VOLUME 3

DRAFT
ENVIRONMENTAL IMPACT STATEMENT

GREGORY CANYON LANDFILL

San Diego County, California

APPENDIX C –DESCRIPTION OF ALTERNATIVES

- First Supplement to Agreement between the San Luis Rey Municipal Water District; Dorothy E. Leavey and J.T. and K.L. McCarthy; Edgar E. and Elizabeth S. Pankey Trust; Pankey Farms; Pankey Ranch; Blanche Pope, Trustee U/D/T Pope Family Trust; North San Diego County Development Co.; and Gregory Canyon, Ltd., June 30, 2004
- Agreement between the San Luis Rey Municipal Water District; Dorothy E. Leavey and J.T. and K.L. McCarthy; Edgar E. and Elizabeth S. Pankey Trust; Pankey Farms; Pankey Ranch; Blanche Pope, Trustee U/D/T Pope Family Trust; North San Diego County Development Co.; and Gregory Canyon, Ltd., April 15, 1996
- On-site Alternatives Documentation Review Memorandum, GeoSyntec Consultants, October 11, 2012, revised April 12, 2012 and November 28, 2012
- Gregory Canyon Landfill Off-Site Alternatives Selection, PCR Services Corporation, January 2012
- Off-site Alternatives Documentation Review Memorandum, GeoSyntec Consultants, January 27, 2012, revised April 23, 2012, September 17, 2012, and November 28, 2012

FIRST SUPPLEMENT TO
AGREEMENT BETWEEN THE
SAN LUIS REY MUNICIPAL WATER DISTRICT;
DOROTHY E. LEAVEY AND J.T. AND K.L. MCCARTHY;
EDGAR E. AND ELIZABETH S. PANKEY TRUST;
PANKEY FARMS; PANKEY RANCH;
BLANCHE POPE, TRUSTEE U/D/T POPE FAMILY TRUST;
NORTH SAN DIEGO COUNTY DEVELOPMENT CO.; AND
GREGORY CANYON, LTD.

THIS FIRST SUPPLEMENT ("First Supplement") is made effective June ___, 2004 by and between the San Luis Rey Municipal Water District ("SLRMWD"), a special district organized under the Municipal Water District Act of 1911, and Gregory Canyon Ltd., a California Limited Liability Company ("Gregory Canyon"), and supplements that instrument recorded on May 8, 1996, entitled "Agreement between the San Luis Rey Municipal Water District; Dorothy E. Leavey and J.T. and K.L. McCarthy; Edgar E. and Elizabeth S. Pankey Trust; Pankey Farms; Pankey Ranch; Blanche Pope, Trustee U/D/T Pope Family Trust; North San Diego County Development Co.; and Gregory Canyon, Ltd." ("1996 Agreement").

SLRMWD and Gregory Canyon are sometimes referred to herein individually as a "Party" and collectively as "Parties".

RECITALS

A The Parties, among others, entered into the 1996 Agreement for the purpose of setting forth measures that would be taken by Gregory Canyon, its predecessors-in-interest and its successors to protect groundwater resources within the boundaries of the SLRMWD.

B. Gregory Canyon has acquired all rights in the Gregory Canyon real property from North San Diego Development Company, a signatory to the 1996 Agreement, and is its successor in interest.

C. The San Diego County Local Enforcement Agency ("LEA") of the Department of Environmental Health, acting as the Lead Agency under the California Environmental Quality Act (Public Resources Code sections 21000, et seq. ("CEQA")), prepared a draft environmental impact report ("EIR") for an approximately 300-acre landfill (including the waste disposal area and borrow/stockpile areas) to be placed on approximately 1,770 acres of land owned by Gregory Canyon (the "Project" or "Project Site"). The Project

Site is located in the unincorporated area of North San Diego County, described with particularity in Proposition C adopted by the voters of San Diego County in a County wide election in November 1994. A portion of the Project Site is located within the jurisdictional boundaries of the SLRMWD.

D. By letter dated April 28, 1999 to the LEA, the SLRMWD requested that certain of the measures contained in the 1996 Agreement be incorporated in the EIR and the Mitigation Monitoring and Reporting Program ("MMRP") for the Project.

E. The LEA incorporated certain measures referenced in the April 29, 1999 letter in the Final EIR for the Project. The LEA certified the Final EIR for the Project on February 6, 2003.

F. SLRMWD contends that the Final EIR, specifically Table 10-1 of the MMRP, identifies the SLRMWD as a CEQA "Responsible Party" charged with monitoring compliance with Project mitigation measures MM 4.3-1a through MM 4.3-1j.

G. Following the LEA's certification of the Final EIR, the SLRMWD requested the LEA to require that Gregory Canyon provide funding to make it feasible for the SLRMWD to carry out the responsibilities assigned to it in the Final EIR, including monitoring the mitigation measures delegated to it by the LEA in MM 4.3-1a through MM 4.3-1j, as well as to implement other measures designed to protect groundwater resources. The SLRMWD has also asked the LEA to consult with it, and with the California Regional Water Quality Control Board, San Diego Region ("RWQCB") to develop appropriate protocols to assist the SLRMWD in carrying out its CEQA responsibilities and to monitor compliance with these Project mitigations. In carrying out these activities, SLRMWD believes that it is a Responsible Agency as defined in CEQA. Gregory Canyon takes no position on that issue.

H. The SLRMWD on June 16, 2004, at a regularly scheduled and agendized meeting of the Board of Directors, acting as a CEQA Responsible Agency, by a 4-0 vote (with one absence) declined to approve the Final EIR for the landfill project on the grounds that it was inadequate as a matter of law, that the project would result in significant unmitigated water quality impacts for which no Statement of Overriding Considerations was made, for which mitigation was infeasible to carry out, and that adverse environmental impacts would result because of the SLRMWD's refusal to accept the responsibilities delegated to it by the LEA under the MMRP as written and approved by the LEA.

I. Gregory Canyon hereby agrees to pay SLRMWD's costs of meeting its mitigation monitoring responsibilities as described in the Final EIR, to purchase a policy or policies of insurance acceptable to SLRMWD to address issues of environmental investigation, clean up and remediation, to pay the costs of construction quality assurance during construction of the landfill, as well as for other items, in accordance with the terms and conditions set forth herein and in terms and conditions to be developed and memorialized in future amendments, modifications and/or supplements to the 1996 Agreement.

J. This First Supplement sets for the terms agreed to between the SLRMWD and Gregory Canyon as to the assistance Gregory Canyon will furnish to the SLRMWD to monitor the mitigation requirements set forth in the 1996 Agreement and MM 4.3-1a through MM 4.3-1j, as well as additional mitigation measures and other matters. By entering into this First Supplement, SLRMWD takes no position on the suitability of the project site for municipal landfill purposes.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is acknowledged, the Parties agree as follows:

1. Agreement Remains in Effect.

   1.1 All terms and conditions of the 1996 Agreement remain in effect, as supplemented by this First Supplement.

2. Feasibility of Mitigation Measures.

   2.1 Upon agreement by Gregory Canyon to fully fund performance of the SLRMWD's duties under the Final EIR, including monitoring compliance with Mitigation Measures MM 4.3-1a through MM 4.3-1j, the SLRMWD acting as a CEQA Responsible Agency will reconsider the matter of its approval of the Final EIR at a specially scheduled meeting of its Board of Directors on June 30, 2004, at 1:30 p.m. at its offices in Fallbrook.

3. Periodic Review.

3.1 The Parties recognize the importance of periodic review and amendment, modification and/or supplement of the 1996 Agreement throughout the life of the landfill and during its closure and post-closure period. The Parties recognize and agree that on certain matters, they will work in good faith to reach agreement on matters which are too premature to agree on in required detail at this time. The Parties agree to meet annually or more frequently to discuss performance under the 1996 Agreement, the First Supplement, and any future amendments, modifications and/or supplements; any accounting matters; payment or billing issues; and performance protocols, and to coordinate with each other and the regulatory agencies. In the event no agreement can be reached regarding disputes between the SLRMWD and Gregory Canyon as to Gregory Canyon's compliance with Joint Technical Document ("JTD") requirements and Waste Discharge Requirements ("WDRs") and the SLRMWD's duties under the Final EIR, the Parties agree that the SLRMWD may seek to enforce the provisions of the JTD and WDRs as they affect water quality in the appropriate California court to the full extent provided under applicable law. SLRMWD has standing to enforce the JTD and WDRs in the appropriate California court to the full extent provided under applicable law.

4. Payment by Gregory Canyon of the SLRMWD's Mitigation Monitoring Expenses.

4.1. Gregory Canyon agrees to pay the SLRMWD's reasonable costs for consultants, engineers and attorneys engaged by the SLRMWD to assist it in evaluating and performing its CEQA mitigation monitoring requirements, and advising the District on insurance matters arising from the purchase of insurance consistent with this First Supplement. Such costs include the preparation of this First Supplement, attorneys' costs incurred in relation to the procurement of insurance, and coordination with regulatory agencies to develop protocols to monitor compliance with project mitigation measures MM 4.3-1a through MM 4.3-1j.

4.2 Gregory Canyon will deposit with the SLRMWD the initial sum of $75,000 on July 15, 2004, against which estimated attorneys' and experts' fees incurred in developing this First Supplement will be billed. Should actual fees and costs exceed the amount deposited, SLRMWD will bill the reasonable costs to Gregory Canyon for payment, which Gregory Canyon agrees to pay. If the deposit

exceeds actual costs the surplus will be refunded to Gregory Canyon. On August 1, 2004, and annually thereafter until post-closure actions have been completed, Gregory Canyon will deposit a sum expected to cover SLRMWD's reasonable costs for the remainder of the year plus a reserve of $25,000 out of which technical consultants' fees, attorneys' fees and costs incurred in carrying out mitigation responsibilities for the year, will be paid. Such deposit due August 1, 2004 will be in the initial sum of $45,000 per year, including $20,000 for the first year of monitoring and development of protocols, and $25,000 reserve. Funds remaining as of August 1, 2005 will be carried over. In the event reasonable costs incurred exceed funds on deposit and reserved, Gregory Canyon agrees to pay such reasonable costs and fees. A copy of the project mitigation measures is attached hereto as Exhibit A.

4.3 At the end of the first year in which waste is accepted for disposal at the Gregory Canyon Landfill, the Parties will commence negotiations about Gregory Canyon's payment of monitoring costs of the SLRMWD during the landfill's closure and post-closure period, as provided for in Section 4.2.

4.4 Disputes, if any, which arise concerning reasonableness of costs incurred by the SLRMWD are not subject to resolution by the binding arbitration provisions of Section 10 of the 1996 Agreement. The Parties agree that any dispute will be resolved through informal mediation, and if unresolved after passage of a reasonable time, in the California court system judicially. The SLRMWD agrees to make available for inspection by Gregory Canyon statements from technical consultants for professional services, and will provide summaries or redacted versions of statements for professional services submitted by its attorneys. In making such statements and summaries available for Gregory Canyon's review, the SLRMWD does not waive the attorney-client privilege, the attorney work product doctrine or any provision of law protecting the confidentiality of its communications with its attorneys and/or other consultants or their work product. The SLRMWD will require documentation from its attorneys and consultants prior to payment.

4.5 The SLRMWD will furnish documentation to Gregory Canyon by the fifteenth (15th) day following the end of each calendar quarter for expenses incurred during the previous calendar quarter. Funds deposited which have not been spent or which have not been earmarked for incurred expenses will be carried forward to

the next year. SLRMWD may keep a reserve of up to $25,000. Unspent funds in excess of $25,000 will be refunded.

5. Funding of Construction Quality Contractor.

5.1 The Parties have agreed that Gregory Canyon will pay the costs of engagement of a Construction Quality Contractor ("CQC") who will perform as provided for in 27 California Code of Regulations ("CCR") 20323 and 27 CCR 20324.

5.1.1 Prior to initiating construction, Gregory Canyon shall enter into a binding agreement with the RWQCB to provide funding to allow the RWQCB to engage the CQC to undertake Construction Quality Assurance ("CQA") consistent with 27 CCR 20323 and 27 CCR 20324. In addition to the requirements of 27 CCR 20324, the design professional preparing the CQA shall have at least five years experience as a registered civil engineer or certified engineering geologist working on landfills in California. The firm selected will be required to procure a policy of insurance, the terms and amounts of which must be acceptable to the SLRMWD.

5.1.2 CQA activities will be undertaken in accordance with procedures set forth in 27 CCR 20323 and 27 CCR 20324, including the JTD prepared by Gregory Canyon and submitted to and approved by the LEA and the RWQCB, as it may be amended from time to time. The CQC will report to the RWQCB.

5.1.3 In the event the RWQCB is unable to accept funding for the CQC or is otherwise unable to retain the CQC, the Parties agree to negotiate in good faith to identify another agency that may engage the CQC to perform the activities contemplated by this First Supplement.

5.1.4 Copies of reports, notes of field observations, testing results and all other documents prepared by the CQC will be provided to both the SLRMWD and Gregory Canyon when submitted by the CQC to RWQCB, at no cost to the SLRMWD.

5.1.5 Gregory Canyon may engage its own contractor to provide CQA services, or may rely on the CQC engaged by RWQCB in meeting CQA requirements in applicable law, regulations or permits.

6. Groundwater Sampling and Analysis.

6.1 Maintaining water quality of the San Luis Rey River and its basins for the beneficial use of water users in the SLRMWD is a priority of both Parties. The Parties acknowledge that the RWQCB has designated the water within the SLRMWD to have the beneficial use for drinking water purposes. The Parties recognize that the groundwater monitoring system to be included in the WDRs and/or JTD will address background monitoring, detection monitoring, and surface water monitoring. Starting upon issuance of the WDRs, and completing not less than one hundred twenty (120) days prior to commencing the receipt of waste at the landfill, the Parties shall develop a protocol for the sampling, handling and analysis of groundwater samples to be collected from monitoring wells at the landfill (and other wells to be monitored), as required by the WDRs and/or JTD. The Parties agree that the protocol will be consistent with applicable federal and state law and regulations governing solid waste landfills, including but not limited to the requirements of 27 CCR 20415. The protocol will include a determination of the constituents to be analyzed, and a method for adjusting the constituents to be analyzed based on future monitoring of leachate collected from Gregory Canyon's leachate collection and removal system. The LEA and the RWQCB will be consulted in the development of the protocol. In the event of disagreement regarding any provisions of the protocol, the determination of the RWQCB will be controlling.

6.2 Within fifteen (15) days from the date of final completion of the protocol, the SLRMWD will select one or more State Certified contractors to provide sampling, handling and laboratory analytical services at a State Certified laboratory with respect to groundwater samples collected in accordance with the requirements of the WDRs and/or JTD. Gregory Canyon agrees to promptly enter into arrangements for payment of the selected contractor or contractors for providing these services without interruption until completion of post-closure activities. The contractor(s) will be selected in consultation with the LEA and the RWQCB, and any contractor providing laboratory analytical services must be State-certified.

6.3 The SLRMWD may, in its reasonable judgment, select new contractor(s) referred to in Section 6.2 to substitute for any of the contractor(s) initially selected, and upon such occurrence Gregory Canyon agrees to promptly make arrangements for the payment of such new contractor(s). However, any selection of new substitute contractor(s) that occurs following initiation of an Evaluation Monitoring Program conducted pursuant to 27 CCR 20385(a)(2) or (3) will not become effective until the completion of the Evaluation Monitoring Program.

7. Water Service by the SLRMWD.

7.1 Gregory Canyon agrees to purchase water and water service from the SLRMWD (if available) for use in a service area to be determined by Gregory Canyon in quantities and at pressures, adequate for construction and operation as set forth in the EIR, subject to the approval (if required) of the San Diego County Local Agency Formation Commission ("LAFCO"). The terms and conditions of service are to be negotiated and set forth in a service agreement to be finalized among the Parties in sufficient time to furnish service of initial construction water. Gregory Canyon agrees to pay all costs of the SLRMWD's furnishing of water service Gregory Canyon agrees to notify the SLRMWD on or before October 1, 2004, of its construction and project build out plans to allow the SLRMWD to commence arrangements for service, at which time a Readiness to Serve Fee will be levied by SLRMWD**.** The SLRMWD will arrange to undertake all required studies, including environmental and engineering studies, at Gregory Canyon's expense, to initiate service.

7.2 Subject to water availability and approval of LAFCO (if required) the SLRMWD will provide both potable and non-potable water to those portions of the Project site as designated by Gregory Canyon in such quantities and at such pressures as requested by Gregory Canyon, which water is to be made available during construction and throughout its operation, and during closure, and post-closure period as appropriate.

7.3 Gregory Canyon will support any proceedings involving the SLRMWD before LAFCO, if asked to do so by the SLRMWD, including but not limited to, changes of the boundaries of SLRMWD's service area to include the entire Gregory Canyon ownership.

7.4 Gregory Canyon will support and not oppose the imposition of the SLRMWD's annual water availability charge on lands within the boundaries of the SLRMWD.

7.5 Gregory Canyon will support formation of an improvement district within the SLRMWD, if requested, consistent with the provisions of California Water Code sections 71000 et seq., and other laws to which the SLRMWD is subject, which formation will be in the sole determination of the SLRMWD, for the purpose of providing water service to those portions of the Project site within the SLRMWD for which the operator requires water service .

8. Water Rights.

8.1 Gregory Canyon will convey to the SLRMWD any and all water rights it holds, whether or not currently exercised, in a form satisfactory to the SLRMWD, the election of which will be at the SLRMWD's sole discretion. The conveyed water rights will be used by the SLRMWD to furnish water within SLRMWD's service area at locations designated by Gregory Canyon, to Gregory Canyon and for other beneficial uses, including but not limited to, fire flow. Gregory Canyon will use its best efforts to preserve and defend its claimed water rights, and not lose them through non-use, prescription, or lapse of administrative proceedings.

8.2 Gregory Canyon will resume processing its Application to Appropriate Water No. A30038 now pending before the State Water Resources Control Board, to affirm the property's historic water supply, and to allow appropriation of water to lands not riparian to the San Luis Rey River.

8.3 Any water reasonably surplus to the needs of Gregory Canyon will be transferred in a form satisfactory to the SLRMWD, for beneficial use.

8.4 Gregory Canyon will furnish the SLRMWD historic records of pumping at the landfill property, including volume, place of use, point of diversion, type of pump, power records, water facility construction, repair and maintenance records, prior filings, if any, with the State Water Resources Control Board, and records of proceedings regarding Application to Appropriate No. A30038, to the extent available. These records should be furnished as soon as possible, so that the SLRMWD can study water supply options for the Gregory Canyon Landfill.

9. Hold Harmless, Indemnification and Insurance.

9.1 Gregory Canyon agrees to defend (with counsel of Gregory Canyon's choice, subject to SLRMWD's approval), indemnify and hold the SLRMWD harmless in any claims, suits, proceedings, investigations, and judgments arising from or in connection with (a) the exercise of Gregory Canyon's water rights; (b) the furnishing of any water and/or water related services by SLRMWD to Gregory Canyon's property and operations; (c) the furnishing of water by SLRMWD to any other water user within SLRMWD; (d) the consumption or use of any water from the San Luis Rey River or its groundwater claimed to be contaminated; (e) the carrying out of SLRMWD's monitoring duties under CEQA (except to the extent of the negligence or willful misconduct of SLRMWD, its representatives, consultants, officers, agents, employees, and volunteers); and (f) the administration of this First Supplement.

9.2 The Parties further recognize that SLRMWD's service of water is regulated by state and federal law. In the event that a "Contaminant", as defined below, is detected (a) in a Gregory Canyon monitoring well; or (b) in a SLRMWD production well, and the RWQCB makes a finding that the Contaminant is traceable to the Project; or (c) in, on, or under any property under the jurisdiction of the SLRMWD from which water is pumped, and the RWQCB makes a finding that the Contaminant is traceable to the Project, Gregory Canyon shall be responsible for all liabilities, damages, claims and costs resulting therefrom, including but not limited to any liability Gregory Canyon may have under state and federal law and including, but not limited to, the following:

(i) Costs of investigation and remediation of the soil, sediment, groundwater and surface water, and costs of natural resource damages and property damage to the extent required by applicable laws and the requirements of governmental authorities including costs of defense of any associated damage suit brought against, or judgment entered against the SLRMWD by any person regardless of merit or outcome;

(ii) Removal of the Contaminant from the drinking water to the extent required by applicable laws if the Contaminant is found in a production well, through well-head treatment or other treatment system acceptable to SLRMWD;

(iii) Costs incurred by SLRMWD to require the clean up of unpermitted releases of Contaminants by Gregory Canyon associated with the operation and maintenance of treatment facilities until remediation is complete, pursuant to applicable laws and the requirements of governmental authorities;

(iv) Costs, fines and penalties due to violations or alleged violations by Gregory Canyon of applicable laws relating to the environment or health and safety;

(v) Costs of liabilities for alleged or actual personal injury, including costs of defense of any claim against, suit brought against, or judgment entered against the SLRMWD by any person arising from the ingestion of or exposure to water claimed to be contaminated by the Gregory Canyon Landfill; and

(vi) Losses, liabilities, damages, costs (including but not limited to investigatory and response costs) and expenses (including but not limited to reasonable attorneys' and consultants' fees and any and all expenses whatsoever reasonably incurred in investigating, responding to, preparing, defending or settling any claim or action or in invoking or obtaining the benefits of insurance covering SLRMWD (including the insurance contemplated in this section 9), in respect of any loss against which SLRMWD would otherwise be indemnified hereunder.

"Contaminant" means any constituent which exceeds action levels for drinking water supplies established by state and/or federal law, including but not limited to, Title 22 of California Code of Regulations or any substance that gives rise to liability, imposes duties, or requires the incurrence of costs under any environmental health or health and safety law. The Parties agree to confer and cooperate with the RWQCB in the determination of required actions, as appropriate.

9.3 The Parties recognize that the San Luis Rey River and its groundwater basins are the sole source of supply to the water users in the SLRMWD, and that the geology and hydrology of the river and its basins allow for the storage of water, the conjunctive use of ground and surface water, and the carry over of water to meet the demands of customers through dry, and multiple dry year periods. In recognition of the importance of this natural resource, Gregory Canyon agrees to purchase and maintain for the duration of the operation, closure and post closure periods, policies of environmental insurance covering claims for injuries to persons or damage to property (including natural resources damage) and the release and remediation of contaminants into the environment, which may arise from or in connection with the design, construction, closure operation, expansion, modification and repair of the landfill by Gregory Canyon, its successors, its agents, representatives, employees, or assigns issued by acceptable insurance companies, as determined by the SLRMWD, which are (1) qualified to do the business of insurance in California, (2) maintain an agent for service of process within the State, and (3) are rated not less than "A VII" according to the latest Best's Key Rating Guide, covering the liabilities set forth in Sections 9.1 and 9.2, and all liabilities and claims related to the release of Contaminants resulting in any way from the operations of Gregory Canyon, claims for violations of health, safety or environmental laws, third party claims against the SLRMWD, tort claims, clean up and remediation claims and costs, trespass claims, nuisance claims, and claims for catastrophic acts, including acts of domestic and foreign terrorism. The insurance coverage shall cover the SLRMWD, its employees, directors, agents and volunteers.

(a) The policy or policies and related endorsements are to be received and approved by the SLRMWD, in its reasonable discretion before the commencement of landfill construction. The polices of insurance are to contain or be endorsed to contain, without limitation, the following provisions and are to meet the following requirements; provided, however, that if the coverage provided for set forth in this First Supplement is not available at commercially reasonable terms, then the parties shall negotiate to replace the terms as set forth in this First Supplement with comparable terms acceptable to the SLRMWD that meet the goals of the SLRMWD as set forth in this First Supplement:

(i) The SLRMWD, its representatives, consultants, directors, officers, agents, and employees, and volunteers are to be covered as Named Insureds under the policies, including but not limited to, as respects: liability arising out of the activities performed by or on behalf of Gregory Canyon; products and completed operations of Gregory Canyon; and premises owned, leased, or used by Gregory Canyon.

(ii) Gregory Canyon's insurance coverage shall be primary insurance as respects: the SLRMWD, its representatives, consultants, officers, agents, employees, and volunteers. Any insurance or self-insurance maintained by the SLRMWD, its representatives, and their directors, officers, employees, consultants, or volunteers shall be in excess of Gregory Canyon's insurance and shall not contribute to it.

(iii) Any failure to comply with the reporting provisions of the policy shall not affect coverage provided to the SLRMWD, its representatives, consultants, officers, agents, employees, and volunteers.

(iv) Coverage shall state Gregory Canyon's insurance and shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

(v) The insurance coverage shall contain no special limitations on the scope of protection afforded to the SLRMWD, its officers, officials, employees, agents or volunteers.

(b) <u>All Coverage</u>: Each insurance policy required by the SLRMWD shall be endorsed to state that coverage shall not be suspended, voided, canceled by either Party, reduced in coverage or in limits except after sixty (60) days prior to written notice by certified mail, return receipt required, has been given to the SLRMWD.

(c) Proof of Insurance: Gregory Canyon shall, not less than 45 (forty-five) days prior to the initiation of landfill construction, furnish the SLRMWD with original policies and endorsements evidencing coverage required by this section of the Supplement. The policy or policies and related endorsements are to be signed by the person authorized by that insurer to bind coverage on its behalf. SLRMWD must be provided complete, certified copies of all required insurance policies, including endorsements affecting the coverage required by these specifications.

(d) Certificate of Insurance: Gregory Canyon shall, at least thirty (30) days prior to the expiration of any insurance policy required by this Agreement, file a signed and completed "Certificate of Insurance" (listing all policy endorsements and provisions called for by this Agreement) with the SLRMWD stating that such insurance policy has been renewed or extended. Should Gregory Canyon be unable to renew or extend any insurance policy or policies required by this First Supplement, Gregory Canyon shall deliver a letter of credit in the amount of the aggregate limits of the policy or policies that Gregory Canyon was unable to extend or renew. The letter of credit shall be available to fund the matters contemplated in this First Supplement. If such letter of credit is not available to Gregory Canyon, as demonstrated to SLRMWD by Gregory Canyon, Gregory Canyon shall have delivered to SLRMWD such security or other financial instruments having at least equal value to the amount of such letter of credit, such security and financial instruments that meet the goals of the SLRMWD as set forth in this First Supplement, as determined by the SLRMWD in its reasonable discretion.

(e) Amount: The insurance policy shall be in the sum of at least $100,000,000 per occurrence in 2004 dollars. Gregory Canyon will furnish the SLRMWD with certificates of insurance annually. The SLRMWD will have the right to require Gregory Canyon to switch carriers if the rating of the insurer declines. This policy of insurance shall be in addition to other financial arrangements required by the RWQCB, the State Water Resources Control Board, and the California Integrated Waste Management Board, and as outlined in the 1996 Agreement.

10. Delay or Termination of Landfill Project.

10.1 Even in the event of a delay of initiation of construction or operation for any reason, or in the event of a voter approval of any land use initiative which, if approved, would change the zoning for the property owned by Gregory Canyon to prohibit the use of the property for landfill purposes, Gregory Canyon will, nevertheless, reimburse the SLRMWD any actual costs incurred by SLRMWD to initiate water service to Gregory Canyon, and for actual costs to modify, supplement and update the 1996 Agreement to allow the SLRMWD to implement the mitigation measures delegated to it by the LEA. Notwithstanding the above, the any transfer of water rights under Section 8 would not become effective until such times as the Parties enter into a water service agreement and Gregory Canyon's water rights are transferred in a form acceptable to SLRMWD.

11. Cooperation Regarding Amendment of JTD and WDRs.

11.1 The Parties recognize that the 1996 Agreement will be amended from time to time, and that this First Supplement is an interim agreement. The parties agree that this First Supplement, and future supplements, will be made a part of the JTD and placed before the LEA or the California Integrated Waste Management Board for their consideration, as appropriate. In addition, the Parties agree to request that this agreement become a part of the WDRs for the project, either directly or through incorporation in the JTD. The parties will cooperate to ensure that this First Supplement becomes an integral part of the Gregory Canyon JTD, as the 1996 Agreement is from time to time amended, modified and/or supplemented, and that the Parties will cooperate with each other in such amendment, modification and/or supplement process.

12. Binding on Successors and Assigns.

12.1 This First Supplement is binding on the successors and assigns of the Parties.

13. Requisite Action. The Parties represent and warrant to each other that they have taken all requisite action to approve, authorize, execute and deliver this First Supplement and that each person executing this First Supplement on their behalf has all requisite power and authority to execute this First Supplement and to bind the Parties to the provision of this First Supplement.

IN WITNESS WHEREOF, the Parties have executed this First Supplement effective as of the day and year first above written.

Dated: June 30, 2004

SAN LUIS REY MUNICIPAL WATER DISTRICT

By: _____
President, Board of Directors

Dated: June 30, 2004

Attest: _____
Assistant Secretary

Dated: _____

GREGORY CANYON LTD., a California Limited Liability Company

By: _____
Richard Chase, Project Manager

13. Requisite Action. The Parties represent and warrant to each other that they have taken all requisite action to approve, authorize, execute and deliver this First Supplement and that each person executing this First Supplement on their behalf has all requisite power and authority to execute this First Supplement and to bind the Parties to the provision of this First Supplement.

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Dated: _____

SAN LUIS REY MUNICIPAL WATER DISTRICT

By: _____
President, Board of Directors

Dated: _____

Attest: _____
Secretary

Dated: 6/30/2004

GREGORY CANYON LTD., a California Limited Liability Company

By: Richard Chase
Richard Chase, Project Manager

EXHIBIT A

MITIGATION MONITORING MEASURES RELATED TO SLRMWD AGREEMENT

MITIGATION MEASURE NO.	MITIGATION MEASURE	METHOD OF VERIFICATION	TIMING OF VERIFICATION	RESPONSIBLE PARTY
MM 4.3-1a	For the purpose of providing additional environmental assurance to the San Luis Rey Municipal Water District, in addition to the 13 monitoring wells surrounding the landfill, the water quality monitoring shall include at a minimum monitoring of two production wells (downgradient SLRMWD well #34 and upgradient Lucio well #2), upgradient alluvial monitoring well GMW-3, and downgradient alluvial monitoring well GLA-16 located within the project boundary).	Written report by applicant's hydrogeologist	Annually	San Luis Rey Municipal Water District
MM 4.3-1b	If contamination is detected in any monitored well, the landfill operator shall be responsible for treatment and disposal of contaminated water. The landfill operator shall ensure that impacted water is treated to acceptable water quality standards, consistent with existing background water quality as provided in CCR Title 27, Section 20400 (a)(1). Adequate treatment shall be implemented to maintain background levels established by the RWQCB at the time of issuance of the waste discharge requirements.	Field inspection and monitoring by applicant's hydrogeologist	If contamination is detected	Regional Water Quality Control Board and San Luis Rey Municipal Water District
MM 4.3-1c	The Applicant shall provide to the San Luis Rey Municipal Water District simultaneously with the submission to the RWQCB data collected from the groundwater monitoring program and shall provide to the District and its consultants split samples from any groundwater monitoring station upon reasonable notice given before the next regularly scheduled sampling to enable the District to verify the data collected.	Data prepared by applicant's hydrogeologist	Simultaneously with submission to Regional Water Quality Control Board	San Luis Rey Municipal Water District

Mitigation Measure No.	Mitigation Measure	Method of Verification	Timing of Verification	Responsible Party
MM 4.3-1d	Prior to the commencement of Phase 1 construction project grading, the Applicant shall provide the San Luis Rey Municipal Water District and the other parties to the Mitigation agreement with an irrevocable letter of credit in accordance with Section 9 and Exhibit C of the Mitigation Agreement. The Letter of Credit shall be automatically renewed annually.	Irrevocable letter of credit	Prior to commencement of Phase 1 construction grading	San Luis Rey Municipal Water District and other parties to the agreement [1]
MM 4.3-1e	Prior to commencement of project operation, the Applicant shall establish, maintain, and administer a trust fund or third party custodial account for the benefit of the San Luis Rey Municipal Water District and the other parties to the Mitigation Agreement in accordance with Section 9 and Exhibit C of the Mitigation Agreement.	Verification of establishment of trust fund	Prior to commencement of operation	San Luis Rey Municipal Water District and other parties to the agreement
MM 4.3-1f	As a condition of any water rights appropriation permit that may be granted by the State Water Resources Control Board, the Applicant shall reduce its diversion of water if the amount of groundwater available within the San Luis Rey Municipal Water District based upon water rights as they existed on April 15, 1996 within the boundaries defined in the Mitigation Agreement, is insufficient to meet the reasonable and beneficial needs of the District or any of the landowners within the District.	Written verification of water usage	If groundwater supply is deemed to be insufficient	San Luis Rey Municipal Water District and other parties to the agreement
MM 4.3-1g	The Applicant shall identify and use an alternate water supply for construction and operation of the project if the amount of groundwater available within the San Luis Rey Municipal Water District is insufficient to meet the reasonable and beneficial needs of the District or any of the landowners within the District.	Written verification of alternate supply	If groundwater supply is deemed to be insufficient	San Luis Rey Municipal Water District

[1] The Agreement is between the San Luis Rey Municipal Water District, certain surrounding landowners, and Gregory Canyon, Ltd.

Mitigation Measure No.	Mitigation Measure	Method of Verification	Timing of Verification	Responsible Party
MM 4.3-1h	If the construction, operation, or closure of the landfill causes degradation of the Pala Basin water or quality of foreign water stored in the Pala Basin for use within the Pala Basin so that it cannot be used for domestic uses and for irrigation, the Applicant shall be liable to the San Luis Rey Municipal Water District to the extent of any degradation of the quality of Pala Basin water or the quality of foreign water stored in the Pala Basin caused by the construction, operation or closure of the landfill, including the cost of remediating the degradation of water quality attributable to the construction, operation or closure of the landfill, or if such remediation is not technologically or economically feasible, of providing an alternative water supply pending permanent remediation measures to the extent necessary to meet the reasonable needs for domestic and irrigation uses of the parties who signed the Mitigation Agreement. The applicant's liability with respect to foreign water shall be limited to remediation of a maximum of 17,694 acre-feet. Remediating the water quality of the Pala Basin or providing an alternative water supply, shall be part of the closure plan and part of the cost estimate required by 14 CCR § 17782.	Testing as required by RWQCB after consultation with SLRMWD	Reporting as required by RWQCB or SLRMWD Agreement	Regional Water Quality Control Board; San Luis Rey Municipal Water District
MM 4.3-1i	The Applicant shall notify the San Luis Rey Municipal Water District and each of the parties to the Mitigation Agreement of any request to modify or to be released from the requirements of the closure plan or the post closure maintenance plan for the project.	Copy of request	At time of request	San Luis Rey Municipal Water District and other parties to SLRMWD Agreement
MM 4.3-1j	The Applicant shall consult with the San Luis Rey Municipal Water District concerning the number, specifications, location, and frequency of data collection at the monitoring stations. The final decision regarding the need for and adequacy of the number, specifications, location of and frequency of data collection from the monitoring stations will be made by the RWQCB.	Discussion with SLRMWD	During discussions of monitoring with RWQCB	Regional Water Quality Control Board; San Luis Rey Municipal Water District

AGREEMENT

THIS AGREEMENT ("Agreement") is entered into on April 15, 1996 (the "Effective Date"), by and between the SAN LUIS REY MUNICIPAL WATER DISTRICT ("SLRMWD"); Dorothy E. Leavey, J.T. and K.L. McCarthy; Edgar E. and Elizabeth S. Pankey Trust; Pankey Farms; Pankey Ranch, A California Limited Partnership; Blanche Pope, Trustee U/D/T Pope Family Trust ("Signing District Members") on the one hand, and North San Diego County Development Co., a California General Partnership ("Current Owner"); Gregory Canyon, Ltd., a California Limited Liability Company, ("Development Company") on the other hand.

RECITALS

This Agreement is entered into with reference to and in reliance upon the following facts:

A. The SLRMWD is a municipal water district representing the property owners on the San Luis Rey River from the Pala Indian Reservation on the east to highway I-15 on the

west. The SLRMWD maintains and defends the vested water rights of landowners within the boundaries of the SLRMWD, maintains and defends the rights of the SLRMWD, and develops plans for maintenance of a reliable water supply for the future. The SLRMWD comprises the real property shown in Exhibit A as of the Effective Date. The Signing District Members respectively own the real property described on Exhibit B, as of the Effective Date, including appurtenant riparian and appropriative water rights as of the Effective Date.

B. Development Company holds an option (the "Option") to purchase from Current Owner approximately 1600 acres in northern San Diego County, generally known as Gregory Canyon, (the "Gregory Canyon Property") on which it proposes to construct a Class III (solid waste) or Municipal Solid Waste Landfill ("MSWL") and recycling center (collectively "Gregory Canyon Facility"). Some of the Gregory Canyon Property is within the SLRMWD and some of the Gregory Canyon Property is not within the SLRMWD. Development Company wishes to obtain the necessary permits required for the development and operation of the Gregory Canyon Facility. Current Owner has vested water rights as a landowner. Current Owner, through its general partner, has filed an Application to Appropriate Water By Permit with the State Water Resources Control Board ("Application No. 30038) to obtain the right to use Pala Basin water in the construction and operation of the Gregory Canyon Facility. Development Company's

option to acquire the Gregory Canyon Property includes the transfer of Application No. 30038.

C. Approximately 388 acres of the Gregory Canyon Property are within the boundaries of the SLRMWD. The historical production of water from that portion of the Gregory Canyon Property within the SLRMWD totalled in excess of 470 acre-feet per year, which was used primarily for domestic, dairy and agricultural irrigation purposes. It is Development Company's best estimate that the amount of water reasonably necessary for use during the construction phase of the Gregory Canyon Facility is approximately 150,000 gallons of water per day or approximately 180 acre-feet per year, and that during operation of the Gregory Canyon Facility, the amount of water reasonably necessary for use is approximately 50,000 gallons per day or approximately 60 acre-feet per year. Development Company is willing to limit its water usage under any permit granted pursuant to Application No. 30038 to the quantity reasonably necessary for construction and operation of the Gregory Canyon Facility.

D. SLRMWD and the Signing District Members have expressed certain concerns about locating the Gregory Canyon Facility at the Gregory Canyon site. Those concerns include the need to prevent degradation of the Pala Basin due to the construction, operation or closure of the Gregory Canyon Facility

and maintaining an adequate water supply for present and future beneficial uses.

E. Development Company is willing to develop the Gregory Canyon Facility in a manner that will help protect the Pala Basin and quality of water in the Pala Basin. Development Company is further willing to acknowledge that water rights appurtenant to land owned as of the Effective Date by the Signing District Members as described in Exhibit B and water rights held by SLRMWD as of the Effective Date are superior to any appropriative water rights granted pursuant to Application No. 30038. There are landowners within SLRMWD who are not Signing District Members. Development Company is willing to acknowledge that riparian and appropriative water rights appurtenant to land that is owned by others than Signing District Members as of the Effective Date and that is within the boundaries of SLRMWD as shown on Exhibit A are superior to any appropriative water rights granted pursuant to Application No. 30038.

F. SLRMWD and the Signing District Members are willing to consent to the siting of the Gregory Canyon Facility and use of Pala Basin water for construction and operation of the Gregory Canyon Facility under certain terms and conditions.

NOW, THEREFORE, the parties hereto agree as follows:

1. This Agreement relates to the SLRMWD with respect to that property within the boundaries described in Exhibit A and the water rights appurtenant thereto as of the Effective Date. This Agreement does not apply to additional real property and water rights appurtenant thereto that may be annexed to the SLRMWD after the Effective Date or to any water rights otherwise acquired by SLRMWD after the Effective Date. However, if any groundwater rights appurtenant to real property shown in Exhibit A are assigned to SLRMWD, the terms of the Agreement shall apply, but only to that quantity of groundwater usage actually exercised by the assignor as of the Effective Date.

2. This Agreement also relates to Signing District Members Dorothy E. Leavey, J.T. and K.L. McCarthy; Edgar E. and Elizabeth S. Pankey Trust; Pankey Farms; Pankey Ranch, A California Limited Partnership; Blanche Pope, Trustee U/D/T Pope Family Trust with respect to that property, and the water rights appurtenant thereto, described in Exhibit B owned by the respective Signing District Members as of the Effective Date and no other. This Agreement does not apply to any property acquired by any Signing District Member after the Effective Date or to any water rights appurtenant to such after-acquired property. This Agreement also applies to any water rights issued to a Signing District Member pursuant to an application for appropriative rights for water historically used on property

described on Exhibit B by the Signing District Member under an imperfect riparian claim. This Agreement does not apply to any water rights acquired after the Effective Date.

3. Definitions:

a. "CIWMB" means the California Integrated Waste Management Board, the lead agency for implementing the California Municipal Solid Waste Permit Program.

b. "SWRCB" means the State Water Resources Control Board.

c. "RWQCB" means the Regional Water Quality Control Board, Region 9.

d. "LEA" means the San Diego County Department of Environmental Health, the local enforcement agency that has been delegated by the California Integrated Waste Management Board to issue solid waste facility permits in San Diego County.

e. "Gregory Canyon Property" means approximately 1,600 acres in northern San Diego County owned by North San Diego Development Co., generally known as Gregory Canyon.

f. "Gregory Canyon Facility" means a Class III (solid waste) or Municipal Solid Waste Landfill ("MSWL") and recycling center to be constructed on the Gregory Canyon Property.

g. "EIR" means the environmental impact report required for the Gregory Canyon Facility by the California Environmental Quality Act.

h. "Operator" means the owner of the Gregory Canyon Property or other person who through a lease, franchise agreement or other arrangement with the owner of the Gregory Canyon Property becomes legally responsible to the state for including, but not limited to, the following requirements for the Gregory Canyon Facility:

i. Obtaining a solid waste facilities' permit,

ii. Complying with all applicable federal, state and local requirements,

iii. The physical operation of the site, or

iv. Closing and maintaining the site during the post closure maintenance period.

i. "Pala Basin" means that portion of the San Luis Rey River contained within the boundaries of the SLRMWD as shown on Exhibit A.

j. "Foreign Water" means water brought into the Pala Basin from a different watershed.

k. "Foreign Water Storage" means temporary storage of Foreign Water in the Pala Basin with permission of all holders of water rights in the Pala Basin for use within the Pala Basin or for the purpose of returning the Foreign Water to its owner(s) for beneficial uses.

l. "Excess Storage Capacity" means the capacity of the Pala Basin to accept and store Foreign Water.

m. To the extent that terms are not defined in this Agreement, they shall be given the same definition as those set forth in Title 14, California Code of Regulations, section 17761. To the extent that terms used in this Agreement are not defined in 14 CCR § 17761, they shall be given the definitions found in Title 23, California Code of Regulations, section 2601. If the same word is defined differently in 14 CCR § 17761 and 23 CCR § 2601, the definition in 14 CCR § 17761 shall control.

4. Acknowledgement of Superior Water Rights.

a. Development Company hereby acknowledges that water rights held as of the Effective Date by the SLRMWD, landowners within SLRMWD, and the Signing District Members that are appurtenant to that property described in Exhibits A and B, and no other, are superior to any appropriative water rights granted pursuant to Application No. 30038. This acknowledgement does not apply to any real property or water rights acquired after the Effective Date. This Agreement is not intended to and shall not affect any appurtenant riparian, appropriative or other water rights of the Gregory Canyon Property other than any appropriative water rights granted pursuant to Application No. 30038.

b. Development Company agrees to insert as a condition of any permit that may be granted pursuant to Application No. 30038 that if at any time in the future, investigation by SLRMWD or any of the Signing District Members demonstrates that the amount of water available in the Pala Basin is insufficient to meet the reasonable and beneficial needs of the SLRMWD or any of the Signing District Members based upon the reasonable water demands of the SLRMWD or any of the Signing District Members based upon water rights as they existed on the Effective Date as set forth in paragraphs 1 and 2, within the boundaries depicted in Exhibit A or the property described in Exhibit B, then Development Company will reduce diversion of the

water under any permit or license granted pursuant to Application No. 30038 for use on the Gregory Canyon Facility to the extent necessary to eliminate the insufficiency.

c. Development Company agrees to identify an alternative water supply for the construction and operation of the Gregory Canyon Facility and agrees to use the alternative water supply to the extent necessary in the event that the SLRMWD or any of the Signing District Members demonstrates that the amount of water available in the Pala Basin is insufficient to meet the reasonable and beneficial needs of the SLRMWD or any of the Signing District Members based upon the reasonable water demands of the SLRMWD or any of the Signing District Members based upon water rights as they existed on the Effective Date as set forth in paragraphs 1 and 2, within the boundaries depicted in Exhibit A or the property described in Exhibit B.

5. Groundwater Quality Monitoring Plan.

a. Hydrogeological Investigation. Development Company has retained I^3 as its EIR consultant. I^3 and its subcontractors will perform an investigation of the hydrogeological conditions at the Gregory Canyon Facility site as part of the EIR. Development Company agrees to provide SLRMWD with a copy of all final reports generated by its EIR consultants for the Gregory Canyon Facility within ten days of receipt of such report by Development Company.

b. Groundwater Monitoring During Operations. Development Company agrees to install monitoring stations to monitor for the movement of leachate from the Gregory Canyon Facility toward the San Luis Rey River and to monitor the groundwater for constituents of MSWL leachate throughout the operating life of the Gregory Canyon Facility. Development Company shall consult with SLRMWD about the number, specifications, location of, and the frequency of data collection of the monitoring stations. The final decision regarding the need for and adequacy of the number, specifications, location of and frequency of data collection of such monitoring stations shall be made by the RWQCB and/or the CIWMB and/or the LEA and/or any other government agency having the power to require or regulate groundwater monitoring.

c. Data From Groundwater Monitoring Stations. Development Company agrees to provide to SLRMWD simultaneously with the submission to the RWQCB, LEA or CIWMB, data collected from the groundwater monitoring program and shall provide to SLRMWD and its consultants split samples from any groundwater monitoring station upon reasonable notice given before the next regularly scheduled sampling to enable SLRMWD to verify the data collected.

d. SLRMWD, the Signing District Members and Development Company agree to meet regularly to exchange information, communicate concerns and attempt to fashion

solutions to any problems arising out of the construction or operation of the Gregory Canyon Facility.

6. Closure Plan and Post Closure Maintenance Plan.

a. Development Company will comply with all laws and regulations concerning the preparation of a closure plan and a post closure maintenance plan as currently required by 14 CCR § 17782 and hereby agrees that it has a contractual obligation to SLRMWD and the Signing District Members to fully comply with the requirements of 14 CCR § 17782.

b. Development Company agrees to research various means of providing an alternative water supply for the SLRMWD and the Signing District Members, including treatment of Pala Basin water at the wellhead, in the event that and to the extent that the Pala Basin water quality in the SLRMWD is degraded by the construction, operation or closure of the Gregory Canyon Facility so that it cannot be used for domestic uses or for irrigation. The baseline for the water quality of the Pala Basin water in the SLRMWD shall be the background level established by the RWQCB as part of the issuance of Water Discharge Requirements for the Gregory Canyon Facility.

c. Development Company will construct and maintain a reverse osmosis treatment facility as part of the leachate containment system for the Gregory Canyon Facility.

7. Storage of Foreign Water.

The San Diego County Water Authority ("SDCWA") has done a preliminary study on the Excess Storage Capacity of the Pala Basin and has estimated that the Excess Storage Capacity is 16,000 acre feet. The SDCWA would have to contract with the SLRMWD and/or the Signing District Members and with other holders of water rights in the Pala Basin to obtain the right to store Foreign Water in the Pala Basin. SLRMWD is also currently evaluating options for Foreign Water Storage. SLRMWD has done a preliminary study on the Excess Storage Capacity of the Pala Basin and has estimated that the Excess Storage Capacity is 17,694 acre-feet. The Excess Storage Capacity of the Pala Basin therefore has prospective economic value to the SLRMWD, the Signing District Members and other holders of water rights in the Pala Basin. The parties agree that it is not possible at this time to determine whether the SDCWA or anyone else will contract with SLRMWD and/or the Signing Members for the storage of Foreign Water in the Pala Basin or will be able to gain the permission needed from all other holders of water rights to store Foreign Water in the Pala Basin.

8. Liability for Damage.

a. If the construction, operation or closure of the Gregory Canyon Facility causes degradation of the quality of the Pala Basin water or quality of Foreign Water stored in the Pala Basin for use within the Pala Basin so that it cannot be used for domestic uses and for irrigation, Development Company shall be liable to SLRMWD for the extent of any degradation of the quality of Pala Basin water or quality of Foreign Water stored in the Pala Basin caused by the construction, operation or closure of the Gregory Canyon Facility, including the cost of remediating the degradation of water quality attributable to the construction, operation or closure of the Gregory Canyon Facility, or if such remediation is not technologically and economically feasible, of providing an alternative water supply. If remediation is technologically and economically feasible, Development Company shall be liable for providing the affected Signing District Members a temporary alternative water supply pending permanent remediation measures to the extent necessary to meet the affected Signing District Members' reasonable needs for domestic and irrigation uses. Liability under this paragraph 8a with respect to Foreign Water Storage shall be limited to remediation of a maximum of 17,694 acre-feet.

b. In the event that the construction, operation or closure of the Gregory Canyon Facility causes

degradation of the water quality in the Pala Basin to the extent that such degradation renders the Pala Basin unusable for Foreign Water Storage, and the SLRMWD or any of the Signing District Members are economically damaged thereby, Development Co. agrees to remediate the water quality in the Pala Basin to the extent that any such degradation is caused by the construction, operation or closure of the Gregory Canyon Facility if such remediation is technologically and economically feasible. If such remediation is not technologically or economically feasible, Development Co. agrees to compensate the SLRMWD and the Signing District Members for the economic loss actually caused them in the event that the Pala Basin cannot be used for Foreign Water Storage due to degradation of water quality in the Pala Basin caused by the construction, operation or closure of the Gregory Canyon Facility. The parties acknowledge that the technology of remediation will evolve over the life of this Agreement and hereby agree that any dispute over what is technologically and economically feasible shall be resolved by arbitration pursuant to paragraph 10 herein. Liability under this paragraph 8b shall be limited to remediation of 17,694 acre-feet of Foreign Water.

c. In the event that any person or entity makes a claim against or sues SLRMWD and/or the Signing District Members for damage to the Pala Basin water quality, supply, or Foreign Water Storage capability allegedly caused by the construction, operation and/or closure of the Gregory Canyon Facility and as a result of the SLRMWD and/or the Signing

District Members having executed this Agreement, Development Company shall indemnify SLRMWD and/or the Signing District Members from such claims, including providing SLRMWD and/or the Signing District Members with a legal defense by competent lawyers of Development Company's choice.

d. Development Company, SLRMWD and the Signing District Members hereby agree that each has standing to seek damages for the failure to perform any portion of this Agreement or to seek a mandatory injunction compelling the performance of any duty imposed by statute, regulation or this Agreement upon any of them. This Agreement does not confer any rights upon any person or entity who is not a party to it. There are no intended or known third-party beneficiaries to this Agreement.

e. Development Company agrees to notify SLRMWD and each of the Signing District Members of any request to modify or to be released from the requirements of the closure plan or the post closure maintenance plan for the Gregory Canyon Facility.

9. Financial Assurances.

a. Prior to the commencement of construction of the Gregory Canyon Facility (i.e., grading), Development Company agrees to prepare and to provide to SLRMWD

(1) an estimate of the cost to monitor groundwater during the operational life of the Gregory Canyon Facility, (2) an estimate of the cost to do the closure and post closure monitoring required by 14 CCR § 17782, and (3) an estimate of the cost to operate and maintain the reverse osmosis facility to be constructed pursuant to paragraph 6c. Development Company agrees to provide SLRMWD and the Signing District Members with evidence of sufficient financial resources to fully implement all groundwater monitoring required during the operational life of the Gregory Canyon Facility and during its closure and post closure and to operate and maintain the reverse osmosis facility. Development Company shall demonstrate to SLRMWD and the Signing District Members its financial ability to perform groundwater monitoring and to operate and maintain the reverse osmosis facility by use of a trust fund, letter of credit, surety bond or satisfaction of the financial means test set forth in 14 CCR § 18289 or by any other mechanism allowed by existing or future regulations on Class III or MSWL facilities.

b. Remediating the water quality in the Pala Basin, or providing an alternative water supply, as described in paragraphs 8a and 8b shall be a part of the closure plan and part of the cost estimate required by 14 CCR § 17782. However, whether or not the responsible regulatory agencies include such measures in the closure plan, Development Company shall establish and maintain a mitigation fund in accordance with

all of the terms set forth in Exhibit C attached hereto and incorporated herein by reference.

10. Disputes.

In the event of any dispute arising out of this Agreement or any of the substantive issues covered herein, the SLRMWD, the Signing District Members and Development Company agree to submit the dispute to binding arbitration in accordance with California Code of Civil Procedure section 1280, et seq. If the dispute arises out of those portions of this Agreement involving monitoring, water quality degradation, water quality or quantity restoration, availability of water, technological or economic feasibility or other technical (as opposed to legal) issue, the SLRMWD, the Signing District Members and Development Company agree that arbitration shall be conducted by two hydrogeologists or other technically competent persons and one lawyer familiar with California water law. The SLRMWD and Signing District Members shall choose one of the technical arbitrators and Development Company shall choose the other. The two technical arbitrators shall jointly choose the lawyer.

11. Cooperation.

a. The SLRMWD, the Signing District Members and Development Company shall use their best efforts to cooperate to allow the full performance of this Agreement. SLRMWD and the

Signing District Members hereby confirm that this Agreement satisfies their concerns regarding the potential impact of the Gregory Canyon Facility on the quality and quantity of Pala Basin water and Foreign Water, and on the Excess Storage Capacity of the Pala Basin. Each of the parties is authorized to provide a copy of this Agreement to any public agency or private party. The SLRMWD, the Signing District Members and Development Company shall each make their respective consultants available promptly to consult with one another for any discussions on technical matters envisioned by this Agreement.

b. The SLRMWD, the Signing District Members and Development Company agree that this Agreement shall be incorporated into the mitigation measures to be adopted in the Gregory Canyon Facility EIR to the extent that the LEA allows, and shall also be incorporated into the project plans and specifications.

c. The SLRMWD and the Signing District Members hereby agree that they shall not object to, testify against or oppose the Gregory Canyon Facility during the EIR or permitting process with respect to the issues of water quality and quantity in the Pala Basin. The SLRMWD and the Signing District Members shall withdraw all protests filed in opposition to Application No. 30038 upon the Effective Date.

12. This Agreement shall be binding on any and all successors and assigns of SLRMWD, the Signing District Members and Development Company. In the event that Development Company or its assigns exercise the Option, this Agreement shall only bind Development Company, its successors and assigns and shall not in any way bind or limit Current Owner, or its successors or assigns.

13. In the event that Development Company does not exercise the Option and Current Owner applies for permits to develop the Gregory Canyon Facility within five years of notice that the Option will not be exercised or within five years of the expiration of the Option, whichever first occurs, Current Owner hereby agrees to perform all duties of Development Company set forth in this Agreement. The provisions of this Paragraph 13 shall be binding on all successors and assigns of Current Owner.

14. This Agreement shall terminate in the event that Development Company does not exercise the Option and Current Owner does not apply for permits to develop the Gregory Canyon Facility within five years of notice that the Option will not be exercised or within five years of the expiration of the Option, whichever first occurs.

15. All notices or other communications required or permitted hereunder shall be in writing, and shall be personally delivered or sent by first class mail, postage

prepaid, to the respective parties at the addresses listed in Exhibit D and shall be deemed received upon the earlier of (i) if personally delivered, the date of delivery to the address of the designee to receive such notice; or (ii) if mailed, four (4) business days after the date of posting by the United States Post Office. All oral notices of other communications must be confirmed within forty-eight (48) hours by letter mailed or delivered in accordance with the foregoing.

Dated: 12 Jan '96

SAN LUIS REY MUNICIPAL WATER DISTRICT

By: Robert V. Pankey
President, Board of Directors

Dated: ~~Rodney~~ 12 Jan 96

Attest: Rodney Guild

Rodney Guild, Secretary

Dated: 4-15-96

DOROTHY E. LEAVEY, J.T. AND K.L. McCARTHY, GENERAL PARTNERS

By: Kathleen L. McCarthy
Kathleen L. McCarthy, General Partner

Dated: 10 Apr 96

EDGAR E. and ELIZABETH S. PANKEY TRUST

By: Edgar E. Pankey, Tr
Edgar E. Pankey, Trustee

[signatures continued on next page]

Dated: 4-4-96

PANKEY FARMS

By: Victor S. Pankey

Victor S. Pankey, General Partner

Dated: 1-12-96

PANKEY RANCH
a California Limited Partnership

By: William H. Pankey

William H. Pankey, General Partner

Dated: April 5, 1996

POPE FAMILY TRUST

By: Blanche Pope

Blanche Pope, Trustee

Dated: 3/15/96

GREGORY CANYON LTD.

By: Jerry A. Riessen

Jerry A. Riessen, President

Dated: _____

NORTH SAN DIEGO DEVELOPMENT COMPANY

By: _____

Waste Management of California, Inc., Its General Partner

Dated: _____ PANKEY FARMS

By: _____
Victor S. Pankey, General Partner

Dated: 1-12-96 PANKEY RANCH
a California Limited Partnership

By: William H. Pankey
William H. Pankey, General Partner

Dated: _____ POPE FAMILY TRUST

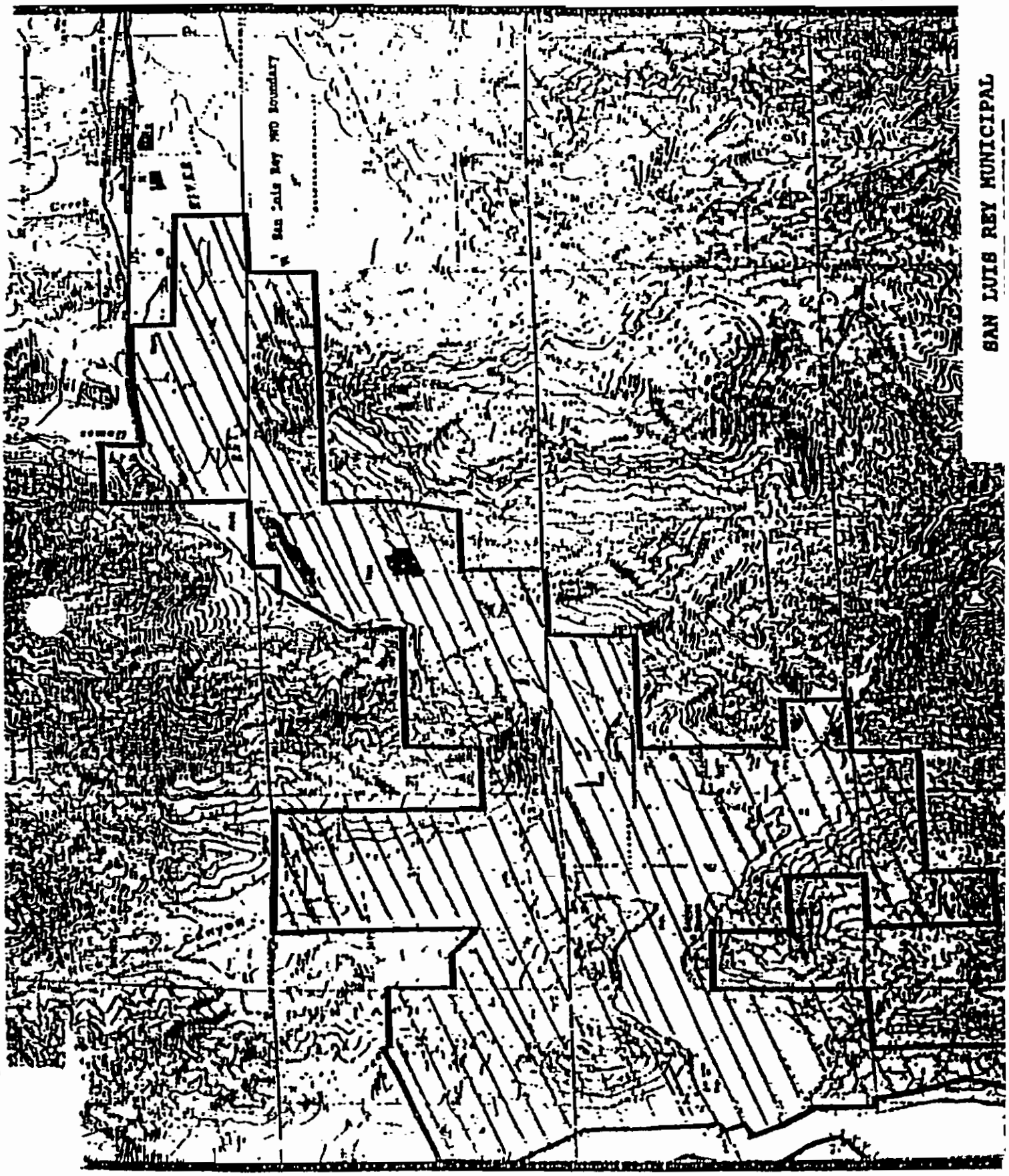
By: _____
Blanche Pope, Trustee

Dated: _____ GREGORY CANYON LTD.

By: _____
Jerry A. Riessen, President

Dated: 3-1-96 NORTH SAN DIEGO DEVELOPMENT COMPANY

By: Marian King
Waste Management of California, Inc., Its General Partner



1

Exhibit A

DOROTHY E. LEAVEY,
J.T. AND K.L. McCARTHY

PROPERTY DESCRIPTION

PARCEL 1

THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER; THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER; AND PORTIONS OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER AND OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER, IN SECTION 6; ALSO THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER, AND THE EAST HALF OF THE NORTHWEST QUARTER IN SECTION 7, TOWNSHIP 10 SOUTH, RANGE 2 WEST, S.B.M., IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, AS SHOWN ON RECORD OF SURVEY MAPS NO. 703 AND NO. 731, RECORDS OF SAN DIEGO COUNTY, THE AFOREMENTIONED LAND BEING DESCRIBED AS A WHOLE AS FOLLOWS:

COMMENCING AT THE CORNER COMMON TO SECTIONS 5, 6, 7 AND 8 IN SAID TOWNSHIP 10 SOUTH, RANGE 2 WEST; THENCE NORTH 0°25'29" EAST, 1343.43 FEET; THENCE SOUTH 89°56'19" WEST, 1328.62 FEET TO THE TRUE POINT OF BEGINNING, BEING THE SOUTHEAST CORNER OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 6; THENCE NORTH 0°31'21" EAST ALONG THE EAST LINE OF SAID NORTHWEST QUARTER OF THE SOUTHEAST QUARTER, 1035.91 FEET (RECORD 1026.96 FEET) TO A 1" CAPPED IRON PIPE WITH A COPPER DISK MARKED L.S. 1439, BEING THE MOST SOUTHERLY CORNER OF A PARCEL OF LAND CONVEYED TO JOHN HOFFMAN, BY DEED DATED JANUARY 15, 1884 AND RECORDED IN BOOK 45, PAGE 448 OF DEEDS; THENCE NORTH 55° WEST ALONG THE SOUTHERLY LINE OF SAID LAND CONVEYED TO HOFFMAN, 1613.35 FEET, MORE OR LESS, TO THE COUNTY ROAD KNOWN AS LILAC ROAD RUNNING THROUGH THE APPROXIMATE MIDDLE OF SAID SECTION 6; THENCE SOUTH TO A COPPER DISK MARKED R.E.919 SET IN A 1 INCH IRON PIPE, WHICH COPPER DISK WAS SET FOR THE CENTER OF SAID SECTION 6; THENCE NORTH 88°54'59" WEST ALONG THE EAST AND WEST CENTER LINE OF SAID SECTION 1313.81 FEET TO A COPPER DISK SET IN A 1 INCH IRON PIPE MARKED R.E. 919 AT THE NORTHWEST CORNER OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION; THENCE SOUTH 0°24'10" EAST ALONG THE WEST LINE OF SAID NORTHEAST QUARTER OF THE SOUTHWEST QUARTER, 1340.70 FEET TO THE SOUTHWEST CORNER THEREOF, BEING MARKED BY A COPPER DISK SET IN A 1 INCH IRON PIPE; THENCE SOUTH 88°03'51" EAST ALONG THE SOUTH LINE OF SAID NORTHEAST QUARTER OF THE SOUTHWEST QUARTER, 1312.26 FEET TO A COPPER DISK SET IN A 1 INCH IRON PIPE ON THE NORTH AND SOUTH CENTER LINE OF SAID SECTION 6; THENCE SOUTH 0°18'37" EAST ALONG SAID CENTER LINE, 1360.17 FEET TO THE QUARTER CORNER COMMON TO SAID SECTIONS 6 AND 7; THENCE NORTH 87°12'54" WEST ALONG THE COMMON LINE BETWEEN SAID SECTIONS, 1311.00 FEET TO A COPPER DISK

Exhibit B

MARKED R.E. 919 SET IN A 1 INCH IRON PIPE IN A ROCK MOUND AT THE NORTHWEST CORNER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 7; THENCE SOUTH 0°26'57" WEST ALONG THE WEST LINE OF THE EAST HALF OF SAID NORTHWEST QUARTER, 2596.16 FEET TO A COPPER DISK MARKED R.E. 919 SET ON THE SOUTH LINE OF SAID NORTHWEST QUARTER IN A LARGE GRANITE BOULDER WHICH IS 50 FEET SOUTH AND 200 FEET WEST FROM U.S.G.S. STATION "LANCASTER"; THENCE SOUTH 89°03'28" EAST ALONG SAID SOUTH LINE OF SAID NORTHWEST QUARTER, 1306.86 FEET TO THE NORTH AND SOUTH CENTER LINE OF SAID SECTION 7; THENCE NORTH 0°31'07" EAST ALONG SAID CENTER LINE, 1276.93 FEET TO A COPPER DISK MARKED R.E. 919 SET IN A 1 INCH IRON PIPE AT THE SOUTHWEST CORNER OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION; THENCE NORTH 89°52'50" EAST ALONG THE SOUTH LINE OF SAID NORTHWEST QUARTER OF THE NORTHEAST QUARTER, 1290.12 FEET TO A COPPER DISK MARKED R.E. 919 SET IN A GRANITE BOULDER, SAID POINT BEING THE SOUTHEAST CORNER OF SAID NORTHWEST QUARTER OF THE NORTHEAST QUARTER; THENCE NORTH 0°13'03" EAST ALONG THE EAST LINE OF SAID NORTHWEST QUARTER OF THE NORTHEAST QUARTER, 1300.96 FEET TO A COPPER DISK MARKED R.E. 919 SET IN A 1 INCH IRON PIPE, WHICH POINT WAS SET FOR THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 6; THENCE NORTH 0°03'01" EAST ALONG THE EAST LINE OF SAID SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER, 1334.49 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL 2

ALL THAT PART OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 10 SOUTH, RANGE 2 WEST, S.B.M., IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID SECTION 6 AS SHOWN ON RECORD OF SURVEY MAP NO. 731, AND ALSO ON RECORD OF SURVEY MAPS NOS. 703 AND 548; THENCE RUNNING NORTH 0°25'29" EAST 1343.43 FEET TO A POINT; THENCE SOUTH 89°56'19" WEST 964.14 FEET TO A POINT IN THE COUNTY ROAD COMMONLY KNOWN AS LILAC ROAD OR COUSER'S ROAD, AS RELOCATED IN 1927, SAID POINT BEING THE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE ALONG THE APPROXIMATE CENTER LINE OF SAID ROAD THE FOLLOWING THREE COURSES, TO WIT: NORTH 33°23'41" WEST 288.9 FEET; NORTH 41°28'41" WEST 206.7 FEET; NORTH 62°37'41" WEST 72.8 FEET TO THE BOUNDARY LINE DESCRIBED IN "AGREEMENT SETTLING BOUNDARY LINE" DATED 12-23-39, MADE BY AND BETWEEN DON C. PORTER ET UX AND CALIFORNIA LANDS INC., AND RECORDED IN BOOK 988, PAGE 16 OF RECORDS OF SAN DIEGO COUNTY; THENCE SOUTH 0°31'21" WEST ALONG SAID BOUNDARY LINE 429.91 FEET TO THE SOUTH END OF SAID BOUNDARY LINE, SAID POINT BEGIN MARKED BY A 1 1/2" IRON PIPE WITH COPPER DISC MARKED "LS 1439"; THENCE NORTH

89°56'19" EAST 364.48 FEET TO THE POINT OF BEGINNING, CONTAINING 2.075 ACRES, MORE OR LESS.

PARCEL 3

PARCEL A: THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 5, AND THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 6, ALL IN TOWNSHIP 10 SOUTH, RANGE 2 WEST, S.B.M., IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THAT PORTION CONVEYED IN THAT DEED FROM THOMAS E. LEAVEY AND DOROTHY E. LEAVEY, HUSBAND AND WIFE, TO RODNEY GUILD AND JOYCE GUILD, HUSBAND AND WIFE, DATED NOVEMBER 5, 1969 AND RECORDED NOVEMBER 17, 1969, AS DOCUMENT NO. 210735 OF OFFICIAL RECORDS IN THE COUNTY RECORDER'S OFFICE OF SAN DIEGO COUNTY, CALIFORNIA.

PARCEL B: ALL EASEMENTS AND RIGHTS OF WAY OF RECORD APPURTENANT TO PARCEL 3A ABOVE INCLUDING THAT EASEMENT AND RIGHT OF WAY RESERVED IN THAT DEED FROM THOMAS E. LEAVEY AND DOROTHY E. LEAVEY, HUSBAND AND WIFE, TO RODNEY GUILD AND JOYCE GUILD, HUSBAND AND WIFE, DATED NOVEMBER 5, 1969 AND RECORDED NOVEMBER 17, 1969 AS DOCUMENT NO. 210735 OF OFFICIAL RECORDS IN THE COUNTY RECORDER'S OFFICE OF SAN DIEGO COUNTY, CALIFORNIA.

PARCEL 4

PARCEL A: LOT 2 (THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER) OF SECTION 6, TOWNSHIP 10 SOUTH, RANGE 2 WEST, S.B.M., IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO U.S. GOVERNMENT SURVEY APPROVED JUNE 30, 1875.

PARCEL B: THAT PORTION OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 6, AND OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 10 SOUTH, RANGE 2 WEST, S.B.M., IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, LYING NORTHERLY OF A LINE (AND ITS PROLONGATION) DESCRIBED AS FOLLOWS: BEGINNING AT A POINT IN THE EASTERLY LINE OF SAID NORTHWEST QUARTER OF THE SOUTHEAST QUARTER DISTANT ALONG SAID LINE NORTH 0°31'21" EAST 1035.91 FEET FROM THE SOUTHEASTERLY CORNER OF SAID NORTHWEST QUARTER OF THE SOUTHEAST QUARTER, SAID POINT OF BEGINNING BEING THE NORTHEASTERLY CORNER OF THAT PARCEL OF LAND DESCRIBED IN DEED TO THOMAS E. LEAVEY ET UX, RECORDED MAY 22, 1940 AS DOCUMENT NO. 24496 IN BOOK 1031, PAGE 228 OF OFFICIAL RECORDS; THENCE ALONG THE NORTHEASTERLY LINE OF SAID LEAVEY LAND NORTH 55° WEST 1613.35 FEET, MORE OR LESS, TO THE NORTHWESTERLY CORNER OF SAID LEAVEY LAND, IN THE NORTH AND SOUTH CENTER LINE OF

SAID SECTION 6, SAID ABOVE DESCRIBED LINE BEING SHOWN ON RECORD OF SURVEY NO. 731.

PARCEL C: THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 6, TOWNSHIP 10 SOUTH, RANGE 2 WEST, S.B.M., IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO U.S. GOVERNMENT SURVEY APPROVED JUNE 30, 1875.

PARCEL D: THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 6, TOWNSHIP 10 SOUTH, RANGE 2 WEST, S.B.M., IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA.

EXCEPTING THEREFROM THAT PORTION DESCRIBED IN DEED TO THOMAS E. LEAVEY, ET UX, RECORDED MAY 3, 1940 AS DOCUMENT NO. 21228 IN BOOK 1016, PAGE 489 OF OFFICIAL RECORDS.

PARCEL 5

THOSE PORTIONS OF THE SOUTH HALF OF LOT 3, AND THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 6, TOWNSHIP 10 SOUTH, RANGE 2 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO UNITED STATES GOVERNMENT SURVEY, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE SOUTHERLY LINE OF THE NORTHWEST QUARTER OF SAID SECTION 6, DISTANT THEREON NORTH 88°25'24" WEST, 1000.00 FEET FROM THE SOUTHEASTERLY CORNER THEREOF; THENCE ALONG SAID SOUTHERLY LINE SOUTH 88°25'24" EAST, 1000.00 FEET TO SAID SOUTHEASTERLY CORNER; THENCE ALONG THE EASTERLY LINE OF SAID NORTHWEST QUARTER, NORTH 00°39'37" EAST, 2003.57 FEET TO THE NORTHEAST CORNER OF THE SOUTH HALF OF SAID LOT 3; THENCE ALONG THE NORTHERLY LINE OF SAID SOUTH HALF NORTH 88°55'31" WEST, 536.11 FEET TO AN INTERSECTION WITH THE CENTER LINE OF COUNTY HIGHWAY COMMISSION ROUTE 18, DIVISION 2, AS SHOWN ON SHEET 1 OF A PLAN OF SAID HIGHWAY ON FILE IN THE OFFICE OF THE COUNTY ENGINEER OF SAN DIEGO COUNTY; THENCE ALONG SAID CENTER LINE OF HIGHWAY AS FOLLOWS: SOUTH 07°52'19" WEST, 47.59 FEET TO THE BEGINNING OF A TANGENT 1500.00 FOOT RADIUS CURVE, CONCAVE NORTHWESTERLY; SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 07°01'54", A DISTANCE OF 184.09 FEET; TANGENT TO SAID CURVE, SOUTH 14°54'13" WEST, 102.05 FEET TO THE BEGINNING OF A TANGENT 800.00 FOOT RADIUS CURVE, CONCAVE NORTHWESTERLY; SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 09°58'10", A DISTANCE OF 139.20 FEET; TANGENT TO SAID CURVE SOUTH 24°52'23" WEST, 58.26 FEET TO THE BEGINNING OF A TANGENT 300.00 FOOT RADIUS CURVE, CONCAVE EASTERLY; SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 33°05'10", A DISTANCE OF 173.24 FEET; TANGENT TO SAID CURVE, SOUTH 08°12'47" EAST, 87.76 FEET TO THE BEGINNING OF A TANGENT 275.00 FOOT RADIUS CURVE CONCAVE WESTERLY,

SOUTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 29°12'20", A DISTANCE OF 140.18 FEET; TANGENT TO SAID CURVE SOUTH 20°59'33" WEST, 4.20 FEET TO THE BEGINNING OF A TANGENT 300.00 FOOT RADIUS CURVE, CONCAVE NORTHWESTERLY; SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 22°01'40", A DISTANCE OF 115.34 FEET; TANGENT TO SAID CURVE, SOUTH 43°01'13" WEST, 1.97 FEET TO THE BEGINNING OF A TANGENT 110.00 FOOT RADIUS CURVE, CONCAVE NORTHWESTERLY; AND SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 26°33'45", A DISTANCE OF 51.00 FEET TO A POINT HEREIN DESIGNATED AS POINT "A", BEING ALSO A POINT ON A LINE BEARING NORTH 12°35'00" EAST FROM THE POINT OF BEGINNING; THENCE SOUTH 12°35'00" WEST, 975.39 FEET TO THE POINT OF BEGINNING.

EDGAR E. AND ELIZABETH S. PANKEY TRUST

PROPERTY DESCRIPTION

THAT PORTION OF THE RANCHO MONSERATE IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, IN BOOK 1, PAGE 108 OF PATENTS, DESCRIBED AS FOLLOWS:

BEGINNING AT AN ANGLE POINT IN THE EASTERLY BOUNDARY OF THE TRACT OF LAND CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED IN BOOK 3026, PAGE 490 OF OFFICIAL RECORDS FORMED BY THE COURSES "SOUTH 44°25'30" WEST 814.80 FEET" AND "SOUTH 0°44'30" WEST 1856.81 FEET"; THENCE SOUTH 0°44'30" WEST 1856.81 FEET; THENCE SOUTH 4°58'08" EAST 301.50 FEET; THENCE SOUTH 0°44'30" WEST 816.15 FEET TO THE NORTHWESTERLY LINE CONVEYED TO DOUGLAS GRAHAM SHEARER AND WIFE, BY DEED RECORDED IN BOOK 3444, PAGE 457 OF OFFICIAL RECORDS; THENCE ALONG SAID NORTHWESTERLY LINE NORTH 45°25'30" EAST 3024.78 FEET; THENCE NORTH 25°30'45" EAST 1152.79 FEET TO POINT "A" OF THIS DESCRIPTION; THENCE NORTH 26°39' WEST 591.28 FEET; THENCE NORTH 46°13' WEST 102.01 FEET; THENCE NORTH 57°48' WEST 360.41 FEET; THENCE NORTH 33°42'30" WEST 120.42 FEET; THENCE NORTH 4°01'30" WEST 302.11 FEET; THENCE NORTH 20°45' EAST 117.71 FEET TO THE CENTER LINE OF HIGHWAY COMMISSION COUNTY ROAD, ROUTE 18, DIVISION 1 BEING POINT "B" OF THIS DESCRIPTION; THENCE ALONG SAID CENTER LINE SOUTH 66°47' 909.01 FEET TO THE BEGINNING OF A TANGENT 700.00 FOOT RADIUS CURVE CONCAVE SOUTHEASTERLY; THENCE SOUTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 22°35'00" A DISTANCE OF 275.91 FEET; THENCE TANGENT TO SAID CURVE SOUTH 44°25'30" WEST 509.32 FEET TO SAID EASTERLY BOUNDARY OF THE STATE OF CALIFORNIA LAND; THENCE ALONG SAID BOUNDARY SOUTH 43°34'30" EAST 50.00 FEET AND SOUTH 44°25'30" WEST 814.80 FEET TO THE POINT OF BEGINNING.

EXCEPTING THOSE PORTIONS CONDEMNED TO THE STATE OF CALIFORNIA BY FINAL ORDER OF CONDEMNATION RECORDED MARCH 21, 1973 AS FILE NO. 73-073740 OF OFFICIAL RECORDS.

ALSO EXCEPTING THOSE PORTIONS GRANTED TO THE STATE OF CALIFORNIA IN PARCEL 1 BY DEED RECORDED FEBRUARY 19, 1975 AS SERIES/INSTRUMENT NO. 75-036967.

PANKEY FARMS

PROPERTY DESCRIPTION

PARCEL 1

THAT PORTION OF THE RANCHO MONSERATE, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, IN BOOK 1, PAGE 108 OF PATENTS, DESCRIBED AS FOLLOWS:

BEGINNING AT CORNER NO. 3 OF THE EXTERNAL SURVEY OF SAID RANCHO MONSERATE; THENCE ALONG THE BOUNDARY OF LAND DESCRIBED IN DEED TO STEPTOE RANCH CO., RECORDED DECEMBER 1, 1961 AS FILE NO. 208836 AS FOLLOWS: NORTH 00°28'58" WEST, 1179.19 FEET (RECORD - NORTH 0°33'00" WEST, 1179.00 FEET); NORTH 89°58'10" WEST, 149.20 FEET (RECORD - 149.41 FEET) TO A POINT ON THE ARC OF A 232.15 FOOT RADIUS CURVE (RECORD - 225.00 FOOT RADIUS CURVE) CONCAVE WESTERLY, A RADIAL LINE OF SAID CURVE BEARS NORTH 84°11'11" EAST TO SAID POINT; NORTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 38°26'02", A DISTANCE OF 155.73 FEET (RECORD - 156.08 FEET); TANGENT TO SAID CURVE NORTH 44°14'51" WEST, 51.05 FEET (RECORD - NORTH 44°44'51" WEST); NORTH 89°58'10" WEST, 51.72 FEET (RECORD - 52.07 FEET); NORTH 42°24'00" EAST, 1200.00 FEET; SOUTH 47°36'00" EAST, 1425.00 FEET TO AN ANGLE POINT THEREIN; NORTH 86°49'57" EAST, 1054.02 FEET (RECORD - NORTH 86°53'09" EAST, 1051.98 FEET) TO AN INTERSECTION WITH THE EASTERLY BOUNDARY OF SAID RANCHO MONSERATE; AND ALONG THE EASTERLY AND SOUTHERLY BOUNDARY OF SAID RANCHO AS FOLLOWS: SOUTH 00°11'45" EAST, 1194.93 FEET (RECORD - SOUTH 0°09'42" EAST) TO CORNER NO. 2 OF SAID RANCHO AND SOUTH 86°51'45" WEST, 2610.72 FEET (RECORD - SOUTH 86°53'09" WEST, 2606.39 FEET) TO THE POINT OF BEGINNING.

PARCEL 2

AN EASEMENT AND RIGHT OF WAY FOR A WATER COURSE OVER A STRIP OF LAND 100.00 FEET IN WIDTH, LYING WITHIN RANCHO MONSERATE, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF ON FILE IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, IN BOOK 1, PAGE 108 OF PATENTS, THE SOUTHEASTERLY LINE OF SAID STRIP BEING DESCRIBED AS FOLLOWS:

BEGINNING AT THE MOST NORTHERLY CORNER OF PARCEL 1 HEREINABOVE DESCRIBED; THENCE ALONG THE NORTHWESTERLY LINE OF SAID PARCEL 1, SOUTH 42°24'00" WEST, 1164.91 FEET.

PANKEY RANCH, A CALIFORNIA LIMITED PARTNERSHIP

PROPERTY DESCRIPTION

PARCEL 1

THAT PORTION OF THE RANCHO MONSERATE, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF RECORDED IN BOOK 1, PAGE 108 OF PATENTS, RECORDS OF SAN DIEGO COUNTY, BEING DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF THE SOUTHEAST QUARTER OF FRACTIONAL SECTION 36, TOWNSHIP 9 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN; THENCE ALONG THE WESTERLY LINE OF SAID SOUTHEAST QUARTER, SOUTH 0°26'07" WEST 1273.20 FEET TO THE SOUTHERLY LINE OF THE NORTH HALF OF SAID SOUTHEAST QUARTER; THENCE ALONG THE WESTERLY PROLONGATION OF SAID SOUTHERLY LINE, SOUTH 89°40'14" WEST 1259.67 FEET TO THE SOUTHEAST CORNER OF THE LAND DESCRIBED IN DEED TO DAON CORPORATION, RECORDED MARCH 27, 1981 AS FILE NO. 81-092782 OF OFFICIAL RECORDS; THENCE ALONG THE BOUNDARY OF SAID DAON CORPORATION LAND, NORTH 26°42'12" WEST 32.25 FEET; THENCE NORTH 0°03'30" EAST 1327.93 FEET; THENCE NORTH 65°22'28" EAST 681.37 FEET; THENCE LEAVING SAID BOUNDARY, SOUTH 61°29'03" EAST 754.61 FEET TO THE POINT OF BEGINNING.

RESERVING THEREFROM IN FAVOR OF THE GRANTOR AN EASEMENT AND RIGHT OF WAY FOR INGRESS AND EGRESS, ROAD AND UTILITY PURPOSES, INCLUDING BUT NOT LIMITED TO ELECTRIC POWER, TELEPHONE, GAS, WATER, SEWER AND CABLE TELEVISION LINES AND APPURTENANCES THERETO, OVER, UNDER, ALONG AND ACROSS THOSE PORTIONS LYING WITHIN PARCEL 13 BELOW, PRIOR TO THE EXCEPTION.

SAID EASEMENT IS HEREBY DECLARED TO BE APPURTENANT TO AND FOR THE USE AND BENEFIT OF THE PRESENT AND FUTURE OWNER OR OWNERS OF ALL OR ANY PORTION OF THE GRANTOR'S REMAINING LAND.

PARCEL 2

THOSE PORTIONS OF RANCHO MONSERATE, ACCORDING TO MAP THEREOF RECORDED IN BOOK 1, PAGE 108 OF PATENTS, RECORDS OF SAN DIEGO COUNTY, AND OF FRACTIONAL SECTION 36, TOWNSHIP 9 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO OFFICIAL PLAT THEREOF, ALL IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF SAID FRACTIONAL SECTION 36; THENCE ALONG THE WESTERLY LINE OF THE

NORTHEAST QUARTER OF SAID FRACTIONAL SECTION, NORTH 0°26'07" EAST 90.00 FEET TO THE NORTHWEST CORNER OF THE LAND DESCRIBED IN DEED TO PANKEY RANCH, RECORDED APRIL 13, 1981 AS FILE NO. 81-112045 OF OFFICIAL RECORDS; THENCE ALONG THE BOUNDARY OF SAID PANKEY RANCH, NORTH 65°02'26" EAST 1269.34 FEET; THENCE NORTH 71°58'58" EAST 200.00 FEET; THENCE LEAVING SAID BOUNDARY, NORTH 2°17'43" WEST 970.00 FEET; THENCE SOUTH 67°06'45" WEST 863.63 FEET; THENCE SOUTH 87°42'17" WEST 500.00 FEET TO THE MOST EASTERLY ANGLE POINT OF THE LAND DESCRIBED IN DEED TO DAON CORPORATION, RECORDED MARCH 27, 1981 AS FILE NO. 81-092782 OF OFFICIAL RECORDS; THENCE ALONG THE BOUNDARY OF SAID DAON CORPORATION LAND, SOUTH 47°45'53" WEST 221.16 FEET; THENCE SOUTH 49°10'58" WEST 663.73 FEET; THENCE SOUTH 14°12'21" WEST 123.41 FEET; THENCE SOUTH 6°09'01" EAST 239.79 FEET; THENCE LEAVING SAID BOUNDARY, SOUTH 61°29'03" EAST 754.61 FEET TO THE POINT OF BEGINNING.

RESERVING THEREFROM IN FAVOR OF THE GRANTOR AN EASEMENT AND RIGHT OF WAY FOR INGRESS AND EGRESS, ROAD AND UTILITY PURPOSES, INCLUDING BUT NOT LIMITED TO ELECTRIC POWER, TELEPHONE, GAS, WATER, SEWER AND CABLE TELEVISION LINES AND APPURTENANCES THERETO, OVER, UNDER, ALONG AND ACROSS THAT PORTION LYING WITHIN PARCEL 2B BELOW, PRIOR TO THE EXCEPTION.

SAID EASEMENT IS HEREBY DECLARED TO BE APPURTENANT TO AND FOR THE USE AND BENEFIT OF THE PRESENT AND FUTURE OWNER OR OWNERS OF ALL OR ANY PORTION OF THE GRANTOR'S REMAINING LAND.

PARCEL 3

THAT PORTION OF FRACTIONAL SECTION 36, TOWNSHIP 9 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF, BEING DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF SAID FRACTIONAL SECTION 36; THENCE ALONG THE WESTERLY LINE OF THE NORTHEAST CORNER OF SAID FRACTIONAL SECTION, NORTH 0°26'07" EAST 90.00 FEET TO THE NORTHWEST CORNER OF THE LAND DESCRIBED IN DEED TO PANKEY RANCH, RECORDED APRIL 13, 1981 AS FILE NO. 81-112045 OF OFFICIAL RECORDS; THENCE ALONG THE BOUNDARY OF SAID PANKEY RANCH, NORTH 65°02'26" EAST 1269.34 FEET; THENCE NORTH 71°58'58" EAST 200.00 FEET; THENCE LEAVING SAID BOUNDARY, NORTH 2°17'43" WEST 970.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE RETRACING SOUTH 2°17'43" EAST 970.00 FEET; THENCE CONTINUING ALONG THE BOUNDARY OF SAID PANKEY RANCH, NORTH 71°58'58" EAST 461.44 FEET; THENCE SOUTH 24°09'39" EAST 868.73 FEET; THENCE SOUTH 28°57'51" EAST 730. 31 FEET; THENCE SOUTH 49°14'33" WEST 1015.39 FEET; THENCE NORTH 87°46'48" WEST 200.00 FEET; THENCE SOUTH 2°13'12" WEST 400.00 FEET; THENCE SOUTH 87°46'48" EAST 1150.00 FEET TO THE

EASTERLY LINE OF THE SOUTHEAST QUARTER OF SAID FRACTIONAL SECTION; THENCE ALONG SAID EASTERLY LINE, NORTH 2°13'12" EAST 1750.00 FEET TO THE SOUTHEAST CORNER OF THE NORTHEAST QUARTER OF SAID FRACTIONAL SECTION; THENCE ALONG THE EASTERLY LINE OF SAID NORTHEAST QUARTER, NORTH 2°17'43" WEST 2777.01 FEET TO THE NORTHEAST CORNER OF SAID FRACTIONAL SECTION; THENCE ALONG THE NORTHERLY LINE THEREOF, SOUTH 87°38'06" WEST 1850.30 FEET TO THE CENTER LINE OF THAT CERTAIN STRIP OF LAND DESCRIBED AS EASEMENT PARCEL 5 IN DEED TO WILLIAM B. BUCK, ET AL, RECORDED OCTOBER 31, 1978 AS FILE NO. 78-471499 OF OFFICIAL RECORDS; THENCE LEAVING SAID NORTHERLY LINE AND ALONG SAID CENTER LINE, SOUTH 13°36'00" WEST (SOUTH 13°35'04" WEST PER DEED) 373.08 FEET; THENCE SOUTH 18°39'45" WEST (SOUTH 18°38'41" WEST PER DEED) 240.70 FEET; THENCE LEAVING SAID CENTER LINE, SOUTH 82°37'00" EAST 694.71 FEET; THENCE SOUTH 2°17'43" EAST 410.00 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL 4

THOSE PORTIONS OF RANCHO MONSERATE, ACCORDING TO MAP THEREOF RECORDED IN BOOK 1, PAGE 108 OF PATENTS, RECORDS OF SAN DIEGO COUNTY, AND OF FRACTIONAL SECTION 36, TOWNSHIP 9 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO OFFICIAL PLAT THEREOF, ALL IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID FRACTIONAL SECTION 36; THENCE ALONG THE NORTHERLY LINE THEREOF, SOUTH 87°38'06" WEST 1850.30 FEET TO THE CENTER LINE OF THAT CERTAIN STRIP OF LAND DESCRIBED AS EASEMENT PARCEL 5 IN DEED TO WILLIAM B. BUCK, ET AL, RECORDED OCTOBER 31, 1978 AS FILE NO. 78-471499 OF OFFICIAL RECORDS, BEING THE TRUE POINT OF BEGINNING; THENCE LEAVING SAID NORTHERLY LINE AND ALONG SAID CENTER LINE, SOUTH 13°36'00" WEST (SOUTH 13°35'04" WEST PER DEED) 373.08 FEET; THENCE SOUTH 18°39'45" WEST (SOUTH 18°38'41" WEST PER DEED) 240.70 FEET; THENCE LEAVING SAID CENTER LINE, SOUTH 82°37'00" EAST 694.71 FEET; THENCE SOUTH 2°17'43" EAST 410.00 FEET; THENCE SOUTH 67°06'45" WEST 863.63 FEET; THENCE SOUTH 87°42'17" WEST 500.00 FEET TO THE MOST EASTERLY ANGLE POINT OF THE LAND DESCRIBED IN DEED TO DAON CORPORATION, RECORDED MARCH 27, 1981 AS FILE NO. 81-092782 OF OFFICIAL RECORDS; THENCE ALONG THE BOUNDARY OF SAID DAON CORPORATION LAND, NORTH 24°37'32" WEST 1589.35 FEET TO THE BOUNDARY OF SAID RANCHO MONSERATE; THENCE ALONG SAID BOUNDARY, SOUTH 87°27'51" EAST 675.96 FEET TO CORNER NO. 21 OF THE EXTERNAL SURVEY OF SAID RANCHO, BEING THE NORTHWEST CORNER OF THE NORTHEAST QUARTER OF SAID FRACTION SECTION; THENCE ALONG THE NORTHERLY LINE THEREOF, NORTH 87°38'06" EAST 742.21 FEET TO THE TRUE POINT OF BEGINNING.

RESERVING THEREFROM IN FAVOR OF THE GRANTOR AN EASEMENT AND RIGHT OF WAY FOR INGRESS AND EGRESS, ROAD AND UTILITY PURPOSES, INCLUDING BUT NOT LIMITED TO ELECTRIC POWER, TELEPHONE, GAS, WATER, SEWER AND CABLE TELEVISION LINES AND APPURTENANCES THERETO, OVER, UNDER, ALONG AND ACROSS THOSE PORTIONS LYING WITHIN PARCEL 4B BELOW, PRIOR TO THE EXCEPTION.

SAID EASEMENT IS HEREBY DECLARED TO BE APPURTENANT TO AND FOR THE USE AND BENEFIT OF THE PRESENT AND FUTURE OWNER OR OWNERS OF ALL OR ANY PORTION OF THE GRANTOR'S REMAINING LAND.

PARCEL 5

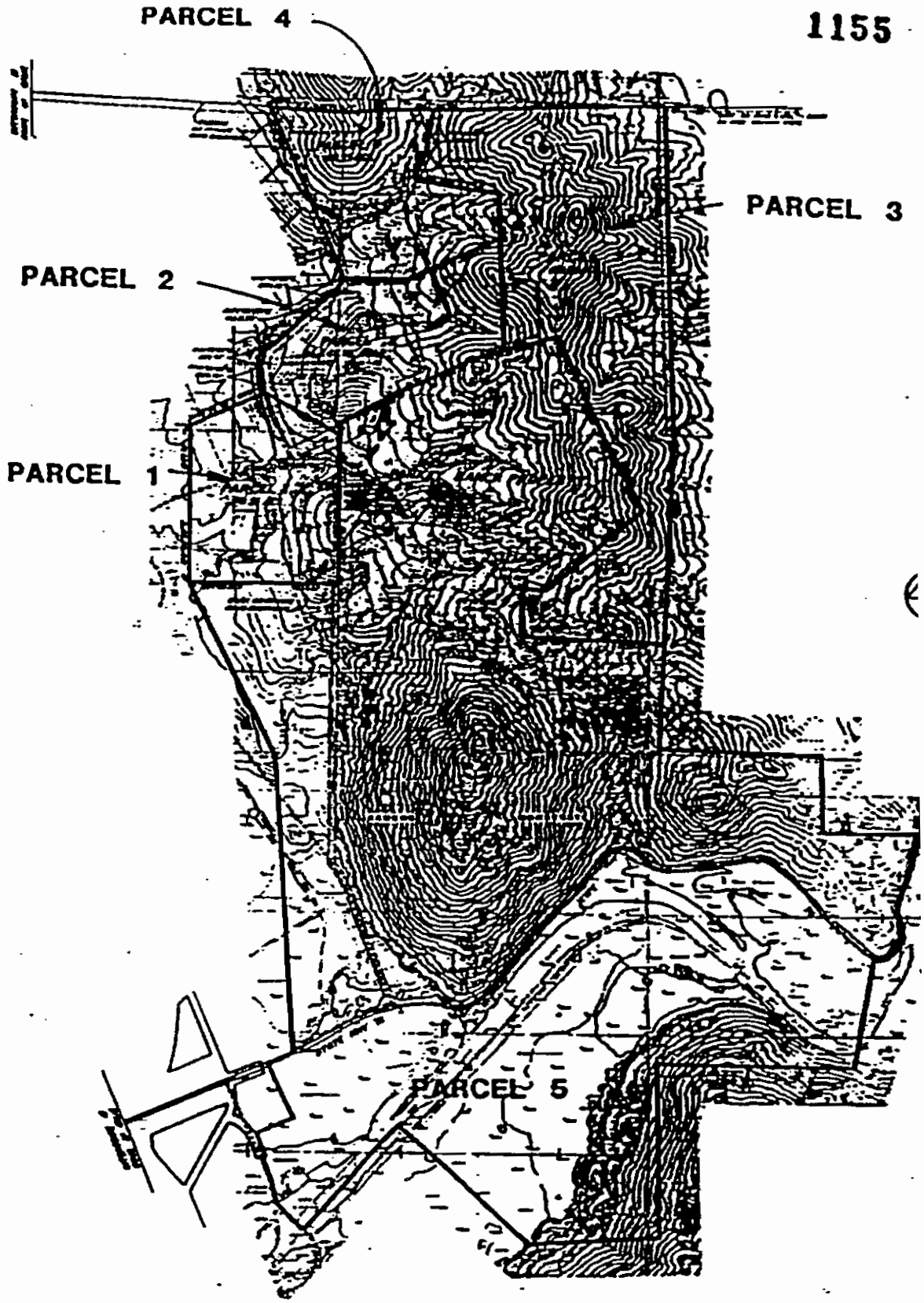
THAT PORTION OF THE EAST HALF OF SECTION 36, TOWNSHIP 9 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, ACCORDING TO OFFICIAL PLAT THEREOF; THAT PORTION OF THE NORTHWEST QUARTER OF SECTION 6, TOWNSHIP 10 SOUTH, RANGE 2 WEST, SAN BERNARDINO MERIDIAN, ACCORDING TO OFFICIAL PLAT THEREOF; AND THAT PORTION OF THE MONSERATE RANCHO, ACCORDING TO MAP THEREOF ON FILE IN THE OFFICE OF THE RECORDER OF SAN DIEGO COUNTY IN BOOK 1, PAGE 108 OF PATENTS, ALL IN THE UNINCORPORATED AREA OF THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, DESCRIBED AS A WHOLE AS FOLLOWS:

COMMENCING AT AN ANGLE POINT ON THE EASTERLY BOUNDARY OF LAND DESCRIBED IN DEED TO THE STATE OF CALIFORNIA, RECORDED JUNE 6, 1973 AS DOCUMENT NO. 73-186085; THENCE ALONG SAID BOUNDARY SOUTH 0°33'08" WEST 1378.56 FEET TO AN INTERSECTION WITH THE WESTERLY PROLONGATION OF THE SOUTH LINE OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 36; THENCE ALONG SAID PROLONGATION, NORTH 89°40'14" EAST 1644.36 FEET TO POINT "A" OF THIS DESCRIPTION; THENCE CONTINUING ALONG SAID PROLONGATION, NORTH 89°40'14" EAST 1259.67 FEET TO THE SOUTHWEST CORNER OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 36; THENCE ALONG THE BOUNDARY OF THE SOUTHEAST QUARTER OF SAID SECTION 36 AS FOLLOWS: NORTH 0°26'07" EAST 1273.20 FEET TO THE NORTHWEST CORNER THEREOF; AND ALONG THE NORTH LINE OF SAID SOUTHEAST QUARTER, NORTH 88°59'31" 2136.38 FEET TO POINT "B" OF THIS DESCRIPTION; THENCE CONTINUING ALONG SAID NORTH LINE NORTH 88°59'31" EAST 586.19 FEET TO THE NORTHEAST CORNER OF SAID SOUTHEAST QUARTER; THENCE ALONG THE EAST LINE OF SAID SOUTHEAST QUARTER SOUTH 2°13'12" WEST 1750.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE LEAVING SAID EAST LINE OF SAID SOUTHEAST QUARTER NORTH 87°46'48" WEST 1150.00 FEET; THENCE NORTH 2°13'12" EAST 400.00 FEET; THENCE SOUTH 87°46'48" EAST 200.00 FEET; THENCE NORTH 49°14'33" EAST 1015.39 FEET TO A POINT IN THE NORTH LINE OF LAND DESCRIBED IN DEED TO PANKEY RANCH, RECORDED APRIL 13, 1981 AS FILE NO. 81-112045 OF OFFICIAL RECORDS; THENCE ALONG THE BOUNDARY OF SAID PANKEY RANCH, NORTH 28°57'51" WEST 730.31 FEET TO SAID POINT "B"; THENCE NORTH 24°09'39" WEST 868.73 FEET; THENCE SOUTH 71°58'58" WEST 661.44

FEET; THENCE SOUTH 65°02'26" EAST 1269.34 FEET TO AN INTERSECTION WITH THE WEST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 36, SAID INTERSECTION BEING NORTH 0°26'07" EAST 90.00 FEET FROM THE SOUTHWEST CORNER OF SAID NORTHEAST QUARTER; THENCE ALONG THE WEST LINE OF SAID NORTHEAST QUARTER AND SOUTHEAST QUARTER SOUTH 0°26'07" WEST 1363.20 FEET TO THE SOUTHWEST CORNER OF THE NORTH HALF OF SAID SOUTHEAST QUARTER; THENCE ALONG THE WESTERLY PROLONGATION OF THE SOUTH LINE OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 36 SOUTH 89°40'14" WEST 1259.67 FEET TO SAID POINT "A"; THENCE SOUTH 26°42'12" EAST 1561.47 FEET; THENCE SOUTH 3°49'46" EAST 2479.80 FEET TO AN INTERSECTION WITH THE CENTERLINE OF STATE HIGHWAY 11, SD-76, SAID POINT OF INTERSECTION BEING A POINT ON A 3729.02-FOOT RADIUS CURVE CONCAVE NORTHWESTERLY, THE RADIAL LINE TO SAID POINT BEARS SOUTH 24°35'25" EAST; THENCE ALONG SAID CENTER LINE AND SOUTHWESTERLY ALONG SAID CURVE THROUGH AN ANGLE OF 2°12'31" A DISTANCE OF 143.75 FEET; THENCE TANGENT TO SAID CURVE, SOUTH 67°37'06" WEST 75.76 FEET; THENCE LEAVING SAID CENTERLINE, SOUTH 26°00'27" EAST 507.05 FEET; THENCE SOUTH 65°31'33" WEST 356.67 FEET TO THE EASTERLY SIDE LINE OF COUNTY ROAD SURVEY NO. 1219; THENCE ALONG SAID SIDE LINE, SOUTH 23°16'27" EAST 188.03 FEET; THENCE SOUTH 66°43'33" WEST 25.00 FEET TO THE CENTERLINE OF SAID COUNTY ROAD SURVEY NO. 1219; THENCE ALONG SAID CENTERLINE AS FOLLOWS: SOUTH 23°16'27" EAST 229.73 FEET TO THE BEGINNING OF A TANGENT 280-FOOT RADIUS REVERSE CURVE CONCAVE WESTERLY; THENCE SOUTHERLY ALONG SAID CURVE THROUGH AN ANGLE OF 19°03'12" A DISTANCE OF 93.11 FEET TO THE BEGINNING OF A 100-FOOT RADIUS REVERSE CURVE CONCAVE EASTERLY; THENCE SOUTHERLY ALONG SAID CURVE THROUGH AN ANGLE OF 40°02'34" A DISTANCE OF 69.89 FEET; AND TANGENT TO SAID CURVE, SOUTH 44°15'49" EAST 297.81 FEET TO THE BOUNDARY OF LAND DESCRIBED IN DEED TO PANKEY RANCH, RECORDED JULY 3, 1974 AS DOCUMENT NO. 74-179396; THENCE ALONG SAID BOUNDARY AS FOLLOWS: NORTH 42°53'02" EAST 1188.03 FEET; THENCE SOUTH 47°06'58" EAST 1423.93 FEET; THENCE NORTH 87°22'01" EAST 1054.17 FEET TO THE EASTERLY BOUNDARY OF SAID MONSERATE RANCHO; THENCE ALONG SAID EASTERLY BOUNDARY, NORTH 0°18'36" EAST 1445.20 FEET TO THE SOUTHWEST CORNER OF THE NORTHWEST QUARTER OF SAID SECTION 6; THENCE ALONG THE SOUTH LINE OF SAID NORTHWEST QUARTER, SOUTH 88°25'47" EAST 1637.76 FEET TO THE SOUTHEASTERLY CORNER OF LAND DESCRIBED IN PARCEL 2 OF DEED TO PANKEY RANCH, RECORDED JULY 3, 1974 AS DOCUMENT NO. 74-179394; THENCE ALONG THE BOUNDARY OF SAID LAND AS FOLLOWS: NORTH 12°35'00" EAST 974.62 FEET TO A POINT ON A 110 FEET RADIUS CURVE CONCAVE NORTHWESTERLY, THE RADIAL LINE TO SAID POINT BEARS SOUTH 20°33'30" EAST; THENCE NORTHEASTERLY ALONG SAID CURVE THROUGH AN ANGLE OF 26°25'17" A DISTANCE OF 50.73 FEET; THENCE TANGENT TO SAID CURVE, NORTH 43°01'13" EAST 1.97 FEET TO THE BEGINNING OF A TANGENT 300-FOOT RADIUS CURVE CONCAVE NORTHWESTERLY; THENCE NORTHEASTERLY ALONG SAID CURVE THROUGH AN ANGLE OF 22°01'40" A DISTANCE OF 115.34 FEET; THENCE TANGENT TO

SAID CURVE, NORTH 20°59'33" EAST 4.20 FEET TO THE BEGINNING OF A TANGENT 275-FOOT RADIUS CURVE CONCAVE WESTERLY; THENCE NORTHERLY ALONG SAID CURVE THROUGH AN ANGLE OF 29°12'20" A DISTANCE OF 140.18 FEET; THENCE TANGENT TO SAID CURVE, NORTH 8°12'47" WEST 87.76 FEET TO THE BEGINNING OF A TANGENT 300-FOOT RADIUS CURVE CONCAVE EASTERLY; THENCE NORTHERLY ALONG SAID CURVE THROUGH AN ANGLE OF 33°05'10" A DISTANCE OF 173.24 FEET; THENCE TANGENT TO SAID CURVE, NORTH 24°52'23" EAST 58.26 FEET TO THE BEGINNING OF A TANGENT 800-FOOT RADIUS CURVE CONCAVE NORTHWESTERLY; THENCE NORTHEASTERLY ALONG SAID CURVE THROUGH AN ANGLE OF 9°58'10" A DISTANCE OF 139.20 FEET; THENCE TANGENT TO SAID CURVE, NORTH 14°54'13" EAST 102.05 FEET TO THE BEGINNING OF A TANGENT 1500-FOOT RADIUS CURVE CONCAVE WESTERLY; THENCE NORTHERLY ALONG SAID CURVE THROUGH AN ANGLE OF 7°01'54" A DISTANCE OF 184.09 FEET; THENCE TANGENT TO SAID CURVE, NORTH 7°52'19" EAST 47.59 FEET TO THE NORTH LINE OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 6; THENCE ALONG SAID NORTH LINE, NORTH 88°55'31" WEST 764.77 FEET TO THE WEST LINE OF SAID NORTHEAST QUARTER OF NORTHWEST QUARTER; THENCE ALONG SAID WEST LINE, NORTH 0°24'44" EAST 672.06 FEET TO THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 6; THENCE ALONG SAID NORTH LINE, NORTH 89°25'43" WEST 1349.38 FEET TO THE NORTHWEST CORNER OF SAID SECTION 6 AND THE SOUTHEAST CORNER OF SAID SECTION 36; THENCE ALONG THE EAST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 36, NORTH 2°13'12" EAST 863.25 FEET MORE OR LESS TO THE TRUE POINT OF BEGINNING.

Exhibit B



EXISTING LEGAL PARCELS

1995

Exhibit B

BLANCHE POPE, TRUSTEE
U/D/T POPE FAMILY TRUST

PROPERTY DESCRIPTION

PARCEL 1A

THAT PORTION OF THE WEST HALF OF THE NORTHEAST QUARTER AND THE WEST HALF OF THE SOUTHEAST QUARTER OF FRACTIONAL SECTION 12, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO AN OFFICIAL PLAT OF SAID LAND FILED IN THE DISTRICT LAND OFFICE, DESCRIBED AS FOLLOWS:

BEGINNING AT CORNER NO. 3 OF RANCHO MONSERATE, ACCORDING TO MAP ON FILE IN BOOK 1, PAGE 108 OF PATENTS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, CORNER NO. 4 OF SAID RANCHO BEARS SOUTH 01°09'12" WEST; THENCE ALONG THE EASTERLY LINE OF THE LAND DESCRIBED IN DEED TO SAN LUIS REY MUNICIPAL WATER DISTRICT RECORDED OCTOBER 7, 1983 AS FILE NO. 83-362222 OF OFFICIAL RECORDS OF SAID COUNTY, SOUTH 15°17'40" EAST 353.44 FEET; THENCE SOUTH 36°54'40" EAST 794.97 FEET; THENCE SOUTH 48°29'40" EAST 131.24 FEET; THENCE SOUTH 63°08'56" WEST 628.53 FEET; THENCE SOUTH 09°32'38" EAST 269.68 FEET; THENCE SOUTH 02°27'28" WEST 435.12 FEET; THENCE SOUTH 48°45'30" EAST 124.20 FEET; THENCE SOUTH 64°34'34" WEST 122.99 FEET; THENCE SOUTH 13°55'40" EAST 269.26 FEET; THENCE SOUTH 03°25'58" EAST 250.80 FEET; THENCE SOUTH 21°28'44" EAST 260.00 FEET; THENCE SOUTH 05°32'22" WEST 325.96 FEET; THENCE SOUTH 32°36'02" EAST 1711.92 FEET TO THE EASTERLY LINE OF THE WEST HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 12; THENCE LEAVING THE EASTERLY LINE OF SAID SAN LUIS REY MUNICIPAL WATER DISTRICT ALONG THE EASTERLY LINE OF THE WEST HALF OF THE SOUTHEAST QUARTER AND THE EASTERLY LINE OF THE WEST HALF OF THE NORTHEASTERLY QUARTER OF SAID SECTION 12 NORTH 01°26'07" EAST 4764.55 FEET TO THE SOUTHERLY LINE OF SAID RANCHO MONSERATE; THENCE ALONG SAID SOUTHERLY LINE SOUTH 87°21'37" WEST 1303.19 FEET TO THE POINT OF BEGINNING.

SUBJECT TO THE RESERVATION OF THE LAND DESCRIBED IN DEED TO THE COUNTY OF SAN DIEGO RECORDED AUGUST 21, 1940 IN BOOK 1047, PAGE 495 OF OFFICIAL RECORDS OF SAID COUNTY, AS SAME IS SHOWN ON ROAD SURVEY NO. 837 ON FILE IN THE OFFICE OF THE COUNTY ENGINEER OF SAID COUNTY.

PARCEL 1B

AN EASEMENT FOR ROAD AND UTILITY PURPOSES 50 FEET WIDE, THE CENTER LINE OF WHICH IS DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE CENTER LINE OF THE LAND DESCRIBED IN DEED TO THE COUNTY OF SAN DIEGO RECORDED AUGUST 21, 1940 IN BOOK 1047, PAGE 495 OF OFFICIAL RECORDS OF SAID COUNTY, AS SAME IS SHOWN ON ROAD SURVEY NO. 837 ON FILE IN THE OFFICE OF THE COUNTY ENGINEER OF SAID COUNTY, SAID POINT OF BEGINNING BEARS NORTH 08°18'36" EAST, 25.00 FEET FROM THE SOUTHERLY TERMINUS OF SAID COUNTY LAND; THENCE SOUTH 08°18'36" WEST 25.00 FEET ALONG THE CENTER LINE OF SAID COUNTY LAND; THENCE LEAVING SAID COUNTY LAND SOUTH 17°57'25" EAST 862.96 FEET TO A POINT OF INTERSECTION WITH A LINE THAT IS PARALLEL WITH AND 25.00 FEET WESTERLY OF THAT BOUNDARY BETWEEN CORNER NO. 3 AND CORNER NO. 4 OF SAID RANCHO MONSERATE, SAID POINT OF INTERSECTION ALSO BEING ON A LINE THAT IS PARALLEL WITH AND 25.00 FEET SOUTHERLY OF THAT BOUNDARY BETWEEN CORNER NO. 3 AND CORNER NO. 2 OF SAID RANCHO MONSERATE; THENCE ALONG SAID PARALLEL LINE NORTH 87°21'37" EAST 25.06 FEET TO THE EASTERLY BOUNDARY OF SAID RANCHO MONSERATE; THENCE CONTINUING ALONG SAID PARALLEL LINE NORTH 87°21'37" EAST 7.27 FEET TO THE WESTERLY LINE OF PARCEL A HEREIN DESCRIBED.

THE SIDE LINES OF SAID EASEMENT TO BE SHORTENED OR PROLONGED SO AS TO TERMINATE ON THE WESTERLY LINE OF PARCEL A HEREIN DESCRIBED.

PARCEL 1C

A NON-EXCLUSIVE EASEMENT FOR INGRESS AND EGRESS FROM THE NEAREST DEDICATED COUNTY ROAD OVER PARCELS 1 AND 3 AS DESCRIBED IN THAT CERTAIN CERTIFICATE OF COMPLIANCE FILED FOR RECORD WITH THE COUNTY RECORDER ON OCTOBER 17, 1984 AS FILE NO. 84-392858 OF OFFICIAL RECORDS, AND THE RIGHT TO WITHDRAW FROM AND TO UTILIZE WATER FOR ANY PURPOSE WHATSOEVER FROM THE EXISTING WATER WELLS LOCATED WITHIN THE SAN LUIS REY FLOODWAY AT THE NORTHEASTERLY CORNER OF SAID PARCEL 1 AND AN EXCLUSIVE EASEMENT OVER SAID PARCEL 1 FOR EXISTING WATER PUMPING FACILITIES, WATER PIPELINES AND APPURTENANCES, AND ELECTRIC POWER POLES AND OVERHEAD LINES THAT ARE USED FOR CONVEYANCE OF WATER AND ELECTRIC POWER TO PARCELS A AND B HEREINABOVE DESCRIBED.

RESERVING THE RIGHT OF PRESENT OR FUTURE OWNERS OF SAID PARCELS 1 AND 3 TO RELOCATE THE ABOVE DESCRIBED INGRESS AND EGRESS EASEMENTS, WATER WELLS, WATER PUMPING FACILITIES AND APPURTENANCES, AND ELECTRIC POWER POLES AND OVERHEAD LINES, AND TO PROVIDE SPECIFIC EASEMENTS FOR THE RELOCATED FACILITIES.

NOTE: THE ROUTE OR LOCATION OF THE ABOVE NON-EXCLUSIVE EASEMENT CANNOT BE DETERMINED FROM THE RECORD.

PARCEL 2

THAT PORTION OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 13, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, ACCORDING TO OFFICIAL PLAT THEREOF, TOGETHER WITH THAT PORTION OF RANCHO MONSERATE, ACCORDING TO MAP NO. 827 ON FILE IN BOOK 1, PAGE 108 OF PATENTS IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, SAID PORTIONS DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWESTERLY TERMINUS OF COURSE (18) DESCRIBED "SOUTH 25°19'17" EAST, 966.73 FEET" IN PARCEL 1 OF DEED TO THE STATE OF CALIFORNIA RECORDED JANUARY 9, 1973 AS FILE NO. 73-006174 OF OFFICIAL RECORDS OF SAID COUNTY, BEING ON THE NORTHEASTERLY BOUNDARY OF LAND DESCRIBED IN SAID DEED; THENCE SOUTHEASTERLY ALONG SAID BOUNDARY THE FOLLOWING SIX COURSES:

(1) SOUTH 25°19'17" EAST, 966.73 FEET; (2) SOUTH 32°16'10" EAST, 1730.07 FEET; (3) SOUTH 53°14'24" EAST, 277.31 FEET; (4) SOUTH 18°47'54" WEST, 290.00 FEET; (5) SOUTH 27°12'38" EAST, 632.65 FEET; (6) SOUTH 19°54'22" EAST 1622.82 FEET TO A POINT ON THE SOUTHERLY LINE OF SAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER, DISTANT ALONG SAID SOUTHERLY LINE SOUTH 89°21'28" WEST, 180.00 FEET FROM THE SOUTHEASTERLY CORNER OF SAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER; THENCE (7), LEAVING SAID BOUNDARY ALONG SAID SOUTHERLY LINE SOUTH 89°21'28" WEST, 50.00 FEET; THENCE (8) LEAVING SAID SOUTHERLY LINE NORTH 28°33'34" WEST, 549.16 FEET; THENCE (9) NORTH 16°10'12" WEST, 1168.64 FEET; THENCE (10) NORTH 26°18'09" WEST, 385.75 FEET; THENCE (11) NORTH 39°46'51" WEST, 141.49 FEET; THENCE (12) SOUTH 62°05'09" WEST, 12.47 FEET; THENCE (13) NORTH 33°40'50" WEST, 455.28 FEET; THENCE (14) NORTH 31°58'13" WEST 817.03 FEET; THENCE (15) NORTH 31°54'15" WEST, 618.45 FEET; THENCE (16) ALONG A TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 6600.00 FEET, THROUGH A CENTRAL ANGLE OF 04°42'53", AN ARC LENGTH OF 543.10 FEET; THENCE (17) NORTH 62°48'38" EAST, 24.24 FEET; THENCE (18) NORTH 25°22'25" WEST, 46.96 FEET; THENCE (19) SOUTH 74°04'43" WEST, 24.68 FEET; THENCE (20) NORTH 25°34'26" WEST, 428.53 FEET; THENCE (21) ALONG A TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 180.00 FEET, THROUGH A CENTRAL ANGLE OF 64°13'13", AN ARC LENGTH OF 201.75 FEET; THENCE (22) NORTH 50°25'00" EAST 326.26 FEET TO THE POINT OF BEGINNING.

PARCEL 3

THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER AND ALSO THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER IN SECTION 13,

TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF.

EXCEPTING FROM THE SAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 13, THAT PORTION THEREOF, DESCRIBED AS PARCEL 1 IN THE FINAL ORDER OR DECREE OF CONDEMNATION, RECORDED OCTOBER 18, 1948 IN BOOK 2987, PAGE 83 OF OFFICIAL RECORDS.

ALSO EXCEPT THEREFROM THAT PORTION LYING WITHIN LAND DESCRIBED IN A DEED TO THE STATE OF CALIFORNIA, RECORDED JANUARY 9, 1973 AS FILE NO. 73-006174 OF OFFICIAL RECORDS.

ALSO EXCEPTING FROM SAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 13, ONE-HALF OF ANY ROYALTY RECEIVED FOR ANY OIL, GAS OR HYDROCARBON SUBSTANCES NOW IN OR UNDER THE ABOVE DESCRIBED PROPERTY OR WHICH AT ANY TIME MAY BE DEVELOPED, EXTRACTED OR PRODUCED FROM SAID LANDS, AS RESERVED BY WILLIAM G. GROSS IN DEED RECORDED MARCH 3, 1926 IN BOOK 1203, PAGE 119 OF DEEDS.

PARCEL 4

THAT PORTION OF MONSERATE RANCHO, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF ON FILE IN THE OFFICE OF COUNTY RECORDER OF SAN DIEGO COUNTY IN BOOK 1, PAGE 108 OF PATENTS, DESCRIBED AS FOLLOWS:

BEGINNING AT CORNER NO. 4 OF SAID RANCHO; THENCE NORTH 0°40′45" EAST ALONG THE EASTERLY BOUNDARY OF SAID RANCHO, 5218.03 FEET, MORE OR LESS, TO CORNER NO. 3 OF SAID RANCHO; THENCE LEAVING SAID BOUNDARY LINE, NORTH 0°33′ WEST 1354.00 FEET; THENCE NORTH 89°58′10" WEST 660.00 FEET; THENCE SOUTH 25°30′45" WEST 1500.21 FEET, MORE OR LESS, TO A POINT THAT BEARS NORTH 89°56′10" WEST 1320.00 FEET FROM CORNER NO. 3 OF SAID RANCHO; THENCE SOUTH 0°40′30" WEST 3909.50 FEET, MORE OR LESS, TO INTERSECTION WITH A LINE THAT IS PARALLEL WITH AND DISTANT 1319.74 FEET NORTHERLY (MEASURED AT RIGHT ANGLES) FROM THE SOUTHERLY BOUNDARY OF SAID RANCHO; THENCE ALONG SAID PARALLEL LINE SOUTH 89°32′ WEST 3954.44 FEET, MORE OR LESS, TO INTERSECTION WITH A LINE BEARING NORTH 0°40′30" EAST FROM THE NORTH QUARTER CORNER OF SECTION 14, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN; THENCE SOUTH 0°40′30" WEST 1320.00 FEET TO SAID NORTH QUARTER CORNER OF SAID SECTION 14, SAID POINT BEING IN THE SOUTHERLY BOUNDARY LINE OF SAID MONSERATE RANCHO; THENCE ALONG SAID SOUTHERLY BOUNDARY NORTH 89°32′ EAST 5274.34 FEET, MORE OR LESS, TO CORNER NO. 4 OF SAID RANCHO AND THE POINT OF BEGINNING.

EXCEPTING THAT PORTION THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT CORNER NO. 3 OF SAID RANCHO FROM SAID POINT OF BEGINNING CORNER NO. 4 OF SAID RANCHO BEARS SOUTH 0°40'45" WEST; THENCE NORTH 0°33' WEST 1179.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH 0°33' WEST 175.00 FEET; THENCE NORTH 89°58'10" WEST TO THE NORTHEASTERLY LINE OF ROAD SURVEY NO. 837, AS DESCRIBED IN DEED TO THE COUNTY OF SAN DIEGO, RECORDED AUGUST 21, 1940 IN BOOK 1047, PAGE 495 OF OFFICIAL RECORDS; THENCE SOUTHEASTERLY ALONG SAID NORTHEASTERLY LINE TO THE INTERSECTION WITH A LINE BEARING NORTH 89°58'10" WEST FROM THE TRUE POINT OF BEGINNING; THENCE SOUTH 89°58'10" EAST TO THE TRUE POINT OF BEGINNING.

ALSO EXCEPT THEREFROM THAT PORTION THEREOF, LYING WESTERLY OF THE EASTERLY LINE OF CALIFORNIA STATE HIGHWAY, AS SAID HIGHWAY IS DESCRIBED UNDER PARCEL 2 IN THE FINAL ORDER OR DECREE OF CONDEMNATION, RECORDED OCTOBER 18, 1948 IN BOOK 2987, PAGE 83 OF OFFICIAL RECORDS.

ALSO EXCEPT THEREFROM THAT PORTION LYING WITHIN LAND DESCRIBED IN A DEED TO THE STATE OF CALIFORNIA, RECORDED JANUARY 9, 1973 AS FILE NO. 73-006174 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM THAT PORTION LYING WITHIN COUNTY OF SAN DIEGO TRACT NO. 4249, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP NO. 11877, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, AUGUST 1987.

ALSO EXCEPTING THEREFROM ALL THAT PORTION OF LOTS 1 THROUGH 211 OF COUNTY OF SAN DIEGO TRACT 4249-2, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 12710, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, SEPTEMBER 20, 1990.

ALSO, EXCEPTING THEREFROM, ALL THAT PORTION OF LOTS 1 THROUGH 348 OF COUNTY OF SAN DIEGO TRACT 4249-3, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 12848, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JULY 25, 1991.

PARCEL 5

THE WEST HALF OF THE NORTHEAST QUARTER AND ALSO THE WEST HALF OF THE SOUTHEAST QUARTER OF SECTION 12, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF. EXCEPTING THEREFROM THAT PORTION DESCRIBED AS FOLLOWS:

BEGINNING AT CORNER NO. 3 OF RANCHO MONSERATE, ACCORDING TO MAP ON FILE IN BOOK 1, PAGE 108 OF PATENTS IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, CORNER NO. 4 OF SAID RANCHO BEARS SOUTH 01°09'12" WEST; THENCE ALONG THE EASTERLY LINE OF THE LAND DESCRIBED IN DEED TO SAN LUIS REY MUNICIPAL WATER DISTRICT RECORDED OCTOBER 7, 1983 AS FILE NO. 83-362222 OF OFFICIAL RECORDS OF SAID COUNTY SOUTH 15°17'40" EAST 353.44 FEET; THENCE SOUTH 36°54'40" EAST 794.97 FEET; THENCE SOUTH 48°29'40" EAST 131.24 FEET; THENCE SOUTH 63°08'56" WEST 628.53 FEET; THENCE SOUTH 09°32'38" EAST 269.68 FEET; THENCE SOUTH 02°27'28" WEST 435.12 FEET; THENCE SOUTH 48°45'30" EAST 124.20 FEET; THENCE SOUTH 64°34'34" WEST 122.99 FEET; THENCE SOUTH 13°55'40" EAST 269.26 FEET; THENCE SOUTH 03°25'58" EAST 250.80 FEET; THENCE SOUTH 21°28;44" EAST 260.00 FEET; THENCE SOUTH 05°32'22" WEST 325.96 FEET; THENCE SOUTH 32°36'02" EAST 1711.92 FEET TO THE EASTERLY LINE OF THE WEST HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 12; THENCE LEAVING THE EASTERLY LINE OF SAID SAN LUIS REY MUNICIPAL WATER DISTRICT ALONG THE EASTERLY LINE OF THE WEST HALF OF THE SOUTHEAST QUARTER AND THE EASTERLY LINE OF THE WEST HALF OF THE NORTHEASTERLY QUARTER OF SAID SECTION 12 NORTH 01°26'07" EAST 4765.55 FEET TO THE SOUTHERLY LINE OF SAID RANCHO MONSERATE; THENCE ALONG SAID SOUTHERLY LINE SOUTH 87°21'37" WEST 1303.19 FEET TO THE POINT OF BEGINNING.

ALSO EXCEPTING THEREFROM THAT PORTION LYING WITHIN COUNTY OF SAN DIEGO TRACT NO. 4249, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP NO. 11877, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, AUGUST 11, 1987.

ALSO EXCEPTING THEREFROM THAT PORTION OF LOTS 1 THROUGH 211 OF COUNTY OF SAN DIEGO TRACT NO. 44249-2, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 12710, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, SEPTEMBER 20, 1990.

PARCEL 6

LOTS 1 THROUGH 211 INCLUSIVE OF COUNTY OF SAN DIEGO TRACT NO. 4249-2, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 12710, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, SEPTEMBER 20, 1990.

PARCEL 7

LOTS 1 THROUGH 348 OF COUNTY OF SAN DIEGO TRACT 4249-3, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 12848, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JULY 25, 1991.

EXHIBIT "C"

Gregory Canyon Facility Mitigation Fund

The mitigation fund to be established and maintained pursuant to Section 9b will consist of a trust fund and a letter of credit.

A. Trust Fund.

1. Structure. Prior to commencement of operation of the Gregory Canyon Facility, a trust fund or third party custodial account (the "Trust Fund") shall be established, maintained and administered for the benefit of the San Luis Rey Municipal Water District ("SLRMWD") and the Signing District Members in accordance with the terms of a trust agreement or third party custodial agreement approved by SLRMWD and the Signing District Members, which agreement shall be similar to the trust agreement referenced at 14 C.C.R. § 18284(b). The trustee shall be an institution acceptable to SLRMWD and the Signing District Members. All costs of opening, maintaining and administering the Trust Fund shall be borne by Development Company and Development Company shall bear the entire risk of any investment losses incurred by the trustee in investing and reinvesting the monies in the Trust Fund.

2. Amount. The Trust Fund amount will total $2,520,000 in today's dollars (the "Fund Amount"). The Fund Amount will be increased annually in accordance with the greater of (i) the increase in the Engineering News Record ("ENR") Building Cost Index for the area including the San Diego metropolitan area or (ii) revised cost estimates for the remediation pursuant to paragraphs 8a and 8b of the Agreement approved by Development Company, SLRMWD, and the Signing District Members (or by arbitration pursuant to paragraph 10 of the Agreement in the absence of such approval) in order to ensure that the Fund Amount is sufficient to achieve the purpose of the Trust Fund.

3. Manner of Funding. SLRMWD and the Signing District Members agree that the Fund Amount can be funded over a period of 10 years through quarterly payments, initially in the amount of $63,000, due and payable January 1, April 1, July 1 and October 1. The amount of the quarterly payments shall increase as necessary if the Fund Amount increases pursuant to paragraph 2. Interest earnings on the amounts in the Trust Fund will be retained until the Fund Amount, as increased from time to time, is attained. Excess interest earnings will be paid to Development Company. If withdrawals are made by SLRMWD or the Signing District Members from the Trust Fund pursuant to the conditions for drawing on the Trust Fund described below,

Development Company shall replenish the Trust Fund to the full Fund Amount until and to the extent funding is assured to complete the remediation pursuant to paragraphs 8a and 8b of the Agreement.

4. Conditions for Draw. SLRMWD or the Signing District Members will be entitled to draw on the Trust Fund upon the determination of a qualified engineer that the Gregory Canyon Facility's leachate containment system has failed, resulting in or creating an imminent threat of degradation of Pala Basin water, Foreign Water, and/or the Excess Storage Capacity as described in paragraphs 8a and 8b of the Agreement. Amounts drawn from the Trust Fund will be available for use by SLRMWD or the Signing District Members to fund remediation pursuant to paragraphs 8a and 8b of the Agreement. Disputes concerning the propriety of any withdrawal from the Trust Fund shall be submitted to binding arbitration in accordance with the provisions of paragraph 10 of the Agreement.

5. Conditions for Release. The monies in the Trust Fund will be released to Development Company 10 years after closure of the Gregory Canyon Facility, provided that SLRMWD and the Signing District Members have received a certificate from a qualified engineer selected by them to the effect that the water quality of the Pala Basin has not been degraded by the Gregory

Canyon Facility so that it cannot be used for domestic uses and for irrigation. The selected engineer shall use generally accepted objective criteria in his/her determination. Disputes concerning whether the conditions for release of the Trust Fund have been satisfied shall be submitted to binding arbitration in accordance with the provisions of paragraph 10 of the Agreement. If the arbitrators conclude that the conditions for release have been satisfied by objective standards, the arbitrators shall have the power and authority to order release of the Trust Fund to Development Company.

B. Letter of Credit.

1. Structure and Amount. Prior to the commencement of construction (i.e., grading) of the Gregory Canyon Facility, Development Company will provide to SLRMWD and the Signing District Members an irrevocable letter of credit (the "Letter of Credit") in the amount of $840,000. The Letter of Credit will be in a form and issued by an institution acceptable to SLRMWD and the Signing District Members. The Letter of Credit shall be automatically renewed annually for the full amount required under paragraph B.3 below unless terminated by the issuing institution upon written notice to SLRMWD and the Signing District Members at least 30 days prior to its expiration. The form of the Letter of Credit shall be substantially similar to that referenced in 14

C.C.R. § 18287. Development Company shall bear all costs associated with obtaining and maintaining the Letter of Credit.

2. Conditions for Draw. SLRMWD or the Signing District members will be entitled to draw on the Letter of Credit in total upon any of the following circumstances:

a. Development Company's failure to establish the Trust Fund prior to the commencement of operation of the Gregory Canyon Facility;

b. Development Company's failure to make a scheduled quarterly deposit in the Trust Fund in the appropriate amount;

c. in the event and to the extent the Trust Fund is insufficient to fund remediation pursuant to paragraphs 8a and 8b of the Agreement; or

d. during the 10 days immediately preceding the then current expiration date after receipt of 30 days notice of termination of the Letter of Credit from the issuing institution and Development Company's failure to substitute a new Letter of Credit.

Amounts drawn on the Letter of Credit may be applied by SLRMWD or the Signing District Members to enforce any and all of their rights under the Agreement, to compel Development Company to perform its obligations under the Agreement or to mitigate damages to SLRMWD and the Signing District Members as a result of Development Company's failure to perform such obligations. A draw on the Letter of Credit or the Trust Fund shall not relieve Development Company of any of its obligations under the Agreement.

3. Reduction in Amount. Each time the Letter of Credit is to be renewed, the Letter of Credit may be reduced to an amount which, when added to the amount of money in the Trust Fund following the previous quarterly payment, equals or exceeds the Fund Amount, subject to written verification of the trustee of the Trust Fund and approval of SLRMWD and the Signing District Members.

4. Termination of Letter of Credit. The Letter of Credit shall terminate once the Trust Fund contains the full Fund Amount.

EXHIBIT "D"

Address List

SAN LUIS REY MUNICIPAL WATER DISTRICT

Mr. Robert H. Pankey
San Luis Rey Municipal Water District
5328 Highway 76
Bonsall, California 92003

DOROTHY E. LEAVEY, J.T. AND K.L. MCCARTHY

Kathleen McCarthy
10449 Bainbridge Avenue
Los Angeles, California 90024

EDGAR E. AND ELIZABETH S. PANKEY TRUST

Edgar E. and Elizabeth S. Pankey
320 West Main Street
Tustin, California 92680

PANKEY RANCH, A CALIFORNIA LIMITED PARTNERSHIP

Mr. William H. Pankey
Pankey Ranch
5328 Highway 76
Bonsall, California 92003

PANKEY FARMS

Victor S. Pankey
Pankey Farms
3264 Shearer Crossing
Bonsall, California 92003

BLANCHE POPE, TRUSTEE U/D/T POPE FAMILY TRUST

Mrs. Blanche Pope
3501 Garrison Street
San Diego, California 92106

NORTH SAN DIEGO DEVELOPMENT COMPANY

North San Diego Development Company
c/o Waste Management of California, Inc., General Partner
Waste Management Inc., West Group
18500 Von Karman, Suite 900
Irvine, California 92715

Attn: Marian King, Vice President & General Counsel

GREGORY CANYON, LTD.

Mr. Richard W. Chase
Taconic Resources
15025 Paso Del Sol
Del Mar, California 92014

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

1169

State of California
County of San Diego

On January 12, 1996 before me, Phyllis Gale Ramsey, Notary,
DATE NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"

personally appeared Robert H. Pankey,
NAME(S) OF SIGNER(S)

☒ personally known to me - OR - ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signatures(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Phyllis Gale Ramsey
SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

☐ INDIVIDUAL
☐ CORPORATE OFFICER

TITLE(S)

☐ PARTNER(S) ☐ LIMITED
☐ GENERAL
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
■ OTHER: President of the Board of Directors

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)
San Luis Rey Municipal Water District

DESCRIPTION OF ATTACHED DOCUMENT

Agreement
TITLE OR TYPE OF DOCUMENT

50
NUMBER OF PAGES

DATE OF DOCUMENT

Jerry A. Riessen, Waste Management of Cal., Victor S. Pankey, William H. Pankey, Blanche Pope, Kathleen L. McCarthy, Edgar E. Pankey, Rodney Guild
SIGNER(S) OTHER THAN NAMED ABOVE

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of San Diego

On January 12, 1996 (DATE) before me Phyllis Gale Rumsey Notary (NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"),

personally appeared Rodney Guild (NAME(S) OF SIGNER(S)),

☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signatures(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Phyllis Gale Rumsey
SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

☐ INDIVIDUAL
☐ CORPORATE OFFICER

TITLE(S)

☐ PARTNER(S) ☐ LIMITED
☐ GENERAL
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
■ OTHER: Secretary to the Board of Directors

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)
San Luis Rey Municipal Water District

DESCRIPTION OF ATTACHED DOCUMENT

Agreement
TITLE OR TYPE OF DOCUMENT

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NUMBER OF PAGES

DATE OF DOCUMENT

Jerry A. Riessen, Waste Management of Cal., Victor S. Pankey, William H. Pankey, Blanche Pope, Kathleen L. McCarthy, Edgar E. Pankey, Robert H. Pankey
SIGNER(S) OTHER THAN NAMED ABOVE

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT 1171

State of California
County of Los Angeles

On 4/15/96 (DATE) before me, Gary M. Gold. Notary Public (NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC")

personally appeared Kathleen L. McCarthy (NAME(S) OF SIGNER(S))

☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signatures(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

GARY M. GOLD
COMM # 984735
Notary Public — California
LOS ANGELES COUNTY
My Comm. Expires FEB 15, 1997

SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

☐ INDIVIDUAL
☐ CORPORATE OFFICER

TITLE(S)

■ PARTNER(S) ☐ LIMITED
■ GENERAL
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER:

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)
Dorothy E. Leavey, J.T. and K.L. McCarthy, General Partners

DESCRIPTION OF ATTACHED DOCUMENT

Agreement
TITLE OR TYPE OF DOCUMENT

50
NUMBER OF PAGES

DATE OF DOCUMENT

Jerry A. Riessen, Waste Management of Cal., Victor S. Pankey, William H. Pankey, Blanche Pope, Edgar E. Pankey, Robert H. Pankey, Rodney Guild
SIGNER(S) OTHER THAN NAMED ABOVE

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

1172

State of California
County of ORANGE

On April 10, 1996 (DATE) before me, B. Ryan, notary public (NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC")

personally appeared Edgar E. Pankey (NAME(S) OF SIGNER(S))

☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signatures(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

ASE1 B. RYAN COMM. #980552 NOTARY PUBLIC-CALIFORNIA ORANGE COUNTY My Comm. Expires Dec. 21, 1996 ASE1

WITNESS my hand and official seal.

B. Ryan
SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

☐ INDIVIDUAL
☐ CORPORATE OFFICER

TITLE(S)

☐ PARTNER(S) ☐ LIMITED ☐ GENERAL
☐ ATTORNEY-IN-FACT
■ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER:

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)
Edgar E. and Elizabeth S. Pankey Trust

DESCRIPTION OF ATTACHED DOCUMENT

Agreement
TITLE OR TYPE OF DOCUMENT

50
NUMBER OF PAGES

DATE OF DOCUMENT

Jerry A. Riessen, Waste Management of Cal., Victor S. Pankey, William H. Pankey, Blanche Pope, Kathleen L. McCarthy, Robert H. Pankey, Rodney Guild
SIGNER(S) OTHER THAN NAMED ABOVE

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

1173

State of California
County of SAN DIEGO

On APRIL 4, 1994 (DATE) before me, NATHAN C. MILLS (NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"),

personally appeared Victor S. Pankey (NAME(S) OF SIGNER(S)),

☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signatures(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

NATHAN C. MILLS
COMM. # 1000000
Notary Public — California
SAN DIEGO COUNTY
My Comm. Expires JUL 12, 1997

WITNESS my hand and official seal.

Nathan C. Mills
SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

☐ INDIVIDUAL
☐ CORPORATE OFFICER

TITLE(S)

■ PARTNER(S) ☐ LIMITED
■ GENERAL
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER:

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)
Pankey Farms

DESCRIPTION OF ATTACHED DOCUMENT

Agreement
TITLE OR TYPE OF DOCUMENT

50
NUMBER OF PAGES

DATE OF DOCUMENT

Jerry A. Riessen, Waste Management of Cal., William H. Pankey, Blanche Pope, Kathleen L. McCarthy, Edgar E. Pankey, Robert H. Pankey, Rodney Guild
SIGNER(S) OTHER THAN NAMED ABOVE

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

1174

State of California
County of San Diego

On January 12, 1994 before me, Phyllis Gale Rumsey, Notary
DATE NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"

ersonally appeared William H. Pankey
NAME(S) OF SIGNER(S)

☒ personally known to me - OR - ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signatures(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

Phyllis Gale Rumsey
Comm. 1053471
NOTARY PUBLIC - CALIFORNIA
SAN DIEGO COUNTY
Expires Jan 22, 1996

WITNESS my hand and official seal.

Phyllis Gale Rumsey
SIGNATURE OF NOTARY

OPTIONAL

ough the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent ttachment of this form.

CAPACITY CLAIMED BY SIGNER

INDIVIDUAL
CORPORATE OFFICER

TITLE(S)

PARTNER(S) ☐ LIMITED
■ GENERAL
ATTORNEY-IN-FACT
TRUSTEE(S)
GUARDIAN/CONSERVATOR
OTHER:

GNER IS REPRESENTING:
AME OF PERSON(S) OR ENTITY(IES)
ankey Ranch, a California Limited Partnership

DESCRIPTION OF ATTACHED DOCUMENT

Agreement
TITLE OR TYPE OF DOCUMENT

50
NUMBER OF PAGES

DATE OF DOCUMENT

Jerry A. Riessen, Waste Management of Cal., Victor S. Pankey, Edgar E. Pankey, Blanche Pope, Kathleen L. McCarthy, Robert H. Pankey, Rodney Guild
SIGNER(S) OTHER THAN NAMED ABOVE

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of San Diego

1175

On April 5 1996 (DATE) before me, David Reiff, Notary Public (NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC")

personally appeared Blanche Pope (NAME(S) OF SIGNER(S))

☐ personally known to me - OR - ☑ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signatures(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

OFFICIAL SEAL
DAVID REIFF
NOTARY PUBLIC-CALIFORNIA
COMM. NO. 1075601
SAN DIEGO COUNTY
MY COMM. EXP. OCT. 22, 1999

WITNESS my hand and official seal.

David Reiff
SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

☐ INDIVIDUAL
☐ CORPORATE OFFICER

TITLE(S)

☐ PARTNER(S) ☐ LIMITED
☐ GENERAL
☐ ATTORNEY-IN-FACT
■ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER:

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)
Pope Family Trust

DESCRIPTION OF ATTACHED DOCUMENT

Agreement
TITLE OR TYPE OF DOCUMENT

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NUMBER OF PAGES

DATE OF DOCUMENT

Jerry A. Riessen, Waste Management of Cal., Victor S. Pankey, William H. Pankey, Edgar E. Pankey, Kathleen L. McCarthy, Robert H. Pankey, Rodney Guild
SIGNER(S) OTHER THAN NAMED ABOVE

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of Orange

1176

On March 7, 1996 before me, Tobi Marshall, Notary Public,
DATE — NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"

personally appeared Marian King
NAME(S) OF SIGNER(S)

☑ personally known to me - OR - ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signatures(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

TOBI MARSHALL
COMM. # 1059306
Notary Public — California
ORANGE COUNTY
My Comm. Expires MAY 21, 1999

WITNESS my hand and official seal.

Tobi Marshall
SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

☐ INDIVIDUAL
☑ CORPORATE OFFICER
Vice President and General Counsel
TITLE(S)

☐ PARTNER(S) ☐ LIMITED
☐ GENERAL
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER: _____

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)
North San Diego Development Company/
Waste Management of California, Inc.

DESCRIPTION OF ATTACHED DOCUMENT

Agreement
TITLE OR TYPE OF DOCUMENT

50
NUMBER OF PAGES

DATE OF DOCUMENT

Jerry A. Riessen, Victor S. Pankey, William H. Pankey, Edgar E. Pankey, Blanche Pope, Kathleen L. McCarthy, Robert H. Pankey, Rodney Guild
SIGNER(S) OTHER THAN NAMED ABOVE

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT 1177

State of CALIFORNIA
County of SAN FRANCISCO

On March 14, 1996 before me, MELANIE WALLACE
DATE NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"

personally appeared Jerry A. Riessen
NAME(S) OF SIGNER(S)

☒ personally known to me - OR - ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signatures(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

PWR1 MELANIE WALLACE Comm. # 1001945 NOTARY PUBLIC - CALIFORNIA City and County of San Francisco My Comm. Expires Aug. 22, 1997 PWR1

WITNESS my hand and official seal.

Melanie Wallace
SIGNATURE OF NOTARY

OPTIONAL

Though the data below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent reattachment of this form.

CAPACITY CLAIMED BY SIGNER

☐ INDIVIDUAL
■ CORPORATE OFFICER

President
TITLE(S)

☐ PARTNER(S) ☐ LIMITED
☐ GENERAL
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER: _____

SIGNER IS REPRESENTING:
NAME OF PERSON(S) OR ENTITY(IES)
Gregory Canyon, Ltd.

DESCRIPTION OF ATTACHED DOCUMENT

Agreement
TITLE OR TYPE OF DOCUMENT

50
NUMBER OF PAGES

DATE OF DOCUMENT

Waste Management of Cal., Victor S. Pankey, William H. Pankey, Edgar E. Pankey, Blanche Pope, Kathleen L. McCarthy, Robert H. Pankey, Rodney Guild
SIGNER(S) OTHER THAN NAMED ABOVE

San Luis Rey Municipal Water District
5328 Highway 76
Bonsall, California 92003
(619) 728-1434

RECEIVED
JUL 1 1 32 PM '96
HEAL... ...CES

JUL 02 1996
DEH
DIRECTOR'S OFFICE

Directors
Pankey, President
Pankey, Vice President
Gulid, Secretary
Director
Director

District Engineer
Langdon W. Owen

District Legal Counsel
Susan M. Taylor

June 27, 1996

ORIGINAL
COPY

Ir. Daniel J. Avera, Director
ounty of San Diego
nvironmental Health Services
ost Office Box 85261
an Diego, CA 92186-5261

Subject: Gregory Canyon Landfill Project

Dear Mr. Avera:

On April 15, 1996, the enclosed Gregory Canyon Landfill Mitigation Agreement "Agreement") was executed by the proponents of the Gregory Canyon landfill project, the ublic water district in which a portion of the landfill would be located, and several private andowners whose wells are just downstream of the proposed landfill site. The purpose of the Agreement is to ensure that the construction, operation and closure of the Gregory Canyon andfill project are carried out in a manner that will help protect the Pala Basin of the San Luis Rey River and the quality of water in the Pala Basin. The parties to the Agreement are the San Luis Rey Municipal Water District ("SLRMWD"), certain property owners within the boundaries of the San Luis Rey Municipal Water District ("Signing District Members"), North San Diego County Development Co., a California General Partnership ("Current Owner"), and Gregory Canyon Ltd., a California Limited Liability Company ("Development Company").

The Agreement resolves for the parties issues of the impacts to water quality and quantity in the Pala Basin that could result from the construction, operation and closure of the Gregory Canyon landfill.

The purpose of this letter is to ask you to include the provisions of the Agreement, as outlined below, in any permits, licenses or approvals issued by your agency. A summary of the Agreement provisions follows:

THE LANDFILL OWNER'S AND OPERATOR'S OBLIGATIONS

The landfill owners and operators have agreed:

- to acknowledge that the riparian and appropriative water rights appurtenant to the landowners' properties and water rights held by the District are superior to any appropriative water rights that may be granted by the State Water Resources Control Board to Waste Management, Inc. of California under its Application to Appropriate No. 30038 (Agreement Section 4.a.);

- to reduce diversion of the water under any permit or license granted pursuant to Application No. 30038 if at any time in the future investigation by the District or any landowner demonstrates that the amount of water available in the Pala Basin is insufficient to meet the reasonable and beneficial needs of the District or any signing member based upon water rights as they existed when the Agreement became effective (Agreement Section 4.b.);

- to use an alternate water supply for construction and operation of the landfill if the District or any of the landowners demonstrate that the amount of water in the Pala Basin is insufficient to meet their reasonable and beneficial needs (Agreement Section 4.c.)

- to have hydrogeological studies performed in connection with the preparation of the Environmental Impact Report ("EIR") for the landfill project and to share copies of the investigations with the District (Agreement Section 5.a.);

- to install monitoring stations to monitor for the movement of leachate from the landfill toward the San Luis Rey River during the operational life of the landfill, to consult with the District about the best locations for the monitoring stations, and to provide the District with the data collected from the monitoring stations (Agreement Section 5.b. and c.);

- to construct and maintain a reverse osmosis treatment facility as part of the leachate containment system for the Gregory Canyon landfill in order to provide immediate treatment of any contaminants that escape the containment system to the San Luis Rey River at the mouth of the landfill before the contamination reaches production wells downstream (Agreement Section 6.c.);

- to remedy any degradation of the Basin resulting from the construction, operation or closure of the Gregory Canyon landfill or, if remediation is not feasible, to provide an alternate water supply and to compensate the District and landowners if such degradation renders the Pala Basin unusable for storage of foreign water and the District and landowners are thereby economically damaged (Agreement Section 8 a. and b.); and

- to establish and maintain a mitigation fund in the form of a trust fund and a letter of edit in specified amounts before beginning construction of the landfill in order to ensure the ›ility to remediate the landfill's water quality impacts to the Pala Basin or provide an alternate ater supply should it become necessary. The trust fund will be funded over a ten-year period ıd will total $2,520,000 in today's dollars. The fund amount will increase annually based on stablished criteria in order to ensure that the fund amount is sufficient to achieve the purpose f the trust fund (Agreement Section 9.b and Exhibit "C").

All of the parties have agreed that the Agreement's provisions are to be incorporated into ıe mitigation measures to be adopted in connection with the landfill project EIR, to the extent ıat the Local Enforcement Agency will allow, and that the provisions will also be incorporated ıto the project plans and specifications for the landfill project (Agreement Section 11.b). As a esult, this letter is intended to advise you of this Agreement and its provisions so that you, as n agency responsible for reviewing and/or approving the Gregory Canyon landfill project, will ıclude the provisions of the Agreement among the conditions of your approval of the landfill ›roject.

Thank you for your consideration.

Sincerely,

SAN LUIS REY MUNICIPAL WATER DISTRICT

Robert H. Pankey

Robert H. Pankey, President

RHP:hjb
cc: Jan Driscoll, Esq.

PLEASE COMPLETE THIS INFORMATION

RECORDING REQUESTED BY:

Susan M. Trager

AND WHEN RECORDED MAIL TO:

SAN LUIS REY MUNICIPAL WATER DISTRICT
c/o MICHELE A. STAPLES, ESQ.
LAW OFFICES OF SUSAN M. TRAGER
2100 S.E. MAIN STREET, SUITE 104
IRVINE, CALIFORNIA 92714

DOC # 1996-0234450
08-MAY-1996 12:17 PM

OFFICIAL RECORDS
SAN DIEGO COUNTY RECORDER'S OFFICE
GREGORY SMITH, COUNTY RECORDER
FEES: 0.00

1117

RECEIVED
MAY 27 1996
LAW OFFICES OF
SUSAN M TRAGER

NO RECORDING FEE REQUIRED PER GOV. CODE SEC. 27

AGREEMENT BETWEEN
THE SAN LUIS REY MUNICIPAL WATER DISTRICT;
DOROTHY E. LEAVEY, J.T. AND K.L. MCCARTHY;
EDGAR E. AND ELIZABETH S. PANKEY TRUST;
PANKEY FARMS; PANKEY RANCH;
BLANCHE POPE, TRUSTEE U/D/T POPE FAMILY TRUST;
NORTH SAN DIEGO COUNTY DEVELOPMENT CO.;
AND GREGORY CANYON, LTD.

Title of Document

APN numbers for the following properties:

Leavey (McCarthy):	128-010-08	Pankey Farms:	125-063-
	128-010-29		
	128-020-28	Edgar E. and	
	128-070-02	Elizabeth S. Pankey Trust:	125-063-
	128-070-03		125-063-
	128-420-01		125-100-
	128-420-02		
	128-420-03	Blanche Pope, Trustee:	125-100-
	128-420-05		125-100-
Pankey Ranch:	108-120-53	North San Diego	
	108-121-11	County Development Co.:	128-470-
	108-122-03		128-470-
	108-122-09		128-470-
	108-122-10		128-470-
	108-122-11		128-470-
	125-061-04		128-470-
	125-061-05		128-470-
	125-061-06		110-150-
	125-062-02		110-150-
	125-062-03		110-150-
	128-010-33		110-150-
	128-010-34		110-150-
			110-150-
Pankey Family			110-362-
Irrevocable Trust:	108-120-54		

Geosyntec consultants

Memorandum

Date: 11 October 2011, Revised 12 April and 28 November 2012

To: William Miller, U.S. Army Corps of Engineers, Senior Project Manager

From: Jennifer Nevius, P.E.

Subject: On-site Alternatives Documentation Review
Gregory Canyon Landfill

INTRODUCTION

This memorandum presents the results of a review to assess the potential feasibility of on-site alternatives to the proposed Gregory Canyon Landfill in northern San Diego County, California. Gregory Canyon Limited (Applicant) has proposed the development of the landfill south of State Route 76 (SR 76), approximately 3 miles east of Interstate 15. The property encompasses approximately 1,770 acres, with approximately 13 acres to be acquired from San Diego Gas and Electric (SDG&E) associated with the relocation of three transmission pads. Approximately 308.6 acres are proposed for overall landfill activities (e.g., stockpile areas, ancillary facilities, access road, and refuse disposal), with approximately 183 acres to be used for refuse disposal.

The U.S. Army Corps of Engineers, Los Angeles District (Corps) is evaluating the feasibility of potential alternatives to the Applicant's Preferred Alternative in association with an Environmental Impact Statement (EIS) being prepared to satisfy the requirements of the National Environmental Policy Act (NEPA) and the U.S. Environmental Protection Agency's Section 404(b)(1) guidelines contained in the 40 Code of Federal Regulations (CFR), Part 230. The Corps selected PCR Services Corporation (PCR) and its subconsultants (including Geosyntec Consultants [Geosyntec]) to prepare the EIS.

BACKGROUND

As part of the NEPA and 404(b)(1) process, the Corps must evaluate alternatives that would reduce potential environmental impacts, specifically impacts to waters of the U.S. The Corps requested that the Applicant provide input regarding potential alternative on-site locations for the landfill and associated facilities to determine if impacts to waters of the U.S. could be reduced through a redesign of the proposed development. The Corps wanted to evaluate the feasibility of locating the landfill on the south side of SR 76 outside Gregory Canyon and on the north side of SR 76. In light of the Corps' intent to provide a peer review, the Corps requested input from the Applicant for potential on-site alternatives, considering the Applicant team's familiarity with the site and technical capability regarding landfill permitting, design, and construction.

PCR provided Geosyntec with documentation of an evaluation of two on-site alternatives, identified as Alternative 1 and Alternative 2, prepared by Bryan A. Stirrat and Associates (BAS), the Applicant's

engineering consultant. The Applicant's documentation consists of two summaries listing factors they believe make these alternatives impractical or unreasonable, and five drawing sheets dated May 2011 that illustrate the locations and base grading and final grading plans of these on-site alternatives. The electronic files for the drawing sheets were provided by BAS in AutoCAD format. Geosyntec was also provided a PDF copy of the Joint Technical Document (JTD) for the Applicant's Preferred Alternative prepared by BAS, dated September 2010 and revised January 2011.

PURPOSE AND SCOPE OF SERVICES

The purpose of this memorandum is to assist the Corps in evaluating the feasibility of potential alternatives to the Applicant's Preferred Alternative in association with the EIS. The scope of Geosyntec's professional consulting services was to perform a technical review of the on-site alternatives documentation submitted to the Corps by the Applicant and, as needed, the supporting information in the JTD. The review was performed to provide a professional opinion regarding the on-site alternative documentation prepared by BAS and if it is considered generally complete, correct, and unbiased, and also to document, if applicable, the existence of other credible potential on-site alternatives. The review did not include a detailed check of the quantities, calculations, and figures prepared by BAS or design of additional potential on-site alternatives.

Geosyntec is a consulting engineering firm specializing in landfill permitting, design, and construction. Our review was limited to a technical review of the alternatives from a general landfill design perspective. Geosyntec professionals involved in this review are not technical specialists in air quality, aesthetic, or biological impacts, and we provide no review comments as to the completeness, correctness, or unbiased nature of statements made in those technical areas. This memorandum represents completion of Geosyntec's work for the on-site alternatives evaluation review authorized by PCR on 6 September 2011. The memorandum was prepared by Jennifer Nevius, P.E. and reviewed by Greg Corcoran, P.E. in accordance with Geosyntec's Quality Management Program.

ON-SITE ALTERNATIVE REVIEW

Alternative 1

As outlined in the Applicant's documentation, Alternative 1 would locate the landfill and associated facilities south of SR 76. The landfill footprint would occupy approximately 191 acres and would be located outside Gregory Canyon in the southwestern portion of the site, west of the existing aqueduct easement. The landfill footprint includes the areas proposed as Borrow/Stockpile Areas A and B in the Applicant's Preferred Alternative. The landfill creates a landform that would rise in elevation from approximately 400 feet Mean Sea Level (ft MSL) at the western property boundary to a maximum elevation of 950 ft MSL at the central portion of the southern property boundary. Alternative 1 requires approximately 48.3 million cubic yards (mcy) of excavation and generates 52 mcy of gross airspace, compared with approximately 7.9 mcy of excavation and 59.5 mcy of gross airspace from the Applicant's Preferred Alternative. The disposal capacity for Alternative 1 would be approximately 27 million tons, compared with 30 million tons in the Applicant's Preferred Alternative.

The ancillary facilities would be located to the north of the Alternative 1 landfill footprint in the western portion of the site, south of and adjacent to the San Luis Rey River. A desilting basin would be located adjacent to these facilities north of the Alternative 1 landfill footprint. The excavated materials would be stockpiled in the southern portion of Gregory Canyon and would occupy approximately 92 acres. Another desilting basin would be located north of the stockpile area. As with the Applicant's Preferred Alternative, an internal haul road would be developed connecting the stockpile area with the landfill footprint.

Site access from SR 76 would be west of the proposed location for the Applicant's Preferred Alternative. As with the Applicant's Preferred Alternative, a bridge would be constructed to cross the San Luis Rey River, requiring a 404(b)(1) permit from the Corps. As with the Applicant's Preferred Alternative, improvements to SR 76 would be required to allow for adequate turning movements and on-site vehicle queuing.

Alternative 2

As outlined in the Applicant's documentation, Alternative 2 would locate the landfill and associated facilities to the north of SR 76. The landfill footprint would occupy approximately 50 acres and would be located within a canyon in the northwestern portion of the site, west of the existing aqueduct easement. The landfill creates a landform that rises in elevation from approximately 450 ft MSL at the southern end of the footprint, closest to SR 76, to a maximum elevation of 1,200 ft MSL at the northern end of the footprint. Alternative 2 requires excavation of 4.8 mcy and generates 6.4 mcy of gross airspace, compared with 7.9 mcy of excavation and 59.5 mcy of gross airspace with the Applicant's Preferred Alternative. The disposal capacity for Alternative 2 would be approximately 3.3 million tons (estimated with the same ratio of total refuse volume to gross airspace presented for the Applicant's Preferred Alternative in Alternative 1), compared with 30 million tons in the Applicant's Preferred Alternative.

Although not detailed in the Applicant's documentation, we infer from the documentation that the ancillary facilities and desilting basin would be located on the north side of SR 76, adjacent to the southern portion of the footprint. Similarly, a proposed stockpile footprint or location was not identified in the Applicant's documentation for Alternative 2. The soil required for construction and operation of Alternative 2 may be on the order of 3 mcy (estimated by a ratio of the soil required to footprint of the Applicant's Preferred Alternative), which is a significant percentage of the 4.8 mcy excavation volume. A smaller stockpile area would be required for permanent or long-term storage. As there is not adequate or practical area on the north side of SR 76, the borrow/stockpile area would be located on the south side of SR 76, requiring a bridge for earthmoving equipment. For practical purposes such as safety, traffic, logistics, etc., construction vehicles would not be permitted to cross SR 76, and a bridge (or undercrossing) would be required to convey vehicles.

Site access from SR 76 to the Alternative 2 location was not detailed in the Applicant's documentation; however, access would likely be west of the access to the Applicant's Preferred Alternative. As with the Applicant's Preferred Alternative, improvements to SR 76 would be required to allow for adequate turning movements and on-site vehicle queuing.

FINDINGS

Based on our review of the referenced documentation, Geosyntec generally concurs with the factors presented in the Applicant's on-site alternatives evaluation that assess the practicality and reasonableness of the proposed on-site alternatives in comparison to the Applicant's Preferred Alternative. Specifically, Geosyntec concurs with the landfill design factors outlined below supporting the determination that Alternatives 1 and 2 are considered impractical or unreasonable.

Alternative 1

- Alternative 1 requires significantly more excavation than the Applicant's Preferred Alternative (48.3 mcy as compared to 7.9 mcy for the Applicant's Preferred Alternative) for a similar quantity of disposal airspace. This additional excavation would likely significantly increase the overall costs of landfill development (including excavation, hauling, and long-term or permanent stockpiling). Historically, industry practices in San Diego County and other areas of southern California have used the canyon-fill approach for landfills, which results in a more efficient and cost-effective landfill.
- The significant excavation required for Alternative 1 would lengthen the landfill development schedule and likely adversely impact landfill phasing and waste acceptance if airspace could not be made available ahead of excavation. For example, excavation of 48.3 mcy at the maximum permitted rate of 10,000 cubic yards (cy) per day, at 307 days per year, would require over 15 years, assuming continuous excavation. In our experience, the maximum excavation rate of 10,000 cy per day is considered a reasonable value for large-scale landfill excavation projects, although larger excavation rates can be achieved with an appropriate equipment spread and work area size.
- The required stockpile footprint is a function of the total volume of material to be stockpiled, and the stockpile geometry, height, slope inclinations, etc. However, stockpiling of surplus soils (in excess of 30 mcy for Alternative 1) would require significant area for long-term or permanent storage, reportedly on the order of 92 acres (compared to a total of approximately 87 acres for the Applicant's Preferred Alternative) depending on stockpile geometry.

Alternative 2

- Alternative 2 provides significantly less gross airspace than the Applicant's Preferred Alternative (6.4 mcy as compared to 59.5 mcy for the Applicant's Preferred Alternative). While the capacity of Alternative 2 may be increased slightly with a more detailed design, a significant increase in capacity without a significant increase in excavation is considered infeasible. A landfill with a capacity similar to the Applicant's Preferred Alternative is considered infeasible in the area of Alternative 2.
- In general, impacts to landfill operations would occur if airspace was not available ahead of excavation. Excavation of 4.8 mcy at the maximum permitted rate of 10,000 cy per day, at 307 days per year, would require approximately 1.5 years, assuming continuous excavation.

- Stockpiling of surplus soils on the order of 2 mcy would require a significantly smaller footprint for long-term or permanent storage (compared to a total of approximately 87 acres for the Applicant's Preferred Alternative), depending on stockpile geometry.
- No significant areas for stockpiling of this magnitude were identified north of SR 76, resulting in additional costs for development of stockpile locations south of SR 76.

Additional On-site Alternatives

- Based on our review of the site topography and the limits of the Applicant's Preferred Alternative and Alternatives 1 and 2, Geosyntec believes that the available on-site alternative landfill locations have been evaluated and that the extent of Alternatives 1 and 2 have generally been maximized considering the preliminary nature of the evaluation and site constraints including topography, property boundary, easements and the San Luis Rey River 100-year floodplain.

Additional factors regarding air quality, aesthetic, and biological impacts are presented by the Applicant; however, Geosyntec has not provided a technical review of these topics outside our area of expertise.

DISCUSSION

The following paragraphs describe Geosyntec's review of the technical assumptions used in this on-site alternatives evaluation.

Detailed landfill design for Alternatives 1 and 2 would consider a multitude of landfill technical design and operational factors, and would have the objective of maximizing airspace within the project constraints. Detailed design may be able to increase the gross airspace; however, the magnitude of a potential increase without additional excavation is not considered significant. It is more likely that detailed design would decrease the gross airspace as constraints to landfill construction are developed, such as the incorporation of additional access roads, stability berms, buildings, tanks, and stormwater management facilities such as channels and basins, etc.

Geosyntec confirmed the gross airspace and excavation volumes presented in the documentation with either the values presented in the JTD (for the Applicant's Preferred Alternative) or using AutoCAD topographic comparison methods for Alternatives 1 and 2. Phasing plans for Alternatives 1 and 2 were not provided, so quantities for phases within Alternatives 1 and 2 could not be confirmed. Although supporting information for the additional excavation cost for Alternative 1 (compared to the Applicant's Preferred Alternative) was not provided, the unit cost generated by dividing the reported cost by the additional excavation volume is considered conservative but reasonable for excavation that includes blasting and excavation of soil and rock.

Where adequate supporting information was available, Geosyntec performed calculations to confirm the site life estimates and excavation durations, utilizing the assumptions of 307 operating days per year and disposal rates of 1,950 and 3,200 tons per day for the first and subsequent years of operation, respectively, and the maximum permitted excavation rate of 10,000 cy per day. For the reported Alternative 1 Phase 1 airspace of 4.0 mcy, Geosyntec estimated approximately 3 years of airspace rather than the reported 2.2 years; however, our estimated site life would be lower if the cited airspace includes liner or cover

materials. Geosyntec also confirmed the excavation duration estimate of 2.2 years for Alternative 1 Phase 1. The excavation duration estimate for Alternative 1 Phase 2 could not be performed because phasing plans or detailed quantities were not provided. The Applicant provided estimates of time to construct the first two phases of Alternative 1; however, Geosyntec was not provided with phasing plans for Alternative 1 and was not able to verify these estimates. However, as noted above, excavation of 48.3 mcy at the maximum permitted rate would require 15 years of continuous excavation (which may not be feasible). In addition, it may not be valid to assume that excavation would be able to progress at the maximum permitted rate every operating day. Lower production rates or temporary delays would be expected due to weather or other factors. This calculation supports the likelihood that delays between project phases would be likely.

The stockpile volume for Alternative 1 could be managed in two or more locations rather than one large stockpile; however, a larger overall stockpile footprint or a larger stockpile height would be required for the same volume due to geometric considerations. In addition, efficiencies in transportation (hauling) and stormwater management may be realized with fewer stockpile locations. Evaluating potential stockpile areas outside Gregory Canyon (to avoid a Corps permit) and constrained by the property boundary, SR 76 (to avoid a bridge), and the waste footprint of Alternative 1, the remaining area for stockpiling appears to be considerably less than the 92 acres proposed for Alternative 1 and would be adjacent to SR 76 and the San Luis Rey River, likely increasing adverse impacts.

The potential impacts indicated by the Applicant in regard to air quality, aesthetics, and biological impacts appear logical; however, we provide no review comments as to the completeness, correctness, or unbiased nature of statements made in those technical areas. Our only editorial comment is that the reported prevailing wind directions from the west and northwest reported in the Alternative 1 portion of the documentation were confirmed with the JTD (Page D.3-2 and Figure 28), but the reported prevailing wind direction from the east is inconsistent with data presented in the JTD.

Attachment

Attachment A – Applicant’s On-Site Alternatives Documentation

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ATTACHMENT A

Applicant’s On-site Alternatives Documentation

FACTORS THAT MAKE ALTERNATIVE 1 IMPRACTICAL OR UNREASONABLE

1. The disposal volume is less than with applicant's preferred alternative, 52 mcy of gross airspace vs. 59.5 mcy of gross airspace in applicant's preferred alternative. If disposal capacity is at the same percentage to gross airspace as with applicant's preferred alternative, disposal capacity would be reduced to about 27 million tons.

2. Alternative 1 would also require vastly more excavation than applicant's preferred alternative, 48.3 mcy of excavation vs. 7.9 mcy of excavation.

   It would be a significant deviation from standard industry practice to build landfills where the volume of excavation comprises a significant percentage of the gross airspace. The reason for this is that it costs much more to have to create airspace rather than use airspace created by natural contours, and much larger areas to store or dispose of the excess excavated material are required. The additional cost of excavation would be $320,000,000.

3. The substantial excavation required would create logistical issues that would extend the period of initial construction, and substantially curtail the volume of waste that could be received during initial years of operations. The initial excavation required for Phase 1 would be 6.7 mcy which yields 4.0 mcy, or 2.2 years of airspace. At a permitted excavation rate 10,000 cy per day, 307 days per year, excavation of Phase 1 will take at least 2.2 years. Liner placement would immediately follow excavation (possibly at the tail end of the excavation). Once excavation for Phase 1 is complete, Phase 2 must commence immediately. The second phase of excavation would take 6 years at 10,000 cy per day. This means the landfill will have to shut down or severely curtail waste receipt for up to 6 years while materials are cleared and the waste containment structure installed, since it could only accept 2.2 years of permitted volume in the initial 8.2 years of operation. Excavation and liner development could not keep up with waste receipts.

   Note that these estimates are based on the maximum excavation rate currently permitted for applicants preferred alternative. This does not take into account factors that could result in lower daily excavation quantities, such as nature of the material, weather days, distance to the stockpile and allowable working hours. Also, given the proximity of Alternative 1 to the property boundary, the currently allowable daily volume of excavation may have to be reduced to meet AQIA requirements.

4. A logistical issue arises over where to put all this excavated material, since this amount would greatly exceed soil requirements. By way of comparison, the total soil requirement for applicant's preferred alternative is 14.1 mcy. There is no current, consistent and ongoing market for this volume of material. Even if there were, transport of the material off-site would result in additional truck trips and AQ impacts.

   Four potential locations have been considered for a stockpile. The required stockpile size would be approximately 90 acres.

a. South side of San Luis Rey River, in Verboom pasture. This location is close to the landfill footprint, but has a number of other adverse impacts. First and foremost is the impact on threatened or endangered species. The stockpile would be in documented upland AT habitat, and would result in a significantly greater direct disturbance of upland AT habitat than applicant's preferred alternative. This would also remove an area currently designated for habitat restoration. In addition, operations would move much closer to the San Luis Rey River channel, increasing noise impacts on LBV and SWF. The landfill footprint would also be closer, potentially increasing indirect impacts such as predators and light. This stockpile would be massive and have a substantial height, and would be visible from SR 76, residents in the Couser Canyon/Rice Canyon area, and residents to the north of SR 76. Most of the stockpile area would be in the 100 year floodplain which would have significant and unmitigable impacts on the SLR.

b. North side of San Luis Rey River, south of SR 76, in area of former Lucio Dairy (current Herzog storage yard). This location is further from the landfill footprint, which would mean longer trips by heavy equipment moving material to and from the stockpile. This would be both costly and inefficient. Also, heavy off-road equipment would have to share the bridge crossing over the San Luis Rey River with waste delivery trucks and private vehicles. This has a very significant potential to create safety issues. A fundamental operating practice in the industry is to limit the interaction between on-road and off-road vehicles to the greatest extent possible. The only way to avoid this safety impact would be to build a second bridge across the San Luis Rey River, which is costly, would also require a 404 permit, and would increase construction-related and (potentially) operations related noise impacts to LBV and SWF.

   AT have not been observed in this area, but under applicant's preferred alternative this is an area designated for habitat restoration including creation of upland AT habitat. There would be increased operations closer to the San Luis Rey River channel and increased noise impacts to LBV and SWF.

   This massive materials pile would be located very close to SR 76, and would be easily visible by motorists and residents on the north side of SR76. This would also make the area north of the river unattractive and unsuitable for development of a County trail. It would also decrease the amount of suitable arroyo toad habitat for restoration.

c. North of SR 76, in area of Alternative 2. This location would present enormous logistical difficulties. Off-road equipment cannot travel on SR 76, so this option would require constructing a bridge over SR 76. This bridge and its access road would run directly through the proposed habitat restoration area, increasing noise impacts to LBV and AT. Then to avoid the safety issue noted above, it might be necessary to construct a second bridge across the San Luis Rey River.

This massive materials pile would be located very close to SR 76, and would be easily visible by motorists and residents on the north side of SR76.

This stockpile would be a significant source of fugitive PM_{10} and $PM_{2.5}$ close to the property boundary, and would add to the already considerable difficulty of meeting AQ requirements for Alternative 1

d. Gregory Canyon. This location is close in proximity to the landfill footprint, and would limit interaction between on-road vehicles and off-road heavy equipment. Passage over the aqueduct pipelines would be required, but this is also a feature of applicant's proposed project. A stability berm would need to be constructed at the lower end of the stockpile.

The stockpile would be approximately one-half the size of the landfill footprint in Gregory Canyon under applicant's preferred alternative. Dredge and fill of water of the U.S. would take place, and a 404 permit would still be required. There would also be filling of additional water designated as waters of the state by RWQCB. This stockpile would have the same visibility impacts as applicant's preferred alternative, and would also touch the western flank of Gregory Mountain.

Based on the above analysis, while Option d. is best, none of the four stockpile locations is considered practical or feasible.

5. More construction (excavation and blasting) and operation activities would occur closer to the property line, which would make it problematic to demonstrate compliance with standards for criteria air pollutants. Air quality impacts from applicant's preferred alternative are so highly controlled that substantial incremental improvement is not realistic. Prevailing wind directions are from the west, northwest and east, and contaminants would need to travel only a short distance before reaching the property boundary, limiting the opportunity for attenuation (particularly with respect to PM_{10} and $PM_{2.5}$). One of the few potential options to reduce air emissions would be to reduce the allowable volume of grading from the currently permitted 10,000 cy per day, which would further exacerbate the logistical issues noted in paragraph 3 above.

6. Storm water management facilities, including a sedimentation basin, would be required within Gregory Canyon. A 404 permit would still be required. The Sedimentation would touch the western flank of Gregory Mountain. The sedimentation basin in this area could also create visual impacts.

7. A landfill access road bridge across the San Luis Rey River would still be required. A 404 permit would still be required.

Logistical issues arise because the access road would connect to SR 76 at a different location. In order to meet the sight line requirements of Proposition C, SR 76 would have to be realigned to the south on the stretch east of the new access location, through a larger portion of the presently proposed habitat restoration area than is required for the realignment under applicant's preferred alternative. This would make fewer acres available for restoration. Realigned

SR 76 would also be closer to the existing riparian habitat in the SLR than with the SR 76 realignment under applicant's preferred alternative, resulting in greater traffic noise impacts to LBV, SWF and arroyo toad.

8. The relocated facilities area at the north side of the disposal footprint would reduce the number of acres available for on-site habitat restoration.

9. The alternative landfill would be much more visible because it would remove a blocking hillside south of the San Luis Rey River. It would likely be visible to residents along Couser Canyon Road/Rice Road. It would remain visible to residents to the north of SR 76 and motorists using SR76.

10. Alternative 1 landfill facilities would be much more visible from the top of Gregory Mountain than applicant's preferred alternative.

11. The relocation of the disposal area and ancillary facilities closer to the San Luis Rey River corridor, with increased noise and visibility, would make the County trail along the north side of the San Luis Rey River substantially less attractive.

12. Construction (excavation and blasting) and operation would be in much closer proximity to receptors, primarily to the south of the landfill property. It is likely that there would be a significant noise impact from project operations, which is not the case with applicant's preferred alternative. It is also possible that health risk modeling would exceed applicable standards, given the closer proximity of these receptors. Air quality impacts from applicant's preferred alternative are so highly controlled that substantial incremental improvement is not realistic, except for the potential to reduce daily excavation quantities, which exacerbates other logistical issues.

13. Construction and operation is located much closer to existing agricultural areas, increasing impacts.

14. The Alternative 1 facilities are located closer to potentially incompatible land uses, since the property immediately to the west of the landfill property is the most potentially developable area for residential uses.

FACTORS THAT MAKE ALTERNATIVE 2 IMPRACTICAL OR INFEASIBLE

1. This alternative would provide only a small fraction of the capacity provided by applicant's preferred alternative, and excavation of 4.8 mcy of materials would be required for 6.4 mcy of gross airspace. This would provide only 2.2 years of capacity at permitted levels under applicant's preferred alternative. This falls substantially short of meeting the primary project purpose of providing long-term disposal capacity.

   The maximum foundation grades that practically allow for suitable stability and placement of a liner system are approximately 2:1. This puts a practical limit on the depth of excavation in this area. Also, a deeper excavation would likely contact the groundwater table, and would require extensive groundwater dewatering with pumps, and separation from waste. Storm water and leachate would have to be pumped from the disposal area, rather than flowing by gravity. In addition to the above concerns, each cy of deeper excavation would yield less than a cy of useable airspace. See discussion of issues arising where the excavation volume is similar to disposal capacity in Alternative 1, paragraph 2.

2. Eastward or westward expansion of the excavation area is infeasible due to the proximity of the aqueduct to the east and the property line to the west. Expansion to the west could only be undertaken through the acquisition of additional property, which is not currently available.

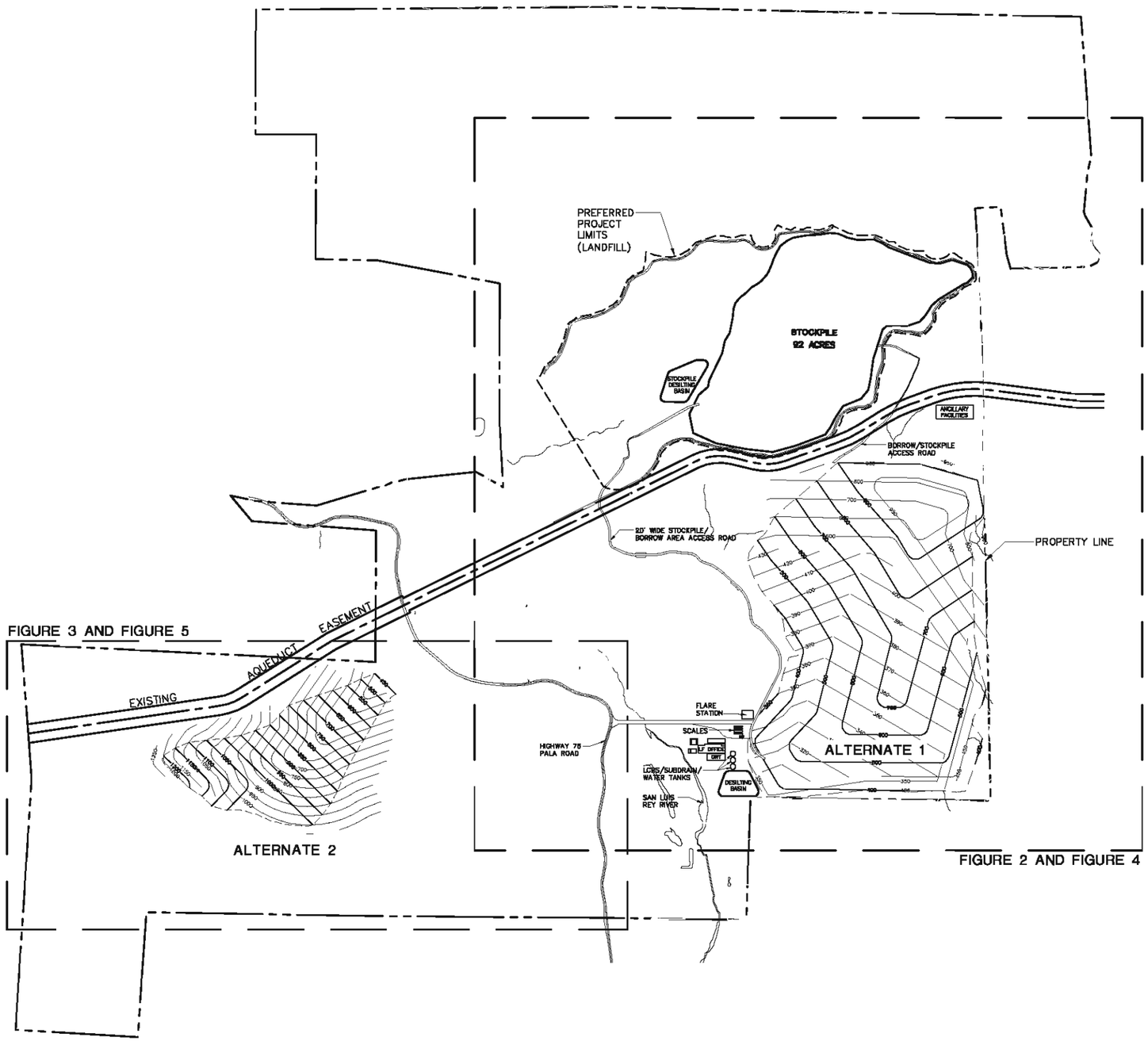
3. Expansion of the excavation area to the north is infeasible due to unfavorable topographic features (drainage and two high points), and the northerly property boundary.

4. There is not adequate room for a stockpile on the north side of SR 76. One of the stockpile locations discussed in Alternative 1, paragraphs 4.a, 4.b or 4.d above would need to be utilized. Options 4.a and 4.d would require a bridge over both SR 76 and the San Luis Rey River. Construction of multi-million dollar bridges over SR 76 and/or the San Luis Rey River to accommodate earthmoving equipment is impractical and economically infeasible. The bridge would only serve one purpose – transporting earthmoving equipment during excavation and cover placement. The substantial distance between the disposal footprint and these stockpile areas would be costly and inefficient. It would create noise impacts on threatened and endangered species. Other logistical issues raised from the use of these options are discussed in Alternative 1, paragraphs 4.a and 4.d above. The stockpile option described in alternative 1, paragraph 4.b above would be closer to the disposal footprint, but would still require a bridge over SR 76. Other logistical issues related to this option, including visibility to motorists of SR 76 and residents, impact of suitable arroyo toad habitat, and loss of AT restoration area, are discussed in Alternative 1, paragraph 4.b above.

5. Alternative 2 landfill and ancillary facilities would be much more visible to those traversing SR 76 because of its close proximity to the highway. Landfill facilities would be visible from the top of Gregory Mountain to a much greater extent than applicant's preferred alternative.

6. For customer access to the landfill, at grade improvements to SR 76 would be

required to allow for adequate turning movements and on-site vehicle queuing. The intersection would be signalized. This would in turn require the realignment of 76 to achieve a long left turn pocket for inbound trucks and mandated sightlines. The realignment and widening would reduce areas available for habitat restoration, and would increase noise impacts to AT, LBV and SWF. Should Caltrans deny this approach, it would then be necessary to construct a bridge over SR 76, which is economically infeasible because of the significant cost to construct an over crossing, especially considering the very limited disposal capacity provided by Alternative 2.



N

GRAPHIC SCALE

600 300 0 600 1200

(IN FEET)

LEGEND

- PROPERTY LINE
- EXISTING GROUND CONTOUR
- 500 PROPOSED EXCAVATION CONTOUR
- 900 PROPOSED FILL INDEX CONTOUR
- 950 PROPOSED FILL INTERIOR CONTOUR
- TOP/TOE OF SLOPE
- ACCESS/HAUL ROAD
- FLOWLINE

FIGURE 1

NO.	REVISION DESCRIPTION	BY:

BAS
BRYAN A. STIRRAT & ASSOCIATES
CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS
1360 VALLEY VISTA DRIVE
DIAMOND BAR, CALIFORNIA 91765
(909) 860-7777

GREGORY CANYON LANDFILL

PROJECT ALTERNATIVES
SITE AND INDEX SHEET

DESIGNED BY : B.A.S./G.E.S.	SCALE : AS SHOWN	
DRAWN BY : D.C.R./A.N.P.	DATE : 5-2011	FILE NO.: 04-00131XS
CHECKED BY :	DATE :	SHEET 1 OF 5
APPROVED BY :	DATE :	

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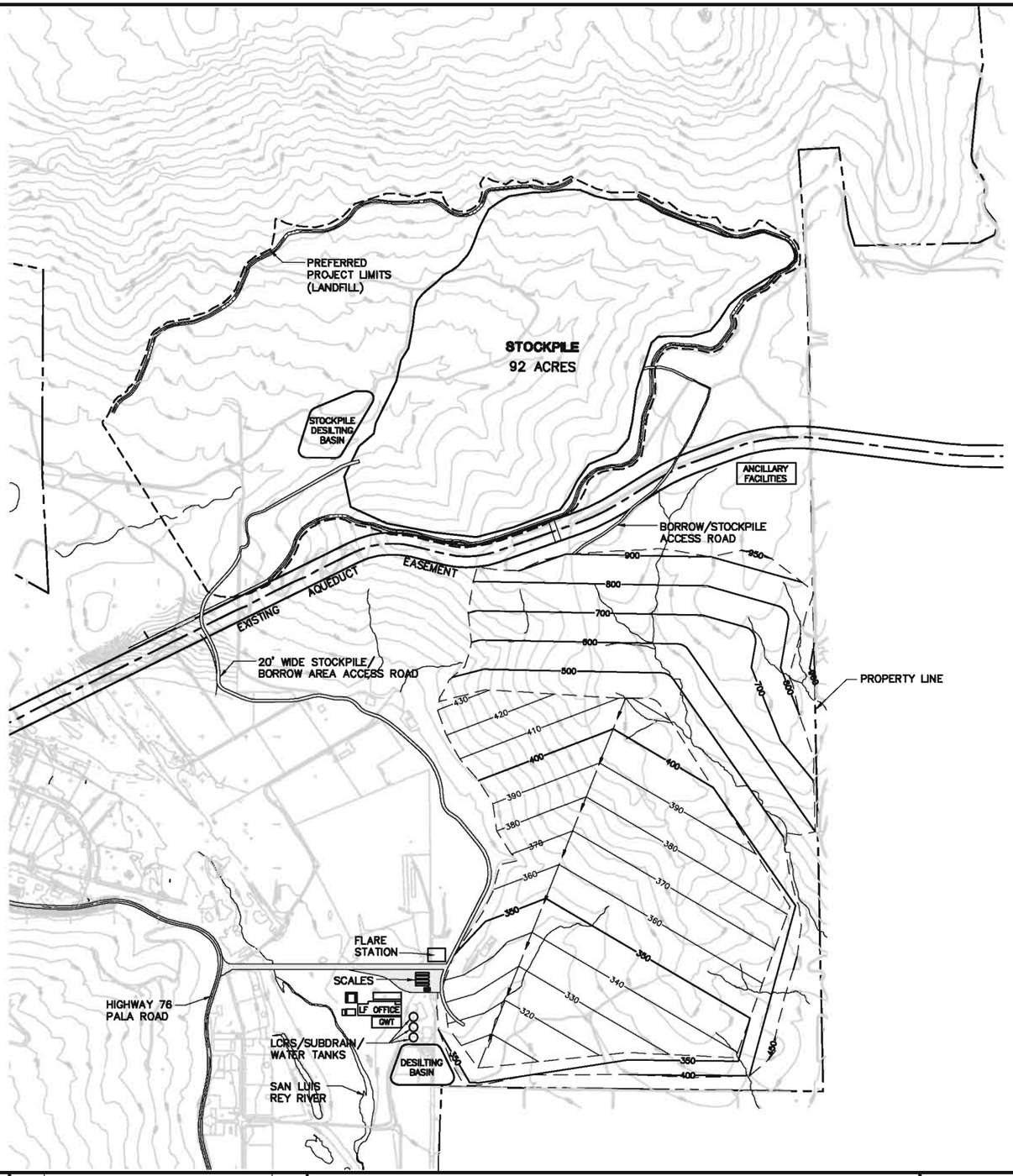

N

GRAPHIC SCALE

400 200 0 400 800

(IN FEET)

LEGEND

- PROPERTY LINE
- 430 EXISTING GROUND CONTOUR
- 600 PROPOSED EXCAVATION INDEX CONTOUR
- 410 PROPOSED EXCAVATION INTERIOR CONTOUR
- TOP/TOE OF SLOPE
- ACCESS/HAUL ROAD
- FLOWLINE

FIGURE 2

NO.	REVISION DESCRIPTION	BY:

BAS

BRYAN A. STIRRAT & ASSOCIATES
CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS
1360 VALLEY VISTA DRIVE
DIAMOND BAR, CALIFORNIA 91765
(909) 860-7777

GREGORY CANYON LANDFILL

PROJECT ALTERNATIVES

BASE GRADING PLAN - ALTERNATE 1

DESIGNED BY : B.A.S./G.E.S.	SCALE : AS SHOWN	
DRAWN BY : D.C.R./A.N.P.	DATE : 5-2011	FILE NO.: 11-0015GRX
CHECKED BY :	DATE :	SHEET 2 OF 5
APPROVED BY :	DATE :	

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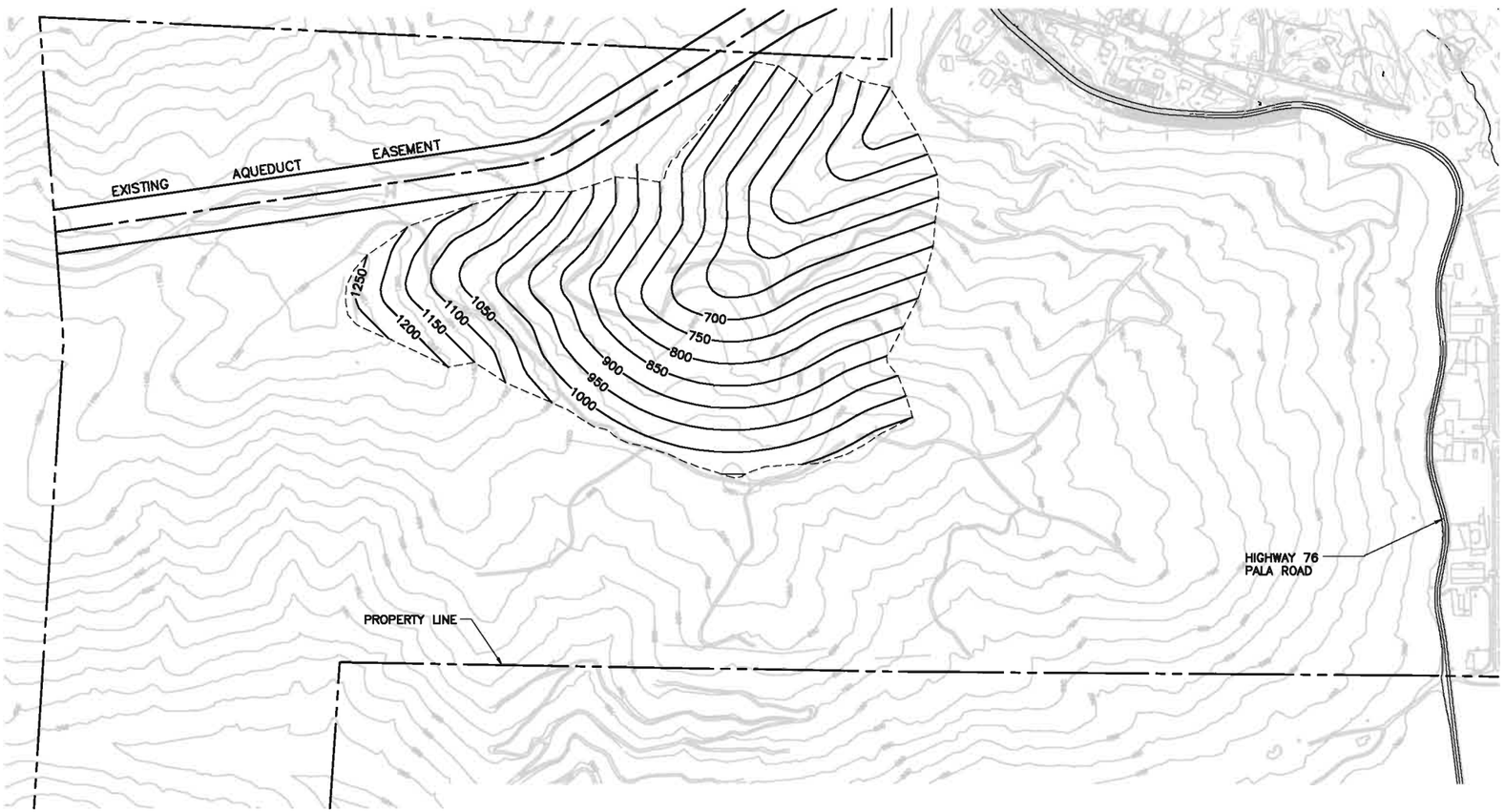

N

GRAPHIC SCALE

300 150 0 300 600

(IN FEET)

LEGEND

- PROPERTY LINE
- 602 EXISTING GROUND CONTOUR
- 600 PROPOSED EXCAVATION CONTOUR
- TOP/TOE OF SLOPE
- ACCESS/HAUL ROAD
- 2% RATE OF SLOPE

FIGURE 3

NO.	REVISION DESCRIPTION	BY:

BAS
BRYAN A. STIRRAT & ASSOCIATES
CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS
1360 VALLEY VISTA DRIVE
DIAMOND BAR, CALIFORNIA 91765
(909) 860-7777

GREGORY CANYON LANDFILL

PROJECT ALTERNATIVES

BASE GRADING PLAN - ALTERNATE 2

DESIGNED BY : B.A.S./G.E.S.	SCALE : AS SHOWN	
DRAWN BY : D.C.R./A.N.P.	DATE : 5-2011	FILE NO.: 11-0018GRX
CHECKED BY :	DATE :	SHEET 3 OF 5
APPROVED BY :	DATE :	

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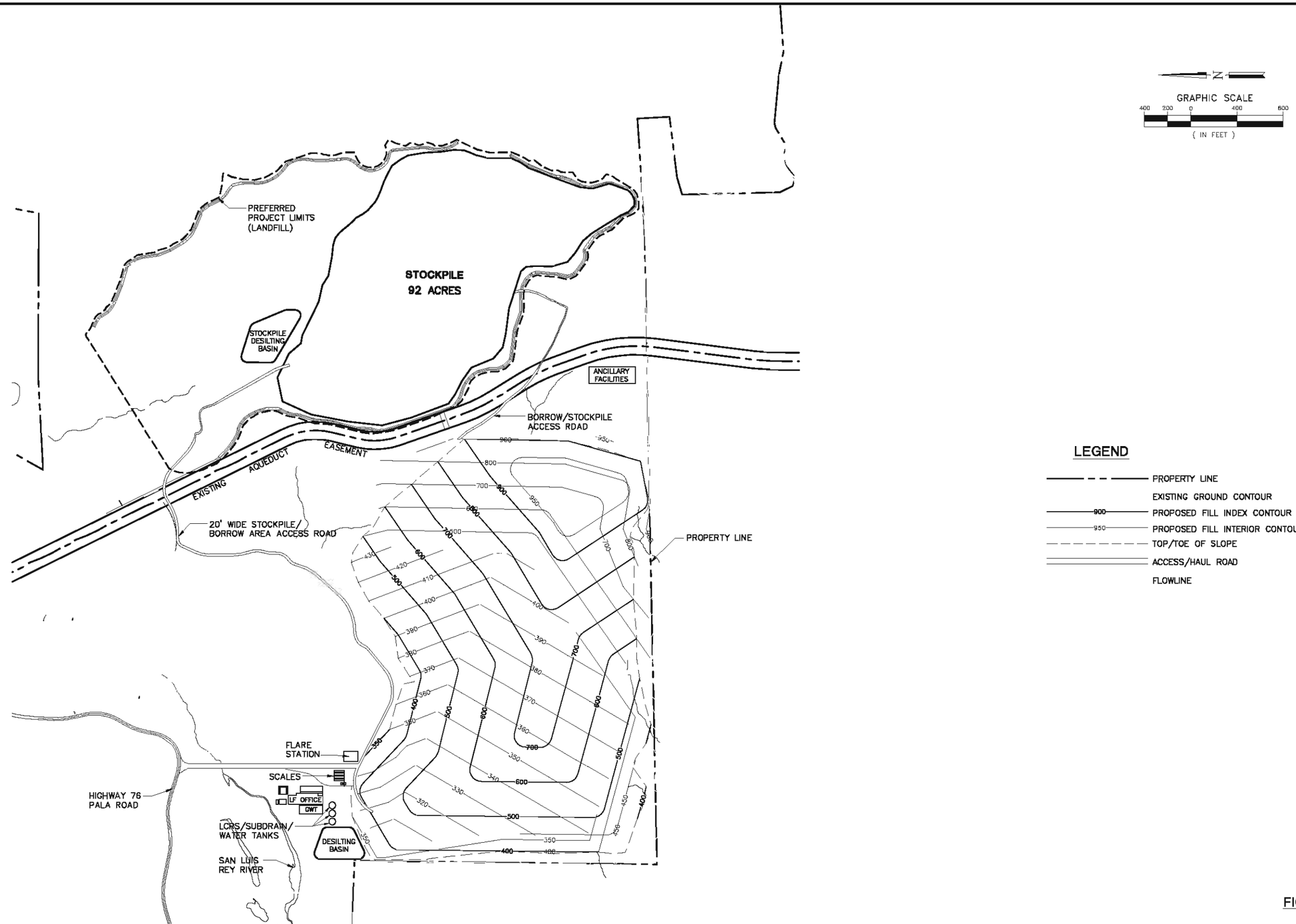

FIGURE 4

NO.	REVISION DESCRIPTION	BY:

BAS
BRYAN A. STIRRAT & ASSOCIATES
CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS
1360 VALLEY VISTA DRIVE
DIAMOND BAR, CALIFORNIA 91765
(909) 860-7777

GREGORY CANYON LANDFILL
PROJECT ALTERNATIVES
FINAL GRADING PLAN - ALTERNATE 1

DESIGNED BY : B.A.S./G.E.S.	SCALE : AS SHOWN	
DRAWN BY : D.C.R./A.N.P.	DATE : 5-2011	FILE NO.: 12-0032GRF
CHECKED BY :	DATE :	SHEET 4 OF 5
APPROVED BY :	DATE :	

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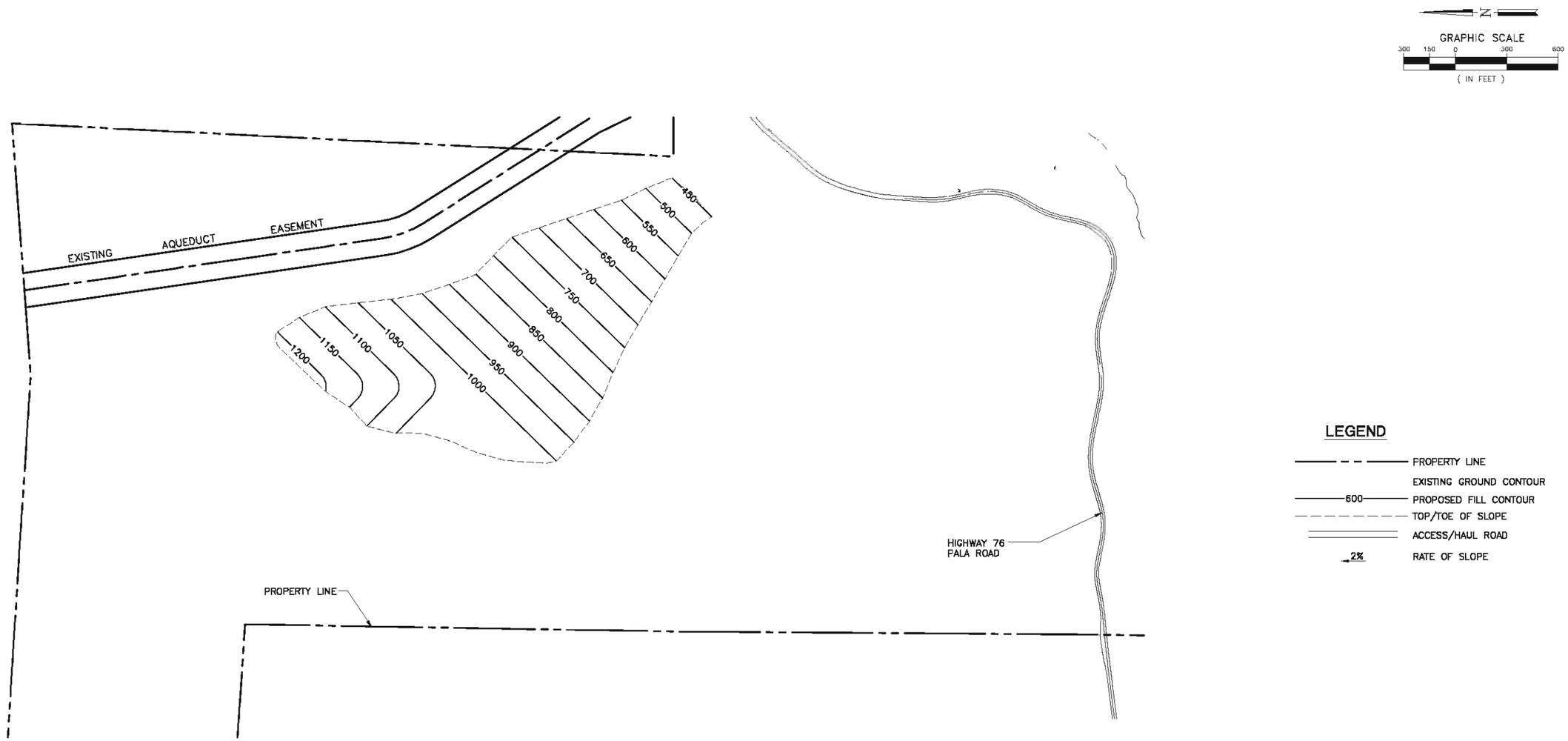

FIGURE 5

NO.	REVISION DESCRIPTION	BY:

BAS
BRYAN A. STIRRAT & ASSOCIATES
CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS
1360 VALLEY VISTA DRIVE
DIAMOND BAR, CALIFORNIA 91765
(909) 860-7777

GREGORY CANYON LANDFILL

PROJECT ALTERNATIVES

FINAL GRADING PLAN - ALTERNATE 2

DESIGNED BY : B.A.S./G.E.S.	SCALE : AS SHOWN	
DRAWN BY : D.C.R./A.N.P.	DATE : 5-2011	FILE NO.: 12-0035GRF
CHECKED BY :	DATE :	
APPROVED BY :	DATE :	SHEET 5 OF 5

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Gregory Canyon Landfill
Off-Site Alternatives Selection

INTRODUCTION AND REGULATORY CONTEXT

The EIS for the Gregory Canyon Landfill project will include an analysis of off-site alternatives as part of the Corps' overall effort to rigorously explore and objectively evaluate all reasonable alternatives in compliance with Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) and practicable alternatives in compliance with the USEPA's Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] Part 230). As there are various Federal, State, and local regulations that apply to the siting of landfills, siting criteria employed pursuant to these regulations have been reviewed and considered in identifying reasonable and practicable off-site alternatives for evaluation in the EIS. At the Federal level, the CFR, Part 258, also referred to as Subtitle D, addresses municipal solid waste facilities. CFR Part 258, Location Restrictions, provides criteria for the location of municipal solid waste facilities. The criteria address proximity to airports, floodplains, wetlands, fault areas, seismic impact zones, and unstable areas.

The California Integrated Waste Management Act of 1989 (IWMA), as amended, established an integrated system of solid waste management in the state. The IWMA requires that each County prepare an Integrated Waste Management Plan and a Siting Element. The purpose of a Siting Element is to assist local governments and private industry in planning for integrated waste management and the siting of solid waste disposal facilities. A Siting Element must demonstrate that 15 years of countywide or regional solid waste disposal capacity can be achieved based upon the requirements of state solid waste law as provided in Public Resources Code Section 41701.

California Code of Regulations (CCR), Title 14, Division 7, Chapter 9, Article 6.5, Section 18756 requires that county and regional agencies describe the criteria to be used in the siting process for a new solid waste disposal facility, or to expand an existing solid waste disposal facility. CCR Section 18756 indicates that the criteria shall include, but not be limited to, a description of the major categories of Environmental Considerations, Environmental Impacts, Socioeconomic Considerations, Legal Considerations, and additional criteria as developed by the county, cities, regional agency and member agencies.

The siting of new landfills is typically complex and can often be controversial. The most appropriate location for a new landfill must satisfy a mix of engineering, environmental, socioeconomic and legal considerations. Given the multiple factors that need to be considered in siting a landfill, as well as the political and controversial nature of many landfill projects, there is rarely a perfect site for a landfill. Therefore, the objective is to select a site that provides the best balance of tradeoffs among various desirable site characteristics. The legislative requirement to provide siting criteria clearly recognizes the complexity of identifying a location for a new landfill. In compliance with state legislation and to accomplish the task of siting a landfill, screening and weighting analyses are commonly used to evaluate and rank selected sites. Use of a standard set of siting criteria can add predictability to the siting process for all participants by providing uniformity in the planning and evaluation of potential sites.

Generally, the process described in Siting Elements for finding a location for a new landfill is two-tiered. The first tier is a broad screening phase, which generally relies on readily available data that are focused at a broad, regional scale. The entire county or portion of a county being considered is typically evaluated and the first tier criteria are normally pass/fail and do not include numeric ranking. Criteria used in the first tier are often criteria from CFR 40, Part 258, and include proximity to a Halocene fault, location of 100-year floodplain, and proximity to airports. If a site fails any given first tier criterion, the site is excluded from further consideration. These criteria do not determine relative acceptability of an area, but whether a site is suitable for further evaluation.

The second tier of the process used in Siting Elements for identifying a new landfill location involves a more detailed analysis and comparison of the candidate sites that remain after the initial first tier pass/fail screening analysis has been completed. Criteria used in the second tier include more site specific issues such as depth to groundwater, and the existence of biological or cultural resources on the site. In addition, the criteria typically address the technical feasibility of locating a landfill on a candidate site, such as the potential capacity of a landfill and the access routes. In addition, the second tier generally includes a more detailed numeric and often weighted evaluation in order to allow for a comparison or ranking of the candidate sites.

COUNTY OF SAN DIEGO LANDFILL SITING STUDIES

The County of San Diego has a long history of trying to identify potential landfill sites in various locations throughout the County. Reference is made in the County's Regional Solid Waste Management Plan (Revised 1986) to two separate studies that were being conducted under contract to the County to locate landfill sites in the County. The Regional Solid Waste Management Plan refers to one study focused in the southeastern portion of the County conducted by the United States Geological Survey, and another study focused in the northwestern portion of the County conducted by Lawrence/Trumbull Associates.[1] Various studies in North County and Southwest County were also conducted in the late 1980s and 1990s prior to the County's privatization of the solid waste disposal system in 1997. The approach taken by the County for siting landfills in the late 1980s/early 1990s was regional in nature. The various studies are discussed below.

North County Siting Studies

The County of San Diego contracted for the preparation of three siting studies between 1986 and 1992 to locate one or more facilities in North County. In addition, a Draft EIR/EIS was prepared in 1990, which analyzed three potential locations as well as combinations of the three locations. The studies prepared for the County to site a new landfill in North County are discussed below.

[1] *While these studies are mentioned in the County's Regional Solid Waste Management Plan (Revised 1986) a copy of these studies has not been found in the County's files. Conference notes from October 30, 1985 at the startup of the North County Landfill Site Search indicate that "Greg Lines and Charlie Kaehler described their Landfill Site Search Project in S.E. County, and the methodology used." The attendees list indicates that Greg Lines and Charlie Kaehler were with USGS, WRD. The conference notes indicate that: "Initially 31 potential sites were identified from the USGS maps. The number was reduced to 13 by onsite inspection, with consideration of proximity to existing development, access and other factors." Therefore, it appears that the study for a site in southeast County proceeded although the documentation has not been located.*

Landfill Siting Study Northern San Diego County, Edarra, Inc. The study was conducted by Edarra, Inc.[2] involved a two-phase landfill siting process, which is described above. The objective in Phase I was to identify six potential sites that would be further analyzed in Phase II, including a detailed analysis of the technical characteristics of each site and its acceptability to the host community and the general public. Edarra's approach in Phase I was a departure from the conventional approach used to site landfills, which is to identify the technically best site without involvement of the public. Rather, in Phase I of the siting study, after consultation with County staff, Edarra created a North County Landfill Siting Task Force to provide formal input into the process. Edarra staff contacted chairpersons from each of the planning groups and sponsor groups in North County as well as leaders in local chambers of commerce, the refuse hauling industry and the environmental community. The Task Force consisted of 23 members with representatives from local government, the solid waste industry, the environmental community, and businesses.[3] The Task Force generated a set of non-technical criteria for siting a new landfill. A criterion established by the Task Force (Criteria #2) is that a minimum of two sites are required for North County. The Task Force expressed concern that the siting of a new landfill (i.e., capacity/size) should not be based solely on waste generated. Given that a large geographic area (North County) is to be served by the facility, the Task Force established a criterion of identifying two sites so that "…no single community would bear all the traffic impacts, nuisance problems, property devaluation or other perceived community impacts." The non-technical criteria were weighted with technical criteria and economic/planning parameters established by the County of San Diego.

The study area encompassed approximately 903 square miles (approximately 21 miles wide and 43 miles long). The study area was bounded by the ocean on the west, SR 79 on the east, Riverside County to the north, and north of SR 78 and included Carlsbad, San Marcos, Escondido, Oceanside, Vista, Bonsall, Fallbrook, Pala, Pauma, Palomar, Mesa Grande, and Warner Springs. Preliminary geotechnical factors relating to site suitability were considered and included:

a) minimum area to be 200 acres
b) topography suitable for a landfill site
c) useable groundwater areas should be avoided
d) major drainages and areas subject to flooding should be avoided
e) soil and geologic characteristics should restrict off-site migration of leachate and methane gas
f) active fault zones should be avoided.

Eighteen potential sites were identified by the project engineer and were presented to the Task Force. An analysis of the 18 sites was conducted. Based on the analysis, including Task Force evaluation, Edarra recommended further evaluation of 6 potential landfill sites in the following order of preference:

[2] *Landfill Siting Study Northern San Diego County Phase I, Edarra, Inc., May 1986. Attendees listed in conference notes show Terry Trumbull was with Edarra, Inc. while there is a letter to Lawrence/Trumbull Associates in Los Angeles, CA in the document. It is not clear but based on the timing it appears that this is the study referred to in the County's 1986 Regional Solid Waste Management Report.*

[3] *Cities represented included Carlsbad, San Marcos, Vista, Oceanside, and Escondido; other communities represented included Valley Center, Rancho Santa Fe, Rainbow, Warner Springs, Fallbrook, Pauma Valley, and Palomar Planning Organization. Sierra Club, San Diego Ecology, and Escondido Ecology were also represented as well as haulers/solid waste industry. One representative's affiliation was listed as "Leucadia (General public and recycling interests)".*

- Site 9 Unincorporated County (Merriam Mountain)
- Site 8 Unincorporated County (Twin Oaks)
- Site 6 Vista (Drag Strip)
- Site 3 Oceanside (Vandegrift Boulevard)
- Site 16 or 17 Unincorporated County and National Forest (Dameron Valley)
- Site 4 City of Oceanside

The recommendations to the County corresponded to those proposed by the Task Force. Since the Task Force did not reach consensus on six sites, Edarra recommended those sites that received three or more votes from Task Force members for inclusion. The County reviewed the recommendations and substituted Site 18 for Site 4. Thus, the County selected the following six sites for more intensive review in Phase II:

- Site 3 Oceanside (Vandegrift Boulevard)
- Site 6 Vista (Drag Strip)
- Site 8 Unincorporated County (Twin Oaks)
- Site 9 Unincorporated County (Merriam Mountain)
- Site 16 Unincorporated County (Dameron Valley)
- Site 18 Unincorporated County (Blue Canyon)

In the Phase II analysis, the geotechnical consultant reviewed more detailed information and conducted site inspections. Simultaneously, an extensive evaluation for special plants and animals was undertaken. In addition, transportation costs and site data were provided to the Task Force. As a result of Phase II, sites selected for further consideration by the Task Force were in order of preference:

- Site 9 Unincorporated County (Merriam Mountain)
- Site 8 Unincorporated County (Twin Oaks)
- Site 6 Vista (Drag Strip)

Site 3 (Oceanside – Vandegrift Boulevard) did not receive enough support from the Task Force for further consideration. The primary objections to the site from the Task Force related to traffic. The candidate site is located on Vandegrift Boulevard, which is a major thoroughfare to Camp Pendleton. The only other alternate access is via a route that passes a high density residential development. The major routes to Vandergrift are already overloaded. Most of the routes are two lane roads. In addition, the City of Oceanside submitted a memorandum objecting to the site. Reasons cited in the memorandum include traffic, land use, and potential pollution of Pilgrim Creek riparian corridor. The estimated landfill capacity in the study for this candidate site was 9 million cubic yards.

While Site 16 (Unincorporated County - Dameron Valley) received three votes from the Task Force, it was not the first preference of any member. Members that ranked the site indicated that it should be considered only under a joint planning/cost venture with Riverside County. In addition, there was concern regarding

traffic impacts to communities along Highway 79. The estimated landfill capacity in the study for this candidate site was 25 million cubic yards.

Because of the conclusions of the geotechnical review Site 18 (Unincorporated County – Blue Canyon) was not considered further by the Task Force. The study indicates that the northwest trending Aguanga Fault passes through the site. In addition, the site was least preferred because of its distance from population centers.[4]

Section VII of the Edarra Phase II report, which provides the Citizens' Committee Recommendations, indicates that the Task Force specifically requested that the project staff characterize their conclusions as follows:

1. Do not disband the Task Force; the County should expand the site search boundaries and bring more sites to them for consideration.
2. Reconsider some of the sites originally rejected because of distance or access.
3. The approach taken for siting a landfill was different than in the past and should be continued.

Expanded North County Landfill Study, SCS Engineers. Following the Edarra study, the County hired SCS Engineers in 1987 to extend the efforts undertaken by Edarra and to expand the study area. The study area for this effort encompassed approximately 1,150 square miles and covered most of the northwest quarter of the County. The study area was 247 square miles larger than the area considered in the previous study prepared by Edarra, Inc. The study area for this study extended south and east of the area considered in the previous effort (Edarra, Inc. study). The western boundary of the study area was formed by the easterly boundary of the Coastal Zone. Orange and Riverside Counties formed the northern boundary of the study area. The study area extended just east of Ranchita and extended south to State Highway 78/City of San Diego northern limits. The study objective was to identify and evaluate potential sites for a new Class III landfill to accommodate solid waste generated by citizens and businesses in the study area. The study also considered locations for transfer stations.

With regard to landfill sites, the study initially identified 168 sites from a review of maps. As with other studies, the candidate sites were screened using pass/fail criteria that addressed technical and environmental requirements which were serious enough that their impact on a site could preclude the site from being permitted. In addition, if a candidate site had inadequate capacity, which for this study was considered to be a minimum of 30 million cubic yards, the site was dropped. A total of 36 candidate sites were identified from the initial list after application of the pass/fail criteria. Nineteen sites identified in the previous Edarra, Inc. siting study were also reviewed, bringing the total to 55 sites.

[4] *Criterion 8 from the Phase I Siting Study indicates that the "Site should be centrally located to major population centers." The discussion in the Siting Study regarding the criteria indicates that "This criteria incorporates concerns about both economics and illegal dumping. The Task Force wanted this stated as a separate criteria, even though several other criteria address these issues. Moreover, the Task Force members felt strongly that locating a site in an isolated region would certainly eliminate all the problems of site neighbors and community reaction, but would not effectively solve any of the garbage handling or disposal problems of the region." The study did not suggest specific distances from the population centers that would be appropriate. However, the Siting Study indicates that "Site #18 was 5.6 times as expensive as the cheapest site (Site #6).*

The 55 sites that remained after the first screening were subject to further analysis. Thirty three of the sites were eliminated based on several factors, including development on the site, recent seismic activity, geology and proximity to surface water, design difficulties, access, small landfill volume, and aesthetics, as well as several sites' location within the proposed Pamo Dam reservoir area[5], located on reservations, or located within Camp Pendleton. As a result, 22 sites were left for further evaluation.

The next step in the process was to apply a quantitative ranking process following review of additional data and fly-over inspections to the 22 remaining sites. A series of evaluation criteria were applied and the sites were ranked. The total values were compared and the following six sites, in order of ranking, were identified for further evaluation:

- Site R[6] Blue Canyon
- Site 5 Trujillo Creek Canyon
- Site 2 Rainbow Creek Canyon
- Site 24 Fink Road
- Site 14 Boden Canyon West
- Site 15 Boden Canyon East

The study acknowledged that although the six finalist sites appeared to be the best, others among the 22 candidate sites may also be acceptable locations for a new landfill. More detailed analysis of the six finalist sites is included in the study. The analyses included technical issues, such as geology and hydrogeology of a candidate site. The study included a conceptual design to assess access, location and size of the landfill footprint, and location of the scales. Technical factors considered in the site evaluations included soil availability for cover, soil permeability, access, and cost for operation of a landfill given the distance from the population centers. An environmental analysis was also conducted for each of the six finalist sites. The environmental analysis included air quality, traffic, noise, biological resources, archaeological resources, and socioeconomic factors. In addition, field reconnaissance involved an assessment of paleontological resources. Table 1 provides a summary of the analysis contained in the study for each of the six candidate sites.

The study concludes that all six sites "…have the characteristics necessary to be excellent landfill sites." The text of the study indicates that Table 1 of the study provides the final ranking and lists Sites 14 (Boden Canyon West), 15 (Boden Canyon East), and 24 (Fink Road) among the higher ranking sites. The conclusion indicates that "…the U.S. Forest Service has stated that these sites are integral parts of their system. They will not, therefore, support a land exchange for any of these sites. Since this is the case, it is not considered likely that Federal permission to acquire these sites will be granted." While not stated, that would leave Sites R (Blue Canyon), 5 (Trujillo Creek Canyon,) and 2 (Rainbow Creek Canyon).

The study recommended that the County proceed with environmental and geological data gathering, permitting procedures, and land acquisition inquiries for at least three of the six finalists sites. This

[5] *Although a permit was issued for the development of the Pamo Dam, the dam was never developed as a result of potential environmental impacts.*

[6] *Site R is from the 1986 Edarra Study. In the Edarra Study it was Site 18.*

Table 1

Summary of Findings for Six Finalist Candidate Sites in the Expanded North County Landfill Study (SCS Engineers, 1988)

	Site R – Blue Canyon	Site 5 – Trujillo Canyon	Site 2 – Rainbow Canyon	Site 24 – Fink Road	Site 14 – Boden Canyon West	Site 15 – Boden Canyon East
Geology	Regional fault underlies one part of canyon, but not under area proposed for landfill; Not known to have been active in Holocene time	Site cut by at least 3 branches of Elsinore Fault; Parts of Elsinore Fault active in Quaternary although no Holocene surface rupture known in immediate vicinity; traces of several separate faults are obvious from geomorphic features	No major faults cut site; site reconnaissance noted geomorphic features that indicate northwest/southeast trending fault of local extent across central part of Rainbow Canyon	Major faults cut site; 2 branches of Agua Tibia North fault cross site; parts of Agua Tibia active in Quaternary but no Holocene movement known in immediate vicinity	Temescal Fault approx. 2 miles east of site; site reconnaissance noted geomorphic features indicating a north-northwest trending fault of local extent may lie near axis of canyon; no Holocene fault movement known in immediate vicinity	No major faults traverse the site; Temescal fault is located approx. 1 mile east of site
Surface and Ground water	Blue Canyon appears to be self-contained hydrologic unit with no surface inlets and 1 outlet; only lower reaches of canyon expected to have extractable shallow ground water even during wet season	Ponded water observed near upper reaches of canyon; no stream seen in central part of canyon but likely that relatively shallow ground water occurs locally	Located in tributary to Rainbow canyon, which contains a flowing stream; however, tributary canyon is dry during most of year	Center of canyon occupied by dry creek	Center of canyon has dry creek; Boden Canyon appears to be self-contained hydrologic unit with no surface inlets and one outlet	Canyon appears to be self-contained hydrologic unit; no creek was found during site reconnaissance in winter months
Land Use	Closest development is Puerta La Cruz Conservation Camp on Highway 79; Sunshine Summit about 1.5 miles north of site; residences across Canada Aguanga from the site; Land ownership is part Federal	Agua Tibia Wilderness area approx. ¼ mile from area proposed for landfilling; orchards in close proximity; homes on northern perimeter of site and along access road	Some residences in vicinity; residences along access road; agricultural uses around site; trailer park located 1 mile east of site	Entirely with Cleveland National Forest; no residences nearby	Few residences in area; Pamo Valley with farmland and residences is about 2 miles east; San Pasqual is about 5 miles to southwest; eastern half of site is located in Cleveland National Forest	Pamo Valley is nearest agricultural and residential area and is about 1 mile east; San Pasqual is about 5 miles to southwest; site is within Cleveland National Forest

Table 1 (Continued)

Summary of Findings for Six Finalist Candidate Sites in the Expanded North County Landfill Study (SCS Engineers, 1988)

	Site R – Blue Canyon	Site 5 – Trujillo Canyon	Site 2 – Rainbow Canyon	Site 24 – Fink Road	Site 14 – Boden Canyon West	Site 15 – Boden Canyon East
	(Cleveland National Forest) and part other public domain					
Access/Traffic	Highway 79; 1 mile of new access road needed	Possible access along Magee Road would require improvement to 3 – 7 miles of road	Not determined; if along I-15 access would require 3 miles of new road	Access from Highway 79; site access not determined; one option along Fink Road with 3 miles of new road; other option via Lake Henshaw truck route requiring 6 miles of new road	Access from Highway 78; site access not determined; from south would require 4 miles of road and if from Lake Wohlford Road would require 1 mile of new road and improvement of 6 miles of road	Access from Highway 78; site access not determined; from south would require 3 miles of new road; if from Lake Wohlford Road 3 miles of new road and 7 miles improved road
Sensitive Plant or animal species	None known; coast live oak woodland at center of canyon; mixed chaparral on canyon slopes and ridge tops	A number of sensitive plant and animal species known to exist, incl. Tetracoccus dioicus, Milkwort, and Nolina "parryi"; Golden eagle, Cooper's Hawk, Red Shouldered Hawk, Mountain Lion Ringtail	Several coast live oaks in canyon area in south part of site; Tetracoccus dioicus and Arctostaphylos peninsularis on east facing slope above rainbow Creek and could be on south-facing slopes; no sensitive animals observed; Least bell's vireo could exist south of site ; Black-tailed gnatcatchers could inhabit scrubland on site	Mixed chaparral on steep slopes of canyon and ridges; coast live oak woodland in canyon bottom; sensitive plant and animal species not expected on site	Dense stands of California Live Oaks and Sycamores in canyon bottom; open grassland; inland sage scrub habitat on slopes of canyon	Inland sage scrub on slopes of canyon; Coast live oak in canyon; foraging area of Golden Eagle

Table 1 (Continued)

Summary of Findings for Six Finalist Candidate Sites in the Expanded North County Landfill Study (SCS Engineers, 1988)

	Site R – Blue Canyon	Site 5 – Trujillo Canyon	Site 2 – Rainbow Canyon	Site 24 – Fink Road	Site 14 – Boden Canyon West	Site 15 – Boden Canyon East
Archaeological Sites	None known; moderate potential for archaeological site within canyon	None known; low to moderate potential for archaeological site within canyon	None known; low to moderate potential for archaeological site within canyon	Previously recorded archaeological site known in canyon; moderate potential for site to be fairly significant in terms of resources	None known; low potential for archaeological site within canyon	None known; low potential for archaeological site within canyon
Cover soil on site	Moderate amount	Probably adequate cover soil	Moderate amount	Soils on site would provide some of needed cover	Some soil on site	Some soil on site
Cost to operate	Relatively costly due to distance from population centers	Relatively inexpensive due to relative proximity to population centers in North County	Less costly compared to other sites due to proximity to North County population centers	High cost due to distance from population centers	Moderately costly due to distance from population centers	Higher than other sites that are closer to population centers
Aesthetics	Potentially visible from some residences	May be visible from some homes	No information provided	No information provided	No information provided	Landfill would not be visible to residences
Other	187 million cubic yards; 45 year life	119 million cubic yards; 36 year life	56 million cubic yards; 25 year life	111 million cubic yards; 35 year life	121 million cubic yards; 36 year life	75 million cubic yards; 29 year life

Source: PCR Services Corporation, 2011

approach was recommended in light of a limited amount of time in which to make the new landfill operational and to provide the County greater flexibility in eventual landfill siting. The study provided the following recommendations for additional work to be undertaken for each site:

- Detailed analysis of landfill design including production of current topographic map of site, delineation of property lines, design of access roads, and definition of final grades and slopes of filled area to serve as input for site environmental assessments.
- Subsurface exploration to evaluate specifics of site geology, depth and quality of ground water, and permeability of bedrock.
- In-depth assessment of seismicity at each site.
- Preparation of Environmental Assessments, including a survey for sensitive plant and animal species; detailed records search and site reconnaissance to determine archaeological resources, and noise, air quality, and traffic analyses.
- Initiation of permitting procedures.

Preliminary Design Report for North County Landfill Study, Metcalf & Eddy, Inc. Following the SCS Engineers Siting Study completed in 1988, the County contracted with Metcalf & Eddy, Inc. to prepare preliminary designs for the sites selected by the County. The purpose of the preliminary design was to further evaluate the sites from both a technical feasibility and an environmental standpoint. The Preliminary Design Report prepared for the County by Metcalf & Eddy, Inc. (January 1990) indicates that "The proposed landfill sites will accommodate municipal solid wastes generated in the northern San Diego County." The Preliminary Design Report starts with the six sites that were recommended in the SCS study and indicates that one site, Gregory Canyon, was added to the list in response to a private offer for sale of a canyon to the County. After further review, the County reduced the recommended sites to the following three finalists:

- Blue Canyon
- Aspen Road
- Gregory Canyon

The study provides preliminary landfill designs for each site and evaluates the sites. The preliminary designs were done to generally determine the feasibility of landfill construction and operation, to compare the cost of the development of the sites, and to provide sufficient site layout data for further evaluation of environmental impacts. The study provides preliminary design, costs, and 3-D views for each site. These are the three sites that were then evaluated in the Draft EIR/EIS, which is discussed below.

Draft EIR/EIS, The Butler/Roach Group, Inc. In 1990 the Butler/Roach Group, Inc. prepared a Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/EIS) for three landfills in North County. The Draft EIR/EIS indicates that "The County of San Diego proposed to construct and operate a lined Class III sanitary landfill at each of three sites: Aspen Road, Blue Canyon and Gregory Canyon." Because the Blue Canyon site is partially located on public land administered by the Bureau of Land Management (BLM) and on land administered by the U.S. Forest Service in the Cleveland National Forest, a joint EIR/EIS was required. The Draft EIR/EIS contains a detailed analysis of the three sites. However, the EIR was never certified. Nevertheless, the analysis led to a decision by the County Board of Supervisors to abandon the

Blue Canyon site and add two other potential sites, Merriam Mountain and Gopher Canyon. The Gopher Canyon site was later eliminated from the County's search. Based on research undertaken to date it is not clear why the EIR/EIS process was not completed.

The North County Landfill Supplemental Siting Study, The Butler/Roach Group, Inc. In 1992, the County resumed efforts to locate a solid waste facility in North County. The Butler/Roach Group, with technical input from Metcalf & Eddy, Inc., and Geotechnical Consultants, Inc., prepared The North County Landfill Supplemental Siting Study (Siting Study). The 1992 Siting Study analyzed 16 sites, some of which were in the previous siting studies prepared by Edarra and SCS. The introduction to the Siting Study states that:

> *"The search for additional, closer landfill sites is not meant to identify replacement alternatives for the Aspen Road or Gregory Canyon sites, for which the Board of Supervisors authorized further design and related studies, but to identify additional sites that may ultimately be considered together with the Aspen Road and Gregory Canyon sites. Furthermore, this Supplemental Siting Study does not reevaluate the Aspen Road or Gregory Canyon sites."*[7]

The process used in the Siting Study involved a two-tier process, similar to that described above. The first tier applied pass/fail criteria using an opportunities/constraints approach. The County formed a Technical Advisory Committee (TAC) for the process. The TAC was comprised of representatives from various agencies, including the Regional Water Quality Control Board, California Integrated Waste Management Board, Air Pollution Control District, Solid Waste Industry Committee, County Water Authority, County Planning and Land Use Department, and County Health Department. A first step of the TAC was to reevaluate and refine the Siting Study Criteria used in the previous site selection processes in the Edarra and SCS studies. The TAC met several times to consider the criteria to be used. The meetings were open to the public.

The TAC evaluated and refined the pass/fail criteria to be used in the first tier or screening level of the study. The Siting Study used the following eight pass/fail criteria that were established by the TAC for the Siting Study:

- Pass/Fail Criterion 1: Proximity to airports
- Pass/Fail Criterion 2: Floodplains
- Pass/Fail Criterion 3: Active faults
- Pass/Fail Criterion 4: Incompatible Land Use
- Pass/Fail Criterion 5: Threatened or endangered species8
- Pass/Fail Criterion 6: Historic and archaeological preservation
- Pass/Fail Criterion 7: Aquifers
- Pass/Fail Criterion 8: Distance from a major aqueduct (surface water projects)

[7] *Page I-1, North County Landfill Supplemental Siting Study, Butler Roach Group, January 1992.*

[8] *This criterion is the known occurrence of rare, threatened, or endangered species on the site, and where the project could cause a substantial loss of habitat for the rare, threatened, or endangered species which is not easily mitigated.*

All eight criteria were used in the first tier screen, but six of the criteria were applied at the study area level while two of the criteria were applied at the site level. Starting at the study area level, a fatal flaw analysis was conducted within the study area using pass/fail criterion 1, 2, 3, 4, 7, and 8. Thus, the areas of six of the eight pass/fail criteria were mapped within the study area, which showed areas in which a landfill should not be located. An area either passes the set of six criteria or fails to meet one or more of the criteria and is excluded from further consideration. Criterion 5 and Criterion 6 (Threatened or endangered species and Historic and archaeological preservation, respectively) were subsequently applied on a site-by-site basis rather than to the study area as a whole.

The Siting Study eliminated eight of the 16 sites based on the fatal flaw conditions. An additional site (Site 16 Harmony Grove Road) was eliminated based on visual inspection made by helicopter that identified more than 20 homes on the property (Pass/Fail Criterion 4) as well as knowledge of a planned water storage reservoir upstream of a site.[9] None of the sites eliminated was based on site-specific application of criterion 5 or 6. The seven sites remaining at this stage of the study were:

- Site 3 - Vandegrift Boulevard
- Site 6 - South Fork Gopher Canyon
- Site 7 – Gopher Canyon Road
- Site 8 – Twin Oaks
- Site 9 – Merriam Mountain South
- Site 12 – Burnt Mountain West
- Site 15 – Del Dios Highway

The next step in the process was for Metcalf & Eddy engineers to conduct a search for additional feasible landfill sites within the study area using USGS 7.5 Minute Topographical Quadrangle Maps. The focus was limited to those areas not deleted as fatal flaw areas as a result of application of the pass/fail criteria. The search was to identify canyons that appeared to possess relatively adequate capacity and reasonable accessibility. Metcalf and Eddy's search began with the larger canyons and progressed to smaller canyons. Metcalf & Eddy identified 10 additional potential sites within the study area. The pass/fail criteria were applied to the 10 additional potential sites identified by Metcalf & Eddy. One site (Burnt Mountain North) was eliminated based on pass/fail criterion 4, since more than 20 homes were located within the site. The following nine sites remained:

- Site A – Loma Alta
- Site B – East of Mountain Meadow Road
- Site C – East of Mt. Whitney
- Site D – West of Mt. Whitney
- Site E – South of Lake Hodges

[9] *The Supplemental Siting Study indicates that "The County Water Authority (CWA) has a planned water storage reservoir (Mt. Israel Reservoir) located immediately upstream of the site." The Yuima Water Authority website indicates that while the Yuima Water Authority does not own any storage facilities it has storage agreements with other jurisdictions and has recently implemented an Emergency Storage Project which includes a reservoir at Mt. Israel in Olivenhain's district.*

- Site F – North of San Elijo Canyon
- Site G – East Escondido
- Site H- East of Edgehill Road
- Site I – Burnt Mountain South

These nine sites, which passed the pass/fail criteria, were evaluated along with the seven other sites listed above in the second tier of the evaluation process.

Thus, 16 sites were considered in the second tier of the evaluation process. The second tier involved a more comprehensive site evaluation with more specific criteria. Twenty evaluation criteria were used in the site-specific evaluation. The evaluation criteria used were as follows:

Evaluation Criteria	Subject
1	Natural Protection
2	Groundwater Quality
3	Depth to Groundwater
4	Evidence of Faulting
5	Beneficial Surface Water Uses
6	Site Runoff Sources
7	Precipitation
8	Floodplains (Flood volumes)
9	Rare, Threatened or Endangered Species
10	Land Habitat
11	Cultural Resources
12	Visibility
13	Adjacent Land Use
14	Buffer Area
15	Current Site Use
16	Access Routes
17	Proximity to Aqueducts
18	Site Soils
19	Site Capacity
20	Road Construction

An analysis of the 16 sites was conducted using each of the evaluation criteria. A weighted scale was used, with emphasis on the protection of water resources. Based on the analysis, the four highest ranked sites were:

- Merriam Mountain South
- Loma Alta
- Gopher Canyon Road
- South of Lake Hodges

Southwest San Diego Siting Studies

In addition to the above described County efforts undertaken to locate a solid waste facility in North County, the County had a simultaneous effort underway to locate a facility or facilities in Southwest San Diego County. The need for a landfill to serve the southwestern portion of San Diego County was identified in the Regional Solid Waste Management Plan (San Diego County, 1986). Two siting studies for southwestern San Diego County were completed in the early 1990s and are discussed below.

Southwest San Diego County Solid Waste Facility Siting Study, Dames & Moore. In late 1987, the County issued a Request for Proposal for consultants to undertake studies to identify potential landfill sites within the southwestern portion of the County. As a result, in 1990 Dames & Moore prepared the Southwest San Diego County Solid Waste Facility Siting Study. The County and City of San Diego cooperated in funding and managing the study "…to identify potential landfill and other solid waste facility sites in southwestern San Diego County to replace existing landfills expected to close in the late 1990s."[10] Facility types needed in the area included Class III landfills, inert debris landfills, and transfer stations.

The study area encompassed 1,650 square miles in southwestern San Diego County. The study area included the southwestern portion of the County with the coast as the western boundary and extending to the east just east of SR 79 and I-8, the County's International Border with Mexico as the southern boundary, and a straight line north of Escondido drawn from the coast to just east of SR 79 creating the northern boundary. The study was conducted in three phases. The study process was characterized by a series of steps during which areas of increasing suitability were successively identified and evaluated.

Similar to the North County siting studies, the site evaluation criteria were defined with the assistance of a 15-member Citizen Advisory Committee, composed of interested citizens appointed by the Board of Supervisors and the San Diego City County, and a Technical Advisory Committee, composed of staff from landfill regulatory agencies. Agencies represented on the Technical Advisory Committee included the California Waste Management Board; the Regional Water Quality Control Board; the Air Pollution Control District; the County Health Department; and the County Planning Department. In addition, the Committee included representatives from the Solid Waste Industry Committee; the Public Works Advisory Board; and the Department of Public Works, Environmental Section. A total of 10 community meetings were held throughout the study area during the process.

[10] *Figure I-1 in the study shows the existing landfills and collection bin sites in the County. The landfills shown are West Miramar, Sycamore, and Otay landfills in south county and San Marcos and Ramona landfills in north county.*

As was done in other siting studies, the process was to identify suitable areas using available data and criteria. The criteria included land use considerations, such as the presence of existing urban lands; parks, recreation and preservation areas; airports and their associated bird hazard zones. Other criteria addressed potential physical constraints, such as 100-year flood plains, known geologic faults, and proximity to drinking water reservoirs. As a result, 56 siting areas were identified comprising approximately 550 square miles (out of the 1,650-square-mile area) and recommended for further investigation.

The first site screening used engineering, hydrologic and land use data to focus on specific sites. A total of 143 potential candidate landfill sites were identified. The second site screening considered site access, more specifically the proximity to existing or planned four-lane highways, to screen the 143 sites to a more manageable number. Of the 143 sites under consideration, 101 met the criterion for highway proximity. Some of the sites were combined with adjacent sites, resulting in 43 sites or site clusters for further review. Six other sites, although not meeting the highway proximity criterion, had advantageous characteristics that suggested their retention for further study. Thus, 49 sites were moved to the third site-screening level.

The third site screening evaluated the 49 sites using the following 14 criteria:

- governmental jurisdiction
- agency concerns
- site capacity
- existing land use
- proximity of residential areas to possible access roads
- proximity of the site to the urban area
- proximity of the site to areas of projected growth
- general plans on/near the site
- site visibility from major highways
- geologic constraints
- hydrologic constraints
- biological resources
- cultural resources (archaeology, etc.)
- access road mileage needed

As a result of the third site screening, 13 landfill sites and four inert sites were recommended for further study in Phase 2.

The process used in Phase 2 to evaluate and compare the candidate landfill sites involved active participation of citizen representatives, Technical Advisory Committee members, public officials, and interested citizens. The criteria used were developed based on criteria from North County study, previous Dames & Moore experience in similar projects, and input from Citizen Task Force and Technical Committee.

The 20 evaluation criteria were divided into 11 categories and were used to evaluate the 13 sites.[11] The evaluation conducted in Phase 2 resulted in the recommendation of six sites for further study:

- A-1b Oak Canyon;
- D-1 East Otay Mesa;
- AC-1w Long Valley;
- AG-1 Marron Valley;
- AD-17 Unnamed Canyon west of Dulzura; and
- C-1 Campo

The results and recommendations from Phase 2 were presented to the County Board of Supervisors in August 1989. Board members noted that four of the six sites were located substantial distances from the urban area and directed staff to identify additional sites nearer to the source. Based on the Board's direction, Phase 3 was defined by staff as the western half of the original study area. Within the revised study area, 78 potential sites previously identified by Dames & Moore were reexamined and five potential sites remained after the initial screening, including:

- Site C-4 Upper Sycamore Canyon;
- Site E-1b Wolf Canyon;
- Site E-8 North Otay Valley;
- Site G-1b Del Mar Mesa; and
- Site L-3 County (adjacent to Poway park land)

Site L-3 was eliminated in the third screening because it was determined to be the least suitable. Site L-3 is located close to and would be visible from several hundred acres of low-density residential use, as well as from Iron Mountain, a peak that had recently been added to Poway's park system. The site also is anticipated to have shallow or perched groundwater and is located less than two miles upstream from San Vicente reservoir. The site is moderately steep and has limited on-site soil for daily operation. In addition, Site L-3 was the farthest of the five sites from the urban area. Thus, four sites were further evaluated. As all four sites were determined to be suitable, the report recommended that the additional four sites be added to the six sites that had been identified previously.

The City and County selected five sites for conceptual engineering and preliminary environmental evaluation. The five sites include two sites within the City of San Diego: Upper Sycamore Canyon and Oak Canyon; and three sites within San Diego County: Wolf Canyon, North Otay Valley, and East Otay Mesa.

Site Feasibility Assessment: Southwest San Diego County Landfills Project, Ogden Environmental and Energy Services. The conceptual engineering and environmental analyses were conducted by Ogden

[11] *The candidate site identified in Phase 1 on Capitan Grande Indian Reservation (Site V-1) was eliminated as the tribal leaders did not support including the site. The Campo Band of Mission Indians proposed a landfill and resource recovery facility on their reservation and a study was underway. The County Board of Supervisors and the San Diego City Council approved the Campo Band of Mission Indians' request to include the Campo site in the subject study. Thus, the total number of candidate sites remained at 13.*

Environmental and Energy Services and documented in the Site Feasibility Assessment: Southwest San Diego County Landfills Project dated February 1993. The analysis includes conceptual engineering for each site (10 percent) as well as a preliminary environmental evaluation of the five sites. The analysis addressed land use, biological resources, cultural resources, traffic/circulation, geology/soils, surface water and ground water, and paleontology. An evaluation matrix was prepared to provide the City and County with a summary comparison of the five landfill sites.

LANDFILL SITES FOR CONSIDERATION AS EIS ALTERNATIVES

The screening of alternatives to identify a reasonable range of feasible alternatives for detailed study in the EIS starts with the statement of purpose and need associated with the proposed project. In support of this Environmental Impact Statement (EIS), a Needs Assessment was prepared for the Corps by R3 Consulting Group, Inc.[12] to provide an independent review to address if a new landfill is warranted in the general vicinity of the proposed landfill. The findings of the Needs Assessment indicate that based on San Diego County's current remaining disposal capacity and the agreements affecting other counties' ability to accept out-of-county waste, additional landfill capacity is needed for San Diego County to meet its disposal capacity needs. This finding in the Needs Assessment regarding San Diego County's need for additional landfill capacity is consistent with the findings in the County's 2005 Siting Element and the Five-Year Review Report with respect to current permitted capacity. The basic purpose of the project is to meet a portion (approximately 30 million tons) of San Diego County's long-term waste disposal needs by providing non-hazardous solid waste disposal capacity to service waste generated in or near North County.

As previously indicated the siting of a landfill is highly technical, complex, and political. The process, even with siting criteria, is time consuming and costly. As reflected in the discussion above, the County of San Diego spent many years attempting to site new landfills in North County and Southwest County. Between all of the studies undertaken by the County, large areas of the County were considered for potential locations of new landfills. A total of 196 sites were evaluated in North County and a total of 143 sites were evaluated in Southwestern County for a total of 339 sites. Despite years of study, a new landfill has not yet been approved in the County, even though forecasts have consistently shown that additional capacity will be required to serve future demand.

Given the complexity and challenges involved in siting landfills, the objective for identifying alternatives for study in the EIS, is not to conduct a new landfill siting study for the County, but to fulfill NEPA's requirement to analyze a reasonable range of feasible alternatives that could meet the purpose and need, reduce potential significant impacts associated with the applicant's preferred alternative, and foster the Corps' ability to make a reasoned choice among alternatives. Thus, after careful consideration and review of the siting studies described above, this off-site alternatives screening analysis focuses on what appear to be the most viable sites that were identified and evaluated over the years in the technical studies completed for the County. The sites identified for initial consideration as EIS off-site alternatives draw primarily from the North County siting studies and the County's previous and current Siting Elements, in which reserved and tentatively reserved landfill sites are identified (i.e., Merriam Mountain and Aspen Road).

[12] *Needs Assessment of the Proposed Gregory Canyon Landfill in Northern San Diego County, R3 Consulting Group, Inc., April 2011.*

In addition, the County recently completed the State-required five-year update of the 2005 Siting Element (Five-Year CIWMP/RAIWMP Review Report).[13] The Five-Year Review Report and the 2005 Siting Element assume the expansion of Sycamore Canyon. In addition, in June 2010 the voters of San Diego County approved Proposition A, which amends the General Plan designation and zoning of a site in South County known as East Otay Mesa. The Five-Year Review Report adds the East Otay Mesa Landfill to the Siting Element as a reserved site.

Finally, regarding sites not previously evaluated in the County's siting studies or in previous County Siting Elements, the Liberty Quarry site, which is located in Riverside County adjacent to the San Diego County boundary, has also been identified for consideration as a potential landfill site.

Based on review of the previous siting studies, previous County Siting Elements, the County Five-Year CIWMP/RAIWMP Review Report, and moving outward from the site in an effort to find other potential off-site alternatives, the following sites have been identified for initial screening to identify alternatives for detailed evaluation in the EIS:

- Merriam Mountain
- Aspen Road
- Gopher Canyon Road
- Blue Canyon
- Loma Alta
- South of Lake Hodges
- Expansion of Sycamore Canyon
- Liberty Quarry
- East Otay Mesa

A set of criteria for use in screening the potential EIS off-site alternatives is discussed below. A summary matrix using the criteria follows the discussion of the criteria. The nine sites listed above are screened using the criteria. The information used to screen the sites is from available sources, including the County Siting Studies, EIRs prepared for proposed development on a particular site, San Diego County's EIR for the County's General Plan Update, as well as recent aerials. Background notes relating to the matrix/screening criteria as well as a graphic showing the location of each site is provided following the matrix.

DETERMINATION OF SCREENING CRITERIA FOR OFF-SITE ALTERNATIVES IN THE EIS

Since Siting Elements are required to have siting criteria, the Siting Elements for the majority of the counties within the Waste Shed as defined in the Needs Assessment prepared for the project were reviewed to understand the process and siting criteria used by these counties for new landfills or the expansion of existing facilities. The Waste Shed includes the following six counties: Los Angeles, Orange, San Bernardino, Imperial, Riverside and San Diego Counties. Siting Elements from Los Angeles, Orange, San Bernardino,

[13] *San Diego County Five-Year Review Report of the County Integrated Waste Management Plan for the County of San Diego, March 23, 2011.*

Riverside, and San Diego Counties were reviewed. While there are some criteria that are unique to a particular County, such as blow sand areas in Riverside County, there is a lot of commonality in the siting criteria used in the Siting Elements.

In addition to the counties cited above, the various siting studies conducted by the County of San Diego included siting criteria. The process undertaken in these studies to identify locations that could be acceptable for landfills was generally similar in that a broad study area analysis was used initially followed by a more site-specific process. In addition, there is commonality in the criteria that were used for comparing and ranking sites. The criteria used in the North County Landfill Supplemental Siting Study (Butler/Roach Group, 1992) are similar to the criteria contained in the 2005 San Diego County Siting Element. The criteria used in the various County Siting Elements were also considered for their relevance.

In addition to siting studies undertaken by the County since the late 1980s as well as the criteria in the Siting Elements reviewed, Corps Regulatory Program regulations (33 CFR Parts 320-332) require consideration of the public interest in rendering permit decisions. The Corps considers the following 20 public interest factors:

- Conservation
- Economics
- Aesthetics
- General environmental concerns
- Wetlands
- Historic properties
- Fish and wildlife values
- Flood hazards
- Floodplain values
- Land use
- Navigation
- Shore erosion and accretion.
- Recreation
- Water supply and conservation
- Water quality
- Energy needs
- Safety
- Food and fiber production
- Mineral needs
- Considerations of property ownership

The Corps also considers practicability and availability in evaluating alternatives and determining compliance with the USEPA's Section 404(b)(1) Guidelines. Based on the review of Federal regulations (CFR, Part 258), various County Siting Elements, various siting studies conducted by San Diego County, particularly the 1992 Siting Study, the Corps' public interest factors, and the Section 404(b)(1) Guidelines, the Corps identified 12 criteria to be used in identifying reasonable and practicable off-site alternatives for further evaluation in the EIS. These criteria encompass and are generally representative of the criteria identified in applicable regulations and used in siting elements and the County Siting Study. The criteria combined some of the previous criteria into one. For example, existing site land use and adjacent land use, which can be two separate criteria, are combined into one criterion. Also, site soils and site capacity, which can be separate technical criteria, were combined within the technical, logistics, and cost criterion.

While a decision was made not to weight the criteria, some criteria are more important than others. For example, the land use criteria is a key criteria in that the siting studies were conducted about 20 years ago and the land may have developed or the land use pattern in the vicinity of a site may have changed. If a property has been developed since the siting study it would render the site's availability for a landfill facility.

The following provides a description of the categories used as criteria for the screening/evaluation of off-site alternatives for this Draft EIS. The criteria are used to evaluate possible off-site alternatives for the EIS in the matrix provided at the end of this section.

Site Evaluation Criterion 1: Groundwater and Aquifers

The purpose of this criterion is to protect groundwater resources. Alluvial aquifers and fractured rock aquifers are particularly sensitive to degradation, making sites which include these features less desirable than sites without them.

- Natural Protection: Addresses the amount of natural protection that site geological conditions provide to groundwater. The application of this criterion involves the estimation of site substrate permeability and thickness, and potential for alternate design of the liner system. Unfractured, low permeability sedimentary material provides greater protection than a highly permeable material or highly fractured bedrock.
- Depth to Groundwater: Vertical and horizontal distance to groundwater. The deeper the groundwater, the more effective natural protection becomes; similarly, the greater the horizontal distance, the more effective natural projection becomes.
- Evidence of Faulting: The existence of fault dislocations, and their disrupting effect on bedrock geology, must be considered as factors to maintaining the integrity of groundwater; consideration of faults on or adjacent to the site.

Site Evaluation Criterion 2: Surface Water

Beneficial Surface Water: The Clean Water Act National Pollutant Discharge Elimination System (NPDES) regulations require any discharges of run-off from landfills achieve strict water quality standards.

- Site runoff sources: Sources of surface water crossing a site that could increase the potential for negative impacts on water quality. Presence of springs, perennial streams, and/or intermittent drainages is generally less desirable than sites without these aquatic features.
- Precipitation: Amount of precipitation at the site, which can penetrate landfill cover and lead to the creation of leachate. Precipitation can also erode landfill surfaces by causing run-on and run-off. Sites with low annual precipitation generally present low erosion and leachate generation potentials to landfills.

Site Evaluation Criterion 3: Floodplains

CCR Title 23 Section 2533 and 40 CFR 257.3-1, specify that Class III landfills cannot be sited within a 100-year floodplain. This criterion identifies the proximity to floodplains.

Site Evaluation Criterion 4: Water Availability

Evaluate sources of water for landfill construction and operation: Sufficient water available to meet landfill demand during construction and operational phases

Site Evaluation Criterion 5: Seismic Safety

Existence of active faults and or lineations on or adjacent to the site

Site Evaluation Criterion 6: Biological Resources

Generally, the less sensitive a site is relative to biological resources and the fewer impacts to these resources that would occur with landfill development the more suitable the site.

- Federally Threatened and Endangered Species
- Designated Critical Habitat
- Bald and Golden Eagle areas
- Migratory Birds
- Ecosystem Integrity: Identify habitats with regard to the presence of unique associations and/or species of local interest and/or economical importance that are not listed as threatened or endangered
- Officially recognized/adopted wildlife corridors

Site Evaluation Criterion 7: Cultural Resources

Preservation of national, state, and local registered historical, Native American and prehistoric sites, as well as sites known to be eligible for registration on the National Register of Historic Places. The fewer impacts to these resources, the more suitable the site.

Site Evaluation Criterion 8: Aesthetics

- Visibility of landfill from public gathering/vantage points
- Location and number of viewers; sensitivity of viewers to aesthetic impacts
- State and locally designated scenic highways

Site Evaluation Criterion 9: Land Use Compatibility

Proximity to residential or other sensitive land uses, particularly concentrated populations associated with such uses, can be a fundamental determinant of a site's suitability for a landfill. Issues to be considered include:

- Current Site Use
- Adjacent land uses: Consideration of potential noise, vibration, and odor on adjacent uses.
- Ability to provide buffer areas

Site Evaluation Criterion 10: Health and Safety

- Wildland fires

- Health Risks: proximity to sensitive uses/receptors
- Proximity to aqueducts or transmission lines

Site Evaluation Criterion 11: Technical Suitability, Logistics, and Cost

- Proximity to sources of waste generation/transfer stations
- Roadways and their adjacent land uses to access the site
- Proximity to airports
- Availability of soil for cover and liner
- Site capacity
- Costs associated with site, such as costs for transportation of solid waste and costs for site development

Site Evaluation Criterion 12: Site Availability

- Site ownership and cost to acquire
- Feasibility of site acquisition and development within a 15-year period of time[14] to help avoid forecasted shortfalls in landfill capacity needed to serve San Diego County.

SCREENING FOR OFF-SITE ALTERNATIVES IN THE EIS

The criteria above, which are contained in the matrix that follows, are being used to screen nine sites to determine if they warrant further evaluation as off-site alternatives in the Gregory Canyon Landfill EIS.

Figure 1 shows the location of the existing landfills in San Diego County as well as the nine potential off-site locations that are being considered as alternatives to the proposed Gregory Canyon Landfill. The sites were selected based on review of the County's siting studies, previous County Siting Elements, the County Five-Year CIWMP/RAIWMP Review Report, and moving outward from the site in an effort to find potential off-site alternatives. The information used to screen the sites is from available sources, including the County Siting Studies, EIRs prepared for proposed development on a site, San Diego County's EIR for the County's General Plan Update, and review of recent aerial photography. A graphic showing the location of each potential site as well as supporting information regarding the site is provided in Attachment A. Please see the supporting information in the attachment for more detail regarding the values given for the criteria in the matrix.

[14] *In 2011, San Diego County completed the required five-year update of the 2005 Siting Element (Five-Year CIWMP/RAIWMP Review Report). The analysis in the Review Report shows that with current permitted in-County landfill capacity (no landfill expansions or new landfills), the County has capacity until 2022, which is less than the required 15 years of capacity that is a Siting Element must demonstrate pursuant to California Code of Regulations Section 18755(a). The analysis provided in the Review Report shows that the County continues to rely on additional capacity from landfill expansions that have not occurred and a landfill that does not exist yet. A Needs Assessment was prepared for the Corps by R3 Consulting Group, Inc. The Needs Assessment indicates that under current conditions, and assuming current rates of diversion and no new landfills or landfill expansions, San Diego County is estimated to be out of landfill disposal capacity in 2024 (i.e., less than 15 years). However, it should be noted that with the tonnage reduction that has occurred recently and two planned, but not yet approved, major landfill expansions (at Miramar Landfill and Sycamore Canyon Landfill), the County has enough daily permitted disposal capacity for the next 18 years. .*

Existing Landfills and Potential Off-Site Alternative Locations

Gregory Canyon Landfill Project

Source: ESRI, 2009; USGS Topographic Series; PCR Services Corporation, 2011.

FIGURE

1

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Potential Off-Site Alternatives Screening Matrix

CRITERIA / SITE	Merriam Mountain	Aspen Road	Gopher Canyon Road	Blue Canyon	Loma Alta	South of Lake Hodges	Expansion of Sycamore Canyon	Liberty Quarry	East Otay Mesa
Groundwater and Aquifers									
Natural protection + Thick sequence (20 feet or greater) of uniform unfractured low permeability sedimentary material beneath the landfill - Highly permeable material (coarse-grained sediments or highly fractured bedrock beneath the landfill)	-	-	0	-	0	-	+	0	-
Depth to groundwater + Deeper than 400 feet - Less than 50 feet	0	0	0	0	**0**	-	0	-	0
Evidence of faulting + No evidence of faults, topographic lineations, or other indicators of structural weakness on or adjacent to site - Apparently inactive fault(s) identified on or adjacent to site	+	+	0	-	**-**	0	0	0	0
Surface Water									
Site runoff sources + Only runoff results from direct precipitation on the site - Perennial drainage channel crosses the site	+	-	0	-	0	0	+	+	+
Precipitation + Less than 12 inches - More than 15 inches	NA	0	0	+	+ 1	0	0	0	0

"+"=Positive "-"=Negative "O"=Neutral

Potential Off-Site Alternatives Screening Matrix (Continued)

CRITERIA / SITE	Merriam Mountain	Aspen Road	Gopher Canyon Road	Blue Canyon	Loma Alta	South of Lake Hodges	Expansion of Sycamore Canyon	Liberty Quarry	East Otay Mesa
Floodplains									
Proximity to floodplains + Located outside a 100-year floodplain or major drainage - Located within a 100-year floodplain or major drainage	+	+	+	+	+	+	+	+	+
Water Availability									
+ Municipal water supply available - Water supply uncertain	**+**	+	0	**-**	**+**	**+**	**0**	**-**	0
Seismic Safety									
+ More than 200 feet from a known active fault as identified on the Alquist-Priolo Earthquake Fault Zone Maps or other known active faults - Within 200 feet of a known active fault as identified on the Alquist-Priolo Earthquake Fault Zone Maps or other known active faults	**+**	**+**	**+**	-	**+**	**+**	**+**	**+**	**+**
Biological Resources									
Federally threatened and endangered species + No known occurrence of rare, threatened, or endangered species on the site - Occurrence of rare, threatened, or endangered listed or candidate species confirmed	-	+	+	-	0	-	-	-	-
Rare and sensitive species + Disturbed area, low diversity of plants and wildlife - Habitat for unique species of interest which are not on the rare or endangered list	-	-	+	-	+	+	-	-	-

"+"=Positive "-"=Negative "O"=Neutral

Potential Off-Site Alternatives Screening Matrix (Continued)

CRITERIA / SITE	Merriam Mountain	Aspen Road	Gopher Canyon Road	Blue Canyon	Loma Alta	South of Lake Hodges	Expansion of Sycamore Canyon	Liberty Quarry	East Otay Mesa
Wildlife corridors + Site is not located within a wildlife corridor - Site is located within a wildlife corridor	-	-	+	-	+	+	+	-+	+
Cultural Resources + No significant cultural resource identified on or adjacent to site - Identified significant cultural resources or sacred area on site	0	0	-	0	0	-	+	-	-
Aesthetics + Landfill is not visible from existing residences (within 2 miles) or public roads/streets - Landfill is visible from a designated scenic highway corridor, park or designated recreation area, or visible within 2 miles to more than 20 homes	-	-	-	-	-	-	-	-	+
Land Use Compatibility On-site use(s) + Site is vacant - Site is developed	+	+	+	+	-	-	+	+	+
Adjacent land uses/proximity of sensitive receptors + Adjacent land is vacant - Adjacent land is developed or approved for development with residential use	+	-	-	+	-	-	+	+	+
Buffer area + Site is large enough to provide buffer area (no occupied structure within 4,000 feet) - Site is limited and minimal buffer area can be provided (developed residential area within 1,000 feet)	-	-	-	+	-	-	+	+	+

"+"=Positive "-"=Negative "O"=Neutral

Potential Off-Site Alternatives Screening Matrix (Continued)

CRITERIA / SITE	Merriam Mountain	Aspen Road	Gopher Canyon Road	Blue Canyon	Loma Alta	South of Lake Hodges	Expansion of Sycamore Canyon	Liberty Quarry	East Otay Mesa
Health and Safety									
Wildland fires + Site is located outside an area subject to wildland fires - Site is located within an area subject to wildland fires	-	-	-	-	+	-	-	-	-
Health risk + Site is buffered from sensitive receptors - Site is within close proximity to sensitive receptors	0	-	-	+	-	-	+	+	+
Proximity to aqueduct or transmission lines + 2,000 feet or more away from an existing or planned aqueduct or transmission lines - 200 feet away from an existing or planned aqueduct or transmission lines	+	-	+	+	+	+	-	+	-
Technical Site Suitability									
Site access (off-site) + Access is entirely through undeveloped or industrial areas - Access is through residential development(s) on roads requiring major reconstruction to handle heavy traffic	-	-	+	0	0	-	0	+	0
Site soils + Adequate suitability, volume of soils available on site for the construction of liner, and daily, intermediate and final cover - Importation of soil required for liner and daily, intermediate and final cover	-	+	+	-	+	+	+	-	-

"+"=Positive "-"=Negative "O"=Neutral

Potential Off-Site Alternatives Screening Matrix (Continued)

CRITERIA / SITE	Merriam Mountain	Aspen Road	Gopher Canyon Road	Blue Canyon	Loma Alta	South of Lake Hodges	Expansion of Sycamore Canyon	Liberty Quarry	East Otay Mesa
Site capacity + 30+ million cubic yards - 10 million cubic yards	0	+	0	+	0	+	+	0	+
Proximity to airports + Site is located more than 10,000 feet from runways used by turbojet aircrafts or 5,000 feet from runways used by piston-type aircraft - Site is located less than 10,000 feet from runways used by turbojet aircrafts or 5,000 feet from runways used by piston-type aircraft	+	+	+	+	+	+	+	+	+
Proximity to sources of waste/ability to transport to site + Site is located within proximity to population centers or close to a transfer station - Site is located at a distance from the population centers and not close to a transfer station	+	-	+	-	+	+	+	+	-
Site Availability + Site is owned by applicant or is available for acquisition by applicant and can be acquired within a reasonable period of time - Site is not owned by applicant and is not available for acquisition	0	0	0	-	-	-	0	-	0
Recommended for Analysis in EIS	Yes	Yes	Yes	No	No	No	Yes	No	Yes

"+"=Positive "-"=Negative "O"=Neutral

SUMMARY OF SCREENING EVALUATION FOR POTENTIAL OFF-SITE ALTERNATIVES

Of the nine potential off-site alternatives, the screening evaluation has identified five sites for further analysis in the Gregory Canyon Landfill EIS. The Merriam Mountain site is recommended as it was identified as a feasible site in the SCS Siting Study (1988) and the Edarra Siting Study (1986). Merriam Mountain was also analyzed in the North County Supplemental Siting Study (1992). In addition, Merriam Mountain was a tentative site in the County's 1995 Integrated Waste Management Plan (1996). For purposes of the EIS, the screening evaluation confirmed that Merriam Mountain still appears to be a feasible site to consider for a landfill. The Merriam Mountain site contains a substantial canyon that would provide adequate capacity and would have adequate on-site soil sources for daily operation. The site has access from I-15 but a local access road would need to be constructed. The site is not located in the proximity of a known fault or within proximity to a floodplain. The site is largely vacant and is accessible from the population centers in North County.

The Aspen Road site has been considered for many years by the County of San Diego. Aspen Road was included in the Preliminary Design Report for North County Landfill Study (1990). The Aspen Road site was evaluated in the 1990 Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/EIS) prepared by the Butler/Roach Group. The Draft EIR/EIS indicates that "The County of San Diego proposed to construct and operate a lined Class III sanitary landfill at each of three sites: Aspen Road, Blue Canyon and Gregory Canyon." In addition, Aspen Road was a tentative site in the County's Integrated Waste Management Plan (1996). For purposes of the EIS, the screening evaluation confirmed that Aspen Road still appears to be a feasible site to consider for a landfill. The site would provide adequate landfill capacity and would have adequate on-site soil sources for daily operation. The site has access from I-15 and trucks would travel on streets with residential development. The site is not located in the proximity of a known fault or within proximity of a floodplain. In addition, the site is largely vacant. Finally, the site is accessible from the population centers in North County.

The Gopher Canyon Road site was evaluated in the 1992 Supplemental Siting Study. Based on the information in that study, and the current screening evaluation, the site appears to be feasible for the development of a landfill. The site would provide adequate landfill capacity and would have adequate on-site soil sources for daily operation. The site is not located in the proximity of a known earthquake fault. A difficulty identified in the study is that the site does not have a flat area adjacent to the landfill footprint for the location of the facilities area and access to the site could require a new road. While the site is vacant, there is residential development, including a golf course, to the east of the site and residential development to the west of the site. However, these land uses are not high density and are for the most part would be set back a sufficient distance from the landfill footprint. Because the site seems to be generally feasible and is within proximity of the population centers in North County, the site is recommended as an off-site alternative for further evaluation.

The proposed expansion of the Sycamore Canyon Landfill is considered in San Diego County's Siting Element. The expansion is considered to be feasible as it is an expansion of an existing facility. The proposed expansion and increase in daily intake are currently undergoing environmental review. The site is currently operated and is in private ownership. Therefore, it is recommended that the Sycamore Expansion be considered as an alternative to the proposed project for analysis in the Gregory Canyon EIS.

The County's Five-Year Review Report adds the East Otay Mesa Landfill to the Siting Element as a reserved site. Although the design process for the facility is in the early stages, based on available information the site appears to be feasible for the development of a landfill with respect to landfill capacity and the distance of the site from a known earthquake fault. The site may not have adequate cover soils, which suggests the need to import soils. Based on the available information, it is recommended that East Otay Mesa be considered to be a viable off-site alternative to the project.

Almost 20 years has passed since the County conducted the last siting study and many areas of the County have subsequently been developed. Based on the screening evaluation two of the potential sites have been subject to development that appears to have compromised their viability as landfill sites. The Loma Alta site, which is located in the City of Oceanside, has been partially developed with light industrial uses since the time that the site was considered by the County as a candidate site, and the area surrounding the site has become more urbanized, including proximate residential uses. The South of Lake Hodges site, which is located in the County, has been graded for residential development, and other residential uses are under development or are developed adjacent to and in close proximity to the site.

Blue Canyon was one of three North County landfill sites evaluated in the 1990 Draft EIR/EIS. The Draft EIR/EIS indicates that "The County of San Diego proposes to construct and operation a lined Class III sanitary landfill at each of three sites: Aspen Road, Blue Canyon and Gregory Canyon." The Draft EIR/EIS provides information regarding each of the sites. Based on the information contained in the Draft EIR/EIS, and confirmed through the screening evaluation, the site appears to be infeasible for the development of a landfill as the site is located within proximity of a known earthquake fault, which could alter the potential capacity of the landfill. In addition, the site would not have adequate soil materials on site for daily operation which would require that materials be trucked to the site or alternative cover be used. Finally, Blue Canyon is not readily accessible from the population centers in North County, and would require extensive improvements on SR-79.

With regard to the Liberty Quarry site, an application is being process by the Riverside County for a quarry at the site. In August 2011, the Riverside County Planning Commission recommended denial of the quarry. If the quarry project is not approved by the Riverside Board of Supervisors (November 2011), the site could be available pending any litigation over the decision.

Nonetheless, from a technical standpoint, Geosyntec Consulting Inc. (Geosyntec) conducted a preliminary evaluation of the feasibility of locating a landfill on the site, as the site has not been the subject of previous landfill siting studies. There are two canyons located on the Liberty Quarry site. The western canyon would provide an estimated capacity of 11 million cubic yards. In addition, the configuration of the western canyon would present operational constraints. The eastern canyon is smaller and faces I-15 and Temecula. Therefore, the site does not provide enough capacity to represent a viable alternative to the proposed Gregory Canyon Landfill without substantial excavation. It is important to note that all of the North San Diego County siting studies were focused on canyon landfill sites.

Based on the limited canyon capacity of the Liberty Quarry site, excavation of the site to provide the capacity needed for a landfill was also considered. Location of a landfill in the footprint proposed for the quarry would require substantial excavation of material. The excavation would require blasting and essentially would result in quarry activities to allow for the landfill in that location. The timing to complete removal of

the material prior to the start of landfilling would not likely meet the County's need for a new landfill as the excavation of the material would occur over many years. (The Draft EIR for Liberty Quarry indicates that quarrying would occur for 75 years.) If a portion of the material were excavated and then the area filled (i.e., a combined quarry and landfill), potential conflicts could result between the two operations. In addition, combined operations could result in a substantial increase in environmental impacts or might otherwise require operation at very low levels to reduce environmental impacts. In addition, the site would not have adequate on-site soil sources for daily operation and cover material would need to be imported to the site. On-site water is not available for construction and operation and water would need to be trucked to or piped into the site. Based on the technical infeasibility related to the capacity of the site, it is recommended that the Liberty Quarry site not be considered as an alternative for analysis in the Gregory Canyon EIS.

Potential impacts to waters of the U.S. was not used as a screening criteria in the above matrix primarily because it was not used as a screening or evaluation criteria in the County's siting studies. However, the Corps needs to consider potential impacts to waters of the U.S. in determining alternatives to evaluate relative to the Section 404(b)(10 permit. Because of the importance of the issue PCR conducted a preliminary evaluation of the potential for encountering waters of the U.S. on the sites being recommended for evaluation in the EIS. Using USGS topographic maps, PCR calculated the lengths of blue line streams on the sites being recommended. Drainages occurring within chaparral were calculated assuming an average width of two to three feet. The size of potential jurisdictional areas was based on remote sensing (visual queues); drainage areas that appear to be wider were given larger jurisdictional areas. Drainages occurring within wooded areas were calculated assuming an average width of between six and nine feet. Based on this preliminary evaluation, Merriam Mountain, Aspen Road, and Gopher Canyon had approximately give or take one acre of waters of the U.S. Thus, it appears that waters of the U.S. for the sites recommended for evaluation in the EIS are not substantially greater than the extent of waters of the U.S. located on the Gregory Canyon site.

The USACE determined that a second screening should be conducted given the Purpose and Need, which is to meet a portion (approximately 30 million tons) of San Diego County's long-term waste disposal needs by providing non-hazardous solid waste disposal capacity to service waste generated in or near North County and the geographic distribution of the off-site alternatives. R3 Consulting Group conducted a limited assessment of the potential transportation costs associated with the hauling of waste from North County jurisdictions to the potential off-site alternative locations. PCR Services Corporation conducted a screening level environmental analysis, which focused on air quality and greenhouse gas emissions resulting from the hauling of waste from North County to each of the potential off-site alternative locations. Attachment B contains the R3 Consulting Group letter report and the PCR memorandum. The USACE determined that based on the second screening the difference in cost and emissions between the sites was not substantial enough to eliminate any of the alternatives from further review. Therefore, no alternatives were eliminated as a result of the second screening. Thus, five off-site alternatives are evaluated in the EIS.

REFERENCES:

Aerial Express 2009 USGS

Draft EIR/EIS for the Proposed North County Class III Landfill, The Butler Roach Group, 1990

Final Report Expanded North County Landfill Study, SCS Engineers, 1988

Final Environmental Impact Report for the Proposed Sycamore Landfill Master Plan, BRG Consulting, Inc., September 2008

Google Earth 2010

Landfill Siting Study Northern San Diego County Phase I, Edarra, Inc, 1986

Landfill Siting Study Northern San Diego County Phase II, Edarra, Inc, 1986

Liberty Quarry Draft Environmental Impact Report No. 475, July 2009

Los Angeles County, Countywide Siting Element, 1997

Needs Assessment of the Proposed Gregory Canyon Landfill in Northern San Diego County, R3 Consulting Group, Inc., April 2011

North County Landfill Supplemental Siting Study, Butler Roach Group, 1992

Orange County, Countywide Siting Element, 1995

Preliminary Design Report for North County Landfill Study, Metcalf and Eddy, January 1990

Recirculated EIR – Merriam Mountains Specific Plan, March 2009

Riverside County, Countywide Integrated Waste Management Plan, September 1996

San Bernardino County, Countywide Siting Element, Revised May 2005

San Diego County, Countywide Siting Element, Revised September 2005

San Diego County Five-Year CIWMP/RAIWMP Review Report, 2011

San Diego County Conservation Element, General Plan Update, 2011

San Diego County, Final EIR for the General Plan Update

Site Feasibility Assessment Southwest San Diego County Landfills Project, Ogden Environmental and Energy Services, 1993

Southwest San Diego County Solid Waste Facility Siting Study, Dames & Moore, 1990

Attachment
Potential Off-Site Alternatives Screening
Supporting Information for Screening Criteria

MERRIAM MOUNTAIN

ASPEN ROAD

GOPHER CANYON

BLUE CANYON

LOMA ALTA

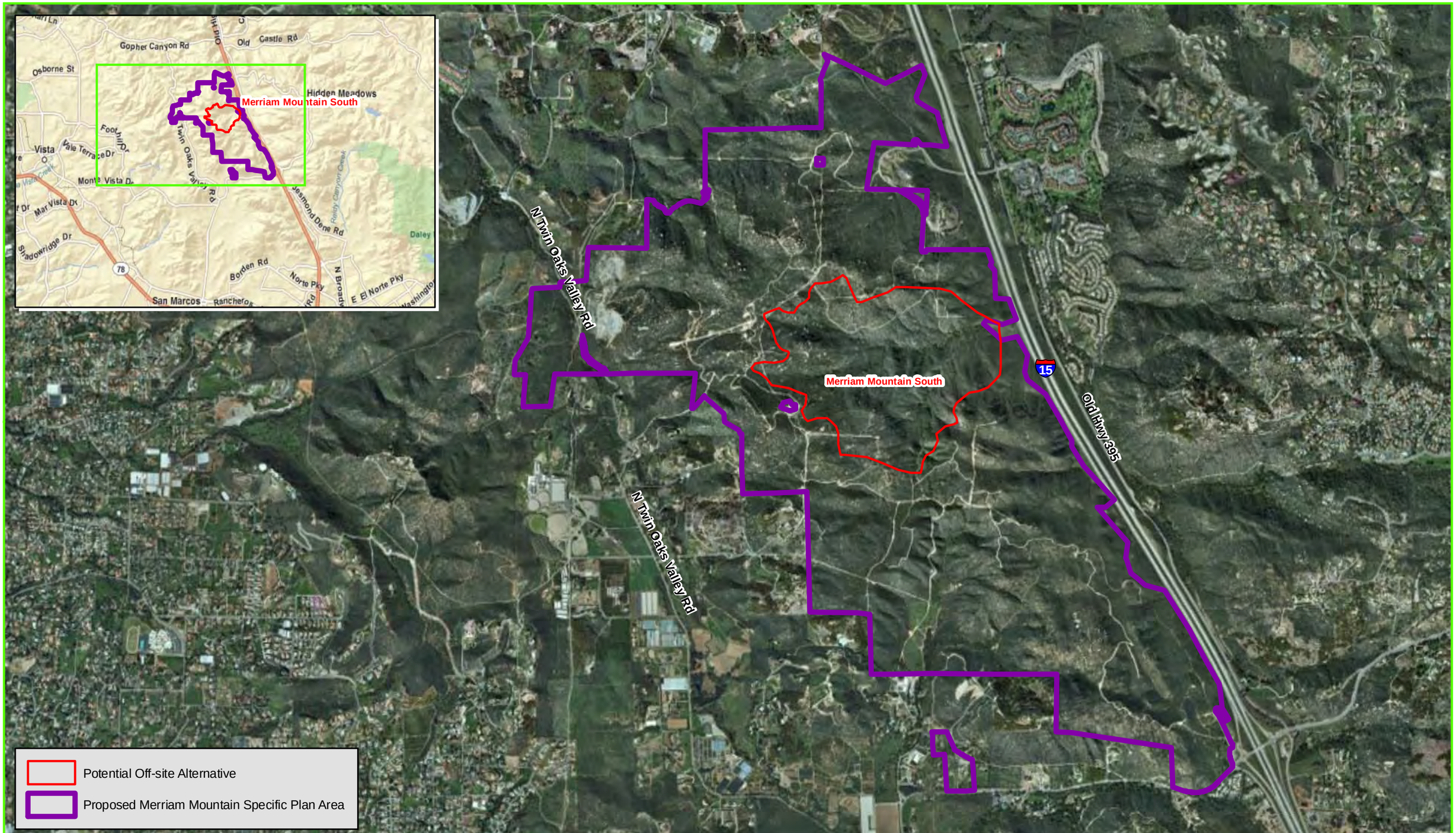
SOUTH OF LAKE HODGES

SYCAMORE EXPANSION

LIBERTY QUARRY

EAST OTAY MESA

Note: Figure 1 is in the main body of the Gregory Canyon Off-Site Alternatives Document. Figure 2 is the first figure in this Attachment



PCR

N

0 2,000 4,000 Feet

Potential Off-Site Alternative - Merriam Mountain South

Gregory Canyon Landfill Project

Source: Aerial Express, 2009; PCR Services Corporation, 2011.

FIGURE

2

Off-Site Alternative Screening
Supporting Information for Screening Criteria

MERRIAM MOUNTAIN

The Merriam Mountain site comprises a portion of an area for which a specific plan was proposed. The proposed plan was the Merriam Mountain Specific Plan. An EIR was prepared for the proposed Specific Plan. The Specific Plan was denied by the San Diego County Board of Supervisors.

NATURAL PROTECTION

Thin topsoils (0 to 2 feet thick) and alluvium (less than 3 feet thick) in the drainages

Granitic rock outcrops and boulders observed over the majority of the site and metavolcanic rocks on the west margin, including the quarry area to the northwest.

(Source: Recirculated EIR – Merriam Mountains Specific Plan (March 2009))

Conditions would support a landfill although granular soils are highly pervious and would not naturally protect groundwater.

DEPTH TO GROUNDWATER

Surface and shallow groundwater were not encountered; however, surface flow is anticipated after rainfall. An area of seepage was observed in the northern section near the abandoned airfield [not within the landfill footprint].

(Source: Recirculated EIR – Merriam Mountains Specific Plan (March 2009))

EVIDENCE OF FAULTING

No evidence of faulting

(Source: Recirculated EIR – Merriam Mountains Specific Plan (March 2009))

SURFACE WATER

East-flowing blue line stream flows through potential landfill site.

(Source: Aerial Express 2009 (USGS))

PRECIPITATION

Not known

PROXIMITY TO FLOODPLAINS

No floodplains in the proximity of the site

(Source: Recirculated EIR – Merriam Mountains Specific Plan (March 2009))

WATER AVAILABILITY

No on-site sources. The site would be served by the Vallecitos Water District (VWD), whose supplies are purchased from the San Diego County Water Authority.

(Source: Recirculated EIR – Merriam Mountains Specific Plan (March 2009))

SEISMIC SAFETY

No proximity to active faults

(Source: Recirculated EIR – Merriam Mountains Specific Plan (March 2009))

BIOLOGICAL RESOURCES

Sensitive plant and animal species occur on site.

(Source: Recirculated EIR – Merriam Mountains Specific Plan (March 2009))

The proposed landfill site which is located in the north sector of the proposed 2,327-acre Merriam Mountains Specific Plan area has the greatest potential for supporting wildlife movement to the largely undeveloped San Marcos Mountains to the west.

(Source: Recirculated EIR – Merriam Mountains Specific Plan (March 2009))

CULTURAL RESOURCES

Previously recorded cultural sites occur on the property and in the area.

(Source: Recirculated EIR – Merriam Mountains Specific Plan (March 2009))

AESTHETICS

The site would be visible from the Lawrence Welk Village residential/recreational development located to the east of I-15, approximately 1,060 feet to the east of the site. I-15 is a County of San Diego designated scenic highway in the area of Merriam Mountain in the County's Conservation Element.

(Sources: Google Earth 2010 and Conservation Element San Diego County General Plan Update (2011))

LAND USE COMPATIBILITY

Current aerial photos of the site indicate the nearest off site residences to be approximately 1,540 feet (0.29 miles) to the north, approximately 3,730 feet (0.71 miles) to the south, approximately 1,060 feet (0.20 miles) to the east, and approximately 1,850 feet (0.35 miles) to the west.

(Source: Google Earth 2010)

HEALTH AND SAFETY

Wildland fires: Designated as State Responsibility Area (SRA) "Very High" fire hazard area and as Wildland/Urban Interface area.

(Source: General Plan Update FEIR, Figure 2.7-5, County Fire Hazard Severity Zones in FRA, SRA, and LRA)

Health Risk: Site is in the proximity of off site residential uses

TECHNICAL SUITABILITY

Access: For the residential development, if alternative access from the freeway would not be available, access would require acquisition of right of way at Deer Springs Road.

(Source: Recirculated EIR – Merriam Mountains Specific Plan (March 2009))

Site Soils: The abundance of exposed boulders and lack of deep weathering in the up-canyon granitic bedrock, indicate difficult excavation conditions and small resultant volumes of generated earth materials for landfill cover within the landfill footprint. However, soils would be available in the Merriam Mountain site outside of the canyon area.

(Source: Recirculated EIR – Merriam Mountains Specific Plan (March 2009))

Site Capacity: 66.4 million-cubic-yard capacity

Airports: No airports in the area

PROXIMITY TO SOURCES

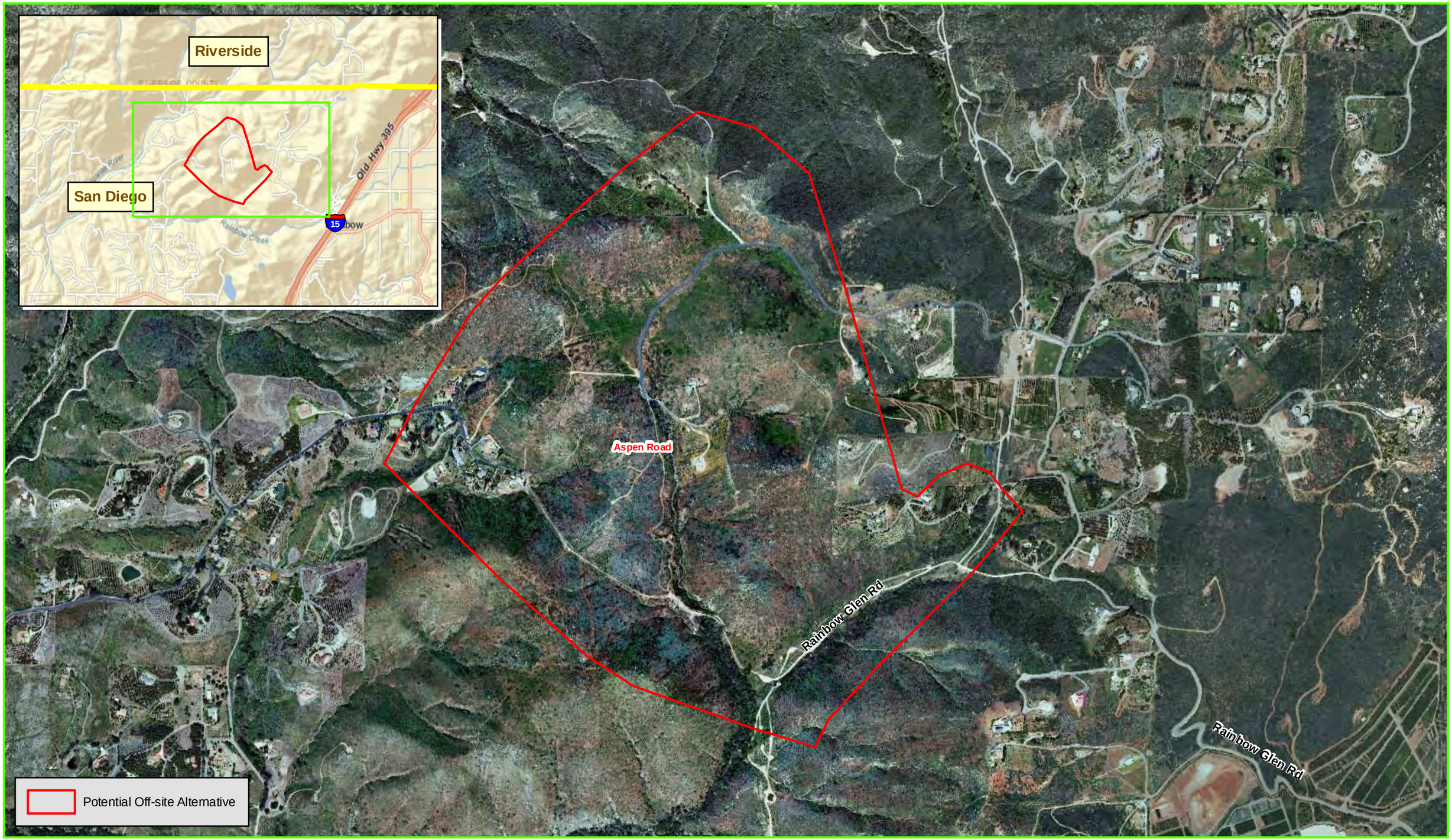
The site is located in close proximity to North County population centers.

SITE AVAILABILITY

Privately owned and may be available for purchase. The site is vacant.

SUMMARY FINDINGS AND RECOMMENDATION

According to information available in the sources cited above, the site appears to be feasible for the development of a landfill; particularly, from a technical standpoint. The site contains a substantial canyon that would provide adequate landfill capacity, would have adequate onsite soil sources for daily operation (from other portions of the site outside the canyon area), is not located in the proximity of a known earthquake fault, is largely vacant, and is accessible from the population centers in North County. However, the site is within close proximity to residential development. Detriments of the site, such as fire hazard and impacts to biotic habitat are common among much of the undeveloped land in the County and, therefore, do not particularly distinguish this site. Based on the site's technical feasibility, it is recommended that the Merriam Mountain site be considered as an alternative to the proposed project for analysis in the Gregory Canyon EIS.



PCR

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0 800 1,600 Feet

Potential Off-Site Alternative - Aspen Road

Gregory Canyon Landfill Project

Source: ESRI, 2009; Aerial Express, 2009; PCR Services Corporation, 2011.

FIGURE

3

Off-Site Alternative Screening
Supporting Information for Screening Criteria

ASPEN ROAD

Information is from the Draft EIR/EIS for the North County Class III Landfill (January 1990) unless cited otherwise.

NATURAL PROTECTION

Underlying Gabbro and soils are permeable and do not provide good natural protection. However, excavation of onsite materials would generate requisite soils for daily operations.

DEPTH TO GROUNDWATER

50-60 feet; however, perched groundwater and an active spring indicate shallow groundwater levels in some areas

EVIDENCE OF FAULTING

No known faults in the area.

SURFACE WATER

Blue line stream from active onsite spring runs to Rainbow Creek (Source: Aerial Express 2009 (USGS))

PRECIPITATION

13.2 inches annually

PROXIMITY TO FLOODPLAINS

No floodplains in the proximity of site

WATER AVAILABILITY

Municipal water is available; relocation of water lines crossing the site would be needed

SEISMIC SAFETY

No proximity to active faults

BIOLOGICAL RESOURCES

Based on the Draft EIR/EIS for the North County Class III Landfill (January 1990), development of a landfill on the site would impact 257 acres of southern mixed chaparral, 5.32 acres of southern coast live oak riparian forest, 3.45 acres of southern coast live oak woodland, 57.7 acres of Diegan coastal sage scrub, 11.7 acres of grassland/sage scrub ecotone, 21.5 acres of non-native grassland, and 58.3 acres of distorbed areas and 0.71 acres of Valley Needle grass grassland. Significant impacts to Unique and Sensitive habitat and to Threatened and Endangered species (Parry's tetracoccus and Cooper's hawk). Revegetation would reduce impacts to less than significant, except for Parry's tetracoccus, which would remain significant and unavoidable. The CNPS list ranks Parry's tetracoccus as plant rank as 2.3, state rank in S1.3, and global rank is G5

(Source: Draft EIR/EIS for the North County Class III Landfill (January 1990)(Summary of Impacts and Mitigation), and CNPS Inventory of Rare and Endangered Plants (http://www.rarerplants.cnps.org)

The site is located within a wildlife corrider. The site is located within the vicinity of the Santa Margarita Ecological Reserve area. The site is located with the Santa-Ana – Palomar Linkage area.

(SOURCE: SOUTH COAST MISSING LINKAGES: A WILDLAND NETWORK FOR THE SOUTH COAST ECOREGION, SOUTH COAST WILDLANDS)CULTURAL RESOURCES

According to the 1990 Draft EIR/EIS, several known cultural resources occur in the area, but not within the property boundary. An unknown potential for impacts from offsite improvements (relocation of water lines) exists since the area is rich in resources (Draft EIR/EIS, pp. 5-57 and 5-58). The Draft EIR/EIS identified impacts to Native American ethnobotanical resources on site that could be mitigated to less than significant through transplantation.

AESTHETICS

Ridge on east side visible from the east (forms horizon). BLM Class II rating to "retain existing character of the landscape"; Significant impacts to Red Mountain viewshed and Willow Glen viewshed, which would not be mitigated to less than significant

(Source: Draft EIR/EIS for the North County Class III Landfill (January 1990) and CNPS Inventory)

LAND USE COMPATIBILITY

Land Use/Zoning: Multiple Rural Use overall/24.4 acres at the center designated as "Agricultural Preserve"

At the time of the preparation of the Draft EIR/EIS three residences occupied the site. The land is comprised of various parcels held in private ownership. While the land use section in the Draft EIR/EIS does not describe the uses on the site, the economics section (page 4-95) of the document states: "The Aspen Road site contains low density residential and specialized agricultural land uses, most of which is undeveloped under natural vegetative cover."

From recent GooogleMaps aerial views, there appears to a be a new residence off Aspen Road and a small orchard or garden at the north, center (off Terra Nuevo) and a small garden or landscaped area at the southeast edge. However, the Williamson Act portion (which is described as being central to the site) does not appear to be in use for agricultural purposes.

Current aerial photos of the site indicate the closest residences to be approximately 75 feet to the east, approximately 175 feet to the west, and approximately 1,370 feet to the south.

(Source: Google Earth 2010)

HEALTH AND SAFETY

Wildland fires: Designated as State Responsibility Area (SRA) "Very High" fire hazard area and as Wildland/Urban Interface area.

(Source: General Plan Update FEIR, Figure 2.7-5, County Fire Hazard Severity Zones in FRA, SRA, and LRA, and as a Wildland Urban Interface area in Figure 2.7-6, Wildland/Urban Interface Areas)

Health Risk: Project is close to residential uses – impacts to sensitive land uses would remain significant after mitigation. The EIR states that the 60 "noise sensitive" residential land uses, located within 3,000 feet of the site, would be impacted by project construction and operation. Residential uses along Rainbow Glen Road would also be impacted by 4 to 8 dBA increases in noise levels resulting from traffic.

Proximity to aqueduct or transmission lines: Existing 36-inch De Luz Heights Municipal Water District pipeline through the site would need to be relocated. In addition, the Second San Diego Aqueduct, which contains San Diego County Water Authority Pipelines 4 and 5, runs through the eastern portion of the site (San Diego County Water Authority scoping comment letter dated June 15, 2010). A deep keyway excavation beneath the toe of the landfill would undercut this alluvial drainage, causing seepage inflow along the south side of the key.

TECHNICAL SUITABILITY

Access: Trucking through residential streets, but street improvements not indicated in the Draft EIS/EIR. Access is via 1-15/Mission Road (a diamond interchange – stop sign controlled) to Rainbow Valley Blvd to Rainbow Glen Rd (30'-wide). Rainbow Glen Road is projected to be LOS E. Total distance from I-15 would be approximately 5.3 miles. The access road to the site would require the construction of approximately 1.7 miles of new road from Rainbow Glen Road to the site. The Draft EIS/EIR (1990) indicates the need for noise barriers to protect residential uses between the Old 395/I-15 off-ramp and the site.

Site Soils: Gabbro and other soil materials would need to be fully excavated prior to liner construction. This would generate adequate cover soils.

Site Capacity: Landfill would occupy approximately 147 acres of an approximately 416 acre site. Site could provide 44 million-cubic-yard capacity, which would accommodate 35.2 million cubic yards of refuse.

Airports: No airports in the area

(Source: General Plan Update FEIR, Figure 2.7-3, Military, Public, and Private Airports)

Proximity to Sources of Waste: The site is located north of Fallbrook, within proximity to the population centers in North County

SITE AVAILABILITY

Landfill would require the purchase of 790 acres (p. 2-12). The site is owned by private owners and consists of 21 parcels with three residences.

SUMMARY FINDINGS AND RECOMMENDATION

According to information available in the sources cited above, the site appears to be feasible for the development of a landfill, particularly from a technical standpoint. The site would provide adequate landfill capacity and would have adequate on-site soil sources for daily operation. The site is not located in the proximity of a known earthquake fault. In addition, the site is largely vacant. Finally, the site is accessible from the population centers in North County. However, the site is located within close proximity to single-family residences. Detriments of the site, such as fire hazard and impacts to biological habitat are common among much of the undeveloped land in the County and, therefore, do not particularly distinguish this site. Based on the above information, including the site's technical feasibility, it is recommended that the Aspen Road site be considered as an off-site alternative in the Gregory Canyon EIS.

PCR

N

0 800 1,600 Feet

Potential Off-Site Alternative - Gopher Canyon Road

Gregory Canyon Landfill Project

Source: ESRI, 2009; Aerial Express, 2009; PCR Services Corporation, 2011.

FIGURE

4

Off-Site Alternative Screening
Supporting Information for Screening Criteria

GOPHER CANYON ROAD

Information obtained from the 1992 North County Landfill Supplemental Siting Study

NATURAL PROTECTION

Bedrock Geology – Gabbroic Rock (designated moderately fractured due to its greater proclivity to weathering and the typical development of clay weathering products within or lining natural fractures) (Unfractured, low permeability sedimentary material provides greater protection than a highly permeable material or highly fractured bedrock)

DEPTH TO GROUNDWATER

Greater than 50 feet below ground surface

EVIDENCE OF FAULTING

Six random lineaments identified (random lineaments classified as "no consistent pattern"); no mapped faults

SURFACE WATER

Seasonal water springs are located below the projected final elevation of the refuse fill.

Between 12 and 15 inches of rainfall annually

PROXIMITY TO FLOODPLAINS

The site is located approximately 2.5 miles from the San Luis Rey Valley; the site is not located within a floodplain

WATER AVAILABILITY

Water is likely available to the site

SEISMIC SAFETY

No regionally mapped fault features cross the site

BIOLOGICAL RESOURCES

The NDDB search and review of EIRs at the time did not indicate the presence of any rare, threatened, endangered, or candidate species on the site. No known habitat for unique species of local interest which are not on the rare or endangered list were identified at the time of the 1992 study.

CULTURAL RESOURCES

The 1992 study indicated a known sacred area adjacent to or near site.

AESTHETICS

The site would be visible from homes near the Vista Valley Country Club at distances of less than one-half mile. A ridge line provides some screening along the southwest side of the golf course. Approximately five homes were located along the northwestern edge of the site along a ridge. These homes overlook the site and would have uninterrupted views of landfill operations at distances of less than 1,000 feet.

LAND USE COMPATIBILITY

Based on a current aerial the site is vacant. The Vista Valley Country Club is located immediately to the east of the site. Single-family residences that are associated with the Country Club are located within approximately 630 feet of the site. In addition, single-family residences are located to the west of the site, with the closest residences approximately 375 feet from the site.

HEALTH AND SAFETY

Wildland fires: Designated as State Responsibility Area (SRA) "Very High" fire hazard area

Proximity to aqueduct or transmission lines: The site is not within proximity to an aqueduct. No known transmission lines are in the area.

TECHNICAL SUITABILITY

Access to the site could involve a new road along the west side of the golf course from Gopher Canyon Road to the site. An alternate route was identified in the 1992 Supplemental Siting Study to the southern perimeter of the site by taking Twin Oaks Valley Road north from Deer Springs Road to a private road which led to a quarry site on the southeastern side of the site.

The area near the toe of the proposed landfill poses some difficulties for locating the landfill operations facilities as the area does not include any relatively flat areas or canyon floor. The toe of the landfill would be near an existing golf course.

Site Soils: There are soils of adequate suitability for cover. There would be sufficient on-site soils for cover.

Site capacity: 39 million cubic yards of airspace capacity

Airport: The site is not located within proximity to an airport.

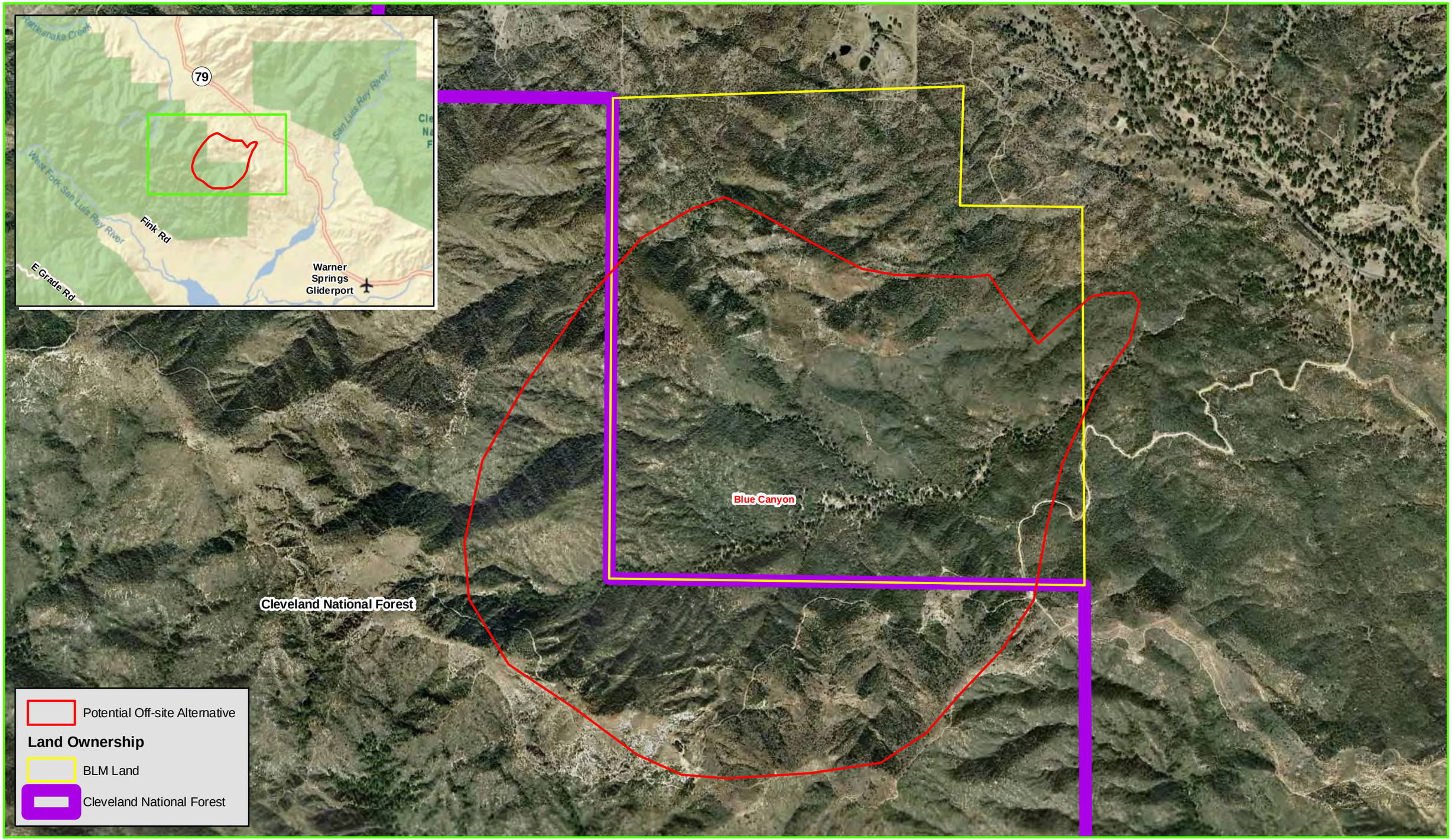
Proximity to sources of waste/ability to transport to site: The site is located within proximity to population centers in North County

SITE AVAILABILITY

Unknown

SUMMARY FINDINGS AND RECOMMENDATION

According to information available primarily from the 1992 Supplemental Siting Study, the site appears to be feasible for the development of a landfill. The site would provide adequate landfill capacity and would have adequate on-site soil sources for daily operation. The site is not located in the proximity of a known earthquake fault and may have relatively fewer biological resource constraints than other sites. The site does not have a flat area adjacent to the landfill footprint for the location of the facilities area. Access to the site could require a new road. While the site is vacant, the Vista Valley Country Club golf course is located immediately to the east of the site. Single-family residences are located within approximately 630 feet to the east of the site. In addition, single-family residences are located within approximately 375 feet to the west of the site. The site is readily accessible from the population centers in North County. Detriments of the site, such as fire hazard and impacts to biological habitat are common among much of the undeveloped land in the County and, therefore, do not particularly distinguish this site. Therefore, based on the above information, it is recommended that the Gopher Canyon Road site be considered as an off-site alternative in the Gregory Canyon EIS.



PCR

N

0 1,000 2,000 Feet

Potential Off-Site Alternative - Blue Canyon

Gregory Canyon Landfill Project

Source: ESRI, 2009; Aerial Express, 2009; PCR Services Corporation, 2011.

FIGURE

5

Off-Site Alternative Screening
Supporting Information for Screening Criteria

BLUE CANYON

Information is from the Draft EIR/EIS for the North County Class III Landfill (January 1990) unless cited otherwise.

NATURAL PROTECTION

Bedrock underlies the site. However, the bedrock would not protect groundwater. The EIR identifies potential impacts to active and intermittent springs within the limits of the landfill development. In addition, the EIR discusses the migration of contaminants in Canada Aguanga, a moderately significant groundwater regime discharging into the Warner groundwater basin. These impacts could be mitigated through the use of subdrains and grout curtain barriers.

DEPTH TO GROUNDWATER

Active and intermittent natural springs onsite. (Depth to groundwater not provided in the EIR/EIS)

EVIDENCE OF FAULTING

Trace of the Aquanga Fault and traces of the Aqua Caliente fault zone are located on the adjacent Vista Irrigation District land. Until the activity status of the fault has been determined, a smaller landfill could be constructed and operated in a set back from the fault. This potentially constrains the advantages of the larger site.

SURFACE WATER

Blue line stream bisects the southeast sector of the site

(Source: Aerial Express 2009 (USGS))

PRECIPITATION

8- 10” annual rainfall

PROXIMITY TO FLOODPLAINS

No floodplains in the proximity

WATER AVAILABILITY

Groundwater would be available for construction. Water would need to be purchased for operation. The Vista Irrigation District (which serves the area) indicates that it would not provide water. If the Warner Springs Ranch wastewater treatment plant were upgraded, it may supply recycled water for operation. Reclaimed water could be piped to the site and used for landfill operations. However, sources would be needed for potable use.

SEISMIC SAFETY

Activity level of the Aquanga Fault needs to be determined) (see above).

BIOLOGICAL RESOURCES

As indicated in the Draft EIR/EIS for the North County Class III Landfill (January 1990), impacts to 41.4 acres of forest and woodlands, 619 acres of southern mixed chaparral, and 110 acres of disturbed or fire break vegetation. Significant impacts to Unique and Sensitive habitat and to Threatened and Endangered species (San Diego Gum plant, Cooper's hawk). Potential impacts from off-site borrow pit. Impacts (except to Southern oak woodland) would be mitigated to less than significance. Impacts to Southern oak woodland would remain significant and unavoidable.

(Source: Draft EIR/EIS for the North County Class III Landfill (January 1990)(Summary of Impacts and Mitigation), and CNPS Inventory Rare and Endangered Plants - List 1B.2)

CULTURAL RESOURCES

According to the 1990 Draft EIR/EIS, several known cultural resources occur in the area, but not within the property boundary. An unknown potential for impacts from offsite improvements (relocation of water lines) exists since the area is rich in resources (Draft EIR/EIS, p. 5-58). The Draft EIR/EIS identified impacts to Native American ethnobotanical resources on site that could be mitigated to less than significant through transplantation.

AESTHETICS

BLM Class II rating to "retain existing character of the landscape"; several vantage points would be visible to a large number of viewers. The landfill would be visible from a large area including the Sunshine Summit area and Warner Springs and particularly intrusive from the Warner Springs Mobilehome Estates. The project would be clearly visible from SR-79, a designated State of California scenic highway, and would visually impact the Palomar Divide Truck Trail viewshed. Impacts would not be mitigated to less than significant (significant and unavoidable).

(Source: Draft EIR/EIS for the North County Class III Landfill (January 1990) and CNPS Inventory)

LAND USE COMPATIBILITY

The site is designated Public Agency Lands. The majority of the site is held in public ownership by the BLM (central portion of the site) and Cleveland National Forest (western and southern portion of the site) (Draft EIR/EIS, P. 4-29).

The site is currently vacant with the exception of a trail (Palomar Mountain Truck Trail), which would need to be relocated. The immediate area is used as passive open space. A mobile home park is located one mile to the north.

Current aerial photos of the site indicate the nearest off site residences to be approximately 2,940 feet (0.56 miles) to the north and 2,670 feet (0.51 miles) to the south. No residences are located within one mile to the south and west of the site.

(Source: Google Earth 2010)

HEALTH AND SAFETY

Wildland fires: Designated as Federal Responsibility Area (FRA) "Very High" fire hazard area.

(Source: General Plan Update FEIR, Figure 2.7-5, County Fire Hazard Severity Zones in FRA, SRA, and LRA)

Health Risk: High noise levels from truck traffic along SR-79. Could be mitigated with sound walls.

(Source: Draft EIR/EIS for the North County Class III Landfill (January 1990))

Proximity to aqueduct or transmission lines: No

TECHNICAL SUITABILITY

Access: 31.8 miles on SR-79 from I-15. Construction of 0.8 miles of new road from the Palomar Mountain Truck Trail and SR-79 to the site; improvements to SR-79 would be required, including a 300-foot-long eastbound right-turn lane with a 90-foot transition; 16-foot-wide, 1,000-foot-long westbound acceleration lane with a 800-foot transition on SR-79 to the Blue Canyon access road, construction of one-mile-long passing lanes on sustained uphill grades (5% or more)

SR-79 east of I-15 is projected to operate at LOS F (assuming that SR-79 were upgraded to a six-lane prime arterial) during peak hour and LOS E for road segments (pp.4-36 and 5-29).

Site Soils: Lack of adequate cover soils. Cover soils would need to be trucked from off-site borrow pit. Likely pit site would be Vista Irrigation Ditch land near SR-79 or within the alluvial drainage to the east of SR-79.

Site Capacity: 150 million-cubic-yard capacity, which would accommodate 135 million cubic yards of refuse. (The Blue Canyon Site would encompass approximately 722 acres of land and the landfill would occupy approximately 520 acres.)

Airports: No airports in area

(Source: General Plan Update FEIR, Figure 2.7-3, Military, Public, and Private Airports)

Proximity to Sources of Waste: Four miles northeast of the town of Fallbrook.

SITE AVAILABILITY

Site is public land administered by the BLM and USFS and private land owned by the Vista Irrigation District.

(Source: Draft EIR/EIS for the North County Class III Landfill (January 1990))

SUMMARY FINDINGS AND RECOMMENDATION

According to information available in the sources cited above, the site appears to be infeasible for the development of a landfill, particularly from a technical standpoint. The site is located in close proximity to a known earthquake fault. The site may not provide adequate landfill capacity if the landfill footprint must be set back from fault traces. In addition, the site would not have adequate onsite soil sources for daily operation, which would mean that materials would need to be trucked to the site. Furthermore, Blue Canyon is not readily accessible from the population centers in North County, and would require extensive and costly improvements on SR-79. Finally, the majority of the site is held in public ownership by the BLM (central portion of the site) and Cleveland National Forest (western and southern portion of the site). Thus, land exchanges would be necessary. Other detriments of the site, such as fire hazard and impacts to biotic habitat are common among much of the undeveloped land in the County and, therefore, do not particularly distinguish this site. However, based on the site's technical challenges, it is recommended that the Blue Canyon site not be considered as an off-site alternative to for analysis in the Gregory Canyon EIS.

PCR

0 600 1,200 Feet

Potential Off-Site Alternative - Loma Alta

Gregory Canyon Landfill Project

Source: ESRI, 2009; Aerial Express, 2009; PCR Services Corporation, 2011.

FIGURE

6

Off-Site Alternative Screening
Supporting Information for Screening Criteria

LOMA ALTA

Information obtained from the 1992 North County Landfill Supplemental Siting Study unless cited otherwise

NATURAL PROTECTION

Bedrock Geology – Eocene Sandstone, Siltstone (Santiago Formation) [considered moderately permeable on the basis of limited fracturing and a characteristically significant silt and/or clay fraction acting to reduce primary permeability] (Unfractured, low permeability sedimentary material provides greater protection than a highly permeable material or highly fractured bedrock)

DEPTH TO GROUNDWATER

25-50 feet below ground surface

EVIDENCE OF FAULTING

Based on published geologic data, there are not indications of fault traces crossing site; 3 short fault features have been mapped directly south of the site

SURFACE RUNOFF

Prior to the development that has occurred on the site, intermittent streams of channels crossed the site; the site was subject to unchannelized surface runoff from large (greater than 100 acres) upslope areas

Less than 12 inches of annual rainfall

FLOODPLAINS

The site is not located within a floodplain **[Need to confirm]**

WATER AVAILABILITY

12-inch water line exists along Oceanside Boulevard

BIOLOGICAL RESOURCES

The NDDB indicated the occurrence of *Polioptila Californica* (California Gnatcatcher) and *Dipodomys Stephensi* (Stephens Kangaroo Rat) on the site.

CULTURAL RESOURCES

National Register-eligible or potentially eligible resource identified adjacent to site

AESTHETICS

Site would be visible from surrounding homes

LAND USE COMPATIBILITY

The site is located in an urbanized area. The site is designated Light Industrial and is developed with some industrial uses. The development is recent and appears to be trending towards build out. Uses include R&D, warehousing, light manufacturing, but with more commercial uses than light industrial given market conditions. The area is not a redevelopment area.

(Russ Cunningham, City of Oceanside, phone communication September 6, 2011)

Based on a review of a recent aerial, residential properties are located within close proximity to the north and east of the site. Single family residences are located approximately 1,105 feet (0.21 miles) to the east of the site.

HEALTH AND SAFETY

Wildland fires: Shown on the map as "Incorporated" area with no fire hazard designation

Proximity to aqueduct or transmission lines: The site is not within proximity to an aqueduct or transmission line

TECHNICAL SITE SUITABILITY

Site access would be from Oceanside Boulevard near the intersection of Rancho del Oro. Trucks would travel through urban areas to reach the freeway.

Site Soils: There would be sufficient cover materials given the excavatability of the soils; no import would be required

Site capacity: 25 million cubic yards of airspace capacity

Airport: The site is located along Oceanside Boulevard near Rancho del Oro approximately two miles southeast of the Oceanside Municipal Airport

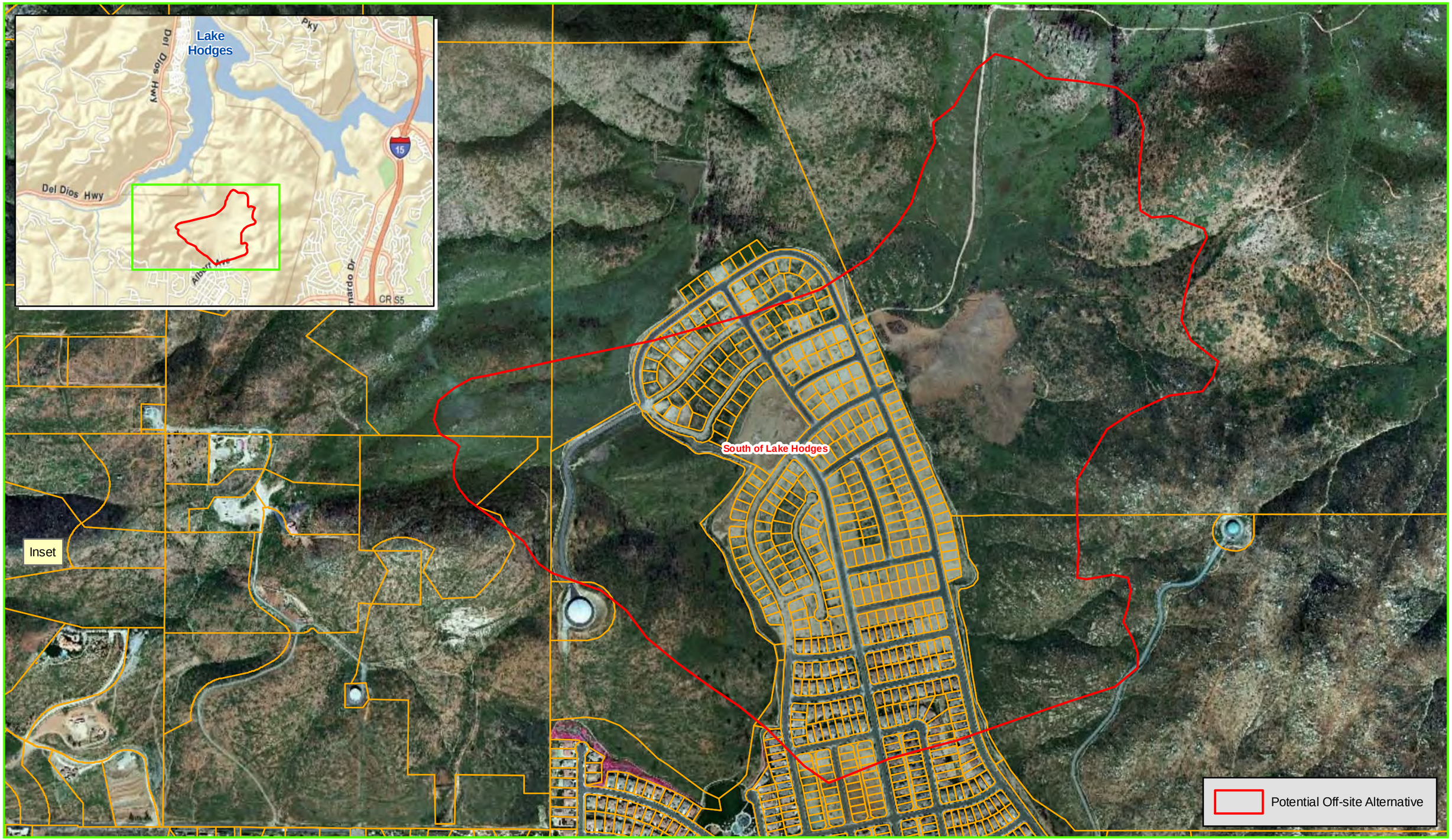
Proximity to sources of waste/ability to transport to site: As the site is located within the City of Oceanside, the site would be within close proximity to waste generators

SITE AVAILABILITY

Site is comprised of various parcels in private ownership, a number of which are developed with recent improvements. The site is not known to be available.

SUMMARY FINDINGS AND RECOMMENDATION

At the time of the 1992 North County Supplemental Siting Study, the site appeared to be feasible for development of a landfill from a technical standpoint in terms of access, availability of soil material, no evidence of faults, and some natural protection. In addition, in terms of the site's location, the site is located within close proximity to population centers in North County. However, the capacity of the landfill was limited. There were some issues common to other sites with regard to development of the site as a landfill, such as potential impacts to biological resources and potential impacts to cultural resources. However, while the site may have been generally suitable for a landfill at the time of the 1992 Siting Study, the site is now partially developed and located in an area that is being built out with light industrial/commercial uses. In addition, existing industrial/commercial development is located adjacent to the site. Residential development is located within close proximity to the east and north of the site. Therefore, based on the current land use on the site and in the surrounding area, it is recommended that the Loma Alta site not be considered as an off-site alternative in the Gregory Canyon EIS.



PCR

N

0 600 1,200 Feet

Potential Off-Site Alternative - South of Lake Hodges

Gregory Canyon Landfill Project

Source: ESRI, 2009; Aerial Express, 2009; PCR Services Corporation, 2011.

FIGURE

7

Off-Site Alternative Screening
Supporting Information for Screening Criteria

SOUTH OF LAKE HODGES

Information obtained from the 1992 North County Landfill Supplemental Siting Study unless cited otherwise

NATURAL PROTECTION

Bedrock Geology – Metavolcanic Rock (Santiago Peak Volcanics) [designated highly fractured due to the relative lesser degree of chemical weathering and consequently, the likelihood of open, or unweathered fractures] (Unfractured, low permeability sedimentary material provides greater protection than a highly permeable material or highly fractured bedrock)

DEPTH TO GROUNDWATER

Less than 50 feet below ground surface

EVIDENCE OF FAULTING

Two random lineaments identified (random lineaments classified as "no consistent pattern")

SURFACE RUNOFF

Intermittent streams of channels cross the site or the site is subject to unchannelized surface runoff from large (greater than 100 acres) upslope areas

Between 12 and 15 inches of rainfall annually

BIOLOGICAL RESOURCES

The NDDB indicated the occurrence of *Ferocactus Viridescens* (San Diego Barrel Cactus) and *Polioptila Californica* (California Gnatcatcher) present on the site.

CULTURAL RESOURCES

The 1992 study indicated known sacred area adjacent to or near site

AESTHETICS

Landfill operations would be visible from surrounding residences

LAND USE COMPATIBILITY

Site is located just south of Lake Hodges, approximately 1.5 miles west of Rancho Bernardo. Based on a current aerial the site appears to be graded for residential development, perhaps with some of the residences already constructed. Single-family residences are being developed immediately adjacent to the southern portion of the site; single-family residences are located approximately 870 feet (approximately 0.16 miles) to the southwest of the site. In addition, single-family residences are located approximately 3,770 feet (approximately 0.71 miles) to the east of the site.

HEALTH AND SAFETY

Wildland fires: Designated as State Responsibility Area (SRA) "Very High" fire hazard area

Proximity to aqueduct or transmission lines: The site is not within proximity to an aqueduct. No known transmission lines are in the area.

TECHNICAL SITE SUITABILITY

Site access : Not applicable as the site is being developed with residential uses

Site Soils: Adequate material on-site for cover

Site capacity: 36 million cubic yards of airspace capacity

Airport: The site is not located within proximity to an airport

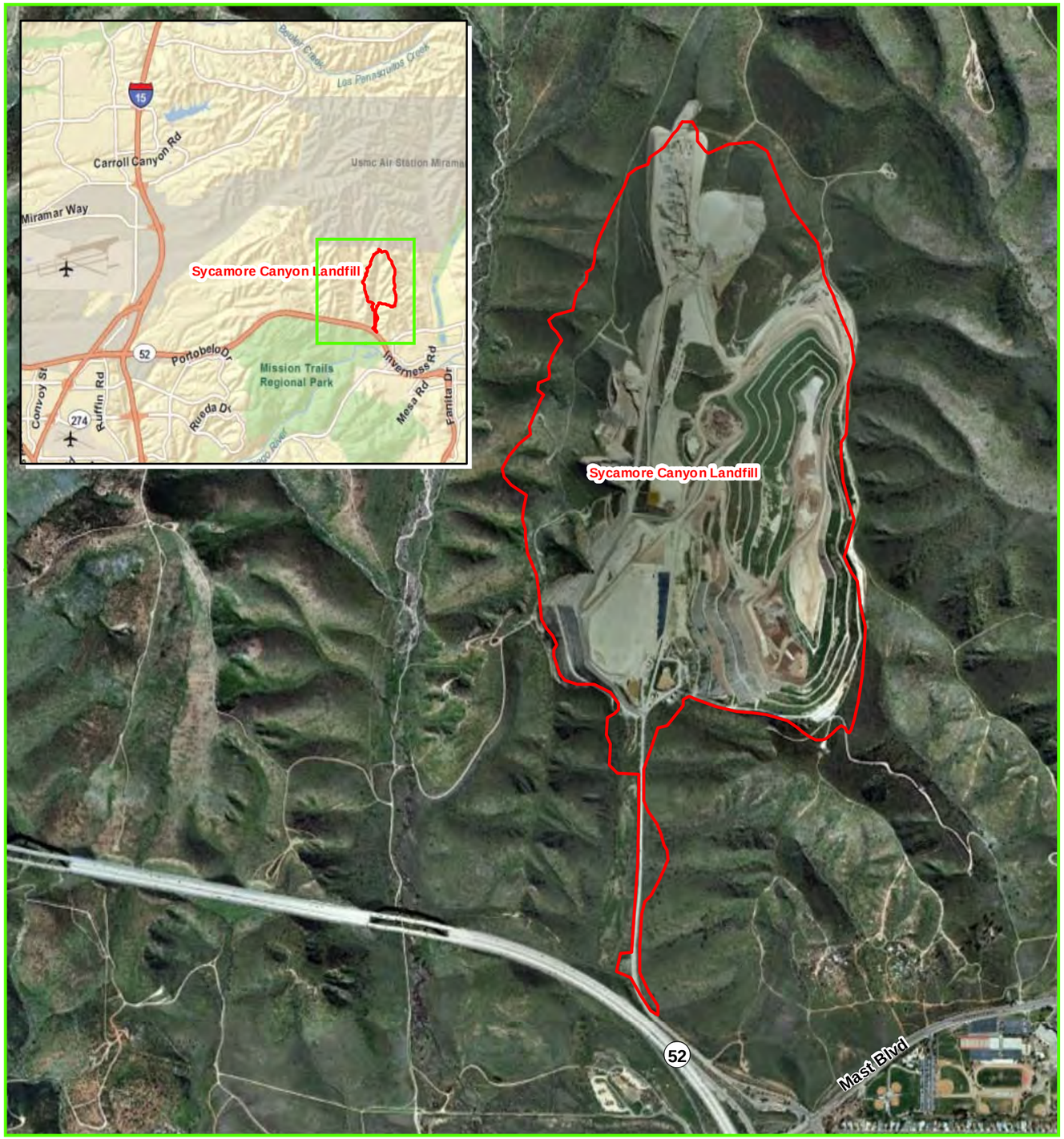
Proximity to sources of waste/ability to transport to site: The site is located within proximity to population centers in North County, although south of most jurisdictions within North County.

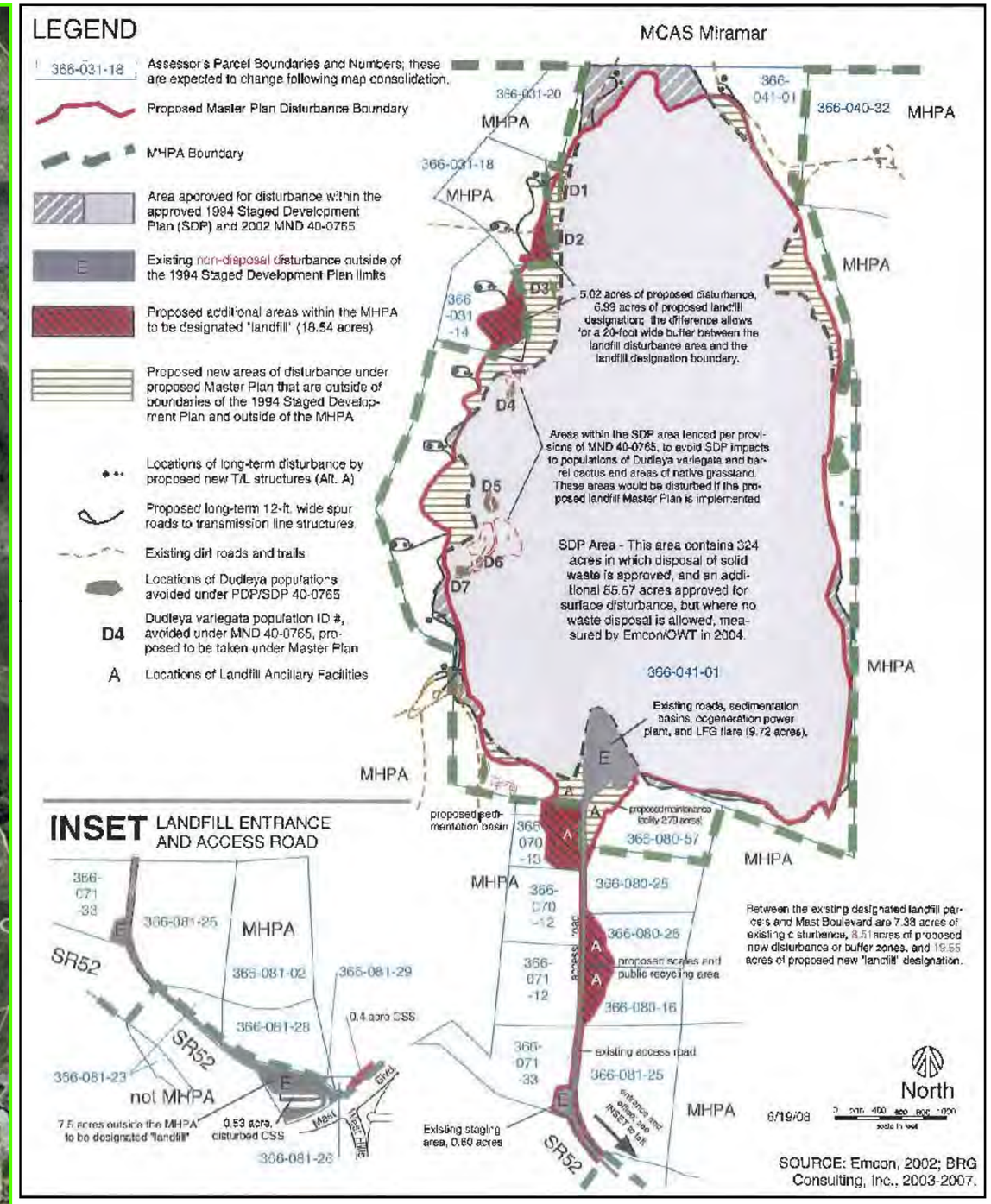
SITE AVAILABILITY

The site is being developed with residential uses

SUMMARY FINDINGS AND RECOMMENDATION

The site would be feasible generally for the development of a landfill from a technical standpoint in terms of capacity, access, and availability of soil material. There is no evidence of active faults on the site. In addition, in terms of the site's location, the site is located within close proximity to population centers in North County. There are some issues with regard to development of the site as a landfill, such as potential impacts to biological resources and potential indirect impacts to cultural resources. However, while the site may have been generally suitable for a landfill at the time of the 1992 Siting Study, the site is located in an area that is being developed with residences. Single-family residences are being developed immediately adjacent to the southern portion of the site and single-family residences are located approximately 870 feet to the southwest of the site. Therefore, based on the current land use on the site and in the surrounding area, it is recommended that the South of Lake Hodges site not be considered as an off-site alternative in the Gregory Canyon EIS.





PCR

0 1,250 2,500 Feet

Potential Off-Site Alternative - Sycamore Canyon Landfill

FIGURE **8**

Gregory Canyon Landfill Project

Source: Aerial Express, 2009; Sycamore Landfill Master Plan EIR; PCR Services Corporation, 2011.

Off-Site Alternative Screening
Supporting Information for Screening Criteria

SYCAMORE CANYON EXPANSION

An EIR was prepared for the Sycamore Canyon Expansion (Sycamore Landfill Master Plan Final EIR, September 2008). The EIR was litigated. A Recirculated Draft EIR will be prepared. A Revised Notice of Preparation is expected to be released in Fall 2011. The information below is based on the Sycamore Landfill Master Plan Final EIR (September 2008) as it is the information that is currently available.

The proposed Sycamore Canyon Expansion would increase the existing Sycamore Canyon Landfill disposal area by 43.2 acres, with an increase in the landfill prism footprint of approximately 26 acres. The landfill would increase from a total of 491 to 517 acres and the landfill prism footprint would increase to approximately 358 acres. The total long-term disturbance would be approximately 440 acres. The profile of the landfill would be raised by 167 feet (from an elevation of 883 feet above mean sea level (AMSL) to approximately 1,050 feet AMSL). The project would require the excavation of approximately 35 to 40 million cubic yards of natural soils and materials, some would be exported as aggregate.

Under the Master Plan, the average daily waste tonnage is proposed to increase from the current 3,965 tons per day (tpd) to a maximum of 13,000 tpd by 2025. The increases would occur in steps, depending on the rate of solid waste generated in the region.

(Source: Chapter 3, Project Description, Sycamore Landfill Master Plan Final EIR (September 2008))

NATURAL PROTECTION

The landfill expansion would occur on top of the existing landfill and in natural habitat areas along the periphery of the existing landfill.

Our current background information on the Sycamore Canyon project does not describe soils or groundwater conditions; however, the prior *Site Feasibility Assessment Southwest San Diego County Landfills Project* (1993) indicates that no shallow groundwater was observed in the area. The Project Description in the *Sycamore Landfill Master Plan Final EIR* (2008) indicates that sedimentation basins and liner systems would be expanded and that the proposed excavation would provide suitable base grades for liner construction. The removal of natural materials and expansion of liner systems assumes that natural soils would not provide adequate protection of whatever groundwater resources would exist on site.

(Source: Chapter 3, Project Description, Sycamore Landfill Master Plan Final EIR (September 2008) and Site Feasibility Assessment Southwest San Diego County Landfills Project (1993))

DEPTH TO GROUNDWATER

Our current background information on the Sycamore Canyon Expansion project does not describe soils or groundwater; however, the prior *Site Feasibility Assessment Southwest San Diego County Landfills Project* (1993) indicates that no shallow groundwater was observed in the area.

No evidence of springs or seeps.

(Source: Site Feasibility Assessment, Southwest San Diego County Landfills Assessment (1993))

EVIDENCE OF FAULTING

Some lineaments and potential slope instability; however, presence of active faulting not expected.

(Source: Site Feasibility Assessment, Southwest San Diego County Landfills Assessment (1993))

SURFACE WATER

Ephemeral (Source: Site Feasibility Assessment, Southwest San Diego County Landfills Assessment (1993))

PRECIPITATION

14.54 inches per year

(Source: Site Feasibility Assessment, Southwest San Diego County Landfills Assessment (1993))

PROXIMITY TO FLOODPLAINS

The site is not in a mapped 100-year flood zone; however there is a potential for flooding in a large storm event. (Source: Site Feasibility Assessment, Southwest San Diego County Landfills Assessment (1993))

FLOW VOLUMES

As with the existing landfill, it is assumed that increased runoff would be captured and circulated through the expansion project's new sedimentation systems.

WATER AVAILABILITY

No onsite water resources. Water is available to the existing Sycamore Canyon and would be available to the expansion project.

SEISMIC SAFETY

There are no known active or potentially active faults crossing the site.

(Source: Site Feasibility Assessment, Southwest San Diego County Landfills Assessment (1993))

BIOLOGICAL RESOURCES

Sensitive and rare and endangered animal and plant species occur on the site.

(Source: Site Feasibility Assessment, Southwest San Diego County Landfills Assessment (1993))

No critical wildlife corridors.

CULTURAL RESOURCES

Previously recorded archaeological sites on the property, but the value is unknown

(Source: Site Feasibility Assessment, Southwest San Diego County Landfills Assessment (1993))

AESTHETICS

The increase in height would result in the landfill being visible from the surrounding area.

(Source: Chapter 3, Project Description, Sycamore Landfill Master Plan Final EIR (September 2008))

LAND USE COMPATIBILITY

The area immediately surrounding the site is primarily vacant.

HEALTH AND SAFETY

Wildland fires: Designated as State Responsibility Area (SRA) "Very High" fire hazard area in San Diego County *(Source: General Plan Update FEIR, Figure 2.7-5, County Fire Hazard Severity Zones in FRA, SRA, and LRA)*

TECHNICAL SUITABILITY

The site is an existing landfill; an expansion of the facility is technically feasible.

Transmission lines: Existing SDG&E electrical transmission lines along the west edge of the site would need to be relocated.

Site Capacity (Sycamore expansion): 86 million cubic yards

(Source: Chapter 3, Project Description, Sycamore Landfill Master Plan Final EIR (September 2008))

Airports: None in vicinity

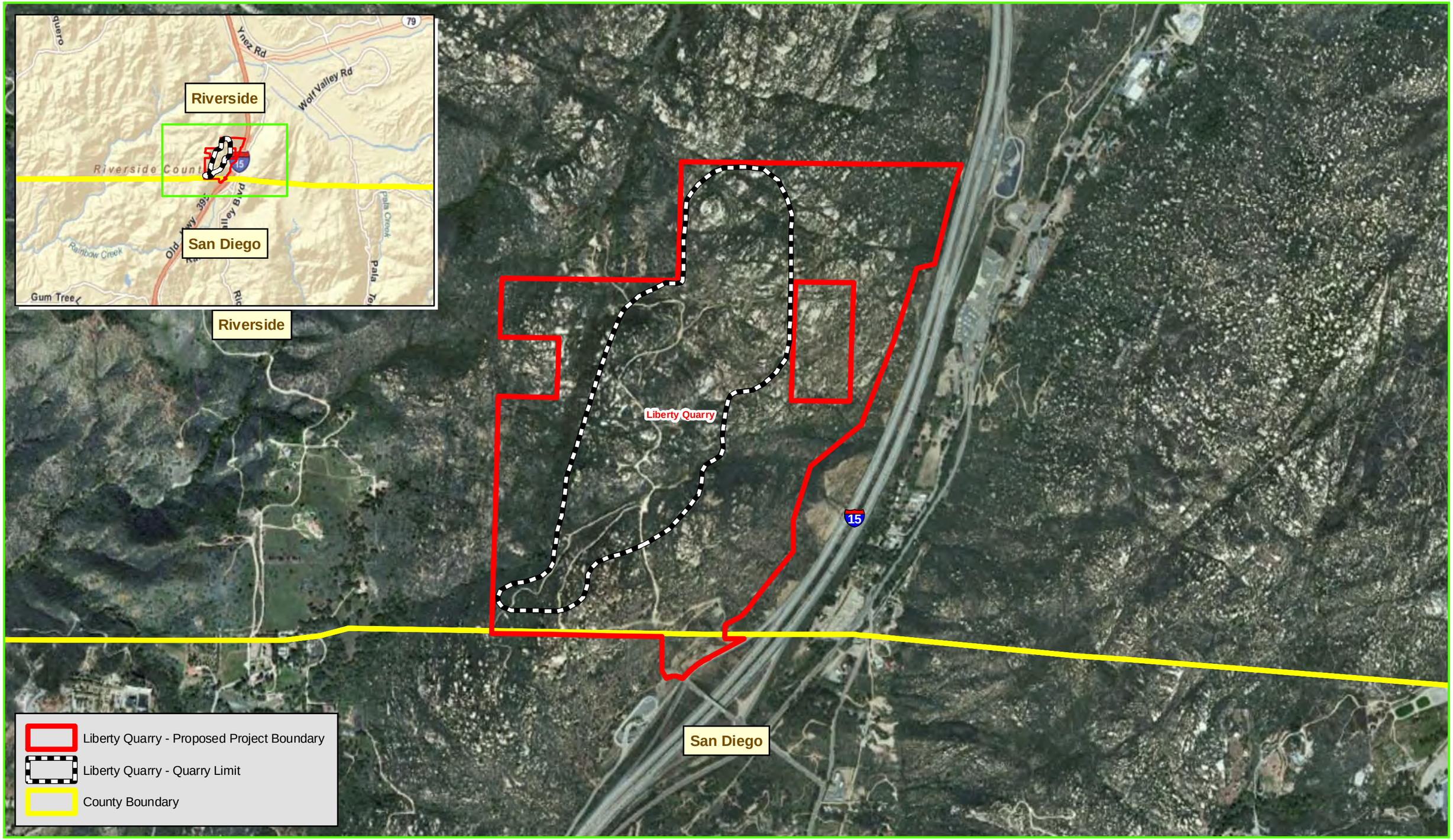
Proximity to Sources: The site is located to the south of the general North San Diego County service area.

SITE AVAILABILITY

Private ownership

SUMMARY FINDINGS AND RECOMMENDATION

According to information available in the sources cited above, the expansion of the existing landfill would be feasible from a technical standpoint. The expansion would provide additional landfill capacity. The site would have adequate on-site soil sources for daily operation. The site is not located in the proximity of a known earthquake fault. However, the site is currently operated and is in private ownership. The site is located to the south of the general North San Diego County service area. Detriments of the site, such as fire hazard and impacts to biotic habitat are common among much of the undeveloped land in the County and, therefore, do not particularly distinguish this site. Therefore, it is recommended that the Sycamore Expansion be considered as an alternative to the proposed project for analysis in the Gregory Canyon EIS.



PCR

N

0 1,000 2,000 Feet

Potential Off-Site Alternative - Liberty Quarry

Gregory Canyon Landfill Project

Source: ESRI, 2009; Aerial Express, 2009; PCR Services Corporation, 2011.

FIGURE

9

Off-Site Alternative Screening
Supporting Information for Screening Criteria

LIBERTY QUARRY

On August 11, 2011 the Riverside Planning Commission voted to recommend denial of the quarry on the basis that its negative effects (impacts to views, air quality, biological resources, cultural resources, vibration, traffic, etc.) would outweigh its benefits. The project is scheduled to be heard by the Board of Supervisors in November 2011. The proposed quarry has been faced with significant opposition and is controversial.

NATURAL PROTECTION

Exposed bedrock and coarse materials would not provide natural protection.

(Source: Liberty Quarry Draft Environmental Impact Report No. 475 (July 2009))

DEPTH TO GROUNDWATER

Massive crystalline bedrock underlying the site is considered "non-water bearing." Local groundwater is limited to fractured joint systems and two seasonal surface seeps associated with local fractures. Some groundwater in deep vertical borings at depths ranging from approximately 9 feet below ground surface to 373 feet below ground surface; Some evidence of seeps or springs in the southern portion of the site.

(Source: Liberty Quarry Draft Environmental Impact Report No. 475 (July 2009))

EVIDENCE OF FAULTING

No faulting on the site. Nearest fault is approximately 2.1 miles from the site.

(Source: Liberty Quarry Draft Environmental Impact Report No. 475 (July 2009))

SURFACE WATER

Blue line stream bisects the westerly sector of the site.

(Source: Aerial Express 2009 (USGS))

PRECIPITATION

Ranges from 3.8 to 28.36 inches per year.

(Source: Liberty Quarry Draft Environmental Impact Report No. 475 (July 2009))

PROXIMITY TO FLOODPLAINS

The site is not in a 100-year flood zone.

(Source: Liberty Quarry Draft Environmental Impact Report No. 475 (July 2009))

WATER AVAILABILITY

The site does not have adequate onsite water sources (groundwater) for use during construction and operation. All water would need to be transported to the site for construction and operation. The availability of municipal water is unknown.

(Source: Liberty Quarry Draft Environmental Impact Report No. 475 (July 2009))

SEISMIC SAFETY

There are no active or potentially active faults in the area or through the site.

(Source: Liberty Quarry Draft Environmental Impact Report No. 475 (July 2009))

BIOLOGICAL RESOURCES

Sensitive and rare and endangered animal and plant species (CNPS Inventory Rare and Endangered Plants) occur on the site.

(Source: Liberty Quarry Draft Environmental Impact Report No. 475 (July 2009))

The site is located within a wildlife corridor. The site is located within the vicinity of the Santa Margarita Ecological Reserve area. The site is located with the Santa-Ana – Palomar Linkage area.

(Source: South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion, South Coast Wildlands)

CULTURAL RESOURCES

Impacts to Native American traditional cultural property.

(Source: Liberty Quarry Draft Environmental Impact Report No. 475 (July 2009))

AESTHETICS

I-15 is a designated scenic highway in the proposed Riverside County General Plan and a designated scenic highway in the San Diego County General Plan update (adopted August 2011). Portions of the site are visible from I-15.

(Source: Liberty Quarry Draft Environmental Impact Report No. 475 (July 2009))

LAND USE COMPATIBILITY

Area adjoins the I-15 corridor to the east. Adjacent properties to the north, west, and south are largely vacant.

Sensitive east edge (canyon side) of the site is less than one mile from urban development in the City of Temecula (to the east of I-15) and some habitable uses. Freeway access (the Rainbow interchange) is located just north of the town of Rainbow. The land use sensitivity of the site has been evidenced by opposition to the project from the City of Temecula and other parties in unincorporated Riverside County.

(Source: Liberty Quarry Draft Environmental Impact Report No. 475 (July 2009))

HEALTH AND SAFETY

Wildland fires: Designated as Federal Responsibility Area (FRA) "Very High" fire hazard area in San Diego County and "High Fire Area" in Riverside County.

(Sources: General Plan Update FEIR, Figure 2.7-5, County Fire Hazard Severity Zones in FRA, SRA, and LRA and Liberty Quarry Draft Environmental Impact Report No. 475 (July 2009))

Proximity to aqueduct or transmission lines: No transmission lines or aqueducts are known to be within 2,000 feet of the site.

TECHNICAL SUITABILITY

Geosyntec Consultants Inc. (Geosyntec) provided input regarding the technical suitability of the site for development and operation of a landfill as this site has not been evaluated previously for use as landfill. Geosyntec reviewed aerial photography and the Geology and Soils section and related figures from various sections of the Liberty Quarry Draft EIR (July 2009). The following discussion regarding the technical suitability of the site is based on a review and use of existing materials and information.

The site encompasses approximately 414 acres, and the proposed quarry would occupy approximately 155 acres in the central portion of the property. The site is hilly, with steep natural slopes and intervening

ephemeral drainage courses. A prominent ridgeline in the central portion of the site topographically divides the property and is generally oriented north-south. The site is underlain by granodiorite, with granitic bedrock and boulder outcroppings visible at the ground surface in many areas across the site. Within the quarry site, surficial soil deposits are generally thin (less than 4 to 5 feet) and discontinuous.

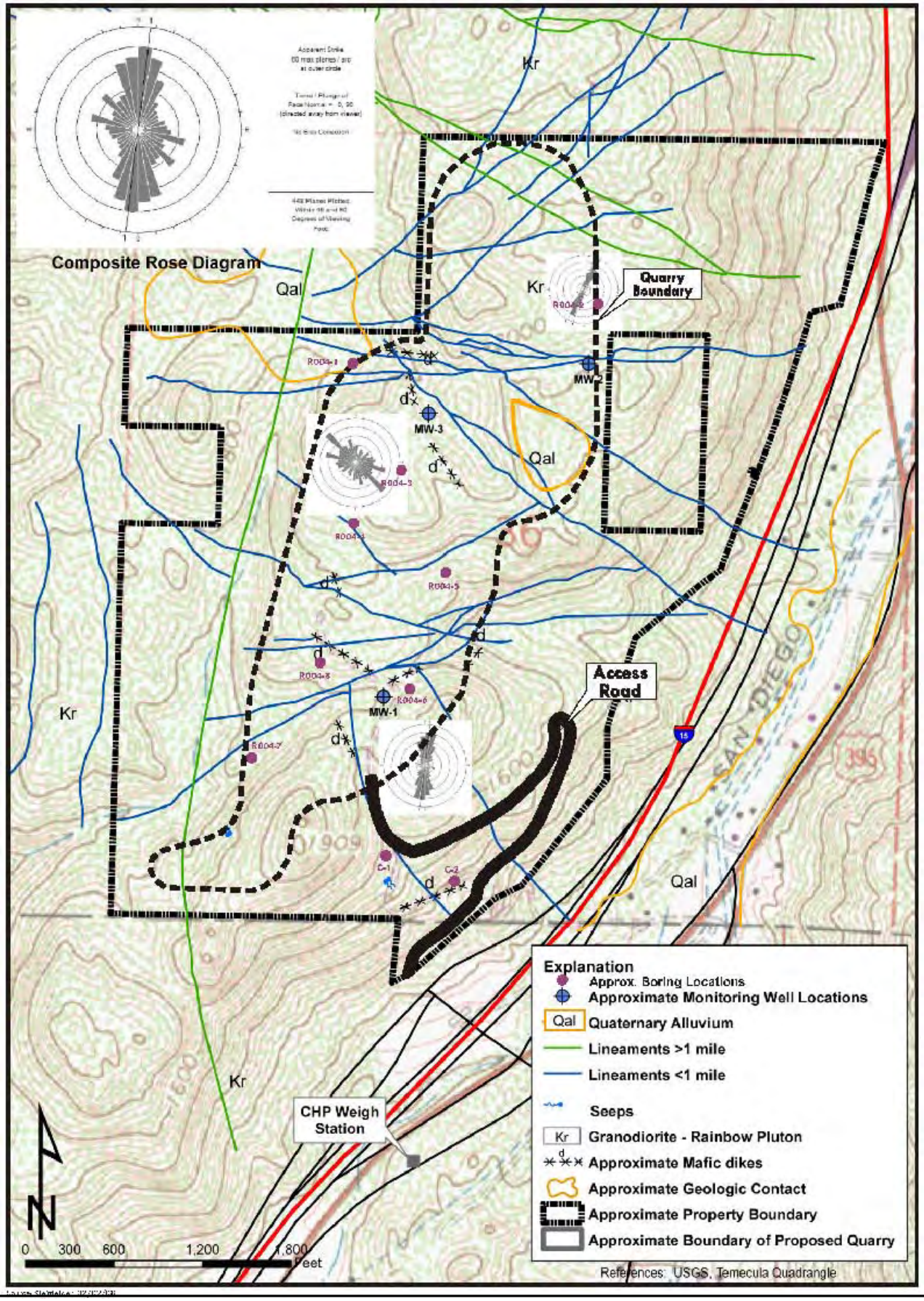
The method of landfill construction varies with terrain. Historically, San Diego County has used the canyon-fill approach for landfills which was the focus of the County's extensive siting efforts that occurred in the late 1980s and early 1990s. The focus on canyon landfill sites is due to their advantages from a technical and economic standpoint compared to sites that would require more substantial excavation. Therefore, a preliminary evaluation of the canyons on the Liberty Quarry site was conducted to determine potential landfill capacity.

The largest canyon along the western portion of the site is oriented north-south and is approximately 3,600 feet in length. Smaller tributary canyons are oriented generally east-west with crests at the main ridgeline. These smaller canyons face I-15 and the development within the City of Temecula. The landfill capacity evaluation only considered the largest western canyon.

Geosyntec used the average end area methodology to approximate the potential gross airspace capacity generated by filling the western canyon. The evaluation assumed no excavation, and compared the existing topography to a theoretical landfill final grade established by constructing assumed final slopes at five canyon cross section locations at 3:1 (horizontal:vertical) inclinations. Due to the preliminary nature of this screening evaluation, no three-dimensional final grading design or electronic topographic comparisons were performed. Based on the evaluation outlined above, the western canyon was determined to have an estimated capacity on the order of 11 million cubic yards. However, development of a three-dimensional final grading plan, and allocating area for essential landfill facilities such as buildings, tanks, ponds, access roads, etc. would reduce the estimated capacity.

As can be seen in Figure 10, the western canyon is long and narrow. Such a configuration is less desirable from an operational standpoint as it is difficult for equipment to access and work in the landfill and results in landfill operating cells that are difficult to construct. In addition, the lack of on-site soils would require substantial import of off-site soils for landfill cell construction, waste daily cover, and final cover construction.

Given that the canyons on the site would not provide sufficient capacity, a preliminary evaluation of the proposed quarry footprint was conducted to determine the feasibility of locating a landfill within that area with the requisite need for excavation. Because of the terrain within the proposed quarry footprint, extensive excavation would be required to create space for a waste prism. The excavation of rock would likely involve blasting and significant heavy excavation. Essentially, the quarry activity would need to occur prior to being able to locate a landfill within the proposed quarry footprint. In addition, while some of the excavated material could be processed for use on the site, a significant volume of rock material would need to be exported. Furthermore, a significant volume of soil material would need to be imported for landfill construction and operations use. The cost and time involved with excavation of the material to create the space for the waste prism would likely make the site's use as a landfill infeasible in the absence of excavation in association with a quarry.



Geologic Map – Liberty Quarry

Gregory Canyon Landfill Project
Source: Liberty Quarry EIR.

FIGURE
10

PCR

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Although surficial soil deposits and processed excavated material could provide some portion of the cover material, it is likely that cover soil would need to be imported to the site. Additionally, the on-site soil and bedrock materials would not meet the requirements for the low permeability material component of the liner and final cover systems. As with many landfill sites, the low permeability material (clay) liner would need to be imported.

Airports: No airports in the area

PROXIMITY TO SOURCES OF WASTE

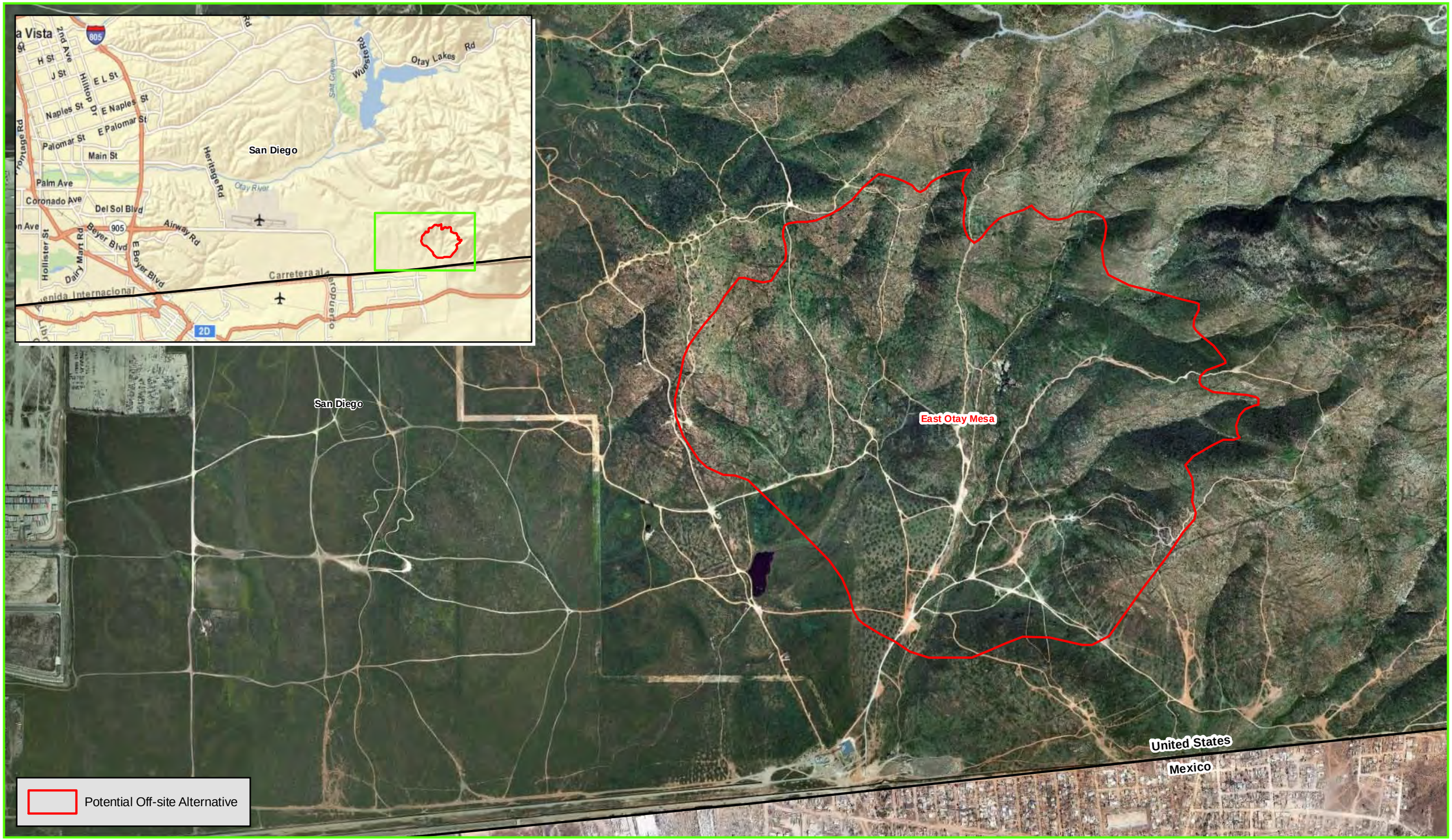
The site, the majority of which is located outside San Diego County, is located in proximity to population centers in North County.

SITE AVAILABILITY

If the quarry project is not approved by the Riverside Board of Supervisors (November 2011), the site would likely be available pending any litigation over the decision. In August 2011, the Riverside County Planning Commission recommended denial of the quarry. It is likely that the controversy and extent of opposition faced by the quarry, particularly if it is denied, would be the same or greater with a landfill proposal for the site which suggests a lengthy and complex environmental review process. Also, if the quarry proposal is denied, the likelihood of the County supporting or pursuing a landfill on the site would seem to be remote, particularly given the need for quarry-like excavation needed to provide a reasonably sized landfill footprint.

SUMMARY FINDINGS AND RECOMMENDATION

Based on the information available and the preliminary evaluation conducted by Geosyntec, the Liberty Quarry site is not considered feasible for the development of a landfill. There are two canyons located on the site and these were evaluated for the feasibility of locating a landfill in one or both of the canyons. The western canyon would provide an estimated capacity of 11 million cubic yards. In addition, the configuration of the western canyon would present operational constraints. The eastern canyon is smaller and faces I-15 and Temecula. Location of a landfill in the footprint proposed for the quarry would require substantial excavation of material. The excavation would require blasting and essentially would result in quarry activities to allow for the landfill in that location. The timing to complete the removal of the material prior to the start of landfilling would not meet the County's need for a new landfill as the excavation of the material would occur over many years. (The Draft EIR for Liberty Quarry indicates that quarrying would occur for 75 years.) If a portion of the material were excavated and then the area filled (i.e,, a combined quarry and landfill), potential conflicts could result between the two operations. In addition, combined operations could increase environmental impacts or require operation at very low levels to reduce potential environmental impacts. The site would not have adequate on-site soil sources for daily operation and cover material would need to be imported to the site. In addition, on-site water is not available for construction and operation, and water would need to be trucked to or piped into the site. Although the site is not located in the proximity of a known active or potentially active earthquake fault, based on the technical infeasibility related to the capacity of the site, it is recommended that the Liberty Quarry site not be considered as an alternative for analysis in the Gregory Canyon EIS.



PCR

N

0 900 1,800 Feet

Potential Off-Site Alternative - East Otay Mesa

Gregory Canyon Landfill Project

Source: ESRI, 2009; Aerial Express, 2009; PCR Services Corporation, 2011.

FIGURE

11

Off-Site Alternative Screening
Supporting Information for Screening Criteria

EAST OTAY MESA

Proposition A, East Otay Mesa Recycling Collection Center and Landfill Ordinance, was approved by the voters of San Diego County in June 2010. Proposition A amended the General Plan designation and zoning for the East Otay Mesa site to allow for a landfill facility. San Diego County's Five-Year Review Report adds the East Otay Mesa Landfill to the Siting Element as a reserved site. The design process for the facility is in the early stages and current information pertaining to the site is not available. Information is obtained from the Site Feasibility Assessment, Southwest San Diego County Landfills Assessment dated 1993 unless otherwise cited.

NATURAL PROTECTION

Coarse and shallow surface materials (less than 2-feet in depth) would not provide natural protection.

DEPTH TO GROUNDWATER

Crystalline bedrock underlying the site is considered non-water bearing (no shallow, underlying aquifer). Local groundwater is limited to fractured joint systems and two seasonal surface seeps associated with local fractures.

EVIDENCE OF FAULTING

No evidence of faulting over the site.

SURFACE WATER

Site encompasses a south-trending wash. Potential flooding in high storm events because of the steepness of slopes.

PRECIPITATION

10 inches per year

PROXIMITY TO FLOODPLAINS

The site is not in a mapped 100-year flood zone; however there is a potential for flooding in a large storm event.

WATER AVAILABILITY

Municipal water likely available via lines in Otay Mesa Road that serve industrial uses to the west.

SEISMIC SAFETY

There are no known active or potentially active faults crossing the site.

BIOLOGICAL RESOURCES

Sensitive and rare and endangered animal and plant species occur on the site.

No critical wildlife corridors.

CULTURAL RESOURCES

The Assessment indicates that based on the number of recorded sites, the site and access alignments are constrained by the presence of cultural resources (page 5.C-11). The Assessment also states that the Native American Heritage Commission's written response did not identify any such locations on the East Otay Mesa landfill site and referred the inquiry to several specified local representatives. Most of the Native American archaeological resources appear to be lithic scatter, which are untested. Some areas of the site have high sensitivity for paleontological resources.

AESTHETICS

The site is not highly visible from residential areas.

LAND USE COMPATIBILITY

The area immediately surrounding the site is primarily vacant, with the exception of urban residential uses to the south of the international border, approximately 0.25-mile to the south.

Current aerial photos of the site indicate the nearest offsite residences to be approximately 1,540' to the south. No residences are shown within one mile to the north, east, and west.

(Source: Google Earth 2010)

HEALTH AND SAFETY

Wildland fires: Designated as State Responsibility Area (SRA) "Very High" fire hazard area in San Diego County

(Source: General Plan Update FEIR, Figure 2.7-5, County Fire Hazard Severity Zones in FRA, SRA, and LRA)

SDG&E transmission lines are located in proximity to the site.

TECHNICAL SUITABILITY

Site Capacity: Based on information provided in Proposition A, the facility would occupy 340 acres of a 450 acre site. The facility has not been designed and a Solid Waste Facility Permit application has not been filed. However, preliminary information provided by the project proponent estimates that the facility would have a total capacity of approximately 180,000,000 tons and will be ready to accept waste by 2020.

(Source: Email correspondence, Lindsay Arbone, Asset Manager, SD Commercial, LLC, March 22, 2011)

Soils: Shallow alluvial soils (approximately two feet deep) and coarse materials unsuitable for liner or cover soils. Soils would need to be imported.

Airports: Brown's Field is located approximately two miles to the west.

Proximity to Sources:

The site, which is located in the far southern portion of the County, would be located a distance from population centers located in North County.

SITE AVAILABILITY

Private ownership

SUMMARY FINDINGS AND RECOMMENDATION

In light of the passage of Proposition A and the inclusion of East Otay Mesa in the County's Siting Element as a reserved site and based on available information, the site appears to be feasible for the development of a landfill with respect to landfill capacity and the distance of the site from a known earthquake fault. However, the site may not have adequate cover soils, which suggests the need to import soils. The site is located in South San Diego County at a considerable distance from the population centers in North County that generate solid waste. Thus, costs would be greater for the longer haul as well as potential air quality, greenhouse gas emissions, and traffic impacts that would result. Other detriments of the site, such as fire hazard and impacts to biological habitat are common among much of the undeveloped land in the County and, therefore, do not particularly distinguish this site. However, this site, like the Sycamore Canyon Landfill Expansion is being pursued in its own right, which may suggest it would not represent a true off-site alternative to the proposed Gregory Canyon Landfill. Based on the distance from the site to North County and the purpose and need statement for the Gregory Canyon Landfill, it is recommended that the East Otay Mesa not be considered as an off-site alternative in the Gregory Canyon EIS.

R3 Consulting Group, Inc.
Resources Respect Responsibility

R3 Consulting Group, Inc.
4811 Chippendale Drive, Suite 708
Sacramento, CA 95841
Tel. 916-576-0306
Fax: 916-331-9600
www.r3cgi.com

December 29, 2011

Bill Miller, Senior Project Manager
U.S. Army Corps of Engineers
Arizona Branch, Regulatory Division
3636 N. Central Avenue, Suite 900
Phoenix, AZ 85012-1936

Subject: Cost of transfer and transport analysis of alternative disposal sites to the proposed Gregory Canyon Landfill

Dear Mr. Miller:

R3 Consulting Group, Inc. (R3) was engaged by the United States Army Corps of Engineers (Corps) to complete a cost of transfer and transport analysis of alternative disposal sites to the proposed Gregory Canyon Landfill (GCL). The objectives of the Report were to provide:

- A listing of the communities represented as North San Diego County, and their respective disposal tonnages as provided in the Needs Assessment prepared by R3 Consulting Group, dated April 2011;
- Travel distances to the current transfer stations and the current and five alternative disposal sites from communities in North San Diego County;
- The potential impact of West Miramar Landfill closure and potential destination for the orphaned disposal tonnage; and
- Estimated cost impact of transfer, transport, and associated facility tipping fees to the five alternative disposal sites for the communities in North San Diego County.

R3 recently completed a Needs Assessment of the Proposed GCL to provide the Corps with an independent review to address whether a new regional landfill is warranted in the general vicinity of the proposed GCL site. All tonnage and population values used in this Letter Report come from the Needs Assessment, unless specified otherwise.

We appreciate the opportunity to provide assistance to PCR and the Corps. Should there be any questions or comments regarding this submittal please do not hesitate to contact me by phone at (916) 576-0306, or by e-mail at rterwin@r3cgi.com.

Yours truly,

R3 CONSULTING GROUP, INC.

Richard Tagore-Erwin
Principal

Attachments

Attachment 1 - *Jurisdictions in North San Diego County: In and Out of County Landfills Used in 2009 that Accept MSW*

Background

North San Diego County Jurisdictions

The following table provides a list of the jurisdictions in North San Diego County as defined in the Purpose and Need Statement[1]; the associated disposal tonnage and population information has been taken from R3's Needs Assessment[2].

TABLE 1
Jurisdictions in North San Diego County: 3-Year Annual Average Disposal Tonnages for 2007-2009 and 2010 Population Values

North San Diego County Jurisdiction	Annual Average Tons Disposed[3] (2007 – 2009)	2010 Population Estimate (SANDAG)
Carlsbad	120,924	106,804
Encinitas	69,256	65,171
Escondido	138,751	147,514
Oceanside	138,536	183,095
San Marcos	88,339	84,391
Solana Beach	15,895	13,783
Vista	102,518	97,513
Unincorporated Area – Rainbow CDP	2,164	1,832
Unincorporated Area – Ramona CDP	23,967	20,292
Unincorporated Area – Borrego Springs CDP[4]	4,050	3,429
Total	**704,402**	**723,824**

1 R3 used the most recent Draft Purpose and Need Statement received from PCR Services Corporation (PCR), dated 2011.

2 Needs Assessment of the Proposed Gregory Canyon Landfill in Northern San Diego County, prepared for United States Army Corps of Engineers by R3 Consulting Group, Inc., April 14, 2011.

3 Annual Average Tons Disposed values are rounded to the nearest ton.

4 The three unincorporated Census Designated Places (CDPs) were selected based on their differing geographic proximities within North San Diego County. Population values were gathered from the 2010 Census, and disposal tonnages were calculated based on the CDP's population percentage of the total unincorporated county. For analysis purposes, the unincorporated portion of North San Diego County will consist of these three communities only; therefore, the disposal tonnage associated with each CDP does not account for all of the unincorporated County disposal tonnage.

R3

Disposal Facilities

The following disposal facilities are currently active and located in San Diego County:

TABLE 2 Landfill Facilities in San Diego County: 3-Year Annual Average Accepted Waste Tonnages for 2007-2009, Estimated Remaining Disposal Capacity, and Estimated Closure Date			
Site Name	**Annual Average Tons Disposed (2007 – 2009)**	**Estimated Remaining Disposal Capacity as of 12/2010 (Tons)**	**Estimated Closure Date**
Ramona Landfill[5]	55,730	x	Inactive
Borrego Landfill	8,014	231,404	10/31/2030
Otay Landfill	1,274,826	16,520,263	4/30/2021
West Miramar Sanitary Landfill	1,075,218	5,010,847	1/31/2022[6]
Sycamore Canyon Landfill	900,891	20,090,649	12/31/2031
San Onofre Landfill	584	621,909	11/30/2257
Las Pulgas Landfill[7]	31,957	5,020,030	3/31/2047
Total	**3,347,220**	**47,495,101**	

The destination facilities that accept mixed municipal waste and the 2009 disposal tonnages for each North San Diego County jurisdiction have been provided in Attachment 1.

Additionally, the following locations have been identified as potential off-site alternatives to GCL for analysis in the Environmental Impact Statement (EIS), and would be located in San Diego County[8]:

- Aspen Road;
- Gopher Canyon Road;
- Merriam Mountain;
- Sycamore Canyon Expansion; and
- East Otay Mesa.

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5 Note: Ramona Landfill is no longer permitted or active, but is included in this table because it accepted waste until 2009.

6 According to the final Five-Year Review Report of the County Integrated Waste Management Plan for the County of San Diego, prepared by the County of San Diego Department of Public Works, March 23, 2011, p. 11., West Miramar Sanitary Landfill is assumed to close in 2022.

7 San Onofre and Las Pulgas landfills only accept waste from Camp Pendleton and do not accept waste from the commercial or public sectors and are therefore not considered in this analysis.

8 Information on the five potential alternative sites to GCL, including each site's latitude and longitude coordinates, were provided by PCR. Most of the alternative disposal facilities are proposed and have not been constructed.

R3

Transfer Stations

North San Diego County currently has six transfer stations with the ability to transport medium to large volumes of solid waste. For the purposes of this analysis, only transfer stations which accept mixed municipal waste and have a maximum daily throughput of at least 200 tons per day have been considered. The following table shows the transfer station facilities in North San Diego County, along with their location, maximum daily throughput, and business owner/land owner.

TABLE 3
Transfer Station Facilities in North San Diego County: Location, Maximum Daily Throughput, and Business Owner/Land Owner

Site Name	Location	Maximum Daily Throughput (Tons per Day)	Operator/ Business Owner	Land Owner
Escondido Resource Recovery	1044 W. Washington Avenue, Escondido, CA 92025	2,500	Jemco Equipment Corporation	Jemco Equipment Corporation
Palomar Transfer Station, Inc.	5960 El Camino Real, Carlsbad, CA 92020	800	Palomar Transfer Station, Inc.	County of San Diego, Airport Division
SANCO Recycling	1044 Washington Avenue, Escondido, CA 92025	735	SANCO Services	Jemco Equipment Corporation
Waste Management of North County	2376 Industry Street, Oceanside, CA 92054	4,500	Waste Management Of North County	Waste Management Of North County
Fallbrook Recycling Facility	550 W. Aviation Road, Fallbrook, CA 92028	500	Fallbrook Refuse Service	EDCO Disposal Corporation
Ramona MRF and Transfer Station	324 Maple Street, Ramona, CA 92065	370	Jemco Equipment Corporation	Ramona Disposal Services

The following table shows the proximity (in miles) of each jurisdiction to the transfer stations in North San Diego County. The two closest transfer stations to each jurisdiction are highlighted in green. In addition, each jurisdiction's hauler, Waste Management (WM) or Edco Disposal (EDCO), is also shown.

TABLE 4
Distance to Transfer Stations from Jurisdictions in North San Diego County

Transfer Station	Carlsbad (WM)	Encinitas (EDCO)	Escondido (EDCO)	Oceanside (WM)	San Marcos (EDCO)
Escondido Resource Recovery	18.2	27.3	1.4	20.0	4.2
SANCO Recycling[9]	18.2	27.3	1.4	20.0	4.2
Palomar Transfer Station, Inc.	5.9	8.5	12.9	10.1	7.0
Waste Management of North County	3.5	12.7	20.9	2.5	15.9
Fallbrook Recycling Facility	22.4	31.6	27.2	19.2	21.2
Ramona MRF and Transfer Station	36.9	46.0	17.5	38.7	23.8

Transfer Station	Solana Beach (WM)	Vista (EDCO)	Unincorporated San Diego County[10]		
			Rainbow	Ramona	Borrego Springs
Escondido Resource Recovery	26.5	11.4	23.8	18.6	69.4
SANCO Recycling	26.5	11.4	23.8	18.6	69.4
Palomar Transfer Station, Inc.	14.6	7.0	34.6	31.4	82.2
Waste Management of North County	18.7	10.2	23.6	36.6	87.5
Fallbrook Recycling Facility	37.7	13.5	9.2	44.3	81.6
Ramona MRF and Transfer Station	38.8	30.2	41.3	0.1	51.6

R3 was not able to verify which transfer station(s) each jurisdiction currently utilizes; however, because there are a limited amount of medium to large volume transfer stations in North San Diego County, for purposes of this analysis, it was assumed that each jurisdiction would transport 100 percent of its disposal tonnage to one of its two closest transfer stations.

Analysis

For analysis purposes, it has been assumed that each jurisdiction transports 100 percent of their disposal tonnage to one of the current or alternative disposal facilities. Sycamore Canyon Landfill has been included and analyzed as an alternative facility due to the planned site expansions; it should be noted, however, that several jurisdictions currently dispose of waste at Sycamore.

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[9] According to CalRecycle, the Escondido Resource Recovery and SANCO Recycling transfer stations are both located at 1044 Washington Avenue, Escondido, CA, and are therefore grouped together for the purposes of this analysis. Accordingly, three transfer stations were analyzed for the jurisdictions of Escondido and San Marcos, and CDPs of Ramona and Borrego Springs.

[10] Because the CDPs are within the unincorporated portion of San Diego County, R3 was not able to definitively determine the region's waste hauler(s).

The following provides the key assumptions in the overall analysis:

- For each jurisdiction, City Hall has been used as the point-of-origin of waste. For each CDP, the latitude and longitude coordinates provided by the 2010 Census have been assumed as the point-of-origin of waste;
- All tonnage and population values used in this Letter Report come from the Needs Assessment, unless specified otherwise;
- Disposal tonnage has been assumed to remain constant, and the analysis does not account for potential increases or decreases in population or economic inflation;
- 100 percent of each jurisdiction's or CDP's disposal tonnage has been assumed to go to one of its two closest transfer stations, and from that transfer station to one of the current or alternative disposal facilities;
- The potential impact of self-hauled waste has not been evaluated as these tonnages cannot be uniformly quantified;[11]
- If tipping fees were not available for current or alternative sites, R3 used an average of the publically posted tipping fees for landfill sites within San Diego County; and
- The analysis does not take into account potential direct-hauled waste, as the jurisdictions that are currently directly hauling waste to disposal facilities would likely continue to do so. Furthermore, since the facility operator/land owner is not known for the potential alternative disposal facilities, any analysis would be speculative in regards to whether or not the facilities would receive direct-hauled waste from the respective jurisdictions.

Transport Analysis Assumptions and Methodology

In developing our analysis of the potential relationship between North San Diego County jurisdictions and the current and alternative disposal facilities, the following three main factors were considered:

- The two closest transfer station facilities to each jurisdiction or CDP, and the total transfer time that would be required to transport material from one of the two closest transfer station facilities to one of the current or alternative disposal facilities;
- The average transfer cost per ton per round trip minute (RTM); and
- The availability of alternative disposal facilities.

In addition, we assumed that all transfer vehicles would be returning from the disposal facility empty.

The analysis was based on the differential in time to transfer the material instead of the differential in distance to transfer the material in order to allow us to utilize current GPS mapping and tracking programs. These programs, such as MapQuest, Microsoft Trips and Streets and Google Maps utilize GPS technology, road types and traffic data to estimate not only the distance and routing

[11] While R3 was not able to quantify the potential impact of self-hauled waste to the current or alternative disposal facilities, it is estimated that a maximum of approximately 10 to 20 percent of a jurisdiction's or CDP's waste could come from self-haul sources.

between to two points, but also the average driving time given the specific conditions of the route. In addition, they allow the selection of road types such as highways versus small arterials, which allows for the elimination of small roads that are not suitable for transfer trailers. After considering the variables involved in the transfer process, R3 believes that basing the analysis on the estimated time differential instead of the distance differential will produce more accurate and reliable information.

Based on feedback from several transfer station facility operators, it was calculated that the average transfer cost is approximately $0.08 per ton per haul minute, which equates to $0.16 per ton per round trip minute. This calculation is based on a total per-hour transport cost of $100 and an average haul tonnage of 21 tons per load. Round trip minute units were used to account for the transfer trailers' initial and return trip from the landfill facilities. As stated previously, the transfer trailers were assumed to return from the disposal facility empty. Therefore, each jurisdiction's annual transport cost is equal to the 3-year annual average disposal tons multiplied by $0.16 per ton per round trip minute and the minutes from transfer station to disposal facility.

While R3 did not quantify the economic benefit to the respective haulers for delivering material to facilities in which they operate, we believe that costs would be a determining factor in the haulers' ultimate decision of whether or not to dispose of refuse in a facility that they do not own or operate.

This analysis did not take into account the cost of loading or unloading transfer vehicles, as those costs would be incurred regardless of which facility was used for disposal. Accordingly, the transfer station handling costs only represent the cost of handling the material once it has been unloaded at the transfer station facility. This per-ton transfer station handling fee and the per-ton landfill tipping fee were assumed to remain constant, since those fees would be negotiated between the jurisdiction or hauler and the respective facility. Therefore, the annual transfer station handling cost and the annual landfill tipping fee cost remain constant for each jurisdiction.

Carlsbad

The two closest transfer stations to the jurisdiction of Carlsbad are the Palomar Transfer Station and the Waste Management of North County Transfer Station. Because Waste Management is the residential and commercial franchised hauler in Carlsbad, it is likely that the Waste Management of North County Transfer Station will be used. The following table shows the transport time from each transfer station to each current and alternative disposal facility, estimated annual transfer station handling costs, annual transport costs, annual landfill tipping fee costs, total annual costs, and the percent change in annual costs from current conditions.

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TABLE 5 Carlsbad Transfer Analysis						
Jurisdiction of Carlsbad			**3-Year Annual Average Disposal Tons: 120,924**			
Transfer Station and Alternative Disposal Facility (Alternative Facilities in Red)	**Time from Transfer Station to Disposal Facility (Minutes)**	**Annual Transfer Station Handling Cost[12]**	**Annual Transport Cost**	**Annual Landfill Tipping Fee Cost[13]**	**Total Annual Cost**	**% Change in Annual Cost from Current[14]**
		$12.00 / Ton	**$0.16 / Ton per RTM**			
Transfer Station: Palomar Transfer Station, Inc.						
Borrego	123	$1,451,093	$2,379,792	$6,126,835	**$9,957,720**	13.1%
Otay (Currently Used - Approx. 98% of Waste Disposed in '09)	55	$1,451,093	$1,064,135	$6,288,068	**$8,803,295**	0.0%
West Miramar	32	$1,451,093	$619,133	$5,804,370	**$7,874,596**	-10.5%
Aspen Road	47	$1,451,093	$909,351	$6,126,835	**$8,487,279**	-3.6%
East Otay Mesa	75	$1,451,093	$1,451,093	$6,126,835	**$9,029,020**	2.6%
Gopher Canyon Road	28	$1,451,093	$541,741	$6,126,835	**$8,119,669**	-7.8%
Merriam Mountain South	33	$1,451,093	$638,481	$6,126,835	**$8,216,409**	-6.7%
Sycamore Canyon Landfill Expansion	44	$1,451,093	$851,308	$6,288,068	**$8,590,468**	-2.4%
Transfer Station: Waste Management of North County						
Borrego	126	$1,451,093	$2,437,836	$6,126,835	**$10,015,763**	13.5%
Otay (Currently Used - Approx. 98% of Waste Disposed in '09)	56	$1,451,093	$1,083,482	$6,288,068	**$8,822,643**	0.0%
West Miramar	33	$1,451,093	$638,481	$5,804,370	**$7,893,944**	-10.5%
Aspen Road	46	$1,451,093	$890,003	$6,126,835	**$8,467,931**	-4.0%
East Otay Mesa	75	$1,451,093	$1,451,093	$6,126,835	**$9,029,020**	2.3%
Gopher Canyon Road	27	$1,451,093	$522,393	$6,126,835	**$8,100,321**	-8.2%
Merriam Mountain South	36	$1,451,093	$696,524	$6,126,835	**$8,274,452**	-6.2%
Sycamore Canyon Landfill Expansion	45	$1,451,093	$870,656	$6,288,068	**$8,609,816**	-2.4%

[12] The transfer station handling cost remains constant for each jurisdiction because it is based on a fixed average of $12.00 per ton. This value was determined using input gathered from several transfer station facility operators.

[13] Landfill Tipping Fees are as follows: $52.00 per ton for Otay and Sycamore Canyon Landfill Expansion; $48.00 per ton for West Miramar; and $50.67 per ton for all remaining landfills and alternative disposal sites ($50.67 is the average of the three known current tipping fees).

[14] The "% Change in Annual Cost from Current" values were calculated based on the percent change of total annual costs from the jurisdiction's currently used landfill to one of the current or alternative disposal sites.

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As shown above, Borrego and East Otay Mesa are the only disposal facilities that may result in increased transportation costs. Each of the other disposal facilities in the County, including the other alternatives sites, may result in a decrease in annual transport costs.

Encinitas

Like Carlsbad, the two closest transfer stations to the jurisdiction of Encinitas are the Palomar Transfer Station and the Waste Management of North County Transfer Station. The following table shows the transport time from each transfer station to each current and alternative disposal facility, estimated annual transfer station handling costs, annual transport costs, annual landfill tipping fee costs, total annual costs, and percent change in annual costs from current conditions.

TABLE 6
Encinitas Transfer Analysis

Jurisdiction of Encinitas			3-Year Annual Average Disposal Tons: 69,255			
Transfer Station and Alternative Disposal Facility (Alternative Facilities in Red)	**Time from Transfer Station to Disposal Facility (Minutes)**	**Annual Transfer Station Handling Cost $12.00 / Ton**	**Annual Transport Cost $0.16 / Ton per RTM**	**Annual Landfill Tipping Fee Cost**	**Total Annual Cost**	**% Change in Annual Cost from Current**
Transfer Station: Palomar Transfer Station, Inc.						
Borrego	123	$831,072	$1,362,958	$3,508,970	**$5,702,999**	15.9%
Otay	55	$831,072	$609,453	$3,601,311	**$5,041,835**	2.5%
West Miramar	32	$831,072	$354,591	$3,324,287	**$4,509,949**	-8.3%
Aspen Road	47	$831,072	$520,805	$3,508,970	**$4,860,846**	-1.2%
East Otay Mesa	75	$831,072	$831,072	$3,508,970	**$5,171,113**	5.1%
Gopher Canyon Road	28	$831,072	$310,267	$3,508,970	**$4,650,308**	-5.5%
Merriam Mountain South	33	$831,072	$365,672	$3,508,970	**$4,705,713**	-4.4%
Sycamore Canyon Landfill Expansion (Currently Used - Approx. 98% of Waste Disposed in '09)	44	$831,072	$487,562	$3,601,311	**$4,919,945**	0.0%
Transfer Station: Waste Management of North County						
Borrego	126	$831,072	$1,396,201	$3,508,970	**$5,736,242**	16.3%
Otay	56	$831,072	$620,534	$3,601,311	**$5,052,916**	2.5%
West Miramar	33	$831,072	$365,672	$3,324,287	**$4,521,030**	-8.3%
Aspen Road	46	$831,072	$509,724	$3,508,970	**$4,849,765**	-1.6%
East Otay Mesa	75	$831,072	$831,072	$3,508,970	**$5,171,113**	4.9%
Gopher Canyon Road	27	$831,072	$299,186	$3,508,970	**$4,639,227**	-5.9%
Merriam Mountain South	36	$831,072	$398,914	$3,508,970	**$4,738,956**	-3.9%
Sycamore Canyon Landfill Expansion (Currently Used - Approx. 98% of Waste Disposed in '09)	45	$831,072	$498,643	$3,601,311	**$4,931,026**	0.0%

As shown above, the West Miramar, Aspen Road, Gopher Canyon, and Merriam Mountain disposal facilities may result in a decrease in annual transport costs for the jurisdiction of Encinitas. Each of the other disposal facilities in the County, including the other alternatives sites, may result in an increase in annual transport costs. Because the majority of Encinitas' waste is currently disposed at Sycamore Canyon Landfill, it is likely that Sycamore will continue to receive the majority of the jurisdiction's waste.

Escondido

The closest transfer stations to the jurisdiction of Escondido are the Escondido Resource Recovery and SANCO Recycling transfer stations[15], and the Palomar Transfer Station. The following table shows the transport time from each transfer station to each current and alternative disposal facility, estimated annual transfer station handling costs, annual transport costs, annual landfill tipping fee costs, total annual costs, and percent change in annual costs from current conditions.

TABLE 7
Escondido Transfer Analysis

Jurisdiction of Escondido			3-Year Annual Average Disposal Tons: 138,751			
Transfer Station and Alternative Disposal Facility (Alternative Facilities in Red)	**Time from Transfer Station to Disposal Facility (Minutes)**	**Annual Transfer Station Handling Cost**	**Annual Transport Cost**	**Annual Landfill Tipping Fee Cost**	**Total Annual Cost**	**% Change in Annual Cost from Current**
		$12.00 / Ton	**$0.16 / Ton per RTM**			
Transfer Station: Escondido Resource Recovery/SANCO Recycling						
Borrego	106	$1,665,018	$2,353,225	$7,030,076	**$11,048,319**	14.7%
Otay	47	$1,665,018	$1,043,411	$7,215,078	**$9,923,507**	3.0%
West Miramar	26	$1,665,018	$577,206	$6,660,072	**$8,902,296**	-7.6%
Aspen Road	33	$1,665,018	$732,608	$7,030,076	**$9,427,701**	-2.2%
East Otay Mesa	66	$1,665,018	$1,465,216	$7,030,076	**$10,160,309**	5.5%
Gopher Canyon Road	29	$1,665,018	$643,807	$7,030,076	**$9,338,901**	-3.1%
Merriam Mountain South	26	$1,665,018	$577,206	$7,030,076	**$9,272,300**	-3.8%
Sycamore Canyon Landfill Expansion (Currently Used - Approx. 97% of Waste Disposed in '09)	34	$1,665,018	$754,808	$7,215,078	**$9,634,904**	0.0%

[15] According to CalRecycle, the Escondido Resource Recovery and SANCO Recycling transfer stations are both located at 1044 Washington Avenue, Escondido, CA, and are therefore grouped together for the purposes of this analysis.

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TABLE 7 Escondido Transfer Analysis						
Jurisdiction of Escondido			**3-Year Annual Average Disposal Tons: 138,751**			
Transfer Station and Alternative Disposal Facility (Alternative Facilities in Red)	**Time from Transfer Station to Disposal Facility (Minutes)**	**Annual Transfer Station Handling Cost**	**Annual Transport Cost**	**Annual Landfill Tipping Fee Cost**	**Total Annual Cost**	**% Change in Annual Cost from Current**
		$12.00 / Ton	**$0.16 / Ton per RTM**			
Transfer Station: Palomar Transfer Station, Inc.						
Borrego	123	$1,665,018	$2,730,629	$7,030,076	**$11,425,723**	15.9%
Otay	55	$1,665,018	$1,221,013	$7,215,078	**$10,101,109**	2.5%
West Miramar	32	$1,665,018	$710,408	$6,660,072	**$9,035,497**	-8.3%
Aspen Road	47	$1,665,018	$1,043,411	$7,030,076	**$9,738,505**	-1.2%
East Otay Mesa	75	$1,665,018	$1,665,018	$7,030,076	**$10,360,112**	5.1%
Gopher Canyon Road	28	$1,665,018	$621,607	$7,030,076	**$9,316,700**	-5.5%
Merriam Mountain South	33	$1,665,018	$732,608	$7,030,076	**$9,427,701**	-4.4%
Sycamore Canyon Landfill Expansion (Currently Used - Approx. 97% of Waste Disposed in '09)	44	$1,665,018	$976,811	$7,215,078	**$9,856,906**	0.0%

As shown above, the West Miramar, Aspen Road, Gopher Canyon, and Merriam Mountain disposal facilities may result in a decrease in annual transport costs for the jurisdiction of Escondido. Each of the other disposal facilities in the County, including the other alternatives sites, may result in an increase in annual transport costs. Because the majority of Escondido's waste is currently disposed at Sycamore Canyon Landfill, it is likely that Sycamore will continue to receive the majority of the jurisdiction's waste.

Oceanside

The two closest transfer stations to the jurisdiction of Oceanside are the Palomar Transfer Station and the Waste Management of North County Transfer Station. Because Waste Management is the residential and commercial franchised hauler in Oceanside, it is likely that the Waste Management of North County Transfer Station will be used. Oceanside is the only jurisdiction in North San Diego County that utilizes an out-of-county landfill (Prima Deshecha) to dispose of the majority of its waste. The following table shows the transport time from each transfer station to each current and alternative disposal facility, estimated annual transfer station handling costs, annual transport costs, annual landfill tipping fee costs, total annual costs, and the percent change in annual costs from current conditions.

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TABLE 8 Oceanside Transfer Analysis						
Jurisdiction of Oceanside			**3-Year Annual Average Disposal Tons:138,535**			
Transfer Station and Alternative Disposal Facility (Alternative Facilities in Red)	**Time from Transfer Station to Disposal Facility (Minutes)**	**Annual Transfer Station Handling Cost**	**Annual Transport Cost**	**Annual Landfill Tipping Fee Cost**	**Total Annual Cost**	**% Change in Annual Cost from Current**
		$12.00 / Ton	**$0.16 / Ton per RTM**			
Transfer Station: Palomar Transfer Station, Inc.						
Borrego	123	$1,662,428	$2,726,382	$7,019,139	**$11,407,949**	17.6%
Otay	55	$1,662,428	$1,219,114	$7,203,854	**$10,085,395**	4.0%
West Miramar	32	$1,662,428	$709,303	$6,649,711	**$9,021,441**	-7.0%
Prima Deshecha Sanitary Landfill (Currently Used - Approx. 70% of Waste Disposed in '09)	46	$1,662,428	$1,019,622	$7,019,139	**$9,701,190**	0.0%
Aspen Road	47	$1,662,428	$1,041,788	$7,019,139	**$9,723,355**	0.2%
East Otay Mesa	75	$1,662,428	$1,662,428	$7,019,139	**$10,343,995**	6.6%
Gopher Canyon Road	28	$1,662,428	$620,640	$7,019,139	**$9,302,207**	-4.1%
Merriam Mountain South	33	$1,662,428	$731,468	$7,019,139	**$9,413,035**	-3.0%
Sycamore Canyon Landfill Expansion	44	$1,662,428	$975,291	$7,203,854	**$9,841,572**	1.4%
Transfer Station: Waste Management of North County						
Borrego	126	$1,662,428	$2,792,879	$7,019,139	**$11,474,446**	20.8%
Otay	56	$1,662,428	$1,241,279	$7,203,854	**$10,107,561**	6.4%
West Miramar	33	$1,662,428	$731,468	$6,649,711	**$9,043,607**	-4.8%
Prima Deshecha Sanitary Landfill (Currently Used - Approx. 70% of Waste Disposed in '09)	37	$1,662,428	$820,131	$7,019,139	**$9,501,698**	0.0%
Aspen Road	46	$1,662,428	$1,019,622	$7,019,139	**$9,701,190**	2.1%
East Otay Mesa	75	$1,662,428	$1,662,428	$7,019,139	**$10,343,995**	8.9%
Gopher Canyon Road	27	$1,662,428	$598,474	$7,019,139	**$9,280,041**	-2.3%
Merriam Mountain South	36	$1,662,428	$797,965	$7,019,139	**$9,479,533**	-0.2%
Sycamore Canyon Landfill Expansion	45	$1,662,428	$997,457	$7,203,854	**$9,863,738**	3.8%

As shown, the West Miramar, Gopher Canyon, and Merriam Mountain disposal facilities may result in a decrease in annual transport costs. Each of the other disposal facilities in the County, including the other alternatives sites, may result in an increase in annual transport costs.

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San Marcos

The closest transfer stations to the jurisdiction of San Marcos are the Escondido Resource Recovery and SANCO Recycling transfer stations, and the Palomar Transfer Station. The following table shows the transport time from each transfer station to each current and alternative disposal facility, estimated annual transfer station handling costs, annual transport costs, annual landfill tipping fee costs, total annual costs, and percent change in annual costs from current conditions.

TABLE 9
San Marcos Transfer Analysis

Jurisdiction of San Marcos			3-Year Annual Average Disposal Tons: 88,339			
Transfer Station and Alternative Disposal Facility (Alternative Facilities in Red)	**Time from Transfer Station to Disposal Facility (Minutes)**	**Annual Transfer Station Handling Cost**	**Annual Transport Cost**	**Annual Landfill Tipping Fee Cost**	**Total Annual Cost**	**% Change in Annual Cost from Current**
		$12.00 / Ton	**$0.16 / Ton per RTM**			
Transfer Station: Escondido Resource Recovery/SANCO Recycling						
Borrego	106	$1,060,071	$1,498,234	$4,475,855	**$7,034,159**	14.7%
Otay	47	$1,060,071	$664,311	$4,593,640	**$6,318,022**	3.0%
West Miramar	26	$1,060,071	$367,491	$4,240,284	**$5,667,846**	-7.6%
Aspen Road	33	$1,060,071	$466,431	$4,475,855	**$6,002,357**	-2.2%
East Otay Mesa	66	$1,060,071	$932,862	$4,475,855	**$6,468,788**	5.5%
Gopher Canyon Road	29	$1,060,071	$409,894	$4,475,855	**$5,945,820**	-3.1%
Merriam Mountain South	26	$1,060,071	$367,491	$4,475,855	**$5,903,417**	-3.8%
Sycamore Canyon Landfill Expansion (Currently Used - Approx. 96% of Waste Disposed in '09)	34	$1,060,071	$480,565	$4,593,640	**$6,134,277**	0.0%
Transfer Station: Palomar Transfer Station, Inc.						
Borrego	123	$1,665,018	$2,730,629	$4,475,855	**$11,425,723**	15.9%
Otay	55	$1,665,018	$1,221,013	$4,593,640	**$10,101,109**	2.5%
West Miramar	32	$1,665,018	$710,408	$4,240,284	**$9,035,497**	-8.3%
Aspen Road	47	$1,665,018	$1,043,411	$4,475,855	**$9,738,505**	-1.2%
East Otay Mesa	75	$1,665,018	$1,665,018	$4,475,855	**$10,360,112**	5.1%
Gopher Canyon Road	28	$1,665,018	$621,607	$4,475,855	**$9,316,700**	-5.5%
Merriam Mountain South	33	$1,665,018	$732,608	$4,475,855	**$9,427,701**	-4.4%
Sycamore Canyon Landfill Expansion (Currently Used - Approx. 96% of Waste Disposed in '09)	44	$1,665,018	$976,811	$4,593,640	**$9,856,906**	0.0%

As shown above, the West Miramar, Aspen Road, Gopher Canyon, and Merriam Mountain disposal facilities may result in a decrease in annual transport costs for the jurisdiction of San Marcos. Each of the other disposal facilities in the County, including the other alternatives sites, may result in an increase in annual transport costs. Because the majority of San Marcos' waste is currently disposed

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at Sycamore Canyon Landfill, it is likely that Sycamore will continue to receive the majority of the jurisdiction's waste.

Solana Beach

The two closest transfer stations to the jurisdiction of Solana Beach are the Palomar Transfer Station and the Waste Management of North County Transfer Station. The following table shows the transport time from each transfer station to each current and alternative disposal facility, estimated annual transfer station handling costs, annual transport costs, annual landfill tipping fee costs, total annual costs, and percent change in annual costs from current conditions.

TABLE 10
Solana Beach Transfer Analysis

Jurisdiction of Solana Beach			3-Year Annual Average Disposal Tons: 15,895			
Transfer Station and Alternative Disposal Facility (Alternative Facilities in Red)	**Time from Transfer Station to Disposal Facility (Minutes)**	**Annual Transfer Station Handling Cost**	**Annual Transport Cost**	**Annual Landfill Tipping Fee Cost**	**Total Annual Cost**	**% Change in Annual Cost from Current**
		$12.00 / Ton	**$0.16 / Ton per RTM**			
Transfer Station: Palomar Transfer Station, Inc.						
Borrego	123	$190,745	$312,822	$805,368	**$1,308,935**	13.1%
Otay (Currently Used - Approx. 56% of Waste Disposed in '09)	55	$190,745	$139,880	$826,562	**$1,157,186**	0.0%
West Miramar	32	$190,745	$81,385	$762,980	**$1,035,110**	-10.5%
Aspen Road	47	$190,745	$119,534	$805,368	**$1,115,646**	-3.6%
East Otay Mesa	75	$190,745	$190,745	$805,368	**$1,186,858**	2.6%
Gopher Canyon Road	28	$190,745	$71,211	$805,368	**$1,067,324**	-7.8%
Merriam Mountain South	33	$190,745	$83,928	$805,368	**$1,080,041**	-6.7%
Sycamore Canyon Landfill Expansion	44	$190,745	$111,904	$826,562	**$1,129,210**	-2.4%
Transfer Station: Waste Management of North County						
Borrego	126	$190,745	$320,452	$805,368	**$1,316,564**	13.5%
Otay (Currently Used - Approx. 56% of Waste Disposed in '09)	56	$190,745	$142,423	$826,562	**$1,159,730**	0.0%
West Miramar	33	$190,745	$83,928	$762,980	**$1,037,653**	-10.5%
Aspen Road	46	$190,745	$116,990	$805,368	**$1,113,103**	-4.0%
East Otay Mesa	75	$190,745	$190,745	$805,368	**$1,186,858**	2.3%
Gopher Canyon Road	27	$190,745	$68,668	$805,368	**$1,064,781**	-8.2%
Merriam Mountain South	36	$190,745	$91,558	$805,368	**$1,087,670**	-6.2%
Sycamore Canyon Landfill Expansion	45	$190,745	$114,447	$826,562	**$1,131,754**	-2.4%

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With the exception of the East Otay Mesa and Borrego facilities, each current and alternative disposal facility may result in a decrease in annual transport costs for Solana Beach.

Vista

The two closest transfer stations to the jurisdiction of Vista are the Palomar Transfer Station and the Waste Management of North County Transfer Station. The following table shows the transport time from each transfer station to each current and alternative disposal facility, estimated annual transfer station handling costs, annual transport costs, annual landfill tipping fee costs, total annual costs, and percent change in annual costs from current conditions.

TABLE 11
Vista Transfer Analysis

Jurisdiction of Vista			3-Year Annual Average Disposal Tons: 102,518			
Transfer Station and Alternative Disposal Facility (Alternative Facilities in Red)	**Time from Transfer Station to Disposal Facility (Minutes)**	**Annual Transfer Station Handling Cost**	**Annual Transport Cost**	**Annual Landfill Tipping Fee Cost**	**Total Annual Cost**	**% Change in Annual Cost from Current**
		$12.00 / Ton	**$0.16 / Ton per RTM**			
Transfer Station: Palomar Transfer Station, Inc.						
Borrego	123	$1,230,216	$2,017,554	$5,194,246	**$8,442,016**	15.9%
Otay	55	$1,230,216	$902,158	$5,330,937	**$7,463,311**	2.5%
West Miramar	32	$1,230,216	$524,892	$4,920,864	**$6,675,973**	-8.3%
Aspen Road	47	$1,230,216	$770,935	$5,194,246	**$7,195,397**	-1.2%
East Otay Mesa	75	$1,230,216	$1,230,216	$5,194,246	**$7,654,678**	5.1%
Gopher Canyon Road	28	$1,230,216	$459,281	$5,194,246	**$6,883,743**	-5.5%
Merriam Mountain South	33	$1,230,216	$541,295	$5,194,246	**$6,965,757**	-4.4%
Sycamore Canyon Landfill Expansion (Currently Used - Approx. 88% of Waste Disposed in '09)	44	$1,230,216	$721,727	$5,330,937	**$7,282,879**	0.0%
Transfer Station: Waste Management of North County						
Borrego	126	$1,230,216	$2,066,763	$5,194,246	**$8,491,225**	16.3%
Otay	56	$1,230,216	$918,561	$5,330,937	**$7,479,714**	2.5%
West Miramar	33	$1,230,216	$541,295	$4,920,864	**$6,692,376**	-8.3%
Aspen Road	46	$1,230,216	$754,533	$5,194,246	**$7,178,995**	-1.6%
East Otay Mesa	75	$1,230,216	$1,230,216	$5,194,246	**$7,654,678**	4.9%
Gopher Canyon Road	27	$1,230,216	$442,878	$5,194,246	**$6,867,340**	-5.9%
Merriam Mountain South	36	$1,230,216	$590,504	$5,194,246	**$7,014,966**	-3.9%
Sycamore Canyon Landfill Expansion (Currently Used - Approx. 88% of Waste Disposed in '09)	45	$1,230,216	$738,130	$5,330,937	**$7,299,282**	0.0%

As shown above, use of the West Miramar, Aspen Road, Gopher Canyon, and/or Merriam Mountain disposal facilities may result in a decrease in annual transport costs for Vista.

Unincorporated – Rainbow CDP

The two closest transfer stations to the CDP of Rainbow are the Fallbrook Recycling Facility transfer station and the Waste Management of North County Transfer Station. The following table shows the transport time from each transfer station to each current and alternative disposal facility, estimated annual transfer station handling costs, annual transport costs, annual landfill tipping fee costs, and total annual costs. CalRecycle does not provide data specific to regions within the Unincorporated County; therefore, the percent change in annual costs from current conditions value for each CDP is based on the assumption that each of the respective CDPs' two closest transfer stations would transport waste to the closest currently active disposal facility. This methodology was used for comparative purposes only, and may or may not reflect actual conditions.

TABLE 12
Rainbow CDP Transfer Analysis

Unincorporated CDP - Rainbow			3-Year Annual Average Disposal Tons: 2,164[16]			
Transfer Station and Alternative Disposal Facility (Alternative Facilities in Red)	**Time from Transfer Station to Disposal Facility (Minutes)**	**Annual Transfer Station Handling Cost**	**Annual Transport Cost**	**Annual Landfill Tipping Fee Cost**	**Total Annual Cost**	**% Change in Annual Cost from Current**
		$12.00 / Ton	**$0.16 / Ton per RTM**			
Transfer Station: Fallbrook Recycling Facility						
Borrego	121	$25,966	$41,892	$109,634	**$177,492**	19.2%
Otay	75	$25,966	$25,966	$112,519	**$164,451**	10.5%
West Miramar (Assumed as currently used for the Fallbrook Transfer Station)	55	$25,966	$19,042	$103,864	**$148,871**	0.0%
Aspen Road	21	$25,966	$7,270	$109,634	**$142,870**	-4.0%
East Otay Mesa	95	$25,966	$32,890	$109,634	**$168,490**	13.2%
Gopher Canyon Road	30	$25,966	$10,386	$109,634	**$145,986**	-1.9%
Merriam Mountain South	43	$25,966	$14,887	$109,634	**$150,487**	1.1%
Sycamore Canyon Landfill Expansion	63	$25,966	$21,811	$112,519	**$160,296**	7.7%

[16] The "3-Year Annual Average Disposal Tons" value for the CDPs was calculated based on the CDP's population percentage of the total Unincorporated San Diego County population.

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TABLE 12 Rainbow CDP Transfer Analysis						
Unincorporated CDP - Rainbow			**3-Year Annual Average Disposal Tons: 2,164[16]**			
Transfer Station and Alternative Disposal Facility (Alternative Facilities in Red)	**Time from Transfer Station to Disposal Facility (Minutes)**	**Annual Transfer Station Handling Cost**	**Annual Transport Cost**	**Annual Landfill Tipping Fee Cost**	**Total Annual Cost**	**% Change in Annual Cost from Current**
		$12.00 / Ton	**$0.16 / Ton per RTM**			
Transfer Station: Waste Management of North County						
Borrego	126	$25,966	$43,623	$109,634	**$179,223**	26.9%
Otay	56	$25,966	$19,388	$112,519	**$157,873**	11.8%
West Miramar (Assumed as currently used for the Waste Management Transfer Station)	33	$25,966	$11,425	$103,864	**$141,255**	0.0%
Aspen Road	46	$25,966	$15,926	$109,634	**$151,526**	7.3%
East Otay Mesa	75	$25,966	$25,966	$109,634	**$161,566**	14.4%
Gopher Canyon Road	27	$25,966	$9,348	$109,634	**$144,948**	2.6%
Merriam Mountain South	36	$25,966	$12,464	$109,634	**$148,063**	4.8%
Sycamore Canyon Landfill Expansion	45	$25,966	$15,580	$112,519	**$154,064**	9.1%

Based on the total annual cost values and the transport time from the transfer stations to the alternative disposal facilities, Aspen Road and Merriam Mountain are two feasible options for Rainbow if the Fallbrook Recycling Facility were used. If the Waste Management of North County transfer station were used, West Miramar, Gopher Canyon and Merriam Mountain may be feasible alternative disposal facility options.

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Unincorporated – Ramona CDP

The closest transfer stations to the CDP of Ramona are the Escondido Resource Recovery and SANCO Recycling transfer stations, and the Ramona MRF and Transfer Station. The following table shows the transport time from each transfer station to each current and alternative disposal facility, estimated annual transfer station handling costs, annual transport costs, annual landfill tipping fee costs, and total annual costs.

TABLE 13 Ramona CDP Transfer Analysis						
Unincorporated CDP - Ramona			3-Year Annual Average Disposal Tons: 23,967			
Transfer Station and Alternative Disposal Facility (Alternative Facilities in Red)	Time from Transfer Station to Disposal Facility (Minutes)	Annual Transfer Station Handling Cost $12.00 / Ton	Annual Transport Cost $0.16 / Ton per RTM	Annual Landfill Tipping Fee Cost	Total Annual Cost	% Change in Annual Cost from Current
Transfer Station: Escondido Resource Recovery/SANCO Recycling						
Borrego	106	$287,609	$406,488	$1,214,351	**$1,908,449**	24.1%
Otay	47	$287,609	$180,235	$1,246,308	**$1,714,152**	11.5%
West Miramar (Assumed as currently used for the Escondido Transfer Station)	26	$287,609	$99,705	$1,150,438	**$1,537,752**	0.0%
Aspen Road	33	$287,609	$126,548	$1,214,351	**$1,628,509**	5.9%
East Otay Mesa	66	$287,609	$253,096	$1,214,351	**$1,755,057**	14.1%
Gopher Canyon Road	29	$287,609	$111,209	$1,214,351	**$1,613,170**	4.9%
Merriam Mountain South	26	$287,609	$99,705	$1,214,351	**$1,601,665**	4.2%
Sycamore Canyon Landfill Expansion	34	$287,609	$130,383	$1,246,308	**$1,664,300**	8.2%
Transfer Station: Ramona MRF and Transfer Station						
Borrego	83	$287,609	$318,288	$1,214,351	**$1,820,248**	7.9%
Otay	58	$287,609	$222,418	$1,246,308	**$1,756,335**	4.1%
West Miramar	44	$287,609	$168,731	$1,150,438	**$1,606,778**	-4.8%
Aspen Road	57	$287,609	$218,583	$1,214,351	**$1,720,544**	2.0%
East Otay Mesa	73	$287,609	$279,940	$1,214,351	**$1,781,900**	5.6%
Gopher Canyon Road	53	$287,609	$203,244	$1,214,351	**$1,705,205**	1.1%
Merriam Mountain South	50	$287,609	$191,740	$1,214,351	**$1,693,700**	0.4%
Sycamore Canyon Landfill Expansion (Assumed as currently used for the Ramona MRF and Transfer Station)	40	$287,609	$153,392	$1,246,308	**$1,687,309**	0.0%

Based on the total annual cost values and the transport time from the transfer stations to the alternative disposal facilities, West Miramar and Sycamore Canyon are two feasible options for Ramona if the Ramona MRF and Transfer Station were used. If the Escondido Resource Recovery

and/or the SANCO Recycling transfer station were used, West Miramar, Gopher Canyon and Merriam Mountain may be feasible alternative disposal facility options.

Unincorporated – Borrego Springs CDP

The closest transfer stations to the CDP of Borrego Springs are the Escondido Resource Recovery and SANCO Recycling transfer stations, and the Ramona MRF and Transfer Station. The following table shows the transport time from each transfer station to each current and alternative disposal facility, estimated annual transfer station handling costs, annual transport costs, annual landfill tipping fee costs, and total annual costs.

TABLE 14
Borrego Springs CDP Transfer Analysis

Unincorporated CDP – Borrego Springs			3-Year Annual Average Disposal Tons: 4,050			
Transfer Station and Alternative Disposal Facility (Alternative Facilities in Red)	**Time from Transfer Station to Disposal Facility (Minutes)**	**Annual Transfer Station Handling Cost**	**Annual Transport Cost**	**Annual Landfill Tipping Fee Cost**	**Total Annual Cost**	**% Change in Annual Cost from Current**
		$12.00 / Ton	**$0.16 / Ton per RTM**			
Transfer Station: Escondido Resource Recovery/SANCO Recycling						
Borrego	106	$48,601	$68,690	$205,205	**$322,495**	24.1%
Otay	47	$48,601	$30,457	$210,605	**$289,662**	11.5%
West Miramar (Assumed as currently used for the Escondido Transfer Station)	26	$48,601	$16,848	$194,404	**$259,854**	0.0%
Aspen Road	33	$48,601	$21,384	$205,205	**$275,190**	5.9%
East Otay Mesa	66	$48,601	$42,769	$205,205	**$296,575**	14.1%
Gopher Canyon Road	29	$48,601	$18,792	$205,205	**$272,598**	4.9%
Merriam Mountain South	26	$48,601	$16,848	$205,205	**$270,654**	4.2%
Sycamore Canyon Landfill Expansion	34	$48,601	$22,032	$210,605	**$281,238**	8.2%
Transfer Station: Ramona MRF and Transfer Station						
Borrego	83	$48,601	$53,785	$205,205	**$307,591**	7.9%
Otay	58	$48,601	$37,585	$210,605	**$296,791**	4.1%
West Miramar	44	$48,601	$28,513	$194,404	**$271,518**	-4.8%
Aspen Road	57	$48,601	$36,937	$205,205	**$290,742**	2.0%
East Otay Mesa	73	$48,601	$47,305	$205,205	**$301,111**	5.6%
Gopher Canyon Road	53	$48,601	$34,345	$205,205	**$288,150**	1.1%
Merriam Mountain South	50	$48,601	$32,401	$205,205	**$286,206**	0.4%
Sycamore Canyon Landfill Expansion (Assumed as currently used for the Ramona MRF and Transfer Station)	40	$48,601	$25,921	$210,605	**$285,126**	0.0%

Based on the total annual cost values and the transport time from the transfer stations to the alternative disposal facilities, West Miramar and Sycamore Canyon are two feasible options for Borrego if the Ramona MRF and Transfer Station were used. If the Escondido Resource Recovery and/or the SANCO Recycling transfer station were used, West Miramar, Gopher Canyon and Merriam Mountain may be feasible alternative disposal facility options.

Findings

The following tables show the major findings of this analysis, assuming each jurisdiction or CDP uses one or both of its two closest transfer stations.

TABLE 15
Summary of Percent Change in Annual Transport Costs with use of an Alternative Disposal Facility

North San Diego County Jurisdiction or CDP	Aspen Road	East Otay Mesa	Gopher Canyon Road	Merriam Mountain	Sycamore Canyon Exp.
Carlsbad	-3.6% to -4.0%	+2.3% to +2.6%	-7.8% to -8.2%	-6.2% to -6.7%	-2.4%
Encinitas	-1.2% to -1.6%	+4.9% to +5.1%	-5.5% to -5.9%	-3.9% to -4.4%	Currently used
Escondido	-1.2% to -2.2%	+5.1% to +5.5%	-3.1% to -5.5%	-3.8% to -4.4%	Currently used
Oceanside	+0.2% to +2.1%	+6.6% to +8.9%	-2.3% to -4.1%	--0.2% to -3.0%	+1.4% – +3.8%
San Marcos	-1.2% to -2.2%	+5.1% to +5.5%	-3.1% to -5.5%	-3.8% to -4.4%	Currently used
Solana Beach	-3.6% to -4.0%	+2.3% to +2.6%	-7.8% to -8.2%	-6.2% to -6.7%	-2.4%
Vista	-1.2% to -1.6%	+4.9% to +5.1%	-5.5% to -5.9%	-3.9% to -4.4%	Currently used
Unincorporated Area – Rainbow CDP	-4.0% to 7.3%	+13.2% to +14.4%	-1.9% to +2.6%	+1.1% to +4.8%	+7.7% to +9.1%
Unincorporated Area – Ramona CDP	+2.0% to +5.9%	+5.6% to +14.1%	+1.1% to +4.9%	+0.4% to +4.2%	0.0% to +8.2%
Unincorporated Area – Borrego Springs CDP	+2.0% to +5.9%	+5.6% to +14.1%	+1.1% to +4.9%	+0.4% to +4.2%	0.0% to +8.2%

In summary, East Otay Mesa is the only disposal site that could incur increased transport-related costs for every North San Diego County jurisdiction and CDP. Each of the other alternative disposal sites could decrease or keep transportation costs neutral for at least five of the jurisdictions or CDPs in North San Diego County.

Furthermore, though the analysis did not take into account potential direct-haul alternatives, it is possible that jurisdictions within a maximum of 30 miles of one of the current or potential alternative

sites would haul waste directly to the landfill. This could potentially reduce vehicle miles travelled, and in turn reduce overall transportation related costs.

West Miramar Landfill Closure

The jurisdiction of San Diego currently and historically disposes of the majority of its waste at West Miramar Sanitary Landfill. Of the total disposal tons accepted by West Miramar in 2007, 2008, and 2009, the City of San Diego accounted for approximately 85, 87, and 96 percent of that waste, respectively.[17] Considering the scheduled closure of West Miramar in 2022[18] and the significant proposed expansions at Sycamore Canyon, it is likely that the orphaned waste that would otherwise go to West Miramar will instead be transported to the Sycamore site. This assumption is also based on the close proximity of Sycamore Canyon to both West Miramar and the City of San Diego.

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[17] Information gathered from the CalRecycle Disposal Reporting System (DRS).

[18] Gathered from the final Five-Year Report of the County Integrated Waste Management Plan for the County of San Diego, prepared by the County of San Diego Department of Public Works, March 23, 2011, p. 11.

Geosyntec consultants

Memorandum

Date:	27 January 2012, Revised 23 April, 17 September, and 28 November 2012
To:	William Miller, U.S. Army Corps of Engineers, Senior Project Manager
From:	Jennifer Nevius, P.E.
Subject:	Off-site Alternatives Evaluation Gregory Canyon Landfill

INTRODUCTION

This memorandum presents the results of an evaluation of off-site alternatives to the proposed Gregory Canyon Landfill (Project) in northern San Diego County, California. Gregory Canyon Limited (Applicant) has proposed the development of the Class III municipal solid waste landfill south of State Route 76, approximately 3 miles east of Interstate 15 (I-15), also referenced herein as the Applicant's Proposed Alternative. The Project property includes approximately 1,770 acres, with approximately 13 acres to be acquired from San Diego Gas & Electric (SDG&E) associated with the relocation of three transmission pads. Approximately 308.6 acres are proposed for overall landfill activities (e.g., stockpile areas, ancillary facilities, access road, and waste disposal), with approximately 183 acres to be used for waste disposal.

An Environmental Impact Report (EIR) was prepared for the Project and was certified in 2007 by the San Diego County (County) Department of Environmental Health. Addenda to the EIR were prepared and adopted in August 2008, January 2010, and May 2010. A Joint Technical Document (JTD) for the Project was prepared by Bryan A. Stirrat and Associates (BAS), dated September 2010 and revised January 2011.

The U.S. Army Corps of Engineers, Los Angeles District (Corps) is evaluating the Applicant's Proposed Alternative and other alternatives in association with an Environmental Impact Statement (EIS) being prepared to satisfy the requirements of the National Environmental Policy Act (NEPA) and the U.S. Environmental Protection Agency's Section 404(b)(1) guidelines contained in the 40 Code of Federal Regulations (CFR), Part 230. The Corps selected PCR Services Corporation (PCR) and its subconsultants (including Geosyntec Consultants [Geosyntec]) to prepare the EIS. The Corps identified off-site alternatives to be evaluated in the EIS.

BACKGROUND

To select locations of off-site alternatives, PCR utilized information from historical landfill siting studies performed for the County and EIRs from landfill projects that used a variety of criteria for evaluating potential sites and alternative sites. Historical landfill siting studies reviewed included those prepared by Edarra, Inc. (1986), the Butler Roach Group (BRG, 1992), and Ogden Environmental and Energy Services (Ogden, 1993). The historical EIR information reviewed included the Draft EIR/EIS for the

proposed North County Class III Landfill (BRG, 1990) and the Revised Final EIR for the Gregory Canyon Landfill prepared by the County (2007). A conceptual design for a landfill in the eastern portion of the Otay Mesa area of southern San Diego County prepared by Geo-Logic Associates (GLA, 2012) was also reviewed. Detailed reference information for these documents is contained in the References section of this memorandum.

Based on a review of available studies and current regulations regarding landfill siting, the Corps conducted a screening of potential off-site locations and identified potential off-site alternatives within the County. Subsequently, the Corps asked that PCR evaluate conceptual designs for the following off-site alternatives to the Project in the EIS:

- Merriam Mountain South;
- Aspen Road;
- Gopher Canyon Road; and
- East Otay Mesa.

Expansion of the Sycamore Canyon Landfill is another off-site alternative to the Proposed Project; however, this site has existing design plans for expansion, and development of conceptual designs was not required.

PURPOSE AND SCOPE OF SERVICES

Geosyntec is a consulting engineering firm specializing in landfill permitting, design, and construction. The purpose of our work was to provide conceptual design information solely to support evaluation of off-site alternatives to the Project as part of the EIS.

The scope of Geosyntec's professional consulting services included developing conceptual designs for landfilling at four of the identified potential off-site alternative locations as outlined above. This information is not intended to provide a level of detail that might otherwise be appropriate if these projects were formally being pursued for development – rather, it is intended solely to provide a basis for evaluation in the EIS. For example, the scope of our services did not include considerations such as development of seismic ground motions or performing static and seismic slope stability analyses. Geosyntec reviewed the referenced historical County landfill siting studies and EIR information provided by PCR, and other available public information and utilized applicable information in our evaluations. Site reconnaissance was excluded from our scope of work, as the sites are under private ownership and therefore not accessible.

This memorandum represents completion of Geosyntec's work authorized by PCR on 6 December 2011, and was prepared by Jennifer Nevius, P.E. and reviewed by Greg Corcoran, P.E. in conformance with Geosyntec's Quality Management Program.

OFF-SITE ALTERNATIVE CONCEPTUAL PLANS

Geosyntec prepared conceptual-level plan information for off-site alternatives to the Gregory Canyon Landfill Project including Merriam Mountain South, Aspen Road, Gopher Canyon Road, and East Otay Mesa. The locations of these alternatives are presented on Figure 1.

CONCEPTUAL PLAN APPROACH

The conceptual designs presented herein are intended to support EIS evaluations and did not include extensive plan development iterations to optimize plan considerations including: site boundary; access; stormwater conveyance; slope stability; rock excavation minimization; site soil balance; and airspace maximization. The conceptual plan approach was to establish roughly balanced goals for each consideration based on a review of available information and our landfill experience, and then prepare concept-level figures illustrating excavation and earthen fill to achieve base liner system grades, waste and final cover soil fill to achieve final cover grades, and general site facilities plans for each alternative.

The conceptual plans were developed considering the requirements of Title 27 of the California Code of Regulations (27 CCR) and standard features for southern California landfills, including: 2H:1V (horizontal:vertical) excavation slope inclinations; 3H:1V maximum landfill fill slope inclinations; a 2 percent minimum landfill base liner system grade; and a 3 percent minimum landfill final cover grade. The historical boundaries identified in previous studies by others were used as guidelines for developing the conceptual level plans. The excavation grades and depths were targeted to provide a rough order of magnitude soil balance (excavation, engineered fill [i.e., embankment fill], operations soil, daily/intermediate cover, and final cover) where practical, minimize rock excavation, and result in similar excavation depths to the Applicant's Proposed Alternative.

Recent site-specific groundwater elevation information is not available for the off-site alternatives. The information utilized to develop the conceptual plans is based on general information published in previous studies, where available. Regulations from 27 CCR require a minimum 5-foot separation between groundwater and waste. Control of groundwater to meet this requirement could be achieved with the use of subdrains at each of the sites as necessary. Ancillary features to the landfill, such as desilting basins and access roads, were evaluated in terms of approximate location and size, but were not designed or graded. Similarly, internal site access roads, benches for access, stormwater conveyance, and erosion control best management practices were not included in these conceptual plans.

The existing site topography for the off-site alternative locations was obtained from United States Geological Survey (USGS) Quadrangle map data with a 40-foot contour interval, and interpolated using Geographic Information Systems (GIS) software to a 10-foot contour interval. The datum used for the evaluation is Mean Sea Level (MSL) using the North American Vertical Datum of 1988 (NAVD 88).

Proposed access routes to the off-site alternatives, with the exception of the East Otay Mesa site, were provided by PCR and their consultant Linscott, Law & Greenspan, Engineers (LLG) with input from the Corps. Proposed access routes to the East Otay Mesa site were considered to be the same routes proposed by GLA (2012). Aerial imagery and location of USGS-designated blue line drainages in the vicinity of the sites were provided by PCR.

The area required for the ancillary landfill facilities such as scales and entry/exit lanes, buildings, tanks, flare station, and desilting basins was assumed to be similar to the preliminary design for the Applicant's Proposed Alternative as presented by BAS (2011); however, design grading and planning were not performed to evaluate specific elements of the facilities layout. Due to the site constraints, multiple, smaller potential borrow/stockpiling areas were typically identified for the off-site alternatives as compared to the Project, and the potential stockpile locations were based, in part, on proximity to the sites and relatively flatter or canyon-like topography.

Where the alternative sites were historically identified by a landfill boundary rather than a site facility boundary which includes the landfill and all ancillary facilities, a conceptual site facility boundary was evaluated. The proposed conceptual site facility boundaries for the potential off-site alternatives consider the historical site boundaries, topography, and parcel boundaries. In general, the approach used to develop the conceptual site facility boundaries was to encompass the landfill and ancillary facilities, including basins and potential stockpile areas.

The quantities of soil generated and conceptually utilized on-site were developed for each off-site alternative based on the liner and cover system and the waste to soil ratios proposed for the Gregory Canyon Landfill as outlined by BAS in the JTD (2011). The quantities of clay and gravel estimated for the liner system for the off-site alternatives were based on a 27 CCR prescriptive single liner system with a subdrain.

CONCEPTUAL PLAN SUMMARY

A summary of pertinent conceptual information for the off-site alternatives and corresponding information for the Applicant's Proposed Alternative is provided in Table 1 at the end of the memorandum text. Additional details for the conceptual plans for these off-site alternatives are presented in the following sections.

MERRIAM MOUNTAIN SOUTH

The Merriam Mountain South site is located immediately west of I-15, southwest of Lawrence Welk Village. The site is approximately five miles northeast of Vista and eight miles south of the Applicant's Proposed Alternative (Figure 1). The Merriam Mountain South site was identified as a feasible landfill site by Edarra (1986), BRG (1992), and designated as a reserved site in the Countywide Siting Element (County, 1996). The historical area for the Merriam Mountain South site is 343.8 acres, with a larger conceptual site facility boundary of approximately 552.5 acres evaluated as part of the current study. The Merriam Mountain South site is also located within a 2,327-acre area evaluated as a master-planned community including residential, commercial, recreational, and open space land uses (County, 2009), but is not identified therein as a landfill site. No known utilities or utility easements currently transect the landfill site.

SITE CONDITIONS

The Merriam Mountain South site is currently undeveloped, with the exception of dirt access roads, and features rugged and steep natural slopes, with typical slope inclinations on the order of 2H:1V or steeper. The main canyon drains generally to the east. BRG (2002) reported that greater than 50 percent of the exposed ground along the uppermost one-third of the natural hillsides consists of rock outcrops or

boulders ranging from 10 to 30 feet in diameter, and that bedrock outcrops and boulders cover approximately 10 percent of the surface along the lower two-thirds of the canyon slopes.

One intermittent stream, designated by USGS as a blue line drainage, flows toward the east in the central portion of the site (See Figure 4). Elevations on the site range from approximately 650 feet MSL on the eastern site boundary to approximately 1,500 feet MSL at several locations on the western site boundary.

GEOLOGY, HYDROLOGY, AND HYDROGEOLOGY

A preliminary geotechnical investigation was included in the draft EIR for the Merriam Mountains Specific Plan (Leighton and Associates [Leighton], 2006) and was reviewed as part of this evaluation. Based on a review of the referenced geotechnical information and other available published information (Kennedy and Tan, 2005), the Merriam Mountain South site is underlain by granitic rock, covered by a thin veneer of alluvium/colluvium in the bottom of canyons and along the lower slopes. The alluvium and colluvium are reported to consist of silty to clayey sand, sandy clay, and silty clay (Leighton, 2006).

Based on observations in shallow trench excavations and existing road cuts and seismic refraction traverses, Leighton (2006) estimated the depth of hard rock in the general area of the Merriam Mountains South site varied at probable depths of 5 to 10 feet below grade. The results of the seismic refraction traverses indicate that blasting would be required at depths greater than 10 to 20 feet below grade (Leighton, 2006). The volume of excavation that would be suitable for cover material as defined by BAS (2010), “with limited processing required; primarily crushing of the rippable hard rock”, summarized in Table 1 is based on an assumed average depth of rippable rock of 15 feet below grade. The logs of the trench excavations present the colluvium and weathered granitic rock encountered as silty sand. No grain size information was available for materials sampled from the trench explorations.

BRG (1992) reports six well-defined lineaments bordering the site which may indicate fault structure, but concludes that no evidence of faulting is known in the area. Leighton (2006) concluded that their review of available geologic literature indicated no known active, potentially active, or inactive faults transect the site. The nearest known active regional fault is the Julian segment of the Elsinore Fault Zone. The closest projected trace for this fault zone is located approximately 12 miles northeast of the site (Jennings and Bryant, 2010).

Groundwater is present in the fractured rock aquifer at estimated depths from between 50 and 200 feet below surface grade, and a shallower or perched water table may be present beneath the primary canyon flow line as reported by BRG (1992). No groundwater or seepage was observed in the shallow trench explorations performed by Leighton (2006).

Seismically-induced soil liquefaction is a phenomenon in which saturated coarse-grained soils lose a significant portion of their strength and acquire some mobility from strong ground motions due to a rapid increase in excess pore water pressures. Evaluation of liquefaction is typically based on detailed evaluation of ground motions and site-specific soil characteristics, which are beyond the scope of the current study. However, for the purposes of this conceptual evaluation, we anticipate that loose materials potentially susceptible to seismically-induced liquefaction would be either removed from the footprint of the landfill during excavation, evaluated to be non-liquefiable in situ, or improved to mitigate liquefaction potential. Therefore, the potential for liquefaction to adversely impact the project is considered low.

Rockfall and debris flow are considered to be potential geologic hazards at the Merriam Mountain South site that could be mitigated, similar to the Applicant’s Proposed Alternative.

CONCEPTUAL PLANS

The conceptual excavation plan prepared for the Merriam Mountain South site for this study is presented on Figure 2. This excavation plan includes cut slopes with inclinations of 2H:1V and a stepped floor to reduce excavation depths. Slopes with inclinations of 2H:1V are present between the stepped landfill floor levels. The average excavation depth is on the order of 20 to 100 feet, with a localized maximum excavation depth of approximately 160 feet. A 100-foot high engineered fill berm is included in the conceptual plan at the lower end of the canyon to increase waste mass stability and airspace, while providing some area for landfill facilities at the toe of the landfill. The total excavation volume is approximately 7.5 mcy, less 2.5 mcy utilized for the engineered fill berm, resulting in a net excavation volume of approximately 5.0 mcy.

The fill plan for the site is presented on Figure 3. The fill plan includes final waste slopes with inclinations between 3H:1V and 3.5H:1V. The minor slopes on the north and south perimeter of the landfill are sloped at 3H:1V, while the inclination of the primary east-facing slope is 3.5H:1V. The conceptual fill plan includes a top deck area of approximately 50 acres, with a maximum fill elevation of approximately 1,395 ft MSL, creating final cover inclinations exceeding the minimum slope of 3 percent as required by 27 CCR.

The conceptual locations for ancillary facilities and borrow/stockpile areas for the Merriam Mountain South site are presented on Figure 4. Access to the site would likely be along I-15 from the north, and the road conceptually would diverge to either enter the landfill or to access the desilting basin and landfill support facilities. On-site access roads would be required around the perimeter of the site and would likely be surfaced with gravel. Switchback-type roads would likely be required in localized areas of steep grades around the landfill perimeter.

The area near the toe of the proposed landfill presents challenges to locating the landfill operations facilities. Additional area outside the historical boundary would be needed for ancillary landfill facilities. One desilting basin is conceptually located in the eastern portion of the site at the toe of the landfill, near the floor of the canyon. The scales, entrance facility, and the landfill buildings are conceptually proposed along the landfill entrance road adjacent to I-15.

A significant constraint exists related to the site area available for borrow and stockpiling activities. Although excavation and stockpiling activities would be phased, significant areas outside of the historical boundary would be needed for borrow/stockpile areas. The conceptual borrow/stockpile areas encompass approximately 46 acres and are located in the northwestern and southern portions of the site and include areas outside of the historical boundary. Stockpiles in these potential areas could have a height on the order of 100 to 140 feet above existing grades.

SITE ACCESS

The proposed access to the Merriam Mountain South site would be from I-15 via Deer Springs/Mountain Meadow exit, north on Champagne Boulevard, west on Lawrence Welk Drive, and south on an approximately 0.5-mile new access road constructed for this proposed landfill. Based on the steep topography in the area of the conceptual landfill access road, the new access road alignment may need to be lengthened or relocated to maintain road grades at practical levels.

SITE CAPACITY AND SOIL AVAILABILITY

The conceptual plan consists of a waste footprint of approximately 183 acres. The plan indicated on Figures 2 and 3 provides a gross airspace of approximately 52.6 mcy. The conceptual plan avoided

excavation of a topographic knoll in the southern portion of the site to reduce hard rock excavation, and resulted in more than the 23 mcy of airspace capacity cited by Edarra (1986) and less than the 66.4 mcy of airspace capacity cited in the County Integrated Waste Management Plan (County, 1996) or the 83 mcy of airspace capacity cited by BRG (1992).

Based on the assumed waste to soil ratio of 4 to 1 and a final cover soil thickness of 4 feet, approximately 14.0 mcy of soil would be required for engineered fill, operations soil, daily, intermediate, and final cover. Based on the assumed waste to soil ratio of 7.5 to 1 assuming use of alternative daily cover (ADC), approximately 9.9 mcy of soil would be required for engineered fill, operations soil, daily, intermediate, and final cover. Blasting and rock crushing would be required to excavate and process excavated unweathered hard rock materials for use as cover at the site. Due to the limited extent of soil and rippable rock, the site may produce insufficient quantities of material suitable for cover without significant processing. A comparison of needed and available resources suggests a deficit of soil materials. Cover material may need to be imported to the site or alternative cover materials used.

The low-permeability material needed for construction of the clay liner is not present at the site and would need to be imported, or an alternative engineered liner system would be required. Gravel required for the liner components and access road surfacing could potentially be sourced from the on-site excavated materials.

CONSTRUCTION AND OPERATIONAL CONSIDERATIONS

As noted above, excavation will be difficult due to the presence of hard, unweathered granite. Blasting and rock crushing would be required to excavate and process excavated materials for use at the site. Assuming the same maximum excavation rate of 10,000 cy per day as the Applicant's Proposed Alternative, and operating 307 days per year, the total excavation would require approximately 2.4 years. Likely, as with the Applicant's Proposed Alternative, the construction and subsequent filling of the landfill would be phased. Construction phasing, particularly with regard to stockpiling, would be a critical consideration for design of the landfill site. Control of groundwater to conform to 27 CCR regulations would likely require the construction of a subdrain beneath the landfill floor.

ASPEN ROAD

The Aspen Road site is located approximately 1.5 miles west of I-15 near the Mission Road exit. The site is approximately four miles northeast of the town of Fallbrook and about two miles west of Rainbow, and is approximately seven miles northwest of the Applicant's Proposed Alternative (Figure 1). The Aspen Road site was identified as a feasible landfill site in the Draft EIR/EIS for the North County Class III Landfill (BRG, 1990) and the Gregory Canyon Landfill Final EIR (County, 2007). The historical area for the Aspen Road site is 406.7 acres, with a larger conceptual site facility boundary of approximately 456.1 acres evaluated as part of the current study.

SITE CONDITIONS

Elevations on the site range from approximately 820 feet MSL in the Rainbow Creek Drainage at the southern portion of the site to approximately 1,475 feet MSL near the eastern site boundary. Existing development, including residences, is located in the eastern and western portions of the site as illustrated in Figure 7. The existing Metropolitan San Diego Pipelines Nos. 4 and 5 cross underneath the site along the eastern property boundary (San Diego County, 2007), as shown on Figure 7. The site features moderately rugged and steep natural slopes, with typical slope inclinations on the order of 2H:1V or flatter. The main canyon drains generally to the south. A USGS designated blue line drainage, reportedly

intermittent, flows toward the southwest in the southern portion of the site and is a minor tributary to an unnamed stream that joins Rainbow Creek.

GEOLOGY, HYDROLOGY, AND HYDROGEOLOGY

The Aspen Road site is primarily underlain by crystalline igneous rock classified as a gabbro, covered by a thin veneer of alluvium/colluvium in the bottom of canyons and along the lower slopes (Kennedy and Tan, 2005). Geotechnical Consultants, Inc. (GCI) describes the alluvium/colluvium as clayey silt, silty clay and sandy silt with varying amounts of gravel, cobbles, and localized boulders (GCI, 1990). Decomposed gabbro, granodiorite dikes, older fanglomerate and debris flow deposits are also located on-site (GCI, 1990). As reported by GCI (1990), the gabbro encountered at the Aspen Road site varies from hard to very deeply weathered, with the latter dominant at shallower depths. The depth of hard rock at the Aspen Road site, defined by GCI as rippable conditions using correlations to seismic velocities, ranged from 25 feet along the steeper flanking hillsides up to 80 feet in the north-central portion of the site (GCI, 1990). The volume of excavation that would be suitable for cover material as defined by BAS (2010), "with limited processing required; primarily crushing of the rippable hard rock", summarized in Table 1 is based on an assumed average depth of rippable rock of 25 feet below grade.

The nearest known active regional fault is the Julian segment of the Elsinore Fault Zone. The closest projected trace for this fault zone is located approximately 4.3 miles northeast of the site (Jennings and Bryant, 2010).

The depth to groundwater is approximately 50 feet to 60 feet below ground surface; however, perched groundwater and an active spring indicate shallow groundwater levels in some areas (BRG, 1992).

For the purposes of this conceptual evaluation, we anticipate that loose materials potentially susceptible to seismically-induced liquefaction would be either removed from the footprint of the landfill during excavation, evaluated to be non-liquefiable in situ, or improved to mitigate liquefaction potential. Therefore, the potential for liquefaction to adversely impact the project is considered low.

Rockfall and debris flow are considered to be potential geologic hazards at the Aspen Road site that could be mitigated, similar to the Applicant's Proposed Alternative.

CONCEPTUAL PLANS

The conceptual excavation plan prepared for the Aspen Road site for this study is presented on Figure 5 and includes cut slopes with inclinations of 2H:1V. The average excavation depth is on the order of 20 to 70 feet, with a localized maximum excavation depth of approximately 100 feet. A 60-foot high engineered fill berm is included in the conceptual plan at the southern end of the canyon to increase waste mass stability and airspace, while providing some area for landfill facilities at the toe of the landfill and reducing earthwork activities in the blue line drainage. The total excavation volume is approximately 10.0 mcy, less approximately 1.0 mcy utilized for the engineered fill berm, resulting in a net excavation volume of approximately 9.0 mcy.

The fill plan for the site is presented on Figure 6 and includes final waste slopes with inclinations of 3H:1V. The conceptual fill plan includes a top deck area of approximately 23 acres, with a maximum fill elevation of approximately 1,465 ft MSL, creating final cover inclinations exceeding the minimum slope of 3 percent as required by 27 CCR.

The conceptual locations for ancillary facilities and borrow/stockpile areas for the Aspen Road site are presented on Figure 7. Access to the site would be along I-15 from the south. On-site access roads would

be required around the perimeter of the site and would likely be surfaced with gravel. Switchback-type roads would likely be required in localized areas of steep grades around the landfill perimeter.

The area near the toe of the proposed landfill poses challenges for locating the landfill operations facilities while limiting disturbance to the USGS designated blue line drainage. Although excavation and stockpiling activities would be phased, area outside of the historical boundary would be needed for borrow/stockpile areas due to the steep topography surrounding the waste footprint. The conceptual borrow/stockpile areas encompass approximately 17 acres and are located in the eastern and western portions of the site, and include area outside of the historical boundary. Stockpiles in these potential areas could have a height on the order of 50 to 100 feet above existing grades. Additional area outside the historical boundary would be needed for the site access road and scales. Three desilting basins are conceptually proposed; one in the southern portion of the site and two in the western portion of the site.

Site Access

Access to the site would be from I-15 via the Mission Road interchange, north on Old Highway 395, west on Rainbow Valley Boulevard and Rainbow Glen Road. From the intersection of Rainbow Glen Road and Oak Crest Road, a new 2.25-mile access road would be constructed for this landfill site, in part adjacent to and traversing Rainbow Creek. Previous information indicates a culvert used to cross over Rainbow Creek. Access along the existing Rainbow Glen Road is considered unsuitable due to steep topography and hairpin turns.

Site Capacity and Soil Availability

The conceptual plan consists of a landfill area of approximately 156 acres. The conceptual plan indicated on Figures 5 and 6 provides a gross airspace of approximately 48.7 mcy; similar to the 44 mcy capacity cited by BRG (1990) and greater than the 35.2 mcy capacity cited by the County (1996).

Based on the assumed waste to soil ratio of 4 to 1 and a final cover soil thickness of 4 feet, approximately 11.6 mcy of soil would be required for engineered fill, operations soil, daily, intermediate, and final cover. Based on the assumed waste to soil ratio of 7.5 to 1 assuming use of ADC, approximately 7.8 mcy of soil would be required for engineered fill, operations soil, daily, intermediate, and final cover. Blasting and rock crushing would be required to excavate and process excavated materials for use at the site. Due to the limited extent of soil and rippable rock, the site may produce insufficient quantities of material suitable for cover without significant processing. A comparison of needed and available resources suggests a deficit of soil materials. Cover material may need to be imported to the site or alternative cover materials used.

The low-permeability material needed for construction of the clay liner is not present at the site and would need to be imported, or an alternative engineered liner system would be required. Gravel required for the liner components and access road surfacing could potentially be sourced from the on-site excavated materials.

Construction and Operational Considerations

As noted above, excavation will be difficult due to the presence of hard, unweathered rock. Blasting and rock crushing would be required to excavate and process excavated materials for use at the site. Assuming the same maximum excavation rate of 10,000 cy per day as the Applicant's Proposed Alternative, operating 307 days per year, the total excavation would require approximately 3.3 years. Likely, as with the Applicant's Proposed Alternative, the construction and subsequent filling of the landfill would be

phased. Construction phasing, particularly with regard to stockpiling locations, would be a critical consideration for design of the landfill site. Control of groundwater to conform to 27 CCR regulations would likely require the construction of a subdrain beneath the landfill floor.

GOPHER CANYON ROAD

The Gopher Canyon Road site is located west of I-15 near the Mission Road exit, approximately three miles northeast of the city of Vista and nine miles southwest of the Applicant's Proposed Alternative (Figure 1). The Gopher Canyon Road site was identified as a feasible landfill site by BRG (1992). The historical area for the Gopher Canyon Road site is 227.4 acres, with a larger conceptual site facility boundary of approximately 473.5 acres evaluated as part of the current study. No known utilities or utility easements currently transect the site; however, an existing tank is located immediately adjacent to the western central portion of the site as shown on Figure 10.

SITE CONDITIONS

The primary canyon on the Gopher Canyon Road site drains to the north and is west of and adjacent to the Vista Valley Country Club golf course in the south fork of Gopher Canyon. The golf course encroaches on the northeast corner of the historical boundary. The site is largely undeveloped, with the exception of dirt access roads and one paved road leading to the central portion of the site. Existing development is present adjacent to the site, including the golf course, a water storage tank, and a residential development immediately east of the historical boundary, and a quarry is present to the east-southeast of the site. The site features rugged and steep natural slopes, with typical slope inclinations on the order of 2H:1V or steeper locally. No USGS-designated blue line drainage is present at the site; however, a blue line drainage is located to the east of the site within the South Fork of Gopher Canyon. Elevations on the site range from approximately 480 feet MSL on the northern site boundary to approximately 1,150 feet MSL at the southwestern site boundary.

GEOLOGY, HYDROLOGY, AND HYDROGEOLOGY

The Gopher Canyon Road site is underlain by crystalline igneous rock classified as a gabbro (BRG, 1992 and Kennedy and Tan, 2005). The gabbro is likely covered by a thin veneer of alluvium/colluvium in the bottom of canyons and along the lower slopes. BRG (1992) estimated the depth of hard rock in the Gopher Canyon Road site at 15 feet below grade. The volume of excavation that would be suitable for cover material as defined by BAS (2011), "with limited processing required; primarily crushing of the rippable hard rock", summarized in Table 1 is based on an assumed average estimated depth of rippable rock of 15 feet below grade.

The nearest known active regional fault is the Julian segment of the Elsinore Fault Zone. The closest projected trace for this fault zone is located approximately 12.8 miles northeast of the site (Jennings and Bryant, 2010). Lineaments identified on aerial photographs are short and lack a consistent structural pattern (BRG, 1992).

The depth to groundwater is estimated to be less than 50 feet in the central canyon flow line, with groundwater substantially deeper over the remainder of the site (BRG, 1992).

For the purposes of this conceptual evaluation, we anticipate that loose materials potentially susceptible to seismically-induced liquefaction would be either removed from the footprint of the landfill during excavation, evaluated to be non-liquefiable in situ, or improved to mitigate liquefaction potential. Therefore, the potential for liquefaction to adversely impact the project is considered low.

Rockfall and debris flow are considered to be potential geologic hazards at the Gopher Canyon Road site that could be mitigated, similar to the Applicant's Proposed Alternative.

CONCEPTUAL PLANS

The conceptual excavation plan prepared for the Gopher Canyon Road site for this study is presented on Figure 8. This excavation plan includes cut slopes with inclinations of 2H:1V and a stepped floor to reduce excavation depths. Slopes with inclinations of 2H:1V are present between the conceptual landfill floor levels. The average excavation depth is on the order of 20 to 100 feet, with a localized maximum excavation depth of approximately 150 feet. A 60-foot high engineered fill berm is included in the conceptual plan at the northern end of the canyon to increase waste mass stability and airspace, while providing some area for landfill facilities at the toe of the landfill and the portion of the existing golf course that encroaches on the historical boundary. The total excavation volume is approximately 11.8 mcy, less 2.8 mcy utilized for the engineered fill berm, resulting in a net excavation volume of approximately 9.0 mcy.

The fill plan for the site is presented on Figure 9. The fill plan includes final waste slopes with inclinations of 3H:1V. The conceptual fill plan includes a top deck area of approximately 9.2 acres, with a maximum fill elevation of approximately 1,150 ft MSL, creating final cover inclinations exceeding the minimum slope of 3 percent as required by 27 CCR.

The conceptual locations for ancillary facilities and borrow/stockpile areas for the Gopher Canyon Road site are presented on Figure 10. Access to the site would be along I-15 and Gopher Canyon Road, and a new access road would be constructed from the north. On-site access roads would be required around the perimeter of the site and would likely be surfaced with gravel. Switchback-type roads would likely be required in localized areas of steep grades around the landfill perimeter.

The area near the toe of the proposed landfill poses challenges for locating the landfill operations facilities. In addition, the existing golf course encroaches significantly on the historical boundary in the canyon floor area at the toe of the landfill. Additional area outside the historical boundary will be needed for ancillary landfill facilities. Two desilting basins are conceptually located in the northeastern portion of the site near the toe of the landfill. The scales and entrance facility and the landfill buildings are conceptually proposed along the landfill entrance road adjacent to the existing golf course.

A significant constraint exists related to the site area available for borrow and stockpiling activities. Although excavation and stockpiling activities would be phased, significant area outside of the historical boundary would be needed for borrow/stockpile areas. The conceptual borrow/stockpile areas encompass approximately 37 acres and are located in the southern and eastern portions of the site, and are located entirely beyond the historical boundary. Stockpiles in these potential areas could have a height on the order of 120 to 220 feet above existing grades.

ACCESS

The proposed site access could involve a new road along the west side of the Vista Valley Country Club golf course from Gopher Canyon Road to the northeast corner of the site. A longer alternate route was identified in the 1992 siting study (BRG, 1992) to the southeast corner of the site by taking Twin Oaks Valley Road north from Deer Springs Road to a private road which led to a quarry on the southeastern side of the site (San Diego County, 2007). From an operational standpoint, access to the site from the north via Gopher Canyon Road, where trucks could enter at a lower elevation, may be more favorable.

SITE CAPACITY AND SOIL AVAILABILITY

The conceptual plan consists of a waste footprint of approximately 169 acres. The plan indicated on Figures 8 and 9 provides a gross airspace of approximately 45.0 mcy; similar to the 39 mcy airspace capacity as cited by BRG (1992) and less than the 55.0 mcy cited by the County (1996).

Based on the assumed waste to soil ratio of 4 to 1, approximately 12.8 mcy of soil would be required for engineered fill, operations soil, daily, intermediate, and final cover. Based on the assumed waste to soil ratio of 7.5 to 1 assuming use of ADC, approximately 9.3 mcy of soil would be required for engineered fill, operations soil, daily, intermediate, and final cover. Blasting and rock crushing would be required to excavate and process excavated materials for use at the site. Due to the limited extent of soil and rippable rock, the site may produce insufficient quantities of material suitable for cover without significant processing. A comparison of needed and available resources suggests a deficit of soil materials. Daily or intermediate cover material may need to be imported to the site or alternative cover materials used. Final cover materials would likely need to be imported to the site.

The low-permeability material needed for construction of the clay liner is not present at the site and would need to be imported, or an alternative engineered liner system would be required. Gravel required for the liner components and access road surfacing could potentially be sourced from the on-site excavated materials.

CONSTRUCTION AND OPERATIONAL CONSIDERATIONS

As noted above, excavation would be difficult due to the presence of hard, unweathered rock, and blasting and rock crushing would be required to excavate and process excavated materials for use at the site. Assuming the same maximum excavation rate of 10,000 cy per day as the Applicant's Proposed Alternative, operating 307 days per year, the total excavation would require approximately 3.8 years. Likely, as with the Applicant's Proposed Alternative, the construction and subsequent filling of the landfill would be phased. Construction phasing, particularly with regard to stockpiling locations, would be a critical consideration for design of the landfill site. Control of groundwater to conform to 27 CCR regulations would likely require the construction of a subdrain beneath the landfill floor.

EAST OTAY MESA

The East Otay Mesa site is situated in southern San Diego County approximately 0.25 mile from the United States-Mexico international border. The site is located approximately 2 miles east of the Siempre Viva Road exit from State Route 905, east of the terminus of Otay Mesa Road. The site is approximately two miles east of the community of Otay Mesa, and is approximately 55 miles south of the Applicant's Proposed Alternative (Figure 1). The East Otay Mesa site was identified as a feasible landfill site in the site feasibility assessment for Southwest San Diego County prepared by Ogden (1993).

On 8 June 2010, the voters of San Diego County approved County-wide initiative Proposition A. Proposition A amended the County General Plan, Zoning Ordinance, and other ordinances and policies of the County of San Diego to allow for the construction and operation of a recycling collection center and Class III solid waste landfill on the East Otay Mesa site. The authorized facility could occupy approximately 340 acres of the 450-acre property.

The site is currently being pursued for private development as a landfill, separate from the evaluation performed as part of this study. A 10 percent level conceptual design plan set prepared by GLA (2012) was used as a reference for the current evaluations. The GLA conceptual plans maximize utilization of

the site and propose to develop approximately 344.2 acres with a corresponding airspace volume of approximately 141 mcy achieved with excavation depths on the order of 100 to 200 feet, 3H:1V interior cut slopes, and 3H:1V final waste slopes. The ancillary landfill facilities are planned south of the landfill in the GLA conceptual design. The conceptual design performed for this evaluation described below is an alternative smaller than the GLA (2012) concept, which would be comparable in size to the Applicant's Proposed Alternative.

SITE CONDITIONS

Elevations on the East Otay Mesa site range from approximately 560 feet MSL at the southwestern portion of the site to approximately 1,000 feet MSL near the eastern site boundary. The site and surrounding areas are currently undeveloped and feature moderately rugged and steep natural slopes, with typical slope inclinations on the order of 2H:1V or flatter. The three primary canyons and associated drainages flow toward the southwest across the site. An existing high voltage transmission line is located adjacent to the western portion of the site.

GEOLOGY, HYDROLOGY, AND HYDROGEOLOGY

The East Otay Mesa site is mapped as underlain by predominantly volcanic rock classified as Santiago Peak Volcanics (Kennedy and Tan, 1977) and is likely covered by a thin veneer of alluvium/colluvium in the bottom of canyons and along lower canyon slopes. Based on our general experience, the Santiago Peaks Volcanics formation consists of hard, metamorphosed volcanic rock (Todd, 2004). The volume of excavation that would be suitable for cover material as defined by BAS (2010), "with limited processing required; primarily crushing of the rippable hard rock", summarized in Table 1 is based on an assumed average depth of rippable rock. No site specific information is available regarding the depth of rippable rock, but due to the presence of rock outcrops in aerial imagery of the site and the potential for collection of alluvial/colluvial materials, the depth of rippable rock was assumed at an average of 10 feet below grade for this evaluation.

The East Otay Mesa site is not located within an Earthquake Fault Zone. The Rose Canyon and Coronado Bank Fault Zones are located approximately 13 miles and 23 miles west of the site, respectively, and the Julian segment of the Elsinore Fault Zone and the more distant San Jacinto Fault Zone are located approximately 40 miles and 61 miles to the northeast, respectively.

No site specific information is available regarding depth to groundwater at the site. The Application for Certification for the proposed Pio Pico Energy Center (located approximately 1.4 miles northwest of the East Otay Mesa off-site alternative) references a geotechnical investigation performed in 1997 for the Otay Mesa Generating Plant (a neighboring site to the Pio Pico Energy Center), where groundwater was observed below elevation 580 feet, unknown datum (Pio Pico Energy Center, LLC, 2011).

For the purposes of this conceptual evaluation, we anticipate that loose materials potentially susceptible to seismically-induced liquefaction would be either removed from the footprint of the landfill during excavation, evaluated to be non-liquefiable in situ, or improved to mitigate liquefaction potential. Therefore, the potential for liquefaction to adversely impact the project is considered low.

Rockfall and debris flow, if considered to be potential geologic hazards by investigations performed as part of proposed development at the East Otay Mesa site, could be mitigated, similar to the Applicant's Proposed Alternative. Rockfall potential would likely be associated with cut slopes that expose out of slope geologic bedding.

CONCEPTUAL PLANS

The conceptual excavation plan prepared for the East Otay Mesa site for this study is presented on Figure 11 and includes cut slopes with inclinations of 2H:1V. The average excavation depth is on the order of 40 to 120 feet, with a localized maximum excavation depth of approximately 140 feet. A 100-foot high engineered fill berm is included in the conceptual plan at the southern end of the canyon to increase waste mass stability and airspace. The total excavation volume is approximately 15.1 mcy, less 0.7 mcy utilized for the engineered fill berm, resulting in a net excavation volume of approximately 14.4 mcy.

The fill plan for the site is presented on Figure 12. The fill plan includes final waste slopes with inclinations of 3H:1V. The conceptual fill plan includes a top deck area of approximately 48.7 acres, with a maximum fill elevation of approximately 1,010 feet MSL, creating final cover inclinations exceeding the minimum slope of 3 percent required by 27 CCR.

The conceptual plans prepared by Geosyntec for the off-site alternative targeted a similar capacity to the Applicant's Proposed Alternative (gross airspace of 59.5 mcy) and would result in a reduced capacity as compared to the GLA conceptual design (GLA, 2012) currently being pursued for development. Consideration was also given to reduce development as practical within environmentally sensitive areas such as drainages and a potential vernal pool area in the southern portion of the site.

The conceptual locations for ancillary facilities and a borrow/stockpile area for the East Otay Mesa site are presented on Figure 13. On-site access roads would be required around the perimeter of the landfill and would likely be surfaced with gravel. Switchback-type roads may be required in localized areas of steep grades around the landfill perimeter.

The conceptual borrow/stockpile area identified encompasses approximately 46 acres and is located in the northern portion of canyons east of the landfill footprint. A potential stockpile in this area, constrained in height similar to the surrounding grades to reduce visual impacts, could have a height up to 250 feet above existing grades. Two desilting basins are conceptually proposed adjacent to the southern portion of the waste footprint.

SITE ACCESS

Access to the site would be from SR 905 via the Siempre Viva Road exit. The conceptual design plans prepared by GLA indicate primary and secondary site access roads that would be constructed as part of the landfill project.

SITE CAPACITY AND SOIL AVAILABILITY

The conceptual plan indicated on Figures 11 and 12 consists of a landfill area of approximately 141.0 acres and provides a gross airspace of approximately 49.0 mcy.

Based on the assumed waste to soil ratio of 4 to 1 and a final cover soil thickness of 4 feet, approximately 11.3 mcy of soil would be required for engineered fill, operations soil, daily, intermediate, and final cover. Based on the assumed waste to soil ratio of 7.5 to 1 assuming use of ADC, approximately 7.4 mcy of soil would be required for engineered fill, operations soil, daily, intermediate, and final cover. Blasting and rock crushing would be required to excavate and process excavated materials for use at the site. Due to the limited extent of soil and rippable rock, the site may produce insufficient quantities of material suitable for cover without significant processing. A comparison of needed and available resources indicates a significant excess of excavated materials on the order of 3.8 mcy, for an assumed waste to soil

ratio of 4 to 1. Consideration should be given to the export of materials from the site or for permanent stockpiling on the site, especially if a larger waste to soil ratio is achieved with the use of alternative cover materials. In addition, cover material may need to be imported to the site, alternative cover materials used, or additional processing performed if material on site is not suitable for use as cover.

The low-permeability material needed for construction of the clay liner is likely not present at the site and would need to be imported, or an alternative engineered liner system would be required. However, low-permeable material is prevalent in the Otay Formation geologic unit mapped west of the East Otay Mesa site. Gravel required for the liner components and access road surfacing could potentially be sourced from the on-site excavated materials.

Construction and Operational Considerations

As noted above, excavation will be difficult due to the presence of hard, unweathered rock. Blasting and rock crushing would be required to excavate and process excavated materials for use at the site. Assuming the same maximum excavation rate of 10,000 cy per day as the Applicant's Proposed Alternative, operating 307 days per year, the total excavation would require approximately 4.9 years. Likely, as with the Applicant's Proposed Alternative, the construction and subsequent filling of the landfill would be phased. Construction phasing would be a critical consideration for design of the landfill site. The elevation of groundwater is unknown at this undeveloped site; however, control of groundwater to conform to 27 CCR regulations can be achieved with the construction of a subdrain beneath the landfill floor.

Closure

As summarized in this memorandum, Geosyntec performed an evaluation on behalf of the Corps, including preparation of conceptual excavation, fill, and facilities plans for the Merriam Mountain South, Aspen Road, Gopher Canyon Road, and East Otay Mesa off-site alternatives to the Applicant's Proposed Alternative to support preparation of the EIS. The conceptual plans roughly evaluated considerations such as: site footprint; access; rock excavation minimization; site soil balance; and airspace maximization.

We appreciate the opportunity to assist you with this important project. Should you have any questions regarding the contents of this memorandum, please contact us.

Attachments

Table 1

Figures 1 through 13

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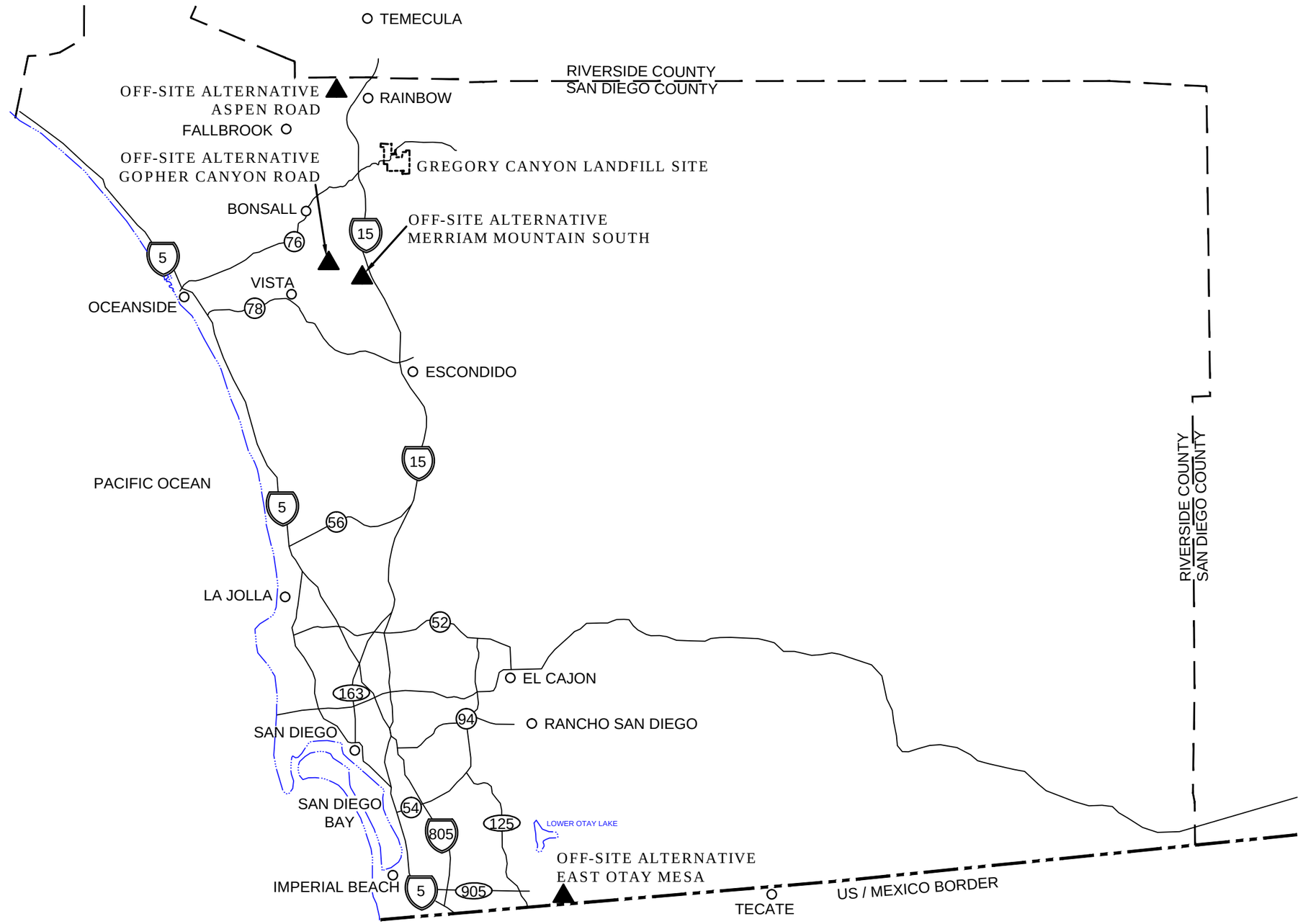
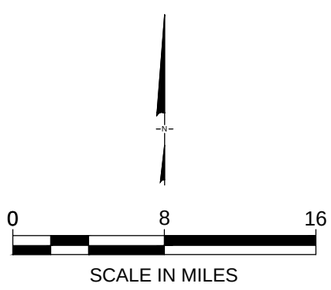
Table 1. Summary of Conceptual Plan Information
Gregory Canyon Landfill Off-Site Alternatives

Parameter	Applicant's Proposed Alternative [a]	Off-Site Alternatives [b]			
	Gregory Canyon	Merriam Mountain South	Aspen Road	Gopher Canyon Road	East Otay Mesa
Historical Boundary Area (acres)	308.6	343.8	406.7	227.4	422.7
Conceptual Site Facility Boundary Area (acres)	308.6	552.5	456.1	473.5	344.2
Potential Stockpile Area (acres)	83.5	46	17	37	46
Conceptual Stockpile Height (ft)	100 to 200	100 to 140	50 to 100	120 to 220	50 to 250
Waste Footprint Area (acres) [c]	183	183	156	169	141
Maximum Fill Elevation (ft MSL)	1, 110	1,395	1,465	1,150	1,010
Minimum Excavation Elevation (ft MSL)	380	730	900	530	540
Typical Range of Excavation Depth (ft)	50 to 75	20 to 100	20 to 70	20 to 100	40 to 120
Localized Max. Excavation Depth (ft)	75	160	100	150	140
Gross Excavation Volume (mcy) [d]	7.9	7.5	10.0	11.8	15.1
Typical Waste Fill Slope Inclination	3.5H:1V	3.5H:1V	3H:1V	3H:1V	3H:1V
Maximum Cut Slope Inclination	2H:1V	2H:1V	2H:1V	2H:1V	2H:1V
Suitable Excavation for Cover Soil (mcy) [e]	4.9	4.8	6.7	4.4	2.4
Suitable Borrow for Cover Soil (mcy) [e]	4.5	1.1	0.7	0.9	0.7
Soil Fill Volume (mcy) [d]	1.2	2.5	1.0	2.8	0.7
Operations Soil Layer Volume (mcy)	0.6	0.6	0.5	0.6	0.5
Net Excavation Volume (mcy) [f]	6.7	5.0	9.0	9.0	14.4
Gross Airspace (mcy) [g]	59.5	52.6	48.7	45.0	49.0
Estimated Final Cover Volume (mcy) [h]	0.9	0.9	0.8	0.9	0.7
Liner Clay Volume (mcy) [i]	0.6	0.6	0.5	0.6	0.5
Liner Gravel/Drainage Layer Volume (mcy) [j]	0.3	0.1	0.2	0.1	0.3
With a 4:1 Waste to Soil Ratio					
Daily/Intermediate Cover Volume (mcy) [k]	11.4	10.0	9.3	8.5	9.4
Total Soil Requirement (mcy) [l]	14.1	14.0	11.6	12.8	11.3
Net Capacity (mcy) [m]	45.6	40.2	37.3	34.2	37.7
With a 7.5:1 Waste to Soil Ratio					
Daily/Intermediate Cover Volume (mcy) [k]	6.7	5.9	5.5	5.0	5.5
Total Soil Requirement (mcy) [l]	9.4	9.9	7.8	9.3	7.4
Net Capacity (mcy) [m]	50.3	44.3	41.1	37.7	41.5

Notes:

a. Values presented for the Applicant's Proposed Alternative are based on the JTD (BAS, 2011).
b. Values presented for the off-site alternatives are based on the conceptual designs presented herein.
c. Two-dimensional area within the limit of waste for the off-site alternatives.
d. Based on topographic comparisons between existing and conceptual excavation grades and assumes no bulking of excavated materials.
e. "Suitable" for cover material with limited processing required, primarily crushing of the rippable hard rock as defined by BAS (2011).
f. Estimated as gross excavation volume less soil fill volume.
g. Based on topographic comparisons between conceptual excavation grades and final cover grades.
h. Estimated assuming a 4-foot thick final cover, with 1-foot placed as part of intermediate cover.
i. 24-inches of low permeability material as part of bottom and slope liner sections.
j. Total of 2.75 feet and 2 feet of gravel required as part of bottom liner section for subdrain, drainage layer, and LCRS for Gregory Canyon and off-site alternatives, respectively.
k. Estimated daily/intermediate cover required for off-site alternatives estimated using noted waste-to-soil ratio.
l. Total soil requirement for off-site alternatives estimated as sum of soil fill, operations soil, daily and intermediate cover, and final cover volumes.
m. Estimated consistent with the BAS (2011) estimate as gross airspace less liner, operations soil daily/intermediate cover, and final cover volumes.





VICINITY MAP
OFF-SITE ALTERNATIVES
GREGORY CANYON LANDFILL PROJECT

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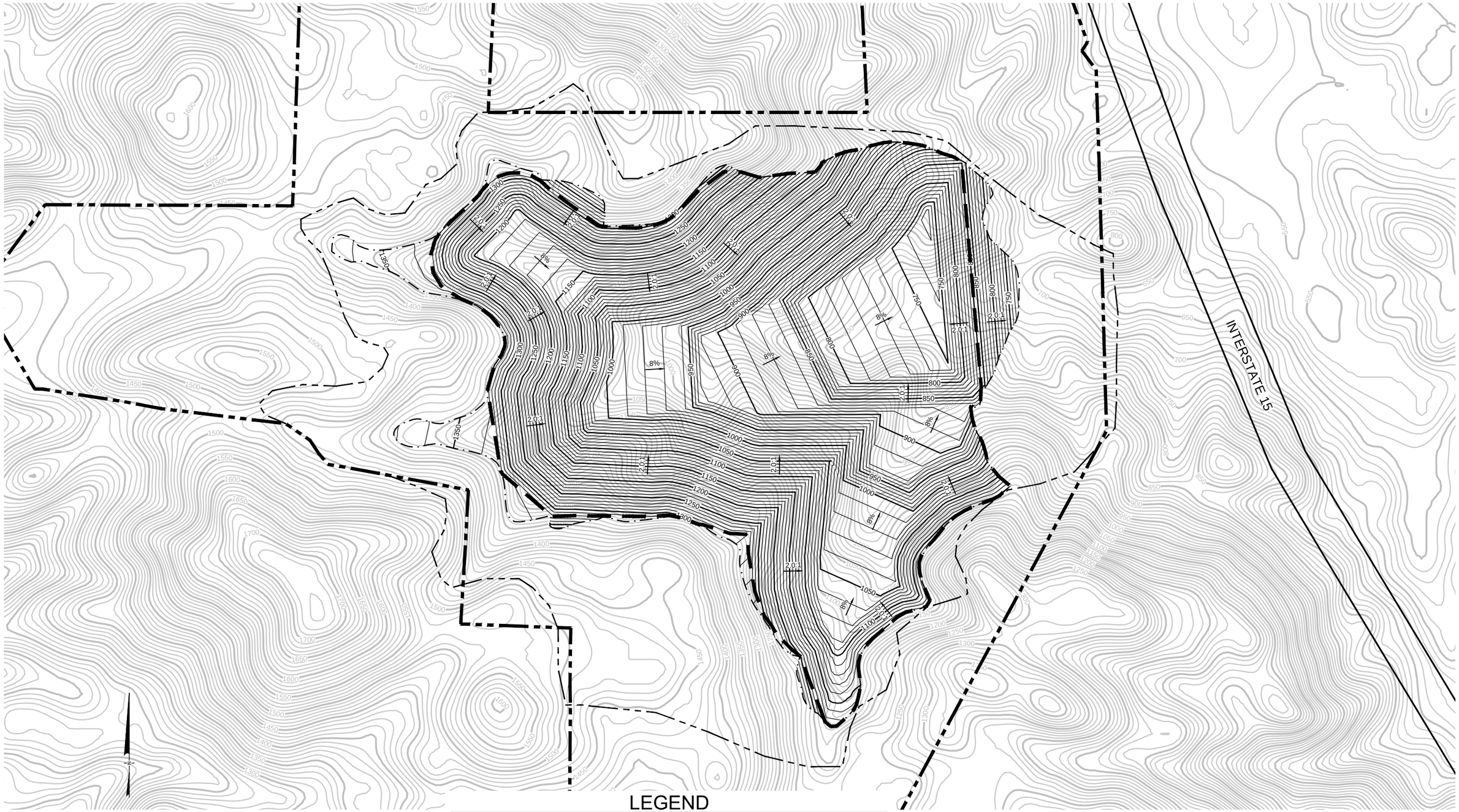
DATE:	NOVEMBER 2012	FIGURE
PROJECT NO.	SC0581	1

P:\PRJ\SDCADD\CADD\SC0581 GREGORY CANYON_SC0581-03-01\FIGURES\SC0581-F01.DWG - DRAWN BY:MCARLSON



LEGEND

- HISTORICAL BOUNDARY (BRG, 1992)
- CONCEPTUAL SITE FACILITY BOUNDARY
- EXISTING GROUND MAJOR CONTOUR (50')
- EXISTING GROUND MINOR CONTOUR (10')
- PROPOSED GRADING MAJOR CONTOUR (50')
- PROPOSED GRADING MINOR CONTOUR (10')
- LIMIT OF GRADING
- LIMIT OF WASTE

0 600' 1200'

SCALE IN FEET

NOTE:

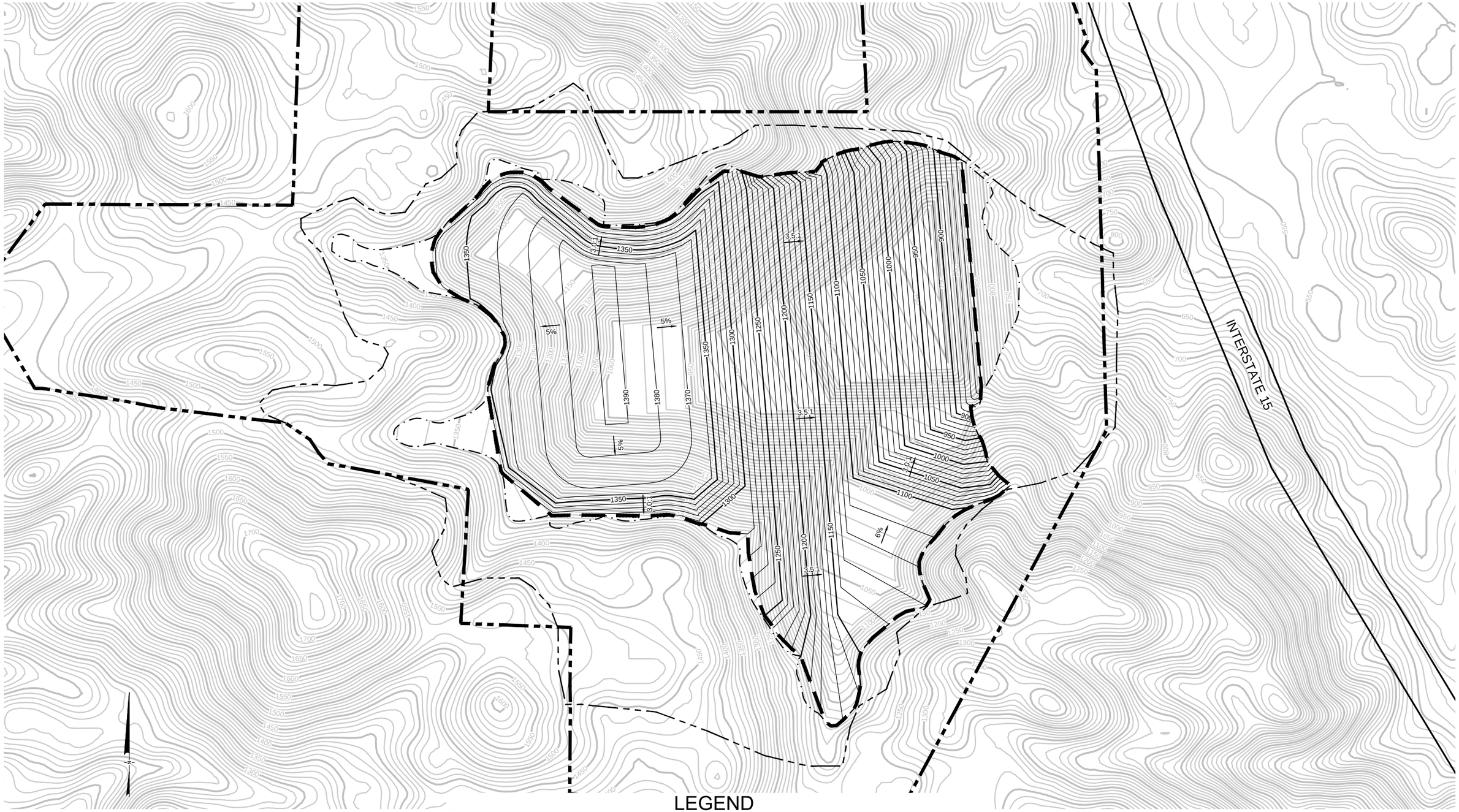
1. EXISTING TOPOGRAPHY INTERPOLATED FROM USGS QUAD DATA (40-FOOT NAVD 88 CONTOURS).

CONCEPTUAL EXCAVATION PLAN
MERRIAM MOUNTAIN SOUTH OFF-SITE ALTERNATIVE
GREGORY CANYON LANDFILL PROJECT

Geosyntec consultants

DATE:	NOVEMBER 2012	FIGURE
PROJECT NO.	SC0581	2

P:\PRJ\SDC\ADD\SC0581 GREGORY CANYON_SC0581-03-01\FIGURES\SC0581-F02.DWG - DRAWN BY:MCARLSON



LEGEND

- HISTORICAL BOUNDARY (BRG, 1992)
- CONCEPTUAL SITE FACILITY BOUNDARY
- EXISTING GROUND / BASE GRADING MAJOR CONTOUR (50')
- EXISTING GROUND / BASE GRADING MINOR CONTOUR (10')
- PROPOSED GRADING MAJOR CONTOUR (50')
- PROPOSED GRADING MINOR CONTOUR (10')
- LIMIT OF GRADING
- LIMIT OF WASTE

0 600' 1200'

SCALE IN FEET

NOTE:

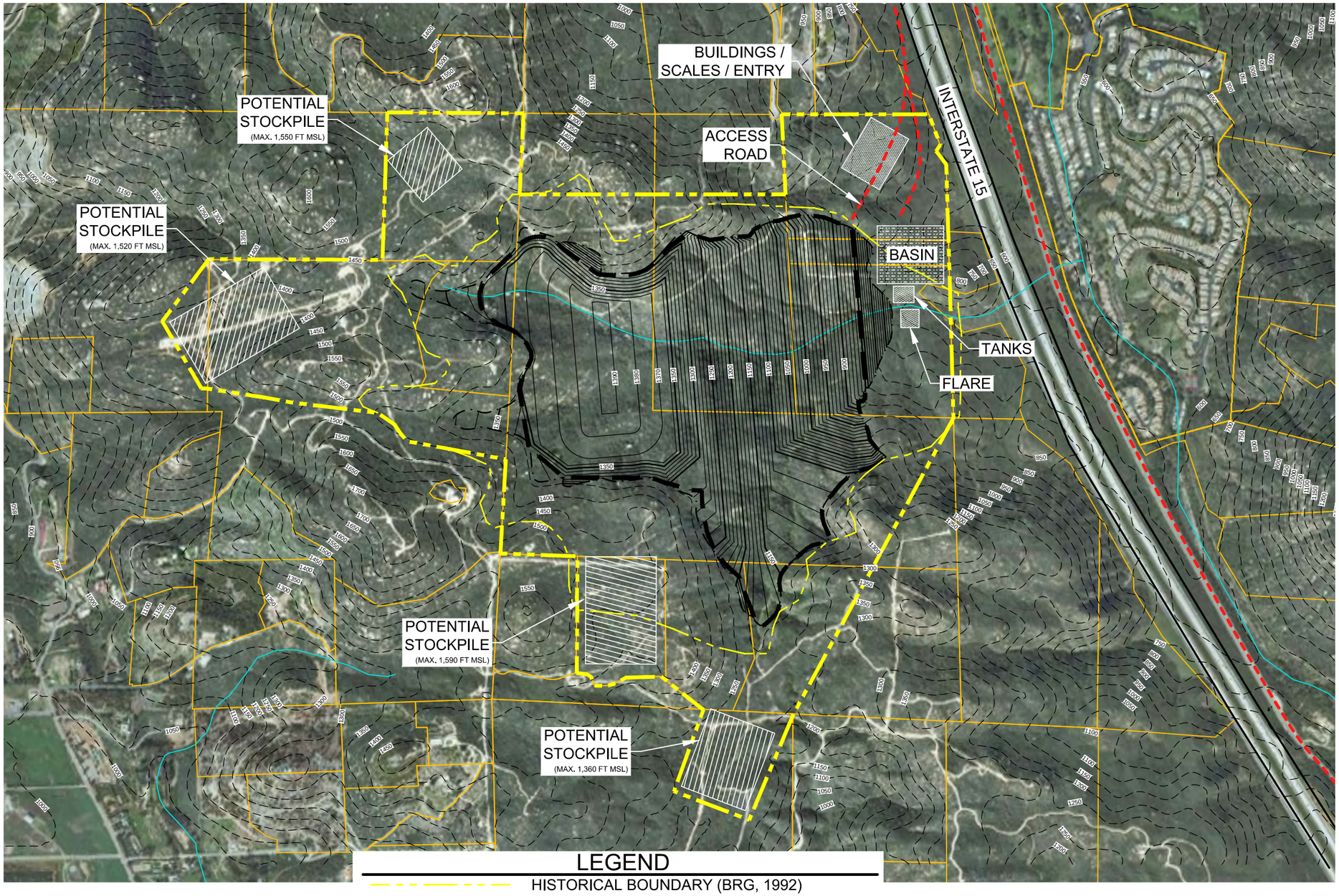
1. EXISTING TOPOGRAPHY INTERPOLATED FROM USGS QUAD DATA (40-FOOT NAVD 88 CONTOURS).

CONCEPTUAL FILL PLAN
MERRIAM MOUNTAIN SOUTH OFF-SITE ALTERNATIVE
GREGORY CANYON LANDFILL PROJECT

Geosyntec consultants

DATE:	NOVEMBER 2012	FIGURE
PROJECT NO.	SC0581	3

P:\PRJ\SDC\ADD\ADD\SC0581 GREGORY CANYON_SC0581-03-01\FIGURES\SC0581-F03.DWG - DRAWN BY:MCARLSON



LEGEND

- HISTORICAL BOUNDARY (BRG, 1992)
- CONCEPTUAL SITE FACILITY BOUNDARY
- PARCEL BOUNDARY
- USGS BLUE LINE DRAINAGE
- 1000 EXISTING GROUND MAJOR CONTOUR (50')
- 1000 PROPOSED GRADING MAJOR CONTOUR (50')
- 1000 PROPOSED GRADING MINOR CONTOUR (10')
- LIMIT OF GRADING
- LIMIT OF WASTE
- ACCESS ROAD

0 1000' 2000'

SCALE IN FEET

NOTE:

1. EXISTING TOPOGRAPHY INTERPOLATED FROM USGS QUAD DATA (40-FOOT NAVD 88 CONTOURS).

CONCEPTUAL FACILITES PLAN
MERRIAM MOUNTAIN SOUTH OFF-SITE ALTERNATIVE
GREGORY CANYON LANDFILL PROJECT

Geosyntec consultants

DATE:	NOVEMBER 2012	FIGURE
PROJECT NO.	SC0581	4

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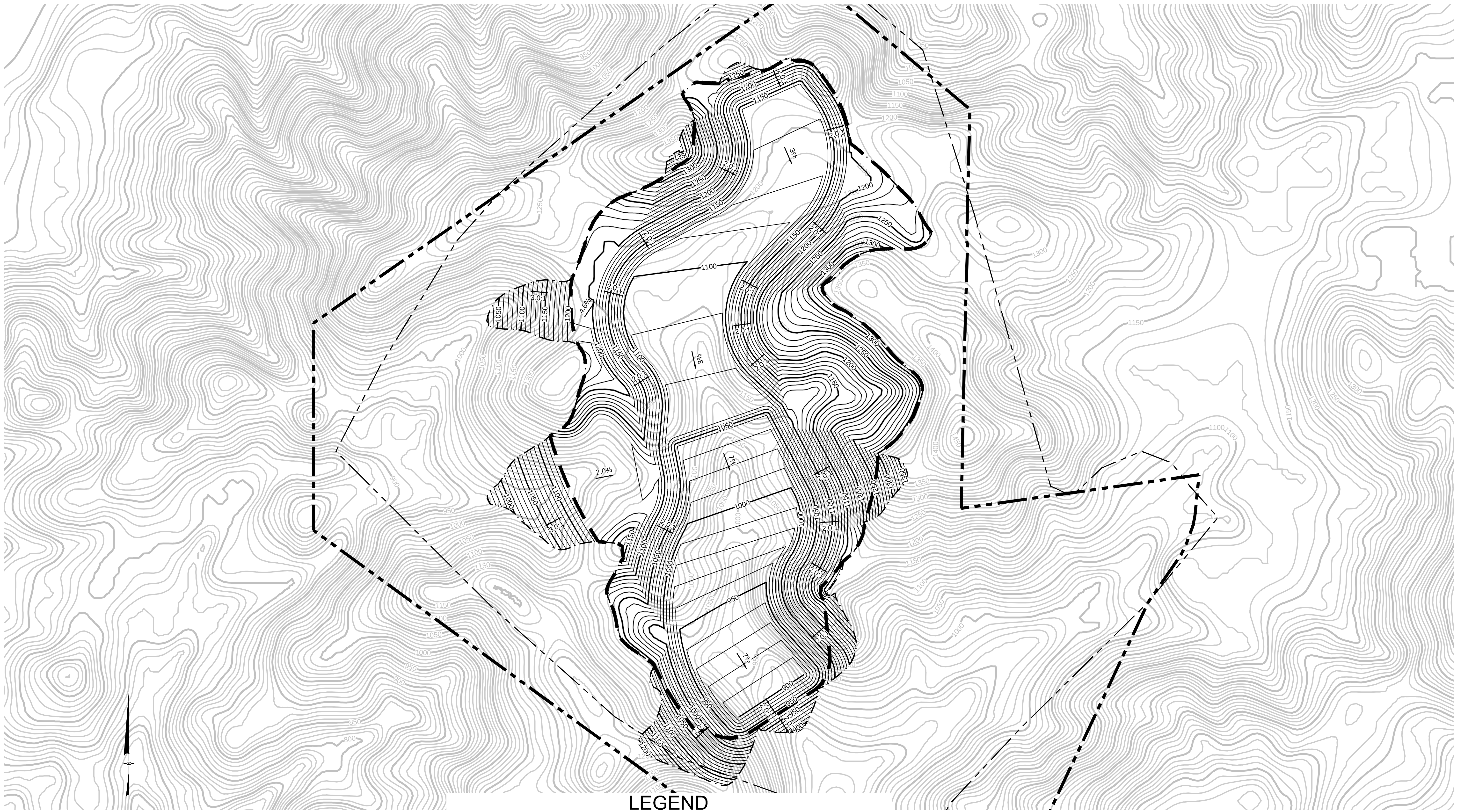

0 600' 1200'

SCALE IN FEET

NOTE:

1. EXISTING TOPOGRAPHY INTERPOLATED FROM USGS QUAD DATA (40-FOOT NAVD 88 CONTOURS).

LEGEND

- HISTORICAL BOUNDARY (BRG, 1992)
- CONCEPTUAL SITE FACILITY BOUNDARY
- EXISTING GROUND MAJOR CONTOUR (50')
- EXISTING GROUND MINOR CONTOUR (10')
- PROPOSED GRADING MAJOR CONTOUR (50')
- PROPOSED GRADING MINOR CONTOUR (10')
- LIMIT OF GRADING
- LIMIT OF WASTE

CONCEPTUAL EXCAVATION PLAN
ASPEN ROAD OFF-SITE ALTERNATIVE
GREGORY CANYON LANDFILL PROJECT

Geosyntec consultants

DATE:	NOVEMBER 2012	FIGURE
PROJECT NO.	SC0581	5

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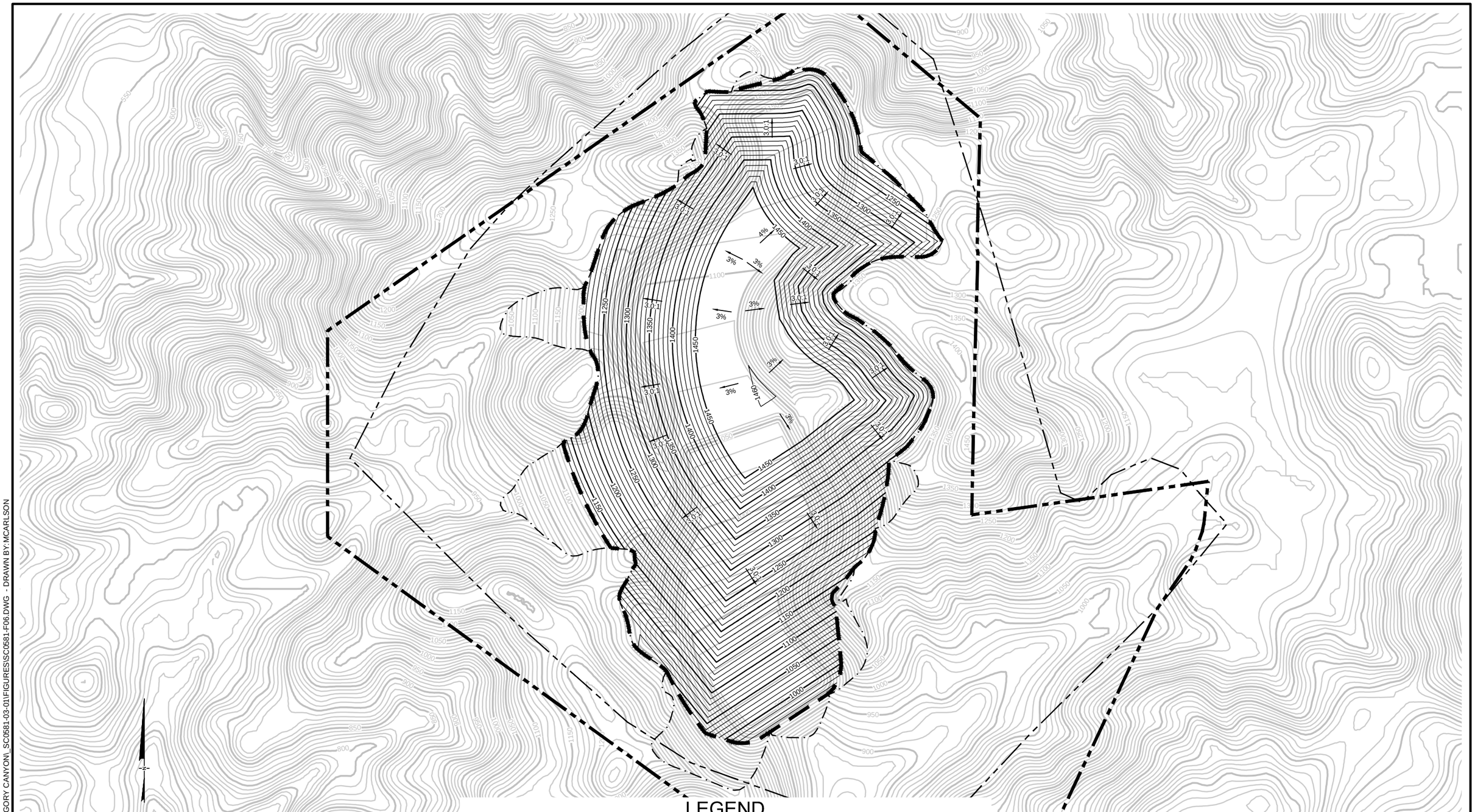

0 600' 1200'

SCALE IN FEET

NOTE:

1. EXISTING TOPOGRAPHY INTERPOLATED FROM USGS QUAD DATA (40-FOOT NAVD 88 CONTOURS).

LEGEND

- HISTORICAL BOUNDARY (BRG, 1992)
- CONCEPTUAL SITE FACILITY BOUNDARY
- 1000 EXISTING GROUND / BASE GRADING MAJOR CONTOUR (50')
- EXISTING GROUND / BASE GRADING MINOR CONTOUR (10')
- 1000 PROPOSED GRADING MAJOR CONTOUR (50')
- PROPOSED GRADING MINOR CONTOUR (10')
- LIMIT OF GRADING
- LIMIT OF WASTE

CONCEPTUAL FILL PLAN
ASPEN ROAD OFF-SITE ALTERNATIVE
GREGORY CANYON LANDFILL PROJECT

Geosyntec consultants

DATE:	NOVEMBER 2012	FIGURE
PROJECT NO.	SC0581	6

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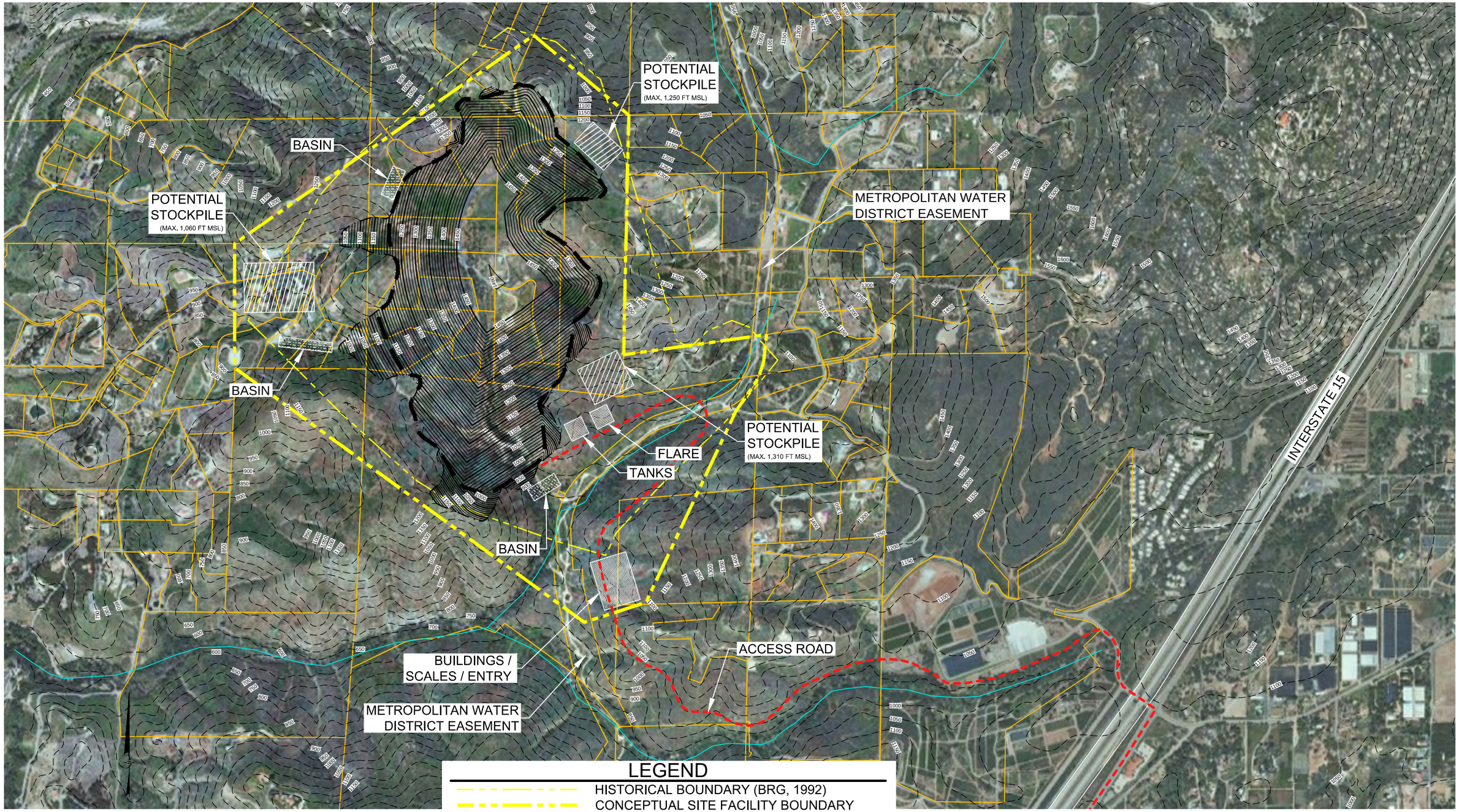

LEGEND

- HISTORICAL BOUNDARY (BRG, 1992)
- CONCEPTUAL SITE FACILITY BOUNDARY
- PARCEL BOUNDARY
- USGS BLUE LINE DRAINAGE
- EXISTING GROUND MAJOR CONTOUR (50')
- PROPOSED GRADING MAJOR CONTOUR (50')
- PROPOSED GRADING MINOR CONTOUR (10')
- LIMIT OF GRADING
- LIMIT OF WASTE
- ACCESS ROAD

0 1000' 2000'

SCALE IN FEET

NOTE:

1. EXISTING TOPOGRAPHY INTERPOLATED FROM USGS QUAD DATA (40-FOOT NAVD 88 CONTOURS).

CONCEPTUAL FACILITIES PLAN
ASPEN ROAD OFF-SITE ALTERNATIVE
GREGORY CANYON LANDFILL PROJECT

Geosyntec consultants

DATE: NOVEMBER 2012

PROJECT NO. SC0581

FIGURE 7

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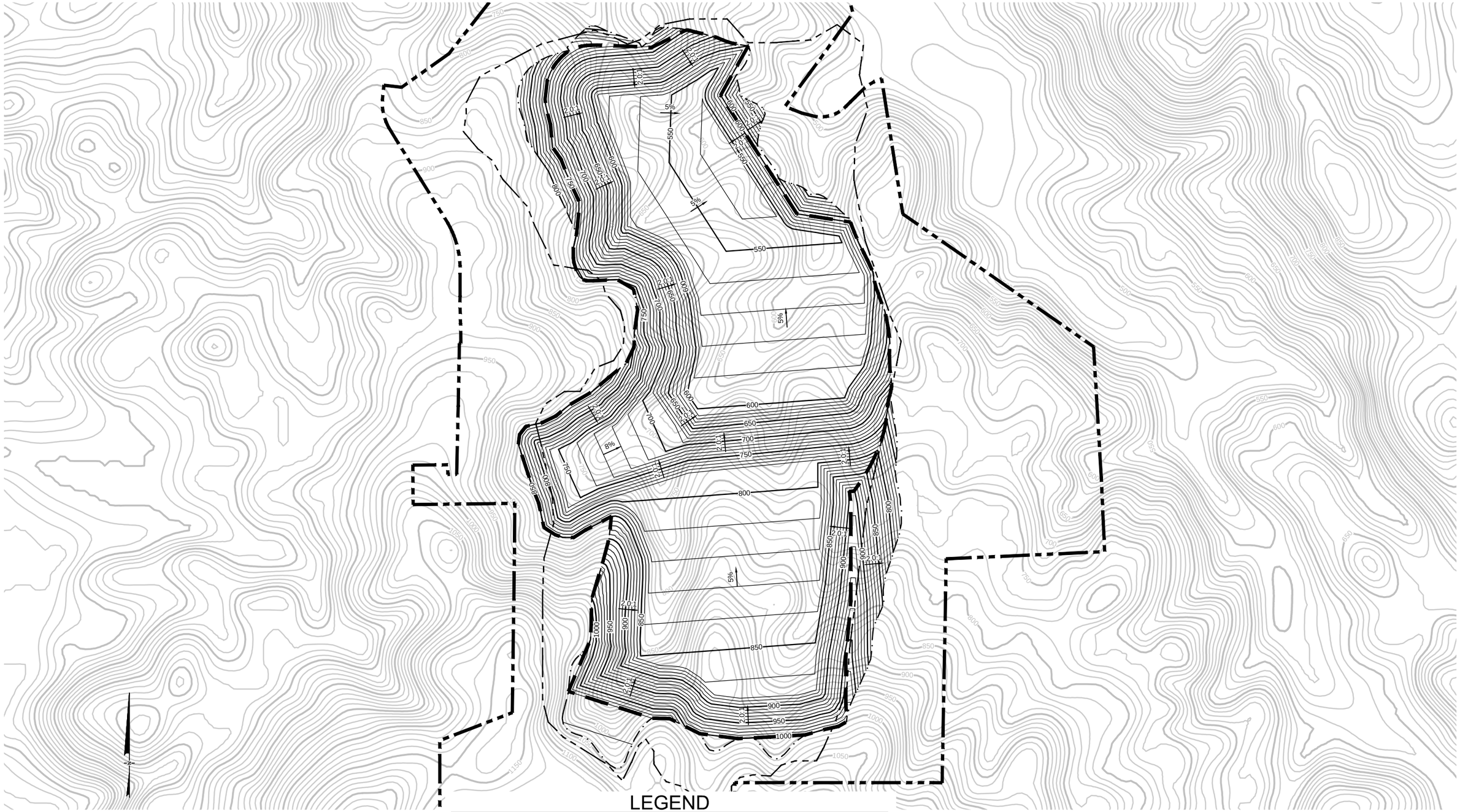

0 600' 1200'

SCALE IN FEET

NOTE:

1. EXISTING TOPOGRAPHY INTERPOLATED FROM USGS QUAD DATA (40-FOOT NAVD 88 CONTOURS).

LEGEND

- HISTORICAL BOUNDARY (BRG, 1992)
- CONCEPTUAL SITE FACILITY BOUNDARY
- EXISTING GROUND MAJOR CONTOUR (50')
- EXISTING GROUND MINOR CONTOUR (10')
- PROPOSED GRADING MAJOR CONTOUR (50')
- PROPOSED GRADING MINOR CONTOUR (10')
- LIMIT OF GRADING
- LIMIT OF WASTE

CONCEPTUAL EXCAVATION PLAN
GOPHER CANYON ROAD OFF-SITE ALTERNATIVE
GREGORY CANYON LANDFILL PROJECT

Geosyntec consultants

DATE:	NOVEMBER 2012	FIGURE
PROJECT NO.	SC0581	8

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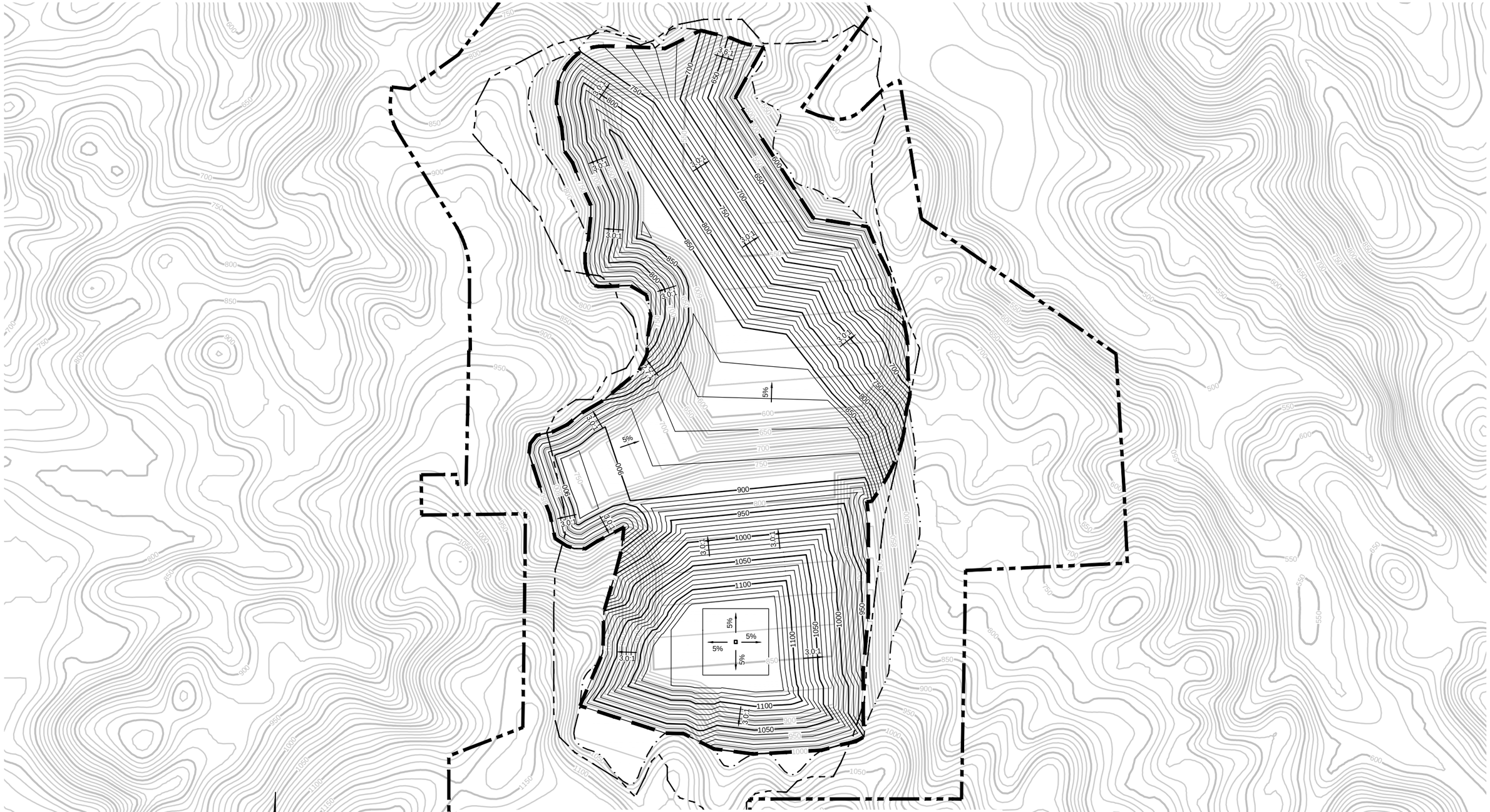

0 600' 1200'

SCALE IN FEET

N

NOTE:

1. EXISTING TOPOGRAPHY INTERPOLATED FROM USGS QUAD DATA (40-FOOT NAVD 88 CONTOURS).

LEGEND

- HISTORICAL BOUNDARY (BRG, 1992)
- CONCEPTUAL SITE FACILITY BOUNDARY
- EXISTING GROUND / BASE GRADING MAJOR CONTOUR (50')
- EXISTING GROUND / BASE GRADING MINOR CONTOUR (10')
- PROPOSED GRADING MAJOR CONTOUR (50')
- PROPOSED GRADING MINOR CONTOUR (10')
- LIMIT OF GRADING
- LIMIT OF WASTE

CONCEPTUAL FILL PLAN
GOPHER CANYON ROAD OFF-SITE ALTERNATIVE
GREGORY CANYON LANDFILL PROJECT

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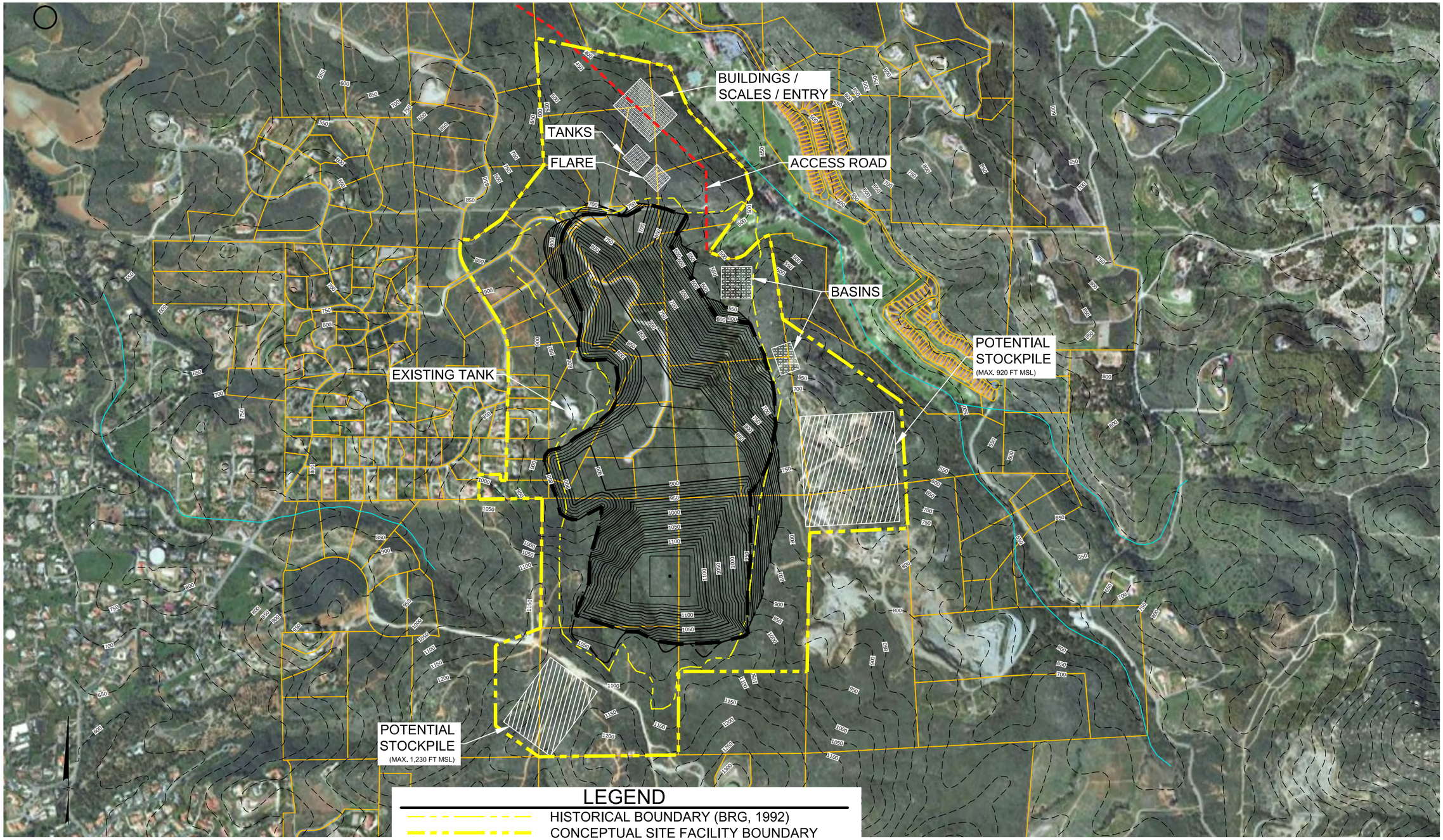
DATE:	NOVEMBER 2012	FIGURE
PROJECT NO.	SC0581	9

P:\PRJ\SD\CADD\CADD\SC0581 GREGORY CANYON_SC0581-03-01\FIGURES\SC0581-F09.DWG - DRAWN BY:MCARLSON



LEGEND

- HISTORICAL BOUNDARY (BRG, 1992)
- CONCEPTUAL SITE FACILITY BOUNDARY
- PARCEL BOUNDARY
- USGS BLUE LINE DRAINAGE
- 1000 — EXISTING GROUND MAJOR CONTOUR (50')
- 1000 — PROPOSED GRADING MAJOR CONTOUR (50')
- 1000 — PROPOSED GRADING MINOR CONTOUR (10')
- LIMIT OF GRADING
- LIMIT OF WASTE
- ACCESS ROAD

0 1000' 2000'

SCALE IN FEET

NOTE:

1. EXISTING TOPOGRAPHY INTERPOLATED FROM USGS QUAD DATA (40-FOOT NAVD 88 CONTOURS).

CONCEPTUAL FACILITES PLAN
GOPHER CANYON ROAD OFF-SITE ALTERNATIVE
GREGORY CANYON LANDFILL PROJECT

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DATE:	NOVEMBER 2012	FIGURE
PROJECT NO.	SC0581	10

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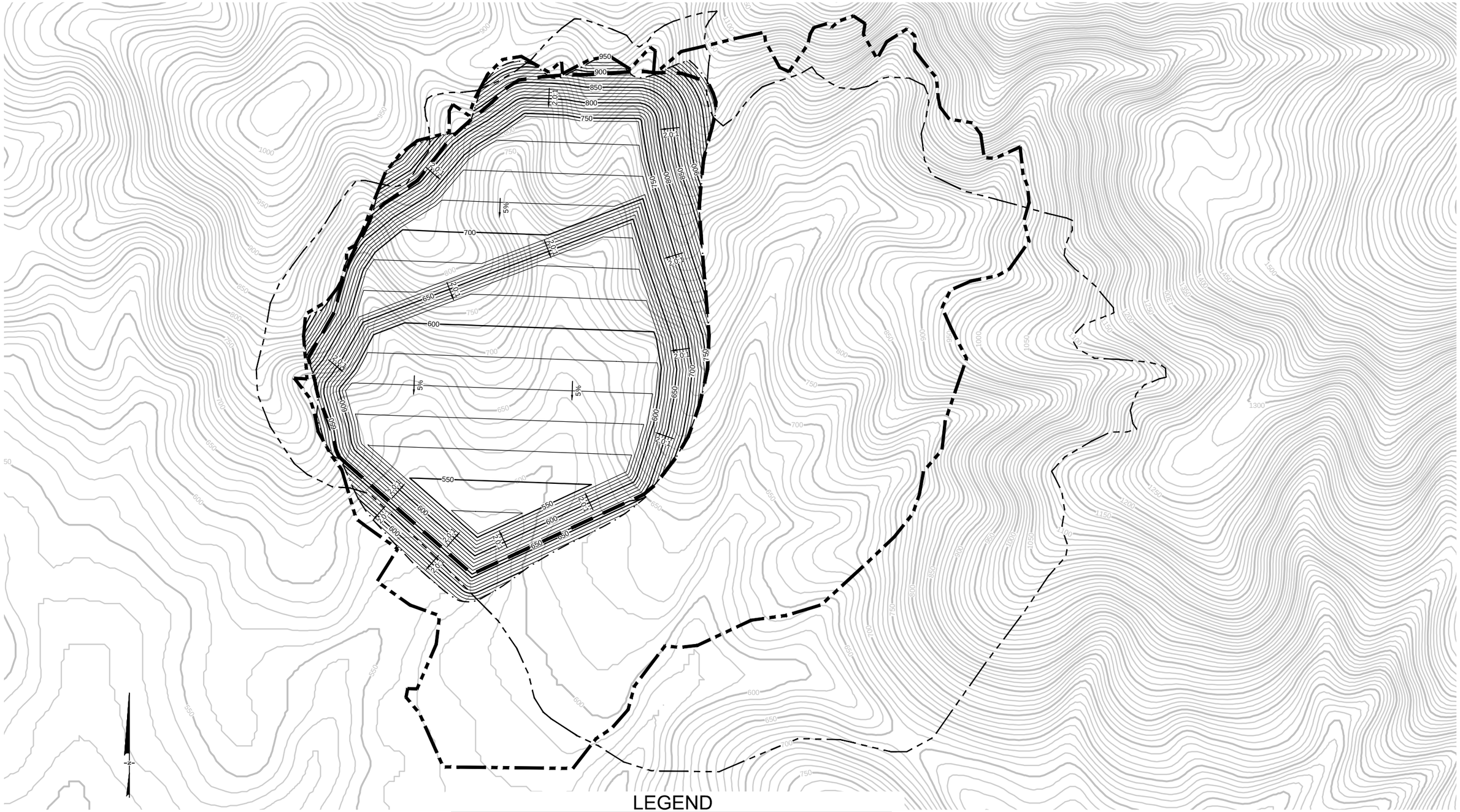

NOTE:
1. EXISTING TOPOGRAPHY INTERPOLATED FROM USGS QUAD DATA (40-FOOT NAVD 88 CONTOURS).

LEGEND

- HISTORICAL BOUNDARY (OGDEN, 1993)
- CONCEPTUAL SITE FACILITY BOUNDARY (GLA, 2012)
- EXISTING GROUND MAJOR CONTOUR (50')
- EXISTING GROUND MINOR CONTOUR (10')
- PROPOSED GRADING MAJOR CONTOUR (50')
- PROPOSED GRADING MINOR CONTOUR (10')
- LIMIT OF GRADING
- LIMIT OF WASTE

CONCEPTUAL EXCAVATION PLAN
EAST OTAY MESA OFF-SITE ALTERNATIVE
GREGORY CANYON LANDFILL PROJECT

Geosyntec consultants

DATE:	NOVEMBER 2012	FIGURE
PROJECT NO.	SC0581	11

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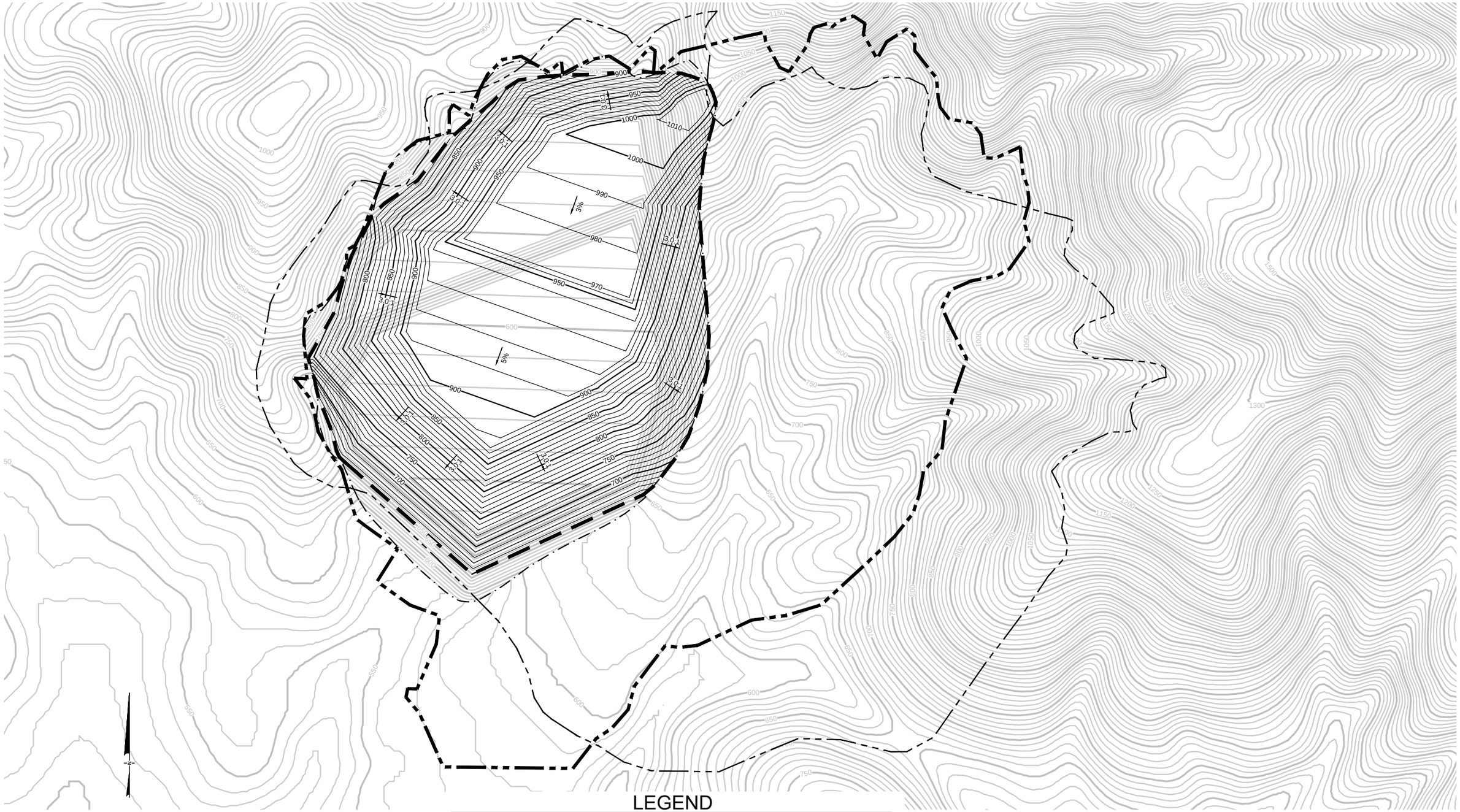

NOTE:
1. EXISTING TOPOGRAPHY INTERPOLATED FROM USGS QUAD DATA (40-FOOT NAVD 88 CONTOURS).

LEGEND

- HISTORICAL BOUNDARY (OGDEN, 1993)
- CONCEPTUAL SITE FACILITY BOUNDARY (GLA, 2012)
- EXISTING GROUND MAJOR CONTOUR (50')
- EXISTING GROUND MINOR CONTOUR (10')
- PROPOSED GRADING MAJOR CONTOUR (50')
- PROPOSED GRADING MINOR CONTOUR (10')
- LIMIT OF GRADING
- LIMIT OF WASTE

CONCEPTUAL FILL PLAN
GOPHER CANYON ROAD OFF-SITE ALTERNATIVE
GREGORY CANYON LANDFILL PROJECT

Geosyntec consultants

DATE:	NOVEMBER 2012	FIGURE
PROJECT NO.	SC0581	12

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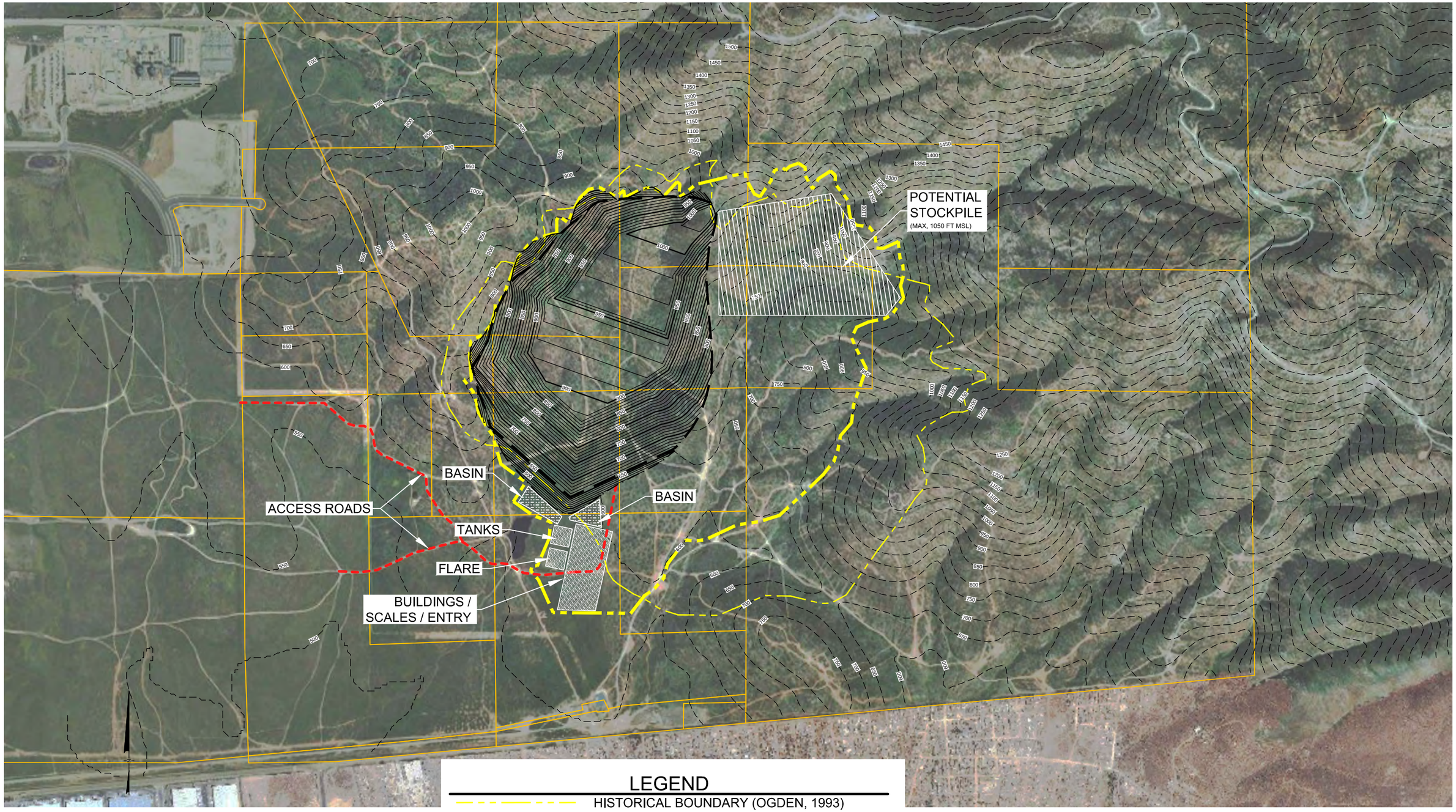

LEGEND

- HISTORICAL BOUNDARY (OGDEN, 1993)
- CONCEPTUAL SITE FACILITY BOUNDARY (GLA, 2012)
- PARCEL BOUNDARY
- 1000 — EXISTING GROUND MAJOR CONTOUR (50')
- 1000 — PROPOSED GRADING MAJOR CONTOUR (50')
- 1000 — PROPOSED GRADING MINOR CONTOUR (10')
- LIMIT OF GRADING
- LIMIT OF WASTE
- ACCESS ROAD

0 1000' 2000'

SCALE IN FEET

NOTE:

1. EXISTING TOPOGRAPHY INTERPOLATED FROM USGS QUAD DATA (40-FOOT NAVD 88 CONTOURS).

CONCEPTUAL FACILITES PLAN
EAST OTAY MESA OFF-SITE ALTERNATIVE
GREGORY CANYON LANDFILL PROJECT

Geosyntec consultants

DATE:	NOVEMBER 2012	FIGURE
PROJECT NO.	SC0581	13

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