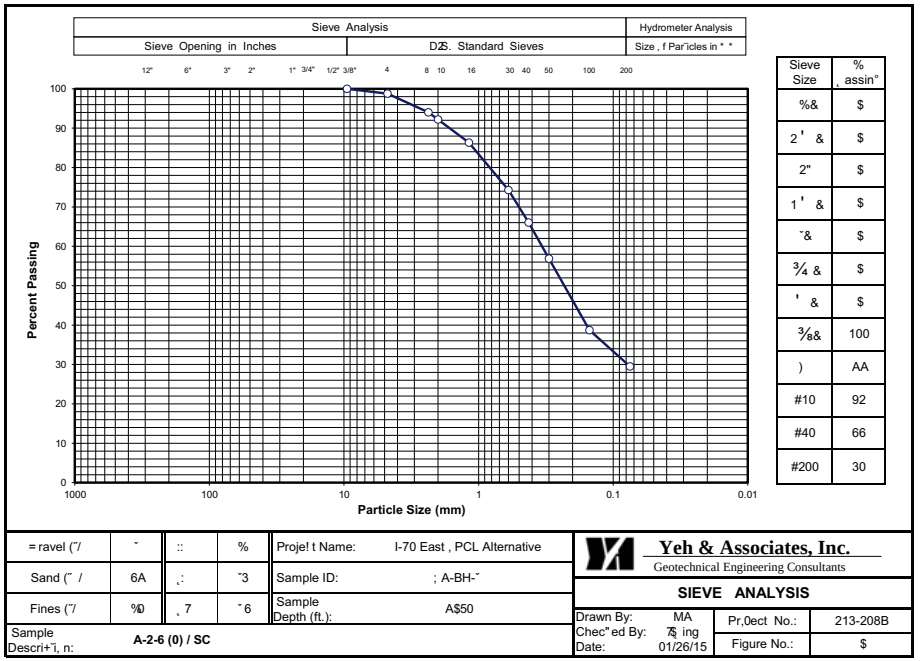

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	100
)	AA
#10	92
#40	66
#200	30

= ravel (˝/	¯	::	%	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	6A	,:	¯3	Sample ID:	; A-BH-¯
Fines (˝/	%0	, 7	¯6	Sample Depth (ft.):	A$50
Sample Descri+¯i, n:	**A-2-6 (0) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/26/15	Figure No.:	$

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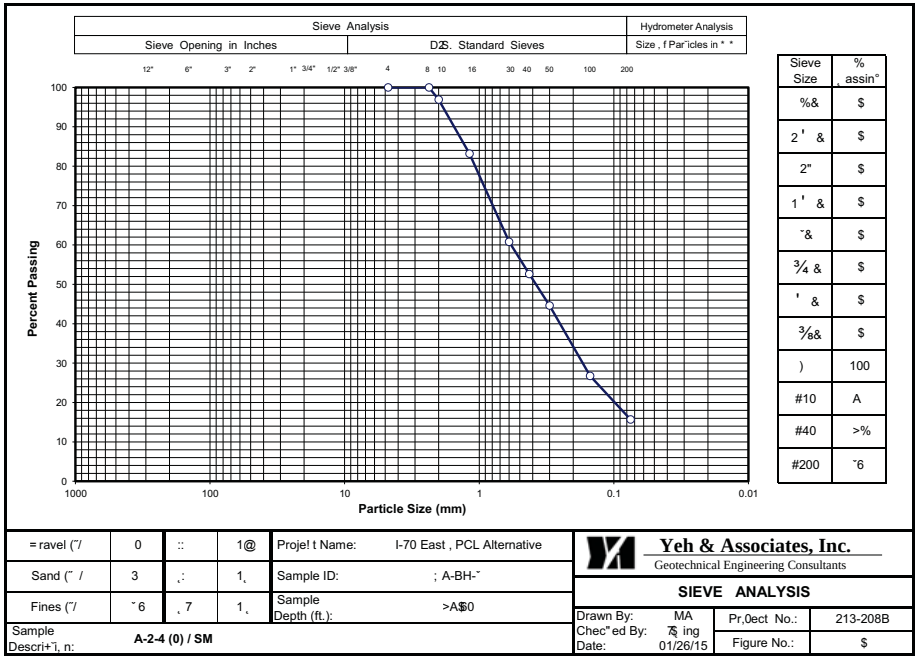

Sieve Size	% ¸assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A
#40	>%
#200	¨6

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3	¸:	1¸	Sample ID:	; A-BH-˘
Fines (˜/	¨6	¸ 7	1¸	Sample Depth (ft.):	>A$0
Sample Descri+¨ı, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	01/26/15	Figure No.:	$

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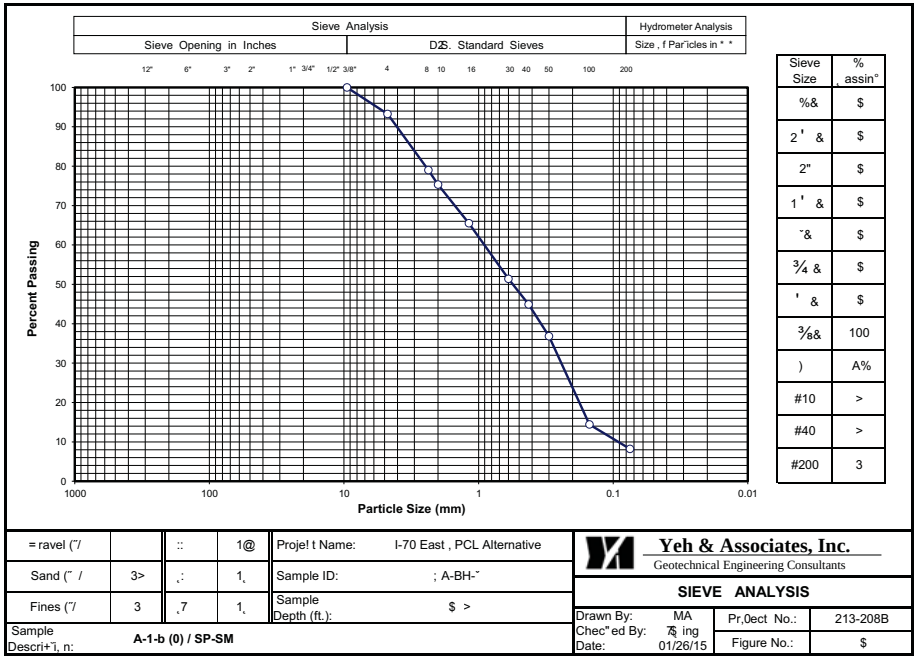

Sieve Size	% ¸assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	A%
#10	>
#40	>
#200	3

= ravel (˜/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3>	¸:	1¸	Sample ID:	; A-BH-˘
Fines (˜/	3	¸7	1¸	Sample Depth (ft.):	$ >
Sample Descri+¨ı, n:	**A-1-b (0) / SP-SM**				

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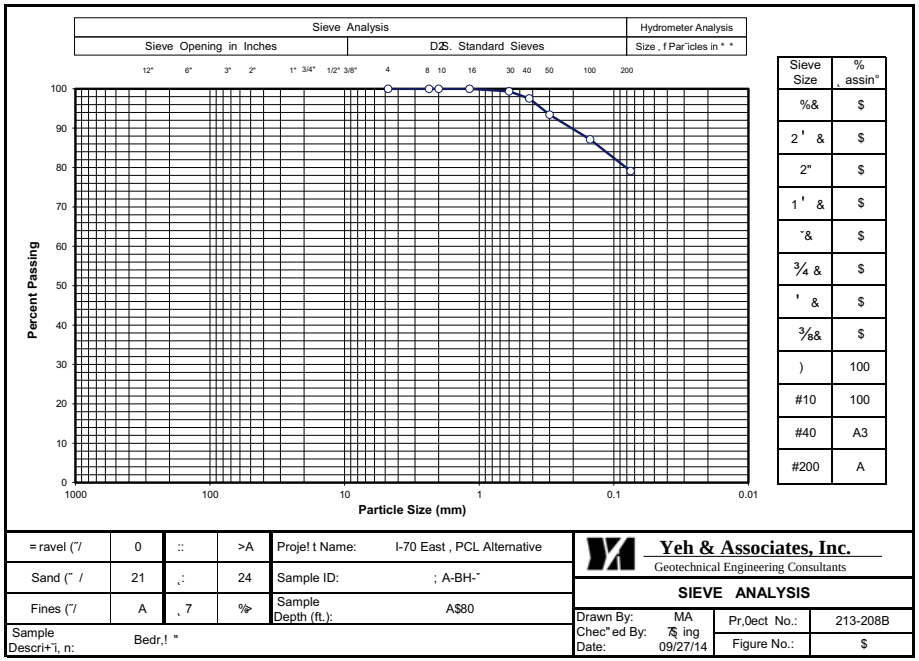
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	01/26/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A3
#200	A

= ravel (˜/	0	::	>A	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	21	¸:	24	Sample ID:	; A-BH-˘
Fines (˜/	A	¸ 7	%>	Sample Depth (ft.):	A$80
Sample Descri+¨ı, n:	Bedr,! "				

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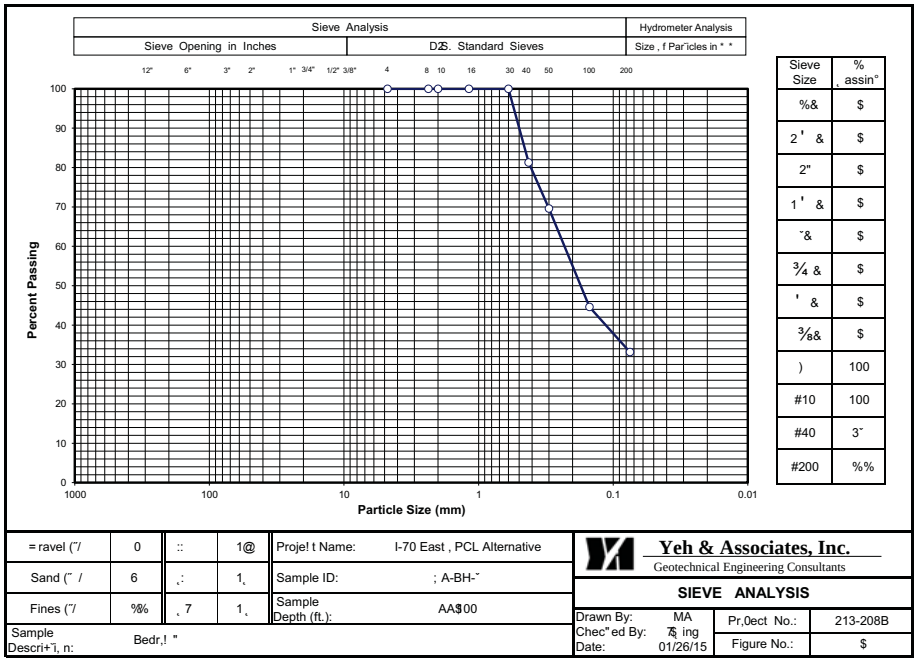
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	09/27/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3˜
#200	%%

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	¸:	1¸	Sample ID:	; A-BH-˘
Fines (˜/	%%	¸ 7	1¸	Sample Depth (ft.):	AA$00
Sample Descri+¨ı, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	01/26/15	Figure No.:	$

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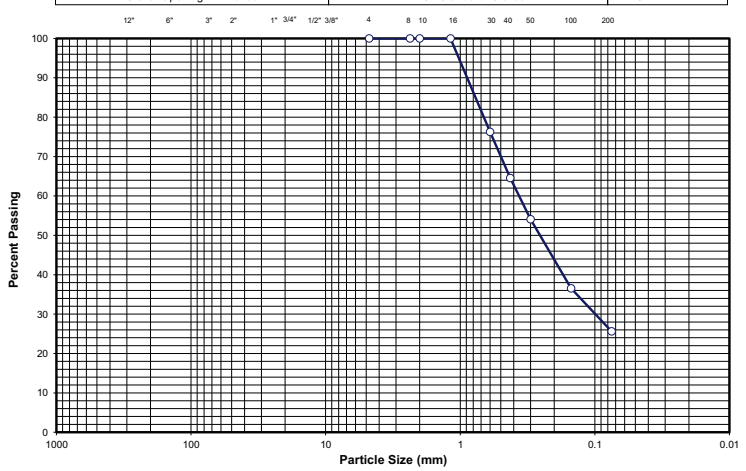
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	6>
#200	26

= ravel (˝/	0	::	%A	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /		¸:	24	Sample ID:	; A-BH-˘
Fines (˝/	26	¸ 7	˘ >	Sample Depth (ft.):	˝˝ $ ˝˝>
Sample Descri+˙ı, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	01/26/15	Figure No.:	$

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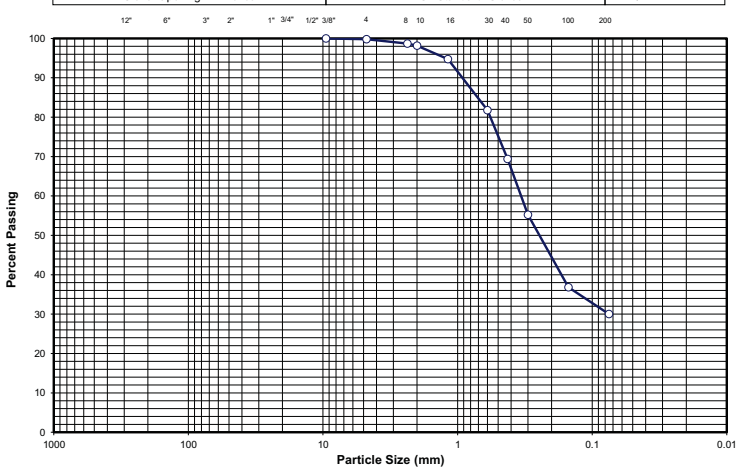
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	A3
#40	6A
#200	30

= ravel (˝/	0	::	%	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	70	¸:	¨3	Sample ID:	; A-BH-2
Fines (˝/	%0	¸ 7	˘ A	Sample Depth (ft.):	A$0
Sample Descri+˙ı, n:	**A-2-6 (0) / SC**				

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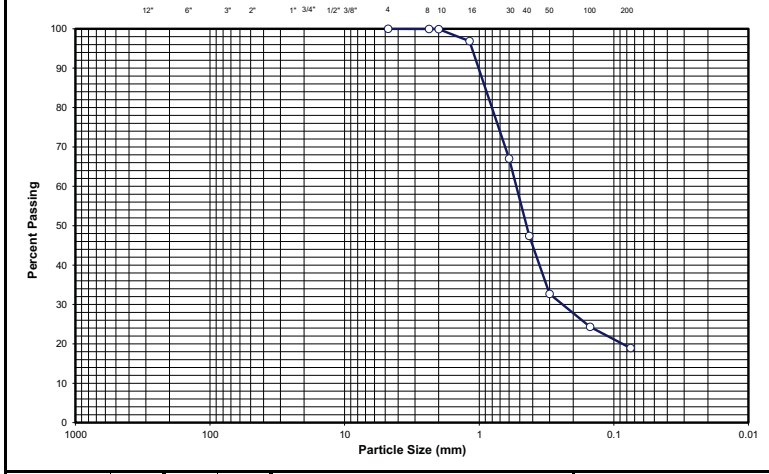
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	01/28/15	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	
#200	˘A

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	3˘	¸:	1¸	Sample ID:	; A-BH-2
Fines (˝/	˘ A	¸ 7	1¸	Sample Depth (ft.):	29-30
Sample Descri+˙ı, n:	**A-1-b (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	01/28/15	Figure No.:	$

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Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	100
#200	>%

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /		¸:	1¸	Sample ID:	; A-BH-2
Fines (˝/	>%	¸ 7	1¸	Sample Depth (ft.):	>A$0
Sample Descri+˙ı, n:	**A-4 (0) / ML**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	01/28/15	Figure No.:	$

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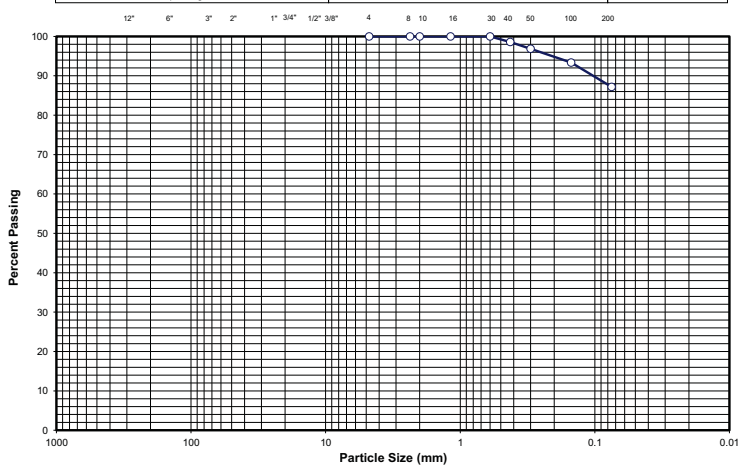
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	3

= ravel (¨/	0	::	>A	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	¨%	¸:	29	Sample ID:	; A-BH-2
Fines (¨/	3	¸ 7	%0	Sample Depth (ft.):	A$80
Sample Descri+¨ï, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/28/15	Figure No.:	$

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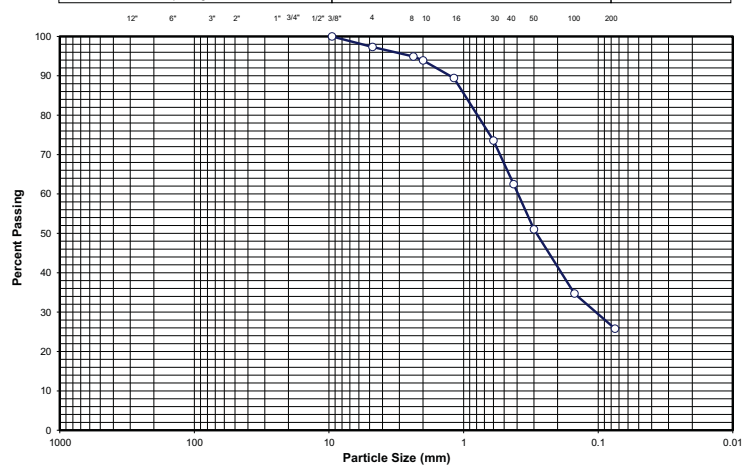
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	A
#10	A
#40	62
#200	26

= ravel (¨/	%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	¨	¸:	1¸	Sample ID:	; A-BH-2
Fines (¨/	26	¸ 7	1¸	Sample Depth (ft.):	A $A>
Sample Descri+¨ï, n:	Bedr,! "				

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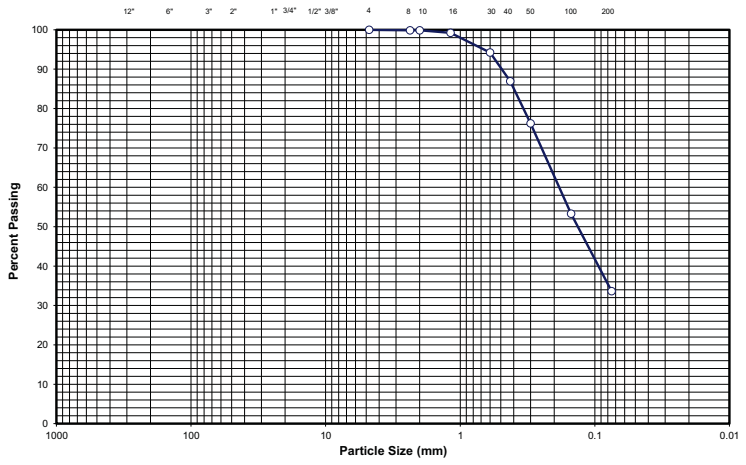
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/28/15	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3
#200	%

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	66	¸:	1¸	Sample ID:	; A-BH-2
Fines (¨/	%	¸ 7	1¸	Sample Depth (ft.):	109-110
Sample Descri+¨ï, n:	Bedr,! "				

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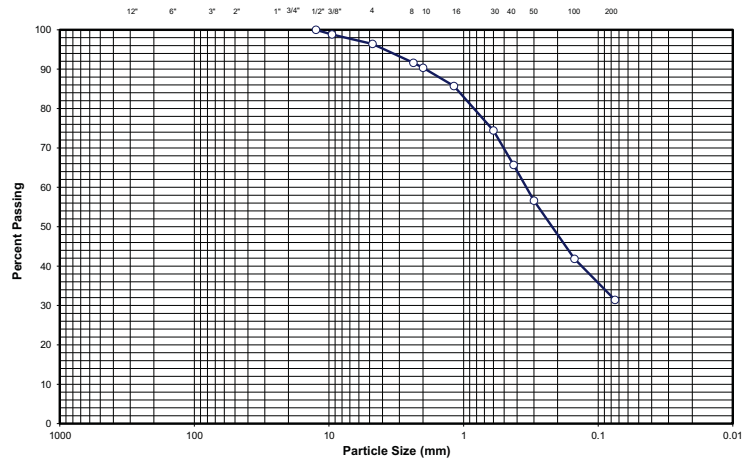
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/28/15	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&	AA
)	A6
#10	90
#40	66
#200	%¨

= ravel (¨/		::	40	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	6>	¸:	¨A	Sample ID:	; A-BM-¨
Fines (¨/	%	¸ 7	2¨	Sample Depth (ft.):	¨ $ ¨>
Sample Descri+¨ï, n:	**A-2-6 (1) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/26/15	Figure No.:	$

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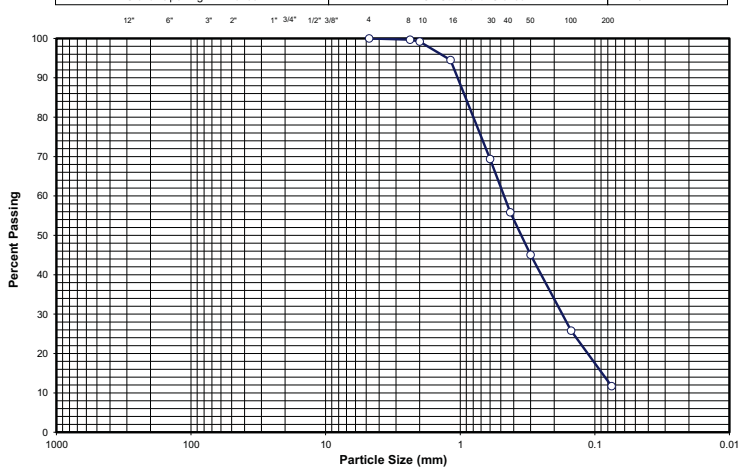
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	AA
#40	>6
#200	12

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	33	,:	1¸	Sample ID:	; A-BM-˘
Fines (˝/	˘2	¸7	1¸	Sample Depth (ft.):	24-25
Sample Descri+¯i, n:	**A-2-4 (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ÿ§ ing		
Date:	01/26/15	Figure No.:	$

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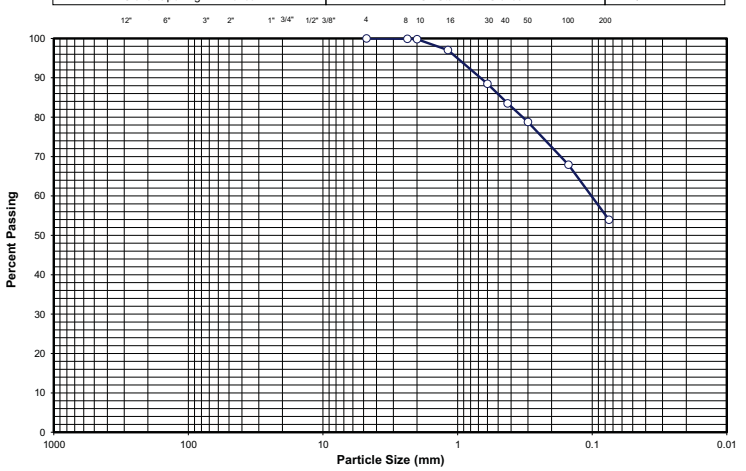
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3
#200	>

= ravel (˝/	0	::	%	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	6	,:	˘	Sample ID:	; A-BM-˘
Fines (˝/	>	¸7	20	Sample Depth (ft.):	29-30
Sample Descri+¯i, n:	**A-6 (7) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ÿ§ ing		
Date:	01/28/15	Figure No.:	$

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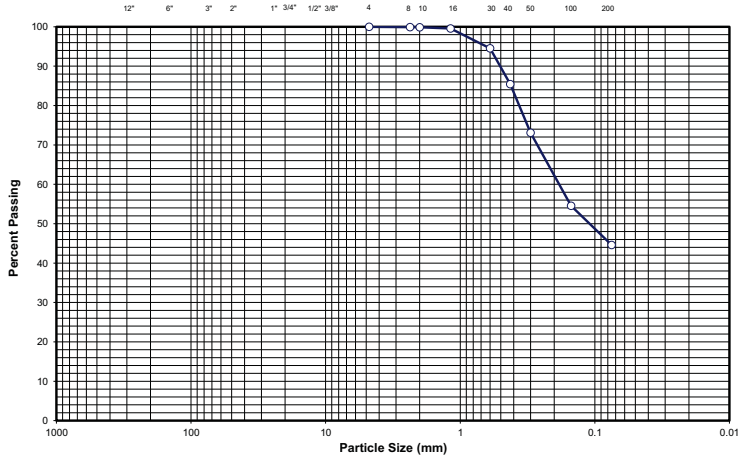
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3>
#200	>

= ravel (˝/	0	::		Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	>>	,:	¯3	Sample ID:	; A-BM-˘
Fines (˝/	>	¸7	2A	Sample Depth (ft.):	> $>>
Sample Descri+¯i, n:	**A-7-6 (8) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ÿ§ ing		
Date:	01/28/15	Figure No.:	$

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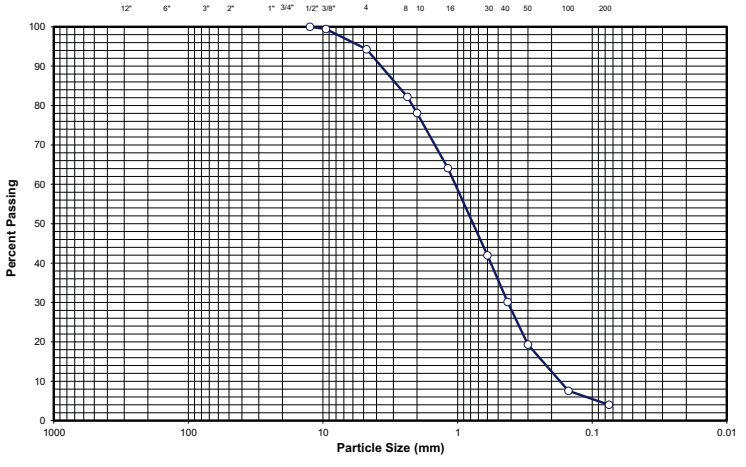
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&	AA
)	A
#10	3
#40	30
#200	

= ravel (˝/	6	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	90	,:	1¸	Sample ID:	; A-BM-˘
Fines (˝/		¸7	1¸	Sample Depth (ft.):	6 $6>
Sample Descri+¯i, n:	**A-1-b (0) / SP**				

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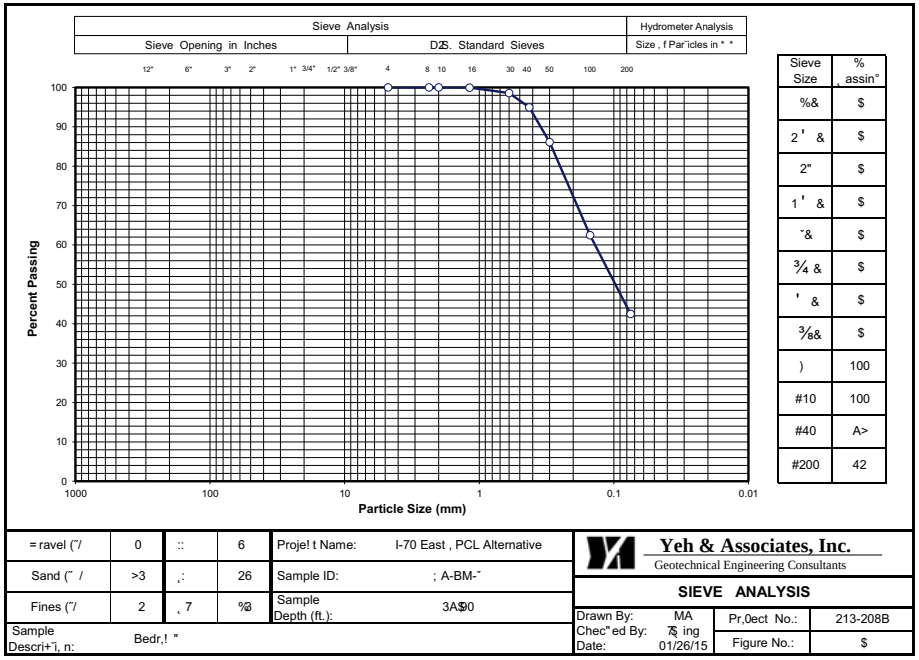
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ÿ§ ing		
Date:	01/26/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A>
#200	42

= ravel (¨/	0	::	6	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>3	¸:	26	Sample ID:	; A-BM-¨
Fines (¨/	2	¸ 7	%8	Sample Depth (ft.):	3A$90
Sample Descri+¨i, n:	Bedr,! "				

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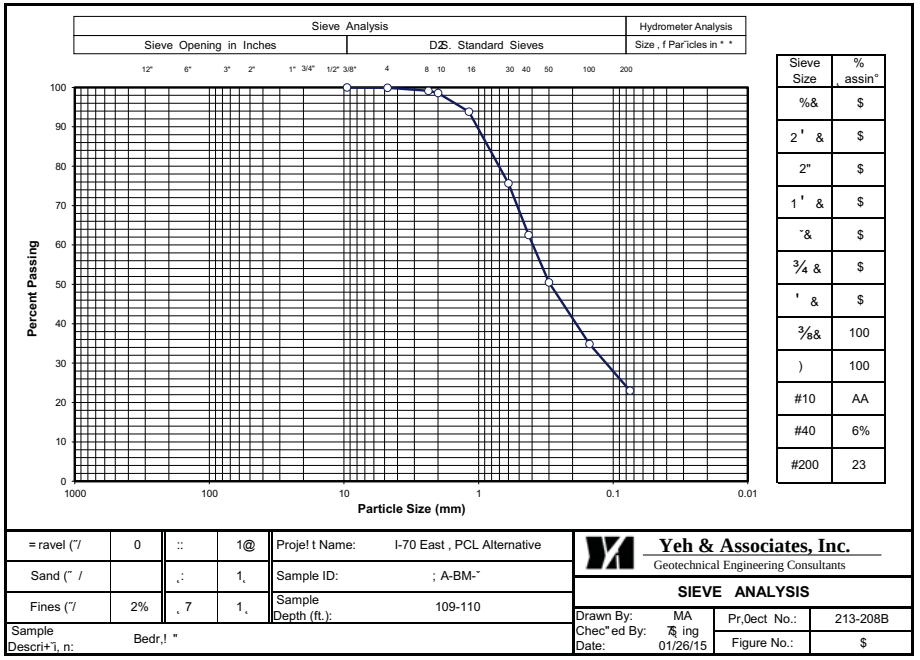
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/26/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	AA
#40	6%
#200	23

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /		¸:	1¸	Sample ID:	; A-BM-¨
Fines (¨/	2%	¸ 7	1¸	Sample Depth (ft.):	109-110
Sample Descri+¨i, n:	Bedr,! "				

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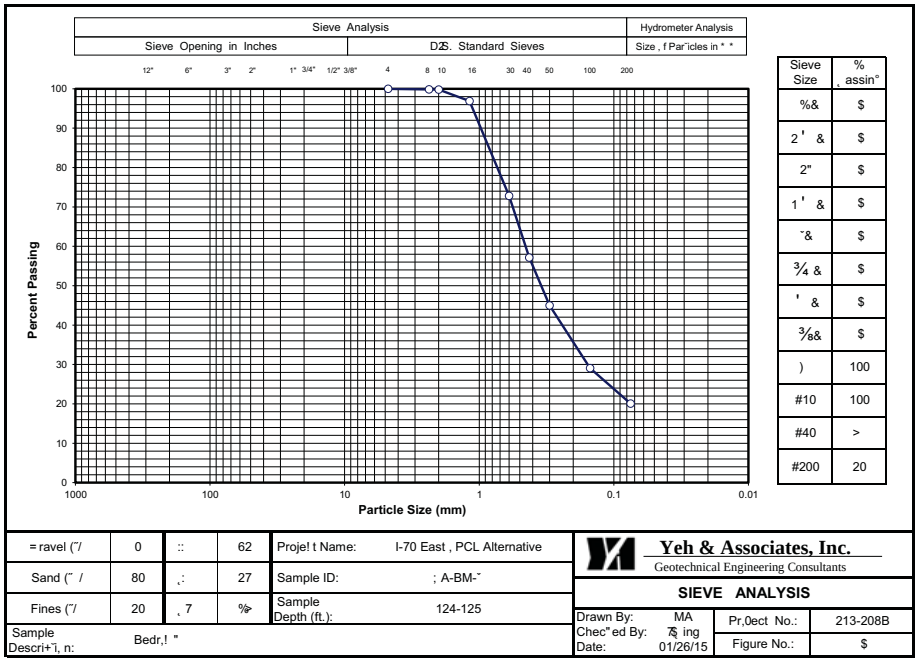
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/26/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	>
#200	20

= ravel (¨/	0	::	62	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	80	¸:	27	Sample ID:	; A-BM-¨
Fines (¨/	20	¸ 7	%≥	Sample Depth (ft.):	124-125
Sample Descri+¨i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/26/15	Figure No.:	$

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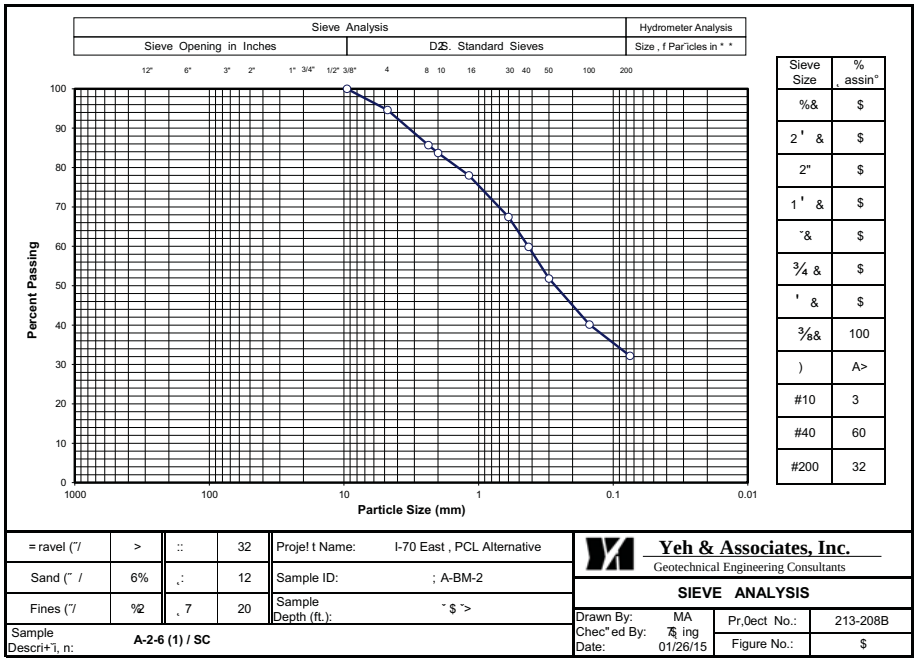

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	A>
#10	3
#40	60
#200	32

= ravel (¨/	>	::	32	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	6%	¸:	12	Sample ID:	; A-BM-2
Fines (¨/	%2	¸ 7	20	Sample Depth (ft.):	¨ $ ¨>
Sample Descri+¨i, n:	**A-2-6 (1) / SC**				

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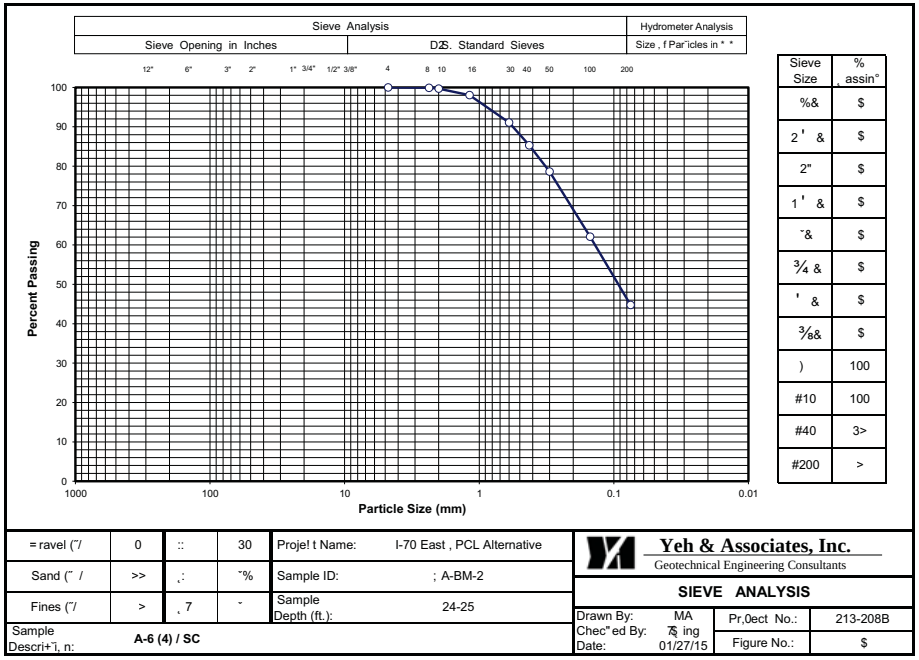
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/26/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3>
#200	>

= ravel (¨/	0	::	30	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>>	¸:	¨%	Sample ID:	; A-BM-2
Fines (¨/	>	¸ 7	¨	Sample Depth (ft.):	24-25
Sample Descri+¨i, n:	**A-6 (4) / SC**				

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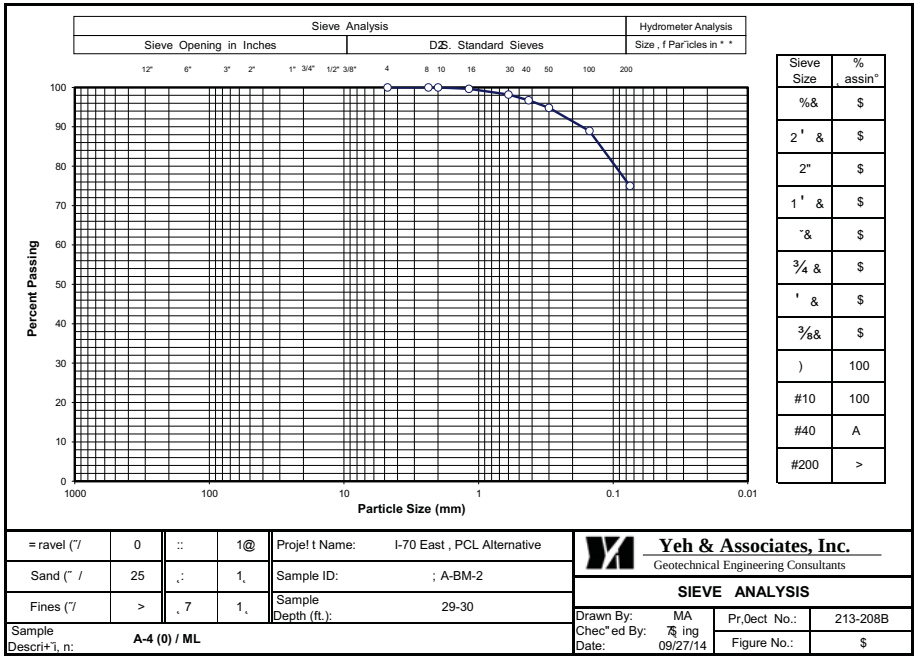
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ø ing		
Date:	01/27/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A
#200	>

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	25	¸:	1¸	Sample ID:	; A-BM-2
Fines (¨/	>	¸ 7	1¸	Sample Depth (ft.):	29-30
Sample Descri+¨i, n:	**A-4 (0) / ML**				

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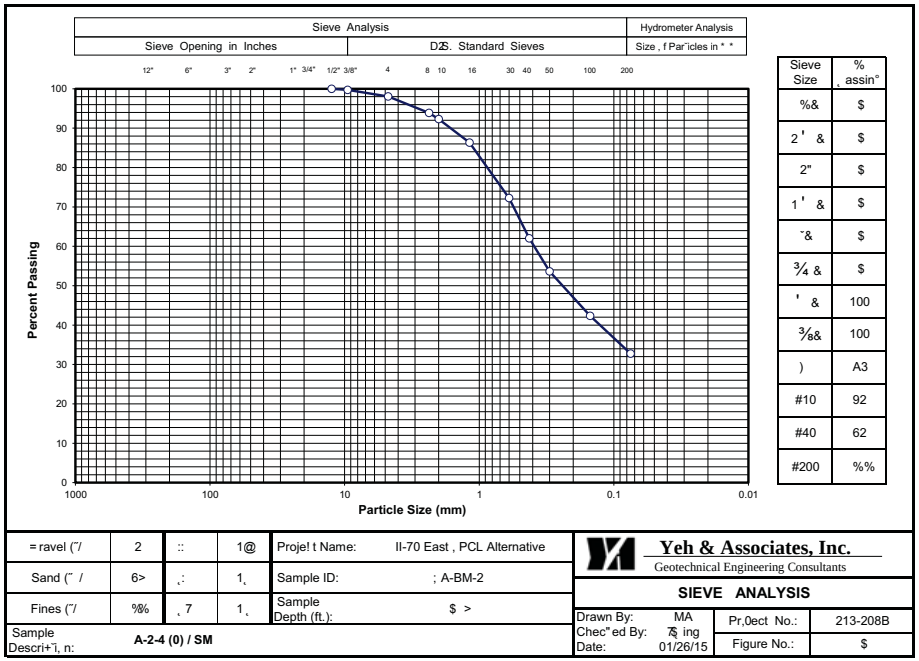
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ø ing		
Date:	09/27/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&	100
)	A3
#10	92
#40	62
#200	%%

= ravel (¨/	2	::	1@	Proje! t Name:	II-70 East , PCL Alternative
Sand (¨ /	6>	¸:	1¸	Sample ID:	; A-BM-2
Fines (¨/	%%	¸ 7	1¸	Sample Depth (ft.):	$ >
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ø ing		
Date:	01/26/15	Figure No.:	$

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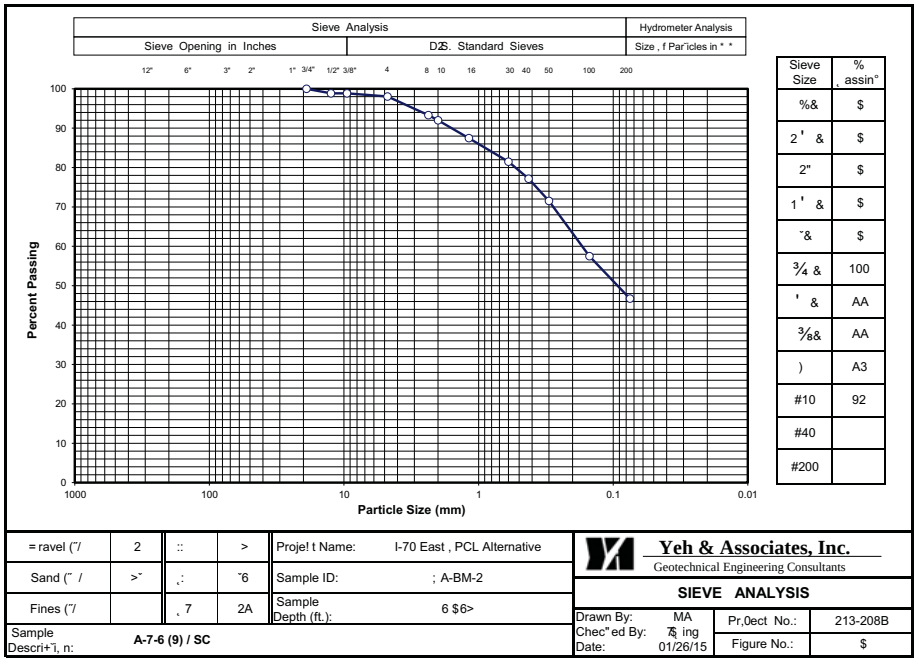

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	AA
⅜&	AA
)	A3
#10	92
#40	
#200	

= ravel (¨/	2	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>¨	¸:	¨6	Sample ID:	; A-BM-2
Fines (¨/		¸ 7	2A	Sample Depth (ft.):	6 $6>
Sample Descri+¨i, n:	**A-7-6 (9) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ø ing		
Date:	01/26/15	Figure No.:	$

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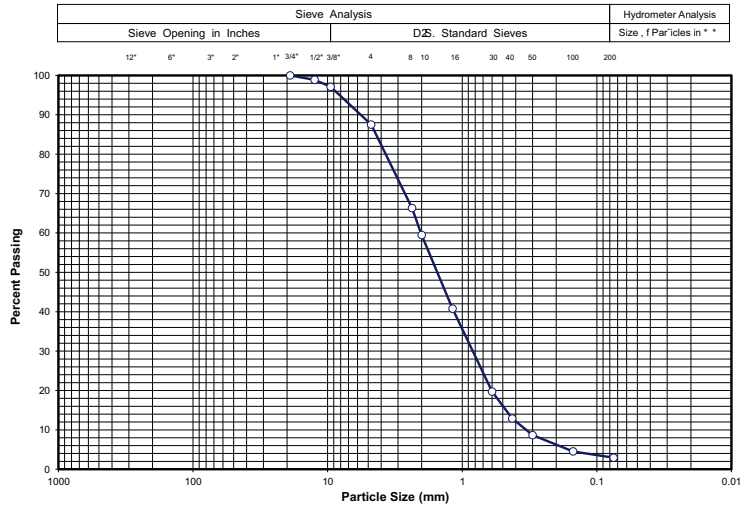

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	AA
⅜&	A
)	33
#10	>A
#40	¨%
#200	%

= ravel (˝/	12	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	3>	¸:	1¸	Sample ID:	; A-BM-2
Fines (˝/	%	¸7	1¸	Sample Depth (ft.):	6A$70
Sample Descri+¨i, n:	**A-1-b (0) / SW**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/26/15	Figure No.:	$

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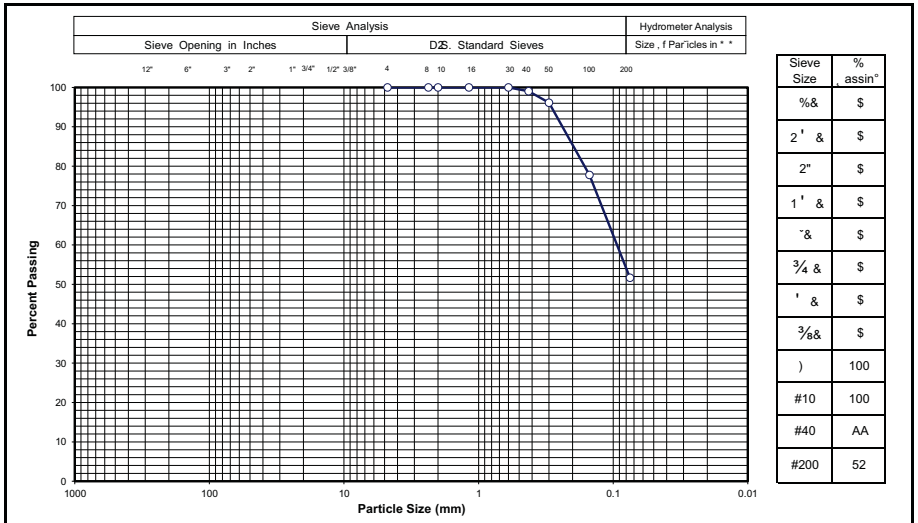

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	52

= ravel (˝/	0	::	6¨	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	3	¸:	25	Sample ID:	; A-BM-2
Fines (˝/	>2	¸ 7	%6	Sample Depth (ft.):	3A$90
Sample Descri+¨i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/26/15	Figure No.:	$

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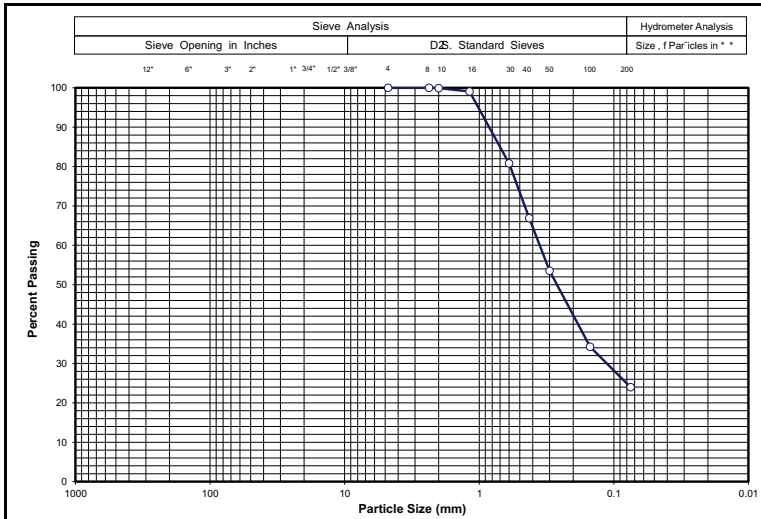

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	6
#200	24

= ravel (˝/	0	::	>6	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	6	¸:	24	Sample ID:	; A-BM-2
Fines (˝/	2	¸ 7	%2	Sample Depth (ft.):	A $A>
Sample Descri+¨i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/28/15	Figure No.:	$

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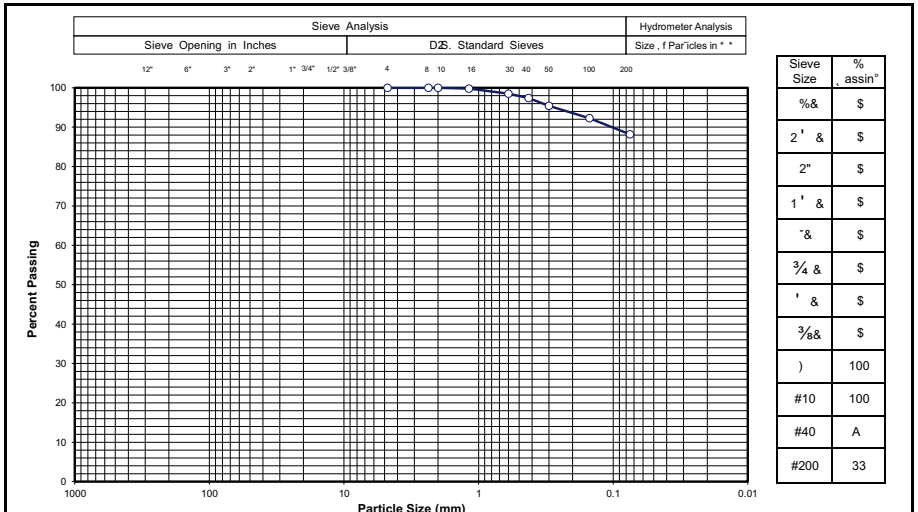

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A
#200	33

= ravel (˝/	0	::	62	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	12	¸:	27	Sample ID:	; A-BM-2
Fines (˝/	33	¸ 7	%>	Sample Depth (ft.):	¨˝ $ ¨˝>
Sample Descri+¨i, n:	Bedr,! "				

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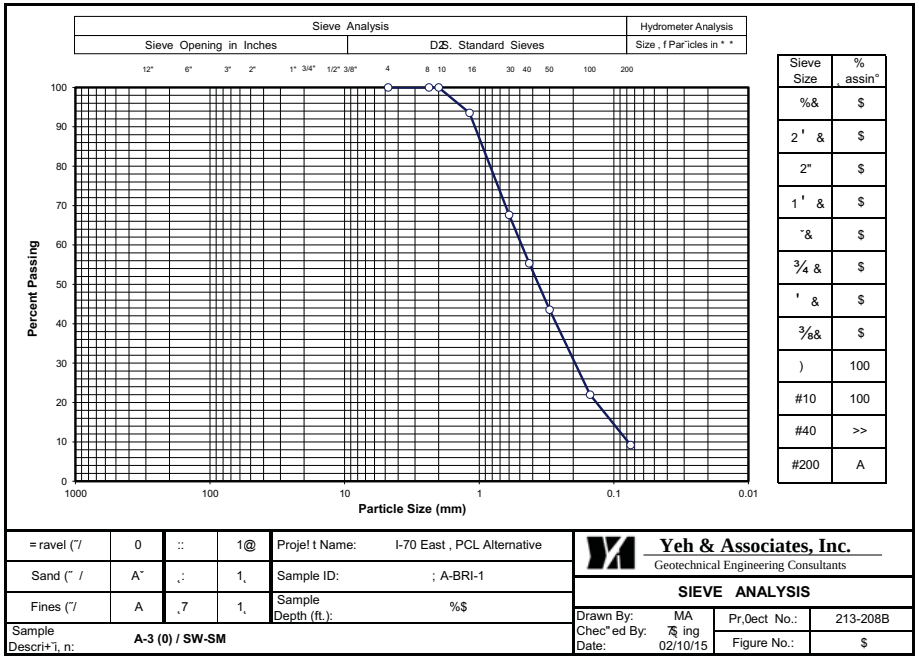
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	01/28/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	>>
#200	A

= ravel (¯/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	A¯	¸:	1¸	Sample ID:	; A-BRI-1
Fines (¯/	A	¸7	1¸	Sample Depth (ft.):	%$
Sample Descri+¯i, n:	**A-3 (0) / SW-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/10/15	Figure No.:	$

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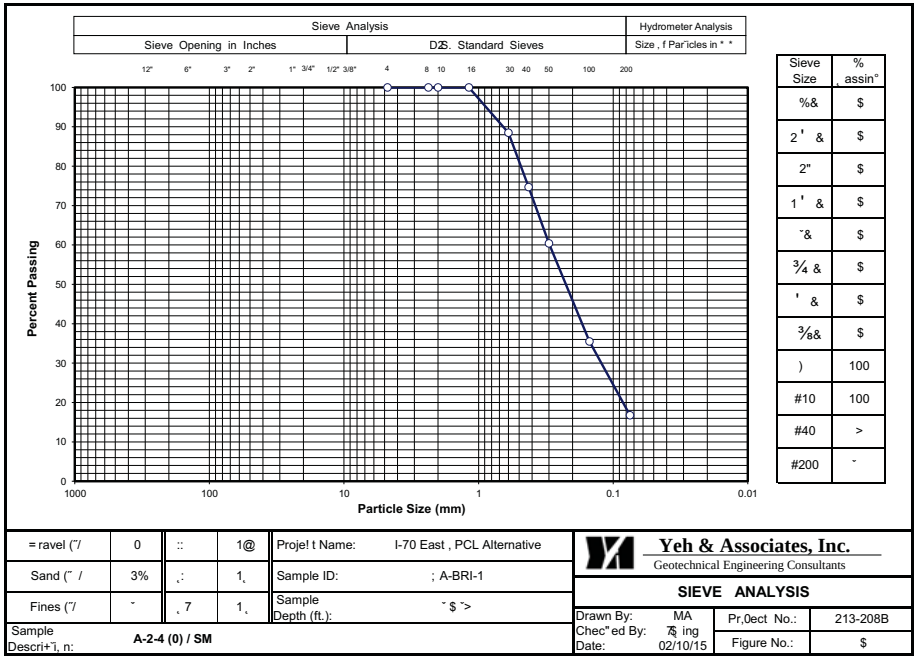

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	>
#200	¯

= ravel (¯/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3%	¸:	1¸	Sample ID:	; A-BRI-1
Fines (¯/	¯	¸7	1¸	Sample Depth (ft.):	¯$ ¯>
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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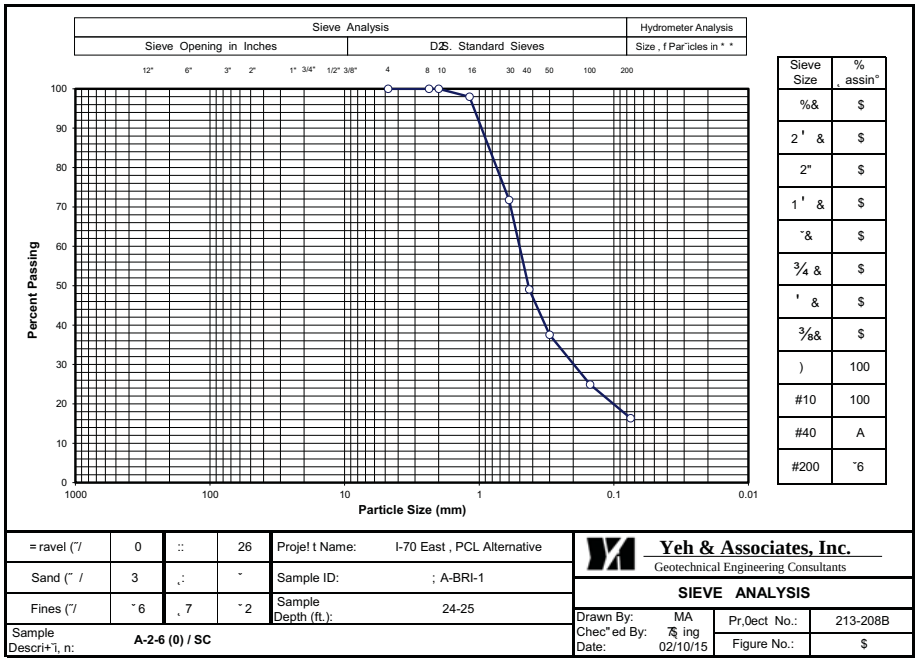
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/10/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A
#200	¯6

= ravel (¯/	0	::	26	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3	¸:	¯	Sample ID:	; A-BRI-1
Fines (¯/	¯6	¸7	¯2	Sample Depth (ft.):	24-25
Sample Descri+¯i, n:	**A-2-6 (0) / SC**				

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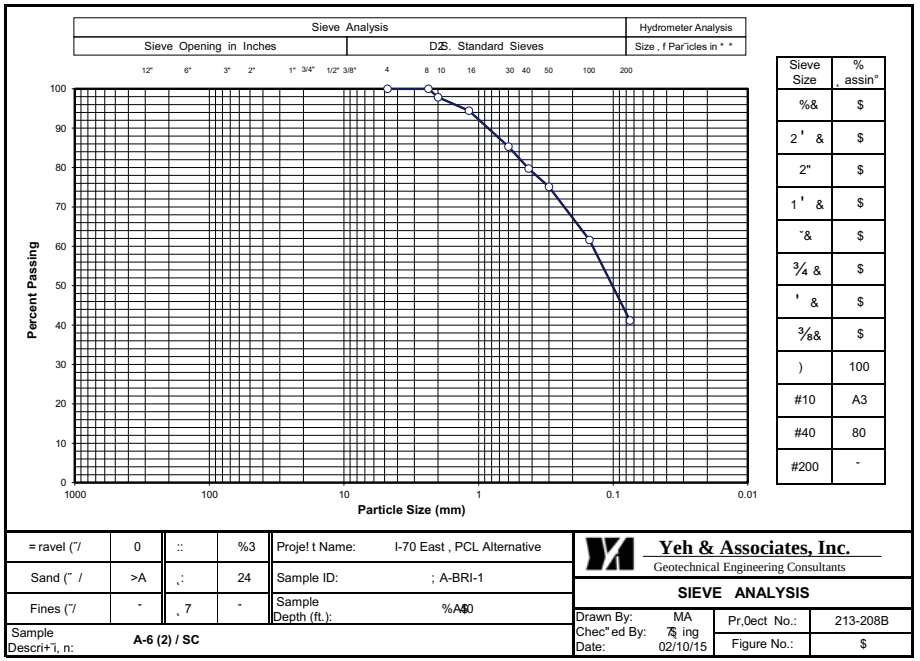
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/10/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	A3
#40	80
#200	¯

= ravel (¯/	0	::	%3	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>A	¸:	24	Sample ID:	; A-BRI-1
Fines (¯/	¯	¸7	¯	Sample Depth (ft.):	%A$0
Sample Descri+¯i, n:	**A-6 (2) / SC**				

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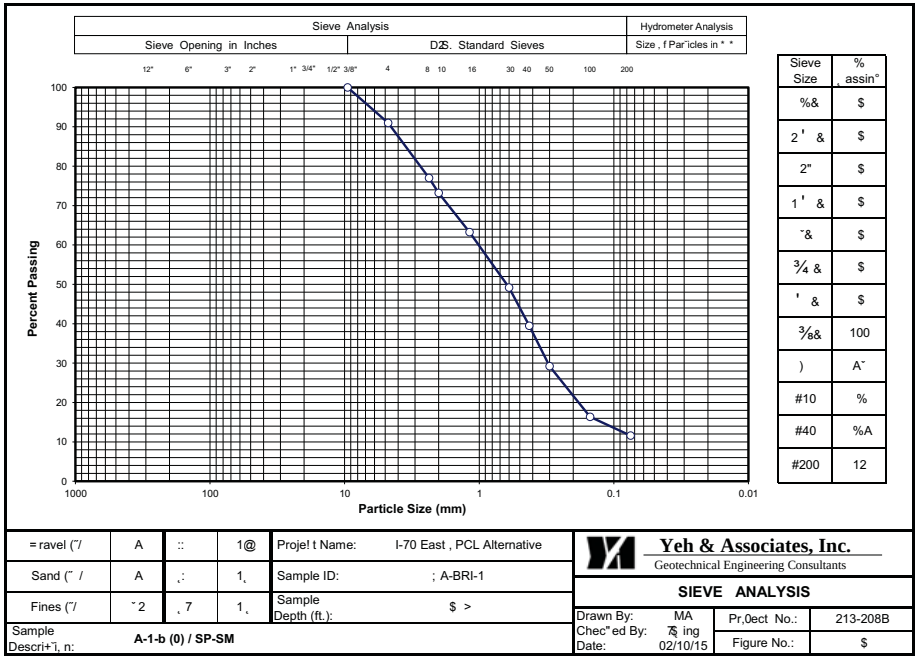
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/10/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	A¨
#10	%
#40	%A
#200	12

= ravel (˝/	A	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	A	¸:	1¸	Sample ID:	; A-BRI-1
Fines (˝/	¨2	¸ 7	1¸	Sample Depth (ft.):	$ >
Sample Descri+¨ı, n:	**A-1-b (0) / SP-SM**				

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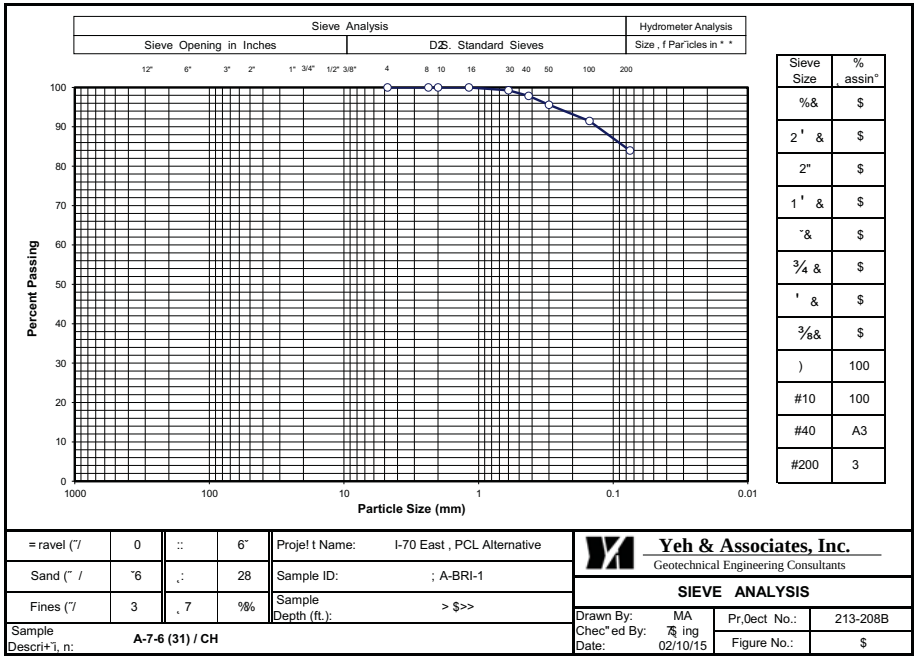
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	?§ ing		
Date:	02/10/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A3
#200	3

= ravel (˝/	0	::	6¨	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	¨6	¸:	28	Sample ID:	; A-BRI-1
Fines (˝/	3	¸ 7	%%	Sample Depth (ft.):	> $>>
Sample Descri+¨ı, n:	**A-7-6 (31) / CH**				

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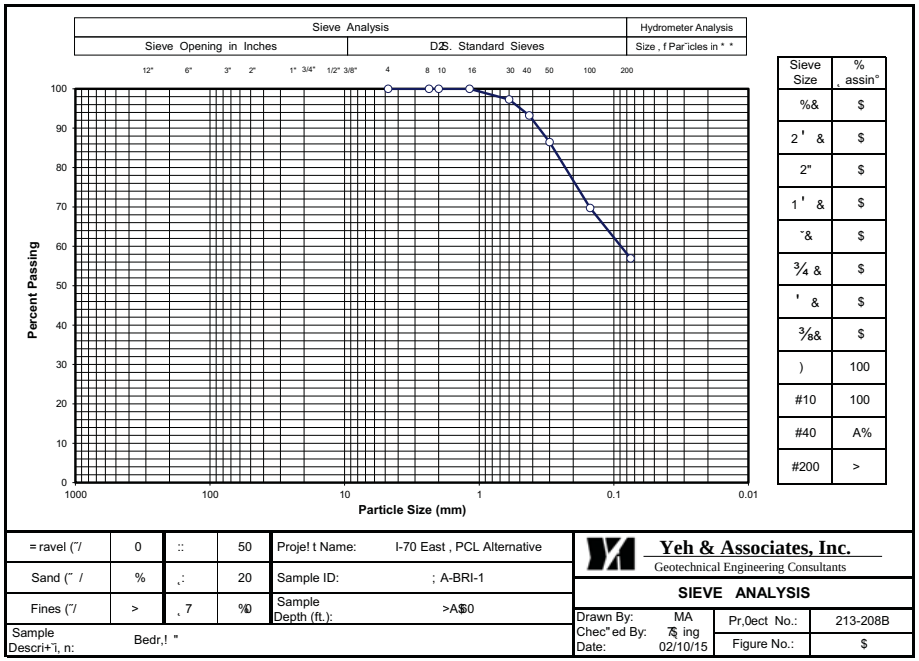
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	?§ ing		
Date:	02/10/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A%
#200	>

= ravel (˝/	0	::	50	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	%	¸:	20	Sample ID:	; A-BRI-1
Fines (˝/	>	¸ 7	%0	Sample Depth (ft.):	>A$0
Sample Descri+¨ı, n:	Bedr,! "				

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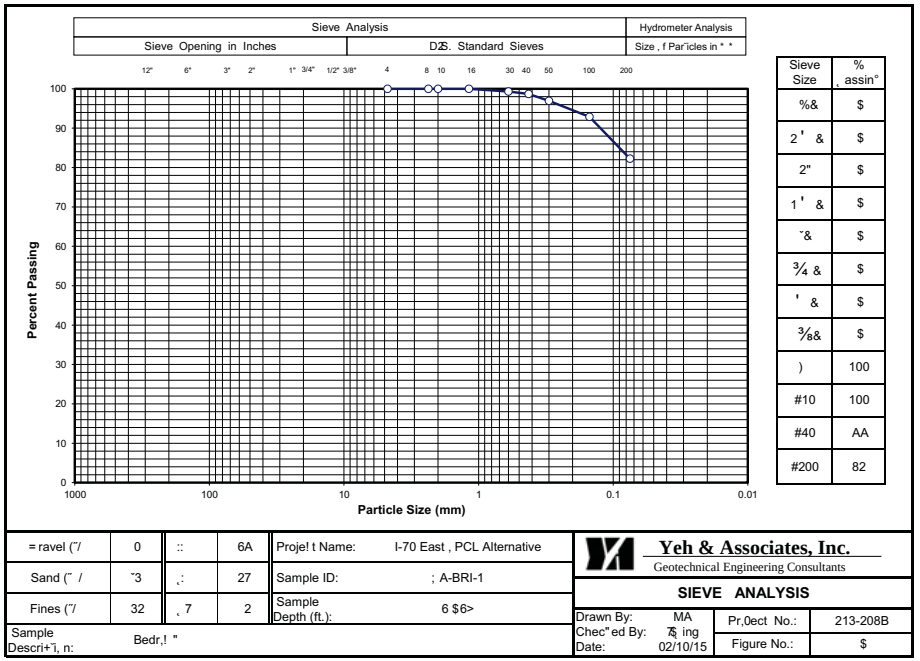
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	?§ ing		
Date:	02/10/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	82

= ravel (˝/	0	::	6A	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	¨3	¸:	27	Sample ID:	; A-BRI-1
Fines (˝/	32	¸ 7	2	Sample Depth (ft.):	6 $6>
Sample Descri+¨ı, n:	Bedr,! "				

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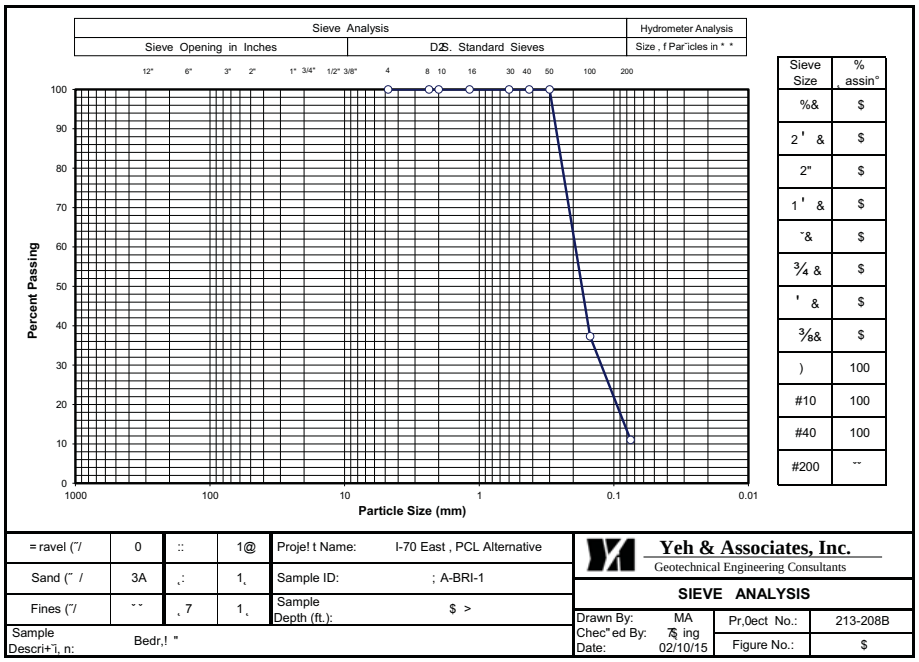
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	?§ ing		
Date:	02/10/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	100
#200	¨¨

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3A	¸:	1¸	Sample ID:	; A-BRI-1
Fines (˜/	¨¨	¸ 7	1¸	Sample Depth (ft.):	$ >
Sample Descri+¨ı, n:	Bedr,! "				

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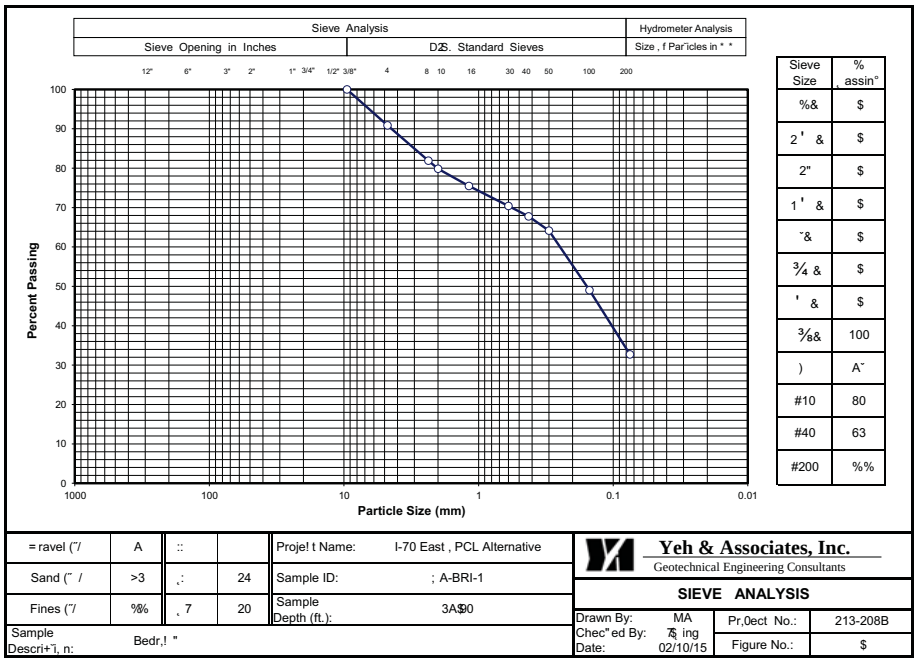
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	ŦŞ ing		
Date:	02/10/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	A¨
#10	80
#40	63
#200	%%

= ravel (˜/	A	::		Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	>3	¸:	24	Sample ID:	; A-BRI-1
Fines (˜/	%%	¸ 7	20	Sample Depth (ft.):	3A$90
Sample Descri+¨ı, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	ŦŞ ing		
Date:	02/10/15	Figure No.:	$

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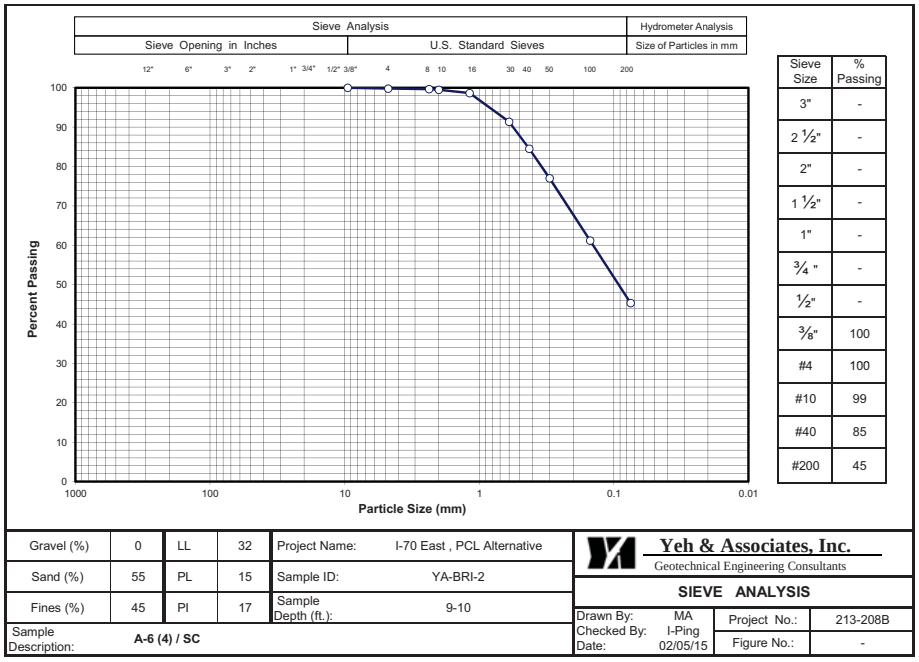

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	-
½"	-
⅜"	100
#4	100
#10	99
#40	85
#200	45

Gravel (%)	0	LL	32	Project Name:	I-70 East , PCL Alternative
Sand (%)	55	PL	15	Sample ID:	YA-BRI-2
Fines (%)	45	PI	17	Sample Depth (ft.):	9-10
Sample Description:	**A-6 (4) / SC**				

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Drawn By:	MA	Project No.:	213-208B
Checked By:	I-Ping		
Date:	02/05/15	Figure No.:	-

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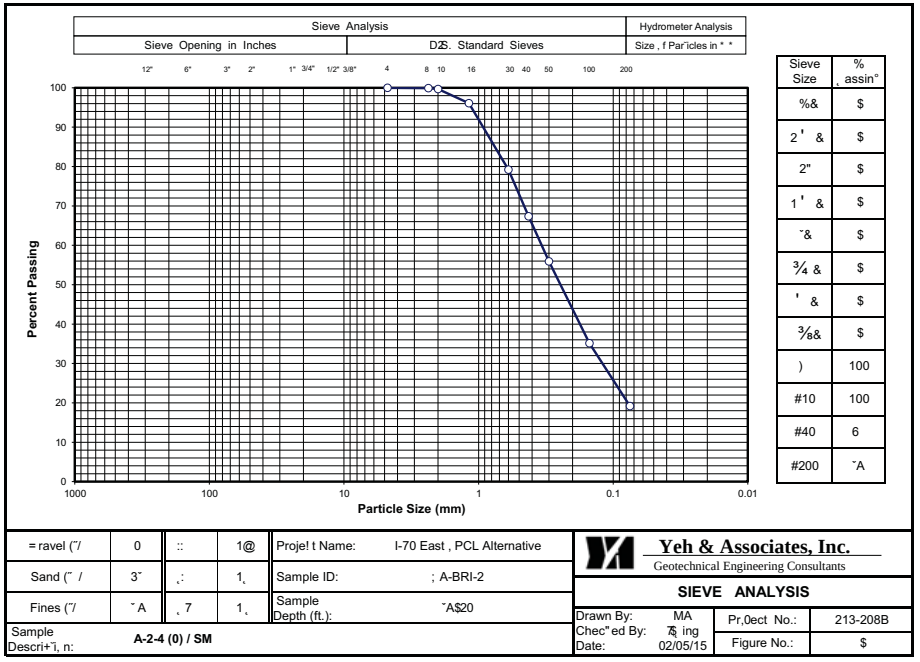

Sieve Size	% ¸assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	6
#200	¨A

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3¨	¸:	1¸	Sample ID:	; A-BRI-2
Fines (˜/	¨A	¸ 7	1¸	Sample Depth (ft.):	¨A$20
Sample Descri+¨ı, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	ŦŞ ing		
Date:	02/05/15	Figure No.:	$

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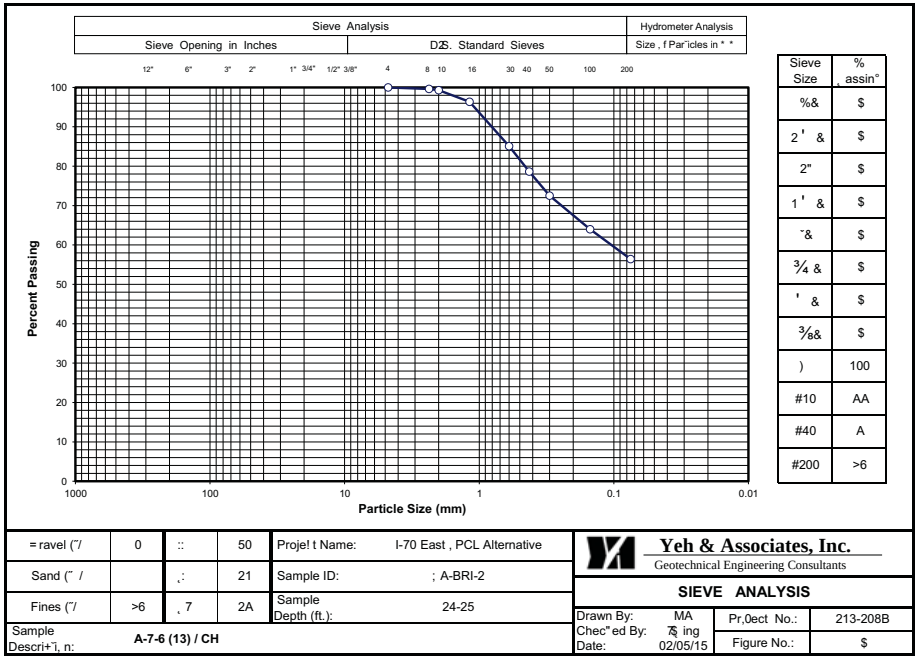

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	AA
#40	A
#200	>6

= ravel (¨/	0	::	50	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /		¸:	21	Sample ID:	; A-BRI-2
Fines (¨/	>6	¸ 7	2A	Sample Depth (ft.):	24-25
Sample Descri+¨i, n:	**A-7-6 (13) / CH**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/05/15	Figure No.:	$

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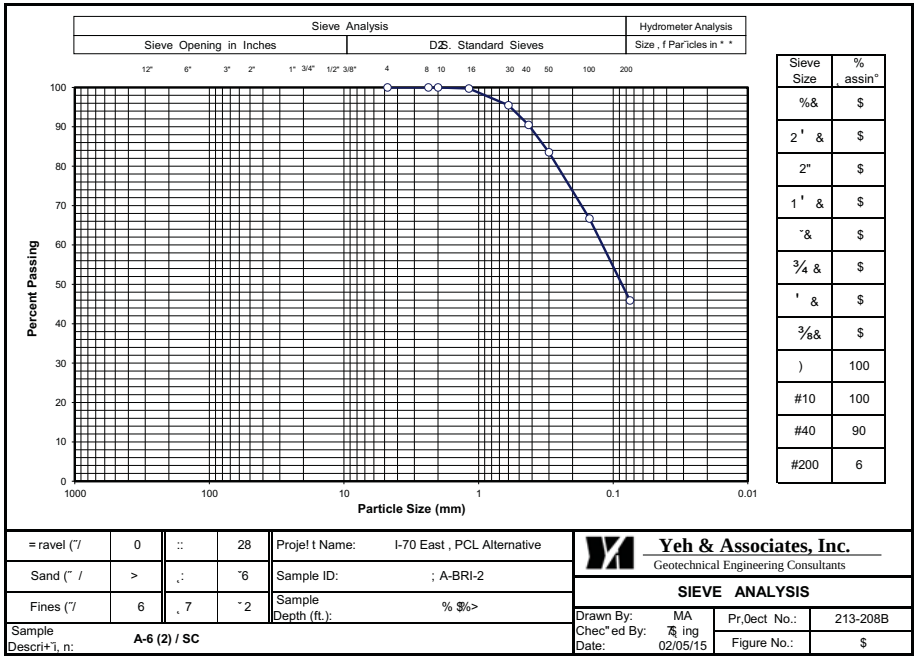

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	90
#200	6

= ravel (¨/	0	::	28	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>	¸:	¨6	Sample ID:	; A-BRI-2
Fines (¨/	6	¸ 7	¨2	Sample Depth (ft.):	% $%>
Sample Descri+¨i, n:	**A-6 (2) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/05/15	Figure No.:	$

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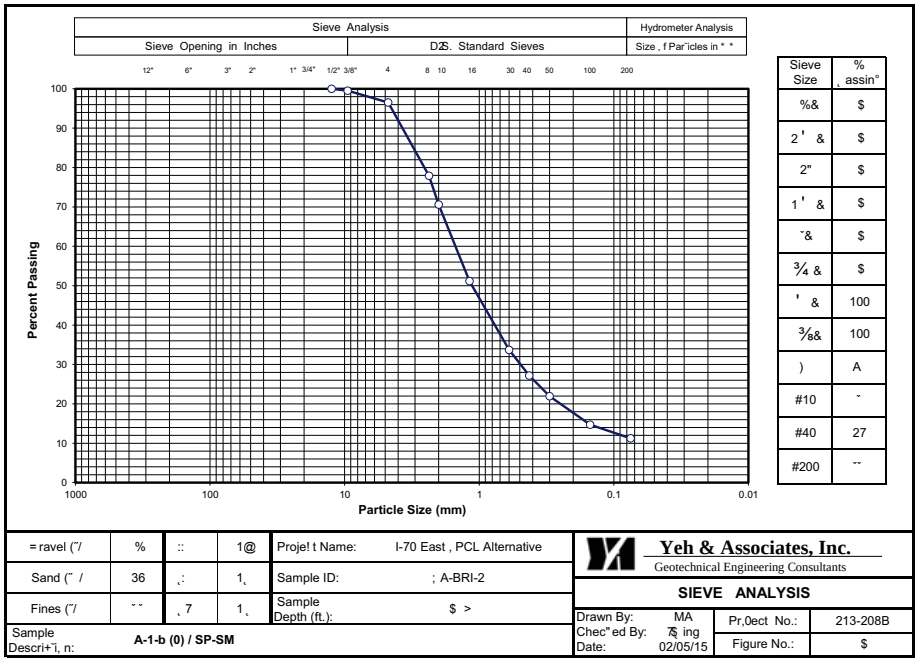

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&	100
)	A
#10	¨
#40	27
#200	¨¨

= ravel (¨/	%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	36	¸:	1¸	Sample ID:	; A-BRI-2
Fines (¨/	¨¨	¸ 7	1¸	Sample Depth (ft.):	$ >
Sample Descri+¨i, n:	**A-1-b (0) / SP-SM**				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/05/15	Figure No.:	$

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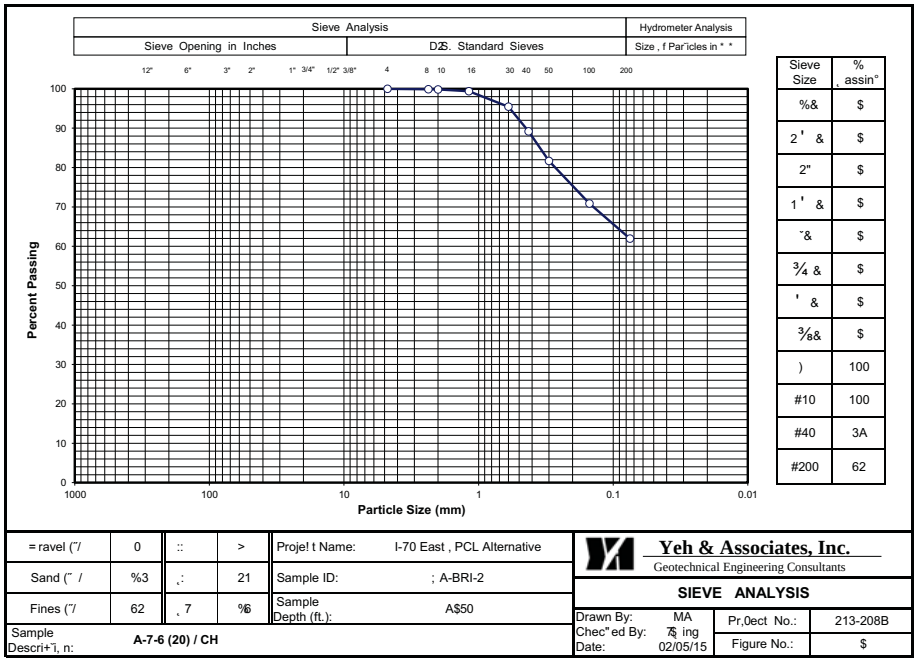

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3A
#200	62

= ravel (¨/	0	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	%3	¸:	21	Sample ID:	; A-BRI-2
Fines (¨/	62	¸ 7	%6	Sample Depth (ft.):	A$50
Sample Descri+¨i, n:	**A-7-6 (20) / CH**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/05/15	Figure No.:	$

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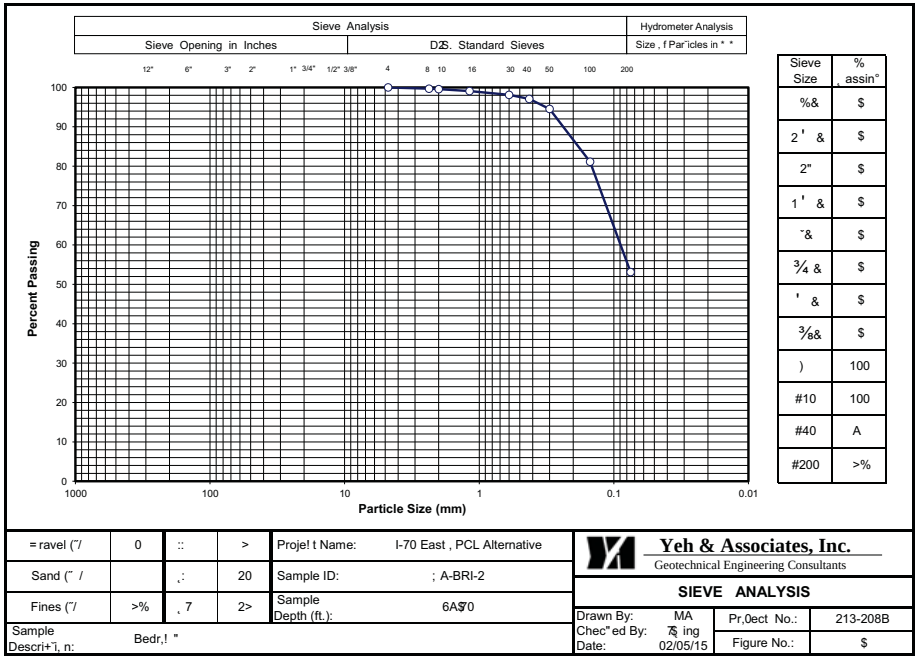

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A
#200	>%

= ravel (˝/	0	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /		¸:	20	Sample ID:	; A-BRI-2
Fines (˝/	>%	¸ 7	2>	Sample Depth (ft.):	6A$70
Sample Descri+¨ı, n:	Bedr,! "				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/05/15	Figure No.:	$

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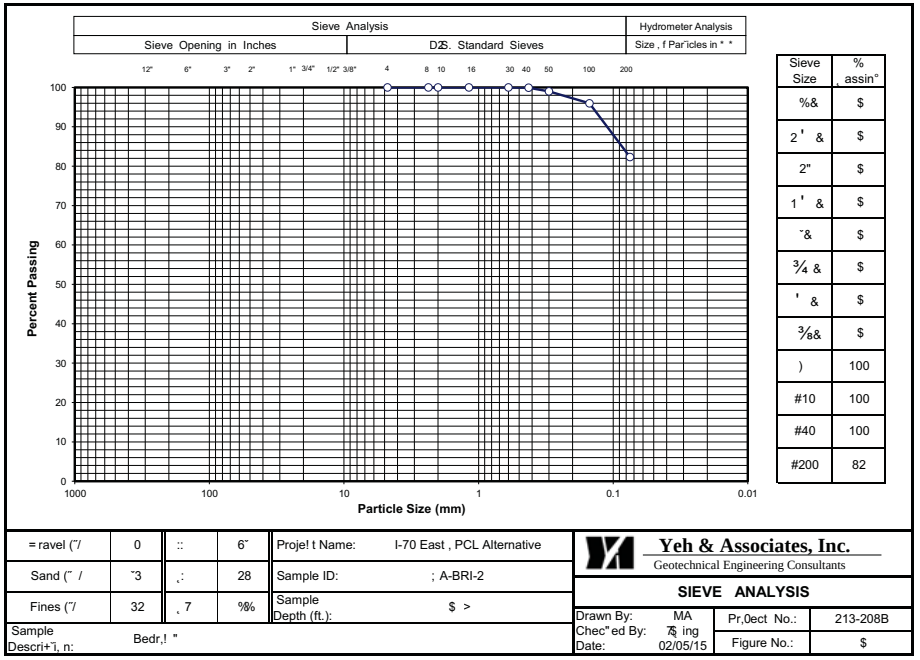

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	100
#200	82

= ravel (˝/	0	::	6¨	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	¨3	¸:	28	Sample ID:	; A-BRI-2
Fines (˝/	32	¸ 7	%%	Sample Depth (ft.):	$ >
Sample Descri+¨ı, n:	Bedr,! "				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/05/15	Figure No.:	$

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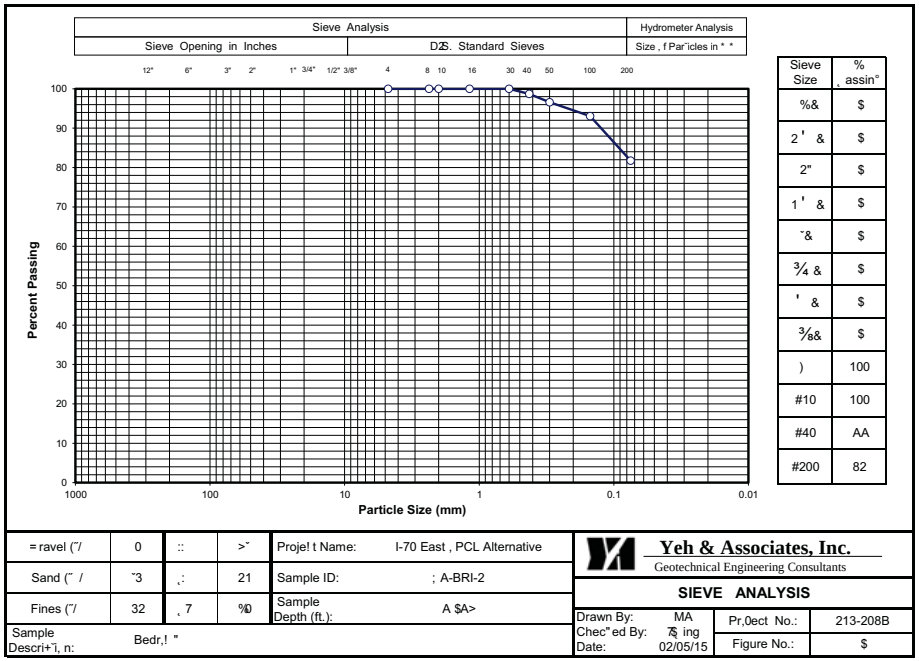

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	82

= ravel (˝/	0	::	>¨	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	¨3	¸:	21	Sample ID:	; A-BRI-2
Fines (˝/	32	¸ 7	%0	Sample Depth (ft.):	A $A>
Sample Descri+¨ı, n:	Bedr,! "				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/05/15	Figure No.:	$

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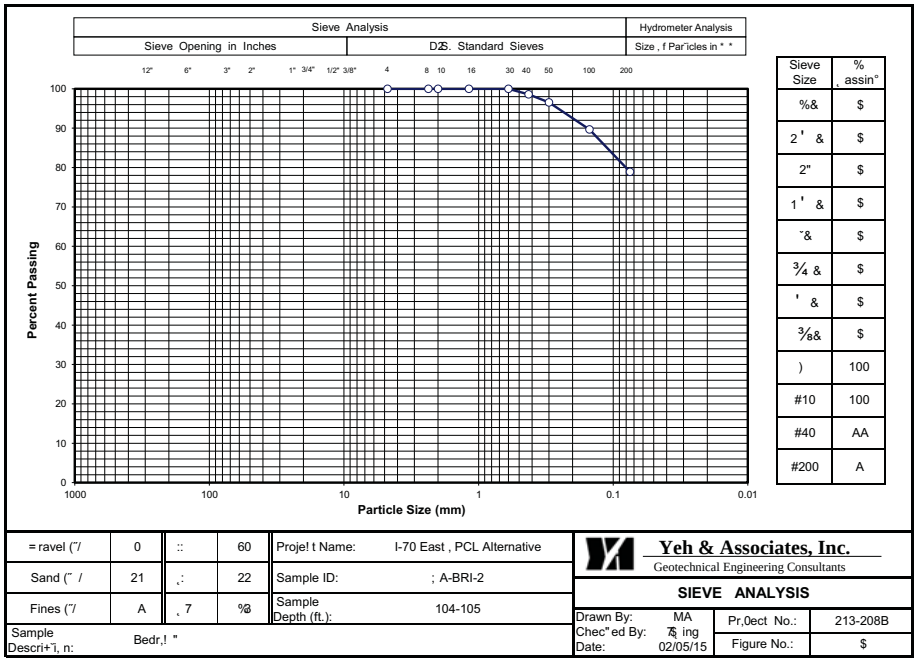

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	A

= ravel (˝/	0	::	60	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	21	¸:	22	Sample ID:	; A-BRI-2
Fines (˝/	A	¸ 7	%3	Sample Depth (ft.):	104-105
Sample Descri+¨ı, n:	Bedr,! "				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/05/15	Figure No.:	$

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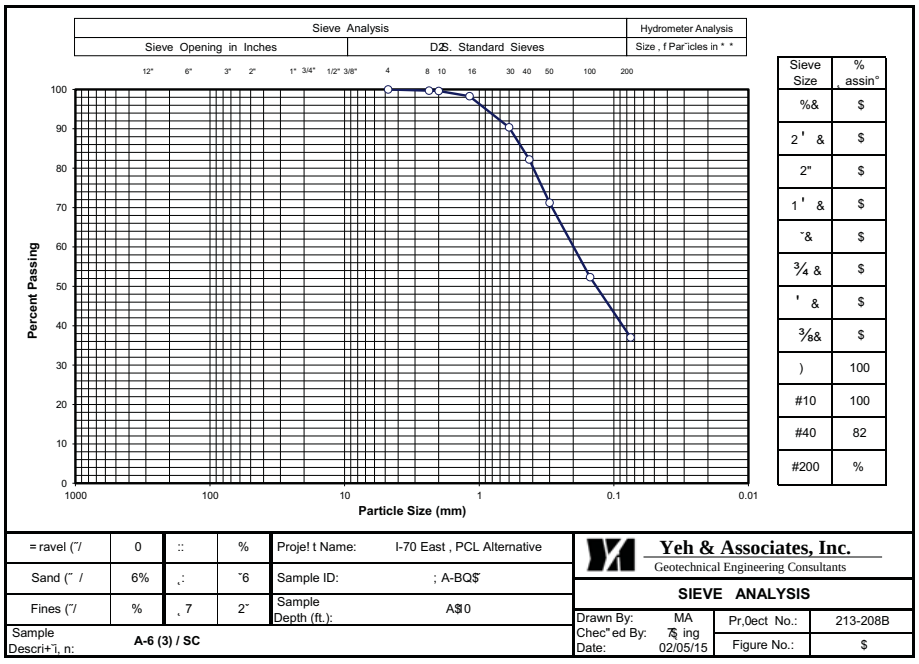

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	82
#200	%

= ravel (˜/	0	::	%	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6%	,:	¯6	Sample ID:	; A-BQ$
Fines (˜/	%	, 7	2¯	Sample Depth (ft.):	A$10
Sample Descri+¯i, n:	**A-6 (3) / SC**				

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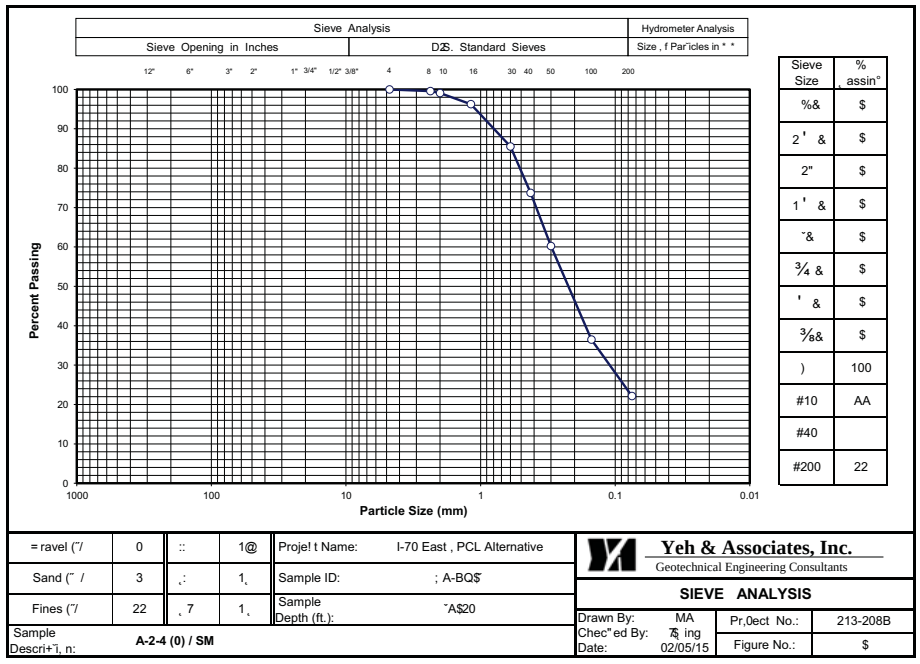
Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	T$ ing		
Date:	02/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	AA
#40	
#200	22

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3	,:	1,	Sample ID:	; A-BQ$
Fines (˜/	22	, 7	1,	Sample Depth (ft.):	¯A$20
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	T$ ing		
Date:	02/05/15	Figure No.:	$

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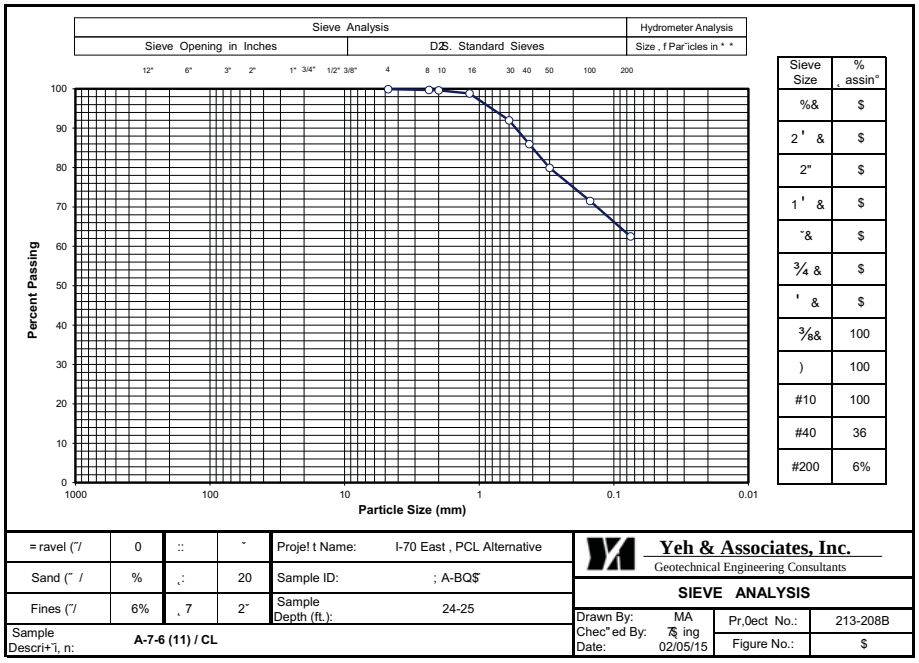

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	100
)	100
#10	100
#40	36
#200	6%

= ravel (˜/	0	::	¯	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	%	,:	20	Sample ID:	; A-BQ$
Fines (˜/	6%	, 7	2¯	Sample Depth (ft.):	24-25
Sample Descri+¯i, n:	**A-7-6 (11) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	T$ ing		
Date:	02/05/15	Figure No.:	$

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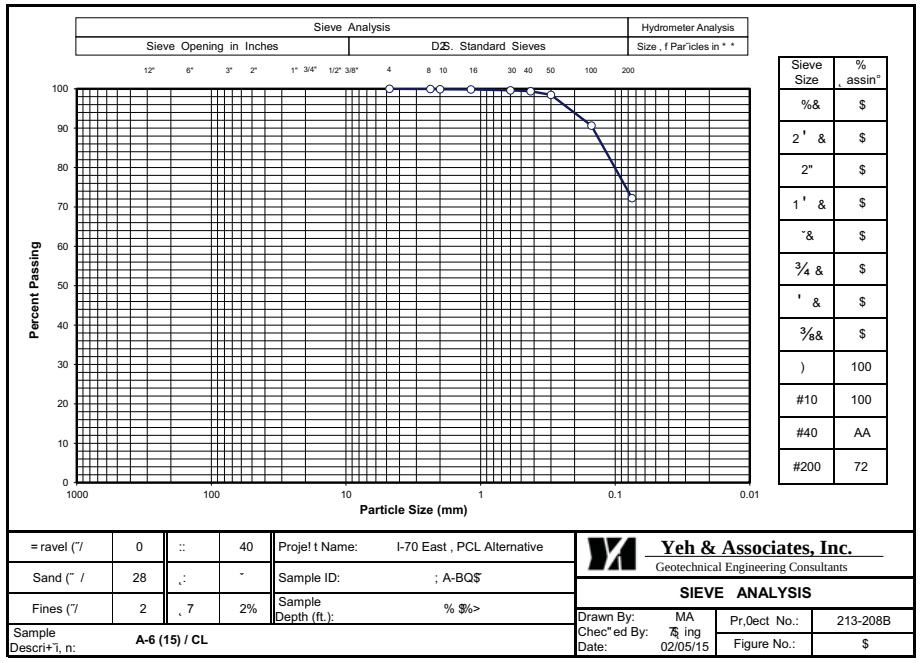

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	72

= ravel (˜/	0	::	40	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	28	,:	¯	Sample ID:	; A-BQ$
Fines (˜/	2	, 7	2%	Sample Depth (ft.):	% $%>
Sample Descri+¯i, n:	**A-6 (15) / CL**				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	T$ ing		
Date:	02/05/15	Figure No.:	$

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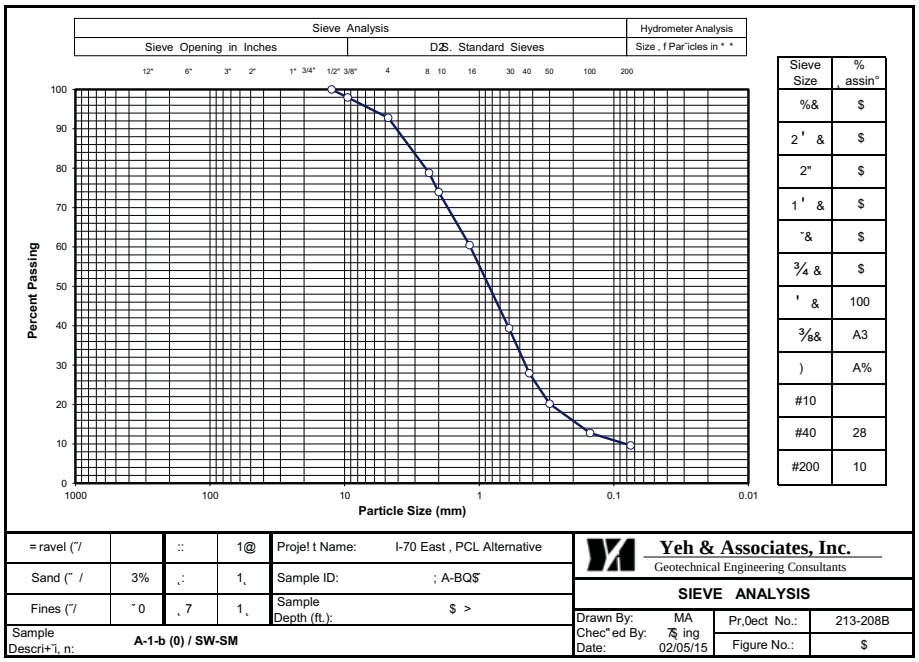

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&	A3
)	A%
#10	
#40	28
#200	10

= ravel (¨/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3%	¸:	1¸	Sample ID:	; A-BQ$
Fines (¨/	¨0	¸7	1¸	Sample Depth (ft.):	$ >
Sample Descri+¨i, n:	**A-1-b (0) / SW-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7$ ing		
Date:	02/05/15	Figure No.:	$

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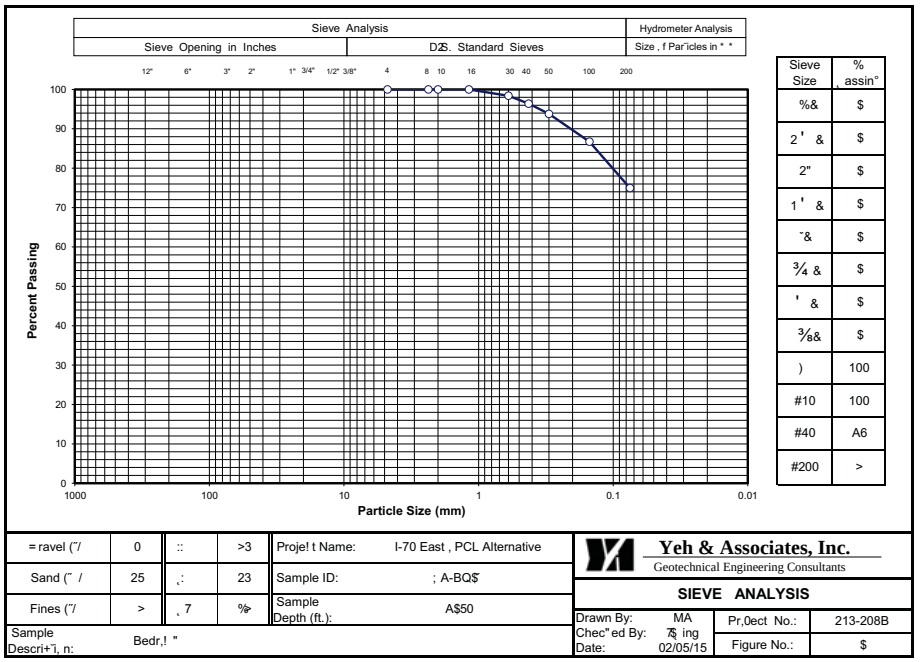

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A6
#200	>

= ravel (¨/	0	::	>3	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	25	¸:	23	Sample ID:	; A-BQ$
Fines (¨/	>	¸7	%>	Sample Depth (ft.):	A$50
Sample Descri+¨i, n:	Bedr,! "				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7$ ing		
Date:	02/05/15	Figure No.:	$

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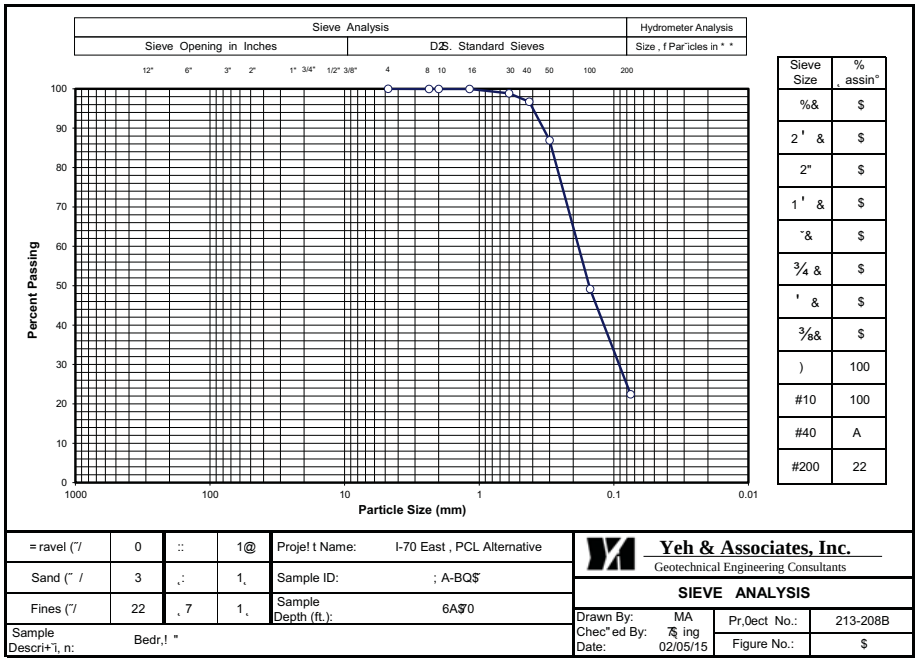

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A
#200	22

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3	¸:	1¸	Sample ID:	; A-BQ$
Fines (¨/	22	¸7	1¸	Sample Depth (ft.):	6A$70
Sample Descri+¨i, n:	Bedr,! "				

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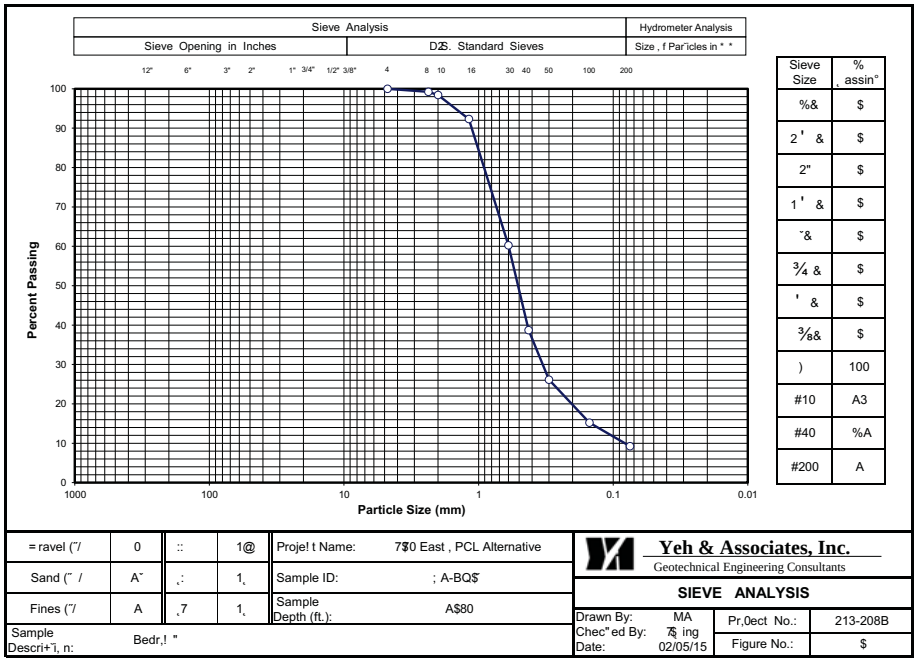
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7$ ing		
Date:	02/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	A3
#40	%A
#200	A

= ravel (¨/	0	::	1@	Proje! t Name:	7$0 East , PCL Alternative
Sand (¨ /	A¨	¸:	1¸	Sample ID:	; A-BQ$
Fines (¨/	A	¸7	1¸	Sample Depth (ft.):	A$80
Sample Descri+¨i, n:	Bedr,! "				

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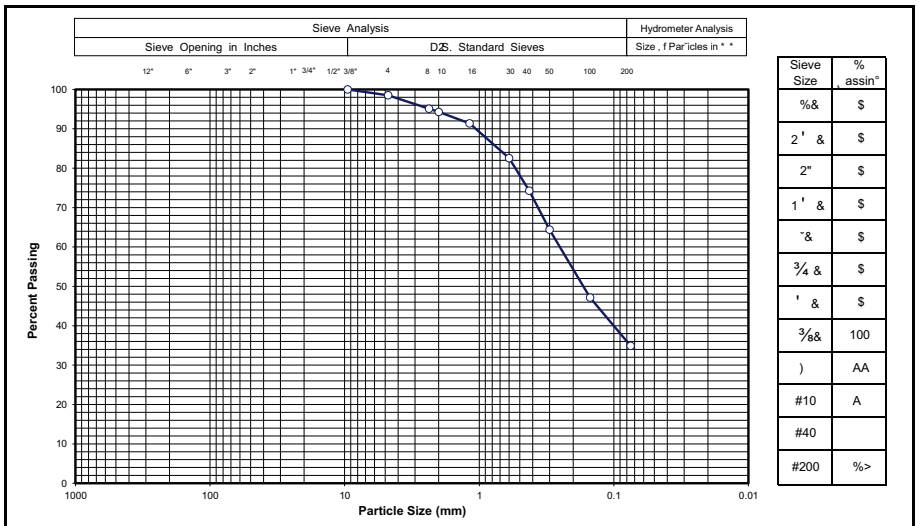
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7$ ing		
Date:	02/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A
#40	
#200	%>

= ravel (¯/	¯	::	42	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6	¸:	¯>	Sample ID:	; A-BQS2
Fines (¯/	%>	¸ 7	2	Sample Depth (ft.):	AS10
Sample Descri+¯i, n:	**A-2-7 (3) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/06/15	Figure No.:	$

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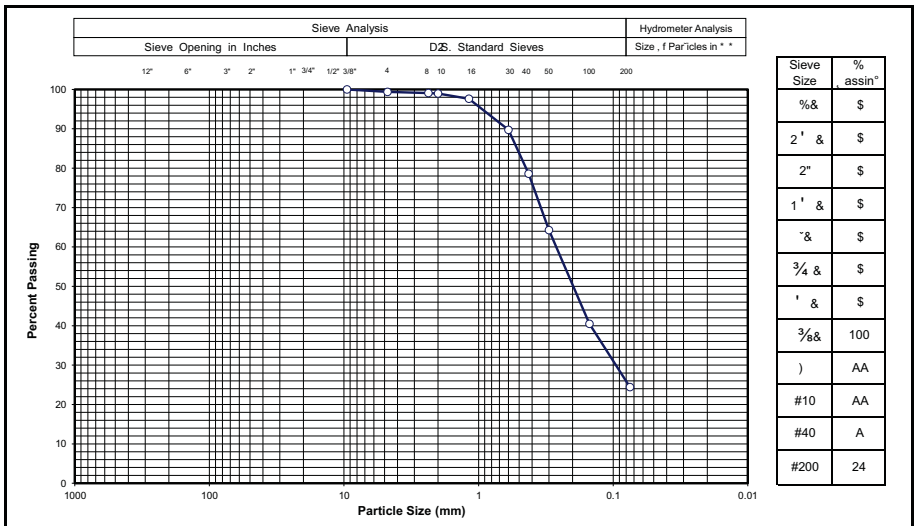

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	AA
#40	A
#200	24

= ravel (¯/	¯	::	27	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>	¸:	¯	Sample ID:	; A-BQS2
Fines (¯/	2	¸ 7	¯%	Sample Depth (ft.):	¯AS20
Sample Descri+¯i, n:	**A-2-6 (0) / SC**				

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SIEVE ANALYSIS

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Chec"ed By:	7S ing		
Date:	02/06/15	Figure No.:	$

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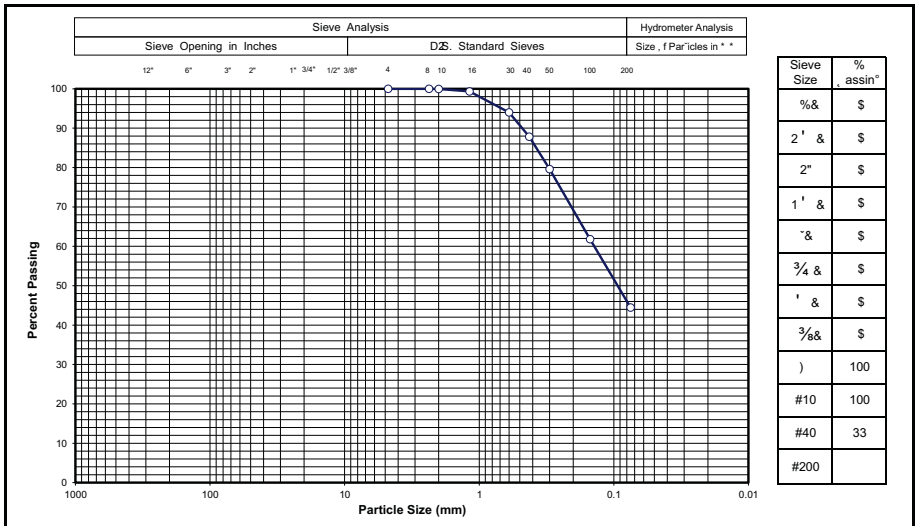

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	33
#200	

= ravel (¯/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>6	¸:	1¸	Sample ID:	; A-BQS2
Fines (¯/		¸ 7	1¸	Sample Depth (ft.):	29-30
Sample Descri+¯i, n:	**A-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/06/15	Figure No.:	$

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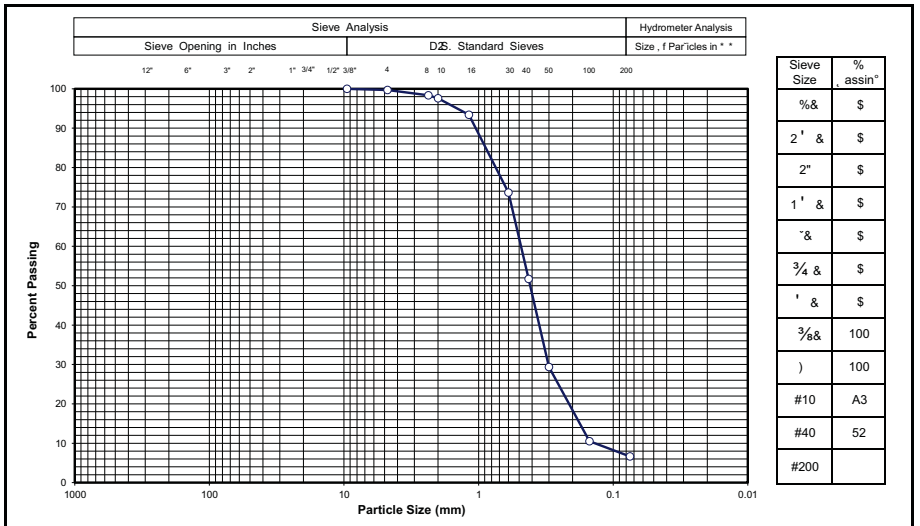

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	A3
#40	52
#200	

= ravel (¯/	0	::	1@	Proje! t Name:	II-70 East , PCL Alternative
Sand (¯ /	A%	¸:	1¸	Sample ID:	; A-BQS2
Fines (¯/		¸7	1¸	Sample Depth (ft.):	%AS0
Sample Descri+¯i, n:	**A-3 (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/06/15	Figure No.:	$

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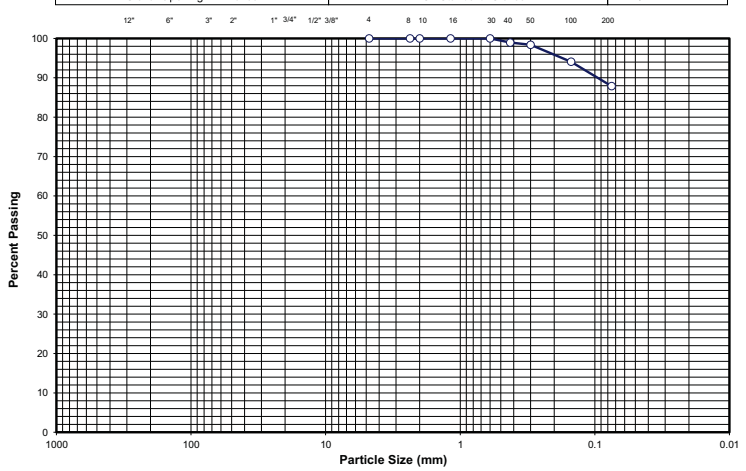
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% , assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	33

= ravel (¨/	0	::	63	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	12	¸:	29	Sample ID:	; A-BQ$2
Fines (¨/	33	¸ 7	%A	Sample Depth (ft.):	$ >
Sample Descri+¨ï, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/06/15	Figure No.:	$

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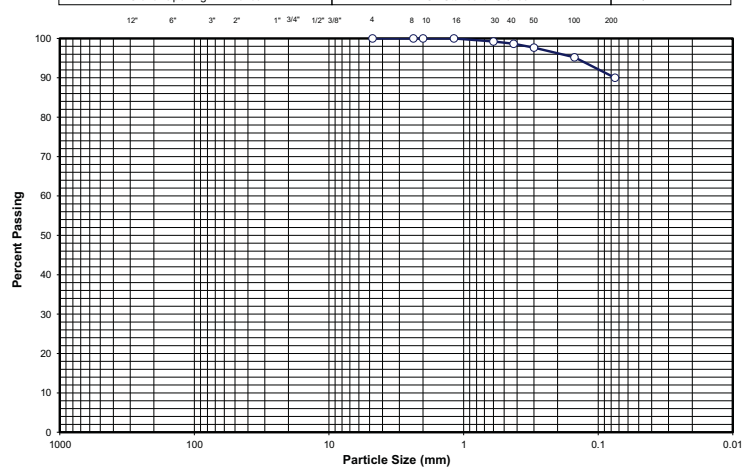
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% , assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	90

= ravel (¨/	0	::	6	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	10	¸:	28	Sample ID:	; A-BQ$2
Fines (¨/	A0	¸ 7	%6	Sample Depth (ft.):	>A$30
Sample Descri+¨ï, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/06/15	Figure No.:	$

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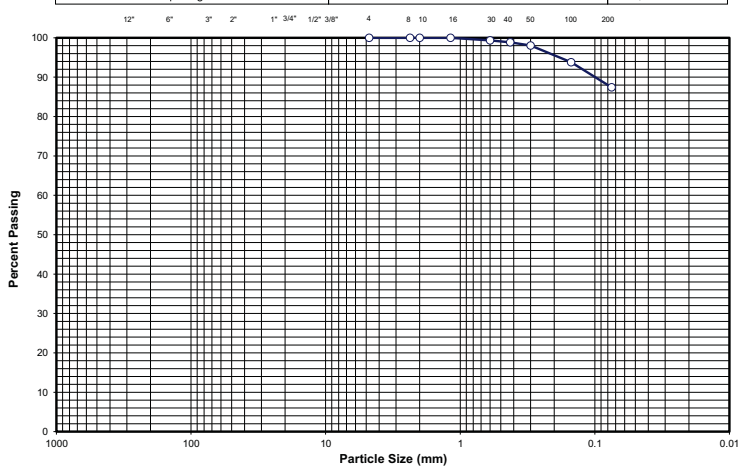
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% , assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	3

= ravel (¨/	0	::	6	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	¨%	¸:	28	Sample ID:	; A-BQ$2
Fines (¨/	3	¸ 7	%6	Sample Depth (ft.):	6A$70
Sample Descri+¨ï, n:	Bedr,! "				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/06/15	Figure No.:	$

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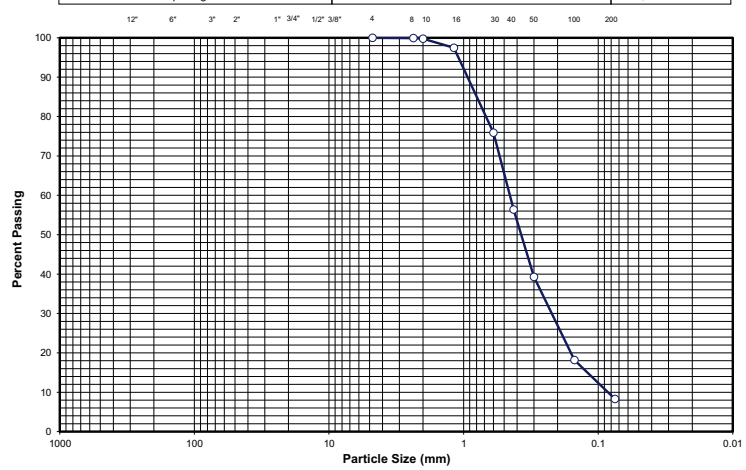
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% , assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	>6
#200	3

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	92	¸:	1¸	Sample ID:	; A-B270-¨
Fines (¨/	3	¸7	1¸	Sample Depth (ft.):	A$10
Sample Descri+¨ï, n:	**A-3 (0) / SP-SM**				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/06/15	Figure No.:	$

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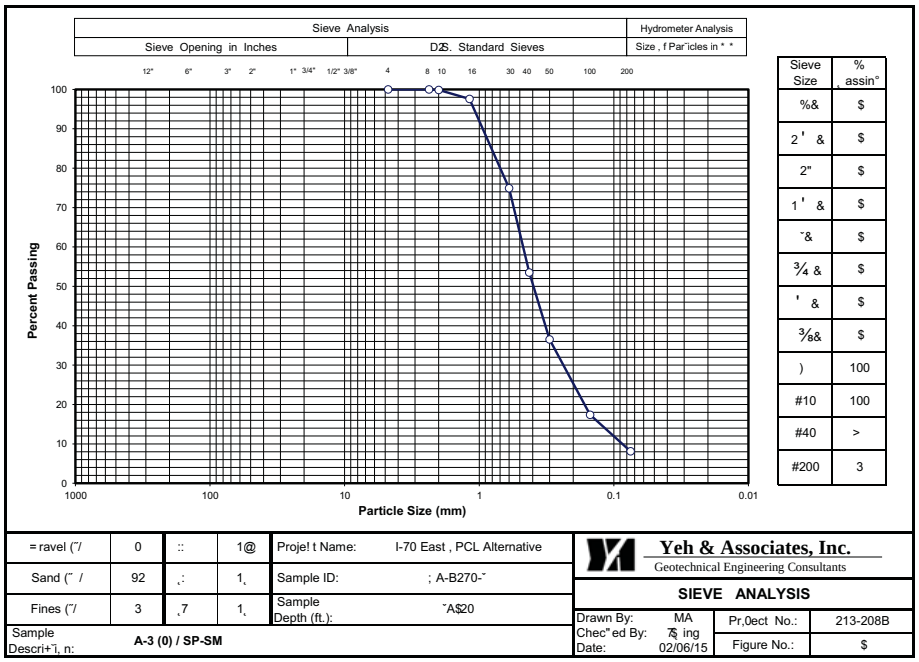

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	>
#200	3

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	92	¸:	1¸	Sample ID:	; A-B270-¨
Fines (¨/	3	¸7	1¸	Sample Depth (ft.):	¨A$20
Sample Descri+¨i, n:	**A-3 (0) / SP-SM**				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/06/15	Figure No.:	$

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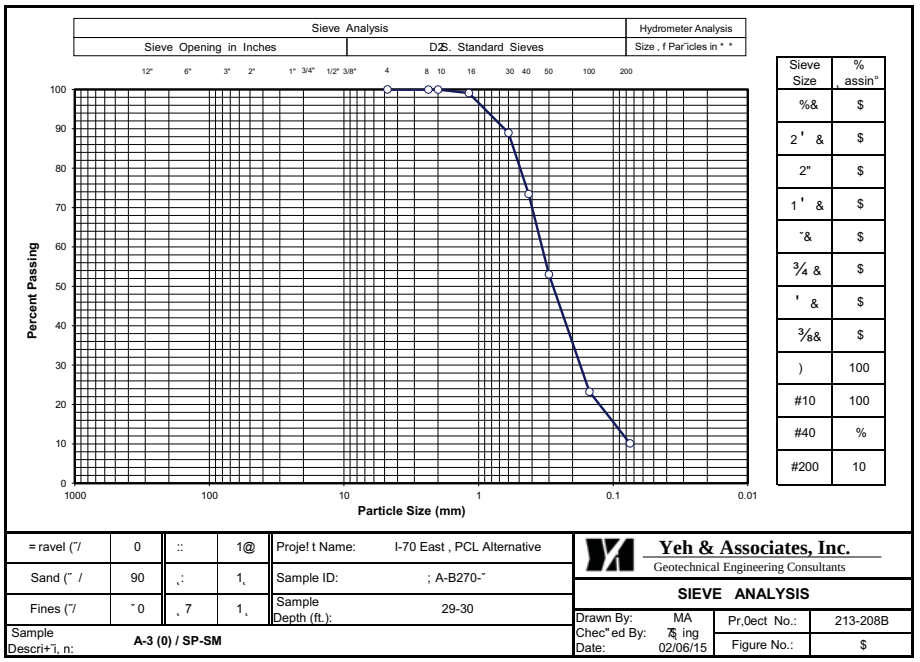

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	%
#200	10

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	90	¸:	1¸	Sample ID:	; A-B270-¨
Fines (¨/	¨0	¸7	1¸	Sample Depth (ft.):	29-30
Sample Descri+¨i, n:	**A-3 (0) / SP-SM**				

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Drawn By:	MA	Pr,0ect No.:	213-208B
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Date:	02/06/15	Figure No.:	$

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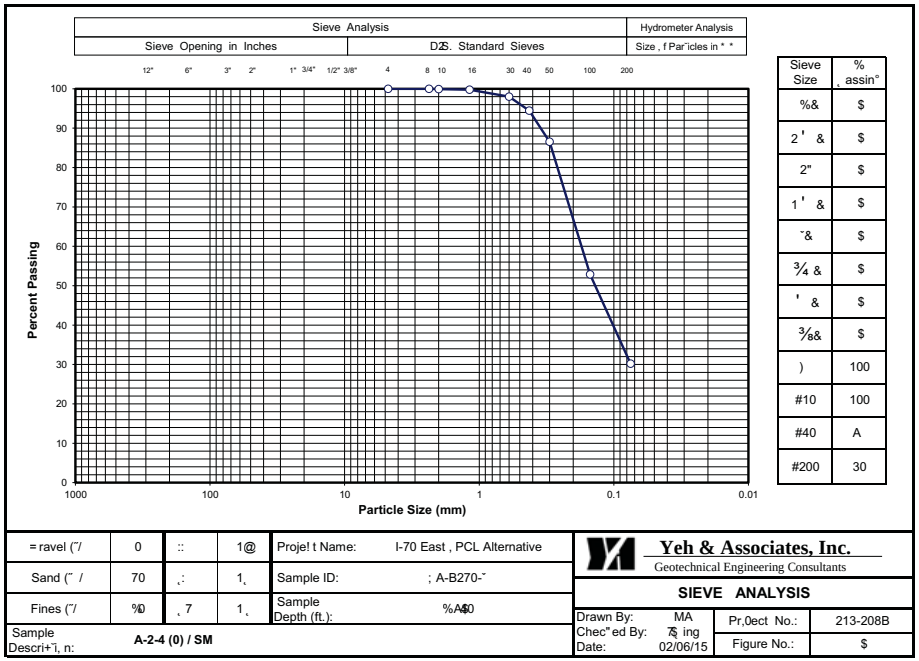

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A
#200	30

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	70	¸:	1¸	Sample ID:	; A-B270-¨
Fines (¨/	%0	¸7	1¸	Sample Depth (ft.):	%A$0
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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Date:	02/06/15	Figure No.:	$

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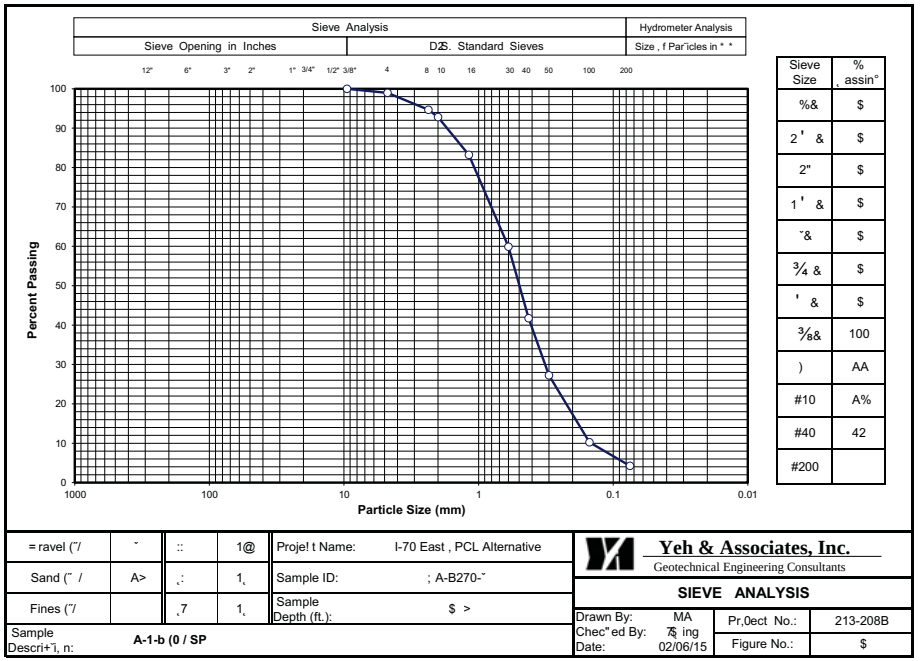

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A%
#40	42
#200	

= ravel (¨/	¨	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	A>	¸:	1¸	Sample ID:	; A-B270-¨
Fines (¨/		¸7	1¸	Sample Depth (ft.):	$ >
Sample Descri+¨i, n:	**A-1-b (0 / SP**				

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Date:	02/06/15	Figure No.:	$

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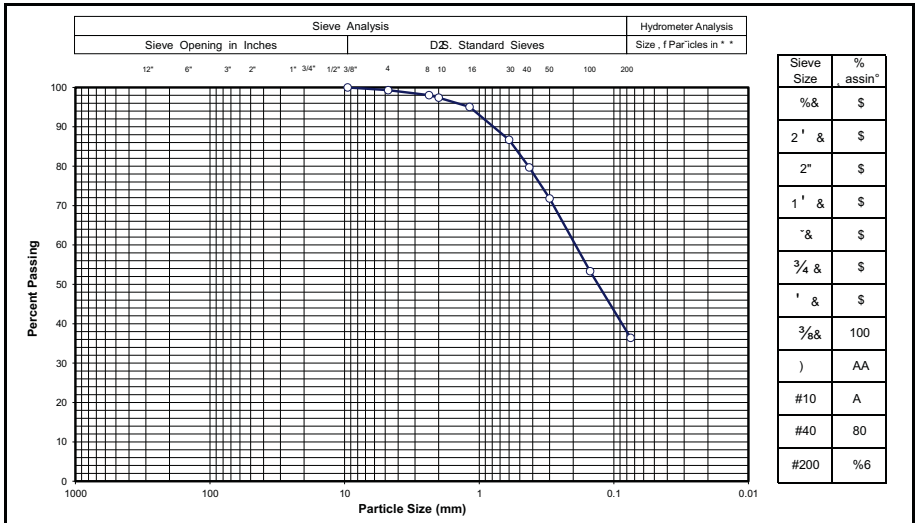

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A
#40	80
#200	%6

= ravel (¨/	¨	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	6%	¸:	22	Sample ID:	; A-B270-¨
Fines (¨/	%6	¸ 7	%2	Sample Depth (ft.):	>A$0
Sample Descri+¨ı, n:	Bedr,! "				

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Chec"ed By:	7§ ing		
Date:	02/06/15	Figure No.:	$

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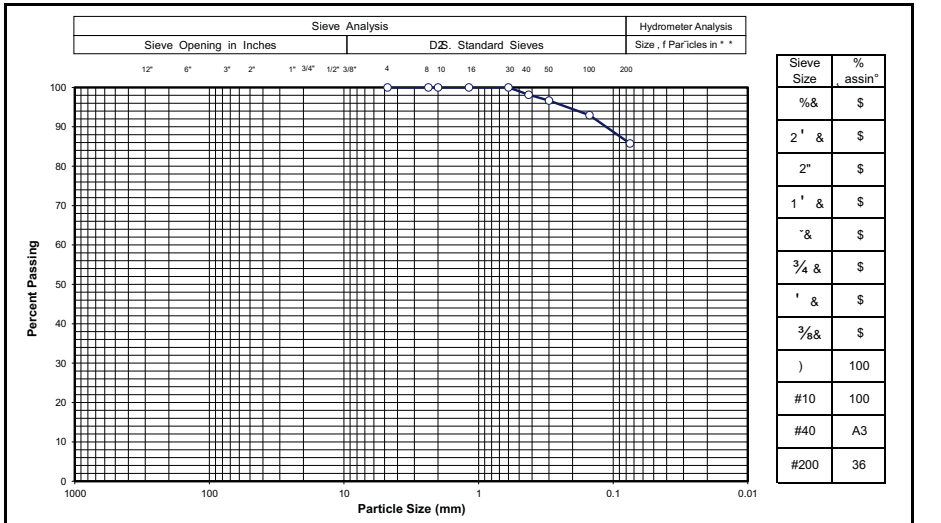

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A3
#200	36

= ravel (¨/	0	::	6%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	¨	¸:	27	Sample ID:	; A-B270-¨
Fines (¨/	36	¸ 7	%6	Sample Depth (ft.):	6A$0
Sample Descri+¨ı, n:	Bedr,! "				

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Chec"ed By:	7§ ing		
Date:	02/06/15	Figure No.:	$

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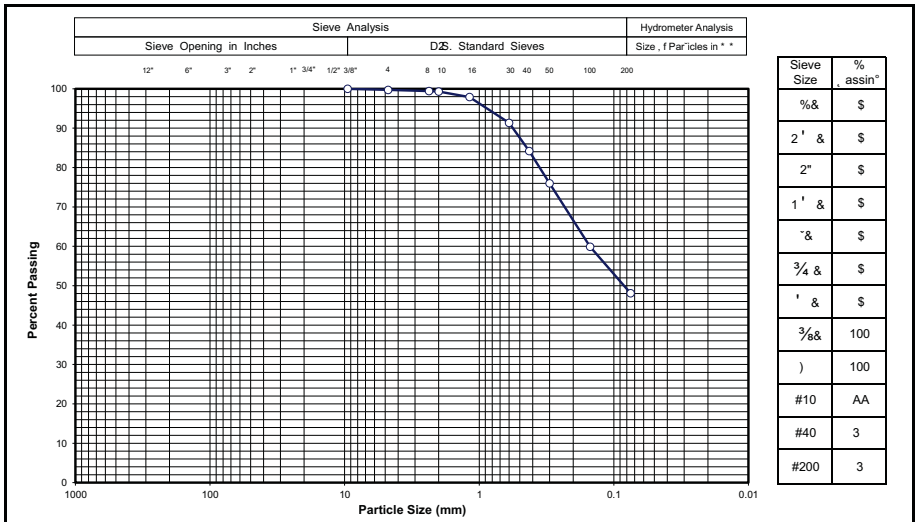

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	AA
#40	3
#200	3

= ravel (¨/	0	::	42	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	52	¸:	¨	Sample ID:	; A-B270-2
Fines (¨/	3	¸ 7	2>	Sample Depth (ft.):	%$
Sample Descri+¨ı, n:	**A-7-6 (8) / SC**				

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Date:	02/10/15	Figure No.:	$

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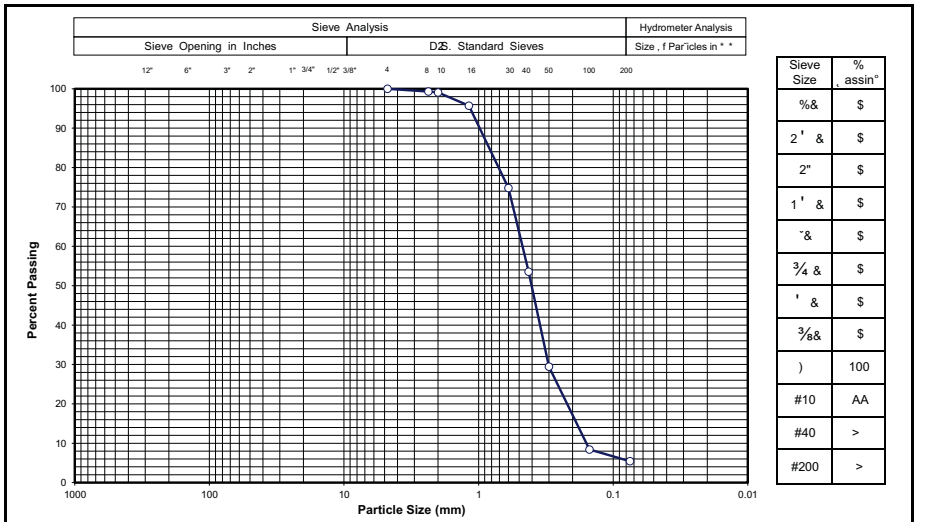

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	>
#200	>

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	A>	¸:	1¸	Sample ID:	; A-B270-2
Fines (¨/	>	¸7	1¸	Sample Depth (ft.):	6$
Sample Descri+¨ı, n:	**A-3 (0) / SP-SM**				

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Drawn By:	MA	Pr,0ect No.:	213-208B
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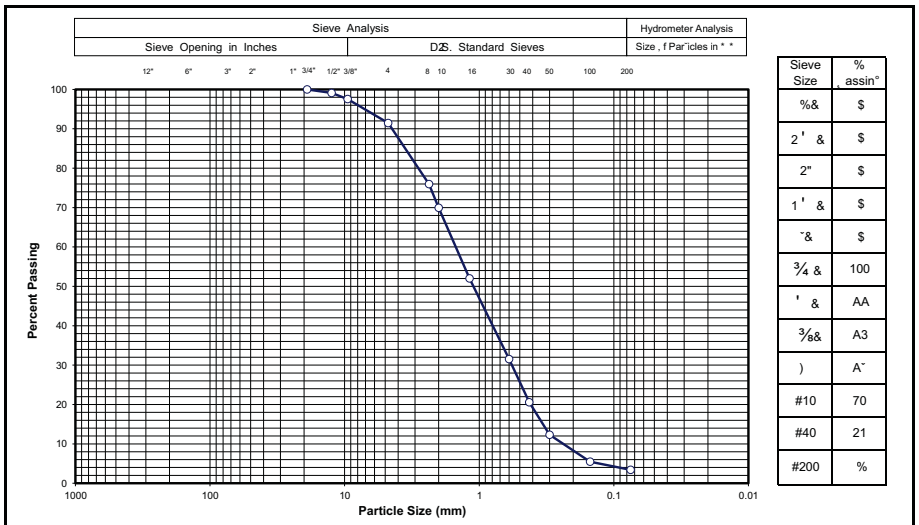

Sieve Size	% , assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	AA
⅜&	A3
)	A¨
#10	70
#40	21
#200	%

= ravel (˜/	A	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	33	¸:	1¸	Sample ID:	; A-B270-2
Fines (˜/	%	¸7	1¸	Sample Depth (ft.):	A$10
Sample Descri+¨ı, n:	**A-1-b (0) / SP**				

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Chec"ed By:	7S ing		
Date:	02/10/15	Figure No.:	$

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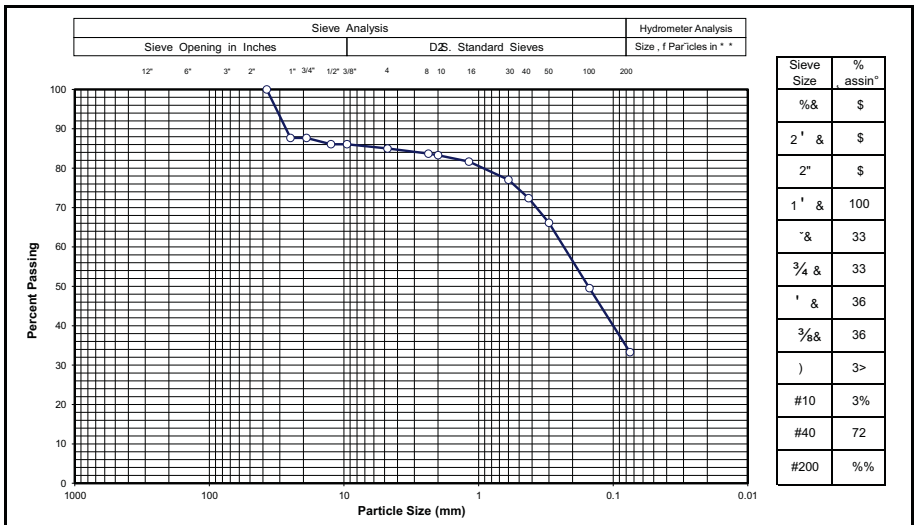

Sieve Size	% , assin˜
%&	$
2 ' &	$
2"	$
1 ' &	100
¨&	33
¾ &	33
' &	36
⅜&	36
)	3>
#10	3%
#40	72
#200	%%

= ravel (˜/	¨>	::	>6	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	52	¸:	23	Sample ID:	; A-B270-2
Fines (˜/	%%	¸7	%%	Sample Depth (ft.):	¨ $ ¨>
Sample Descri+¨ı, n:	**A-2-7 (4) / SC**				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/10/15	Figure No.:	$

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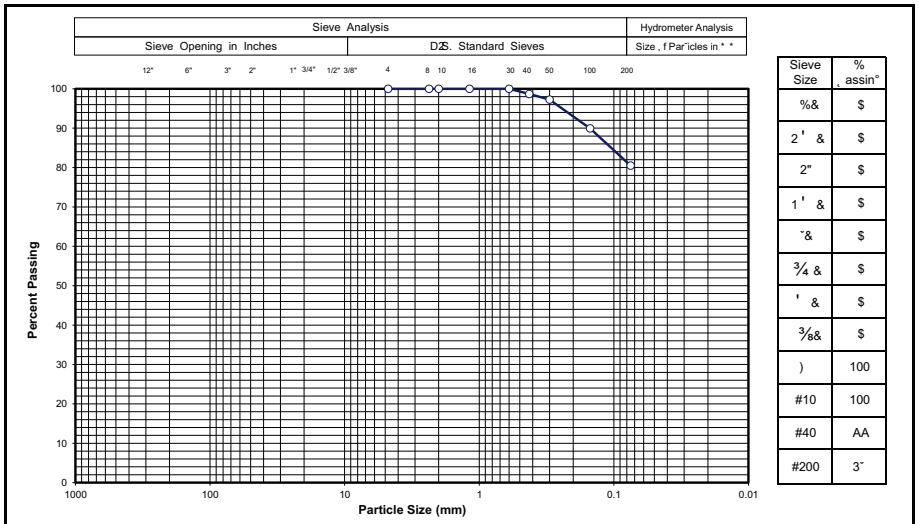

Sieve Size	% , assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	3¨

= ravel (˜/	0	::	>A	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	¨A	¸:	22	Sample ID:	; A-B270-2
Fines (˜/	3¨	¸7	%	Sample Depth (ft.):	29-30
Sample Descri+¨ı, n:	Bedr,! "				

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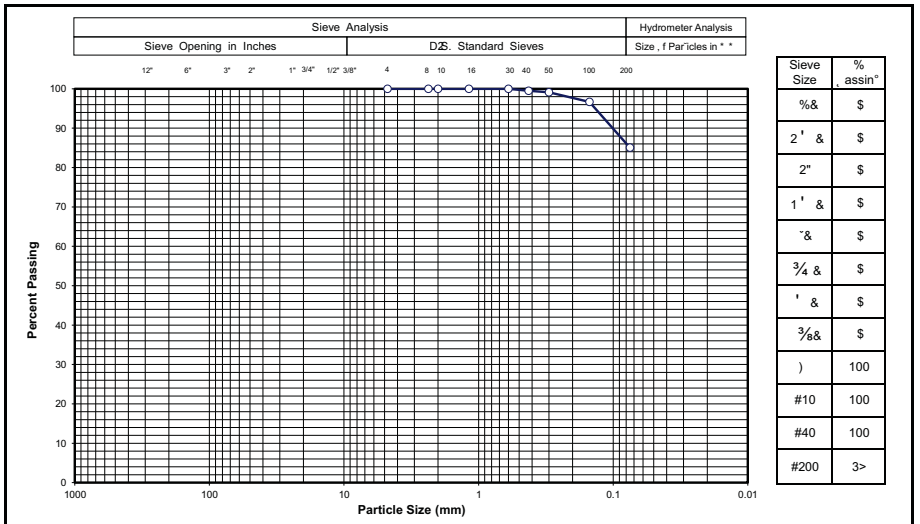
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/10/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	100
#200	3>

= ravel (˜/	0	::	>>	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	¨>	¸:	24	Sample ID:	; A-B270-2
Fines (˜/	3>	¸7	%	Sample Depth (ft.):	%A$0
Sample Descri+¨ı, n:	Bedr,! "				

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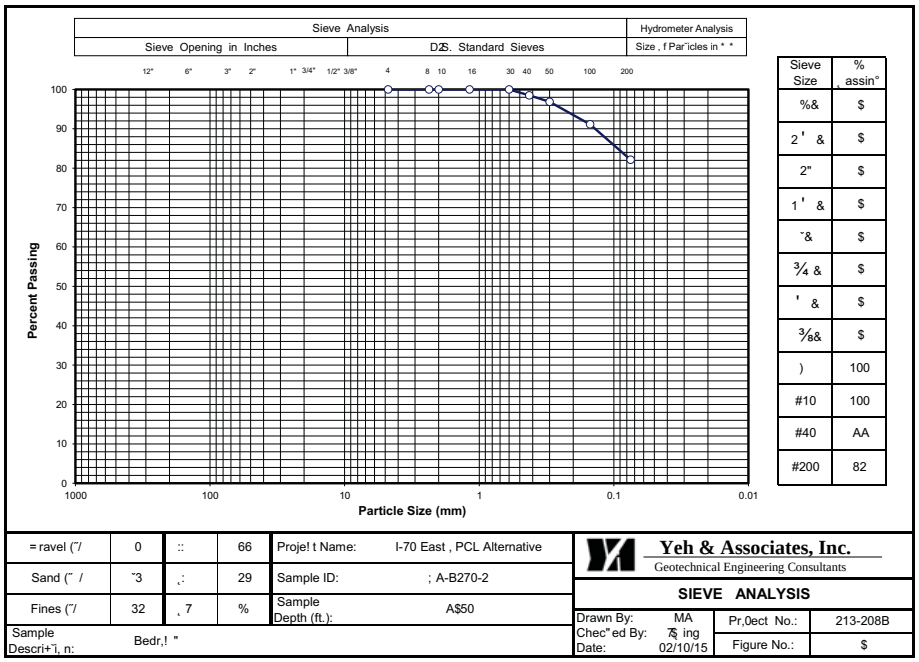
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/10/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	82

= ravel (˜/	0	::	66	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	¨3	,:	29	Sample ID:	; A-B270-2
Fines (˜/	32	, 7	%	Sample Depth (ft.):	A$50
Sample Descri+¨i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7$ ing		
Date:	02/10/15	Figure No.:	$

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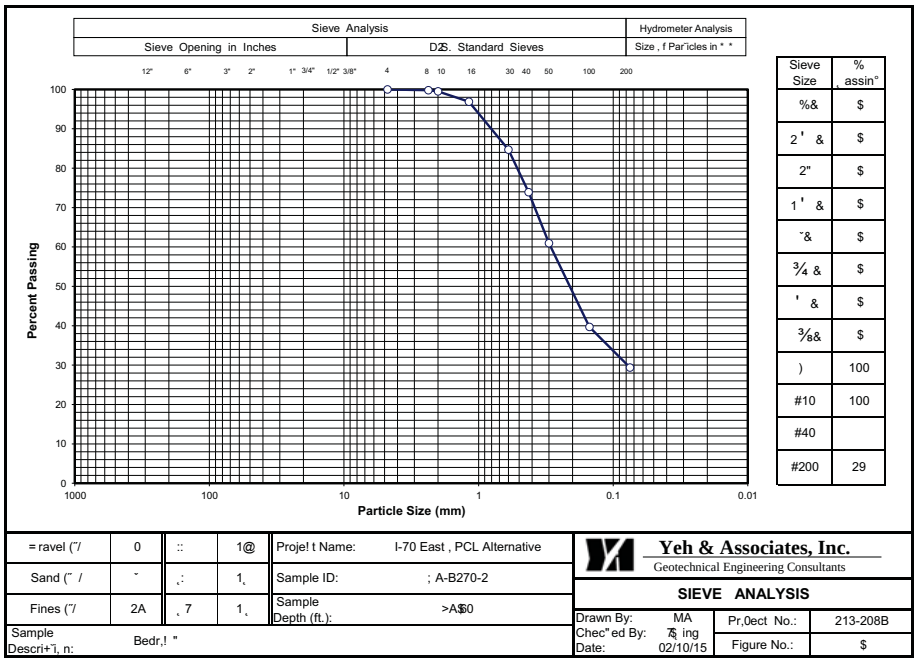

Sieve Size	% ,assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	
#200	29

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	˜	,:	1,	Sample ID:	; A-B270-2
Fines (˜/	2A	, 7	1,	Sample Depth (ft.):	>A$0
Sample Descri+¨i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7$ ing		
Date:	02/10/15	Figure No.:	$

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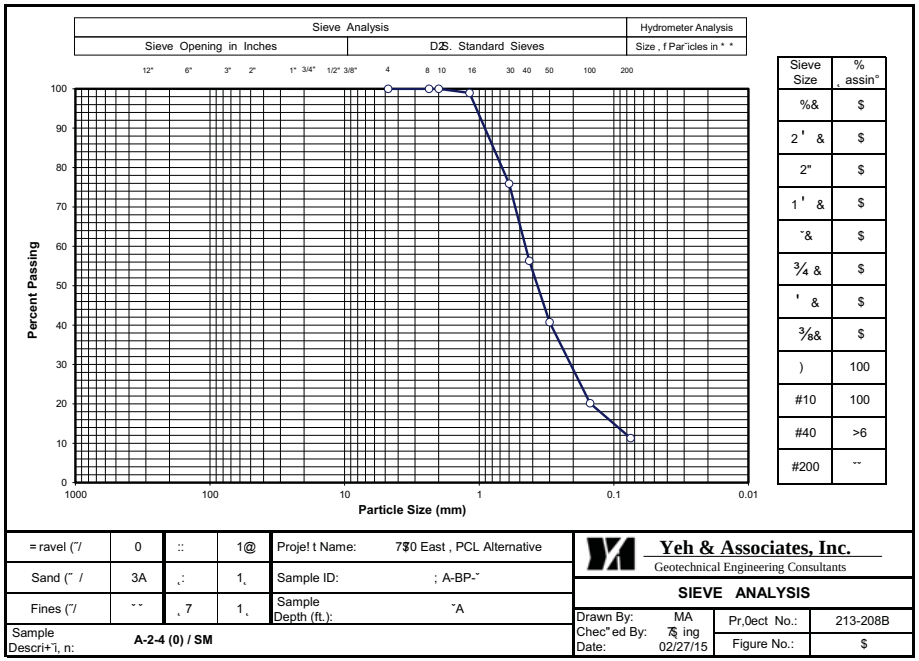

Sieve Size	% ,assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	>6
#200	˜˜

= ravel (˜/	0	::	1@	Proje! t Name:	7$0 East , PCL Alternative
Sand (˜ /	3A	,:	1,	Sample ID:	; A-BP-˜
Fines (˜/	˜˜	, 7	1,	Sample Depth (ft.):	˜A
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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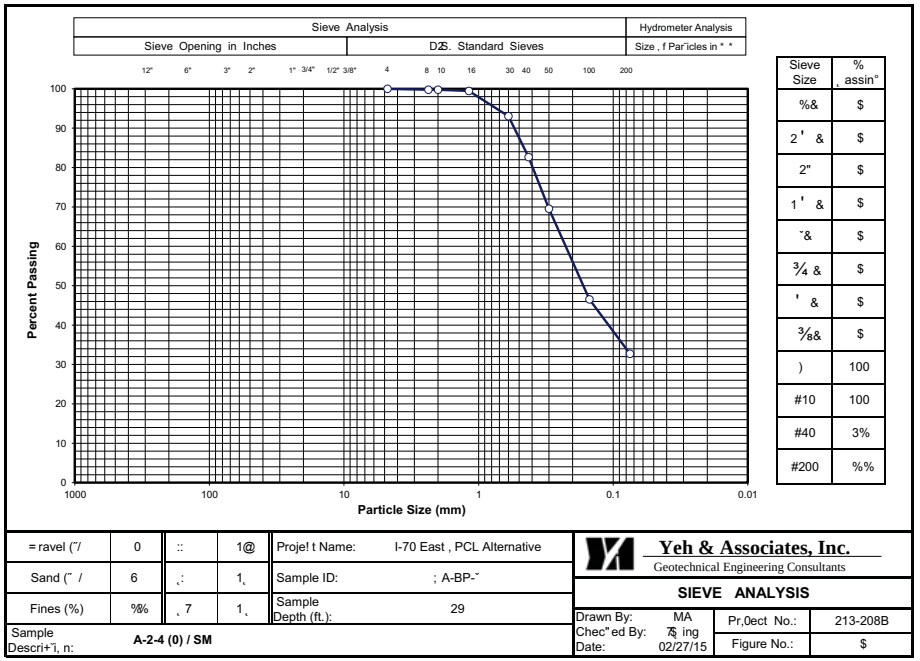
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7$ ing		
Date:	02/27/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3%
#200	%%

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	,:	1,	Sample ID:	; A-BP-˜
Fines (%)	%%	, 7	1,	Sample Depth (ft.):	29
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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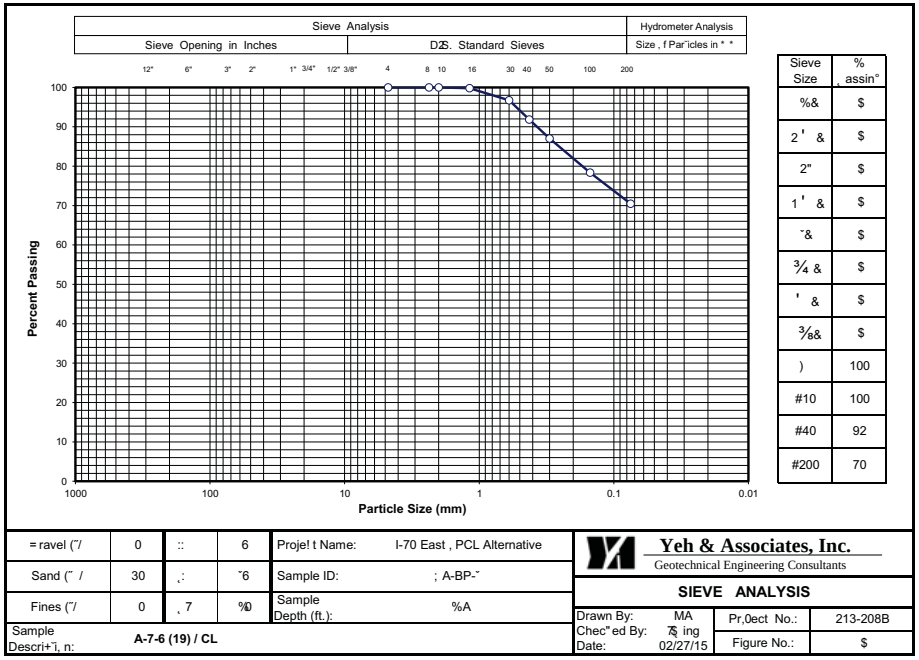
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7$ ing		
Date:	02/27/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	92
#200	70

= ravel (˜/	0	::	6	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	30	¸:	¨6	Sample ID:	; A-BP-˘
Fines (˜/	0	¸ 7	%0	Sample Depth (ft.):	%A
Sample Descri+¨ı, n:	**A-7-6 (19) / CL**				

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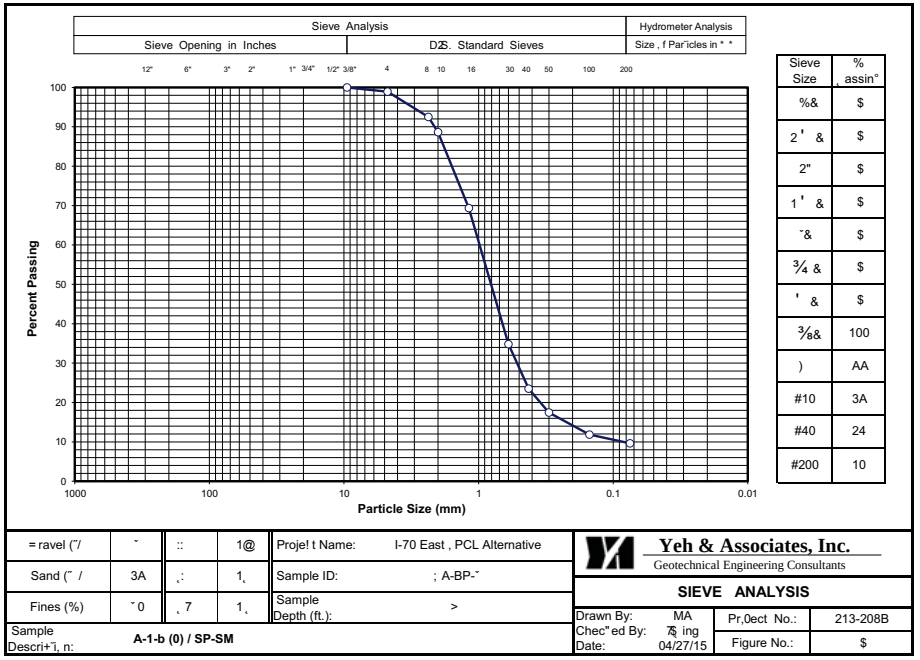
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/27/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	AA
#10	3A
#40	24
#200	10

= ravel (˜/	˘	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3A	¸:	1¸	Sample ID:	; A-BP-˘
Fines (%)	˘0	¸ 7	1¸	Sample Depth (ft.):	>
Sample Descri+¨ı, n:	**A-1-b (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	04/27/15	Figure No.:	$

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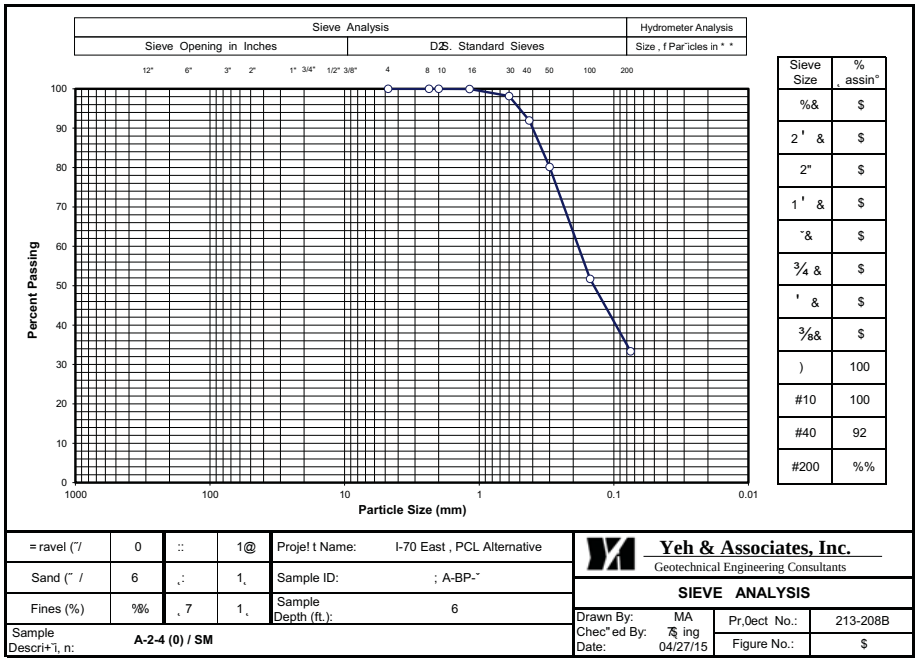

Sieve Size	% , assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	92
#200	%%

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	¸:	1¸	Sample ID:	; A-BP-˘
Fines (%)	%%	¸ 7	1¸	Sample Depth (ft.):	6
Sample Descri+¨ı, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	04/27/15	Figure No.:	$

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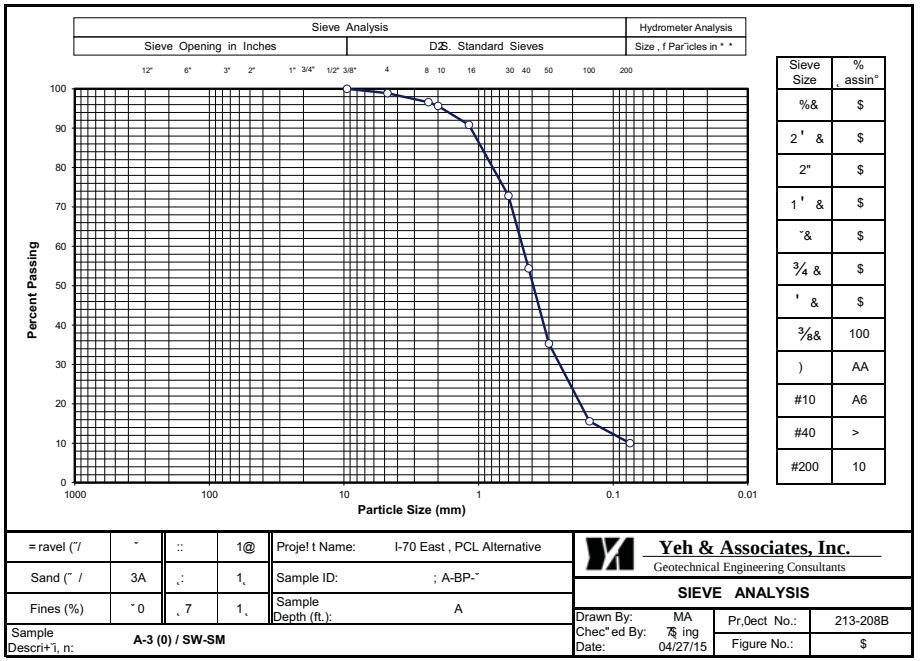

Sieve Size	% , assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	AA
#10	A6
#40	>
#200	10

= ravel (˜/	˘	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3A	¸:	1¸	Sample ID:	; A-BP-˘
Fines (%)	˘0	¸ 7	1¸	Sample Depth (ft.):	A
Sample Descri+¨ı, n:	**A-3 (0) / SW-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	04/27/15	Figure No.:	$

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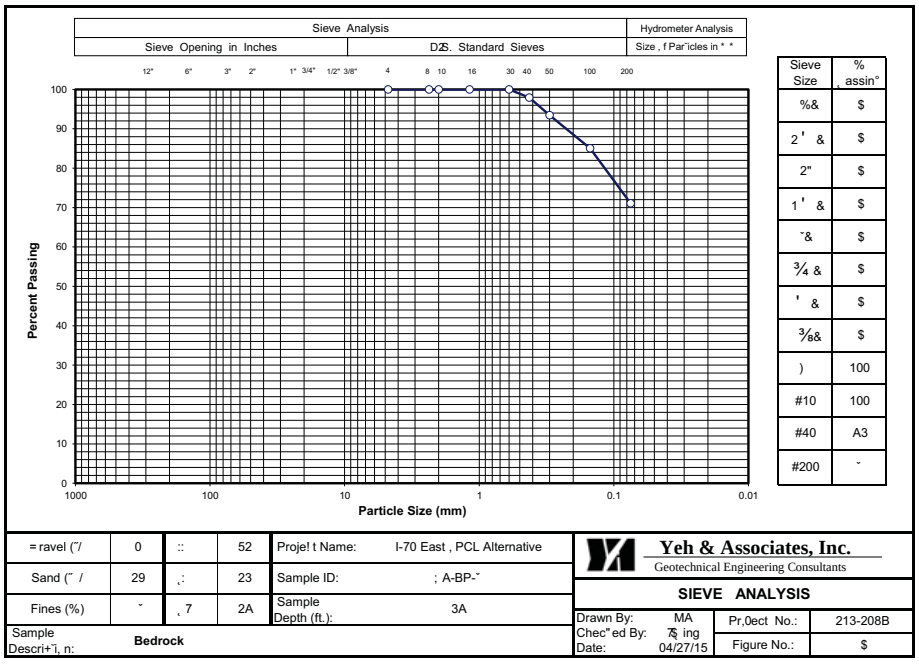

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A3
#200	ˇ

= ravel (˝/	0	::	52	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	29	¸:	23	Sample ID:	; A-BP-ˇ
Fines (%)	ˇ	¸ 7	2A	Sample Depth (ft.):	3A
Sample Descri+¯i, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ÿ§ ing		
Date:	04/27/15	Figure No.:	$

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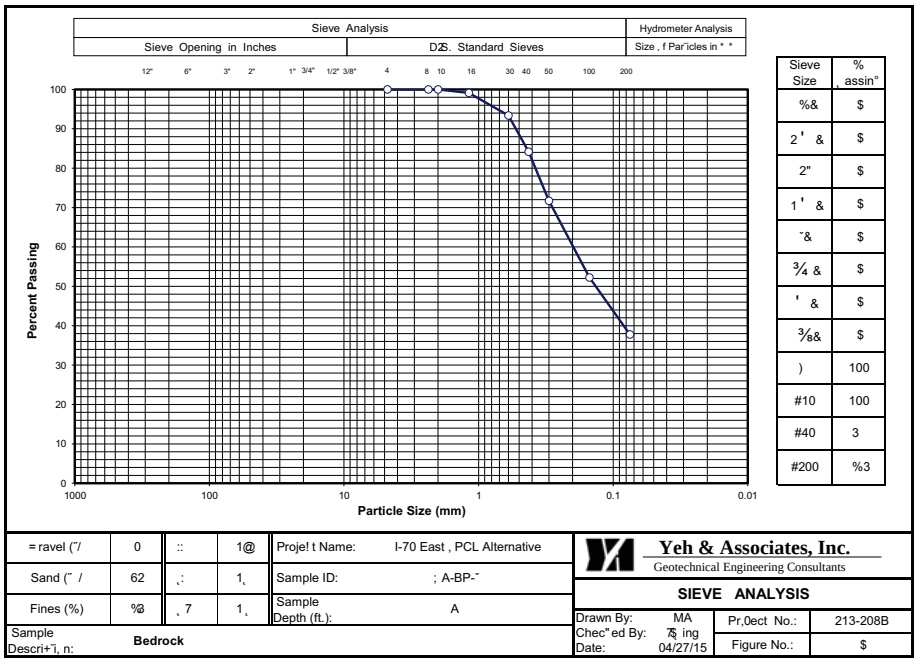

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3
#200	%3

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	62	¸:	1¸	Sample ID:	; A-BP-ˇ
Fines (%)	%8	¸ 7	1¸	Sample Depth (ft.):	A
Sample Descri+¯i, n:	**Bedrock**				

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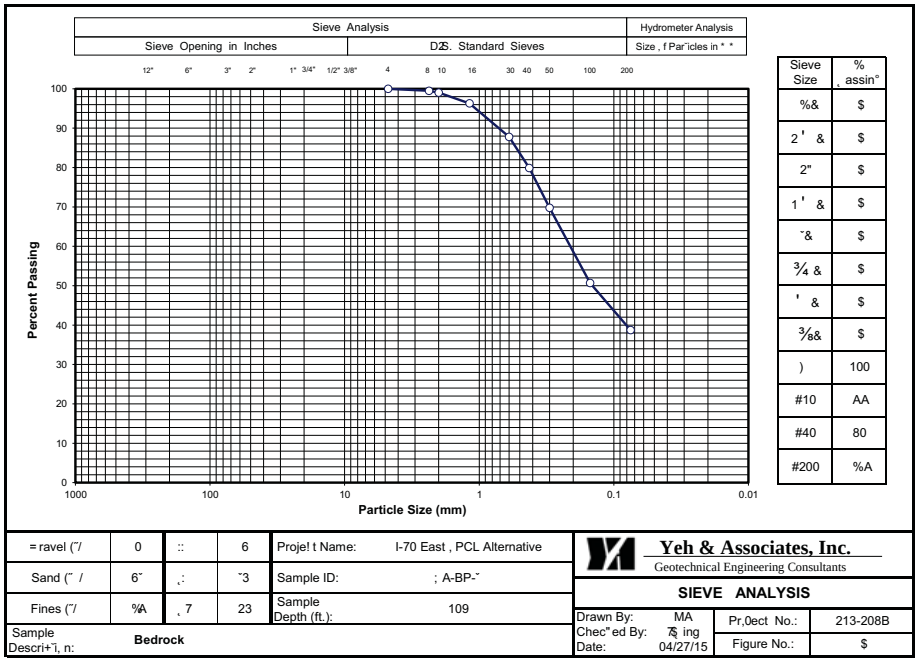
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ÿ§ ing		
Date:	04/27/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	AA
#40	80
#200	%A

= ravel (˝/	0	::	6	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	6ˇ	¸:	¯3	Sample ID:	; A-BP-ˇ
Fines (˝/	%A	¸ 7	23	Sample Depth (ft.):	109
Sample Descri+¯i, n:	**Bedrock**				

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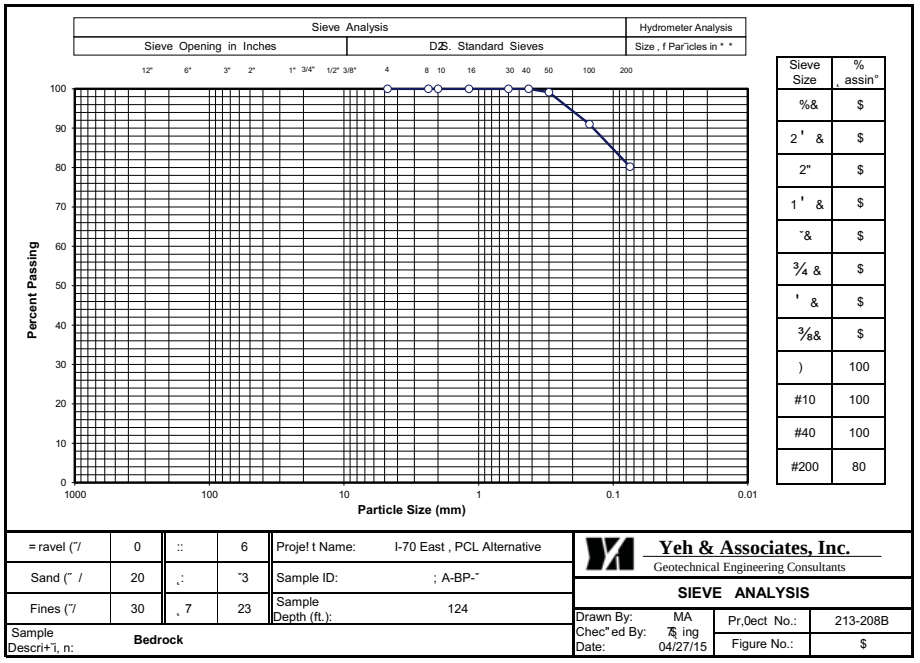
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ÿ§ ing		
Date:	04/27/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	100
#200	80

= ravel (˝/	0	::	6	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	20	¸:	¯3	Sample ID:	; A-BP-ˇ
Fines (˝/	30	¸ 7	23	Sample Depth (ft.):	124
Sample Descri+¯i, n:	**Bedrock**				

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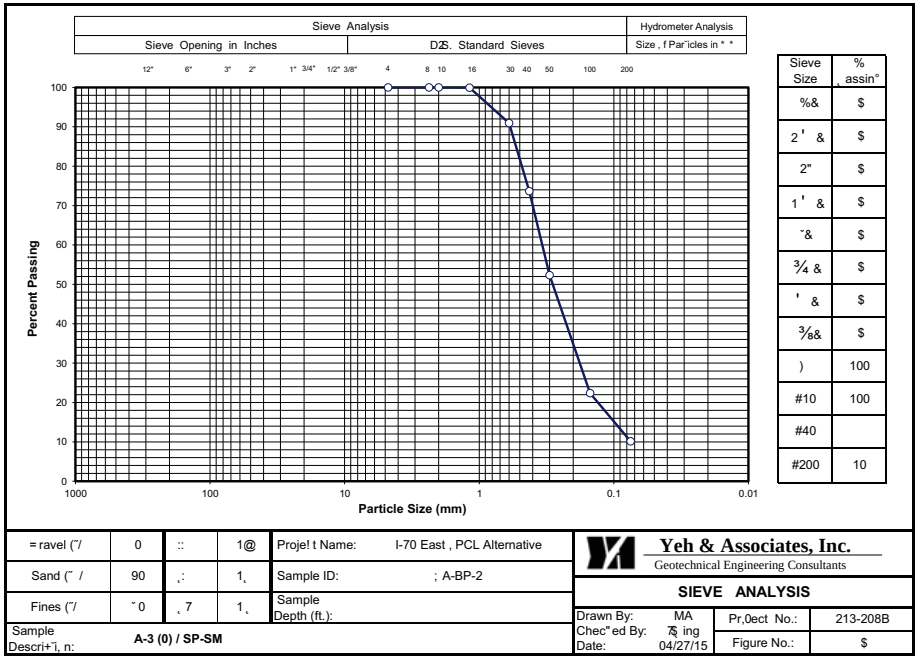
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ÿ§ ing		
Date:	04/27/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	
#200	10

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	90	¸:	1¸	Sample ID:	; A-BP-2
Fines (¨/	¨0	¸ 7	1¸	Sample Depth (ft.):	
Sample Descri+¨i, n:	**A-3 (0) / SP-SM**				

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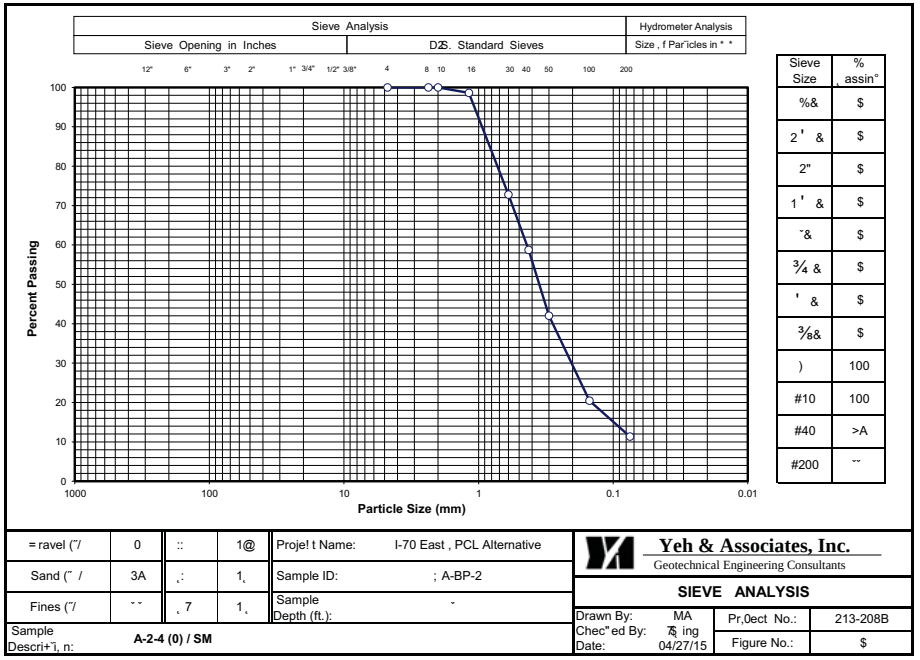
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	04/27/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	>A
#200	¨¨

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3A	¸:	1¸	Sample ID:	; A-BP-2
Fines (¨/	¨¨	¸ 7	1¸	Sample Depth (ft.):	¨
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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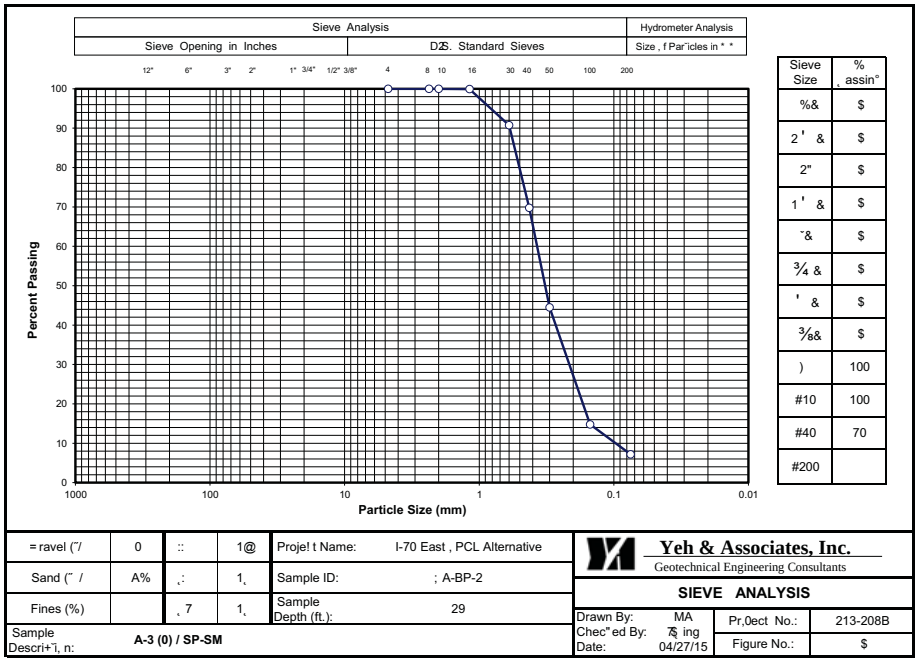
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	04/27/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	70
#200	

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	A%	¸:	1¸	Sample ID:	; A-BP-2
Fines (%)		¸ 7	1¸	Sample Depth (ft.):	29
Sample Descri+¨i, n:	**A-3 (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	04/27/15	Figure No.:	$

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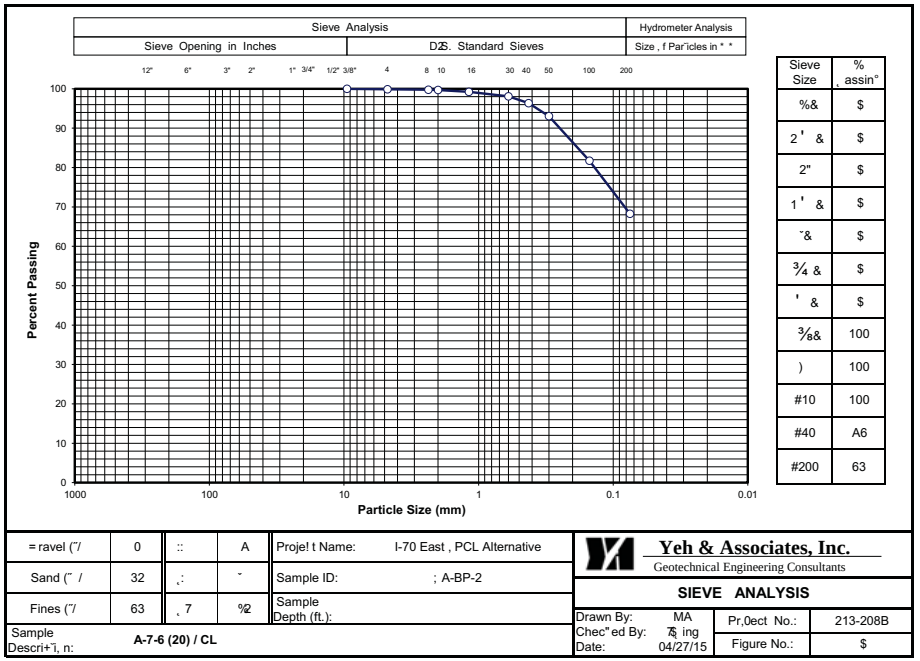

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	100
#10	100
#40	A6
#200	63

= ravel (¨/	0	::	A	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	32	¸:	¨	Sample ID:	; A-BP-2
Fines (¨/	63	¸ 7	%2	Sample Depth (ft.):	
Sample Descri+¨i, n:	**A-7-6 (20) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	04/27/15	Figure No.:	$

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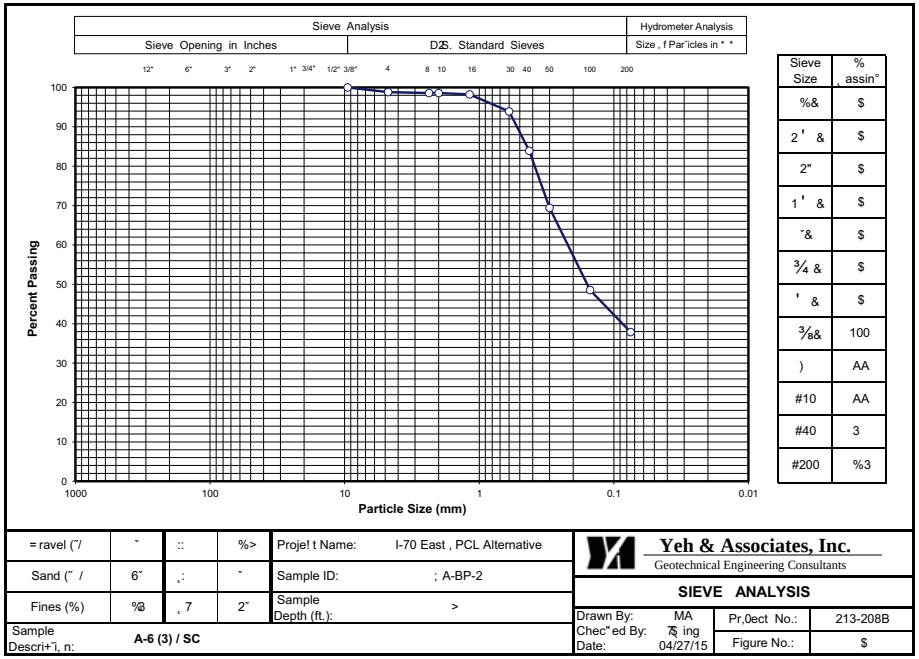

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	AA
#40	3
#200	%3

= ravel (¨/	¨	::	%>	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	6¨	¸:	¨	Sample ID:	; A-BP-2
Fines (%)	%8	¸ 7	2¨	Sample Depth (ft.):	>
Sample Descri+¨ï, n:	**A-6 (3) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	04/27/15	Figure No.:	$

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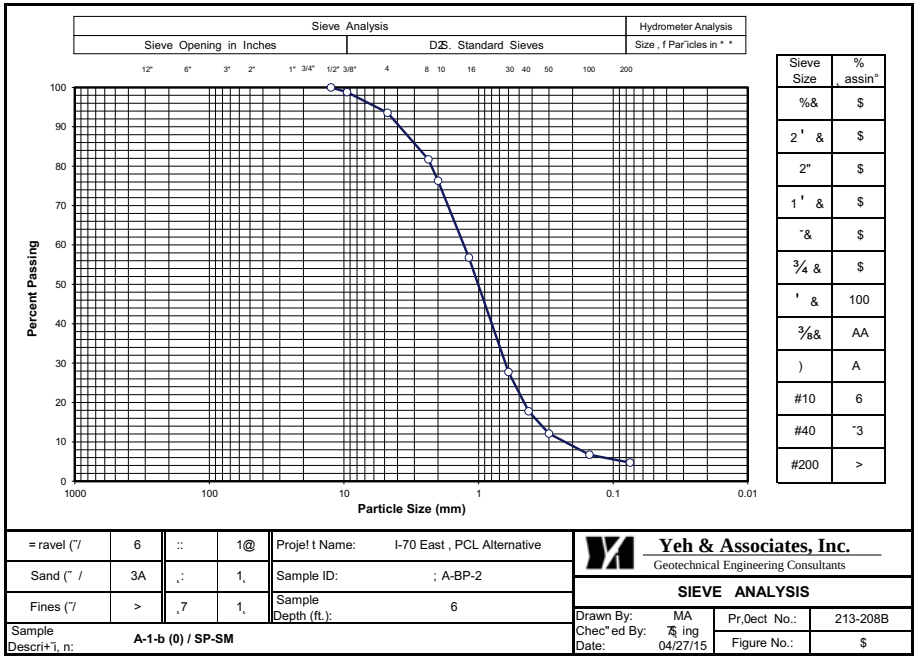

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&&	AA
)	A
#10	6
#40	¨3
#200	>

= ravel (¨/	6	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3A	¸:	1¸	Sample ID:	; A-BP-2
Fines (¨/	>	¸7	1¸	Sample Depth (ft.):	6
Sample Descri+¨ï, n:	**A-1-b (0) / SP-SM**				

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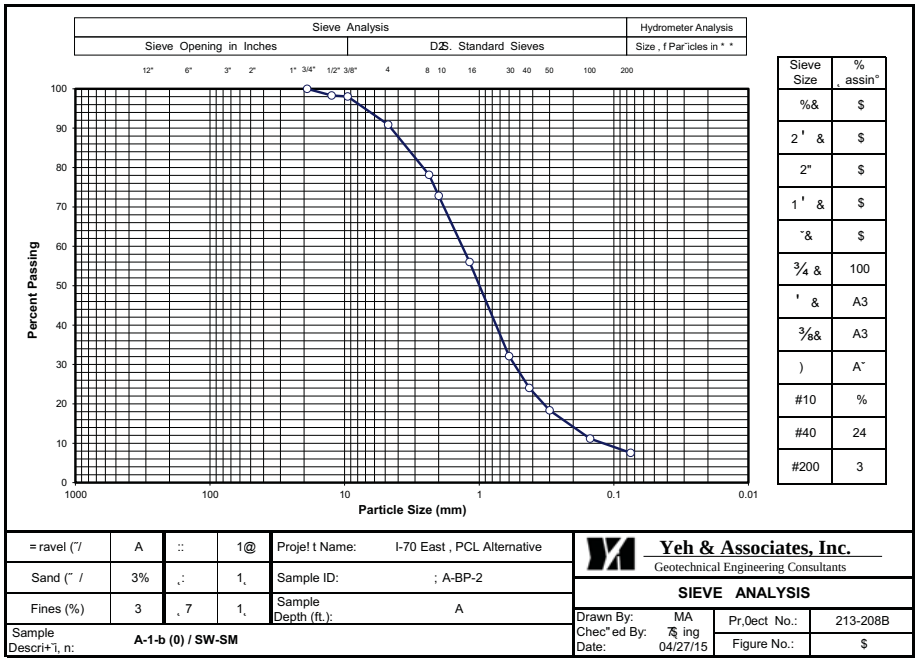
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	04/27/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	A3
⅜&&	A3
)	A¨
#10	%
#40	24
#200	3

= ravel (¨/	A	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3%	¸:	1¸	Sample ID:	; A-BP-2
Fines (%)	3	¸ 7	1¸	Sample Depth (ft.):	A
Sample Descri+¨ï, n:	**A-1-b (0) / SW-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	04/27/15	Figure No.:	$

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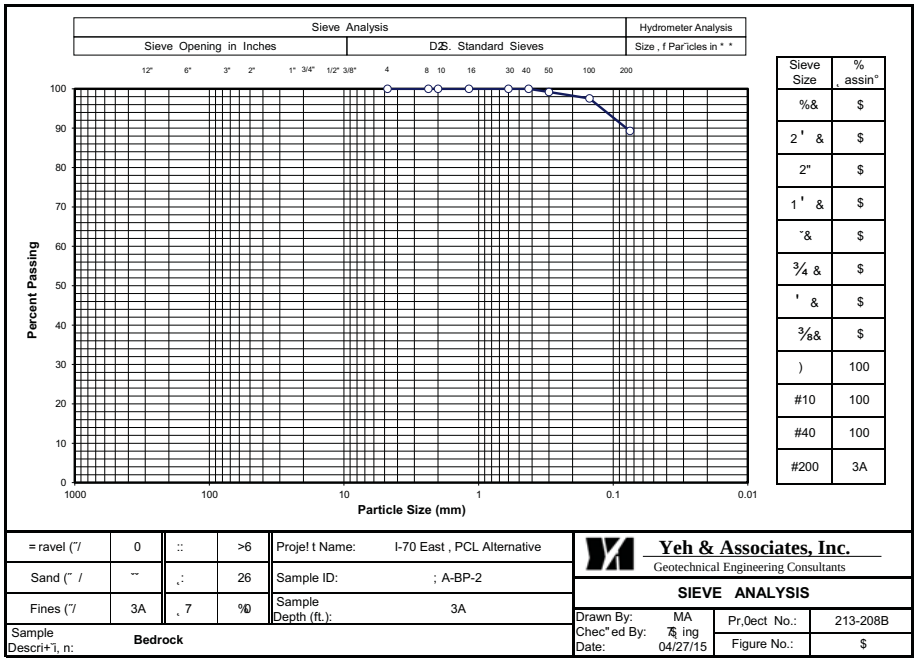

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	100
#200	3A

= ravel (¨/	0	::	>6	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	¨¨	¸:	26	Sample ID:	; A-BP-2
Fines (¨/	3A	¸ 7	%0	Sample Depth (ft.):	3A
Sample Descri+¨ï, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	04/27/15	Figure No.:	$

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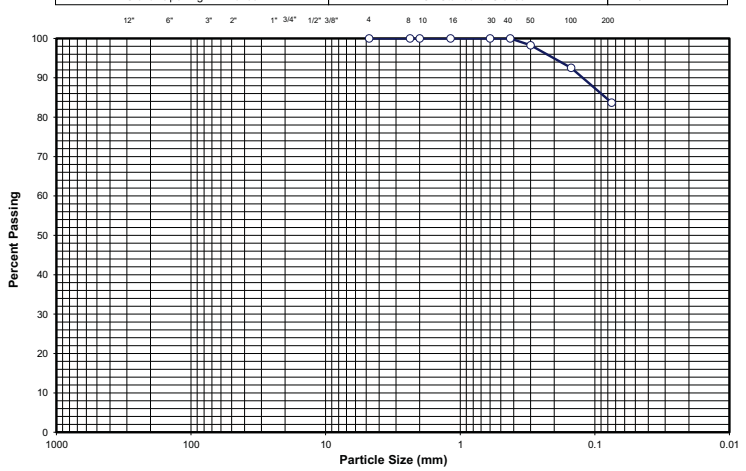
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	100
#200	3

= ravel (˝/	0	::	>%	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	¯6	,:	26	Sample ID:	; A-BP-2
Fines (%)	3	, 7	2	Sample Depth (ft.):	104
Sample Descri+¯i, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	04/27/15	Figure No.:	$

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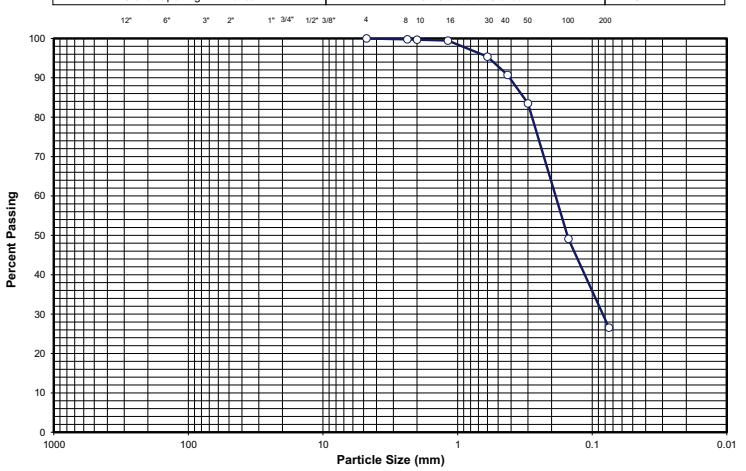
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A¯
#200	27

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	%	,:	1,	Sample ID:	; A-BP-2
Fines (˝/	2	, 7	1,	Sample Depth (ft.):	¯˝A
Sample Descri+¯i, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	04/27/15	Figure No.:	$

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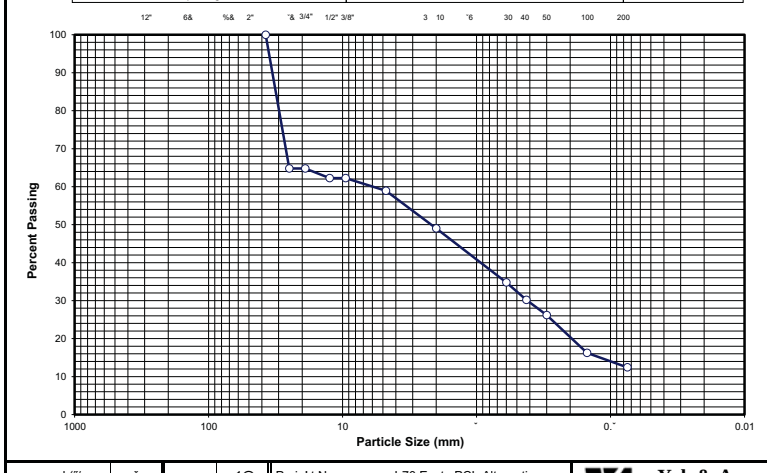
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S¯andard Sieves | Size , f Par¯icles in * *



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	100
¯&	6>
¾ &	6>
' &	62
⅜&	62
)	>A
#10	A
#40	30
#200	12

= ravel (˝/	¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /		,:	1,	Sample ID:	; A-D,$¯
Fines (˝/	¯2	, 7	1,	Sample Depth (ft.):	>
Sample Descri+¯i, n:	A-1-a (0) / SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec"ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

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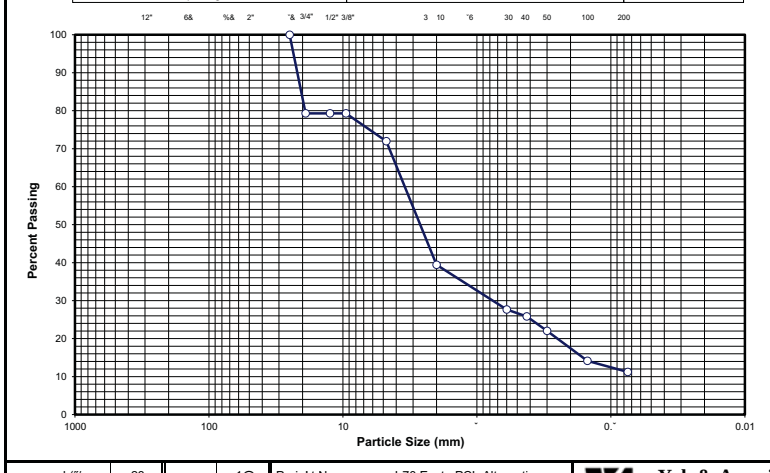
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S¯andard Sieves | Size , f Par¯icles in * *



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	100
¾ &	A
' &	A
⅜&	A
)	72
#10	%A
#40	26
#200	¯˝

= ravel (˝/	28	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	6¯	,:	1,	Sample ID:	; A-D,$¯
Fines (˝/	¯˝	, 7	1,	Sample Depth (ft.):	¯>
Sample Descri+¯i, n:	A-¯$a (0/ / SP-SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec"ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

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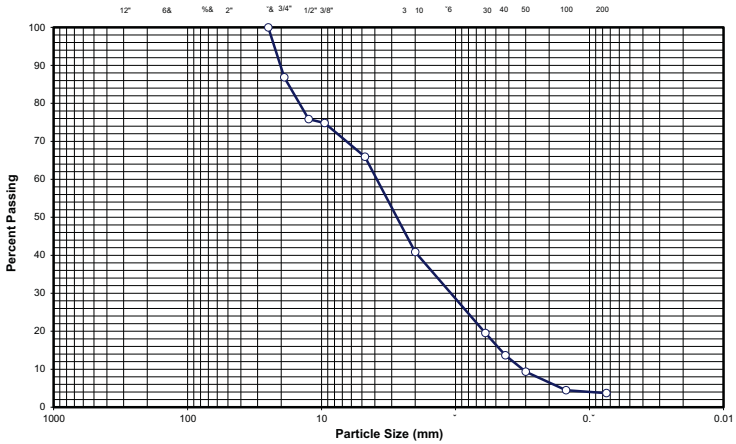
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	100
¾ &	3
' &	6
⅜&&	>
)	66
#10	¯
#40	¯
#200	

= ravel (˝/	%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	62	,.:	1,	Sample ID:	; A-D,$¯
Fines (˝/		,7	1,	Sample Depth (ft.):	20
Sample Descri+¯i, n:	A-1-a (0) / SP				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
˜ ec"ed By:	˜ alvin		
Date:	04/03/14	Figure No.:	$

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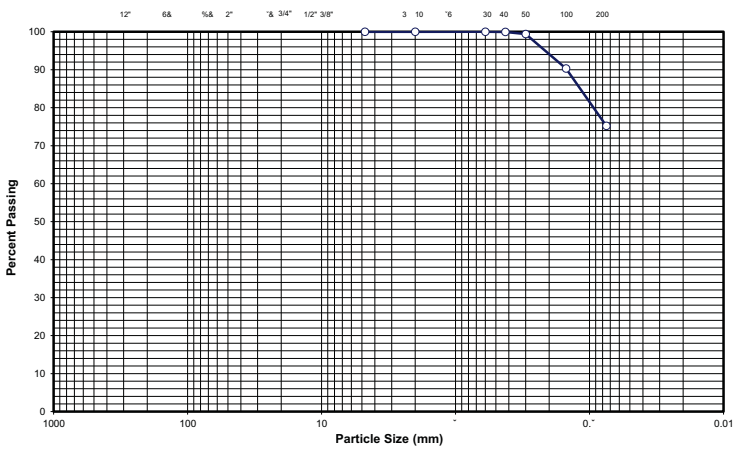
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	100
#200	>

= ravel (˝/	0	::	3	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	25	,.:	30	Sample ID:	; A-D,$¯
Fines (˝/	>	, 7	¯3	Sample Depth (ft.):	40
Sample Descri+¯i, n:	Bedr,! "				

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Drawn By:	MA	Pr,0ect No.:	213-208 RR
˜ ec"ed By:	˜ alvin		
Date:	04/03/14	Figure No.:	$

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Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	100
¾ &	92
' &	33
⅜&&	3
)	¯
#10	50
#40	¯
#200	

= ravel (˝/	29	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	,.:	1,	Sample ID:	; A-D,$¯
Fines (˝/		,7	1,	Sample Depth (ft.):	%>
Sample Descri+¯i, n:	A-1-a (0) / SP				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
˜ ec"ed By:	˜ alvin		
Date:	04/03/14	Figure No.:	$

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Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	AA
#200	3>

= ravel (˝/	0	::	A	Pr, 0e! ˜ Name:	I-70 East Corridor
Sand (˜ /	¯>	,.:	32	Sample ID:	; A-D,$¯
Fines (˝/	3>	, 7	˙	Sample Depth (ft.):	60
Sample Descri+¯i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
˜ ec"ed By:	˜ alvin		
Date:	04/03/14	Figure No.:	$

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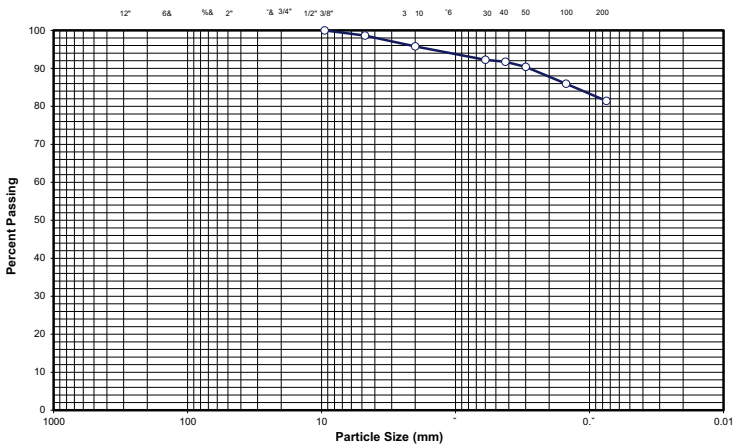
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A6
#40	92
#200	3¯

= ravel ("/	¯	::	%%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	¯3	,.:	24	Sample ID:	; A-D,$2
Fines ("/	3¯	,7	A	Sample Depth (ft.):	
Sample Descri+¯i, n:	A-4 (7) / ML				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec" ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

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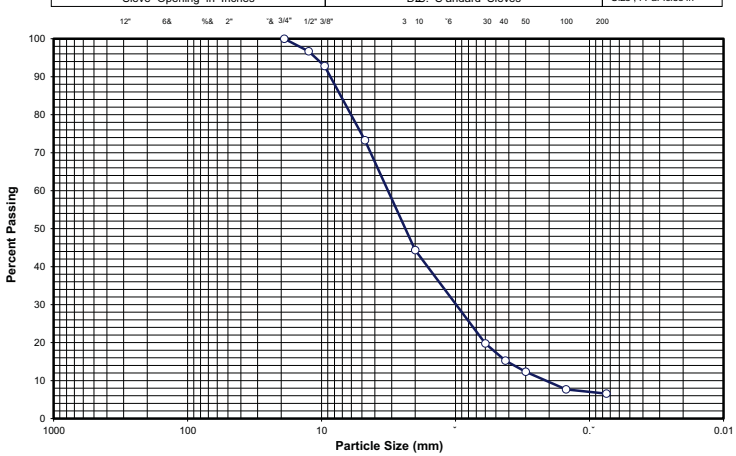
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	100
¾ &	3%
' &	
⅜&&	63
)	>
#10	%%
#40	¯%
#200	

= ravel ("/	6	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	50	,.:	1,	Sample ID:	; A-D,$2
Fines ("/		,7	1,	Sample Depth (ft.):	A
Sample Descri+¯i, n:	A-1-a (0) / SP				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec" ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

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Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A
⅜&&	A%
)	%
#10	
#40	¯>
#200	

= ravel ("/	27	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	66	,.:	1,	Sample ID:	; A-D,$2
Fines ("/		,7	1,	Sample Depth (ft.):	¯A
Sample Descri+¯i, n:	A-1-a (0) / SW$SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec" ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A%
⅜&&	92
)	
#10	>
#40	¯6
#200	

= ravel ("/	26	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6	,.:	1,	Sample ID:	; A-D,$2
Fines ("/		,7	1,	Sample Depth (ft.):	%
Sample Descri+¯i, n:	A-1-a (0) / SW$SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec" ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

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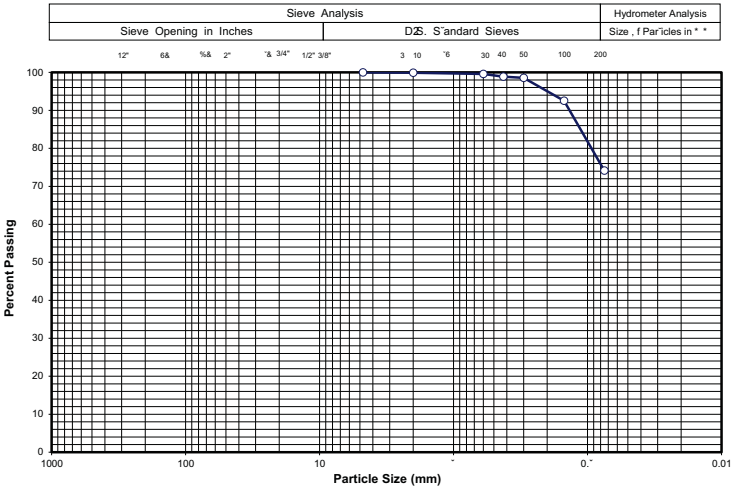

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	AA
#200	

= ravel ("/	0	::	%A	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	26	,.:	28	Sample ID:	; A-D,$2
Fines ("/		, 7	~ ~	Sample Depth (ft.):	%A
Sample Descri+¯i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec" ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

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Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A6
#200	>A

= ravel ("/	0	::		Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	¯	,.:	%6	Sample ID:	; A-D,$2
Fines ("/	>A	, 7	~ ~	Sample Depth (ft.):	>A
Sample Descri+¯i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec" ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

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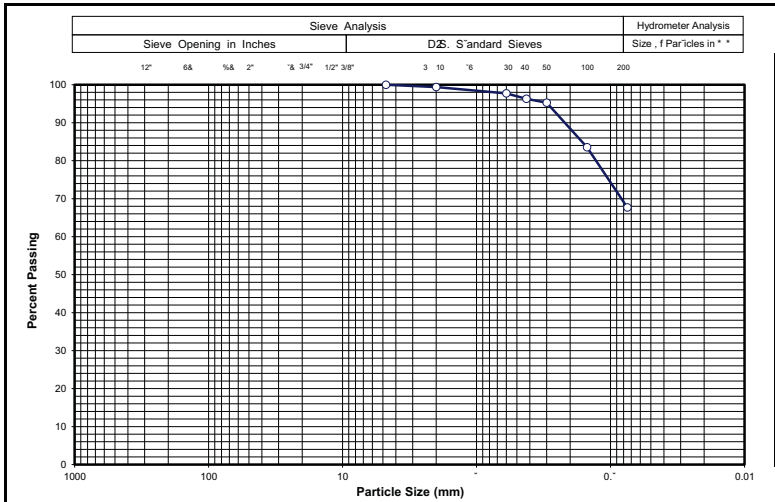

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	A6
#200	63

= ravel ("/	0	::	%6	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	32	,.:	¯6	Sample ID:	; A-D,$%
Fines ("/	63	, 7	20	Sample Depth (ft.):	%
Sample Descri+¯i, n:	A-6 (11) / CL				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec" ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

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Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	82
#40	¯6
#200	

= ravel ("/	¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	A>	,.:	1,	Sample ID:	; A-D,$%
Fines ("/		,7	1,	Sample Depth (ft.):	3
Sample Descri+¯i, n:	A-1-b (0) / SP				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec" ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

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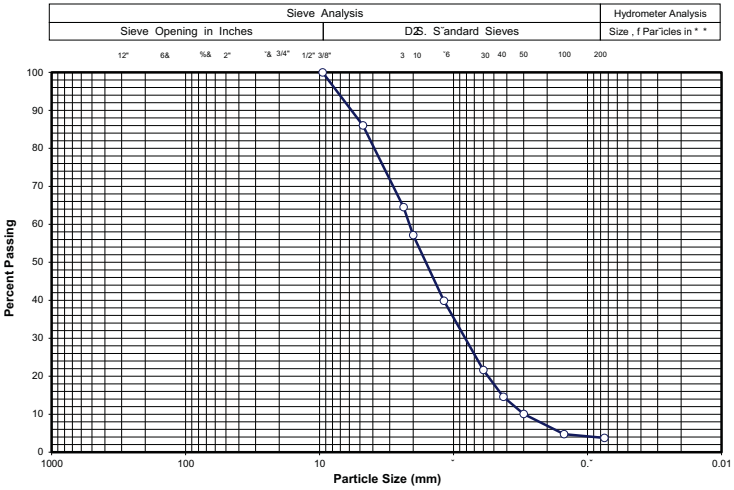

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	36
#10	>
#40	`>
#200	

= ravel (`/	`	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	82	,:	1,	Sample ID:	; A-D,$%
Fines (`/		,7	1,	Sample Depth (ft.):	23
Sample Descri+`i, n:	A-1-b (0) / ^E				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
` ec"ed By:	` alvin		
Date:	04/03/14	Figure No.:	$

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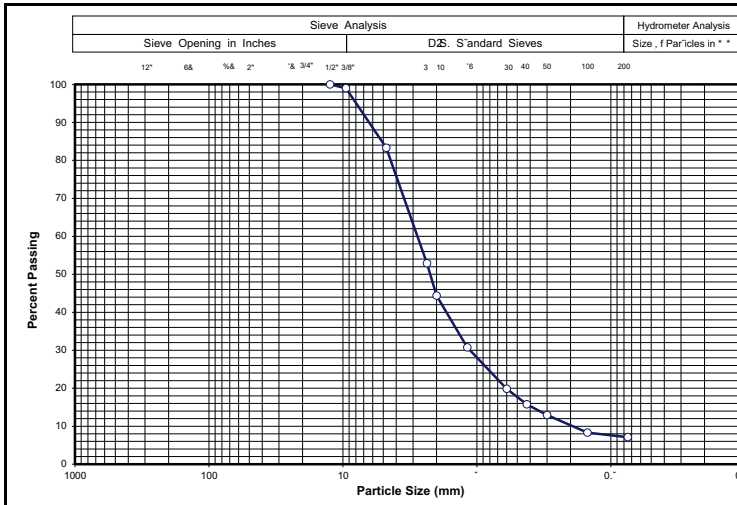

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	100
⅜&&	AA
)	3%
#10	
#40	`6
#200	

= ravel (`/	`	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	6	,:	1,	Sample ID:	; A-D,$%
Fines (`/		,7	1,	Sample Depth (ft.):	%3
Sample Descri+`i, n:	A-1-a (0) / SW$SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
` ec"ed By:	` alvin		
Date:	04/03/14	Figure No.:	$

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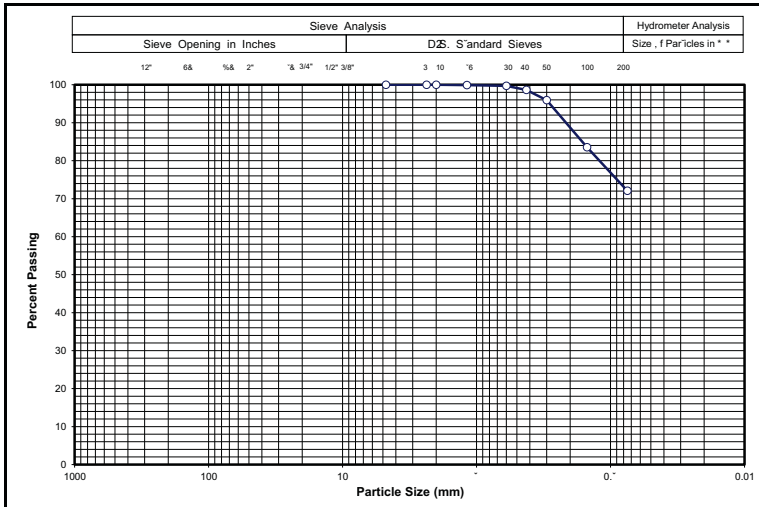

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	AA
#200	72

= ravel (`/	0	::	6	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	28	,:	%`	Sample ID:	; A-D,$%
Fines (`/	2	, 7	` >	Sample Depth (ft.):	%
Sample Descri+`i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
` ec"ed By:	` alvin		
Date:	04/03/14	Figure No.:	$

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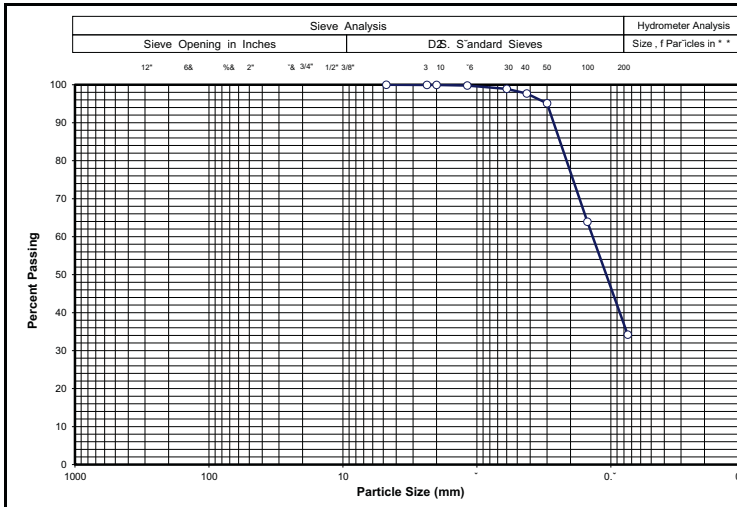

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A3
#200	%

= ravel (`/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	66	,:	1,	Sample ID:	; A-D,$%
Fines (`/	%	, 7	1,	Sample Depth (ft.):	>3
Sample Descri+`i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
` ec"ed By:	` alvin		
Date:	04/03/14	Figure No.:	$

Revised 04/27/2004

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	3
#200	62

= ravel ("/	0	::	%¯
Sand (¯ /	%3	,.:	¯6
Fines ("/	62	,.7	¯>
Sample Descri+¯i, n:	A-6 (7) / ¯:		

Proje! t Name: I-70 East , PCL Alternative
Sample ID: ; A-D,$
Sample Depth (ft.): >

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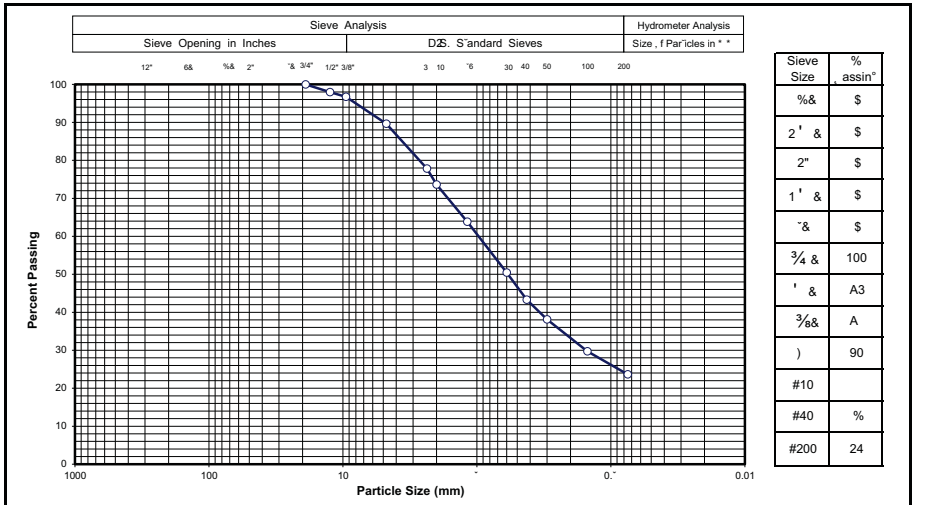
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A3
⅜&&	A
)	90
#10	
#40	%
#200	24

= ravel ("/	10	::	1@
Sand (¯ /	66	,.:	1,
Fines ("/	2	,.7	1,
Sample Descri+¯i, n:	A-1-b (0) / SM		

Proje! t Name: I-70 East , PCL Alternative
Sample ID: ; A-D,$
Sample Depth (ft.): ¯>

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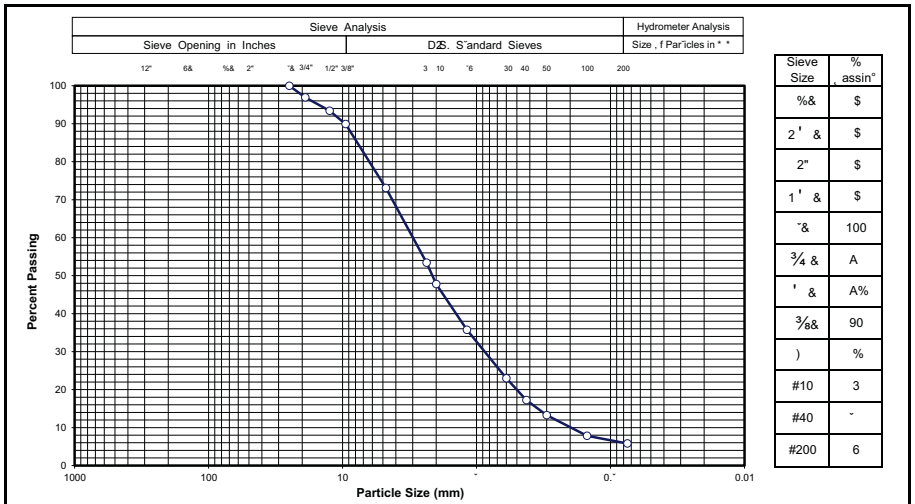
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	100
¾ &	A
' &	A%
⅜&&	90
)	%
#10	3
#40	¯
#200	6

= ravel ("/	27	::	1@
Sand (¯ /	6	,.:	1,
Fines ("/	6	,.7	1,
Sample Descri+¯i, n:	A-1-a (0) / SW-SM		

Proje! t Name: I-70 East , PCL Alternative
Sample ID: ; A-D,$
Sample Depth (ft.): %>

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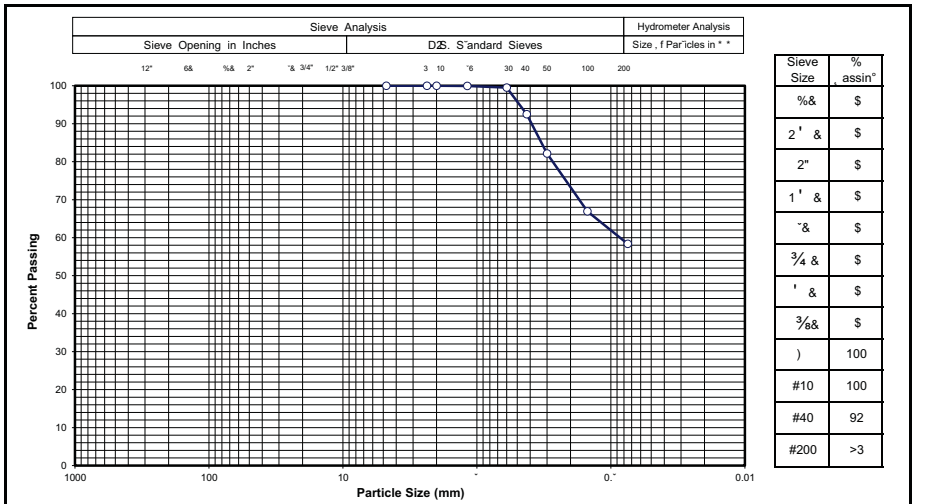
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	92
#200	>3

= ravel ("/	0	::	60
Sand (¯ /	42	,.:	27
Fines ("/	>3	,.7	%%
Sample Descri+¯i, n:	Bedr,! "		

Proje! t Name: I-70 East , PCL Alternative
Sample ID: ; A-D,$
Sample Depth (ft.): 40

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

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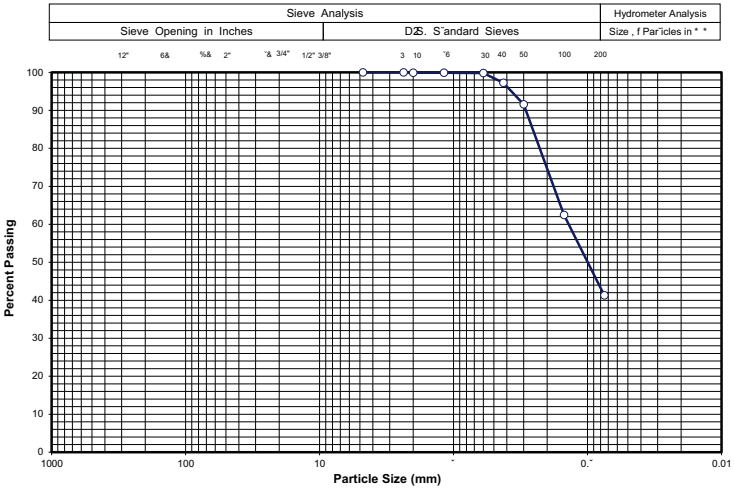

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A
#200	`

= ravel (`/	0	::	A	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	>A	,.:	22	Sample ID:	; A-D,$
Fines (`/	`	, 7	2	Sample Depth (ft.):	60
Sample Descri+`i, n:	Bedr,! "				

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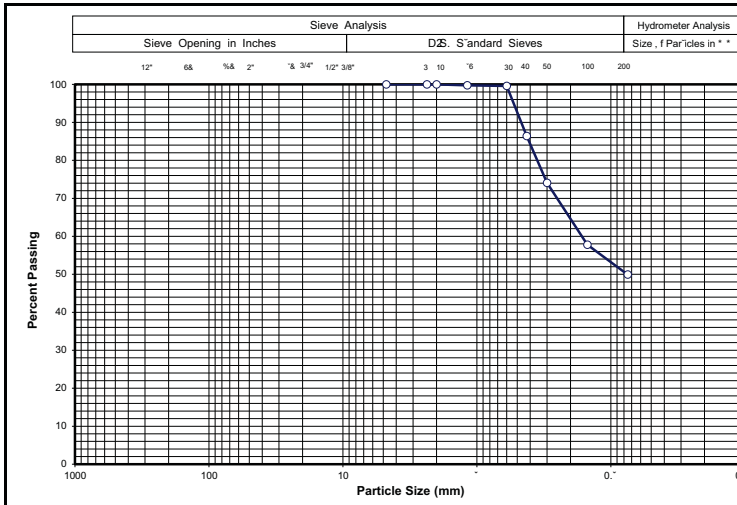
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
` ec"ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	36
#200	50

= ravel (`/	0	::	>6	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	50	,.:	29	Sample ID:	; A-D,$
Fines (`/	>0	, 7	2	Sample Depth (ft.):	>
Sample Descri+`i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
` ec"ed By:	Fere		
Date:	10/12/11	Figure No.:	$

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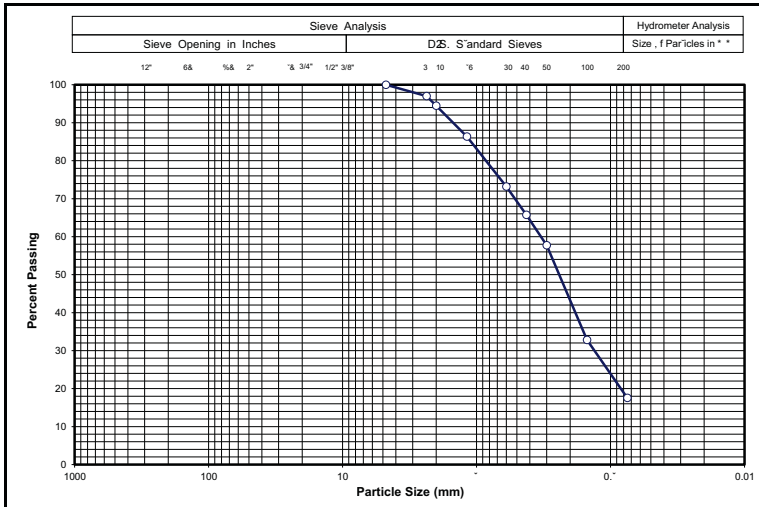

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A
#40	66
#200	`3

= ravel (`/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	82	,.:	1,	Sample ID:	; A-D,$>
Fines (`/	`3	, 7	1,	Sample Depth (ft.):	%
Sample Descri+`i, n:	A-2-4 (0) / SM				

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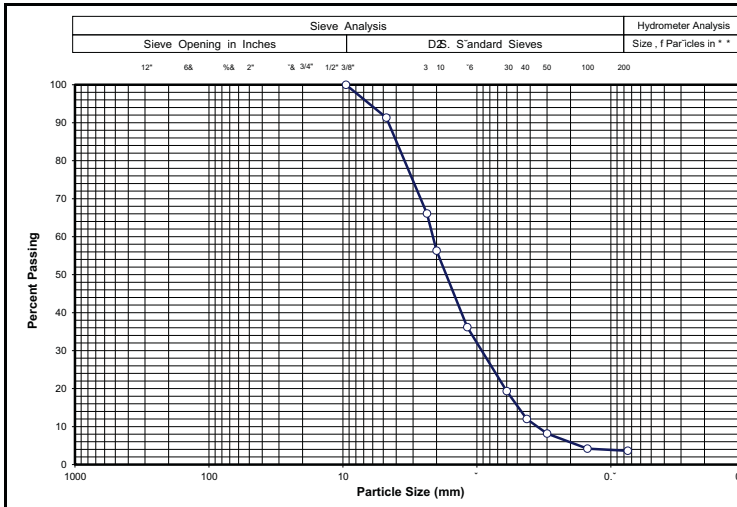
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
` ec"ed By:	` alvin		
Date:	04/03/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	A`
#10	>6
#40	12
#200	

= ravel (`/	A	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	3	,.:	1,	Sample ID:	; A-D,$>
Fines (`/		,7	1,	Sample Depth (ft.):	`3
Sample Descri+`i, n:	A-1-b (0) / SP				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
` ec"ed By:	` alvin		
Date:	04/03/14	Figure No.:	$

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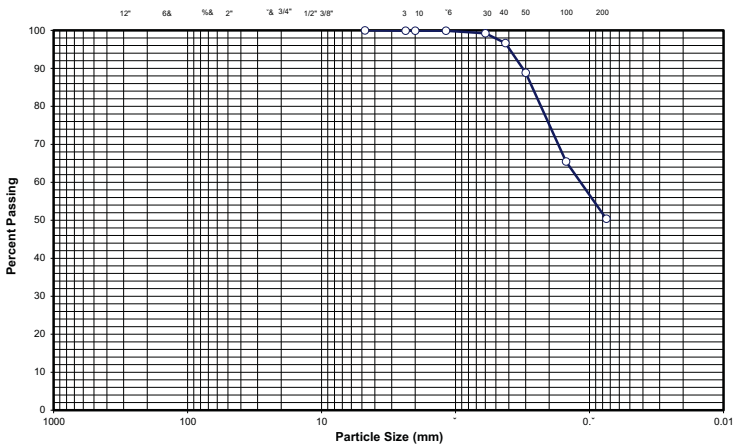
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A
#200	50

= ravel ("/	0	::	>6	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	50	¸:	28	Sample ID:	; A-D¸$>
Fines ("/	>0	¸ 7	23	Sample Depth (ft.):	%3
Sample Descri+¯i, n:	Bedr,! "				

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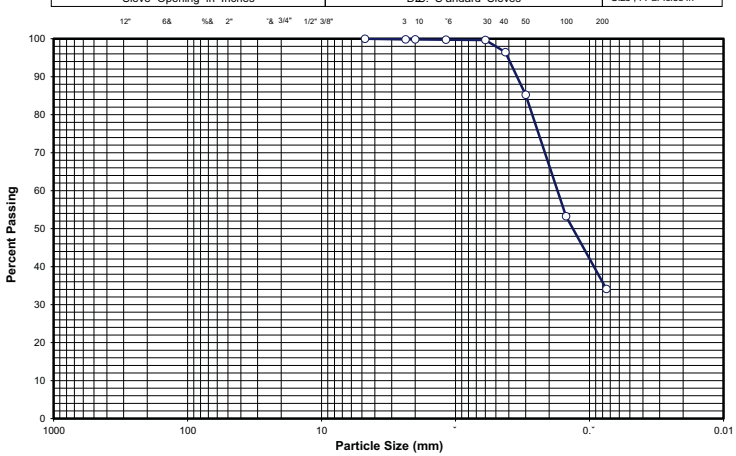
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec"ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A6
#200	%

= ravel ("/	0	::	6	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	66	¸:	25	Sample ID:	; A-D¸$>
Fines ("/	%	¸ 7	2¯	Sample Depth (ft.):	6%
Sample Descri+¯i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec"ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

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Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	A3
#10	A6
#40	>
#200	¯6

= ravel ("/	2	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	82	¸:	1¸	Sample ID:	; A-D¸$>
Fines ("/	¯6	¸ 7	1¸	Sample Depth (ft.):	>%
Sample Descri+¯i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec"ed By:	¯ alvin		
Date:	04/03/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	100
¾ &	A3
' &	90
⅜&&	3>
)	6A
#10	6
#40	23
#200	¯¯

= ravel ("/	%¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>3	¸:	1¸	Sample ID:	; A-D¸$6
Fines ("/	¯¯	¸ 7	1¸	Sample Depth (ft.):	
Sample Descri+¯i, n:	A-1-a (0) / SP-SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
¯ ec"ed By:	¯ alvin		
Date:	04/24/14	Figure No.:	$

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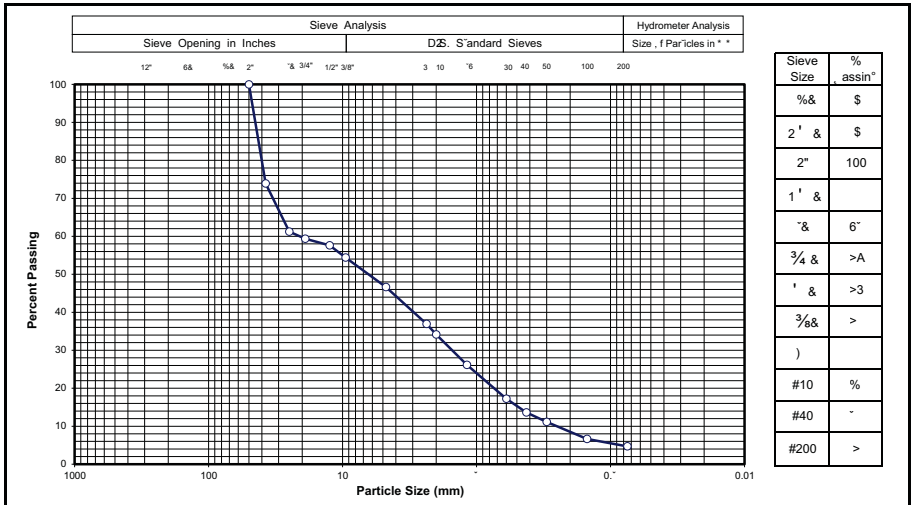

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	100
1 ' &	
`&	6`
¾ &	>A
' &	>3
⅜&&	>
)	
#10	%
#40	`
#200	>

= ravel (`/	>%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	42	,:	1,	Sample ID:	; A-D,$6
Fines (`/	>	,7	1,	Sample Depth (ft.):	-
Sample Descri+`i, n:	A-1-a (0) / =,				

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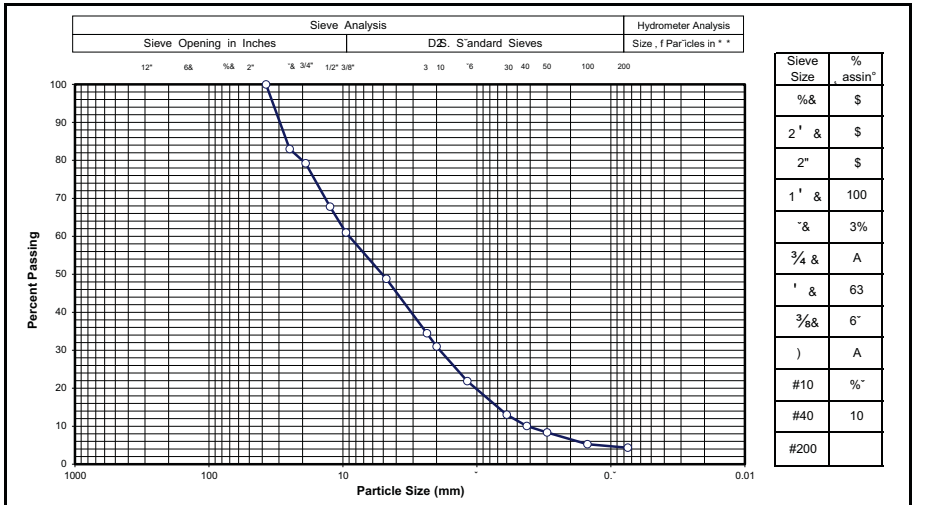
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
` ec"ed By:	` avin		
Date:	04/24/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	100
`&	3%
¾ &	A
' &	63
⅜&&	6`
)	A
#10	%`
#40	10
#200	

= ravel (`/	>`	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	>	,:	1,	Sample ID:	; A-D,$
Fines (`/		,7	1,	Sample Depth (ft.):	>
Sample Descri+`i, n:	A-1-a (0) / =,				

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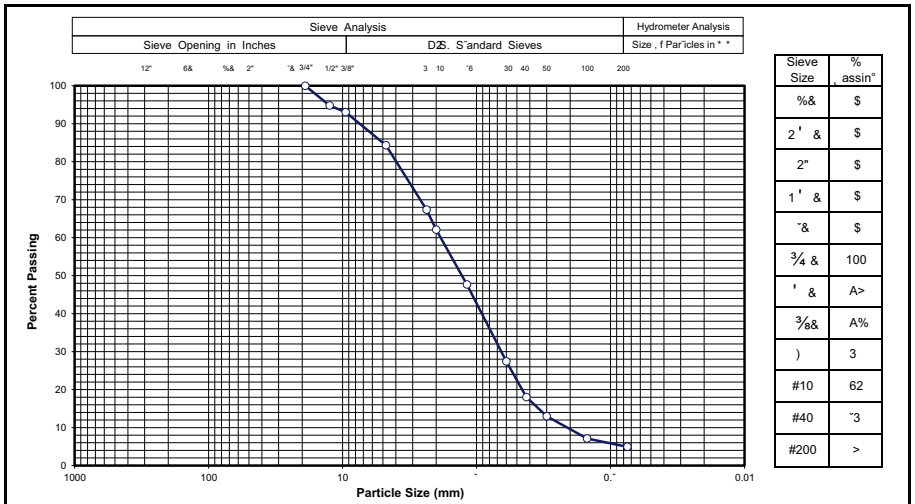
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
` ec"ed By:	` alvin		
Date:	04/24/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	100
' &	A>
⅜&&	A%
)	3
#10	62
#40	`3
#200	>

= ravel (`/	`6	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	A	,:	1,	Sample ID:	; A-D,$
Fines (`/	>	,7	1,	Sample Depth (ft.):	`>
Sample Descri+`i, n:	A-1-b (0) / `E				

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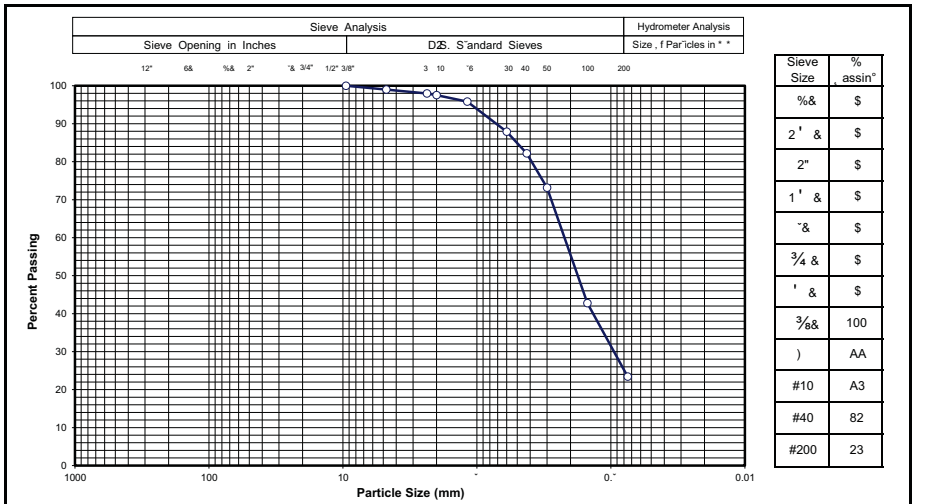
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RR
` ec"ed By:	` alvin		
Date:	04/24/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A3
#40	82
#200	23

= ravel (`/	`	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	6	,:	1,	Sample ID:	; A-RW$`
Fines (`/	2%	, 7	1,	Sample Depth (ft.):	>
Sample Descri+`i, n:	A-2-4 (0) / SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
` ec"ed By:	Fere		
Date:	10/12/11	Figure No.:	$

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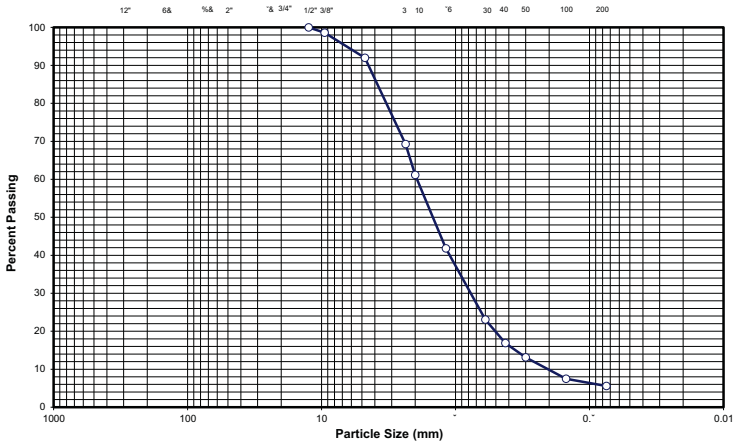
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	AA
)	92
#10	6¯
#40	¯
#200	6

= ravel ("/	3	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	36	,.:	1,	Sample ID:	; A-RW$'
Fines ("/	6	,7	1,	Sample Depth (ft.):	20
Sample Descri+¯i, n:	A-1-b (0) / SW-SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

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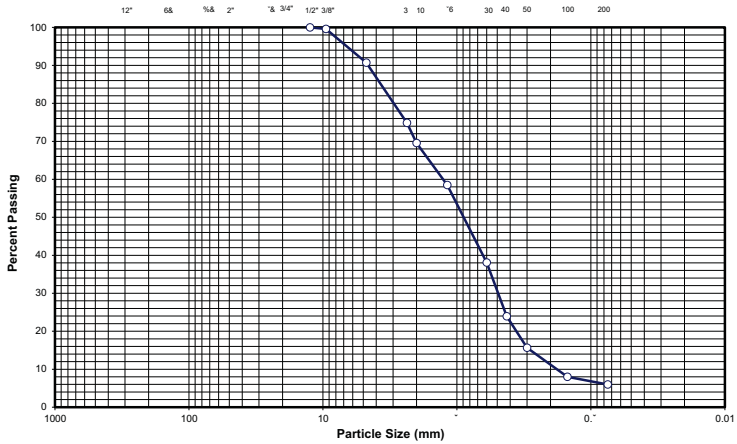
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	100
)	A¯
#10	70
#40	24
#200	6

= ravel ("/	A	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3>	,.:	1,	Sample ID:	; A-RW$'
Fines ("/	6	,7	1,	Sample Depth (ft.):	%>
Sample Descri+¯i, n:	A-1-b (0) / SW-SM				

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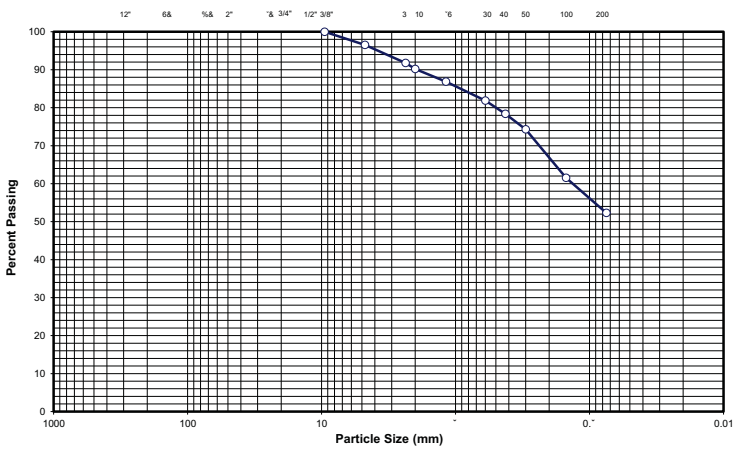
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	A
#10	90
#40	3
#200	52

= ravel ("/	%	::	%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>	,.:	21	Sample ID:	; A-RW$2
Fines ("/	>2	, 7	¯6	Sample Depth (ft.):	
Sample Descri+¯i, n:	A-6 (5) / ¯:				

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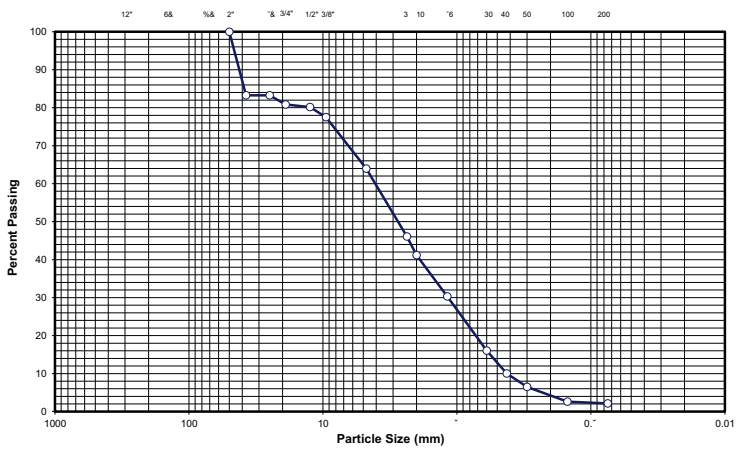
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	100
1 ' &	3%
¯&	3%
¾ &	3¯
' &	80
⅜&&	3
)	6
#10	¯
#40	10
#200	2

= ravel ("/	%6	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	62	,.:	1,	Sample ID:	; A-RW$2
Fines ("/	2	,7	1,	Sample Depth (ft.):	29
Sample Descri+¯i, n:	A-1-a (0) / ˆ,				

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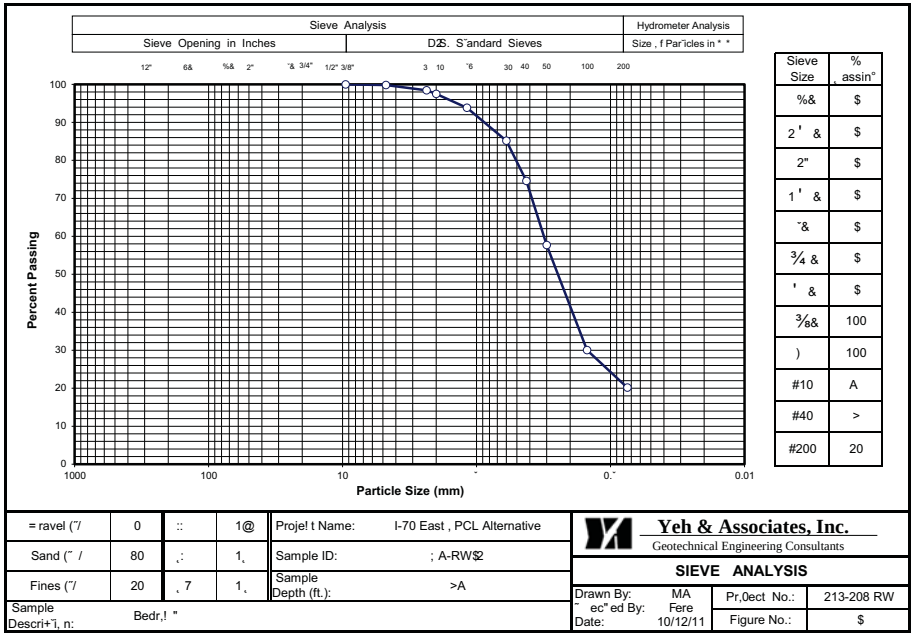
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	A
#40	>
#200	20

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	80	,.:	1,	Sample ID:	; A-RW$2
Fines ("/	20	, 7	1,	Sample Depth (ft.):	>A
Sample Descri+¯i, n:	Bedr,! "				

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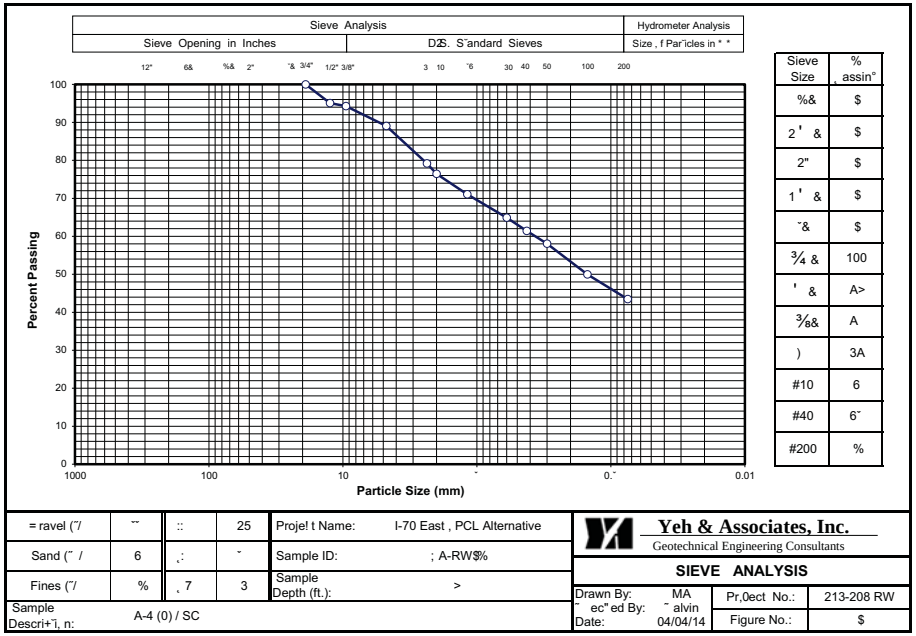
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	Fere	Figure No.:	$
Date:	10/12/11		

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A>
⅜&&	A
)	3A
#10	6
#40	6¯
#200	%

= ravel ("/	¯¯	::	25	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6	,.:	¯	Sample ID:	; A-RW$%
Fines ("/	%	, 7	3	Sample Depth (ft.):	>
Sample Descri+¯i, n:	A-4 (0) / SC				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	¯ alvin	Figure No.:	$
Date:	04/04/14		

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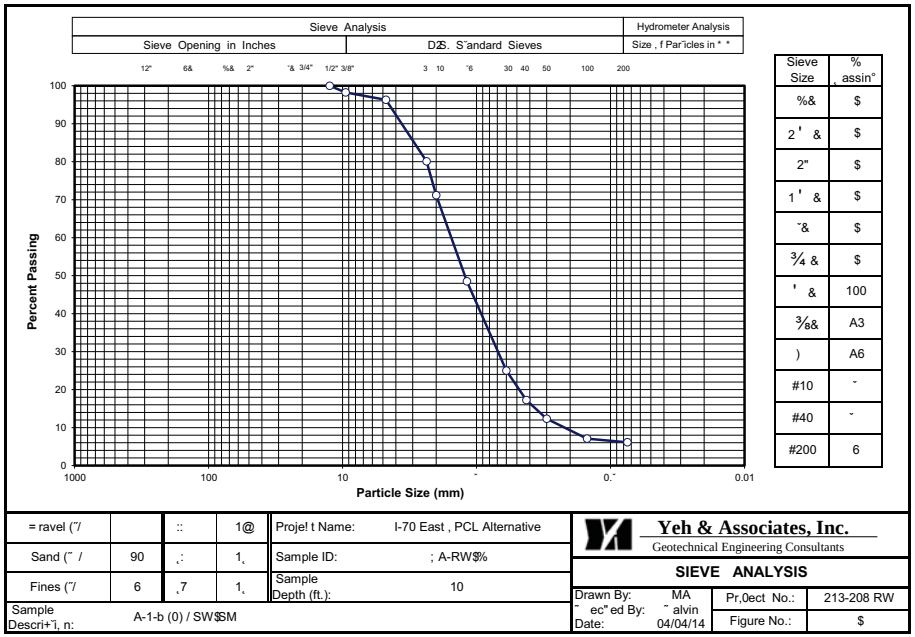

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	A3
)	A6
#10	¯
#40	¯
#200	6

= ravel ("/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	90	,.:	1,	Sample ID:	; A-RW$%
Fines ("/	6	,7	1,	Sample Depth (ft.):	10
Sample Descri+¯i, n:	A-1-b (0) / SW$SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	¯ alvin	Figure No.:	$
Date:	04/04/14		

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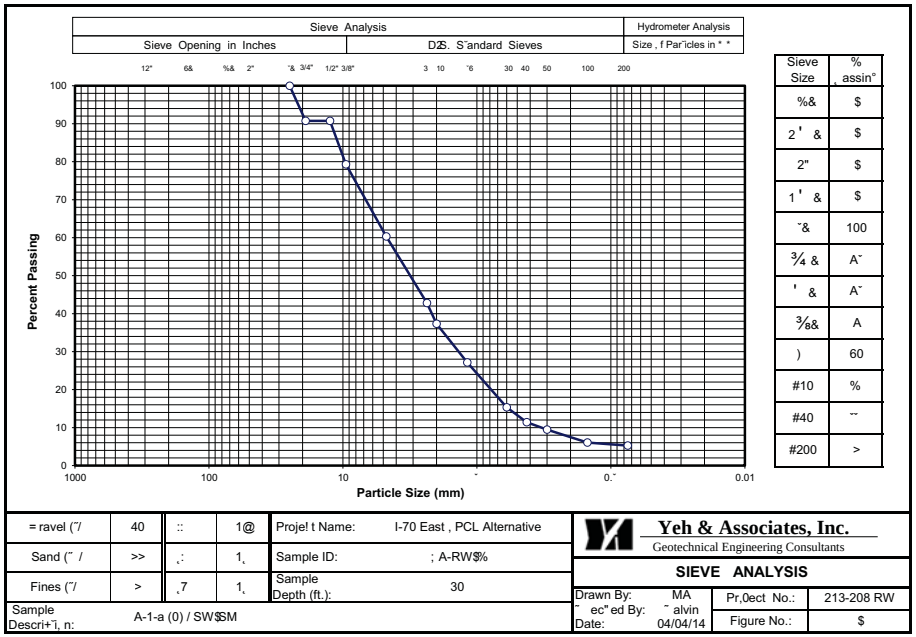

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	100
¾ &	A¯
' &	A¯
⅜&&	A
)	60
#10	%
#40	¯¯
#200	>

= ravel ("/	40	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>>	,.:	1,	Sample ID:	; A-RW$%
Fines ("/	>	,7	1,	Sample Depth (ft.):	30
Sample Descri+¯i, n:	A-1-a (0) / SW$SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	¯ alvin	Figure No.:	$
Date:	04/04/14		

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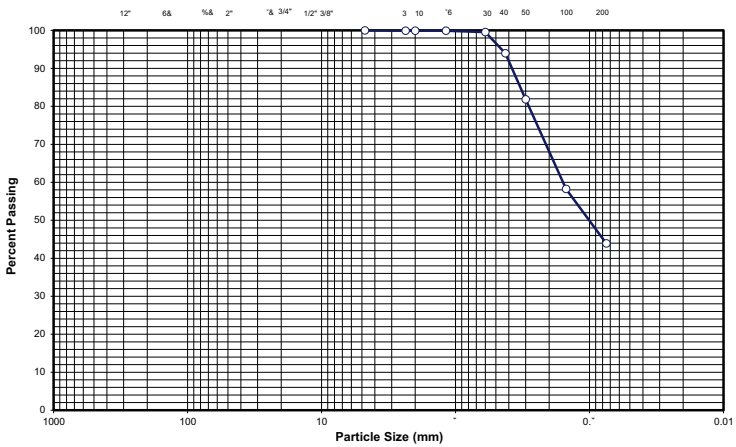
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A
#200	

= ravel ("/	0	::	>¯	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>6	,.:	26	Sample ID:	; A-RW$%
Fines ("/		,7	2>	Sample Depth (ft.):	>
Sample Descri+¯i, n:	Bedr,! "				

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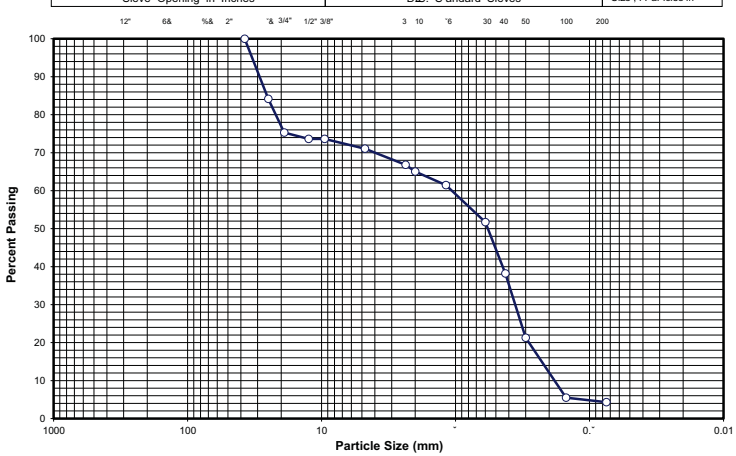
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec"ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	100
¯&	3
¾ &	>
' &	
⅜&&	
)	¯
#10	6>
#40	%3
#200	

= ravel ("/	29	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6	,.:	1,	Sample ID:	; A-RW$
Fines ("/		,7	1,	Sample Depth (ft.):	¯%
Sample Descri+¯i, n:	A-1-b (0) / SP				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec"ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	3>
#200	3

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	52	,.:	1,	Sample ID:	; A-RW$
Fines ("/	3	,7	1,	Sample Depth (ft.):	%
Sample Descri+¯i, n:	A-4 (0) / SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec"ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	AA
)	3
#10	>¯
#40	10
#200	%

= ravel ("/	¯%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3	,.:	1,	Sample ID:	; A-RW$
Fines ("/	%	,7	1,	Sample Depth (ft.):	28
Sample Descri+¯i, n:	A-1-b (0) / SP				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec"ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

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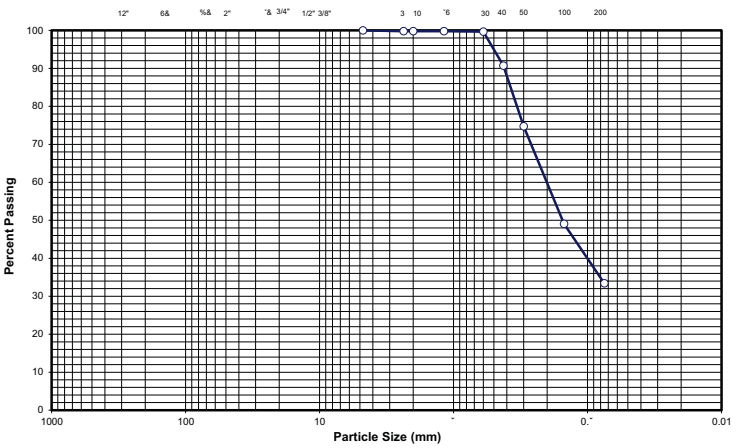
Sieve Analysis		Hydrometer Analysis
Sieve Opening in Inches	D2S. S`andard Sieves	Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A¯
#200	%%

= ravel ("/	0	::	>6	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6	,.:	25	Sample ID:	; A-RW$
Fines ("/	%%	, 7	%	Sample Depth (ft.):	%3
Sample Descri+¯i, n:	Bedr,! "				

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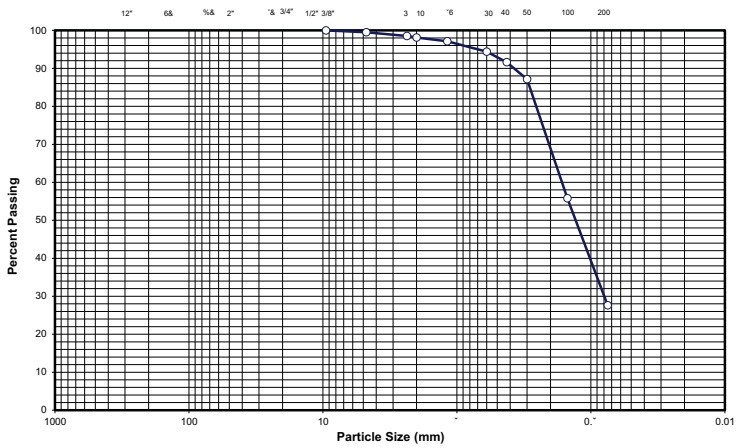
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	¯ alvin		
Date:	04/04/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis		Hydrometer Analysis
Sieve Opening in Inches	D2S. S`andard Sieves	Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	A3
#40	92
#200	28

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	72	,.:	1,	Sample ID:	; A-RW$
Fines ("/	23	, 7	1,	Sample Depth (ft.):	60
Sample Descri+¯i, n:	Bedr,! "				

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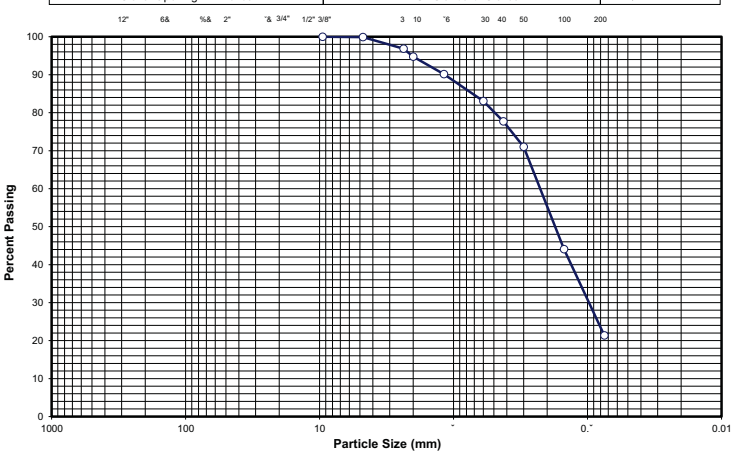
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004

Sieve Analysis		Hydrometer Analysis
Sieve Opening in Inches	D2S. S`andard Sieves	Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	A>
#40	3
#200	21

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	A	,.:	1,	Sample ID:	; A-RW$>
Fines ("/	2¯	, 7	1,	Sample Depth (ft.):	>
Sample Descri+¯i, n:	A-2-4 (0) / SM				

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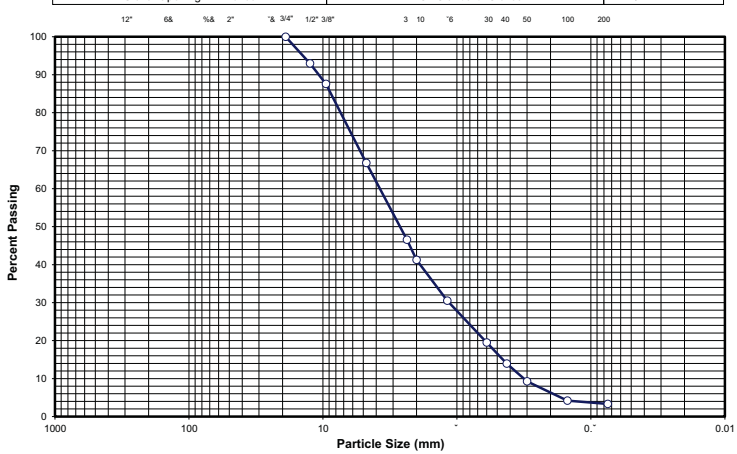
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004

Sieve Analysis		Hydrometer Analysis
Sieve Opening in Inches	D2S. S`andard Sieves	Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A%
⅜&&	33
)	6
#10	¯
#40	¯
#200	%

= ravel ("/	%%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6	,.:	1,	Sample ID:	; A-RW$>
Fines ("/	%	,7	1,	Sample Depth (ft.):	20
Sample Descri+¯i, n:	A-1-a (0) / ¯E				

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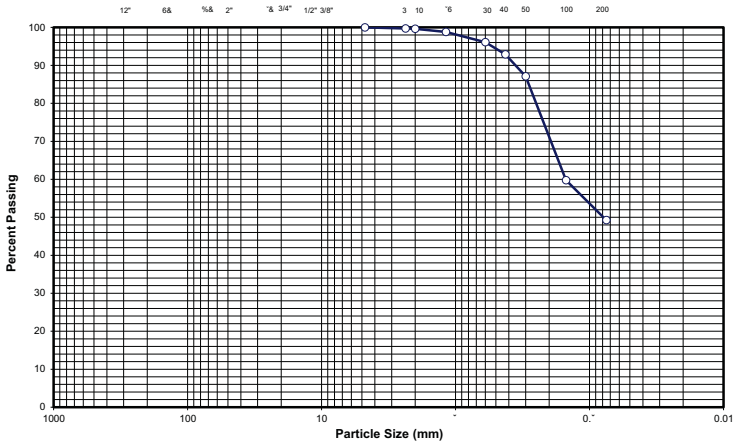
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A%
#200	A

= ravel ("/	0	::		Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>¯	,.:	22	Sample ID:	; A-RW$>
Fines ("/	A	, 7	22	Sample Depth (ft.):	%>
Sample Descri+¯i, n:	A-7-6 (7) / ¯¯				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	Fere	Figure No.:	$
Date:	10/12/11		

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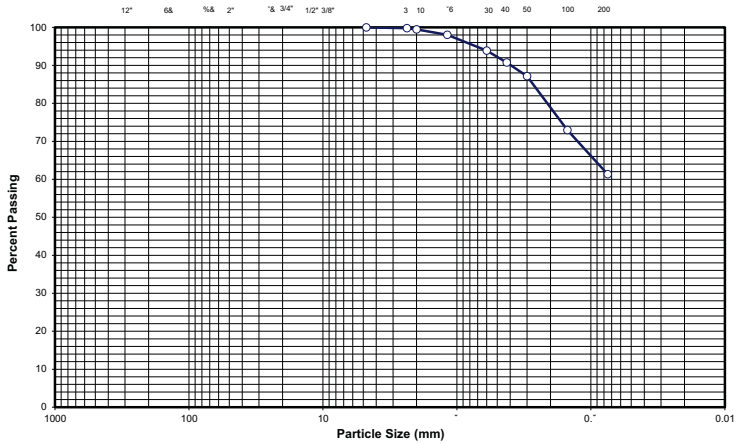
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	A¯
#200	6¯

= ravel ("/	0	::	%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	%A	,.:	22	Sample ID:	; A-RW$>
Fines ("/	6¯	, 7	¯2	Sample Depth (ft.):	6>
Sample Descri+¯i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 RW
¯ ec" ed By:	Fere	Figure No.:	$
Date:	10/12/11		

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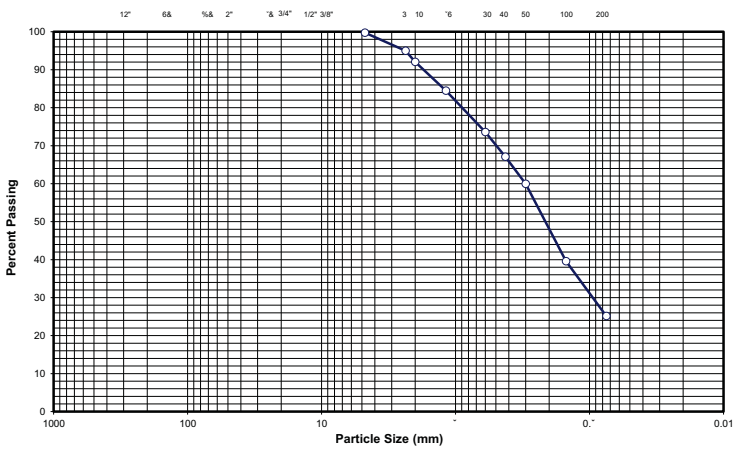
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	92
#40	6
#200	25

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>	,.:	1,	Sample ID:	; A-RW$6
Fines ("/	2>	, 7	1,	Sample Depth (ft.):	2
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec" ed By:	¯ alvin	Figure No.:	$
Date:	05/02/14		

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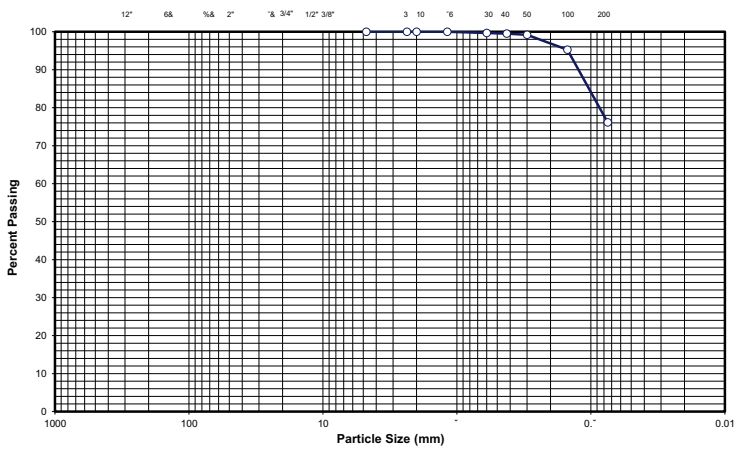
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	AA
#200	6

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	24	,.:	1,	Sample ID:	; A-RW$6
Fines ("/	6	, 7	1,	Sample Depth (ft.):	¯
Sample Descri+¯i, n:	**A-4 (0) / ML**				

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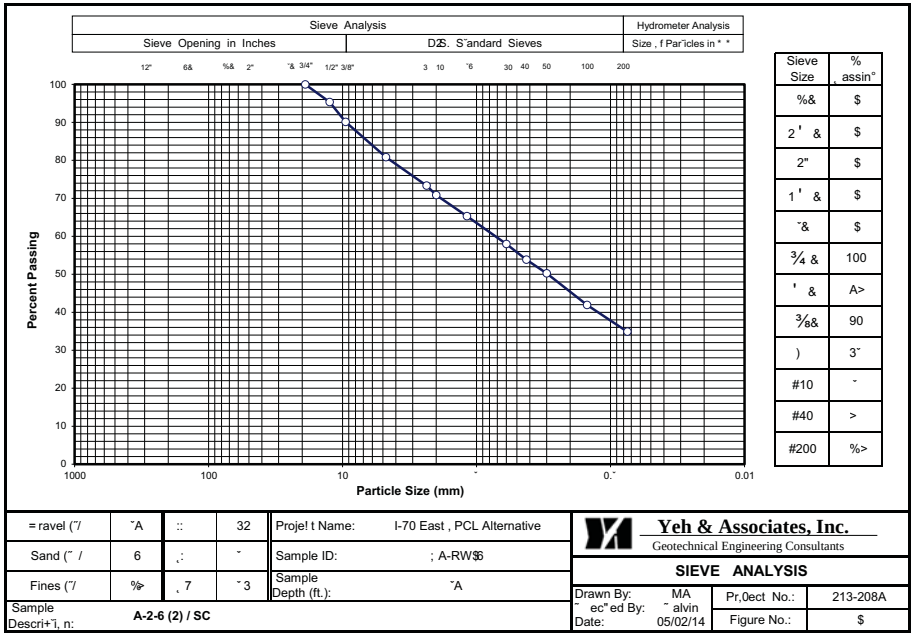
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec" ed By:	¯ alvin	Figure No.:	$
Date:	05/02/14		

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	100
' &	A>
⅜&&	90
)	3`
#10	`
#40	>
#200	%>

= ravel (`/	`A	::	32	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	6	,.:	`	Sample ID:	; A-RW$6
Fines (`/	%>	, 7	`3	Sample Depth (ft.):	`A
Sample Descri+`i, n:	**A-2-6 (2) / SC**				

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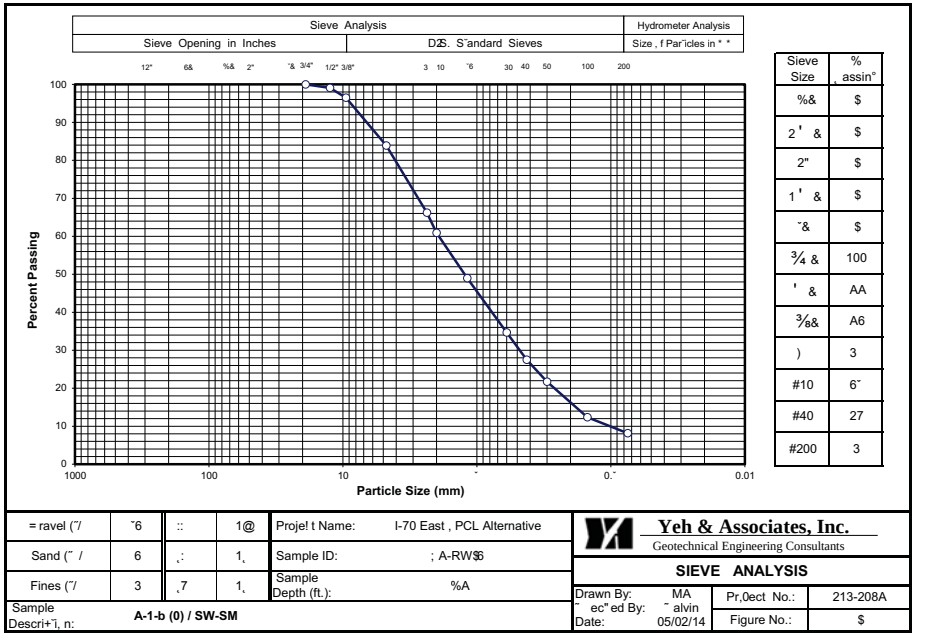
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	100
' &	AA
⅜&&	A6
)	3
#10	6`
#40	27
#200	3

= ravel (`/	`6	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	6	,.:	1,	Sample ID:	; A-RW$6
Fines (`/	3	,7	1,	Sample Depth (ft.):	%A
Sample Descri+`i, n:	**A-1-b (0) / SW-SM**				

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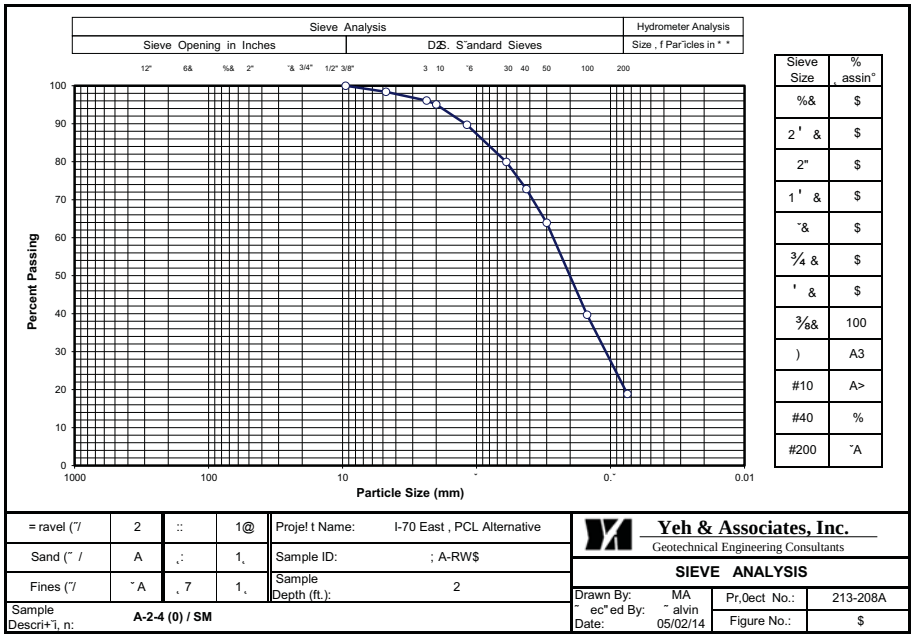
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	A3
#10	A>
#40	%
#200	`A

= ravel (`/	2	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	A	,.:	1,	Sample ID:	; A-RW$
Fines (`/	`A	, 7	1,	Sample Depth (ft.):	2
Sample Descri+`i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

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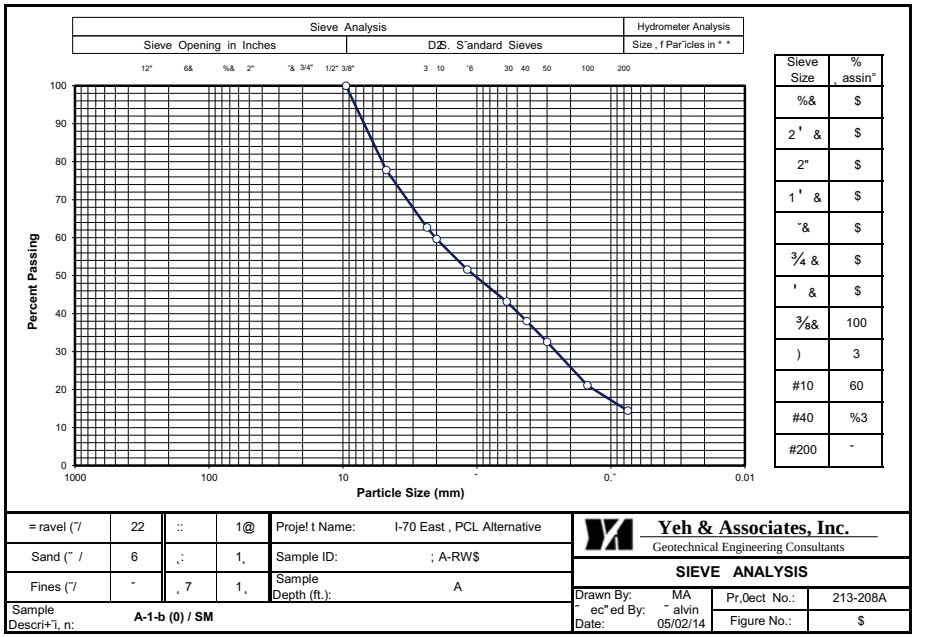

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	3
#10	60
#40	%3
#200	`

= ravel (`/	22	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	6	,.:	1,	Sample ID:	; A-RW$
Fines (`/	`	, 7	1,	Sample Depth (ft.):	A
Sample Descri+`i, n:	**A-1-b (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

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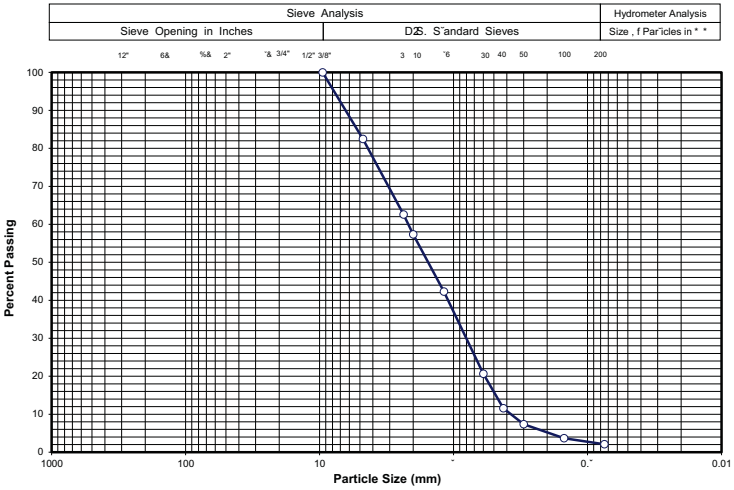

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	82
#10	>
#40	12
#200	2

= ravel ("/	`3	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (" /	80	,.:	1,	Sample ID:	; A-RW$
Fines ("/	2	,7	1,	Sample Depth (ft.):	25
Sample Descri+`i, n:	**A-1-b (0) / SP**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
" ec" ed By:	~ alvin		
Date:	05/02/14	Figure No.:	$

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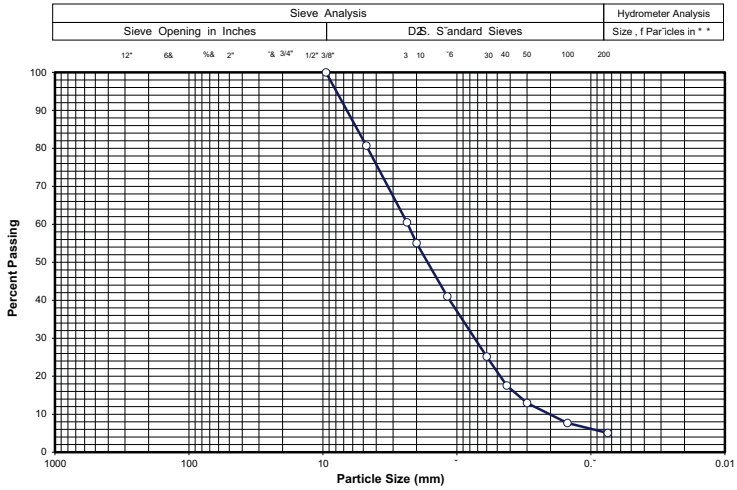

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	3`
#10	>>
#40	`3
#200	>

= ravel ("/	`A	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (" /	6	,.:	1,	Sample ID:	; A-RW$
Fines ("/	>	,7	1,	Sample Depth (ft.):	%>
Sample Descri+`i, n:	**A-1-b (0) / SW-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
" ec" ed By:	~ alvin		
Date:	05/02/14	Figure No.:	$

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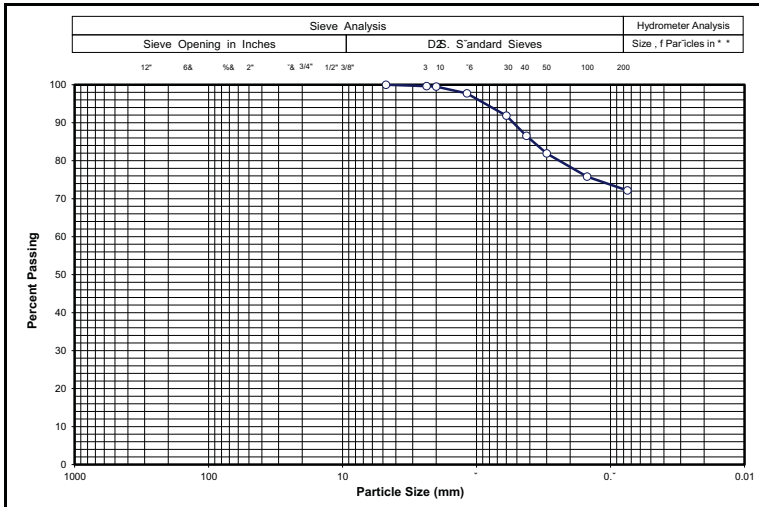

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	3
#200	72

= ravel ("/	0	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (" /	28	,.:	`3	Sample ID:	; A-RW$
Fines ("/	2	, 7	2	Sample Depth (ft.):	40
Sample Descri+`i, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
" ec" ed By:	~ alvin		
Date:	05/02/14	Figure No.:	$

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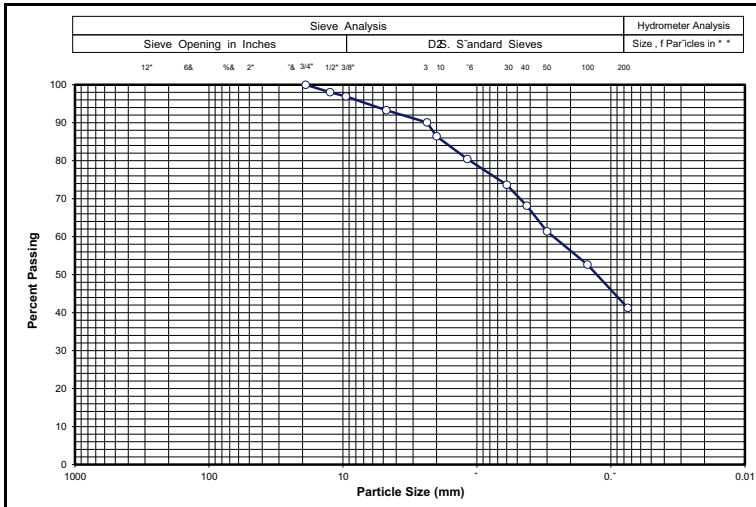

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	100
' &	A3
⅜&&	A
)	A%
#10	36
#40	63
#200	`

= ravel ("/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (" /	52	,.:	1,	Sample ID:	; A-RW$3
Fines ("/	`	, 7	1,	Sample Depth (ft.):	
Sample Descri+`i, n:	**A-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
" ec" ed By:	~ alvin		
Date:	05/02/14	Figure No.:	$

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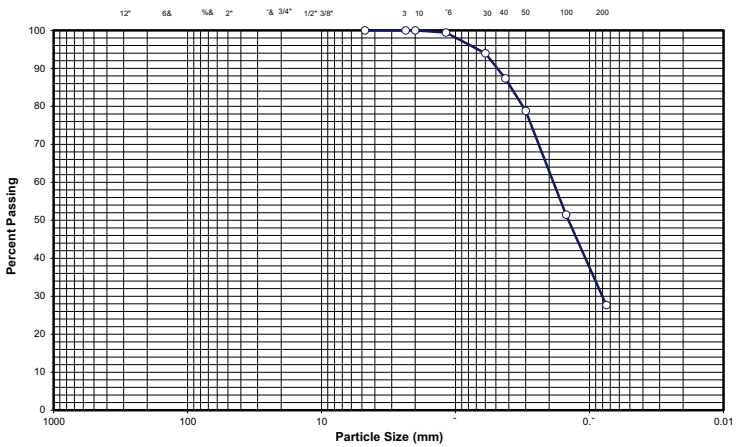
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3
#200	28

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	72	,.:	1,	Sample ID:	; A-RW$3
Fines (˝/	23	, 7	1,	Sample Depth (ft.):	¯
Sample Descri+ī, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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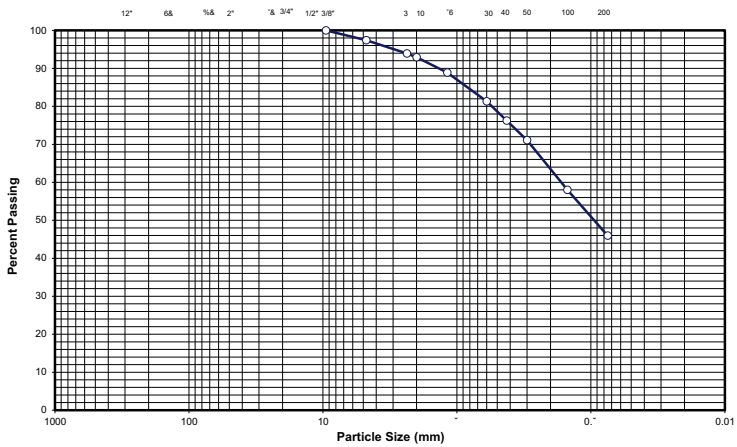
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	A
#10	A%
#40	6
#200	6

= ravel (˝/	%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	>˘	,.:	1,	Sample ID:	; A-RW$3
Fines (˝/	6	, 7	1,	Sample Depth (ft.):	24
Sample Descri+ī, n:	**A-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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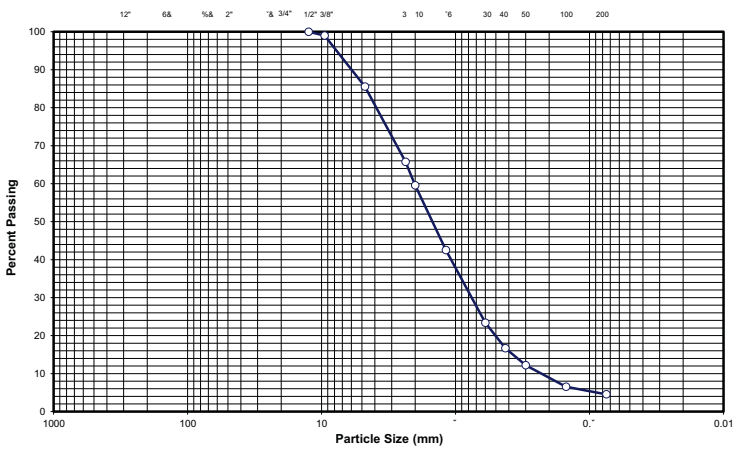
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	AA
)	36
#10	60
#40	¯
#200	>

= ravel (˝/	¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3˘	,.:	1,	Sample ID:	; A-RW$3
Fines (˝/	>	,7	1,	Sample Depth (ft.):	%
Sample Descri+ī, n:	**A-1-b (0) / SW-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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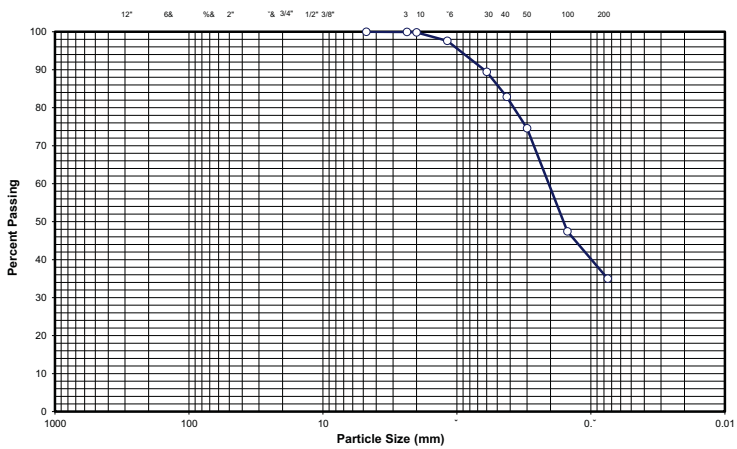
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3%
#200	%>

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6>	,.:	1,	Sample ID:	; A-RW$A
Fines (˝/	%>	, 7	1,	Sample Depth (ft.):	
Sample Descri+ī, n:	**A-2-4 (0) / SM**				

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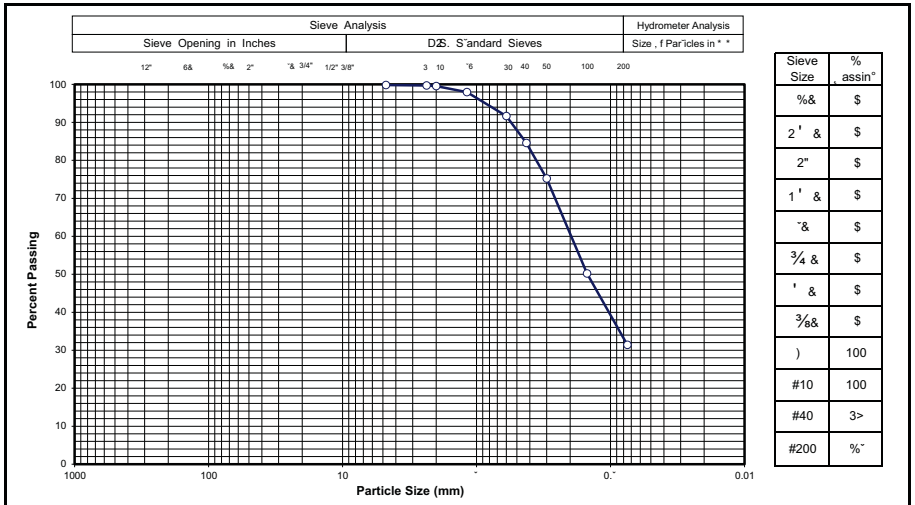
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3>
#200	%¯

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6A	,.:	1,	Sample ID:	; A-RW$A
Fines (˜/	%	, 7	1,	Sample Depth (ft.):	20
Sample Descri+˜i, n:	**A-2-4 (0) / SM**				

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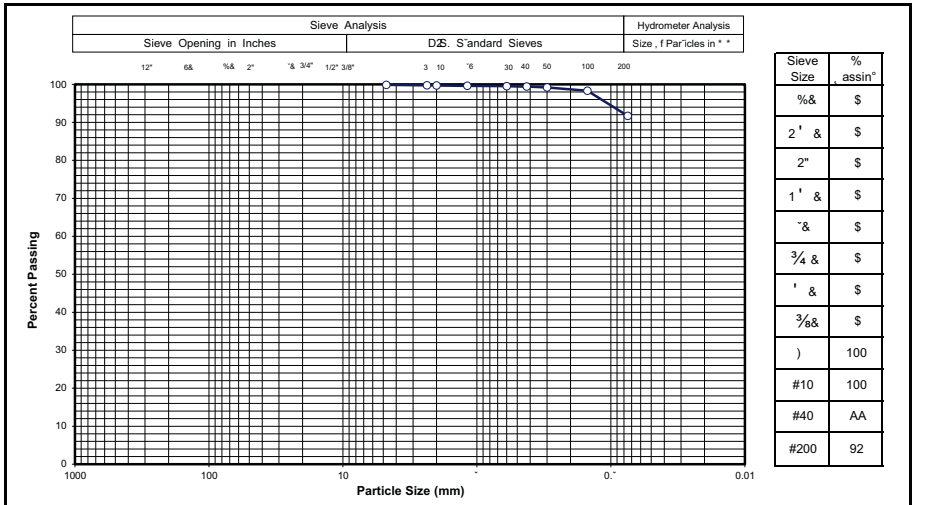
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	AA
#200	92

= ravel (˜/	0	::	¯	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3	,.:	21	Sample ID:	; A-RW$A
Fines (˜/	A2	, 7	20	Sample Depth (ft.):	%>
Sample Descri+˜i, n:	**A-7-6 (19) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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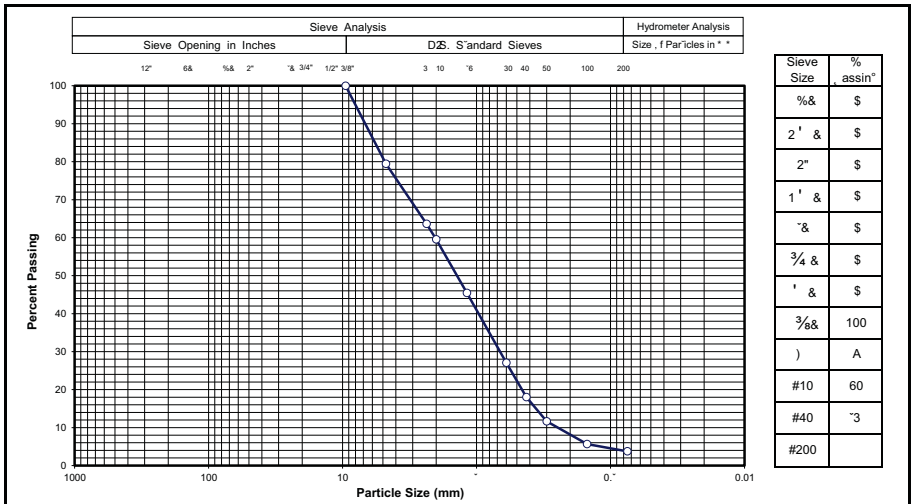

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	A
#10	60
#40	¯3
#200	

= ravel (˜/	21	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	>	,.:	1,	Sample ID:	; A-RW$A
Fines (˜/		,7	1,	Sample Depth (ft.):	>
Sample Descri+˜i, n:	**A-1-b (0) / SP**				

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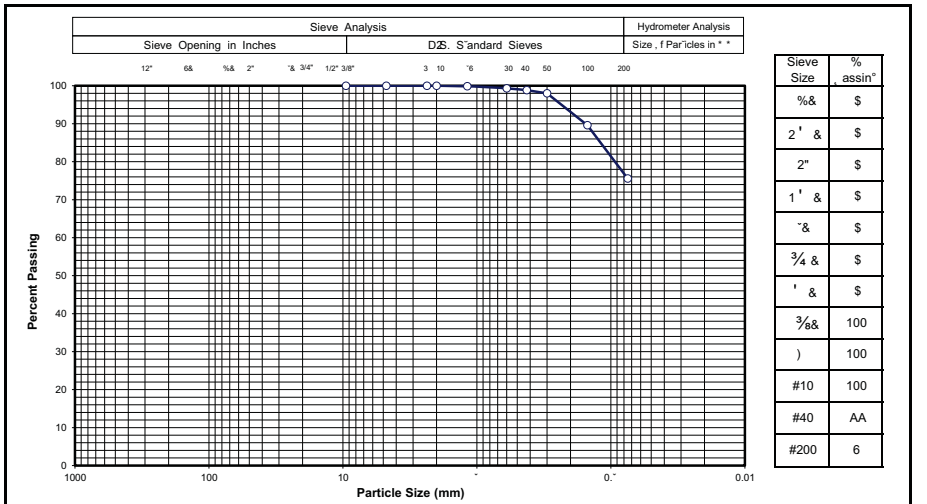
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	100
#40	AA
#200	6

= ravel (˜/	0	::	6A	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	24	,.:	32	Sample ID:	; A-RW$A
Fines (˜/	6	, 7	%	Sample Depth (ft.):	50
Sample Descri+˜i, n:	**Bedrock**				

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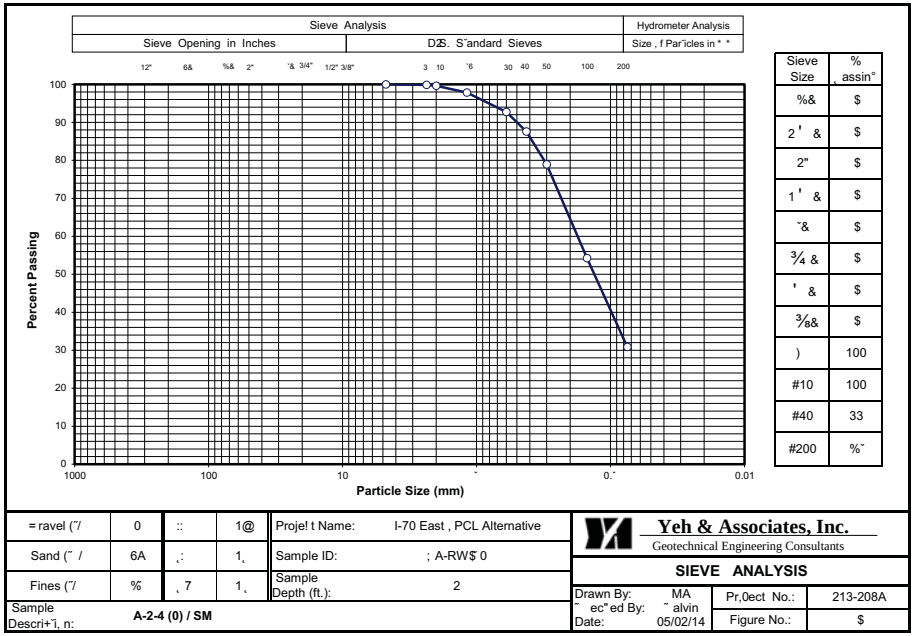
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	33
#200	%`

= ravel (`/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	6A	,.:	1,	Sample ID:	; A-RW$ 0
Fines (`/	%	, 7	1,	Sample Depth (ft.):	2
Sample Descri+`i, n:	**A-2-4 (0) / SM**				

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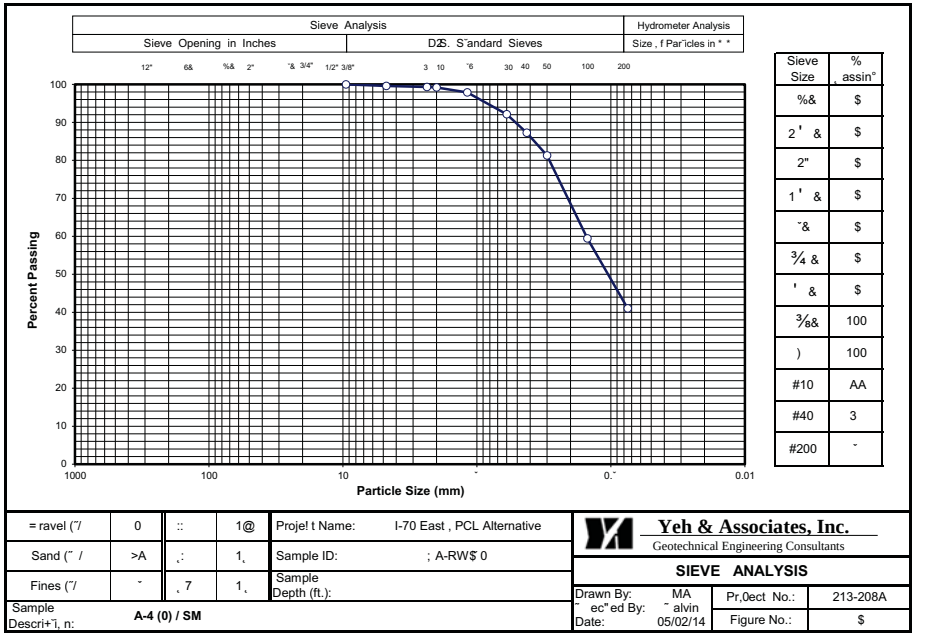
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	~ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	AA
#40	3
#200	`

= ravel (`/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	>A	,.:	1,	Sample ID:	; A-RW$ 0
Fines (`/	`	, 7	1,	Sample Depth (ft.):	
Sample Descri+`i, n:	**A-4 (0) / SM**				

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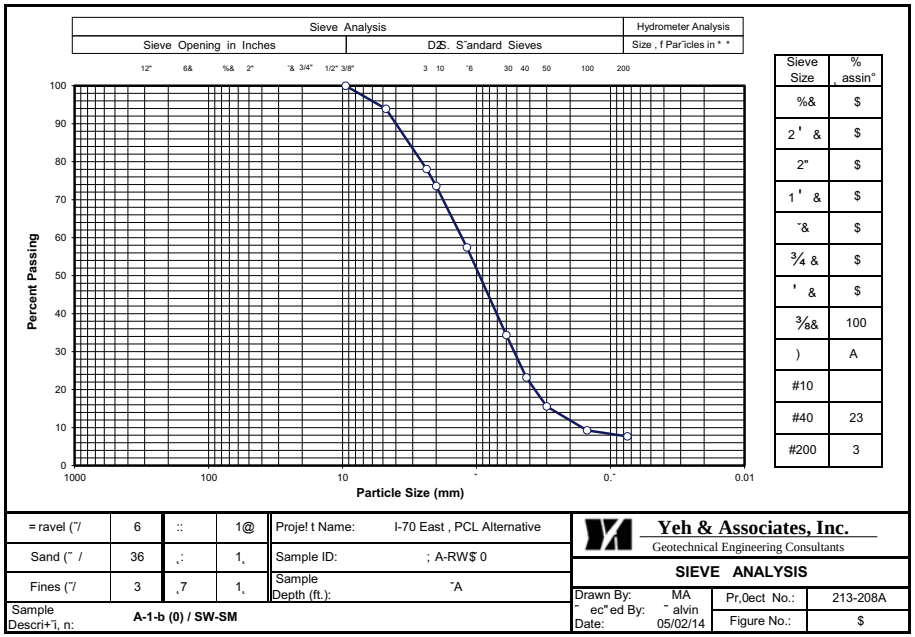
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	~ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	A
#10	
#40	23
#200	3

= ravel (`/	6	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	36	,.:	1,	Sample ID:	; A-RW$ 0
Fines (`/	3	,7	1,	Sample Depth (ft.):	`A
Sample Descri+`i, n:	**A-1-b (0) / SW-SM**				

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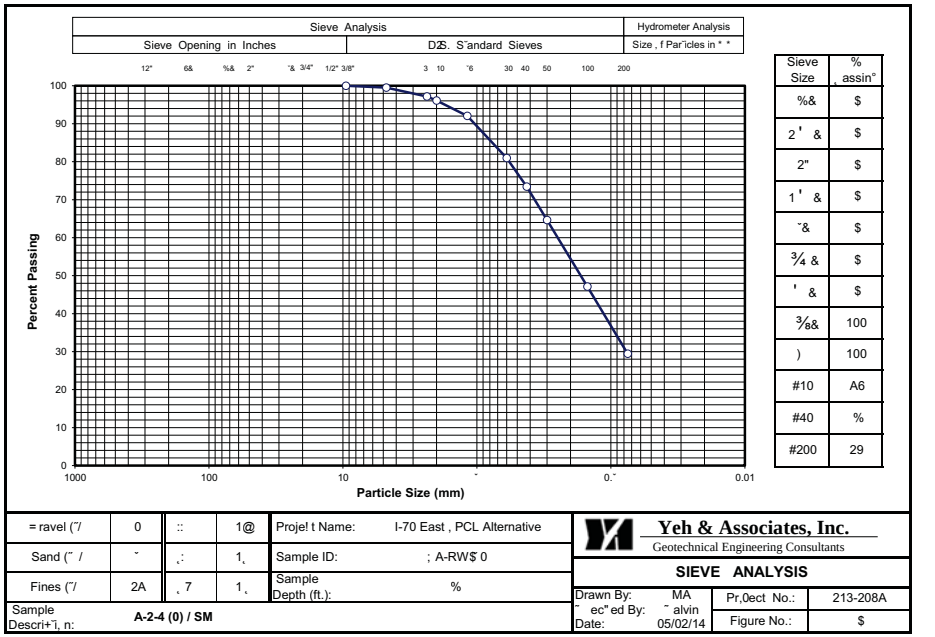
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	~ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	A6
#40	%
#200	29

= ravel (`/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	`	,.:	1,	Sample ID:	; A-RW$ 0
Fines (`/	2A	, 7	1,	Sample Depth (ft.):	%
Sample Descri+`i, n:	**A-2-4 (0) / SM**				

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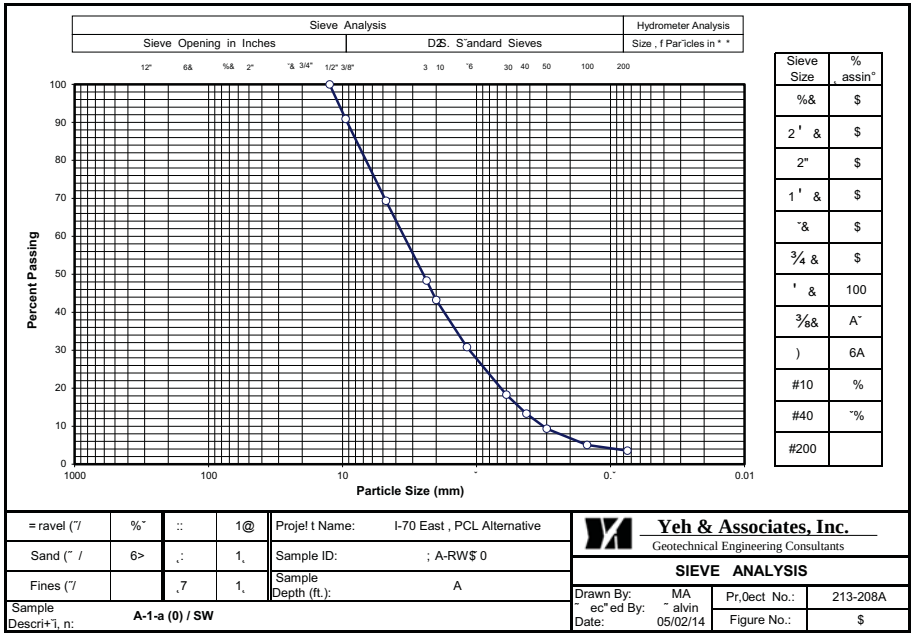
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	~ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% assin
%&	$
2 ' &	$
2"	$
1 ' &	$
~&	$
¾ &	$
' &	100
⅜&&	A~
)	6A
#10	%
#40	~%
#200	

= ravel (~/	%~	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (~ /	6>	.:	1.	Sample ID:	; A-RW$ 0
Fines (~/		.7	1.	Sample Depth (ft.):	A
Sample Descri+~i, n:	**A-1-a (0) / SW**				

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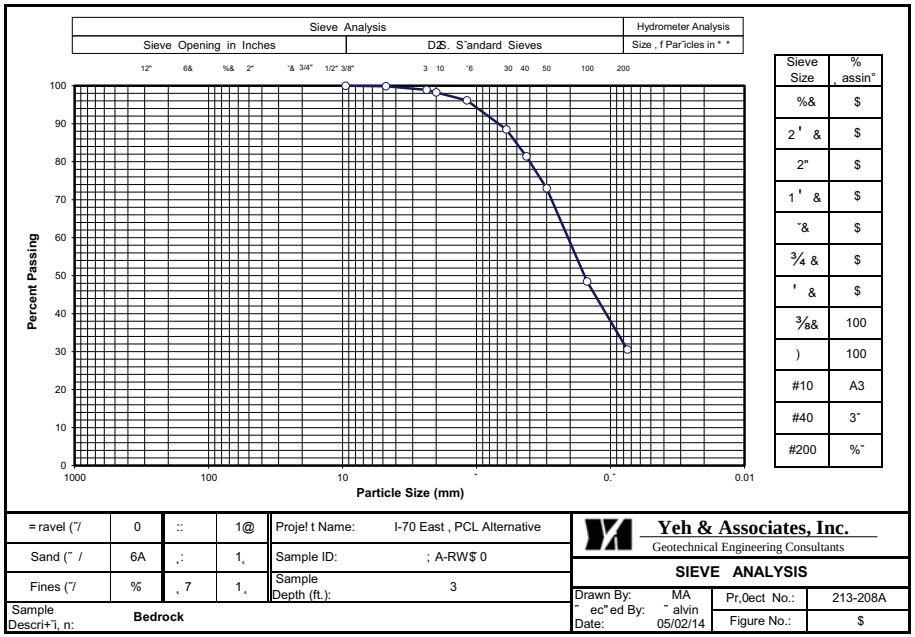
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
~ ec" ed By:	~ alvin	Figure No.:	$
Date:	05/02/14		

Revised 04/27/2004



Sieve Size	% assin
%&	$
2 ' &	$
2"	$
1 ' &	$
~&	$
¾ &	$
' &	100
⅜&&	A~
)	6A
#10	%
#40	~%
#200	

= ravel (~/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (~ /	6A	.:	1.	Sample ID:	; A-RW$ 0
Fines (~/	%	.7	1.	Sample Depth (ft.):	3
Sample Descri+~i, n:	**Bedrock**				

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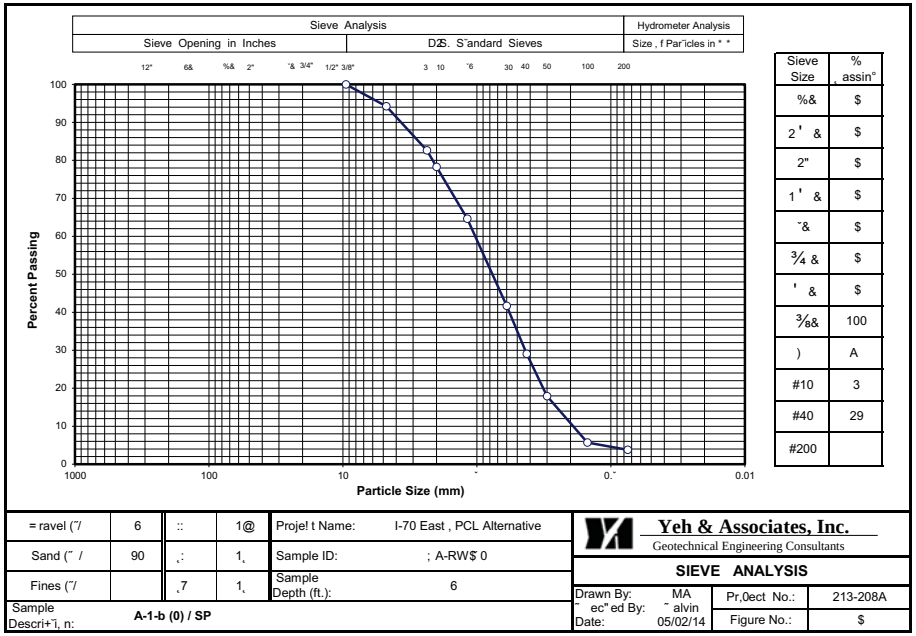
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
~ ec" ed By:	~ alvin	Figure No.:	$
Date:	05/02/14		

Revised 04/27/2004



Sieve Size	% assin
%&	$
2 ' &	$
2"	$
1 ' &	$
~&	$
¾ &	$
' &	$
⅜&&	100
)	A
#10	3
#40	29
#200	

= ravel (~/	6	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (~ /	90	.:	1.	Sample ID:	; A-RW$ 0
Fines (~/		.7	1.	Sample Depth (ft.):	6
Sample Descri+~i, n:	**A-1-b (0) / SP**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
~ ec" ed By:	~ alvin	Figure No.:	$
Date:	05/02/14		

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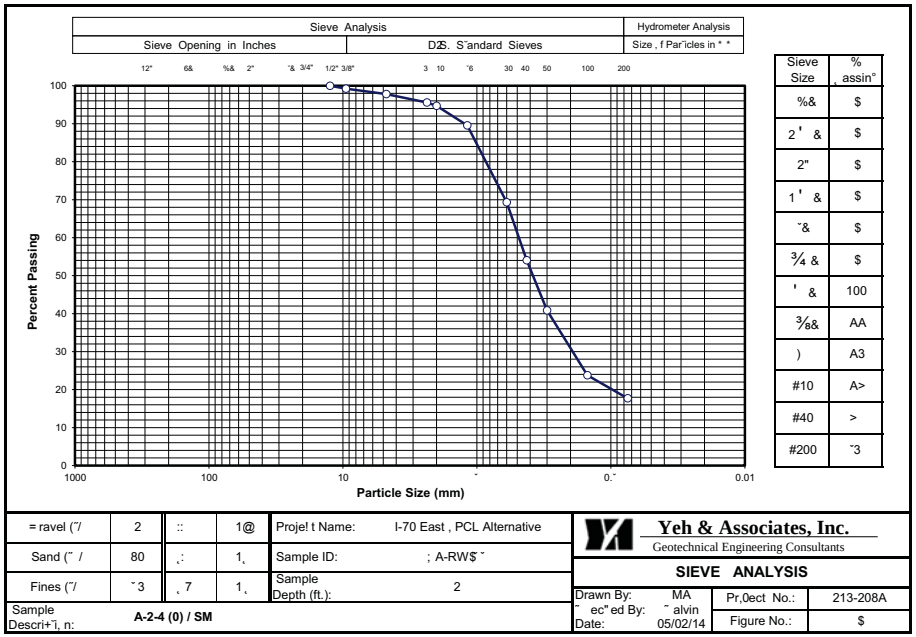

Sieve Size	% assin
%&	$
2 ' &	$
2"	$
1 ' &	$
~&	$
¾ &	$
' &	100
⅜&&	AA
)	A3
#10	A>
#40	>
#200	~3

= ravel (~/	2	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (~ /	80	.:	1.	Sample ID:	; A-RW$ ~
Fines (~/	~3	.7	1.	Sample Depth (ft.):	2
Sample Descri+~i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
~ ec" ed By:	~ alvin	Figure No.:	$
Date:	05/02/14		

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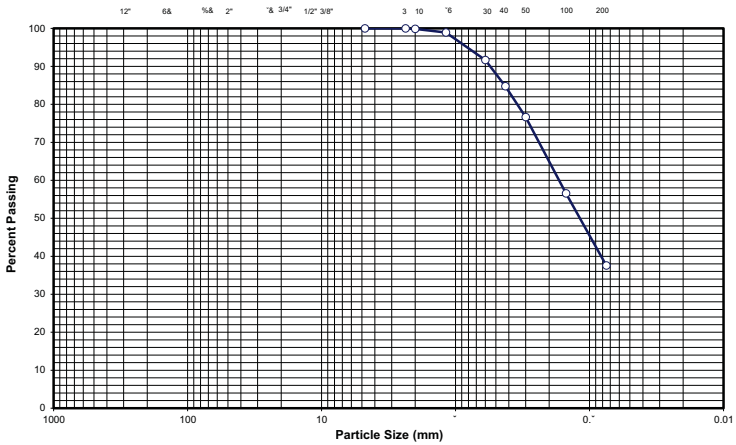
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3>
#200	%3

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	62	,.:	1,	Sample ID:	; A-RW$˜ ˜
Fines (˝/	%3	, 7	1,	Sample Depth (ft.):	A
Sample Descri+˙i, n:	**A-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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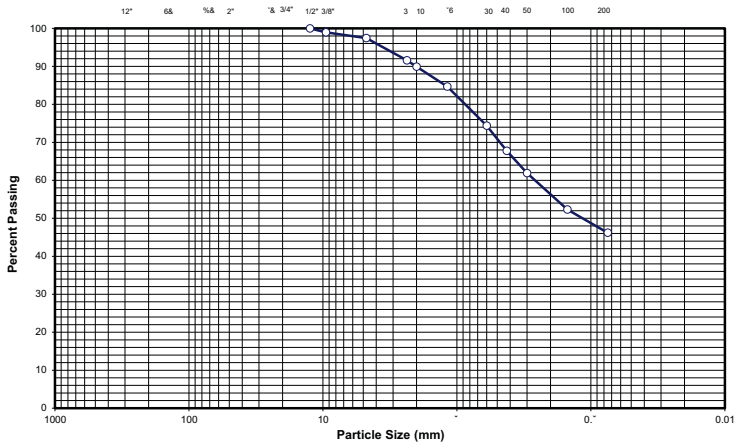
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	AA
)	A
#10	90
#40	63
#200	6

= ravel (˝/	%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	>˜	,.:	1,	Sample ID:	; A-RW$˜ ˜
Fines (˝/	6	, 7	1,	Sample Depth (ft.):	˜
Sample Descri+˙i, n:	**A-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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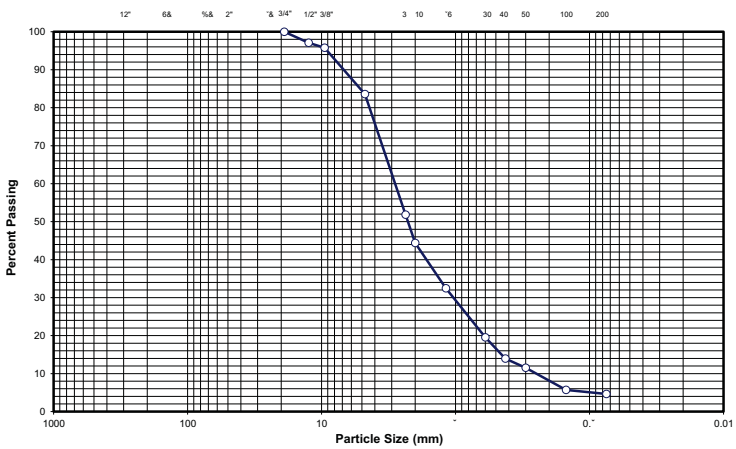
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A
⅜&&	A6
)	3
#10	
#40	˜
#200	>

= ravel (˝/	¯6	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	A	,.:	1,	Sample ID:	; A-RW$˜ ˜
Fines (˝/	>	,7	1,	Sample Depth (ft.):	24
Sample Descri+˙i, n:	**A-1-a (0) / SW-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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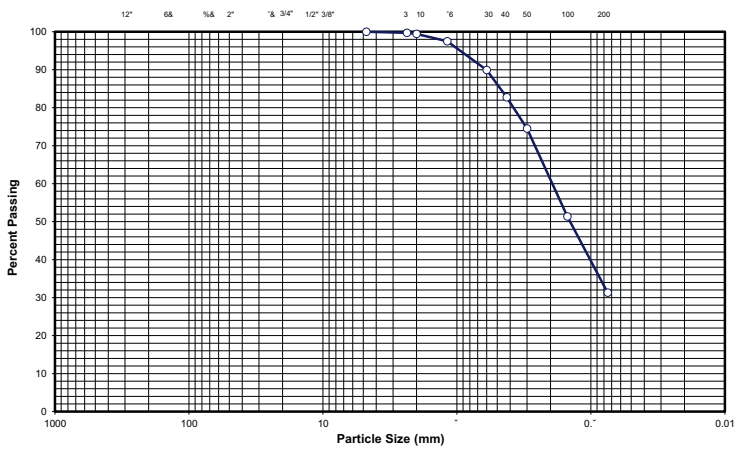
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	3%
#200	%˜

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6A	,.:	1,	Sample ID:	; A-RW$˜ ˜
Fines (˝/	%	, 7	1,	Sample Depth (ft.):	%
Sample Descri+˙i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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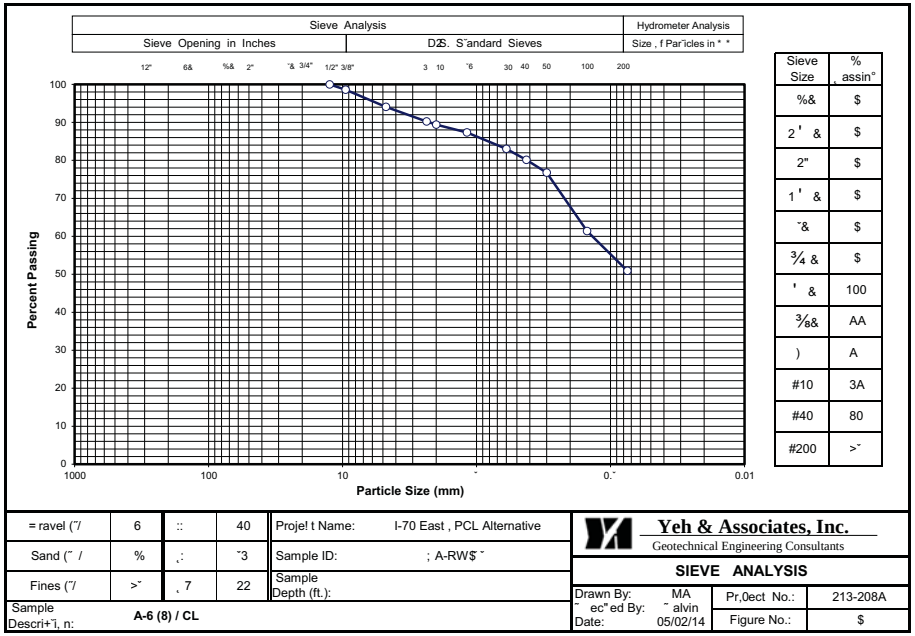

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	100
⅜&&	AA
)	A
#10	3A
#40	80
#200	>`

= ravel (`/	6	::	40	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	%	,:	`3	Sample ID:	; A-RW$ `
Fines (`/	>`	, 7	22	Sample Depth (ft.):	
Sample Descri+`i, n:	**A-6 (8) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin	Figure No.:	$
Date:	05/02/14		

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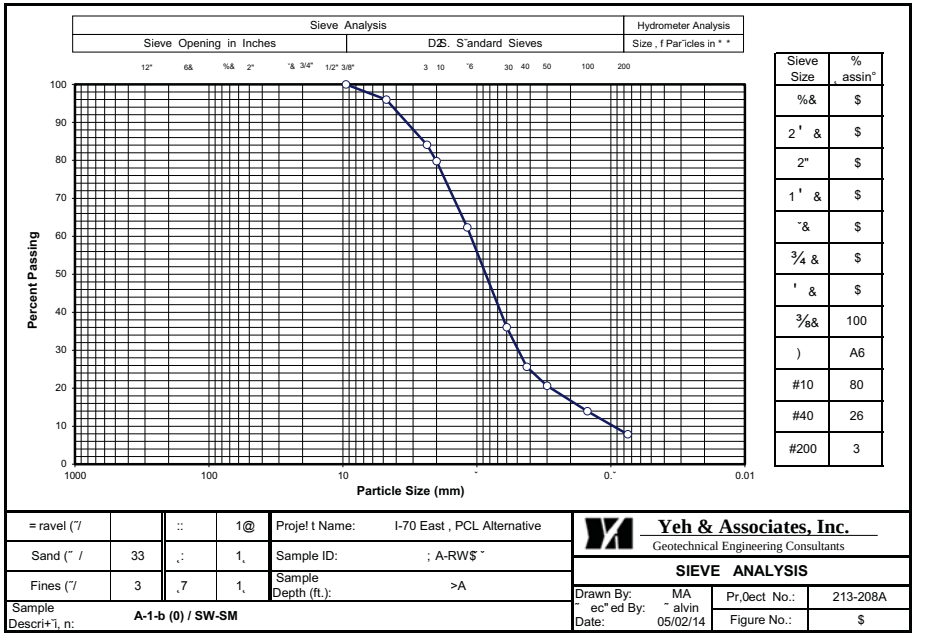

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	A6
#10	80
#40	26
#200	3

= ravel (`/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	33	,:	1,	Sample ID:	; A-RW$ `
Fines (`/	3	,7	1,	Sample Depth (ft.):	>A
Sample Descri+`i, n:	**A-1-b (0) / SW-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin	Figure No.:	$
Date:	05/02/14		

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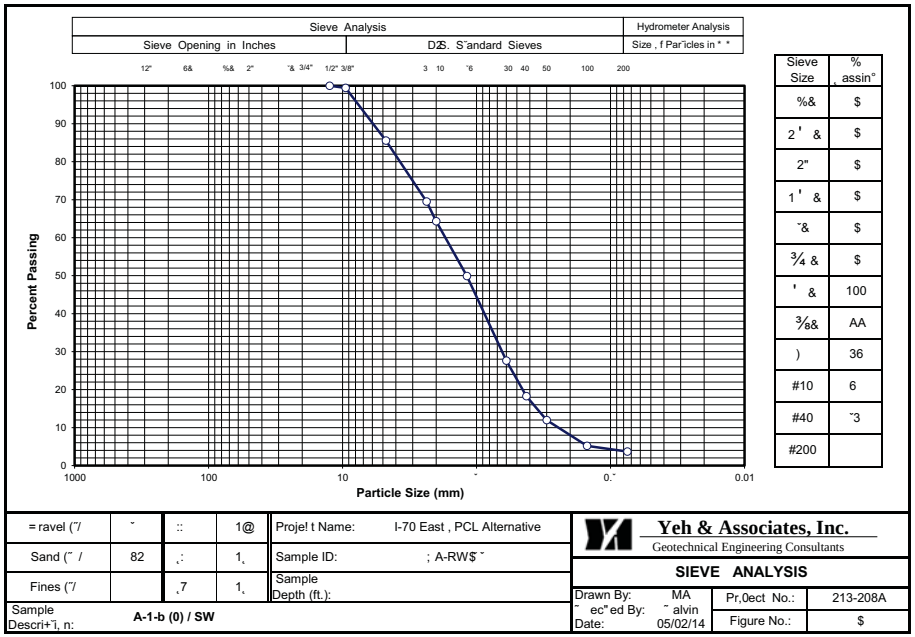

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	100
⅜&&	AA
)	36
#10	6
#40	`3
#200	

= ravel (`/	`	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	82	,:	1,	Sample ID:	; A-RW$ `
Fines (`/		,7	1,	Sample Depth (ft.):	
Sample Descri+`i, n:	**A-1-b (0) / SW**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin	Figure No.:	$
Date:	05/02/14		

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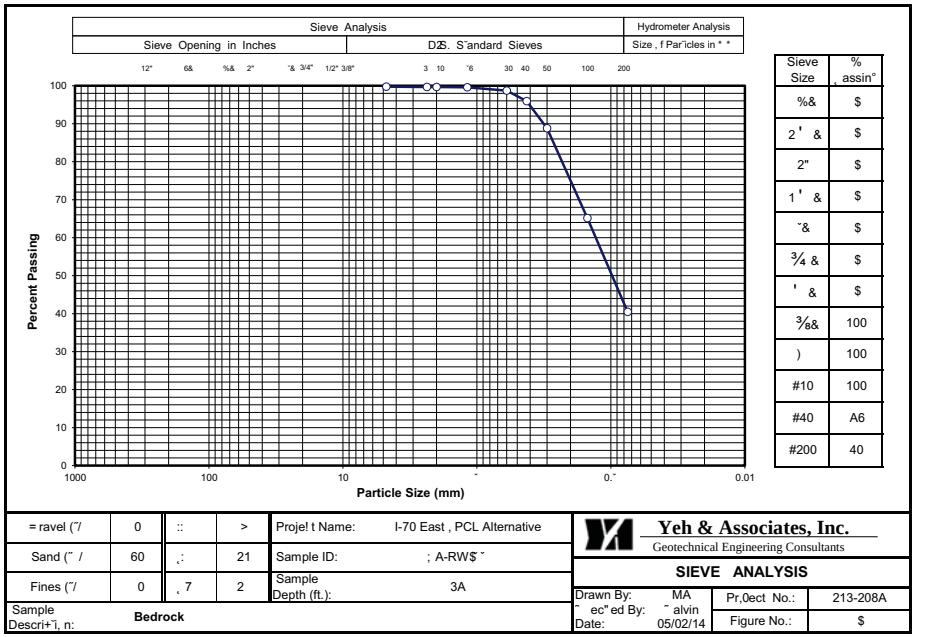

Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	100
#40	A6
#200	40

= ravel (`/	0	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	60	,:	21	Sample ID:	; A-RW$ `
Fines (`/	0	, 7	2	Sample Depth (ft.):	3A
Sample Descri+`i, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin	Figure No.:	$
Date:	05/02/14		

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Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	100
#40	
#200	22

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3	,.:	1,	Sample ID:	; A-RW$ 2
Fines ("/	22	, 7	1,	Sample Depth (ft.):	%

Sample Descri+¯i, n: **A-2-4 (2) / SM**

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec" ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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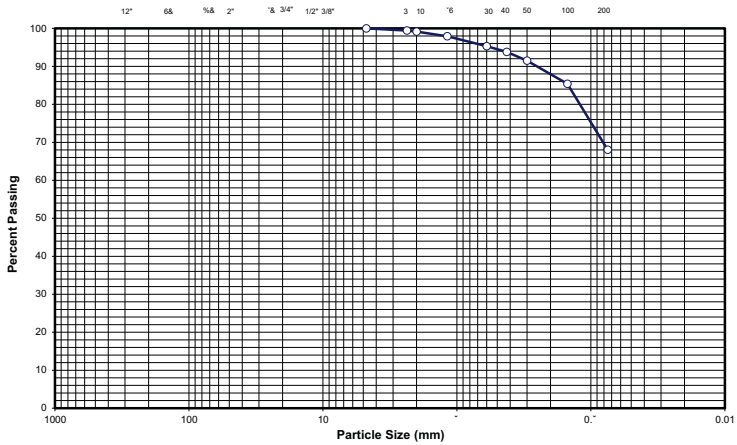
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	A
#200	63

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	32	,.:	1,	Sample ID:	; A-RW$ 2
Fines ("/	63	, 7	1,	Sample Depth (ft.):	¯>

Sample Descri+¯i, n: **A-4 (0) / ML**

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec" ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

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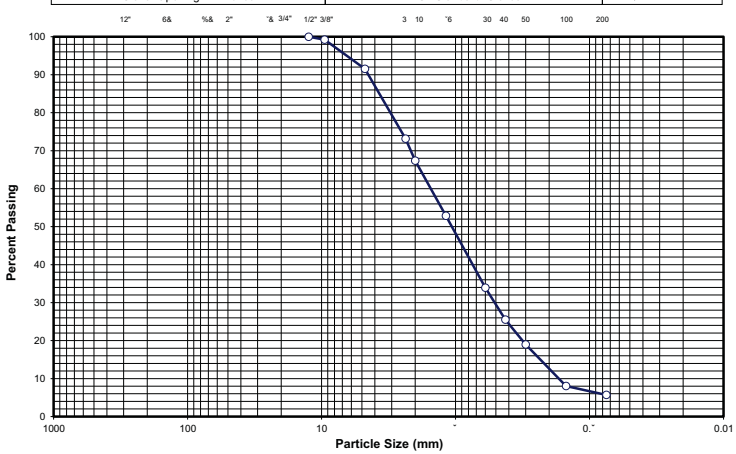
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	AA
)	92
#10	6
#40	26
#200	6

= ravel ("/	3	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	36	,.:	1,	Sample ID:	; A-RW$ 2
Fines ("/	6	,7	1,	Sample Depth (ft.):	30

Sample Descri+¯i, n: **A-1-b (0) / SP-SM**

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec" ed By:	¯ alvin		
Date:	06/14/14	Figure No.:	$

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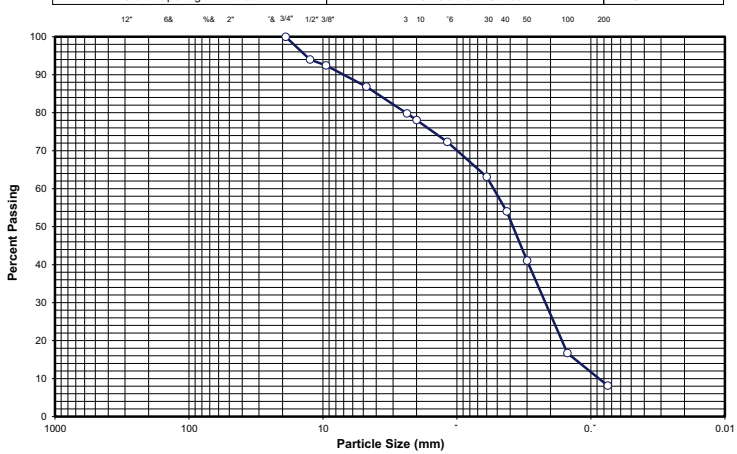
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A
⅜&&	92
)	3
#10	3
#40	>
#200	3

= ravel ("/	¯%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	A	,.:	1,	Sample ID:	; A-RW$ 2
Fines ("/	3	,7	1,	Sample Depth (ft.):	40

Sample Descri+¯i, n: **A-3 (0) / SP-SM**

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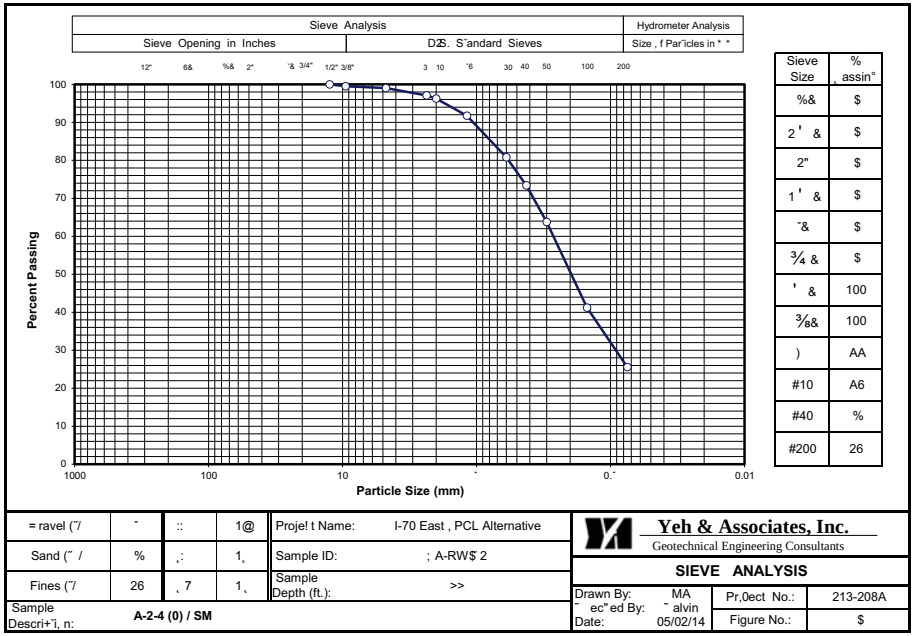
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
¯ ec" ed By:	¯ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	100
)	AA
#10	A6
#40	%
#200	26

= ravel (˝/	¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	%	,.:	1,	Sample ID:	; A-RW$ 2
Fines (˝/	26	, 7	1,	Sample Depth (ft.):	>>
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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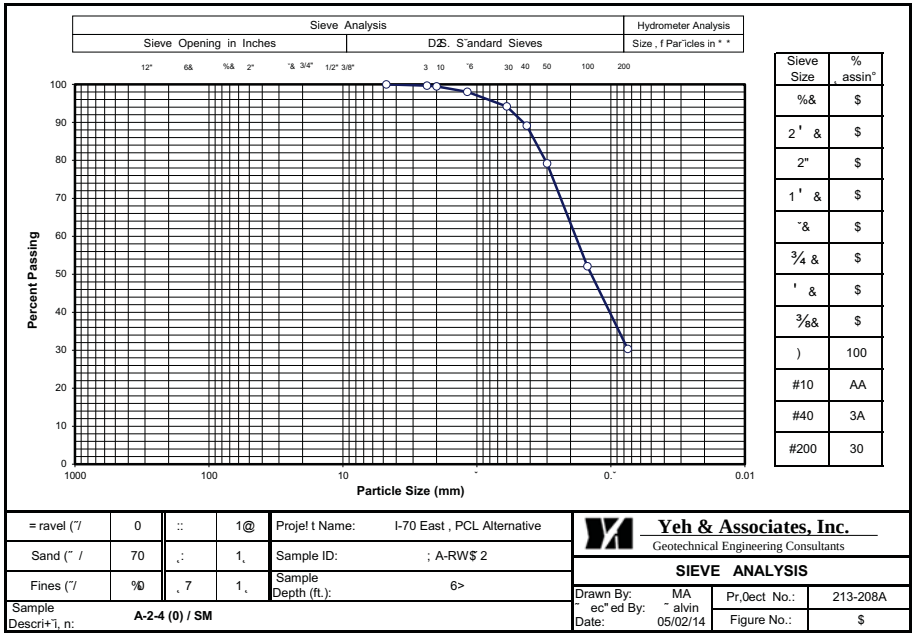
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	3A
#200	30

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	70	,.:	1,	Sample ID:	; A-RW$ 2
Fines (˝/	%0	, 7	1,	Sample Depth (ft.):	6>
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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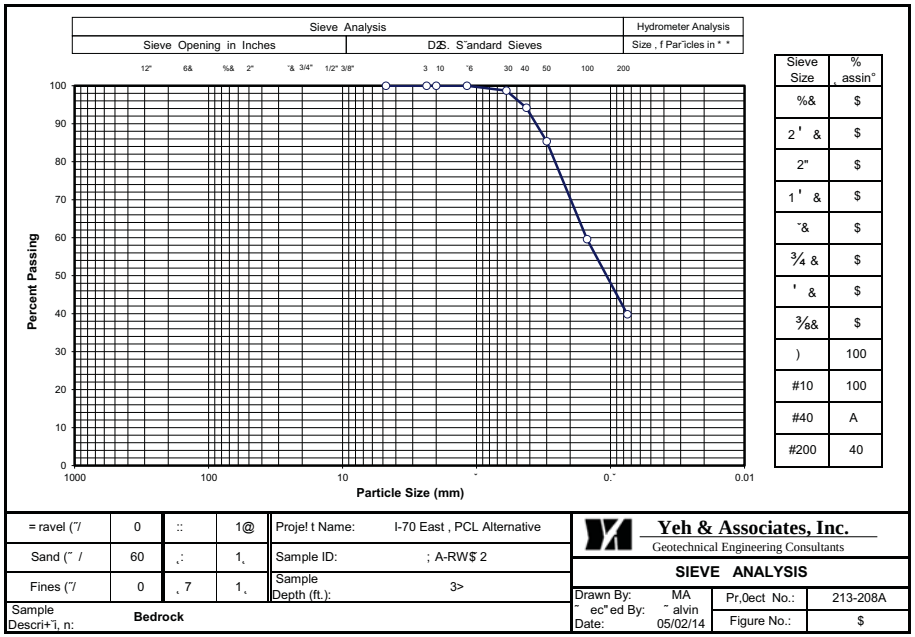
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A
#200	40

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	60	,.:	1,	Sample ID:	; A-RW$ 2
Fines (˝/	0	, 7	1,	Sample Depth (ft.):	3>
Sample Descri+¯i, n:	**Bedrock**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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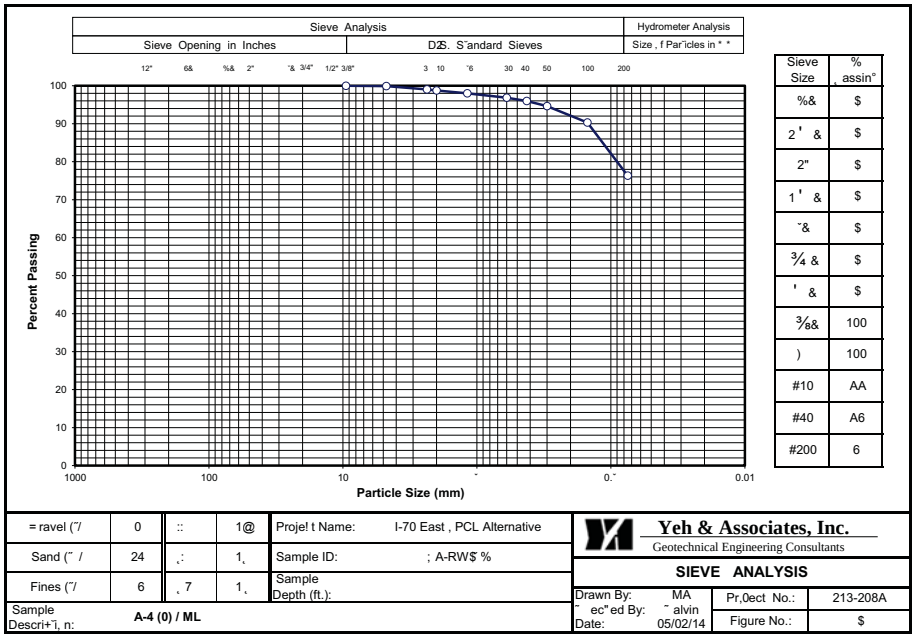

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	AA
#40	A6
#200	6

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	24	,.:	1,	Sample ID:	; A-RW$ %
Fines (˝/	6	, 7	1,	Sample Depth (ft.):	
Sample Descri+¯i, n:	**A-4 (0) / ML**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec"ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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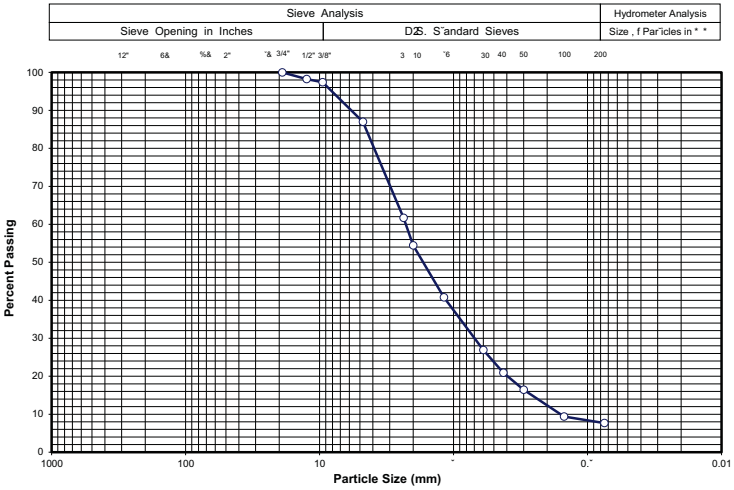

Sieve Size	% , assin`
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	100
' &	A3
⅜&&	A
)	3
#10	>
#40	21
#200	3

= ravel (`/	`%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	A	,.:	1,	Sample ID:	; A-RW$ %
Fines (`/	3	,7	1,	Sample Depth (ft.):	`A
Sample Descri+`i, n:	**A-1-b (0) / SW-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

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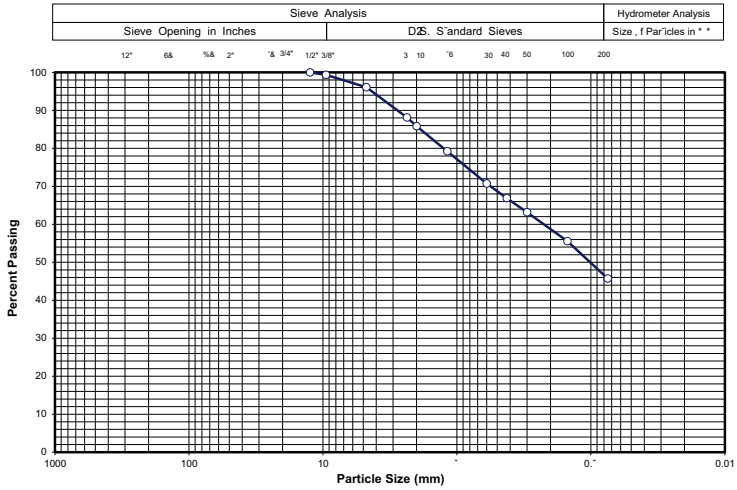

Sieve Size	% , assin`
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	100
⅜&&	AA
)	A6
#10	36
#40	6
#200	6

= ravel (`/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	50	,.:	1,	Sample ID:	; A-RW$ %
Fines (`/	6	,7	1,	Sample Depth (ft.):	%
Sample Descri+`i, n:	**A-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

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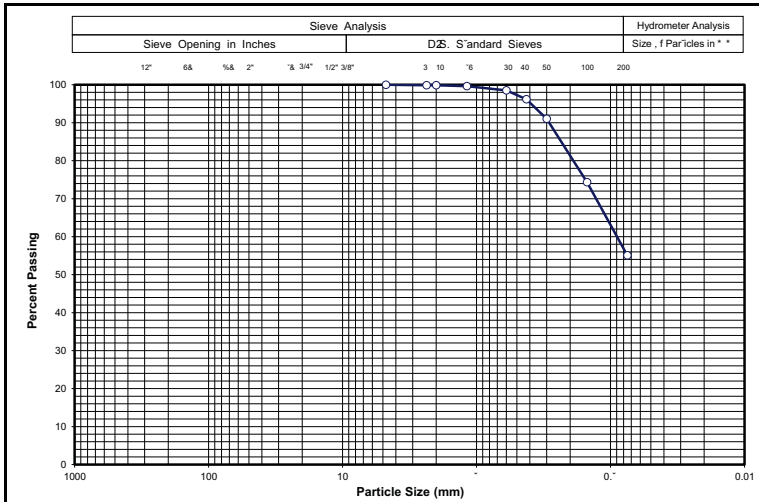

Sieve Size	% , assin`
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A6
#200	>>

= ravel (`/	0	::		Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	>	,.:	20	Sample ID:	; A-RW$ %
Fines (`/	>>	, 7	2	Sample Depth (ft.):	A
Sample Descri+`i, n:	**A-7-6 (10) / CL**				

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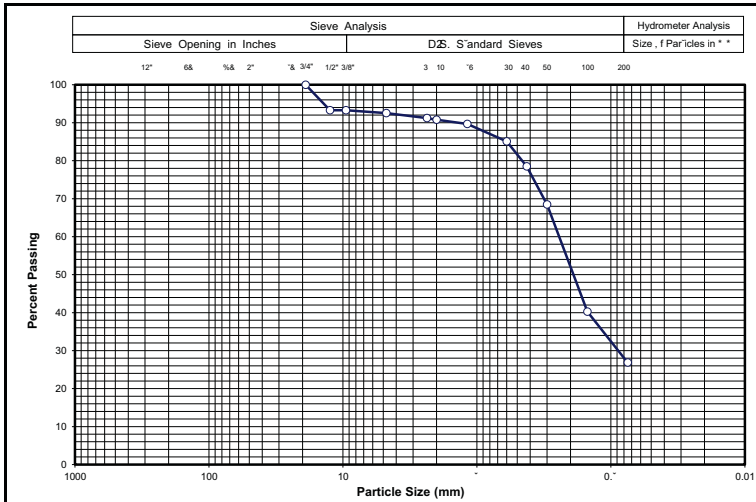
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin`
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	100
' &	A%
⅜&&	A%
)	A%
#10	A`
#40	A
#200	27

= ravel (`/		::	%6	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	66	,.:	`6	Sample ID:	; A-RW$ %
Fines (`/	2	, 7	20	Sample Depth (ft.):	>A
Sample Descri+`i, n:	**A-2-6 (0) / SC**				

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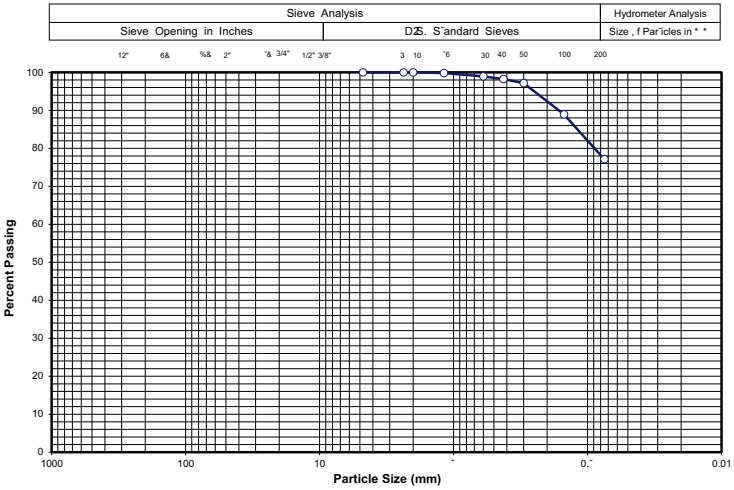
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A3
#200	

= ravel (`/	0	::	6`	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	23	,.:	28	Sample ID:	; A-RW$ %
Fines (`/		, 7	%%	Sample Depth (ft.):	6A
Sample Descri+`i, n:	**Bedrock**				

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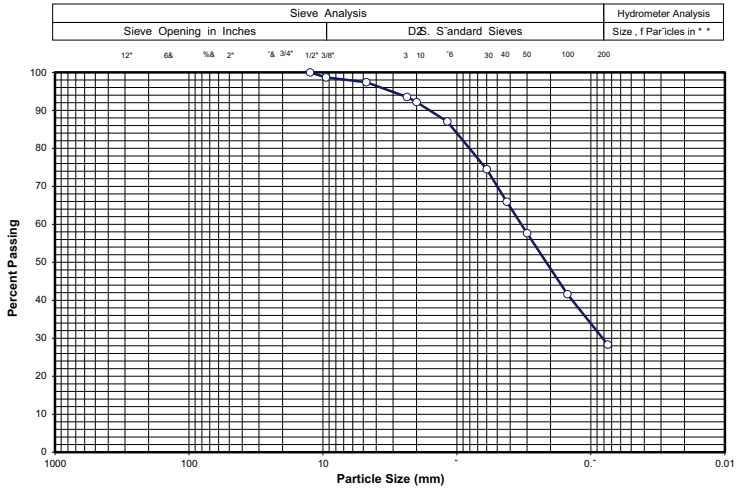
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	100
⅜&&	AA
)	A
#10	92
#40	66
#200	28

= ravel (`/	%	::	22	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	6A	,.:	`	Sample ID:	; A-RW$
Fines (`/	23	, 7	3	Sample Depth (ft.):	
Sample Descri+`i, n:	**A-2-4 (0) / SC**				

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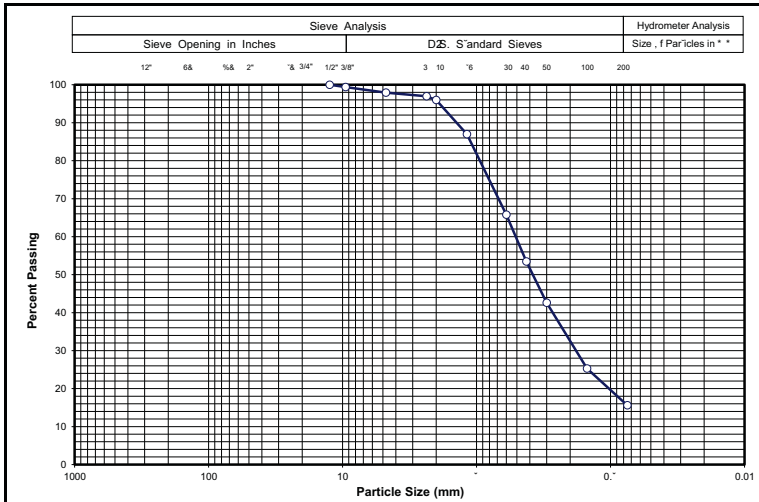
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	100
⅜&&	AA
)	A3
#10	A6
#40	>%
#200	`6

= ravel (`/	2	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	82	,.:	1,	Sample ID:	; A-RW$
Fines (`/	` 6	, 7	1,	Sample Depth (ft.):	A
Sample Descri+`i, n:	**A-2-4 (2) / SM**				

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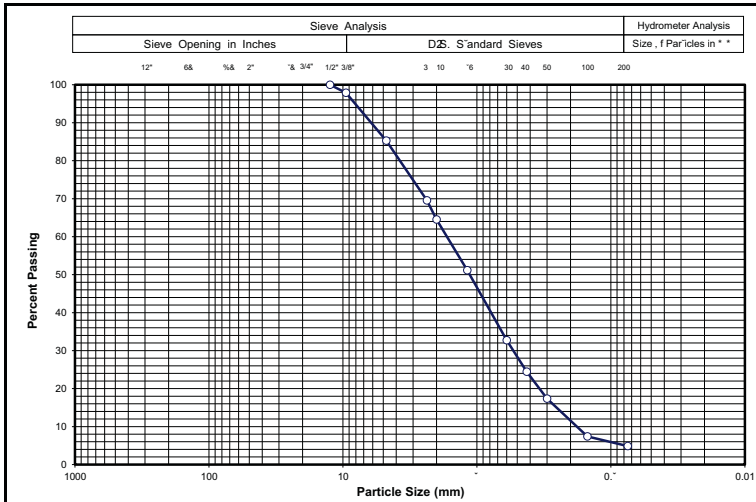
Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	100
⅜&&	A3
)	3>
#10	6
#40	24
#200	>

= ravel (`/	`>	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	80	,.:	1,	Sample ID:	; A-RW$
Fines (`/	>	,7	1,	Sample Depth (ft.):	24
Sample Descri+`i, n:	**A-1-b (0) / SP-SM**				

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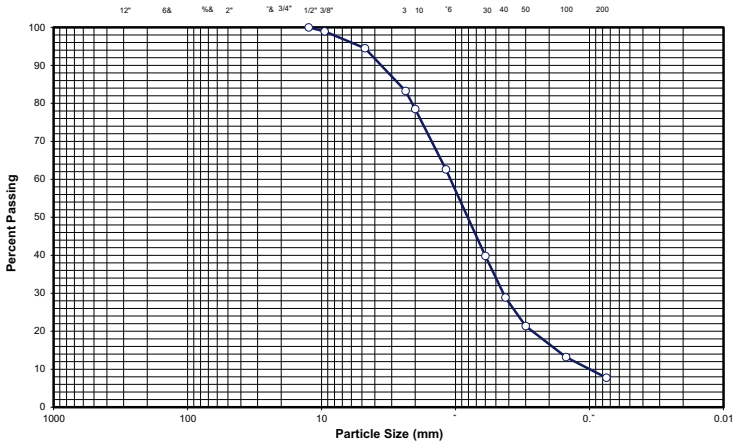
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	AA
)	A>
#10	3
#40	29
#200	3

= ravel (˝/	>	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3	,.:	1,	Sample ID:	; A-RW$
Fines (˝/	3	,7	1,	Sample Depth (ft.):	%A
Sample Descri+¯i, n:	**A-1-b (0) / SW-SM**				

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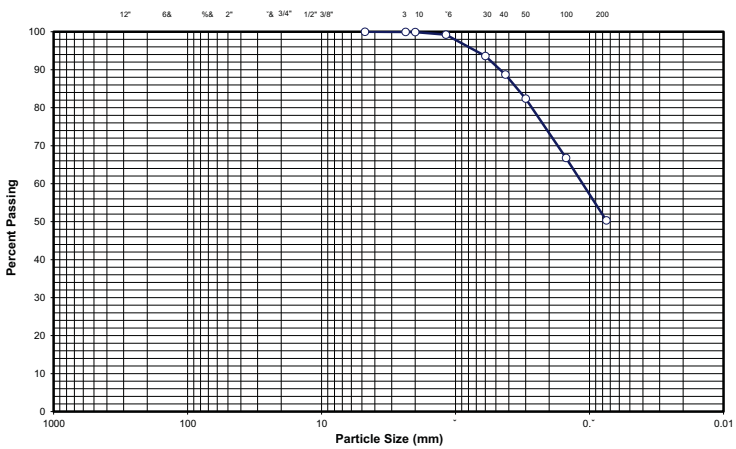
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A
#200	>3

= ravel (˝/	0	::	32	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	42	,.:	¯>	Sample ID:	; A-RW$
Fines (˝/	>3	,7	-	Sample Depth (ft.):	
Sample Descri+¯i, n:	**A-6 (7) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

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Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3A
#200	50

= ravel (˝/	0	::	28	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	50	,.:	12	Sample ID:	; A-RW$ >
Fines (˝/	>0	,7	¯6	Sample Depth (ft.):	%
Sample Descri+¯i, n:	**A-6 (4) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	A
#10	3A
#40	66
#200	42

= ravel (˝/	%	::	%>	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	>>	,.:	¯3	Sample ID:	; A-RW$ >
Fines (˝/	2	,7	-	Sample Depth (ft.):	10
Sample Descri+¯i, n:	**A-6 (3) / SC**				

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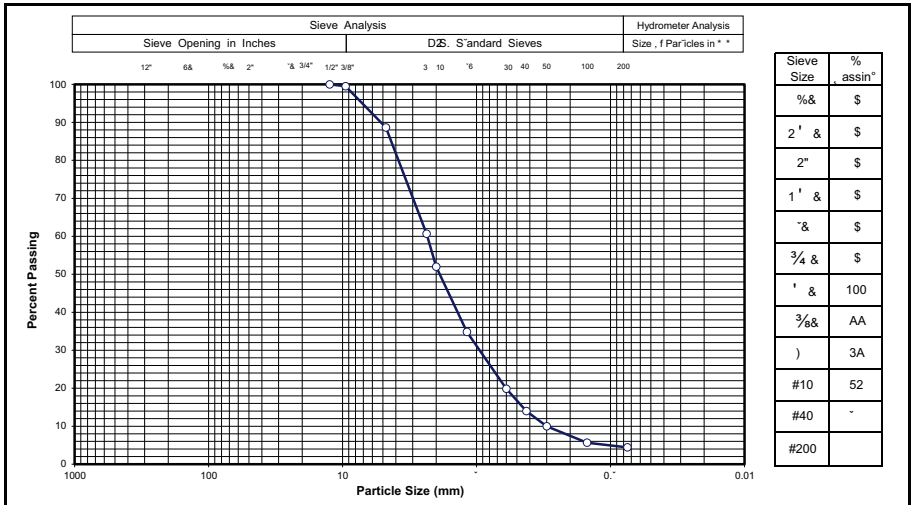
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
˜ ec" ed By:	˜ alvin		
Date:	05/02/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	100
⅜&&	AA
)	3A
#10	52
#40	`
#200	

= ravel (`/	``	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	3>	,:	1,	Sample ID:	; A-RW$ >
Fines (`/		,7	1,	Sample Depth (ft.):	25
Sample Descri+`i, n:	**A-1-b (0) / SW**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin	Figure No.:	$
Date:	05/02/14		

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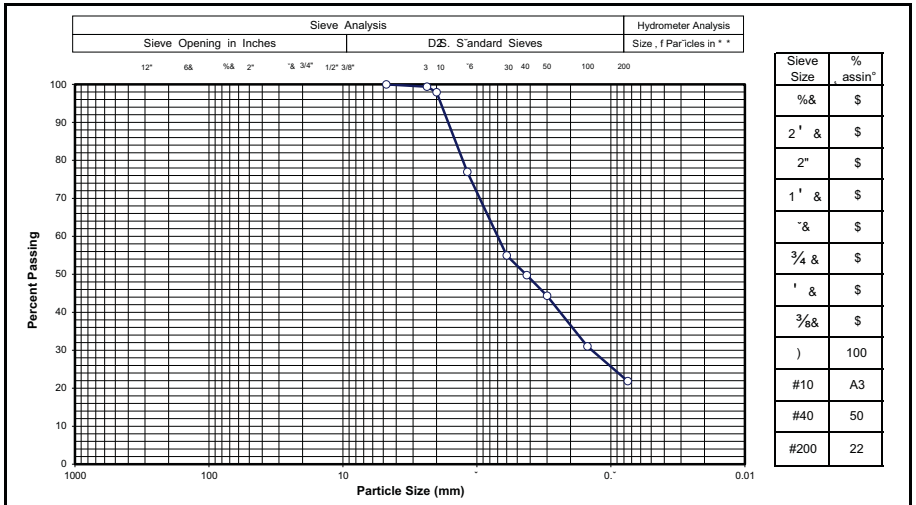

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A3
#40	50
#200	22

= ravel (`/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	3	,:	1,	Sample ID:	; A-RW$ >
Fines (`/	22	,7	1,	Sample Depth (ft.):	%>
Sample Descri+`i, n:	**A-1-b (0) / SM**				

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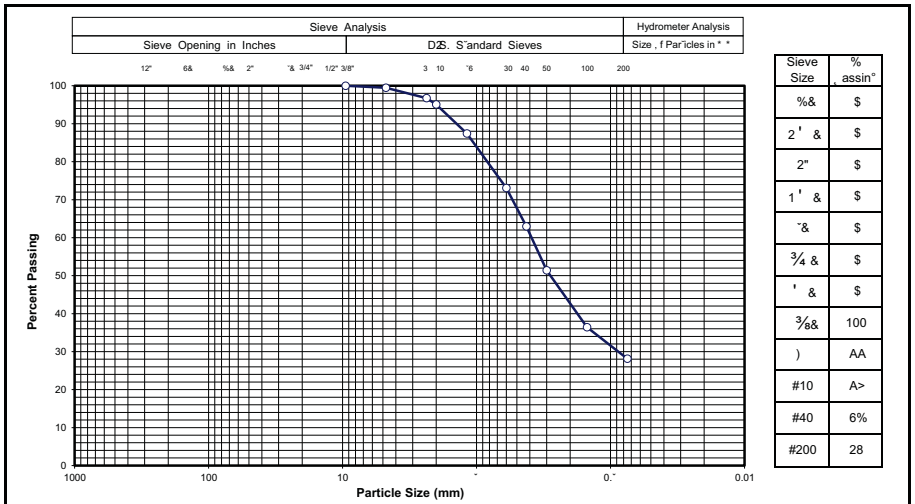
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin	Figure No.:	$
Date:	05/02/14		

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A>
#40	6%
#200	28

= ravel (`/	`	::	%%	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	`	,:	`	Sample ID:	; A-RW$ >
Fines (`/	23	,7	`A	Sample Depth (ft.):	50
Sample Descri+`i, n:	**A-2-6 (0) / SC**				

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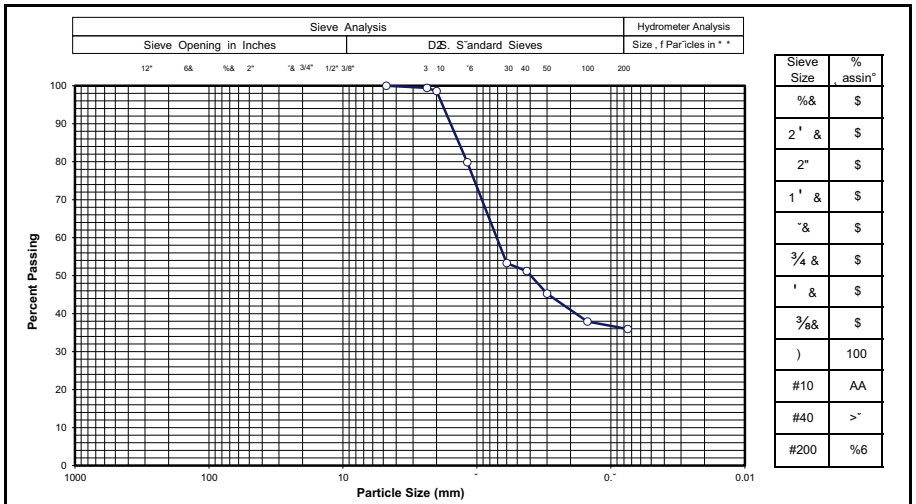
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin	Figure No.:	$
Date:	05/02/14		

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
`&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	>`
#200	%6

= ravel (`/	0	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (` /	6	,:	28	Sample ID:	; A-RW$ >
Fines (`/	%6	,7	26	Sample Depth (ft.):	60
Sample Descri+`i, n:	**Bedrock**				

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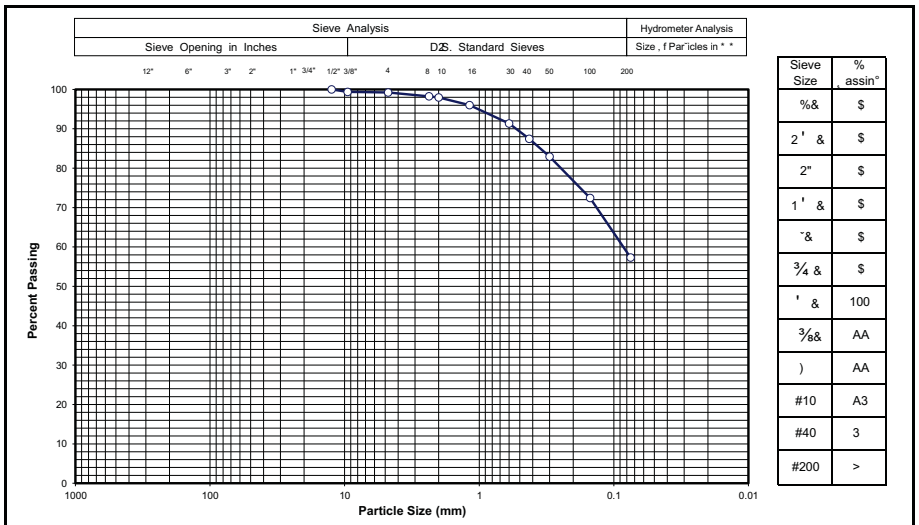
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208A
` ec"ed By:	` alvin	Figure No.:	$
Date:	05/02/14		

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&&	AA
)	AA
#10	A3
#40	3
#200	>

= ravel (¨/	¨	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	42	¸:	1¸	Sample ID:	; A-RW$ 6
Fines (¨/	>	¸7	1¸	Sample Depth (ft.):	2-%
Sample Descri+¨ï, n:	**A-4 (0) / ML**				

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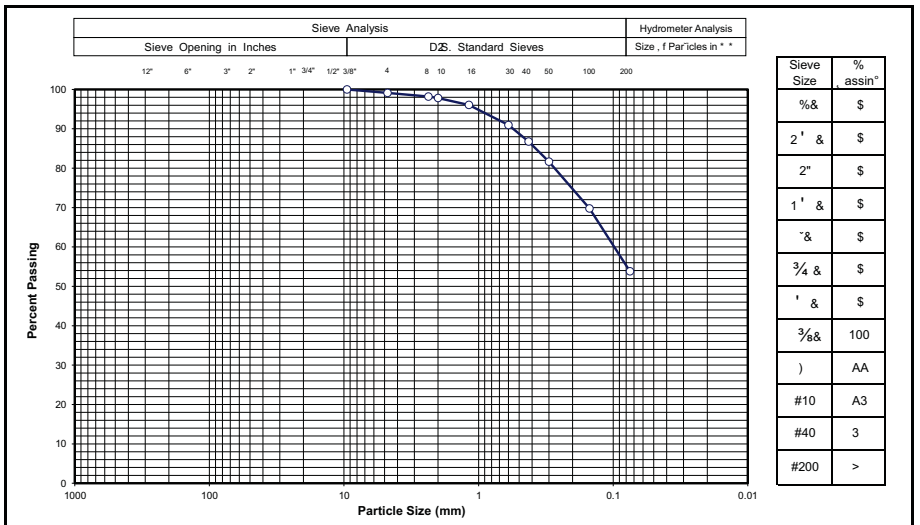
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A3
#40	3
#200	>

= ravel (¨/	¨	::	26	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>	¸:	¨3	Sample ID:	; A-RW$ 6
Fines (¨/	>	¸7	3	Sample Depth (ft.):	A$10
Sample Descri+¨ï, n:	**A-4 (2) / CL**				

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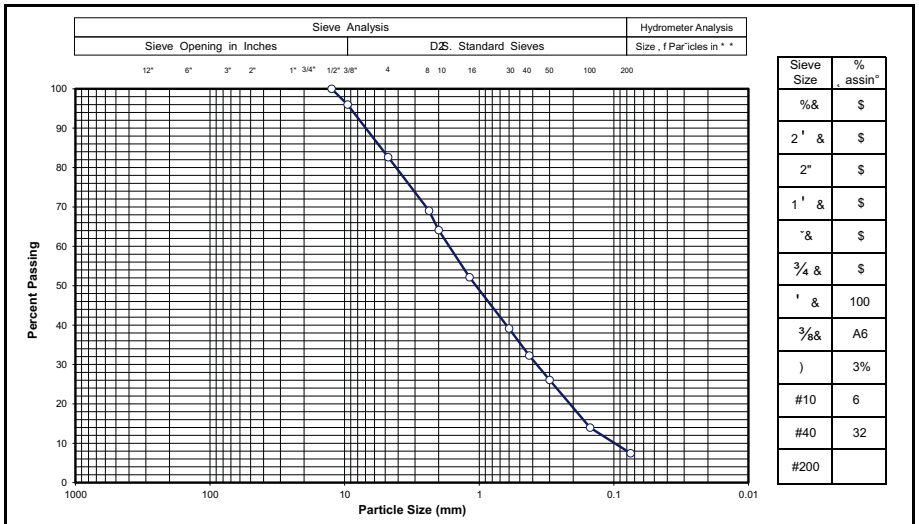
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&&	A6
)	3%
#10	6
#40	32
#200	

= ravel (¨/	¨	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	6	¸:	1¸	Sample ID:	; A-RW$ 6
Fines (¨/		¸7	1¸	Sample Depth (ft.):	29-30
Sample Descri+¨ï, n:	**A-1-b (0) / SP-SM**				

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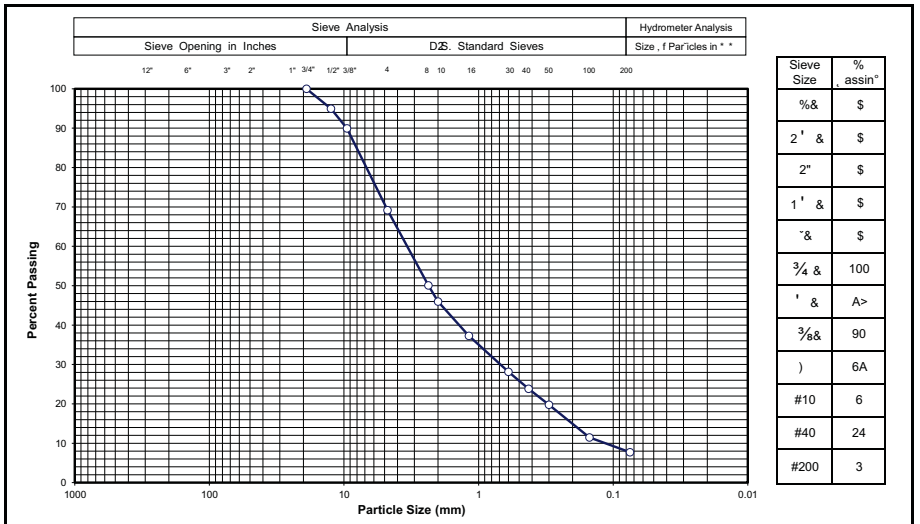
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	A>
⅜&&	90
)	6A
#10	6
#40	24
#200	3

= ravel (¨/	%¨	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	6¨	¸:	1¸	Sample ID:	; A-RW$ 6
Fines (¨/	3	¸7	1¸	Sample Depth (ft.):	%A$0
Sample Descri+¨ï, n:	**A-1-a (0) / SW-SM**				

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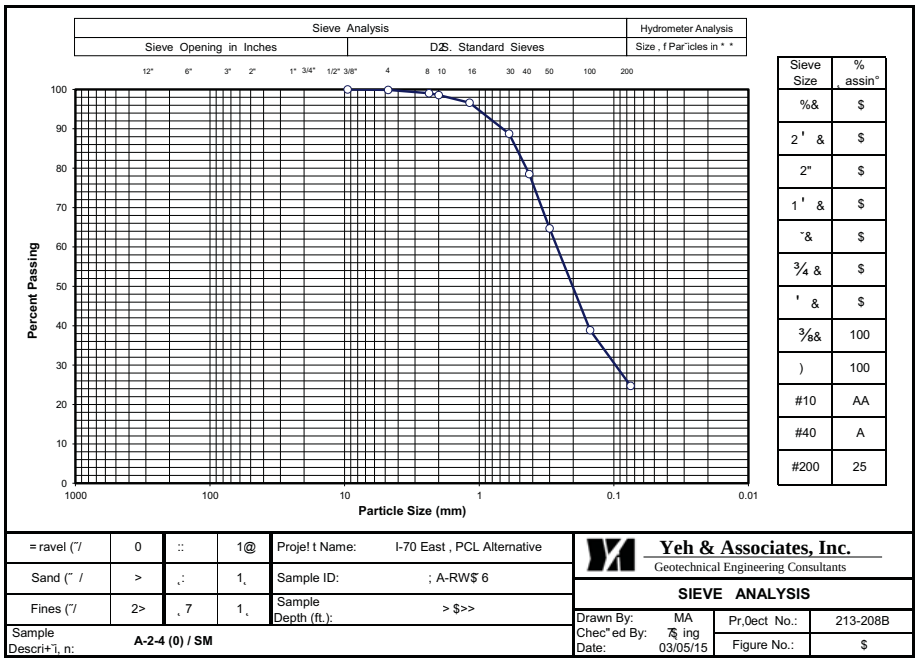
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	AA
#40	A
#200	25

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>	¸:	1¸	Sample ID:	; A-RW$ 6
Fines (¨/	2>	¸ 7	1¸	Sample Depth (ft.):	> $>>
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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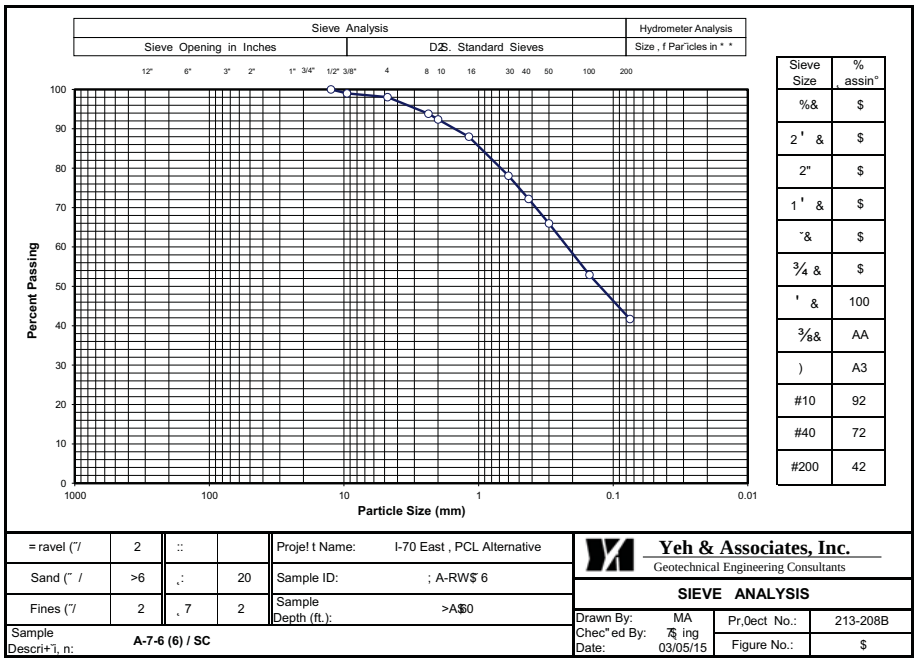
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&&	AA
)	A3
#10	92
#40	72
#200	42

= ravel (¨/	2	::		Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>6	¸:	20	Sample ID:	; A-RW$ 6
Fines (¨/	2	¸ 7	2	Sample Depth (ft.):	>A$0
Sample Descri+¨i, n:	**A-7-6 (6) / SC**				

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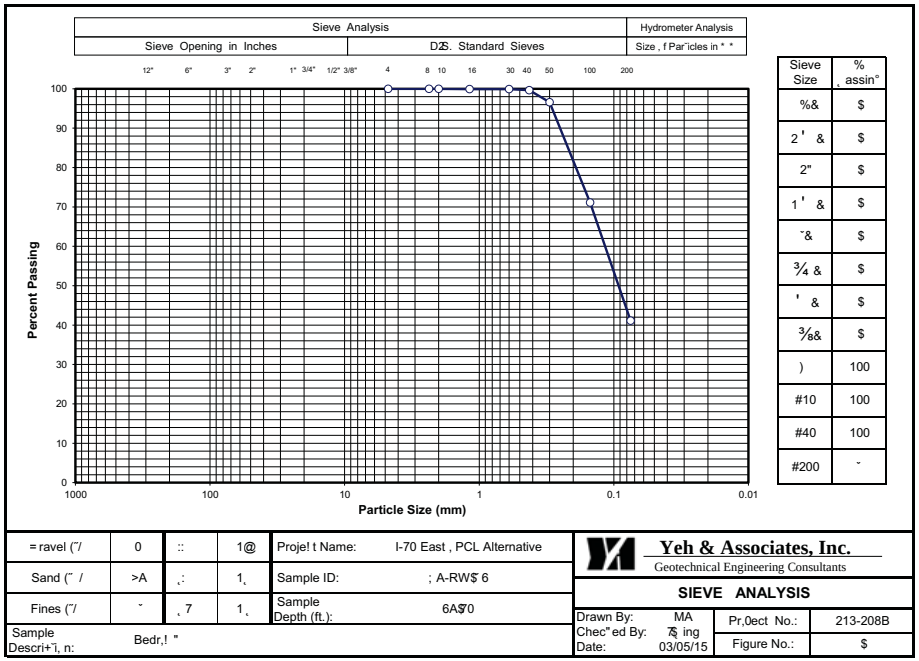
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	100
#200	¨

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>A	¸:	1¸	Sample ID:	; A-RW$ 6
Fines (¨/	¨	¸ 7	1¸	Sample Depth (ft.):	6A$0
Sample Descri+¨i, n:	Bedr,! "				

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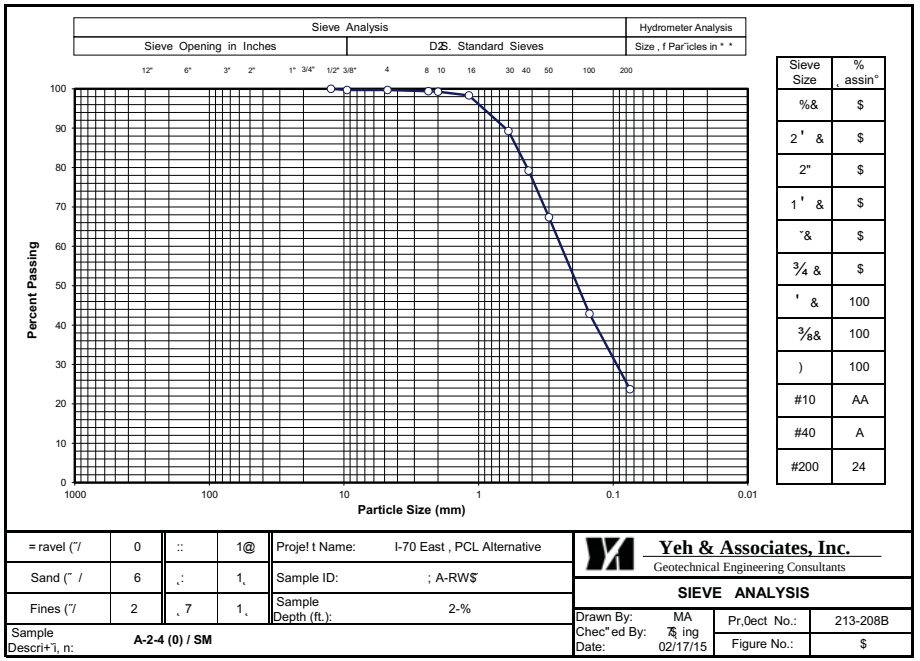
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&&	100
)	100
#10	AA
#40	A
#200	24

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	6	¸:	1¸	Sample ID:	; A-RW$
Fines (¨/	2	¸ 7	1¸	Sample Depth (ft.):	2-%
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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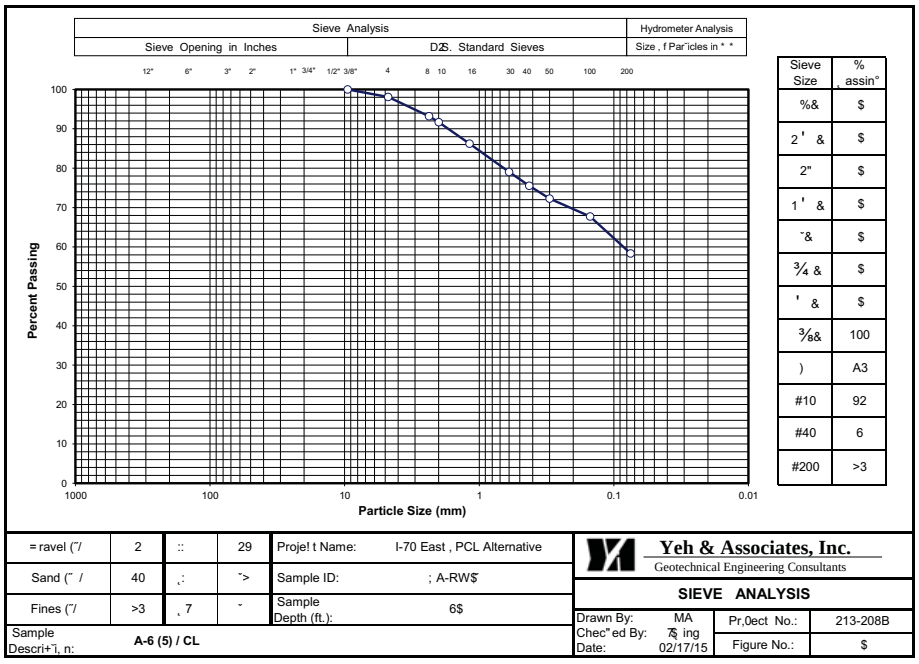
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/17/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	A3
#10	92
#40	6
#200	>3

= ravel (¨/	2	::	29	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	40	¸.:	¨>	Sample ID:	; A-RW$
Fines (¨/	>3	¸ 7	¨	Sample Depth (ft.):	6$
Sample Descri+¨i, n:	**A-6 (5) / CL**				

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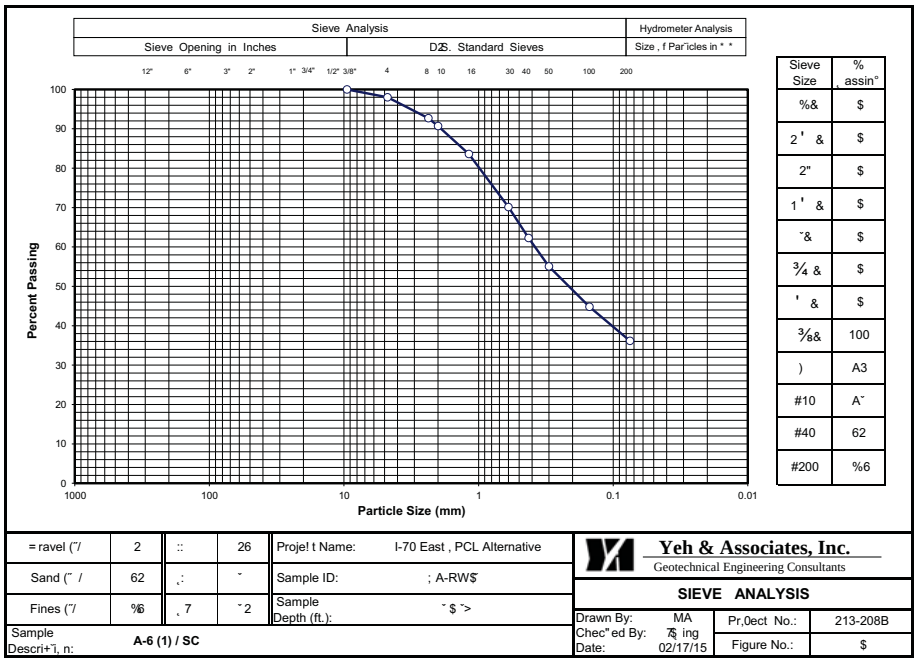
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/17/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	A3
#10	A¨
#40	62
#200	%6

= ravel (¨/	2	::	26	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	62	¸.:	¨	Sample ID:	; A-RW$
Fines (¨/	%6	¸ 7	¨2	Sample Depth (ft.):	¨ $ ¨>
Sample Descri+¨i, n:	**A-6 (1) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/17/15	Figure No.:	$

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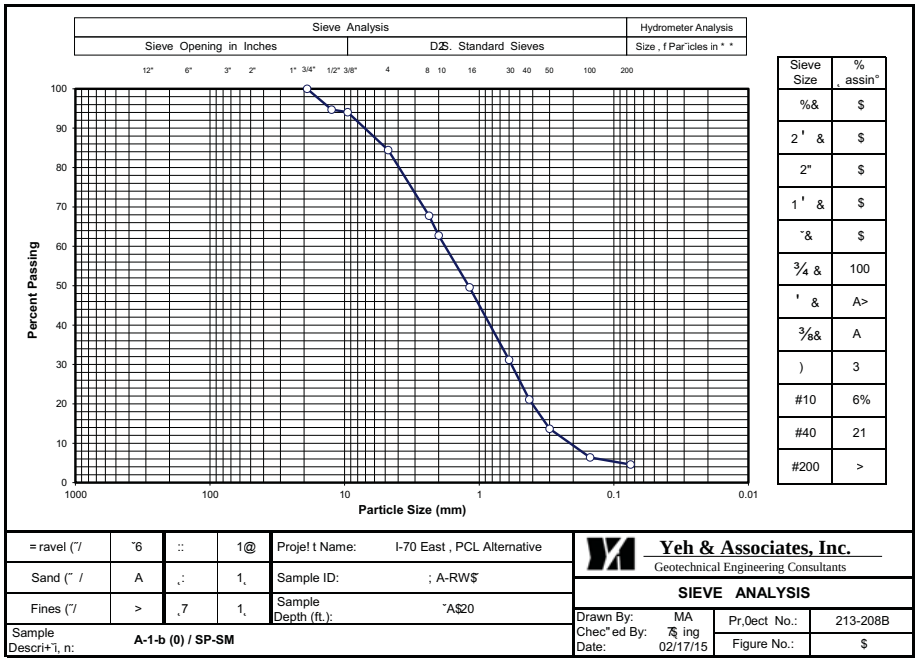

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	A>
⅜&&	A
)	3
#10	6%
#40	21
#200	>

= ravel (¨/	¨6	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	A	¸.:	1¸	Sample ID:	; A-RW$
Fines (¨/	>	¸7	1¸	Sample Depth (ft.):	¨A$20
Sample Descri+¨i, n:	**A-1-b (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/17/15	Figure No.:	$

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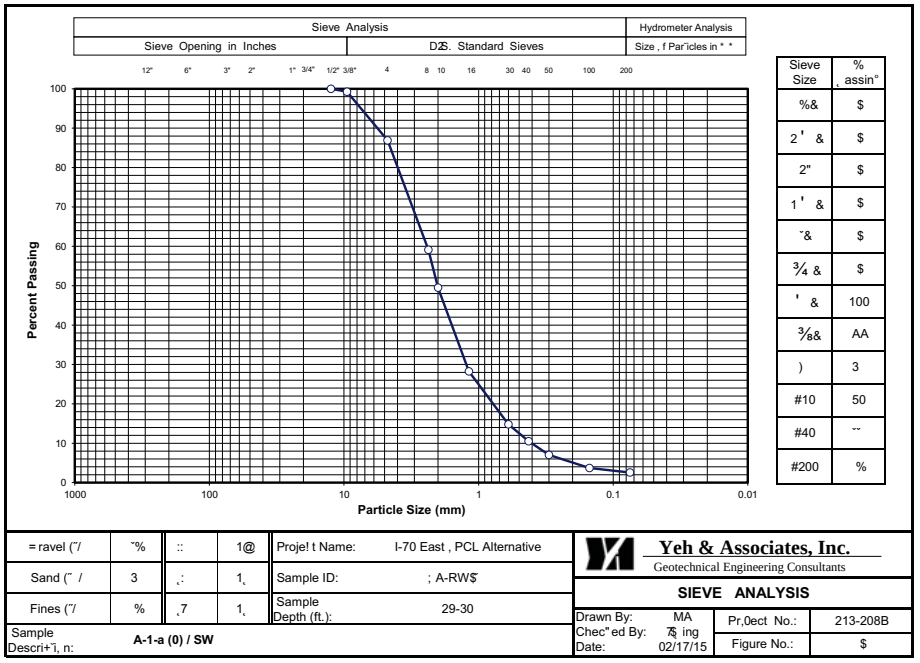

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&&	AA
)	3
#10	50
#40	¨¨
#200	%

= ravel (¨/	¨%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3	¸.:	1¸	Sample ID:	; A-RW$
Fines (¨/	%	¸7	1¸	Sample Depth (ft.):	29-30
Sample Descri+¨i, n:	**A-1-a (0) / SW**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/17/15	Figure No.:	$

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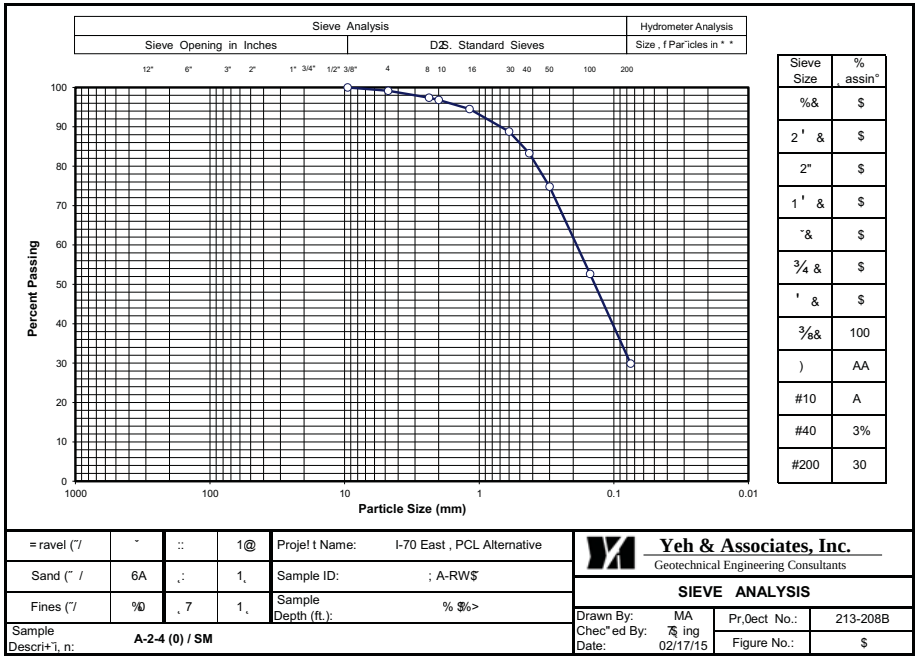

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A
#40	3%
#200	30

= ravel (¨/	¨	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	6A	¸:	1¸	Sample ID:	; A-RW$
Fines (¨/	%0	¸7	1¸	Sample Depth (ft.):	% $%>
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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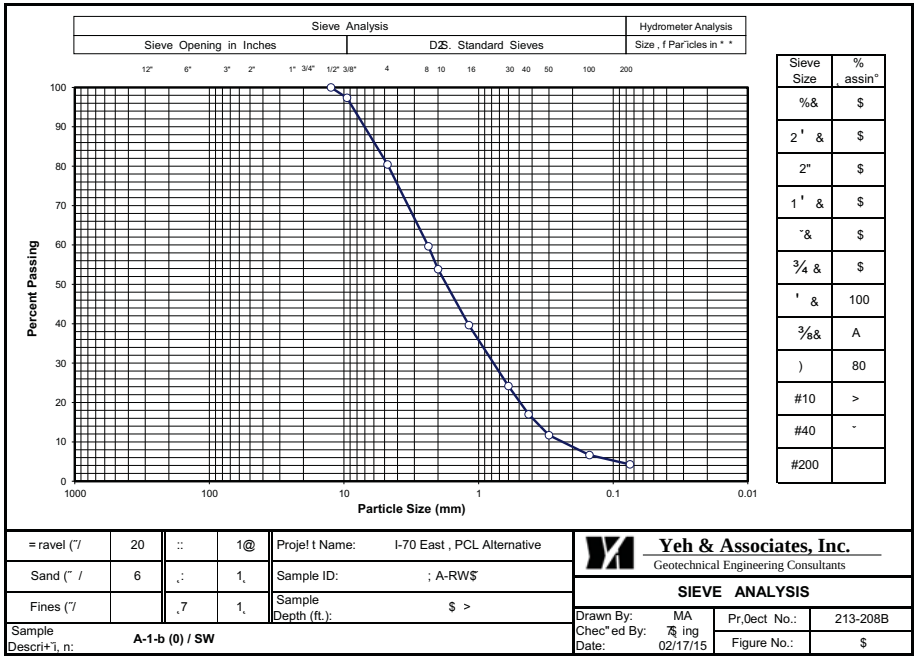
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	¨S ing		
Date:	02/17/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&&	A
)	80
#10	>
#40	¨
#200	

= ravel (¨/	20	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	6	¸:	1¸	Sample ID:	; A-RW$
Fines (¨/		¸7	1¸	Sample Depth (ft.):	$ >
Sample Descri+¨i, n:	**A-1-b (0) / SW**				

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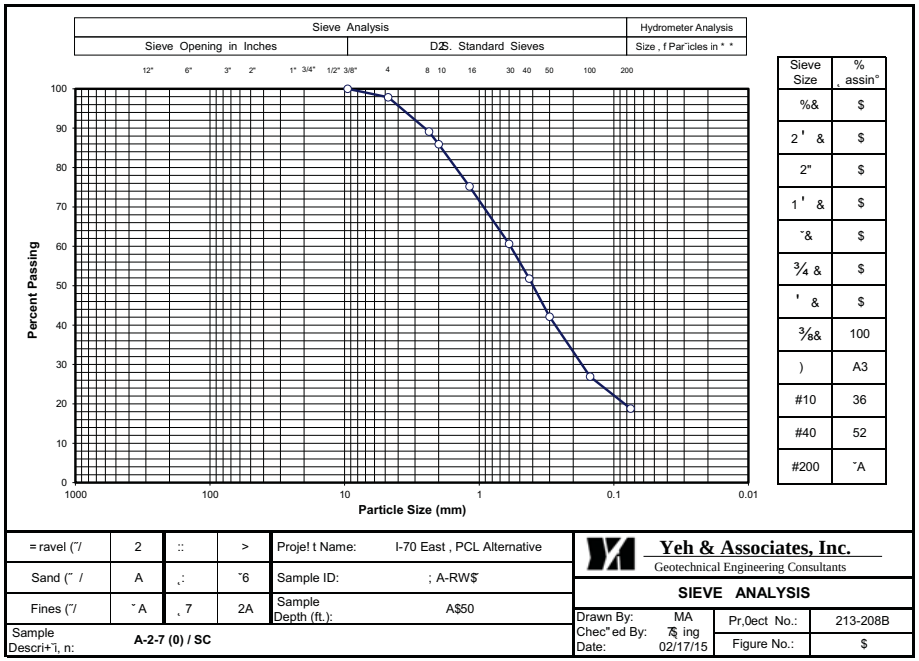
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	¨S ing		
Date:	02/17/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	A3
#10	36
#40	52
#200	¨A

= ravel (¨/	2	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	A	¸:	¨6	Sample ID:	; A-RW$
Fines (¨/	¨ A	¸7	2A	Sample Depth (ft.):	A$50
Sample Descri+¨i, n:	**A-2-7 (0) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	¨S ing		
Date:	02/17/15	Figure No.:	$

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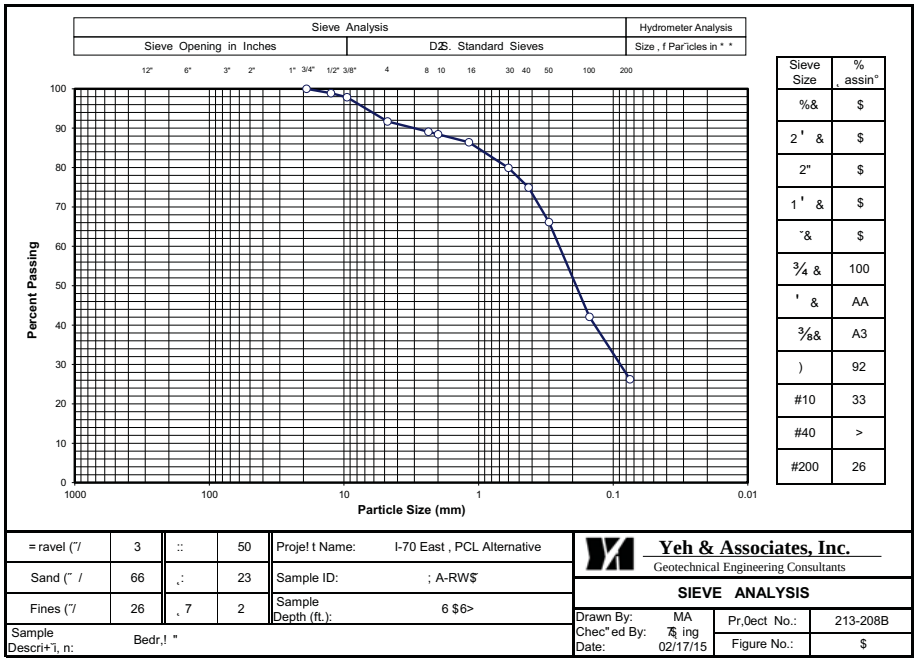

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	AA
⅜&&	A3
)	92
#10	33
#40	>
#200	26

= ravel (¨/	3	::	50	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	66	¸:	23	Sample ID:	; A-RW$
Fines (¨/	26	¸7	2	Sample Depth (ft.):	6 $6>
Sample Descri+¨i, n:	Bedr,! "				

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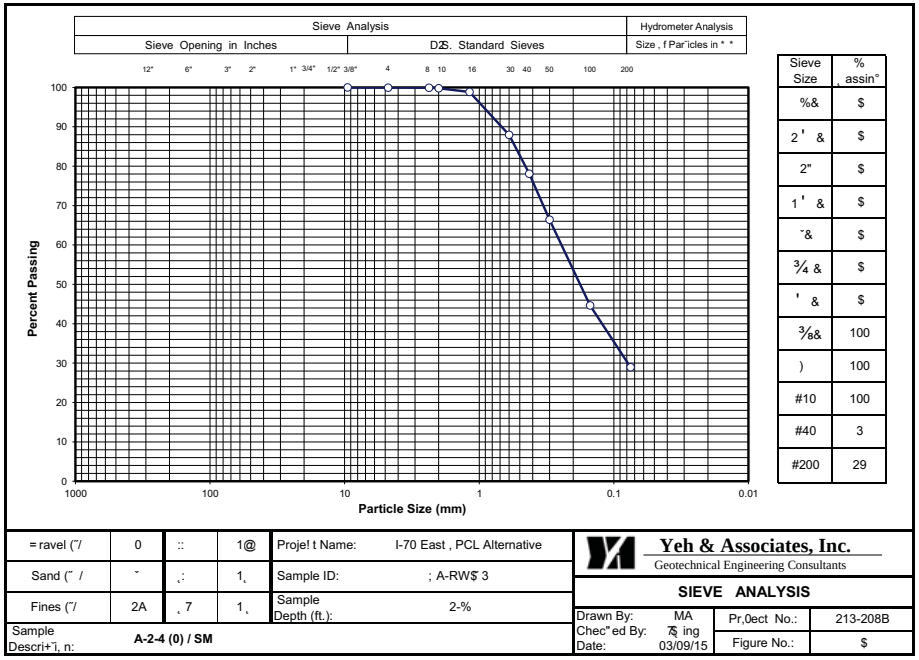
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	¨S ing		
Date:	02/17/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	100
#10	100
#40	3
#200	29

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	¨	¸:	1¸	Sample ID:	; A-RW$¨3
Fines (¨/	2A	¸7	1¸	Sample Depth (ft.):	2-%
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/09/15	Figure No.:	$

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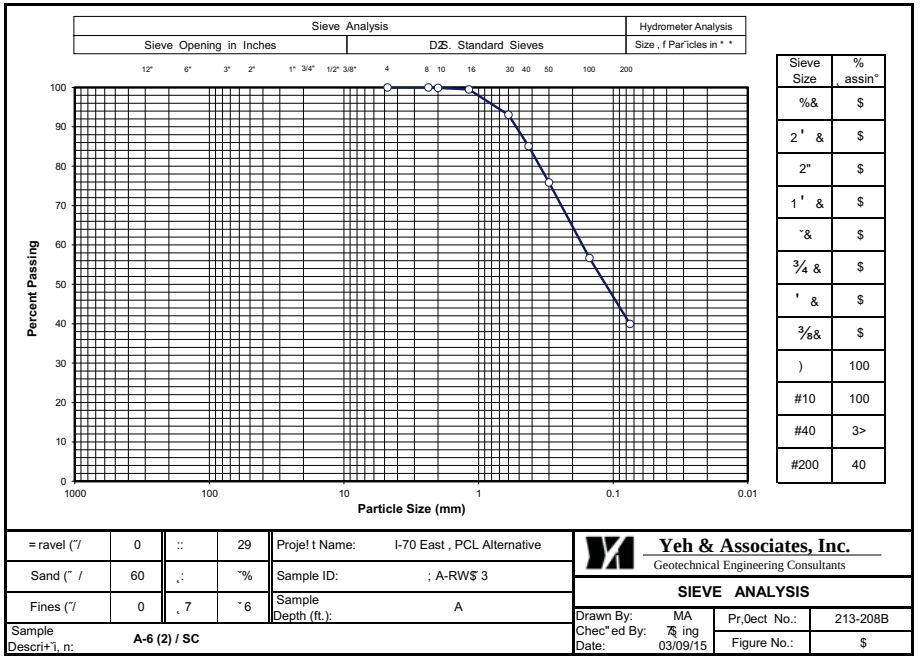

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3>
#200	40

= ravel (¨/	0	::	29	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	60	¸:	¨%	Sample ID:	; A-RW$¨3
Fines (¨/	0	¸7	¨6	Sample Depth (ft.):	A
Sample Descri+¨i, n:	**A-6 (2) / SC**				

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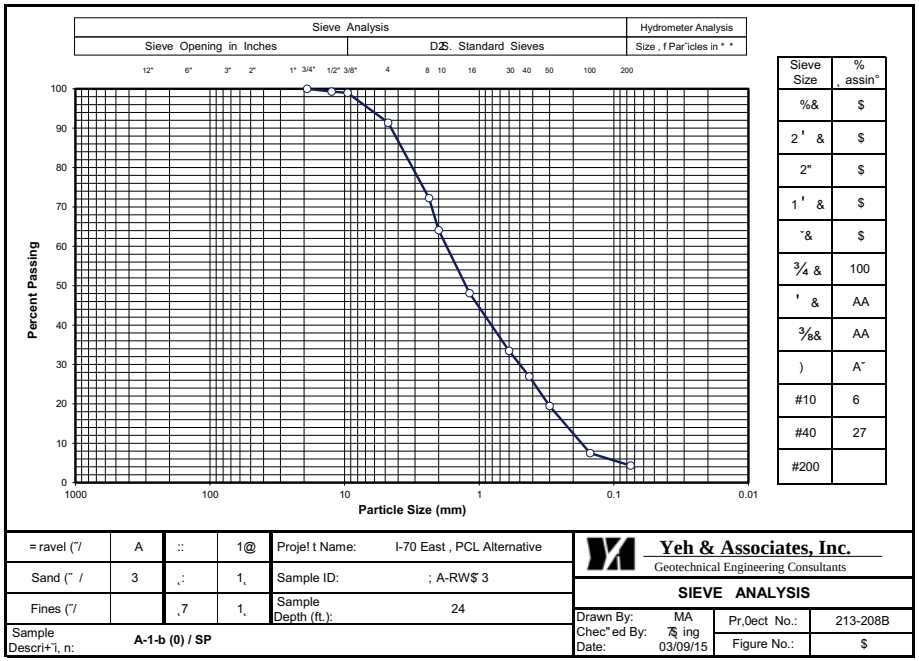
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/09/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	AA
⅜&	AA
)	A¨
#10	6
#40	27
#200	

= ravel (¨/	A	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3	¸:	1¸	Sample ID:	; A-RW$¨3
Fines (¨/		¸7	1¸	Sample Depth (ft.):	24
Sample Descri+¨i, n:	**A-1-b (0) / SP**				

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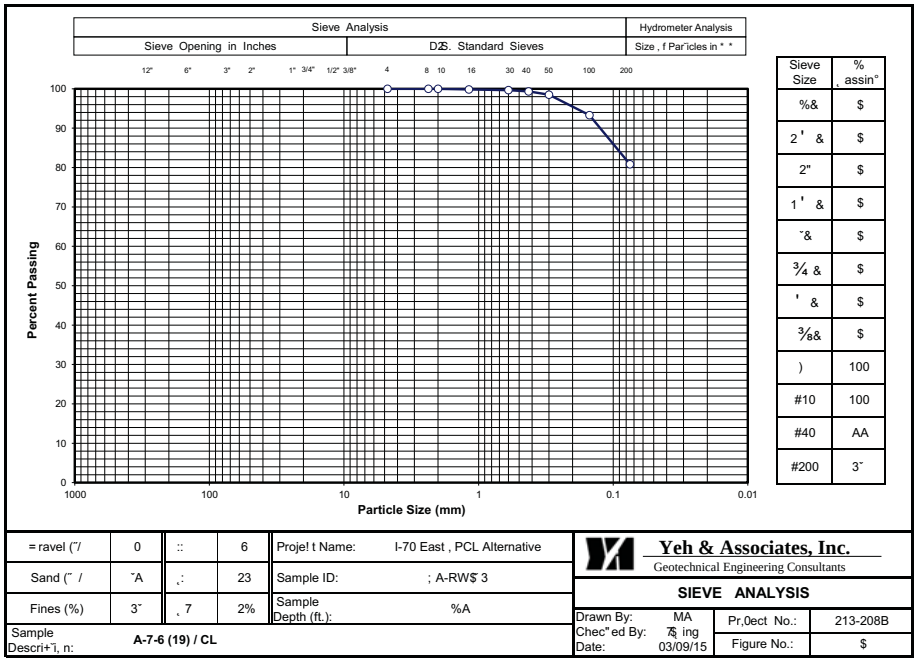
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/09/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	3¨

= ravel (¨/	0	::	6	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	¨A	¸:	23	Sample ID:	; A-RW$¨3
Fines (%)	3¨	¸7	2%	Sample Depth (ft.):	%A
Sample Descri+¨i, n:	**A-7-6 (19) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/09/15	Figure No.:	$

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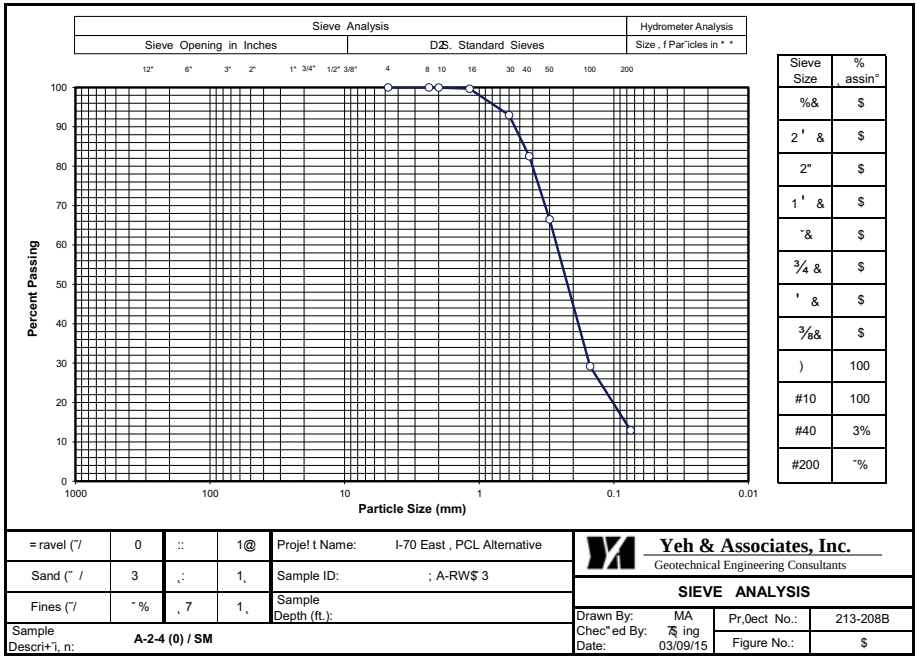

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3%
#200	¨%

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3	¸:	1¸	Sample ID:	; A-RW$ 3
Fines (¨/	¨ %	¸ 7	1¸	Sample Depth (ft.):	
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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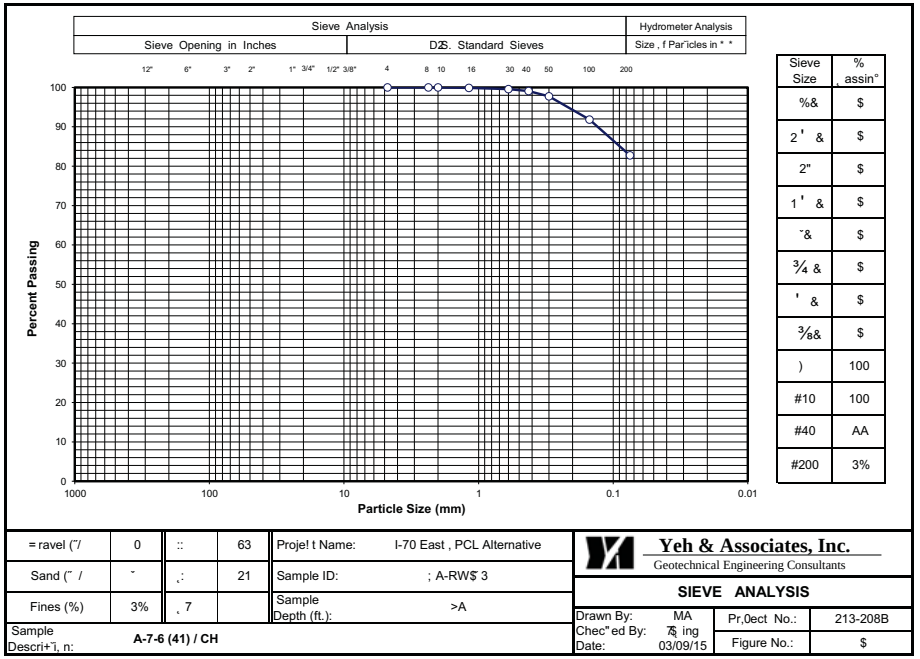
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/09/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	3%

= ravel (¨/	0	::	63	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	¨	¸:	21	Sample ID:	; A-RW$ 3
Fines (%)	3%	¸ 7		Sample Depth (ft.):	>A
Sample Descri+¨i, n:	**A-7-6 (41) / CH**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/09/15	Figure No.:	$

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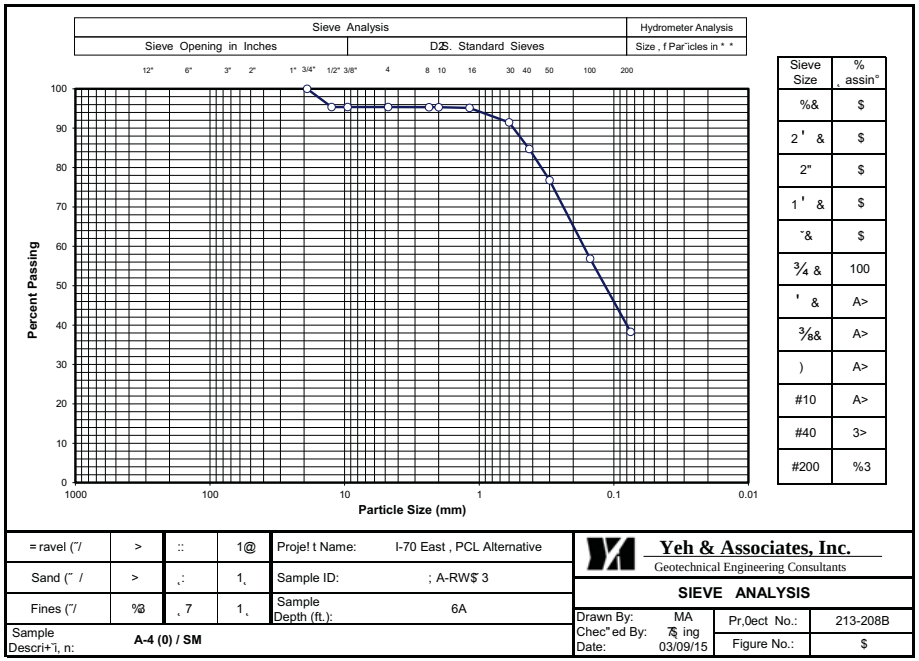

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	A>
⅜&	A>
)	A>
#10	A>
#40	3>
#200	%3

= ravel (¨/	>	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>	¸:	1¸	Sample ID:	; A-RW$ 3
Fines (¨/	%8	¸ 7	1¸	Sample Depth (ft.):	6A
Sample Descri+¨i, n:	**A-4 (0) / SM**				

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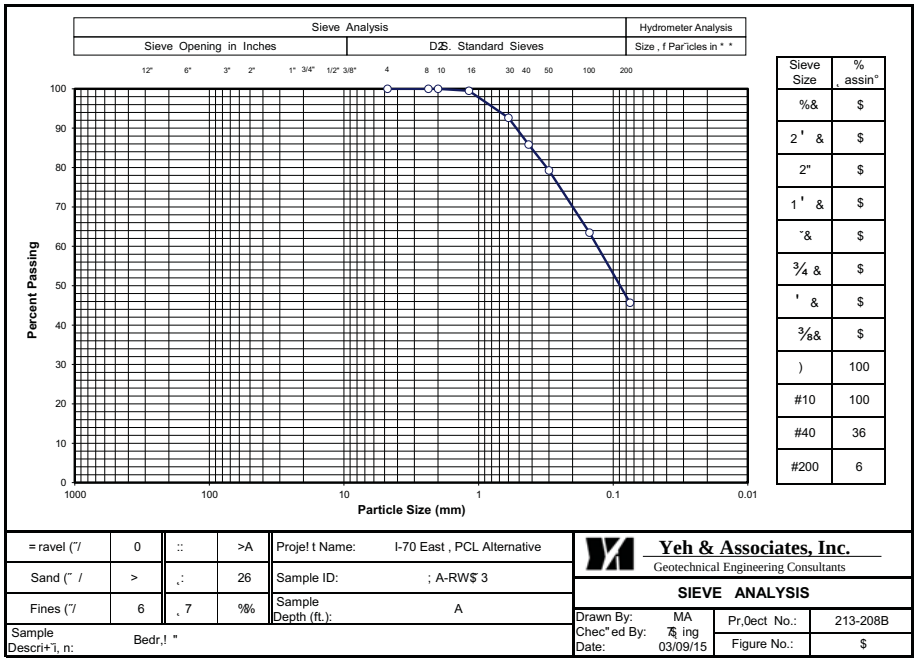
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/09/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	36
#200	6

= ravel (¨/	0	::	>A	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>	¸:	26	Sample ID:	; A-RW$ 3
Fines (¨/	6	¸ 7	%%	Sample Depth (ft.):	A
Sample Descri+¨i, n:	Bedr,! "				

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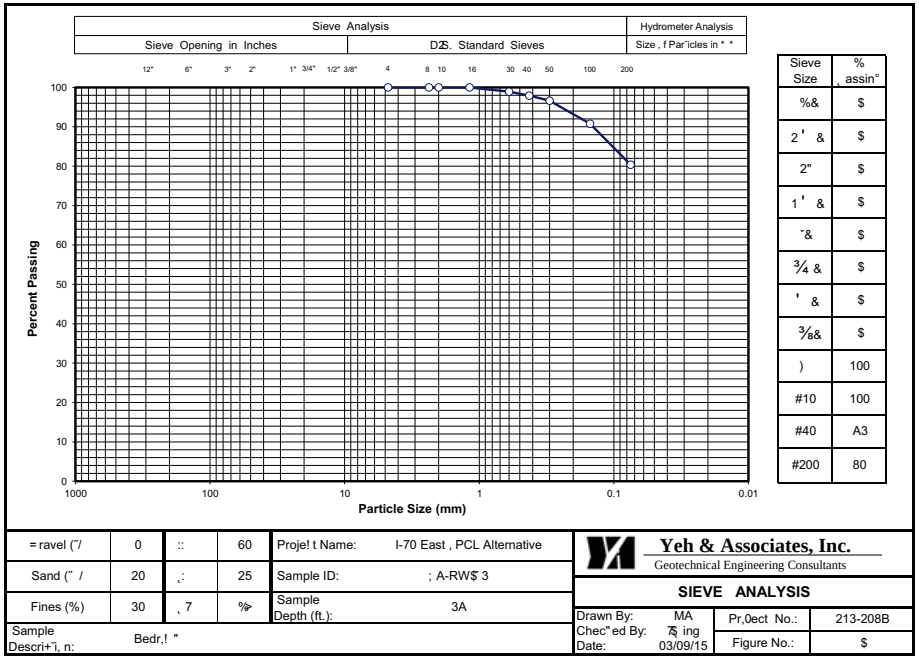
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/09/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A3
#200	80

= ravel (˜/	0	::	60	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	20	¸:	25	Sample ID:	; A-RW$˙3
Fines (%)	30	¸ 7	%>	Sample Depth (ft.):	3A
Sample Descri+¨ı, n:	Bedr,! "				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ÿ§ ing		
Date:	03/09/15	Figure No.:	$

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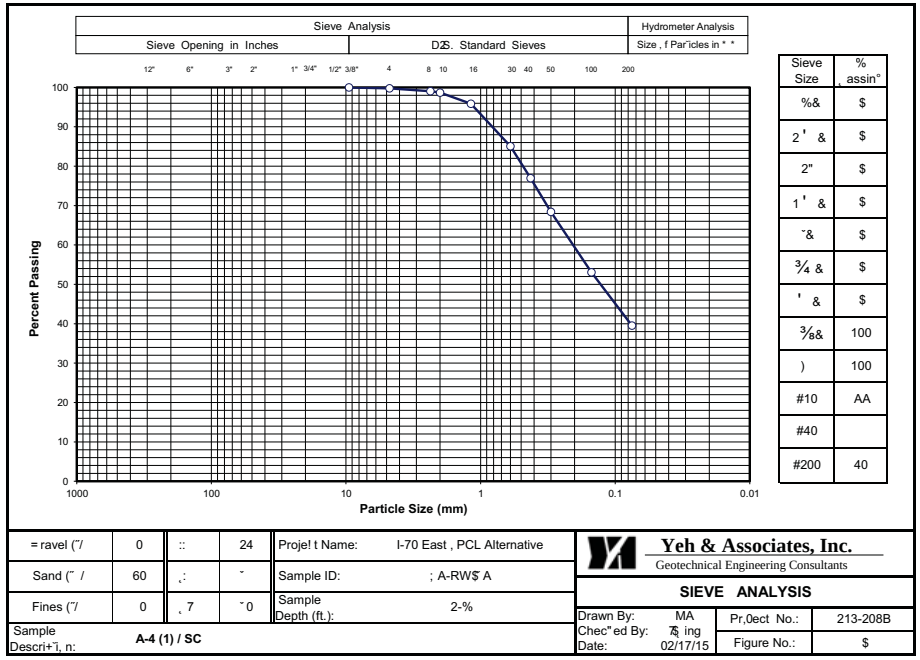

Sieve Size	% , assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	100
#10	AA
#40	
#200	40

= ravel (˜/	0	::	24	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	60	¸:	¨	Sample ID:	; A-RW$˙A
Fines (˜/	0	¸ 7	¨0	Sample Depth (ft.):	2-%
Sample Descri+¨ı, n:	**A-4 (1) / SC**				

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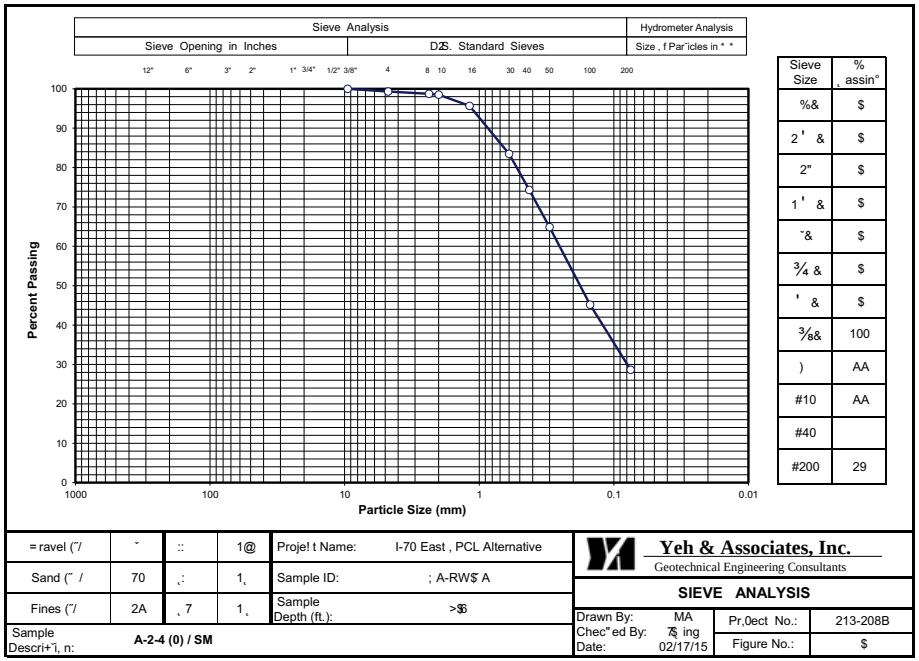
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ÿ§ ing		
Date:	02/17/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	AA
#10	AA
#40	
#200	29

= ravel (˜/	¨	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	70	¸:	1¸	Sample ID:	; A-RW$˙A
Fines (˜/	2A	¸ 7	1¸	Sample Depth (ft.):	>$6
Sample Descri+¨ı, n:	**A-2-4 (0) / SM**				

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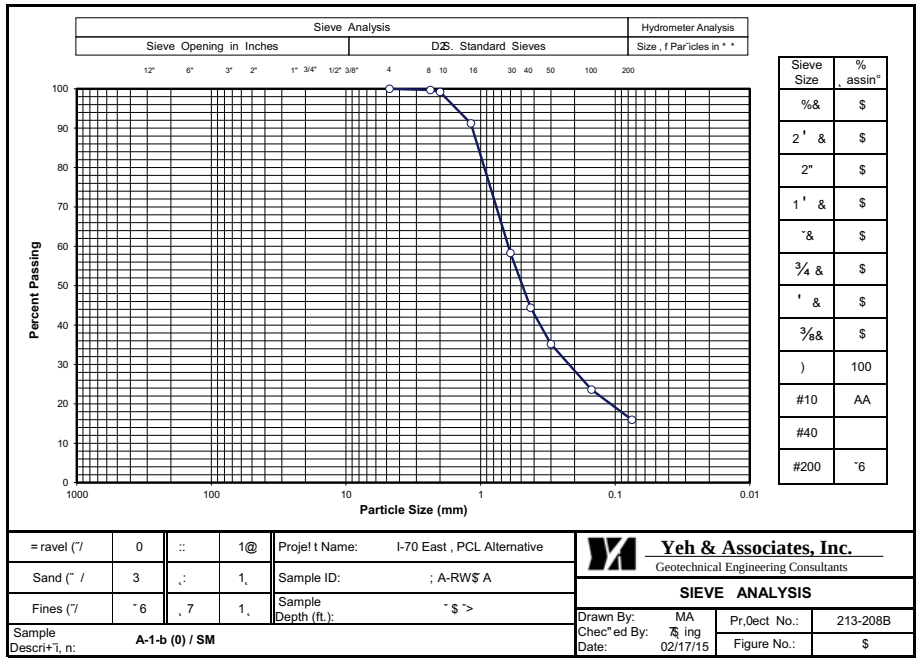
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ÿ§ ing		
Date:	02/17/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	AA
#40	
#200	¨6

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3	¸:	1¸	Sample ID:	; A-RW$˙A
Fines (˜/	¨6	¸ 7	1¸	Sample Depth (ft.):	¨$ ¨>
Sample Descri+¨ı, n:	**A-1-b (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ÿ§ ing		
Date:	02/17/15	Figure No.:	$

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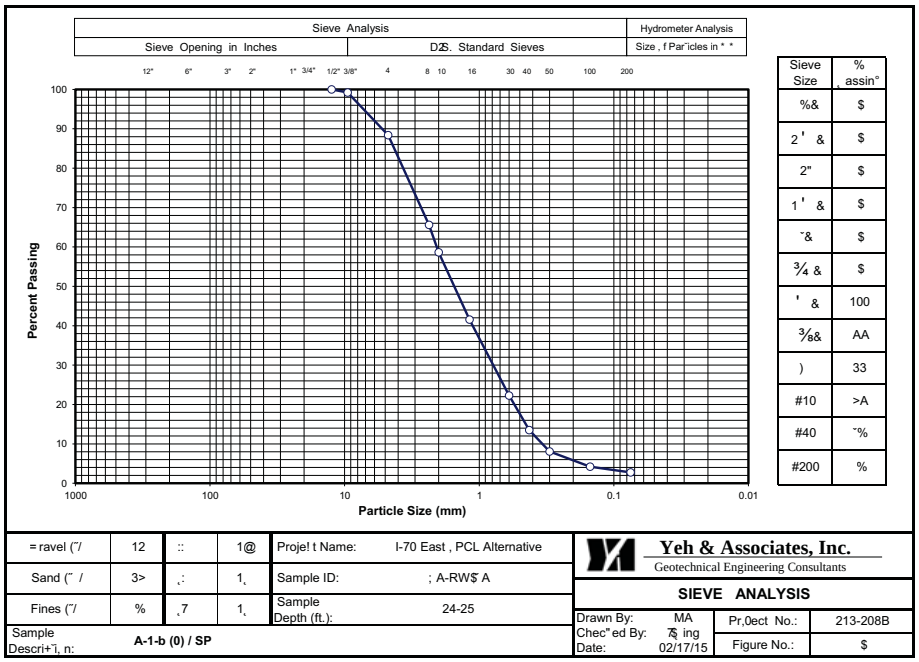

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&	AA
)	33
#10	>A
#40	¨%
#200	%

= ravel (¨/	12	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3>	¸:	1¸	Sample ID:	; A-RW$' A
Fines (¨/	%	¸7	1¸	Sample Depth (ft.):	24-25
Sample Descri+¨ī, n:	**A-1-b (0) / SP**				

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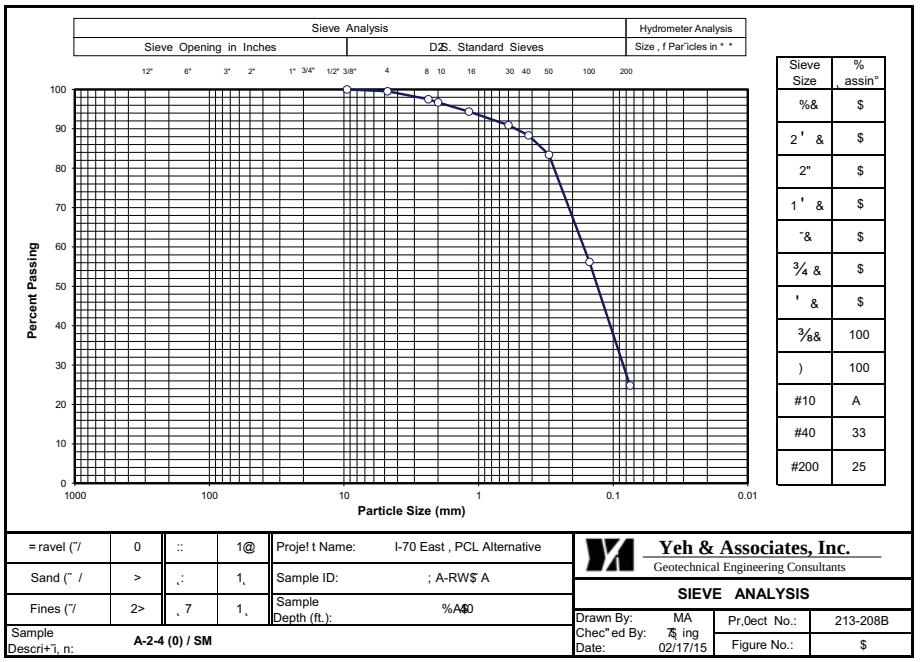
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	?§ ing		
Date:	02/17/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	100
#10	A
#40	33
#200	25

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>	¸:	1¸	Sample ID:	; A-RW$' A
Fines (¨/	2>	¸ 7	1¸	Sample Depth (ft.):	%A$0
Sample Descri+¨ī, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	?§ ing		
Date:	02/17/15	Figure No.:	$

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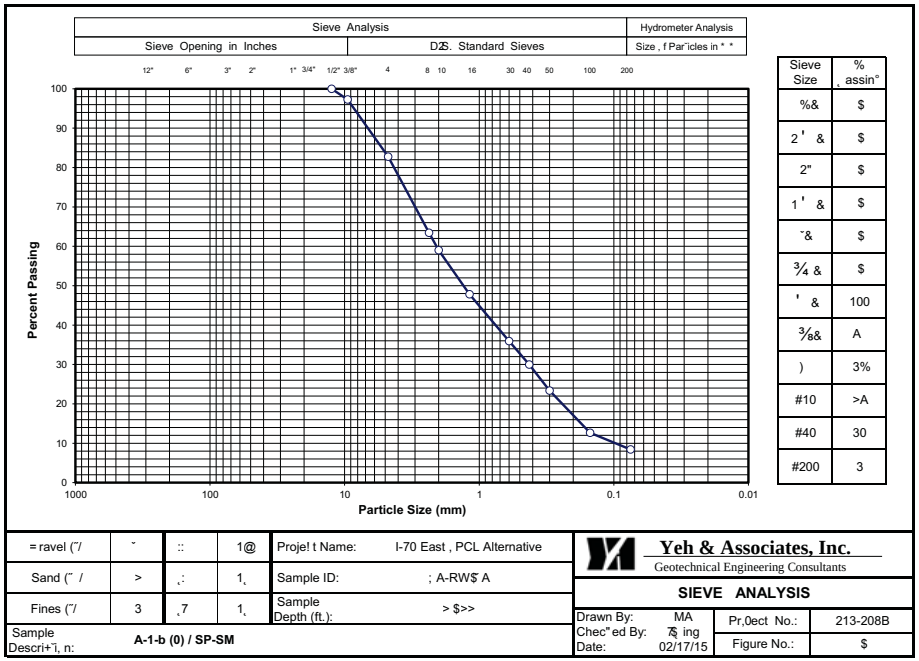

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&	A
)	3%
#10	>A
#40	30
#200	3

= ravel (¨/	¨	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>	¸:	1¸	Sample ID:	; A-RW$' A
Fines (¨/	3	¸7	1¸	Sample Depth (ft.):	> $>>
Sample Descri+¨ī, n:	**A-1-b (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	?§ ing		
Date:	02/17/15	Figure No.:	$

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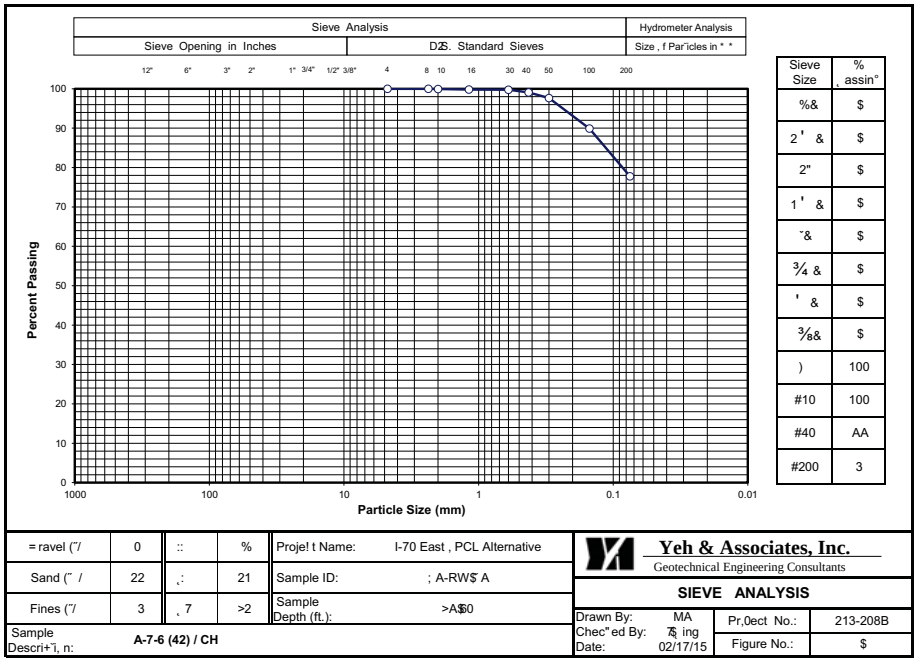

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	3

= ravel (¨/	0	::	%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	22	¸:	21	Sample ID:	; A-RW$' A
Fines (¨/	3	¸ 7	>2	Sample Depth (ft.):	>A$0
Sample Descri+¨ī, n:	**A-7-6 (42) / CH**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	?§ ing		
Date:	02/17/15	Figure No.:	$

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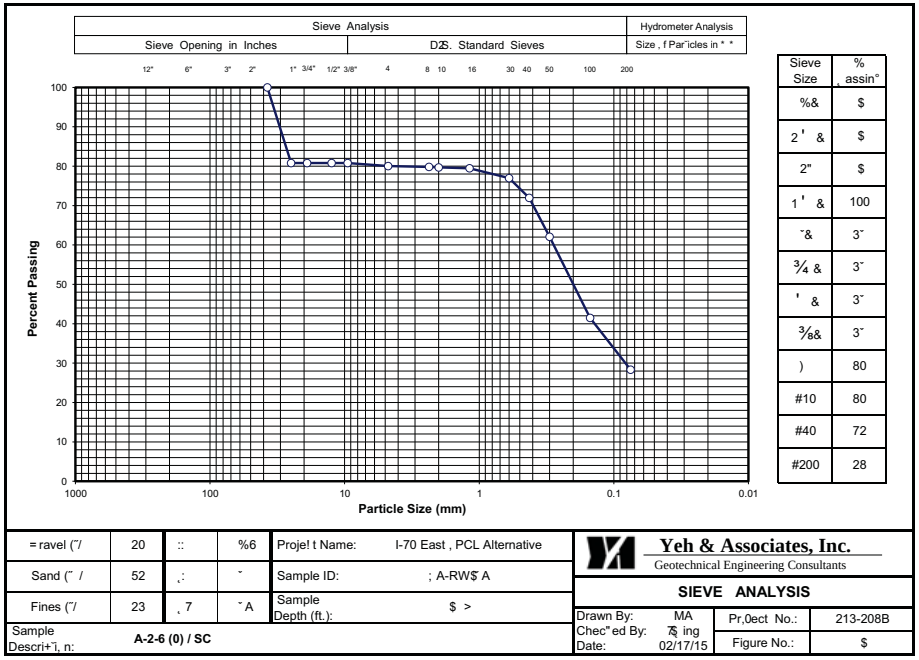

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	100
¨&	3¨
¾ &	3¨
' &	3¨
⅜&	3¨
)	80
#10	80
#40	72
#200	28

= ravel (˝/	20	::	%6	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	52	¸:	¨	Sample ID:	; A-RW$' A
Fines (˝/	23	¸ 7	¨A	Sample Depth (ft.):	$ >
Sample Descri+¨ı, n:	**A-2-6 (0) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	ŦŞ ing		
Date:	02/17/15	Figure No.:	$

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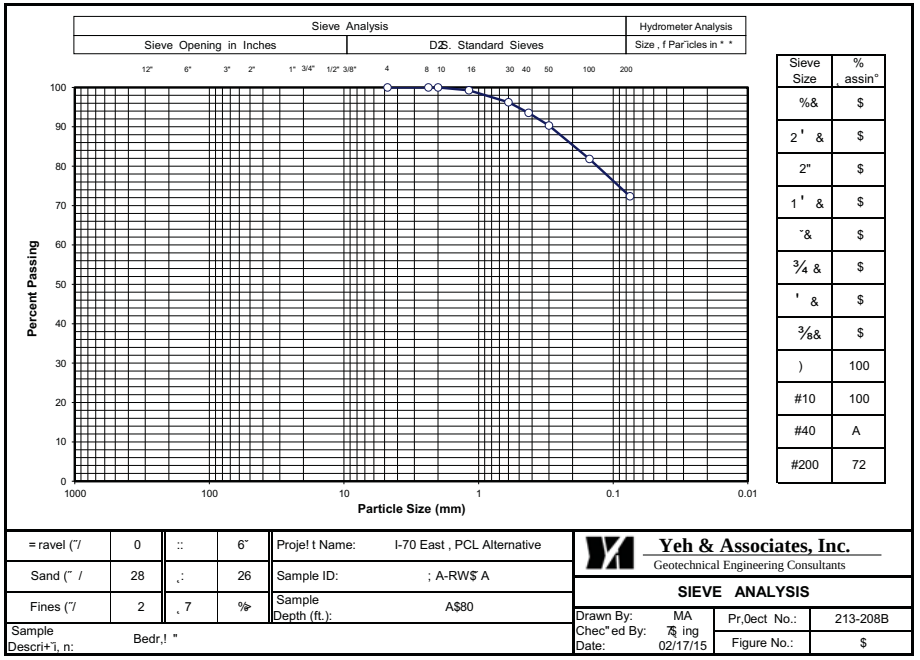

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A
#200	72

= ravel (˝/	0	::	6¨	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	28	¸:	26	Sample ID:	; A-RW$' A
Fines (˝/	2	¸ 7	%>	Sample Depth (ft.):	A$80
Sample Descri+¨ı, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	ŦŞ ing		
Date:	02/17/15	Figure No.:	$

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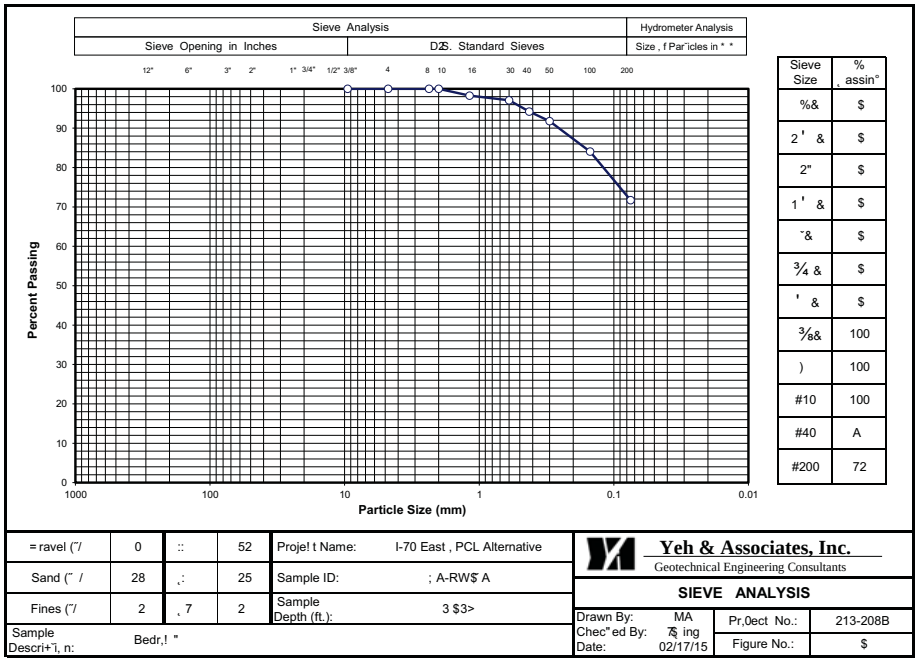

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	100
#10	100
#40	A
#200	72

= ravel (˝/	0	::	52	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	28	¸:	25	Sample ID:	; A-RW$' A
Fines (˝/	2	¸ 7	2	Sample Depth (ft.):	3 $3>
Sample Descri+¨ı, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	ŦŞ ing		
Date:	02/17/15	Figure No.:	$

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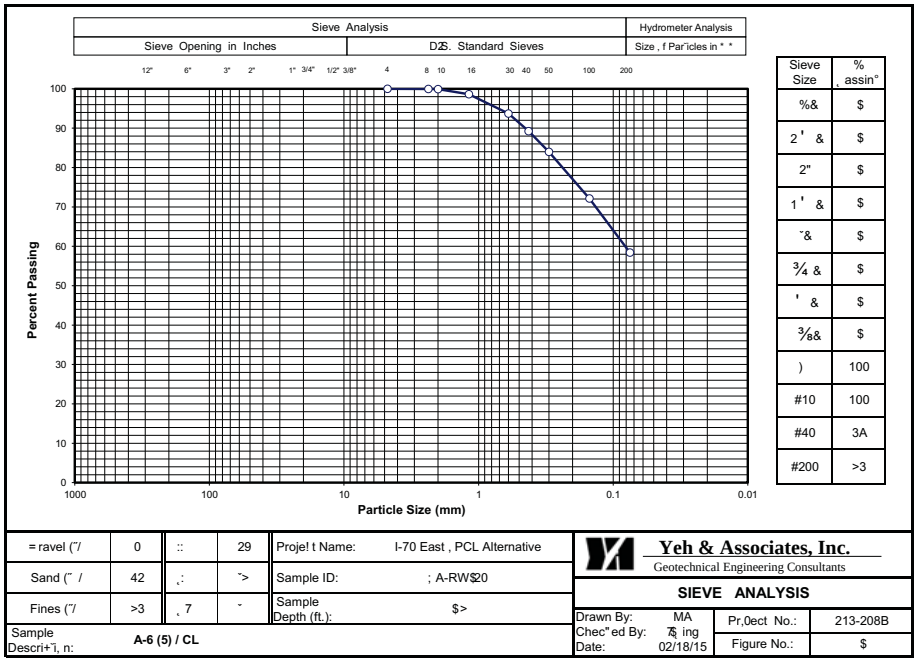

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3A
#200	>3

= ravel (˝/	0	::	29	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	42	¸:	¨>	Sample ID:	; A-RW$20
Fines (˝/	>3	¸ 7	¨	Sample Depth (ft.):	$>
Sample Descri+¨ı, n:	**A-6 (5) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	ŦŞ ing		
Date:	02/18/15	Figure No.:	$

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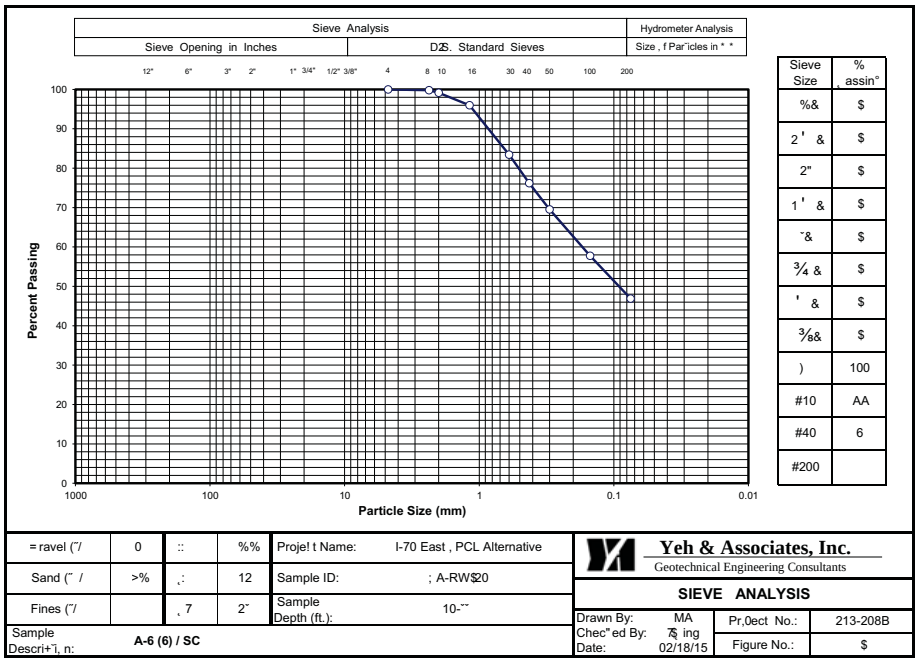

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	AA
#40	6
#200	

= ravel ("/	0	::	%%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>%	¸:	12	Sample ID:	; A-RW$20
Fines ("/		¸ 7	2¨	Sample Depth (ft.):	10-¨¨
Sample Descri+¨i, n:	**A-6 (6) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/18/15	Figure No.:	$

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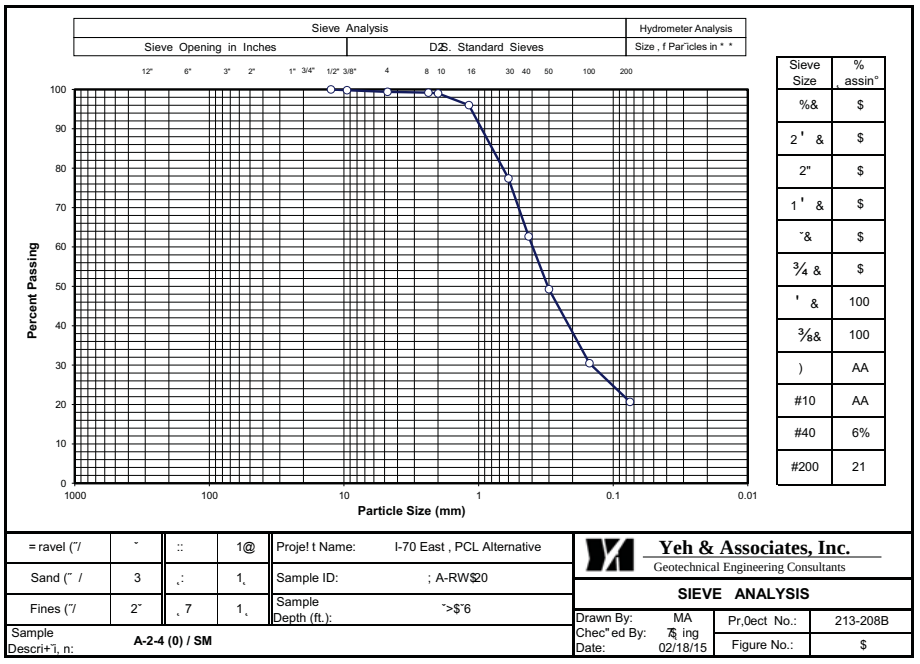

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&	100
)	AA
#10	AA
#40	6%
#200	21

= ravel ("/	¨	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3	¸:	1¸	Sample ID:	; A-RW$20
Fines ("/	2¨	¸ 7	1¸	Sample Depth (ft.):	¨>$¨6
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/18/15	Figure No.:	$

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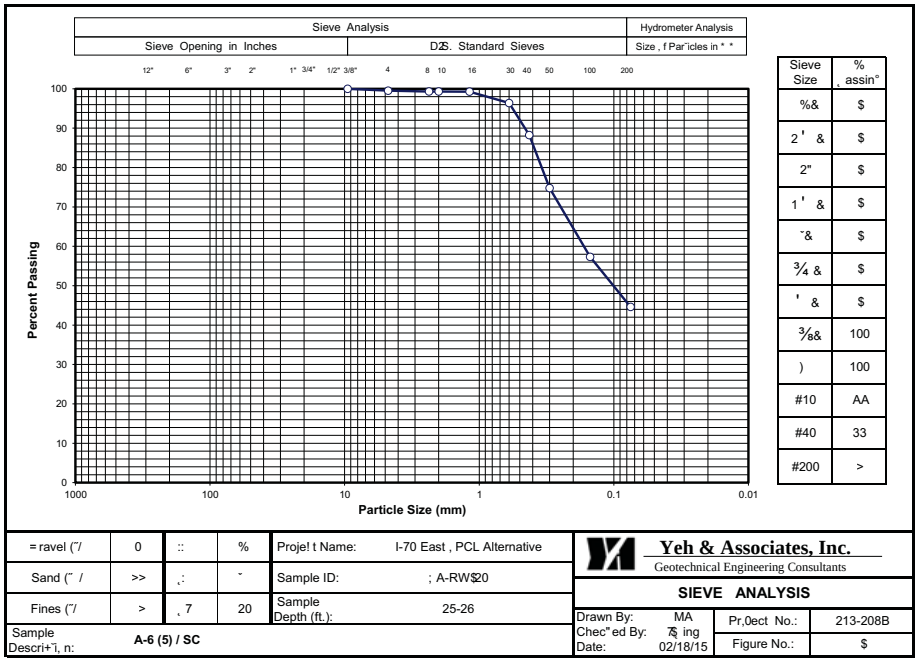

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	100
#10	AA
#40	33
#200	>

= ravel ("/	0	::	%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>>	¸:	¨	Sample ID:	; A-RW$20
Fines ("/	>	¸ 7	20	Sample Depth (ft.):	25-26
Sample Descri+¨i, n:	**A-6 (5) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/18/15	Figure No.:	$

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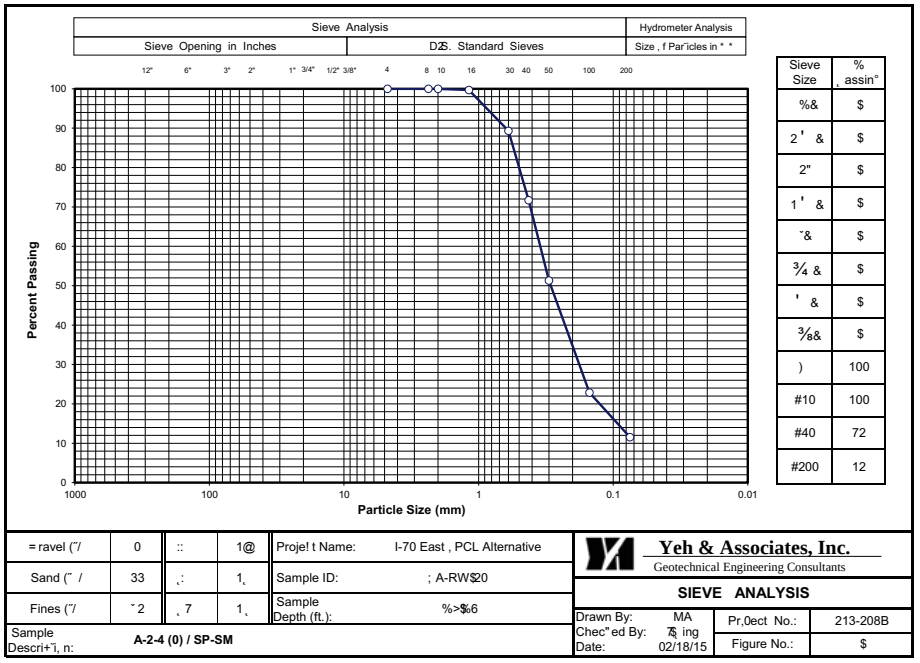

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	72
#200	12

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	33	¸:	1¸	Sample ID:	; A-RW$20
Fines ("/	¨2	¸ 7	1¸	Sample Depth (ft.):	%>$%6
Sample Descri+¨i, n:	**A-2-4 (0) / SP-SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/18/15	Figure No.:	$

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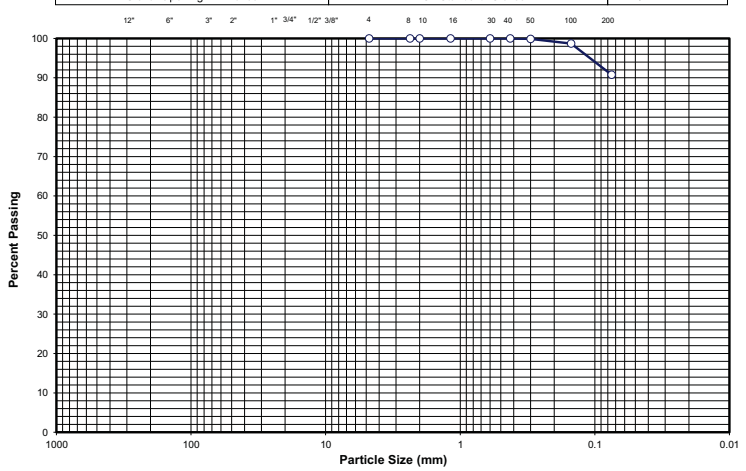
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% ,assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	100
#200	A¨

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	A	,:	1,	Sample ID:	; A-RW$20
Fines (˝/	A¨	, 7	1,	Sample Depth (ft.):	>$ 6
Sample Descri+¨i, n:	**A-4 (0) / ML**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/18/15	Figure No.:	$

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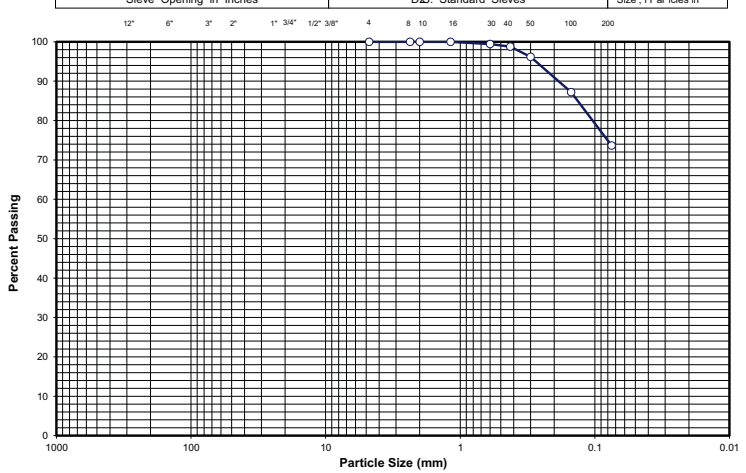
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% ,assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	90

= ravel (˝/	0	::	66	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	10	,:	25	Sample ID:	; A-RW$20
Fines (˝/	A0	, 7	¨	Sample Depth (ft.):	60-6¨
Sample Descri+¨i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/18/15	Figure No.:	$

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Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *

Sieve Size	% ,assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	

= ravel (˝/	0	::	>%	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	26	,:	24	Sample ID:	; A-RW$20
Fines (˝/		, 7	2A	Sample Depth (ft.):	6>$66
Sample Descri+¨i, n:	Bedr,! "				

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Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/19/15	Figure No.:	$

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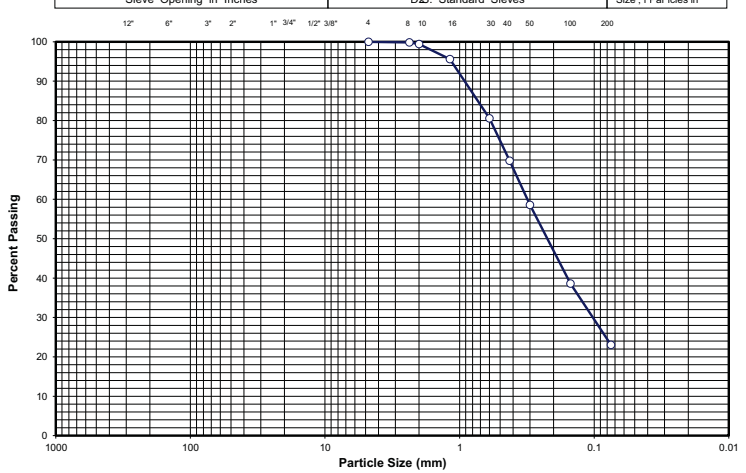
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% ,assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	AA
#40	70
#200	23

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /		,:	1,	Sample ID:	; A-RW$20
Fines (˝/	2%	, 7	1,	Sample Depth (ft.):	%$
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/19/15	Figure No.:	$

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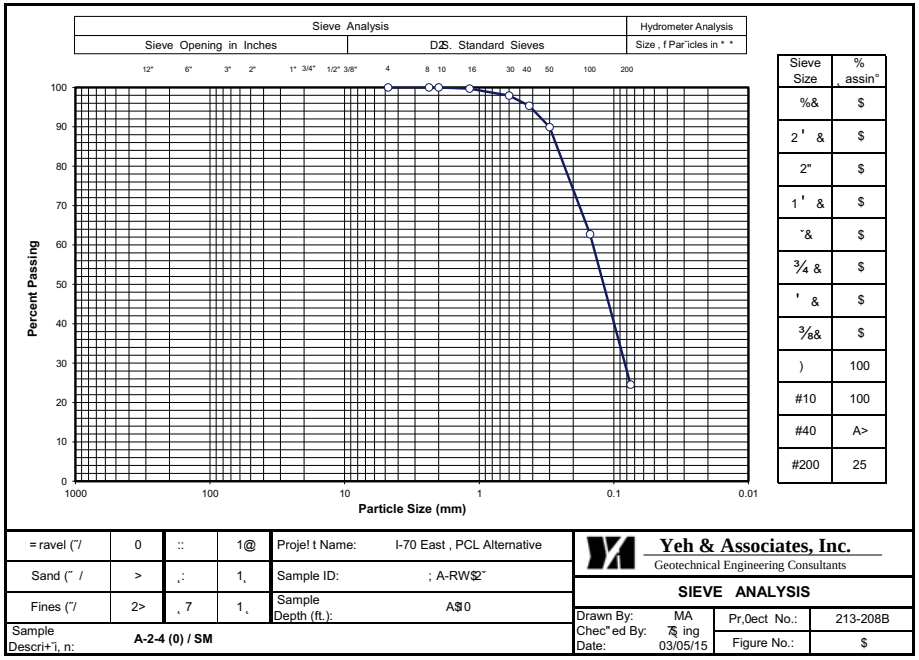

Sieve Size	% ,assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A>
#200	25

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	>	,:	1,	Sample ID:	; A-RW$2˝
Fines (˝/	2>	, 7	1,	Sample Depth (ft.):	A$10
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

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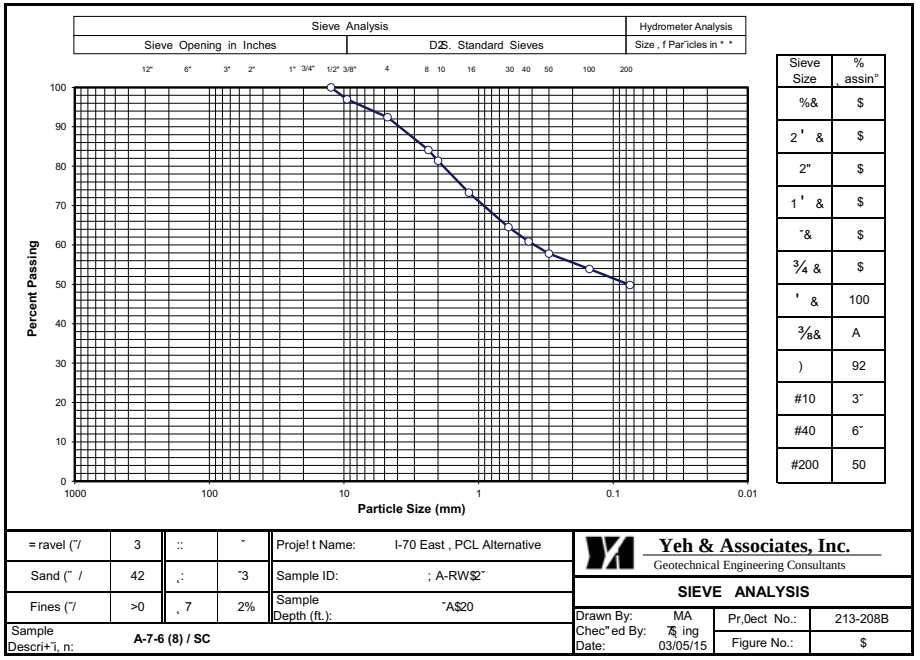

Sieve Size	% ,assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&&	A
)	92
#10	3¨
#40	6¨
#200	50

= ravel (˝/	3	::	¨	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	42	,:	¨3	Sample ID:	; A-RW$2˝
Fines (˝/	>0	, 7	2%	Sample Depth (ft.):	¨A$20
Sample Descri+¨i, n:	**A-7-6 (8) / SC**				

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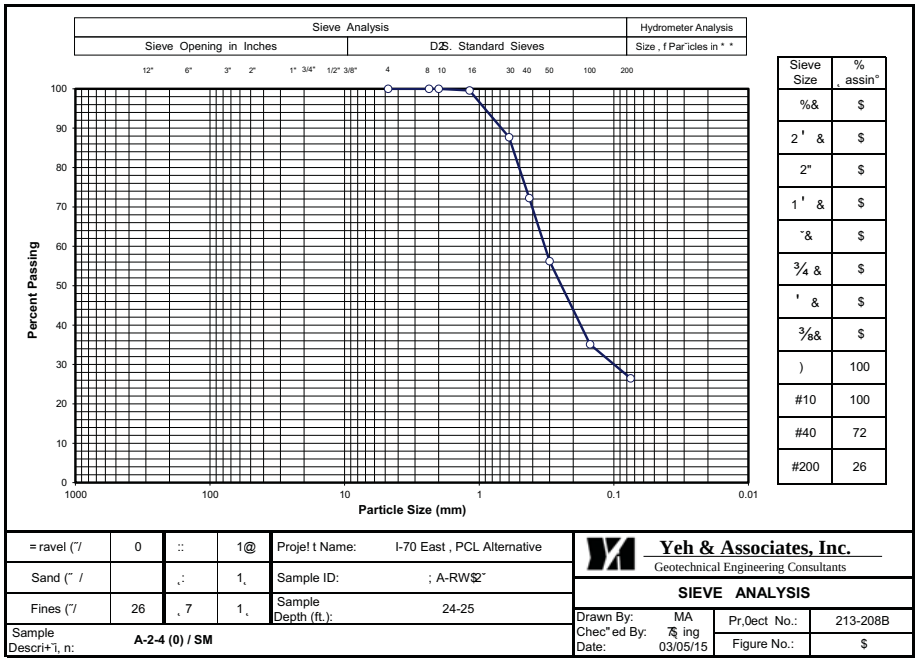
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	72
#200	26

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /		,:	1,	Sample ID:	; A-RW$2˝
Fines (˝/	26	, 7	1,	Sample Depth (ft.):	24-25
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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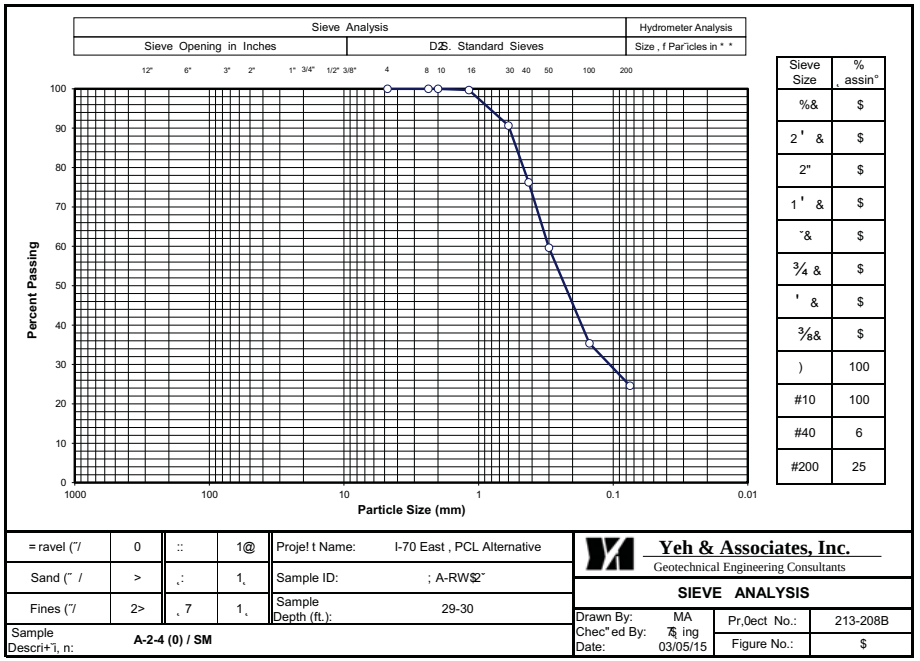
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	6
#200	25

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	>	,:	1,	Sample ID:	; A-RW$2˝
Fines (˝/	2>	, 7	1,	Sample Depth (ft.):	29-30
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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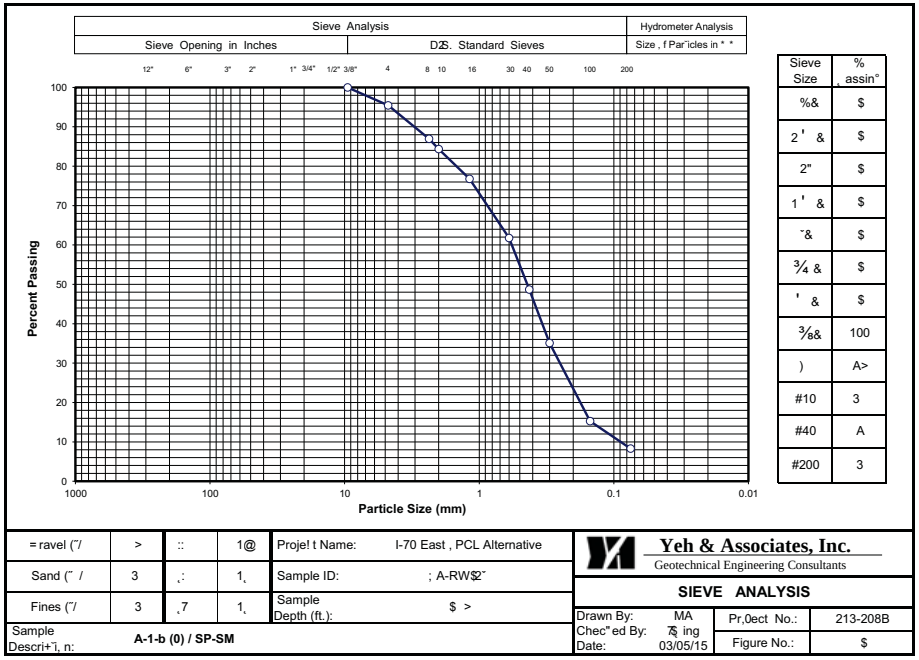
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	A>
#10	3
#40	A
#200	3

= ravel (¨/	>	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3	¸:	1¸	Sample ID:	; A-RW$2¨
Fines (¨/	3	¸7	1¸	Sample Depth (ft.):	$ >
Sample Descri+¨ı, n:	**A-1-b (0) / SP-SM**				

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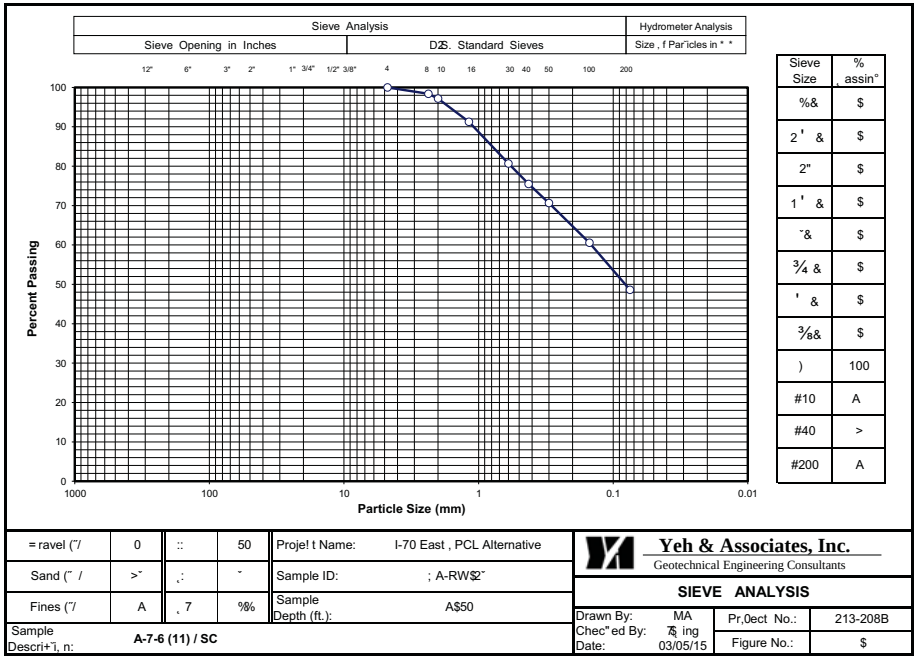
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A
#40	>
#200	A

= ravel (¨/	0	::	50	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>¨	¸:	¨	Sample ID:	; A-RW$2¨
Fines (¨/	A	¸ 7	%%	Sample Depth (ft.):	A$50
Sample Descri+¨ı, n:	**A-7-6 (11) / SC**				

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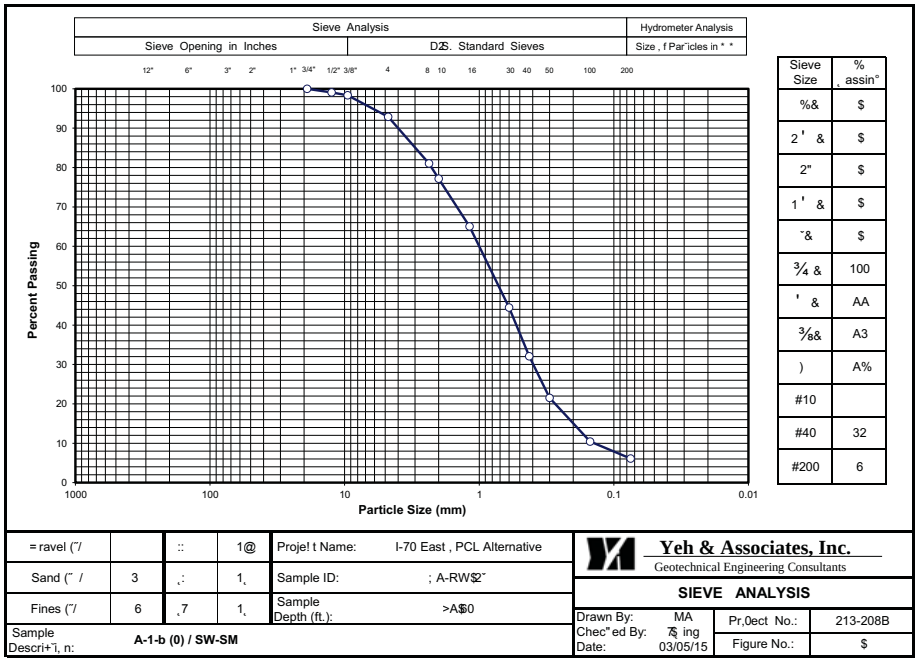
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	AA
⅜&&	A3
)	A%
#10	
#40	32
#200	6

= ravel (¨/		::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3	¸:	1¸	Sample ID:	; A-RW$2¨
Fines (¨/	6	¸7	1¸	Sample Depth (ft.):	>A$0
Sample Descri+¨ı, n:	**A-1-b (0) / SW-SM**				

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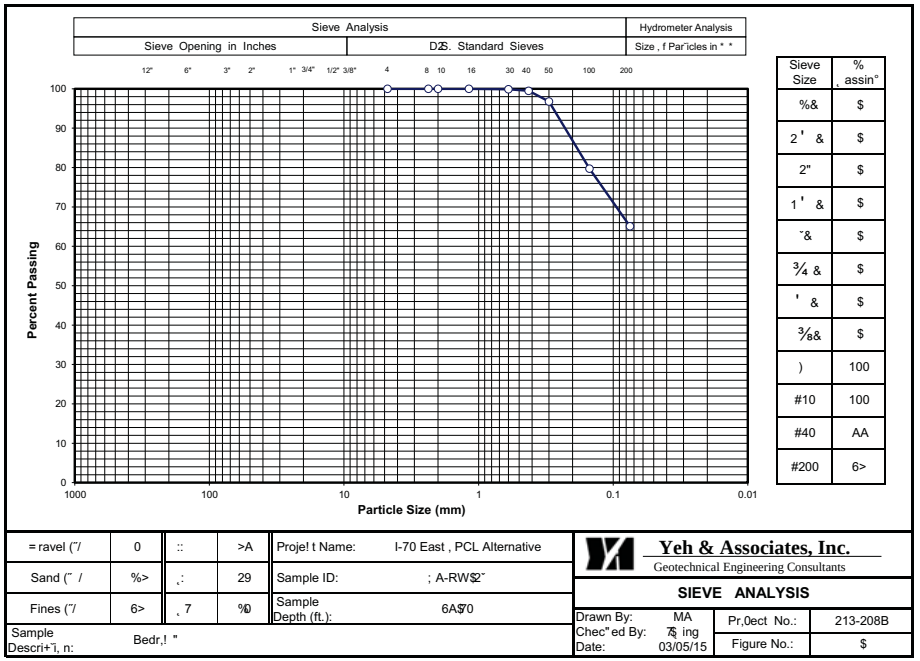
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	AA
#200	6>

= ravel (¨/	0	::	>A	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	%>	¸:	29	Sample ID:	; A-RW$2¨
Fines (¨/	6>	¸ 7	%0	Sample Depth (ft.):	6A$70
Sample Descri+¨ı, n:	Bedr,! "				

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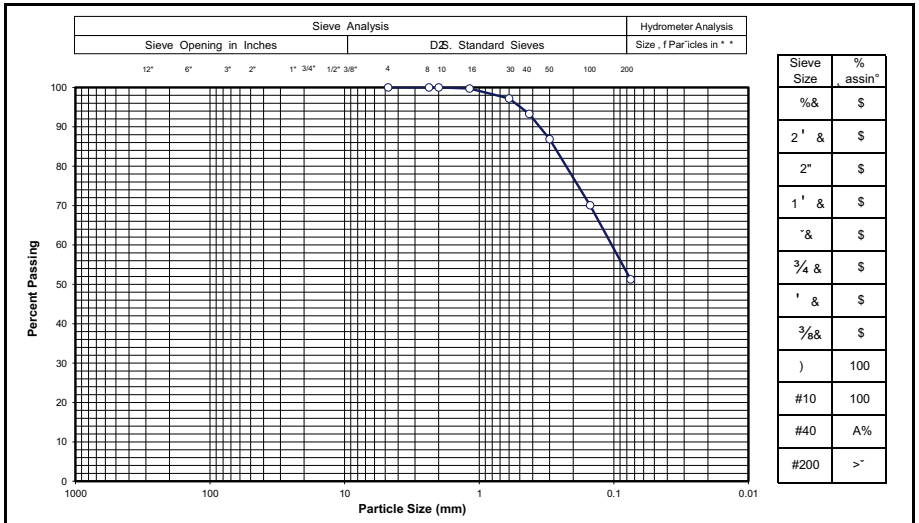
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	A%
#200	>¨

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	A	,:	1,	Sample ID:	; A-RW$22
Fines (˜/	>¨	, 7	1,	Sample Depth (ft.):	>$6
Sample Descri+¨i, n:	**A-4 (0) / ML**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7$ ing		
Date:	03/05/15	Figure No.:	$

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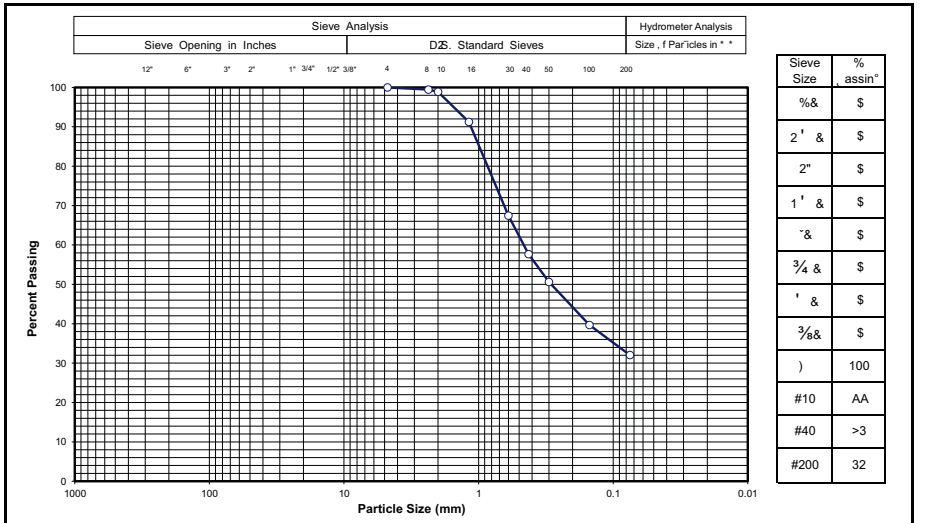

Sieve Size	% ,assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	AA
#40	>3
#200	32

= ravel (˜/	0	::	%¨	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	63	,:	¨	Sample ID:	; A-RW$22
Fines (˜/	%2	, 7	¨	Sample Depth (ft.):	¨$ ¨>
Sample Descri+¨i, n:	**A-2-6 (1) / SC**				

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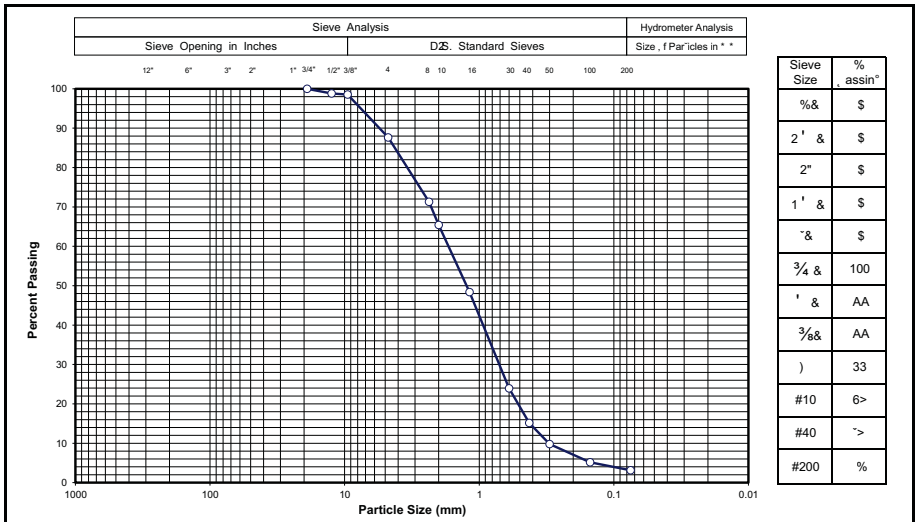
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7$ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	AA
⅜&	AA
)	33
#10	6>
#40	¨>
#200	%

= ravel (˜/	12	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3>	,:	1,	Sample ID:	; A-RW$22
Fines (˜/	%	, 7	1,	Sample Depth (ft.):	24-25
Sample Descri+¨i, n:	**A-1-b (0) / SP**				

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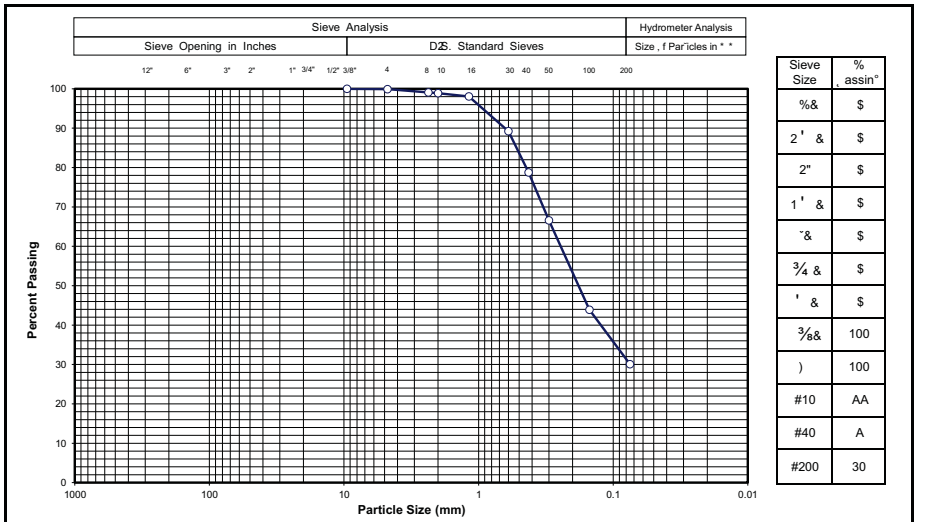
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7$ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin˜
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	100
#10	AA
#40	A
#200	30

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	70	,:	1,	Sample ID:	; A-RW$22
Fines (˜/	%0	, 7	1,	Sample Depth (ft.):	$ >
Sample Descri+¨i, n:	**A-2-4 (0) / SM**				

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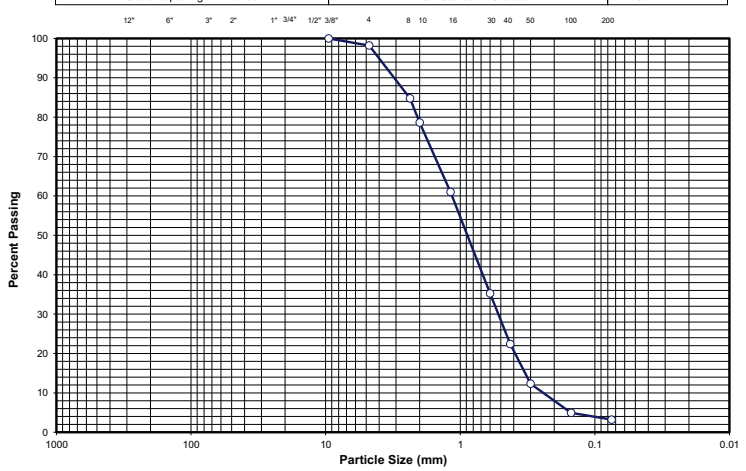
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7$ ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% , assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	A3
#10	A
#40	22
#200	%

= ravel (˜/	2	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	A>	¸:	1¸	Sample ID:	; A-RW$22
Fines (˜/	%	¸ 7	1¸	Sample Depth (ft.):	A$50
Sample Descri+¯i, n:	**A-1-b (0) / SP**				

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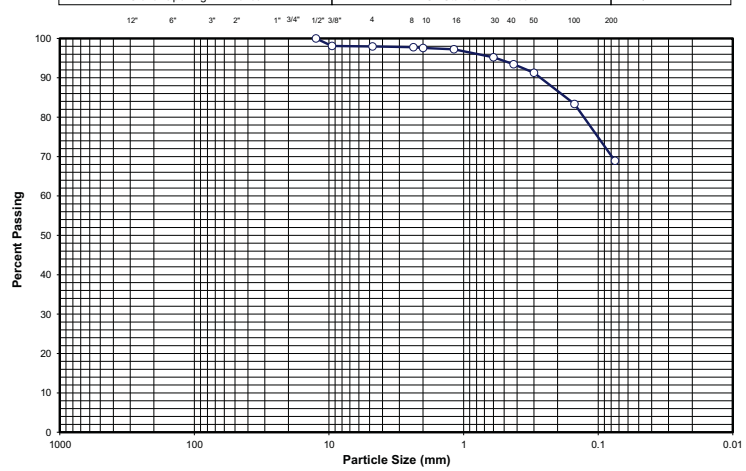
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% , assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&	A3
)	A3
#10	A3
#40	A%
#200	6A

= ravel (˜/	2	::	>6	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	29	¸:	21	Sample ID:	; A-RW$22
Fines (˜/	6A	¸ 7	%>	Sample Depth (ft.):	>A$50
Sample Descri+¯i, n:	**A-7-6 (23) / CH**				

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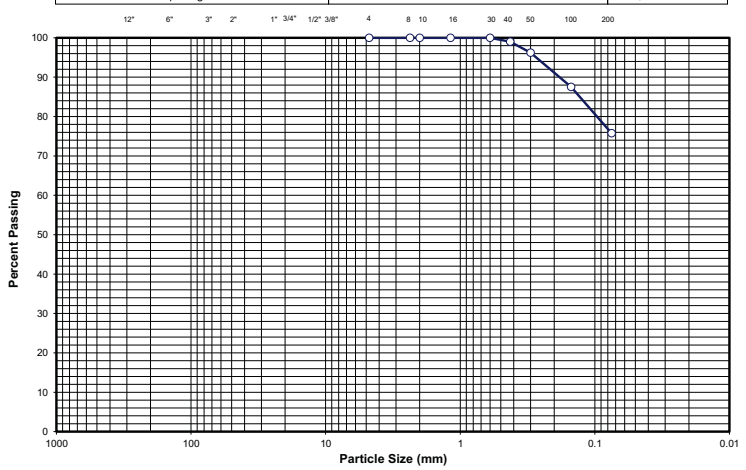
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% , assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	6

= ravel (˜/	0	::	>%	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	24	¸:	28	Sample ID:	; A-RW$22
Fines (˜/	6	¸ 7	2>	Sample Depth (ft.):	6A$70
Sample Descri+¯i, n:	Bedr,! "				

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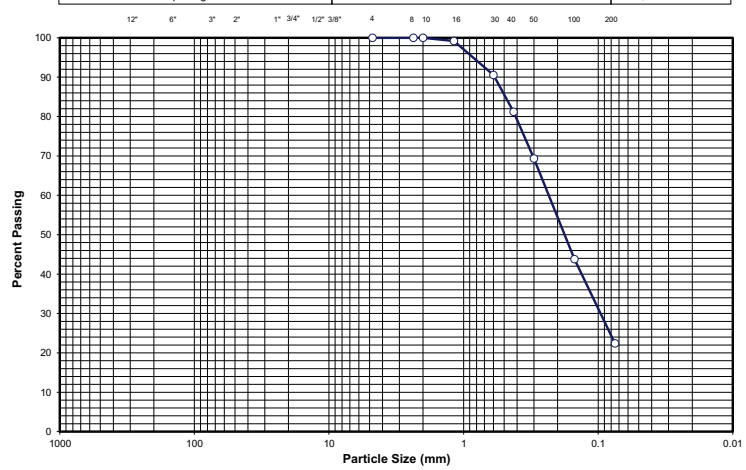
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	03/05/15	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% , assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3¨
#200	22

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3	¸:	1¸	Sample ID:	; A-RW$2%
Fines (˜/	22	¸ 7	1¸	Sample Depth (ft.):	2-%
Sample Descri+¯i, n:	**A-2-4 (0) / SM**				

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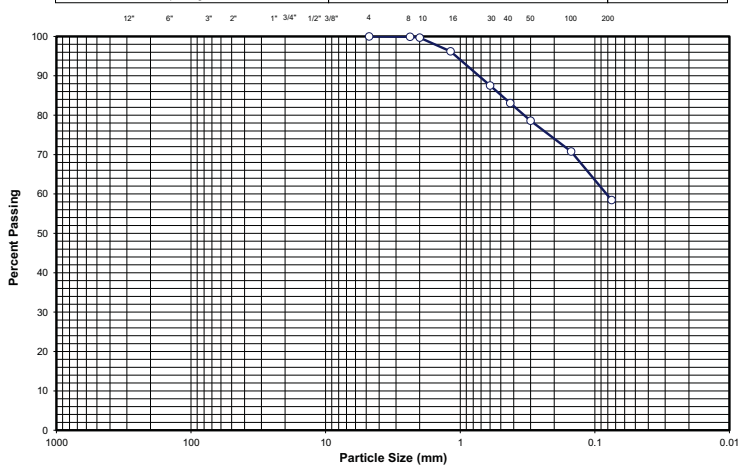
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/19/15	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3%
#200	>3

= ravel (¨/	0	::	28	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	42	,:	¨	Sample ID:	; A-RW$2%
Fines (¨/	>3	, 7	¨	Sample Depth (ft.):	A$10
Sample Descri+¨i, n:	**A-6 (5) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/19/15	Figure No.:	$

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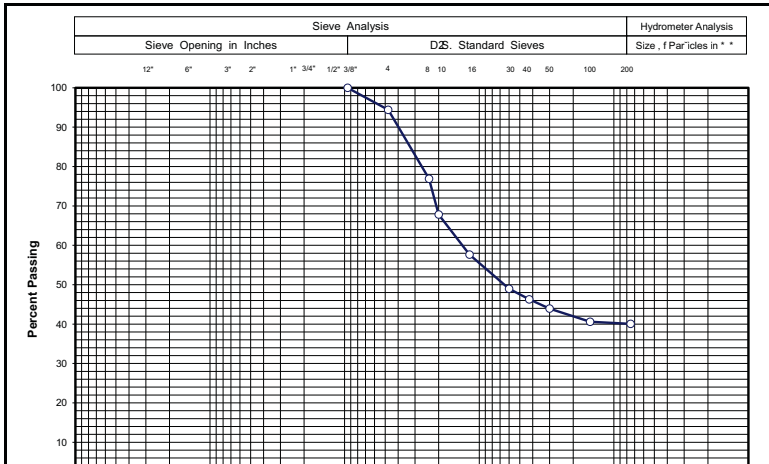
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	36
#200	6>

= ravel (¨/	0	::	%>	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	%>	,:	¨	Sample ID:	; A-RW$2%
Fines (¨/	6>	, 7	2¨	Sample Depth (ft.):	¨$ ¨>
Sample Descri+¨i, n:	**A-6 (11) / CL**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/19/15	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	A
#10	63
#40	6
#200	40

= ravel (¨/	6	::	27	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>	,:	12	Sample ID:	; A-RW$2%
Fines (¨/	0	, 7	¨>	Sample Depth (ft.):	24-25
Sample Descri+¨i, n:	**A-6 (2) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7S ing		
Date:	02/19/15	Figure No.:	$

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Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | U.S. Standard Sieves | Size of Particles in mm

Sieve Size	% Passing
3"	-
2 ½"	-
2"	-
1 ½"	-
1"	-
¾ "	100
½"	99
⅜"	99
#4	90
#10	70
#40	25
#200	5

Gravel (%)	10	LL	NV	Project Name:	I-70 East , PCL Alternative
Sand (%)	85	PL	NP	Sample ID:	YA-RW-23
Fines (%)	5	PI	NP	Sample Depth (ft.):	39-40
Sample Description:	**A-1-b (0) / SP-SM**				

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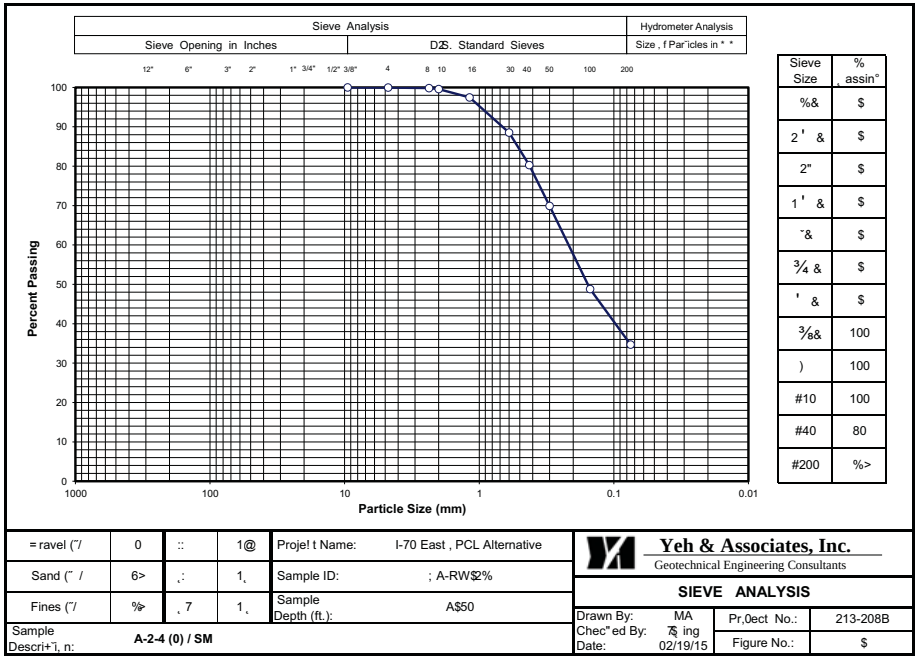
SIEVE ANALYSIS

Drawn By:	MA	Project No.:	213-208B
Checked By:	I-Ping		
Date:	02/19/15	Figure No.:	-

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	100
#10	100
#40	80
#200	%>

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6>	¸:	1¸	Sample ID:	; A-RW$2%
Fines (˜/	%>	¸ 7	1¸	Sample Depth (ft.):	A$50
Sample Descri+¨ı, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/19/15	Figure No.:	$

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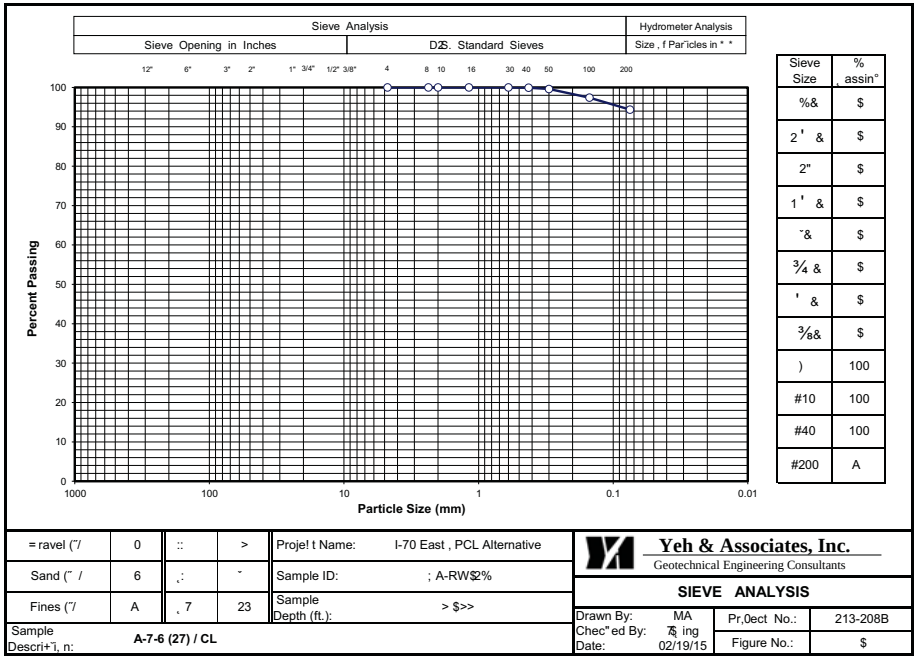

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	100
#200	A

= ravel (˜/	0	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	¸:	¨	Sample ID:	; A-RW$2%
Fines (˜/	A	¸ 7	23	Sample Depth (ft.):	> $>>
Sample Descri+¨ı, n:	**A-7-6 (27) / CL**				

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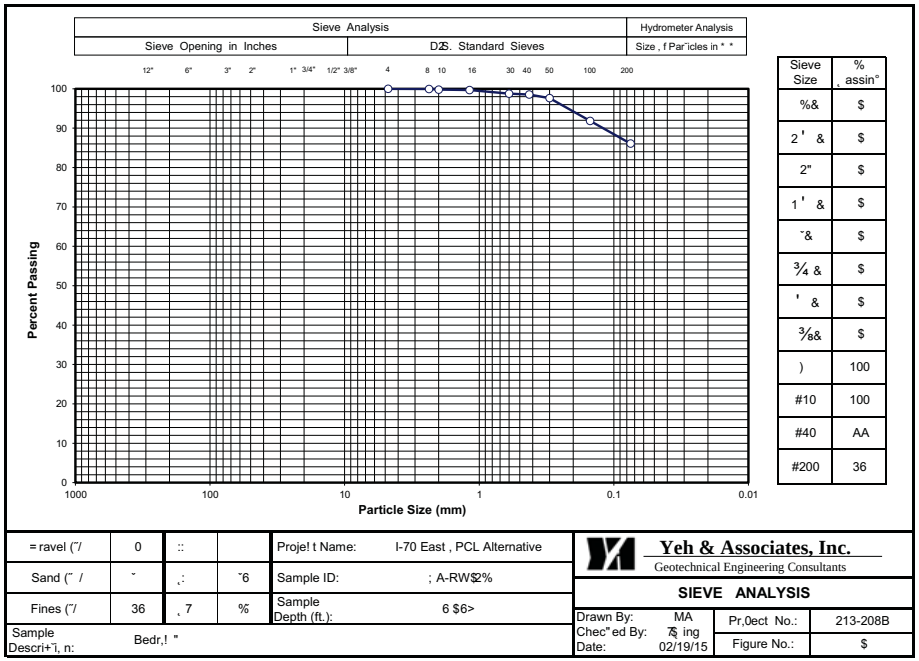
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/19/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	36

= ravel (˜/	0	::		Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	¨	¸:	¨6	Sample ID:	; A-RW$2%
Fines (˜/	36	¸ 7	%	Sample Depth (ft.):	6 $6>
Sample Descri+¨ı, n:	Bedr,! "				

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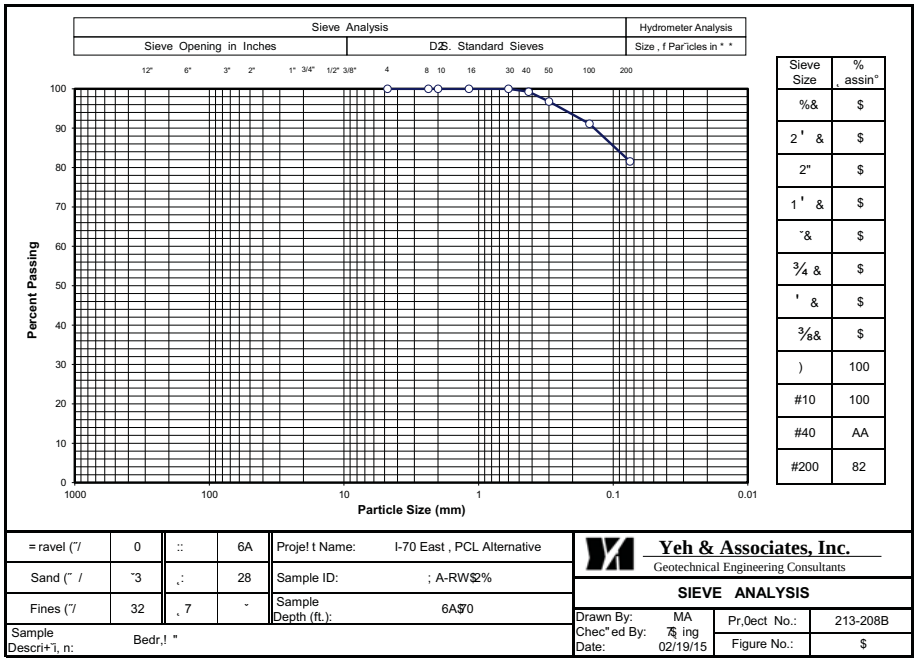
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/19/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	82

= ravel (˜/	0	::	6A	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	¨3	¸:	28	Sample ID:	; A-RW$2%
Fines (˜/	32	¸ 7	¨	Sample Depth (ft.):	6A$70
Sample Descri+¨ı, n:	Bedr,! "				

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Geotechnical Engineering Consultants

SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	02/19/15	Figure No.:	$

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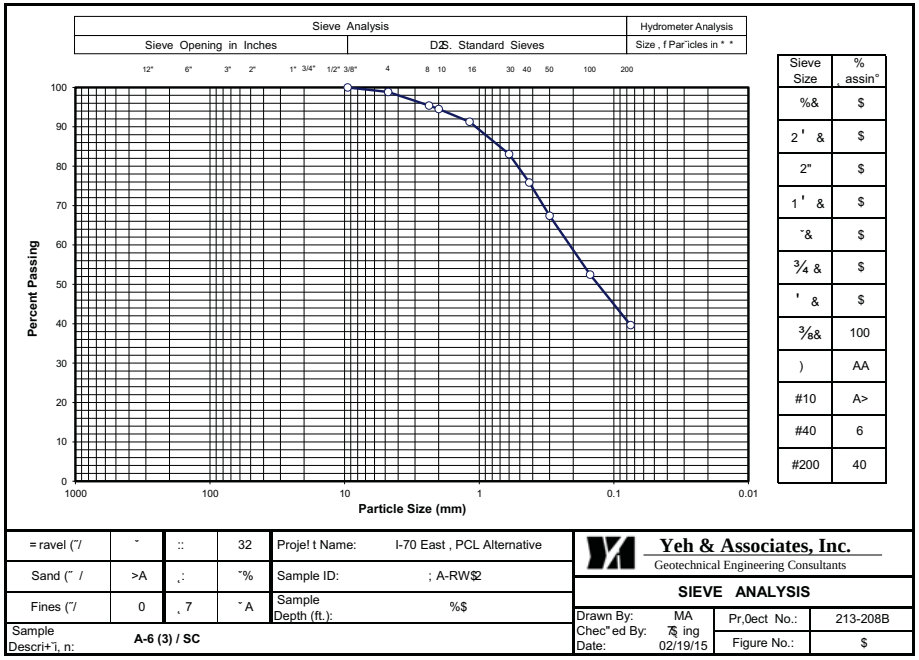

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	AA
#10	A>
#40	6
#200	40

= ravel (˝/	ˇ	::	32	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	>A	,:	˝%	Sample ID:	; A-RW$2
Fines (˝/	0	, 7	ˇA	Sample Depth (ft.):	%$
Sample Descri+ˉi, n:	**A-6 (3) / SC**				

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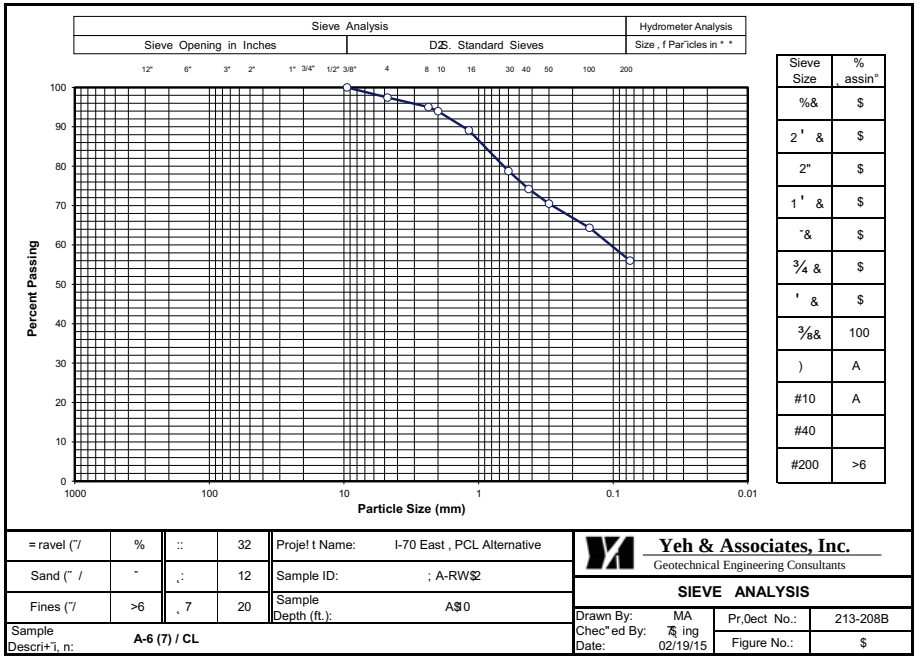
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/19/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	A
#10	A
#40	
#200	>6

= ravel (˝/	%	::	32	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	ˇ	,:	12	Sample ID:	; A-RW$2
Fines (˝/	>6	, 7	20	Sample Depth (ft.):	A$10
Sample Descri+ˉi, n:	**A-6 (7) / CL**				

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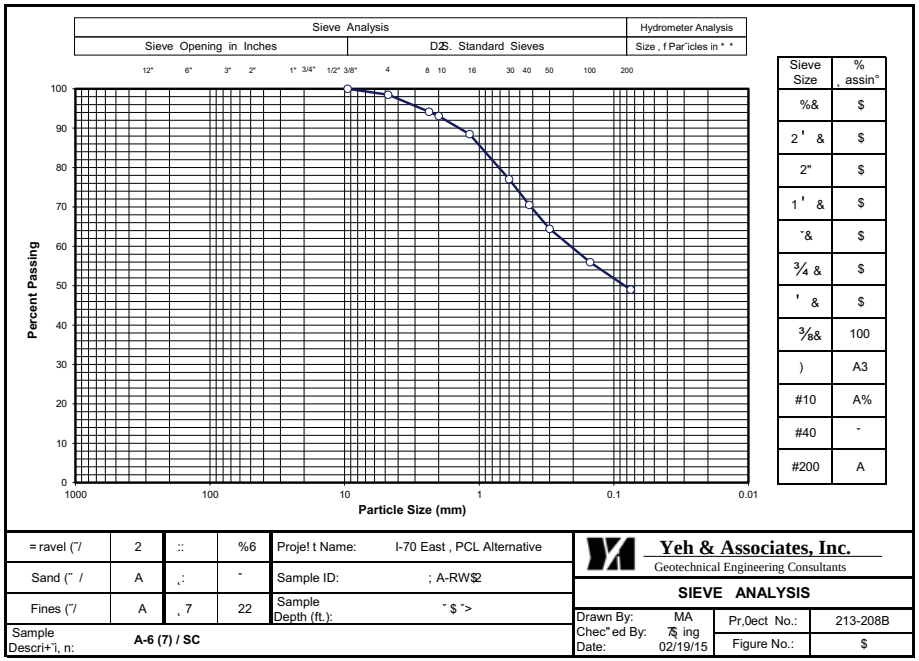
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/19/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	A3
#10	A%
#40	ˇ
#200	A

= ravel (˝/	2	::	%6	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	A	,:	ˇ	Sample ID:	; A-RW$2
Fines (˝/	A	, 7	22	Sample Depth (ft.):	ˇ $ ˝>
Sample Descri+ˉi, n:	**A-6 (7) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/19/15	Figure No.:	$

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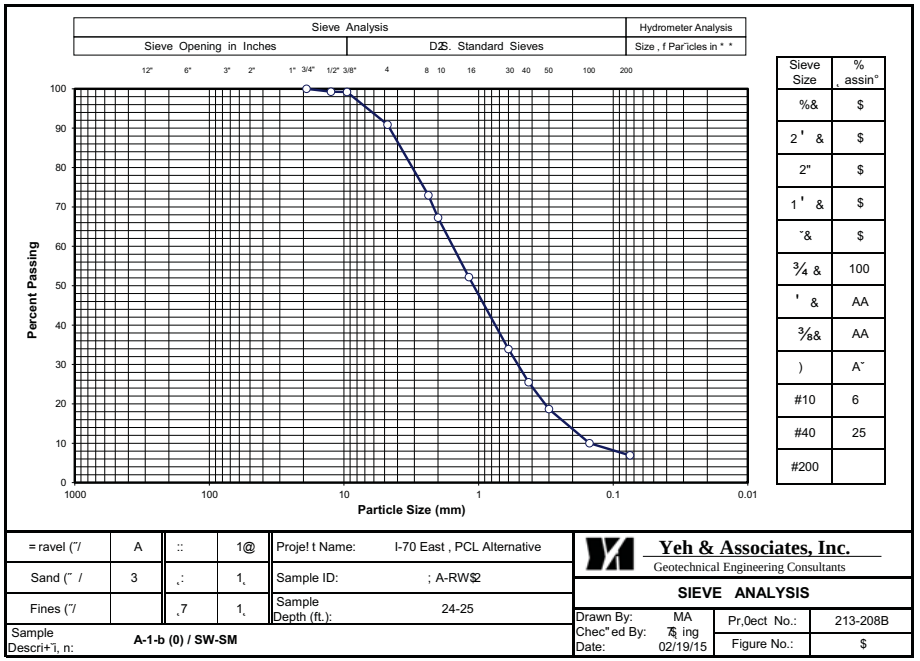

Sieve Size	% , assin˚
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	AA
⅜&	AA
)	A¨
#10	6
#40	25
#200	

= ravel (˝/	A	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˝ /	3	,:	1,	Sample ID:	; A-RW$2
Fines (˝/		,7	1,	Sample Depth (ft.):	24-25
Sample Descri+ˉi, n:	**A-1-b (0) / SW-SM**				

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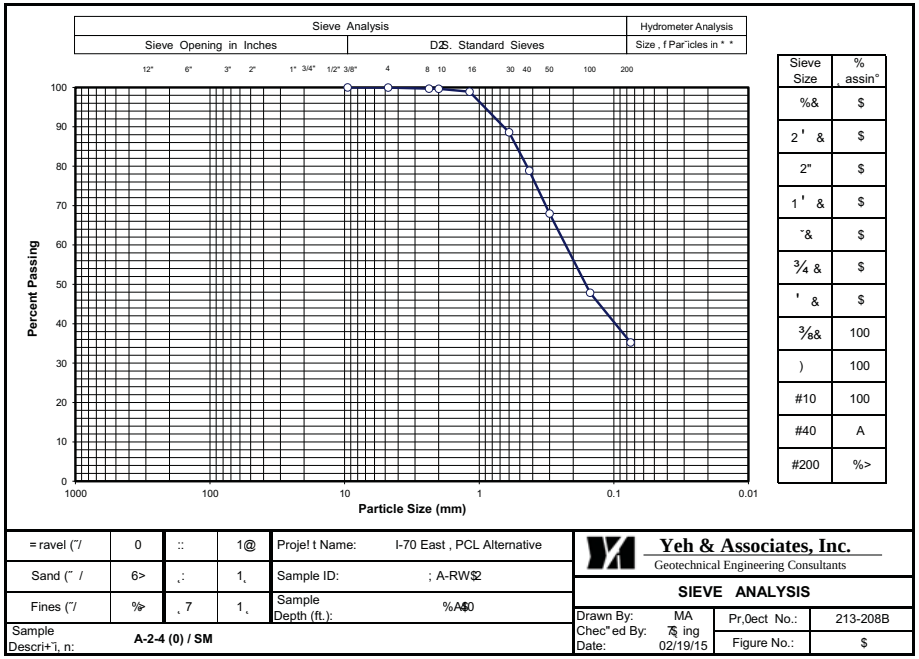
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/19/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	100
#10	100
#40	A
#200	%>

= ravel (¨/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	6>	¸:	1¸	Sample ID:	; A-RW$2
Fines (¨/	%>	¸ 7	1¸	Sample Depth (ft.):	%A$0
Sample Descri+¨ı, n:	**A-2-4 (0) / SM**				

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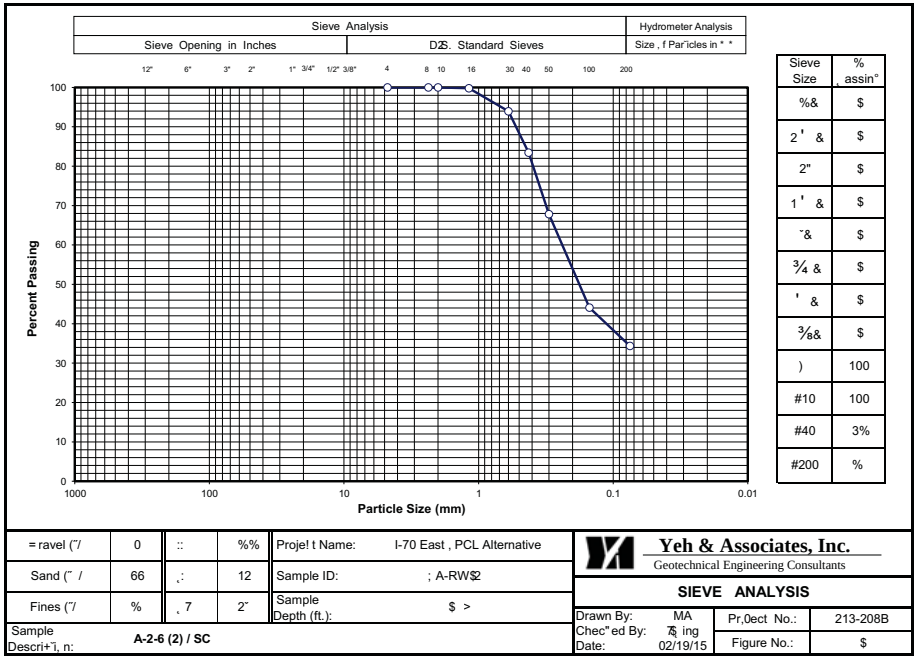
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/19/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	3%
#200	%

= ravel (¨/	0	::	%%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	66	¸:	12	Sample ID:	; A-RW$2
Fines (¨/	%	¸ 7	2¨	Sample Depth (ft.):	$ >
Sample Descri+¨ı, n:	**A-2-6 (2) / SC**				

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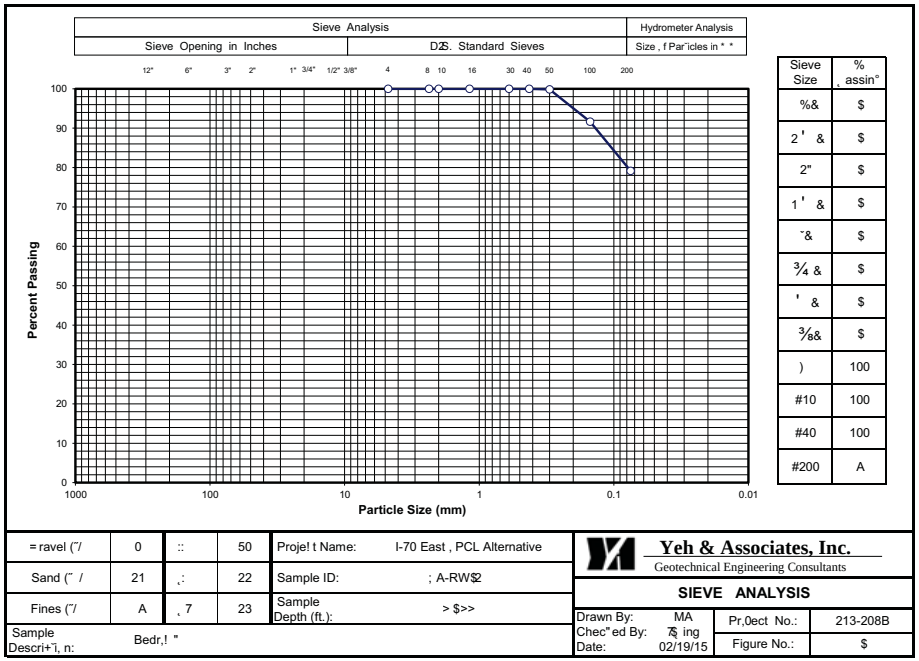
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/19/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	100
#200	A

= ravel (¨/	0	::	50	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	21	¸:	22	Sample ID:	; A-RW$2
Fines (¨/	A	¸ 7	23	Sample Depth (ft.):	> $>>
Sample Descri+¨ı, n:	Bedr,! "				

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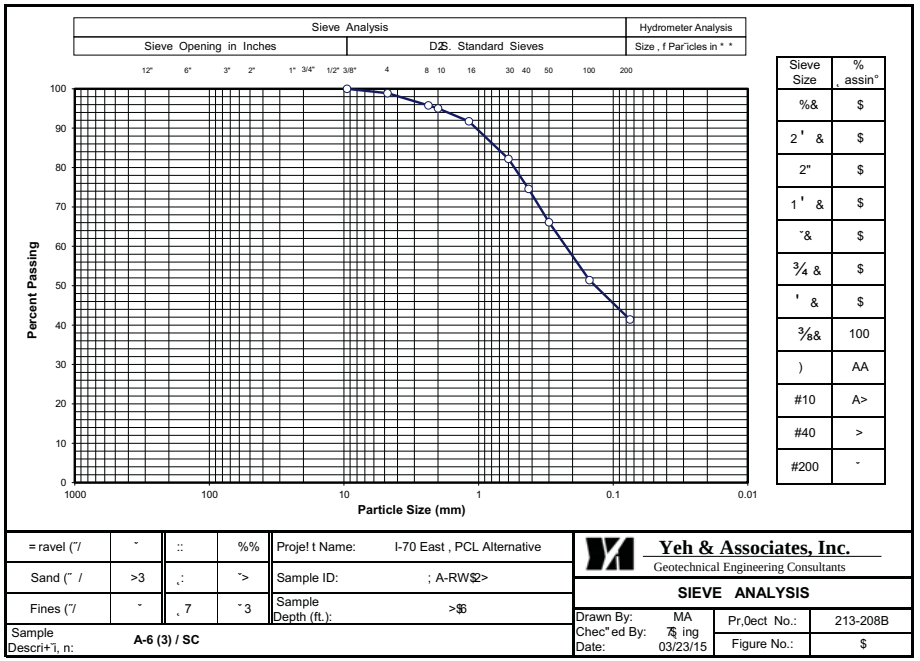
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	02/19/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	100
)	AA
#10	A>
#40	>
#200	¨

= ravel (¨/	¨	::	%%	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>3	¸:	¨>	Sample ID:	; A-RW$2>
Fines (¨/	¨	¸ 7	¨3	Sample Depth (ft.):	>$6
Sample Descri+¨ı, n:	**A-6 (3) / SC**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	Ts ing		
Date:	03/23/15	Figure No.:	$

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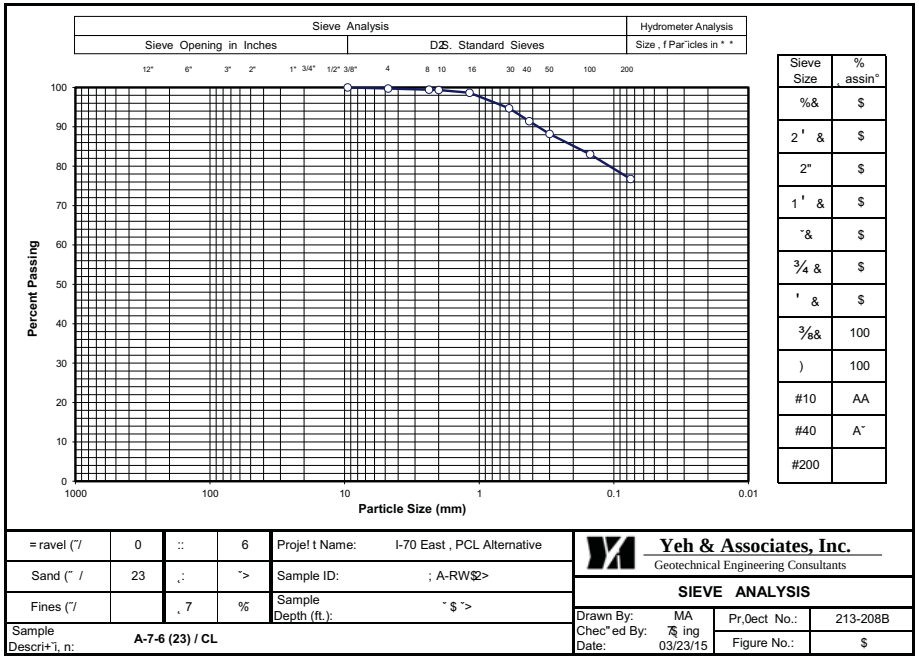

Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	AA
#40	A¨
#200	

= ravel (¨/	0	::	6	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	23	¸:	¨>	Sample ID:	; A-RW$2>
Fines (¨/		¸ 7	%	Sample Depth (ft.):	¨ $ ¨>
Sample Descri+¨i, n:	**A-7-6 (23) / CL**				

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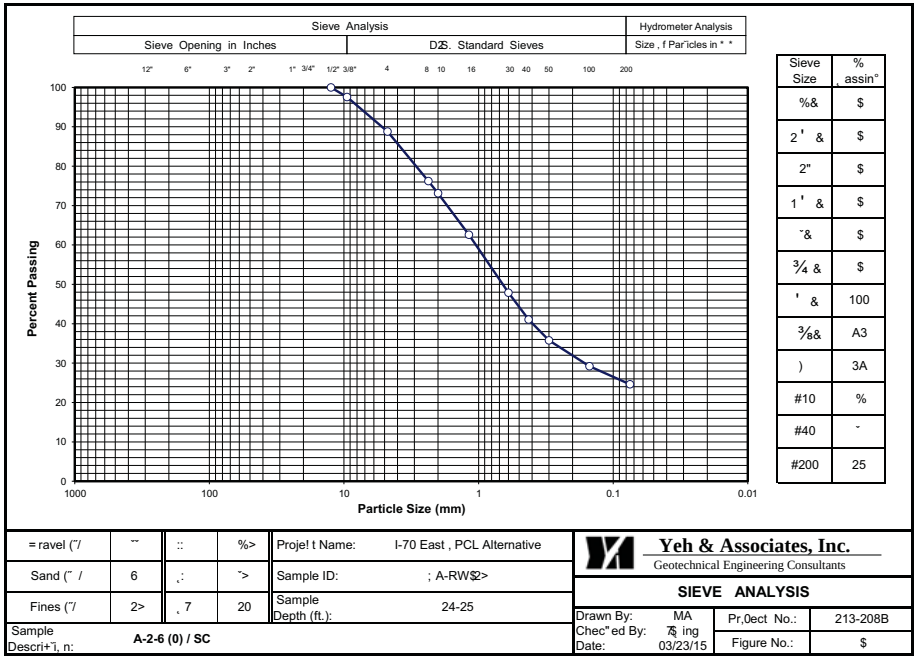
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/23/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&&	A3
)	3A
#10	%
#40	¨
#200	25

= ravel (¨/	¨	::	%>	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	6	¸:	¨>	Sample ID:	; A-RW$2>
Fines (¨/	2>	¸ 7	20	Sample Depth (ft.):	24-25
Sample Descri+¨i, n:	**A-2-6 (0) / SC**				

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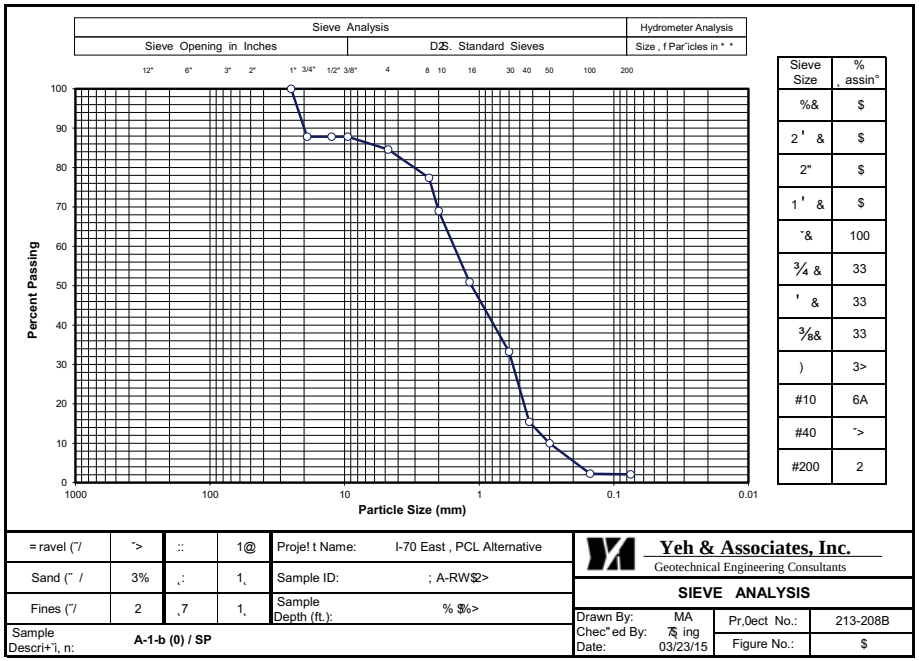
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/23/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	100
¾ &	33
' &	33
⅜&&	33
)	3>
#10	6A
#40	¨>
#200	2

= ravel (¨/	¨>	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3%	¸:	1¸	Sample ID:	; A-RW$2>
Fines (¨/	2	¸7	1¸	Sample Depth (ft.):	% $%>
Sample Descri+¨i, n:	**A-1-b (0) / SP**				

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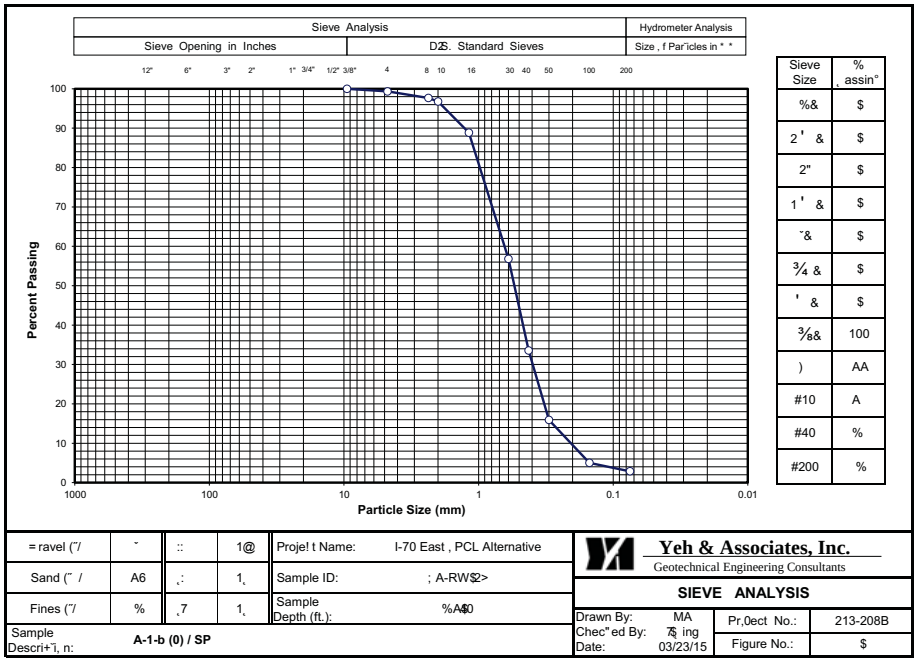
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/23/15	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin¨
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A
#40	%
#200	%

= ravel (¨/	¨	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	A6	¸:	1¸	Sample ID:	; A-RW$2>
Fines (¨/	%	¸7	1¸	Sample Depth (ft.):	%A$0
Sample Descri+¨i, n:	**A-1-b (0) / SP**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/23/15	Figure No.:	$

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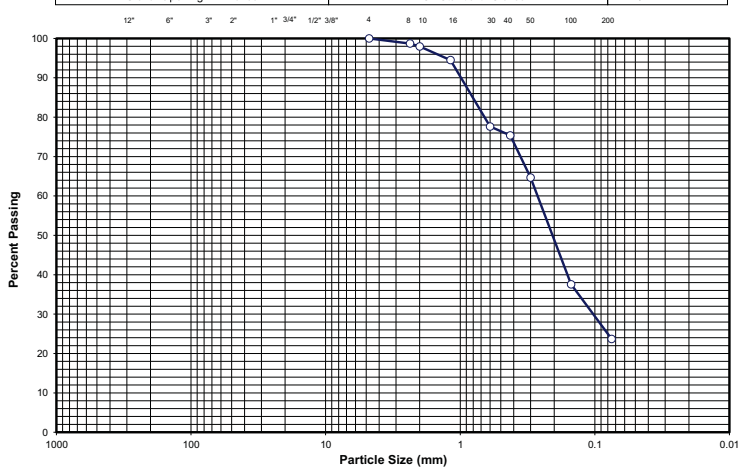
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	A3
#40	>
#200	24

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	,:	1¸	Sample ID:	; A-RW$2>
Fines (˜/	2	¸ 7	1¸	Sample Depth (ft.):	A$50
Sample Descri+¨ı, n:	**A-2-4 (0) / SM**				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/23/15	Figure No.:	$

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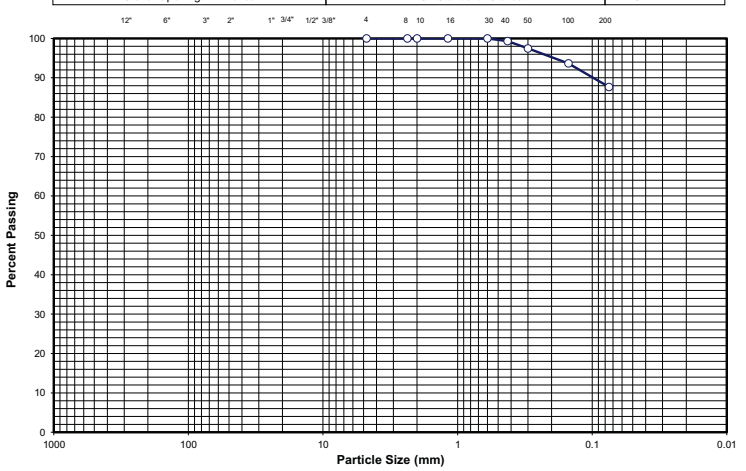
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	AA
#200	33

= ravel (˜/	0	::	>	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	12	,:	25	Sample ID:	; A-RW$2>
Fines (˜/	33	¸ 7	%2	Sample Depth (ft.):	> $>>
Sample Descri+¨ı, n:	Bedr,! "				

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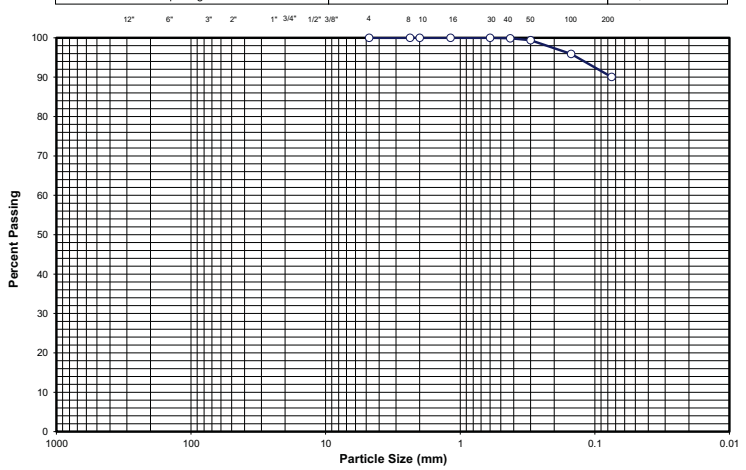
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/23/15	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¨icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	100
#40	100
#200	90

= ravel (˜/	0	::	6>	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	10	,:	29	Sample ID:	; A-RW$2>
Fines (˜/	A0	¸ 7	%6	Sample Depth (ft.):	6 $6>
Sample Descri+¨ı, n:	Bedr,! "				

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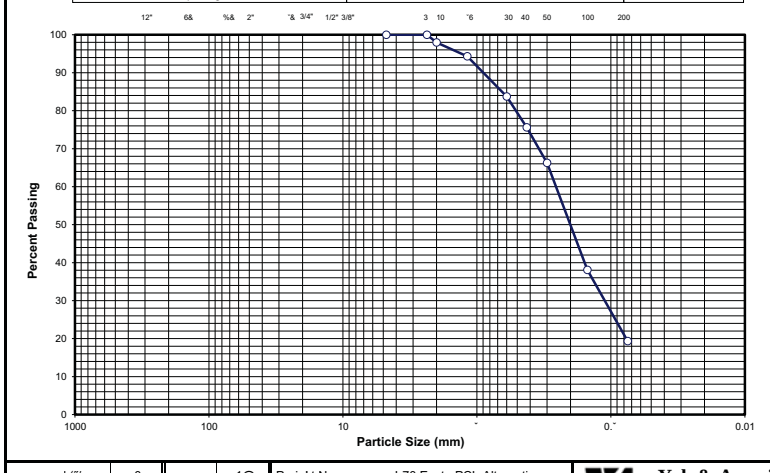
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208B
Chec"ed By:	7§ ing		
Date:	03/23/15	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S¨andard Sieves | Size , f Par¨icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	A3
#40	6
#200	¨A

= ravel (˜/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3¨	,:	1¸	Sample ID:	; A-DO1$¨
Fines (˜/	¨A	¸ 7	1¸	Sample Depth (ft.):	%
Sample Descri+¨ı, n:	A-2-4 (0) / SM				

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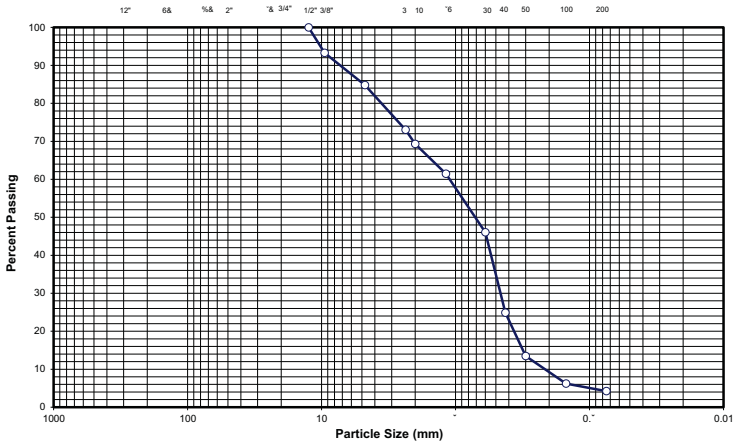
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¨ ec"ed By:	Fere		
Date:	04/16/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	A%
)	3>
#10	6A
#40	25
#200	

= ravel ("/	¯>	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3¯	,.:	1,	Sample ID:	; A-DO1$¯
Fines ("/		,7	1,	Sample Depth (ft.):	¯%
Sample Descri+¯i, n:	A-1-b (0) / ^,				

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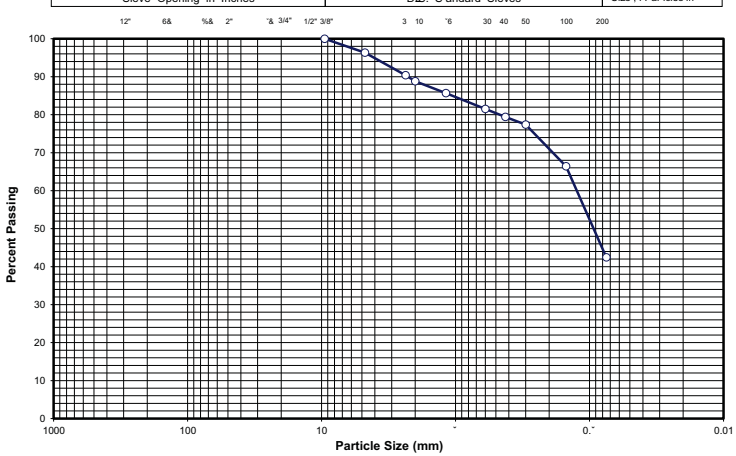
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec" ed By:	Fere	Figure No.:	$
Date:	10/12/11		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	100
¯&	92
¾ &	
' &	6
⅜&&	6%
)	52
#10	%
#40	¯>
#200	>

= ravel ("/	3	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /		,.:	1,	Sample ID:	; A-DO1$¯
Fines ("/	>	,7	1,	Sample Depth (ft.):	28
Sample Descri+¯i, n:	A-1-a (0) / =,				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec" ed By:	¯ alvin	Figure No.:	$
Date:	04/16/14		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	A6
#10	3A
#40	A
#200	42

= ravel ("/		::	%A	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>	,.:	21	Sample ID:	; A-DO1$¯
Fines ("/	2	, 7	¯3	Sample Depth (ft.):	>%
Sample Descri+¯i, n:	Bedr,! "				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec" ed By:	Fere	Figure No.:	$
Date:	10/12/11		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	90
#10	6
#40	60
#200	3

= ravel ("/	10	::	32	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	42	,.:	¯6	Sample ID:	; A-DO1$2
Fines ("/	3	, 7	¯ 6	Sample Depth (ft.):	%
Sample Descri+¯i, n:	A-6 .4) / ^ ¯				

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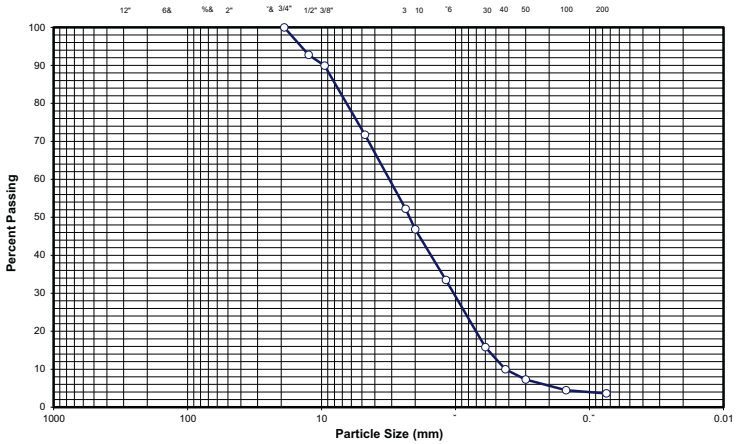
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec" ed By:	¯ alvin	Figure No.:	$
Date:	04/16/14		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A%
⅜&&	90
)	72
#10	
#40	10
#200	

= ravel ("/	28	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	63	,.:	1,	Sample ID:	; A-DO1$2
Fines ("/		,7	1,	Sample Depth (ft.):	¯A
Sample Descri+¯i, n:	A-1-a (0) / ^,				

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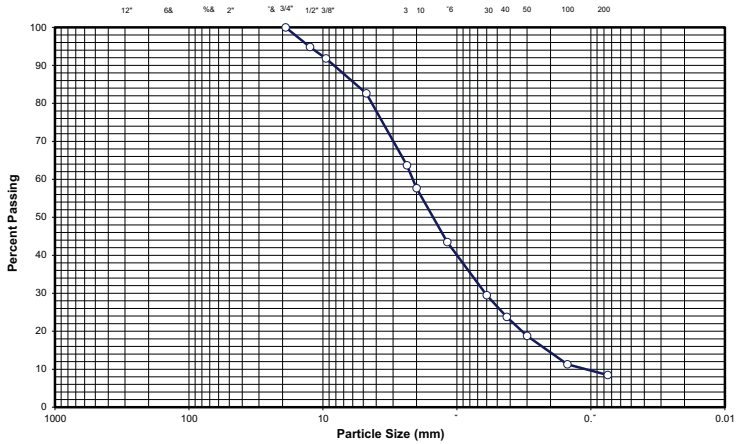
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec"ed By:	¯ alvin	Figure No.:	$
Date:	04/16/14		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A>
⅜&&	92
)	3%
#10	>3
#40	24
#200	3

= ravel ("/	¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>	,.:	1,	Sample ID:	; A-DO1$2
Fines ("/	3	,7	1,	Sample Depth (ft.):	%
Sample Descri+¯i, n:	A-1-b (0) / SW-SM				

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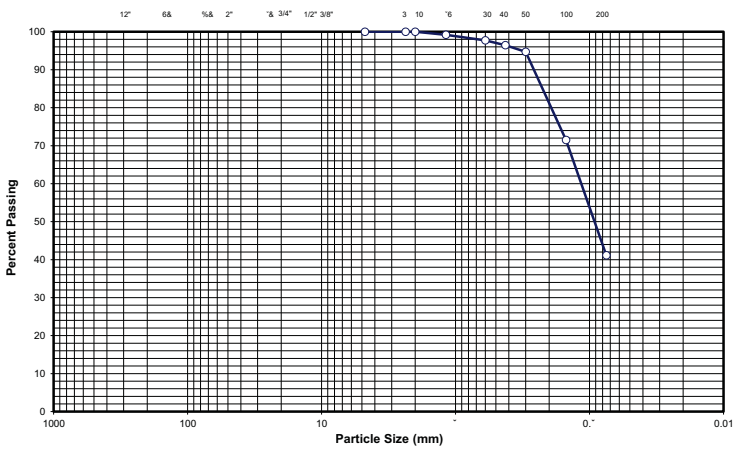
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec"ed By:	¯ alvin	Figure No.:	$
Date:	04/16/14		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A6
#200	¯

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	>A	,.:	1,	Sample ID:	; A-DO1$2
Fines ("/	¯	, 7	1,	Sample Depth (ft.):	
Sample Descri+¯i, n:	Bedr,! "				

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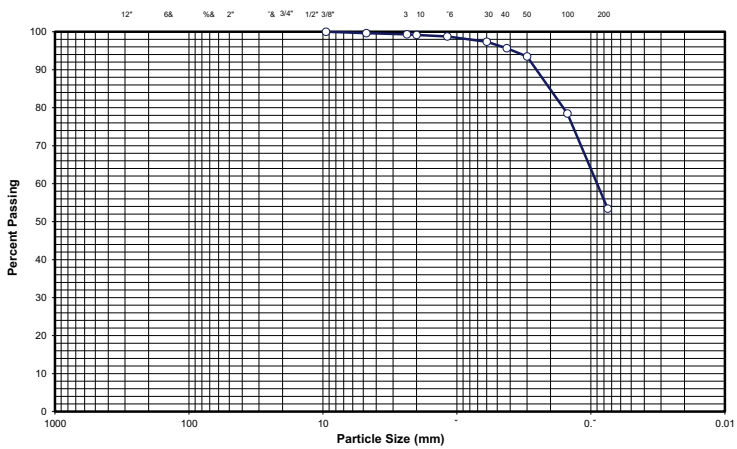
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec"ed By:	¯ alvin	Figure No.:	$
Date:	04/16/14		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	AA
#40	A6
#200	>%

= ravel ("/	0	::	%6	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /		,.:	24	Sample ID:	; A-DO1$2
Fines ("/	>%	, 7	¯2	Sample Depth (ft.):	>
Sample Descri+¯i, n:	Bedr,! "				

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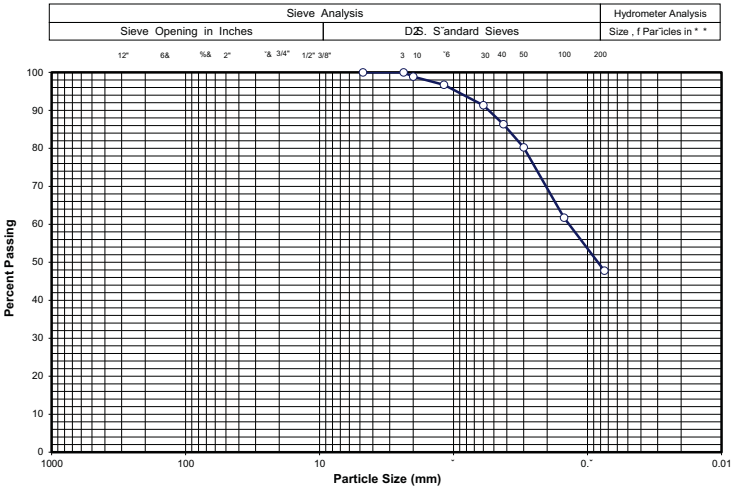
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec"ed By:	¯ alvin	Figure No.:	$
Date:	04/16/14		

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	36
#200	3

= ravel (˝/	0	::	26	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	52	,.:	˜%	Sample ID:	; A-DO1$%
Fines (˝/	3	,.7	˜%	Sample Depth (ft.):	2
Sample Descri+˜i, n:	A-6 (3) / ˜˜				

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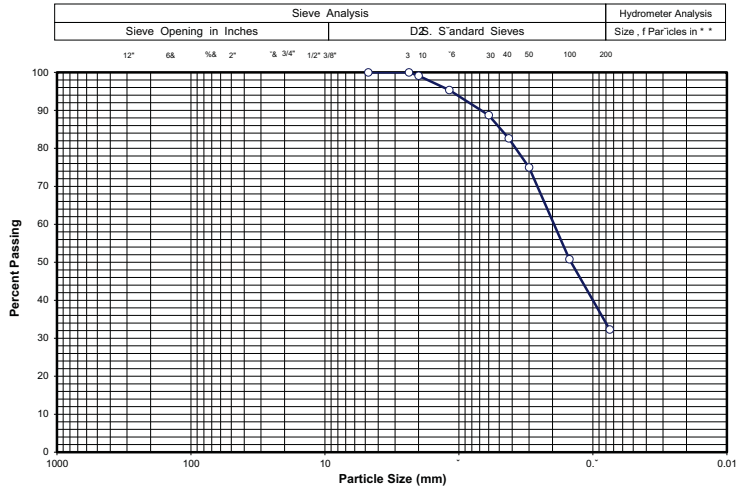
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
˜ ec"ed By:	˜ alvin		
Date:	04/16/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	AA
#40	3%
#200	32

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	63	,.:	1,	Sample ID:	; A-DO1$%
Fines (˝/	%2	,.7	1,	Sample Depth (ft.):	
Sample Descri+˜i, n:	A-2-4 (0) / SM				

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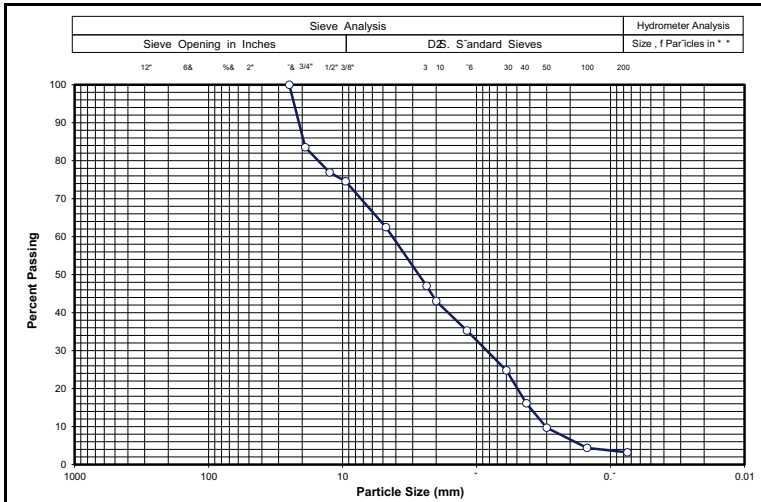
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
˜ ec"ed By:	˜ alvin		
Date:	04/16/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	100
¾ &	3
' &	
⅜&&	>
)	62
#10	%
#40	¯6
#200	%

= ravel (˝/	%3	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	>A	,.:	1,	Sample ID:	; A-DO1$%
Fines (˝/	%	,.7	1,	Sample Depth (ft.):	¯3
Sample Descri+˜i, n:	A-1-a (0) / ˆ,				

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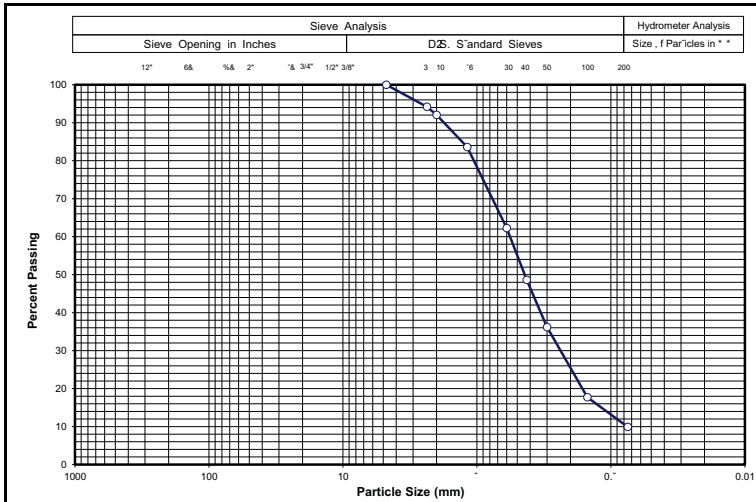
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
˜ ec"ed By:	˜ alvin		
Date:	04/16/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	92
#40	A
#200	10

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	90	,.:	1,	Sample ID:	; A-DO1$%
Fines (˝/	˜0	,.7	1,	Sample Depth (ft.):	%%
Sample Descri+˜i, n:	A-1-b (0) / SW-SM				

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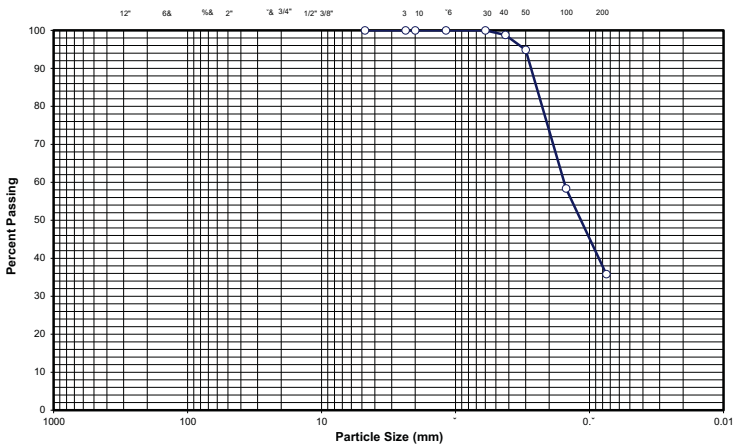
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
˜ ec"ed By:	˜ alvin		
Date:	04/16/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	AA
#200	%6

= ravel (˝/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	,.:	1,	Sample ID:	; A-DO1$%
Fines (˝/	%6	, 7	1,	Sample Depth (ft.):	3
Sample Descri+`i, n:	Bedr,! "				

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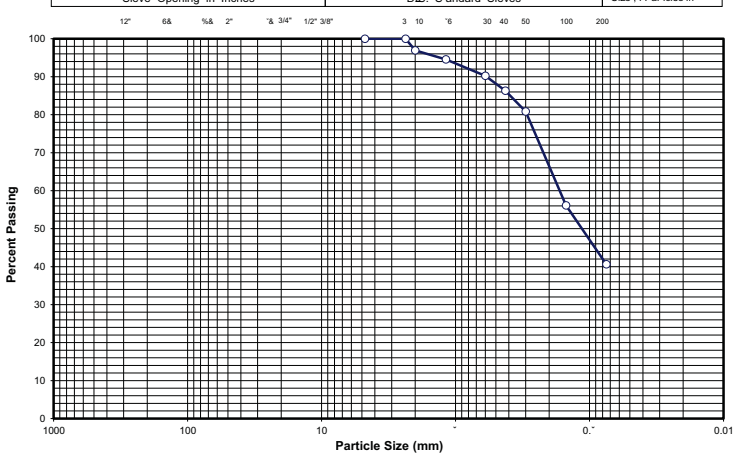
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
˜ ec" ed By:	˜ alvin		
Date:	04/16/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	3
⅜&&	3¯
)	66
#10	%
#40	¯>
#200	2

= ravel (˝/	%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	6	,.:	1,	Sample ID:	; A-DO1$
Fines (˝/	2	,7	1,	Sample Depth (ft.):	%
Sample Descri+`i, n:	A-1-a (0) / ^,				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
˜ ec" ed By:	˜ alvin		
Date:	04/16/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	A
#40	36
#200	˜

= ravel (˝/	0	::	%%	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	>A	,.:	¯6	Sample ID:	; A-DO1$
Fines (˝/	˜	, 7	˜	Sample Depth (ft.):	6
Sample Descri+`i, n:	A-6 (3) / ˜˜				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
˜ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	A>
)	3A
#10	72
#40	%
#200	>

= ravel (˝/	˜˜	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (˜ /	3	,.:	1,	Sample ID:	; A-DO1$
Fines (˝/	>	,7	1,	Sample Depth (ft.):	˜
Sample Descri+`i, n:	A-1-b (0) / ^,				

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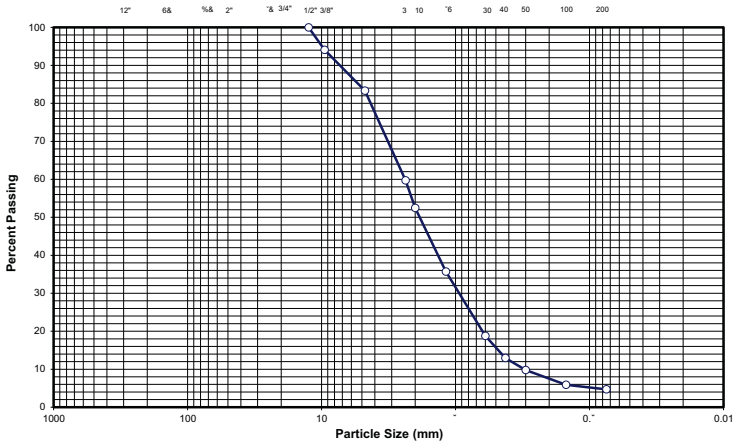
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
˜ ec" ed By:	˜ alvin		
Date:	04/16/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	A
)	3%
#10	52
#40	¯%
#200	>

= ravel ("/	¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3	¸:	1¸	Sample ID:	; A-DO1$
Fines ("/	>	¸7	1¸	Sample Depth (ft.):	29
Sample Descri+¯i, n:	A-1-b (0) / ¯E				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec" ed By:	Fere	Figure No.:	$
Date:	10/12/11		

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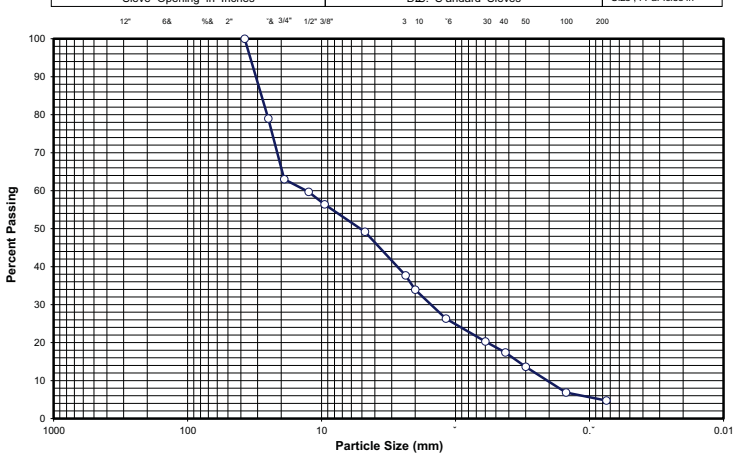
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	100
¯&	A
¾ &	6%
' &	60
⅜&&	>6
)	A
#10	%
#40	¯
#200	>

= ravel ("/	>¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /		¸:	1¸	Sample ID:	; A-DO1$>
Fines ("/	>	¸7	1¸	Sample Depth (ft.):	¯%
Sample Descri+¯i, n:	A-1-a (0) / =¸				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec" ed By:	¯ alvin	Figure No.:	$
Date:	04/24/14		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A3
⅜&&	A%
)	82
#10	>A
#40	20
#200	2

= ravel ("/	¯3	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	80	¸:	1¸	Sample ID:	; A-DO1$>
Fines ("/	2	¸7	1¸	Sample Depth (ft.):	%
Sample Descri+¯i, n:	A-1-b (0) / ˆ¸				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec" ed By:	¯ alvin	Figure No.:	$
Date:	04/24/14		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	33
#200	¯¯

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3A	¸:	1¸	Sample ID:	; A-DO1$>
Fines ("/	¯¯	¸7	1¸	Sample Depth (ft.):	23
Sample Descri+¯i, n:	A-2-4 (0) / SM				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec" ed By:	¯ alvin	Figure No.:	$
Date:	04/24/14		

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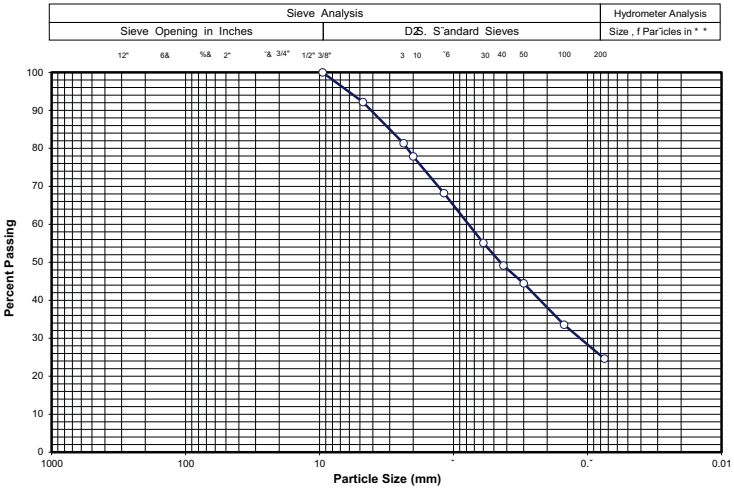

Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	92
#10	3
#40	A
#200	25

= ravel ("/	3	::	25	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6	¸.:	21	Sample ID:	; A-DO1$6
Fines ("/	2>	¸ 7		Sample Depth (ft.):	>
Sample Descri+¯i, n:	A-1-b (0) / SM-SC				

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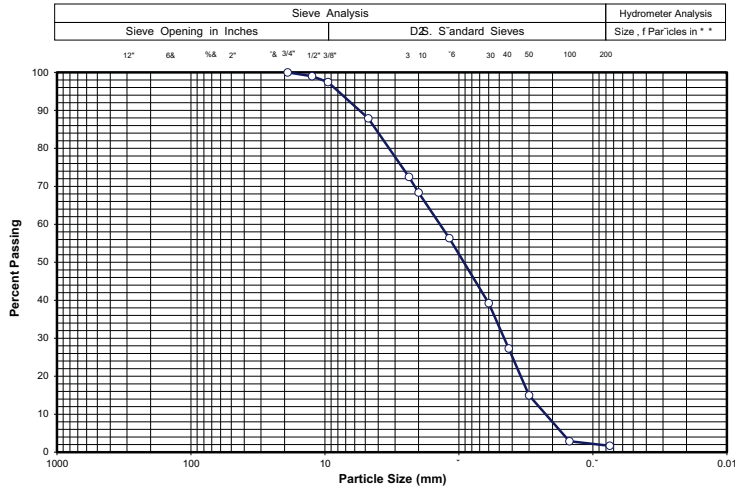
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec"ed By:	¯ alvin		
Date:	04/16/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	AA
⅜&&	A
)	33
#10	63
#40	27
#200	2

= ravel ("/	12	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	36	¸.:	1¸	Sample ID:	; A-DO1$
Fines ("/	2	¸7	1¸	Sample Depth (ft.):	
Sample Descri+¯i, n:	A-1-b (0) / ^¸				

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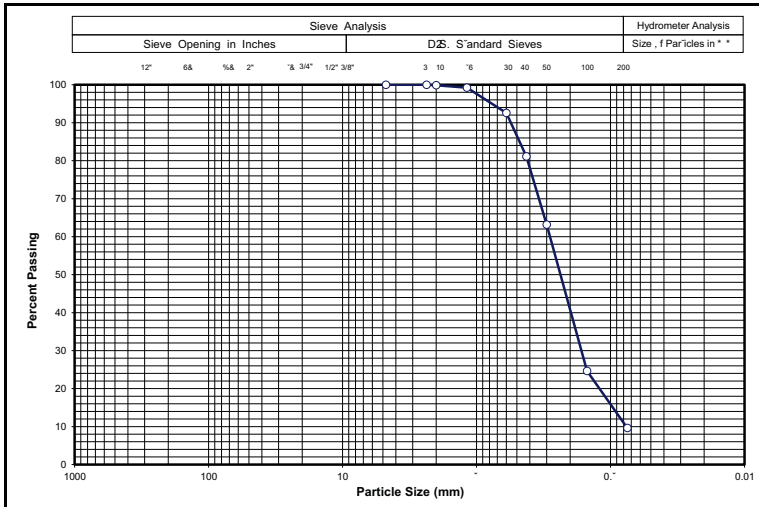
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec"ed By:	¯ alvin		
Date:	04/24/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3¯
#200	10

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	90	¸.:	1¸	Sample ID:	; A-DO1$
Fines ("/	¯0	¸ 7	1¸	Sample Depth (ft.):	10
Sample Descri+¯i, n:	A-3 (0) / SP-SM				

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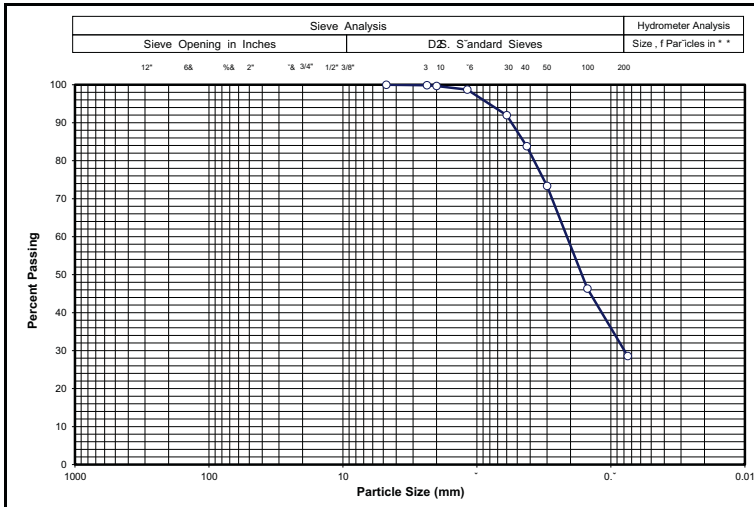
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec"ed By:	¯ alvin		
Date:	04/24/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	3
#200	29

= ravel ("/	0	::	32	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	¯	¸.:	¯3	Sample ID:	; A-DO1$
Fines ("/	2A	¸ 7	¯	Sample Depth (ft.):	¯>
Sample Descri+¯i, n:	A-2-6 (0) / ¯¯				

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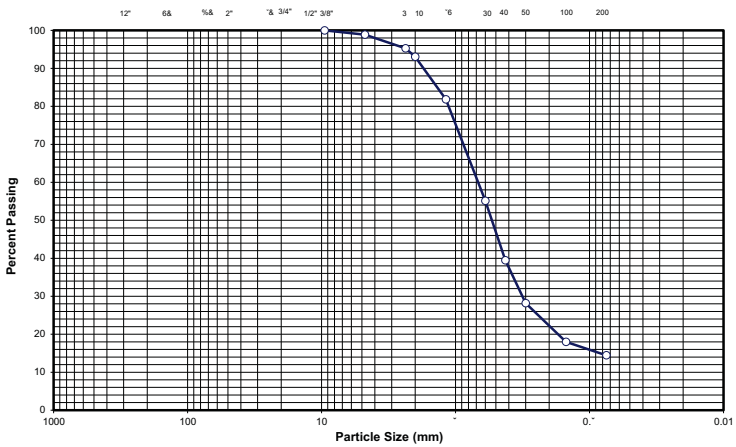
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec"ed By:	¯ alvin		
Date:	04/24/14	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par¯icles in * *



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	AA
#10	A%
#40	%A
#200	¯

= ravel (¯/	¯	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3>	¸:	1¸	Sample ID:	; A-DO1$
Fines (¯/	¯	¸7	1¸	Sample Depth (ft.):	20
Sample Descri+¯i, n:	A-1-b (0) / SM				

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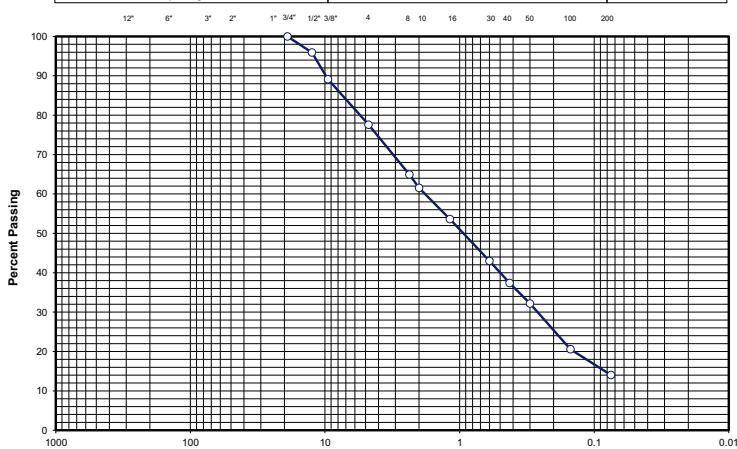
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec"ed By:	¯ alvin	Figure No.:	$
Date:	04/24/14		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A6
⅜&&	3A
)	3
#10	62
#40	%
#200	¯

= ravel (¯/	22	::	25	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	6	¸:	¯>	Sample ID:	; A-DO1$3
Fines (¯/	¯	¸7	¯0	Sample Depth (ft.):	2
Sample Descri+¯i, n:	A-2-4 / SC				

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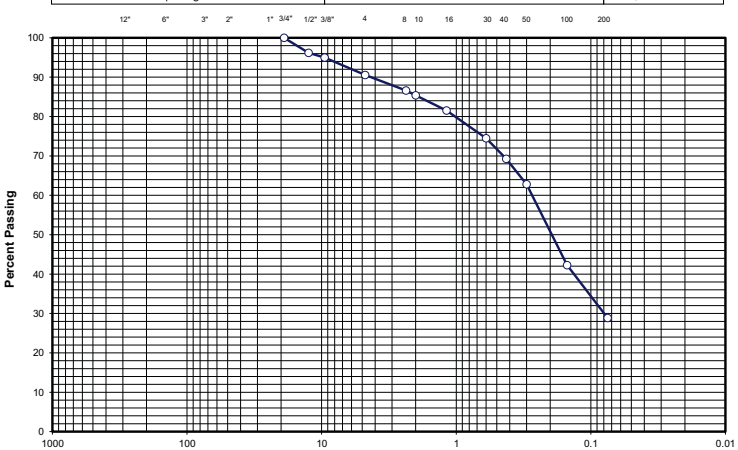
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec"ed By:	¯ alvin	Figure No.:	$
Date:	04/24/14		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A6
⅜&&	A>
)	A¯
#10	3>
#40	6A
#200	29

= ravel (¯/	A	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	62	¸:	1¸	Sample ID:	; A-DO1$3
Fines (¯/	2A	¸7	1¸	Sample Depth (ft.):	>
Sample Descri+¯i, n:	A-2-4 (0) / SM				

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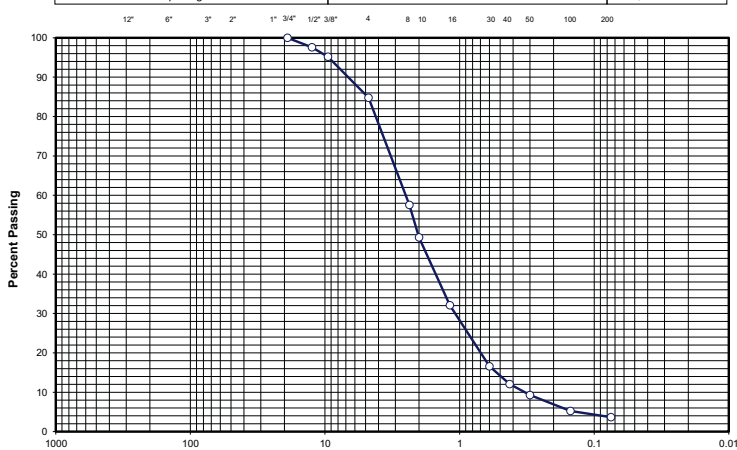
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec"ed By:	¯ alvin	Figure No.:	$
Date:	04/24/14		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. Standard Sieves | Size , f Par¯icles in * *



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	100
' &	A3
⅜&&	A>
)	3>
#10	A
#40	12
#200	

= ravel (¯/	¯>	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¯ /	3¯	¸:	1¸	Sample ID:	; A-DO1$3
Fines (¯/		¸7	1¸	Sample Depth (ft.):	20
Sample Descri+¯i, n:	A-1-a .0) / ¯ E				

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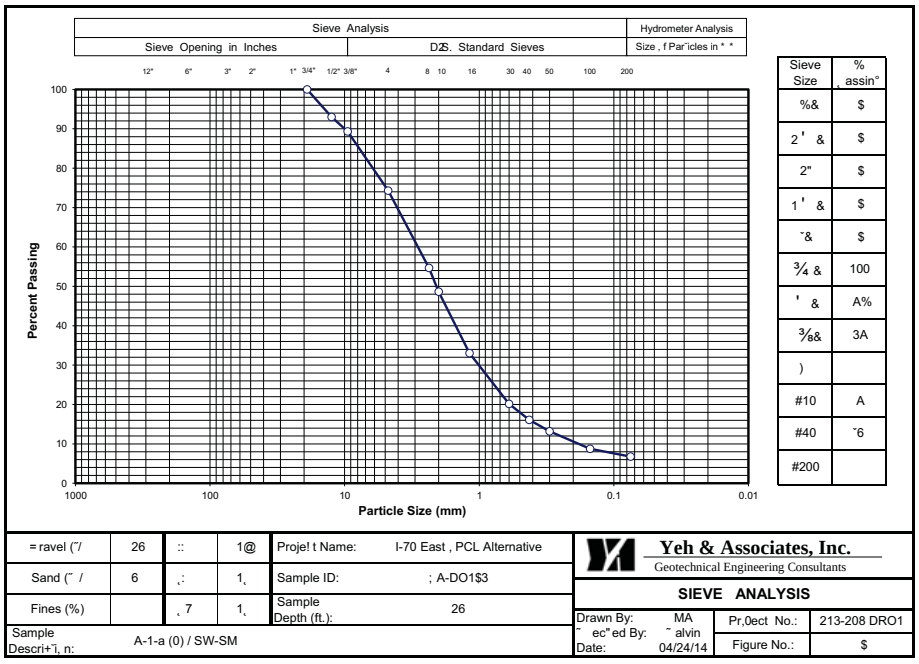
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¯ ec"ed By:	¯ alvin	Figure No.:	$
Date:	04/24/14		

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	A%
⅜&	3A
)	
#10	A
#40	¨6
#200	

= ravel ("/	26	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	6	¸:	1¸	Sample ID:	; A-DO1$3
Fines (%)		¸ 7	1¸	Sample Depth (ft.):	26
Sample Descri+¨i, n:	A-1-a (0) / SW-SM				

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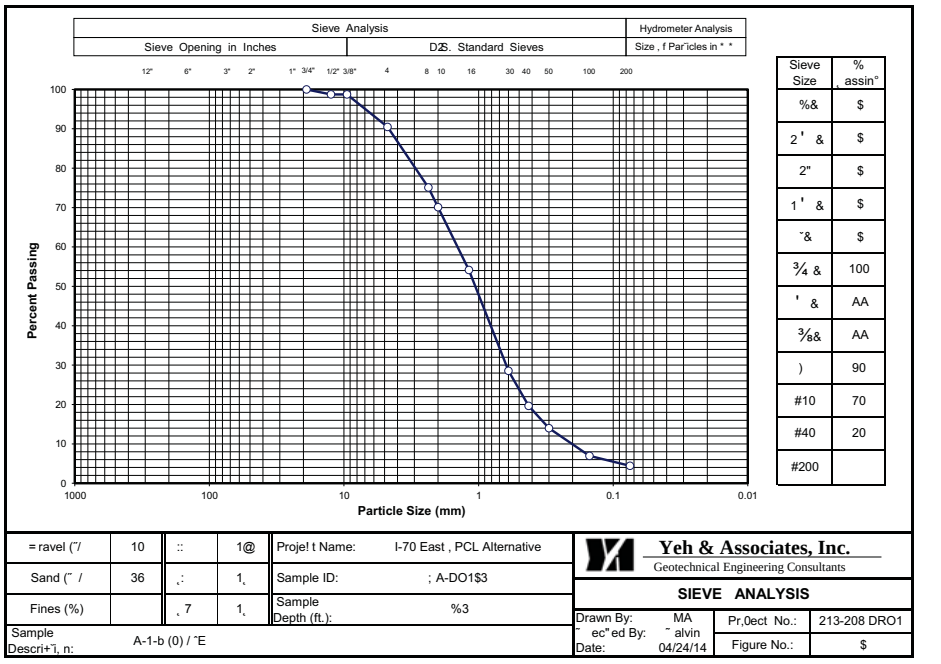
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¨ ec" ed By:	¨ alvin		
Date:	04/24/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	AA
⅜&	AA
)	90
#10	70
#40	20
#200	

= ravel ("/	10	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	36	¸:	1¸	Sample ID:	; A-DO1$3
Fines (%)		¸ 7	1¸	Sample Depth (ft.):	%3
Sample Descri+¨i, n:	A-1-b (0) / ¨E				

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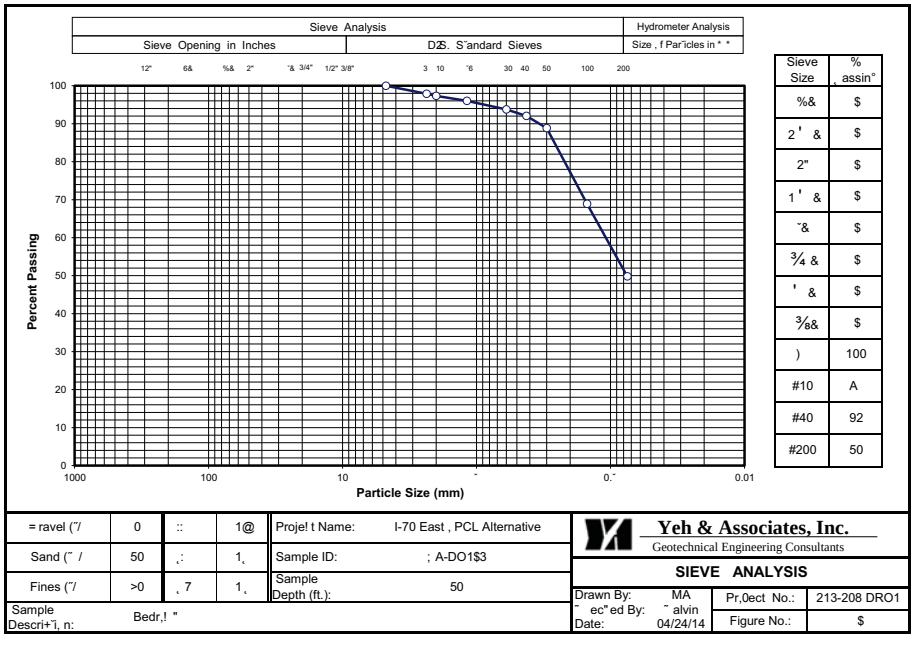
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¨ ec" ed By:	¨ alvin		
Date:	04/24/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&	$
)	100
#10	A
#40	92
#200	50

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	50	¸:	1¸	Sample ID:	; A-DO1$3
Fines ("/	>0	¸ 7	1¸	Sample Depth (ft.):	50
Sample Descri+¨i, n:	Bedr,! "				

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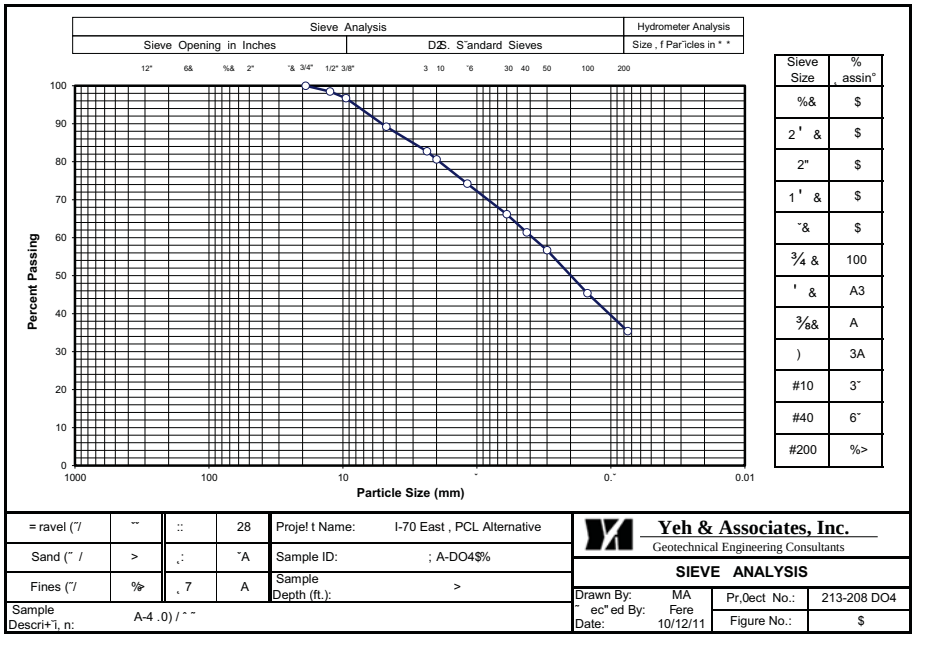
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DRO1
¨ ec" ed By:	¨ alvin		
Date:	04/24/14	Figure No.:	$

Revised 04/27/2004



Sieve Size	% ¸assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	100
' &	A3
⅜&	A
)	3A
#10	3¨
#40	6¨
#200	%>

= ravel ("/	¨¨	::	28	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>	¸:	¨A	Sample ID:	; A-DO4$%
Fines ("/	%>	¸ 7	A	Sample Depth (ft.):	>
Sample Descri+¨i, n:	A-4 .0) / ^ ¨				

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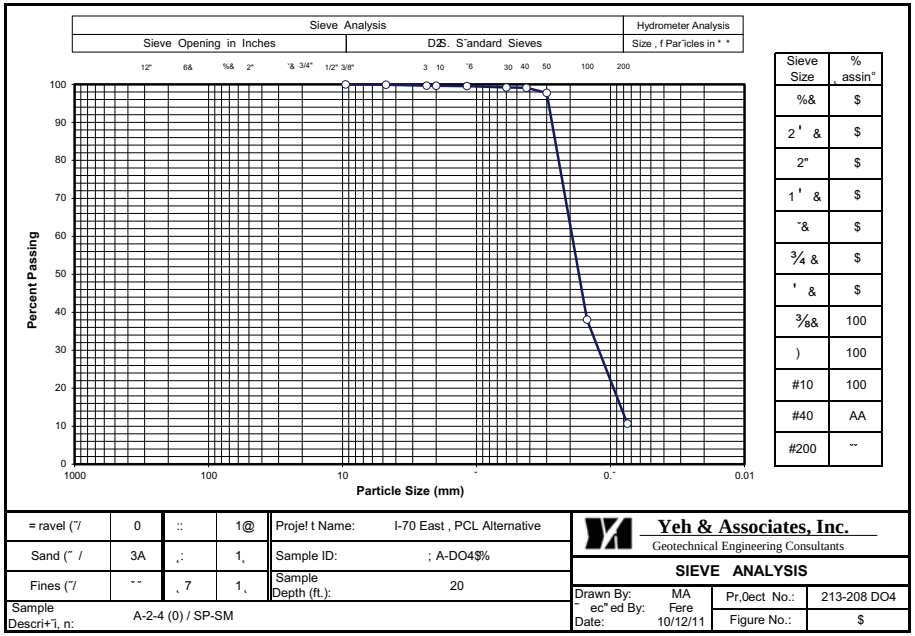
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DO4
¨ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	100
#40	AA
#200	¨¨

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	3A	¸:	1¸	Sample ID:	; A-DO4$%
Fines ("/	¯¯	¸ 7	1¸	Sample Depth (ft.):	20
Sample Descri+¯i, n:	A-2-4 (0) / SP-SM				

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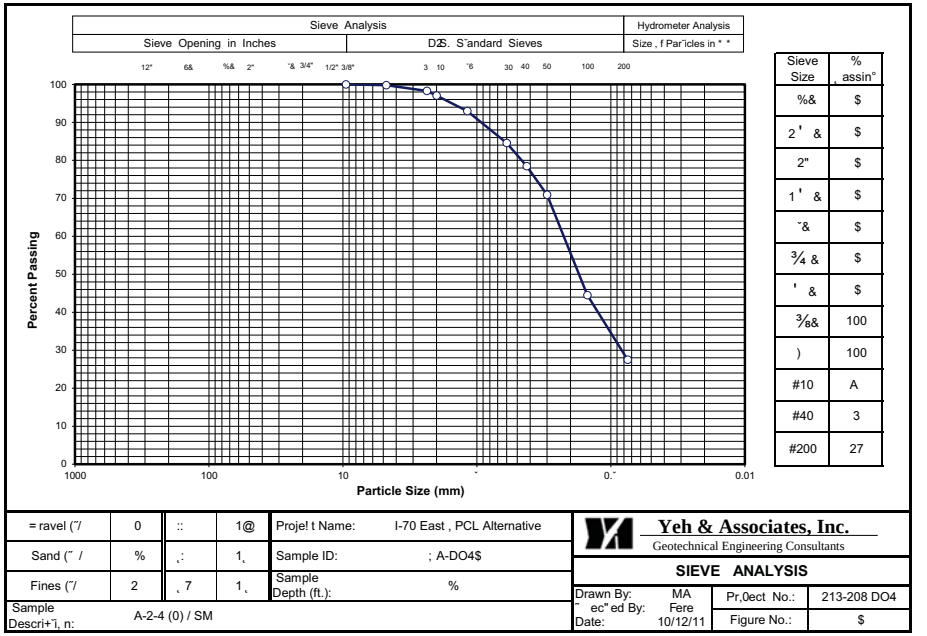
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DO4
¨ ec" ed By:	Fere	Figure No.:	$
Date:	10/12/11		

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	$
⅜&&	100
)	100
#10	A
#40	3
#200	27

= ravel ("/	0	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	%	¸:	1¸	Sample ID:	; A-DO4$
Fines ("/	2	¸ 7	1¸	Sample Depth (ft.):	%
Sample Descri+¯i, n:	A-2-4 (0) / SM				

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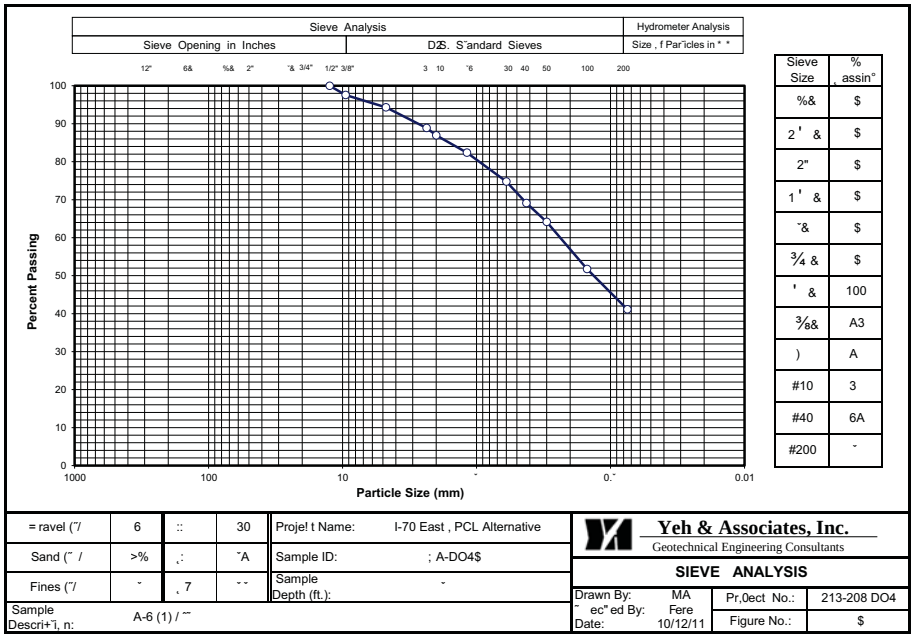
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DO4
¨ ec" ed By:	Fere	Figure No.:	$
Date:	10/12/11		

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¯&	$
¾ &	$
' &	100
⅜&&	A3
)	A
#10	3
#40	6A
#200	¯

= ravel ("/	6	::	30	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>%	¸:	¯A	Sample ID:	; A-DO4$
Fines ("/	¯	¸ 7	¯¯	Sample Depth (ft.):	¯
Sample Descri+¯i, n:	A-6 (1) / ¨¨				

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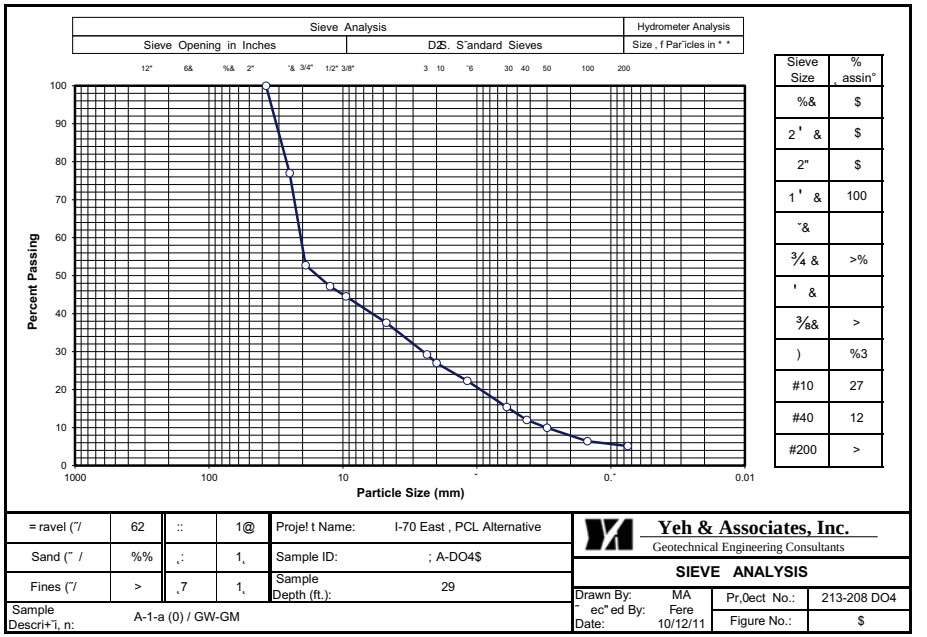
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DO4
¨ ec" ed By:	Fere	Figure No.:	$
Date:	10/12/11		

Revised 04/27/2004



Sieve Size	% , assin°
%&	$
2 ' &	$
2"	$
1 ' &	100
¯&	
¾ &	>%
' &	
⅜&&	>
)	%3
#10	27
#40	12
#200	>

= ravel ("/	62	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	%%	¸:	1¸	Sample ID:	; A-DO4$
Fines ("/	>	¸7	1¸	Sample Depth (ft.):	29
Sample Descri+¯i, n:	A-1-a (0) / GW-GM				

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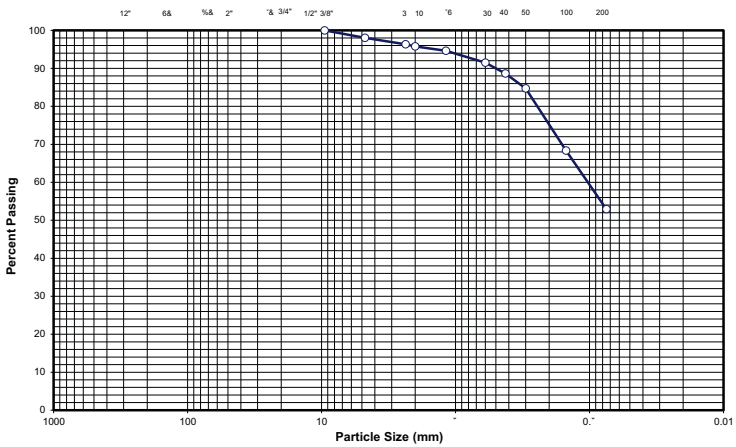
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DO4
¨ ec" ed By:	Fere	Figure No.:	$
Date:	10/12/11		

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	100
)	A3
#10	A6
#40	3A
#200	>%

= ravel ("/	2	::	>>	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	>	,.:	20	Sample ID:	; A-DO4$>
Fines ("/	>%	, 7	%>	Sample Depth (ft.):	2
Sample Descri+ī, n:	A-7-6 (14) / CH				

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SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DO4
¨ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

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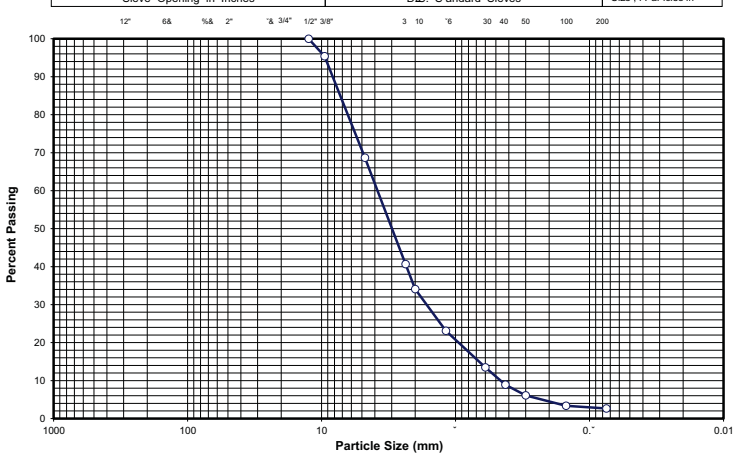
Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&&	A>
)	6A
#10	%
#40	A
#200	%

= ravel ("/	%¨	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	66	,.:	1,	Sample ID:	; A-DO4$>
Fines ("/	%	,7	1,	Sample Depth (ft.):	¨3
Sample Descri+ī, n:	A-1-a (0) / ¨E				

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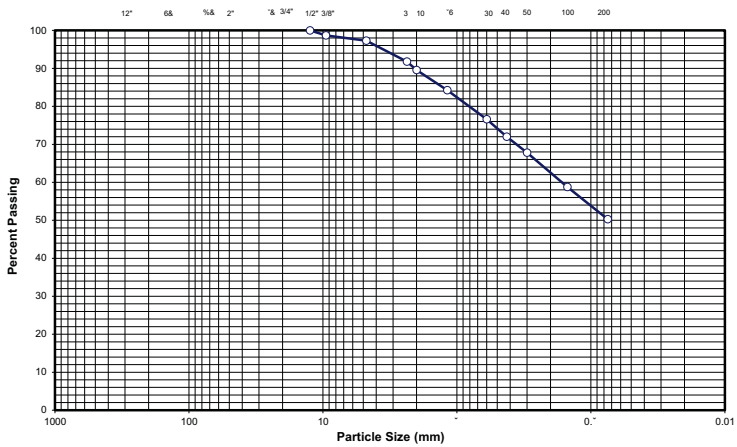
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DO4
¨ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	100
⅜&&	AA
)	A
#10	90
#40	72
#200	50

= ravel ("/	%	::	30	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /		,.:	¨>	Sample ID:	; A-DO4$>
Fines ("/	>0	, 7	¨ >	Sample Depth (ft.):	¨%
Sample Descri+ī, n:	A-6 .4) / ¨ :				

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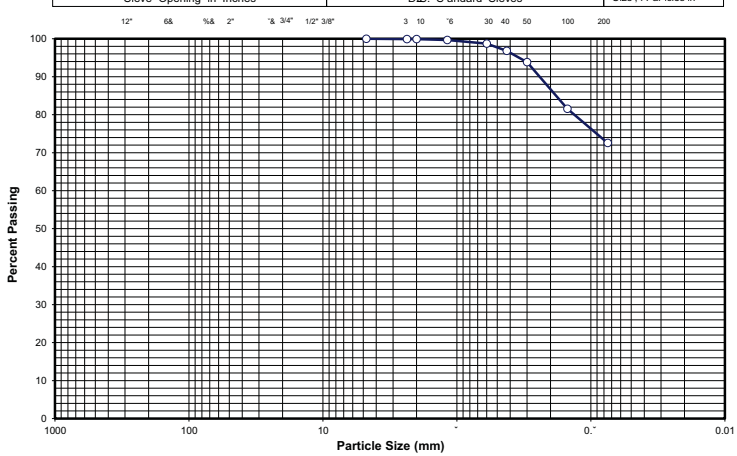
SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DO4
¨ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004

Sieve Analysis | Hydrometer Analysis

Sieve Opening in Inches | D2S. S`andard Sieves | Size , f Par`icles in * *



Sieve Size	% ,assin°
%&	$
2 ' &	$
2"	$
1 ' &	$
¨&	$
¾ &	$
' &	$
⅜&&	$
)	100
#10	100
#40	A
#200	%

= ravel ("/	0	::	>6	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	27	,.:	22	Sample ID:	; A-DO4$>
Fines ("/	%	, 7	%	Sample Depth (ft.):	28
Sample Descri+ī, n:	A-7-6 (24) / CH				

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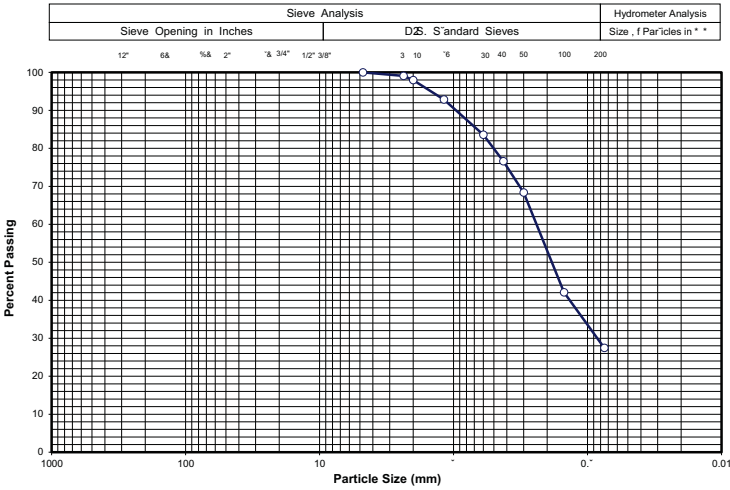
Geotechnical Engineering Consultants

SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DO4
¨ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004



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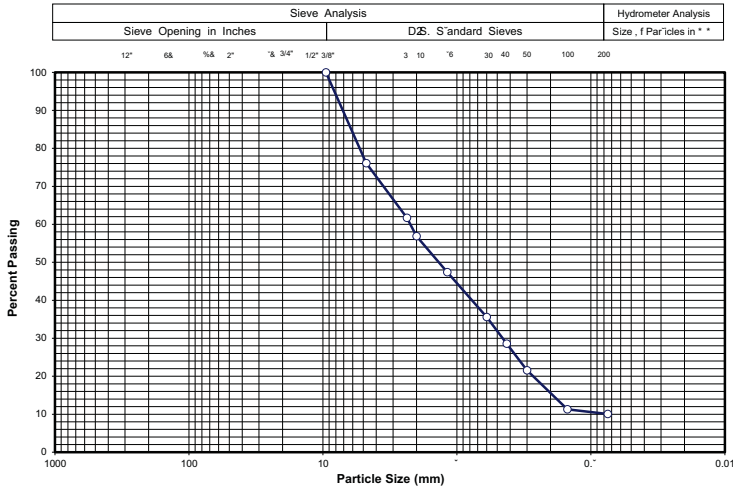
Fines ("/	2	¸7	1¸	Sample Depth (ft.):	%
Sample Descri+¨i, n:	A-2-4 (0) / SM				

Yeh & Associates, Inc.
Geotechnical Engineering Consultants

SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DO4
¨ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004



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)	6
#10	>
#40	29
#200	10

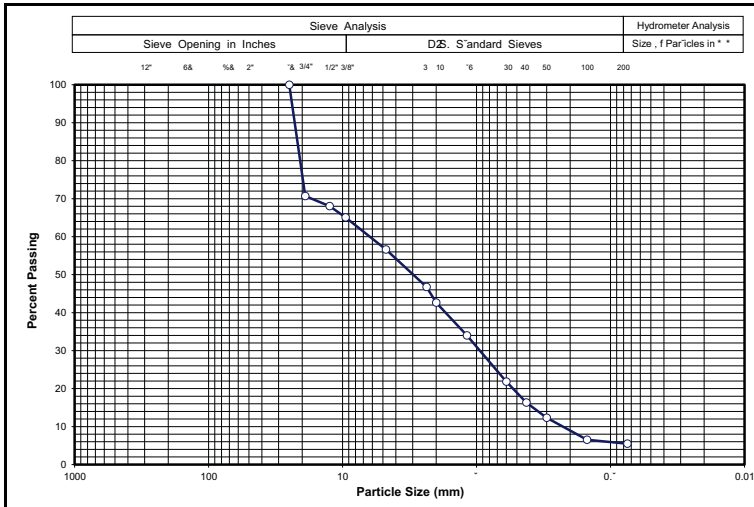
= ravel ("/	24	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	66	¸:	1¸	Sample ID:	; A-DO4$6
Fines ("/	¨0	¸7	1¸	Sample Depth (ft.):	¨
Sample Descri+¨i, n:	A-1-b (0) /SW-SM				

Yeh & Associates, Inc.
Geotechnical Engineering Consultants

SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DO4
¨ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004



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#10	%
#40	¨6
#200	>

= ravel ("/	%	::	1@	Proje! t Name:	I-70 East , PCL Alternative
Sand (¨ /	52	¸:	1¸	Sample ID:	; A-DO4$6
Fines ("/	>	¸7	1¸	Sample Depth (ft.):	29
Sample Descri+¨i, n:	A-1-a (0) / SP-SM				

Yeh & Associates, Inc.
Geotechnical Engineering Consultants

SIEVE ANALYSIS

Drawn By:	MA	Pr,0ect No.:	213-208 DO4
¨ ec" ed By:	Fere		
Date:	10/12/11	Figure No.:	$

Revised 04/27/2004

Appendix D.1

Pavement Shoulder Boring Logs and Laboratory Test Results

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-EB-LS-2204+00**

Boring Began: 5/12/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/12/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 6.0 ft
Ground Elevation: Est. Elev. to be added
Location: EB-LS-2204+00, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.6 ft. 7" ASPHALT.	
								0.6 - 1.3 ft. 8" CONCRETE.	
								1.3 - 2.1 ft. 10" BASE COURSE.	
								2.1 - 6.0 ft. clayey SAND FILL with some gravel, silty SAND interbeds, brown, loose to medium dense, rust stained.	**Bulk Sample @ 2.1-5 ft** #200= 28 % LL= 27 PL= 11 PI= 16 pH= 7.4 S= 0.008 % Chl= 0.097 % Re= 420 ohms-cm AASHTO: A-2-6 (0) USCS: SC **CA Sample @ 3 ft** MC= 10.8 % DD= 121.2 pcf #200= 31 % LL= NV PL= NP PI= NP S/C= -0.3 % AASHTO: A-2-4 (0) USCS: SM
					3/13	16			
	5				3/3	6			
								Bottom of Hole at 6.0 ft.	
	10								
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-EB-LS-2256+80**

Boring Began: 5/12/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/12/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 11.0 ft
Ground Elevation: Est. Elev. to be added
Location: EB-LS-2256+80, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	0							**0.0 - 1.3 ft. 15.25" ASPHALT**.	Pavement cored
								1.3 - 5.0 ft. clayey SAND FILL, dark brown, medium dense.	**Bulk Sample @ 2-5 ft** #200= 46 % LL= 28 PL= 13 PI= 15 AASHTO: A-6 (3) USCS: SC
					5/10	15			
	5				4/6	10		**5.0 - 11.0 ft. silty SAND FILL**, brown, loose.	**CA Sample @ 5 ft** MC= 6.9 % DD= 110.5 pcf #200= 20 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	10				1/2	3		Bottom of Hole at 11.0 ft.	**CA Sample @ 10 ft** MC= 8.7 % DD= 116.0 pcf
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-EB-LS-2309+60**

Boring Began: 5/12/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/12/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 6.0 ft
Ground Elevation: Est. Elev. to be added
Location: EB-LS-2309+60, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 1.2 ft. 14.75" ASPHALT.	Pavement cored
								1.2 - 6.0 ft. silty SAND FILL, brown, medium dense.	**Bulk Sample @ 1.2-5 ft** #200= 22 % LL= NV PL= NP PI= NP pH= 7.7 S= 0.012 % Chl= 0.0337 % R-Value= 58 Re= 852 ohms-cm AASHTO: A-2-4 (0) USCS: SM
					9/11	20			
	5				7/9	16			
								Bottom of Hole at 6.0 ft.	**CA Sample @ 2 ft** MC= 9.1 % DD= 116.9 pcf #200= 17 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	10								
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-EB-LS-2362+40**

Boring Began: 5/12/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/12/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 11.0 ft
Ground Elevation: Est. Elev. to be added
Location: EB-LS-2362+40, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 1.0 ft. 12.5" ASPHALT.	Pavement cored
								1.0 - 2.8 ft. 21" BASE COURSE.	
					12/17	29		**2.8 - 5.0 ft. clayey SAND FILL**, light brown to brown, medium dense.	**Bulk Sample @ 3-5 ft** #200= 30 % LL= 25 PL= 15 PI= 10 AASHTO: A-2-4 (0) USCS: SC
	5				9/15	24		**5.0 - 11.0 ft. silty SAND FILL**, brown, medium dense.	**CA Sample @ 5 ft** MC= 11.1 % DD= 121.3 pcf #200= 17 % LL= NV PL= NP PI= NP AASHTO: A-1-b (0) USCS: SM
	10				7/12	19		Bottom of Hole at 11.0 ft.	**CA Sample @ 10 ft** MC= 11.2 % DD= 115.0 pcf
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-EB-LS-2415+20**

Boring Began: 5/12/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/12/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 5.0 ft
Ground Elevation: Est. Elev. to be added
Location: EB-LS-2415+20, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	0							**0.0 - 0.8 ft. 10" CONCRETE**.	Pavement cored
								0.8 - 0.9 ft. 1.5" VOID.	**Bulk Sample @ 1-5 ft**
								0.9 - 5.0 ft. clayey GRAVEL FILL with sand, brown, medium stiff.	#200= 24 % LL= 26 PL= 16 PI= 10 AASHTO: A-2-4 (0) USCS: GC
					7/8	15			**CA Sample @ 3 ft**
	5							Bottom of Hole at 5.0 ft.	MC= 9.7 % DD= 119.8 pcf #200= 33 % LL= 27 PL= 17 PI= 10 S/C= -0.5 % AASHTO: A-2-4 (0) USCS: SC
	10								
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-EB-LS-2490+50**

Boring Began: 5/12/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/12/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 11.0 ft
Ground Elevation: Est. Elev. to be added
Location: EB-LS-2490+50, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 1.1 ft. 12.75" CONCRETE.	
								1.1 - 5.0 ft. clayey SAND FILL with silt, brown, medium dense.	**Bulk Sample @ 2-5 ft** #200= 37 % LL= 22 PL= 14 PI= 8 pH= 7.8 S= 0.007 % Chl= 0.033 % Re= 731 ohms-cm AASHTO: A-4 (0) USCS: SC
					13/11	24			
	5				5/4	9		**5.0 - 6.0 ft. silty SAND**, light brown to brown, loose.	**CA Sample @ 3 ft** MC= 8.8 % DD= 121.5 pcf
								6.0 - 11.0 ft. clayey SAND with silt, brown to yellowish brown, loose, calcareous.	**CA Sample @ 5 ft** MC= 5.4 % DD= 109.9 pcf #200= 17 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	10				3/4	7			**Bulk Sample @ 5-10 ft** #200= 46 % LL= 22 PL= 15 PI= 7 AASHTO: A-4 (0) USCS: SM-SC
								Bottom of Hole at 11.0 ft.	**CA Sample @ 10 ft** MC= 17.7 % DD= 98.5 pcf
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-EB-RS-2230+40**

Boring Began: 5/14/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/14/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 11.0 ft
Ground Elevation: Est. Elev. to be added
Location: EB-RS-2230+40, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.4 ft. 5" ASPHALT.	Pavement cored
								0.4 - 1.1 ft. 8.75" CONCRETE.	
								1.1 - 11.0 ft. clayey SAND FILL with some gravel, brown, loose, calcareous.	**Bulk Sample @ 2-5 ft** #200= 49 % LL= 32 PL= 13 PI= 19 R-Value= 27 AASHTO: A-6 (5) USCS: SC
					4/6	10			**CA Sample @ 5 ft** MC= 14.1 % DD= 120.6 pcf #200= 48 % LL= 31 PL= 15 PI= 16 AASHTO: A-6 (4) USCS: SC
	5				2/2	4			**CA Sample @ 10 ft** MC= 3.4 % DD= 95.7 pcf
	10				3/5	8		Bottom of Hole at 11.0 ft.	
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-EB-RS-2270+00**

Boring Began: 5/14/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/14/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 6.0 ft
Ground Elevation: Est. Elev. to be added
Location: EB-RS-2270+00, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 1.2 ft. 13.75" ASPHALT.	
								1.2 - 6.0 ft. silty SAND and clayey SAND FILL, light brown to brown, medium dense.	**Bulk Sample @ 1.1-5 ft** #200= 35 % LL= 22 PL= 15 PI= 7 pH= 8.4 S= 0.012 % Chl= 0.0185 % Re= 1202 ohms-cm **CA Sample @ 2 ft** MC= 7.3 % DD= 121.0 pcf #200= 13 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
					10/14	24			
	5				8/10	18			
								Bottom of Hole at 6.0 ft.	
	10								
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-EB-RS-2336+00**

Boring Began: 5/14/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/14/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 11.0 ft
Ground Elevation: Est. Elev. to be added
Location: EB-RS-2336+00, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.9 ft. 11.25" ASPHALT.	
								0.9 - 11.0 ft. silty SAND FILL, brown to dark brown, loose to medium dense.	**Bulk Sample @ 0.9-5 ft** #200= 25 % LL= NV PL= NP PI= NP pH= 7.3 S= 0.004 % Chl= 0.043 % Re= 779 ohms-cm AASHTO: A-2-4 (0) USCS: SM **CA Sample @ 2 ft** MC= 7.9 % DD= 114.0 pcf #200= 10 % LL= NV PL= NP PI= NP S/C= -0.5 % AASHTO: A-2-4 (0) USCS: SM **CA Sample @ 10 ft** MC= 4.7 % DD= 112.3 pcf
					7/9	16			
	5				9/18	27			
	10				4/5	9			
								Bottom of Hole at 11.0 ft.	
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-EB-RS-2388+80**

Boring Began: 5/14/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/14/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 6.0 ft
Ground Elevation: Est. Elev. to be added
Location: EB-RS-2388+80, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 1.1 ft. 13.75" CONCRETE.	
								1.1 - 5.0 ft. clayey SAND FILL, light brown to brown, medium dense.	
					14/21	35			**CA Sample @ 2 ft** MC= 8.3 % DD= 123.0 pcf **Bulk Sample @ 2-5 ft** #200= 28 % LL= 25 PL= 14 PI= 11 AASHTO: A-2-6 (0) USCS: SC
	5				9/14	23		**5.0 - 6.0 ft. silty SAND FILL**, brown, medium dense.	**CA Sample @ 5 ft** MC= 10.6 % DD= 121.2 pcf #200= 27 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
								Bottom of Hole at 6.0 ft.	
	10								
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1

Project No.: 213-208B — Boring: **YA-EB-RS-2441+60**

Boring Began: 5/14/2015
Completed: 5/14/2015
Total Depth: 11.0 ft
Drilling Method: Solid-Stem Auger (4" OD)
Drill Bit:
Ground Elevation: Est. Elev. to be added
Drill: CME 75, Automatic Hammer
Casing:
Location: EB-RS-2441+60, Est. Coord. to be added
Driller: CDOT
Weather: Clear
Coordinates: N: E:
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 1.1 ft. 13.75" CONCRETE.	
								1.1 - 11.0 ft. sandy CLAY with some gravel, brown to dark brown, medium stiff.	**Bulk Sample @ 1.1-5 ft** #200= 53 % LL= 28 PL= 13 PI= 15 pH= 7.8 S= 0.005 % Chl= 0.0353 % Re= 646 ohms-cm AASHTO: A-6 (4) USCS: CL **CA Sample @ 2 ft** MC= 14.2 % DD= 118.4 pcf #200= 55 % LL= 34 PL= 14 PI= 20 S/C= 0.3 % AASHTO: A-6 (7) USCS: CL **CA Sample @ 5 ft** MC= 19.2 % DD= 110.6 pcf #200= 86 % LL= 35 PL= 17 PI= 18 AASHTO: A-6 (15) USCS: CL **CA Sample @ 10 ft** MC= 11.8 % DD= 116.3 pcf
					3/1	4			
	5				2/3	5			
	10				5/6	11			
								Bottom of Hole at 11.0 ft.	
	15								
	20								
	25								
	30								

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Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-EB-RS-2488+00**

Boring Began: 5/14/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/14/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 6.0 ft
Ground Elevation: Est. Elev. to be added
Location: EB-RS-2488+00, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 1.0 ft. 11.75" CONCRETE.	
								1.0 - 6.0 ft. silty SAND FILL with some gravel, light brown to brown, loose.	**CA Sample @ 2 ft** MC= 5.6 % DD= 115.7 pcf #200= 18 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM **Bulk Sample @ 2-5 ft** #200= 26 % LL= NV PL= NP PI= NP R-Value= 53 AASHTO: A-2-4 (0) USCS: SM
					2/5	7			
	5				4/4	8			
								Bottom of Hole at 6.0 ft.	
	10								
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-WB-LS-2227+00**

Boring Began: 5/12/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/12/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 6.0 ft
Ground Elevation: Est. Elev. to be added
Location: WB-LS-2227+00, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	0							**0.0 - 1.3 ft. 15" ASPHALT**.	Asphalt core sample is missing 4.5" due to layer of poor asphalt **Bulk Sample @ 1.3-5 ft** #200= 28 % LL= 26 PL= 14 PI= 12 pH= 8.1 S= 0.005 % Chl= 0.0144 % R-Value= 34 Re= 1608 ohms-cm AASHTO: A-2-6 (0) USCS: SC **CA Sample @ 5 ft** MC= 15.1 % DD= 112.5 pcf #200= 44 % LL= 34 PL= 15 PI= 19 S/C= -0.3 % AASHTO: A-6 (4) USCS: SC
	1							**1.3 - 4.0 ft. clayey SAND FILL**, brown, loose.	
	2				5/6	11			
	3								
	4							**4.0 - 6.0 ft. clayey SAND**, brown, loose, rust stained.	
	5				2/3	5			
	6							Bottom of Hole at 6.0 ft.	
	10								
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-WB-LS-2279+80**

Boring Began: 5/12/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/12/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 11.0 ft
Ground Elevation: Est. Elev. to be added
Location: WB-LS-2279+80, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 1.3 ft. 15" ASPHALT.	Asphalt core sample is missing 4.75" due to layer of poor asphalt
					5/4	9		**1.3 - 11.0 ft. silty SAND FILL** with some gravel, grading with more silt with depth, brown to yellowish brown, loose.	**CA Sample @ 2 ft** MC= 8.6 % DD= 109.2 pcf #200= 19 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	5				3/4	7			**Bulk Sample @ 2-5 ft** #200= 23 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	10				3/5	8			**CA Sample @ 5 ft** MC= 12 % DD= 109.2 pcf #200= 42 % LL= NV PL= NP PI= NP AASHTO: A-4 (0) USCS: SM
								Bottom of Hole at 11.0 ft.	
	15								
	20								
	25								
	30								

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Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-WB-LS-2332+60**

Boring Began: 5/12/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/12/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 6.0 ft
Ground Elevation: Est. Elev. to be added
Location: WB-LS-2332+60, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 1.6 ft. 18.75" ASPHALT.	Asphalt core sample is missing 1.75" due to layer of poor asphalt **CA Sample @ 2 ft** MC= 9.4 % DD= 115.8 pcf #200= 14 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM **Bulk Sample @ 2-5 ft** #200= 23 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
					5/8	13		**1.6 - 6.0 ft. silty SAND FILL**, light brown to dark brown, medium dense to dense.	
	5				24/30	54		Bottom of Hole at 6.0 ft.	
	10								
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-WB-LS-2385+40**

Boring Began: 5/12/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/12/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 11.0 ft
Ground Elevation: Est. Elev. to be added
Location: WB-LS-2385+40, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.7 ft. a8.5" CONCRETE**.**	Pavement cored
								0.7 - 11.0 ft. clayey SAND FILL, light brown to dark brown, loose to medium dense, contains asphalt pieces.	**Bulk Sample @ 0.7-5 ft**
					4/10	14			#200= 32 %
									LL= 25
									PL= 17
									PI= 8
									pH= 8.2
	5								S= 0.017 %
					4/7	11			Chl= 0.022 %
									Re= 971 ohms-cm
									AASHTO: A-2-4 (0)
									USCS: SC
									CA Sample @ 5 ft
									MC= 13 %
									DD= 117.1 pcf
									#200= 41 %
	10								LL= 32
					4/7	11			PL= 14
									PI= 18
								Bottom of Hole at 11.0 ft.	AASHTO: A-6 (3)
									USCS: SC
									CA Sample @10 ft
									MC= 12.5 %
									DD= 114.6 pcf
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-WB-LS-2438+20**

Boring Began: 5/12/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/12/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 6.0 ft
Ground Elevation: Est. Elev. to be added
Location: WB-LS-2438+20, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	0							**0.0 - 0.8 ft. 9.5" CONCRETE**.	Pavement cored
								0.8 - 6.0 ft. silty SAND FILL, light brown, medium dense.	
					6/10	16			**CA Sample @ 2 ft** MC= 10.7 % DD= 118.0 pcf #200= 34 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	5				4/6	10		Bottom of Hole at 6.0 ft.	**Bulk Sample @ 2-5** #200= 33 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
	10								
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-WB-RS-2204+00**

Boring Began: 5/15/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/15/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 11.0 ft
Ground Elevation: Est. Elev. to be added
Location: WB-RS-2204+00, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 0.4 ft. 5.5" ASPHALT.	
								0.4 - 1.1 ft. 8" CONCRETE.	
								1.1 - 3.0 ft. silty SAND FILL, dark brown, loose.	**CA Sample @ 2 ft**
					4/6	10			MC= 13.3 %
								3.0 - 11.0 ft. clayey SAND FILL, light brown to dark gray, loose to medium dense.	DD= 120.3 pcf
									#200= 28 %
	5				6/12	18			LL= NV
									PL= NP
									PI= NP
									S/C= -0.3 %
									AASHTO: A-2-4 (0)
									USCS: SM
									Bulk Sample @ 2-5 ft
	10				5/7	12			#200= 36 %
									LL= 24
									PL= 12
									PI= 12
									AASHTO: A-6 (1)
									USCS: SC
									CA Sample @ 5 ft
									MC= 11.6 %
									DD= 117.5 pcf
	15								
	20								
	25								
	30								
								Bottom of Hole at 11.0 ft.	

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-WB-RS-2252+40**

Boring Began: 5/15/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/15/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 6.0 ft
Ground Elevation: Est. Elev. to be added
Location: WB-RS-2252+40, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 1.3 ft. 15" ASPHALT.	
								1.3 - 4.5 ft. silty SAND FILL, light brown, dense.	**CA Sample @ 2 ft** MC= 7.9 % DD= 122.3 pcf **Bulk Sample @ 2-5 ft** #200= 24 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM
					17/24	41			
	5				5/12	17		**4.5 - 6.0 ft. clayey SAND**, light brown to brown, medium dense.	**CA Sample @ 5 ft** MC= 16.8 % DD= 112.0 pcf #200= 33 % LL= 31 PL= 17 PI= 14 AASHTO: A-2-6 (0) USCS: SC
								Bottom of Hole at 6.0 ft.	
	10								
	15								
	20								
	25								
	30								

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GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-WB-RS-2305+20**

Boring Began: 5/15/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/15/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 11.0 ft
Ground Elevation: Est. Elev. to be added
Location: WB-RS-2305+20, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	0							**0.0 - 0.3 ft. 4" ASPHALT**.	
								0.3 - 1.2 ft. 11" CONCRETE.	
								1.2 - 11.0 ft. silty SAND FILL with some gravel, light brown to brown, loose.	**CA Sample @ 2 ft** MC= 7.6 % DD= 112.5 pcf #200= 19 % LL= NV PL= NP PI= NP AASHTO: A-2-4 (0) USCS: SM **Bulk Sample @ 2-5 ft** #200= 24 % LL= NV PL= NP PI= NP R-Value= 64 AASHTO: A-2-4 (0) USCS: SM **CA Sample @ 5 ft** MC= 8.3 % DD= 111.6 pcf
					5/7	12			
	5				4/3	7			
	10				2/4	6			
								Bottom of Hole at 11.0 ft.	
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-WB-RS-2358+00**

Boring Began: 5/15/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/15/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 6.0 ft
Ground Elevation: Est. Elev. to be added
Location: WB-RS-2358+00, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 1.0 ft. 12.5" CONCRETE.	Pavement cored
								1.0 - 6.0 ft. silty SAND FILL with some gravel, light brown, medium dense to dense.	**Bulk Sample @ 1.1-5 ft** #200= 22 % LL= NV PL= NP PI= NP pH= 7.8 S= 0.003 % Chl= 0.0131 % Re= 1675 ohms-cm AASHTO: A-2-4 (0) USCS: SM
					13/31	44			
	5				11/13	24			**CA Sample @ 5 ft** MC= 7.2 % DD= 118.8 pcf #200= 8 % LL= NV PL= NP PI= NP AASHTO: A-3 (0) USCS: SP-SM
								Bottom of Hole at 6.0 ft.	
	10								
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-WB-RS-2410+80**

Boring Began: 5/15/2015
Drilling Method: Solid-Stem Auger (4" OD)
Drill: CME 75, Automatic Hammer
Driller: CDOT
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Completed: 5/15/2015
Drill Bit:
Casing:
Weather: Clear

Total Depth: 11.0 ft
Ground Elevation: Est. Elev. to be added
Location: WB-RS-2410+80, Est. Coord. to be added
Coordinates: N: E:

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
	0							**0.0 - 1.0 ft. 12.5" CONCRETE**.	
								1.0 - 3.0 ft. gravelly SAND FILL with silt, light brown, medium dense.	**CA Sample @ 2 ft**
					8/10	18			#200= 13 %
								3.0 - 8.5 ft. clayey SAND FILL, light brown, loose.	LL= NV
	5								PL= NP
					4/4	8			PI= NP
									AASHTO: A-1-a (0)
									USCS: SM
									Bulk Sample @ 2-5 ft
									MC= 1.9 %
									#200= 35 %
									LL= 24
								8.5 - 11.0 ft. sandy CLAY, light brown, medium stiff.	PL= 14
	10								PI= 10
					3/7	10			AASHTO: A-4 (0)
									USCS: SC
								Bottom of Hole at 11.0 ft.	**CA Sample @ 5 ft**
									MC= 9.1 %
									DD= 107.0 pcf
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH AND ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING CONSULTANTS

Project: I70 PCL Pavement Borings — Sheet 1 of 1
Project No.: 213-208B — Boring: **YA-WB-RS-2463+60**

Boring Began: 5/15/2015
Completed: 5/15/2015
Total Depth: 6.0 ft
Drilling Method: Solid-Stem Auger (4" OD)
Drill Bit:
Ground Elevation: Est. Elev. to be added
Drill: CME 75, Automatic Hammer
Casing:
Location: WB-RS-2463+60, Est. Coord. to be added
Driller: CDOT
Weather: Clear
Coordinates: N: E:
Logged By: R. Desterhouse
Final By: M. Boyd
Inclination: Vertical

Ground Water Notes: Groundwater not encountered during drilling

Depth	-	-	-	-
Date	-	-	-	-
Time	-	-	-	-

Elevation (feet)	Depth (feet)	Run / Sample Type	Recovery (%)	Rock RQD	Soil Samples Blows per 6 in	Soil Samples N	Lithology	Material Description	Field Notes and Lab Tests
								0.0 - 1.2 ft. 13.5" CONCRETE.	
								1.2 - 6.0 ft. silty SAND FILL with some gravel, light brown, loose.	**Bulk Sample @ 1.2-5 ft** #200= 31 % LL= NV PL= NP PI= NP pH= 7.9 S= 0.007 % Chl= 0.0063 % Re= 1761 ohms-cm AASHTO: A-2-4 (0) USCS: SM **CA Sample @ 2 ft** MC= 8.8 % DD= 123.9 pcf #200= 23 % LL= NV PL= NP PI= NP S/C= -0.2 % AASHTO: A-2-4 (0) USCS: SM
					5/10	15			
	5				4/5	9			
								Bottom of Hole at 6.0 ft.	
	10								
	15								
	20								
	25								
	30								

BORING LOG - LONG BORING # PCL PAVEMENT BORINGS.GPJ YEH ASSOCIATES.GDT 7/17/15

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 PS Project Name: I-70 PCL (Phase 3) Date: 6/4/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Chloride %	% Swell (+) / Consoli-dation (-)	R-VALUE	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI							AASHTO	USCS
YA-EB LS 2204+00	2.1-5	Bulk	–	–	9	63	28	27	11	16	7.4	0.008	420	0.097	–	–	A-2-6 (0)	SC
YA-EB LS 2204+00	3	CA	10.8	121.2	0	69	31	NV	NP	NP	–	–	–	–	-0.3	–	A-2-4 (0)	SM
YA-EB LS 2256+80	2-5	Bulk	–	–	2	52	46	28	13	15	–	–	–	–	–	–	A-6 (3)	SC
YA-EB LS 2256+80	5	CA	6.9	110.5	0	80	20	NV	NP	NP	–	–	–	–	–	–	A-2-4 (0)	SM
YA-EB LS 2256+80	10	CA	8.7	116.2	–	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-EB LS 2309+60	1.2-5	Bulk	–	–	3	75	22	NV	NP	NP	7.7	0.012	852	0.0337	–	58	A-2-4 (0)	SM
YA-EB LS 2309+60	2	CA	9.1	116.9	0	83	17	NV	NP	NP	–	–	–	–	–	–	A-2-4 (0)	SM
YA-EB LS 2362+40	3-5	Bulk	–	–	4	66	30	25	15	10	–	–	–	–	–	–	A-2-4 (0)	SC
YA-EB LS 2362+40	5	CA	11.1	121.3	2	81	17	NV	NP	NP	–	–	–	–	–	–	A-1-b (0)	SM
YA-EB LS 2362+40	10	CA	11.2	115.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-EB LS 2415+20	1-5	Bulk	–	–	46	30	24	26	16	10	–	–	–	–	–	–	A-2-4 (0)	GC
YA-EB LS 2415+20	3	CA	9.7	119.8	18	49	33	27	17	10	–	–	–	–	-0.5	–	A-2-4 (0)	SC
YA-EB LS 2490+50	2-5	Bulk	–	–	2	61	37	22	14	8	7.8	0.007	731	0.033	–	–	A-4 (0)	SC
YA-EB LS 2490+50	3	CA	8.8	121.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-EB LS 2490+50	5	CA	5.4	109.9	0	83	17	NV	NP	NP	–	–	–	–	_	–	A-2-4 (0)	SM
YA-EB LS 2490+50	5-10	Bulk	–	–	0	54	46	22	15	7	–	–	–	–	–	–	A-4 (0)	SM-SC

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 PS Project Name: I-70 PCL (Phase 3) Date: 6/4/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Chloride %	% Swell (+) / Consoli-dation (-)	R-VALUE	CLASSIFICATION	
Boring NO.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI							AASHTO	USCS
YA-EB LS 2490+50	10	CA	17.7	98.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-EB RS 2230+40	2-5	Bulk	–	–	6	45	49	32	13	19	–	–	–	–	–	27	A-6 (5)	SC
YA-EB RS 2230+40	5	CA	14.1	120.6	0	52	48	31	15	16	–	–	–	–	–	–	A-6 (4)	SC
YA-EB RS 2230+40	10	CA	3.4	95.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-EB RS 2270+00	1.1-5	Bulk	–	–	3	62	35	22	15	7	8.4	0.012	1202	0.0185	–	–	A-4 (0)	SM-SC
YA-EB RS 2270+00	2	CA	7.3	121.0	0	87	13	NV	NP	NP	–	–	–	–	–	–	A-2-4 (0)	SM
YA-EB RS 2336+00	0.9-5	Bulk	–	–	3	72	25	NV	NP	NP	7.3	0.004	779	0.043	–	–	A-2-4 (0)	SM
YA-EB RS 2336+00	2	CA	7.9	114.0	0	90	10	NV	NP	NP	–	–	–	–	-0.5	–	A-2-4 (0)	SM
YA-EB RS 2336+00	10	CA	4.7	112	–	–	–	–	–	–	–	–	–	–	_	–	–	–
YA-EB RS 2388+80	2	CA	8.3	123	–	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-EB RS 2388+80	2-5	Bulk	–	–	1	71	28	25	14	11	–	–	–	–	–	–	A-2-6 (0)	SC
YA-EB RS 2388+80	5	CA	10.6	121	4	69	27	NV	NP	NP	–	–	–	–	–	–	A-2-4 (0)	SM
YA-EB RS 2441+60	1.1-5	Bulk	–	–	6	41	53	28	13	15	7.8	0.005	646	0.0353	–	–	A-6 (4)	CL
YA-EB RS 2441+60	2	CA	14.2	118	8	37	55	34	14	20	–	–	–	–	0.3	–	A-6 (7)	CL
YA-EB RS 2441+60	5	CA	19.2	110.6	3	11	86	35	17	18	–	–	–	–	–	–	A-6 (15)	CL
YA-EB RS 2441+60	10	CA	11.8	116.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 PS Project Name: I-70 PCL (Phase 3) Date: 6/4/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Chloride %	% Swell (+) / Consoli-dation (-)	R-VALUE	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI							AASHTO	USCS
YA-WB RS 2204+00	2-5	Bulk	–	–	2	62	36	24	12	12	–	–	–	–	–	–	A-6 (1)	SC
YA-WB RS 2204+00	5	CA	11.6	117.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-WB RS 2252+40	2	CA	7.9	122.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-WB RS 2252+40	2-5	Bulk	–	–	1	75	24	NV	NP	NP	–	–	–	–	–	–	A-2-4 (0)	SM
YA-WB RS 2252+40	5	CA	16.8	112.0	3	64	33	31	17	14	–	–	–	–	–	–	A-2-6 (0)	SC
YA-WB RS 2305+20	2	CA	7.6	112.5	3	78	19	NV	NP	NP	–	–	–	–	–	–	A-2-4 (0)	SM
YA-WB RS 2305+20	2-5	Bulk	–	–	3	73	24	NV	NP	NP	–	–	–	–	–	64	A-2-4 (0)	SM
YA-WB RS 2305+20	5	CA	8.3	111.6	–	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-WB RS 2358+00	1.1-5	Bulk	–	–	4	74	22	NV	NP	NP	7.8	0.003	1675	0.0131	–	–	A-2-4 (0)	SM
YA-WB RS 2358+00	5	CA	7.2	118.8	0	92	8	NV	NP	NP	–	–	–	–	–	–	A-3 (0)	SP-SM
YA-WB RS 2410+80	2	CA	6.2	–	43	44	13	NV	NP	NP	–	–	–	–	–	–	A-1-a (0)	SM
YA-WB RS 2410+80	2-5	Bulk	–	–	2	63	35	24	14	10	–	–	–	–	–	–	A-4 (0)	SC
YA-WB RS 2410+80	5	CA	9.1	107.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-WB RS 2463+60	1.2-5	Bulk	–	–	8	61	31	NV	NP	NP	7.9	0.007	1761	0.0063	_	–	A-2-4 (0)	SM
YA-WB RS 2463+60	2	CA	8.8	123.9	11	66	23	NV	NP	NP	–	–	–	–	-0.2	–	A-2-4 (0)	SM

YEH & ASSOCIATES, INC

Summary of Laboratory Test Results

Project No: 213-208 PS Project Name: I-70 PCL (Phase 3) Date: 6/4/2015

Sample Location			Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg			pH	Water Soluble Sulfate %	Resistivity ohm.cm	Chloride %	% Swell (+) / Consoli-dation (-)	R-VALUE	CLASSIFICATION	
Boring No.	Depth (ft)	Sample Type			Gravel > #4 (%)	Sand (%)	Fines < #200 (%)	LL	PL	PI							AASHTO	USCS
YA-EB RS 2488+00	2	CA	5.6	115.7	0	82	18	NV	NP	NP	–	–	–	–	–	–	A-2-4 (0)	SM
YA-EB RS 2488+00	2-5	Bulk	–	–	6	68	26	NV	NP	NP	–	–	–	–	–	53	A-2-4 (0)	SM
YA-WB LS 2227+00	1.3-5	Bulk	–	–	2	70	28	26	14	12	8.1	0.005	1608	0.0144	–	34	A-2-6 (0)	SC
YA-EB RS 2227+00	5	CA	15.1	112.5	9	47	44	34	15	19	–	–	–	–	-0.3	–	A-6 (4)	SC
YA-WB LS 2279+80	2	CA	8.6	109.2	0	81	19	NV	NP	NP	–	–	–	–	–	–	A-2-4 (0)	SM
YA-WB LS 2279+80	2-5	Bulk	–	_	8	69	23	NV	NP	NP	–	–	–	–	–	–	A-2-4 (0)	SM
YA-WB LS 2279+80	5	CA	12.0	109.2	0	58	42	NV	NP	NP	–	–	–	–	–	–	A-4 (0)	SM
YA-WB LS 2332+60	2	CA	9.4	115.8	0	86	14	NV	NP	NP	–	–	–	–	–	–	A-2-4 (0)	SM
YA-WB LS 2332+60	2-5	Bulk	–	–	6	71	23	NV	NP	NP	–	–	–	–	–	–	A-2-4 (0)	SM
YA-WB LS 2385+40	0.8-5	Bulk	–	–	13	55	32	25	17	8	8.2	0.017	971	0.022	–	–	A-2-4 (0)	SC
YA-WB LS 2385+40	5	CA	13.0	117.1	0	59	41	32	14	18	–	–	–	–	–	–	A-6 (3)	SC
YA-WB LS 2385+40	10	CA	12.5	114.6	–	–	–	–	–	–	–	–	–	–	–	–	–	–
YA-WB LS 2438+20	2	CA	10.7	118	0	66	34	NV	NP	NP	–	–	–	–	–	–	A-2-4 (0)	SM
YA-WB LS 2438+20	2-5	Bulk	–	–	1	66	33	NV	NP	NP	–	–	–	–	_	–	A-2-4 (0)	SM
YA-WB RS 2204+00	2	CA	13.3	120.3	0	72	28	NV	NP	NP	–	–	–	–	-0.3	–	A-2-4 (0)	SM

Appendix D.2

Pavement Core Summary and Photographs

Summary- Pavement Core Thickness

Boring Station	Direction	Lane	Asphalt Thickness (inches)	Concrete Thickness (inches)	Total Thickness (inches)
2203+00	EB	1	7	7.75	14.75
2216+20	EB	1	7	8.25	15.25
2229+40	EB	1	7.25	7.5	14.75
2242+40	EB	1	7.5	7.25	14.75
2255+80	EB	1	6.5	7.25	13.75
2269+00	EB	1	12.25	-	12.25
2282+20	EB	1	13	-	13
2295+40	EB	1	13.25	-	13.25
2308+60	EB	1	12.25	-	12.25
2321+80	EB	1	11.75	-	11.75
2335+00	EB	1	12	-	12
2348+20	EB	1	12.75	-	12.75
2361+40	EB	1	11.25	-	11.25
2374+60	EB	1	7.5	8.5	16
2387+80	EB	1	-	12	12
2401+00	EB	1	-	12.75	12.75
2414+20	EB	1	-	12.75	12.75
2427+40	EB	1	-	13.75	13.75
2440+60	EB	1	-	13.25	13.25
2453+80	EB	1	-	13.75	13.75
2467+00	EB	1	-	14	14
2480+20	EB	1	-	12.5	12.5
2491+00	EB	1	-	13	13
2205+00	EB	2	7.5	7	14.5
2218+20	EB	2	7.5	7.75	15.25
2231+40	EB	2	5.25	7.75	13
2244+60	EB	2	7.75	7.5	15.25
2257+80	EB	2	10	7.75	17.75
2271+00	EB	2	6.5	7.5	14
2310+60	EB	2	7	6	13
2323+80	EB	2	7.25	8	15.25
2337+00	EB	2	7.5	8.5	16
2350+20	EB	2	10	8.75	18.75
2363+40	EB	2	10	7.75	17.75
2376+60	EB	2	8.75	8	16.75
2389+80	EB	2	-	12	12
2403+00	EB	2	-	11.5	11.5
2416+20	EB	2	-	11.75	11.75
2429+40	EB	2	-	13.25	13.25
2442+60	EB	2	-	14.25	14.25
2455+80	EB	2	-	13	13
2212+00	EB	3	6	7.5	13.5
2233+40	EB	3	4.5	8.25	12.75
2257+80	EB	3	9	-	9
2312+60	EB	3	8	8	16
2339+00	EB	3	8	7.5	15.5

Summary- Pavement Core Thickness

Boring Station	Direction	Lane	Asphalt Thickness (inches)	Concrete Thickness (inches)	Total Thickness (inches)
2365+40	EB	3	8.5	8	16.5
2391+80	EB	3	-	13.25	13.25
2418+20	EB	3	-	13	13
2444+60	EB	3	-	13.25	13.25
2261+80	EB	4	8	6.75	14.75
2314+60	EB	4	6.75	7.75	14.5
2341+80	EB	4	7.5	7.75	15.25
2367+40	EB	4	3.25	11.75	15
2420+20	EB	4	-	12.25	12.25
2446+60	EB	4	-	15.25	15.25
2263+80	EB	5	-	16.5	16.5
2422+20	EB	5	13	-	13
2202+00	EB	Left Shoulder	12.25	-	12.25
2217+20	EB	Left Shoulder	11.5	-	11.5
2230+40	EB	Left Shoulder	10	-	10
2243+60	EB	Left Shoulder	7.25	7.75	15
2256+80	EB	Left Shoulder	15.25	-	15.25
2270+00	EB	Left Shoulder	13.5	-	13.5
2283+20	EB	Left Shoulder	16.25	-	16.25
2296+40	EB	Left Shoulder	14.75	-	14.75
2309+60	EB	Left Shoulder	14.75	-	14.75
2322+80	EB	Left Shoulder	14.25	-	14.25
2336+00	EB	Left Shoulder	14.5	-	14.5
2349+20	EB	Left Shoulder	16	-	16
2362+40	EB	Left Shoulder	12.5	-	12.5
2375+60	EB	Left Shoulder	12.75	-	12.75
2388+80	EB	Left Shoulder	-	11.25	11.25
2402+00	EB	Left Shoulder	-	8.5	8.5
2415+20	EB	Left Shoulder	-	10	10
2428+40	EB	Left Shoulder	-	9.25	9.25
2441+60	EB	Left Shoulder	-	10.5	10.5
2454+80	EB	Left Shoulder	-	9.25	9.25
2468+00	EB	Left Shoulder	-	10.75	10.75
2481+20	EB	Left Shoulder	9.25	-	9.25
2204+00	EB	Right Shoulder	6.5	-	6.5
2230+40	EB	Right Shoulder	5	8.75	13.75
2256+80	EB	Right Shoulder	16.25	-	16.25
2283+20	EB	Right Shoulder	13.25	-	13.25
2309+60	EB	Right Shoulder	8.25	-	8.25
2362+40	EB	Right Shoulder	-	11.75	11.75
2415+20	EB	Right Shoulder	-	12.75	12.75
2468+00	EB	Right Shoulder	-	13.5	13.5
2203+00	WB	1	5	7.75	12.75
2216+20	WB	1	7	7.125	14.125
2229+40	WB	1	6.5	7.25	13.75
2242+60	WB	1	14.75	-	14.75

Summary- Pavement Core Thickness

Boring Station	Direction	Lane	Asphalt Thickness (inches)	Concrete Thickness (inches)	Total Thickness (inches)
2255+80	WB	1	7	7.25	14.25
2269+00	WB	1	11.5	-	11.5
2282+20	WB	1	14.25	-	14.25
2295+40	WB	1	13.5	-	13.5
2308+60	WB	1	10.75	-	10.75
2321+80	WB	1	12	-	12
2335+00	WB	1	12.5	-	12.5
2348+20	WB	1	12	-	12
2361+40	WB	1	14.25	-	14.25
2374+60	WB	1	8.5	5.75	14.25
2387+80	WB	1	-	12.25	12.25
2401+00	WB	1	-	13	13
2414+20	WB	1	-	13	13
2427+40	WB	1	-	13	13
2440+60	WB	1	-	12.75	12.75
2453+80	WB	1	-	13.75	13.75
2467+00	WB	1	-	15	15
2480+20	WB	1	-	13.75	13.75
2493+40	WB	1	-	12.5	12.5
2204+00	WB	2	6	7.5	13.5
2214+20	WB	2	8	7	15
2227+40	WB	2	7.5	7.5	15
2240+60	WB	2	7.75	5.25	13
2253+60	WB	2	6	6.5	12.5
2267+00	WB	2	4.75	7	11.75
2280+20	WB	2	8	7.5	15.5
2293+60	WB	2	10	4	14
2306+60	WB	2	8.75	7.75	16.5
2319+80	WB	2	7.5	6.5	14
2333+00	WB	2	8.25	7.75	16
2347+10	WB	2	2.25	8.5	10.75
2359+40	WB	2	9	7.75	16.75
2385+80	WB	2	-	12.75	12.75
2412+20	WB	2	-	12.5	12.5
2465+00	WB	2	-	12.75	12.75
2491+00	WB	2	-	13.5	13.5
2328+60	WB	3	7.25	7.75	15
2355+00	WB	3	7.5	7.75	15.25
2381+40	WB	3	-	12.75	12.75
2408+80	WB	3	-	13.25	13.25
2434+20	WB	3	-	13	13
2485+00	WB	3	-	14	14
2326+60	WB	4	6.5	8	14.5
2353+00	WB	4	5.5	8.5	14
2324+60	WB	5	4	10.5	14.5
2203+00	WB	Left Shoulder	6	7.5	13.5

Summary- Pavement Core Thickness

Boring Station	Direction	Lane	Asphalt Thickness (inches)	Concrete Thickness (inches)	Total Thickness (inches)
2227+00	WB	Left Shoulder	15	-	15
2253+40	WB	Left Shoulder	12.5	-	12.5
2279+80	WB	Left Shoulder	15	-	15
2306+20	WB	Left Shoulder	12	-	12
2332+60	WB	Left Shoulder	18.75	-	18.75
2359+00	WB	Left Shoulder	19	-	19
2385+40	WB	Left Shoulder	-	8.5	8.5
2411+80	WB	Left Shoulder	-	8.5	8.5
2438+20	WB	Left Shoulder	-	9.5	9.5
2464+60	WB	Left Shoulder	-	10.25	10.25
2491+00	WB	Left Shoulder	-	12.5	12.5
2331+60	WB	Right Shoulder	3.5	10.5	14
2358+00	WB	Right Shoulder	-	12.5	12.5
2384+40	WB	Right Shoulder	-	9	9
2410+80	WB	Right Shoulder	-	12.5	12.5
2437+20	WB	Right Shoulder	-	13.5	13.5
2463+60	WB	Right Shoulder	-	13.5	13.5
2490+00	WB	Right Shoulder	-	12.75	12.75
2203+00	EB	1	7	7.75	14.75
2216+20	EB	1	7	8.25	15.25
2229+40	EB	1	7.25	7.5	14.75
2242+40	EB	1	7.5	7.25	14.75
2255+80	EB	1	6.5	7.25	13.75
2269+00	EB	1	12.25	-	12.25
2282+20	EB	1	13	-	13
2295+40	EB	1	13.25	-	13.25
2308+60	EB	1	12.25	-	12.25
2321+80	EB	1	11.75	-	11.75
2335+00	EB	1	12	-	12
2348+20	EB	1	12.75	-	12.75
2361+40	EB	1	11.25	-	11.25
2374+60	EB	1	7.5	8.5	16
2387+80	EB	1	-	12	12
2401+00	EB	1	-	12.75	12.75
2414+20	EB	1	-	12.75	12.75
2427+40	EB	1	-	13.75	13.75
2440+60	EB	1	-	13.25	13.25
2453+80	EB	1	-	13.75	13.75
2467+00	EB	1	-	14	14
2480+20	EB	1	-	12.5	12.5
2491+00	EB	1	-	13	13
2205+00	EB	2	7.5	7	14.5
2218+20	EB	2	7.5	7.75	15.25
2231+40	EB	2	5.25	7.75	13
2244+60	EB	2	7.75	7.5	15.25
2257+80	EB	2	10	7.75	17.75

Summary- Pavement Core Thickness

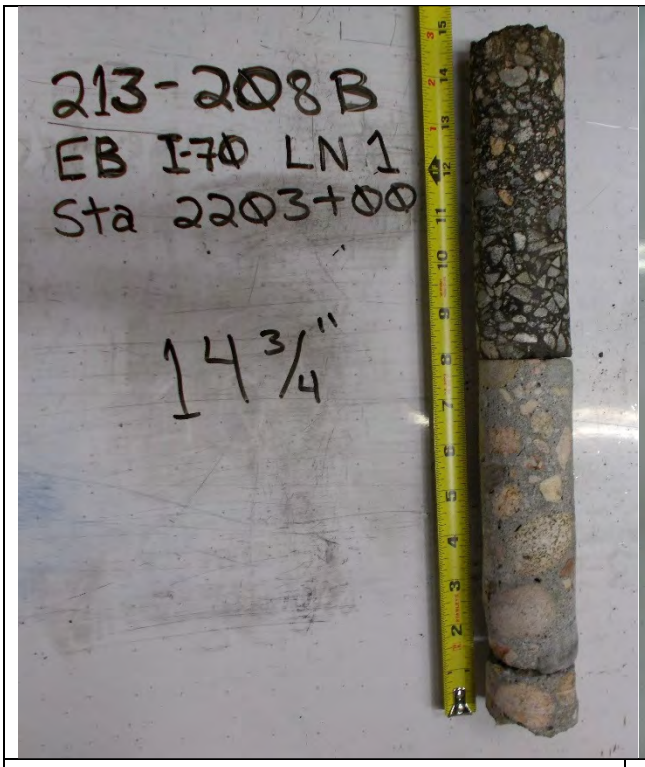
Boring Station	Direction	Lane	Asphalt Thickness (inches)	Concrete Thickness (inches)	Total Thickness (inches)
2271+00	EB	2	6.5	7.5	14
2310+60	EB	2	7	6	13
2323+80	EB	2	7.25	8	15.25
2337+00	EB	2	7.5	8.5	16
2350+20	EB	2	10	8.75	18.75
2363+40	EB	2	10	7.75	17.75
2376+60	EB	2	8.75	8	16.75
2389+80	EB	2	-	12	12
2403+00	EB	2	-	11.5	11.5
2416+20	EB	2	-	11.75	11.75
2429+40	EB	2	-	13.25	13.25
2442+60	EB	2	-	14.25	14.25
2455+80	EB	2	-	13	13
2212+00	EB	3	6	7.5	13.5
2233+40	EB	3	4.5	8.25	12.75
2257+80	EB	3	9	-	9
5312+60	EB	3	8	8	16
2339+00	EB	3	8	7.5	15.5
2365+40	EB	3	8.5	8	16.5
2391+80	EB	3	-	13.25	13.25
2418+20	EB	3	-	13	13
2444+60	EB	3	-	13.25	13.25
2261+80	EB	4	8	6.75	14.75
2314+60	EB	4	6.75	7.75	14.5
2341+80	EB	4	7.5	7.75	15.25
2367+40	EB	4	3.25	11.75	15
2420+20	EB	4	-	12.25	12.25
2446+60	EB	4	-	15.25	15.25
2263+80	EB	5	-	16.5	16.5
2422+20	EB	5	13	-	13
2202+00	EB	Left Shoulder	12.25	-	12.25
2217+20	EB	Left Shoulder	11.5	-	11.5
2230+40	EB	Left Shoulder	10	-	10
2243+60	EB	Left Shoulder	7.25	7.75	15
2256+80	EB	Left Shoulder	15.25	-	15.25
2270+00	EB	Left Shoulder	13.5	-	13.5
2283+20	EB	Left Shoulder	16.25	-	16.25
2296+40	EB	Left Shoulder	14.75	-	14.75
2309+60	EB	Left Shoulder	14.75	-	14.75
2322+80	EB	Left Shoulder	14.25	-	14.25
2336+00	EB	Left Shoulder	14.5	-	14.5
2349+20	EB	Left Shoulder	16	-	16
2362+40	EB	Left Shoulder	12.5	-	12.5
2375+60	EB	Left Shoulder	12.75	-	12.75
2388+80	EB	Left Shoulder	-	11.25	11.25
2402+00	EB	Left Shoulder	-	8.5	8.5

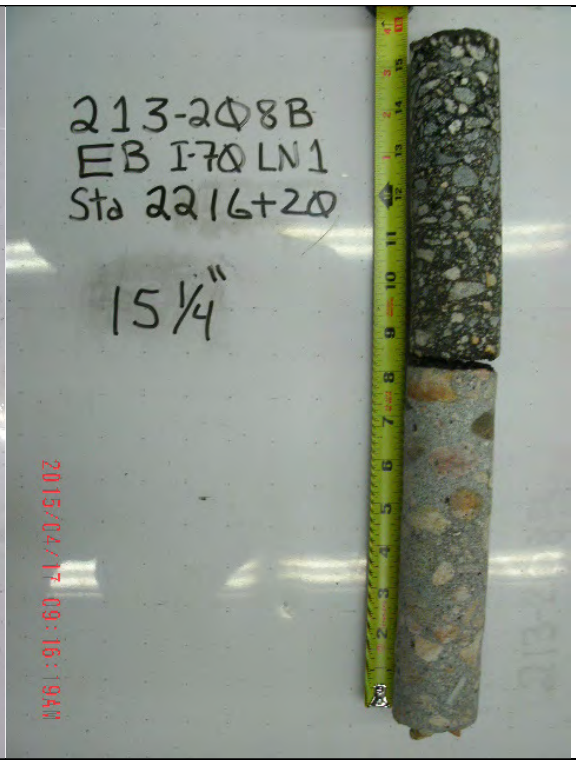
Summary- Pavement Core Thickness

Boring Station	Direction	Lane	Asphalt Thickness (inches)	Concrete Thickness (inches)	Total Thickness (inches)
2415+20	EB	Left Shoulder	-	10	10
2428+40	EB	Left Shoulder	-	9.25	9.25
2441+60	EB	Left Shoulder	-	10.5	10.5
2454+80	EB	Left Shoulder	-	9.25	9.25
2468+00	EB	Left Shoulder	-	10.75	10.75
2481+20	EB	Left Shoulder	9.25	-	9.25
2204+00	EB	Right Shoulder	6.5	-	6.5
2230+40	EB	Right Shoulder	5	8.75	13.75
2256+80	EB	Right Shoulder	16.25	-	16.25
2283+20	EB	Right Shoulder	13.25	-	13.25
2309+60	EB	Right Shoulder	8.25	-	8.25
2362+40	EB	Right Shoulder	-	11.75	11.75
2415+20	EB	Right Shoulder	-	12.75	12.75
2468+00	EB	Right Shoulder	-	13.5	13.5
2401+00	WB	1	-	13	13
2203+00	WB	1	5	7.75	12.75
2216+20	WB	1	7	7.125	14.125
2229+40	WB	1	6.5	7.25	13.75
2242+60	WB	1	14.75	-	14.75
2255+80	WB	1	7	7.25	14.25
2269+00	WB	1	11.5	-	11.5
2282+20	WB	1	14.25	-	14.25
2295+40	WB	1	13.5	-	13.5
2308+60	WB	1	10.75	-	10.75
2321+80	WB	1	12	-	12
2335+00	WB	1	12.5	-	12.5
2348+20	WB	1	12	-	12
2361+40	WB	1	14.25	-	14.25
2374+60	WB	1	8.5	5.75	14.25
2387+80	WB	1	-	12.25	12.25
2414+20	WB	1	-	13	13
2427+40	WB	1	-	13	13
2440+60	WB	1	-	12.75	12.75
2453+80	WB	1	-	13.75	13.75
2467+00	WB	1	-	15	15
2480+20	WB	1	-	13.75	13.75
2493+40	WB	1	-	12.5	12.5
2204+00	WB	2	6	7.5	13.5
2214+20	WB	2	8	7	15
2227+40	WB	2	7.5	7.5	15
2240+60	WB	2	7.75	5.25	13
2253+60	WB	2	6	6.5	12.5
2267+00	WB	2	4.75	7	11.75
2280+20	WB	2	8	7.5	15.5
2293+60	WB	2	10	4	14
2306+60	WB	2	8.75	7.75	16.5

Summary- Pavement Core Thickness

Boring Station	Direction	Lane	Asphalt Thickness (inches)	Concrete Thickness (inches)	Total Thickness (inches)
2319+80	WB	2	7.5	6.5	14
2333+00	WB	2	8.25	7.75	16
2347+10	WB	2	2.25	8.5	10.75
2359+40	WB	2	9	7.75	16.75
2385+80	WB	2	-	12.75	12.75
2412+20	WB	2	-	12.5	12.5
2465+00	WB	2	-	12.75	12.75
2491+00	WB	2	-	13.5	13.5
2328+60	WB	3	7.25	7.75	15
2355+00	WB	3	7.5	7.75	15.25
2381+40	WB	3	-	12.75	12.75
2408+80	WB	3	-	13.25	13.25


213-208B
EB I-70 LN 1
Sta 2203+00
14 3/4"


213-208B
EB I-70 LN1
Sta 2216+20
15 1/4"
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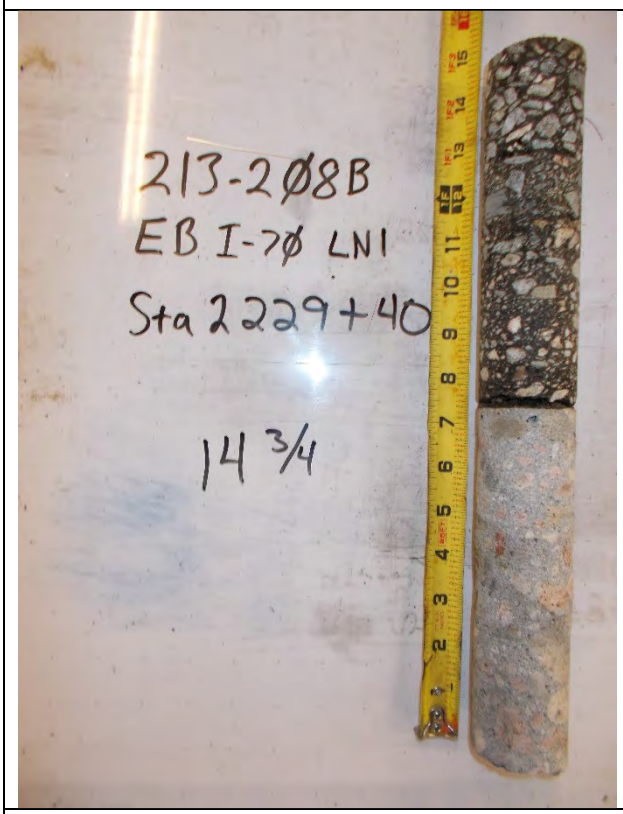
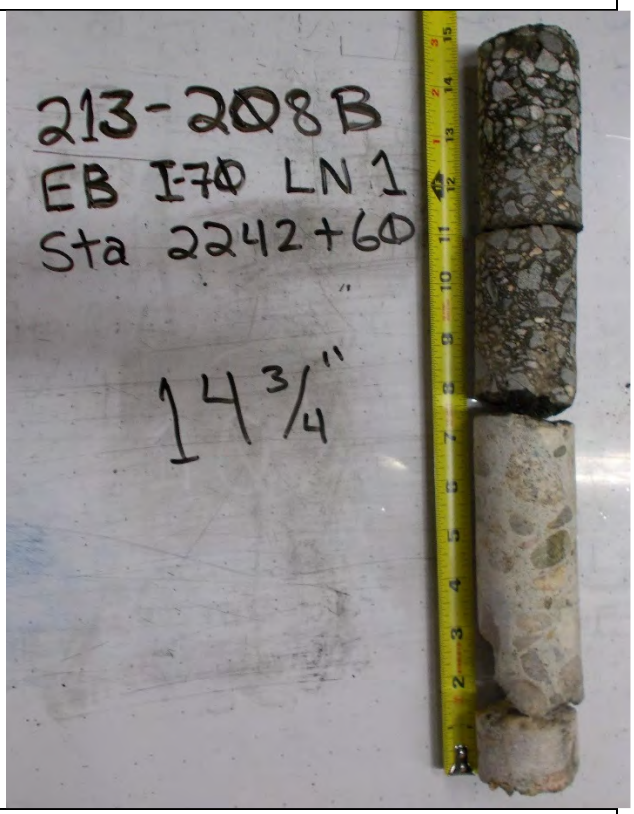
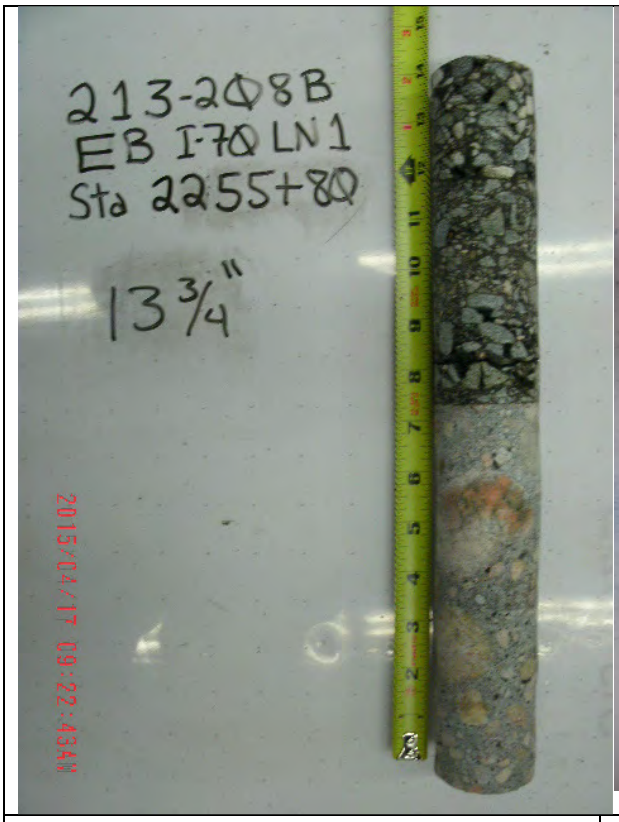

213-208B
EB I-70 LN1
Sta 2229+40
14 3/4


213-208B
EB I-70 LN 1
Sta 2242+60
14 3/4"


213-208B
EB I-70 LN 1
Sta 2255+80
13 3/4"
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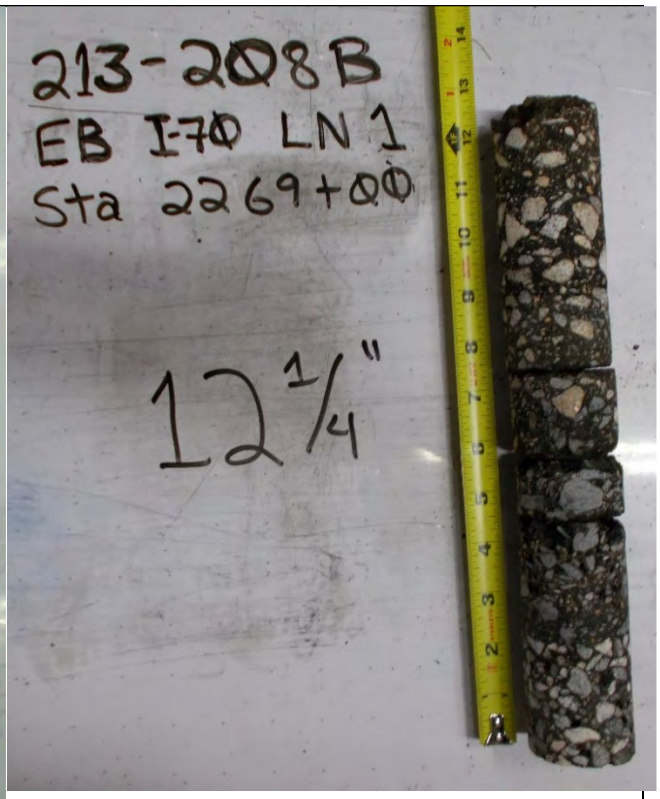
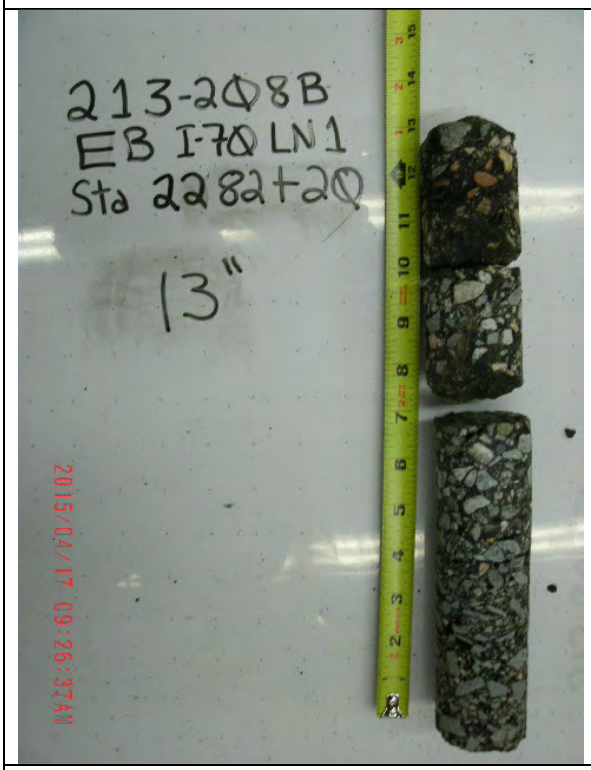
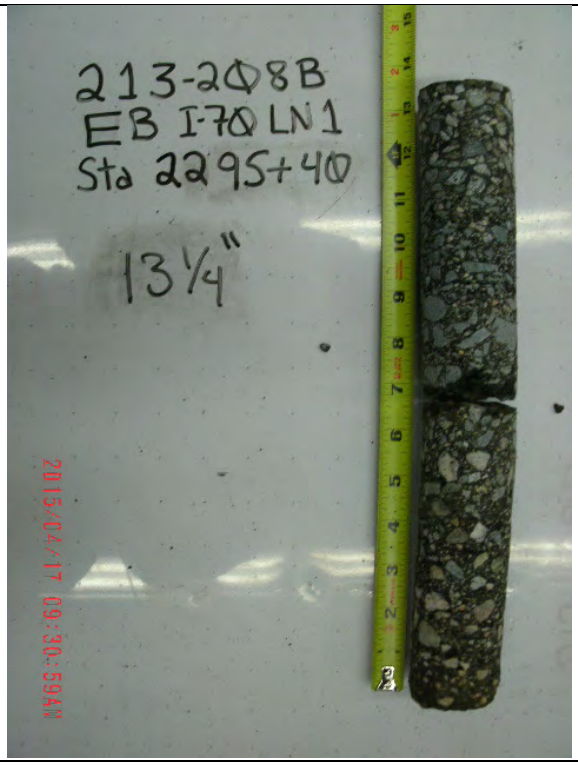
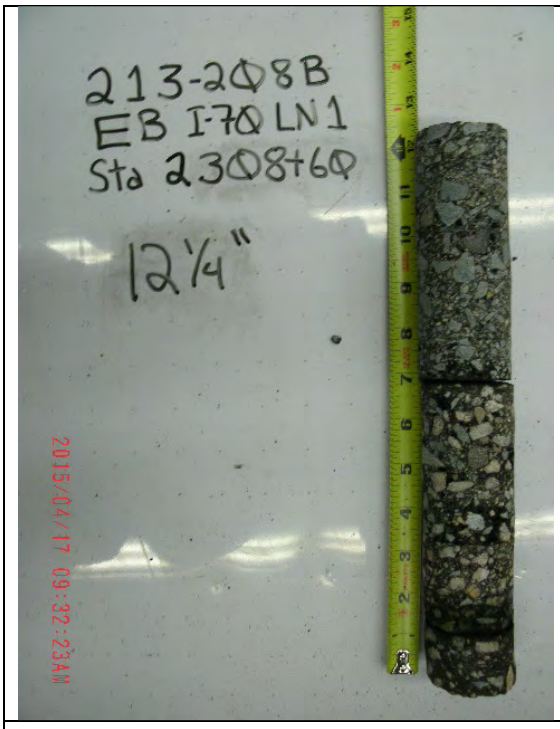
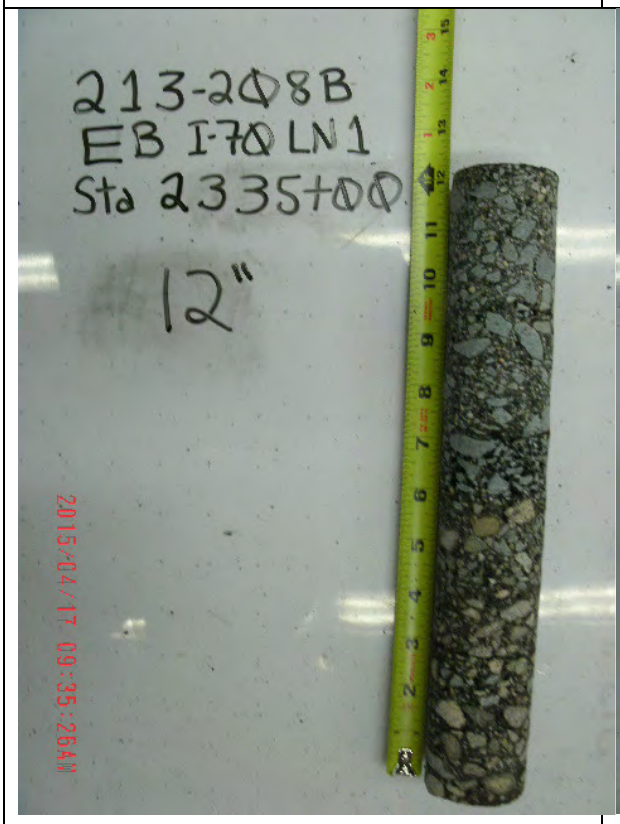

213-208B
EB I-70 LN 1
Sta 2269+00
12 1/4"


213-208B
EB I-70 LN1
Sta 2282+20
13"
2015/04/17 09:26:37AM


213-208B
EB I-70 LN1
Sta 2295+40
13 1/4"
2015/04/17 09:30:59AM


213-208B
EB I-70 LN 1
Sta 2308+60
12 1/4"
2015/04/17 09:32:23AM

213-208B
EB I-70 LN 1
Sta 2321+80
11 3/4"


213-208B
EB I-70 LN 1
Sta 2335+00
12"
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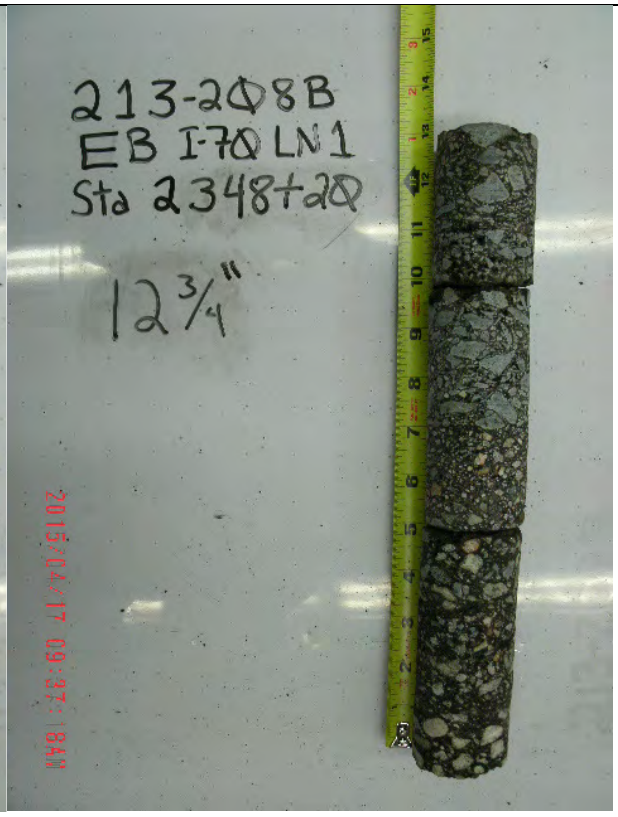
213-208B
EB I-70 LN 1
Sta 2348+20
12 3/4"
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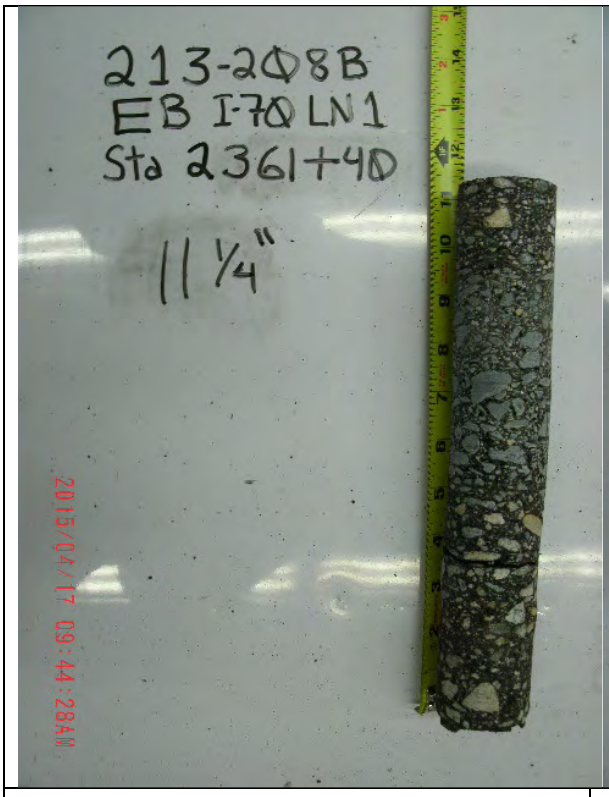
213-208B
EB I-70 LN1
Sta 2361+40
11 1/4"
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213-208B
EB I-70 LN1
Sta 2374+60
16"
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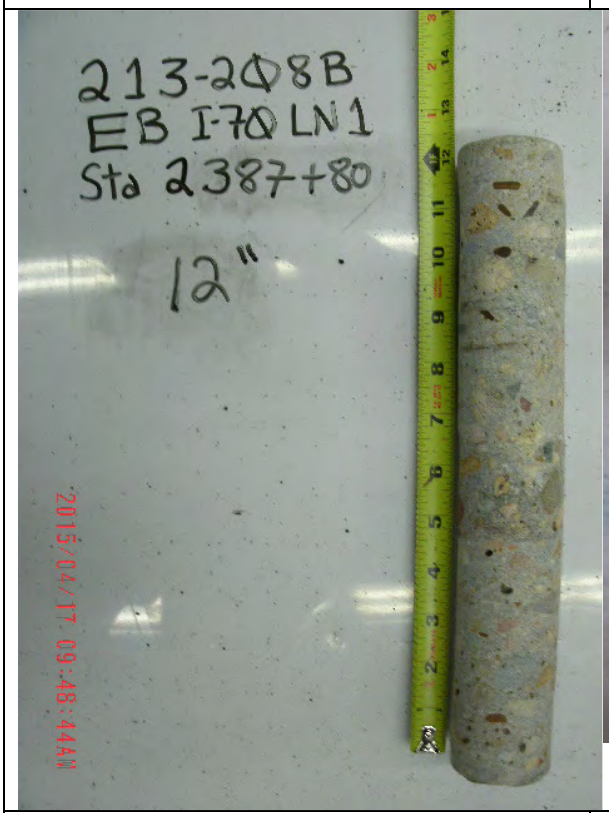
213-208B
EB I-70 LN1
Sta 2387+80
12"
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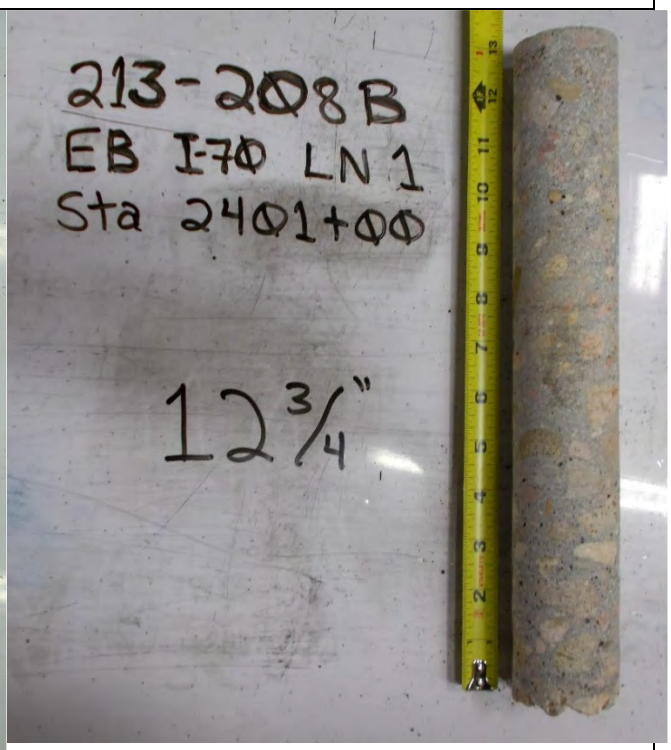
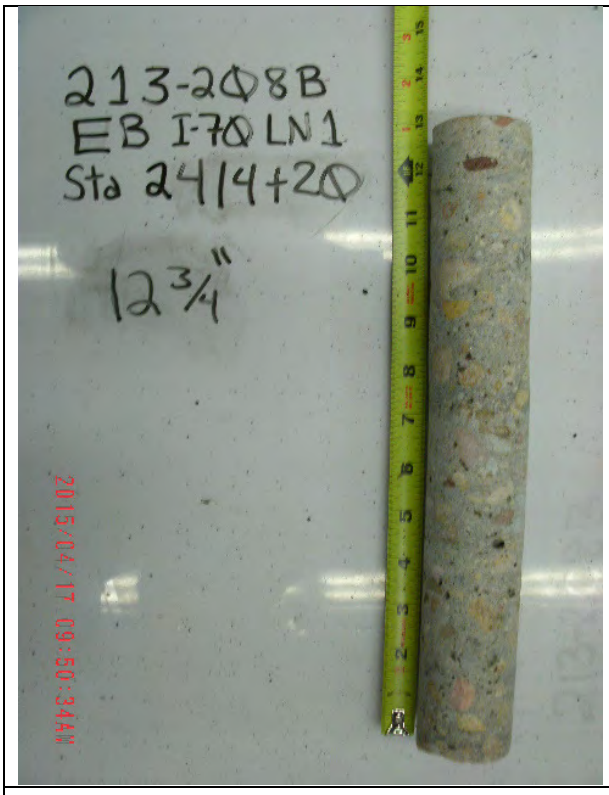

213-208B
EB I-70 LN 1
Sta 2401+00
12 3/4"


213-2Ø8B
EB I-7Ø LN1
Sta 2414+2Ø
12 3/4"
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213-2Ø8B
EB I-7Ø LN1
Sta 2427+4Ø
13 3/4"
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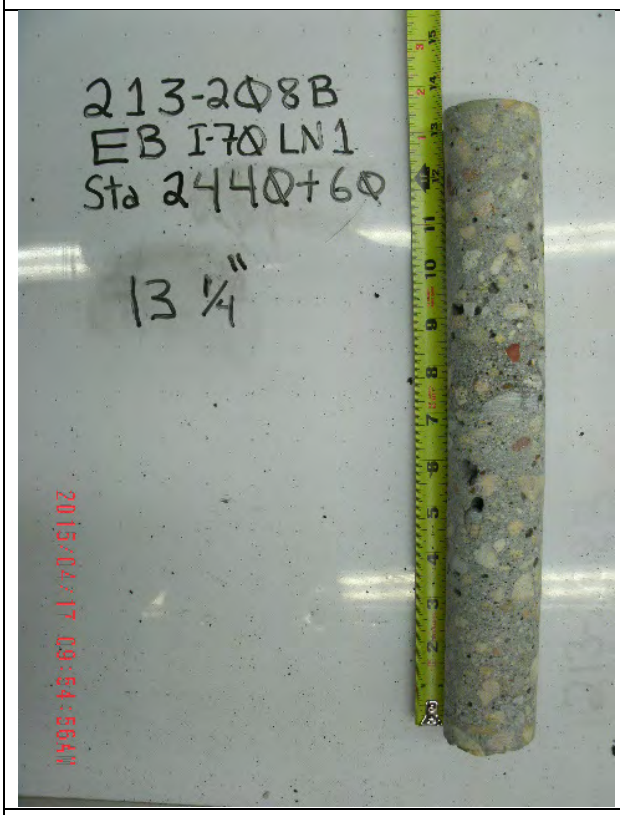
213-2Ø8B
EB I-7Ø LN1
Sta 2440+6Ø
13 1/4"
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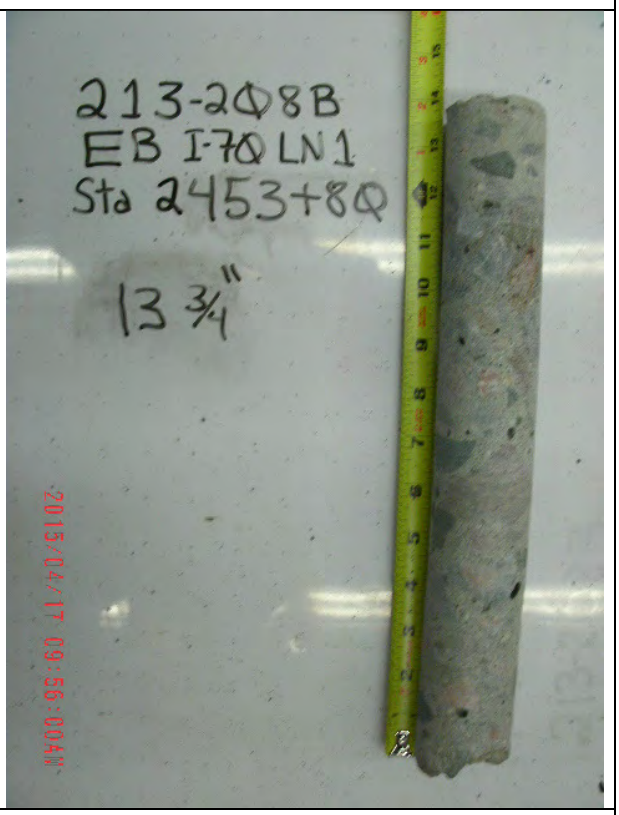
213-2Ø8B
EB I-7Ø LN1
Sta 2453+8Ø
13 3/4"
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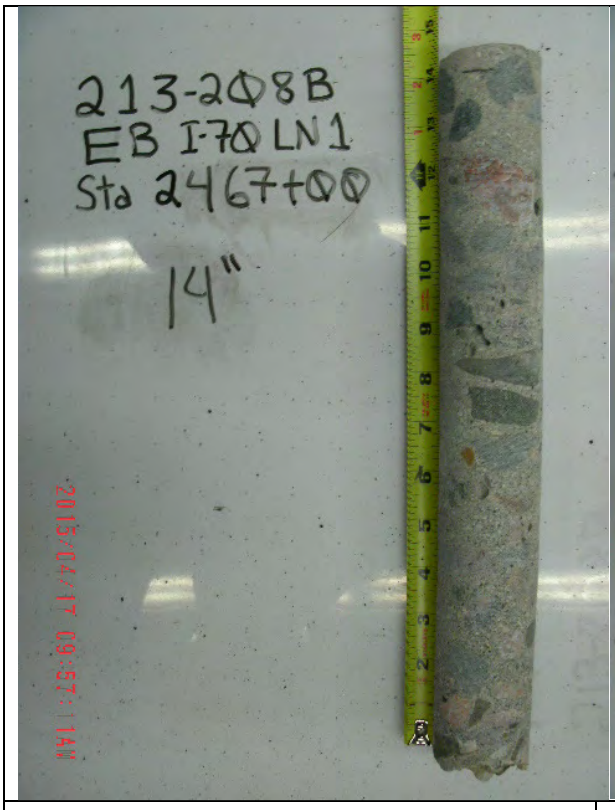
213-208B
EB I-70 LN1
Sta 2467+00
14"
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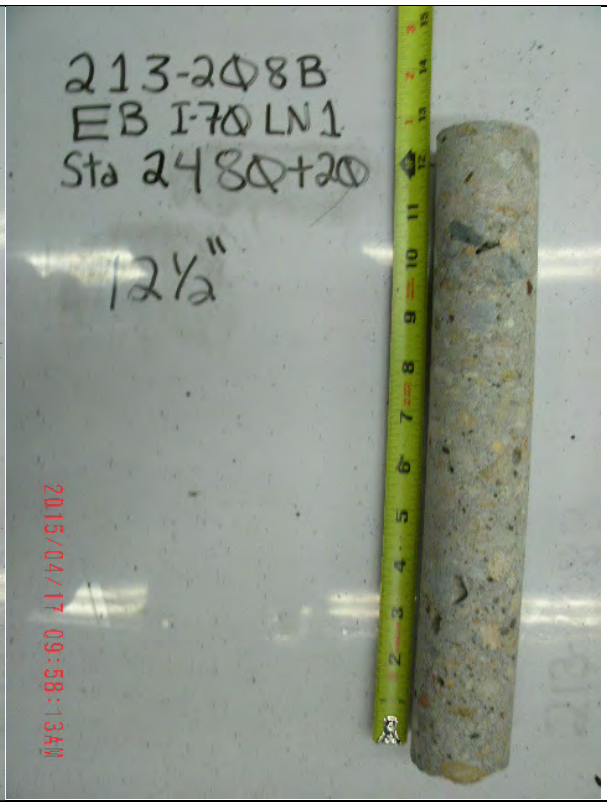
213-208B
EB I-70 LN1
Sta 2480+20
12½"
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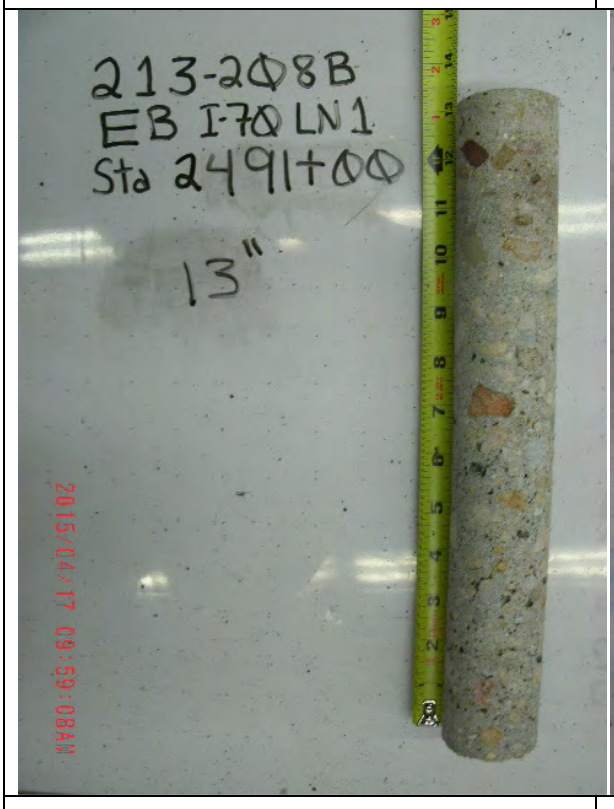
213-208B
EB I-70 LN1
Sta 2491+00
13"
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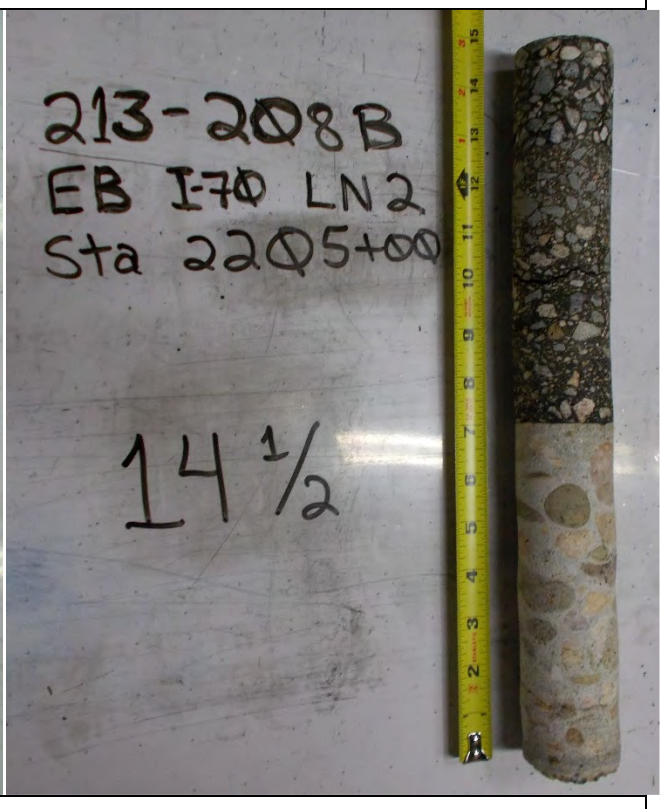
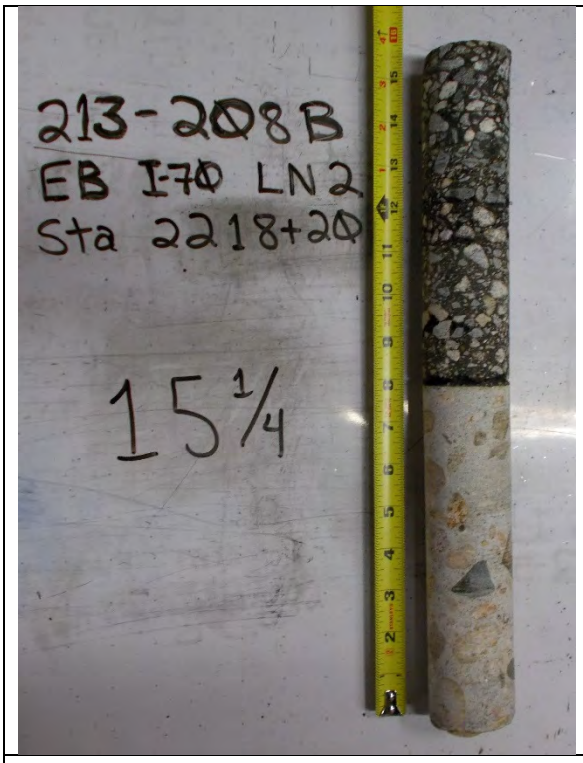
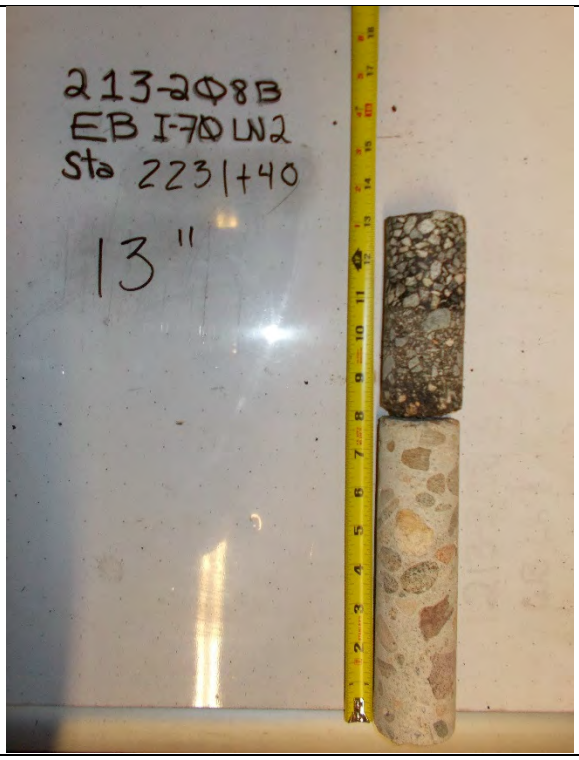
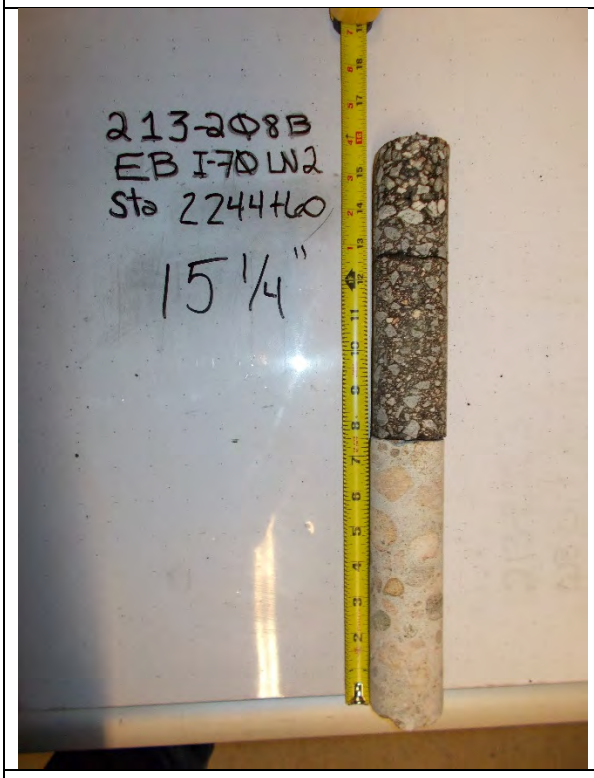
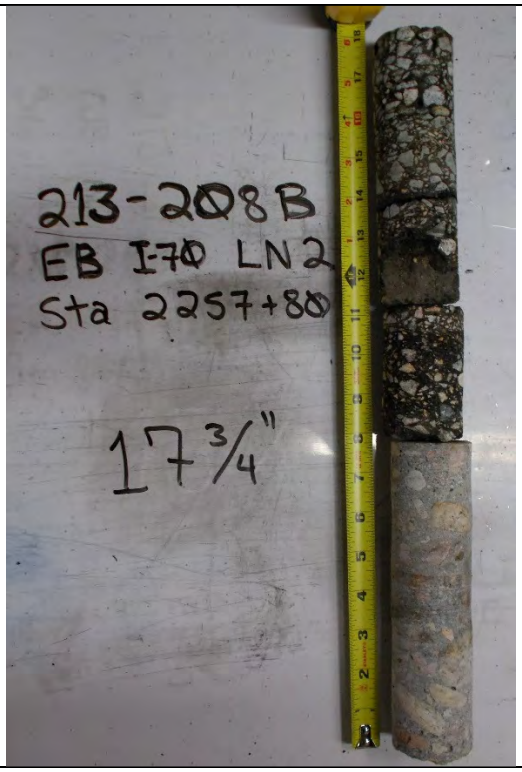

213-208B
EB I-70 LN2
Sta 2205+00
14 ½

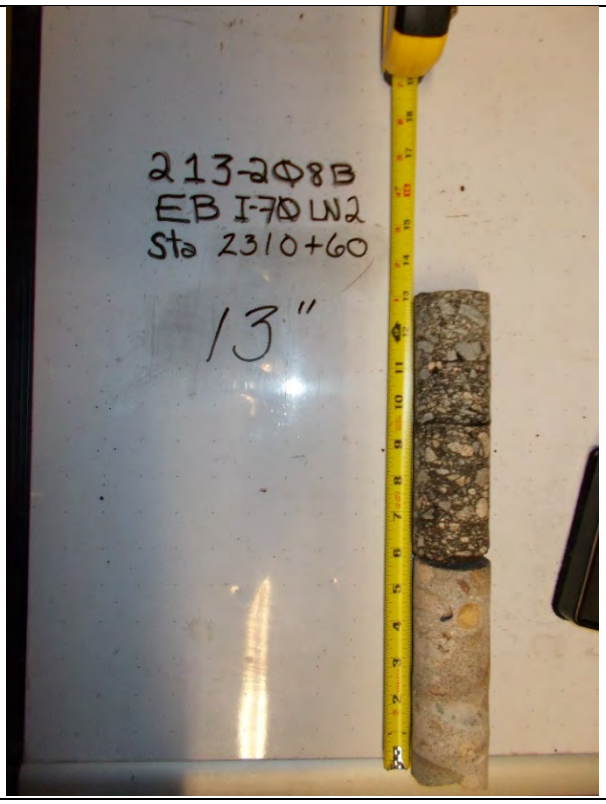

213-208B
EB I-70 LN2
Sta 2218+20
15 1/4

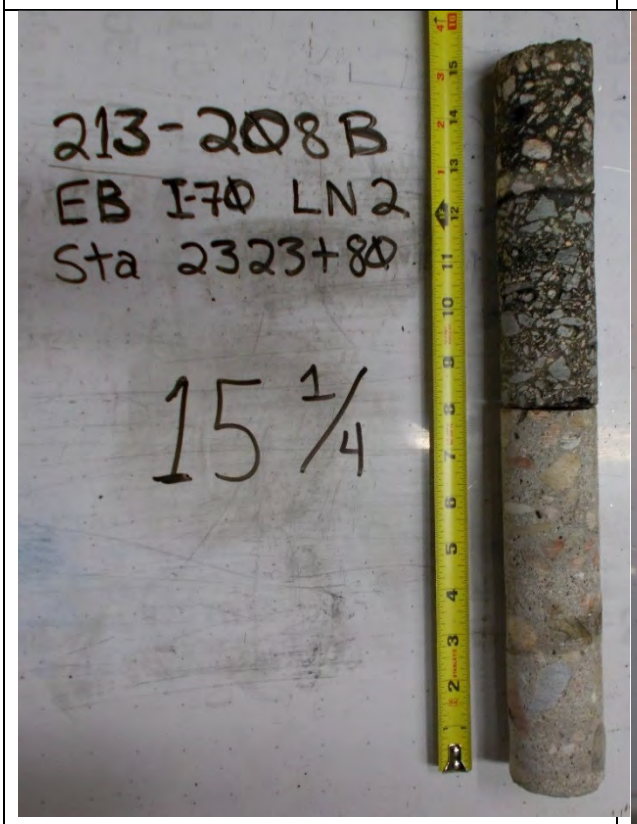

213-208B
EB I-70 LN2
Sta 2231+40
13"

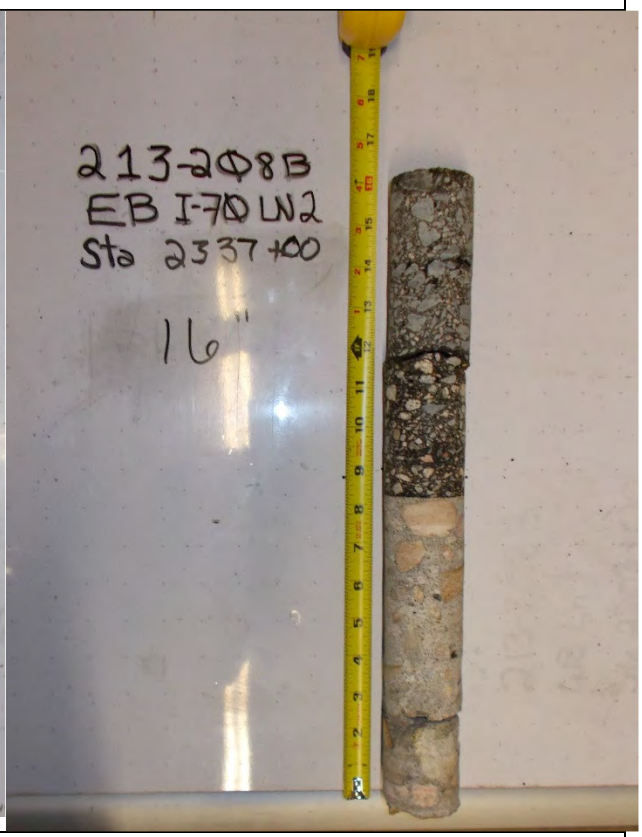

213-208B
EB I-70 LN2
Sta 2244+60
15 1/4"

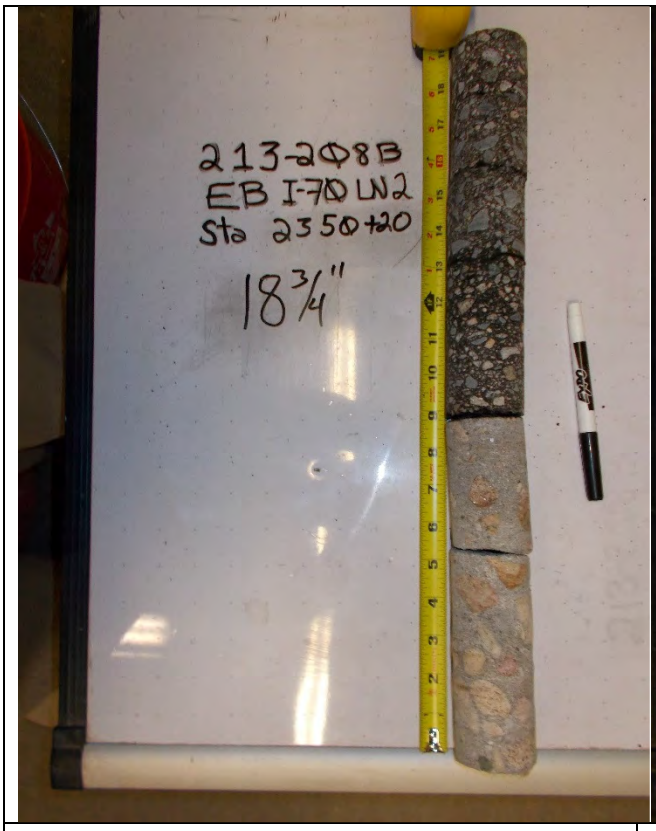

213-208B
EB I-70 LN2
Sta 2257+80
17 3/4"

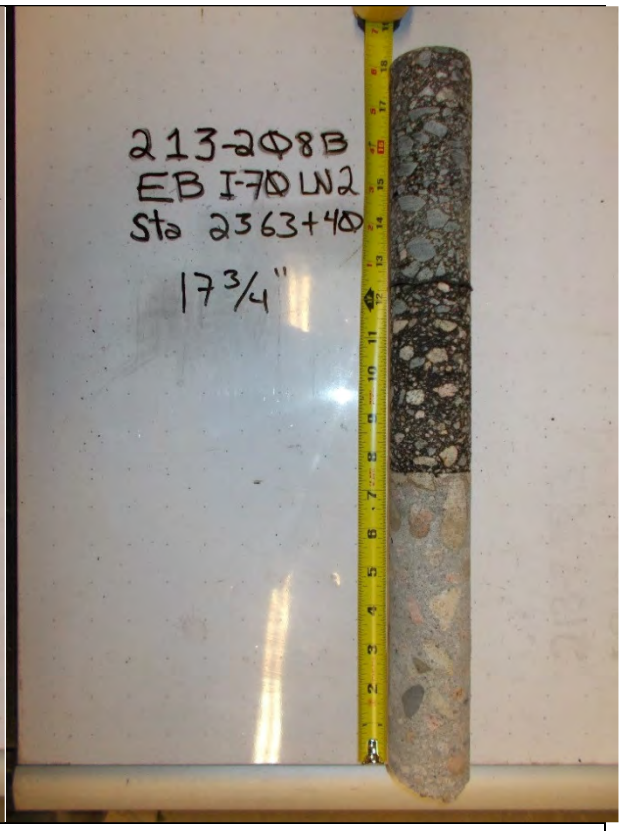
213-2Φ8B
EB I-7Φ LN2
Sta 2271+00
14"

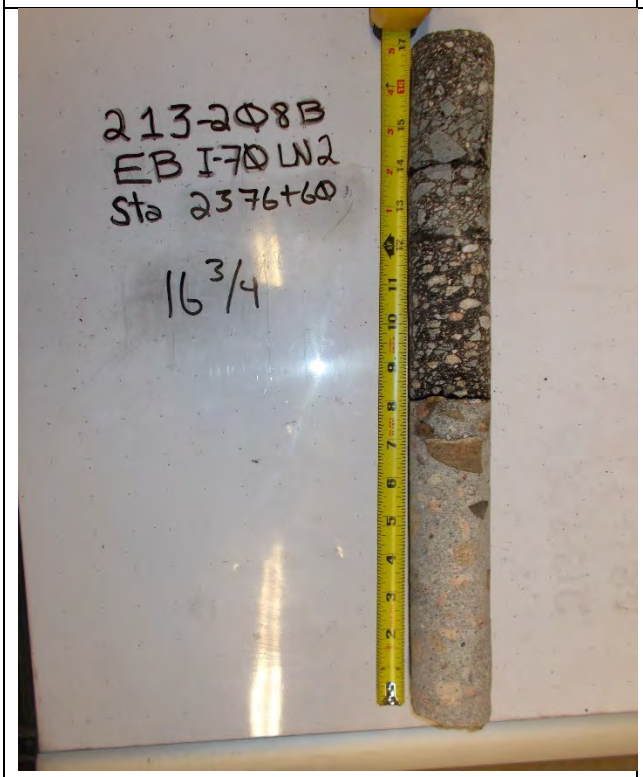

213-2Φ8B
EB I-7Φ LN2
Sta 2310+60
13"

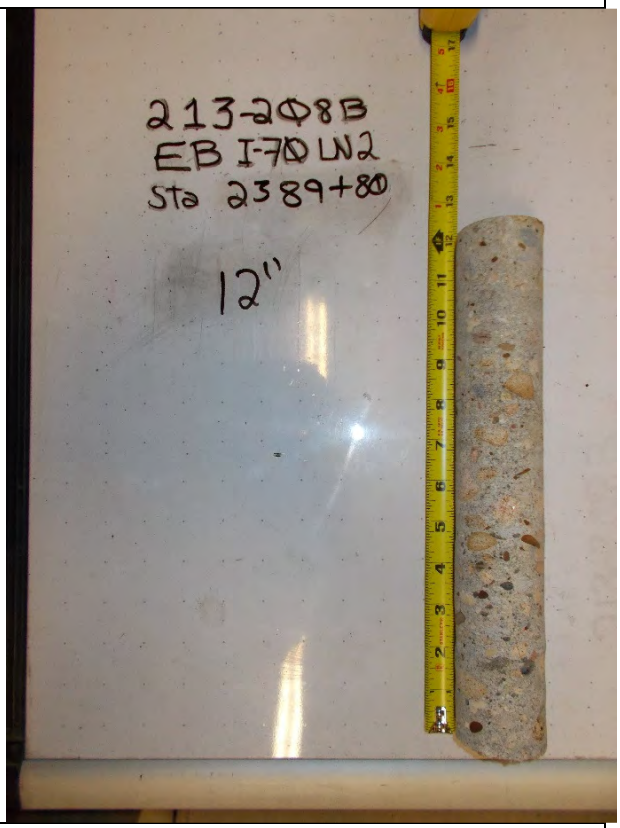

213-2Φ8B
EB I-7Φ LN2
Sta 2323+80
15 1/4

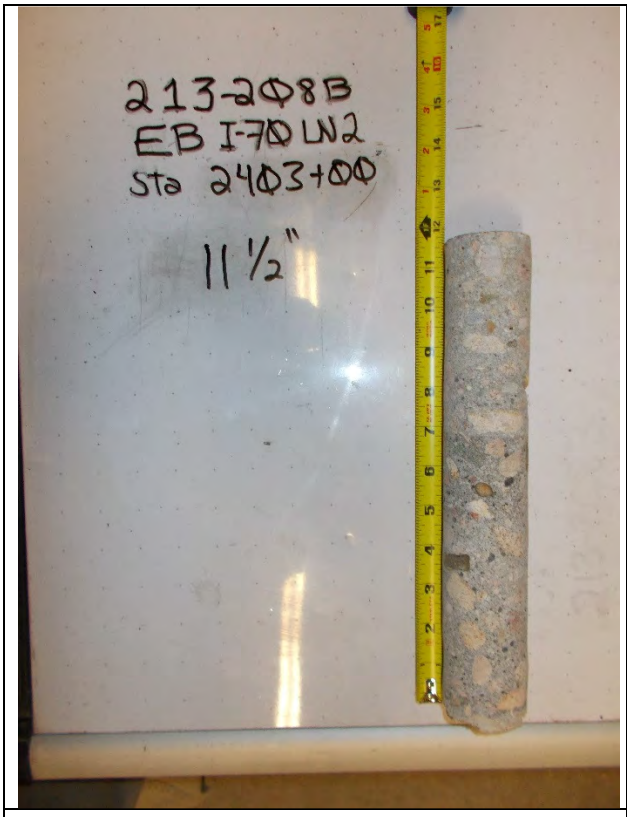

213-2Φ8B
EB I-7Φ LN2
Sta 2337+00
16"

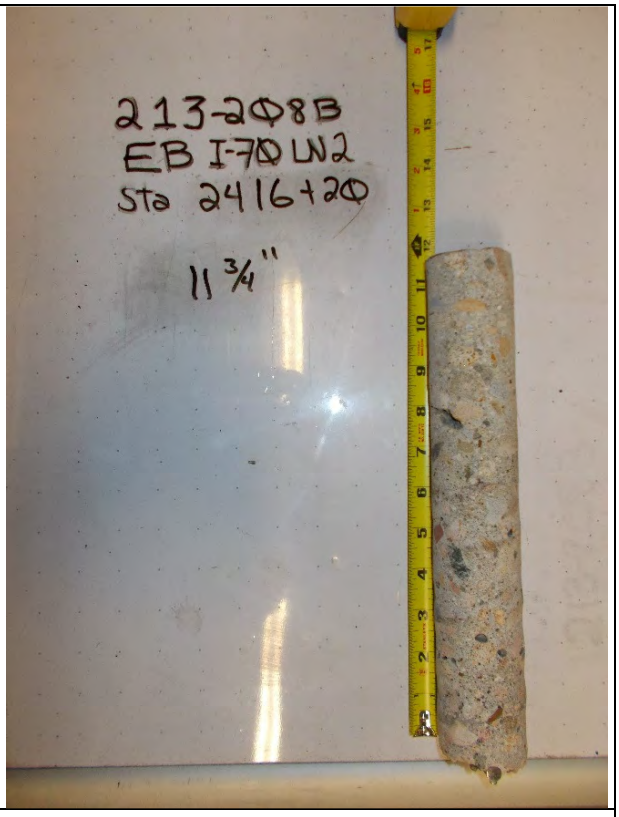

213-2Φ8B
EB I-70 LN2
Sta 2350+20
18 3/4"

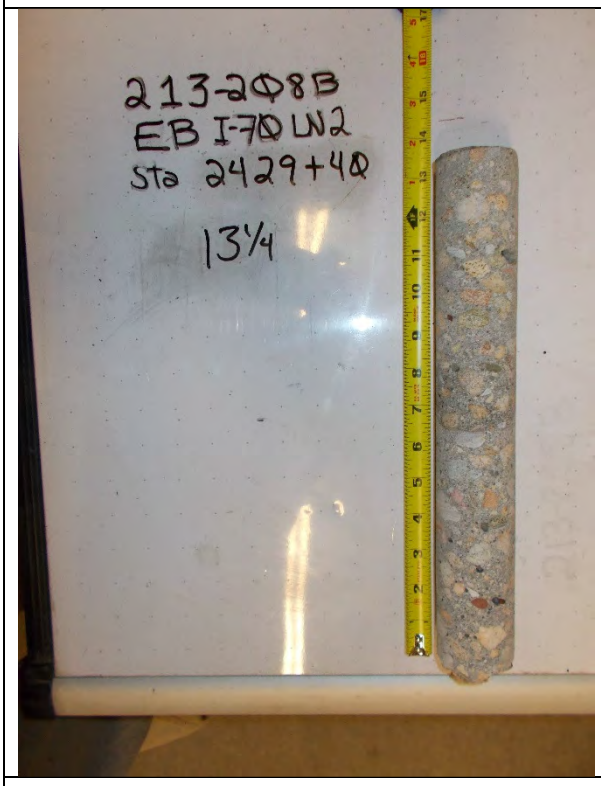

213-2Φ8B
EB I-70 LN2
Sta 2363+40
17 3/4"

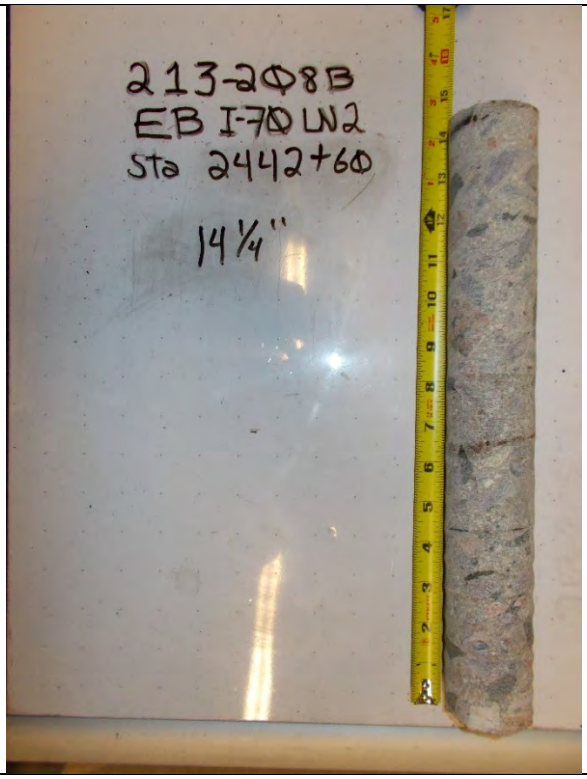

213-2Φ8B
EB I-70 LN2
Sta 2376+60
16 3/4

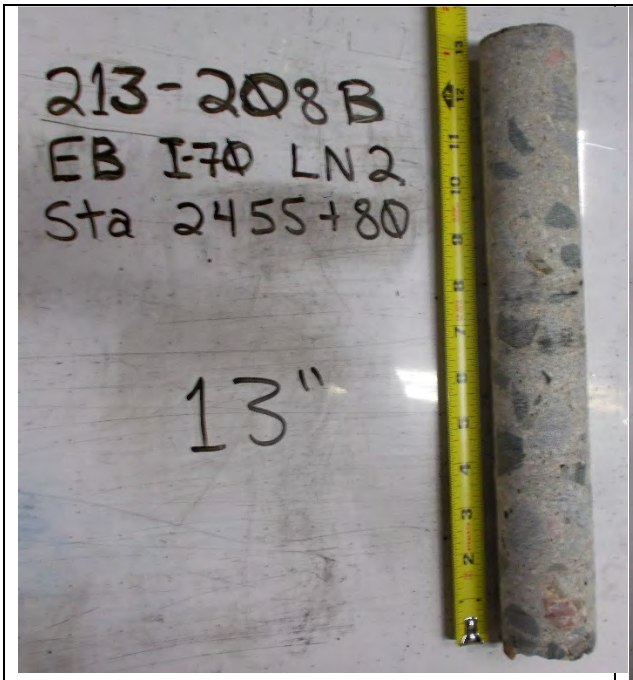

213-2Φ8B
EB I-70 LN2
Sta 2389+80
12"

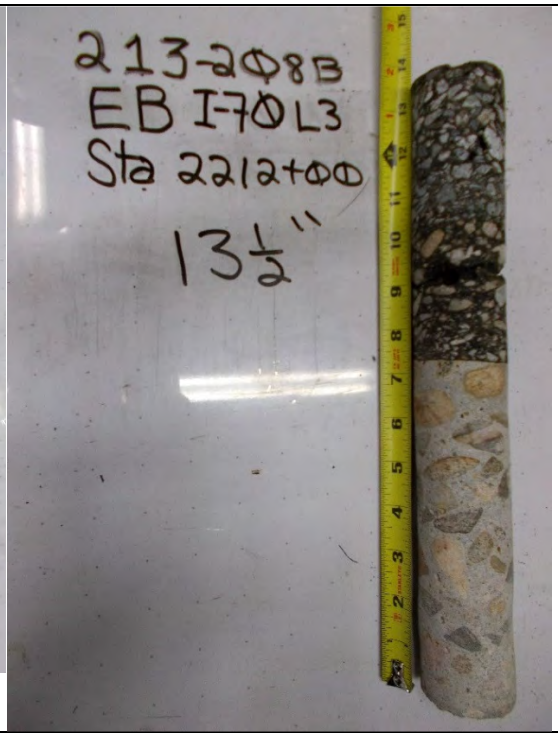

213-2Φ8B
EB I-7Φ LN2
Sta 24Φ3+ΦΦ
11 ½"

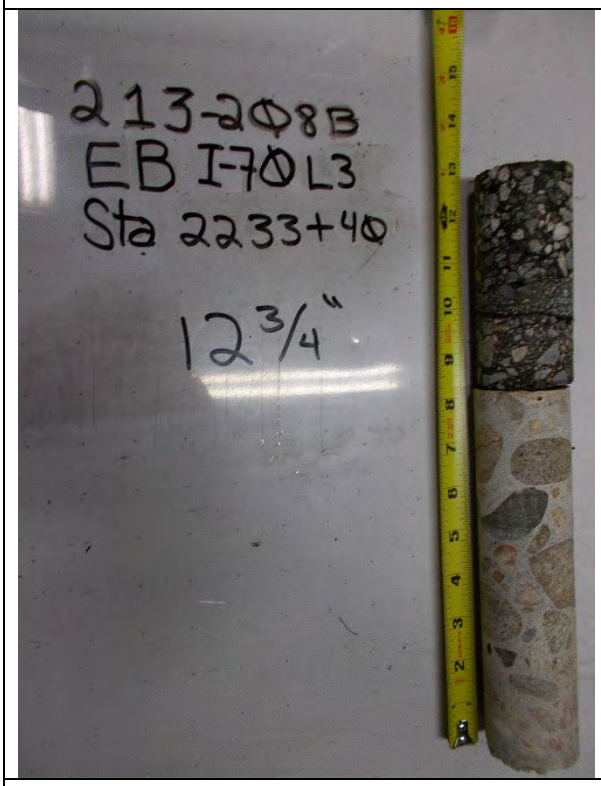

213-2Φ8B
EB I-7Φ LN2
Sta 2416+2Φ
11 ¾"

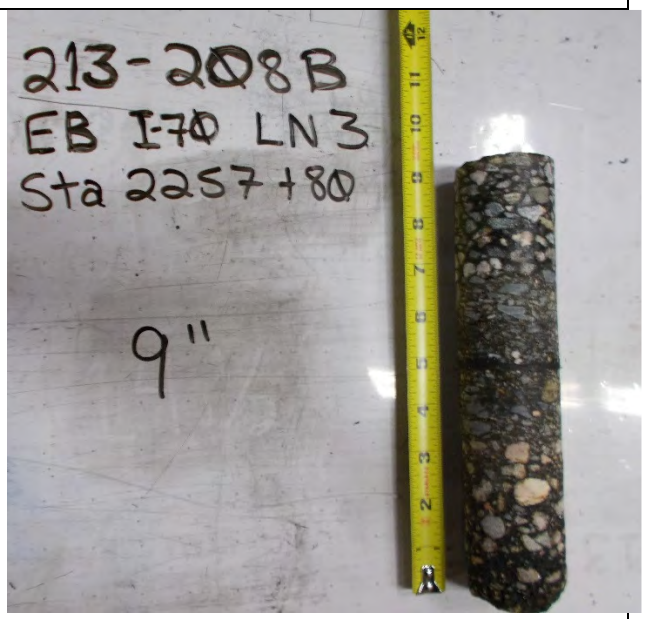

213-2Φ8B
EB I-7Φ LN2
Sta 2429+4Φ
13¼

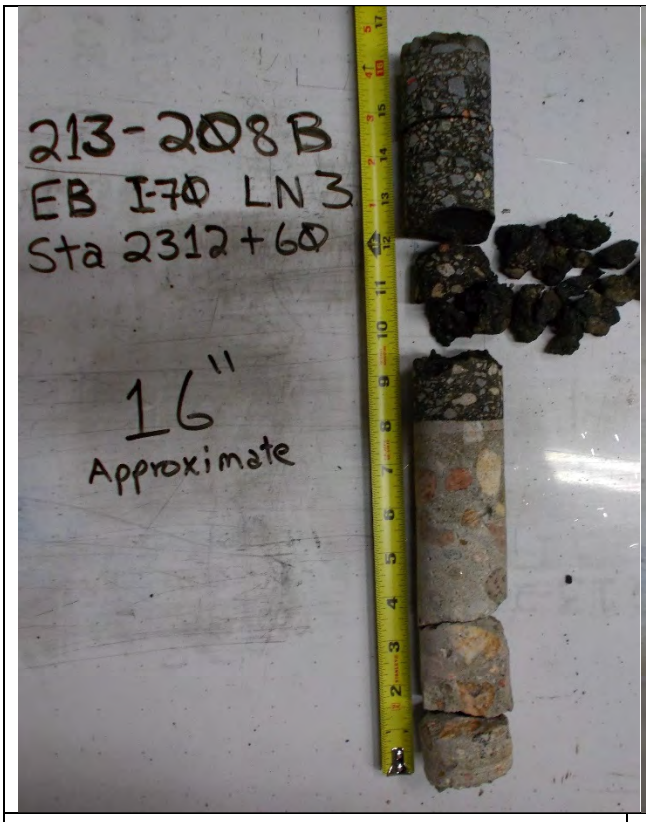

213-2Φ8B
EB I-7Φ LN2
Sta 2442+6Φ
14¼"

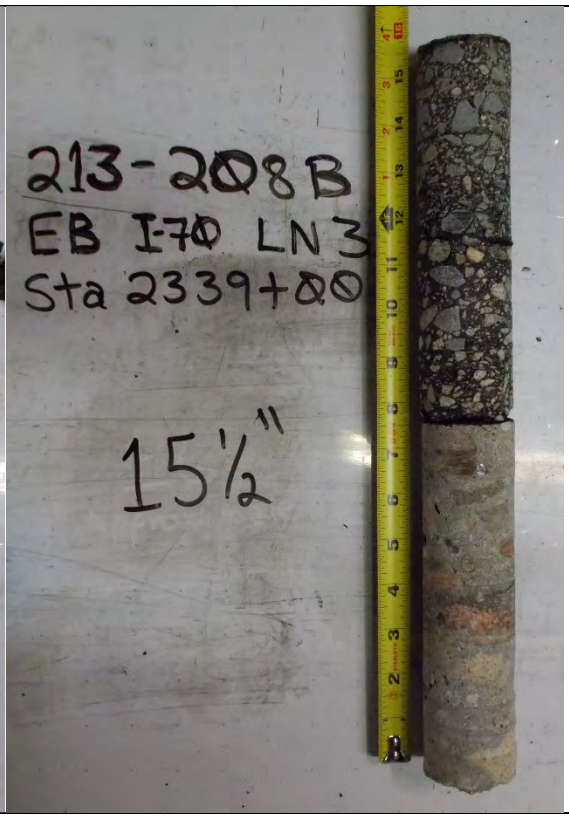

213-2Ø8B
EB I-7Ø LN2
Sta 2455+8Ø
13"

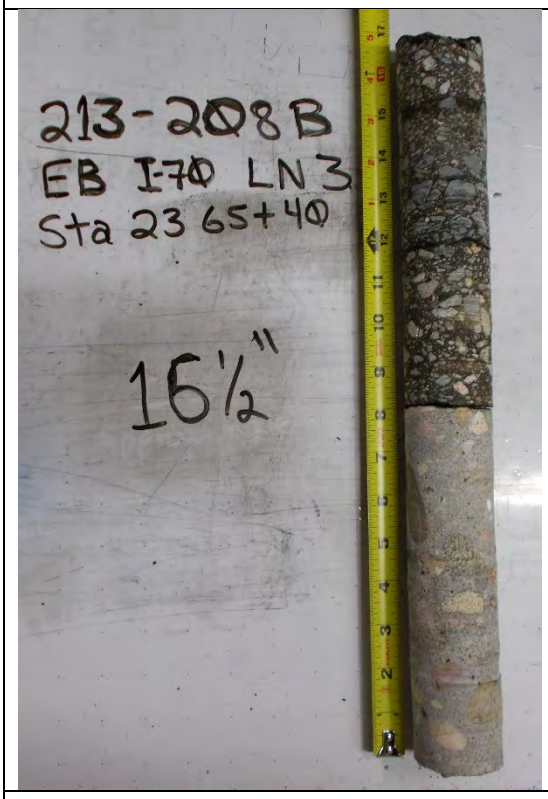

213-2Ø8B
EB I-7Ø L3
Sta 2212+ØØ
13 1/2"

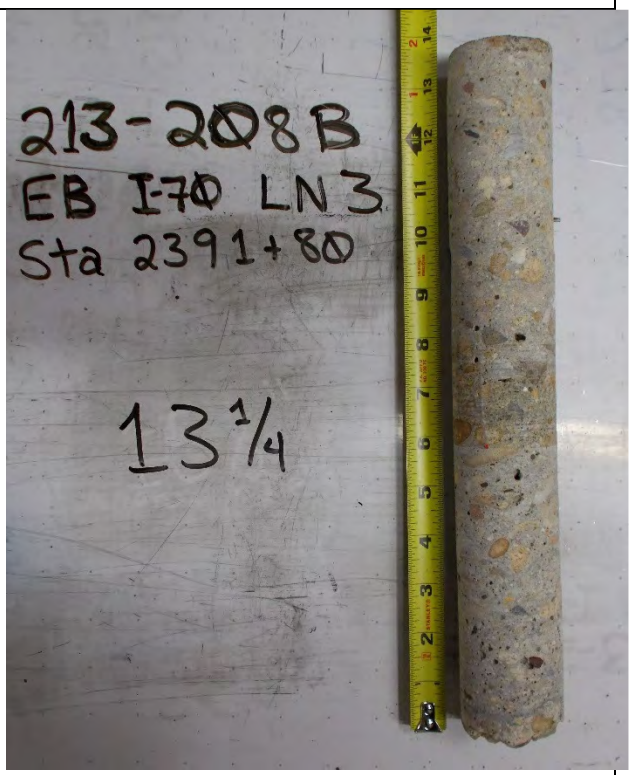

213-2Ø8B
EB I-7Ø L3
Sta 2233+4Ø
12 3/4"

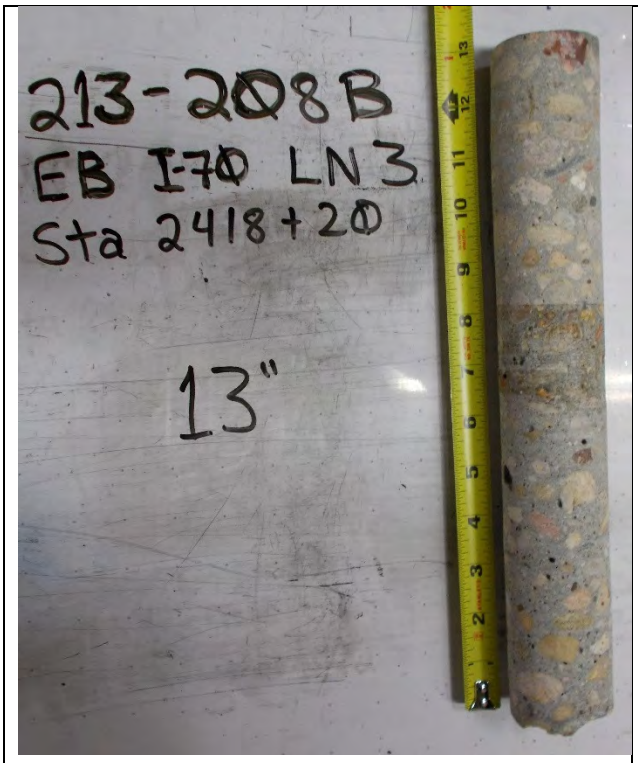

213-2Ø8B
EB I-7Ø LN3
Sta 2257+8Ø
9"

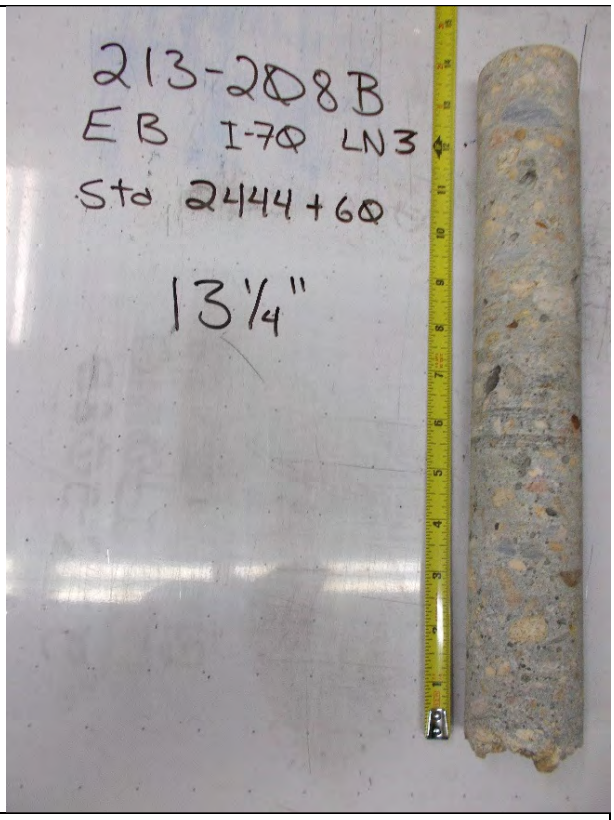

213-208B
EB I-70 LN3
Sta 2312+60
16"
Approximate

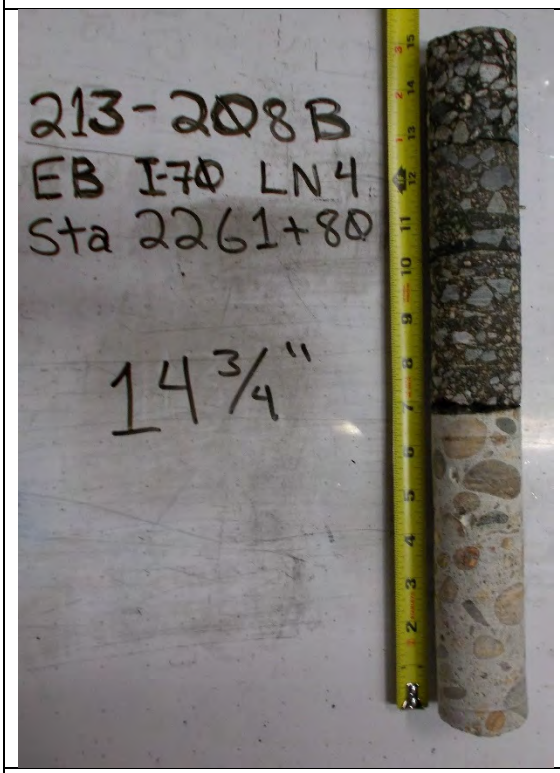

213-208B
EB I-70 LN3
Sta 2339+00
15½"

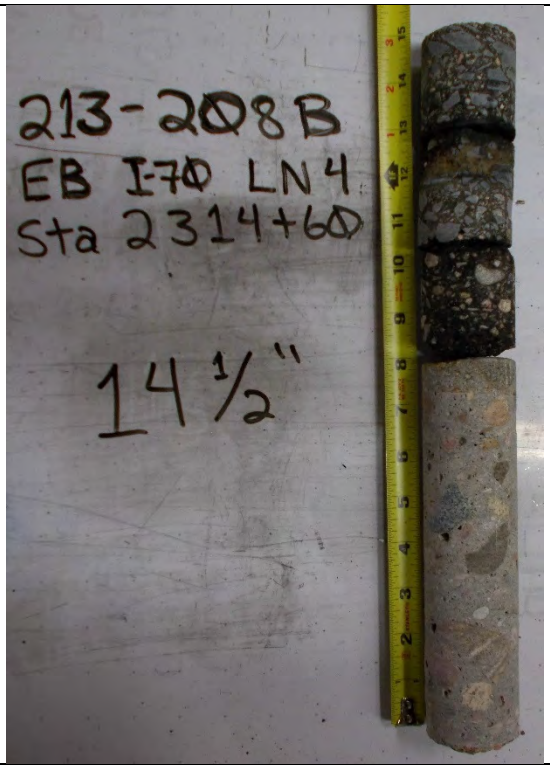

213-208B
EB I-70 LN3
Sta 2365+40
16½"

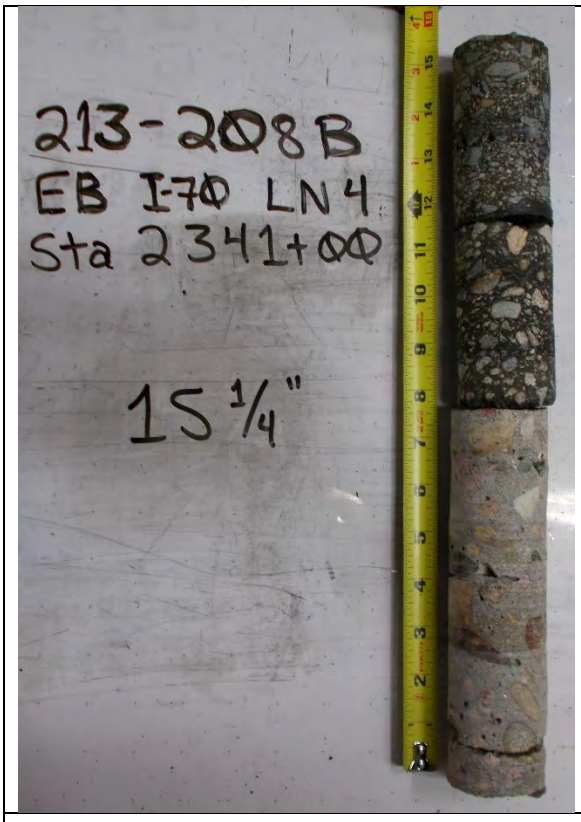

213-208B
EB I-70 LN3
Sta 2391+80
13¼


213-208B
EB I-70 LN3
Sta 2418+20
13"

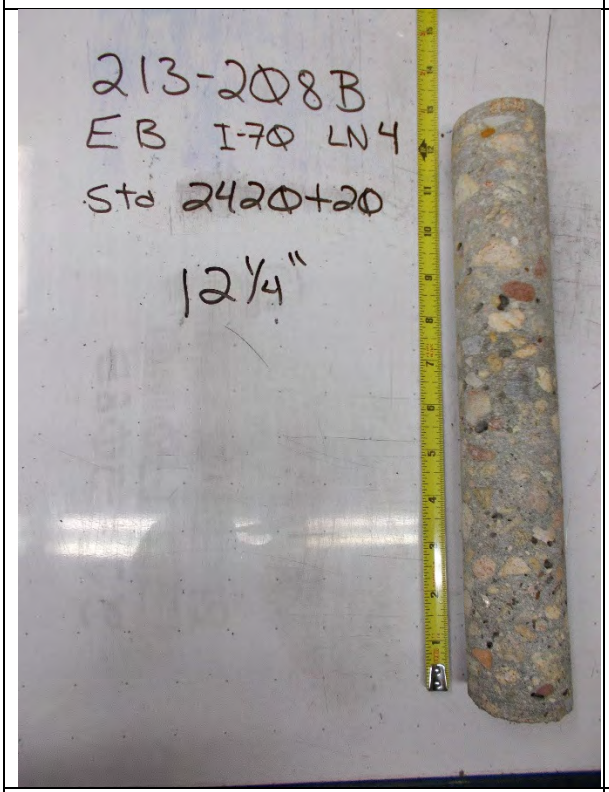

213-208B
EB I-70 LN3
Sta 2444+60
13¼"

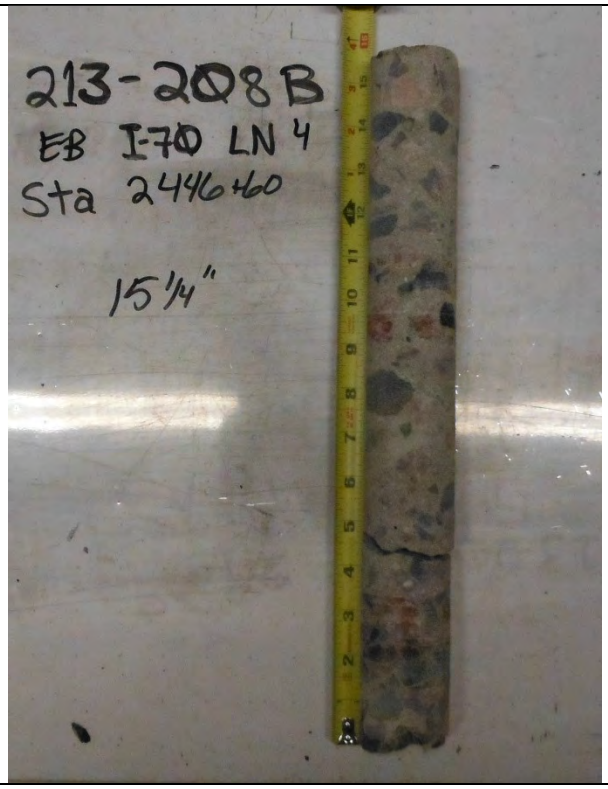

213-208B
EB I-70 LN4
Sta 2261+80
14¾"

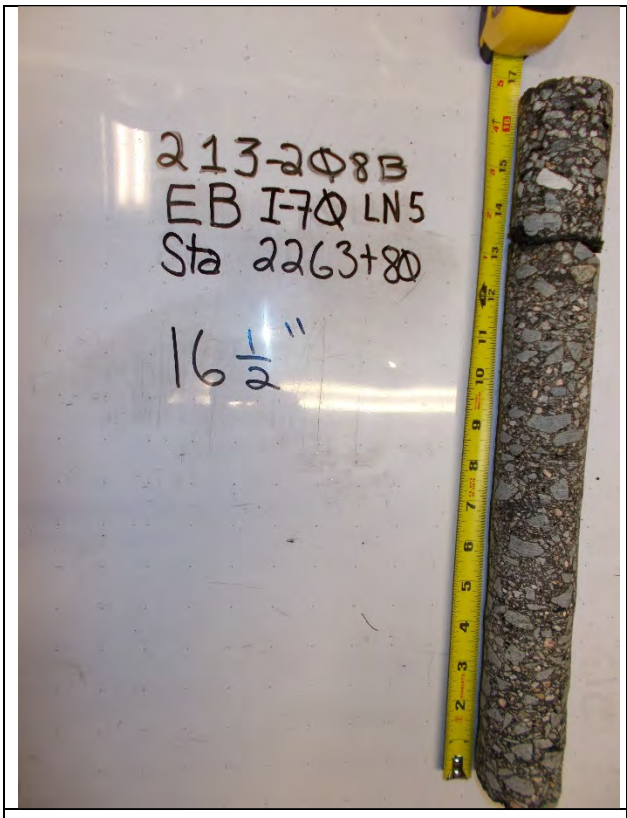

213-208B
EB I-70 LN4
Sta 2314+60
14½"

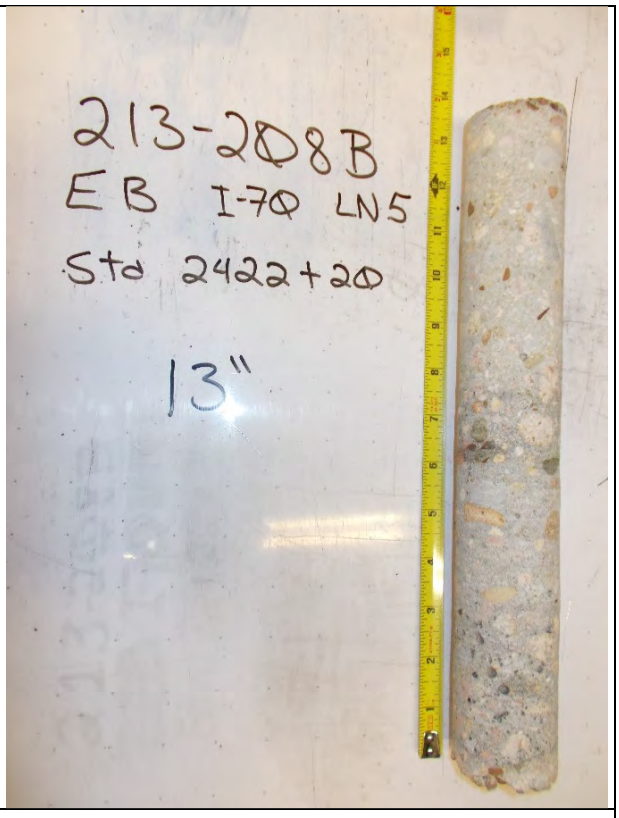

213-208B
EB I-70 LN 4
Sta 2341+00
15 1/4"

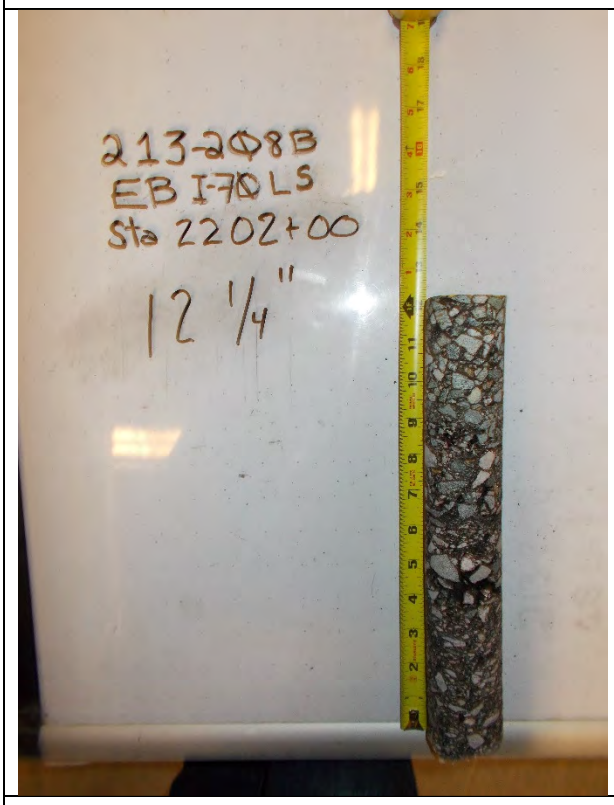
213-208B
EB I-70 LN 4
Sta 2367+40
15"
Approximate

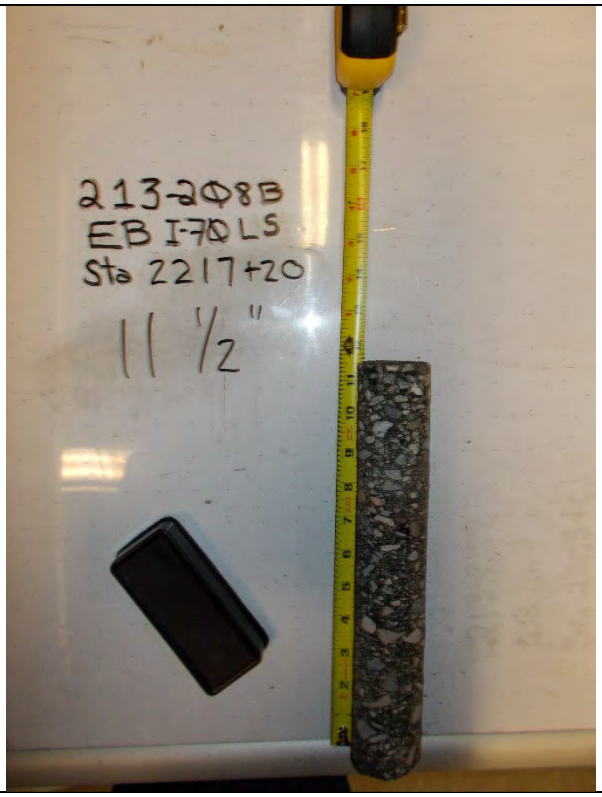

213-208B
EB I-70 LN 4
Sta 2420+20
12 1/4"

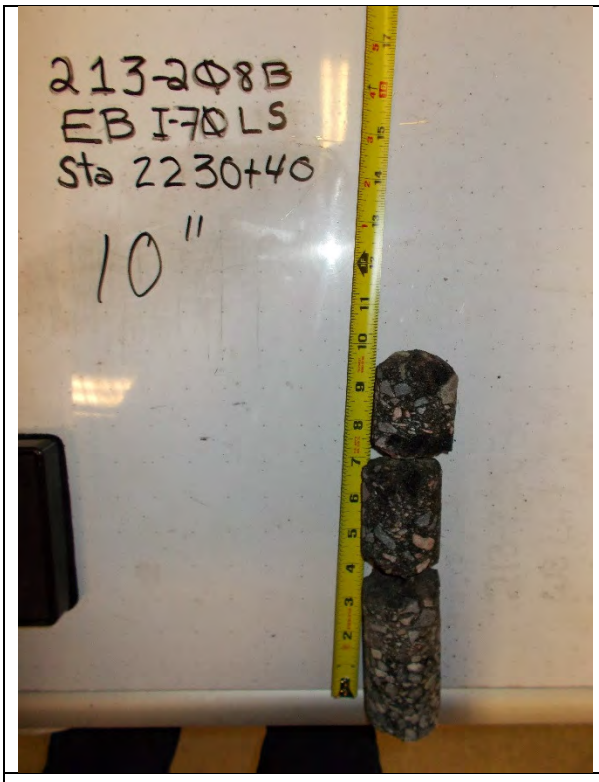

213-208B
EB I-70 LN 4
Sta 2446+60
15 1/4"


213-2Φ8B
EB I-7Φ LN5
Sta 2263+80
16 1/2"

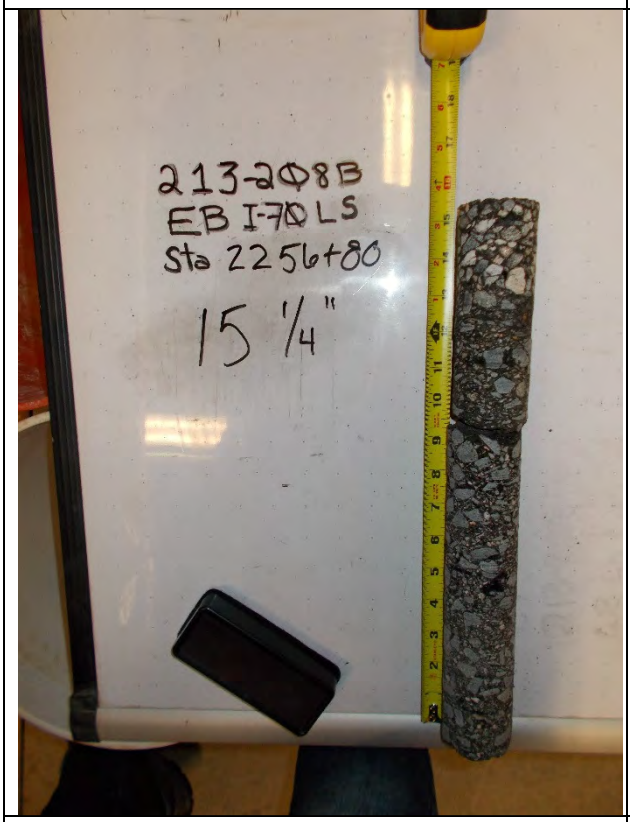

213-2Φ8B
EB I-7Φ LN5
Sta 2422+20
13"

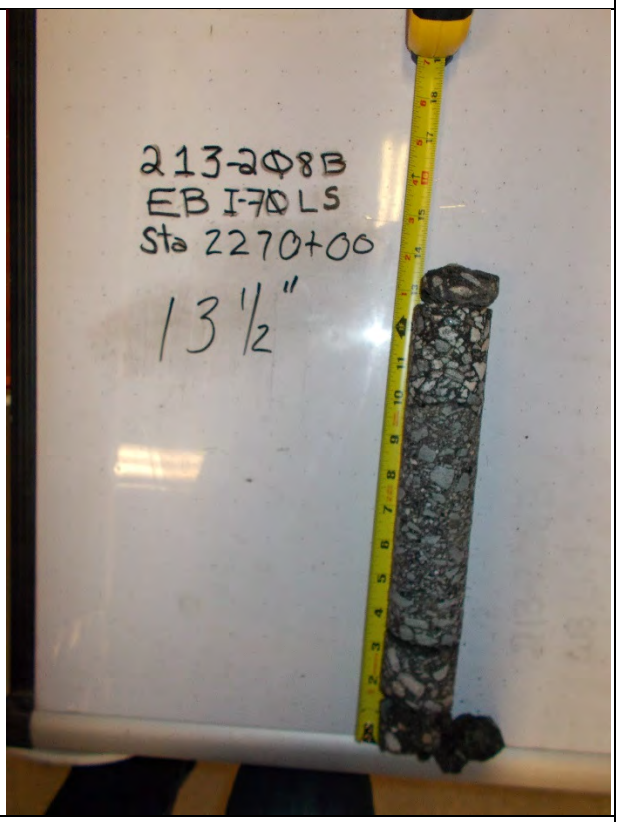

213-2Φ8B
EB I-7Φ LS
Sta 2202+00
12 1/4"

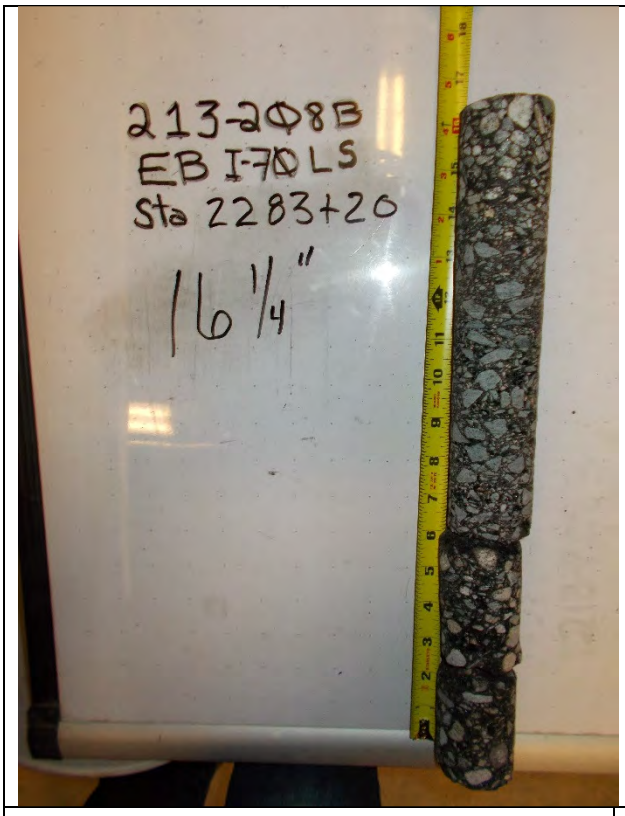

213-2Φ8B
EB I-7Φ LS
Sta 2217+20
11 1/2"


213-2Φ8B
EB I-70 LS
Sta 2230+40
10"

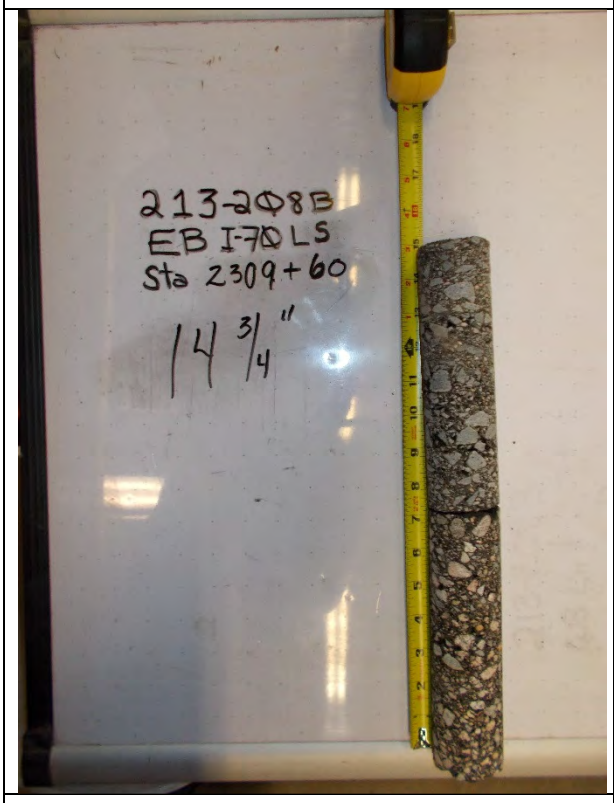
213-2Φ8B
EB I-70 LS
Sta 2243+60
15"

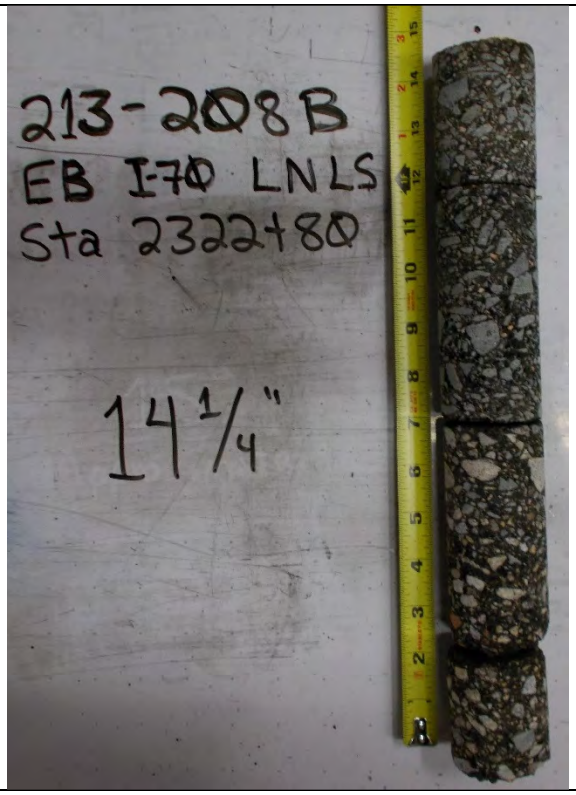

213-2Φ8B
EB I-70 LS
Sta 2256+80
15 1/4"

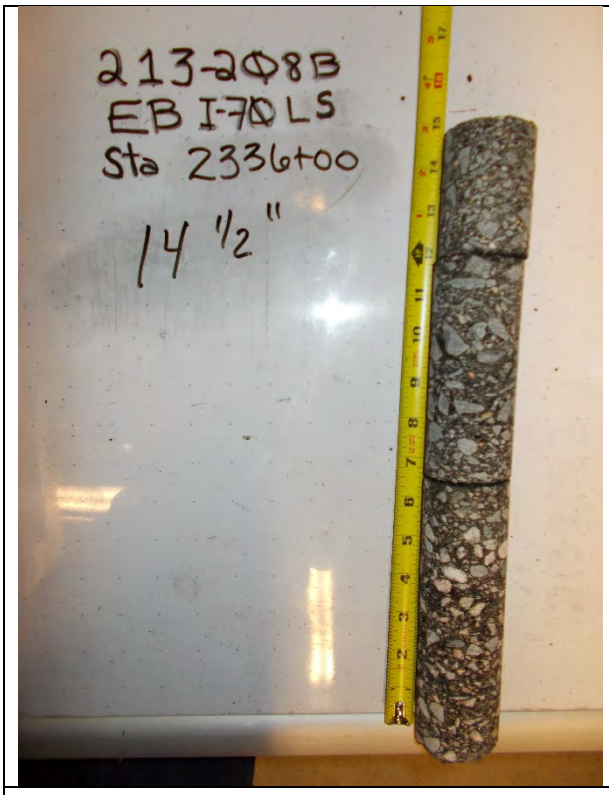

213-2Φ8B
EB I-70 LS
Sta 2270+00
13 1/2"

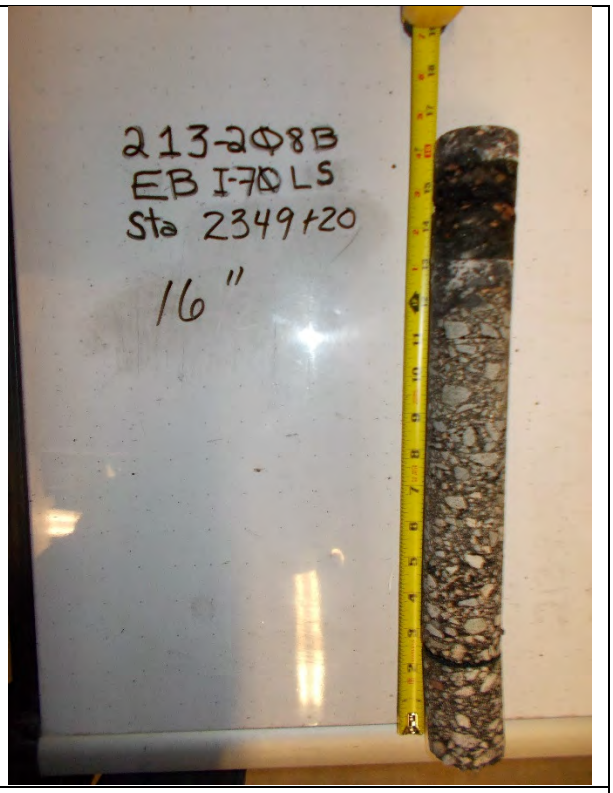

213-2Ø8B
EB I-7Ø LS
Sta 2283+20
16 1/4"

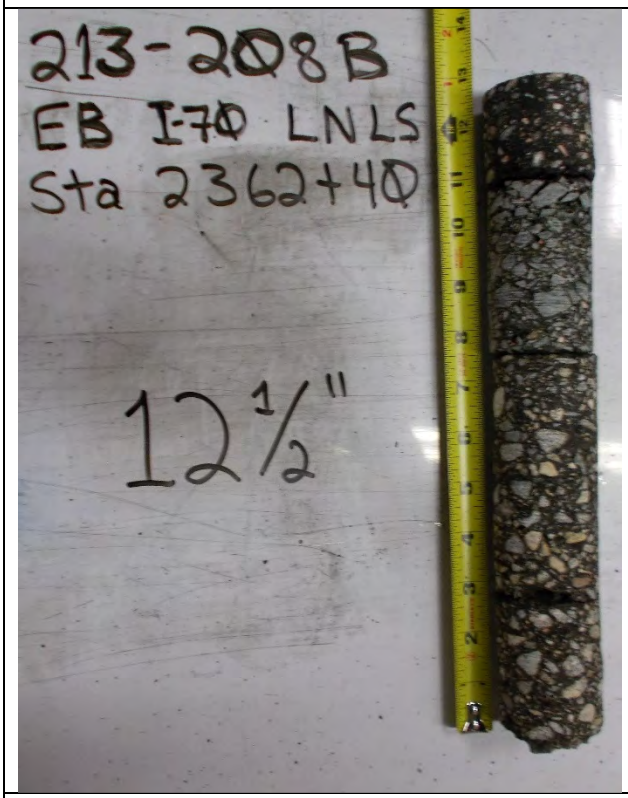
213-2Ø8B
EB I-7Ø LN LS
Sta 2296+40
14 3/4"

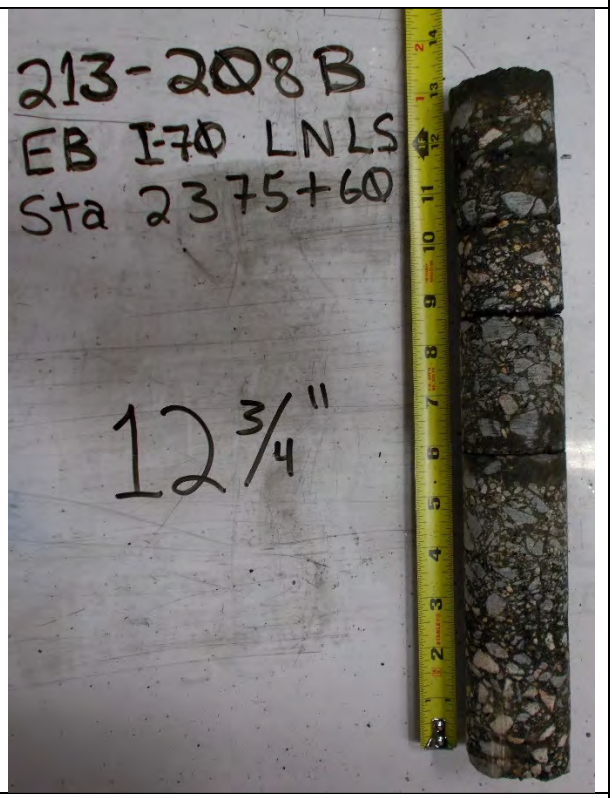

213-2Ø8B
EB I-7Ø LS
Sta 2309+60
14 3/4"

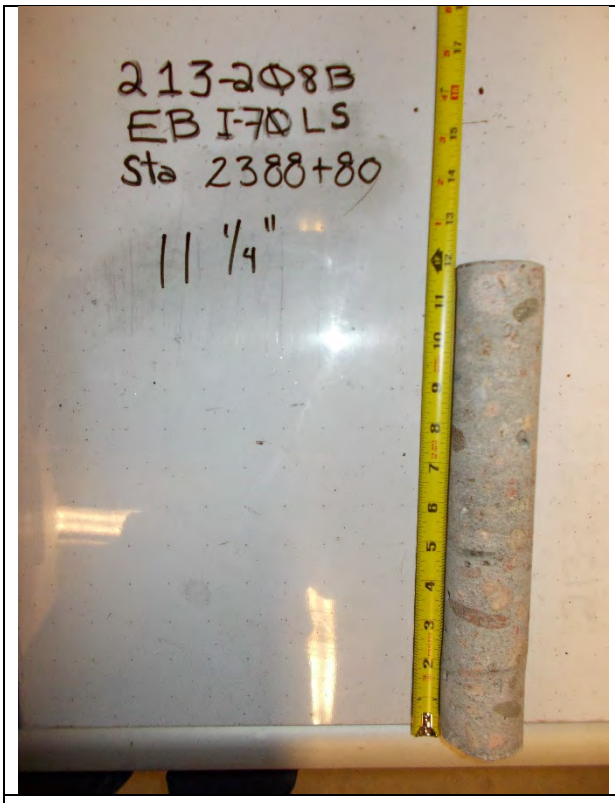

213-2Ø8B
EB I-7Ø LN LS
Sta 2322+8Ø
14 1/4"

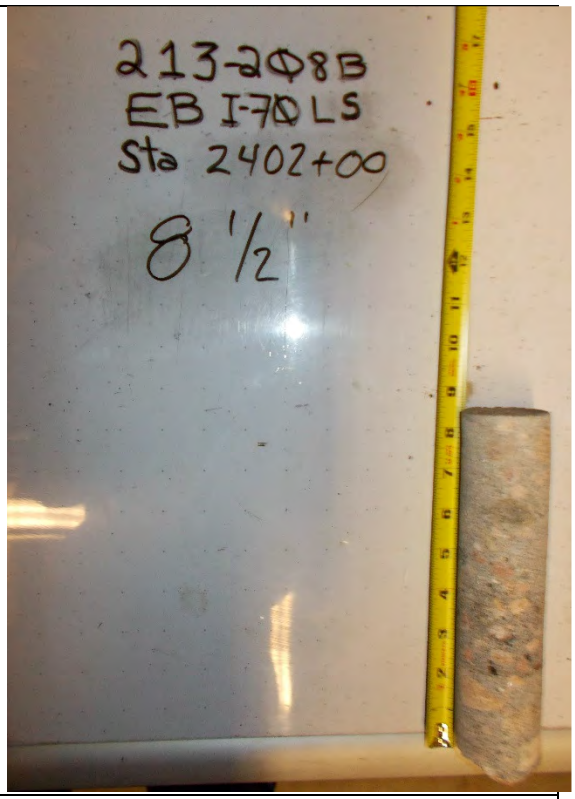

213-208B
EB I-70 LS
Sta 2336+00
14 1/2"

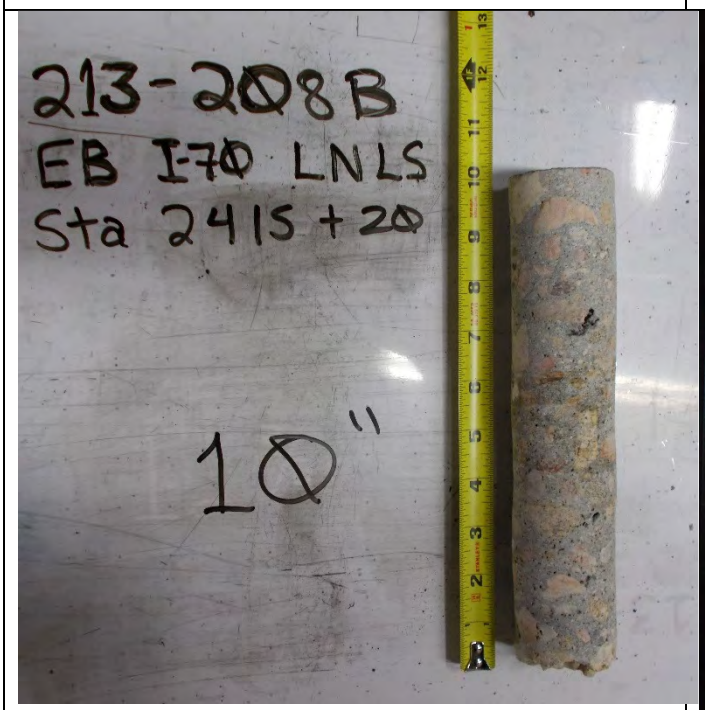

213-208B
EB I-70 LS
Sta 2349+20
16"

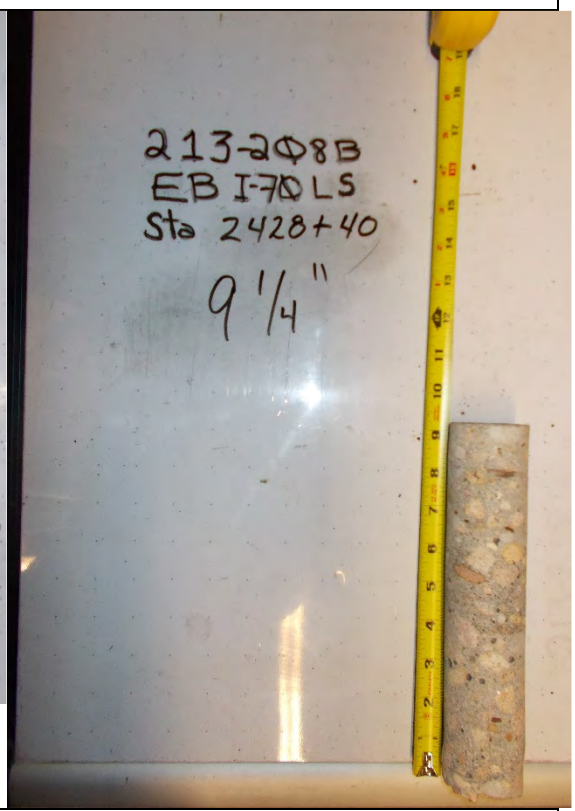

213-208B
EB I-70 LN LS
Sta 2362+40
12 1/2"

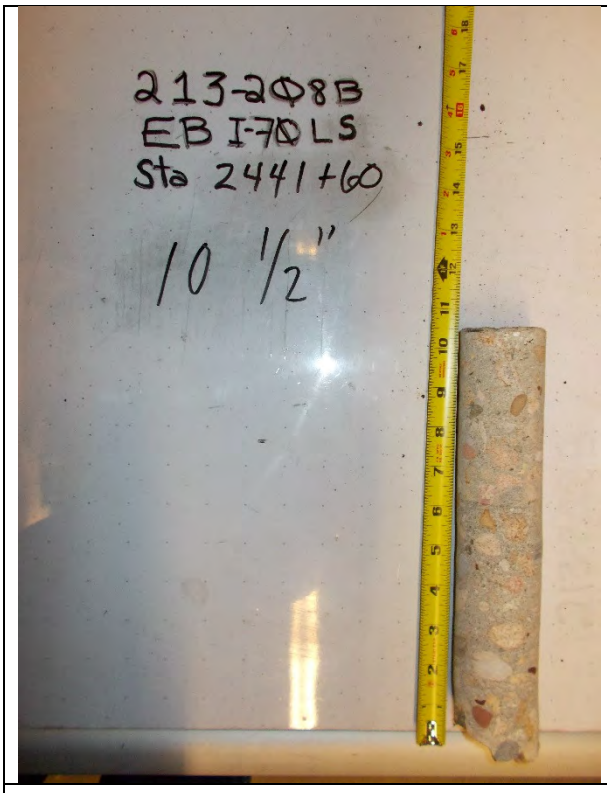

213-208B
EB I-70 LN LS
Sta 2375+60
12 3/4"

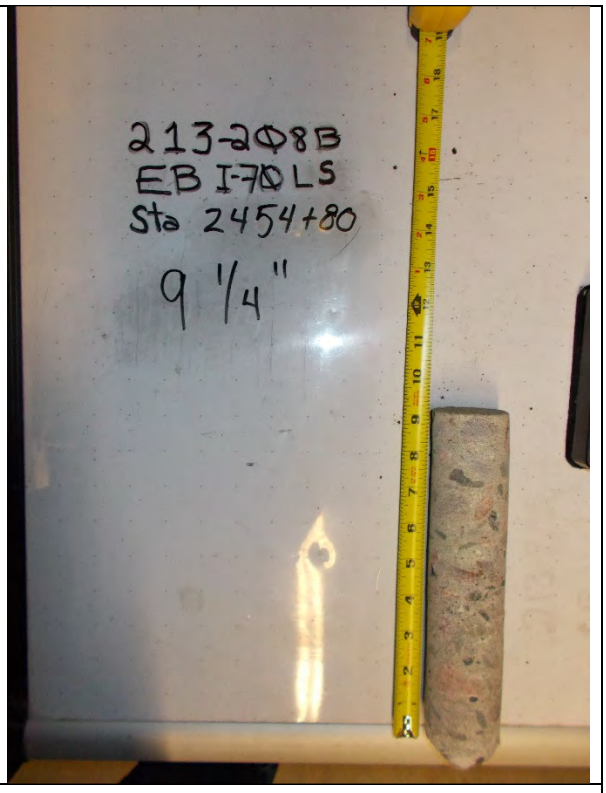

213-208B
EB I-70 LS
Sta 2388+80
11 1/4"

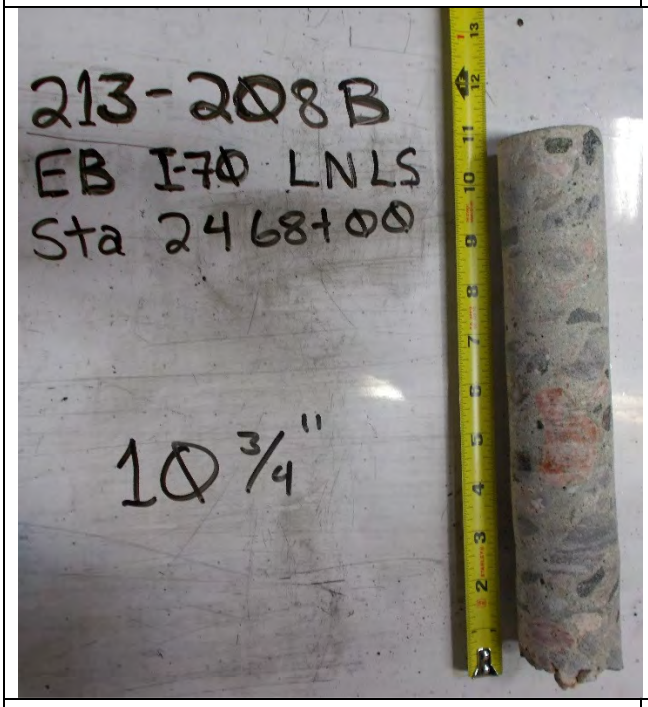

213-208B
EB I-70 LS
Sta 2402+00
8 1/2"

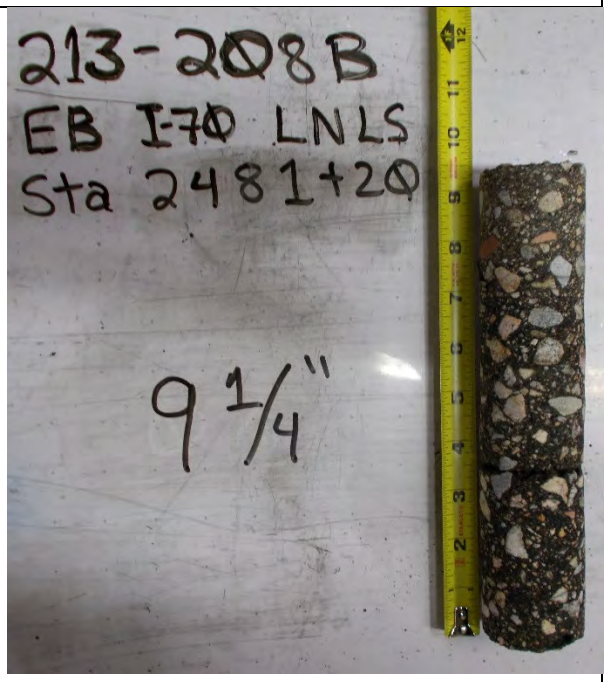

213-208B
EB I-70 LNLS
Sta 2415+20
10"

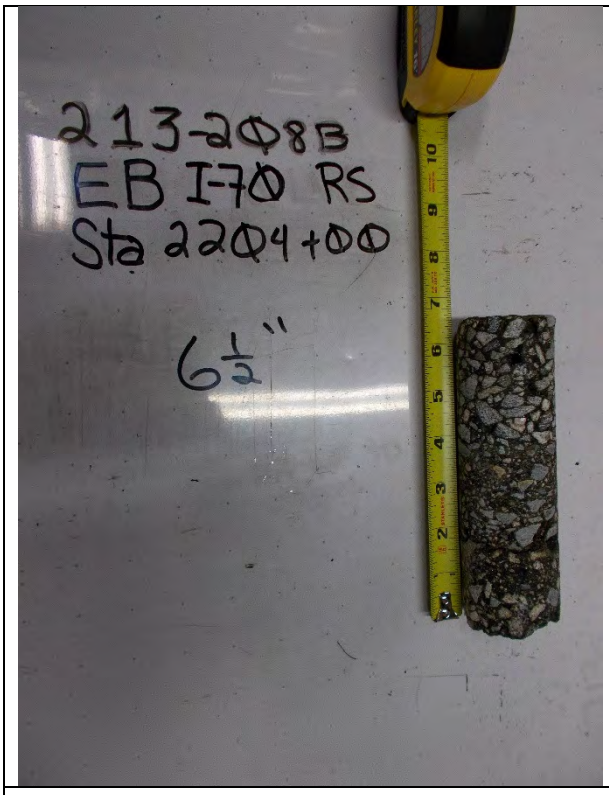

213-208B
EB I-70 LS
Sta 2428+40
9 1/4"

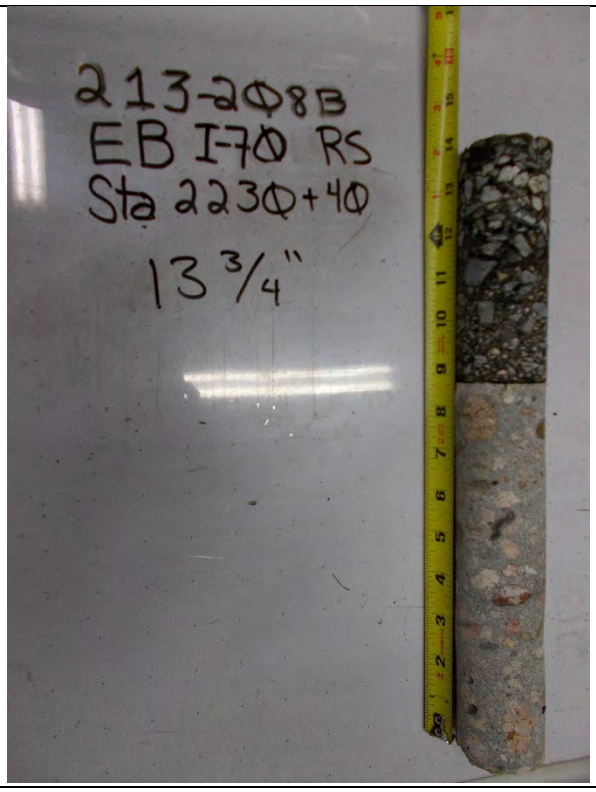

213-208B
EB I-70 LS
Sta 2441+60
10 1/2"

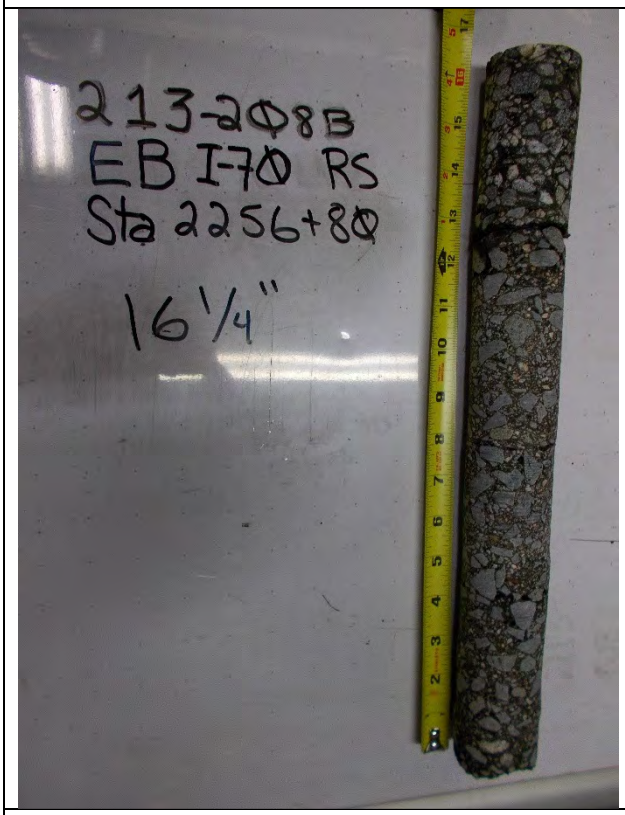

213-208B
EB I-70 LS
Sta 2454+80
9 1/4"

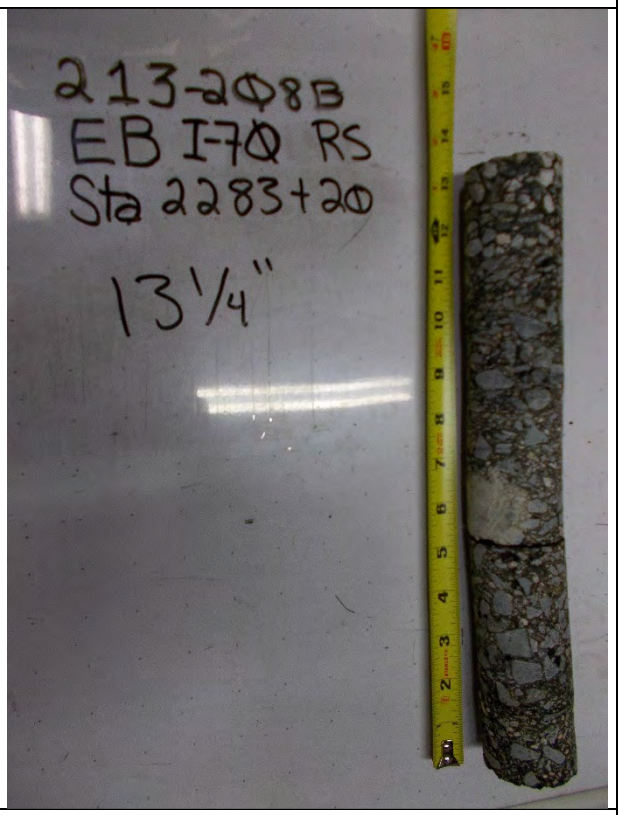

213-208B
EB I-70 LN LS
Sta 2468+00
10 3/4"

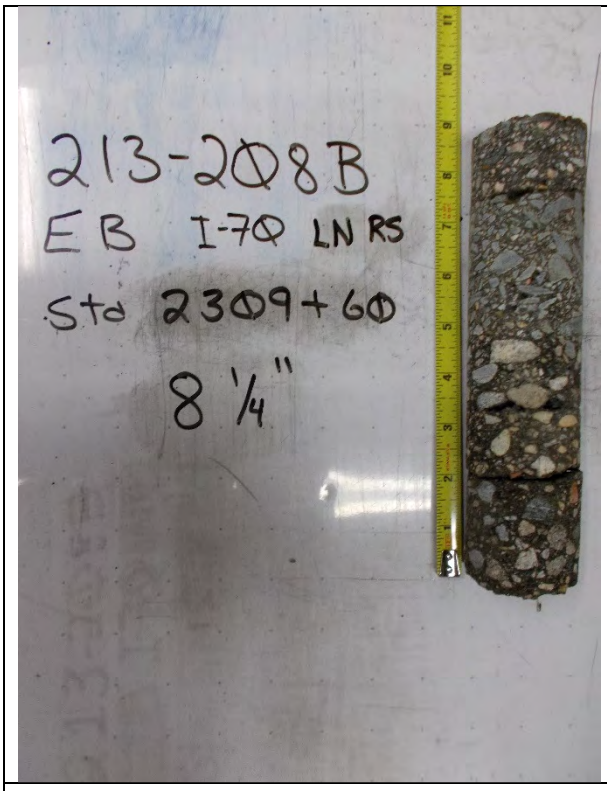

213-208B
EB I-70 LN LS
Sta 2481+20
9 1/4"

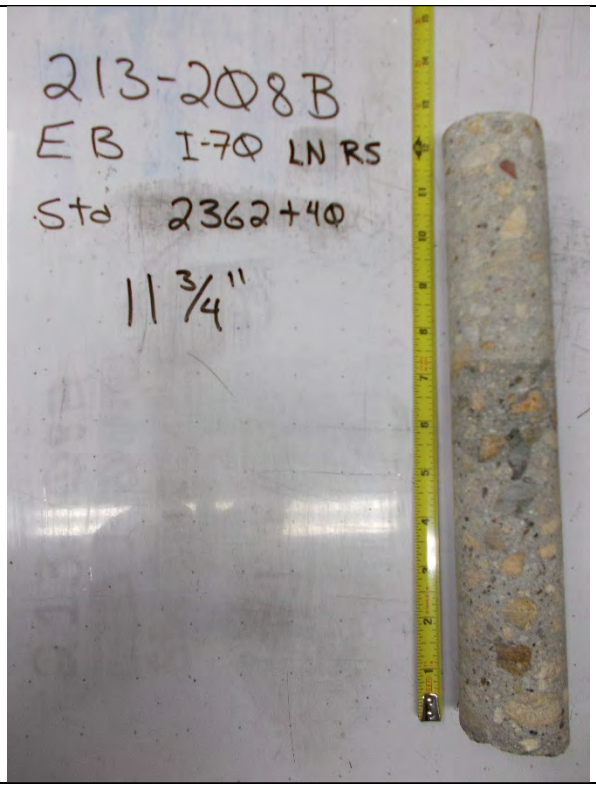

213-2Ø8B
EB I-7Ø RS
Sta 22Ø4+ØØ
6 1/2"

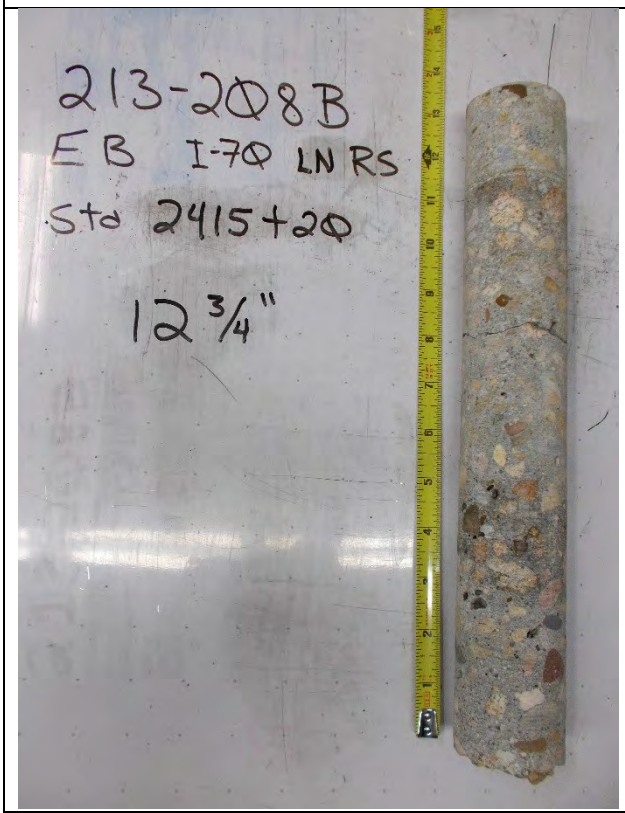

213-2Ø8B
EB I-7Ø RS
Sta 223Ø+4Ø
13 3/4"

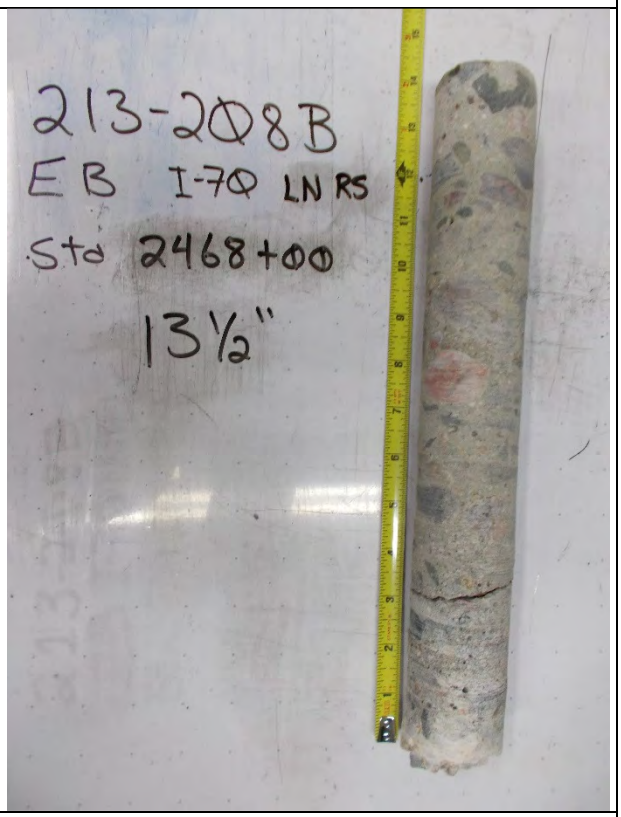

213-2Ø8B
EB I-7Ø RS
Sta 2256+8Ø
16 1/4"

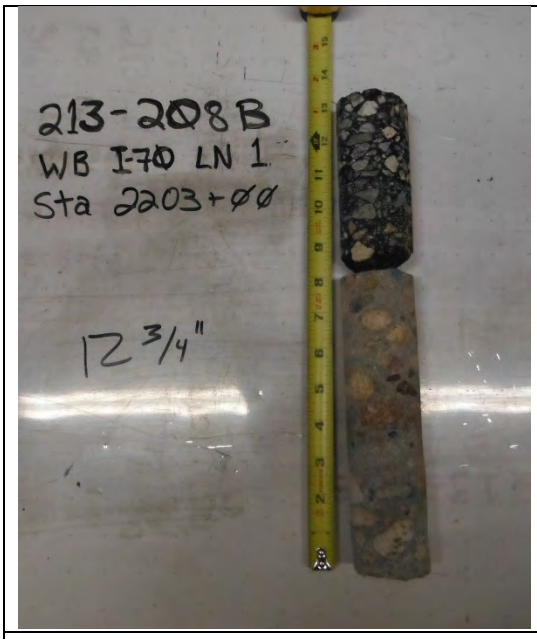

213-2Ø8B
EB I-7Ø RS
Sta 2283+2Ø
13 1/4"

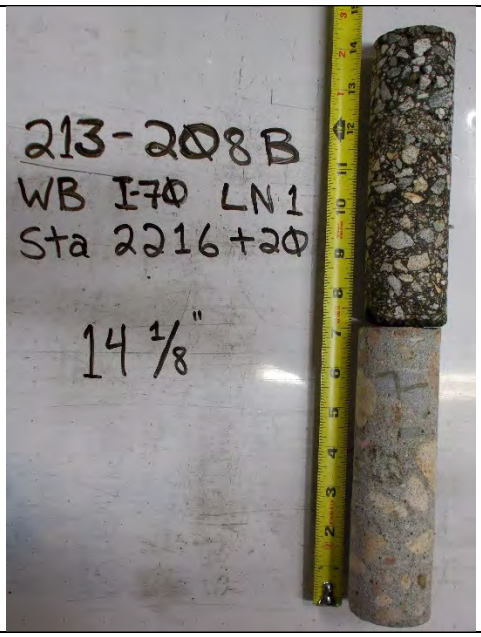

213-208B
EB I-70 LN RS
Sta 2309+60
8 1/4"

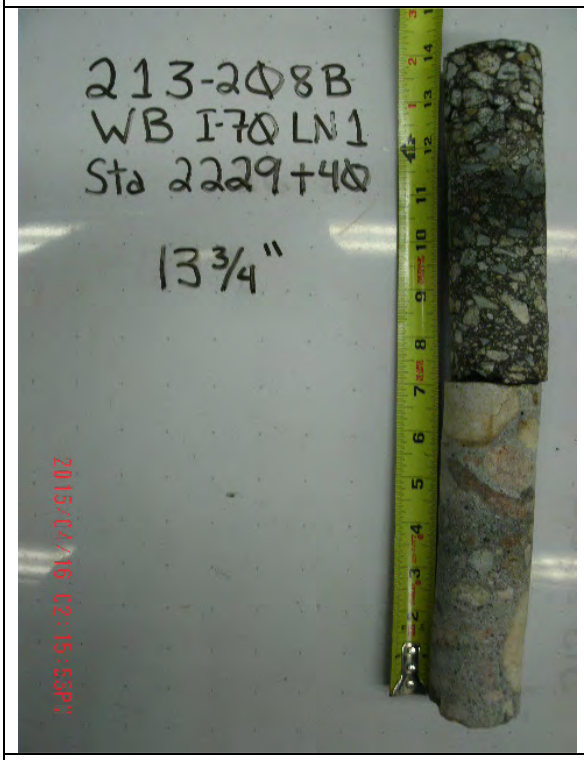

213-208B
EB I-70 LN RS
Sta 2362+40
11 3/4"

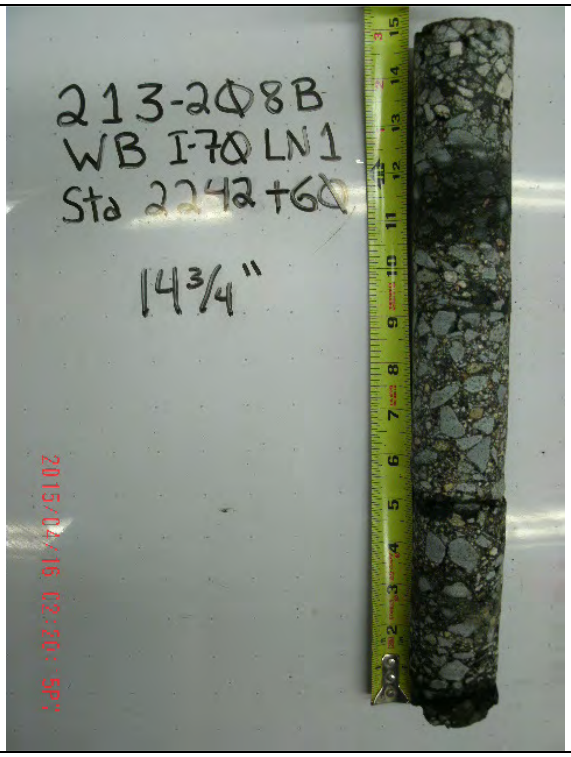

213-208B
EB I-70 LN RS
Sta 2415+20
12 3/4"


213-208B
EB I-70 LN RS
Sta 2468+00
13 1/2"


213-208B
WB I-70 LN 1
Sta 2203+00
12 3/4"

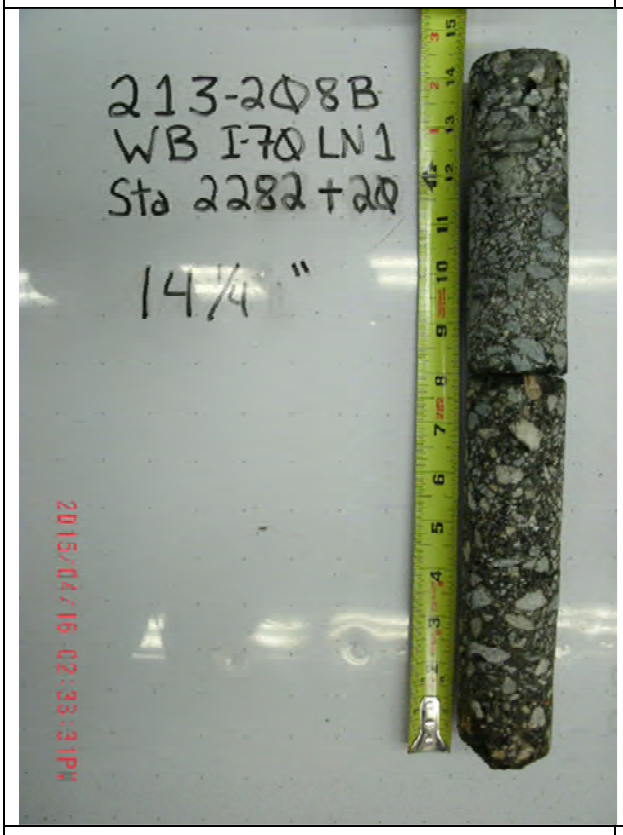

213-208B
WB I-70 LN1
Sta 2216+20
14 1/8"


213-208B
WB I-70 LN1
Sta 2229+40
13 3/4"

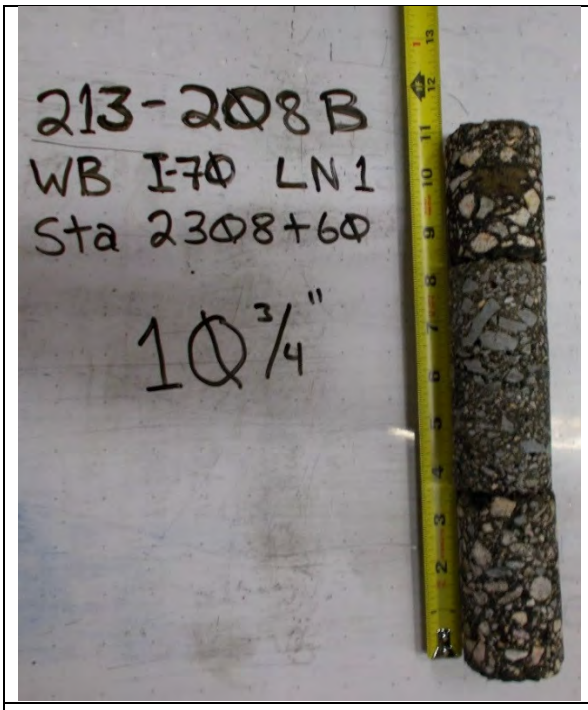

213-208B
WB I-70 LN1
Sta 2242+60
14 3/4"

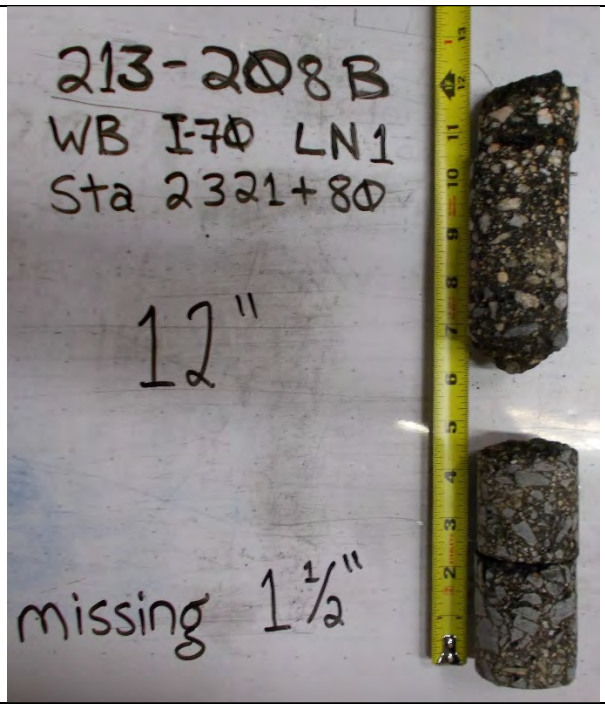
213-208B
WB I-70 LN 1
Sta 2255+80
14 1/4 "

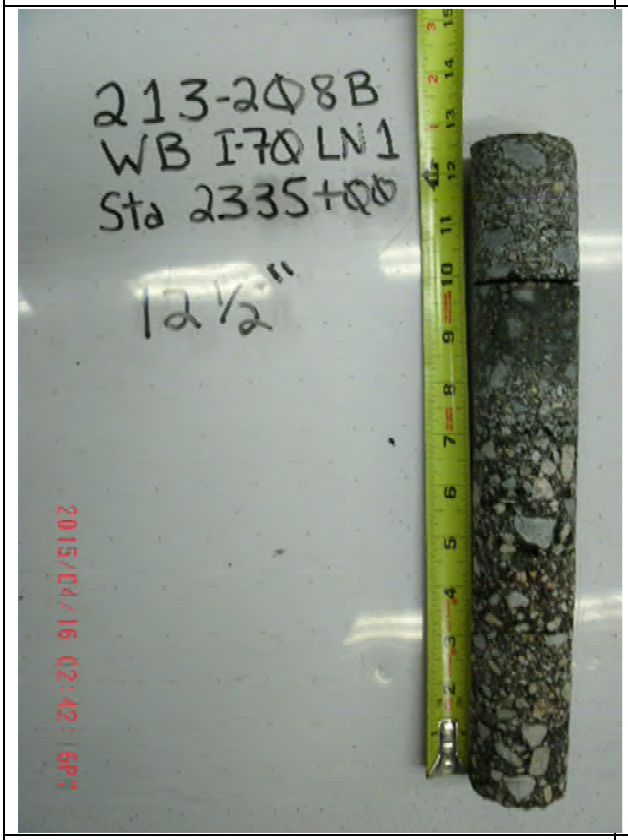
213-208B
WB I-70 LN 1
Sta 2269+00
11 1/2"
4 3/4" missing

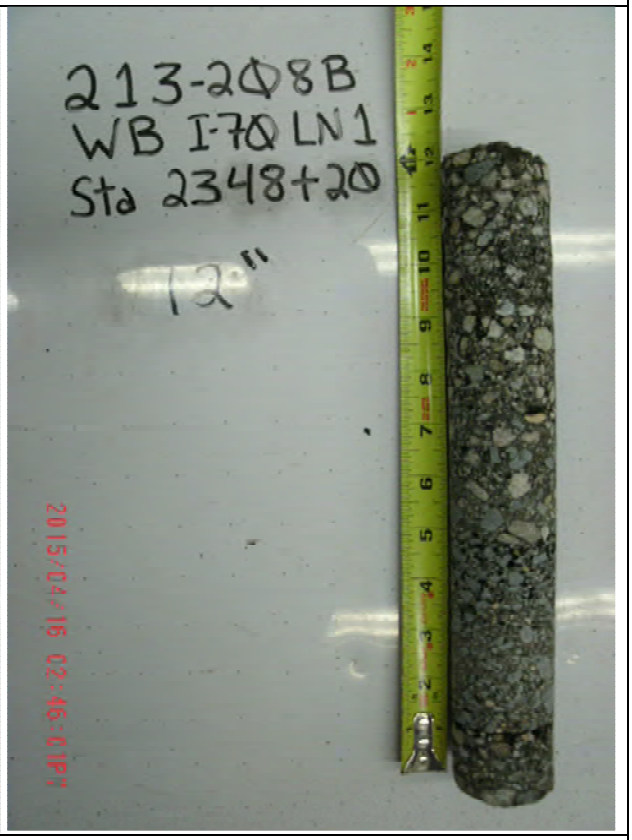

213-208B
WB I-70 LN 1
Sta 2282+20
14 1/4 "

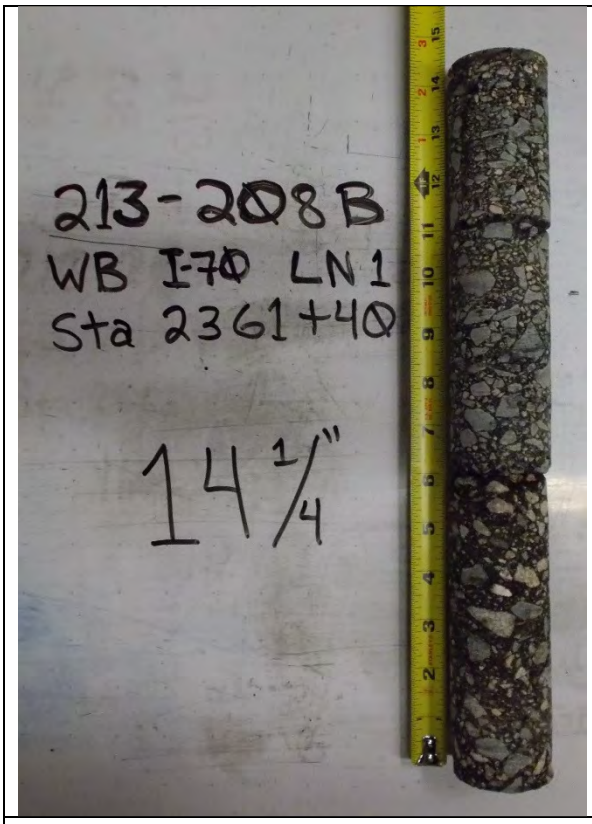
213-208B
WB I-70 LN 1
Sta 2295+40
13 1/2"


213-208B
WB I-70 LN1
Sta 2308+60
10¾"

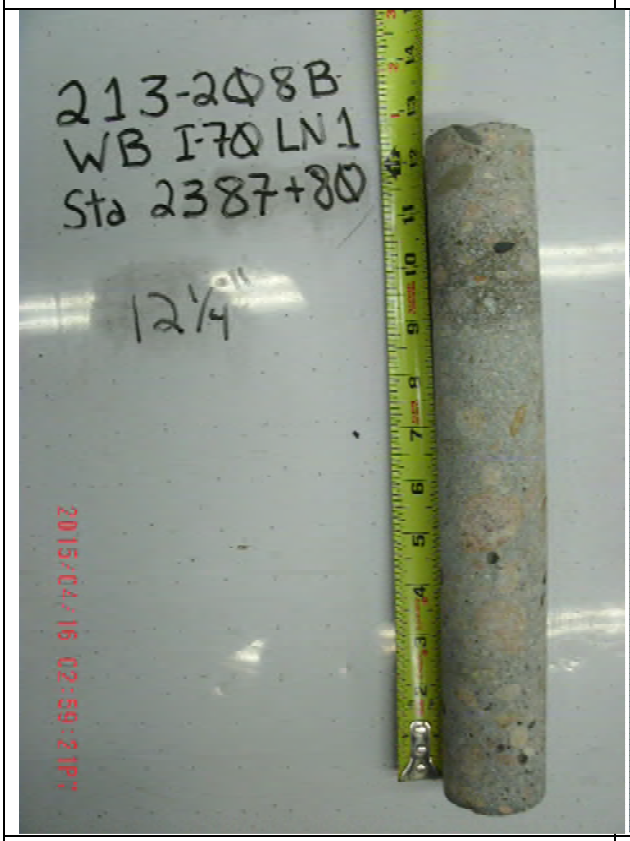

213-208B
WB I-70 LN1
Sta 2321+80
12"
missing 1½"


213-208B
WB I-70 LN1
Sta 2335+00
12½"
2015/04/16 02:42:15 PM

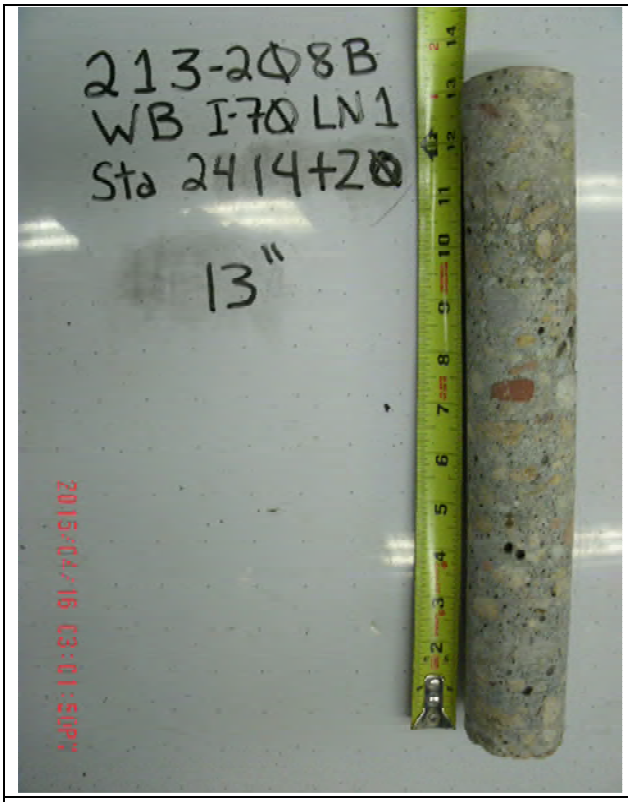

213-208B
WB I-70 LN1
Sta 2348+20
12"
2015/04/16 02:46:01 PM

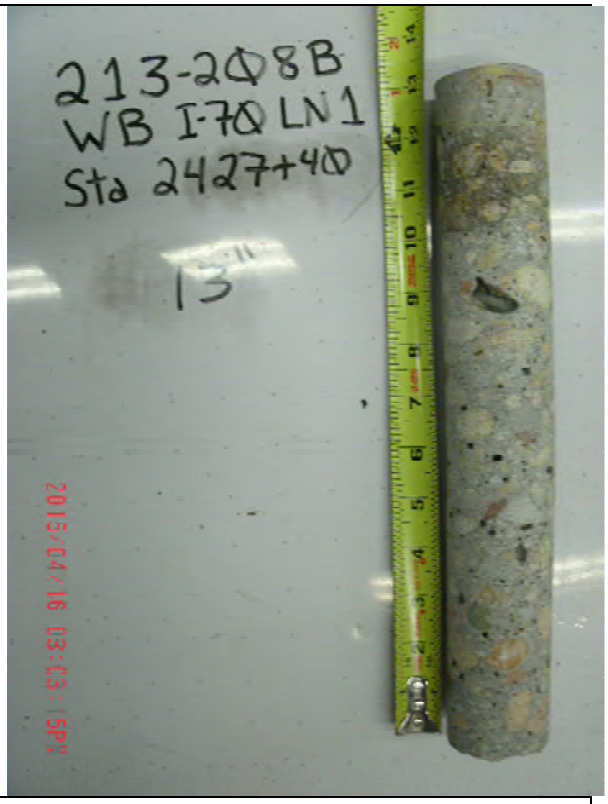

213-208B
WB I-70 LN1
Sta 2361+40
14 1/4"

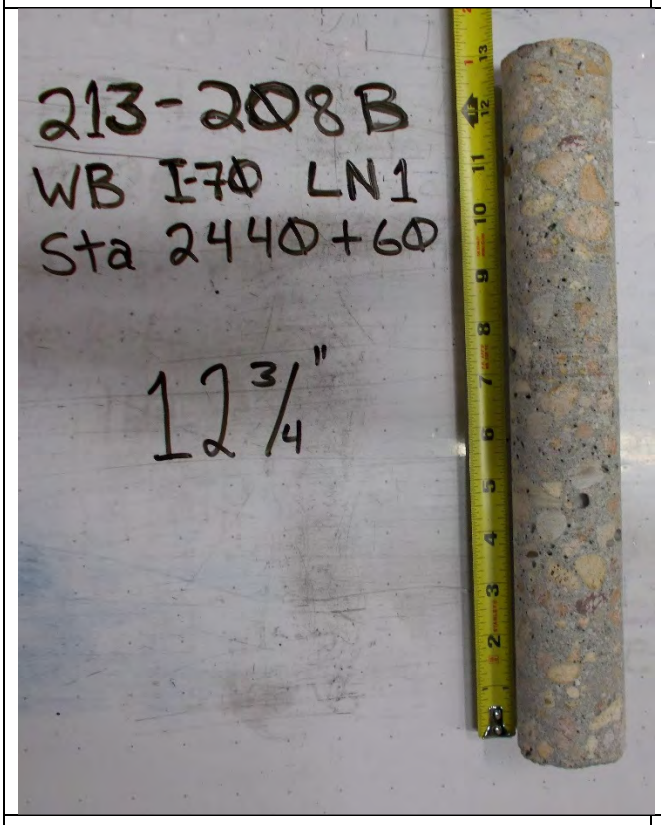
213-208B
WB I-70 LN1
Sta 2374+60
14 1/4"
2015/04/16 02:58:16PM

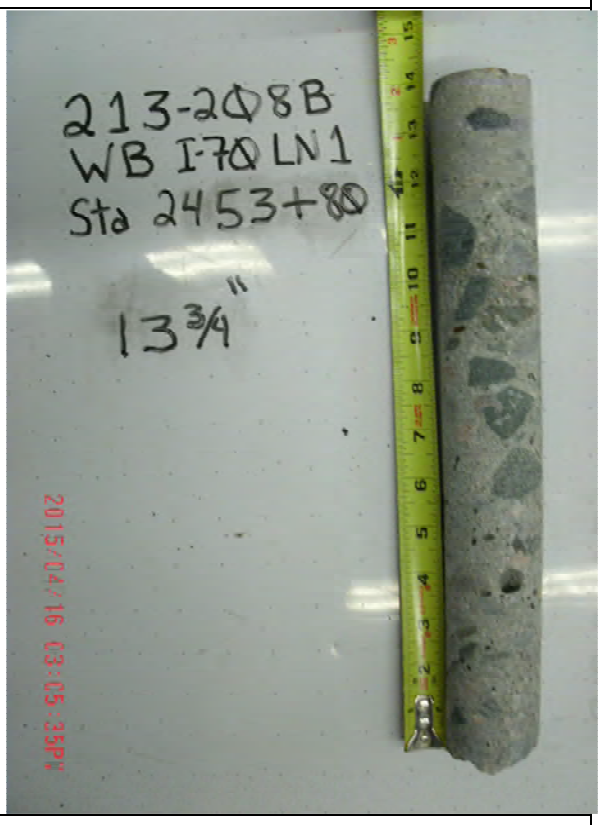

213-208B
WB I-70 LN1
Sta 2387+80
12 1/4"
2015/04/16 02:59:21PM

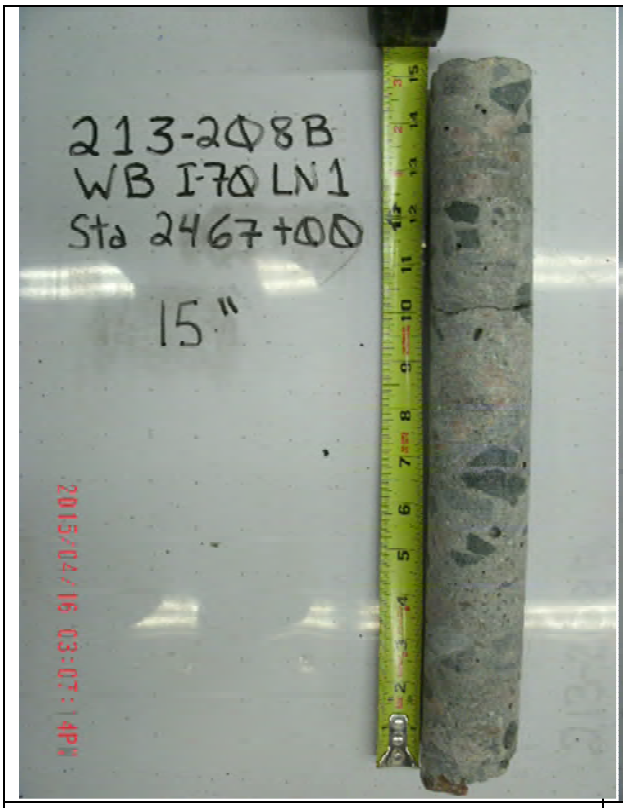
213-208B
WB I-70 LN1
Sta 2401+00
13"
2015/04/16 03:00:57PM

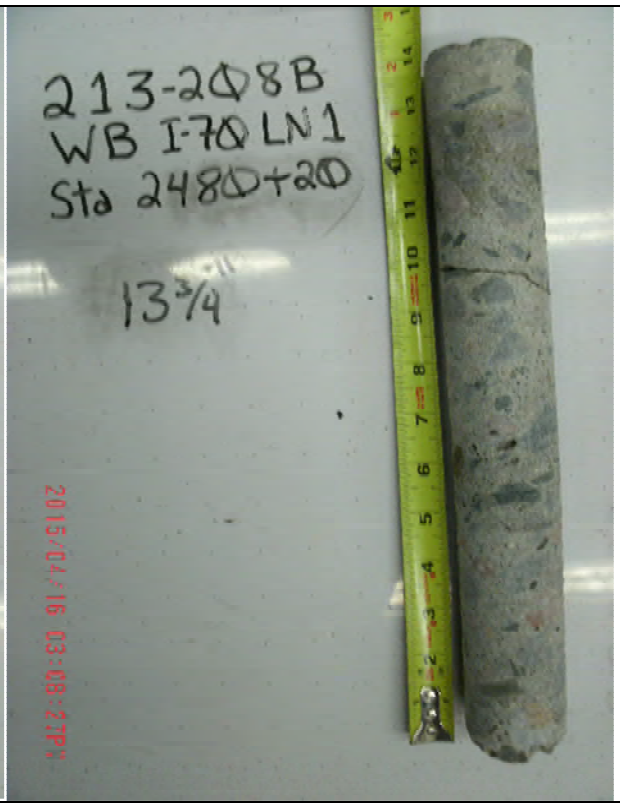

213-208B
WB I-70 LN1
Sta 2414+20
13"


213-208B
WB I-70 LN1
Sta 2427+40
13"

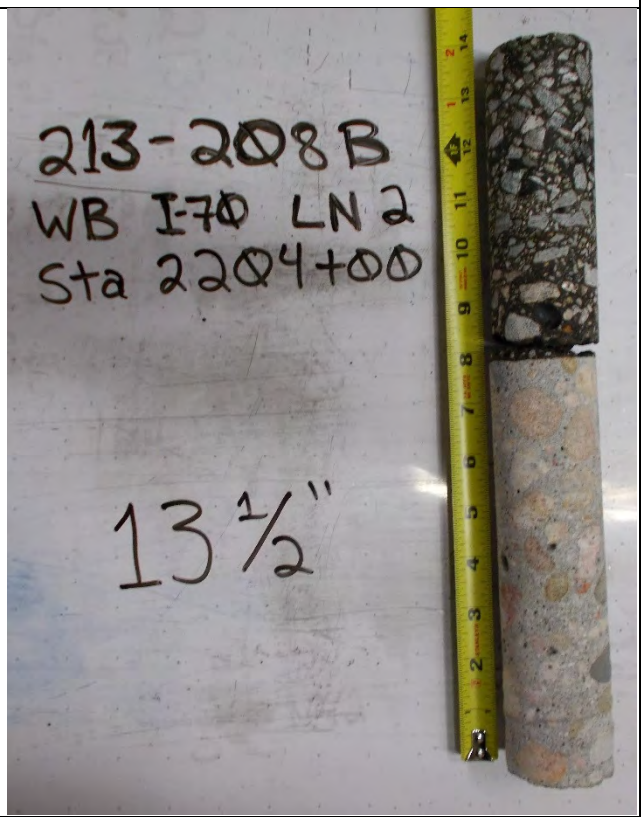

213-208B
WB I-70 LN1
Sta 2440+60
12 3/4"

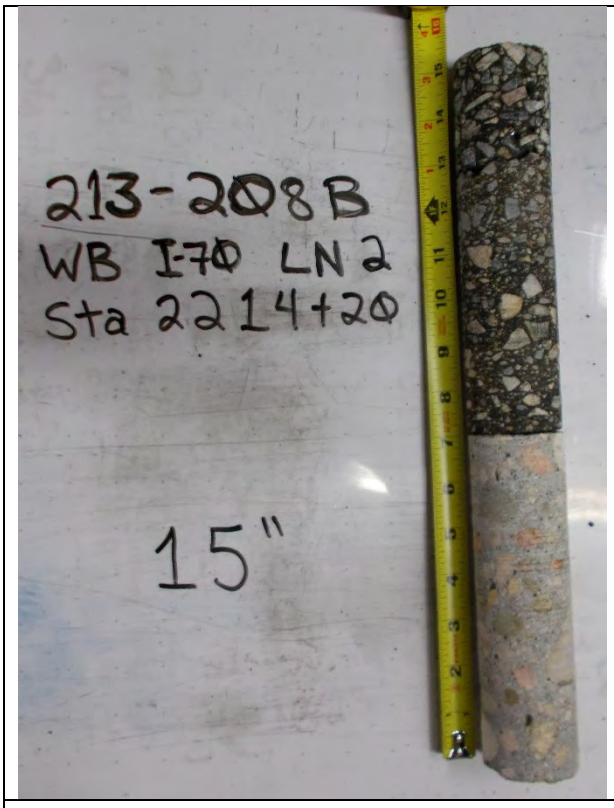

213-208B
WB I-70 LN1
Sta 2453+80
13 3/4"

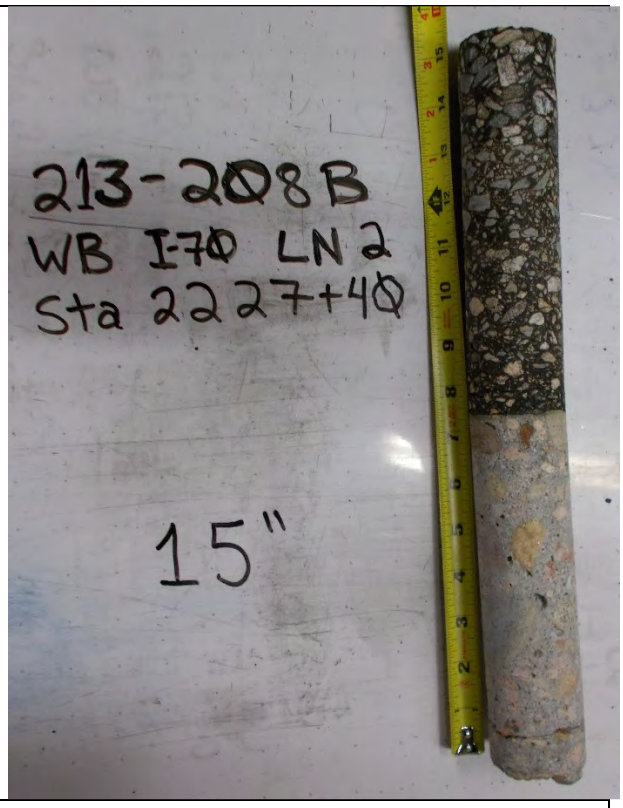

213-208B
WB I-70 LN1
Sta 2467+00
15"
2015/04/16 03:07:14PM

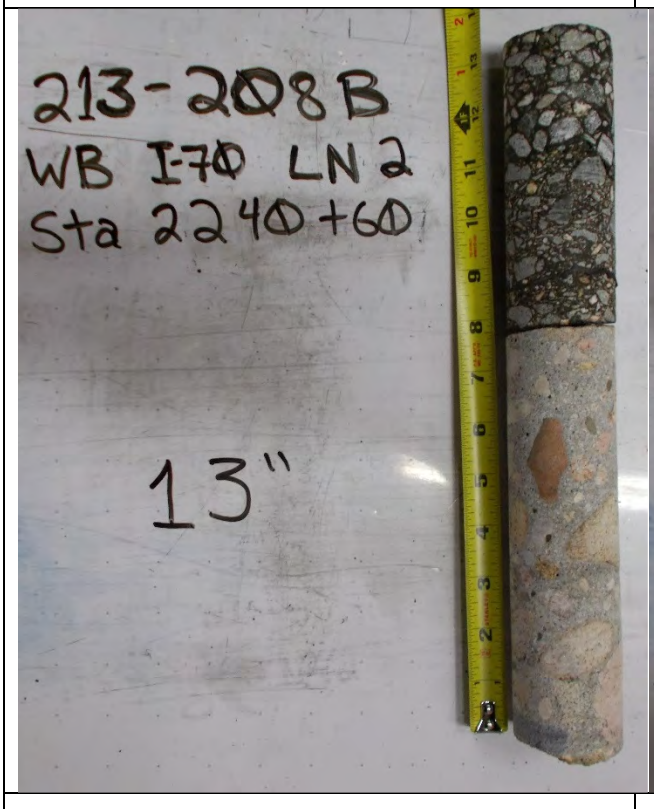

213-208B
WB I-70 LN1
Sta 2480+20
13¾"
2015/04/16 03:08:27PM

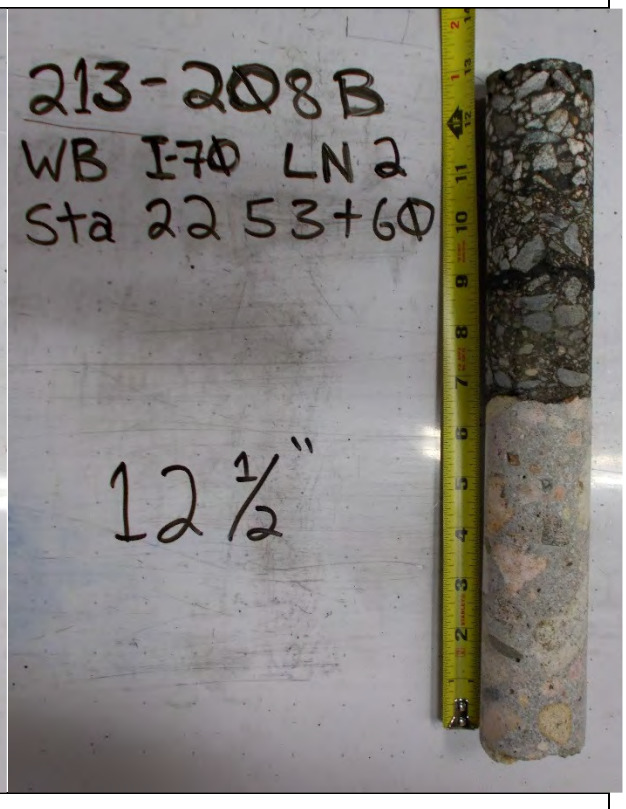
213-208B
WB I-70 LN1
Sta 2493+40
12½"
2015/04/16 03:09:55PM

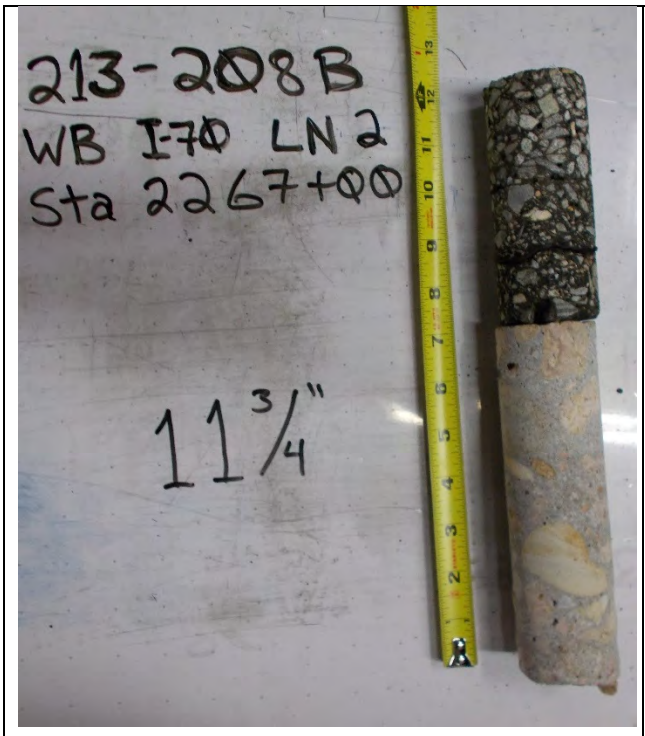

213-208B
WB I-70 LN2
Sta 2204+00
13½"

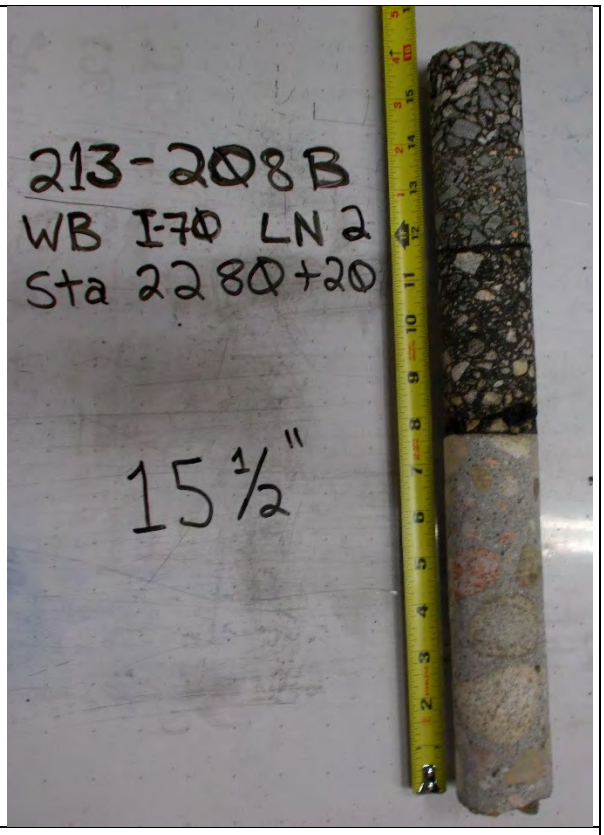

213-208B
WB I-70 LN 2
Sta 2214+20
15"

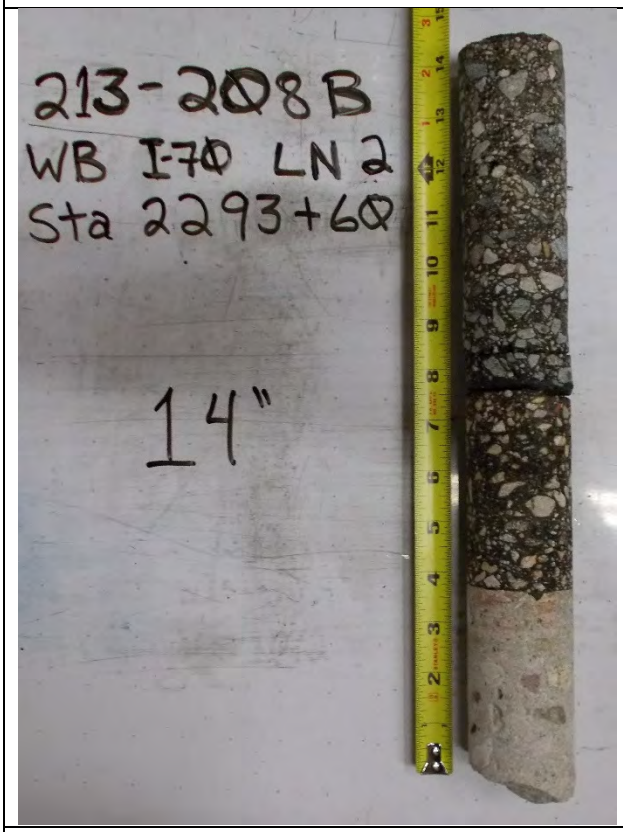

213-208B
WB I-70 LN 2
Sta 2227+40
15"

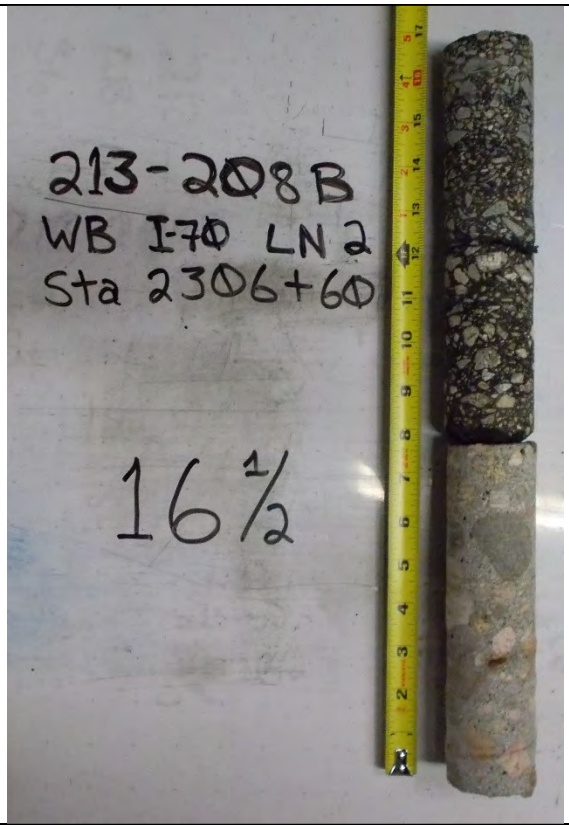

213-208B
WB I-70 LN 2
Sta 2240+60
13"

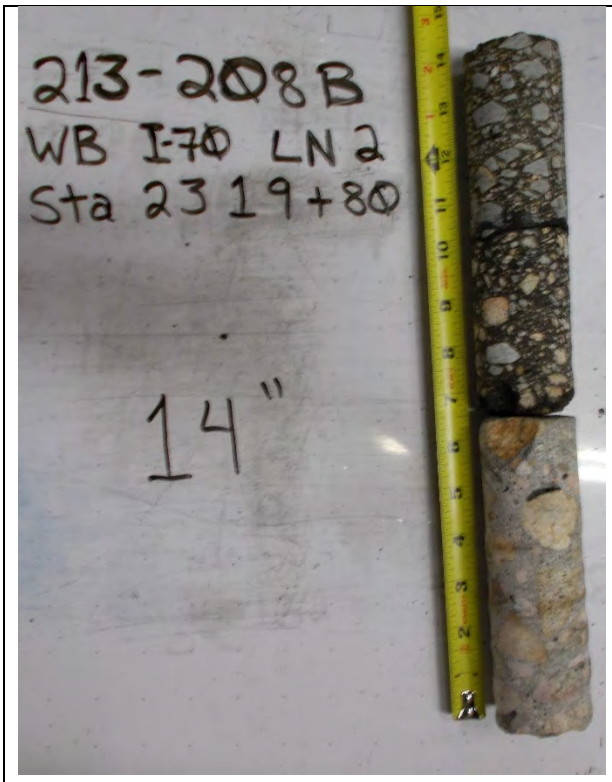

213-208B
WB I-70 LN 2
Sta 2253+60
12 1/2"

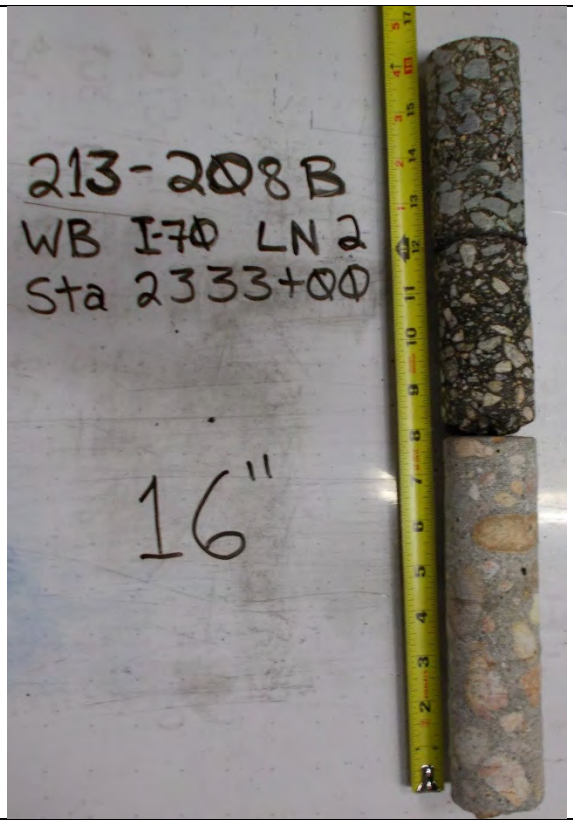

213-208B
WB I-70 LN 2
Sta 2267+00
11¾"

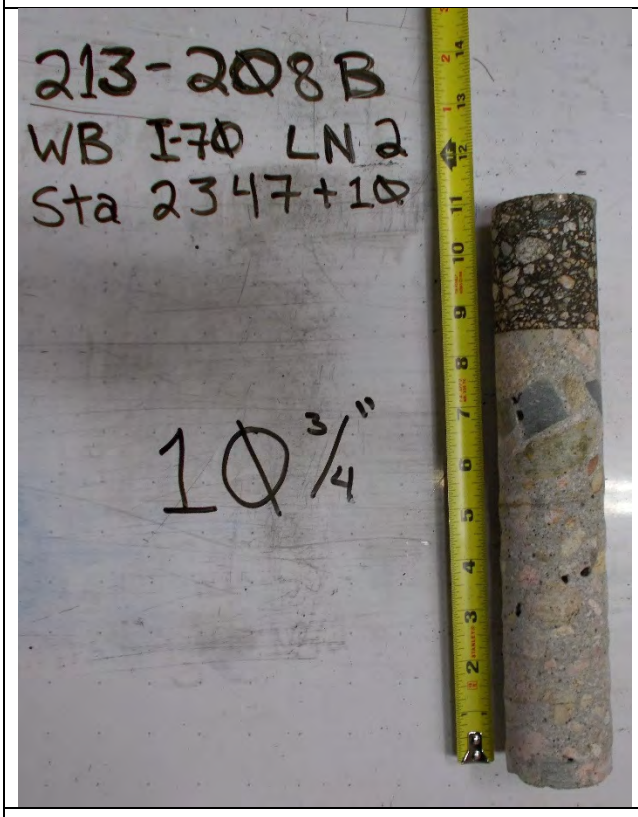

213-208B
WB I-70 LN 2
Sta 2280+20
15½"

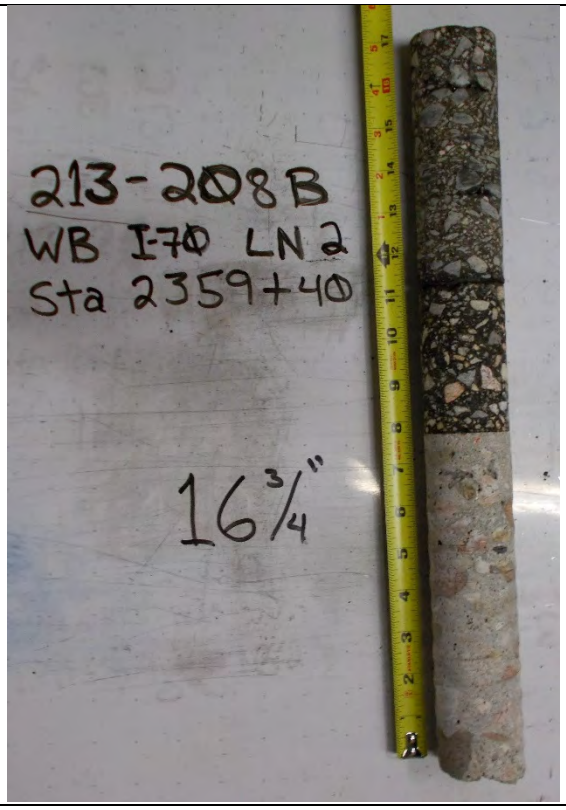

213-208B
WB I-70 LN 2
Sta 2293+60
14"

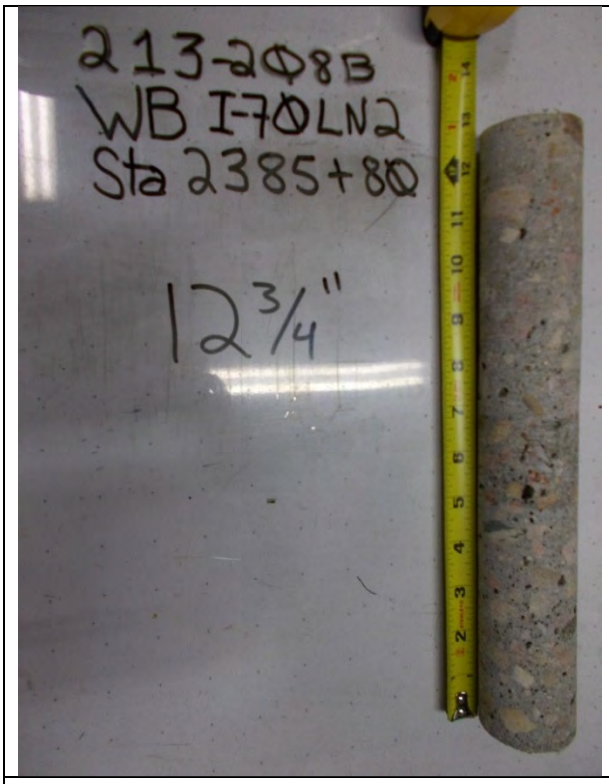

213-208B
WB I-70 LN 2
Sta 2306+60
16½

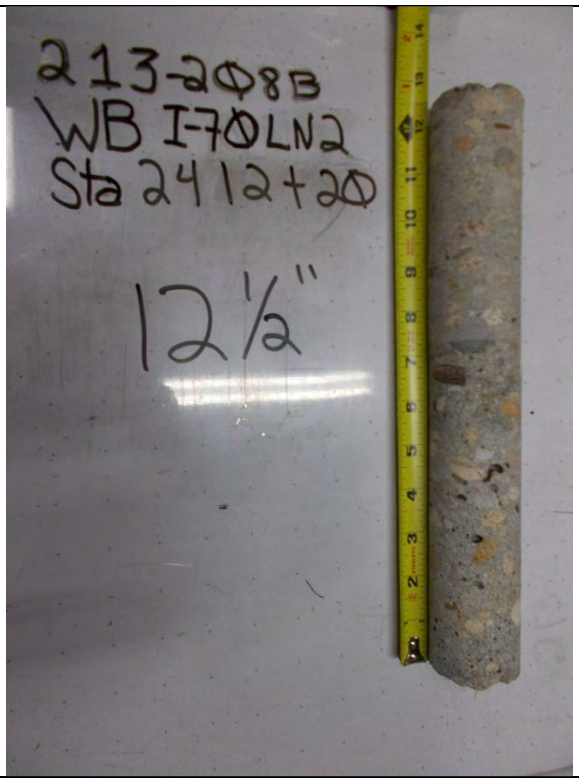

213-208B
WB I-70 LN 2
Sta 2319+80
14"

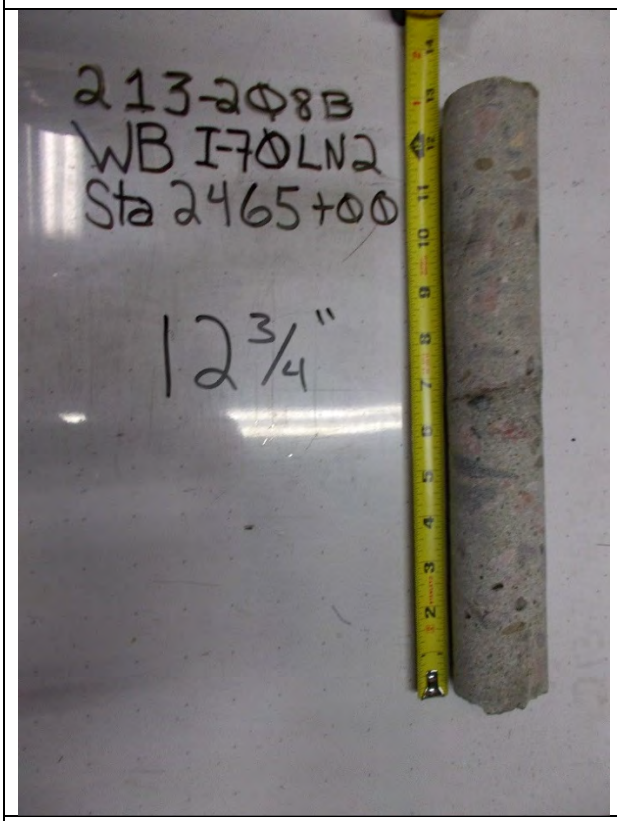

213-208B
WB I-70 LN 2
Sta 2333+00
16"

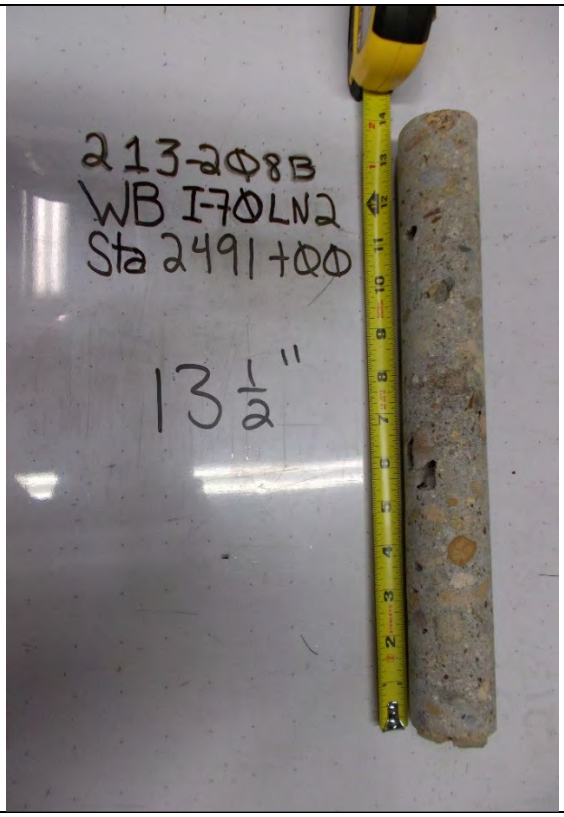

213-208B
WB I-70 LN 2
Sta 2347+10
10 3/4"

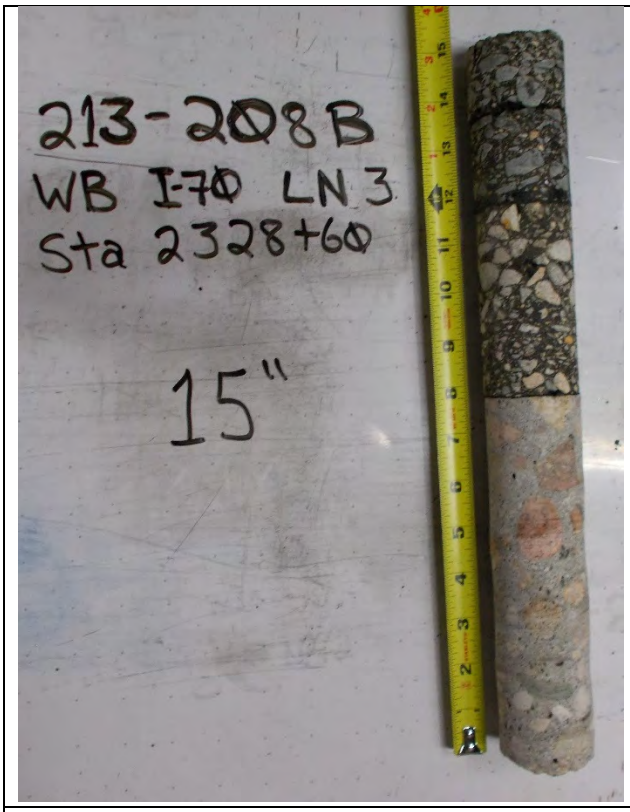

213-208B
WB I-70 LN 2
Sta 2359+40
16 3/4"

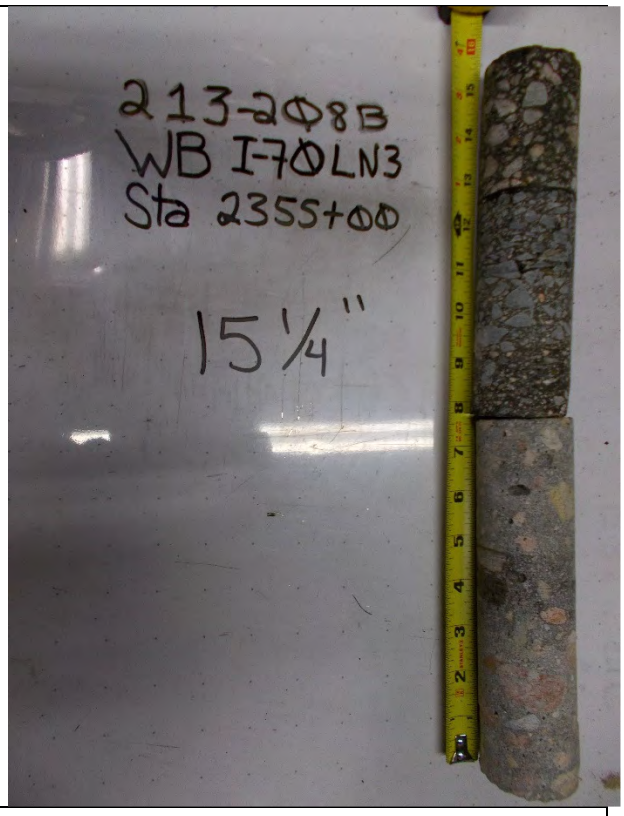

213-2Φ8B
WB I-70LN2
Sta 2385+80
12 3/4"

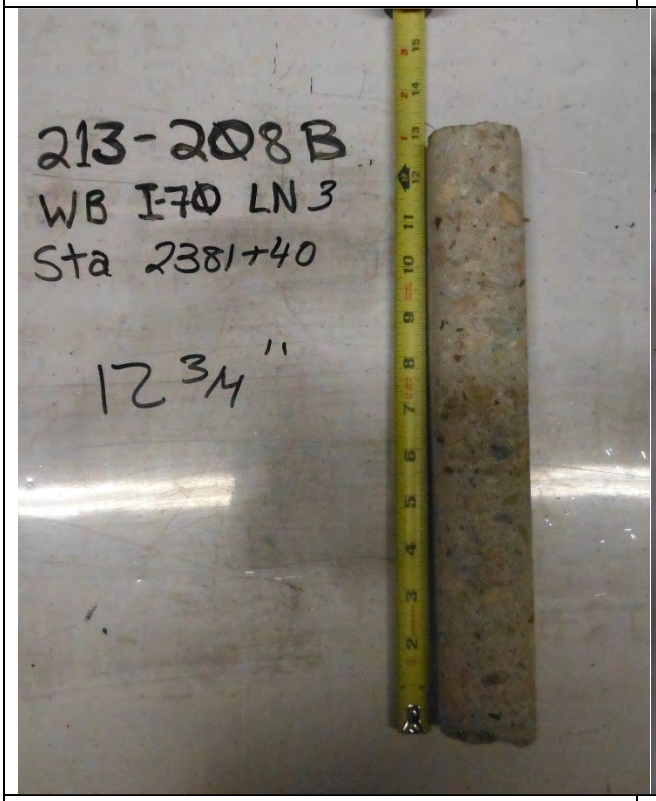

213-2Φ8B
WB I-70LN2
Sta 2412+20
12 1/2"

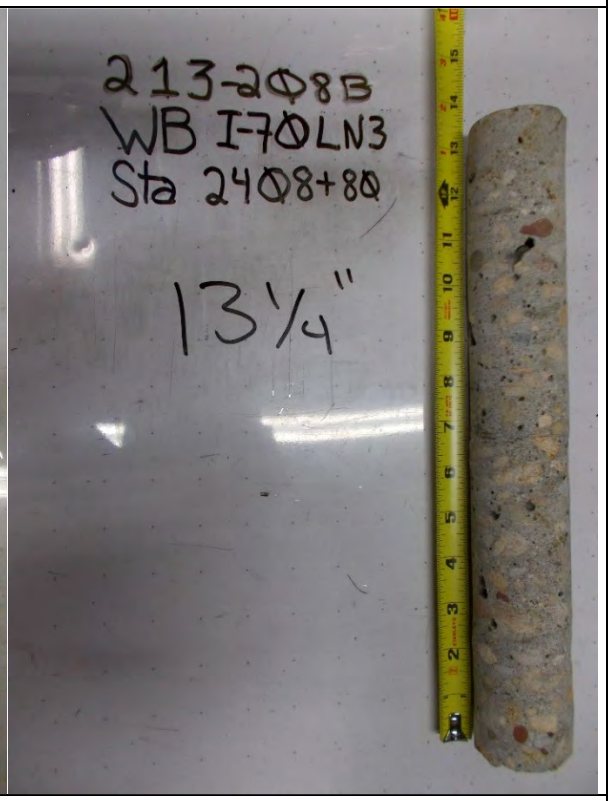

213-2Φ8B
WB I-70LN2
Sta 2465+00
12 3/4"

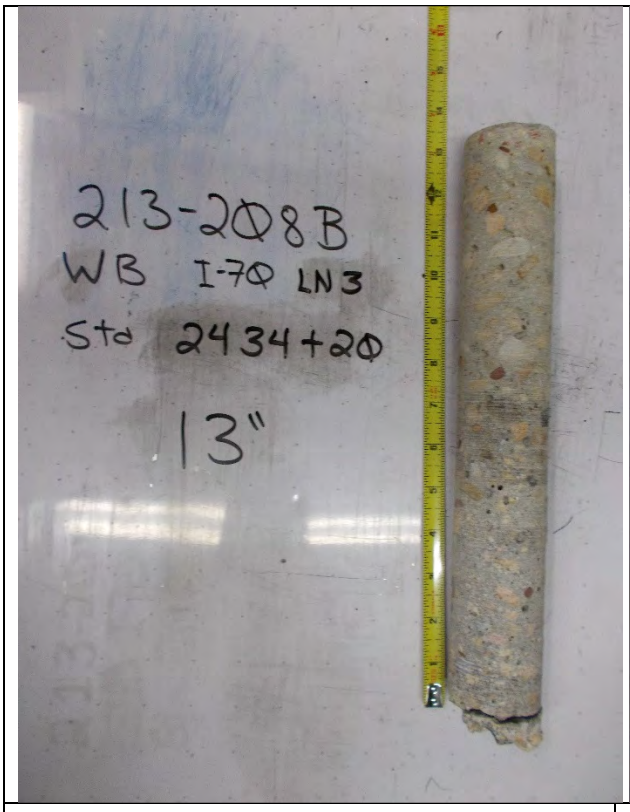

213-2Φ8B
WB I-70LN2
Sta 2491+00
13 1/2"

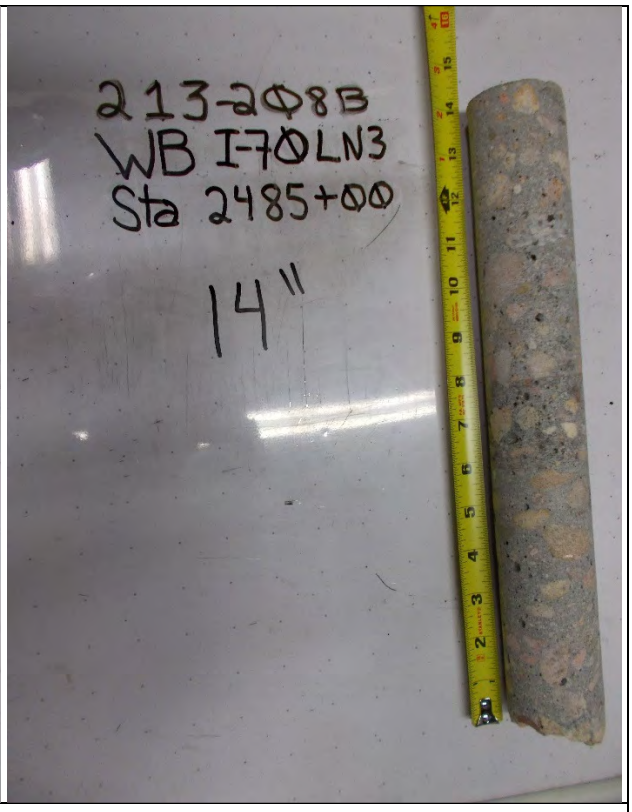

213-208B
WB I-70 LN 3
Sta 2328+60
15"


213-208B
WB I-70 LN3
Sta 2355+00
15 1/4"

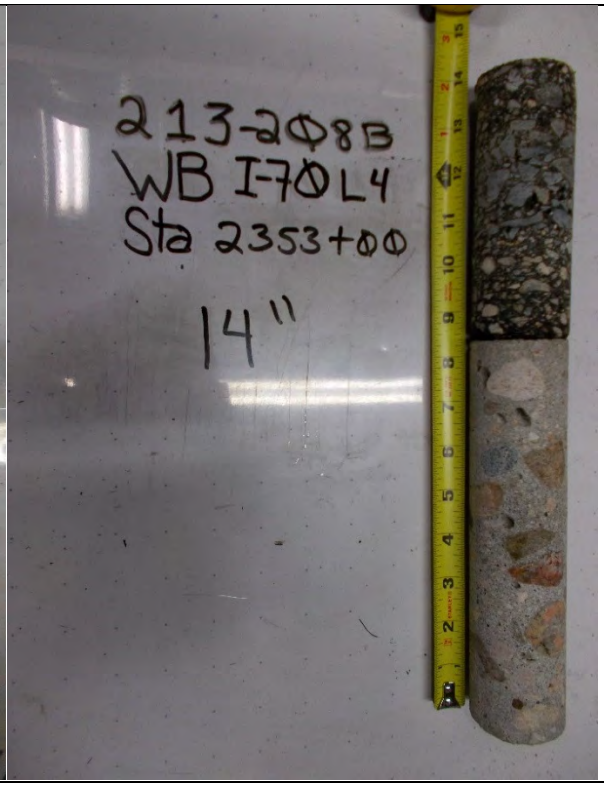

213-208B
WB I-70 LN 3
Sta 2381+40
12 3/4"

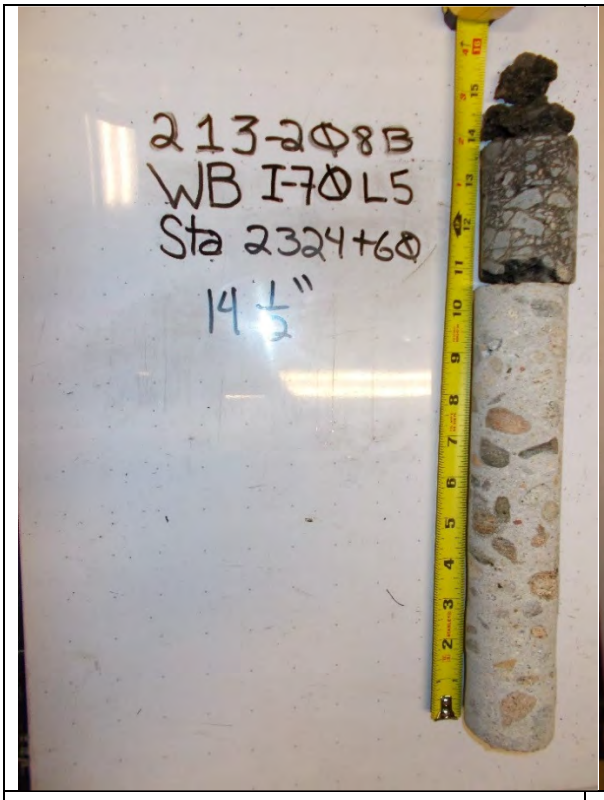

213-208B
WB I-70 LN3
Sta 2408+80
13 1/4"

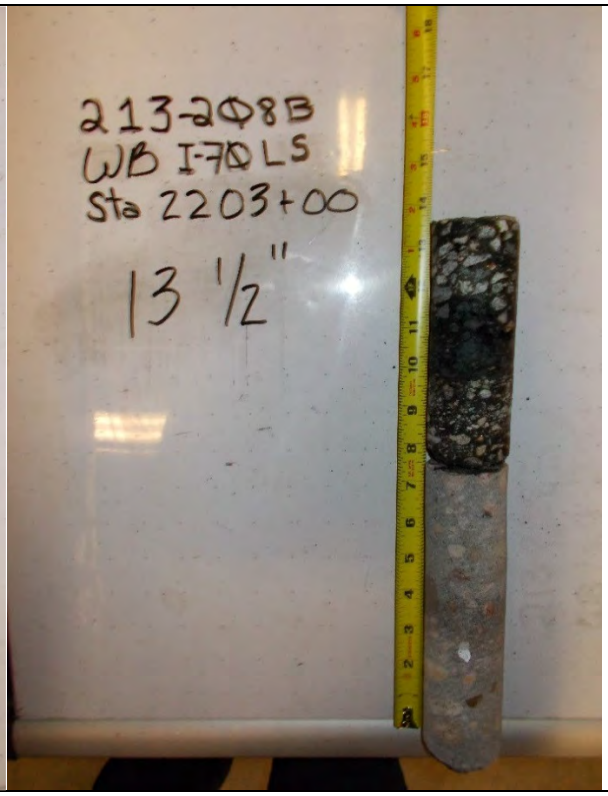

213-208B
WB I-70 LN3
Sta 2434+20
13"

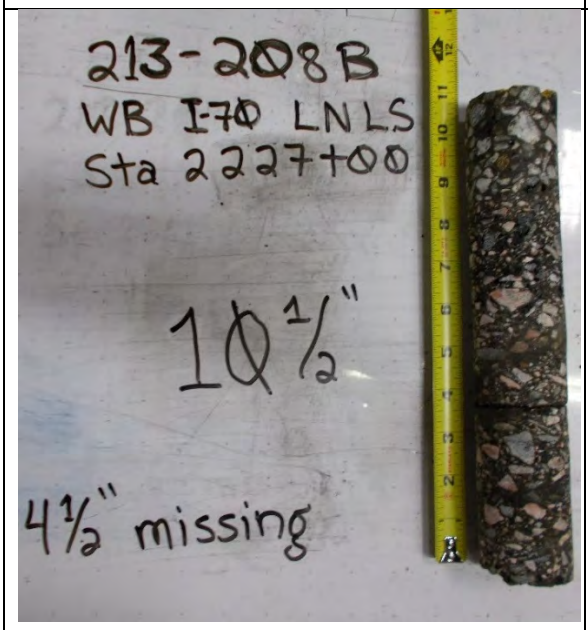

213-208B
WB I-70 LN3
Sta 2485+00
14"

213-208B
WB I-70 LN 4
Sta 2326+60
14 1/2"


213-208B
WB I-70 L4
Sta 2353+00
14"


213-2Φ8B
WB I-70 L5
Sta 2324+60
14 1/2"

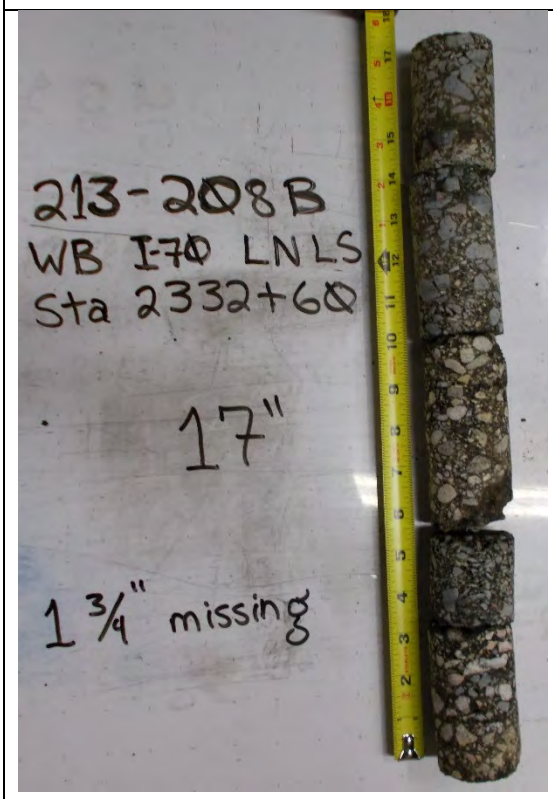

213-2Φ8B
WB I-70 LS
Sta 2203+00
13 1/2"

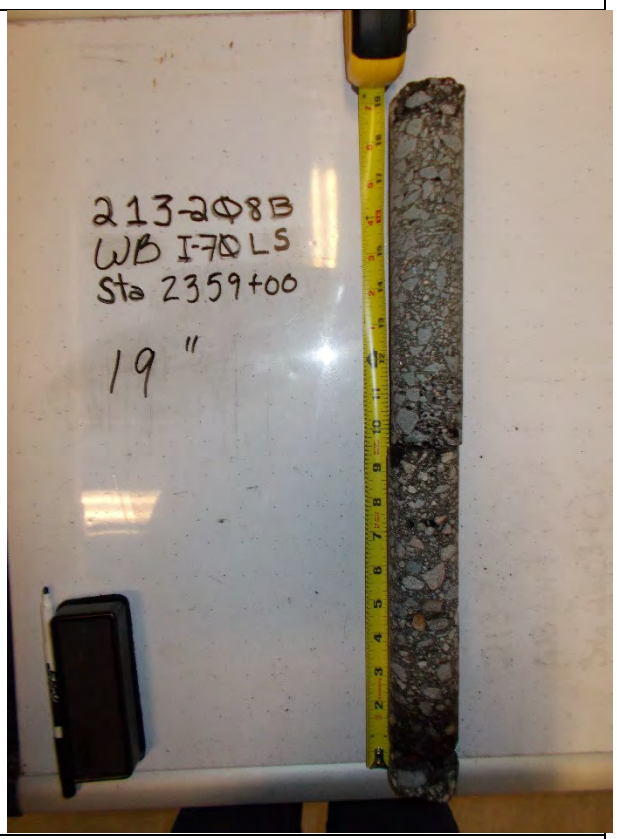

213-208B
WB I-70 LNLS
Sta 2227+00
10 1/2"
4 1/2" missing

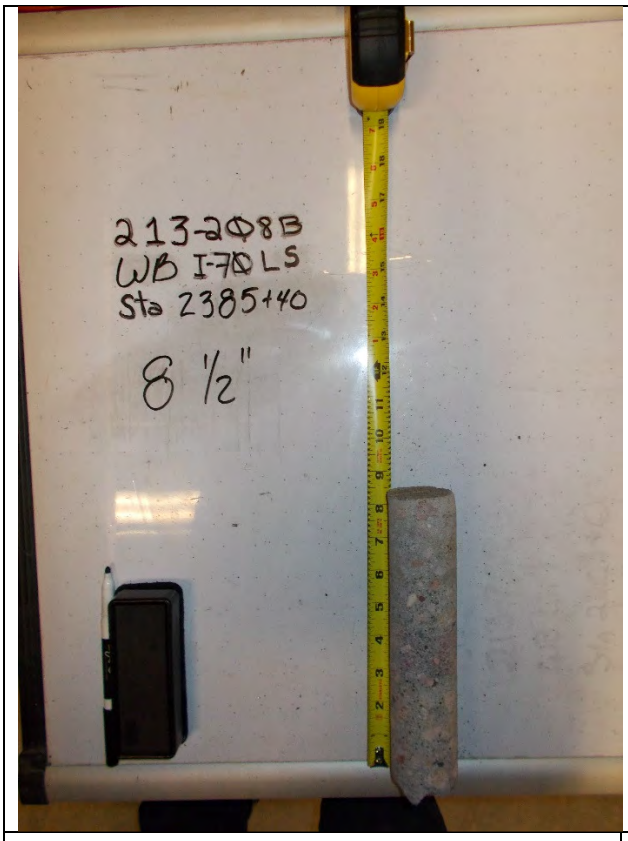
213-208B
WB I-70 LNLS
Sta 2253+40
12 1/2"

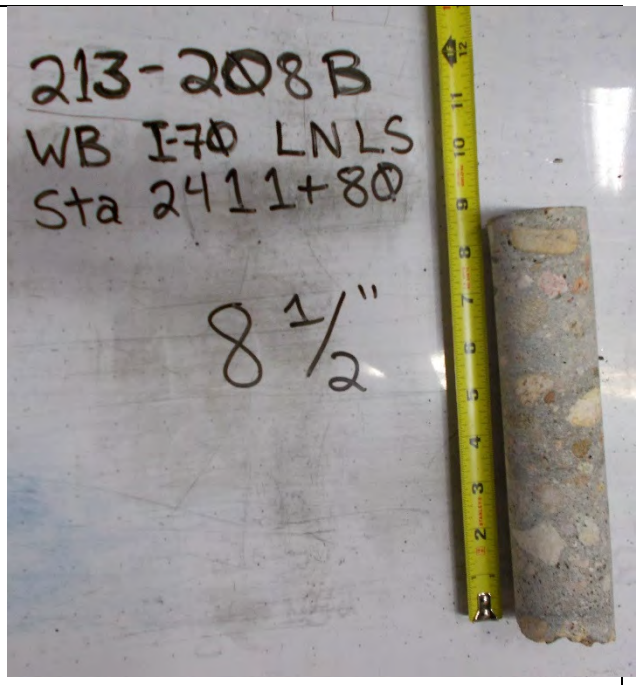
213-208B
WB I-70 LNLS
Sta 2279+80
10 1/4"
4 3/4" missing

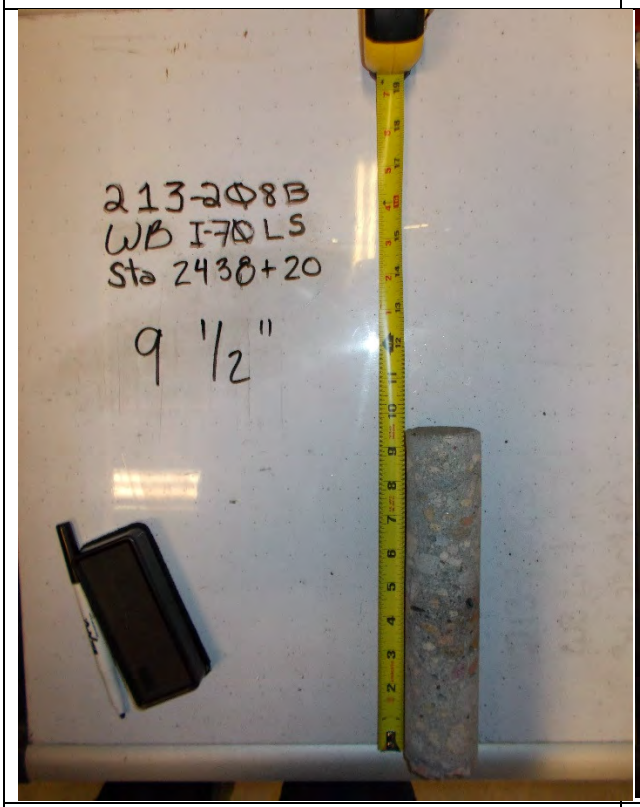
213-208B
WB I-70 LNLS
Sta 2306+20
12"

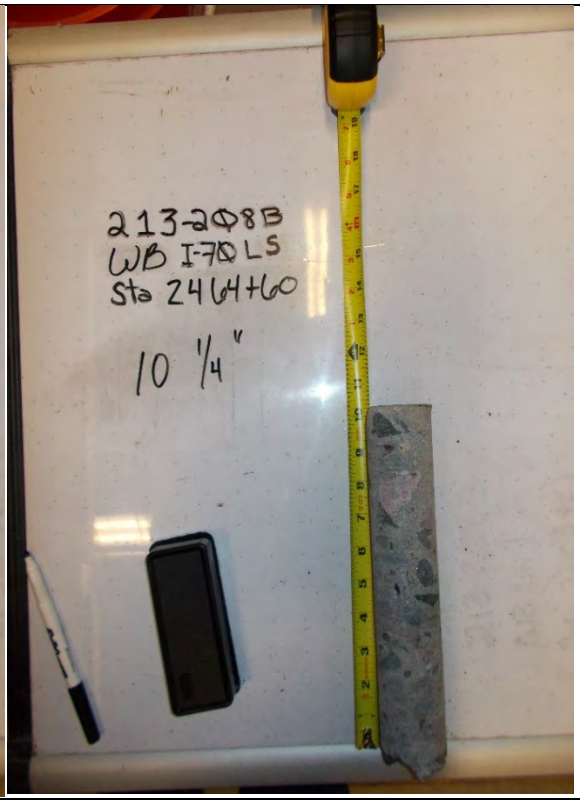

213-208B
WB I-70 LNLS
Sta 2332+60
17"
1 3/4" missing

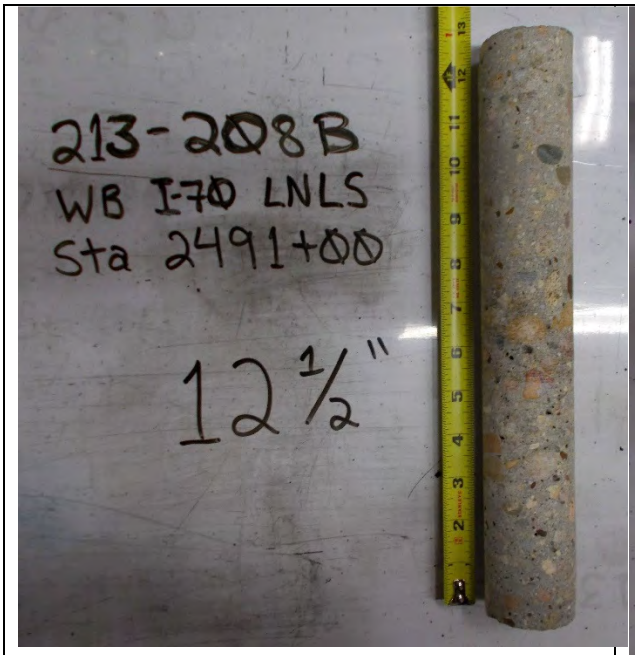

213-208B
WB I-70 LS
Sta 2359+00
19"

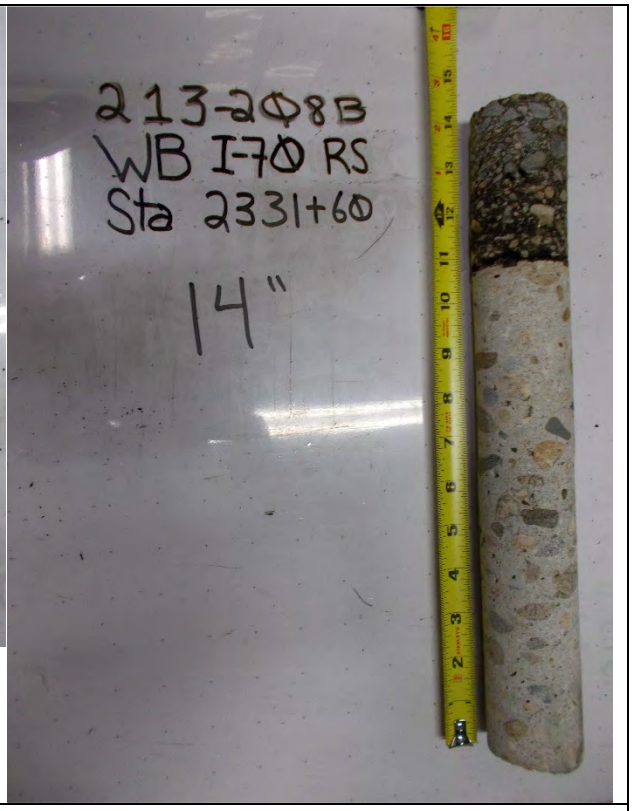

213-208B
WB I-70 LS
Sta 2385+40
8 1/2"

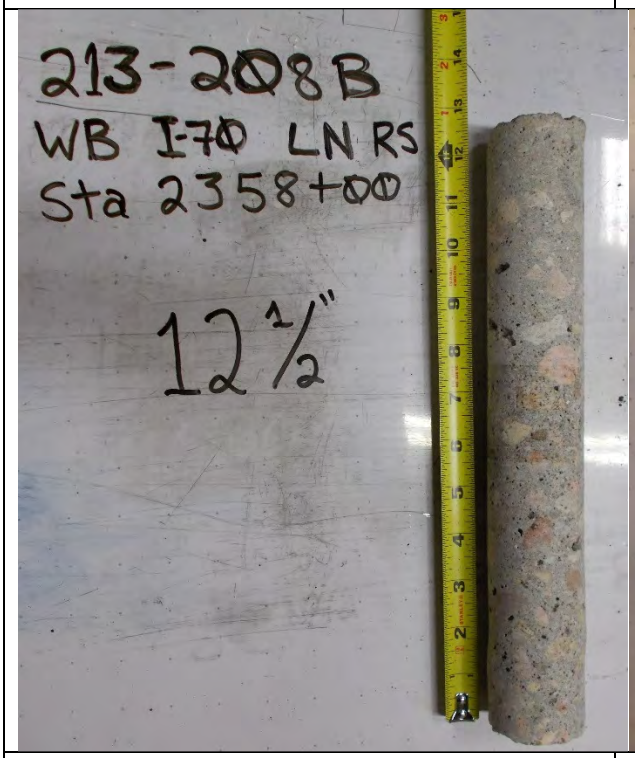

213-208B
WB I-70 LN LS
Sta 2411+80
8 1/2"

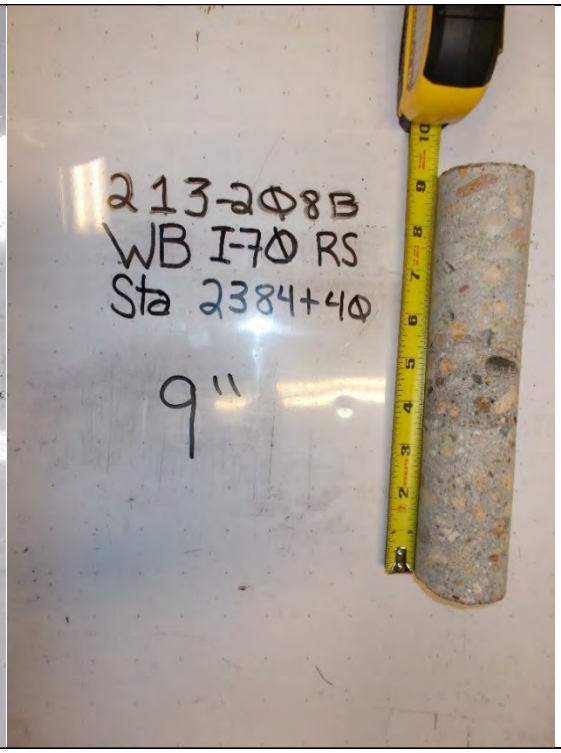

213-208B
WB I-70 LS
Sta 2438+20
9 1/2"

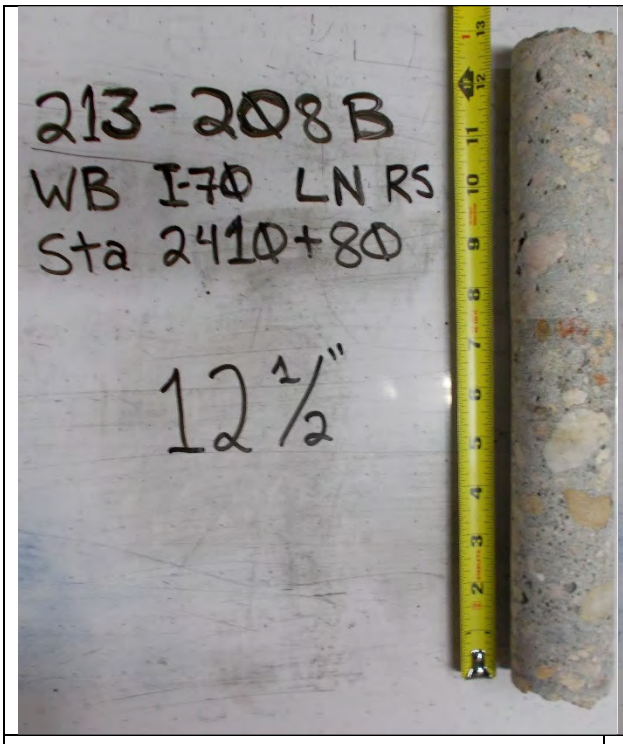

213-208B
WB I-70 LS
Sta 2464+60
10 1/4"

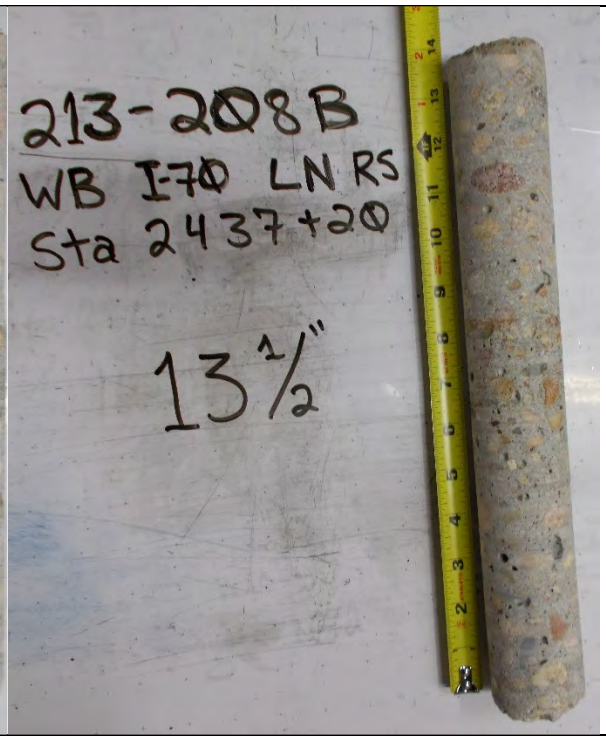

213-208B
WB I-70 LNLS
Sta 2491+00
12 1/2"

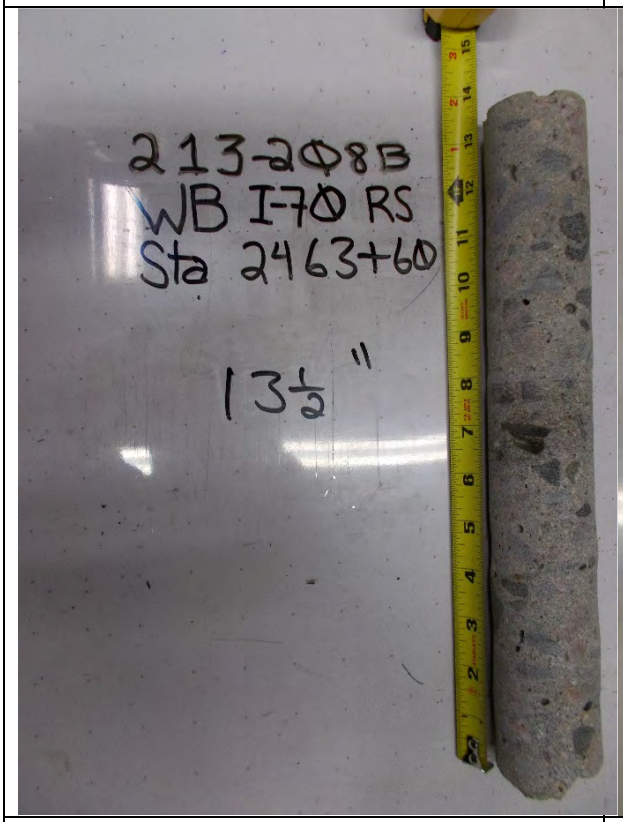

213-208B
WB I-70 RS
Sta 2331+60
14"

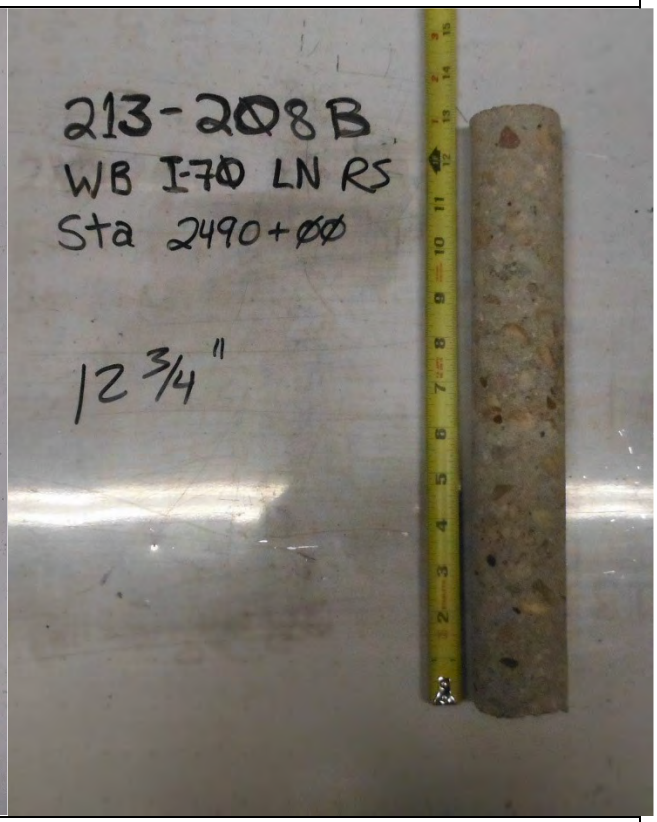

213-208B
WB I-70 LN RS
Sta 2358+00
12 1/2"


213-208B
WB I-70 RS
Sta 2384+40
9"


213-208B
WB I-70 LN RS
Sta 2410+80
12 1/2"


213-208B
WB I-70 LN RS
Sta 2437+20
13 1/2"


213-208B
WB I-70 RS
Sta 2463+60
13 1/2"


213-208B
WB I-70 LN RS
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Appendix E

Geophysical Investigation Report prepared by Olson Engineering, Inc.

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INFRASTRUCTURE IMAGING AND NDE
ASSESSMENT, MONITORING AND REPAIR

Olson ENGINEERING

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May 28, 2014

Yeh and Associates
2000 Clay Street, Suite 200
Denver, CO 80211

Attn: Mr. Micheal L. Kiefer, PE

Office: (303) 781-9590
Email: mkiefer@yeh-eng.com

Re: Geophysical Investigation Report – I70 Storm Water Outflow
Olson Project No.4604a

Olson Engineering, Inc., (Olson) conducted a geophysical investigation for Yeh and Associates (Yeh) along a 5500 foot alignment for the proposed storm water outflow north of I70 and about a mile east of I25 (Figure 1). The objective of the seismic investigation is to image the depth to bedrock beneath the proposed alignment, also shown in Figure 1. The geophysical survey was completed using Multi-channel Analysis of Surface Waves (MASW) to acquire shear (S-) wave data.

The MASW seismic survey was performed based on the scope of work outlined in Olson Proposal No. P2013278.1PG. Field work was conducted on April 15th through April 17th, 2014. The following report presents results from the investigation and summarizes the site conditions, field method and data acquisition/interpretation procedures. For further information regarding the intricacies of the MASW seismic method used for this project, we can submit a method addendum to this report upon request.

The generalized geologic setting is undifferentiated overburden soils consisting of sand with varying amounts of clay and gravel, as well as some fill materials. The soils are anticipated to be 30 to 40 feet thick. Bedrock in this area is a very hard claystone, with interbedded thin layers of sandstone. Depth to the water table is anticipated to be approximately 30 feet below ground surface. The geology and the (noisy) site conditions warrant the use of surface-waves for the seismic tests. Surface wave testing produces shear-wave velocity measurements, which are not affected by saturated soils, as are (P-wave) refraction seismic tests.

Figure 1: General Site location shown as red star on top map, and the transect covered by seismic tests shown in colored segments on the bottom image.

Data Acquisition

Data acquisition was conducted in one of two ways, depending on the type of surface where the data was being collected. On the roadways and through the property belonging to Eaton Metals data was collected using a 24 channel land streamer with 5-foot geophone spacing. Along the northern segment (shown as red in Figure 1) data were collected using 48 spiked geophones spaced 10 feet.

Data were collected using one (when using the land streamer) or two (when using 48 planted geophones) Geometrics Geode 24 channel seismographs (*see inset photo to the right*) with 4.5 Hz vertical component geophones. Acquisition parameters of the seismic system were 0.125ms sample rate and 1 second records. Shot points are located every 40 feet down the 5500 foot long transect where feasible. Gaps in data coverage exist where we could not collect data, such as places where the crew and equipment would have had to cross roads and/or railroad tracks. In addition, we were unable to collect data over the full length going through the property belonging to Eaton Metals due to on-site obstructions and fences. The seismic energy used for this survey consisted of a sledge hammer impacting a plastic strike plate.

Data Processing

The MASW analysis consists of a frequency-velocity transform, picking the transformed data to derive a dispersion curve, and an inversion of this dispersion curve to a layered model. These steps are repeated for each location down line using 24 channels spaced 5 feet when using the land streamer (115 feet) or 12 channels spaced 10 feet when using planted geophones (110 feet). The resulting layered models are combined to generate a 2D S-wave velocity profile. The program SurfSeis 4.2 by the Kansas Geological Survey (© 1998-2010) was used to accomplish these steps. See Figure 2 below for a sample dispersion curve from this project.

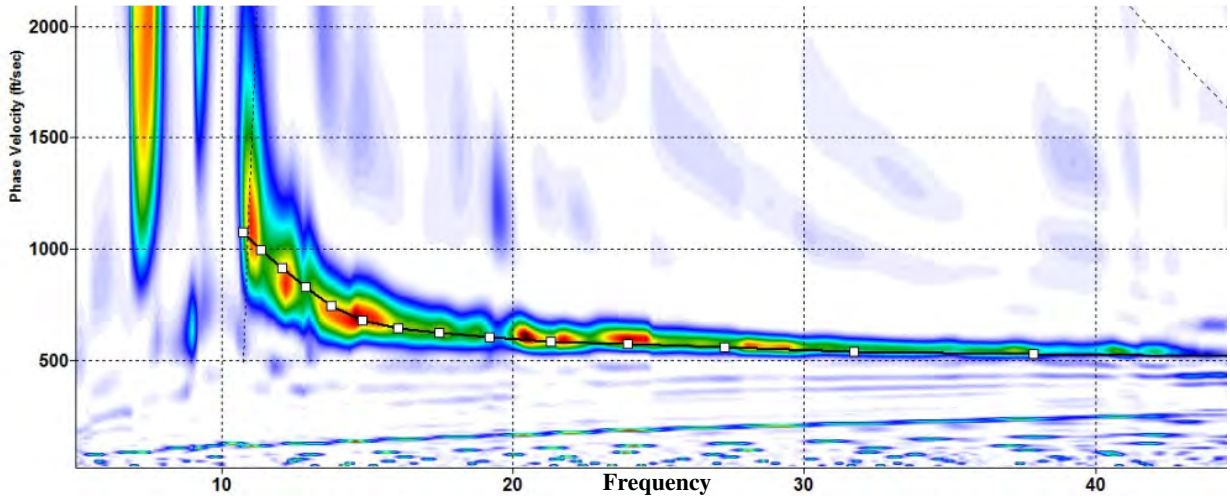

Figure 2: Sample dispersion curve from this project.

Results

The S-wave velocity results are shown on Figure 3. The results are shown as 2D S-wave velocity color cross-sectional plots with blue representing slower velocity values and red representing higher velocity values. Because of the site conditions and transect layout, the seismic results are broken into distinct segments for easier viewing. Each segment is oriented west to east or south to north.

The shear wave velocity (Vs) ranges from 500 feet/second (ft/s) along a few surface areas, to 1200 ft/s at depth. For most of the results from this project site we have interpreted the 1100 ft/s contour line as an estimate of the interface between undifferentiated overburden soils and claystone or sandstone bedrock. However, in Segment D it appears that the top of the bedrock could be more weathered than over the rest of the transect, reducing the velocity at the top of the rock from 1100 ft/s to about 800 ft/s. The 1100 ft/s velocity contour is shown in black on all of the velocity profiles. For Segment D, both the 1100 ft/s and the 800 ft/s contour is shown. The depth to the interpreted bedrock contact ranges between 13 and 50 feet below the ground surface, with the shallowest bedrock seen near the west end of Segment D. The deepest bedrock was detected along the north end of Segment A and in Segments B and C, where bedrock exceeds 40 feet deep.

Olson was provided preliminary borehole logs for eight borings that are located on or very near the seismic lines. A simplified representation of each borehole log has been placed onto our results shown in Figure 3. The boreholes are represented as rectangles with bedrock shown as white with cross hachure. The only borehole that has a bedrock depth that does not match well with our interpretations is YA-DON-1, where interpolating the 1100 ft/s contour to the boring location would suggest that the bedrock is about 8 feet shallower than the borehole indicates. However, it is possible that there is an 8 foot change in bedrock depth between the borehole and the beginning of the line.

The near-surface velocity generally shows about 10 feet of Vs below 700 ft/s (blue and purple) before increasing to between 750 ft/s and 850 ft/s (yellow/green). However, the Vs of the soils beneath segment D are mostly less than 700 ft/s (blue and purple), with only isolated areas increasing to about 750-850 ft/s (green). These low Vs values are consistent with borehole YA-DON-7, which shows SPT N-values of 14 between the depths of 10 feet and 24 feet (where bedrock is encountered). For the rest of the boreholes, there are no N-values less than 20 deeper than 10 feet, with most of the N-values for the overburden soils in the mid-20s. In addition to the different near surface velocity in Segment D, it appears that the top of the rock could be more weathered than elsewhere in this project. This is noted in borehole YA-DON-6. This weathering is most likely decreasing the velocity at the top of the rock, making the 800 ft/s contour line a better match with the top of rock reporting in boreholes YA-DON-6 and YA-DON-7.

Segments B and C show some isolated areas within the soils where Vs increases to above 1000 ft/s. These could represent either compacted / dense gravels or stiff clay lenses within the soil deposits. However, boring YA-DON-8 was placed in the center of one of these areas to investigate this possible high velocity layer and there was no sign of such a layer in the borehole log. This either means that the high velocity areas are artifacts of the velocity inversion process, or that the increased velocity is caused by something that is not observable in the borehole logging. One

likely explanation for this is that the seismic methods measure low strain properties of the subsurface where the blow counts are measuring in the deformation range of the subsurface. It is possible that the areas that show slightly higher velocity values but not elevated blow counts are areas of slightly higher soil induration.

The quality of the data acquired at this site was very good. The good data and correlations shown to the preliminary borehole logs yield a high degree of confidence in the Vs results obtained for this project and presented herein. If you have any questions regarding the field procedures, seismic analysis, or the interpretive results presented herein, please do not hesitate to contact us. We appreciate working with you and look forward to providing you with geophysical or NDE engineering services in the future.

Respectfully,

Jacob Sheehan

Jacob Sheehan
Senior Geophysicist
Olson Engineering, Inc.

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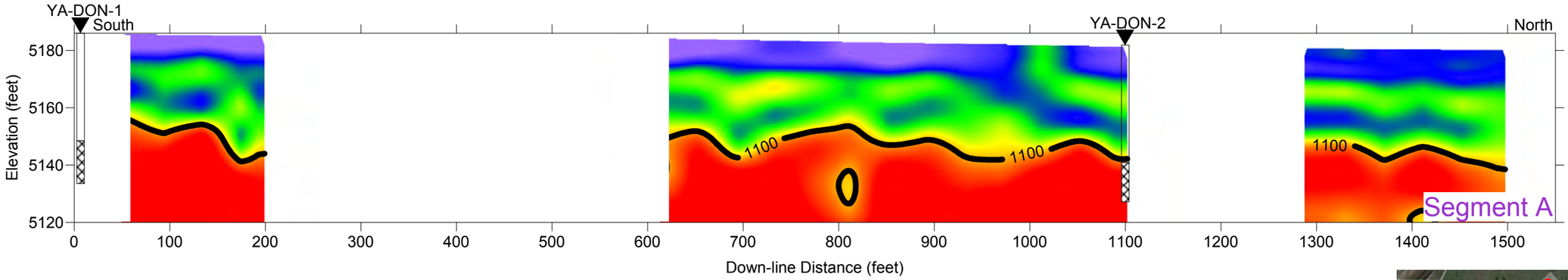

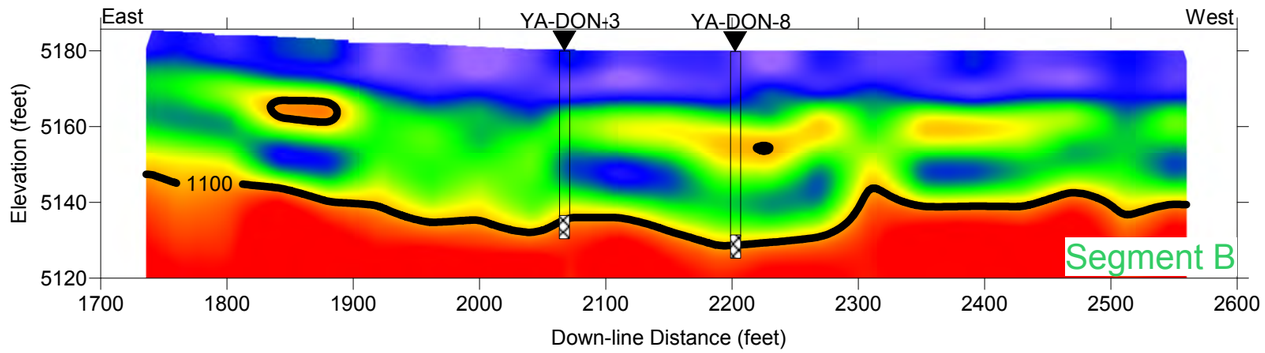

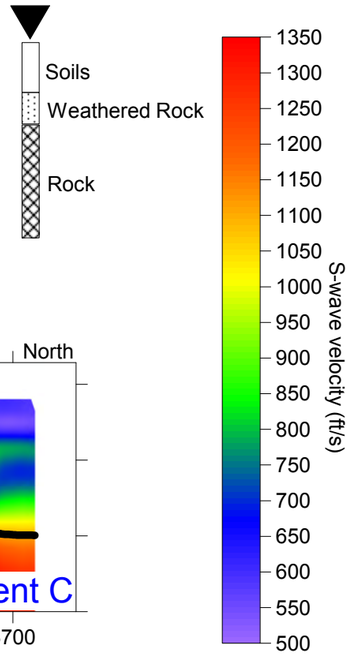

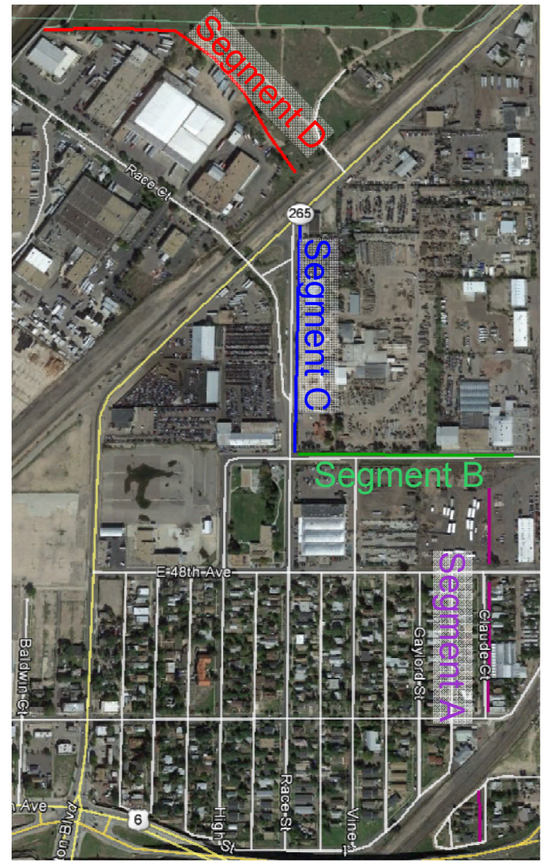

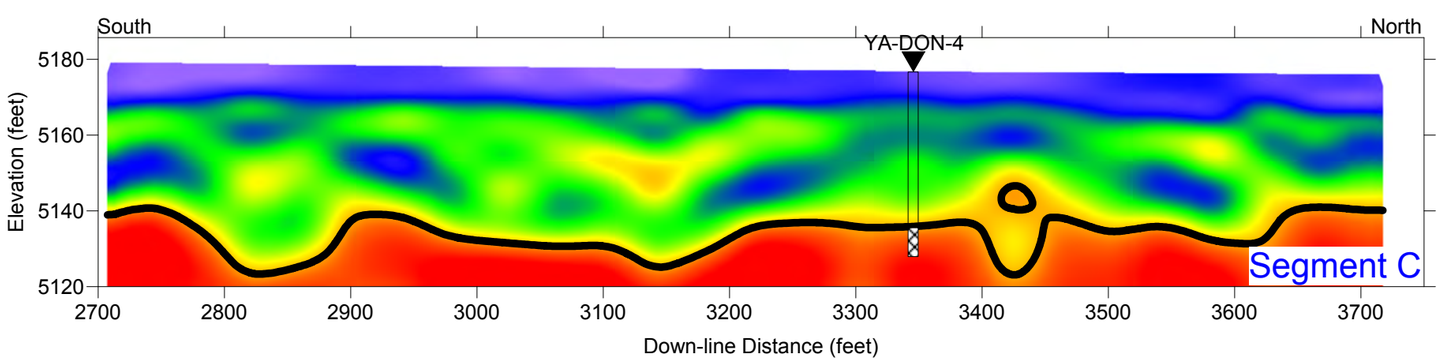

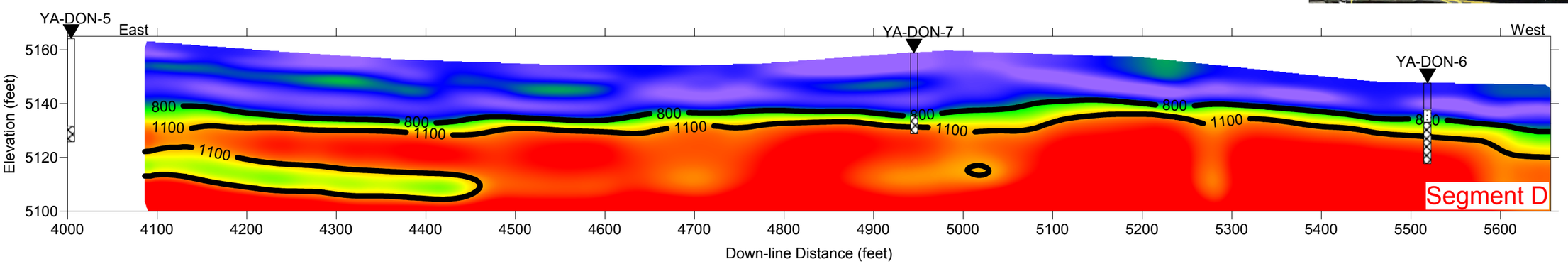

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Olson ENGINEERING

Shear-wave Velocity Profiles

May, 2014

Figure 3