UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF
ECOSYSTEMS, TRIBAL AND
PUBLIC AFFAIRS

January 31, 2011

William D. Gray
Bureau of Reclamation
Columbia-Cascades Area Office
1917 Marsh Road
Yakima, Washington 98901-2058

Re: EPA comments on Bureau of Reclamation's (BOR) Odessa Subarea Special Study.
EPA Project Number: 08-054-BOR

Dear Mr. Gray:

The U.S. Environmental Protection Agency (EPA) has reviewed the draft Environmental Impact Statement (DEIS) regarding the Odessa Subarea Special Study, Columbia Basin Project in Washington. Our review of the DEIS was conducted in accordance with our responsibilities under National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

The DEIS was prepared in cooperation between the Bureau of Reclamation (BOR) and the Washington Department of Ecology (DOE) to evaluate alternatives to deliver surface water from the Columbia Basin Project (CBP) to irrigated lands that currently rely on a declining groundwater supply from the Odessa Groundwater Management Subarea. Eight action alternatives were analyzed for withdrawal in various capacities from two existing reservoirs (Banks and FDR) and a proposed new reservoir (Rocky). All of them include expanding the East Low Canal and the full replacement includes construction of an East High Canal system. These alternatives are illustrated in the table below:

Alternatives- <u>Partial</u> Groundwater Irrigation Replacement (57,000 acres)		**Alternatives- <u>Full</u> Groundwater Irrigation Replacement (102,600 acres)**		**Description**
2A		3A		Would use existing storage in Banks Lake, exclusively.
2B		3B		Would result in drawdowns from both Banks Lake and Lake Roosevelt.
2C		3C		Would use existing storage in Banks Lake, plus a new Rocky Coulee Reservoir.
2D		3D		Would use a combination of all three facilities.

We commend BOR for the work completed in this study and the very well organized EIS. The document communicates complicated information clearly through the layout and description of alternatives, highlighted boxes with key information, and figures/tables (i.e., summary of benefits/impacts in Table 2-15). Also, we are very appreciative of the time that Charles Carnohan of your staff devoted to discussing the overall project and his enthusiasm to engage us in this work.

EPA is actively engaged in the Columbia Basin through many of our programs including CERCLA and our Office of Water and Watershed programs. EPA developed a Strategic Plan for FYI 2011-2015[1] and identified the Columbia River as one of our Nation's great water bodies, joining the Chesapeake Bay, Great Lakes, Gulf of Mexico, South Florida Ecosystem, Long Island Sound and Puget Sound. The strategic plan sets environmental targets which will help to move toward a healthier river:

- Protect, enhance, or restore 13,000 acres of wetland habitat and 3,000 acres of upland habitat in the Lower Columbia River watershed.
- Clean up 150 acres of known highly contaminated sediments.
- Demonstrate a 10% reduction in mean concentration of contaminants of concern found in water and fish tissue.

The Columbia River Basin is also part of EPA's Large Aquatic Ecosystems program that focuses on protecting and restoring the health of critical aquatic ecosystems. We believe it may be relevant to consider this information and how BOR and WA Dept of Ecology's efforts could support this critical work. For further information, the contact for the Columbia River is Marylou Soscia, Columbia River Coordinator, at soscia.marylou@epa.gov.

We acknowledge that water delivery to the Odessa Subarea involves complex water availability/quality issues by striving to address declining groundwater from irrigation with the supplement of surface water (partial replacement) or full replacement of groundwater irrigation. However, as indicated in the DEIS, the resulting impacts to surface water quality and/or habitat are potentially adverse for all action alternatives. Therefore, the challenge is to find ways to promote groundwater recharge while still protecting surface water quality. Our main concerns relate to water quality and the uncertainty about need and success of this project in terms of level of construction, funding and timing. Since this is such a large scale issue, we suggest that you consider developing a collaborative workgroup with agencies, farmers, and other relevant stakeholders to explore mitigation and/or more aggressive means (including identifying funding) to further enhance water efficiency and water conservation. This may aid in addressing both problems. Because of our concerns related to water resources and limited mitigation, we have rated the DEIS EC-2 (Environmental Concerns – Insufficient Information). An explanation of this rating is enclosed. Our detailed comments further discuss these and our other general questions and recommendations.

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[1] USEPA. 2010. *FY 2011-2015 EPA Strategic Plan.* www.**epa**.gov/cfo/**plan**/**plan**.htm

Thank you for the opportunity to review this DEIS. Please feel free to contact Lynne McWhorter of my staff at, (206) 553- 0205 or at mchorter.lynne@epa.gov with any questions or to further discuss these comments. EPA Region 10's Agriculture Specialist is Karma Anderson who is also engaged in this review and is available for questions at anderson.karma@epa.gov. We look forward to working with you in the future on this project.

Sincerely,

Christine B. Reichgott

Christine B. Reichgott, Unit Manager
Environmental Review and Sediment Management Unit

Enclosure

Cc: Marylou Soscia, EPA R10 Oregon Operations Office

EPA Comments on the Odessa Subarea Special Study, Columbia Basin Project Draft EIS

Alternatives

We understand the need to address the severely declining groundwater (100'-200' decline since the 1980's) in the Odessa Subarea; however, we have concerns with (a) the limited method(s) for addressing the problem and (b) the feasibility of implementing them. For example, the planned shift to surface water (included in all of the alternatives) is based on allocations and an agriculture forecast developed decades ago when conditions were quite different from those that exist currently or are expected in the near future (e.g., climate change). We recommend considering additional or modified alternatives and/or supplementing alternatives with more robust mitigation to reduce impacts (further discussed in the next section).

The feasibility of implementing an action is unclear since all alternatives except 2A and 2B have a benefit-cost ratio less than 1 (Table 3), which presumably would make them infeasible; this was confirmed with BOR staff. Furthermore, the only alternative without adverse effects to surface water is alternative 2C for which the benefit- cost ratio is below 1 (benefit-cost ratio 0.678), making its selection unlikely. It appears that cost is the key factor driving the alternative selection and therefore, it is unclear how environmental benefits are weighed. Of the needs listed, economic loss is the only need with a relatively thorough analysis. The DEIS provided an analysis of what will happen if 70% of the wells dry up, in that the cropland will be converted to dryland wheat. This would result in an economic loss of $630 million. However, we are unclear what this means in the context of other interests in the basin. We recommend disclosing more information on how environmental impacts/benefits are weighed along with the cost benefit ratio analysis and how both of these factor into decision making.

Agriculture Practices

The need statement includes, "Fulfill Obligations to Improve Water Management and Delivery;" however, the DEIS appears to miss potentially important components that one would expect in a thorough assessment of water management improvement, such as conservation. The document states that Section 15 of the MOU requires BOR to look at water delivery "to additional existing agricultural lands within the Odessa Subarea." We are unclear if this signifies the intent to primarily expand agriculture lands, or to shift to more water consumptive crops. There does not appear to be a significant analysis of options to reduce water consumption (i.e., converting to more efficient irrigation methods and more efficient crops). Although center pivot irrigation is considered the most efficient for crop production, it may not be the most environmentally efficient. For example, the analysis does not fully address potential groundwater recharge, or preservation of ditch-side riparian areas created as a result of flood irrigation. And though micro-irrigation is not widely used in potato crops, we believe it is valuable to explore this possibility. If it is not feasible, what is the benefit/cost of moving to more water-efficient crops? Dryland wheat is more water efficient, but does not provide the economic return of potatoes. In the larger picture of water shortage, how does the economic benefit of growing potatoes compare with environmental impacts? We recommend that the economic and environmental impacts or benefits be contrasted more clearly and that the decision process for selecting an alternative be more fully described.

We recommend that the EIS include an overall analysis of crop and water efficiency. Although dependent on the site, these practices could include: Advanced Irrigation Water Management, Conservation Crop Rotation, Conservation Tillage, and others. Although not every practice is applicable to every crop or every field, good planning and conservation could reduce overall water need. To accomplish this, we recommend that BOR and Washington Department of Ecology (WADOE) work with Conservation Districts and farmers to maximize water conservation.

We note that the EIS does not include a thorough energy analysis. If the conversion to using surface water for irrigation reduces surface water flows, there is the possibility that the energy production of the Columbia could be reduced. Given that potential, we believe it would be beneficial to consider on-farm hydro-energy projects to counter balance the loss. One suggestion is to include gravity fed pivots in the analysis, which would reduce pivot energy use. We recommend that the EIS more fully evaluate and discuss energy use and energy reduction methods.

Water Availability

As previously stated, Alternative 2C appears to have the least adverse effect on water quality and water quantity (elevation) in Banks Lake, but the reasons are not clear. Since the Rocky Coulee Reservoir is downstream of Banks Lake, it is not clear why predicted water elevations in Banks Lake are significantly different from the other Alternative 2 options. A summary table in Section 4.2 showing source waters and associated flows and/or volumes for each alternative would be helpful in presenting this information, as predicted water elevations are directly related to water quality parameters such as temperature and dissolved oxygen. This could be expanded into a discussion of the water balance showing all sources and sinks (losses) for each alternative, and could also include a full evaluation of evaporative losses which would be very valuable additional information, meriting a more thorough discussion. Through this mass balance approach, the reader would gain a greater appreciation of which alternative is more sustainable and uses the least amount of water, and why predicted water levels in Banks Lake are different for each alternative.

Quality of Groundwater Recharge

The DEIS discusses groundwater levels increasing for the Grande Ronde aquifer for all partial and full replacement alternatives. For the partial alternatives approximately 176,000 acre-feet of ground water would be conserved and for the full replacement alternative, 347,000 acre-feet of groundwater would be conserved allowing for a greater recharge rate. We support activities that promote groundwater recharge/conservation; however, we are concerned with the quality of groundwater recharge given the existence of contamination by nitrates, bacteria and other contaminants in known parts of the Columbia Basin. The DEIS does not appear to discuss this issue or analyze the quality of groundwater. EPA's Ground Water and Ecosystems Restoration of ORD's National Risk Management Laboratory, EPA Region 10, and other federal agencies are working together to link elevated nitrate concentrations to specific sources. This is an important research effort due to the human health concerns and the exceedance of Federal Safe Drinking Water Maximum Contaminant Level (MCL) for nitrate (10 mg/L). For more information please visit the following site:
http://www.epa.gov/ada/gw/pdfs/char_gw_contam_nitrates.pdf.

EPA recognizes that providing high quality drinking water to protect human health is a high priority for land management agencies. Protective actions and land use decisions can be very effective in providing clean source water to aquifers that feed public intakes and wells. Such protective action can lessen the amount of public funds that would otherwise be spent to upgrade treatment facilities to remove contaminants. Therefore, we recommend that the EIS analyze the quality of groundwater and the anticipated recharge water, and also disclose any private wells that are located within the project area. Also the EIS should specifically:

- Identify all federally-regulated source water protection areas and state- regulated source water protection areas, if the state agency maintains that list, within or downstream of the project area;
- Identify all activities that could potentially affect source water areas;
- Identify all potential contaminants that may result from the proposed project;
- Identify all measures that would be taken to protect the source water protection areas in the draft EIS.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The EPA is currently overseeing a CERCLA investigation being carried out by Teck Cominco in the Upper Columbia River. The purpose of the investigation is to determine the nature and extent of contamination in the Upper Columbia River. The investigation will include sampling surface water, sediments, and beaches and will also include an analysis of risks to human health and environment resulting from contamination. It is too early in the investigation to determine whether potential risks resulting from contamination in Lake Roosevelt would be affected by an alteration in the drawdown pattern in Lake Roosevelt and we are unclear if drawdown from Lake Roosevelt could result in erosion and suspension of contaminated dust particles. The current conditions under Section 3.4.2 acknowledge that Lake Roosevelt has significant levels of zinc, lead, copper, arsenic, cadmium, and mercury from the lead-zinc smelter; however, the potential impacts from alternatives is unknown. We recommend that BOR and WADOE coordinate with EPA for activities that occur in Lake Roosevelt and analyze those actions based on available information from the CERCLA investigation.

Mitigation

The DEIS states that all action alternatives would significantly impact water quality in Banks Lake, particularly for temperature and dissolved oxygen (DO) except Alternative 2C. Lake Roosevelt would be minimally impacted for temperature, DO, total dissolved gas, and heavy metals. As stated previously it is unclear why Alternative 2C would be an exception. We question what mitigation would be appropriate for the other alternatives since the DEIS does not identify mitigation measures. Lake Roosevelt is on State's 303(d) list for temperature and DO and while Banks Lake is not currently on the list, data suggests that it exceeds water quality standards for both temperature and DO; therefore, we have concerns about the project's potential to further degrade water quality. The DEIS states for surface water quality (and similarly for impacts to groundwater) that,

> "No water quality mitigation measures are recommended for Lake Roosevelt, the Columbia River downstream of Grand Coulee Dam, or the analysis area irrigation network for this or any of the alternatives because the long-term impacts were not considered significant. The long-term impacts to Banks Lake would be significant based

on current standards, but mitigation measures intended to decrease temperatures and increase dissolved oxygen have limited effectiveness on a broad scale and are not recommended."

We recommend that the BOR and WADOE further explore alternatives to mitigate water quality and quantity impacts and discuss this or other options in the FEIS. Again, this may be best accomplished through large scale collaboration, education, identifying water efficiency practices, and working with farmers to identify funding opportunities to implement methods that promote a more robust water conservation program.