Final Environmental Impact Statement for the COB Energy Facility

DOE/EIS-0343

Bonneville Power Administration

June 2004

COB Energy Facility Project
Final Environmental Impact Statement
DOE/EIS-0343

Lead Agency: U.S. Department of Energy, Bonneville Power Administration (BPA)

Cooperating Agency: U.S. Department of Interior, Bureau of Land Management (BLM)

Title of Proposed Project: COB Energy Facility

State Involved: Oregon

Abstract: COB Energy Facility, LLC, a subsidiary of Peoples Energy Resources Company (PERC), proposes to construct a 1,160-megawatt (MW) natural gas-fired, combined-cycle electric generating plant in Klamath County, Oregon, near the city of Bonanza. Electric power from the Energy Facility would enter the regional grid at BPA's Captain Jack Substation via a proposed 7.2-mile 500-kilovolt (kV) transmission line. BPA has prepared this Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) for its decision regarding this proposed interconnection.

The proposed electric transmission line would cross federal lands under the jurisdiction of BLM, which must decide whether to grant the necessary rights-of-way for this line on approximately 44 acres of BLM land. Accordingly, this EIS will also be used by BLM for the decision in question.

The major reason for this proposal is to provide electrical consumers in the Pacific Northwest and western states with increased power generation to serve increasing demand, and high-voltage transmission service to deliver that power.

Two alternatives are being considered: the proposed action and the No Action Alternative. In the No Action Alternative, BPA would decide not to provide a connection to the regional electric power transmission grid for the proposed Energy Facility or BLM would decide not to grant the electric transmission line rights-of-way. In the proposed action, BPA would provide a connection to the regional grid for the Energy Facility at the Captain Jack Substation and BLM would grant the requested rights-of-way.

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For additional information on U.S. Department of Energy NEPA activities, please contact Carol Borgstrom, Director, Office of NEPA oversight, EH-25, U.S. Department of Energy, 1000 Independence Avenue S.W., Washington D.C. 20585, telephone: 1-800-472-2756.

Contents

Summary Statement

This summary statement serves as an introduction to the errata sheet for the COB Energy Facility Final Environmental Impact Statement (FEIS). The revisions delineated in this errata sheet update the Draft EIS (DEIS). Background information on DEIS public meetings and comments received is provided below, and the errata sheet format is described.

Public Meetings

Notice of the availability of the DEIS was published in the Federal Register on page 66,825 on November 28, 2003. On January 22, 2004, two public meetings were held in conjunction with the hearing conducted by the Oregon Department of Energy. One meeting was held in Lorella, Oregon, where approximately 80 people attended, and the second meeting was held in Klamath Falls, Oregon, where approximately 20 people attended.

Comments

The public comment period for the DEIS closed on February 13, 2004. A total of 29 comment letters were received, 27 from private citizens and two from regulatory agencies. Generally, comments were received on the following topics:

- Management and handling of stormwater
- Disposal and management of process wastewater
- Potential impacts to air quality, wildlife, visual and aesthetic resources, and recreation
- Water rights, availability, and source
- Effects on roads and traffic
- Location of the proposed project compared to other potential sites
- Siting of the proposed project on exclusive farm use (EFU)-zoned land
- Peoples Energy Resource Company (PERC)

A meeting was held with the Department of Interior and the U.S. Bureau of Land Management (BLM) on April 14, 2004, to review and discuss their comments.

Comments on the DEIS submitted during the comment period were considered during preparation of the FEIS. Responses to comments were prepared according to regulations issued by the Council on Environmental Quality for implementing procedural provision of the National Environmental Policy Act (NEPA) in 40 *Code of Federal Regulations* (CFR) 1503.4. Part 6 of this FEIS summarizes each comment and the response provided.

FEIS Text Format

The FEIS text is formatted as follows:

- **SECTION**. Identifies the DEIS section to be revised or the additional section to be added.
- **PAGE**. Identifies the DEIS page number(s) affected.
- **CMT#**. Identifies the comment number in the document titled *Comments on and Responses to the COB Energy Facility DEIS* (Part 6 of this FEIS) to which the FEIS change correlates.
- **CHANGES**. Describes the exact nature of the change to be made in the DEIS. Strikeout indicates text to be removed. Underline indicates text to be added.

PART 1

Final Environmental Impact Statement (FEIS) Text

Part 1. COB Energy Facility Final Environmental Impact Statement Text

Summary

SECTION	PAGE	CMT#	CHANGES
Proposed Federal Action	S-1		***Revision, first paragraph, first sentence.*** COB Energy Facility, LLC, a subsidiary of Peoples Energy Resources ~~Corporation~~ Company (PERC), proposes to construct a natural gas-fired, combined-cycle electric generating plant near Bonanza, Oregon.
Purpose and Need for Action	S-1	28E	***Revision, first paragraph, last sentence.*** BLM will grant the rights-of-way if they are determined to be ~~will authorize~~ appropriate uses of public land consistent with applicable planning documents. ***Additional paragraph****:* PERC's purpose for the proposed the action is to produce electricity for sale to load serving entities in the Pacific Northwest and California. To meet the purpose, PERC would construct, and operate a combined-cycle, gas-fired power plant strategically located along a major electrical transmission line and natural gas pipeline, where a power plant could economically and efficiently generate electrical power. PERC specifically seeks a generation plant site from which it can provide maximum market response to regional power demands, at a "trading hub" location on the Western power grid, having sufficient transmission and substation capacity to meet this objective. The siting of the proposed project and interconnection to the Captain Jack substation is linked to the original purpose of the California-Oregon Transmission Project (COTP). As stated in the COTP FEIS (1988), the transmission line "is to expand the bidirectional capability of the Pacific Northwest-Pacific Southwest Intertie transmission system and to help serve California's need for economical power, the Pacific Northwest's desire to sell surplus power, and the need for maintaining and increasing the reliability of the existing transmission system."
Related State Actions	S-1		***Revision, first paragraph, after last sentence.*** A Draft Proposed Order was issued on December 20, 2003 and a proposed order was issued on March 16, 2004. The Proposed Order recommends that the Oregon Energy Facility Siting Council issue a site certificate with conditions.
Scope of the Environmental Impact Statement	S-2	2E, 27G	***Revision, second paragraph.*** In addition, process wastewater would be managed by one of ~~three~~ two alternatives: • Beneficial reuse of the water for irrigated pasture • Evaporation in a 20-acre, onsite lined evaporation pond • ~~Temporary storage onsite and hauling to a wastewater treatment plant (WWTP) for offsite disposal~~
Components of the Proposed Action	S-3		***No changes***
Major Conclusions	S-3	28F	***No changes***

SECTION	PAGE	CMT#	CHANGES
Geology, Soil, and Seismicity	S-3		***No changes***
Hydrology and Water Quality	S-4	2E, 4B, 27G, 28G	***Revision, third paragraph****:* ~~Three~~ Two alternatives for managing process wastewater are proposed: 1) beneficial use of the water for irrigated pasture~~,~~ and 2) evaporation in an onsite, lined evaporation pond~~, or 3) temporary storage onsite and hauling to a WWTP for offsite disposal~~. Sanitary wastewater from Energy Facility operations would be treated and managed using an onsite septic drainfield. There would be no direct discharge of process water or wastewater to surface water or groundwater.
Vegetation and Wildlife	S-4	28H	***No changes***
Impacts to Wildlife Habitat	S-4	28I	***No changes***
Impacts to Agricultural Land	S-4		***No changes***
Temporary Impacts	S-5		***No changes***
Mitigation for Permanent Disturbance	S-5		***No changes***
Biological Assessment	S-5		***No changes***
Fish	S-5	28J	***No changes***
Traffic and Circulation	S-6		***No changes***
Air Quality	S-6		***No changes***
Scenic and Aesthetic Values	S-6	28K, 28L, 28M	***Revision, fourth sentence:*** The elements of the proposed Energy Facility that could affect the visual and aesthetic quality of the environment would be four stacks ~~and,~~ 38 electric transmission towers, and transmission line corridor clearing and access roads. The visual impacts would affect both private land and BLM-administered land.
Cultural Resources	S-6		***No changes***

SECTION	PAGE	CMT#	CHANGES
Land-Use Plans and Policies	S-7	28N	***After existing paragraph, the following paragraphs added.*** The proposed project involves the location of electrical transmission facilities on approximately 44 acres of land administered by the BLM. This would involve the issuance of a right-of-way or easement to the project proponent. The easement objective from the Klamath Falls Resource Area Record of Decision and Resource Management Plan (RMP), pages 66 to 67, calls for making rights-of-way available where consistent with local comprehensive plans, Oregon statewide planning goals and rules, and avoidance/exclusion areas identified in the RMP. The proposed facilities do not cross any lands identified as easement avoidance or exclusion areas. The RMP encourages, but does not require, new utility corridors to be located within existing corridors. For new corridor creation, the project proponent must demonstrate that the use of an existing route or corridor is not technically or economically feasible and that the proposed corridor minimizes damage to the environment. The proposed location for transmission corridors falls outside of existing corridors designated in the RMP. The proponent's reasoning for not using existing corridors is found in Section 2.5.2.4, Alternative Electric Transmission Line. The proposed project is also consistent with the goals and objectives of the National Energy Policy (2001) because it would contribute to modernization and expansion of the national energy supply.
Socioeconomics	S-7		***No changes***
Public Services and Utilities	S-7	2E, 27G	***Revision, second paragraph.*** ~~Three~~Two alternatives are being considered for the disposal of process wastewater: 1) beneficial use of the water for irrigated pasture~~,~~ and 2) evaporation in an onsite, lined evaporation pond~~, or 3) temporary storage onsite and hauling to a WWTP for offsite disposal. If process wastewater is managed by storage and hauling to a WWTP for disposal, the proposed action would have a minor impact on the treatment capacity at the WWTP~~.
Health and Safety	S-7		***No changes***
Areas of Controversy	S-8		***No changes***
Issues to Be Resolved	S-8		***No changes***

Chapter 1 Introduction

SECTION	PAGE	CMT#	CHANGES
1.1 Proposed Action	1-1		***Revision, first paragraph, first sentence.*** COB Energy Facility, LLC (the project proponent), a subsidiary of Peoples Energy Resources Company (PERC), proposes to build and operate a natural gas-fired, combined-cycle electric power generation plant near Bonanza, Oregon. ***Revision, third and fourth paragraphs.*** ~~Because these Federal actions are necessary for development of the COB Energy Facility, BPA and BLM would assess.~~ To inform BPA and BLM decisionmakers and the public of the potential environmental impacts of the ~~entire Facility before taking any action~~ proposed actions by BPA and BLM related to the proposed project, this environmental impact statement (EIS) has been prepared pursuant to the National Environmental Policy Act (NEPA). Because the actions are integrally related and both necessary for ultimate construction of the Facility, they are considered together as one combined Proposed Action. The following terms are used in this ~~environmental impact statement (~~EIS~~)~~:
1.2 Purpose and Need for the Action	1-2		***No changes***
1.2.1 Underlying Need for Action	1-3		***Revision, fifth paragraph.*** Generation resources typically require interconnection with a high-voltage electrical transmission system for delivery to purchasing retail utilities. Bonneville Power Administration owns and operates the Federal Columbia River Transmission System (FCRTS), comprising more than three-fourths of the high-voltage transmission grid in the Pacific Northwest and including extra-regional transmission facilities. BPA operates the FCRTS, in part, to integrate and transmit "electric power from existing or additional Federal or non-Federal generating units."~~-~~[7] BPA has adopted an Open Access Transmission Tariff for FCRTS consistent with the Federal Energy Regulatory Commission's (FERC) *pro forma* open access tariff.[8] Under BPA's tariff, BPA offers transmission interconnection to the FCRTS to all eligible customers on a first-come, first-served basis, with this offer subject to an environmental review under NEPA. Interconnection with the FCRTS is essential to deliver power from many generation facilities to loads both within and outside the Pacific Northwest. ***Revision, fifth paragraph.*** In summary, electrical consumers served by the Northwest Power Pool and in other western states need increased power production to serve increasing demand, and high-voltage transmission services to deliver that power. ~~Because the project proponent has requested to integrate power from its proposed COB Energy Facility into the FCRTS at the Captain Jack Substation, BPA must decide whether and how to grant that request.~~ In addition, BPA and BLM need to respond to PERC's request for authorizations required from these agencies for PERC to construct the proposed project. More specifically, BPA needs to respond to PERC's request for an interconnection of the proposed project to the FCRTS at BPA's Captain Jack Substation and integration of the power from the project into the FCRTS. BLM needs to respond to PERC's request for a grant of easement across BLM land.
Footnote for 1.2.1 Underlying Need for Action	1-3		***Revision, additional footnote.*** [8] Although BPA is not subject to FERC jurisdiction, BPA follows the open access tariff as a matter of national policy. This course of action demonstrates BPA's commitment to nondiscriminatory access to its transmission system and ensures that BPA would receive nondiscriminatory access to the transmission system of utilities that are subject to FERC jurisdiction.

SECTION	PAGE	CMT#	CHANGES
1.2.2 Purpose of the Action	1-3		***No changes***
1.2.3 Peoples Energy Resources Corporation Project Purpose	1-4		***Additional section.*** **1.2.3 Peoples Energy Resources Company Project Purpose** PERC is a diversified energy company including power generation, midstream services, retail energy services, and oil and gas production. The COB project is a continuation of PERC's business to construct and operate power generation plants for wholesale customers in the United States. As a natural gas and electrical energy provider, the focus of power generation is on natural gas-fired, single-cycle, and combined-cycled power plants. The purpose of PERC's proposed action is to produce electricity for sale to load-serving entities in the Pacific Northwest and California. To meet the purpose, PERC would site, construct and operate a combined-cycle, gas-fired power plant. The selected site would be strategically located along a major electrical transmission line and natural gas pipeline where a power plant could economically and efficiently generate electrical power. PERC specifically seeks a generation plant site where it can provide maximum market response to regional power demands, at a "trading hub" location on the Western power grid having sufficient transmission and substation capacity to meet this objective. The siting of the proposed project and interconnection to the Captain Jack substation are linked to the original purpose of California-Oregon Transmission Project (COTP). As stated in the COTP FEIS (1988), the transmission line "…is to expand the bidirectional capability of the Pacific Northwest-Pacific Southwest Intertie transmission system and to help serve California's need for economical power, the Pacific Northwest's desire to sell surplus power, and the need for maintaining and increasing the reliability of the existing transmission system." Other key siting criteria are described in more detail in Section 2.3.1.
1.3 National Environmental Policy Act Review	1-4		***No changes***
1.3.1 Public Involvement	1-4		***No changes***
1.3.2 Comments Received	1-5 and 1-6		***Revision, header to 1.3.2.*** **1.3.2 Scoping Comments Received** ***Revision, second paragraph, first sentence.*** To address the concern about impact on groundwater, the project ~~propenent~~ proponent has committed to switching from wet cooling to air cooling. This switch reduces water requirements by 97 percent. On July 25, 2003, the project proponent filed an amendment to the site certificate application (SCA) dated September 5, 2002, documenting the switch to air cooling.

SECTION	PAGE	CMT#	CHANGES
1.3.3 Draft Environmental Impact Statement Comments Received	1-6		***Additional section.*** **1.3.3 Draft Environmental Impact Statement Comments Received** Notice of the availability of the draft environmental impact statement (DEIS) was published in the Federal Register on page 66825 on November 28, 2003. On January 22, 2004, two public meetings were held in conjunction with the hearing conducted by the Oregon Department of Energy. One meeting was held in Lorella, Oregon, where approximately 80 people attended, and the second meeting was held in Klamath Falls, Oregon, where approximately 20 people attended. The public comment period for the DEIS closed on February 13, 2004. A total of 29 comments letters were received, 27 from private citizens and two from regulatory agencies. Generally, comments were received on the following topics: • Management and handling of stormwater • Disposal and management of process wastewater • Potential impacts to air quality, wildlife, visual and aesthetic resources, and recreation • Water rights, availability, and source • Impacts to roads and traffic • Location of the proposed project compared to other potential sites • Siting of the proposed project on exclusive farm use (EFU)-zoned land • Concerns about PERC A meeting was held with the Department of Interior and BLM on April 14, 2004, to review and discuss their comments. Comments on the DEIS submitted during the comment period were considered in preparation of the FEIS. Responses to comments were prepared according to regulations issued by the Council on Environmental Quality for implementing procedural provision of the National Environmental Policy Act (NEPA) in 40 CFR 1503.4.
1.4 State of Oregon Review	1-5		***Revision, second paragraph.*** The project proponent submitted an application for a site certificate on September 5, 2002. The SCA was deemed complete on April 30, 2003. On July 25, 2003, an amendment was filed with EFSC to switch to air cooling from wet cooling. A Draft Proposed Order was issued on December 20, 2003, and a proposed order was issued on March 16, 2004. The Proposed Order recommends that EFSC issue a site certificate with conditions. Review of the application by state agencies would proceed concurrent with the NEPA review process. EFSC has no involvement with BPA's siting and construction of its transmission lines and appurtenant facilities.
1.5 Scope and Organization of the EIS	1-5		***No changes***

Chapter 2 Proposed Action and Alternatives

SECTION	PAGE	CMT#	CHANGES
	Pages are not applicable because of reorganization		***Chapter 2 has been reorganized, and clarifying information on the site selection process and alternatives considered has been added. The entire chapter, in track mode (redline) format, is attached as Part 4 of this errata document. Major changes are summarized below.***
2.1 Introduction			
2.2 Site Selection	15E, 17E, 18A, 23L, 29B, 29D, 29E, 29F, 29G		***Additional Section***
2.2 No Action			***Moved to Section 2.4 and retitled No Action Alternative.***
2.3 Proposed Action	2-4	28O, 28P	***Revision, second paragraph, second sentence:*** The locations of the Energy Facility and its related or supporting facilities are shown in Figure 2-1, and Figure 2-2 shows the BLM-managed ~~owned~~ parcels.
2.3 Proposed Action	2-2	2E, 27G	***Revision, second paragraph, third sentence.*** ~~Three~~ Two alternatives for disposal of the process wastewater are proposed: 1) beneficial use of the water for irrigated pasture, and 2) evaporation in an onsite, lined evaporation pond~~, .or 3) temporary storage onsite and hauling to an offsite wastewater treatment plant (WWTP) for disposal.~~
2.3.1 Electric Power Generation Facility			
2.3.1.1 Site Location			***Revision, third paragraph, first bullet.*** **Electric transmission interconnect.** The Energy Facility site would connect to the existing BPA Captain Jack Substation, which is part of the California-Oregon Intertie ~~known as the "Super Highway Crossroads" of Energy for the Pacific Northwest and California~~ and near the California-Oregon border trading hub (geographic location where multiple participants trade power), one of three key power marketing price reference points in the West.
2.3.1.2 Power Generation Facilities			***No substantive changes***
2.3.1.3 Site Facilities			***No substantive changes***

SECTION	PAGE	CMT#	CHANGES
2.3.1.4 Water Supply			***No changes***
2.3.1.5 Fuel and Chemical Storage Facilities			***No substantive changes***
2.3.1.6 Laydown and Storage Areas	2-6		***No changes***
2.3.1.7 Fire Prevention and Control	2-7		***No changes***
2.3.1.8 Wastewater Management, Beneficial Use, and Disposal	2-7	2E, 27G	***Revision, Operation subhead, second sentence and bullets.*** Process wastewater from the Energy Facility would be managed by one of ~~three~~ two alternatives: • Beneficial use of the water for irrigated pasture • Evaporation in an onsite, lined evaporation pond • ~~Temporary storage onsite and hauling to an offsite WWTP for disposal~~
2.3.1.8 Wastewater Management, Beneficial Use, and Disposal	2-10	28Q	***Revision, Irrigated Pasture Beneficial Use***: If process wastewater is managed by beneficial use of the water for irrigated pasture, water generated ~~developed~~ during the winter months would be stored in onsite tanks and combined with process water produced ~~in the~~ during summer months to irrigate onsite acreage.
2.3.1.8 Wastewater Management, Beneficial Use, and Disposal	2-11	2E, 27G	***Revision, Irrigation Pasture Beneficial Use subhead, second paragraph.*** The process water would be used to improve grazing forage yield in areas currently without irrigation, and possibly to enhance the wildlife forage yield in habitat mitigation areas. This activity represents a beneficial use of the water that would not be made if it were evaporated ~~or hauled offsite for disposal.~~

SECTION	PAGE	CMT#	CHANGES
2.3.1.8 Wastewater Management, Beneficial Use, and Disposal	2-11 to 2-12	2E, 27G	***Remove the entire subsection titled Storage and Hauling to Wastewater Treatment Plant:.***
2.3.1.9 Stormwater Management	2-12	2A, 2B, 28C, 28Y2, 28L4	***Revision, Stormwater Sewer System:*** The stormwater sewer system is designed to accommodate a 100-year, 24-hour storm event and would collect stormwater from rooftops, parking lots, and landscaped areas. This storm sewer system would consist of ditches, culverts, and piping, as required, routed to the 1.5-acre stormwater pond. ~~Two alternatives are available for managing the stormwater~~ ~~d~~Discharge from the stormwater pond~~. The preferred alternative~~ would ~~discharge the stormwater into~~ be routed to a 4.7-acre infiltration basin. The infiltration basin is designed to allow the stormwater to infiltrate into the ground. ~~The second alternative would discharge the stormwater into the West Langell Valley Road drainage ditch From the point where the stormwater is discharged into the drainage ditch, the stormwater would travel approximately 8,000 feet before it discharges into the High Line Levee Ditch. The High Line Levee Ditch discharges into the Lost River~~.
2.3.1.10 Solid Waste Management	2-13	2D, 27F	***Revision, first paragraph in subsection Operation.*** The proposed Energy Facility would generate approximately 50 tons per year of conventional solid waste consisting of office trash, packing materials, and nonrecyclables. Solid wastes generated during operation would be recycled as much as feasible. Recyclable materials would be separated from the solid waste stream. Solid waste would be stored in onsite roll-off bins. Any solid waste removed from the sumps or drains would be placed in barrels. Solid waste would be collected periodically by a private contractor and hauled to a licensed disposal facility. The nearest licensed facility is the Klamath County Landfill, located about 35 miles from the Energy Facility site. This landfill and the regional landfill, Roosevelt Regional Landfill in southern Washington, would accommodate solid waste generated by operation of the Energy Facility.
2.3.1.11 Electric Transmission Line	2-14	28R, 28S	***Revision, fourth paragraph, last sentence:*** Where temporary roads are used, any disturbed ground would be regraded to preconstruction contours, erosion control methods implemented, and revegetation initiated.
	2-15	28T, 28U, 28V, 28W, 28X	***Add, end of first complete paragraph:*** Mitigation measures are described in Section 3.4.2.
2.3.3 Natural Gas Pipeline	2-15		***No substantive changes***

SECTION	PAGE	CMT#	CHANGES
2.3.4 Water Supply Well System	2-16		***No substantive changes***
2.3.5 Construction Schedule and Activities	2-17		***No changes***
2.4 Other Projects Potentially Contributing to Cumulative Impacts	2-26	28Y	***Moved and renumbered: Section 2.6.*** ***Add:*** An additional paragraph on ongoing evaluations for a wind project in the vicinity of Bryant Mountain has been added to the text.
2.5 Other Alternatives			
2.5.1 Alternative Strategies for Electrical Supply and Demand Management	2-20		***No changes***
2.5.2 Alternatives Considered but Eliminated From Further Analysis	2-21	3A, 9B, 9C, 15C, 15E, 17C, 17E, 18A, 21B, 23L, 23N, 29B, 29D, 29E, 29F, 29G	***Additional text added to the introductory part of this subsection. Figure 2-3, an addition to the FEIS, is cited to illustrate alternative locations considered for potential development. Table 2-2, an addition to the FEIS, cited to show other potential sites and vicinities for development.***
2.5.2.1	2-22		***Additional subsection: Alternative Energy Facility Sites in the Vicinity of Bonanza, Oregon***
2.5.2.2 Alternative Natural Gas Pipeline	2-23		***No substantive changes***

SECTION	PAGE	CMT#	CHANGES
2.5.2.3 Alternative Water Supply Pipeline	2-24	28A1, 28U1	***No substantive changes***
2.5.2.4 Alternative Electric Transmission Line	2-24	28A1	***Add, fourth paragraph, after third sentence:*** The additional corridor width for the alternative transmission line is for extra workspace required for adequate separation from the existing transmission line.
		28B1	***Revision, fourth paragraph, last sentence:*** The easement alternative would require 52 acres of BLM-~~own~~managed land, while the preferred route would require 44 acres of BLM-~~own~~managed land.
		28C1	***Revision, fifth paragraph, second sentence:*** Land features observed along the alternative electric transmission line route include existing electric transmission lines, fallow agricultural fields used for cattle grazing, ~~residents~~ residences, a lake, woodland for selective historical harvesting of ponderosa pine, open rangeland/woodlands managed by federal and private landowners, and the ~~PG&E~~ GTN interstate gas pipeline system.
2.5.2.5 Alternative Cooling Scenario	2-26		***No substantive changes***
2.5.2.6 Stormwater Discharge to Road Ditch	2-26	2A, 2B, 2C, 27E, 27H, 28C	***Additional section.*** **2.5.2.6 Stormwater Discharge to Road Ditch** An alternative to manage stormwater that falls inside the fenceline of the Energy Facility was considered in the DEIS. This alternative was referred to as the second alternative in the DEIS. That second alternative would route stormwater from the stormwater pond to a ditch adjacent to the Energy Facility access road into the West Langell Valley Roadside ditch, where it would eventually enter the High Line Levee Ditch and then the Lost River. This second alternative is no longer under consideration.
2.5.2.7 Temporary Storage and Hauling Process Wastewater to WWTP	2-27	2E, 27G	***Additional section.*** **2.5.2.7 Temporary Storage and Hauling Process Wastewater to WWTP** Three alternatives were considered in the DEIS for management of process wastewater. The third alternative described in the DEIS would manage of process wastewater by temporarily storing onsite and hauling to a WWTP for offsite disposal. The project proponent has contacted the two municipal WWTPs in Klamath Falls—the South Suburban Sanitary District and the City of Klamath Falls Sanitary District. According to managers at both facilities, each would be required to evaluate whether they can meet the EPA categorical standard to accept industrial waste or whether local ordinance provides for acceptance of truck-hauled wastewater. Neither of these WWTP is presently permitted to accept trucked wastes. Therefore this third alternative is no longer under consideration.
Table 2-1	2-28 to end of table		***Revision to entire table.*** Insert specific mitigation measures for each resource area. This addition affects the column titled "Impact of Proposed Action/Mitigation." Revise table title to "Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures.

SECTION	PAGE	CMT#	CHANGES
		2E, 27G	***Revision, Impact of Proposed Action/Mitigation Column*** **3.3.2** Wastewater and stormwater discharge during Facility construction and operation could affect surface and groundwater quality. BMPs for management of stormwater would be used to safeguard water quality during construction and operation. Onsite stormwater would be recycled (plant drains system) or discharged to an infiltration basin (storm sewer system) Wastewater management would be by one of ~~three~~ two options: beneficial reuse of the water for irrigated pasture~~,~~ or an evaporation pond~~, or storage and hauling to an offsite wastewater treatment plant (WWTP)~~.
		28G1, 28H1	***Revision, Existing Conditions column:*** Surface waters within the project area support various species of fish, including ~~one~~ two federal and state-listed endangered species. ~~Construction and operation of the Facility would not affect fisheries resources in the area.~~
		28L1	***Delete, Existing Conditions column, fourth sentence.*** ~~No exceedance of the annual PM_{10} standard has occurred in the last 10 years.~~
		28M1, 28N1	***Revision, Impact of Proposed Action/Mitigation, 3.8.1:*** Visual impacts to scenic and aesthetic resources could potentially result from the stacks and transmission towers for the electric transmission line; however, these facility features would be in the background of any views. Impacts could also occur from the clearing of the easement and access roads. The proposed Energy Facility would not impact designated scenic areas as described in Section 3.8.1. ***3.8.2:*** No mitigation measures ~~for impact 3.8.1~~ are recommended
		28S1	***Add, Impact of Proposed Action/Mitigation, 3.13.20:*** If vegetation is not maintained within the transmission easement, under certain atmospheric conditions, arcing or torching of the vegetation may occur, resulting in wildfires.
		28T1	***Add, Impact of Proposed Action/Mitigation, 3.1.3:*** The proposed project facilities and transmission towers may impact scenic views for recreational users in the vicinity of the project but would not affect recreational public or private facilities.
Chapter 2 Figures			***Revised Figure 2-2.*** Figure 2-2 will be revised to show BLM-managed land. Figures 2-3 and 2-6 will be added. Figures 2-4 and 2-5 will be renumbered. See Part 3 New and Revised Figures.

Chapter 3 Affected Environmental and Environmental Consequences

SECTION	PAGE	CMT#	CHANGES
3.1 Introduction	3.1-1		***No changes***
3.1.1 Electric Power Generation Facility	3.1-1		***No changes***
3.1.2 Environmental Impacts of the No Action Alternative	3.1-1		***No changes***
3.1.3 Unavoidable Adverse Impacts 3.1.3.1 Geology, Soil, and Seismicity	3.1-2		***No changes***
3.1.3.2 Hydrology and Water	3.1-2		***No changes***
3.1.3.3 Vegetation and Wildlife	3.1-2		***No changes***
3.1.3.4 Traffic and Circulation	3.1-2		***No changes***
3.1.3.5 Air Quality	3.1-2		***No changes***
3.1.3.6 Scenic and Aesthetic Values	3.1-2		***Add additional bullet:*** <u>The transmission line and easement would be visible from adjacent lands and from some scenic areas.</u>
3.1.3.7 Socioeconomic	3.1-3		***No changes***
3.1.3.8 Health and Safety	3.1-3		***No changes***
3.1.4 Short-Term Uses and Long-Term Productivity	3.1-3		***No changes***

SECTION	PAGE	CMT#	CHANGES
3.1.4.1 Proposed Action	3.1-3	28Z1	***Revision, second paragraph, last sentence.*** No wastewater or stormwater would be discharged directly to surface or ground waters.
3.1.4.2 No Action Alternative	3.1-4		***No changes***
3.1.4.3 Irreversible and Irretrievable Commit-ments of Resources	3.1-4		***No changes***
3.1.4.4 Proposed Action	3.1-4		***No changes***
3.1.4.5 No Action Alternative	3.1-5		***No changes***
3.2 Geology, Soil, and Seismicity	3.2-1		***No changes***
3.2.1 Affected Environment	3.2-1		***No changes***
3.2.1.1 Topography	3.2-1		***No changes***
3.2.1.2 Geological Features	3.2-2		***No changes***
3.2.1.3 Soil	3.2-4	28C2	***Revision, second paragraph, last sentence:*** Table 3.2-1 presents a summary table of soil properties and chemistry.
3.2.1.4 Seismicity	3.2-7		***No changes***
3.2.2 Environmental Consequences and Mitigation Measures	3.2-10		

SECTION	PAGE	CMT#	CHANGES
Impact 3.2.1 Recommended Mitigation Measures	3.2-12	28B2	***Revision to seventh bullet:*** Use of Oregon-certified seed or equivalent for revegetation in consultation with ODFW and BLM. See Section 3.4-1.
Impact 3.2.3 Assessment of Impact	3.2-13	28C2	***Add, first paragraph, after first sentence:*** In addition, all road construction on BLM-managed lands would be constructed in conformance with BMPs described in Appendix F of the KFRA-RMP.
Impact 3.2.3 Assessment of Impact	3.2-14	28D2	***Add, end of fourth paragraph, additional sentence:*** All roads and drainage crossing constructed on BLM-managed lands would be in conformance with BMPs described in Appendix F of the KFRA-RMP.
Impact 3.2.4 Assessment of Impact	3.2-14	28F2	***Delete, third paragraph, last sentence.*** ~~If the alternative of stormwater disposal into the West Langell Valley Road side ditch is selected, NPDES General Stormwater Permit 1200-Z and an erosion and sediment control plan would specify BMPs to use.~~
Impact 3.2.6 Assessment of Impact	3.2-15	28G2	***Revision, first paragraph, third sentence.*** ~~Irrigation would not be conducted~~ ~~d~~ To prevent erosion and generation of surface runoff during periods of frozen or saturated soil, wastewater would be stored in a tank onsite, and ~~I~~irrigation would not be conducted. ***Revision, first paragraph, fourth sentence.*** The process wastewater quality would generally be equal to or better than the shallow groundwater and Lost River water used for irrigation to lands around the beneficial use area (see Table 3.3-5). ***Add additional Figure to Chapter 3.3***. Table 3.3-5 Water Quality Comparison
3.2.2 Cumulative Impacts	3.2-17		***No changes***
3.3 Hydrology and Water Quality	3.3-1	2E, 27G	Process wastewater from the Energy Facility would be managed by one of ~~three~~ two alternatives: • Beneficial use of the water for irrigated pasture • Evaporation in an onsite, lined evaporation pond • ~~Temporary storage onsite and hauling to a WWTP for offsite disposal~~
3.3.1 Affected Environment	3.3-1		***No changes***
3.3.1.1 Surface Water	3.3-2	28K2,	***Additional paragraph, after sixth paragraph.*** **Other Water Bodies.** Other water bodies in the overall study area of the project include lakes and reservoirs that could indirectly be affected by air emissions from the Facility, such as McFall and Harpold Reservoirs and Alkali Lake.

SECTION	PAGE	CMT#	CHANGES
Lost River	3.3-2	28L2, 28M2	***Revision, paragraph titled "Lost River."*** The Lost River watershed is a closed, interior basin covering approximately 3,000 square miles of the Klamath River watershed in southern Oregon and Northern California. The headwaters originate east of the Clear Lake Reservoir in Modoc County, California, and flow approximately 75 miles to the Tulelake Sump. Seasonal flows in the Lost River are controlled by releases from the Clear Lake Dam and by irrigation district water management. Historical channel modification, water diversion, and wetland drainage associated with the U.S. Bureau of Reclamation's Klamath Project have resulted in a highly altered system. Historically, the Lost River received flows from the Klamath River but is currently connected to the Klamath River via the Lost River Diversion Canal. Water from the Lost River is currently used for domestic and industrial water supply, irrigation, and livestock. The Lost River is the only fish-bearing perennial habitat in proximity to the analysis area. The closest section of the Lost River is approximately 2 miles north of the Energy Facility site. The Lost River is approximately 0.4 miles north and east of the Babson well.
Surface Water Quality	3.3-2	28N2, 28O2	***Revision, Surface Water Quality paragraph.*** ODEQ is required by Section 303(d) of the Clean Water Act to identify water bodies that do not meet standards for conditions, such as temperature, pH, and toxics. The standards set by ODEQ are designed to protect such beneficial water uses as drinking, agricultural use, recreation, industrial water supply, and ~~cold water fisheries~~ resident fish and aquatic life. The Klamath Basin has portions of 46 different rivers and lakes, which, for one reason or another, have failed to meet these standards. While the area's high ~~summer~~water temperatures account for many of the listings, water bodies such as the Klamath and Lost Rivers fail several different standards, some of which persist throughout the year.
3.3.2 Environmental Consequences and Mitigation Measures	3.3-4		
Impact 3.3.1 Assessment of Impact	3.3-5	28P2	***Revision, fifth paragraph, first sentence.*** Aquifer and borehole tests (see Section 3.3.1.2) ~~have~~ indicate~~d~~ that the shallow and deep systems are likely not hydraulically connected.

SECTION	PAGE	CMT#	CHANGES
3.3.2.1 Process Wastewater	3.3-6 to 3.3-8	2E, 27G	***Revision, first paragraph.*** Process wastewater from the Energy Facility would be managed by one of ~~three~~ two alternatives: • Beneficial reuse of the water for irrigated pasture • Evaporation in an onsite, lined evaporation pond • ~~Temporary storage onsite and hauling to a WWTP for offsite disposal~~ ***Revision, third paragraph, lines 3 to 5.*** This activity represents a beneficial use of the water that would not be made if it were evaporated ~~or hauled offsite for disposal~~. ***Revision, sixth paragraph.*** ~~**Storage and Hauling to Wastewater Treatment Plant.** If this alternative is selected, process wastewater would be managed by temporarily storing wastewater onsite in two 5.0-MG tanks and hauling to a WWTP for offsite disposal. The project proponent has contacted the two municipal WWTPs in Klamath Falls – the South Suburban Sanitary District and the City of Klamath Falls Sanitary District. The ability of these two WWTPs to accept wastewater from testing and commissioning of the Energy Facility and the wastewater from operation of the Energy Facility is presently being evaluated. According to managers at both facilities, each would be required to evaluate whether they can meet the EPA categorical standard to accept industrial waste or whether local ordinance provide for acceptance of truck-hauled wastewater. Over the life of the Energy Facility, other WWTPs may be constructed or considered for management of wastewater generated at the Energy Facility. The project proponent would arrange with a trucking company to routinely haul the wastewater stored in the wastewater storage tanks at the Energy Facility to the WWTP.~~
3.3.2.2 Sanitary Sewage	3.3-8		***No changes***
3.3.2.3 Stormwater	3.3-9	2D	***Additional text, add to end of second paragraph.*** Any solids or sludge left in the sump would be periodically removed and disposed of by a licensed disposal operator.
Storm Sewer System	3.3-9	28S2	***Revise, first paragraph.*** Stormwater that falls inside the fence line of the Energy Facility and is not routed to the plant's drain system described above would be collected in the storm sewer system. The collection of rainfall runoff in this system would be limited to parking lots, roof drains, graveled areas, and vegetated areas. This storm sewer system would consist of ditches, culverts, and piping that are routed to the stormwater pond. ~~From the stormwater pond, there would be two alternatives for stormwater discharge. The preferred alternative would be to discharge the stormwater into a 4.7-acre infiltration basin. The second alternative would be to discharge the stormwater through a ditch adjacent to the Energy Facility access road into the West Langell Valley Roadside ditch, where it would eventually enter the High Line Levee Ditch and then the Lost River. These alternatives are described in more detail below.~~
	3.3-10	28S2	***Revise, second paragraph, heading.*** Infiltration Basin ~~Alternative~~
	3.3-11	28U2	***Delete, second complete paragraph.*** ~~West Langell Valley Road Drainage System Alternative: In this alternative, the outflow from the stormwater pond would go to a Klamath County drainage ditch along the east side of West Langell Valley Road. This drainage ditch discharges to an irrigation canal, labeled High Line Levee Ditch on the U.S. Geological Survey quadrangle map. High Line Levee Ditch eventually discharges to the Lost River. The drainage ditch along the east side of West Langell Valley Road is approximately 8,000 feet long and the irrigation canal to the Lost River is approximately 32,000 feet long. Therefore, stormwater from the Energy Facility site would travel approximately 40,000 feet before it reaches the Lost River.~~

SECTION	PAGE	CMT#	CHANGES
3.3.2 Cumulative Impacts	3.3-13	28X2	***Add, additional paragraph, end of section.*** Temporary and permanent transmission line access roads would add to the overall impacts of runoff from roads in the area. This could result in more erosion and larger stormwater flows. However, the access roads would not be paved and would only be used intermittently for security and maintenance purposes.
Table 3.3-3	3.3-17	2E, 27G	***Final Disposition column, Reverse Osmosis Treatment row.*** Land Application evaporation~~, or haul offsite to WWTP~~.
3.4 Vegetation and Wildlife	3.4-1		***No changes***
3.4.1 Affected Environment	3.4-1		***No changes***
3.4.1.1 Vegetation Communities and Habitats	3.4-4	28D3	***Revision, second paragraph, under heading Aquatic Habitats.*** The Lost River watershed is a closed, interior basin covering approximately 3,000 square miles of the Klamath River watershed in southern Oregon and Northern California. The Lost River historically received flows from the Klamath River and is currently connected to the Klamath River via the Lost River Diversion Canal. The headwaters originate east of the Clear Lake Reservoir in Modoc County, California, and flow approximately 75 miles to the Tulelake Sump. Seasonal flows in the Lost River are controlled by releases from the Clear Lake Dam. The Lost River was the only fish-bearing perennial habitat observed in proximity to the analysis area.
3.4.1.1 Vegetation Communities and Habitats	3.4-6		***Revision, added to third paragraph under heading ODFW Habitat Category 2.*** High-density winter mule deer range is covered by Klamath County's Significant Resource Overlay (SRO), which is discussed in Section 3.10, Land Use Plans and Policies. Approximately 38,678 acres of the SRO are within 5 miles of the Energy Facility features.
3.4.1.2 Plant and Animal Species	3.4-7	28G3	***Add, under heading Noxious Weeds.*** • Leafy spurge (*Euphorbia esula)*—A population documented by the Oregon Department of Agriculture occurs adjacent to the Captain Jack Substation. • Yellowstar thistle *(Centaurea solstitialis)*—Documented on public lands 1 mile west of the substation and on adjacent private lands. • Dalmatian toadflax (*Linaria dalmatica)*—Occurs in and adjacent to the proposed power lines on BLM-managed lands.
Federally and State Protected Threatened and Endangered Species	3.4-10	28I3, 28K3	***Revision, second paragraph, second sentence.*** The only ~~sensitive~~listed species observed in the field or known to occur at or near the proposed Energy Facility site or along the pipeline and electric transmission line easements is the bald eagle.

SECTION	PAGE	CMT#	CHANGES
	3.4-11	28B3, 28M4	***Add additional paragraph after paragraph top of page.*** A screening-level environmental risk assessment (ERA) was conducted as part of the biological assessment (see Appendix C) to address potential risk from the air emissions to aquatic organisms and to bald eagles. Upland areas around the Energy Facility also were evaluated for possible risks from deposition of air emissions and irrigation reuse of process wastewater to terrestrial plants, soil invertebrates, and terrestrial birds and mammals. The ERA concluded that, taking into consideration background levels of metals, deposition of air emissions from the Energy Facility to plants, soil invertebrates, birds, and mammals poses no or negligible risks, and deposition of air emissions on surface water poses no risk to aquatic organisms. In addition, the discharge of constituents evaluated in the process wastewater on irrigated pasture land poses no significant risk to ecological receptors.
	3.4-11	28J3	***Add, additional paragraph, after second paragraph under heading Bald Eagle.*** **Fish.** Two fish species, the shortnose sucker and the Lost River sucker, are also listed species. See Section 3.5 for more information on these species.
3.4.1.3 Wetlands	3.4-11		***No changes***
3.4.2 Environmental Consequences and Mitigation Measures	3.4-14		

SECTION	PAGE	CMT#	CHANGES
Impact 3.4.1 Assessment of Impact	3.4-15	7B, 28A3, 28E3, 28L3	***Add sentence to the end of the first paragraph.*** Approximately 38,678 acres of the SRO are within 5 miles of the Energy Facility features. ***Add paragraph after first paragraph.*** The Energy Facility and stormwater infiltration pond could potentially be hindrances to migrating deer during fall and spring periods. However, it is not likely that the Facility would block a migration route because undeveloped land with sufficient access all round the site would allow deer to go around the Facility. In addition, given the small footprint of the Facility, the length of time required for deer to go around the Facility would be of short duration. ***Add sentence after second sentence in second paragraph.*** During the winter months, wastewater would be stored in an onsite storage tank. ***Add paragraph after fifth paragraph.*** Vegetation management along the transmission line and access roads would concentrate on target vegetation that could fall or bend into the line, including noxious weeds and tall growing vegetation both in and off the right-of-way. With vegetation management, all large woody vegetation growth would be kept out of the easement, maintaining the area's grasses, forbs, and shrubs. Vegetation control may include manual, mechanical, or biological methods or combinations of all three. Use of these methods would be determined through guidelines established in consultation with the BLM and included in the vegetation management plan. Implementation of vegetation management would be through trained and licensed contractors. Impacts could also occur to nontarget species, including: • Trampling, crushing, or accidental removal • Increased exposure to direct sun • Change in plant community composition and diversity • Change in soil moisture and structure • Increase in noxious weeds Additional information on potential impacts can be found in the Transmission System Vegetation Management Program, *Final Environmental Impact Statement*, DOE/EIS-0285, May 2000.
	3.4-17	28U3	***Additional bullet after 5th bullet.*** Existing snags, less than 10 feet in height, would be left in place. In consultation with BLM, trees that have to be removed from the easement may be topped at less than 10 feet and girdled to create habitat.
Impact 3.4.2 Recommended Mitigation Measures	3.4-19	28W3	***Revision, fourth paragraph.*** Where feasible, construction would be limited in natural areas during the breeding and fawning period of deer and antelope (April through September) as well as the nesting period of raptors (May through September).

SECTION	PAGE	CMT#	CHANGES
Impact 3.4.3 Recommended Mitigation Measures	3.4-20	28Y3	***Delete existing sentence, replace with:*** ~~No mitigation measures beyond those described in the impacts section above are needed.~~ Proposed mitigation includes the following: • The proposed transmission line has been located to avoid known areas of bald eagle use. • The proposed transmission line has been located away from the three existing transmission lines to avoid creating a cluster of transmission lines that would pose additional obstacles to flight. • Colored bird flight diverters would be installed to allow for better avian visualization of the groundwires. • The conductors would be spaced greater than the wing span of large birds to prevent electrocutions.
Impact 3.4.3 Assessment of Impacts	3.4-20	28Y3	***Revision, second paragraph.*** A biological assessment has been developed for potential impacts to bald eagles, and an avian monitoring plan is included in Appendix E of Appendix B (the Biological Assessment)**.**
Impact 3.4.4 Recommended Mitigation Measures	3.4-20	28Z3, 28A4	***Revision, second paragraph.*** Fill material placed in the seasonal creek to facilitate vehicle access along the electric transmission line would be the minimum amount necessary to allow crossing of the channel and would be constructed according to the BMPs described in the Klamath Falls Resource Area Resource Management Plan (KFRA RMP). A small-diameter c~~C~~ulvert would be placed under the roadway to facilitate and maintain existing drainage. The roadway crossings would be designed to be low profile to minimize the ponding or water upstream and allow water to flow over the road. Riprap would be installed to minimize erosion.
Impact 3.4.5	3.4.21	28D4a	***Revision, heading Impact 3.4.4.*** ~~Impact 3.4.4~~ Impact 3.4.5
3.4.3 Cumulative Impacts	3.4-21	28L3	***Add paragraph between first and third paragraphs***. There would be an impact of approximately 50.7 acres to the Klamath County high-density winter mule deer range designated as Category 2 habitat. Approximately 38,678 acres cover the area within 5 miles of the proposed project features. No cumulative impact to the high-density winter mule deer range would occur because the impacts would be 0.13 percent of the total high-density winter mule deer range within 5 miles of the proposed project.
Table 3.4-5	3.4-36	28G4	***Revision to the table, BLM Column, Pygmy rabbit line.*** ~~V~~ BAO
	3.4-37	28H4 to 28K4	***Revisions to the "Plants" portion of the table. See Part 2 New or Revised Tables.***
Table 3.4-8	3.4-52	28N4	***Revision to the table, third column head:*** ~~ODFW~~/ONHP ODA/ONHP

SECTION	PAGE	CMT#	CHANGES
	3.4-52	28O4	***Revision to the table: Bakers globe mallow, Habitat Requirements.*** Ponderosa Pine
	3.4-53	28P4	***Revision to the table: Flaccid sedge, Habitat Requirements.*** Less than ~~2,500~~ 5,000 feet
	3.4-55	28Q4	***Revision to the table: Calochorturs longebarbatus.*** Calochorturs longebarbatus longebarbatus
3.5 Fish	3.5-1	28R4	***Deletion, last sentence, first paragraph.*** ~~Because there would be no withdrawals from surface water bodies, construction and operation of the Energy Facility would not affect fisheries resources in the area.~~
3.5.1 Affected Environment 3.5.1.1 Aquatic Environment	3.5-1	28S4, 28T4	***Revision, second paragraph***. The Lost River watershed is a closed, interior basin covering approximately 3,000 square miles of the Klamath River watershed in southern Oregon and Northern California. The headwaters originate east of the Clear Lake Reservoir in Modoc County, California, and flow approximately 75 miles to the Tulelake Sump. Historically, the Klamath River fed the Lost River but is now connected by a diversion canal. Seasonal flows in the Lost River are controlled by releases from the Clear Lake Dam and by irrigation use. The Lost River was the only fish-bearing perennial habitat observed in proximity to the analysis area.
3.5.1.2 Shortnose Sucker and Lost River Sucker	3.5-2 3.5-3	28V4, 28W4	***Revision, first sentence, after heading Shortnose Sucker.*** Change date from 1998 to 1988; add reference (53 FR 27130; July 18, 1988) ***Revision, first sentence, after heading Lost River Sucker.*** Change date from 1998 to 1988; add reference (53 FR 27130; July 18, 1988)
	3.5-3	28Y4, 28A5	***Add section.*** 3.5.1.3 Other Fish Species. Other fish species are likely present and potentially affected by project actions. Native species likely within the general project area include redband trout, largescale suckers, tui chub, blue chub, speckled dace, lamprey species, and sculpin species. Generally, the extent of movement of the native species into the intermittent tributaries and irrigation canals associated with the project area is unknown. Redband trout are known to move substantial distances into intermittent habitats to spawn or forage (Behnke, 1992). However, the presence of redband trout in the Lost River would be generally described as rare (ODFW, 1997). Thus, use of the intermittent habitat within the project area by redband trout would be unlikely or rare. Non-native species may also be present within the APE and may be affected by project actions. These species would likely include largemouth bass, yellow perch, brown bullhead, crappie species, sunfish species, and fathead minnow. The non-native species present in the project area generally are not expected to exhibit significant migrations into intermittent tributary habitats but may be present in irrigation canals near the project area.

SECTION	PAGE	CMT#	CHANGES
3.5.2 Environmental Consequences and Mitigation Measures	3.5-3	28Z4	***Revision, end of first paragraph.*** See Appendix C, Biological Assessment, for additional information on potential impacts.
3.5.3 Cumulative Impacts	3.5-5		***No changes***
3.6 Traffic and Circulation	3.6-1		***No changes***
3.6.1 Affected Environment 3.6.1.1 Roadway Systems and Levels of Service	3.6-1		***No changes***
3.6.1.2 Truck Traffic	3.6-1		***No changes***
3.6.1.3 Railway Facilities	3.6-1		***No changes***
3.6.2 Environmental Consequences and Mitigation Measures	3.6-2		***Revision, Recommended Mitigation Measures for Impact 3.6.1.*** ~~No measures beyond those included in the proposed project are recommended.~~ To minimize impacts, Facility-related construction activities would be scheduled so that construction traffic would occur during off-peak hours; a carpool program would be offered to minimize single-occupancy vehicle use by construction workers. In addition, a bus service would be provided for workers living in Klamath Falls.

SECTION	PAGE	CMT#	CHANGES
3.6.2 Environmental Consequences and Mitigation Measures	3.6-2 and 3.6-3	2E, 27G	***Revision, first and third paragraphs in Assessment of Impact for Impact 3.6.3.*** ~~Traffic during operation of the Energy Facility would depend on the alternative selected for process wastewater management. Traffic during operations would be the same with either of the following alternatives: evaporation in an onsite, lined evaporation pond or beneficial reuse of the water for irrigated pasture. If the storing and hauling to a WWTP for offsite disposal alternative is selected, additional truck trips would be required.~~ Operation of the Facility would generate less than four truck trips per week ~~(not including truck trips for process wastewater disposal)~~ and approximately 20 PM peak-hour worker trips daily (Tables 3.6-4 and 3.6-5). To assess potential impacts, a traffic analysis was performed and evaluated against standard levels of service. The results of the analysis are shown in Table 3.6.5, which summarizes the LOS for local roadways during the construction period. As shown in Table 3.6-5, traffic during Facility operation would not substantially reduce the LOS on the roadways or create a substantial impact on local traffic. ~~An additional 5 to 9 truck trips per day would be required if the storing and hauling to a WWTP for offsite disposal alternative is selected. The proposed route for these wastewater trips into and out of the Energy Facility would be along West Langell Valley Road, Harpold Road (north of West Langell Valley Road), Oregon Highway 70 (west of Harpold Road), and Oregon Highway 140 (west of OR 70). Accounting for a two-way trip, this would generate an additional 10 to 18 trips per day along each of the roads. Although, these trips can reasonably be assumed to occur throughout the day, to be conservative it was assumed that all of these trips occur in the PM peak hour. This change is expected to not cause any noticeable impacts and the roadway level of service would not substantially reduce the LOS on the roadways or create a substantial impact on local traffic.~~
Table 3.6-4	3.6-8	2E, 27G	***See Part 2 New or Revised Tables.***
Table 3.6-5	3.6-9		***See Part 2 New or Revised Tables.***
3.7 Air Quality	3.7-1		***No changes***
3.7.1 Affected Environment	3.7-1		***No changes***
3.7.1.1 Climate	3.7-1		***No changes***
3.7.1.2 Odor	3.7-1		***No changes***
3.7.1.3 Ambient Air Quality Standards	3.7-2		***No changes***

SECTION	PAGE	CMT#	CHANGES
3.7.1.4 Existing Air Quality	3.7-3		***No changes***
3.7.2 Environmental Consequences and Mitigation Measures	3.7-3		
Impact 3.7.2	3.7-4	28I5	***Revisions to first paragraph.*** Combustion turbines and duct burners associated with the HRSGs at the proposed Energy Facility would use natural gas as the only fuel. Combustion of natural gas results in emissions of criteria pollutants that include PM_{10}, NO_X, SO_2, CO, and volatile organic compounds (VOCs). The features listed below, which are incorporated into the Energy Facility design, would be employed to reduce air emissions:
3.7.3 Cumulative Impacts	3.7-9		***No changes***
3.7.3.1 Class II Impacts	3.7-9		***No changes***
3.7.3.2 Other Potential Projects	3.7-9		***No changes***
3.7.3.3 Class I Impacts	3.7-9		***No changes***
3.8 Visual Quality and Aesthetics	3.8-1		***No changes***
3.8.1 Affected Environment	3.8-1		***No changes***
3.8.1.1 OC&E Woods Line State Trail	3.8-1		***No changes***
3.8.1.2 Volcanic Legacy Scenic Byway and Modoc Volcanic Scenic Byway	3.8-1	28K5	***Revision, title and text***. Volcanic Legacy ~~Scenic Byway~~ All-American Road and Modoc Volcanic Scenic Byway The Volcanic Legacy ~~Scenic Byway~~ All-American Road and Modoc Volcanic Scenic Byway have been designated as National Scenic Byways by the U.S. Secretary of Transportation. This designation is based on a roadway's archeological, cultural, historic, natural, recreational, and scenic qualities.
3.8.1.3 State Routes 161 and 139	3.8-2		***No changes***

SECTION	PAGE	CMT#	CHANGES
3.8.1.4 Miller Creek Area of Critical Environmental Concern	3.8-2		***No changes***
3.8.1.5 Lava Beds National Monument	3.8-2		***No changes***
3.8.1.6 Lower Klamath Lake National Wildlife Refuge (NWR) and Tulelake NWR Wildlife Overlooks	3.8-2		***No changes***
3.8.1.7 Bloody Point, Petroglyphs, and Battle of Scorpion Point Vista Points	3.8-2		***No changes***
	3.8-2	28L5	***Add section.*** **3.8.1.8 Emigrant Trails Scenic Byway** The Emigrant Trails Scenic Byway was designated on March 31, 2003, by the U.S. Forest Service as part of its scenic byway system. At the time the visual analysis was conducted, this route was not a designated scenic highway. The following description of the Emigrant Trails Scenic Byway will be included in Section 3.8.1 of the FEIS: "The Emigrant Trails Scenic Byway connects to the existing Outback and Volcanic Legacy Scenic Byways in Oregon and California, and the Modoc and Shasta Volcanic Scenic Byways in California. "The route starts in the northeast corner of Modoc County at New Pine Creek, where the Outback Scenic Byway ends. The route travels south down US Highway 395 to Alturas and then heads west on State Highway 299 to Canby, CA. At Canby, the route turns northwest along State Highway 139 to Tulelake, where it will connect with the existing Modoc Volcanic Scenic Byway and Shasta Volcanic Scenic Byway, which are part of the Volcanic Legacy All American Road (North Cal-Neva Resource Conservation and Development Council, 2003)." Based on the distance from the project site and transmission easement, a significant impact on visual resources from locations along the Emigrant Trail Scenic Byway would not occur.

SECTION	PAGE	CMT#	CHANGES
	3.8-2	28M5	***Add section*** **3.8.1.9 Other Areas of Significance** Alkali Lake is a wetland and shallow lake located between Dairy and Bonanza. The area does not have public access but is subject to grazing. This area encompasses approximately 150 acres and was previously evaluated as a special botanical and habitat area. Yainax Butte is an isolated mountain 8 miles south of Beatty, Oregon. This area consists of approximately 720 acres and is designated as an area of critical environmental concern. The area receives limited use by recreationists and is relatively steep, which naturally protects it from surrounding land uses. It contains significant populations of threatened and endangered plant species. The Bumpheads are rimrocked volcanic tabletops that support a healthy bunchgrass and western juniper community that has been naturally isolated from grazing.
3.8.2 Environmental Consequences and Mitigation Measures	3.8.2	28N5	***Add, after third paragraph, last sentence.*** In addition to the transmission towers, the cleared easement would be visible on both private and BLM-managed land.
Impact 3.8.1 Assessment of Impact	3.8-3	28Y1, 28N5, 28O5	***Add the following, after first paragraph.*** The proposed electric transmission line would extend 7.2 miles from the proposed power plant site to Captain Jack substation, traversing an open, upland landscape that is, in most areas, covered with a mixture of juniper and sagebrush (see Figure 3.4.1, Habitat Types). Although much of the land in this area is privately owned, there is a mosaic of parcels under the jurisdiction of the BLM (Figure 3.2) and three places in which the alignment crosses BLM parcels. Out of the total 7.2-mile alignment, 1.4 miles would cross BLM lands, and a total of 44.1 acres of BLM land would fall within the alignment (using a 250-foot-wide easement width, less for the 154-foot-wide operating easement). Under the BLM's Klamath Falls Resource Area Resource Management Plan, all the BLM lands in the landscape area through which the project would pass have been designated as Visual Resource Management (VRM) Class IV lands, a management class that allows "major modifications of the existing character of landscapes" (Klamath Falls RMP/ROD, page 43). The more specific management direction for VRM Class IV lands in this area is to "[m]anage Visual Resource Management Class IV lands for moderate levels of change to the characteristic landscape. Management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the effect of these activities through careful location, minimal disturbance, and repeating the basic elements of form, line, color, and texture" (Klamath Falls RMP/ROD, page 44). The siting and design of the proposed electric transmission line are consistent with the VRM Class IV objectives. Towers would be carefully sited, access roads would be designed to minimize the visual contrast they create, and areas disturbed during the construction process would be regraded and reseeded. However, tower locations can be altered during final alignment to avoid unforeseen environmental impacts. The three parcels of BLM land that the proposed transmission alignment would cross are visible in more detail on Figure 3.8-4. The parcels that are crossed at the points indicated A and B on this map are in areas with a juniper/sage landscape. On these lands, in response to both the need to maintain clearances and the BLM's interest in eliminating junipers, many of the junipers would be removed from the easement. Although this would create a corridor with a contrasting vegetative pattern, the degree of contrast in color and texture with the surrounding landscape pattern would be reduced to a great degree by the fact that the underlying sage cover would be retained. At the point indicated as C on Figure 3.8-4, a small area of ponderosa pine would need to be cleared to accommodate the line. The tree clearing in this area would be kept to the minimum required for safe operation of the transmission line.

SECTION	PAGE	CMT#	CHANGES
	3.8-3	28V5	***Revise, second paragraph.*** Three sets of visual analyses were performed to determine visual impacts to scenic and aesthetic resources within the 30-mile project area. These analyses were based on lines of sight from the scenic and aesthetic resources to the stacks and transmission lines. Figures 3.8-1 and 3.8-2 show the concentric line of sight to the stacks and transmission towers, respectively.
3.8.2 Cumulative Impacts	3.8-5	28P5, 28T5	***Revise.*** The project study area was established by EFSC as a radius of 30 miles around the project site. However, for purposes of cumulative impacts, the visual resource impact area is determined by scenic locations from which the proposed Facility can be viewed. These locations are described in Section 3.8.2. ~~. The proposed Facility would not have any adverse effect on aesthetic or scenic resources~~. There are existing transmission lines in the vicinity of the project, and the proposed transmission line would result in cumulative impacts. In addition, the construction of the access roads and clearing of the easement would add to existing impacts of roads and other corridors in the area. ~~Consequently, the project would not contribute to past or current actions resulting in cumulative impacts on this element of the environment. If additional electric transmission lines were constructed in proximity to the proposed Facility's transmission lines, they could have a cumulative negative effect on aesthetic resources by creating a cluttered appearance that detracted from the natural environment.~~
Table 3.8-1	3.8-7	28U5	***Revisions to the Table. See Part 2 New or Revised Tables.***
Figure 3.8-1 and 3.8-2	3.8-8 3.8-9	28W5	***Revisions to the Figure. See Part 3 New or Revised Figures.***
3.9 Cultural Resources	3.9-1	28Y5	***Revisions to third paragraph.*** Cultural resource investigations have been conducted in cooperation with the Klamath Tribes. A Cultural Resources Management Plan (CRMP) would be prepared in consultation with the tribes that describes monitoring activities during construction of the Facility and the actions to be taken if an unanticipated cultural resource site were discovered during construction or operation ~~would be managed and protected.~~ of the project.
3.9.1 Affected Environment 3.9.1.1 Prehistoric Background	3.9-1		***No changes***
3.9.1.2 Ethnographic Background	3.9-2		***No changes***
3.9.1.3 Historical Background	3.9-3		***No changes***
3.9.1.4 Investigations Result	3.9-4		***No changes***

SECTION	PAGE	CMT#	CHANGES
3.9.2 Affected Environment Impact 3.9.1 Assessment of Impact	3.9-5	28A6	***Revision to second paragraph, second sentence.*** A CRMP would be developed in coordination with the Klamath Tribes.
3.9.3 Affected Environment	3.9-5		***No changes***
3.10 Land Use Plans and Policies	3.10-1		***No changes***
3.10.1 Affected Environment 3.10.1.1 Land use Characteristics of the Energy Site and Vicinity	3.10-1		***No changes***
3.10.1.2 Local Comprehensive Plan Land Use Designation and Zoning	3.10-4	28C6	***Add to end of paragraph at top of the page.*** Existing roads would need no or very minor changes to accommodate construction traffic, and the impacts would be related to the construction traffic on the existing roads. However, the impacts for new roads would include clearing and grading to allow construction equipment access to the electric transmission line easement.
3.10.1.3 Plans and Policies	3.10-5	28D6	***Delete first paragraph, replace with the following.*** ~~No Federal land use management plan is applicable to the Facility.~~ The proposed action is subject to the BLM's KFRA ROD and RMP with respect to the location of easements across BLM-managed lands. The proposed facilities do not cross any lands identified as easement avoidance or exclusion areas. The RMP encourages, but does not require, new utility easements to be located within existing easements. However, the project proponent must demonstrate that the use of an existing route or easement is not technically or economically feasible and that the proposed easement minimizes damage to the environment. The proposed easement locations fall outside of existing easements designated in the RMP. The project proponent's reasoning for not using existing easements is stated in Section 2.5.2.4, Alternative Electric Transmission Line.
3.10.1.4 Consistency with Local Comprehensive Plan Land Use Designation and Zoning	3.10-5		***No changes***
3.10.1.5 Conformance with Plans and Policies	3.10-6		***No changes***

SECTION	PAGE	CMT#	CHANGES
3.10.2 Environmental Consequences and Mitigation Measures	3.10-8		***No changes***
3.10.3 Cumulative Impacts	3.10-17		***No changes***
Tables			***No changes***
Figures			***No changes***
3.11 Socioeconomic	3.11-1		***No changes***
3.11.1 Affected Environment	3.11-1		***No changes***
3.11.1.1 Population	3.11-1		***No changes***
3.11.1.2 Employment	3.11-1		***No changes***
3.11.1.3 Housing	3.11-2		***No changes***
3.11.2 Environmental Consequences and Mitigation Measures			
Impact 3.11.3	3.11-3	28G6	***Add paragraph, after paragraph titled Assessment of Impact:*** Bonanza is the closest community to the project site. The analysis indicates that, within reasonable commuting distance of the project site, there is sufficient housing available for the labor force that would temporarily move to the area. It is likely that the community of Bonanza would house some of the temporary workforce. However, it is unlikely that significant impact on the infrastructure of the community would occur. It is also likely that there would be increased opportunities and business activities in the community as a result of the project construction and operation, but the needs and or viability of the opportunities would be determined by the private business sector.
3.11.3 Cumulative Impacts	3.11-4		***No changes***

SECTION	PAGE	CMT#	CHANGES
Tables			***No changes***
3.12 Public Services	3.12-1	2E, 27G	***Revision, first paragraph.*** The following section discusses the provision of water, sewer, stormwater, solid waste, police, fire, health care, and school services in the project area. The Facility would use its own raw water supply well system and would manage its own wastewater through one of ~~three~~ two alternatives: • Beneficial use of the water for irrigated pasture • Evaporation in an onsite, lined evaporation pond • ~~Temporarily storing onsite and hauling to a WWTP for offsite disposal~~
3.12.1 Affected Environment	3.12-1		***No changes***
3.12.1.1 Utilities	3.12-1		***No changes***
3.12.1.2 thru 3.12.1.4	3.12-1 3.12-3		***Heading level 4 changed to heading level 5***
3.12.1.2 Sewers and Sewage Treatment	3.12-2	2E, 27G	***Revision, third paragraph.*** ~~For the alternative of storing and hauling to a WWTP for offsite disposal, the project proponent has contacted the two municipal WWTPs in Klamath Falls – the South Suburban Sanitary District and the City of Klamath Falls Sanitary District. According to managers at both facilities, each would be required to evaluate whether they can meet the EPA categorical standard to accept industrial waste or whether local ordinance provide for acceptance of truck-hauled wastewater. Over the life of the Energy Facility, other WWTPs may be constructed or considered for management of wastewater generated at the Energy Facility. The project proponent would arrange with a trucking company to routinely haul the wastewater stored in the wastewater storage tanks at the Energy Facility to the WWTP.~~
3.12.1.3 Water Supply	3.12-2	28I6	***Revise second paragraph as follows after second sentence.*** Some wells in the vicinity of Bonanza reportedly are contaminated, but because the Energy Facility would be withdrawing water from the deep aquifer, the Facility would not impact or be affected by potential contamination in the upper aquifer or spring water in the vicinity of Bonanza. Construction and demolition waste would continue to be accepted for another 20 years, which would be the majority of waste generated during construction of the project. Household waste generated during construction and operation of the Facility would be collected by a private waste vendor and handled by one of the following three methods: • Hauling to the Chemult Landfill • Hauling to a proposed transfer station in Klamath County • Placing in waste rail containers onsite and taken to an intermodal facility for direct placement on rail cars
3.12.1.5 Solid Waste	3.12-3		***Heading level changed to 3.12.1.2***
	3.12.3	28J6	***Revision, second paragraph, last sentence.*** The Klamath Falls Landfill ~~would cease~~ ceased ~~to accept~~accepting household waste in 2004.

SECTION	PAGE	CMT#	CHANGES
3.12.1.6 Transfer Station	3.12-3		***Heading level changed to 3.12.1.3***
3.12.1.7 Police and Fire Protection	3.12-4		***Heading level changed to 3.12.1.4***
3.12.1.8 Health Care	3.12-5		***Heading level changed to 3.12.1.5***
3.12.1.9 Schools	3.12-5		***Heading level changed to 3.12.6***

SECTION	PAGE	CMT#	CHANGES
	3.12-5	28D, 28O1	***Section added.*** 3.12.1.10 Recreation The recreation analysis area evaluated for potential permanent impacts is 5 miles from the COB Energy Facility site boundary and includes the proposed Facility and supporting features, such as the electric transmission line. There are no county, state, or federally designated recreational lands or any designated recreational facilities on the Facility site, which is predominantly privately owned and in agricultural use. However, the project would directly and indirectly impact some publicly owned land managed by BLM. The following potential recreational opportunities exist in the 5-mile analysis area: • Bonanza City Park • Malin City Park • A primitive BLM campsite • A proposed BLM backcountry byway • A proposed BLM trail • Fremont National Forest In addition, to these designated recreational opportunities, the BLM-managed lands offer dispersed recreational opportunities, including hiking, hunting, horseback riding, and snowmobiling. More information on recreation on BLM-managed land can be found in the KFRA RMP. To assess the importance of identified potential recreational opportunities, these opportunities were reviewed against the five criteria in the EFSC regulations. Methods included review of management plans, written descriptions of the resources, and telephone interviews with agencies responsible for management of the potential recreational opportunity. Based on the information obtained, none of the potential recreational opportunities meets the importance test in the EFSC rule. None of them has special designations, none is considered by the managing agency or local government to be important in terms of outstanding or unusual qualities, and none of the sites has a high degree of use. Several primitive BLM campsites with limited access are located within 5 miles of the Energy Facility at the Bryant Mountain Reservoirs, and BLM has proposed the location of a trail and byway within the 5-mile radius. However, BLM is uncertain when these proposed additions would be developed, if at all, according to a BLM representative (Senter, 2002). The primitive campsites are used infrequently (Senter, 2002). The Fremont National Forest provides important recreational and scenic opportunities, and a small portion of the Fremont National Forest is located within 5 miles of the Energy Facility. According to the most recent management plan, this management area does not include the important recreational opportunities (Fremont NF, 1989). The area is managed as important mule deer habitat and permits timber harvests and livestock grazing on appropriate lands. The U.S. Forest Service (USFS) has confirmed that there is no recreational use of the land within 5 miles of the Facility site and that the Energy Facility and electric transmission line locations do not present any concerns to the National Forest management (Egeline, 2002). Bonanza City Park and Malin City Park are both located within 5 miles of the Energy Facility or electric transmission line. The parks are primarily used by local residents and are not considered important recreational resources. From Bonanza City Park, the Energy Facility could be visible from 3 miles in the distance, and from Malin City Park, transmission towers could potentially be visible from 5 miles in the distance. In addition to the 5-mile analysis area, potential temporary impacts could occur during construction. It is anticipated that much of the construction workforce would live in the vicinity of Klamath Falls. The City of Klamath Falls park system consists of 22 parks totaling 602 acres. These are mini, neighborhood, and regional parks, with special-use areas, natural open space, and landscaped areas.

SECTION	PAGE	CMT#	CHANGES
3.12.2 Environmental Consequences and Mitigation Measures	3.12-5 3.12-11	28D	***Additional section under.*** Impact 3.12.2 The Energy Facility would not affect the level of service provided by local public services. *Recreation* There would be no direct impacts on designated important recreational opportunities within the analysis area; however, there could be indirect impacts to dispersed recreational users on BLM-managed lands from the construction and operation of the electric transmission line. In any event, construction and operation of the Facility at distances of several miles from the identified recreational opportunities would not cause the direct or indirect loss of recreational use at the two parks, the primitive campsites, the proposed road and trail, or the National Forest. There could be temporary impacts on city parks in Malin, Bonanza, and Klamath Falls from construction workers, but because the workforce is temporary, is usually not accompanied by dependents, and is transitory because of the different construction phases, the impacts would be dispersed and would not likely be significant.
3.12.3 Cumulative Impacts	3.12-11	2E, 27G	***Revision, first paragraph, second sentence.*** The Energy Facility would be largely self-sufficient, providing its own utilities and security services; therefore, it would not affect the capacity of services provided to the local community in the future. ~~If process wastewater is managed by storing and hauling to a WWTP, agreements would be put in place to ensure the WWTP has the capacity to manage the Energy Facility's volume of process wastewater.~~ The Energy Facility would employ 30 people, many of whom would be hired from local communities. Given the limited number of new residents to the project area, the low growth rate, and the existing capacity of public services and utilities, cumulative impacts to utilities and other public services would not be significant.
Tables			***No changes***
3.12 Health and Safety	3.13-1		***No changes***
3.12.1 Construction and Operation of the Proposed Energy Facility 3.13.1.1. Occupational Health and Safety	3.13-1		***No changes***
3.13.1.2 Fuel Management	3.13-2		***No changes***
3.13.1.3 Hazardous Nonfuel Substances	3.13-3		***No changes***
3.13.1.4 Fire Protection	3.13-3		***Add text after last sentence.*** The transmission easement would be maintained to remove tall, growing vegetation. The vegetation would eliminate or reduce (1) the potential for fires from transmission lines, and (2) impacts of range fires on the transmission lines.

SECTION	PAGE	CMT#	CHANGES
3.13.1.5 Electrical Shock Hazard	3.13-3		***No changes***
3.13.1.6 Electric and Magnetic Fields	3.13-3		***No changes***
3.13.1.7 Noise	3.13-7	17D	***Add paragraph, top of page, after end of sentence.*** **Electric Transmission Line.** Noise can be produced by the corona associated with electric transmission lines; audible sounds are normally associated with 345-kV and higher voltages. The proposed electric transmission line is 500-kV, but noise levels would be expected to be low because modern electric transmission lines are designed, constructed, and maintained so that during dry conditions, they would operate below the corona inception voltage, meaning that the electric transmission line would generate a minimum of corona-related noise. Given the distance of receptors from the easement (approximately 3,000 feet), the impact of corona-generated audible noise is not expected to be significant. Based on data from BPA, the estimated L50 electric transmission line noise under worst-case conditions was tabulated for several distances. The estimated maximum L50 estimated for the closest residence is 27 dBA. A quiet bedroom is 30 dBA (see Table 3.13-1).
3.13..2 Environmental Consequences and Mitigation Measures Impact 3.13.5 Assessment of Impact	3.13-9		***Add, paragraph after second paragraph.*** A fire could occur from sagging transmission lines during high temperature, high humidity, and no-wind conditions if vegetation is not properly maintained in the transmission easement.
3.13.3 Cumulative Impacts	3.13-13		***No changes***
Tables			***No changes***
Figures			***No changes***

Chapter 4 Environmental Consultation, Review, and Permit Requirements

SECTION	PAGE	CMT#	CHANGES
4.1 National Environmental Policy Act	4-1		**No changes**
4.2 Endangered and Threatened Species and Critical Habitat	4-1	28O6	***Add after third paragraph.*** <u>In addition to the bald eagle, the following threatened or endangered species also occur in the vicinity of the project, but without experiencing direct emissions impact:</u> *Shortnosed sucker (Chasmistes Brevirostris)* *Lost River sucker (Deltistes luxatus)* *Applegate's milkvetch (Astragalus applegate)* <u>Potential indirect or cumulative impacts have been covered in a screening-level environmental risk assessment (see Appendix C of Appendix C).</u>
4.3 Fish and Wildlife Conservation	4-2		***No changes***
4.4 Heritage Conservation	4-2		***No changes***
4.5 State, Areawide, and Local Plan and Program Consistency **4.5.1 Land Use**	4-2		***No changes***
4.5.2 Notice to the Federal Aviation Administration	4-3		***No changes***
4.5.3 Construction Related Permits	4-3		***No changes***
4.6 Coastal Zone Management Consistency	4-3		***No changes***

SECTION	PAGE	CMT#	CHANGES
4.7 Floodplains	4-3		***No changes***
4.8 Wetlands	4-4		***No changes***
4.9 Farmlands	4-4		***No changes***
4.10 Recreational Resources	4-4	28P6	***Revision to paragraph.*** There are no established ~~No~~ public recreation facilities ~~occurs~~ at the proposed locations of the Energy Facility site, water supply well and pipeline, electric transmission line, and natural gas pipeline. There are six established potential recreational opportunities within a 5-mile radius of the Energy Facility: • Bonanza City Park • Malin City Park • Primitive BLM campsite • Proposed BLM backcountry byway • Proposed BLM trail • Fremont National Forest In addition to these established recreation facilities, there is a substantial amount of dispersed recreation that occurs in the vicinity of the project, including but not limited to hunting, fishing, off-road vehicle use, and sight-seeing. Construction and operation of the Energy Facility at distances of several miles from the ~~identified~~ established recreational opportunities would not cause the direct or indirect loss of recreational use. Dispersed recreation opportunities on BLM-managed lands may be impacted by the transmission line easement in the form of gates across access roads and visual impacts.
4.11 Global Warming	4-4		***No changes***
4.12 Permit for Structures in Navigable Waterways	4-4		***No changes***
4.13 Permit for Discharges into Waters of the United State	4-5		***No changes***

SECTION	PAGE	CMT#	CHANGES
4.14 Permits for Right-of-Way on Public Lands	4-5		***No changes***
4.15 Energy Conservation at Federal Facilities	4-5		***No changes***
4.16 Pollution Control	4-5		***No changes***
4.16.1 Air	4-5		***No changes***
4.16.2 Water	4-5		***No changes***
4.16.3 Solid and Hazardous Waste	4-6		***No changes***
4.16.4 Safe Drinking Water	4-6		***No changes***
4.16.5 Noise	4-6		***No changes***
4.16.6 Pesticides and Asbestos	4-6		***No changes***
4.16.7 Comprehensive Environmental Response, compensation, and Liability Act (CERCLA)	4-7		***No changes***
4.16.8 Radon	4-7		***No changes***
4.17 Permits	4-7		***No changes***

Chapter 5 List of Preparers

SECTION	PAGE	CMT#	CHANGES
Jim Thornton	5-1	28D	***Add after Environmental Planner.*** Recreation
Dorothy DeVaney	5-2	28D	***Add after Socioeconomic Lead.*** Recreation
Connie Thoman	5-3	28D	***Add after Visual Quality and Aesthetics Lead.*** Recreation

Chapter 6 List of Agencies, Organizations, and Persons to Whom Copies of the EIS Are Sent

NOTE: The mailing list database has been updated when notification has been received that individuals or addresses have changed.

SECTION	PAGE	CMT#	CHANGES
6.1	6-1	28S6	***Move Burns District Area Office from Section 6.2 State Agencies to 6.1 Federal Agencies and list as Bureau of Land Management, correct address.*** Bureau of Land Management—Burns District Area Office c/o Miles Burns 28910 Highway 20 W Hines, OR 97738

Chapter 7 References

SECTION	DEIS PAGE	CMT#	CHANGES
Chapter 2	7-1		***Add after fifth reference.*** Energy Facility Siting Council, Oregon Department of Energy. 2004. *In the matter of the Application for a Site Certificate for the COB Energy Facility – Proposed Order.* Bonneville Power Administration. 1988. *Final Environmental Impact Statement for the California-Oregon Transmission Project and the Los Banos-Gates Transmission Project*.
Chapter 3			
3.10 Land-Use Plans and Policies	7-7		***Add.*** Bureau of Land Management (BLM). 1994. *Klamath Fall Resource Area Resource Management Plan and Environmental Impact Statement*. September 1994. ***Add.*** Bureau of Land Management (BLM). 1995. *Klamath Falls Resource Area Record of Decision and Resource Management Plan and Rangeland Program Summary*. June 1995.
3.12 Public Services	7-9		***Add.*** Senter, Scott. 2002. Bureau of Land Management, Klamath office. Personal communication on April 11, 2002.

Chapter 8 Glossary of Acronyms and Terms

Acronyms

Add. KFRA RMP Klamath Falls Resource Area Resource Management Plan

Terms

Revise. **Best Management Practices (BMP).** A practice or a combination of practices that are recognized by government or industry as methods or activities that, when used properly, are the most effective and practical means of preventing or reducing the potential for adverse environmental impacts~~amount of pollution generated by nonpoint sources~~ to a level compatible with ~~water quality~~established environmental goals, objectives, or regulations.

Appendixes

SECTION	PAGE	CMT#	CHANGES
Appendix A Notice to Prepare an Environmental Impact Statement			
			No changes
Appendix B Water Supply Supplemental Data Report: Executive Summary			
			No changes
Appendix C Biological Assessment			
1 Introduction **1.1 Purpose**	1-1		***No changes***
1.2 List of Threatened, Endangered, and Candidate Species Potentially Affected by the Proposed Project	1-2	28T6	***Revision to sixth bullet.*** • The bald eagle is known to occur in the project area, and suitable nesting habitat was identified within the isolated stand of ponderosa pine habitat along the southern portion of the electric transmission line easement; however, no nests were observed. Known bald eagle nest territory and winter roosts exist in the Significant Impact Area for PM_{10}, and another nesting territory occurs near the proposed electric transmission line.
1.3 Critical Habitat	1-2		***No changes***
1.4 Consultation to Date	1-3		***No changes***
1.5 Current Management Direction	1-4		***No changes***
1.5.1 Bonneville Power Administration	1-4		***No changes***
1.5.2 Bureau of Land Management	1-5		***No changes***

SECTION	PAGE	CMT#	CHANGES
1.5.3 Oregon Department of Fish and Wildlife	1-5		***No changes***
2 Description of Proposed Action **2.1 History**	2-1		***No changes***
2.2 Facility Description	2-2		***No changes***
2.2.1 Process Wastewater Management	2-2	2E, 27G	***Revision to bulleted text.*** Process wastewater from the Energy Facility would be managed by one of ~~three~~ two alternatives: • Beneficial use of the water for irrigated pasture • Evaporation in an onsite, lined evaporation pond • ~~Storage and hauling to a wastewater treatment plant (WWTP) for offsite disposal~~
2.2.2 One- or Two-Phase Combined Cycle Operations	2-2		***No changes***
2.2.3 Facility Location	2-3		***No changes***
2.2.4 Permanent Facility Components	2-3	2E, 27G	***Revisions to bulleted text.*** The principal components of the proposed action are listed here with more detailed descriptions in Section 2.2.7: • A new 1,160-MW air-cooled, natural gas-fired combined-cycle electric power generation plant on 50.6 acres of land • A 31-acre irrigated pasture area • A designated process wastewater management alternative – If a lined evaporation pond is the selected process wastewater management alternative, it would permanently impact 20 acres. – If land application is the selected wastewater disposal alternative, ~~is either trucking offsite or land application,~~ two 5-million-gallon (MG) wastewater tanks would be constructed on the Energy Facility site.
2.2.5 Temporary Facility Components	2-4		***No changes***

SECTION	PAGE	CMT#	CHANGES
2.2.6 Protection and Mitigation Measures	2-4		***No changes***
2.2.7 Energy Facility Site	2-6	2E, 27G	***Revise fifth paragraph under Wastewater Management.*** Process wastewater from the Energy Facility would be managed by one of ~~three~~ two alternatives: • Beneficial use of the water for irrigated pasture • Evaporation in an onsite in a lined evaporation pond • ~~Storage and hauling to a WWTP for offsite disposal~~
2.2.7 Energy Facility Site	2-8	2E, 27G	***Remove Paragraph titled Storing and Hauling to Wastewater Treatment Plant.*** ~~**Storing and Hauling to Wastewater Treatment Plant.** If this alternative were to be selected, process wastewater would be managed by storing and hauling to a WWTP for disposal. The project proponent has contacted the two municipal WWTPs in Klamath Falls – the South Suburban Sanitary District and the City of Klamath Falls Sanitary District. The ability of these two WWTPs to accept wastewater from testing and commissioning of the Energy Facility and the wastewater from operation of the Energy Facility is presently being evaluated. According to managers at both facilities, each would be required to evaluate whether they can meet the U.S. Environmental Protection Agency (EPA) categorical standard to accept industrial waste or whether local ordinances provide for acceptance of truck-hauled wastewater. During the life of the Energy Facility, other WWTPs may be constructed or considered for management of wastewater generated at the Energy Facility. The project proponent would arrange with a trucking company to routinely haul the wastewater stored in the wastewater storage tanks at the Energy Facility to the WWTP.~~
	2-9	2A, 2B	***Revise text under heading Stormwater Sewer System.*** Stormwater Sewer System. Stormwater that falls inside the fence line of the Energy Facility that is not routed to the plant drain system described above, would be collected in the storm sewer system. The collection of rainfall runoff in this system is limited to parking lots, roof drains, graveled areas, and vegetated areas. This storm sewer system would consist of ditches, culverts, and piping, as required, routed to the stormwater pond. Discharge f~~F~~rom the stormwater pond ~~there are two alternatives for discharge of the stormwater. The preferred alternative is to discharge the~~ would be ~~discharged into~~ routed to a 4.7-acre infiltration basin. ~~The second alternative is to discharge the stormwater through a ditch adjacent to the Energy Facility access road and into the West Langell Valley Roadside ditch where it would eventually enter the High Line Levee Ditch and then into the Lost River. These alternatives are described in more detail below.~~
	2-10	2A, 2B	***Revise heading text.*** ***Infiltration Basin ~~Alternative (Preferred)~~***
2.2.8 Related or Supporting Facilities	2-11		***No changes***
Electric Transmission Line Conductors and BFDs	2-14	28U6	***Revision, last sentence.*** Annual monitoring of the lines would be conducted to determine if the transmission lines ~~are~~ have an ~~significant~~ impact on waterfowl and special-status birds that forage or nest in the area.

SECTION	PAGE	CMT#	CHANGES
2.2.9 Construction Schedule	2-15		***No changes***
Tables			***No changes***
Figures			***No changes***
3. Study Methods	41		***No changes***
4. Environmental Setting **4.1 Geological Setting**			***No changes***
4.2 Current Land Use	4-1		***No changes***
4.3 Habitat Types in the Study Area 4.3.1 Western Juniper Woodland	4-1		***No changes***
4.3.2 Ponderosa Pine	4-2		***No changes***
4.3.3 Sagebrush-Steppe	4-3		***No changes***
4.3.4 Rural Areas	4-3		***No changes***
4.3.5 Agricultural Lands	4-4		***No changes***
4.4 Hydrologic Resources 4.4.1 Klamath River Basin	4-4		***No changes***
4.4.2 Lost River	4-5	27A	***Revise second-to-last sentence in the paragraph.*** The Link River is a 2.5-mile river connecting Upper Klamath Lake to Lake Ewauna, which is drained by the Klamath River. ~~canal constructed by the U.S. Bureau of Reclamantion to connect the Lost River to the Klamath River system as part of the Klamath Basin Project.~~

SECTION	PAGE	CMT#	CHANGES
4.4.3 Water Conveyance Features	4-5		***No changes***
4.4.4 Wetlands	4-5	28V6 28W6	***Revision to second paragraph, third sentence.*** ~~A freshwater marsh is located approximately 1,200 feet southeast of the Babson well, and .~~ In addition to the marsh wetland described above, several irrigation ditches flow along the proposed water supply pipeline route. ***Revision, third paragraph, fourth line.*** Change wouldet to willet.
4.4.5 Sedge Wet Meadow	4-6		***No changes***
4.4.6 Wet Meadow	4-6		***No change***
4.4.7 Stock Ponds	4-6		***No change***
4.4.8 Agricultural Drainages	4-6		***No change***
Figures			***No changes***
5. Species Accounts and Status **5.1 Federally Listed Plant Species**	5-1		***No changes***
5.2 Federally Listed Animal Species	5-1		***No changes***
5.2.1 Bald Eagle Avian Collision	 5-7	28X6	***Delete, last sentence, second paragraph.*** ~~If monitoring results show that bald eagles are foraging at the water supply reservoir, remedial actions may be implemented as described in Appendix E.~~

SECTION	PAGE	CMT#	CHANGES
5.2.2 Shortnose and Lost River Sucker Survey Results	5-9	28Y6	***Revision, fourth sentence.*** Greg White, a fisheries biologist with CH2M HILL, met with Leonard LeCaptain of USFWS on September 24, 2002, to investigate this drainage and determined that these fish were most likely ~~red shiners, a nonlisted minnow~~ in the species family *Cyprinidae.*
Improbable Worst-Case Connection	5-10	28Z6	***Addition, after first sentence, add paragraphs*** Because of the lack of other deep wells to provide information, the areal extent, recharge area, and recharge rate of the deep aquifer system are not well known. Accordingly, an assessment of the likely recharge area was performed (CH2M HILL, 2002a) and concluded that the recharge area probably is higher in altitude and located about 20 to 50 miles to the east and north of the Babson well. The assessment also concluded that the recharge area likely is regional in scope, with a minimum size of approximately 1,100 square miles. Based on these conclusions, and using local precipitation figures and the most likely range of known aquifer recharge rates in central Oregon, it is conservatively estimated (a minimum estimate) that the deep aquifer's annual recharge volume is between 134 billion and 241 billion gallons. An intensive 30-day aquifer test in 1993 at the Babson well (CH2M HILL, 1994) suggested that the deep groundwater-bearing zones below 1,580 feet are hydraulically isolated from the shallow aquifer system and surface water in the vicinity of the Energy Facility. For the test, the deep aquifer at the Babson well was pumped at a rate of 3,260 gpm for 30 days while water levels were monitored at 23 different locations within approximately 4 miles of the Babson well. Because no other wells are known to be completed in the deep aquifer within the project area, the monitoring locations consisted of numerous wells completed in the shallow aquifer system, two staff gauges along the Lost River, the Bonanza Springs, a well hydraulically connected with the Bonanza Springs, and a well in connection with a nearby marsh. No effects resulting from pumping the deep aquifer were observed at any of the monitored wells, the Lost River, Bonanza Springs, or the nearby marsh. Consequently, the results of the aquifer test indicated there is no observable hydraulic connection between the deep aquifer system at the Babson well and the shallow aquifer or surface water features. A second aquifer test was performed in the summer of 2002 (CH2M HILL, 2002b). The Babson well was pumped at an average rate of 6,800 gpm for approximately 30 days. An expanded observation well network (31 different locations) was used that included both shallow wells and deeper irrigation wells in Langell Valley, Yonna Valley, Swan Lake Valley, Malin, and Klamath Falls. A hydraulic response in the observation well network was attributed to a leaking well packer. This aside, the data do not indicate that the deep system is in hydraulic connection with a shallow aquifer system. A reconstructed well should eliminate the minor response observed. Deep aquifer response suggests extremely high aquifer transmissivity and supply; at the end of the 30-day pumping period, water levels recovered to the pretest static level within 5 minutes. These observations show that the roughly 294 million gallons withdrawn for this test were insignificant relative to the rate and volume of water available to the Babson well. Appendix B contains the Executive Summary from the *Water Supply Supplemental Data Report: Deep Aquifer Testing at the COB Energy Facility Water Supply* (CH2M HILL, 2002a).

SECTION	PAGE	CMT#	CHANGES
5.2.2 Shortnose and Lost River Sucker. Project Impacts subhead.	5-10	2E, 27G	***Revision to Process Wastewater Management and Stormwater, first paragraph.*** **Process Wastewater Management and Stormwater.** Under the preferred alternative, the Energy Facility would not discharge to surface waters. Process wastewater from the Energy Facility (excluding the sanitary wastewater) would be managed by one of ~~three~~ two alternatives: • Beneficial use of the water for irrigated pasture • Evaporation in an onsite, lined evaporation pond • ~~Storage and hauling to a WWTP for offsite disposal~~
5.3 Cumulative Effects	5-11		***No changes***
6 Conclusion **6.1 Applegate's Milk Vetch**	6-1		***No changes***
6.2 Lost River Sucker and Shortnose Sucker	6-1		***No changes***
6.3 Bald Eagle	6-1	28A7	***Revision, second paragraph, last sentence.*** ~~Annual~~ Each year seasonal monitoring of the new lines would be conducted to determine if the lines cause substantial effects to the bald eagle population. For additional information, see Appendix E, Avian Monitoring Plan.
7. References			***No changes***
8. References	8-3		***Revision, under items listed in words beginning with the letter P.*** PERC Peoples Energy Resource ~~Corporation~~ Company
Tables			***No changes***
Figures			***No changes***
Appendix A to Appendix C			

SECTION	PAGE	CMT#	CHANGES
	A-3	27D	***Revision, under heading "Water Supply Well System."*** In the last sentence, delete ~~sheep~~ and replace with livestock.
	A-8	28B7	***Revision to first paragraph, first sentence.*** During the year following each seeding, and the subsequent 3 years, a qualified botanist or restoration expert would examine a representative sample of the revegetated sites.
Appendix B **Plant and Wildlife Species Observed During Field Surveys in the Project Area**			***No changes***
Appendix C **Screening-Level Ecological Risk Assessment**	28G7 through 28S7		***Changes are made in the ERA Report in Track Changes format. See Part 5 Screening-Level Ecological Risk Assessment Updates.***
Appendix D **Literature Research on Potential Noise Impacts to Wildlife**			***No changes***
Appendix E **Avian Collision Monitoring Plan**			
3. Methods Monitoring for Bird Collisions Conducting Dead Bird Searches	 3-1 3-2	28T7, 28U7	 ***Revision to last paragraph, last sentence.*** The USFWS and ODFW would be notified if any ~~bald eagles or other special status~~ birds are found dead or injured as a result of collisions with the transmission lines~~during the dead bird searches~~. ***Revision to third complete paragraph, last sentence.*** The USFWS and the ODFW would be notified if any ~~bald eagle of other special status~~ birds are found dead from collisions.

SECTION	PAGE	CMT#	CHANGES
4. Data Analysis	4-3	28U7	***Revision last paragraph.*** An ETC would be determined for each special-status species and averaged over the first 3-year monitoring period. The ETC would be compared to the ~~significance~~ criteria set forth by the USFWS Biological Opinion. If the results of the dead bird searches ~~are above the significance criteria~~ do not meet the conditions of the Biological Opinion after the first 3 years of monitoring, the monitoring program would continue on an annual basis. Remedial actions, as defined by USFWS, would likely be implemented, and consultation would be reinitiated. If monitoring results show a decrease in the number of special-status birds incidentally taken by the project during the first 3 years, or the following 3 years, the frequency of monitoring would be reduced, or monitoring would be discontinued upon approval of USFWS. If during the dead bird searches, large numbers of migratory ~~and/~~or special-status birds were to be recorded, the USFWS and ODFW would be notified immediately.

PART 2
Additional and Revised Tables

Part 2 Additional and Revised Tables

Tables

TABLE 2-1

Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
Chapter 3.2 Geology, Soil, and Seismicity	The Energy Facility site is located in a subbasin of the larger Klamath Basin in south-central Oregon. The Klamath Basin is a composite graben that forms the westernmost structural trough of the Basin and Range physiographic province. The Klamath graben is bounded by predominantly north- to northwest-striking normal faults.	**3.2.1** Landslides present a low risk to the proposed Energy Facility. *Mitigation* If, upon further evaluation, the risk of landslide increases, additional mitigation measures would be implemented, including further adjustment of the transmission tower locations and installation of instrumentation on the towers to monitor for movement. **3.2.2** The Energy Facility would have a moderate impact on land identified as high-value soil in Klamath County. *Mitigation* The proposed project would restore 91 acres of fallow land to high-quality deer habitat. Another 145 acres of habitat would be improved in the wildlife mitigation area. In addition, a facility retirement and site restoration approach would support restoration of the Energy Facility site to its current agricultural use. The approach uses topsoil salvaging and replacement, and standard farming practices. **3.2.3** Limited erosion would occur during construction with the implementation of best management practices (BMPs). **3.2.4** Soil erosion during operation of the Facility would be limited by stormwater control features and implementation of BMPs from a National Pollutant Discharge Elimination System (NPDES) permit and an erosion and sediment control plan. **3.2.5** The risk to human safety and harm to physical property as a result of seismic hazard would be minimal at the Energy Facility. *Mitigation* Facilities would be constructed to Uniform Building Code standards for seismic design.	No changes to existing conditions would occur.

[1] Includes a summary of mitigation measures required by the Oregon Energy Facility Siting Council (EFSC)

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		3.2.6 For the process wastewater management alternative involving beneficial use of the water for irrigated pasture, projected loading rates of total dissolved solids (TDS) would be limited to prevent buildup of salts in soil. The projected loading rates of the individual constituents of the process water do not indicate any other significant soil or crop hazard resulting from irrigation by process wastewater or salt-tolerant species. *Mitigation* Agricultural soil would not be adversely impacted by the land application of process wastewater. The process wastewater would be applied to the pasture at agronomic rates during the irrigation season and at an instantaneous application rate less than the infiltration rate of the soil. Irrigation would not be conducted during periods of frozen or saturated soil to prevent erosion and generation of surface runoff. The process wastewater quality would generally be of equal or better quality than the shallow groundwater and Lost River water used for irrigation to lands around the beneficial use area.	
		***EFSC** Mitigation Requirements* D.4(1) The certificate holder shall implement the Agricultural and Forestry Practices Impact Mitigation Plan included as Attachment K-5 to the Application for Site Certification (ASC). D.4(5) The certificate holder shall rehabilitate all construction areas not occupied by the facility or used for mitigation of Facility-related impacts in accordance with the Agricultural and Forestry Practices Impact Mitigation Plan (ASC, Exhibit K, Attachment K-5) and the Revegetation Plan (ASC, Exhibit P, Attachment P-1). The certificate holder shall make these rehabilitated areas and other lands owned or controlled by the certificate holder available for ongoing agricultural and wildlife uses. D.5(1) If the certificate holder does not have subsurface information for design of the transmission lines that is acceptable to the Department D and the Oregon Department of Geology and Mineral Industries ("DOGAMI"), then the certificate holder shall drill exploratory borings at critical locations during final design of the proposed transmission lines.	

TABLE 2-1
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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		D.5 (2) Before beginning construction of the Facility, the certificate holder shall provide the Department and DOGAMI with a geotechnical report containing results of geotechnical analyses and recommendations for the design of the Energy Facility, transmission lines and other related or supporting facilities D.5(8) The certificate holder shall recalculate the maximum expected ground motion based on the results of post-certification field work using at least three attenuation relationships that are appropriate for the local geology and provide a recommended mean PGA and a range of ground motions, and shall provide the engineering analyses, support data and calculations to the Department and DOGAMI at least 30 days prior to finalizing site design. D.5 (9) The certificate holder shall design, engineer and construct the Facility to avoid dangers to human safety presented by non-seismic or aseismic hazards affecting the site. As used in this condition, "non-seismic or aseismic hazards" includes settlement, landslides, groundwater, flooding, and erosion. D.6(3) Throughout construction of the Facility and post-construction restoration, the certificate holder shall use temporary erosion and sediment control measures, such as silt fences, straw bales, mulch, and slope breakers. D.6(4) During construction of the Facility, the certificate holder shall water or cover exposed soil and stockpiles. D.6(5) Throughout construction of the Facility and post-construction restoration, the certificate holder shall install permanent erosion control measures, as necessary. D.6(6) During construction of the Facility, the certificate holder shall strip and separately store topsoil for replacement and replanting after installation of pipelines not buried in roads. D.8(6) The certificate holder shall use best management practices (BMPs) for topsoil protection, erosion and sediment control at the Energy Facility site and along the transmission line easement to avoid or minimize impacts to water quality, wetlands, and riparian areas.	

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		~~D.8(29) Where feasible, the certificate holder shall leave slash piles along the transmission line right of way as habitat for reptiles, small mammals and birds.~~ ~~D.8(15) The certificate holder shall establish the topographic position of the energy facility to minimize indirect effects of noise and ambient light on adjacent habitats.~~ ~~D.10(1) During construction of the facility, the Certificate Holder shall control dust through the application of water or by other equally effective method.~~ ~~E.1.e(3) The certificate holder should retain the services of a registered professional geologist licensed by the State of Oregon to be onsite during the drilling of any new observation or supply wells.~~ E.1.b(5) During construction of the Facility, the certificate holder shall dispose of all excess soils and materials in a upland locations. ~~E.1.d(7)The certificate holder shall designate an appropriately trained supervisor to coordinate and carry out all necessary functions related to maintenance and cooperation of waste collection, treatment, and disposal facilities.~~ ~~E.1.d(8) Unless otherwise permitted by the DEQ, the certificate holder shall not dispose of solid wastes, brines, construction wastes or other wastes at the energy facility site.~~ E.1.d(33) Unless approved otherwise in writing by the DEQ, the certificate holder shall maintain a deep-rooted permanent grass cover on the drainfields and shall periodically cut the grass cover to maintain it in the growth cycle to ensure maximum evapotranspiration. ~~No~~ A~~a~~ctivities that may adversely affect the soil or the functioning of the system ~~are~~ in these areas should be avoided. Such activities would include, but not be limited to, vehicular traffic, covering the area with asphalt or concrete, filling, cutting, or other F.2(10) The certificate holder shall notify the Department within 72 hours of any occurrence involving the Facility if: (a) There is an attempt	

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		by anyone to interfere with its safe operation; (b) A natural event such as an earthquake, flood, tsunami or tornado, or a human-caused event such as a fire or explosion, affects or threatens to affect the public health and safety or the environment; or, (c) There is any fatal injury at the Facility.	
Chapter 3.3 Hydrology and Water Quality	The only perennial surface water body in the Facility vicinity is the Lost River. Intermittent seasonal drainages also exist within the area. In addition, shallow and deep aquifers underlie the area.	**3.3.1** Water for the Energy Facility would be diverted from a deep system aquifer, which does not appear to be hydraulically connected to surface water bodies. *Mitigation* No mitigation is proposed for the water withdrawal from the deep zone aquifer, but as an additional layer of protection, the water right would require operational monitoring and appropriate mitigation if any impacts are discovered to the shallow zone aquifer or surface water. The existing and two new water supply wells would be cased and sealed through the shallow zone aquifer and 1,100 feet of non-water bearing volcanic rock to a depth of approximately 1,500 feet below the ground surface (bgs) No water would be diverted from the Lost River. *Mitigation* To reduce water requirements the Energy Facility would be designed to be air cooled. To further reduce water requirements, water would be recycled and reused from the plant drains, evaporative cooler blowdown, and heat recovery steam generator (HRSG) blowdown. **3.3.2** Wastewater and stormwater discharge during Facility construction and operation could affect surface and groundwater quality. *Mitigation* BMPs for management of stormwater would be used to safeguard water quality during construction and operation. Onsite stormwater would be recycled (plant drains system) or discharged to an infiltration basin (storm sewer system). Wastewater management would be by one of ~~three~~ two options: beneficial use of the water for irrigated pasture or an evaporation pond. ~~or storage and hauling to an offsite wastewater treatment plant~~	No changes to existing conditions would occur.

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		~~(WWTP).~~ **3.3.3** Chemical spills at the proposed Energy Facility could affect surface and groundwater quality. *Mitigation* BMPs and compliance with applicable regulations would avoid or minimize such impacts. **EFSC** Mitigation Requirements D.4 (11) The certificate holder shall submit a final drainage plan to Klamath County' Director of Public Works. The plan will meet all applicable requirements of Klamath County LDC Article 73, and the Energy Facility will be operated so that there is no adverse runoff from the Energy Facility site. D.8(18) During construction of the related or supporting natural gas and water pipelines, the certificate holder shall ensure that side cast material remains within the construction corridors. D.8(19) During construction of the related or supporting natural gas and water pipelines, the certificate holder shall use silt fencing and other barriers to limit lateral spread of soil when material must be side cast in habitat areas within the construction corridor. D.6(1) The certificate holder shall design, engineer and construct the Facility to avoid dangers to human safety presented by nonseismic or a seismic hazards affecting the site. As used in this condition, "non-seismic or a seismic hazards" includes settlement, landslides, groundwater, flooding, and erosion. ~~D.6(8) Before beginning operation of the facility, the certificate holder shall obtain a NPDES Storm Water Discharge General Permit #1200-Z (for industrial activities) from the Oregon Department of Environmental Quality.~~ ~~D.8(6) The certificate holder shall use best management practices (BMPs) for topsoil protection, erosion and sediment control at the energy facility site and along the transmission line ROW to avoid and/or minimize impacts to water quality, wetlands, and riparian areas.~~	

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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		~~D.8(30) The certificate holder shall consult with the Department of Fish and Wildlife to determine appropriate design and placement of several water collection devices (guzzlers) along the transmission line right of way.~~ E.1.b(3) During construction of the Facility, the certificate holder shall coordinate with DSL, the Corps of Engineers, ODFW, and the Department for any proposed impacts to waters of the state. E.1.b(4) During construction of the Facility, the certificate holder shall minimize construction impacts to wetlands and jurisdictional waters by using the narrowest possible construction corridors. E.1.d(9)If the certificate holder constructs and operates only one 580-MW power block, the total amount of process water generated by the certificate holder shall not exceed 12.2 million gallons per calendar year. E.1.d(10) When and if the certificate holder constructs two 580-MW power blocks, the total amount of process water generated by the certificate holder shall not exceed 24.~~,~~3 million gallons per calendar year. E.1.d(11) The certificate holder shall ensure that no process wastewater is discharged to surface waters of the State of Oregon. E.1.d(12) During operation of the process wastewater irrigation system, the certificate holder shall ensure that all process wastewater is irrigated on the designated irrigation site at agronomic rates specified in the irrigation plan required by Condition 1, Schedule C, of the draft WPCF Permit (Attachment C to this Order). The certificate holder shall ensure that all process wastewater is contained on the irrigation site with no runoff from the approved, designated irrigation site. E.1.d(13) During operation of the process wastewater irrigation system, the certificate holder shall ensure that irrigation occurs only during the months of April through September. E.1.d(14) The certificate holder shall ensure that no irrigation of process wastewater occurs until DEQ approves an irrigation management plan required by condition 1, 2 Schedule C, of the draft WPCF Permit	

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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		(Attachment C to this Order). E.1.d(15) During operation of the process wastewater irrigation system, the certificate holder shall ensure that the monthly average total dissolved solids in the irrigated process wastewater do not exceed 210 mg/l. 78 E.1.d(16) During operation of the process wastewater irrigation system, the certificate holder shall ensure that all process wastewater is distributed on land for dissipation by evapotranspiration and controlled seepage by following sound irrigation practices so as to prevent impairment of existing or potential beneficial uses of groundwater. E.1.d(17) During operation of the process wastewater irrigation system, unless otherwise approved as a component of the irrigation management plan required by Condition 1, Schedule C of the draft WPCF Permit (Attachment C to this Order), the certificate holder shall not apply fertilizer to the irrigation site or allow forage animals to graze on it. E.1.d(18) During operation of the process wastewater irrigation system, irrigation of effluent shall be considered failing under the following conditions: (a) Crop growth is stunted due to excessive salt build-up within the soil profile; or(b) Run-off from or excessive ponding routinely occurs on the irrigation site as a result of process wastewater irrigation; or(c) Groundwater monitoring conducted in accordance with the groundwater and soil-monitoring plan indicates that irrigation of process wastewater is causing an increase in total dissolved solids or other contaminants that could impair existing or potential beneficial uses of groundwater. E.1.d(19) During operation of the process wastewater irrigation system, the certificate holder shall ensure that no brines or waste solids from any ion exchange unit or other supply water treatment system is discharged into the process wastewater to be irrigated. All brines or other concentrated wastewater and solids shall be disposed in a manner approved in writing by the DEQ. E.1.d(20) During operation of the process wastewater irrigation system, within days of written notification by the DEQ that the effluent irrigation system is failing and that the failure cannot be corrected by	

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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		modifications to the system, the certificate holder shall construct and begin operating an evaporation pond for the disposal of process wastewater, in accordance with Condition 2, Schedule C, of the draft WPCF Permit (Attachment C to this Order). E.1.d(21) During operation of the process wastewater evaporation ponds, the certificate holder shall ensure that all process wastewater is disposed of in one or more sealed, non-overflow evaporation ponds. E.1.d(22) The certificate holder shall ensure that no storm water from plant drains and processing areas (including transformer and switch yards) or from fuel or material storage is discharged to the seepage disposal system. Storm water meeting these conditions shall be contained, treated and reused as process water. All other storm water such as parking lot and roof drain runoff and runoff from graveled or vegetated surfaces shall be collected in a 2.3 acre-foot storm water pond and then discharged to a 4.7-acre infiltration basin for disposal. E.1.d(25) Before beginning construction of the Energy Facility, the certificate holder shall mark and fence off the area designated for the septic system and its repair area to ensure that it is not disturbed by construction activities not associated with the construction of the septic system. E.1.d(26) The certificate holder shall ensure that the septic tank and drainfield system are installed by a DEQ-licensed sewage disposal service. E.1.d(27) Before beginning construction of the septic tank and drainfield, the certificate holder shall submit detailed construction plans to the DEQ for written approval. No construction shall begin until the plans have been approved in writing. Prior to covering the septic system, the DEQ shall be notified so that the system may be inspected and approved. The certificate holder shall provide the DEQ with as-built plans of the system following completion of the system. No domestic plumbing in any structure shall be used until the septic system installation has been approved by the DEQ and the system has been adequately covered. E.1.d(28) The certificate holder shall ensure that only sources of domestic waste (sewage) are connected to the septic tank and	

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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		drainfield. E.1.d(29) Before beginning operation of the Energy Facility, the certificate holder shall dye test all drains to ensure that industrial wastewater and sewage plumbing are not interconnected. The certificate holder shall provide to DEQ a written certification that the dye test has been conducted and no interconnections exist. E.1.d(30) The certificate holder shall ensure that the septic tank and drainfield system are designed and constructed in accordance with the requirements of OAR Chapter 340, Division 71, and, unless otherwise approved in writing by the DEQ, sized to accommodate a monthly average daily flow of 700 gallons per day (gpd). E.1.d(31) The certificate holder shall inspect the drainfield monthly to ensure that there is no surfacing sewage. If surfacing sewage is discovered, the certificate holder shall notify the DEQ within 24 hours during the work week. E.1.d(32) The certificate holder shall inspect the septic tank annually to determine the accumulation of solids and shall pump the septic tank as necessary to remove solids. Septic tanks shall be pumped either when sludge and scum volume exceeds 35 percent of the liquid capacity of the tanks or every 5 years, whichever occurs first. Septic tanks shall only be pumped by a DEQ licensed sewage disposal service with an approved septage management plan. Septic tank effluent screens are to be cleaned when 25 percent of the screen surface becomes clogged or annually, which ever is less. All septage/sludge (biosolids) shall be managed by a sewage disposal service which is licensed in accordance with OAR 340-71-600. 6 E.1.d(34) Upon retirement of the Facility, the certificate holder shall decommission the septic tank according to requirements of OAR Chapter 340, Division 71. E.1.e(2) Prior to any groundwater use, well KLAM 51920 (Babson well) shall be reconstructed by the certificate holder to ensure that well construction allows no commingling of groundwater between the shallow water bearing zones and the deep water bearing zones. The final casing depth and cement seal depth should extend to a minimum of 750 feet below ground surface (bgs) to take advantage of the	

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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		relatively straight portion of the borehole, and seal installation shall maximize entering of the casing within the borehole. If well KLAM 51920 will not be used by the certificate holder, then KLAM 51920 should be properly reconstructed to seal off either the shallow or deep water bearing zones, or the well should be permanently abandoned. All new supply wells shall only produce groundwater from the deep basalt water bearing zones. Continuous, non-perforated casing and continuous cement seal from land surface to the final casing depth should be required for all new supply wells. The final casing and cement seal depth of all new supply wells should extend to the top of the deep water bearing zones, which in KLAM 51920 is at a depth 1,580 feet bgs, unless an alternative well casing and cement seal design is approved by the [Water Resources] Department. E.1.e(3) The certificate holder should retain the services of a registered professional geologist licensed by the State of Oregon to be onsite during the drilling of any new observation or supply wells. E.1.e(4) The certificate holder should construct two onsite observation wells between the supply wells and existing onsite well KLAM 10814 (MW1). No observation well should be located within 100 feet of any groundwater supply well. One observation well should be constructed in order to monitor water levels within the shallow basalt water-bearing zones below the sediments. One observation well should be constructed in order to monitor water levels within the deep basalt water-bearing zones, which in KLAM 51920 is at a depth 1,580 feet bgs. [Water Resources] Department groundwater staff should approve the design of each observation well. The preferred casing diameter for each observation well is 6 inches. The observation wells should be completed prior to any onsite groundwater use. (a) To monitor the effect of water use, the certificate holder shall make and report water level measurements for the following four wells: (i) To monitor the effect of water use, the certificate holder shall make and report water level measurements for the following four wells: (ii)The new onsite observation well completed in the deep basalt water-bearing zones. (iii) The existing onsite well KLAM 10814 (MW1). The existing offsite well KLAM 50318 (Bonanza Big Springs well), or an approved alternate well if access to KLAM 50318 is denied. (b) Water levels should be measured at all four wells by use of a continuous electronic recorder. The frequency of water level data recording shall be at intervals no less	

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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		frequent than every two hours. The water level in each of the four wells should also be measured once each month by hand to ensure accuracy of water level recorder equipment. (c) The certificate holder should make and report annual static water level measurements on each supply well and the four observation wells. Static water level measurements are those made at the end of a 5-day long no-pumping period occurring in the first two weeks of March of each year, or other period as approved by the [Water Resources] Department. (d) The certificate holder should install and maintain a barometric pressure transducer of sufficient resolution to allow correction of water level data for barometric responses. Barometric pressure should be measured and recorded at the same frequency as the water level data recording. (e) A registered professional geologist licensed by the State of Oregon should make all hand measurements, and maintain continuous water level recording instruments, at each well. Reports for all water level measurements should be submitted to the [Water Resources] Department by April 15 of each year. The recorder data should be submitted in both graphical and electronic formats acceptable to the [Water Resources] Department. Hand measurements should be submitted on [Water Resources] Department approved forms. The certificate holder should make available all water level data as requested by [Water Resources] Department staff. (f) If the submitted water level data are deemed by [Water Resources] Department groundwater staff to be inconsistent, missing, or in error, the [Water Resources] Department may choose to collect additional water level data from the four observation and three supply wells. If it is necessary for [Water Resources] Department groundwater staff to intervene in the monitoring program to collect additional water level data, the [Water Resources] Department would do so at the certificate holder's expense. The [Water Resources] Department would assess the certificate holder the actual and reasonable costs including labor, water level monitoring equipment, travel, lodging, and per diem related to the intervention. The certificate holder should be required to allow [Water Resources] Department staff to access all wells for the purposes of water level data collection. E.1.e(5) Measurements must be made according to the schedule and standards below. (a) Before Groundwater Use Takes Place: (i) Prior to any onsite groundwater use, for each of the four observation wells (KLAM 10814, KLAM 50318, the new shallow and deep basalt water-	

TABLE 2-1
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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		bearing zones observation wells), the certificate holder shall make and report water level measurements for at least 14 days before any use begins, unless otherwise approved by the [Water Resources] Department. (b) After Use of Water has Begun: (i) For each of the four observation wells (KLAM 10814, KLAM 50318, the new shallow and deep basalt water-bearing zones observation wells), the certificate holder shall be required to collect continuous water level data at time intervals no less frequent than every two hours (water level recorder readings), and make monthly hand measurements. The certificate holder shall also measure annual static water levels from each of the supply wells and the four observation wells. Static water level measurements are those made at the end of a 5-day long no-pumping period occurring in the first two weeks of March of each year, or other period as approved by the [Water Resources] Department. The first annual static water level measurement from the observation well completed in the deep basalt water-bearing zones after any groundwater use has begun under this permit should establish the reference level. The reference level will be used to compare future annual static water level measurements. These data should be reported to (c) Measurement Standards: (i) A registered professional geologist licensed by the State of Oregon shall make all hand measurements, and maintain continuous electronic water level recording instruments, at each well. The individual performing the measurements should be required to: (a) Identify each well with its associated measurement; and (b) Measure and report manual water levels, to the nearest hundredth of a foot, as depth to water below ground surface; and (c)Measure and report electronic water levels, to the nearest five hundredths of a foot (0.05 foot), as depth to water below ground surface; and (d) Specify the method used to obtain each measurement; and (e) Certify the accuracy of all measurements and calculations submitted to the [Water Resources] Department; and (f) Provide the land surface elevation at each wellhead to the nearest hundredth of a foot. The certificate holder user shall discontinue use of, or reduce the rate or volume of withdrawal from, the supply wells, as directed by the [Water Resources] Department if static water level measurements in the deep water bearing zones observation well reveals a water level decline of 25 or 20 more feet below the reference level as measured in the deep basalt water bearing zones, attributable to the certificate holder's use, unless the [Water 22 Resources] Department determines the resource can	

TABLE 2-1
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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		withstand those production rates and water level declines. E.1.e(6) Prior to any groundwater use from the reconstructed KLAM 51920 (Babson well), groundwater permit G12451, in the name of Denis G. and Rose M. Babson, Trustees for the Babson Family Trust, shall be voluntarily canceled. E.1.e(7) f substantial interference with a senior water right occurs due to withdrawal of water from any well being used by the certificate holder, then use of water from the well(s) shall be discontinued or reduced and/or the schedule of withdrawal should be regulated until or unless the [Water Resources] Department approves or implements alternative administrative action to mitigate the interference. E.1.e(8) If monitoring indicates appropriations under this right interfere with shallow basalt groundwater wells, and/or affect Bonanza Springs, then use of water from the well(s) under this right shall be discontinued or reduced and/or the schedule of withdrawals shall be regulated until or unless the [Water Resources] Department approves or implements alternative administrative action to mitigate the interference. Mitigation should include, but not be limited to: The development of water from a different source not connected to Bonanza Springs or the senior right, Development of a replacement source for, and acceptable to, the injured right, 2 Acquisition and subsequent cancellation of a sufficient portion of a pre-1990 groundwater right, the exercise of which interferes with Bonanza Springs, Transfer of a sufficient portion of a pre-1990 groundwater right, the exercise of which interferes with Bonanza Springs, to the POA's of this 7 right to replace an equivalent reduction in pumping under this right, 8 Transfer of a pre-1990 groundwater right to the POA's of this right to completely replace appropriations authorized hereunder, Acquisition of a pre-1990 groundwater right and the conveyance of water from its POA to the place of use identified in this right, Artificially recharge enough water to eliminate the injury or the impact to Bonanza Springs.	
Vegetation and Wildlife	The project area is located within the Klamath Ecological Province (East Cascades Ecoregion), on the eastern side of the Cascade Mountains. This region is characterized by large basins surrounded by ancient lake terraces and basaltic	**3.4.1** Construction and operation of the proposed Energy Facility could cause a temporary or permanent loss of vegetation and wildlife habitat. The proposed project would restore 91 acres of fallow land to high-quality deer habitat and another 145 acres of habitat would be improved in the wildlife mitigation area. Mitigation measures would be implemented during	No changes to existing conditions would occur.

TABLE 2-1
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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
	fault block mountains. Elevations range from around 4,000 to 8,400 feet. The soil in the area is derived from basaltic parent material and generally have loamy surface horizons overlaying loamy to clayey subsurface horizons. The climate is characterized by warm, dry summers and cool, moist winters. The average annual precipitation in Klamath County is 14 inches, of which only 27 percent occurs during the growing season.	construction to limit disturbed areas to those needed to ensure practical and safe working conditions, to identify off-limits area, and to revegetate disturbed areas. **3.4.2** Construction and operation of the proposed Energy Facility would create noise and lighting that could disturb wildlife. BMPs would be implemented to reduce disturbances. Workers would receive training regarding wildlife and habitat and safe vehicle speeds. **3.4.3** Bald eagles and other birds could be injured or killed by collisions with power lines. Bird flight diverters would be installed. **3.4.4** Construction and operation of the proposed Energy Facility would disturb less than 0.5 acre of wetlands. Directional boring techniques and a minimum amount of fill would be used to avoid impacts to wetlands. **3.4.5** For the process wastewater management alternative involving beneficial use of the water for irrigated pasture, constituents in the process wastewater would not be expected to be toxic to wildlife. A Screening-Level Ecological Risk Assessment (ERA) following U.S. Environmental Protection Agency (EPA) and Oregon Department of Environmental Quality (ODEQ) guidance was conducted. The results of the ERA indicate that none of the constituents evaluated would be considered to present significant risk to ecological receptors. **EFSC** Mitigation Requirements D.4(3) The certificate holder shall construct temporary fencing and gates around construction areas to avoid conflicts with livestock. D.4(29) The certificate holder shall coordinate construction and operation of the pipeline to address access, revegetation, and timing issues with the dairy. In addition, the certificate holder shall not use herbicides during construction or operation of the Facility along the portion of the pipeline route near the dairy. During construction of the	

TABLE 2-1
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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		pipeline, the certificate holder shall maintain reasonable access for farm operations across the pipeline corridor. D.6(7) Upon completion of construction of in an area, the certificate holder shall restore vegetation in accordance with the Habitat Mitigation and Natural Area Revegetation Plan outlined in the ASC, Exhibit P, Attachment P-1, and the PROPOSED ORDER, COB ENERGY FACILITY MARCH 16, 2004 PAGE 188 Agricultural and Forestry Practices Impact Mitigation Plan outlined in the ASC, Exhibit K, Attachment K-5. D.6(9) Upon completion of retirement of the Facility, the certificate holder shall restore vegetation in accordance with the Habitat Mitigation and Natural Area Revegetation Plan outlined in the ASC, Exhibit P, Attachment P-1, and the Agricultural and Forestry Practices Impact Mitigation Plan outlined in the ASC, Exhibit K, Attachment K-5. D.8(1) The certificate holder shall, to the extent practicable, avoid and, where avoidance is not possible, minimize construction and operation disturbance to areas of native vegetation and areas that provide important wildlife habitat. With respect to construction of the Facility, including, but not limited to, all pipelines, electric transmission lines, the irrigated pasture area, evaporation ponds, access roads, and temporary laydown areas, the certificate holder shall mitigate for possible impacts to wildlife by measures including, but not limited to, the following: (a) Preparing maps to show sensitive areas that are off-limits during the construction phase. (b) Minimizing road construction and vehicle use where possible. (c) Posting signs around the perimeters of any sensitive habitat areas to be avoided. (d) Posting speed limit signs throughout the construction zone. (e) Providing environmental training to all construction personnel, including all construction contractors and their personnel, to inform them of wildlife and habitat issues. Training shall include information about sensitive wildlife, plants, and habitat areas as well as the required precautions to avoid and minimize impacts. (f) Identifying sensitive habitat areas in the field with appropriate signs and flagging. (g) Instructing all construction personnel, including all construction contractors and their personnel, to watch out for wildlife while driving through the Facility site, to maintain reasonable driving speeds so as not to harass or accidentally strike wildlife, and to be particularly cautious and drive at slower speeds in a period from one hour before sunset to one hour after sunrise when some wildlife species	

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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		are the most active. (h) Requiring all construction personnel, including all construction contractors and their personnel, to report any injured or dead wildlife detected at the Facility site. (i) Using certified "weed free" seed mixes and mulches for restoration and revegetation. (j) Using wildlife watering troughs to encourage use of mitigation areas by wildlife. (k) Using preventative measures to reduce the introduction of noxious weeds by construction, e.g., washing vehicles before bringing them to the site and other best management practices. (l) Limiting grading and clearing of vegetation to the minimum extent necessary for practical and safe working areas. D.8(2) The certificate holder shall site and construct the Facility to minimize impacts to vegetation and habitat. (a) The certificate holder shall minimize impacts to natural vegetation and wildlife habitat by locating the Energy Facility site in a fallow agricultural field. (b) The certificate holder shall return the Energy Facility site to an agricultural field upon retirement of the Facility. D.8(3) To the extent practicable, the certificate holder shall site the transmission towers to minimize habitat impacts by avoiding densely wooded areas within the ponderosa pine habitat. D.8(10) The certificate holder shall restore temporary disturbance areas by returning the areas to their original grade and seeding, with appropriate seed mixes as recommended by ODFW and as shown in Table P-7 (ASC, Exhibit P, Attachment P-1), and by mulching the areas with straw. The certificate holder shall obtain ODFW concurrence before making any changes to the proposed seed mix. D.8(11) During construction of the related or supporting transmission line and maintenance of the right-of-way, the certificate holder shall limit clearing of vegetation to only that needed to prevent contact with the transmission line. The certificate holder shall not remove lower growing tree and shrub species. PROPOSED ORDER, COB ENERGY FACILITY MARCH 16, 2004 D.8(12) The certificate holder shall mitigate for permanent impacts to 179.9 acres by restoring about 240 acres of otherwise undisturbed land	

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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		under the control of the certificate holder. As mitigation for permanent impacts to 77 acres of Habitat Category 2, the certificate holder shall restore 90 acres to high-quality deer habitat through the establishment of preferred winter browse species such as big sagebrush, antelope bitterbrush, and curl-leaf mountain mahogany. In addition, the certificate holder shall establish native grasses and forbs in some areas. As mitigation for 29.9 acres of Habitat Category 3 and 73 acres of Habitat Category 4, the certificate holder shall restore 150 acres to sagebrush-steppe habitat; enhance existing juniper woodland habitat through establishment of preferred browse species such as sagebrush, antelope bitterbrush, and curl-leaf mountain mahogany; and selectively remove juniper trees. (ASC, Exhibit P, pages P-18 through P-19). D.8(13) The certificate shall locate the 31-acre irrigated pasture area adjacent to, but separate from, any mitigation areas. D.8(16) The certificate holder shall fence the evaporation pond(s) to preclude their use by wildlife. In addition, the certificate holder shall equip the evaporation pond(s) with a net meeting ODFW requirements to prevent access by raptors and other birds. D.8(21) The certificate holder shall monitor revegetated areas for a period of five years and shall ensure that new vegetation has an 80 percent survival rate. D.8(17) The certificate holder shall install a chain-link fence around the infiltration basin to prevent debris, such as windblown vegetation or leaf litter, from entering and accumulating on the basin bottom. The fence shall also serve to prevent wildlife from entering the basin. ~~D.8(18) During construction of the related or supporting natural gas and water pipelines, the certificate holder shall ensure that side cast material remains within the construction corridors.~~ ~~D.8(19) During construction of the related or supporting natural gas and water pipelines, the certificate holder shall use silt fencing and other barriers to limit lateral spread of soil when material must be side cast in habitat areas within the construction corridor.~~ D.8(22) The certificate holder shall monitor revegetated areas for a period of five years and shall ensure that new vegetation has an 80	

TABLE 2-1
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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		percent survival rate. D.8(23) During the five-year reporting period, the certificate holder shall submit an annual monitoring report to ODFW and the Department. Within one year after completion of construction of the Facility, the certificate holder shall provide to ODFW and the Department a summary report that identifies the revegetation actions it took and the results of revegetation monitoring conducted to that time. D.8(24) Within three months after completion of the final annual monitoring survey, the certificate holder shall provide to ODFW and the Department a report that presents the results of its revegetation monitoring. D.8(25) If revegetation is not successful at establishing appropriate plant cover and controlling erosion, the Department may require the certificate holder to take remedial actions. D.8(26) The certificate holder shall not perform any construction of the transmission line during the critical deer winter range season of December 1 – March 31 unless it receives prior approval from the Department of Energy and Department of Fish and Wildlife. D.8(27) The certificate holder shall monitor the transmission line access road from December 1 to March 31 to ensure the integrity of access road gates and prevent public access during critical deer winter range season. The monitoring shall occur at least once every two weeks during the designated period. D.8(28) Where feasible, the certificate holder shall leave up to four large-diameter snags per acre in the ponderosa pine habitat along the transmission line right of way as habitat for cavity dependant wildlife. D.8(29) Where feasible, the certificate holder shall leave slash piles along the transmission line right of way as habitat for reptiles, small mammals and birds. D.8(30) The certificate holder shall consult with the Department of Fish and Wildlife to determine appropriate design and placement of several water collection devices (guzzlers) along the transmission line right of way.	

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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		D.8(31) The certificate holder shall locate transmission line towers as far away from pygmy rabbit burrows as is feasible. Any towers located near burrows shall have anti-perching devices installed to reduce potential for raptor predation. D.9(2) After completion of construction of the Facility, the certificate holder shall plant suitable vegetative species for bald eagle forage habitat. D.9(4) The certificate holder shall equip the evaporation pond(s) with a net meeting ODFW requirements to prevent access by raptors and other birds. D.9(1) Before beginning construction of the transmission line, the certificate holder shall employ measures to protect raptors in the design and construction of transmission lines. The certificate holder shall employ bird flight diverters on the top of static wires to make them more visible, reducing the potential for collision. D.9(3) The certificate holder shall fence the evaporation pond(s) and infiltration basin to preclude their use by wildlife. D.9(5) The certificate holder shall design all energized transmission conductors with either a minimum separation of nine feet or other measures to reduce the potential for electrocution of raptors and other birds. D.9(6) The certificate holder shall design all energized transmission conductors with either a minimum separation of nine feet or other measures to reduce the potential for electrocution of raptors and other birds. E.1.d(5) Unless otherwise approved in writing by the DEQ, the certificate holder shall maintain a deep-rooted, permanent vegetative cover on the land irrigation area at all times. Vegetation shall be periodically cut and removed to ensure maximum evapotranspiration and nutrient capture. F.2(3) If the certificate holder becomes aware of a significant environmental change or impact attributable to the Facility, the certificate holder shall, as soon as possible, submit a written report to the Department describing the impact on the Facility and its ability to comply with any affected site certificate conditions.	

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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
Fish	Surface waters within the project area support various species of fish, including ~~one~~ two federally and state-listed endangered species. ~~Construction and operation of the Facility would not affect fisheries resources in the area.~~	**3.5.1** Construction of new access roads along the electric transmission line corridor would result in less than 0.5 acre of impact to wetlands related to intermittent creeks. Construction during the dry season (if possible) is recommended as a mitigation measure to avoid the presence of fish and minimize erosion and sedimentation. Culverts would be installed. **EFSC** Mitigation Requirements D.8(30) The certificate holder shall consult with the Department of Fish and Wildlife to determine appropriate design and placement of several water collection devices (guzzlers) along the transmission line right of way.	No changes to existing conditions would occur.
3.6 Traffic and Circulation	The existing network of roads surrounding the proposed facility includes West Langell Valley Road, East Langell Valley Road, Harpold Road, Oregon Route (OR) 70 (ODOT #23), OR 50, and OR 140. These local roads currently have low average daily traffic volumes and low average yearly accident rates. Levels of service are generally A or B, which are considered a high level of operations. These five roads have a high-quality asphalt surface.	**3.6.1** During construction, roadways in the vicinity of the Energy Facility would experience a decrease in level of service. *Mitigation* Construction activities would be scheduled during off-peak hours and a carpooling program would be offered. **3.6.2** Vehicles weighing more than 80,000 pounds (maximum legal load limit) could cause some visible damage to county roads. Before and after conditions would be documented. If damage occurs, the proposed project would restore pavement to previous condition. **3.6.3** Operation of the Energy Facility would generate additional traffic. No mitigation measures are recommended. **EFSC** Mitigation Requirements D.6(2) During construction of the Facility, the certificate holder shall limit haul trucks to designated roadways. D.8(4) The certificate holder shall construct new roads for the electric transmission line within the cleared easement where possible to	No changes to existing conditions would occur.

TABLE 2-1
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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		minimize additional clearing. Gates shall be installed on the new access roads to restrict unauthorized access. Construction vehicles shall remain on the road bed and road shoulder whenever possible. D.8(5) The certificate holder shall ensure that road construction is sited to take advantage of existing roads to the extent practicable. D.8(14) The certificate holder shall use West Langell Valley Road for access to the Facility site. D.13(2) During construction of the Facility, the certificate holder shall use advance signage and traffic diversion equipment when slow or wide loads are being delivered to the Facility site D.13(3) During construction of the Facility, to the extent possible, the certificate holder shall schedule construction activities so that constructed-related traffic will occur other than during roadway peak hours. D.13 (4) During construction of the Facility, in consultation with Klamath County and the Oregon Department of Transportation, the certificate holder shall provide detour plans and warning signs in advance of any foreseeable traffic disturbances. PROPOSED ORDER, COB ENERGY FACILITY MARCH 16, 2004 D.13 (5) During construction of the Facility, the certificate holder when possible shall maintain a minimum of one travel lane on affected roadways. D.13(6) During construction of the Facility, the certificate holder shall arrange for licensed flaggers to direct traffic within the road right-of-way. ~~D.13(7) During construction of the facility, the certificate holder shall offer a carpool program to minimize single-occupancy vehicle use by construction workers.~~ D.13(8) During construction of the Facility, the certificate holder shall offer a carpool program to minimize single-occupancy vehicle use by construction workers. (a) During construction of the Facility, the certificate holder shall monitor for damage to roadways resulting from vehicles delivering heavy loads to the Facility site. (b) After completion	

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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		of construction of the Facility, the certificate holder shall videotape roadways affected by vehicles delivering heavy loads to the Facility site. (c) After completion of construction, the certificate holder shall make the pre- construction and post-construction videotapes available for viewing by the contractor, Klamath County, ODOT and the Department. (d) If the videotapes show there was damage to an affected roadway as a result of vehicles carrying heavy loads, the certificate holder shall restore the roadway to its previous condition. D.13(9)Before beginning construction of the Facility, the certificate holder shall submit to and obtain approval from the Department of Energy of its plan for transporting construction workers to and from the Facility site by bus ("Transportation Plan"). The plan may provide for centralized parking in a public location accessible to the majority of construction workers. However, the location must not cause significant traffic congestion in any area remote from the Facility site. If applicable, the plan must also explain the certificate holder's rationale for allowing certain construction workers to commute to the Facility site by private vehicle and demonstrate that the certificate holder's car pool program will minimize the use of single-occupancy vehicles by construction workers.~~17~~ D.13(10) Before beginning construction of the Facility, the certificate holder shall fully implement the Transportation Plan. The Transportation Plan shall be in effect until completion of construction. ~~17~~ Any construction necessary to provide a centralized public parking space could require the space to be designated as a related or supporting Facility under the Siting Council's rules. ~~PROPOSED ORDER, COB ENERGY FACILITY MARCH 16, 2004.~~	
Air Quality	The proposed Facility is located in an area currently classified as attainment for all criteria air pollutants. The closest air quality data are collected at Klamath Falls, 34 miles to the northwest. Air quality in the project area is expected to be significantly better than Klamath Falls. Oregon Department of Environmental Quality (ODEQ) air quality data summaries available on the Web site indicate that the 24-hour National Ambient Air Quality Standard	**3.7.1** Construction would cause short-term emissions of fugitive dust and construction equipment exhaust. BMPs would be issued to control fugitive dust and other incidental emissions. **3.7.2** Operations would not cause impacts. **3.7.3.** Operation of the Energy Facility would result in emissions of greenhouse gases.	No changes to existing conditions would occur.

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	(NAAQS) for particulate matter less than 10 microns in diameter (PM_{10}) has not been exceeded at Klamath Falls since 1992. ~~No exceedance of the annual PM_{10} standard has occurred in the last 10 years.~~ Monitoring for $PM_{2.5}$ began in July 1998, and has not measured an exceedance of either the proposed annual or 24-hour NAAQS. There has been no exceedance of the 1-hour carbon monoxide (CO) NAAQS in the last 11 years, and the 8-hour NAAQS has not been exceeded since 1991.	The proposed project would pay approximately $13.6 million to The Oregon Climate Trust, which would use these funds to finance CO_2 mitigation projects. **3.7.4.** Operation of the proposed Energy Facility would result in emissions of hazardous air pollutants. Emission-reducing equipment would be continuously monitored to minimize emissions. **3.7.5.** Operation of the Energy Facility could impact Air Quality-Related Values in federally managed Class I areas in the region; however, modeling results show pollutants and haze would not have a significant impact. No mitigation measures are recommended. **3.7.6.** Operation of the Energy Facility would not result in significant odor emissions. No mitigation measures are recommended. EFSC Mitigation Requirements D.15(1) The net carbon dioxide emissions rate for the non-base load power plant shall not exceed 0.675 pounds of carbon dioxide per kilowatt-hour of net electric power output, with carbon dioxide emissions and net electric power output measured on a new and clean basis, as defined in OAR 345-001-0010. D.15(2) The net carbon dioxide emissions rate for incremental emissions for the Facility operating with power augmentation shall not exceed 0.675 pounds of carbon dioxide per kilowatt-hour of net electric power output, with carbon dioxide emissions and net electric power output measured on a new and clean basis at the site during the times of year when the Facility is intended to operate with power augmentation, as the Department may modify such basis pursuant to Condition D.15.(12). E.1.a(1) The certificate holder complies with the appropriate carbon dioxide emissions standard and monetary offset rate in effect at the time the Department or Council makes its determination under this condition.	

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		E.1.a(2) During construction of the Energy Facility, transmission lines or other related or supporting facilities, the certificate holder shall require contractors to equip all combustion engine-powered equipment with exhaust mufflers.	
Scenic and Aesthetic Values	This is a predominantly undeveloped area devoted to forests and farming. A number of aesthetic and scenic resources, such as national forests, existing and proposed wilderness trails, and scenic highways surround the proposed Energy Facility.	**3.8.1** Visual impacts to scenic and aesthetic resources could potentially result from the stacks and transmission towers for the electric transmission line; however, these Facility features would be in the background of any views. Impacts could also occur from the clearing of the right-of-way and access roads. The proposed Energy Facility would not impact designated scenic areas as described in Section 3.8.1. No mitigation measures other than those included in the proposed project, such as painting facilities to blend with the landscape and using nonglare, low-impact lighting, are recommended. **3.8.2** Impacts from Facility lighting would be minimal. ~~See mitigation~~ No mitigation measures ~~for Impact 3.8.1~~ are recommended.	No changes to existing conditions would occur.
Cultural Resources	Three archaeological sites were identified during field surveys of the project area. All three sites are likely to be eligible for listing on the National Register of Historic Places (NRHP) and would qualify as an archaeological site under the Oregon statutes. Two of these sites (35-KL-2175 and PAS-3) are characterized by dispersed lithic scatter containing waste flakes (the by-product of stone tool manufacture), and tools. The remaining site (PAS-4) is a series of four, partially buried stone features that are of cultural and religious value to The Klamath Tribes.	**3.9.1** None of three known cultural sites would be affected by construction and operation of the Facility. The electric transmission line and the water supply pipeline have been moved from their original locations to avoid any impacts. **3.9.2** Unknown cultural resources could be adversely affected by the proposed project. A Cultural Resources Management Plan (CRMP) would be developed in coordination with The Klamath Tribes. The Plan would identify specific protocols and procedures for protecting known and unknown cultural resources. Archaeological monitoring would occur during construction to prevent accidental impacts to the known cultural sites and any resources discovered during construction. **EFSC** Mitigation Requirements D.11(1) Before beginning construction of the Facility, the certificate holder shall develop a Cultural Resources Management Plan ("CRMP") in consultation with Oregon Historic Preservation Office ("SHPO"), the	No changes to existing conditions would occur.

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Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		~~Confederated~~ Klamath Tribe~~s of the Klamath Indian Reservation~~, and the Klamath County Planning Department. The CRMP shall include protocols and procedures for protection of known cultural sites, including the identification of sites in the field and on project construction maps, and for accidental discovery of additional sites. D.11(2) During construction of the Facility, the certificate holder shall implement the CRMP, ensure that a qualified person instructs construction personnel in the identification of archaeological and cultural resources, and ensure that archaeological construction monitors are present to prevent accidental impacts to known cultural resources or to any newly discovered resources. D.11(3) During construction of the Facility, the certificate holder shall implement the CRMP, ensure that a qualified person instructs construction personnel in the identification of archaeological and cultural resources, and ensure that archaeological construction monitors are present to prevent accidental impacts to known cultural resources or to any newly discovered resources.	
Land Use Plans and Policies	The Facility is located in a rural area where elevations range from approximately 4,000 to 8,400 feet. The majority of the lowland areas have been converted to agricultural use. The agricultural lands include cultivated crops, irrigated pasture, unimproved pasture, and fallow fields. There are a few developed areas with residential, agricultural, and industrial uses such as farm homes, dairies, the Gas Transmission Northwest (GTN) compressor station, and Captain Jack Substation.	**3.10.1** The proposed Facility would permanently disturb a total of 108.7 acres of land during the 30-year operating life of the Energy Facility, including an approximate 50.7 acres of land within the Klamath County Big Game Winter Range SRO. The proposed project would restore 91 acres of fallow field to habitat and improve another 145 acres of habitat in the wildlife mitigation area. The Department recommends that the Council make the following findings: (a) That the facility complies with the standards adopted by the Council pursuant to ORS 469.501; (b) That the Energy Facility is a non-base load gas plant that complies with the applicable carbon dioxide emissions standard, OAR 345-024-0550; (c) That except for those statutes and rules for which the decision on compliance has been delegated by the federal government to a state agency other than the Council, the facility complies with all other Oregon statutes and administrative rules identified in the Project Order, as amended, as applicable to the issuance of a site certificate for the proposed facility adopted by the Council or enacted by statute; and, (d) That the facility complies with the statewide planning goals adopted by the Land Conservation and Development Commission, pursuant to ORS	No changes to existing conditions would occur.

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Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		469.503(4). **3.10.2**. Operations at the Energy Facility site would have limited, if any, impact on agricultural activities. No mitigation measures are recommended. **3.10.3** Construction of the Energy Facility would temporarily impact agricultural activities. BMPs would be employed during construction to minimize and avoid impacts to agricultural activities. **3.10.4** Construction of the Energy Facility could have temporary impacts to dairy operation. In addition to the BMPs that would be employed during construction to minimize and avoid impacts to agricultural activities, herbicides would not be used and activities would be coordinated with dairy owner. **3.10.5** The Energy Facility would have permanent and temporary impacts to pasture land. BMPs would be employed during construction to minimize and avoid impacts to pasture land. In addition, temporary fences and gates would be constructed so that at convenient intervals livestock could cross construction areas, and permanent fences if damaged would be repaired or replaced. **3.10.6** Construction impacts would occur to rangeland/woodlands along the natural gas pipeline, water supply pipeline, and the electric transmission line, and permanent impacts to rangeland/woodlands along the electric transmission line. BMPs would be employed during construction to minimize and avoid impacts to rangeland/woodlands. Additional mitigation measures would be implemented to avoid and repair impacts. **3.10.7** Permanent impacts would occur to forest ranges along the electric transmission line. BMPs would be employed during construction to minimize and avoid impacts to forest ranges. Additional mitigation measures would be implemented to avoid and repair impacts.	

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		EFSC Mitigation Requirements D.4(2) Before beginning construction of the facility, the certificate holder shall consult with the owners of lands adjacent to the facility site and farmers operating on those lands to address potential conflicts with agricultural practices including (but not limited to) field access, timing of work, dust control, noxious weed control, and traffic control. D.4(21) In the event that any footing for a transmission tower is located on land with a slope exceeding 25 percent, the certificate holder shall submit engineering plans for such work to the Klamath County Department of Public Works for review and approval. D.4(30) The certificate holder shall complete all actions set forth in the Agricultural and Forestry Practices Impact Mitigation Plan and the Habitat and Natural Area Revegetation Plan. D.8(20) The certificate holder shall, as soon as practicable and appropriate, but in no event later than one year after completing construction in an area, implement the mitigation measures specified. E.1.b(1) Before beginning construction of the facility, the certificate holder shall provide to the Department plans showing proposed construction and access roads for the transmission line and location of spoils disposal sites. E.1.b(2) Before beginning construction of the facility, the certificate holder shall protect wetlands within the construction corridor with construction fencing. No equipment or machinery shall be allowed within fenced wetlands. E.1.b(6) During construction, operation and retirement of the facility, the certificate holder shall ensure that the total amount of material to be placed within wetlands is less than 50 cubic yards. E.1.b(7) After completion of construction of the facility, the certificate holder shall restore wetlands temporarily affected by construction activities to their original grade and shall seed all such wetlands with an appropriate wetland seed mix. E.1.b(8) During construction of the facility, the certificate holder shall use conventional bores to install the natural gas and water supply	

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		pipelines under agriculture drainages and canals. ~~PROPOSED ORDER, COB ENERGY FACILITY MARCH 16, 2004~~ ~~E.1.c(1) During construction of the facility, the certificate holder shall use conventional bores to install the natural gas and water supply pipelines under agriculture drainages and canals. PROPOSED ORDER, COB ENERGY FACILITY MARCH 16, 2004~~ E.1.d(3) At least 1 year before retirement of the Energy Facility, if evaporation ponds are in use, the certificate holder shall submit plans for decommissioning the evaporation ponds. The plans shall include a means for dewatering the evaporation ponds and properly disposing of all accumulated solids in a manner consistent with disposal requirements in effect at the time of decommissioning.	
Socioeconomics	Population has been growing in the vicinity of the Facility at less than 1 percent per year during the last decade, which was approximately one-half of the state's growth rate. In early 2002, the unemployment rate in Klamath County was approximately 13 percent, primarily owing to declines in the construction and mining sectors. In 2000, housing vacancy rates were around 3 percent for owner-occupied housing and 9 percent for rental housing.	**3.11.1** The proposed Energy Facility would result in a limited short-term and long-term population increase. No mitigation measures are recommended. **3.11.2** The proposed project would result in an increase in short-term and long-term employment opportunities in the area. No mitigation measures are recommended. **3.11.3** The proposed Energy Facility would have a short-term impact on housing. New residents would likely settle in the communities within a 30-minute driving distance. No mitigation measures are recommended.	No changes to existing conditions would occur.
Public Services and Utilities	Water and sewer service is provided inside urban growth boundaries (UGBs) of the project area. Outside of UGBs, water is supplied by private wells and sewage goes to individual septic tanks. Solid waste is disposed of at two landfills. Police protection outside UGBs is provided by the Klamath County Sheriff and the Oregon State Patrol. Rural fire protection around Bonanza and Klamath Falls is provided by Klamath County Fire Districts #1, #4, and #5, and the Bonanza Rural Fire Protection District.	**3.12.1** The proposed Energy Facility would have limited, if any, effects on the capacity of local utilities during construction, and no effects during operations. No mitigation measures are recommended. **3.12.2** The proposed Energy Facility would not affect the level of service provided by local public services. Onsite security would be provided during construction. No other mitigation measures are recommended.	No changes to existing conditions would occur.

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
	Health care is available at the Merle West Medical Center in Klamath Falls; however, the closest trauma center is in Bend. The four school districts serving the project area report declining enrollment.	**EFSC** Mitigation Requirements D.14(1) The certificate holder shall set aside a total of 40.2 acres of land to accommodate the evaporation ponds, including the associated road and pipeline, that would serve as an alternative to land application of process wastewater. The final design and sizing of the evaporation ponds shall be subject to DEQ approval pursuant to Condition E1.d.(2). E.1.c(4) The certificate holder shall develop and implement a program that provides reasonable assurance that all fences, gates, cattle guards, trailers, or other objects or structures of a permanent nature that could become inadvertently charged with electricity are grounded or bonded throughout the life of the transmission line. E.1.d(2) Within 6 months following start-up of the Energy Facility, the certificate holder shall submit plans and specifications for sealed, non-overflow, evaporation ponds capable of accommodating both a single power block of 580 MW or double power block of 1,160 MW. The plans and specifications shall ensure that the evaporation pond is sealed so as to maintain a seepage rate of less than 10 -7 cm/sec. The plans and specifications shall also include a leak detection plan. Upon approval of the plans and specifications, the certificate holder shall maintain these plans on file until and if construction of the ponds is required by DEQ. E.1.d(4) The certificate holder shall meet the compliance dates that have been established in the schedule contained in the draft WPCF Permit (Attachment C to this Order). Either prior to or no later than 14 days following any lapsed compliance date, the certificate holder shall submit to the DEQ a notice of compliance or noncompliance with the established schedule. The DEQ may revise a schedule of compliance if it determines there is good and valid cause resulting from events over which the certificate holder has little or no control. J. Based on the above findings of fact, discussions and conclusions of law, the Department recommends that the Council determine that it shall approve the Application for a Site Certificate for the COB Energy Facility and that the chairperson of the Council shall execute the site certificate in the form of the "Site Certificate for the COB Energy Facility." The site certificate for the COB Energy Facility will be attached to this Proposed Order and incorporated by reference into this	

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		Proposed Order. The Department further recommends that the Council direct the Oregon Department of Environmental Quality to issue to the certificate holder a Water Pollution Control Facilities permit substantially in the form of attachment C to this Proposed Order and that it direct the Oregon Water Resources Department to issue to the certificate holder a Permit to Appropriate Public Waters substantially in the form of Attachment D to this Proposed Order.	
Health and Safety	The Energy Facility site consists primarily of scrub brush with limited cattle grazing. Limited industrial and commercial utility uses exist in the area. Development in the vicinity of the Energy Facility site consists of widely distributed residences. Intermittent noise includes traffic on local roads, agricultural activities, and distant overhead aircraft. Continuous noise is absent.	**3.13.1** A natural gas leak could occur, posing a risk of fire. **3.13.2** Diesel fuel could leak from the storage container, posing a fire risk and possible contamination of soil. **3.13.3** Aqueous ammonia could spill or ammonia vapor could be released to the atmosphere, posing a health risk. **3.13.4** Hazardous nonfuel substances could spill, with the potential to harm people at the Energy Facility and in the surrounding area. **3.13.5** A fire could occur at the Energy Facility, posing a threat to workers and nearby people and structures. **3.13.6** The high-voltage electric transmission line could cause electrical shocks directly and from induced charges. **3.13.7** Electric and magnetic fields (EMFs) would increase but would be well within allowable limits. **3.13.8** Operation of the proposed Energy Facility could affect noise levels but would be within limits allowed by state statute. **3.13.9** Construction of the proposed Energy Facility could affect noise levels. Mitigation measures for the proposed project include compliance with applicable Federal, state, and local regulations governing health and safety and the handling and storage of hazardous materials and fuels. No mitigation measures are recommended beyond those proposed by the project. A barrier wall would be reserved as a contingency mitigation measure. The wall would be installed if a noise exceedance is detected	No changes to existing conditions would occur.

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		during Facility performance testing. **EFSC** Mitigation Requirements D.4(17) The certificate holder shall clear and maintain vegetation in the transmission line easement to prevent fire hazard, remove diseased and hazardous vegetation from the easement area, equip the transmission line with a shield wire near the top of transmission structures to shield the towers from lightning strikes, and store no flammable material within the easement area. D.5(4) The certificate holder shall design, engineer and construct the facility to avoid dangers to human safety presented by seismic hazards affecting the site that are expected to result from all maximum probable seismic events. In no event shall the recommended seismic design parameters be any less than those prescribed by the Oregon Uniform Building Code. As used in this condition, "seismic hazard" includes ground shaking, landslide, liquefaction, lateral spreading, tsunami inundation, fault displacement, and subsidence~~.~~ ~~**3.13.5** A fire could occur at the Energy Facility, posing a threat to workers and nearby people and structures.~~. D.5 (7) The site-specific geotechnical investigation and report described in Condition D.5. above shall be completed and the report submitted to the Department prior to final plant design. In addition to being generally consistent with the discussion in the ASC, Exhibit H, pages H-6 through H-12, the geotechnical investigation, as a minimum, shall meet the following additional specifications: ~~9~~ (a) Prior to the site investigation, the certificate holder shall consider faults ~~11~~ depicted by DOGAMI on the Bonanza quadrangle (issued 2003), the Lorella quadrangle (to be issued spring 2004) and the Bryant Mountain quadrangle (mapped 2003, to be issued spring 2004), IMS-20 "Geohazards of Klamath County, Oregon" and USGS open file report 02- 15301Weldon et al. 2002. 1617 (b) In addition to the references listed above, the certificate holder shall select ~~18~~sites for paleoseismic ~~paeleoseismic~~ trenching based on stereo photography, research and field investigation. (c) At least 21 days prior to trenching, the certificate holder shall report to the Department and DOGAMI its selection of sites and the basis for that selection, including the results of stereo-photography. If DOGAMI is not	

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		able to comment on the selection of sites or to observe the trenching and its paleoseismic interpretation, the Department shall arrange, in consultation with DOGAMI, for the performance by an independent qualified registered geologist of those tasks DOGAMI is unable to perform. If the Department does not provide the certificate holder written notice of comments from DOGAMI or an independent qualified registered geologist within 21 days after such notification, the certificate holder may proceed with its investigation as planned. (d) The certificate holder shall, as a minimum, perform paleoseismic ~~34~~trenching on the Bryant Mountain Fault and the Klamath Graben Fault and ~~35~~shall reassess the MPE at those faults in terms of magnitude, location and maximum probable ground motion at the facility site. If field investigation indicates an MPE at those faults greater than the event assumed in the deterministic evaluation contained in the ASC, Exhibit H, the certificate holder shall incorporate the applicable design parameters in design of the facility. In addition to being generally consistent with the discussion in the ASC, ~~43~~ Exhibit H, the site investigation and report shall generally meet the specification in DOGAMI Open File Report O-00-04, "Guidelines for Engineering Geologic Report and Site-Specific Seismic Hazard Reports". D.6(10) The certificate holder shall ensure that ammonia-handling facilities have continuous tank level monitors, temperature and pressure monitors, alarms, check valves and emergency block valves. The certificate holder shall ensure that the ammonia storage tank has double containment and the piping from the tank is double-walled. D.6(11) The certificate holder shall store diesel oil in a commercially manufactured system with internal spill controls and secondary containment. D.6(12) The certificate holder shall equip all chemical storage tanks and locations storing large quantities of hazardous materials with secondary containment constructed of concrete or asphalt with berms around the perimeter. The secondary containment areas shall hold the volume of the largest tank or container in the area. The certificate holder or its primary contractor shall develop written procedures for each containment area. D.8(7) The certificate holder shall locate chemical storage, servicing of	

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		construction and maintenance equipment and vehicles, and overnight storage of wheeled vehicles at least 330 feet from any wetland or waterway. D.8(8) The certificate holder shall place waste material and spoils at least 100 feet from wetlands and waterways. D.8(9) Before beginning construction of the facility, the certificate holder shall prepare and implement a Spill Prevention Control and Countermeasure Plan. D.8(15) The certificate holder shall establish the topographic position of the Energy Facility to minimize indirect effects of noise and ambient light on adjacent habitats. D.10(1) During construction of the facility, the Certificate Holder shall control dust through the application of water or by other equally effective method. D.10(2) During construction of the facility, the Certificate Holder shall use directing and shielding devices on lights to minimize off-site glare. When there is no nighttime construction activity, the Certificate Holder shall minimize night lighting consistent with safety and maintenance requirements. D.10(3) During operation of the facility, the Certificate Holder shall use directing and shielding devices on lights to minimize off-site glare and shall minimize night lighting consistent with safety and maintenance requirements. D.10(4) The Certificate Holder shall use motion detection equipment rather than constant floodlights for security lighting. D.10(5) The Certificate Holder shall paint structures with low-glare paint in colors selected to complement the surrounding foreground and background colors. D.13(1) During construction of the facility, the certificate holder shall provide onsite chemical toilet service suitable for the size and composition of the construction workforce. D.13(11) During construction of the Energy Facility, the certificate	

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		holder shall construct a fire protection system within the buildings and yard areas of the Energy Facility site. (a) The fire protection system shall be constructed in accordance with National Fire Protection Association standards. (b) The system shall include a dedicated water storage system, hose stations, fire water pumps, fire detection system, and portable fire extinguishers located in accordance with National Fire Protection Association standards. (c) A dedicated reserve capacity of about 180,000 gallons in the raw water storage tank shall serve as the fire suppression water source. (d) Fire detection devices, including smoke detectors, heat detectors, manual alarm stations and indicating devices, as appropriate, shall be installed at key points throughout the Energy Facility. (e) Facility staff shall receive basic fire suppression training to enable staff to fight small fires that can be controlled or extinguished with rack hoses and fire extinguishers. E.1.a(3) During construction of the Energy Facility, transmission lines or other related or supporting facilities, the certificate holder shall establish a complaint response system at the construction manager's office to address noise complaints. E.1.a(4) Within two months after the start of commercial operation of the single-phase Energy Facility (or, if the certificate holder elects the two-phase construction alternative, within two months after the start of the commercial operation of the first phase and within two months after the start of commercial operation of the second phase, if applicable), the certificate holder shall retain a qualified noise specialist to measure noise levels associated with the Energy Facility operation. If the certificate holder elects the two-phase construction alternative, the measurements made after the start of commercial operation of the second phase shall be made with both first phase and second phase equipment operating at full load. (a) The specialist shall measure noise levels at receptors M1 and M2 between midnight and 4 a.m., to determine if actual plant noise levels are below 30.5 dBA. During this time period, the Energy Facility shall be operating at the maximum power production rate or the measurement results shall be considered invalid. Records of the facility operating conditions during the measurement period shall submitted along with the sound level data. PROPOSED ORDER, COB ENERGY FACILITY MARCH 16, 2004(b) The certificate holder shall report the results of the noise evaluation to the Department of Energy. (c) If actual noise levels do not comply with	

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		applicable DEQ regulations, the certificate holder shall take those actions necessary to comply with the regulations no later than eight months after the start of commercial operation of the single-phase Energy Facility or, if COB elects the two-phase construction alternative, no later than eight months after the start of commercial operation of each phase of the Energy Facility, if applicable. E.1.a(4) The certificate holder shall install silencers on short duration noise sources e.g. steam vents). E.1.c(2) The certificate holder shall design the transmission lines so that induced voltages resulting from the transmission lines are as low as reasonably achievable; including maintaining as great a conductor height as is reasonably practical at road crossings. E.1.c(3) The certificate holder shall develop and implement a program that provides reasonable assurance that all fences, gates, cattle guards, trailers, or other objects or structures of a permanent nature that could become inadvertently charged with electricity are grounded or bonded throughout the life of the transmission line. E.1.c(5) The certificate holder shall design, construct and operate the transmission lines in accordance with the requirements of the National Electrical Safety Code. E.1.c(6) The certificate holder shall take reasonable steps to reduce or manage exposure to electromagnetic fields (EMF), consistent with Council findings presented in the "Report of EMF Committee to the Energy Facility Siting Council," March 30, 1993, and subsequent findings. Effective on the date of this site certificate, the certificate holder shall provide information to the public, upon request, about EMF levels associated with the Energy Facility and related transmission lines. E.1.c(7) At least 30 days before beginning preparation of detailed design and specifications for the electrical transmission line or the natural gas pipeline, the certificate holder shall consult with the Oregon Public Utility Commission staff to ensure that its designs and specifications are consistent with applicable codes and standards. E.1.c(8) With respect to the related or supporting natural gas pipeline,	

TABLE 2-1
Summary of Affected Environment, ~~and~~ Environmental Consequences, and Mitigation Measures[1]

Environmental Resource	Existing Conditions	Impact of Proposed Action/Mitigation	Impact of No Action Alternative
		the certificate holder shall design, construct and operate the pipeline in accordance with the requirements of the US Department of Transportation as set forth in Title 49, Code of Federal Regulations, Part 192. E.1.d(6) The certificate holder shall maintain in force at all times an adequate contingency plan for prevention and handling of spills and unplanned discharges. The certificate holder shall maintain a continuing program of employee orientation and education to ensure awareness of the necessity of good in-plant control and quick and proper action in the event of a spill or accident. E.1.d(7)The certificate holder shall designate an appropriately trained supervisor to coordinate and carry out all necessary functions related to maintenance and cooperation of waste collection, treatment, and disposal facilities. E.1.d(8) Unless otherwise permitted by the DEQ, the certificate holder shall not dispose of solid wastes, brines, construction wastes or other wastes at the Energy Facility site. E.1.d(23) During construction of the generation facility, the certificate holder shall ensure that all sewage is collected in chemical toilets located on site. E.1.d(24) The certificate holder shall ensure that chemical toilets are managed by a sewage disposal service licensed by the DEQ.	

TABLE 2-2
Other Potential Sites and Vicinities for Development

Washington Area of Focus	MW / Tech	Township Zoning	Physical Attributes				
			Site - General	Electrical	Substation	Fuel	Water
Dallesport, WA (Klickitat County)	TBD	Dallesport/Indust (Port Authority Site)	Approx 70 miles East of Portland.	BPA 500kv on site	b/w John Day and Hanford	NW Pipeline 6" lateral .5 from site. NW Pipeline 26" 12 miles north.	Columbia River adjacent
	Comments: On the north side of Columbia River with John Day Substation on the South Side. Optimal interconnect would be crossing the river. Increase of gas supply and pressure from 26" line 12 miles away makes gas questionable.						
Frederickson, WA (Pierce County)	TBD	Frederickson; industrial	Port of Tacoma Industrial Park	BPA 230 kV	b/w Tacoma and Cowlitz	Northwest Pipeline Corp 26" line within one mile	City or well
	Comments: Multiple plants proposed for this area. Overbuilding a serious concern from gas and electrical interconnection criteria. Water supply is limited and potentially represents a fatal flaw.						
Sunnyside West, WA (Yakima County)	TBD	Sunnyside/Ag	South central Washington	BPA 345 kV and 500 kV	345 kV b/w Bonneville and Midway; 500 kV b/w Hanford and Ostrander	Northwest Pipeline 10" line adjacent	County or well
	Comments: Gas supply and pressure are questionable, area largely rural and no public water lines present. Access to groundwater a concern and potential fatal flaw.						
Sunnyside East, WA (Yakima County)	TBD	Sunnyside/Ag	South central Washington	BPA 345 kV and 500 kV	345 kV b/w Big Eddy and Midway; 500 kV b/w John Day and Hanford	Northwest Pipeline Corp 10" line adjacent	County or well
	Comments: Same gas line as Sunnyside West. Water area largely rural and no public water lines present. Ability to obtain new or transfer exiting water right highly questionable						
Patterson, WA (Benton County)	TBD	Patterson/Ag (Currently fallow field)	Approx 140 miles East of Portland	BPA Horse Heaven 345kv Substation adjacent	BPA Horse Heaven sub is b/w McNary and Ross	NW Pipeline 26" lateral 1 miles North	Lake Umatilla (Columbia River) 1 mile South
	Comments: Gas lateral capacity is questionable on 26' distribution line. Ability to obtain surface water highly questionable.						
Plymouth , WA (Benton County)	TBD	Plymouth/TBD (Currently fallow field)	Approx 156 miles East of Portland	BPA 230 kV and 345kv on site	230 kV b/w Big Eddy and McNary; 345 kV b/w McNary and Ross	NW Pipeline Plymouth Meter Station adjacent (26")	Columbia River 1 mile South
	Comments: Unable to locate site large enough to support plant and adequate buffer.						
Goldendale, WA (Klickitat County)	TBD	Goldendale/ Ag	Approx 100 miles East of Portland	BPA 500kv on site	b/w John Day and Hanford	NW Goldendale Compressor Station (2 Miles)	Ground
	Comments: Another CCCT under construction. Open season for expansion of pressure of line closed. Project permitting was aggressively opposed.						

Oregon Area of Focus	MW / Tech	Township Zoning	Physical Attributes				
			Site - General	Electrical	Adjacent Substation	Fuel	Water
Bonanza, OR (Klamath County)	Phase 1 - SC (4) FA=600MW Phase 2 - CC (2) 2 on 1 FA = 1100	Exclusive Farm Use	900 acre barren parcel at the foot of Bryant Mountain. Potential for multiple interconnections	Line Tap (3) 500kV lines – BPA, PGE and PacPower on site	7 miles north of Malin & Capt Jack Substation and the COB Trading Hub	PGT Malin compressor station within 4 miles (42", 36", 12")	Deep isolated well with 7kgpm flow 3.5 miles as the crow flies to site. Was permitted by OWRD as a separate source

Washington Area of Focus	MW / Tech	Township Zoning	Physical Attributes: Site - General	Electrical	Substation	Fuel	Water
	Comments - Flat site, gas supply adequate, At market transmission and permitable water. Best location to date.						
***Malin, OR (Klamath County)**	TBD	AG	Topography of the area very high flowing hill or low marsh. No clear favorable location	Malin Sub BPA, PGE and PacPower. (2) 230kV & (3) 500kV	1 Mile from Malin Substation	PGT lines on site (42"&36")	Groundwater- no public water supply, Bureau of Reclamation has just cut off all surface withdraws.
	Comments: Topography very difficult and high elevation. Will be OK for air dispersion but potential significant visual impacts. Permitting a new water permit or transfer of existing right maybe a fatal flaw. (* Further discussion included in response to question DEIS comment 29E).						
Troutdale, OR (Multnomah County)	TBD	Troutdale/Indust (Alcoa site from 3rd party)	Land is an issue for this area, very few small parcels	Troutdale Sub PAC & BPA	Big Eddy & Ostrander	Williams Reynolds meter station pipeline in vicinity	Columbia River adjacent
	Comments: Site is on the border of Columbia Gorge Scenic Area. Gorge cumulative impact study being conducted by BPA is under way and including the project in that analysis and obtaining an air permit is a potential project fatal flaw.						
Albany, OR (Linn County)	TBD	Albany / Ag (under review)	Between Portland and Eugene	Tap 511 sub PacPower 230 kV and 115 kV sub; 2 x 230 kV; 2 x 115 kV	Albany, Tap 10	Williams meter station (34600 Midway) within one mile	Albany Water Treatment Facility (needs further investigation)
	Comments: Williams natural gas pipeline is a 12 inch distribution line and does not have sufficient capacity or pressure to support a generating facility. Expansion would be necessary.						
Umatilla, OR (Umatilla County)	TBD	Current use Ag	Near Coyote Springs II and Hermiston projects	Line Tap BPA and PacifiCorp 500 kV and 230 kV	McNary	Williams and PGT pipelines in vicinity	Columbia River; needs further investigation
	Comments: Area overbuilt from an electrical interconnection perspective. Ability to obtain or transfer water right from Columbia River highly questionable..						

TABLE 3.3-3
Estimated Water Use and Disposition During Operations

Process Where Flow Starts	Process Receiving Flow	Water System Flows (gpm)*		Final Disposition
		Peak	Average	
Water supply wells	Raw water storage tank	210	115	Storage
Raw water storage tank	Demineralization process	317	130	Land application or evaporation
	HRSG blowdown tanks	100	100	Land application or evaporation
	Evaporative coolers	216	0	Land application or evaporation
	Potable water/sanitary systems	1	1	Septic system
	Service water	5	5	Land application or evaporation
	Fire protection	3,000	N/A	Storage
Reverse osmosis Treatment	Demineralization process	159	65	Demineralized water storage
	Wastewater storage tank	159	65	Land Application evaporation~~, or haul offsite to WWTP~~
Demineralized Process	Water/steam cycle	66	65	Land application or evaporation
	Wastewater collection basin	93	0	Land application or evaporation
Water/steam cycle	HRSG blowdown tanks	23	23	Land application or evaporation
	Evaporation	43	42	Evaporation
Evaporative coolers	Evaporation	108	0	Evaporation
	Wastewater collection basin	108	0	Land application or evaporation
HRSG blowdown tanks	Evaporation	8	8	Evaporation
	Wastewater collection basin	214	214	Land application or evaporation
Wastewater collection basin	Raw water storage tank	115	115	Storage
Stormwater from disturbed areas on Energy Facility site	Stormwater pond	Variable	Variable	Infiltration
	Stormwater infiltration basin	Variable	Variable	
Stormwater run-on from undisturbed areas	Plant stormwater by-pass drainages	Variable	Variable	Existing drainages and West Langell Valley Road drainage ditch

* Rates are for two blocks (1,160 MW) and are with supplemental duct firing.
HRSG = heat recovery steam generator
WWTP = wastewater treatment plant

TABLE 3.3-5
Water Quality Comparison

Parameter	Units	Land Application Water Quality	Lost River (min,max,average[3])	Jan Wright Well (12/18/92)
pH	Standard units	7.5-9.0	7.70, 8.20, 7.92	8.12
Iron	mg/L	0.14	--	0.0235
Copper	mg/L	0.00	--	0.0033
Manganese	mg/L	0.02	--	0.0269
Calcium	mg/L	28.92	--	34.9
Magnesium	mg/L	11.74	--	15.8
Sodium	mg/L	20.12	14.50, 25.50, 20.00	34
Potassium	mg/L	4.22	--	3.03
Boron	mg/L	0.54	--	--
Silica	mg/L	71.12	--	45.2
Chloride	mg/L	4.14	2.40, 7.80, 4.54	3.25
Nitrate as N	mg/L	0.84	0.10, 0.26, 0.18	ND @ 0.007
Nitrite as N	mg/L	0.02	--	--
Ammonia as N	mg/L	0.00	0.02, 0.41, 0.16	--
Sulfate	mg/L	6.29	11, 22.90, 17.56	10.2
Total Alkalinity	mg/L as $CaCO_3$	164.12	100, 130, 116.43	218
Fluoride	mg/L	0.20	--	--
Phosphorous	mg/L	0.05	--	--
Orthophosphate as P	mg/L	0.00	0.25, 1.30, 0.51	ND @ 0.032
Sulfite	mg/L	0.00	--	--
Oil and Grease	mg/L	0.00	--	--
TOC	mg/L	0.00	--	--
TDS [1]	mg/L	203	237, 367, 295[4]	261
TSS	mg/L	0.00	--	--
Phosphonates [2]	mg/L	0.00	--	--
Polyacrylate [2]	mg/L	0.00	--	--
Free Chlorine [2]	mg/L	0.00	--	--

Notes:

[1] Includes treatment chemicals for the steam cycle.

[2] Reverse osmosis (RO) treatment not required, therefore the phosphonates, polyacrylate, and free chlorine are not present.

[3] Data obtained from EPA STORET Database for Lost River Harpold Dam Station, 1968-1975 Irrigation months (June 1-Sept 30).

[4] Calculated from Electrical Conductivity (Snoeyink and Jenkins, 1980 and Van Hoorn and vanAlpen, 1994).

Projected water quality from Burns and McDonnell September 9, 2003, water balance.

$CaCO_3$ = calcium carbonate.

mg/L = milligrams per liter.

ND = nondetect.

TDS = total dissolved solids.

TOC = total organic content.

TSS = total suspended solids.

TABLE 3.4-5
Special-Status Species Potentially Occurring Within the Analysis Area

Species	FWS	BLM	ODFW ODA	ONHP	Habitat Requirements	Potential Occurrence in Analysis Area
Plants						
American pillwort *Pilularia americana*	--	--	--	2	Vernal pools and along the margins of lakes, ponds and reservoirs at elevations below 5,500 feet	Not observed; Some habitat present, known to occur along margins of reservoirs east of analysis area.
Baker's globe mallow *Illiama bakerii*	--	SS	--	1	Chaparral, sagebrush, ponderosa pine and juniper woodland habitats at elevations between 3,000 and 8,500 feet	Not Observed, Suitable habitat present
Bellinger's meadowfoam *Limnanthes floccossa* ssp. *Bellingeriana*	SoC	SS	C	1	Vernal pools, moist meadows and seeps in open pine-oak woodlands at elevations between 900 and 4,000 feet	Not observed; Limited habitat present
Blue-leaved penstemon *Penstemon glaucinus*	SoC	SS	--	1	High elevation lodgepole and white fir forests	No suitable habitat; All known populations occur on 6400 acres of Federal lands managed by the Fremont NF, Winema NF and the BLM.
Columbia yellowcress *Rorippa columbiae*	SoC	SS	C	1	Along streams, lakes, wet meadows and other seasonally saturated areas at elevations between 4,000 and 6,000 feet	Not observed; Suitable habitat present
Creeping woody rock cress *Arabis suffrutescens var horizontalis*	SoC	--	C	1	Sagebrush scrub, Yellow pine forest and red fir forest at elevations less than 5,000 feet	Not observed; Suitable habitat present
Disappearing monkeyflower *Mimulus evanescens*	SoC	SS	C	1	Great basin scrub, lower montane conifer forest, pinyon juniper woodland; gravelly, rocky; vernally moist areas at elevations between 4,000 and 6,000 feet	Not observed; Suitable habitat present
Flaccid sedge *Craex leptalea*	--	TS	--	3	Bogs, fens, marshes, swamps, seeps and wet meadows at elevations less than 2,500 feet	Not observed; Limited habitat present; above known elevation range of species

TABLE 3.4-5
Special-Status Species Potentially Occurring Within the Analysis Area

Species	FWS	BLM	ODFW ODA	ONHP	Habitat Requirements	Potential Occurrence in Analysis Area
Fringed campion *Silene nuda ssp. Insectivora*	--	TS	--	4	Meadows in ponderosa / lodgepole pine forest openings at elevations between 4,000 and 6,000 feet	Meadows in ponderosa / lodgepole pine forest openings
Greene's Mariposa lily *Calachortus greenei*	SoC	SS	C	1	Oak woodland, pinyon juniper woodland, coniferous forest, meadows and seeps, volcanic soil, at elevations between 3,000 and 6,500	Not observed; Suitable habitat present
Green-flowered wild ginger *Asarum wagneri*	--	SS	C	1	Mixed conifer and lodgepole pine forests at elevations ranging from 4,500 to 8,500 feet	Not observed; Limited habitat present
Green-tinged paintbrush *Castilleja chlorotica*	--	SS	--	1	Dry gravelly slopes, and grassy openings in ponderosa pine or lodgepole pine forests at elevations between 5,000 and 8,200 feet	Not observed; Suitable habitat present
Howell's false caraway *Perideridia howellii*	--	TS	--	4	Ponderosa pine, mixed conifer, meadows, along streams and on moist slopes at elevations between 2,000 and 5,000 feet	Not observed; Suitable habitat present
Lady slipper orchid *Cypripedium fasciculatum*	SoC	SMC BS	C	C/1	Open conifer forest at elevations, generally acidic soil, at elevations between 500 and 7,500 feet	Not observed; Limited habitat present
Least phacelia *Phacelia minutissima*	--	--	C	1	Open, ephemerally moist areas in meadows, sagebrush-steppe, lower montane forests and riparian areas at elevations between 4,000 and 8,000 feet	Not observed; Suitable habitat present
Lemmon's catchfly *Silene lemmonii*	--	--	--	3	Oak woodlands and conifer forests at elevations between 2,800 and 9,000 feet	Not observed; Suitable habitat present
Long-bearded Mariposa lily *Calachortus longebarbatus longebarbatus*	--	TS	--	1	Meadows or along the edges of ponderosa pine, lodgepole pine forests and in juniper woodlands at elevations between 4,000 and 6,000 feet	Meadows in ponderosa / lodgepole pine forest openings

TABLE 3.4-5
Special-Status Species Potentially Occurring Within the Analysis Area

Species	FWS	BLM	ODFW ODA	ONHP	Habitat Requirements	Potential Occurrence in Analysis Area
Mountain lady's slipper *Cypripedium montanum*	--	TS SMC		4	Mixed conifer forests and woodlands at elevations ranging from 300 to 6,000 feet	Not observed; Suitable habitat present
Mt. Mazama collomia *Collomia mazama*	--	--	--	1	Alpine meadows and on slopes in association with mixed conifer, true fir and lodgepole pine forests, generally on open or disturbed areas at elevations generally above 5,000 feet	No suitable habitat present
Newberry's gentian *Gentiana newberryi*	--	AS	--	2	Vernally wet to dry, subalpine and alpine meadows, along mountain streams at elevations between 5,000 and 12,000 feet	No suitable habitat present
Playa phacelia *Phacelia inundata*	SoC	--	--	1	Sagebrush scrub, yellow pine forests, alkali sinks and playas, on alkaline soil 4,500 to 6,000 feet.	Not observed; Limited habitat present
Profuse –flowered mensa mint *Pogogyne floribunda*	SoC	SS	--	1	Vernal pools, seasonal lakes and intermittent drainages at elevations between 3,200 and 5,000 feet	Not observed; limited habitat present
Prostrate buckwheat *Erigonum procidum*	SoC	--	C	1	Dry, rocky slopes, and flats within juniper-sagebrush and Jeffery pine woodlands at elevations between 4,000 and 8,500 feet	Not observed; Suitable habitat present
Rafinesque's pondweed *Potamogeton diversifolius*	--	--	--	2	Ponds, streams and reservoirs below 8,000 feet	Not observed; Limited habitat present
Red-root yampah *Perideridia erythrorhiza*	SoC	--	C	1	Meadows, pastures, and open areas in pine-oak woodlands at elevations less than 5,000 feet	Not observed; Suitable habitat present
Salt heliotrope *Heliotropum curvassavicum*	--	TS	--	3	Many different plant communities at elevations less than 7,000 feet, but is generally associated with saline soil	Not observed; Suitable habitat present

TABLE 3.4-5
Special-Status Species Potentially Occurring Within the Analysis Area

Species	FWS	BLM	ODFW ODA	ONHP	Habitat Requirements	Potential Occurrence in Analysis Area
Shockley's ivisia *Ivesia shockleyi*	--	--	--	2	Open gravelly, rocky areas associated with subalpine fir and pine forests, at elevations between 9,000 and 13,000 feet	No suitable habitat present
Short-podded thelypody *Thelypodium brachycarpum*	--	AS	--	2	Irrigated pasture, sagebrush shrub, pond and stream edges; adjacent to ponderosa pine forests; alkali soil at elevations between 3,000 and 6,500 feet	Not observed; Suitable habitat present
Slender bulrush *Scirpus heterochaetus*	--	TS	--	3	Marshes, swamps and around lake edges, in lower montane conifer forests at elevations around 5,000 feet	Not observed; Limited habitat present
Tricolor monkeyflower *Mimulus tricolor*	--	--	--	2	Moist flats on wet clay soil and in vernal pools within woodlands and grasslands, at elevations less than 5,000 feet	Not observed; Limited habitat present
Warner Mountain bedstraw *Gallium serpenticum* var. *warnerense*	--	--	--	2	Meadows and seeps, pinyon / juniper woodland, conifer forest and rocky talus at elevations between 4,500 and 9,000 feet	Not observed; Suitable habitat present

TABLE 3.4-5
Special-Status Species Potentially Occurring Within the Analysis Area

Species	FWS	BLM	ODFW ODA	ONHP	Habitat Requirements	Potential Occurrence in Analysis Area

United States Fish and Wildlife Service (FWS)
SoC Federal Species of Concern

Bureau of Land Management, Klamath Falls Resource Area Special Status Species (BLM)
TS - Bureau Tracking Species
AS - Bureau Assessment Species
SS - Bureau Sensitive Species
SMA Survey and Manage Category A Species
SMB Survey and Manage Category B Species
SMC Survey and Manage Category C Species

Oregon Department of Fish and Wildlife (ODFW) / Oregon Department of Agriculture (ODA)

C	Candidate for state listing as threatened or endangered
V	Vulnerable species for which listing as threatened or endangered is not believed to be imminent
U	Undetermined status; more information is needed to determine the conservation status of the species
P	Peripheral or naturally rare species, species on the edge of their natural range in Oregon, or have naturally low populations within the state

Oregon Natural Heritage Program (ONHP)

1	Taxa that are threatened or endangered throughout their range
2	Taxa that are threatened or endangered in Oregon, but more secure elsewhere
3	Review list, taxa for which more information is needed to determine the conservation status
4	Species that are of conservation concern, but are not currently threatened or endangered

TABLE 3.6-4
Estimated Truck Traffic at the Energy Facility During Operation

Delivery Type	Number and Occurrence of Trucks
Aqueous ammonia	2 per week
Condensed polisher waste	1 per month
Cleaning chemicals	1 per month
Trash pickup	1 per week
Sanitary waste	1 per year
~~Wastewater transport*~~	~~5 to 9 per day~~

~~* Applies only if storage and haul to wastewater treatment plant (WWTP) option is selected.~~

TABLE 3.6.5
Existing and Future Peak-Hour Traffic Volumes and LOS with and without Energy Facility Impacts

	2000 Existing PM Peak		2004 PM Peak *without* Energy Facility		2004 PM Peak *with* Energy Facility	
	Traffic Volumes	**LOS**	**Traffic Volumes**	**LOS**	**Traffic Volumes~~*~~**	**LOS**
West Langell Valley Road (south of Harpold Road)	40	A	45	A	65~~/83~~	A
Harpold Road (north of West Langell Valley Road)	40	A	45	A	65~~/83~~	A
Harpold Road (south of West Langell Valley Road)	40	A	45	A	65~~/65~~	A
East Langell Valley Road	40	A	45	A	65~~/65~~	A
OR 50 (east of Harpold Road)	150	A	165	A	185~~/185~~	A
OR 50 (west of Harpold Road)	150	A	165	A	185~~/185~~	A
OR 70 (east of Harpold Road/Carol Avenue)	190	A	210	A	230~~/230~~	A
OR 70 (west of Harpold Road)	90	A	100	A	120~~/138~~	A
OR 140 (east of OR 70)	310	B	342	B	360~~/360~~	B
OR 140 (west of OR 70)	330	B	365	B	385~~/403~~	B

~~* 65/83: Traffic volume without process wastewater truck trips/traffic volume with process wastewater truck trips.~~

LOS = level of service
Estimated 1 percent growth factor for 2004.
Source: Oregon Department of Transportation

TABLE 3.8-1
Resources Identified as Scenic or Aesthetic

Resource	Jurisdiction	Applicable Plan Designation	Approximate Distance from Energy Facility (miles)	Approximate Distance from Southernmost Transmission Towers (miles)	Line of Sight to Stacks or Transmission Towers? (N = no, Y = yes)
Lava Beds National Monument	National Park Service	No scenic designation	22	17	N, Y
Sycan National Wild and Scenic River	USFS/Fremont and Winema NF	Wild and Scenic River	21	21	N, N
North Fork Sprague River (Wild and Scenic River)	USFS/Fremont and Winema NF	Wild and Scenic River, Scenic and Recreational Area	27	27	N, N
OC&E Woods Line State Trail	OPRD	Rails to Trails route, no scenic designation	9	8	Y, Y
Bloody Point	Modoc County	Historic Site with vista point	14	9	N, Y
Petroglyphs	Modoc County	Historic Site with vista point	22	16	N, Y
Battle of Scorpion Point	Modoc County	Historic Site with vista point	24	19	N, Y
Volcanic Legacy Scenic Byway (US 97 in Oregon)	ODOT/Klamath County	National Scenic Byway	21	20	Y, Y
US 97	Caltrans	Eligible Scenic Highway	21	20	N, N
SR 161	Caltrans	Eligible Scenic Highway	14	9	N, Y
SR139	Caltrans	Eligible Scenic Highway	14	9	N, Y
Modoc Volcanic Scenic Byway	USFS, Modoc County	National Scenic Byway	15	10	N, Y
Bear Valley National Wildlife Refuge Observation Area	USFWS	Wildlife observation, no scenic designation	28	25	N, N
Lower Klamath National Wildlife Refuge Wildlife Overlook	USFWS	Wildlife observation, no scenic designation	19	15	N, Y
Tulelake National Wildlife Refuge Wildlife Overlook	USFWS	Wildlife observation, no scenic designation	17	11	N, Y
Klamath Wildlife Refuge	ODFW	State Wildlife Refuge, no scenic designation	22	20	N, N
Miller Creek ACEC	BLM, Klamath Falls	BLM Area of Critical Environmental Concern with scenic value	10	10	Y, Y
Alkali Lake	BLM, Klamath Falls		4	8	Y,Y
Yainax Butte	BLM, Klamath Falls	BLM Special Area	12	17	Y,Y
Bumpheads Special Area	BLM, Klamath Falls	BLM Special Botanical/ Habitat Area with scenic value	15	15	N, N

BLM = Bureau of Land Management
NF = National Forest
ODFW = Oregon Department of Fish and Wildlife
ODOT = Oregon Department of Transportation
OPRD = Oregon Parks and Recreation Department
OSU = Oregon State University
USFS = U.S. Forest Service
USFWS = U.S. Fish and Wildlife Service

PART 3

Additional and Revised Figures

Part 3 Additional and Revised Figures

2-3 Other Potential Sites and Vicinities for Development [*additional figure*]
2-4 Typical Transmission Tower Structure [*DEIS Figure 2-3*]
2-5 Typical Water Supply Pipeline Configuration [*DEIS Figure 2-4*]
2-6 City of Malin Visual Resource Map [*additional figure*]

Pacific Ocean

Seattle Metro Area

Frederickson

Spokane

Washington

Montana

Plymouth

Sunnyside East

Sunnyside West

Patterson

Goldendale

Dallesport

Umatilla

Troutdale

Portland Metro Area

Salem

Albany

Eugene

Oregon

Idaho

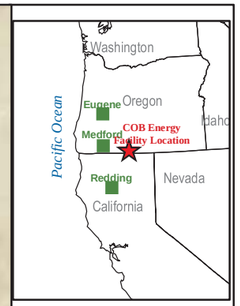
Klamath Falls

Bonanza

Malin

California

Nevada



Legend

- Other Potential Sites and Vicinities for Development
- Cities
- States

N

0 25 50 Miles

Figure 2-3
Other Potential Sites and Vicinities for Development
COB Energy Facility
Bonanza, OR

CH2MHILL

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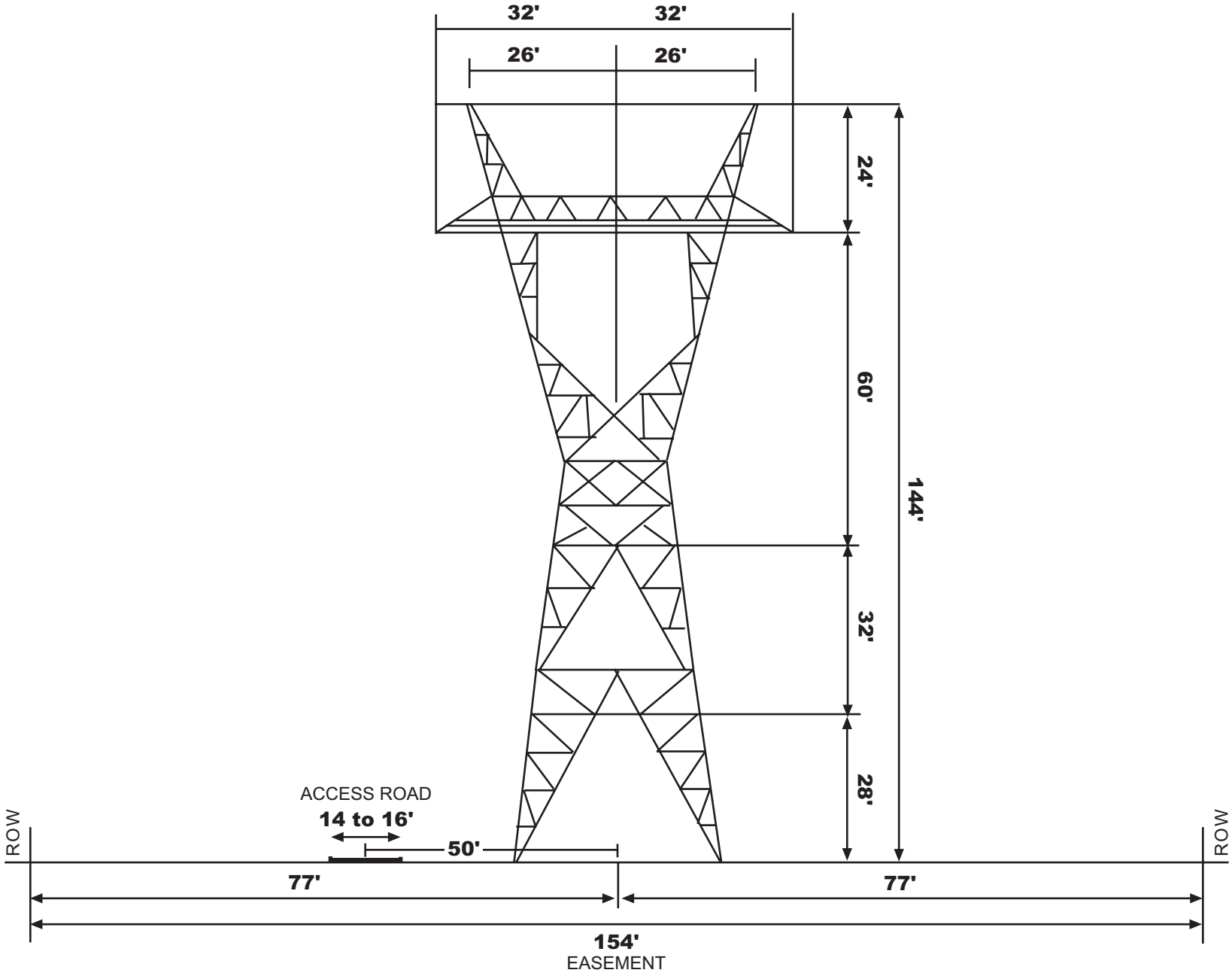

NOTES:

1. TRANSMISSION TOWER IS LATTICE.
2. CONDUCTORS COULD BE HORIZONTAL OR VERTICAL.
3. ACCESS ROAD MAXIMUM GRADE IS LESS THAN 15 PERCENT.

Figure 2-4
Typical Transmission Tower Structure
COB Energy Facility
Bonanza, OR

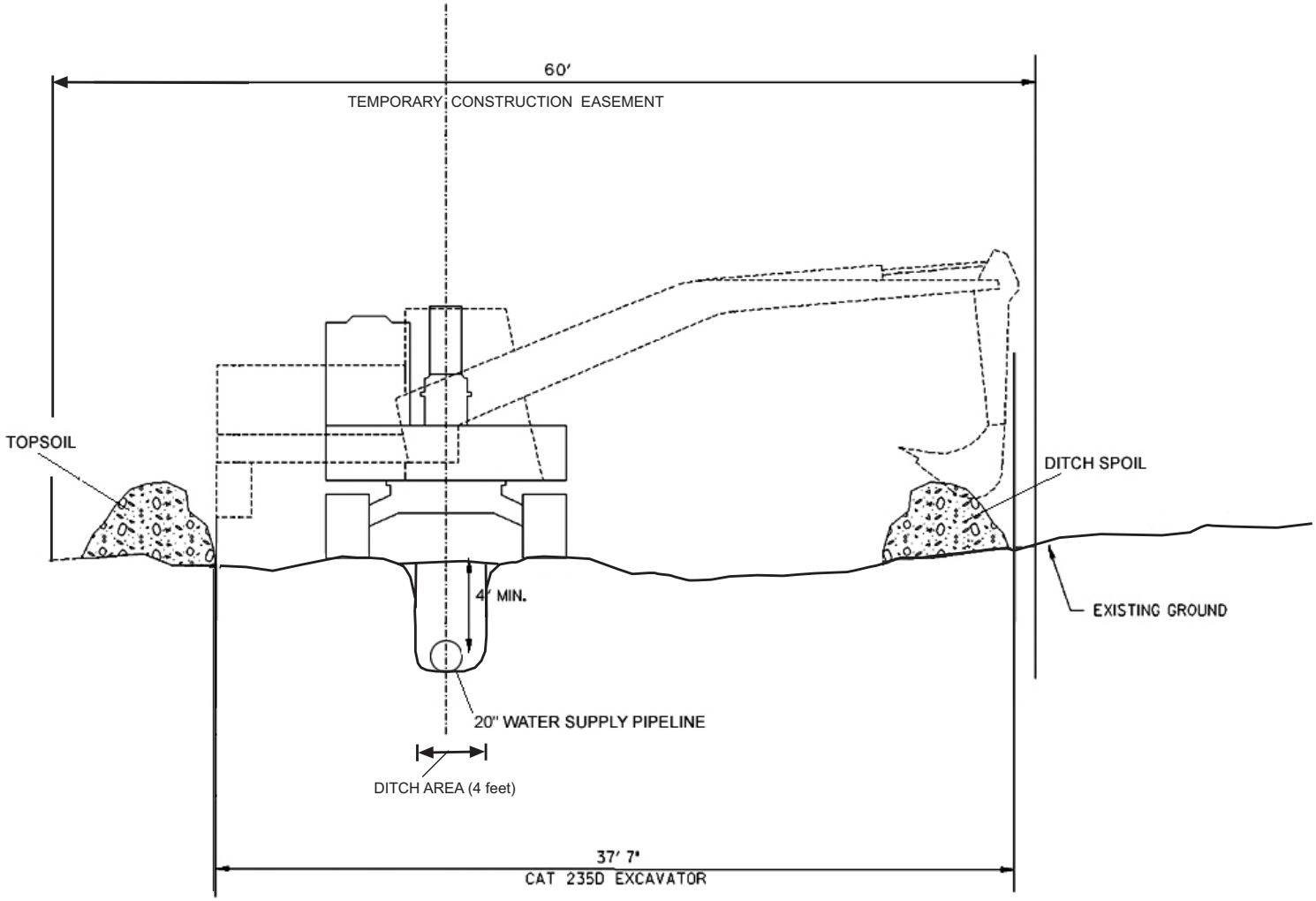

Figure 2-5
Typical Water Supply Pipeline Configuration
Biological Assessment
COB Energy Facility
Bonanza, OR

Captain Jack Substation

Malin

TULE LAKE VALLEY

Pacific Ocean

Washington

Oregon

Eugene

Medford

COB Energy Facility Location

Redding

California

Nevada

Idaho

Legend

- Structures
- Captain Jack Substation
- Counties
- Visual Resources - Class 4
- Cities
- BLM-Managed Land
- Bryant Mountain Proposed Trailhead and Primitive Camping Areas Managed by BLM

Source: USGS National Elevation Dataset; 30-meter grid size/BLM/ Forest Service/ESRI/Klamath, Lake, Modoc and Siskiyou Counties

N

0 1,500 3,000 Feet

Figure 2-6
City of Malin Visual Resource Map
COB Energy Facility
Bonanza, OR

CH2MHILL

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PART 4

Chapter 2 Updates

CHAPTER 2

Proposed Action and Alternatives

2.1 Introduction

This section contains a description of the Proposed Action and alternatives to the Proposed Action. Section 2.2 describes the ~~project proponent's~~ site selection process used by the project proponent in considering options for siting its proposed energy facility and ancillary facilities. Section 2.3 describes the Proposed Action, ~~other potential~~ alternatives ~~sites considered, site-specific and technologic alternatives, and the two alternatives~~ being which is considered in detail in this FEIS. Section 2.4 describes ~~:~~ the ~~Proposed Action and~~ No Action alternative, which is also considered in detail in this FEIS. Other alternatives, including alternatives considered but eliminated from detailed analysis in this FEIS, are described in Section 2.5. Section 2.6 describes other projects in the project vicinity that could potentially contribute to cumulative impacts.

2.2 Site Selection

2.2.1 Alternative Energy Facility Sites

Selection of an energy facility site is typically based on a common set of factors or criteria, such as the degree of risk in obtaining regulatory approval, the availability of natural gas and water to operate the facility, cost associated with upgrading natural gas supply and impacts to the grid to interconnect and operate the facility; and access to electric transmission system facilities to export power onto an electric system grid. In the energy development industry, no set threshold exists for determining whether a site is "acceptable" or "not acceptable" because the degree of acceptable risk and cost will vary from company to company.

Described below are criteria considered in selecting the COB Energy Facility. Additional information concerning other potential sites and vicinities is provided in Section 2.5.

2.2.2 Infrastructure

A potential site must be within a reasonable distance of the infrastructure needed to construct and operate a gas-fired power project. This includes the following:

- Transportation: The potential site should be located near a railroad (siding) and roads with the load capacity to accommodate heavy loads. During construction, heavy equipment and materiel should be brought as close to the site as possible via rail and then moved to the potential site by road. In addition, adequate roads are necessary to transport construction workers to the site. During operation, heavy trucks will deliver supplies to the ~~facility~~Facility, and a small operational crew will work at the site. The farther away from rail access and an adequate road network a site is, the higher

construction costs, acquisition of more land or rights-of-way,~~,~~ and greater probability of significant environmental impacts.

- Transmission Interconnection: The potential site should be located near a major electric transmission line or substation that can accommodate the proposed ~~power plant~~Energy Facility capacity and not impede the integrity of the power grid. A power plant must be able to interconnect with electric transmission facilities (electric transmission lines or substations) in order to move the power to market. If the potential site is not reasonably close to electric transmission facilities that can accommodate the load, it is neither economical nor practical to construct the project at that site. The size (in kV) of the electric transmission line, capacity (availability to carry additional electrical load), and distance from the generation source are key considerations. If the size or capacity of an existing electric transmission line is insufficient, the existing electric transmission lines would need to be upgraded or a new electric transmission line constructed so that the load could be accommodated. If a new electric transmission line must be constructed to make an interconnection or to support an interconnection, construction costs will be increased, more land or rights-of-way acquired, and, depending upon local land and environmental attributes, a greater probability environmental impacts may be expected. Similarly, the capacity of an existing substation to accommodate increased load is important. Existing substations lacking in capacity or space for expansion would require costly upgrades to accommodate power generated from the new ~~power plant~~Energy Facility.

- To meet transmission objectives, an ideal energy generation site is strategically located along a major electrical transmission line through which the plant can provide maximum market response to regional power demands, at a "trading hub" location on the power grid having sufficient transmission and substation capacity to meet this objective. The primary purpose and need for the COB ~~facility~~Energy Facility's meeting market conditions are provided at the location near the Captain Jack Substation (see ~~Applicant's~~project proponent's Purpose and Need Statement, Section 1.2).

- Natural Gas Transmission: The potential site should be located near a major natural gas pipeline that has capacity to supply natural gas to the ~~power plant~~Energy Facility. Key issues on siting near a natural gas pipeline include sufficient capacity (size of pipeline), availability (amount of capacity already committed), pipeline pressure, and distance to the ~~power plant~~Energy Facility. Potentially cost-prohibitive upgrades may be required for a natural gas pipeline that does not have adequate capacity or pressure. If pipeline pressure is insufficient, a compression can be added, but this increases project costs as well as the probability of significant adverse environmental impacts.

- Water: Gas-fired, combined-cycle power plants require a source of water, but the amount of water can vary significantly depending on the cooling option selected (water or air). In most gas-fired power plants, process wastewater is also discharged. Power projects proposed for unincorporated areas can use either surface water or ground water. The source must be proven, in sufficient quantity, and reliable. Depending upon the chosen design, the surrounding land area must be capable of managing and/or disposing of stormwater and noncontact process water without probable significant adverse impacts to surface and groundwater resources.

2.2.3 Construction Feasibility

Site Size: A potential site must be able to accommodate the power plant dimensions, including the availability of construction laydown and staging areas during the construction phases of the project. The site size can vary depending on the power block, cooling-option, and ancillary requirements, such as wastewater treatment, equipment storage, and security and fire access perimeter.

Topography: To the degree possible, a potential site should be level to minimize the amount of cutting and filling. The more site-preparation work needed, the more costly and difficult will be the construction. In addition, usually there is a greater probability of significant adverse environmental impacts associated with project sites that require significant modification.

Geotechnical: In siting power projects, soil conditions and seismic considerations are important factors. Unstable soils require significant and costly foundations that raise overall project costs, insurance costs, and overall risk factors. Seismic concerns are related to known faults and liquefaction.

Flooding: Potential sites subject to flooding are normally eliminated from further consideration.

2.2.4 Environmental/Land Use/Community/Acceptance

Environment: The potential site should be capable of development as an energy facility such that, to the degree possible, environmental impacts can be minimized or will be capable of mitigation. Key environmental considerations include:

- Air quality - A potential site should be in an attainment area; if not, there should be credits or other mitigation available to offset impacts. The project should avoid significant impacts on Class I areas. Significant impacts could lead to the denial of project permits or severely limit project operations.
- Wetlands and other Water Bodies - A potential site should avoid or have minimal impacts on wetlands or other surface waters, including streams. Impacts on wetlands and streams often require local, state, and Federal project approvals and could lead to a denial of siting the project at the selected location.
- Threatened or endangered species - A potential site should avoid impacts to threatened or endangered species or their habitat. Although in some cases impacts (taking) are allowed, it is a costly and often contentious process to complete with long-term monitoring. Potential impacts could result in denial of permits to construct the project.
- Visibility/aesthetics – If possible, a potential site should be located to minimize its visibility to residents and areas of recreation (e.g., parks, campgrounds, etc.).
- Cultural resources – A potential site should avoid disturbance of cultural resources.
- Water - Impacts on water, either from the use of or discharge to, can result in costly project engineering, construction, and operation. Although most potential impacts can be overcome with engineering and technology, the overall cost could make the project uneconomical.

- Land Use: The potential site should be located in an area compatible with local comprehensive planning guidelines and documents and zoned for the proposed activity. Although the land use laws and regulations may be changed over time to allow the construction of the project, significant uncertainty concerning whether a power plant is an allowed use or not undermines project feasibility; and even if permitted, a project could be saddled with costly construction and operational limitations and mitigation.
- Community Acceptance: To the degree possible, the construction and operation of a power plant should be an accepted and welcome addition to the local community, bringing economic gain. Generally, the greater the degree that all other siting considerations can be met, the higher the community acceptance.

~~No Action~~

~~In the No Action Alternative, BPA would decide not to provide the requested connection to the regional power grid or BLM would decide not to provide an easement for construction of an electric transmission line across Federal lands. Without these approvals, the proposed Energy Facility would not be feasible. Thus, in the No Action Alternative the proposed Energy Facility would not be built.~~

2.3 Proposed Action

In the proposed action, BPA would provide an interconnection to the regional power grid, and BLM would grant an easement allowing the power line to be built on Federal lands. The Energy Facility would be built and operated by the project proponent. ~~It~~ The Energy Facility would consist of a 1,160-MW, natural gas-fired, combined-cycle power generation plant. Based on the conditions of the electric power market, the project proponent may decide to construct the ~~facility~~ Facility in one or two phases.

A new electric transmission line~~,~~ approximately 7.2 miles in length~~,~~ would be built by the project proponent and would deliver electric power from the Energy Facility to the regional power grid at BPA's Captain Jack Substation. Figure 2-1 shows t~~T~~he locations of the Energy Facility and its related or supporting facilities~~ are shown in Figure 2-1, and~~ Figure 2-2 shows the BLM-~~owned~~managed parcels.

The proposed Energy Facility would be fueled by natural gas from the existing ~~PG&E~~ Gas Transmission Northwest (~~PG&E~~ GTN) pipeline. The fuel would be ~~and~~ delivered through an approximately 4.1-mile, ~~approximately~~ 20-inch-diameter, natural gas pipeline that would be constructed from the GTN Bonanza Compressor Station along the rights-of-way of existing Klamath County roads. ~~The natural gas pipeline is expected to be 20 inches in diameter.~~

~~Water would be needed by t~~The proposed Energy Facility would need water to generate steam for the combined-cycle operation. Water would also be needed ~~, and~~ for demineralized water production, potable water and sanitary systems, and service water. The water ~~–~~supply well system would consist of an existing well and two additional water supply wells. The water supply well system would be configured and constructed to withdraw water only from the deep zone aquifer and would be isolated from the shallow

zone aquifer and surface water. The existing well, ~~known as~~ the Babson well, was originally drilled to depths exceeding 5,000 feet for oil and gas exploration in the 1920s and has partial obstructions at depths of 1,870 and 2,050 feet. The Babson well would be sealed through the shallow zone aquifer and ~~through~~ approximately 1,100 feet of nonbearing rock to approximately 1,500 feet below the ground surface (bgs). No other Langell Valley area wells or water rights in the deep aquifer system are known to exist. Two additional water supply wells would be drilled to a depth of approximately 2,000 feet bgs.

Once withdrawn, the water would be pumped through a 2.8-mile water supply pipeline to a raw water storage tank located at the Energy Facility site. Under average annual ambient conditions with supplemental duct firing, the Energy Facility would discharge approximately 22 gallons per minute (gpm) of process wastewater. ~~would be discharged by the Energy Facility. Three~~ Two alternatives for disposal of the process wastewater are proposed: 1) beneficial use of the water for irrigated pasture, or 2) evaporation in an onsite, lined evaporation pond~~, or 3) temporary storage onsite and hauling to an offsite wastewater treatment plant (WWTP) for disposal~~.

The principal components of the proposed action are as follows:

- A new ~~,~~ 1,160-MW, air-cooled, natural gas-fired, combined-cycle electric power generation plant located near Bonanza, Oregon, on 50.6 acres of land
- A new ~~,~~ 7.2-mile, electric transmission line to deliver electricity from the proposed Energy Facility to BPA's Captain Jack Substation
- A new ~~,~~ 4.1-mile, natural gas pipeline to deliver fuel to the proposed Energy Facility site
- A water~~-~~ supply well system consisting of an existing well and two additional water supply wells
- A 2.8-mile ~~,~~ water~~-~~ supply pipeline between the water supply wells and the Energy Facility
- A 31-acre ~~,~~ irrigated, pasture area for beneficial use of process wastewater. Process wastewater would be delivered via a 3,770-foot irrigation pipeline.
- A 20-acre evaporation pond if process wastewater is managed by an onsite, lined evaporation pond
- A 4.7-acre ~~,~~ stormwater infiltration basin
- A 1.5-acre ~~,~~ stormwater pond

Each of these components is described in greater detail in the next subsections. Table 2-1 ~~shows a , and a comparison of~~compares project impacts and specifies mitigation measures ~~is shown in Table 2-1~~. Table 2-1 includes many of the terms and conditions in the proposed order (PO) issued by the Oregon Department of Energy on March 16, 2004.

2.3.1 Electric Power Generation Facility

2.3.1.1 Site Location

The proposed Energy Facility site is located 3 miles south of Bonanza, Oregon, on the east side of West Langell Valley Road No. 520 in Klamath County. Access to the site would be from Langell Valley Road No. 520 (see Figures 2-1, Site Map, and 2-2, Facility Map). The Energy Facility site is located on 50.6 acres of property totaling 749 acres in Sections 22, 23, 25, and 26 of Township 39 South, Range 11 East. The property, ~~is~~ currently undeveloped, ~~and~~ has historically been used for agricultural activities as described below. Figure 2-2 shows BLM-owned parcels.

Specific criteria are considered to determine the location when siting a combined-cycle power plant such as the proposed Facility. Key criteria include proximity to transmission, fuel supply, and water supply. Additional criteria include site size, topography, geotechnical issues, flooding potential, transportation, environmental impacts, and nearby residences.

The project location selected for the proposed Facility had the highest potential for meeting these criteria, as described in the following list:

- **Electric transmission interconnect**. The Energy Facility site would connect to the existing BPA Captain Jack Substation, which is part of the California - Oregon Intertie~~, known as the "Super Highway Crossroads" of Energy for the Pacific Northwest and California~~ and near the California-Oregon border trading hub (geographic location where multiple participants trade power), one of three key power marketing price reference points in the West.
- **Fuel supply**. The ~~PG&E~~ GTN Bonanza Compressor Station is located 4.3 miles from the Energy Facility site.
- **Water supply**. The Energy Facility would use water from a deep aquifer with no demonstrated connection to the shallow water system.
- **Site size**. The land area fits the proposed Energy Facility dimensions, including construction laydown areas needed during the building process.
- **Topography**. The topography would allow sufficient cut and fill for a level Energy Facility site.
- **Geotechnical**. The soil is expected to be suitable, with sufficient stability and low potential for liquefaction.
- **Flooding potential**. The Federal Emergency Management Agency (FEMA) flood insurance rate map for the proposed Facility (panel number 410109 1250B) shows minimal flooding potential.
- **Transportation.** The Energy Facility site is located approximately 7 miles from the city of Malin, which has suitable rail for the construction and support of the proposed Facility.
- **Environment.** Generally speaking, t~~T~~he proposed project would have no significant adverse effect on the environment with the implementation of mitigation measures.

Mitigation and habitat improvement practices and measures that would be employed are described in more detail in the EIS and a Habitat Mitigation and Natural Area Revegetation Plan (the Revegetation Plan) that is part of the Biological Assessment (BA) (Appendix C to the EIS). Impacts that cannot be avoided (including those that are reduced in their level of significance, but remain unavoidable impacts of the proposed project) are disclosed in Section 3.1.3 of this EIS~~, Section 3.1.3~~.

- **Nearby ~~R~~residents.** The closest resident to the proposed Energy Facility site is located approximately 5,700 feet northwest of the Energy Facility. However, because of topography, this resident would not be able to view the Energy Facility. ~~because of topography.~~ The closest resident to the Energy Facility with an unobstructed view is located approximately 6,700 feet southeast of the Energy Facility. The closest resident to the electric transmission line is located approximately 3,000 feet east of the electric transmission line. The closest resident to the water supply wells is located approximately 3,500 feet southwest of the water supply well site.

~~Eleven alternative~~The project proponent identified 11 other potential sites or vicinities in Oregon and Washington (see Figure 2-3~~___~~) ~~were identified by the project proponent~~ as having development potential. None of these ~~alternative~~ sites successfully met the criteria identified above, and none of the sites met the proponent's fundamental purpose and need for the generation facility.

2.3.1.2 Power Generation Facilities

The proposed Energy Facility would consist of four General Electric (GE) model 7FA (or equivalent) combustion turbine generators (CTGs), four, three-pressure heat recovery steam generators (HRSGs), and two steam turbines. The Energy Facility would be fueled by natural gas used in the combustion turbines. Expanding gases from combustion would turn rotors within the turbines that are connected to electric generators. The hot gases exhausted from the combustion turbines would be used to produce steam in the HRSGs. The steam from two HRSGs would then be expanded through a steam turbine that drives its own electric generator, thus creating additional electrical energy. Spent steam from the HRSGs would be condensed and routed to the air-cooled condensers. Steam from the exhaust of the steam turbine generator (STG) would be condensed in a surface condenser, with the condensate routed back to the HRSGs as boiler feedwater to complete the closed steam cycle.

The CTGs and HRSGs would be outdoor units with thermal insulation and acoustical attenuation. To increase steam-generating capacity, a duct burner system would be included in each HRSG. The duct burner would be single-fuel, using natural gas only. The duct burner would increase both the steam generated in the HRSGs and the CTG electrical output. Additional equipment dedicated to each power block would include surface condensers, air-cooled condensers, generator step-up transformers, electrical distribution gear, and associated ancillary equipment.

2.3.1.3 Site Facilities

Access to the site would be from West Langell Valley Road No. 520. In addition to the combustion turbines, steam turbines, and air-cooled condensers, the site would include a laydown and storage area, administrative/control room building, warehouse/maintenance

building, water treatment facilities, raw water and demineralized water storage tanks, process wastewater storage tanks, stormwater pond, septic tank/leach field, and switchyard. If the onsite evaporation pond is used for process wastewater management, the process wastewater tanks would not be required.

The following are the approximate dimensions of major Energy Facility structures and visible features:

- Power generation equipment and systems: approximately 12 acres by 54 feet tall
- Stacks: approximately 150 to 200 feet tall
- Air-cooled condensers: approximately 4.3 acres and 125 feet tall
- Raw water storage tank: 113 feet in diameter and 40 feet tall
- Laydown and storage area: approximately 6.3 acres
- Administration/control room building: approximately 0.2 acre by 22 feet tall
- Warehouse/maintenance building: approximately 0.2 acre by 22 feet tall
- Water treatment facilities
  - Water treatment building—approximately 0.2 acre by 22 feet tall
  - Demineralized water storage tank—approximately 37 feet in diameter by 40 feet tall
- Wastewater alternatives
  - Beneficial use of the water for irrigated pasture: approximately 31 acres, with ~~and~~ two wastewater storage tanks 100 feet in diameter by~~and~~ 40 feet tall
  - Lined evaporation pond alternative: approximately 20 acres with 7-MG storage capacity

  ~~Temporarily storing onsite and hauling to an offsite WWTP for disposal: two wastewater storage tanks 100 feet in diameter and 40 feet tall~~
- Stormwater pond: approximately 1.5 acres
- Stormwater infiltration basin: approximately 4.7 acres
- Septic tank/leach field: less than 1 acre

2.3.1.4 Water Supply

The Energy Facility would use water from a deep aquifer system intercepted by an existing well known as the Babson well. (No other Langell Valley area wells or water rights in the deep aquifer system are known to exist.) A well system consisting of the Babson well and two additional water supply wells would be used to withdraw water from the deep zone aquifer. The water withdrawal would be subject to a water right permit issued by the state of Oregon.

The two additional water supply wells are necessary for back-up to ensure reliability of the water supply to the Energy Facility. Whether the Energy Facility is constructed in phases, the water well supply system will be constructed at one time. The two additional water supply wells would be located in close proximity to the existing well.

During operations, the primary uses of water at the proposed Energy Facility would be for steam generation, demineralized water production, potable water and sanitary systems, and service water. Water also would be available for fire suppression. During construction, water would be used for dust suppression, compaction, vehicle and equipment cleanup, and miscellaneous construction-related uses. Drinking water for construction workers would be bottled water or other potable water trucked to the Energy Facility.

When operating, water use in the Energy Facility would vary daily and seasonally in response to fluctuating electricity demand and weather conditions. As a result, actual daily water use at the Energy Facility is estimated to vary from 0 ~~gallons per minute (~~gpm~~)~~ when the Energy Facility is offline up to a maximum of 210 gpm (0.30 mgd or 0.92 ac-ft/day or 0.47 cfs). For average annual conditions with duct firing, it is anticipated that the average withdrawal rate from the water supply wells would be approximately 72 gpm (0.10 mgd or 0.31 ac-ft/day or 0.16 cfs). In addition, 90 gpm (0.13 mgd or 0.40 ac-ft/day or 0.16 cfs) would be required to irrigate up to 16 acres of land between March 1 and October 31 of each year.

Water from the water supply well system would be pumped through a 2.8-mile, 6-inch-diameter water supply pipeline to a 3.0-MG raw water storage tank at the Energy Facility.

2.3.1.5 Fuel and Chemical Storage Facilities

Construction. During construction, fuels and chemicals anticipated to be used include diesel fuel, gasoline, lubricants and oils, solvents, paints, ethylene diamine triacetic acid (EDTA), and surfactant. The diesel fuel and gasoline would be stored in aboveground storage tanks that would be located within secondary containment. The chemicals would be stored in drums and containers located inside construction storage trailers. Spill kits with absorbent materials would be available in the event of a spill of hazardous chemicals.

Operation. Natural gas would be delivered from the existing ~~PG&E~~ GTN pipeline system through a 4.1-mile, natural gas pipeline constructed from the Bonanza Compressor Station along the rights-of-way ~~(ROW)~~ of existing Klamath County roads. Natural gas would not be stored onsite.

There would be diesel fuel storage for the fire water pump at the Energy Facility and for the back-up generators at the water supply well system. The diesel fuel storage capacity would be approximately 100 gallons and 4,300 gallons (two tanks each with a capacity of approximately 2,150 gallons) for the fire water pump and back-up generators, respectively. Diesel fuel would be purchased from fuel distributors. Vehicles used would be fueled and serviced offsite. No storage of fuels or lubricants for vehicles would be necessary onsite.

Lubricants and oils for the generators, turbines, transformers, and miscellaneous electrical equipment would be stored in drums and containers. The lubricants and oil would be stored indoors and within appropriate containment areas.

Water treatment chemicals would be stored in aboveground storage tanks or portable plastic tanks (totes). The water treatment chemicals include sulfuric acid, sodium hydroxide,

EDTA, hydrazine, ammonia hydroxide, sodium hypochlorite, sodium bisulfite, sodium metabisulfite, sodium nitrite, organic phosphate, sodium phosphate, lime, soda ash, magnesium chloride, polymers, filter acid, and iron chloride. Cleaning fluids and detergents would be used for periodic cleaning of the combustion turbine blades. The chemicals would be stored in totes or aboveground storage tanks situated in the appropriate containment areas designed to hold the volume of the liquids stored plus freeboard, according to applicable regulations and best management practices (BMPs).

Aqueous ammonia would be stored in a 30,000-gallon, aboveground storage tank. The tank would be contained within a bermed area and would be designed in accordance with applicable industry specifications. The tank would be equipped with a level gauge and would be monitored from the control room. The area for delivery of aqueous ammonia to the storage tank also would be bermed.

2.3.1.6 Laydown and Storage Areas

The proposed Energy Facility would have a 71.0-acre, construction parking lot and laydown areas for pipe, tool, and material storage, and trailers. During the life of the Energy Facility, major maintenance and construction projects would require a storage and work area. In addition, large items would require outdoor storage. An approximately 6-acre laydown and storage area would be part of the 50.6-acre Energy Facility site.

2.3.1.7 Fire Prevention and Control

Systems for fire prevention, detection, and control would be installed at the proposed Energy Facility. The systems would be installed in the buildings and yard areas as required by the National Fire Protection Association (NFPA) and the Facility insurer. The systems would be designed to meet local, state, and NFPA standards.

The main fire protection system would include a dedicated water storage system, hose stations, and fire pumps. Water would be supplied by the deep aquifer well system described in Section 2.3.4. A portion of the 325,000-gallon, demineralized water storage tank would be dedicated to the fire protection system.

The fire detection system would continuously monitor the Energy Facility, provide indication of the location of fires, warn the Energy Facility personnel, and activate the fire protection system. The combustion turbine enclosures would include carbon dioxide fire-extinguishing systems.

Smoke detectors, heat detectors, manual alarm stations, and indicating devices would be installed throughout the Energy Facility. Portable fire extinguishers would be placed at key locations.

2.3.1.8 Wastewater Management, Beneficial Use, and Disposal

Construction. Wastewater would be generated during construction and testing/ commissioning of the Energy Facility from washdown of concrete trucks after concrete loads have been emptied; washing of exteriors of construction equipment and vehicles to remove accumulated dirt; rinsing of the water systems; and hydrostatic testing of the natural gas and water supply pipelines. Wastewater from concrete truck washdown and cleaning of construction equipment would be managed so that there would be no discharge

offsite or discharge to surface waters. Wastewater from the flushing and hydrostatic testing (testing and commissioning wastewater) is estimated to be 6.5 MG. Hydrostatic testing and flushing would be performed sequentially with water filtered between steps so that water can be reused and recycled to the extent possible. During construction and testing/ commissioning, portable toilets would be provided for onsite sewage handling and would be pumped out and cleaned regularly by a qualified contractor.

Operation. The proposed Energy Facility would use water primarily for steam generation, demineralized water production, potable water and sanitary systems, and service water. Water also would be available for fire suppression. Process wastewater from the Energy Facility would be managed by one of ~~three~~ two alternatives:

- Beneficial use of the water for irrigated pasture
- Evaporation in an onsite, lined evaporation pond

~~Temporary storage onsite and hauling to an offsite WWTP for disposal~~

Irrigated Pasture Beneficial Use~~:~~. If process wastewater is managed by beneficial use of the water for irrigated pasture, water ~~developed~~ generated during the winter months would be stored in on~~-~~site tanks and combined with process water ~~produced~~ in the summer months to irrigate onsite acreage. The Energy Facility site and land immediately adjacent to the Energy Facility under option by the project proponent, encompasses sufficient acreage with soil types suitable for this activity. Process water can be managed without exceeding annual salt loading rates typical of nearby irrigated lands~~,~~ or of other facilities with permits to use similar water in a similar fashion. Approximately 31 acres would be required to manage the total volume of process water available without exceeding typical total dissolved solids (TDS) loading rates that currently result from irrigated agriculture in the area.

The process water would be used to improve grazing forage yield in areas currently without irrigation, and possibly to enhance the wildlife forage yield in habitat mitigation areas. This activity represents a beneficial use of the water that would not be made if it were evaporated ~~or hauled offsite for disposal~~. The irrigated use would occur only in areas with well-drained soil and with suitable slopes to minimize the potential for surface runoff or erosion. The irrigated use would not occur in areas that are drained by subsurface drain tiles to minimize any potential discharges to surface water. Annual application rates would occur at levels substantially lower than gross irrigation requirements for full irrigation, and the irrigated use would not result in recharge to groundwater during periods of irrigation.

Onsite Evaporation Pond~~:~~. If process wastewater is managed by evaporation, an optional backup ~~of a 20-acre evaporation pond~~ 20-acre evaporation pond would be used to manage process wastewater. The pond would be sized to store approximately 7 MG and lined to protect groundwater. ~~would be used to manage process wastewater.~~ The evaporation pond alternative is a contingency only, and ~~it~~ the pond would not be built until such time as it is determined that process wastewater management by irrigated ~~-~~pasture beneficial use does not function as designed. If the ~~need for the~~ evaporation pond is needed, ~~occurs,~~ the water treatment system at the Energy Facility would be changed to increase the cycling of the water and to reduce the quantity of wastewater to be discharged to the evaporation pond.

The evaporation pond would most likely be designed to operate passively. However, to reduce the size of the footprint, a spray enhancement system would be installed if it were

economically viable. A wastewater stream pipeline would take wastewater from the Energy Facility to the evaporation pond. The evaporation pond would be designed and sized to contain sediment from the wastewater for the life of the plant with minimal need to clean out the sediment. There would need to be sufficient freeboard in the evaporation pond to account for sediment accumulation. The evaporation pond would be cleaned periodically, and sludge and other solids that would accumulate from evaporation of the wastewater would be removed and disposed of at an approved landfill.

The pond would be designed to include a composite liner system for containment of wastewater and sediment. Bentonite would be added to the soil at the base of the evaporation pond, mixed to a depth of approximately 12 inches, and then compacted to achieve a permeability of greater than $1x10^{-6}$ centimeters per second (cm/sec). An alternative to the bentonite-treated soil would be to use a bentomat geotextile system. The bentomat geotextile system is available with a permeability as low as $5x10^{-9}$ cm/sec. A 60-mil HDPE liner would be placed over the bentonite-treated soil or the bentomat geotextile system, to form the top layer of the composite liner system.

~~*Storage and Hauling to Wastewater Treatment Plant*: If this alternative were to be selected, process wastewater would be managed by temporarily storing onsite and hauling to a WWTP for offsite disposal. The project proponent has contacted the two municipal WWTPs in Klamath Falls—the South Suburban Sanitary District and the City of Klamath Falls Sanitary District. The ability of these two WWTPs to accept wastewater from testing and commissioning of the Energy Facility and the wastewater from operation of the Energy Facility is presently being evaluated. According to managers at both facilities, each would be required to evaluate whether they can meet the EPA categorical standard to accept industrial waste or whether local ordinance provides for acceptance of truck-hauled wastewater. During the life of the Energy Facility, other WWTPs may be constructed or considered for management of wastewater generated at the Energy Facility. The project proponent would arrange with a trucking company to routinely haul the wastewater stored in the wastewater storage tanks at the Energy Facility to the WWTP.~~

Sanitary wastewater from restroom and shower facilities would be routed to an onsite septic tank, which would discharge to a leach field. Approximate flows of up to 1,500 gallons per day or about 1 gpm are expected.

2.3.1.9 Stormwater Management

Construction. During construction, stormwater would be managed according to NPDES General Construction Permit 1200-C, issued by the Oregon Department of Environmental Quality (ODEQ), and an erosion and sediment control plan. In general, construction erosion control would consist of BMPs, including techniques such as hay bales, silt fences, and revegetation, to minimize or prevent soil exposed during construction from being carried off the site.

Operation. Stormwater would be managed by implementing BMPs, such as containment, covering, good housekeeping, preventive maintenance, and spill prevention. The drainage from disturbed areas at the Energy Facility site would be designed to drain to a stormwater pond. The stormwater pond would be sized to detain approximately 750,000 gallons (2.3 acre-feet) of water based on a 25-year storm event.

Stormwater would be managed through three systems—the plant drains system, stormwater sewer system, and offsite stormwater diversion system.

Plant Drains System. The plant drains system would be routed through an oil/water (o/w) separator and then back into the raw water process for plant use.

Stormwater Sewer System. The stormwater sewer system is designed to accommodate a 100-year, 24-hour storm event and would collect stormwater from rooftops, parking lots, and landscaped areas. This storm sewer system would consist of ditches, culverts, and piping as required that are routed to the 1.5-acre stormwater pond. ~~Two alternatives are available were considered for managing the stormwater d~~Discharge from the stormwater pond ~~. The preferred alternative~~ would ~~discharge the stormwater into~~be routed to a 4.7-acre infiltration basin. The infiltration basin is designed to allow the stormwater to infiltrate into the ground. ~~The second alternative would to discharge the stormwater into the West Langell Valley Road drainage ditch is no longer proposed, and consequently has been eliminated from further consideration in this EIS.~~

~~. From the point where the stormwater is discharged into the drainage ditch, the stormwater would travel approximately 8,000 feet before it discharges into the High Line Levee Ditch. The High Line Levee Ditch discharges into the Lost River.~~

Offsite Stormwater Diversion System. Stormwater run-on to the Energy Facility site would be prevented by diverting the water around the Energy Facility into natural drainages and the West Langell Valley Road drainage ditch. For the transmission line access roads, culverts would be properly sized and designed where the access road crosses intermittent creeks to facilitate flow of stormwater or snowmelt runoff and to minimize erosion. Access roads would be surfaced with gravel to minimize erosion. Drainage would be maintained along the route of the access roads to prevent ponding of stormwater or snowmelt runoff.

2.3.1.10 Solid Waste Management

Construction. A variety of nonhazardous, inert construction wastes would be generated during construction. The major solid waste types would be concrete waste from foundation construction, wood waste from wood forms used for concrete construction, and scrap steel. Additional wastes include erosion-control materials such as straw bales and silt fencing, and packaging materials for parts and equipment.

Generation of wastes from construction would be minimized through detailed estimates of materials needs and through efficient construction practices. Approximately 350 tons per month of solid waste would be generated. Wastes generated during construction would be recycled as much as feasible. Recyclable materials would be separated from the solid waste stream. Solid waste would be stored in onsite roll-off bins. Any solid waste removed from the sumps or drains would be placed in barrels. Solid waste would be collected periodically by a private contractor and hauled to a licensed disposal facility. The nearest licensed facility is the Klamath County Landfill~~,~~ located about 35 miles from the Energy Facility site.

During construction, fuels, lubricant chemicals, and welding gases would be handled by trained personnel. The material would be in controlled storage until used, and any empty containers or waste material would be segregated in storage and properly recycled or disposed of by licensed handlers.

Operation. The proposed Energy Facility would generate approximately 50 tons per year of conventional solid waste consisting of office trash, packing materials, and nonrecyclables. Solid wastes generated during operation would be recycled as much as feasible. Recyclable materials would be separated from the solid waste stream. Solid waste would be stored in onsite roll-off bins. Solid waste would be collected periodically by a private contractor and hauled to a licensed disposal facility. The nearest licensed facility is the Klamath County Landfill, located about 35 miles from the Energy Facility site. This landfill and the regional landfill, Roosevelt Regional Landfill in southern Washington, would accommodate solid waste generated by operation of the Energy Facility.

If onsite evaporation of the wastewater is selected as the preferred alternative, evaporation would leave a solid waste that would be occasionally removed for disposal in a licensed landfill. This non-hazardous solid waste is a non-hazardous solid waste composed of water-treatment chemicals and constituents concentrated from the raw water supply. Rabanco Companies confirmed that the Roosevelt Regional Landfill would accept and manage the sludge as "special waste," meaning that a unique identification number would be created by the landfill operator to track the sludge from the Energy Facility.

2.3.2 Electric Transmission Line

The proposed COB Energy Facility would include construction of an approximate 7.2-mile, 500-kilovolt (kV), alternating current (AC) electric transmission line running south from the Energy Facility to an interconnection at BPA's Captain Jack Substation. Approximately 38 transmission towers would be required. The transmission towers would consist of steel lattice structures assembled in sections near the transmission tower site. Each transmission tower contains three components: the legs, body, and bridge. Typical transmission towers would range in height from 100 to 165 feet, with most towers in the 105- to 110-foot range. On average, the towers would be spaced approximately 990 feet apart, with a range from 380 to 1,500 feet.

Transmission towers would rest on four concrete footings, each about 4 feet in diameter. Allowing room for access and workspace around the footings would result in a permanent footprint disturbance of approximately 60 feet by 60 feet at each transmission tower. At nine transmission tower locations, approximately 100 feet by 150 feet of additional, permanent space would be required to ensure safety for vehicles and equipment. Footings would be placed in holes that are excavated, augured, or blasted. The design of the footings would vary based on soil properties, bedrock depth, and the soundness of the bedrock at each transmission tower site. The final configuration of the new transmission line (for example, exact number of transmission towers, transmission tower heights, and location of transmission towers) would depend on final design and engineering and geotechnical considerations. Figure 2-43 shows a typical transmission tower structure.

Typically, 500-kV, AC transmission lines require three sets of wires (or "conductors"). Each set is referred to as a phase and typically consists of a pair of bundled aluminum cables. One or two "shield wires" are placed near the top of the transmission structure above the conductors to shield the towers from lightning strikes.

An access road for travel by wheeled vehicles would be required for construction and to access the new electric transmission line for maintenance during operation. The access road

would be designed for use by cranes, excavators, supply trucks, boom trucks, and line trucks. The access road would be surfaced with gravel. Approximately 6.6 miles of new access road would be required. The access road would be approximately 15 feet wide, and grades would be less than 15 percent. No permanent access roads would be constructed in cultivated or fallow fields. Where temporary roads are used, any disturbed ground would be regraded to pre-construction contours, erosion control methods implemented, and revegetated~~repaired~~.

Based on review of a U.S. Geological Survey (USGS) quadrangle map and field work, only three intermittent creeks are present within the proposed electric transmission line corridor, and there are no visible perennial streams. Culverts that are properly sized and designed would be installed where the access road crosses intermittent creeks to facilitate flow of stormwater or snowmelt runoff and to minimize erosion.

Based on a planned, 154-foot-wide, electric transmission line easement, easement options have been obtained. Grading would occur within the easement at each transmission tower site and along the access road. The transmission tower sites may be graded to provide a relatively level work surface. During construction, staging areas would be needed where steel, spools of conductor, and other construction materials would be stored.

For safe and uninterrupted operation of the electric transmission line, vegetation would be cleared or trimmed. Clearing ~~may~~ might be by removal of vegetation or by controlling vegetation so that it does not grow above a certain height. Considerations that influence the amount and type of clearing include vegetation species, height and growth rates of vegetation, ground slope, wind and snow patterns, conductor elevation above ground, and clearance distance required between the conductors and other objects. Some form of clearing ~~may~~ might be required to the edge of the 154-foot-wide easement. Any leaning or diseased trees that could fall into the transmission line or pose a threat to reliable operation would be removed. At transmission tower sites, all trees, brush, stumps, and snags would be removed, including root systems. The amount of clearing required is unknown at this time.

After construction, vegetation control would be necessary, and would include controlling noxious weeds and managing growing vegetation in and adjacent to the easement. Vegetation control would consist of manual, mechanical, biological, and/or chemical methods. Mitigation measures are described in Section 3.4.2.

The project proponent would construct the electric transmission line to a final dead-end structure adjacent to the BPA Captain Jack Substation. BPA would be responsible for final interconnection with the substation. Interconnection work would include installation of bus work and bus ties, 500-kV breaker(s), isolation switches, and foundations; and extending the grounding system for the substation.

2.3.3 Natural Gas Pipeline

A new gas pipeline would be required to supply natural gas to the Energy Facility. ~~It~~ The pipeline would connect to an existing ~~PG&E~~ GTN gas transmission system line through a 4.1-mile-long, 20-inch-diameter natural gas pipeline constructed from the Bonanza Compressor Station along the ~~ROW~~right-of-way of existing Klamath County roads.

Metering facilities would be located at either the Energy Facility or the compressor station and not in the natural gas pipeline easement. The peak operating pressure of the ~~PG&E~~ GTN system at the Bonanza Compressor Station is 911 pounds per square inch, gauge (psig). No compression of natural gas would be required.

The natural gas pipeline would be installed in a 36-inch-wide trench at a depth of about 4 feet. The trench would be backfilled with pipe zone material and then with native soil up to the original grade.

Easement options have been obtained for a planned, 80-foot-wide easement needed for equipment staging and material laydown. The easement would be immediately adjacent to and along the Klamath County ~~ROW~~right-of-way for Harpold County Road No. 1097 and West Langell Valley Road No. 520. The route of the natural gas pipeline would cross the public roads in three places and an irrigation canal in one location. The crossings would be conventional bores underneath the public roads and an irrigation canal. The rest of the natural gas pipeline would be constructed by open trench methods.

In the areas where conventional bores would occur, additional temporary workspace would be required on both sides of the road or irrigation canal. Excavations would be larger than in the open trench sections to accommodate ~~(~~1) greater pipe depth, ~~(~~2) sharp angles at the crossings, and ~~(~~3) safe working conditions within the excavations. These excavations could be approximately 15 feet deep. The additional workspace would be necessary to excavate the deeper ditch in a safe manner and to store the additional excavated soil.

Additional temporary workspace of 40 feet (for a total of 120 feet) would be required along the north side of West Langell Valley Road near the Energy Facility site, where the natural gas pipeline route goes through an approximate 2,200-foot section of steep topography. The extra width would be needed for soil storage when leveling the easement to create a safe working platform for workers and equipment.

2.3.4 Water Supply Well System

Water would be needed by the Energy Facility for steam generation, demineralized water production, potable water and sanitary systems, and service water. Water also would be available for fire suppression. The source of water for construction and operation of the Energy Facility would be groundwater from a deep aquifer system intercepted by a well, known as the Babson well. No other deep aquifer system wells or water rights are known to exist in the Langell Valley area. A water supply system consisting of the Babson well and two additional water supply wells would be used to withdraw water from this deep zone aquifer.

Previous borehole geophysics and aquifer testing at the Babson well (CH2M HILL , 1994) indicated the presence of six groundwater-bearing zones within the upper 2,050 feet of the borehole. The project proponent proposes to use the three deep water-bearing zones that are present below a depth of 1,580 feet to supply water for the Energy Facility. These zones appear to be hydraulically separated from the shallow system by approximately 1,000 feet of non-water-bearing rock. The Babson well would be reconfigured, and the two additional water supply wells would be designed, to isolate the deep zone from the shallow zone system, and withdraw water only from the deep system. -

Development of the Babson well would consist of installing a seal in the well from the surface to approximately 1,500 feet bgs. This seal would consist of a 10-inch or 12-inch welded steel casing grouted in place to seal off the shallow aquifer system. As a result, the well would no longer draw water from the shallow water-bearing zones. The additional water supply wells would be a maximum diameter of 12 inches and the depth of the additional water supply wells is expected to be approximately 2,000 feet. Like the Babson well, the additional water supply wells would be cased and grouted to seal off the shallow aquifer system from the deep system in the wellbore. The two additional water supply wells are necessary for back-up to ensure reliability of the water supply to the Energy Facility. The two additional water supply wells would be located in close proximity to the existing well.

An electrical pump with approximately 50 to 100 horsepower (hp) would be installed in each well. Because the deep aquifer system is under considerable confining pressure, the static water level in the wells would be approximately 20 feet bgs. Submersible pumps would be used. Surface features would include a pumphouse (approximately 20 feet by 30 feet with standard height walls) that would contain a heating, ventilation, and air conditioning (HVAC) system and lighting. On the discharge of the pump, a pump control valve would be needed for pump startup and shutdown procedures.

~~There is existing e~~Electrical service to the Babson well currently exists. However, this electrical service does not have sufficient capacity to accommodate the increased electrical load from the three, 50- to 100-hp pumps. The local power company, PacifiCorp, would be responsible for upgrading the electrical service to accommodate the increased electrical load. Emergency back-up power to the pump would be provided by an onsite diesel generator. The generator would be located near the pumphouses but in a separate walk-in, weatherproof enclosure. The diesel fuel would be stored in an aboveground storage tank located within a secondary containment structure.

Water from the water supply well system would be pumped through a 2.8-mile, 6-inch-diameter water supply pipeline to a 3~~.0~~-MG water storage tank located at the Energy Facility.

The water supply pipeline would be constructed within a 60-foot-wide easement on land under ownership options by the project proponent, except for portions of the route that cross Klamath County roads. The route of the water supply pipeline would cross two Klamath County roads: East Langell Valley Road and Teare County Road 1161. In addition, the water supply pipeline would cross an irrigation ditch operated by the Langell Valley Irrigation District in three locations. The crossings would be directionally bored underneath the public roads and irrigation ditch. The rest of the water supply pipelines would be constructed by open trench methods.

In the areas where conventional bores would occur, additional temporary workspace would be required on both sides of the road or irrigation canal. Excavations would be larger than in the open trench sections to provide room for workers to safely work down in the excavations. The excavations would be approximately 15 feet deep. The additional workspace would be necessary to excavate a safe ditch and store the excavated soil.

A temporary access road for travel by wheeled vehicles would be required for construction. The access road would be designed for use by cranes, excavators, supply trucks, boom

trucks, and line trucks. The access road would be removed and revegetated after construction of the water supply pipeline.

The water supply pipeline would be installed in a 36-inch-wide trench at a depth of about 4 feet. The trench would be backfilled with pipe zone material and then with native soil up to the original grade. Figure 2-54 shows a typical section of the water supply pipelines.

2.3.5 Construction Schedule and Activities

Based on conditions of the electric power market after approval of the SCA, the project proponent may decide to construct the Facility in one phase or two phases. If the Facility is constructed in two phases, construction of the second phase may start up to 2 years after the first phase starts commercial operation.

If the Facility is constructed in one phase, construction is expected to take 23 months. If the Facility is constructed in two phases, the first phase of construction is expected to take approximately 18 months.

Because the conditions of the power market are volatile, the project proponent may choose not to start construction of the Facility until 3 years after the SCA is approved.

For the single--phase construction, the construction workforce is expected to average 352 employees, with a low of 147 during the first 2 months and final 4 months of construction, and a peak of 543 during the fifteenth and sixteenth months of construction.

Equipment used at the site would include light and heavy trucks, backhoes, bulldozers, graders, cranes, air compressors, welding machines, and power hand tools. Foundation piling equipment may also be used. Some specialized boring equipment would be used to install the pipeline under existing roads and irrigation canals.

~~Other Projects Potentially Contributing to Cumulative Impacts~~

~~The level of analysis of cumulative impacts is commensurate with the potential for impacts, resources affected, scale of the impact, and other factors. This treatment of cumulative impacts is consistent with the EPA guidance for determining cumulative impacts (*Consideration of Cumulative Impacts in EPA Review of NEPA Documents*, 1999)~~

~~Other Energy Projects~~

~~There are two other potential energy generation projects near the Energy Facility site: the Klamath County water power project and the Klamath Generating Facility. The Klamath County water power project is proposed to be sited to the southeast of the COB Energy Facility. The Klamath Generating Facility is proposed to be sited about 3 miles south of Klamath Falls, Oregon, adjacent to the existing Klamath Cogeneration Project.~~

~~The Klamath County water power project would be a "closed system" pumped storage project with manmade upper and lower reservoirs. The eventual construction of the water power project is uncertain at this time given its preliminary nature. Energy Recycling Company has submitted an application to the Federal Energy Regulatory Commission for a preliminary permit to secure a license for the Klamath County water power project under~~

Part I of the Federal Power Act. Energy Recycling Company has previously held a permit for the project, and the project proponent worked on a similar project at the site from 1991 to 1998 (the Lorella Pumped Storage Project). Despite presentations to potential development groups, the Lorella Pumped Storage Project never progressed to the development stage, and it is not certain that its predecessor, the Klamath County water power project, will do so, either.

Furthermore, according to the application, water for the Klamath County water power project may be obtained from nearby groundwater sources or the proposed Energy Facility. It is unlikely that the water power project will obtain water from local groundwater sources for the following reasons:

- The shallow aquifer system (above approximately 500 feet) is a heavily appropriated basalt aquifer that is in varying degrees of hydraulic connection with the Lost River.
- The state of Oregon is currently adjudicating Klamath River Basin water rights for those with claims dating prior to 1909.

Because the project has been through various stages of conceptual development and permitting for 12 years and obstacles remain, the Klamath County water power project has not been considered in the discussion of cumulative impacts as a reasonably foreseeable future action.

The COB Energy Facility would use water from the deep aquifer system pumped through the Babson well, rather than from shallow groundwater sources. (On April 24, 2002, the project proponent submitted a water right application to the Oregon Water Resources Department [OWRD] and on April 22, 2003, OWRD issued a proposed final order [PFO] that included a draft water right permit.) No other Langell Valley area wells or water rights in the deep aquifer system are known to exist.

Klamath Generation, LLC, a wholly owned subsidiary of PacifiCorp Power Marketing, Inc., submitted an application for a site certificate on December 26, 2001. The project is called the Klamath Generating Facility and if constructed would be a 542.2-MW natural gas combined-cycle system (two gas combustion turbine generators and one or two steam turbine generators) with power augmentation. The proposed facility would be located about 3 miles south of Klamath Falls, Oregon. The proposed site is adjacent to the existing Klamath Cogeneration Project. On April 23, 2002, the applicant withdrew its request for expedited review. ODOE is continuing to review the application under the standard review process.

The Klamath Generating Facility has been considered in the discussion of cumulative impacts on air quality.

Other Recent or Proposed Projects

Other recent projects or proposed projects that have been identified in the vicinity of the Energy Facility include the following:

Lane/Klamath Fiber Consortium: This project involves the acquisition of the fiber optics system between Springfield, Oregon, and Merrill, Oregon. Only a small portion of the project lies in the vicinity of the proposed project. Because this project is currently constructed in existing

~~rights-of-way and construction impacts have been mitigated, there are no past, present, or future environmental impacts contributing to cumulative impacts.~~

~~Sykes Telecommunication: This project involved the construction of a new 400-employee call center in Klamath Falls, Oregon. The project has been completed. Agricultural land and natural habitat have not been affected. No water discharges to surface or groundwater have occurred, and there are no air emissions related to the project. The project does create additional cumulative traffic on regional roads. Based on the nature of the project and its relative distance from the proposed Energy Facility, there are no significant cumulative impacts related to the proposed Energy Facility.~~

~~Escend Technologies: Escend Technologies designs business-to-business software. Escend opened an office in Klamath Falls in 2000, employing approximately 60 people. The firm estimates that it will grow to 200 employees by 2005. Existing facilities are located in the urban area and do not affect similar types of land and habitats impacted by the proposed Energy Facility. Escend uses city services for water, wastewater, and solid waste. The facility does not have air emissions. Future impacts on regional traffic may occur with increased employment, but these impacts are expected to be spread around the region. Such impacts are not expected to contribute substantially to cumulative traffic impacts in the vicinity of the proposed Energy Facility.~~

~~Thermo Pressed Laminates: This manufacturing facility produces laminate materials for furniture, cabinets, and other uses. The facility was constructed in Klamath Falls in 2002 at an existing industrial site. Water supply, wastewater, and solid waste services are provided through the city of Klamath Falls. The facility has minor air emissions and does not have an air permit. Emissions from this facility would be represented by background.~~

~~Electro Scientific Industries: Electro Scientific Industries makes capital equipment for the semiconductor and electronics components industries. In 2001, the firm opened a manufacturing facility in Klamath Falls. An additional 200 jobs are anticipated by 2006. Except for air emissions, this facility is beyond the resource impact area identified for cumulative impacts. The facility has minor emissions and does not have an air permit. Emissions from this facility would be represented by background.~~

~~Other types of development that potentially could contribute to cumulative impacts include agricultural development, road construction, and land development. Agricultural development historically has impacted the area more than other land uses. The Energy Facility, through land application of the wastewater, would contribute minor cumulative impacts to the present and potential future agricultural development in the area. There are no planned or known road construction projects or land development projects proposed for the project area.~~

2.4 No Action Alternative

In the No Action Alternative, BPA would decide not to provide the requested connection to the regional power grid, or BLM would decide not to provide an easement for construction of an electric transmission line across Federal lands. Without these approvals, the proposed Energy Facility would not be feasible. Thus, in the No Action Alternative, the proposed Energy Facility would not be built.

2.5 Other Alternatives

2.5.1 Alternative Strategies for Electrical Supply and Demand Management

In the early 1990s, BPA prepared a number of NEPA documents that analyzed the environmental effects of various alternative policies and business strategies. In 1993, BPA published a document titled *Resource Program Final Environmental Impact Statement* (DOE/EIS-0162). This EIS included a detailed analysis of the environmental consequences of alternative strategies for managing demand and increasing the supply of electrical energy in the Pacific Northwest. Alternatives analyzed consisted of various combinations of conservation, development of renewable resources (including hydropower, geothermal, wind and solar power), efficiency improvements, cogeneration, combustion turbines, nuclear power, and coal.

In the mid-1990s, responding to changes in the electric utility market, BPA modified its business plan and prepared a document titled *Business Plan Final Environmental Impact Statement* (DOE/EIS-0183). It was published in June 1995 and incorporated a number of earlier NEPA documents by reference, including the *Resource Program Final Environmental Impact Statement*.

The *Business Plan Final Environmental Impact Statement* included a description of how it would be used in BPA's decision-making process, as follows:

> "This BPA EIS is a programmatic EIS: that is, it addresses 'umbrella' policies and concepts. Approaches, strategies, and general agency direction—not site-specific actions—are recommended here. As the Administrator implements his broader policies and business strategies, other more specific business decisions such as the development of individual energy generation resources and transmission facilities will have their own environmental review and decision processes. These additional environmental reviews will look at site-specific actions, using the information and decisions in this EIS as a base to understand how they fit into more global policies and business strategies. This process is called 'tiering,' where more specific additional information on potential environmental consequences adds to the understanding for subsequent decisions." "

The purpose of tiering is to promote orderly and properly sequenced decision-making for complex, multistage projects that may have adverse effects on the environment. ~~It~~ Tiering also avoids unnecessary and duplicative technical analysis. Broad policies and strategies are first examined in a programmatic EIS. The site-specific impacts of an individual project that is needed to implement the larger policy or strategy are then examined in a site-specific EIS. The analysis of the broad political and strategic alternatives is included in the site-specific EIS by reference and does not need to be repeated.

Consistent with this approach, this EIS for the COB Energy Facility confines itself to analysis of the site-specific environmental impacts of the proposed action. The analyses of larger policy and strategy alternatives are contained in the programmatic Business Plan EIS and Resource Program EIS and are included here by reference.

2.5.2 Alternative Considered But Eliminated from Detailed Analysis

The project proponent considered various alternatives before developing the proposed Energy Facility. Numerous locations in Washington and Oregon were considered based on the site selection criteria described in Section 2, and were also evaluated to determine whether the sites met the project proponent's purpose and need for the Facility (see Section 1.2). Information concerning the alternative sites is shown on Table 2-2. Table 2-2 provides a comparative analysis summarizing why these sites were eliminated from detailed analysis and consideration and why the Klamath location was pursued. Figure 2-3 shows the alternative locations for potential development areas.

Based on the comparative consideration of these other potential sites, the Bonanza, Oregon, vicinity clearly best met the project proponent's purpose and need for the energy generation facility, and also best satisfied the site selection criteria. Once the area near Bonanza was selected, minimization of impacts to the environment and residents were the most important criteria used in the company's evaluation of alternative sites and the development of proposed Energy Facility features. The proposed Energy Facility site was chosen because it is close to an existing natural gas pipeline and an existing electric transmission line, and thus would minimize the need for construction of new gas and electrical transmission facilities. This offers both economic and environmental advantages.

Alternative transmission corridors were evaluated for the natural gas pipeline, the water supply pipeline, and the electric transmission line. Alternative wastewater discharge scenarios and cooling also were considered. The following sections describe the alternatives considered for these facilities and the reasons the alternatives were eliminated from detailed analysis.

2.5.2.1 Alternative Energy Facility Sites in the Vicinity of Bonanza, Oregon

A location closer to the Captain Jack substation, and near Malin, Oregon, could reduce the distance needed for a new electric transmission facility. However, compared to other locations in the Bonanza, Oregon, vicinity that are in closer proximity to the Captain Jack substation, the location of the proposed COB Energy Facility minimizes the visual resource impacts. The proposed Energy Facility is located in a small valley where the numbers of residences who would have unobstructed views of the project are very small (fewer than 3). The closest resident with an unobstructed view of the Facility is located over a mile from the project structures, and features of the structures would be seen in the middle-ground of the view. The proposed project site is located next to, and would be visible from, West Langell Valley Road. However, the traffic volume on this road averages no more than 400 vehicles per day (see Section 3.6), and according to local residents, much of this traffic is related to local agricultural activities; in addition, the 400 vehicle trips per day is considered to be a high estimate. Because the 7.2-mile-long electric transmission line required to connect a power plant at the proposed site with the Captain Jack Substation would be routed through an upland area where there are relatively few viewers and where BLM lands have a Class IV Visual Resource Inventory rating, the potential for the line to have visual effects of serious concern is low.

If a project site were to be located in an area nearer to and north of the Captain Jack Substation, it would most likely need to be located somewhere in the upland area where the proposed route of the electric transmission line is located (see Figure 2-2). Project sites in

this area would be close or immediately adjacent to areas of bald eagle activity and habitat (see Section 3.4 and Appendix C), areas of previously identified cultural sites, immediately adjacent to critical deer winter range, and close to the Bryant Mountain Proposed Trail and primitive camping areas managed by the BLM (see Figure 3.8-1). In addition, existing road access to this upland area is by narrow, unpaved dirt roads. These roads are used by the handful of residents who live in the upland area; the roads would need to be widened to accommodate the hauling of heavy equipment and materials for construction. The initial section of the existing road off of West Langell Valley (approximately 4,000 feet) has steep grade as it traverses up the north end of Bryant Mountain and would be particularly difficult to widen.

If a project site were to be located in an area nearer to and south of the Captain Jack Substation, it would most likely need to be located somewhere in the area of flat plain lands that lie between the community of Malin or the hills that border the plain to the north (see Figure 2-6___). This area is devoted to intensive agricultural production and is an open landscape with few trees and with many farm residences located at regular intervals along the network of rural roads that follow the section and quarter section lines. The only screening of views across this plain is provided by Turkey Hill, a narrow, 1-mile-long ridge that rises from the plain in the area just to the north of the community of Malin. Unless a project site were to be located in the area to the due north of Turkey Hill, a power plant facility located on this plain would be highly visible from the community of Malin. Given the pattern of farm residences that are regularly spaced along the roads in this area, a power plant located on any project site in this area would inevitably be visible from a half dozen or more residences located a half a mile or closer to the site, and would be visible in the middle-ground from an even larger number of homes. In addition to being visible from nearby homes and the community of Malin, a power plant built on a site in this area would also be visible across the flat, open agricultural lands from Highway 50, a regionally important connector that carries 1,500 vehicles per day.

In addition to comparatively greater visual impacts upon residents in the Malin vicinity, the area near Malin would be approximately 8 to 10 miles closer to the following scenic or aesthetic resources described in Section 3.8: Lava Beds National Monument, Bloody Point, Battle of Scorpion Point, the Petroglyths, and Tulelake National Refuge. Consequently, while closer to the Captain Jack substation, a location in the Malin vicinity would have a significantly greater impact upon recognized scenic and aesthetic resources, as well as greater potential impacts on recreational users.

The electric transmission line that would be required to link a power plant on a site in the Malin vicinity area with the Captain Jack substation would have a high probability of passing in close proximity to some of the residences in the area. The segment of the transmission line that would traverse the hills that define the northern edge of the plain has the potential to be highly visible from the residences and roads on the plain below because clearing of the right of way would create a contrasting corridor on the hillside and the potential of some of the towers to be skylined at the top of the ridge. Due to these significant unavoidable impacts, as well as other limitations and impacts identified in Table 2-2_____, a site in the vicinity of Malin, Oregon, was eliminated from further detailed analysis and consideration.

2.5.2.2 Alternative Natural Gas Pipeline

The alternative natural gas pipeline route would have been a more direct, 3.8-mile route from the Bonanza Compressor Station to the Energy Facility. This alternative route would have been located away from the public road ~~ROW~~ right of way and ~~run~~ traverse over two mountains between the compressor station and the Energy Facility site.

The majority of the land along the alternative natural gas pipeline would have been zoned Forestry Range (lands of mixed farm and forestry uses), with some Exclusive Farm Use–Cropland (EFU-C) and EFU–Cropland/Grazing (EFU-CG), and a very small area of Industrial Land at the compressor station. Land uses observed along the alternative natural gas pipeline route included irrigated pasture, a dairy, industrial land (the compressor station), open rangeland/woodlands managed by BLM and private landowners, and dryland farming and cattle grazing on a fallow field.

Even though the alternative natural gas pipeline route would have been slightly shorter than the proposed route (3.8 miles versus 4.1 miles), the alternative was eliminated from further consideration because construction would have taken place on steep slopes, increasing the likelihood of erosion, disturbance, and the potential risk of damage from landslides or sloughing. The route would also have crossed an ancient landslide, which would pose risk to the safe operation of the high-pressure natural gas pipeline.

The proposed route would not face the same disadvantages as the alternative route. Furthermore, the proposed alternative would not impact the operation of the irrigation canals during its construction or operation. No cultural resource sites, wetlands, or sensitive plants were identified during field studies.

2.5.2.3 Alternative Water Supply Pipeline

The project proponent chose to obtain water supply for the Energy Facility from the deep aquifer accessible from the Babson well. Because virtually all existing water supply in the Klamath Basin is from the shallow aquifer or surface sources, this approach minimized environmental impacts on water resources in the region by making use of this little-utilized source.

The 8~~.0~~-mile alternative water supply pipeline route from the Babson well to the Energy Facility site would have been substantially longer than the proposed route. The alternative route would have been located along the public road ~~ROW~~right-of-way. This route would have originated at the water supply well system, traveled southeast along East Langell Valley Road, and then along several other public road rights-of-way~~ROWs~~ to West Langell Valley Road, continuing northwest to the raw-water supply storage tank at the Energy Facility site.

Zoning along the route of the alternative water supply pipeline is EFU-CG, EFU-C, and FR. The majority of the land use along the alternative water supply pipeline route is irrigated pasture, with a small amount of juniper woodland, sagebrush scrub, and Ponderosa pine habitats. Numerous wetland resources occur along this route, including two high-quality cattail marshes. Many of the remaining wetlands are excavated channels located within a relict lake bed. These wetland areas are mapped on the National Wetland Inventory (NWI) as palustrine emergent wetlands.

The alternative water supply pipeline was eliminated from further consideration because ~~(~~1) the alternative route is not direct and is 5.2 miles longer than the preferred route, ~~(~~2) the alternative route would have greater wetland impacts and mitigation requirements, ~~(~~3) impacts to local traffic would be significantly greater because the alternative route uses the public road ~~ROW~~right-of-way for almost the entire route, and ~~(~~4) the presence of irrigation canals that parallel the roads for hundreds of feet would be expected to prevent the use of the public ~~ROW~~right-of-way for staging and construction activities.

2.5.2.4 Alternative Electric Transmission Line

Alternatives for interconnecting the proposed project to the regional transmission system are limited because of the location of the proposed ~~project's location~~ project in a remote area with few existing high-voltage lines. However, three alternatives were considered for connecting the Energy Facility with the regional power grid:

(1) ~~t~~The preferred 7.2-mile electric transmission line from the Energy Facility to the BPA Captain Jack Substation.

(2) ~~a~~An alternative, 7.9-mile electric transmission line that also connects the Energy Facility with the BPA Captain Jack Substation, but runs parallel to the existing Pacific Northwest/Pacific Southwest (PNW/PSW) intertie transmission lines~~, and~~.

(3) ~~c~~Connecting to the regional power grid by tying directly into the existing PNW/PSW intertie transmission lines that transect the Energy Facility site.

The third alternative would not require an electric transmission line. This alternative was eliminated because BPA, PGE, and PacifiCorp prohibit direct connection of new generation to the PNW/PSW intertie for protection of system reliability. As a result, this alternative was ~~ruled out~~ immediately ruled out and no further analysis conducted.

The second alternative for the electric transmission line presented technical, economic, and resource concerns greater than those presented by the preferred alternative. The rejected electric transmission line alternative is known as the ~~"~~"~~ROW~~right-of-way alternative~~"~~" in reference to facility locations proposed along existing transmission line rights-of-way. The ~~ROW~~right-of-way alternative would have required building a new electric transmission line from the Energy Facility to the Captain Jack Substation within a separate 200-foot-wide easement, necessitating property acquisition. The easement would have been 7.9 miles long and run parallel and adjacent to the existing electric transmission ~~ROW~~right-of-way corridor and 250 feet from the existing BPA/PGE/PacifiCorp electric transmission lines (three transmission lines collectively known as the PNW/PSW Intertie).

A comparison of the ~~ROW~~right-of-way alternative and the preferred electric transmission line route is presented in Table 2-3~~2~~ of this chapter.

The ~~ROW~~right-of-way alternative would cover a larger area than the preferred alternative. The rejected alternative would be 7.9 miles long and would require 44 towers as compared to 7.2 miles and 38 towers for the preferred route. The rejected alternative would have a 200-foot easement that would cover almost 190.8 acres, while the preferred route would have a 154-foot-wide easement that would cover approximately 134.0 acres. The additional corridor width for the alternative transmission line is for extra workspace required for adequate separation from the existing transmission line. The ~~ROW~~right-of-way alternative would

require 52 acres of BLM-~~owned~~ managed land, while the preferred route would require 44 acres of BLM-~~owned~~ managed land.

Zoning along the route of the alternative electric transmission line is EFU, FR, and F. Land uses observed along the alternative electric transmission line route include existing electric transmission lines, fallow agricultural fields used for cattle grazing, ~~residents~~residences, a lake, selective historical timber harvesting of ponderosa pine woodland, open rangeland/ woodlands managed by Federal and private landowners, and the ~~PG&E~~ GTN interstate gas pipeline system.

A cluster of residences are located in the upper half of the route. These residences are approximately 400 feet from the westernmost existing transmission line. Electric and magnetic fields (EMFs) would increase for the residences along the alternative transmission line. If the alternative transmission line were to be constructed, these residences would only be approximately 200 feet from the centerline of the transmission line, or approximately 100 feet from the edge of the 200-foot easement. In addition, visibility impacts would occur at residential locations as a result of clearing trees and vegetation to within 100 feet (the edge of the 200-foot easement described above) of the residences.

During field surveys of the ~~ROW~~right-of-way alternative, three cultural resource sites were identified. The amended National Historic Preservation Act (NHPA) of 1966 established a Federal policy of avoiding or minimizing adverse effects to cultural resources when planning and constructing ~~f~~Federally involved projects. As such, the proposed electric transmission line has been moved to avoid these resources.

During field surveys in June and July 2002, several bald eagles were observed foraging along the alternative electric transmission line easement. There is a resident population of bald eagles at McFall Reservoir approximately 1,750 feet west of the alternative electric transmission line route.

BPA wants to maintain the flexibility to construct a fourth transmission line adjacent to the three existing lines, and the project proponent's ~~ROW~~right-of-way electric transmission line alternative would not be consistent with that objective. In addition, BPA has raised technical concerns about the feasibility of another electric transmission line adjacent to the existing electric transmission lines.

2.5.2.5 Alternative Cooling Scenario

The project proponent considered water cooling for the Energy Facility. Peak water demand for water cooling would be approximately 7,590 ~~gallons per minute (~~gpm~~)~~ (10.9 million gallons per day [gpd]). Average annual water demand would be approximately 5,390 gpm (7.6 million gpd). These values include 90 gpm for seasonal irrigation. A draft water right permit was issued by Oregon Water Resources Department (OWRD) in a proposed final order (PFO) dated April 22, 2003. This draft water right allowed water withdrawal from the deep zone aquifer at a rate up to 7,500 gpm for industrial uses and 90 gpm for seasonal irrigation use.

Subsequently, the project proponent decided to switch to air cooling from wet cooling in response to feedback from the community. Amendment No. 1 to the SCA was filed with EFSC on July 25, 2003, to switch to air cooling.

On August 19, 2003, OWRD provided ODOE with a revised recommendation and draft water right permit reflecting a reduction in the industrial water requirement to a maximum instantaneous rate of 210 gpm. The 90 gpm for seasonal irrigation use remained unchanged.

2.5.2.6 Stormwater Discharge to County Road Ditch

An alternative to manage stormwater that falls inside the fenceline of the Energy Facility was considered in the DEIS. This alternative was referred to as the second alternative in the DEIS. That second alternative would route stormwater from the stormwater pond to a ditch adjacent to the Energy Facility access road into the West Langell Valley Roadside ditch, where it would eventually enter the High Line Levee Ditch and then the Lost River. This second alternative is no longer under consideration.

2.5.2.7 Temporary Storage and Hauling Process Wastewater to WWTP

Three alternatives were considered in the DEIS for management of process wastewater. The third alternative described in the DEIS would manage of process wastewater by temporarily storing onsite and hauling to a WWTP for offsite disposal. The project proponent has contacted the two municipal WWTPs in Klamath Falls—the South Suburban Sanitary District and the City of Klamath Falls Sanitary District. According to managers at both facilities, each would be required to evaluate whether they can meet the EPA categorical standard to accept industrial waste or whether local ordinance provides for acceptance of truck-hauled wastewater. Neither of these WWTPs is presently permitted to accept trucked wastes. Therefore, this third alternative is no longer under consideration.

2.6 Other Projects Potentially Contributing to Cumulative Impacts

The level of analysis of cumulative impacts is commensurate with the potential for impacts, resources affected, scale of the impact, and other factors. This treatment of cumulative impacts is consistent with the EPA guidance for determining cumulative impacts (*Consideration of Cumulative Impacts in EPA Review of NEPA Documents*, 1999).

2.6.1 Other Energy Projects

There are three~~wo~~ other potential energy generation projects near the Energy Facility site: the Klamath County water power project, ~~and~~ the Klamath Generating Facility, and a wind project on Bryant Mountain. The Klamath County water power project is proposed to be sited to the southeast of the COB Energy Facility. The Klamath Generating Facility is proposed to be sited about 3 miles south of Klamath Falls, Oregon, adjacent to the existing Klamath Cogeneration Project. There is no specific public information on ~~where~~ the wind project on Bryant Mountain.

The Klamath County water power project would be a "closed system" pumped storage project with manmade upper and lower reservoirs. The eventual construction of the water power project is uncertain at this time given its preliminary nature. Energy Recycling Company has submitted an application to the Federal Energy Regulatory Commission for a preliminary permit to secure a license for the Klamath County water power project under Part I of the Federal Power Act. Energy Recycling Company has previously held a permit

for the project, and the project proponent worked on a similar project at the site from 1991 to 1998 (the Lorella Pumped Storage Project). Despite presentations to potential development groups, the Lorella Pumped Storage Project never progressed to the development stage, and it is not certain that its predecessor, the Klamath County water power project, will do so either.

Furthermore, according to the application, water for the Klamath County water power project may be obtained from nearby groundwater sources or the proposed Energy Facility. It is unlikely that the water power project will obtain water from local groundwater sources for the following reasons:

- The shallow aquifer system (above approximately 500 feet) is a heavily appropriated basalt aquifer that is in varying degrees of hydraulic connection with the Lost River.
- The state of Oregon is currently adjudicating Klamath River Basin water rights for those with claims dating prior to 1909.

Because the project has been through various stages of conceptual development and permitting for 12 years and obstacles remain, the Klamath County water power project has not been considered in the discussion of cumulative impacts as a reasonably foreseeable future action.

The COB Energy Facility would use water from the deep aquifer system pumped through the Babson well, rather than from shallow groundwater sources. (On April 24, 2002, the project proponent submitted a water right application to OWRD and on April 22, 2003, OWRD issued a proposed final order [PFO] that included a draft water right permit.) No other Langell Valley area wells or water rights in the deep aquifer system are known to exist~~.[[mention worst-case study here]]~~ (see the worst case analysis of water impacts in Appendix F to the Biological Assessment [which is Appendix C to this FEIS]).

Klamath Generation, LLC, a wholly owned subsidiary of PacifiCorp Power Marketing, Inc., submitted an application for a site certificate on December 26, 2001. The project is called the Klamath Generating Facility and if constructed would be a 542.2-MW natural gas combined-cycle system (two gas combustion turbine generators and one or two steam turbine generators) with power augmentation. The proposed ~~facility~~Facility would be located about 3 miles south of Klamath Falls, Oregon. The proposed site is adjacent to the existing Klamath Cogeneration Project. On April 23, 2002, the Applicant withdrew its request for expedited review. ODOE is continuing to review the application under the standard review process.

The Klamath Generating Facility has been considered in the discussion of cumulative impacts on air quality.

There has been some reports of a possible wind project on Bryant Mountain. To date no formal applications for such a project have been filed with a public agency. Meteorological test towers have been erected to evaluate wind speed in different seasons, but it is not currently known if it is a viable wind location. Without more detail, it is unknown whether a wind project is viable and involve one wind turbine, ten or one hundred, or what ancillary facilities would be required. This project is not a reasonably foreseeable future private or federal action and is not appropriately included in the cumulative impacts analysis.

~~2.1.2~~2.6.2 Other Recent or Proposed Projects

Other recent projects or proposed projects that have been identified in the vicinity of the Energy Facility include the following:

Lane/Klamath Fiber Consortium: This project involves the acquisition of the fiber optics system between Springfield, Oregon, and Merrill, Oregon. Only a small portion of the project lies in the vicinity of the proposed project. Because this project is currently constructed in existing rights-of-way and construction impacts have been mitigated, there are no past, present, or future environmental impacts contributing to cumulative impacts.

Sykes Telecommunication: This project involved the construction of a new, 400-employee call center in Klamath Falls, Oregon. The project has been completed. Agricultural land and natural habitat have not been affected. No water discharges to surface or groundwater have occurred, and there are no air emissions related to the project. The project does create additional cumulative traffic on regional roads. Based on the nature of the project and its relative distance from the proposed Energy Facility, there are no significant cumulative impacts related to the proposed Energy Facility.

Escend Technologies: Escend Technologies designs business-to-business software. Escend opened an office in Klamath Falls in 2000, employing approximately 60 people. The firm estimates that it will grow to 200 employees by 2005. Existing facilities are located in the urban area and do not affect similar types of land and habitats impacted by the proposed Energy Facility. Escend uses city services for water, wastewater, and solid waste. The ~~facility~~Facility does not have air emissions. Future impacts on regional traffic may occur with increased employment, but these impacts are expected to be spread around the region. Such impacts are not expected to contribute substantially to cumulative traffic impacts in the vicinity of the proposed Energy Facility.

Thermo Pressed Laminates: This manufacturing facility produces laminate materials for furniture, cabinets, and other uses. The facility was constructed in Klamath Falls in 2002 at an existing industrial site. Water supply, wastewater, and solid waste services are provided through the city of Klamath Falls. The facility has minor air emissions and does not have an air permit. Emissions from this facility would be represented by background.

Electro Scientific Industries: Electro Scientific Industries makes capital equipment for the semiconductor and electronics components industries. In 2001, the firm opened a manufacturing facility in Klamath Falls. An additional 200 jobs are anticipated by 2006. Except for air emissions, this facility is beyond the resource impact area identified for cumulative impacts. The facility has minor emissions and does not have an air permit. Emissions from this facility would be represented by background.

Other types of development that potentially could contribute to cumulative impacts include agricultural development, road construction, and land development. Agricultural development historically has impacted the area more than other land uses. The Energy Facility, through land application of the wastewater, would contribute minor cumulative impacts to the present and potential future agricultural development in the area. There are no planned or known road construction projects or land development projects proposed for the project area.

PART 5

Screening-Level Ecological Risk Assessment Updates

Screening-Level Ecological Risk Assessment COB Energy Facility, Bonanza, Oregon

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1. Introduction

A screening-level ecological risk assessment (ERA) following U.S. Environmental Protection Agency (EPA) and Oregon Department of Environmental Quality (ODEQ) guidance was conducted to determine the potential risk to plants, soil invertebrates, and wildlife from air emissions at the COB Energy Facility, and, separately, the potential risk of using process wastewater to irrigate 31 acres of pasture and to improve grazing forage yield in areas currently without irrigation. Because there is an active bald eagle nesting area near McFall Reservoir, located approximately 6 miles south of the proposed facility location, and because bald eagles also use other areas in the vicinity of the proposed Facility location (e.g., Smith Reservoir), the U.S. Fish and Wildlife Service (USFWS) has expressed concern about the potential impacts of the air emissions of the Energy Facility on bald eagles and their habitat. Two endangered fish species (shortnose sucker and Lost River sucker) that historically have been found in the Lost River, located 2 miles north of the Energy Facility, and one plant species (Applegate's milk-vetch) are of concern as well.

The screening-level ERA was conducted as part of the biological assessment (BA) to address potential risks under two scenarios. Under the first scenario, the potential risk from air emissions (and subsequent deposition to surface water) to aquatic organisms and to the bald eagle (with exposure via food web transfer) was evaluated. Upland areas surrounding the Energy Facility site also were evaluated for possible risks to terrestrial plants, soil invertebrates, and terrestrial birds and mammals resulting from terrestrial deposition of air emissions. Under the second scenario, possible risks to terrestrial plants, soil invertebrates, and terrestrial birds and mammals ~~and~~ from reuse of the process wastewater for irrigation were assessed.

The procedures used in conducting the ERA are consistent with those described in the following ODEQ and EPA guidance documents:

- Guidance for Ecological Risk Assessment: Level II Screening Level Values (ODEQ, 2001)
- *Framework for Ecological Risk Assessment* (EPA, 1992a)
- *Final Guidelines for Ecological Risk Assessment* (EPA, 1998a)

Ecological risks were evaluated on the basis of conservative assumptions, maximum estimated media concentrations, and screening toxicity values. As is appropriate for a screening-level assessment, risk is not discussed in terms of the potential to cause risk, but in terms of passing or failure to pass the screening evaluation. This screening assessment was based on conservative assumptions such that constituents that passed the screen can be considered to pose no significant risk to ecological receptors. Failure to pass the screen, however, cannot be concluded to represent the presence of risk. Rather these results indicate that available data are insufficient to support a conclusion that ecological risks are absent. Constituents that failed the screen were reevaluated using more realistic assumptions.

This ERA is presented in four sections: problem formulation, exposure assessment, effects assessment, and risk characterization.

2. Problem Formulation

The problem formulation is the first and most critical component of any risk assessment. It involves identifying the problem and chemicals to be addressed, describing the affected site, selecting assessment and measurement endpoints, and developing a site conceptual model and data quality objectives. The problem formulation serves to provide direction and focus to the assessment process.

2.1 Site Description

This section summarizes the location and environmental setting of the Energy Facility (see Sections 2 and 4 of the BA for a more detailed discussion). Briefly, the Energy Facility site is located 3 miles south of Bonanza, Oregon, and 34 miles east of Klamath Falls, Oregon. The Lost River is located approximately 2 miles north of the Energy Facility site and Bryant Mountain is located approximately 1 mile south of the Energy Facility site. Various habitat types within the expected impact area of the Energy Facility include western juniper woodland, Ponderosa pine forest, sagebrush-steppe, ruderal areas, agricultural lands, and several riparian areas associated with the water resources in the area (e.g., Klamath River and tributaries).

2.2 Contaminants of Potential Ecological Concern

Contaminants of potential ecological concern (COPECs) are those chemicals that are present at the site in concentrations that may exceed toxicity thresholds for ecological receptors. This ERA evaluates estimated media concentrations modeled from the air emissions predicted from the natural gas combustion at the Energy Facility and estimated soil concentrations from land application of process wastewater. The significant impact area for air emissions is depicted in Figure 1. This area represents the area where annual average ambient particulate matter under 10 microns (PM_{10}) concentrations of 0.2 $\mu g/m^3$ or greater are predicted. Concentrations at or above this value are defined as significant air quality impacts in the Oregon air quality regulations (OAR 340-200-0020). Oregon's PM_{10} significance level is more stringent than the federal PM_{10} significance level of 1 $\mu g/m^3$ and is therefore considered to be conservative. The percent of aerial deposition at the Energy Facility and that in the primary deposition area are not measurable within the modeling framework. However, incremental soil concentrations (i.e., those above background) from aerial deposition outside

the significant impact area are predicted to be very low and are unlikely to contribute to estimated risk. Because the ~~primary deposition~~significant impact area for air emissions is outside the Energy Facility site (see Figure 1) and deposition outside this impact area is predicted to be very low, ~~the~~ significant deposition from air emissions is not expected to overlap with the process wastewater application area. These two inputs, therefore, were considered separately and were not considered to be additive in soil. Methods used for estimating soil and water concentrations under the two scenarios (i.e., air emissions and process wastewater application) are described below.

2.2.1 Air Emissions

Predicted hazardous air pollutants (HAPs) and their estimated annual emissions are presented in Table 1 along with the estimated annual emissions of ~~particulate matter under 10 microns (~~PM_{10}~~)~~. The methods used to estimate HAPs for the COB Energy Facility are described in detail in Section 2 of the air permit application. Briefly, annual emissions of HAPs were estimated using established EPA emission factors for HAPs (EPA AP-42), supplemented with a recent memorandum from EPA's Office of Air Quality Planning and Standards (OAQPS) regarding formaldehyde emissions from natural-gas-fired combustion turbines employing lean premix combustion. HAP emissions from combustion turbines and duct burners at the proposed facility were conservatively estimated based on 55 percent control efficiency for organic HAPs. Additionally, conservative estimates of heat input rates and annual hours of operation were assumed for each HAP emission source. These conservative assumptions resulted in "worst-case predictions" for HAP emissions.

~~Additionally,~~In addition to the estimated annual emissions, the distribution of ground-level air concentrations of PM_{10} was modeled for a radius of 6 miles around the Energy Facility. The area predicted to have PM_{10} concentrations of 0.2 $\mu g/m^3$ or greater (Oregon air quality regulation) ~~the highest PM_{10} concentrations~~ is depicted in Figure 1. A detailed description of the model used to estimate PM_{10} concentrations is provided in Section 5 of the air permit application. Salient points of the model are described below:

- A class II air quality analysis was conducted using the EPA-approved ISCST3 (Version 020235) model. This model was run using regulatory defaults, direction-specific building downwash, actual receptor elevations, and complex and intermediate terrain algorithms (as appropriate).
- Meteorological data collected at the project site since late October 2001 were processed using the EPA Meteorological Processor for Regulatory Models (MPRM) program. These data indicated that prevailing winds are from the northwest (i.e., they are blowing in a southeast direction). Therefore, the significant impact area for aerial deposition is predicted to occur to the southeast of the proposed facility location.
- The analysis used a nested receptor grid centered on the proposed Facility site with 50-meter spacing out to 1 km, 100-meter spacing out to 5 km, and 500-meter spacing out to 10 km. A fenceline receptor grid with a 50-meter spacing was also used.
- A 6-mile (or 10-km) radius was selected as a realistic initial grid size for the air emissions model. Within this grid, the concentration of PM_{10} was determined at each receptor point over the time period (annual in this case). Each point along the edge

of the grid was checked to ensure that PM_{10} concentrations were below those predicted in the significant impact area. If PM_{10} concentrations were greater than 0.2 µg/m^3, the grid would have been expanded to encompass a larger area. However, in the case of the COB Energy Facility model, these concentrations were less than those in the impact area and the grid size was kept at 6 miles.

Although organic constituents are estimated in the air emissions (see Table 1), EPA (1999) reports that all the organic HAPs are in the vapor phase (vapor phase fraction 100 percent; EPA, 1999). ~~, and t~~Thus, organic HAPs are not expected to have significant deposition to soil or water in the Energy Facility area. Most of the polycyclic aromatic hydrocarbons (PAHs) also are in the vapor fraction (greater than 75 percent; EPA, 1999), and will not have significant deposition in the modeling domain. As a result, the organic HAPs are assumed to vaporize and are not evaluated in this ERA. Metals are of primary concern because of their potential for deposition and low, if any, loss rate from soil and water. These metals include arsenic, cadmium, chromium, cobalt, manganese, mercury, and nickel.

To determine air concentrations of the metals in soil and surface water, the concentration of PM_{10} was multiplied by the ratio of PM_{10} annual emission rate and annual emission rate of the metal. This approach was based on the assumption that all metals are a fraction of the PM_{10} air concentration. The estimated ground-level air concentration of each metal then was used to calculate soil and water concentrations using the following equation from the EPA combustion guidance (EPA, 1998b):

$$Cs = 100 * [(Dydw + Dyww)/(Zs*BD)]*tD$$

Where,

Cs = average soil or water concentration over exposure duration (mg/kg or mg/L),

100 = units conversion factor (mg-m^2/kg-cm^2),

Dydw = deposition rate of dry matter (g/m^2-yr),

Dyww = deposition rate of wet matter (g/m^2-yr),

Zs = soil or water mixing zone depth (cm) = 1 cm for soil, ~~609.6~~152.4 cm for surface water in a generic reservoir, and 60.96 cm for surface water in a generic river,

BD = soil or water bulk density (g/cm^3) = 1.5 g/cm^3 for soil and 1 g/cm^3 for water,

tD = time over which deposition occurs (time period of combustion) (yr) = 30 yrs.

These calculations were based on the following conservative assumptions:

- Standard deposition rates for use in wildlife risk assessments have not been developed. However, 0.02 m/s is the value recommended for use by the California Air Pollution Control Officers Association (CAPCOA, 1993) under their risk assessment guidelines (human health) in the air toxics program. ~~A literature-derived deposition rate of 0.02 m/s (CAPCOA, 1993).~~ This rate includes both dry and wet deposition and is highly conservative. In some cases, it has overestimated deposition by an order of magnitude (Howroyd, 1984). Therefore, a deposition rate of 0.02 m/s is considered conservative and appropriate for a screening-level assessment.

- The value for total wet and dry deposition "~~(~~Dydw + Dyww~~)~~" in the above equation was calculated by multiplying the predicted air concentration of the COPEC at ground level by the deposition rate. The predicted air concentration of the COPEC at ground level is assumed to be in the same proportion as their respective percent mass in PM_{10} (See Table 1). Although McFall Reservoir and Lost River are outside the area predicted to receive the highest concentration of PM_{10} (see Figure 1), other areas utilized by bald eagles (e.g., Smith Reservoir) fall within this area. Therefore, the maximum predicted air concentration within the significant impact area was used to estimate soil and surface water concentrations. This is the most conservative estimate of potential exposure from the predicted deposition of aerial emissions.

- No volatilization of metals occurs that results in 100 percent deposition of emissions. This is especially conservative for mercury because 100 percent of elemental mercury remains in the vapor fraction, and 85 percent of mercuric chloride is generally volatile (EPA, 1999).

- After deposition, no loss to processes, such as erosion, occurs.

- A mixing depth of 1 cm for soil was used as recommended in the combustion guidance (EPA, 1998b). For water bodies, a mixing depth of ~~20~~ 5 feet (~~609.6~~152.4 cm) for a generic reservoir (surrogate for McFall Reservoir, Smith Reservoir, Harpold Reservoir, Alkali Lake, and other surface waters in the area) and 2 feet (60.96 cm) for a generic river (surrogate for Lost River) were selected on the basis of best professional judgment given the latitude and elevation of areas surrounding the Energy Facility.

Table 2 presents summary statistics for predicted concentrations of each COPEC.

2.2.1 Process Wastewater Application

Maximum soil concentrations for the process wastewater application area were calculated from the predicted constituents in the process wastewater at 75 percent recovery (see Table 3). Aluminum, antimony, arsenic, barium, beryllium, cadmium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, tin, and zinc were not detected in the aquifer source water; however, these metals are common in groundwater and likely exist at concentrations below the method reporting limits (MRLs). Therefore, as a conservative assumption, the MRLs for these metals were assumed to represent their concentration in the aquifer source water. Concentrations of these metals were predicted in the process wastewater by multiplying the MRL by a factor (1.954) based on the ratio of raw aquifer water concentration to predicted reject water concentration for metals with detected values (see Table 3).

A factor of 1.954 was determined using a total plant water balance approach. The source water was broken into two components: water and total dissolved solids (TDS). Water leaves the plant by evaporation and wastewater discharge and dissolved solids leave the plant in the wastewater discharge and with the resin from the Polishing Mobil DI. Evaporative losses do not contain dissolved solids; therefore, it was assumed that 98 percent of TDS would be removed in the reject water and the remaining 2 percent by the mobil DI. This results in a reject water TDS of almost two times the TDS in the aquifer source water (i.e., a 1.954 concentration factor). Because the metals are part of the TDS, their

concentrations are also predicted to be 1.954 times greater in the reject water than in the aquifer source water.

Maximum soil concentrations (MSC) of reject water constituents for the process wastewater application area were determined using the following equation:

$$MSC = \frac{(PWC * AWP * L)}{(AA * MD * BD)}$$

Where,

MSC = maximum soil concentration (mg/kg)

PWC = predicted wastewater concentration of constituent (mg/L),

AWP = annual wastewater production (24.3 million gallons or 1,985,500 L),

L = life-span of the energy plant (30 years),

AA = wastewater application area (31 acres or 125,452 m^2),

MD = soil mixing depth for agricultural lands (20 cm or 0.2 m; EPA, 1998b),

BD = bulk density for soil (literature-derived value of 1,500 kg/m^3; EPA, 1998b).

This calculation assumes that constituents accumulate during the 30-year life span of the Energy Facility with no loss from biodegradation, erosion, leaching, or other biotic or abiotic loss mechanisms (see Table 3 for estimated MSCs).

2.2.3 Background Soil Concentrations

Soil concentrations derived from air emissions or process wastewater application represent incremental exposure. Plants, soil invertebrates, and wildlife also are exposed to background concentrations of many of the COPECs. Therefore, background values alone were also compared to screening benchmarks to determine the contribution of background to the total risk estimate. For this ERA, background values for Klamath County as reported by the U.S. Geological Service (USGS) (Boerngen and Shacklette, 1981) were used for all metals, except cadmium. In the absence of these data, the background value for the eastern portion of Washington (which is similar in climate) from the Washington statewide background values report (San Juan, 1994) was used. For comparison, a background concentration of cadmium at a location in California close to the Oregon border was 1.1 mg/kg compared to the Washington value of 1 mg/kg. Additionally, all background values used (Klamath County and Washington state) were generally within the lower range of values measured across the United States (Shacklette and Boergen 1984). Therefore, these regional background values were assumed to be representative of natural levels in the area and were considered appropriate for screening-level assessments in which limited site-specific data are available. ~~, as were Washington statewide background values (San Juan, 1994) when USGS values were lacking. These~~ The selected background values are presented in the risk characterization.

2.3 Assessment Endpoints and Measures of Exposure and Effects

Assessment endpoints are the ecological resources (e.g., potential receptors) that are present at a site and are to be protected. Measures of exposure and effects are the measures evaluated to provide an indication of whether assessment endpoints are sufficiently exposed such that adverse effects may have occurred or are likely to occur.

The areas surrounding the Energy Facility contain a variety of habitats, including riverine systems that support shortnose suckers, Lost River suckers, and bald eagles, which are all federally listed threatened or endangered species. Maintenance of resident aquatic resources is important to the success of these species. Moreover, maintenance of resident terrestrial habitats also is important to bald eagles, which use upland areas during the winter months when lakes and rivers are frozen (Brown and Amadon, 1968). Although Applegate's milk-vetch has been identified as a federally threatened or endangered species endemic to the area, this plant has not been observed in the area of major air emission deposition or in the process wastewater application area. EPA (1992a) identifies four criteria to consider when selecting assessment endpoints. The following is a summary of these criteria and their relationship to the assessment endpoints for the Energy Facility:

- Societal value: Threatened and endangered species (e.g., shortnose sucker, Lost River sucker, and bald eagle) are valued by society as evidenced by special protective legislation.
- Environmental policy goals: Threatened and endangered species (e.g., shortnose sucker, Lost River sucker, and bald eagle) are protected at the individual level.
- Ecological relevance: Aquatic organisms (aquatic plants, invertebrates, and fish) are integral components of the riverine ecosystem present in the Energy Facility area and plants, soil invertebrates, and terrestrial birds and mammals are integral components of the terrestrial ecosystem present in the Energy Facility area.
- Susceptibility to the stressor: Research has shown that aquatic organisms, plants, soil invertebrates, birds, and mammals may be adversely affected by exposure to the COPECs.

Aquatic organisms, terrestrial plants, soil invertebrates, birds, and mammals are potentially sensitive to contaminants and are considered ecologically important. Complete definitions of an assessment endpoint have three components (Suter et al., 2000): the entity, the attribute, and a level of effect. Table 4 summarizes the appropriate assessment endpoints and measures of exposure and effects.

Aquatic organisms, including fish, and bald eagles were evaluated for the aquatic pathways associated with air emissions. Terrestrial pathways for both air emissions deposition and irrigated reuse of process wastewater were evaluated using terrestrial plants, soil invertebrates, and terrestrial birds and mammals as receptors. Specific bird and mammal receptors included the western meadowlark and the deer mouse for the terrestrial assessment and the bald eagle for the aquatic assessment. Western meadowlarks and deer mice have foraging behaviors that are closely associated with the soil and, therefore, are likely to be highly exposed to COPECs in soil. Table 5 outlines relevant life-history parameters for these species.

2.4 Conceptual Site Model

The conceptual site model (CSM) is a description of predicted relationships between ecological receptors and the COPEC to which they might be exposed.

An exposure pathway can be described as the physical course that a COPEC takes from the point of release to a receptor. An exposure pathway is complete (i.e., there is exposure) if there is a way for the receptor to take in chemicals through ingestion, inhalation, or dermal absorption. To be complete, an exposure pathway must have all the following components:

- Chemical source
- Mechanism for chemical release
- Environmental transport medium
- Exposure point
- Feasible route of intake

In the absence of any of these components, an exposure pathway is considered incomplete, and, by definition, there can be no risk associated with that particular exposure pathway. Exposure can occur when chemicals migrate from their source to an exposure point (i.e., a location where receptors can come into contact with the chemicals) or when a receptor moves into direct contact with chemicals or contaminated media.

Two separate exposure scenarios were evaluated, one based strictly on air emissions and one on land application of process wastewater. Conceptual models for both scenarios are presented below.

2.4.1 Air Emissions

~~For purposes of this ERA~~Under the first scenario, the air emissions from natural gas combustion at the Energy Facility are considered the primary source of the COPECs. These COPECs may deposit from air to the soil and surface water within the areas surrounding the Energy Facility. Significant transport of COPECs from the deposition area is not expected. Soil and surface water are the affected media and both aquatic and terrestrial routes of exposure to the COPECs are evaluated in this ERA. Receptors are potentially exposed by way of root or foliar uptake, ~~dermal contact, inhalation,~~ direct ingestion, and ingestion of prey items.

A wide variety of wildlife (i.e., birds and mammals) is supported by the Klamath Basin's mix of habitats, and both terrestrial and aquatic routes of exposure to COPECs exist. Contaminants in water may be directly bioaccumulated by aquatic organisms resident in water bodies located in the vicinity of the Energy Facility, and contaminants in soil may be directly bioaccumulated by terrestrial plants or soil invertebrates. Both aquatic and terrestrial wildlife may be exposed directly to contaminants in soil or surface water by direct ingestion. Wildlife also may receive contaminant exposure through food-web transfer of chemicals from lower trophic levels (e.g., plants to herbivores, plants and prey animals to omnivores) and this is expected to be the primary exposure route for wildlife. Exposure via dermal and inhalation routes although possible are considered trivial compared to ingestion exposure routes.

~~, by dermal contact, or by the inhalation of wind-borne particles. Little information is available on foliar uptake and inhalation routes, and exposure via these routes is expected to~~

~~be minimal; therefore, these pathways will not be evaluated. Although the dermal contact route of exposure exists for many birds and mammals, dermal exposure is likely to be low because of the presence of protective dermal layers (e.g., feathers, fur, scales). Wildlife also may receive contaminant exposure through food-web transfer of chemicals from lower trophic levels (e.g., plants to herbivores, plants and prey animals to omnivores) and this is expected to be the primary exposure route for wildlife.~~

2.4.2 Process Wastewater Application

~~For purposes of this ERA~~Under the second scenario, the process wastewater from the Energy Facility is considered the primary source of the COPECs. These COPECs are transferred to soil in the 31-acre pasture area. Operations of the Energy Facility will be regulated under Oregon state permitting through the DEQ, which places controls on runoff and groundwater impact. To prevent runoff and deep percolation during irrigation, process wastewater will only be applied during the dry irrigation months of April to September and will not exceed agronomic crop water demands. Prior to the start-up of the process wastewater re-use facility, a full soil and hydrogeologic investigation will be conducted to determine selection of the application area. Additionally, monitoring of soil, groundwater, and irrigation water (quality and quantity) is required under the water pollution control permit to meet antidegradation rules for surface and groundwater. ~~Process wastewater will only be applied 8 months of the year and will not be applied during the winter.~~ Therefore, surface water and groundwater are not considered complete exposure pathways in this assessment. Soil is the affected medium and only terrestrial routes of exposure to the COPECs are evaluated in this ERA. ~~No aquatic routes of exposure are expected.~~ Receptors are potentially exposed via root and/or foliar uptake, ~~dermal contact, inhalation,~~ direct ingestion, and ingestion of prey items.

Contaminants in soil may be directly bioaccumulated by terrestrial plants or soil invertebrates. Terrestrial birds and mammals may be exposed directly to contaminants in soil or surface water by direct ingestion. Wildlife also may receive contaminant exposure through food-web transfer of chemicals from lower trophic levels (e.g., plants to herbivores, plants and prey animals to omnivores) and this is expected to be the primary exposure route for wildlife. Exposure via dermal and inhalation routes although possible are considered trivial compared to ingestion exposure routes.~~, by dermal contact, or by the inhalation of wind-borne particles. Little information is available on foliar uptake and inhalation routes and exposure via these routes is expected to be minimal; therefore, these pathways will not be evaluated. Although the dermal contact route of exposure exists for many birds and mammals, dermal exposure is likely to be low because of the presence of protective dermal layers (e.g., feathers, fur, scales). Wildlife also may receive contaminant exposure through food-web transfer of chemicals from lower trophic levels (e.g., plants to herbivores, plants and prey animals to omnivores) and this is expected to be the primary exposure route for wildlife.~~

3. Exposure Assessment

3.1 Aquatic Organisms

Aquatic organisms (aquatic plants, invertebrates, fish) experience exposure based on concentrations in water (i.e., exposure is water-mediated). Water-mediated exposure occurs as a consequence of living in a contaminated medium. Uptake of COPECs can be through

the skin (dermal), through the gills, or through the diet, including ingestion of contaminated water and food. Water-mediated exposure to aquatic organisms is measured as a function of the concentration of contaminants in water (milligrams COPEC per liter water [mg/L]). Water-mediated exposure is used because most information on the effects of contaminants on aquatic organisms (described in Section 4.1) has been obtained from experiments where the exposure to contaminants was reported as a function of the concentrations of contaminants in water. To be conservative, the maximum estimated water concentration for each surface water type (i.e., generic reservoir and generic river) was selected as the suitable exposure point concentration.

3.2 Terrestrial Plants

Terrestrial plants experience exposure based on concentrations in soil (i.e., exposure is soil-mediated). Soil-mediated exposure occurs as a consequence of living in a contaminated medium. For plants, uptake of COPECs can be through roots. Soil-mediated exposure to plants is measured as a function of the concentration of contaminants in soil (milligrams lead per kilogram soil [mg/kg]). Soil-mediated exposure is used because most information on the effects of contaminants on plants (described in Section 4.2) has been obtained from experiments where the exposure to contaminants was reported as a function of the concentrations of contaminants in soil. Because plants are not mobile and to be highly conservative, the maximum estimated concentration was selected as the suitable exposure point concentration.

3.3 Soil Invertebrates

Like plants, soil invertebrates also experience soil-mediated exposure. Uptake of COPECs can be through the skin (dermal), or through the diet, including ingestion of contaminated soil and food. As with plants, most information on the effects of contaminants on soil invertebrates (described in Section 4.3) has been obtained from experiments where the exposure to contaminants was reported as a function of the concentrations of contaminants in soil. Therefore, the focus of the exposure characterization for soil-mediated exposures is the derivation of soil exposure point concentrations. Because mobility of terrestrial invertebrates is low, the maximum concentration was selected as the suitable exposure point concentration.

3.4 Birds and Mammals

Birds and mammals experience exposure through multiple pathways including ingestion of abiotic media (soil, sediment, and surface water) and biotic media (food) as well as inhalation and dermal contact. To address this multiple pathway exposure, modeling is required. Generally, the end product or exposure estimate for birds and mammals is a dosage (amount of chemical per kilogram receptor body weight per day [mg/kg/d]) rather than a media concentration as is the case for the other receptor groups (aquatic organisms, terrestrial plants, and soil invertebrates). This is a function of both the multiple pathway approach as well as the typical methods used in toxicity testing for mammals. However, ODEQ has developed soil screening-level values for birds and mammals and water screening-level values for birds for some contaminants based on conservative assumptions (ODEQ, 2001). These values are intended to be protective of terrestrial birds and mammals and aquatic birds, respectively, and were used as available. To be conservative, the

maximum concentration was selected as the suitable exposure point concentration for comparison to the ODEQ screening values.

If no screening value was available for a COPEC, or a screening value was exceeded, receptor-specific exposure was calculated and compared to literature-derived toxicity values. Moreover, receptor-specific exposure was calculated for bald eagles because it is a special-status species. Summaries of total (i.e., sum over all pathways) and partial (pathway-specific) exposure estimates, as needed, are presented and compared to toxicity values in Section 5. The model used for estimating receptor-specific exposure and associated assumptions is described below.

Model

The general form of the model (Suter et al., 2000) used to estimate exposure of birds and mammals to COPECs in soil, surface water, and food items is as follows:

$$E_t = E_o + E_d + E_i$$

Where:

E_t = the total chemical exposure experienced by wildlife

E_o, E_d, and E_i = oral, dermal, and inhalation exposure, respectively

Oral exposure occurs through the consumption of contaminated food, water, or soil. Dermal exposure occurs when contaminants are absorbed directly through the skin. Inhalation exposure occurs when volatile compounds or fine particulates are inhaled into the lungs.

Although methods are available for assessing dermal exposure to humans (EPA, 1992b), data necessary to estimate dermal exposure generally are not available for wildlife (EPA, 1993). Similarly, methods and data necessary to estimate wildlife inhalation exposure are poorly developed or generally not available (EPA, 1993). If methods were available to permit the estimation of dermal and inhalation rates for birds and mammals, interpretation of the significance of these estimates would be problematic. This is because dermal and inhalation toxicity data for birds and mammals are broadly lacking. Owing to the lack of suitable exposure estimation methods and appropriate toxicity data, further evaluation of potential risks associated with the dermal and inhalation routes was not conducted. Both pathways were retained as uncertainties.

~~Therefore, for the purposes of this ERA, both dermal and inhalation exposure are assumed to be negligible. As a consequence, most exposure must be attributed to the oral exposure pathway. There are no surface water sources on the 31-acre process wastewater application area and, given the arid environment, all water applied to soil is assumed to be rapidly absorbed; therefore, water ingestion is considered an incomplete or insignificant exposure pathway. In contrast, deposition from air emissions is likely to occur in surface waters; therefore, water ingestion is included in the exposure calculations for air emission deposition.~~ By replacing E_o with a generalized exposure model modified from Suter et al. (2000), the previous equation was rewritten as follows:

$$E_j = \left[Water_j \times WIR\right] + \left[Soil_j \times P_s \times FIR\right] + \left[\sum_{i=1}^{N} B_{ij} \times P_i \times FIR\right]$$

Where:

E_j = total exposure (mg/kg/d)

$Water_j$ = concentration of chemical (j) in water (mg/L)

WIR = species-specific water ingestion rate (L water/kg body weight/d)

$Soil_j$ = concentration of chemical (j) in soil (mg/kg)

P_s = soil ingestion rate as proportion of diet

FIR = species-specific food ingestion rate (kg food/kg body weight/d)

B_{ij} = concentration of chemical (j) in biota type (i) (mg/kg)

P_i = proportion of biota type (i) in diet

Assumptions

To establish parameters for the exposure model, various assumptions were necessary. These assumptions are outlined below.

Exposure Point Concentrations. As with the comparisons to ODEQ screening values, a highly conservative approach was taken and the maximum estimated concentration was incorporated into the exposure model as the exposure point concentrations for soil and surface water. For evaluation of the air emissions scenario, maximum surface water concentrations estimated for the generic river were used as exposure point concentrations for meadowlarks. Because ~~there is primary concern for~~ bald eagles are expected to utilize~~ing~~ a variety of habitats in the area, ~~the McFall Reservoir,~~ exposure was calculated using both the generic reservoir and generic river surface water values (maximum concentrations) ~~were used~~ as exposure point concentrations ~~for bald eagles~~. Estimated soil concentrations under this scenario represent the maximum concentration predicted within the significant impact area (Note: this is the maximum concentration predicted for the Energy Facility vicinity.) As previously described, surface water is not present at the process wastewater application area; therefore, water ingestion was not included in the exposure calculation for meadowlarks and deer mice under this scenario. The maximum estimated soil concentrations within the process wastewater application area represent the exposure point concentrations for soil.

Life History Parameters. The specific life-history parameters required to estimate exposure of birds and mammals to COPECs include body weight, ingestion rate of food, ingestion rate of water (for air emissions analysis only), dietary components and percentage of the overall diet represented by each major food type, and approximate amount of soil that may be incidentally ingested based on feeding habits. These parameters, as well as home range information, were obtained from the literature and are presented in Table 5.

It should be noted that bald eagles in the area have a varied diet primarily consisting of carrion, small mammals, and waterfowl during the winter. During the nesting season, fish become and important component. For the purposes of this screening-level assessment, bald

eagles were assumed to have a 100 percent fish diet. This is considered to be a conservative assumption because fish are year-round residents to the area, will forage exclusively within the area, and will experience 100 percent of their exposure from within the area. In contrast, waterfowl are migratory, will only spend a portion of the year in the area, and will only consume a portion of their diet from the area. Additionally, many of the constituents (e.g., mercury) are predicted to accumulate more in fish tissue than in bird tissue using available bioaccumulation models (discussed below). (Note: whereas bioaccumulation models are available for fish, such models for birds are lacking. To estimate concentrations in birds, available models for small mammals would have to be used a surrogate.)

Bioaccumulation Values. Measurements of concentrations of COPECs in wildlife foods are a critical component for the estimation of oral exposure in birds and mammals. Although the preferred data are direct measurements of concentrations in samples collected from the site, such data were not available in the vicinity of the Energy Facility. Therefore, literature-reported bioaccumulation factors (BAFs), regressions, or Kow-based models for terrestrial food items (foliage and insects) and literature-reported bioconcentration factors (BCFs) for aquatic food items were used.

BAFs or regressions were available for foliage (Bechtel-Jacobs, 1998; CH2M HILL, 2002), and insects (CH2M HILL, 2002) for the inorganics, models (K_{ow}-based) from EPA (2000) were used to estimate bioaccumulation factors (BAFs) for phenol in foliage and earthworms. The earthworm model was used as a surrogate for insects. To be conservative, the fraction of organic carbon required for the earthworm bioaccumulation model was assumed to be 1 percent. No foliage BAFs were available for cyanide, silver, thallium, or tin and no insect BAFs were available for cyanide, or tin; therefore, a BAF of one was assumed for these COPECs. BCFs were available for fish (Sample et al., 1997) for all COPECs, except cobalt and manganese. A BCF of one was assumed for these two COPECs. Table 6 summarizes the BAFs and BCFs used in the ERA.

4. Characterization of Ecological Effects

4.1 Aquatic Organisms

Screening-level toxicity values for aquatic organisms are provided by ODEQ guidance (ODEQ, 2001) and are shown in Table 7. For most cases, these values are the same as the National Ambient Water Quality Criteria (EPA, 2002) or chronic values developed at the Oak Ridge National Laboratory (ORNL) (Suter and Tsao, 1996). These values are intended to protect 95 percent of aquatic species, 95 percent of the time. Screening values are only shown for the COPECs associated with air emissions. An aquatic pathway is not complete for the process wastewater application (see Section 2.3).

4.2 Terrestrial Plants

Screening-level toxicity values for terrestrial plants are provided by ODEQ guidance (ODEQ, 2001) and are shown in Table 7. Most of these screening values are from the ORNL plant benchmarks report (Efroymson et al., 1997a). The protection of terrestrial plant communities from a 20 percent reduction in growth, reproduction, or survival is an assessment endpoint in this ERA. Therefore, benchmarks used to determine risk to this receptor group

must be based on adverse effects related to these endpoints. The ORNL plant benchmarks were developed from studies that demonstrated at least a 20 percent reduction in the growth or yield of test plant species, which is consistent with the goals of the ERA. Additionally, growth and yield are important to plant populations and to the ability of the vegetation to support higher trophic levels; therefore, these are ecologically significant responses (Efroymson et al., 1997a).

4.3 Soil Invertebrates

Single-chemical screening-level toxicity values for soil invertebrates are provided by ODEQ guidance (ODEQ, 2001) and are shown in Table 7. Most of these screening values are from the ORNL soil invertebrate benchmarks report (Efroymson et al., 1997b) and are represented primarily by earthworms. The protection of terrestrial invertebrate communities from a 20 percent reduction in growth, reproduction, or survival is an assessment endpoint this assessment. Therefore, benchmarks used to determine risk to this receptor group must be based on adverse effects related to these endpoints. The ORNL soil invertebrate benchmarks were developed from studies that demonstrated at least a 20 percent reduction in the growth or survival of test invertebrate species, which is consistent with the goals of the ERA.

4.4 Birds and Mammals

Screening-level values for birds and mammals provided by ODEQ (ODEQ, 2001) were used as available in the ERA and are presented in Table 7. For birds, cobalt, iron, silver, thallium, and tin were lacking ODEQ screening values, but studies from which benchmarks could be developed for these metals were available. Similarly, iron, silver, tin, cyanide, and phenol benchmarks were developed for mammals from other sources. No data for birds were available for development of benchmarks for cyanide or phenol. Unlike the ODEQ screening values, which are presented as mg constituent per kg soil, these benchmarks are presented as a dose (mg constituent/kg body weight/day) to the receptor and were selected as described below.

Single-chemical toxicity data for birds and mammals consist of no observable adverse effect levels (NOAEL) or lowest observable adverse effect levels (LOAEL) derived from toxicity studies reported in the literature. The benchmarks for birds and mammals were obtained from several sources, including wildlife toxicity reviews, literature searches, wildlife benchmarks developed at ORNL (Sample et al., 1996), the EPA Region IX Biological Technical Assistance Group (BTAG) toxicity reference values (TRV) developed for the U.S. Navy (EFA West, 1998), and a Review of the Navy-EPA Region IX BTAG TRVs for Wildlife (CH2M HILL, 2000). Appropriate studies were selected based on the following criteria:

- Studies were of chronic exposures or exposures during a critical life-stage (i.e., reproduction).
- Exposure was oral through food, to ensure data were representative of oral exposures expected for wildlife in the field.
- Emphasis was placed on studies of reproductive impacts, to ensure relevancy to population-level effects.

- Studies presented adequate information to evaluate and determine the magnitude of exposure and effects (or no effects concentrations).

Multiple toxicity studies were available for birds and mammals for several analytes. Toxicity studies were selected to serve as the primary toxicity value if exposure was chronic or during reproduction, the dosing regime was sufficient to identify both a NOAEL and a LOAEL, and the study considered ecologically relevant effects (i.e., reproduction, mortality, growth). If multiple studies for a given COPEC met these criteria, the study generating the lowest reliable toxicity value was selected to be the primary toxicity value. Primary toxicity values were used for all initial evaluations of the exposure estimates and are highlighted in Table 8. Information concerning assumptions made as part of the extraction of data from each study is presented in the one attachment to this memorandum.

NOAELs and LOAELs for avian and mammalian receptors were estimated from literature data using allometric scaling methods presented in Sample et al. (1996) and Sample and Arenal (1999). Using the following equation, NOAEL or LOAEL for wildlife ($NOAEL_w$ or $LOAEL_w$) were determined for each species:

$$NOAEL_w = NOAEL_t\left(\frac{BW_t}{BW_w}\right)^{1-b} \text{ or } LOAEL_w = LOAEL_t\left(\frac{BW_t}{BW_w}\right)^{1-b}$$

where:

$NOAEL_t$	=	the NOAEL for a test species (obtained from the literature),
$LOAEL_t$	=	the NOAEL for a test species (obtained from the literature),
BW_t and BW_w	=	the body weights (in kg) for the test and wildlife species, respectively, and
b	=	the class-specific allometric scaling factor.

Scaling factors of 0.94 and 1.2 were applied for mammals and birds, respectively (Sample and Arenal, 1999). Table 9 presents these receptor-specific NOAELs and LOAELs.

5. Risk Characterization

In the risk characterization, exposure and effects data are combined to draw conclusions concerning the presence, nature, and magnitude of effects that may exist at the site. For all receptors (i.e., aquatic organisms, terrestrial plants, soil invertebrates, and birds and mammals), only literature-derived benchmarks were available. These were compared to maximum soil or water concentrations or dose based on maximum soil or water concentration to determine hazard quotients (HQs = exposure measure/effects measure) for each COPEC. Screening-level benchmarks are conservative; therefore, COPECs that are below these thresholds pass the screen and are not considered in future evaluations. However, HQs greater than one indicate a failure to pass the screen. Failure to pass the screen, however, cannot be concluded to represent the presence of risk. Rather, these results indicate that available data are insufficient to support a conclusion that ecological risks are absent. Constituents that failed the screen were reevaluated using more realistic assumptions.

Results of the screening evaluations for the deposition from air emissions scenario and the process wastewater application scenario are discussed below. Uncertainties that may influence these screening-level results are summarized in Section 5.3.

5.1 Air Emissions

Screening results for incremental, background, and total soil concentrations and incremental surface water concentrations (generic reservoir and generic river) against ODEQ screening values are presented in Tables 10 and 11, respectively. Table 12 presents bird and mammal screening evaluations based on receptor-specific parameters for COPECs that failed the ODEQ screen (chromium for birds), for COPECs lacking ODEQ screening values (cobalt for birds), and for bald eagles.

For terrestrial receptors (i.e., plants, soil invertebrates, and birds and mammals), chromium, manganese, and nickel failed to pass the screening evaluation when total (incremental + background) concentrations were evaluated (Table 10). Chromium exceeded the ODEQ screening values for plants, soil invertebrates, and birds; manganese exceeded the screening value for plants and soil invertebrates, and nickel exceeded the screening value for plants. However, in all cases, these exceedances were driven by background concentrations and no HQs greater than one were observed based on incremental concentrations. Background concentrations of certain metals (e.g., chromium) often exceed screening benchmarks. This does not necessarily indicate that background values present risk. Rather, this indicates the conservativeness of the screening benchmarks as well as limitations in the toxicity data used to develop the benchmarks. To be protective, screening benchmarks are frequently based on the lowest or 10th percentile concentrations associated with effects. Moreover, toxicity tests upon which screening benchmarks are based are often conducted using soluble salts added to test soils. These salts are generally more bioavailable than those forms present in the environment. Additionally, factors such as pH and organic content can reduce or increase the bioavailability of certain metals in the field relative to that in the laboratory tests and local organisms are often adapted to the background conditions in their environment. Therefore, it is generally assumed that background concentrations do not present risk to plants, soil invertebrates, and birds and mammals that frequent an area.

Because total chromium concentrations exceeded the ODEQ benchmark (HQ = 11.25) for birds and because no ODEQ avian screening value was available for cobalt, these COPECs were further evaluated using receptor-specific parameters to calculate exposure ~~to~~ for western meadowlarks (see Table ~~11~~12). In this evaluation, estimated oral exposure to chromium and cobalt was less than literature-derived benchmarks for these COPECs (see Table ~~11~~12). ~~Therefore~~The results of the terrestrial evaluation based on deposition of air emissions indicate that~~,~~ potential risks from chromium, manganese and nickel to plants, soil invertebrates, and birds are considered to be negligible.

Estimated maximum concentrations of all COPECs under both the generic reservoir and generic river scenarios were below ODEQ benchmarks for aquatic biota and aquatic birds (see Table 11). Therefore, no risk is expected from any of these COPECs. Because no ODEQ aquatic bird screening value was available for cobalt, this COPEC was further evaluated using receptor-specific parameters to calculate exposure (see Table ~~11~~12). Additionally, exposure calculations using receptor-specific parameters were performed for bald eagles

because it is a special-status species that is of special concern within the deposition area of air emissions from the Energy Facility (see Table ~~11~~12).

None of the COPECs evaluated further exceeded oral exposure benchmarks for birds (i.e., all HQs were less than one) for the bald eagle under the generic reservoir (5-foot mixing depth) scenario (see Table ~~11~~12). Mercury exposure using surface water concentrations for the generic river (2-foot mixing depth), exceeded the NOAEL, but not the LOAEL. Because bald eagles are a protected species, exceedance of the NOAEL is of concern; therefore, mercury was evaluated qualitatively to determine its potential for risk to bald eagles. The magnitude of exceedance of the NOAEL is low (HQ = 1.5) suggesting that risk is also likely to be low. Moreover, mercury in the air emissions was assumed to be 100 percent in the particulate phase for estimation of soil and water concentrations. In fact, 100 percent of elemental mercury and 85 percent of mercuric chloride remains in the vapor phase and would be expected to volatilize. Therefore, estimated concentrations of mercury in soil and surface water are greatly over estimated resulting in gross overestimation of risk. Thus, deposition of metals from air emissions is considered to present no risk to aquatic organisms or bald eagles using reservoirs in the vicinity of the Energy Facility. Moreover, no risk to aquatic organisms, including the shortnose sucker and Lost River sucker, or birds using the riverine habitats in the vicinity of the Energy Facility is expected.

5.2 Process Wastewater Application

Screening results for incremental, background, and total soil concentrations against ODEQ screening values are presented in Table 13. Bird and mammal screening evaluations for COPECs lacking ODEQ values are presented in Table 14.

As indicated in Table 13, several process wastewater constituents (aluminum, barium, boron, chromium III, copper, fluoride, iron, manganese, molybdenum, and nickel) failed to pass the screening evaluation (i.e., HQs greater than one for any receptor) when total (incremental + background) concentrations were evaluated. However, the exceedances of all but boron, iron, and molybdenum were driven by background concentrations. It is notable that the ODEQ plant screening value for iron is not a soil concentration, but in fact, represents the screening value for iron in solution. Because it is not applicable to soil, this benchmark was considered inappropriate for use in the screening evaluation. Although risk to plants from iron exposure is uncertain, no incremental risk was found for soil invertebrates, birds, and mammals.

Additionally, incremental exposure to iron is ~~only 0.02~~less than 0.001 percent of the background exposure and is likely insignificant compared to background. Of the constituents evaluated separately for birds and mammals (dose calculations), only iron exceeded the NOAELs with HQs of 17 and ~~3,139~~3,140 for meadowlarks and deer mice, respectively (see Table 14). As with the evaluation in Table 13, these exceedances were driven by background iron concentrations with no exceedances of the toxicity reference values based on wastewater discharge alone. HQs for incremental exposure to iron were 0.00~~43~~ and 0.~~504~~ 748 for meadowlarks and deer mice, respectively. Therefore, the incremental exposure to plants, soil invertebrates, birds, and mammals from the process wastewater application is expected to be minor for all constituents, except for boron and molybdenum exposures to plants and boron exposures to invertebrates. Constituents for

which toxicity benchmarks are lacking were not evaluated and remain an uncertainty. Additionally, salts and total dissolved solids (TDS) were evaluated elsewhere in the BA.

Estimated maximum incremental boron concentrations in soil were ~~93~~ 79 times the plant screening value of 0.5 mg/kg. However, the screening value represents the toxicity level for highly sensitive plant species. For boron-tolerant species (e.g., alfalfa), toxicity thresholds are approximately 2 to 4 mg/kg (Brown et al., 1983). This reduces the HQ from ~~53.4~~79.2 to approximately ~~23.3~~19.8 to ~~11.7~~9.9 for the boron-tolerant species selected for planting in the application area. Moreover, less than 5 percent of the total boron in soil is available for uptake to plants (Eisler, 2000), reducing the estimated incremental exposure from ~~26.7~~39.6 mg/kg to ~~1.33~~1.98 mg/kg and the total exposure from ~~46.7~~59.6 to ~~2.33~~2.98 mg/kg. Though these concentrations still exceed the screening level derived for sensitive plants species, they are below concentrations associated with toxic effects to boron-tolerant plants when considering boron bioavailability. Boron concentrations adjusted for bioavailability are also below the screening level for invertebrates.

Molybdenum is an essential micronutrient that is not highly toxic to plants, but bioaccumulates in plant tissue and is generally of concern to higher trophic organisms (Eisler, 2000). Ruminants (e.g., cattle and sheep) in particular can be sensitive to molybdenum exposure in forage because excess molybdenum may result in a copper deficiency (Eisler, 2000). However, the maximum estimated total molybdenum concentration in soil did not exceed the screening benchmarks for birds and mammals and is therefore unlikely to pose risk to these receptors.

Although the molybdenum benchmark for plants was exceeded, risk to terrestrial plants from molybdenum exposure is considered low because of the low exceedance of the screening value (HQ = ~~2.7~~3.3 for total molybdenum). Additionally, the highly conservative assumptions applied to the risk estimation likely result in an overestimation of molybdenum exposure. First, molybdenum was not measured in the raw aquifer water and was therefore estimated using the minimum reporting limit. Moreover, the maximum soil concentration of molybdenum was estimated assuming a wastewater output of 24.3 million gallons based on a 72 percent capacity factor for the Energy Facility. The actual capacity of the Facility will likely be closer to 40 percent, resulting in the creation of 13.5 million gallons of wastewater. At 40 percent capacity, the estimated soil concentration of molybdenum from wastewater application would be reduced from ~~2.41~~3.58 to ~~1.34~~1.99 mg/kg, a value below the screening benchmark for plants. Finally, the calculation used to estimate soil concentrations from wastewater application assume that there is no loss due to abiotic or biotic factors. As a consequence, the calculated molybdenum concentration likely represents an overestimate of exposure to organisms.

5.3 Uncertainty Analysis

Uncertainties are inherent in all risk assessments. The nature and magnitude of uncertainties depend on the amount and quality of data available, the degree of knowledge concerning site conditions, and the assumptions made to perform the assessment. The following is a qualitative evaluation of the major uncertainties associated with this assessment, in no particular order of importance:

- Concentrations of COPECs in soil and surface water were wholly estimated on the basis of predicted concentrations of COPECs in air emissions and process wastewater from the Energy Facility. Although this uncertainty may result in underestimation of exposure (and risk), the conservative assumptions applied to air emission and process wastewater predictions, as well as the conservative assumptions used to convert these concentrations to soil and water concentrations, likely result in an overestimation of risk.

- Literature-derived values for bulk density of soil, soil and water mixing depths, and deposition rate of air emissions were used to calculate soil and water concentrations. The suitability of these literature values is unknown, although these are conservative values. Therefore, risk may be underestimated, but is likely overestimated.

- Based on best professional judgment, mixing depths of 20 feet for reservoirs and 2 feet for rivers were selected for estimating surface water concentrations from air emissions deposition. The suitability of these values is unknown. Consequently, risk may be over- or underestimated.

- Constituents in wastewater were estimated assuming a 72 percent capacity factor for the Energy Facility. It is more likely that the Facility will be operated at approximately 40 percent capacity. Therefore, wastewater concentrations and resulting risk are likely overestimated.

- Molybdenum, copper, and sulfur have complex interactions in soil that can result in increased or decreased toxicity to foraging animals. For example, excess molybdenum can cause a copper deficiency, though adequate molybdenum can decrease toxicity associated with excess copper. Because of the uncertainties in the risk estimation (e.g., copper and molybdenum were not detected in the raw aquifer water) and the complex nature of these constituents, it is uncertain whether risk was over- or underestimated for copper and molybdenum, although effort was made to overestimate risk through the conservative set of assumptions.

- Data concerning soil ingestion rates for bird and mammal receptors were not available. As a consequence, the soil ingestion rates were estimated on the basis of assumed similarities to other species for which data were available. The suitability of these assumptions is unknown. Although this uncertainty may result in underestimation of exposure (and risk), it is more likely that exposure and risk are overestimated.

- No life history data specific to the COB Energy Facility area were available; therefore, exposure parameters were either modeled on the basis of allometric relationships (e.g., food ingestion rates) or were based on data from the same species in other portions of its range. Because diet composition as well as food, water, and soil ingestion rates can differ among individuals and locations, published parameter values may not accurately reflect individuals present at the site. As a consequence, risk may be either overestimated or underestimated.

- No site-specific data on COPEC concentrations in fish, terrestrial plants, and soil invertebrates were available for wildlife exposure estimate calculations. Therefore, concentrations in these prey items were estimated from literature-reported bioaccumulation models (BCFs, 90th Percentile BAFs, regressions, or Kow-based). The suitability of these bioaccumulation models is unknown. As a consequence,

concentrations of COPECs in prey items of wildlife may be either greater than or less than data used in this assessment.

- Literature-derived toxicity data based on laboratory studies were used to evaluate risk to all receptor groups. It was assumed that effects observed in laboratory species were indicative of effects that would occur in wild species. The suitability of this assumption is unknown. Consequently, risk may be either overestimated or underestimated.
- Literature-derived toxicity data are not available for western meadowlarks, bald eagles, or deer mice. Therefore, laboratory studies on the effects of COPECs on test species (e.g., quail, chicken, mallard, rat, mouse, rabbit) were used to evaluate risks to these receptors. It was assumed that effects observed in these test species were indicative of effects that would occur in the receptor. However, sensitivity to COPECs can vary between species, and this variation may be even more varied between taxonomic groups (i.e., galliforms versus raptors). Consequently, risk may be either overestimated or underestimated.
- Toxicity data are not available for all COPECs considered in this ERA. As a consequence, COPECs for which toxicity data are unavailable were not evaluated. Exclusion of COPECs from evaluation underestimates aggregate risk.
- Bioavailability in the toxicity studies used for screening is generally high because many toxicity tests are performed using soluble salts of inorganic chemicals. Therefore, risk based solely on literature-derived toxicity values may be overestimated.
- Because toxicity data are not available for individual bird and mammal receptors, it was necessary to extrapolate toxicity values from test species to site receptor species. Although improved class-specific scaling factors were employed (Sample and Arenal, 1999), these factors are not chemical-specific and are based on acute toxicity data. As a consequence, risk may be either overestimated or underestimated.
- In this assessment, risks from COPECs each were considered independently (i.e., no ambient media toxicity data were available). Because chemicals may interact in an additive, antagonistic, or synergistic manner, evaluation of single-chemical risk may either underestimate or overestimate risks associated with chemical mixtures.
- Due to lack of exposure estimation methods and toxicological effects data, dermal and inhalation exposure were not evaluated for birds and mammals in this assessment. As a consequence, cumulative exposure estimates may be underestimated. However, because exposure was based on conservative assumptions and because the oral pathway (i.e., ingestion of contaminated media and prey) is the primary exposure route, underestimation of total exposure is considered trivial.

6. Conclusions

6.1 Air Emissions

For terrestrial receptors (i.e., plants, soil invertebrates, birds, and mammals), chromium, manganese, and nickel failed to pass the screening evaluation when total (incremental + background) concentrations were evaluated. However, in all cases, these exceedances were driven by background concentrations. Receptor-specific evaluation of chromium and cobalt

exposure to birds resulted in no exceedances of literature-based toxicity thresholds. Therefore, exposure to arsenic, cadmium, cobalt, and mercury associated with air emissions from the Energy Facility poses no risk to plants, soil invertebrates, birds, and mammals, whereas potential risks to plants, soil invertebrates, and birds from exposure to chromium, manganese, and nickel are considered to be negligible.

None of the COPECs exceeded benchmarks for aquatic receptors; therefore, deposition of air emissions from the Energy Facility to surface water poses no risk to aquatic organisms, such as the shortnose sucker~~,~~ and Lost River sucker. Though mercury under the generic river scenario (2-foot mixing depth) exceeded the NOAEL for bald eagles, this exceedance was low. Additionally, mercury is primarily found (85 percent or greater) in the vapor phase and therefore estimates based on 100 percent in the particulate phase greatly overestimate mercury deposition. Therefore, no risk to ~~, and~~ bald eagles from air emissions is predicted.

6.2 Process Wastewater Application

Process wastewater constituents evaluated, except aluminum, barium, boron, chromium III, copper, fluoride, iron, manganese, molybdenum, and nickel, passed the screening evaluation and are considered to present no risk to ecological receptors. After further evaluation, background concentrations were found to be the primary driver for screening failures of aluminum, barium, chromium III, copper, fluoride, iron, manganese, and nickel, with negligible incremental contributions of these constituents to the risk estimation. Considering the bioavailability of boron to plants (less than 5 percent of total boron) substantially reduced the risk estimation for boron. Although both incremental and total (incremental + background) boron concentrations continued to exceed screening levels for sensitive plant species, incremental and total exposures were below toxicity thresholds for invertebrates and for boron-tolerant plant species when adjusted for boron bioavailability. Estimated maximum concentrations of molybdenum exceeded the soil benchmark for plants; however, risk to terrestrial plants from molybdenum exposure is considered low owing to the low exceedance of the screening value and the highly conservative assumptions applied to the risk estimation. Thus, none of the constituents evaluated are considered to present significant risk to ecological receptors.

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PART 6

Comments on and Responses to the COB Energy Facility Draft Environmental Impact Statement (DEIS)

Comments on and Responses to the COB Energy Facility DEIS

Comments on and Responses to the COB Energy Facility DEIS

Letter Log #	Comment Code	Topic	Comment Summary	Response
PRIVATE CITIZENS				
2COBEF-001	**1A**	Economics	Supports economic growth and the project	Comment noted. No changes are proposed for the Final Environmental Impact Statement (FEIS).
2COBEF-002	**2A**	Stormwater	Concerned that stormwater/plant water will contaminate groundwater	The proposed action is to discharge noncontact stormwater into an infiltration basin. The stormwater is not contaminated and will not affect groundwater or surface water. This process will be permitted and regulated by the Oregon Department of Environmental Quality (DEQ) Water Quality Division. Air emissions will meet the state and federal air quality standards to protect human health. In addition, the risk assessment (Appendix C to the Biological Assessment, which itself is Appendix C to the FEIS), determined that there was no risk to the aquatic environment. The alternative to discharge stormwater into the Langell Valley Road drainage ditch is no longer considered a viable option and has been dropped from further consideration in the
	2B	Stormwater	Potential of stormwater discharging into Langell Valley roadside ditches	The alternative to discharge stormwater into the West Langell Valley Road drainage ditch is no longer considered a viable option and has been dropped from further consideration. The FEIS includes a discussion on dropping this option from further consideration.
	2C	Stormwater	Amendment 2 page B-5 states there will not be stormwater discharges into drainage ditches	See response to Comment 2B.
	2D	Wastewater	How will solids from the Plant Drain System be disposed?	Any solids that are removed from sumps or drains will be placed in barrels and removed from the project site by a licensed recycler or disposal operator.
	2E	Wastewater	Discrepancy between EIS and Amendment 2 whether storing and hauling of wastewater is an alternative.	The Draft EIS (DEIS) and FEIS describe the alternatives for disposal of wastewater. However, the preferred alternative and the alternative proposed to the Energy Facility Siting Council (EFSC) is to land apply process wastewater. Storing and hauling of wastewater will not be considered further in the FEIS.
2COBEF-003	**3A**	Alternatives	Why build the power plant in a pristine area instead of closer to the power demand?	The availability of energy sources (e.g., natural gas, wind, coal, hydro), availability of land, and environmental impacts make it difficult and expensive to site power generating facilities in load centers. In addition, reliability of the electrical system depends on a diverse and distributed generation that is interconnected with a reliable and efficient transmission system. The California-Oregon border is one of the strategic locations for providing power both north and south on the western interconnection transmission system. Additional information on the site selection process for this project has been added to Chapter 2 of the EIS to clarify how the proposed site was chosen.
	3B	Land Use	The project is proposed for land designated as exclusive farm use	Parts of the proposed project will be constructed on land designated as Exclusive Farm Use (EFU). Energy generation facilities are allowed in all EFU zones. The project has applied for acreage exceptions in accordance with Oregon law.
	3C	Transmission	BPA should not allow the transmission interconnection	The opinion of the commenter is noted. To disallow the interconnection—the No Action Alternative—is under consideration.
	3D	Transmission	What will BPA gain by allowing the interconnection?	Bonneville Power Administration (BPA) has no particular interest in allowing the proposed interconnection of the proposed COB Energy Facility to BPA's transmission system. As is discussed in the EIS, BPA has an obligation under its Open Access Transmission Tariff to provide transmission interconnection to all eligible customers on a first-come, first-served basis. If BPA decides to allow interconnection of the proposed project, it would gain revenue for transmission services provided to COB.
2COBEF-004	**4A**	Air Quality	Project will pollute the air	The Air Contaminant Discharge Permit Program, administered by DEQ, has established requirements for regulating air emissions in the atmosphere. Extensive analysis by the project proponent has determined that the Facility meets establish limits to protect human health and the environment. DEQ has issued an Air Contaminant Discharge Permit to the project proponent for the proposed facility.
	4B	Wastewater	Project will pollute the water	There will be no process wastewater discharged to surface or groundwater.
	4C	Peoples Energy	Who are the owners of Peoples Energy, where do they reside?	Peoples Energy is a publicly owned company and as such is owned by stockholders. There is no single residence for all of the stockholders.
	4D	Peoples Energy	Who gets the Peoples Energy profits. Does profit stay in Klamath County?	Peoples Energy profits are received as dividends by stockholders. The economic benefit to Klamath County is not dependent on the corporate profits.
2COBEF-005	**5A**	Fish	Locals had to give up water to protect fish	The project will use water from a deep aquifer that will not affect surface water used by fish, including the Lost River suckers and the shortnosed suckers. A worst case hydraulic connection case presented in Appendix F of the Biological Assessment (BA) found that negative impacts would not occur.
	5B	Wildlife	Impacts on deer population	The potential impacts on wildlife were evaluated in the EIS (see Sections 3.4 and 3.5). Although there will be impacts to wildlife, primarily deer, the project has proposed mitigation which when implemented will enhance deer and other wildlife habitat.
	5C	Water Resources	Impacts on irrigation water, domestic wells, and town of Bonanza	The aquifer proposed for use by the project proponent is not known to be used in the vicinity of the study area. The shallower wells used by the majority of the local irrigators are not expected to be impacted by the relatively small amount (less than 300 gallons per minute [gpm]) of proposed use, a small amount relative to nearby irrigation pumping. In addition, OWRD conditioned the project proponent's draft permit with a requirement that the project proponent monitor for potential impacts, and provide mitigation to offset any observed impacts.
	5D	Water Resources	How can the state issue the project a water right when it will not to others?	The water right issued for the proposed project is for withdrawing a small amount of water from the deep aquifer, which is separate from the shallow aquifer. There are no other water rights proposing to withdraw water from the deep aquifer at the time of the project proponent's request. The water right application was evaluated by the Oregon Water Resources Department (OWRD) and a draft water right was prepared and forwarded to the Oregon Department of Energy (ODE) with a recommendation for approval. Other water right applications in the area are for the shallow aquifer, which has numerous pending water right applications.
	5E	Water Resources	There could be legal action over issuing a water right	The OWRD has prepared a draft permit and recommended that the ODE issue the water right. Any legal challenge to this permit is outside the scope of this National Environmental Policy Act (NEPA) document.
2COBEF-006	**6A**	General Pollution	Why is a higher level of all pollutants okay for local residents?	Local, state, and national pollutant limitations are applicable to projects uniformly. Local residents have the same protection(s) as residents in other locations in Oregon.

Comments on and Responses to the COB Energy Facility DEIS

Letter Log #	Comment Code	Topic	Comment Summary	Response
	6B	Need	There is no emergency need for the energy	The focus of project construction and operation is not to respond to an energy emergency, but to provide an electrical baseload over a long period of time.
	6C	Heat Dissipation	What will the project proponent do if air-cooling is ineffective? Will they use the water-cooled alternative?	Air-cooling is an existing and demonstrated technology that has proven to be effective. The project is not being permitted to allow for water-cooled technology. The comment does not change the proposed action or alternatives and no further action is warranted.
	6D	Water Resources	Can the project proponent claim the first water right on the Babson Well and withdraw as much water as they want?	Water withdrawal is limited by the water right issued by the Oregon Water Resources Department.
	6E	Property Values	If local properties cannot be sold because of impacts from the project, will residents be compensated?	One of the criteria of review for of the state issued Site Certificate is impacts to surrounding agricultural practices. The Oregon Department of Energy has reviewed our application and concluded that the project will not have a negative impact on surrounding land uses (Reference ASC Exhibit)
	6F	Property Values	Will COB workers buy and live in the homes near the project?	The project proponent will have no policy on location of workers residence. The comment does not affect the proposed action or alternatives. No further action is warranted.
	6G	Property Values	Will landowners be given tax breaks or other advantages for impacts on their life styles?	The project is not expected to affect land values of properties in the area either positively or negatively. However, an overall positive economic impact on Klamath County is anticipated.
2COBEF-007	**7A**	Water Resources	Inaccuracies in describing upland features. Does not believe water resource data is accurate, wants independent review	The relationship of above-ground features to below ground features is not necessarily directly correlated. The study conducted by the project proponent was reviewed by the Oregon Water Resources Department and a water right was approved based on that information.
	7B	Wildlife	Impacts on deer migration and fawning survival	See response to Comment 5B.
	7C	Alternatives	Why use farm land when there is existing vacant industrial land available?	See response to Comment 3A.
2COBEF-008	**8A**	Hydrology	The aquifer will be affected by the mass use	See response to Comment 5C.
	8B	Hydrology	Questions the source of the groundwater and potential impacts at the source	The project proponent has provided analysis that shows that even at much higher pumping rates than the currently proposed rate (less than 300 gpm), there should not be a cumulative decline in water levels resulting from the pumping. In addition, the hydraulic radius of influence does not extend to the assumed recharge area, where the deeper aquifer rocks are exposed at the surface. As a result, the proposed pumping is not expected to have any measurable impact in potential recharge areas. However, OWRD conditioned the project proponent's draft permit with a requirement that the project proponent monitor for potential impacts, and provide mitigation to offset any observed impacts.
2COBEF-009	**9A**	Traffic	Impacts on traffic	Traffic and transportation were evaluated in Section 3.6 of the EIS. These studies indicate that the Level of Service on local roads would not be reduced by the construction and operation of the facility. No further action is warranted.
	9B	Land Use	Impacts on cattle, alfalfa crops, and rural residents	See response to Comment 3A.
	9C	Land Use	Project should be constructed in Klamath Falls	See response to Comment 3A.
	9D	Land Use	Project does not conform to the Klamath Falls County Comprehensive Plan	The proposed project would comply with applicable Klamath County land use plans and development regulations. The project proponent is seeking acreage exceptions from the limitations stated under Goals 3 and 4. The acreage exceptions process is anticipated for a power generation facility. The County's Planning Director has confirmed to the project proponent, in writing, that the project satisfies the Plan and development regulations, and that the exceptions to acreage limitations under Goals 3 and 4 are warranted. See Sections 3.10.1.3 through Section 3.10.1.5 for a more detailed discussion on compliance with the Klamath County Land Use regulations.
2COBEF-010	**10A**	Land Use	EFSC beyond its authority to allow project in Exclusive Farm Use Zone	See response to Comment 3B.
	10B	Air Quality	The emissions have been reported to be nine times that of state standards	The Air Contaminant Discharge Permit Program, administered by DEQ, has a rigorous program for evaluating air emissions from this and similar facilities. Through extensive analysis by the project proponent, the Facility has been shown to comply with all requirements, including emissions and air quality requirements.
	10C	Water Quality	Emission from the plant will pollute the spring waters	See response to Comment 10C and Appendix C of the Biological Assessment.
	10D	Land Use	If the project is approved there will be litigation to stop issuance of permits	The proposed project has been issued air and water permits and is in the process of completing the Oregon Energy Facility Siting requirements. Completing the NEPA EIS process and obtaining a Record of Decision (ROD) from BPA and BLM will allow the project, as conditioned by state, local, and federal requirements, to go forward. Legal actions can be taken to challenge these decisions.
2COBEF-011	**11A**	Hydrology	Questions validity of statement that water source is a deep aquifer isolated from the upper aquifer	The project proponent concluded, on the basis of extensive testing and borehole analysis, that there are two separate aquifer systems: one above 500 feet, and another below 1,500 feet. The Oregon Water Resources Department questioned these conclusions, and remains concerned that a connection not indicated in the test results could exist. The project proponent's descriptions of aquifer test results do not constitute false statements. In addition, OWRD conditioned the project proponent's draft permit with a requirement that the project proponent monitor for potential impacts, and provide mitigation to offset any observed impacts.
2COBEF-012	**12A**	Land Use	The size of the buildings exceed guidance for square footage of buildings in commercial zones	The project is proposed to be constructed on land zoned Exclusive Farm Use (EFU). Energy generation facilities are an allowable use in EFU zones. There is no applicable limitation to building size.
	12B	Seismic	The emission stacks will be prone to earthquake damage	Information on seismic hazards are described in Section 3.2.1 and Section 3.2.2 describes potential impacts. As addressed in the DEIS, the project and the associated emission stack would be constructed to meet all building and industry codes as well as seismic design requirements.

Letter Log #	Comment Code	Topic	Comment Summary	Response
	12C	Air Quality	Project will emit 24 percent more CO than what is allowed	The Oregon Department of Energy has established a standard for base load gas plants that is designed to encourage development of lower CO_2 emissions technologies and requires offsets for emissions of CO_2 in excess of this standard. No technology exists today that can meet the CO_2 standard. Offsets in the form of money paid to the Oregon Climate Trust will be used to meet the CO_2 requirement as allowed for in Oregon Administrative Rules
	12D	Land Use	Impacts to the quality of life, but no benefits from power or cheaper rates	The proposed project would provide additional tax revenue to the county as well as provide an economic gain through construction expenditures and wages in the county. The plant operation would provide stable and well paying jobs to approximately 30 employees who would live in the area. This would all contribute to providing county services and boosting business in the region.
2COBEF-013	**13A**	Peoples Energy	Who will construct the project?	An Engineer, Procurement, and Construction (EPC) Contractor will be selected to construct the facility. An EPC contractor has not been selected at the time of the preparation of this FEIS.
2COBEF-014	**14A**	Schools	Concerned about potential impact on schools from influx of children	Construction workers will either come from the local area or will be part of a workforce that will come from outside the region for a short period of time. In most cases, workers from outside the area do not bring their dependents with them because they are on the job site for a short period of time, so there would be a negligible impact on schools. The operation workforce is small (see Section 3.11) and would be dispersed across the area. Impacts on schools from the operational workforce would also be negligible. No further analysis is warranted.
	14B	Water Resources	The City of Bonanza cannot support an influx of people, especially water supply	The majority of construction workers and permanent employees would likely find housing in or near Klamath Falls (Section 3.11.2). It is anticipated that the impact on the community of Bonanza from either construction workers or permanent employees would be minimal.
2COBEF-015	**15A**	Power	Where will the power go?	The project is being constructed as a merchant plant so that the power produced by the Facility can be sold through long-term contracts to energy providers throughout the western states or sold into the short-term market.
	15B	Power	Do local users get a break on their power rates?	Local power rates are set by the local electrical provider and the state utilities commission. The proposed project can not sell power directly to local consumers.
	15C	Power	Put a plant closer to the parties that will use the power	See response to Comment 3A.
	15D	Socioeconomics	Wants more information on the influx and type of people the project will bring in	Construction workers will either come from the local area or will be part of a workforce that will come from outside the region for a short period of time. These workers will include a broad range of trades with the highest need for pipefitters, electricians, carpenters, millwrights, and boilermakers. Operations employees would consist of managers, engineers, and operations technicians.
	15E	Transmission	The hook-up line is a joke, move the plant closer to Captain Jack	See response to Comment 3A.
	15F	Employment	If the plant is a go, how long before employment will begin?	Construction of the facility will depend on project financing, power contract agreements and other variables. In addition, the Oregon Office of Energy will set timelines for construction and operation.
	15G	Power	Build all water power plants	The comment does not meet the project proponent's scope and objective for the construction of a power plant to meet future energy requirements.
2COBEF-016	**16A**	Land Use	The power plant should not be built on agricultural or BLM land	See response to Comment 3B. With regard to BLM lands, BLM's management plans allow electric transmission facilities.
	16B	Water Resources	There is a water problem	Water for the facility will be withdrawn from a deep aquifer and based on detailed analysis is unlikely to significantly affect local domestic or irrigation wells.
2COBEF-017	**17A**	BPA	Supports No Action Alternative—felt BPA could not answer questions at meeting	To disallow the interconnection, the No Action Alternative is under consideration. The purpose of the January 22, 2004, meeting, as stated at the meeting, was to facilitate comment on the draft EIS; this final EIS responds to all questions unanswered at the meeting.
	17B	Peoples Energy	Peoples is misleading the public—references article from Chicago Tribune	The referenced letter addresses a issue between regulated utility Peoples Power in Illinois and the Illinois Public Utility Commission (PUC). There is no resolution to the issue at this time and it is the finding of BPA that resolution of the issue will not affect the proposed action or alternatives nor impede the project proponent's ability to permit and operate a power plant. No further action is warranted.
	17C	Power	The NW will not receive any benefit from the project	Construction of the power plant near the California-Oregon border will allow electrical power to flow to areas of demand both north and south of the project. Historically, energy loads flow south in the summer and north in the winter. In addition, because the project is being constructed and operated in Klamath County, Oregon, the local area will benefit from the business and property taxes the project will pay.
	17D	Transmission	The power line will be noisy	Noise can be produced by the corona associated with transmission lines, but audible sounds are normally associated with 345-kV and higher voltages. The proposed transmission line is 500-kV, but noise levels would be expected to be low because modern transmission lines are designed, constructed, and maintained so that during dry conditions they will operate below the corona inception voltage, meaning that the line will generate a minimum of corona-related noise. Given the distance of receptors (approximately 3,000 feet) from the right-of-way (ROW), the impact of corona-generated audible noise is not expected to be significant. Base on data from BPA, the estimated L50 electric transmission line noise under worst case conditions was tabulated for several distances. The maximum L50 estimated at the closest residence is 27 dBA. This is much less than the L50 nighttime absolute limit of 50 dBA. Additional information on noise from transmission lines is included in the FEIS.
	17E	Power	Put the power plant closer to those who will benefit	The power generating facility is located to take advantage of the availability of water and natural gas at a key point in the transmission system. By constructing the power plant in this location, electrical power can be easily dispatched to load centers in Oregon, Washington, and California.
	17E	Land Use	Project should not be constructed on EFU-zoned land	See response to Comment 3B.
2COBEF-018	**18A**	Land Use	Against a plant being sited in a rural community	See response to Comment 3A.
	18B	Traffic	Does not believe the current traffic numbers on Langell Valley	A conservatively high traffic level was used to ensure that a worst case scenario for impacts to level of service was modeled.
2COBEF-019	**19A**	Land Use	Project should not be constructed on EFU-zoned land	See response to Comment 3B.

Letter Log #	Comment Code	Topic	Comment Summary	Response
	19B	Wildlife	Impacts on wildlife	The potential impacts on wildlife were evaluated (see Sections 3.4 and 3.5) in the EIS. Although there will be impacts to wildlife, primarily deer, the project has proposed mitigation which when implemented will enhance deer and other wildlife habitat.
2COBEF-020	**20A**	BPA	Have you thoroughly investigated Peoples Energy?	BPA has investigated Peoples Energy finances and is satisfied the company is a credible business partner.
	20B	BPA	Why did you let Peoples Energy prepare the DEIS?	Peoples Energy has not prepared this EIS. The EIS was prepared by CH2M HILL, under contract with COB but under the independent and direct supervision of BPA staff, as allowed by the Council on Environmental Quality (CEQ) NEPA regulations. Because CH2M HILL prepared the State siting application and related permit applications under the same contract with COB, BPA determined it was most efficient for CH2M HILL to also prepare the EIS.
2COBEF-021	**21A**	Alternatives	Should study renewable energy as an alternative to the proposed project	The study of renewable energy is not within the scope and objective of the project proponent's proposal.
	21B	Land Use	The project is alien to the rural environment—supports No Action Alternative	See response to Comment 3A.
2COBEF-022	**22A**	Land Use	Project should not be constructed on EFU (forestry) zoned land	See response to Comment 3B.
	22B	Hydrology		The project proponent has provided analysis that indicates that even at much higher pumping rates than the currently proposed rate (less than 300 gpm), there should not be a cumulative decline in water levels resulting from the pumping. Analysis provided by the project proponent also indicated that the withdrawal will be a small fraction of the available recharge. The high permeability of the aquifer system indicates that measurable changes in water levels in the production zone more than a few miles from the well are unlikely, and less likely in the shallow portion of the aquifer system. The Klamath Basin has not been closed to additional appropriation of groundwater for industrial or agricultural uses.
	22C	BPA	Does BPA really want to get involved with a company that doesn't pay?	Payment for transmission services that BPA would provide to COB would be guaranteed by contract.
	22D	Economics	Will the Oregon Commerce Commission (OCC) be able to collect taxes	The comment is outside the scope of the EIS, is not a responsibility of the federal government, and does not affect the proposed action or the alternatives. However, it is the project proponent's responsibility to meet its fiduciary obligations to the state of Oregon.
	22E	Air Quality	Opposes issuance of air permit—cites levels of air emissions as too high in a rural area	The federal Prevention of Significant Deterioration (PSD) air permitting program has established significant emission rate (SER) thresholds for what are known as criteria pollutants. Oregon has established SER thresholds for PM_{10} that are more stringent than the federal criteria. If a project's emissions are less than the SER thresholds, no analysis of emissions from that source is required. If emissions are greater than the SER threshold, then other elements of the PSD program apply. The PSD process allows for emissions increases above SER thresholds as long as air quality impacts resulting from the project can be shown to be below ambient air quality standards and PSD increments. Although the emissions from the COB facility are greater than the SER for several pollutants, the subsequent air quality analysis has shown that ambient air quality will be below the ambient air quality standards and PSD increments and the project has acceptable air quality impacts.
	22F	Air Quality	Project has not fully addressed nonattainment issues. This comment is primarily directed at the air quality permit application and issuance of the permit.	See Comments 22F1 through 3.
	22F1	Air Quality	Does not think that the issue of the nonattainment area has been correctly addressed	Klamath Falls has been in compliance with ambient air quality standards for more than the last 10 years and has recently been redesignated as attainment. The area is classified as maintenance for CO and PM_{10} to control emissions and to keep the area in attainment. The COB project site is more than 20 miles from Klamath Falls and emissions from this plant have been shown, using methods acceptable to DEQ and the U.S. Environmental Protection Agency (EPA), to have no impact on the area. The red and yellow alert days are established to minimize emissions in the immediate Klamath Falls area where air emissions could impact the former nonattainment area and possibly lead to exceedances of the air quality standards.
	22F2	Air Quality	Bonanza has smoky days during the cold and snowy winters, but has had no government measurements regarding ambient air quality and may be a nonattainment area	Based on procedures established through permitting programs by DEQ and EPA, the COB project has been shown to not have a significant impact on any nonattainment area. Bonanza has not been designated as a nonattainment area.
	22F3	Air Quality	During years of forest fires and brush fires, additional smoke that cannot be ignored in any assessment must be considered	Nonattainment areas are established by DEQ and EPA. The COB project has analyzed impacts against designated nonattainment and maintenance areas.
	22G	Water Quality	Opposes land application of wastewater—cites issues with Misami land application	The proposed project and the process wastewater is very different from the Misami operation. The wastewater quality and the application procedures are not comparable. No further action or analysis is proposed.
	22H	Air Quality	Issues with air permit	See Comments 22H1 to 15.
	22H1	Air Quality	The COB draft Standard Discharge Permit does not adequately address the $PM_{2.5}$ that was introduced in 2002	The COB Energy Facility has received an Air Contaminant Discharge Permit from the Oregon DEQ. While the $PM_{2.5}$ standard has been promulgated by EPA, it is not yet a requirement for obtaining a new source permit.
	22H2	Air Quality	Our prolonged inversion situations cannot always be forecasted with accuracy	The COB Energy Facility has received an Air Contaminant Discharge Permit from DEQ after demonstrating that the proposed project will meet all state and federal permitting requirements
	22H3	Air Quality	Klamath Falls was a nonattainment area and just recently got redesignated for CO	Comment noted.

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	22H4	Air Quality	On page 13, one remaining nonattainment community is Klamath Falls, which has a plan in development for PM_{10}, but not for $PM_{2.5}$, which should be addressed in the permit	Oregon's new source permitting program does not include emissions of $PM_{2.5.}$ The COB permit addresses all applicable requirements.
	22H5	Air Quality	COB has the potential to emit 100 tons per year of particulate matter and should be held to Title V specifications	The Federal Title V Operating Permit program is different than the Air Contaminant Discharge Permit program. COB will be required to apply for a Federal Title V Operating Permit within 1 year of starting operations.
	22H6	Air Quality	The chemical composition of the particulates by the COB has not yet been adequately addressed	Throughout the life of the plant, the COB facility will be required to meet the emission limits in the permit that were reflected in the air quality analysis. The application submitted in support of the permit has demonstrated that all state and federal requirements have been met.
	22H7	Air Quality	What is the heat source inside the plant and offices to be used in the COB?	The heating demand of the Energy Facility is minimal compared to the overall operations of the plant and will have an insignificant effect.
	22H8	Air Quality	in the area are numerous sources of methane that were not accounted for in the modeling, including cows, swamp gas and diesel fired tractors, trucks, and trailers used year-round.	Comment noted. Because these sources are intermittent and mobile state and federal air quality regulations do not require these sources to be included in project specific air permitting analysis. No further analysis is required.
	22H9	Air Quality	Ozone can be additionally detrimental to individuals involved in strenuous activity such as cowboys, cow ranchers, hay buckers, etc. in an agricultural setting, more than in other settings	Ozone is a regional scale pollutant and emissions of ozone precursors from the Energy Facility are minimal. No significant ozone impact is expected.
	22H10	Air Quality	Measurements taken at the COB stacks are fine, but what about the ozone formation from NO_2 at various distances from the stacks. Why have EPA and DEQ repealed their standards for nonmethane hydrocarbons?	NO_2 contributes to ozone formation in the presence of hydrocarbons and sunlight. Hydrocarbon emissions in the area are minimal and for reasons listed above, no significant ozone impact is expected. Nonmethane hydrocarbons are regulated against the ozone standard. There is not nor has there ever been a nonmethane hydrocarbon ambient air quality standard.
	22H11	Air Quality	On page 23, there are 16 toxic air pollutants in Oregon's air at levels more than 10 times the federally determined safe levels.	The COB project will have minimal emissions of toxic air pollutants as defined by EPA and DEQ. Natural gas combustion is the cleanest form of thermal energy development and a highly efficient process
	22H12	Noise	The budget cuts eliminated DEQ's noise program. Which of our local enforcement officials are now responsible and why does the permit not make any mention of any requirement?	The noise requirements will be addressed by EFSC and any requirements for mitigation or coordination with local officials will be through EFSC.
	22H13	Air Quality	The levels of stress that the COB will force upon the community has not been addressed when due to only air quality itself	Ambient air quality standards are developed to protect health and welfare. The project meets all criteria.
	22H14	Air Quality	In Table 4, the sulfur dioxide in the 24 hour average is not to be exceeded more than once a year as is the CO in its column. This is probably impossible to maintain. The COB would violate this in a forest fire or wood smoke season easily.	Emissions of sulfur dioxide and CO are minimal from this plant and its impacts have been shown to be insignificant at all times.
	22H15	Air Quality	The location of the Peterson School for measurement data would not seem to be the best area for the worst case scenario measurement	Oregon DEQ has selected the locations and operates the monitoring network in the area. Measurements of pollutants beyond PM_{10} are not taken in Klamath County. However, COB has demonstrated that impacts from the power plant are insignificant as defined by EPA and that ambient air quality data is not needed.
2OCBEF-023	**23A**	General Impacts	Pg. S-3: Believes statement of no significant impacts is misleading	Mitigation has been proposed to offset direct, indirect, and cumulative impacts, not just "significant" impacts.
	23B	Soil	Pg. S-3: Believes the soil is prime farmland	See response to Comment 3B.
	23C	Water Resources	Pg. S-4: Questions the validity of the statement that water source is a deep aquifer isolated from the upper aquifer	The project proponent concluded, on the basis of extensive testing and borehole analysis that there are two separate aquifer systems: one above 500 feet, and another below 1,500 feet. The project proponent bases their conclusion on the available data, and uses appropriate language in describing the results (for example, "based on available data," "does not appear," and "geologic connection apparent"). The Oregon Water Resources Department did question the project proponent's conclusions, and remains concerned that a connection not indicated in the test results could exist. As a result, OWRD conditioned the recommended draft permit to the ODE with a condition that the project proponent monitor for potential impacts, and provide mitigation to offset any observed impacts.
	23D	Socioeconomics	Pg. S-7: Questions statement that majority of workers would come from the local community	Given the unemployment rate, the majority of construction workers could come from the local area. However, construction employment will also depend on the construction contractor, the trade unions, and their subcontractors and other factors. See response to Comment 15D.
	23E	Transmission	Pg. 2-3: Transmission system is constrained—disputes term Super Highway Crossroads of Energy.	The interconnection study has been completed by BPA. BPA has determined that, except for interconnection costs, no system upgrades or improvements are required to accommodate the interconnection of the COB Energy Facility at the Captain Jack Substation. Additionally, the term Super Highway Crossroads has been deleted (see Section 2.3.1.1 in Part 4, Chapter 2 updates).
	23F	Alternatives	Pg. 3.1-1: Disputes statements that No Action Alternative would result in power shortages, limits on economic development, and increased power costs	The Northwest Region has projected a need for additional power in the future. For example the Portland General Electric Integrated Resource Plan states that by 2010, 48,000 MW are needed for a 15 percent reserve margin (43,000 MW for load growth and 5,000 MW for retirements). See Section 1.2.1 for national and regional forecasts of electrical energy consumption.

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	23G	Alternatives	Pg. 3.1-1: Disputes statement that No Action Alternative has negative impacts	The proposed facility is subject to the major source new source review (NSR) requirements provided in OAR Division 224 for new sources. As required by OAR 340-224-0070(1), an analysis was performed to identify best available control technology (BACT) for the primary emission sources (i.e., combustion turbine systems and auxiliary boilers). Through the BACT analysis process, emission limits were developed that reflect the lowest levels employed for similar sources. The limits address site-specific factors, including technical feasibility, control effectiveness, and energy and economic impacts. The BACT process ensures that new sources have limits that are as stringent (i.e., low) as possible, considering limits and technologies employed by other existing facilities. The BACT process serves to continually tighten the limits that new sources need to meet. Sources such as the proposed Facility that employ BACT are using the most effective control technologies available, and generate less pollutants than older facilities subject to less stringent limits.
	23H	Alternatives	Pg. 3.1-1: The selected alternative will have negative socioeconomic impacts	See response to Comment 12D.
	23I	Wildlife	Pg. 3.4-10: The section on wildlife and vegetation should be rewritten to include more detail on greater sandhill crane and bald eagle	The presence of sandhill cranes, bald eagles, mule deer, and antelope, as well as other species, near the project site have been documented (see Section 3.4.1.2). Mitigation measures and actions have been proposed to minimize impact to wildlife in the project area (see Section 3.4.2). The information does not alter the proposed action or alternative. No further action is proposed at this time.
	23J	Land Use	Pg. 3.10-8: Disputes the statement that the project is permitted on agricultural land by state statute. Also requires exception from Klamath County.	See response to Comment 3B.
	23K	Land Use	Pg. 3.10-8 Disputes statement that the facility would not alter the rural character of the surrounding area from rural to urban	Energy facilities are a permitted use in rural areas. However, the power plant in itself would not likely alter or result in changing the rural character of the surrounding area from rural to urban. There are primarily two reasons. First, only very limited types of nonagricultural land uses are allowed in agricultural areas. Secondly, power plants do not attract associated or co-located facilities or generate urban growth.
	23L	Alternatives	Pg. 3.10-9: Disputes statement that there are "no reasonable" alternatives	The project proponent has considered alternative sites for the proposed project, but none of these sites fully meets the needs of the project. The commenter has not specifically identified any other sites that would be viable for the proposed project. Chapter 2 of the EIS has been revised to provide additional clarifying information on the site selection process for this project.
	23M	BA - Land Use	Pg. 2-3: Why does Peoples Energy need 2,700 acres for the project?	The main reason for the optioning of 2,700 is the need for a buffer zone to be in compliance with the Oregon Noise Statute.
	23N	Purpose	Scope of DEIS does not focus on the transmission line	The scope, as described in the Summary Section and in Section 1.2, does not narrowly define the scope to an evaluation of the transmission line. In addition the EIS does evaluate the proposed power plant, including the transmission line and other supporting facilities.
	23O	Land Use	Project should not be constructed on EFU zoned land	See response to Comment 3B.
	23P	Alternatives	EIS should look at natural gas pipeline, water source & pipeline, transmission line, and the facility in separate sections. Material not directly related should be omitted.	The organization and content of the EIS for the COB Energy Facility is consistent with the recommended EIS format and required EIS contents identified in the CEQ NEPA regulations. These regulations identify a format that includes discussing the existing environment and then the environmental consequences of the proposed action. Within this format the project components are described and impacts evaluated. This is the format followed by BPA in preparing the EIS.
2COBEF-024	**24A**	Economics	Supports the project	Comment noted.
2COBEF-025	**25A**	Wildlife	Environmental studies on sandhill cranes and antelope need to be conducted	The presence of sandhill cranes and antelope near the project site have been documented (see Section 3.4.1.2). Mitigation measures and actions have been proposed to minimize impact to wildlife in the project area (see Section 3.4.2). The information does not alter the proposed action or alternative. No further action is proposed at this time.
	25B	Power	Why can't we have reduced power rates?	This comment is beyond the scope of this EIS. However, as an exempt electricity wholesale generator, COB will not be able to sell power directly to consumers. Local power rates are established by the local energy provider and the Oregon Public Utilities Commission.
	25C	Power	Does PPL have a monopoly on power in our area?	This comment is beyond the scope of this EIS.
2C0BEF-026	**26A**	Water Resources	Study the sustainability of the deep aquifer	The project proponent has provided analysis that shows that even at much higher pumping rates than the currently proposed rate (less than 300 gpm), there should not be a cumulative decline in water levels resulting from the pumping. The very rapid recovery after the 30-day aquifer test did not indicate that the proposed withdrawal would have an impact on the water supply in the aquifer system.
	26B	Water Resources	The interference test detected a response in the shallow aquifer	The project proponent provided analysis that shows the observed response was borehole-specific and most likely attributable to a leaking well packer. The project proponent has agreed to seal all production wells over much greater depths (between 750 and 1,500 feet) to address the concern identified.
	26C	Water Resources	USFWS believe there is a connection between the shallow and deep aquifer	Reviewing agencies remained concerned that a hydraulic connection could exist, but evidence refuting the test data provided by the project proponent has not been presented. The project proponent reduced the proposed withdrawal rate to a level that OWRD does not believe will result in a measurable impact should a connection be observed in the future. In addition, OWRD conditioned the project proponent's draft permit with a requirement that the project proponent monitor for potential impacts, and provide mitigation to offset any observed impacts.
	26D	Land Use	Want more information on land use changes and farm practices to be mitigated	No changes are anticipated in land use or farming practices in the vicinity of the proposed project. The power generating facility is located to take advantage of the availability of water and natural gas at a key point in the transmission system. Other business would not co-locate with the power plant and the surrounding land is zoned agricultural. No further action is proposed.
	26E	Power	Facility is planned as a "peaking" facility so it will not be as reliable for baseload	The facility is designated as a peaker for the sole reason of calculating the CO_2 Trust Payment. COB is a Combined Cycle (not Simple Cycle) that will be permitted to have a 72 percent capacity factor by every other definition a base load facility.
	26F	Permits	Potential for litigation, water right challenges, and administrative holds	The EIS is prepared under the requirements of the National Environmental Policy Act to address potential impacts related to the purpose and need for the proposed action. The comment does not affect the proposed action or alternative and is outside of NEPA jurisdiction.

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	26G	Wildlife	Mule deer and pronged horned antelope habitat will be compromised	See response to comments 5B and 23I.
	26H	Wastewater	Vector control may be needed for evaporation pond and land application	The presence of vectors (any animal or insect that is capable of transmitting diseases or causing harm to people and/or animals) will not likely be required because neither the land application of wastewater or the stormwater infiltration basin will have standing water, if any, for extended periods of time. The wastewater will be applied in rates that will not create standing water. However, the stormwater infiltration basin is designed to accommodate and infiltrate a 100-year storm event in 3 days. If there a problem with vectors, the project proponent will coordinate with the Bonanza-Langell Vector Control District for appropriate controls.
	26I	Traffic	DOT recommends 35 mph on Langell Valley Road to accommodate extra traffic	The speed limit on local roads do not affect the proposed action to construct or operate the facility, nor does it affect the evaluation of alternatives.
	26J	Health & Safety	Fire protection and access roads needs to be addressed	Health and safety including fire protection is addressed in Section 3.13 of the EIS. Fire protection will conform with industry, local, state, and federal requirements, including any measures deemed appropriate by EFSC. Access roads will also conform to county and BLM standards.
2C0BEF-027	**27A**	Water Resources	Appendix C, Pg. 4-5 The Lost River is not entirely a canal constructed by the Bureau of Reclamation	The text will be revised to more correctly state the relationship of the rivers, lakes, and canals referenced on Page 4-5 of the EIS.
	27B	Water Resources	FEIS states Lost River is used for domestic and industrial uses—not true	The reference is to the type of use allocations that are permitted under state water resource and water quality laws. It is not intended to indicate that these uses are actually occurring.
	27C	Land Use	Appendix A (Pg. A-3) to Appendix C states land was last used in 1999—rye was planted in 2003	Comment noted.
	27D	Land Use	Appendix A (Pg. A-3) to Appendix C states site for water wells is grazed by sheep - not true sheep are on neighbors property	The reference to sheep will be deleted.
	27E	Wastewater	Contradictions on whether wastewater will be discharged to surface waters	Process wastewater will be land-applied in amounts that will not result in runoff (see Section 3.3.2.1 of the FEIS). Stormwater will be discharged into an infiltration pond. The option to discharge stormwater into the West Langell Valley Road drainage ditch is dropped from further consideration in the FEIS.
	27F	Wastewater	Figure 2-3 shows a closed loop system—how will solids be disposed?	See response to Comment 2D.
	27G	Wastewater	Discrepancy in wastewater disposal—treat and haul of land	See response to Comment 2E.
	27H	Stormwater	Appendix C discusses discharging stormwater. Amendment 2 states there will be no discharge into surface waters.	See response to Comment 27E.
	27I	Wastewater	Appendix C states land application occurs from April to September, but risk assessment states wastewater would be applied for 8 months of the year.	Appendix C is correct. The Risk Assessment will be revised to be consistent. The change does not affect the proposed action or alternatives so no further action is warranted.
	27J	BPA	At a meeting BPA indicated they would grant the interconnection if the project is approved by EFSC, why?	BPA's Transmission Business Line is responsible for providing the region a safe, reliable transmission system with open access and follows nondiscriminatory business practices to facilitate open competition. As part of these practices, BPA has adopted an Open Access Transmission Tariff that is described in Chapter 1 of the EIS. Under this tariff, BPA has an obligation to provide transmission interconnection to all eligible customers on a first-come, first-served basis, subject to an environmental review under NEPA. BPA is not a regulatory agency and accordingly respects the expertise and judgment of agencies who serve their respective regulatory functions according to rules of law. Because BPA provides transmission services at cost, all BPA customers would benefit by the revenue generated from sale of transmission services to COB.
DOI COMMENTS				
2COBEF-028	**28A**	BMPs	BMPs are mentioned throughout the DEIS, but not defined or listed	Best management practices are applicable to many construction and operational activities and can vary greatly depending on the type of activity, the location of the activity, the timing of the activity, and the duration and intensity of the activity. Listing or defining the BMPs would not be very practicable at this time. However, where possible, documents that contain listings or recommended BMPs, including the KFRA-RMP, will be referenced. In addition, actual BMPs will be included in permits and other approvals granted to the project for construction and operation.
	28B	Mitigation	Mitigation measures expected to be implemented should be reflected in the FEIS	Throughout the DEIS mitigation measures were recommended or identified that could be implemented to reduce potential environmental impacts. These mitigations are also included in the FEIS. If BPA decides to approve interconnection of the proposed project, this decision will be made through a Record of Decision (ROD), which will document the mitigation measures that have been adopted from the FEIS. Consistent with BPA's NEPA Regulations, BPA will also prepare a Mitigation Action Plan (MAP) following the ROD, but before any action is taken by BPA that is the subject of mitigation, for any mitigation commitments expressed in the ROD. This MAP will explain how this mitigation will be planned and implemented. However, for any mitigation that is not actually under BPA's jurisdiction, it will be up to the agencies with approval or permitting authority to determine if the recommended mitigation measures will be included in permits and approvals.
	28C	Analysis Area	Action area should include all areas impacted and areas impacted under alternative project actions	The depositional area for PM_{10} was considered in the risk assessment and no additional analysis is required because the assessment was based on maximum estimated soil and water concentrations within the significant impact area. However, wildlife resources, primarily eagles, were not described for this area and additional text will be added in the FEIS (see response to Comment 29B). The alternative for discharging stormwater into the West Langell Valley Road drainage ditch is dropped from further consideration in the FEIS.

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	28D	Recreation	Recreation is not fully addressed, no recreation specialist listed and only minor attention given to recreational values in the area	It is agreed that there are significant recreational values on public lands in the project study area (30-mile radius). However, direct impact to recreational opportunities on public lands is primarily limited to visual and aesthetic impacts from key locations that have designated high-value visual resources. The impacts on these resources are analyzed in Section 3.8. Additional information will be added addressing potential impacts to public recreation facilities during the construction and operation of the proposed project. Other values that are derived from dispersed recreation on public lands, such as hunting, birding, hiking, off-road vehicle use, and sight-seeing, will not, other than visual, be impacted by the project. The project will not emit a plume.
	28E	Purpose	S-1 Last sentence unclear. Reword “BLM will grant the rights-of-way if they are determined to be appropriate uses of public land...”	This change will be made in the FEIS.
	28F	General Impacts	S-3 First sentence may be an over-generalization	Based on the analysis of impacts and the inclusion of mitigation, there will be no significant impacts as a result of the construction and operation of the proposed Facility.
	28G	Wastewater	S-4 How will leaching from the evaporation pond be prevented?	In the preferred option, process wastewater will not be discharged to an evaporation pond, but will be land-applied in amounts that will not result in infiltration or runoff. However, noncontact stormwater will be discharged into an infiltration basin. The infiltration of the stormwater will mimic the natural process of stormwater to retain the natural hydrology of the area. No changes are proposed for the FEIS.
	28H	Wildlife	S-4 The loss of habitat needs to put into perspective by comparing with total area	Although the construction of the project would result in the disturbance of habitat, the project has proposed, in coordination with the ODFW mitigation that will increase the productivity of habitat on adjacent lands. Overall, more land will be subject to productivity gains than will be disturbed. No changes are proposed for the FEIS.
	28I	Wastewater	S-4 DEIS does not identify the constituents expected in the wastewater	Process wastewater characteristics are shown in Table 3.3-4. This section is a summary of the EIS and it is not appropriate to repeat details that are included in the main body of the EIS.
	28J	Fish	S-5 Construction will result in direct and indirect discharges into surface waters	Construction of the transmission line, access roads, intermittent stream crossings and land application of wastewater will have a minimal impact, if any, on fish or fish habitat. BMPs, such as those included in the KFRA-RMP, the AASHTO Drainage Manual, Oregon DOT Hydraulics Manual Vol. 1 Erosion and Sediment for E & SC design, and the Oregon DOT Routine Road Maintenance, Water Quality Maintenance Manual will be utilized as the situations and permit conditions require. No changes are proposed for the FEIS.
	28K	Visual	S-6 Does not include a reference to the plume from the stacks	The Heat Recovery Steam Generator (HRSG) exhaust stacks will emit hot gases with little or no water vapor. However, under certain weather conditions the stack emission could be visible as the hot gases condense water vapor in the air above the stack. This phenomenon would appear as light wispy clouds above the stack and would quickly dissipate. No other plumes will be associated with the project. Most visual plumes from thermal power plants come from condensing water vapor released in the evaporative cooling process. The project has changed from evaporative cooling to air cooling.
	28L	Visual	S-6 Does not reference impacts related to access roads and rights-of-ways, & does not adequately address mitigation measures	The right-of-way clearing will be only to allow equipment to access the transmission line tower locations. Clearing will be limited to providing two track vehicle access to the transmission tower sites. Once construction is completed, any disturbed land, including the two-track vehicle road, will be seeded with native grasses as approved by BLM. A description of the two-track access road will be added to the text of the FEIS. However, no additional mitigation is proposed for inclusion in the FEIS.
	28M	Visual	S-6 No mention of visual impacts to BLM lands - see KFRA Resource Management Plan	See response to Comment 28O5.
	28N	Land Use	S-7 Add paragraph describing how the proposed project conforms to the KFRA - RMP	"The proposed project involves the location of facilities on approximately 44 acres of lands administered by the BLM. This will involve the issuance of a right-of-way or easement to the project proponent. The right-of-way objective from the Klamath Falls Resource Area ROD and Resource Management Plan (RMP), pages 66 to 67, calls for making rights-of-way available where consistent with local comprehensive plans, Oregon statewide planning goals and rules, and avoidance/exclusion areas identified in the RMP. The proposed facilities do not cross any lands identified as right-of-way avoidance or exclusion areas. The RMP encourages, but does not require new utility corridors to be located within existing corridors. However, the project proponent must demonstrate that the use of an existing route or corridor is not technically or economically feasible and minimizes damage to the environment. The proposed corridor locations fall outside of existing corridors designated in the RMP. The proponent’s reasoning for not using existing corridors is found in Section 2.5.2.3, Alternative Electric Transmission Line. The proposed project is also consistent with the goals and objectives of the National Energy Policy (2001).”
	28O	Analysis Area	Pg2-1, Figure 2.2 does not show lands owned by BLM	Figure 2.2 will be revised in the FEIS to show BLM- "managed" lands.
	28P	Land Use	Pg. 2-1 Lands are not owned by BLM, but managed for the public	Text will be changed to indicate they are BLM-managed lands.
	28Q	Wastewater	Pg. 2-7 Using wastewater to develop wetlands, was this considered. At least should be described in Section 2.5.2	The use of wastewater to create wetlands to mitigate for loss of wetlands impacted by the project was not considered. No mitigation for the loss of less than 0.5 acre of wetland is proposed. However, in the final design of access road crossings, the project proponent will consult with BLM to avoid or minimize impacts to the wetland area. The use of wastewater to create wetlands would be expensive because wetland creation depends on many factors and the wastewater system would have to be constructed and managed differently than currently proposed, resulting in more review and consultation with other state and federal agencies as well as adding additional costs to the construction and operation of the Facility.
	28R	Erosion	Pg. 2-11 Steps, techniques, mitigation to be used for minimize erosion	The text in the FEIS will state that disturbed ground in the transmission corridor, that will not be impacted by future operation and maintenance activities, will be regraded to preproject contours and revegetated with native grasses, shrubs and trees as approved by the BLM. Disturbed land in the transmission corridor that will be impacted by future operations and maintenance by the project will be revegetated with native shrubs and grasses.
	28S	Vegetation	Pg 2-12 Discuss or reference mitigation described on Pg 3.4-17	The text in the FEIS will reference the proposed mitigation measures described in Section 3.4.

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	28T	Vegetation	Pg 2-12 Discuss proposed chemicals to be used for vegetation management	Because of the existing range of herbicides, restrictions and limitations on use, changes in availability, availability of new herbicides, and the potential to control vegetation through nonchemical means, the project proponent believes that listing proposed herbicides that will be used, application methods, and any proposed mitigation is premature at this time. However, prior to construction of the project the project proponent will prepare a Vegetation Management Plan in coordination with the BLM. This plan will detail the type and location of weeds to be controlled, detection and control methods, herbicides to be used, application timing, methods and rates. This plan would also include nonchemical methods for vegetation control. Herbicide application(s), if any, would be conducted by a licensed applicator following the approved Vegetation Management Plan. The requirement to prepare a Vegetation Management Plan can be included in the ROD or it can be incorporated in the rights-of-way agreement between BLM and the project.
	28U	Vegetation	Pg 2-12 Should describe in detail a noxious weed management plan for the entire project not just the transmission line	As described in Response #28T, a Vegetation Management Plan will be prepared that will incorporate many of the components described. A description of this plan is in Chapter 2. However, it is premature to describe, in detail, a plan that would be speculative at this time. In the FEIS, the Transmission System Vegetation Management Program FEIS (DOE/EIS-0285) will be incorporated by reference. BLM was a cooperating agency in preparation of this EIS.
	28V	Vegetation	Pg 2-12 Impact of periodic vegetation maintenance is not addressed	Chapter 2 is a description of the construction and operation of the project. Specific impacts are described in Chapter 3.
	28W	Health & Safety	It would be appropriate to discuss chemical use in Section 3.13	If herbicides or pesticides are used by the project, the health and safety protocols would be addressed in the facility health and safety plan. In addition, the application of any chemicals for weed or pest control would be done by a licensed applicator. No changes are proposed for the FEIS.
	28X	Vegetation	Should discuss the impacts of off-road vehicle use to maintain ROW vegetation	Vegetation management can be accomplished using a variety of proven equipment and established practices that avoid causing significant off-road impacts. Selection of final equipment and work practices will be made at a time closer to construction of the project and can be done in consultation with BLM, if deemed necessary and required in the right-of-way agreement. Because of the lack of potential significant impacts, further analysis in the EIS is not warranted.
	28Y	Cumulative Impacts	Pg 2-15 Should discuss the recent Bryant Mountain wind project	To date no formal applications for such a project have been filed with a public agency. Meteorological test towers have been erected to evaluate wind speed in different seasons, but it is not currently known if it is a viable wind location. Without more detail, It is unknown whether a wind project is viable and involves one, 10 or 100 wind turbines, or what ancillary facilities would be required. This project is not a reasonably foreseeable future private or federal action and is not appropriately included in the cumulative impacts analysis.
	28Z	Alternatives	Pg 2-17 Recommends the consideration of using biomass with natural gas for fuel	Although natural gas may be used to augment combustion in a biomass energy facility, the gas turbine technology proposed for the proposed project is not compatible for integration with biomass. Including biomass burning would require a significant deviation from the scope of the project. No changes are proposed in the FEIS.
	28A1	Alternatives	Pg 2-20 The reasoning for one transmission alternative ROW to be 200 feet wide and the other 154 feet wide.	The alternative transmission line requiring a 200-foot easement would be constructed adjacent to an existing BPA transmission line. The additional width of the alternative easement, as compared to the preferred transmission line route of 154-feet, is to meet the BPA guidelines for separation between transmission lines. The EIS has been revised to provide an explanation for the differences in the transmission rights-of-way.
	28B1	Land Use	Pg 2-20 BLM lands should be referred to as BLM-managed lands	To be consistent with previous text revisions, the FEIS text will refer to these lands as BLM-managed lands.
	28C1	Editorial	Pg 2-20 Revise line 3 of 5th paragraph to private residences	The proposed change will be made in the FEIS.
	28D1	Editorial	Pg 2-23 to 2-30, Table 2-1 Move table to Section 3	Table 2-1 was originally included in Chapter 3, but was moved to Chapter 2 as recommended by BPA in comments on the preliminary Draft EIS. Because the proposed change does not affect the alternatives or scope of the EIS, Table 2-1 will be retained in Chapter 2.
	28E1	Vegetation	Pg 2-25, Tble 2-1 Vegetation and Wildlife - Impact column include a summary discussion of the establishment and spread of noxious weeds	Noxious weeds will be addressed in the Vegetation Management Plan to be prepared prior to construction of the project. See Response # 28T for additional information.
	28F1	Vegetation	Pg 2-25, Tble 2-1 Vegetation and Wildlife - Describe a vegetation management plan in detail in Section 2.	See response to comments 28T and 28E1.
	28G1	Editorial	Pg 2-26, Tble 2-1 Construction and operation of the facility would not impact fish is not an existing condition. Needs to describe potential impacts	The sentence regarding construction and operation will be deleted from the text.
	28H1	Fish	Pg 2-26, Tble 2-1 There are two federally/state listed endangered fish species	The text will be revised to indicate that there are two federal and state-listed endangered species.
	28I1	Editorial	Pg 2-26, Tble 2-1 Recommend replacing "visible" with "structural"	The authors believe the word "visible" is appropriate. In its current context, it implies that damage could be seen, but it does not mean that the damage is structural, which suggests that the integrity of the road has been compromised.
	28J1	Transportation	Pg 2-26, Tble 2-1 Not clear how and when road damage is determined	The project has committed to videotaping road conditions before and after heavy hauling. If the condition of the road shows "visible" damage, this information will be provided to state and county transportation departments for a determination on if and what repairs will be required. This information will be added to Section 3.6.2.
	28K1	Transportation	Pg 2-26, Tble 2-1 Line 3.6.3 State mitigation for damage during operation	Based on the established road load limits and the type and weight of vehicular traffic required for the operation and maintenance of the project, the roads would not be damaged beyond the expected normal wear and tear. In addition, county and state permits that limit the time and duration of use are required for vehicular loads that exceed the legal weight limits. In the event there is an abnormal occurrence that results in road damage attributable to the project any required repairs would be at the discretion of the state and county transportation departments. No changes are proposed in the FEIS text.

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	28L1	Air Quality	Pg 2-26, Tble 2-1 Delete "No exceedance of the annual PM10 standard …"	The statement will be deleted in the FEIS.
	28M1	Visual	Pg 2-27, Tble 2-1 More description needed, list visible viewpoints	The table is intended to be a summary table and more detailed information is provided in Section 3.8.1. However, to clarify the summary, the text will be revised to read, "facility features would be in the background of scenic areas as described in Section 3.8.1."
	28N1	Visual	Pg 2-27, Tble 2-1 Should include impacts from transmission corridors and access roads.	Text will be added to the summary and in Section 3.8.1 stating that potential impacts could also result from the construction and maintenance of utility corridors and access roads.
	28O1	Visual	Pg 2-27, Tble 2-1 Facility features and plumes may be seen from listed sites	The Facility will not emit a plume. Information will be added to the text of the FEIS further describing the scenic areas listed in the comment.
	28P1	Visual	Pg 2-27, Tble 2-1 Need better description of the impacts and mitigation	Table 2-1 is intended as a summary and the detail provided of the visual impacts/mitigation is comparable to information provided for other elements of the environment.
	28Q1	Land Use	Pg 2-28, Tble 2-1 Line 3.10.6 Briefly list types of impacts and severity	Comment noted. Table 2-1 is intended as a summary and the reader should refer to referenced section to obtain more details about the existing conditions, potential impacts, and mitigation measures.
	28R1	Socioeconomics	Pg 2-29, Tble 2-1 Consider offering public tours of the facility	Comment noted. As a result of security concerns at power generating facilities, the general public will not be allowed access to the Facility.
	28S1	Health & Safety	Pg 2-30, Tble 2-1 Line 3.13.6 include statement that electrical lines can start fires	A sentence will be added in this table stating that "If vegetation is not maintained within the transmission right-of-way and under certain atmospheric conditions arcing or touching of the vegetation may occur resulting in wildfires." Additional text will also be added to Sections 3.13.1.4 and 3.13.5.
	28T1	Recreation	Table 2-1 does not discuss impacts and mitigation for recreation and tourism	Additional information on recreation describing public recreation facilities in the vicinity of the project and an assessment of impacts added to the FEIS.
	28U1	Transmission	Pg 2-31 Tble 2-2 Explain differences in transmission corridor ROW widths	See Comment 28A1.
	28V1	Transmission	Pg 2-31 Tble 2-2 Under raptor mortality will there be a single line in the future	A single transmission line consists of three phases and there is one wire for each phase. There are no plans to construct another transmission line by the project proponent's during the lifetime of the project.
	28W1	Editorial	Pg 2-33 Figure 2-1 Suggests major county roads and federal/state boundaries	A figure will be included that shows federal and state land administrative boundaries and the major county roads will be labeled. The color shading is intended to highlight differences in topography (elevation)
	28X1	Editorial	There is no map in the DEIS showing BLM-managed land boundaries	A revised map will be included in the FEIS that shows the boundaries of BLM-managed land.
	28Y1	Visual	Pg 3.1-2 Adverse impacts should be clearly identified, including steam plume	Additional information on visual unavoidable adverse impacts will be added to the FEIS. A smoke or steam plume will not be emitted from the facility.
	28Z1	Wastewater	Pg 3.1-3 Why wouldn't process wastewater and stormwater enter ground or surface waters?	Under the preferred alternative, wastewater will be land-applied via a sprinkler system to forage crops and stormwater will be discharged to an infiltration basin. Wastewater will be applied in amounts that will not result in runoff to surface waters (see Section 3.3.2.1) and less than soil infiltration rates (see Section 3.2.2, Impact 3.2.6) and the stormwater will be retained within a closed basin. However, there would be the potential for stormwater, if not evaporated or through uptake by plants, to enter shallow groundwater zones. DEQ has drafted water discharge permits for the process wastewater and stormwater and recommended approval by ODE. The FEIS text will be amended to clarify.
	28A2	Soil	Pg 3.1-4 Show current soil chemical baseline conditions	Table 3.2-1 provides the chemical data from the soil sampling.
	28B2	Vegetation	Pg 3.2-12 Include the use of native shrubs and grasses for mitigation	"In consultation with ODFW and BLM" will be added to the text. The reader will also be referenced to Section 3.4.1 for further information.
	28C2	Soil	Pg 3.2-13 Appropriate BMPs during culvert placement - all road construction should comply with the KFRA RMP	The National Pollutant Discharge Elimination System (NPDES) General Construction Permit 1200-C required by DEQ includes preparation of an erosion and sedimentation control plan. In addition, a Plan of Development (POD) will be prepared for BLM that will conform with the BMPs described in Appendix F of the KFRA-RMP. The KFRA-RMP will be referenced in the FEIS.
	28D2	Transmission	Pg 3.2-14 Temporary and permanent roads to comply with the KFRA-RMP	A POD will be prepared for all activities on BLM-managed lands. The POD will include the construction, maintenance, and abandonment of all access roads. The KFRA-RMP will be referenced in the text.
	28E2	Transmission	Pg 3.2-14 Should acknowledge that some equipment will need to go off road	The DEIS did acknowledge that heavy equipment will be restricted to access roads and transmission sites "where possible." It is anticipated that heavy equipment will need to back up and or make maneuvers that go off the access road. However, there is no intent to use heavy equipment for routine facility and vegetation maintenance activities beyond the access roads. The 154-foot right-of-way, off of the access road, will be maintained by personnel on foot or through the use of small (light) individual four-wheel-drive vehicles.
	28F2	Stormwater	Pg 3.2-14,Sec 3.2.2 Include analysis of potential impacts of stormwater alternative on Lost River	This option to discharge into the West Langell Valley Road ditch will be dropped from further consideration.
	28G2	Wastewater	Pg 3.2-15 Statement that wastewater would be of equal or better quality than groundwater or Lost river is not supported. Need fate analysis of pollutants	The statement will be revised to state that the wastewater quality is generally comparable to water quality in the Lost River and shallow groundwater. A table will be added to the FEIS comparing the calculated wastewater quality for land application, water quality data for the Lost River, and data for shallow groundwater quality.
	28H2	Wastewater	Pg 3.2-15 Recommend a soil monitoring program at land application site	The process wastewater would be applied at agronomic rates during the irrigation season and at rates less than the infiltration rate of the soil. The process waste water when compared to irrigation water quality criteria (Table 3.2-4) is suitable for application without any restrictions. At this point no further action is warranted. A detailed irrigation management plan will be prepared by the project proponent and it must be approved by DEQ prior to land application of the non-contact process wastewater.

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	28I2	Wastewater	Pg 3.2-16 May want to consider a designed wetland to treat wastewater	See response to Comment 28Q.
	28J2	Vegetation	Pg 3.2-17 May want to consider planting fast growing poplars	The mitigation measures proposed by the Project have been designed to reduce blowing dust and soil erosion during construction and operation of the project. These measures are considered adequate control measures. No further actions are warranted at this time.
	28K2	Air Quality	Pg 3.3-2 Surface water - should include surface water impacted by air emissions	Another paragraph will be added to this section describing other water bodies in the area. However, it is unlikely that water bodies in the air emission "dispositional area" would have measurable affects. See Table 11 in the Risk Assessment (Appendix C to Appendix C).
	28L2	Hydrology	Pg 3.3-2 Described the Lost River as a closed basin, however originally received flows from the Klamath River - this needs to be explained in the FEIS	Text will be added to the FEIS clarifying historical flows and the current connection via the Lost River Diversion Canal.
	28M2	Hydrology	Pg 3.3-2 Clarify that seasonal flows in the Lost River are controlled	The text in the FEIS will be revised to clarify seasonal flow management in the Lost River.
	28N2	Fish	Pg 3.3-2 Replace "cold water species" with "resident fish and aquatic life."	The text in the FEIS will be revised to state "resident fish and aquatic life."
	28O2	Water Quality	Pg 3.3-2 Suggest a more accurate explanation for the cause of 303d listing	The text in the FEIS will be revised to indicate that many of 303(d) listings result from high water temperatures.
	28P2	Hydrology	Pg 3.3-4 Clearly identify well test results and probable causes not stated as fact	The primary focus of this section is on the potential impacts of water withdrawal from the lower aquifer. However, the first sentence in the fifth paragraph does state conclusively that the aquifer and borehole tests indicate the shallow and deep aquifers are not hydraulically connected. This statement will be revised in the FEIS.
	28Q2	Hydrology	Pg 3.3-5 Address the water extraction occurring in other basins contributing to the deep aquifer	Based on the hydrologic studies and analysis the withdrawal of an average of 162 gallons per minute for the project would have a very minor impact on groundwater in the deep aquifer, the withdrawal being less than 0.05 percent of the estimated recharge volume. The recharge area is upgradient and is conservatively estimated to be 1,100 square miles (Section 3.3.1.2) and the recharge to the deep system is estimated conservatively at 134 to 241 billion gallons annually. Based on this small percentage, wells that withdraw water from upgradient in the deep aquifer would not be impacted (direct, indirect, or cumulative) from the proposed action. Deep interbasin groundwater flow, if any, that could contribute additional recharge to the Klamath Basin would further reduce the percent of withdrawal relative to the recharge volume. However, to provide more precise estimates and address the amount of water withdrawal from these contributing basins would be very speculative and not affect the overall impact of withdrawal of water from the deep aquifer in the vicinity of the project. No further action is warranted.
	28R2	Hydrology	Potential to cause cumulative impacts beyond boundary of project area - address in cumulative impact section 3.3.3	See response to Comment 28Q2.
	28S2	Stormwater	Pg 3.3-9 No analysis of potential effects on the Lost River from stormwater discharged into ditches.	The option of discharging stormwater into the West Langell Valley Road drainage ditch will be dropped from further consideration in the FEIS.
	28T2	Wastewater	Pg 3.3-6 Should consider designed wetland to treat wastewater	See response to Comment 28Q.
	28U2	Stormwater	Pg 3.3-11 Segregate storm system from ditches and construct infiltration pond	See response to Comment 28S2.
	28V2	Stormwater	Pg 3.3-13 2nd para correct or clarify why containment would not overflow	The text is correct. These storage areas are exposed to rainfall and do not have drains to prevent offsite spills. The sizing of the containment accounts for rainfall.
	28W2	Hydrology	Pg 3.3-13 Need to address deep aquifer cumulative impacts	See response to Comment 28Q2.
	28X2	Transportation	Pg 3.3-13 This section also needs to address road construction	Text will be added to the FEIS to address cumulative impacts from road construction.
	28Y2	Stormwater	Pg 3.3-13 This section also needs to address connection between the facility stormwater drainage and Langell Valley drainage ditch	See response to Comment 28S2.
	28Z2	Hydrology	Pg 3.3-15 & Tble 3.3-1 Discrepancy in average annual precipitation amount	The precipitation described in Table 3.3-1 does not reference the project area, but identifies the "Average Annual Precipitation in Estimated Recharge Area" as 28 inches. The potential recharge area identified by the project proponent and considered in this analysis lies at higher elevations east of the project area, and receives significantly higher amounts of precipitation (more than 40 inches in some areas). As a result, there is no apparent inconsistency and no revision required for this analysis.
	28A3	Vegetation	Pg 3.4-1 Include a discussion of vegetation management for life of the project	This section describes the affected environment. The recommend changes are more appropriate for the impacts section. The following text will be added to Section 3.4.2 in the FEIS. "With vegetation management, all large woody vegetation growth will be kept out of the rights-of-way, resulting in maintaining the area in grasses, forbs, and shrubs. A vegetation management plan will be prepared, in cooperation with BLM, that describes the methods of vegetation control." Also see response to 28T.
	28B3	Analysis Area	Pg 3.4-1 Action area should include all areas directly or indirectly affected, including air emissions and stormwater discharges	The description of the Affected Environment is broadly defined and the depositional area is associated with air emissions. Potential impacts are covered in the Risk Assessment (Appendix C). Based on the analysis in the Risk Assessment there is negligible or no risks to wildlife from air emissions. A brief statement will be included in this section on the findings of the risk assessment. The stormwater option of discharging to the West Langell Valley drainage ditch is dropped from further consideration in the FEIS.
	28C3	Analysis Area	Pg 3.4-4 Same comment as 28B3	See response to Comment 28B3.
	28D3	Hydrology	Pg 3.4-4 Same comment as 28L2	See response to Comment 28L2.

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	28E3	Wildlife	Pg 3.4-5 Address potential impacts of blocking or shifting of mule deer migration	This section discusses the affected environment, potential impacts are discussed in Section 3.4.2.
	28F3	Wildlife	Pg 3.4-7 Recommends fall and winter wildlife surveys	Wildlife studies of the project area have been conducted under the guidance of ODFW and EFSC and unless otherwise determined by ODFW or EFSC no further action is warranted at this time.
	28G3	Vegetation	Pg 3.4-7 Add Leafy spurge, Yellowstar thistle, and Dalmatian toadflax	The listed plants will be added to the FEIS, Section 3.4.1.2.
	28H3	Vegetation	Pg 3.4-7 Recommend preparing a vegetation management plan,	See response to Comment 28T.
	28I3	Wildlife	Pg 3.4-10 Section not clear, revise using appropriate terminology	The text of the DEIS states that "species of concern" are not afforded the level of protection given to other categories of listed species. In the second paragraph second sentence, "sensitive" will be deleted and replaced with "listed."
	28J3	Fish	Pg 3.4-10 No mention of Lost River and shortnose suckers, discuss potential impacts from stormwater	The Lost River Sucker and the shortnosed sucker will be added to the discussion on T & E species. Also see response to 28F2
	28K3	Wildlife	Pg 3.4-10 Change "sensitive" in 2nd sentence, 2nd para to "threatened."	The change will be made in the FEIS.
	28L3	Wildlife	Pg 3.4-14 through 18 Put loss of habitat into context and how important it is to meet wildlife objectives in the area	The project proponent through discussions with the ODFW has agreed to habitat mitigation that will enhance deer habitat. No further action is warranted.
	28M3	Vegetation	Pg 3.4-15 Impact 3.4.1 Acknowledge disturbed conditions contribute to spreading of noxious weeds.	See response to Comment 28T.
	28N3	Wastewater	Pg 3.4-15 Impact 3.4.1 Fate of wastewater when not land-applied is not described	Section 2.3.1.8 indicates the water would be stored during the winter months. Also see response to 28Z1. No further action is warranted at this time.
	28O3	Transmission	Pg 3.4-16 Discuss impacts of new access roads on wildlife, recreation, etc	Specific arrangements on the access and use of access roads on BLM-managed lands (easements) by the public or BLM personnel will be set forth in the Plan of Development. No changes have been made to the FEIS.
	28P3	Transmission	Pg 3.4-16 Will BLM have access to transmission corridor roads?	See response to Comment 28O3.
	28Q3	Vegetation	Pg 3.4-16 Mitigation should include a vegetation management plan, described in Section 2, impacts analyzed here	See response to Comment 28T.
	28R3	Vegetation	Pg 3.4-16 Consider sagebrush-steppe habitat mitigation away from project site	The project has proposed mitigation measures to offset losses of designated wildlife habitat and for other environmental impacts of the project. The proposed mitigation meets or exceeds the potential loss of habitat or other potential impacts of the project. No additional mitigation measures are proposed.
	28S3	Wildlife	Pg 3.4-16 Sensitive bat species are know to occur in the area, consider mitigation	A biologist with expertise in bats was part of the field team conducting the field studies. The only observed presence of bats occurred outside of the project limits (human-made structures) near the well field.
	28T3	Wildlife	Pg 3.4-16 Locate water guzzlers away from project site and West Langell Road	The exact placement of wildlife watering areas has not been determined, but taking into account the water source, the placement of watering areas is negotiable with the wildlife agencies and state/federal land managers. No changes are proposed in the FEIS.
	28U3	Vegetation	Pg 3.4-16 Consider retaining snags less than 10 feet or cut existing trees to 10 feet	Comment noted. Retention of snags within the rights-of-way will be addressed in the vegetation management plan. See Response #28T.
	28V3	Mitigation	Pg 3.4-16 All mitigation should be monitored for multiple years	Wildlife mitigation will be prescribed in the Site Certification by the Oregon Energy Facility Siting Council (EFSC) in coordination with the Oregon Department of Fish and Wildlife. No further action is warranted at this time.
	28W3	Wildlife	Pg 3.4-19 Impact 4.4.2 Revise "in natural areas during the breeding …"	The text in the FEIS will be revised to include "and fawning."
	28X3	Wildlife	Pg 3.4-19 Seasonal restrictions on construction on deer wintering ranges	Seasonal restrictions have been discussed with the ODFW and restrictions, if any, will be included in the Site Certification to be issued by EFSC. No further action is warranted at this time.
	28Y3	Wildlife	Pg 3.4-19 Impact 3.4.3 Bald eagle monitoring plan & power line collision monitoring seasonally	A summary of the proposed monitoring included in the biological assessment will be inserted in the text of the FEIS.
	28Z3	Water Quality	Pg 3.4-20 Impact 3.4.4 Seasonal creek crossing constructed according to BMPs described in the KFRA-RMP Appendix F	The text in the FEIS will reference the BMPs described in Appendix F of the KFRA-RMP. Specific construction details for stream crossings on BLM-managed lands will be addressed in the Plan of Development.
	28A4	Flooding	Pg 3.4-20 Impact 3.4.4 Revise last sentence - culverts designed for 100-yr flood	Culverts designed to pass a 100-year flood would be quite large in diameter, requiring a large amount of disturbance. Roadway crossings would be designed with a low profile to minimize ponding of water and allow the water to flow over the road. A small-diameter culvert would be installed to pass normal flow and riprap would be installed to minimize erosion. This text has been added to the FEIS.
	28B4	Stormwater	Pg 3.4-20 Impact 3.4.4 New para stating road design will minimize runoff	The recommended addition is inappropriate in this section. These impacts are addressed in Section 3.1 Geology and no changes have been made in the FEIS.
	28C4	Wastewater	Pg 3.4-20 Impact 3.4.4 Consider designed wetland to treat all wastewater/runoff	The potential impacts to wetlands is less than 0.5 acre and no mitigation for these impacts is proposed at this time. However, during the final design phase the project proponent will determine if the wetland area can be avoided or impacts further minimized. No changes are proposed for the FEIS.
	28D4	Wastewater	Pg 3.4-21 Concerns about analysis for land application, recommend monitoring program	See responses to comments 28Z1 and 28H2.

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	28D4a	Editorial	Pg 3.4-21 Impact 3.4.4 should be 3.4.5	The heading is corrected.
	28E4	Wastewater	Pg 3.4-20 Impact 3.4.4 Recommends a wastewater monitoring for life of project	See responses to comments 28Z1 and 28H2.
	28F4	Vegetation	Pg 3.4-21 Mitigation measures for noxious weeds to prevent cumulative impacts	See response to Comment 28T.
	28G4	Wildlife	Pg 3.4-36 Tble 3.4-5 BLM status for Pygmy Rabbit should be corrected to "BAO."	The proposed change will be made in the FEIS.
	28H4	Vegetation	Pg 3.4-37 Tble 3.4-5. Does not list the BLM special status plant species	The BLM status, if applicable, will be added to the table.
	28I4	Vegetation	Pg 3.4-37 Tble 3.4-5 Potential for *Iliamma bakeri* to occur near project site, add info	The information provided will be added to Table 3.4-5.
	28J4	Editorial	Pg 3.4-39 Tble 3.4-5 Taxon for long-bearded mariposa lily is *Calochortus longebartus longebartus.*	The correction will be made in the FEIS.
	28K4	Editorial	Pg 3.4-41 Tble 3.4-5 BLM abbreviations, BT - Bureau Tracking & BA - Bureau Assessment	The correction will be made in the FEIS.
	28L4	Fish	Pg 3.4-45 Tble 3.4-8 Include analysis on Lost River and shortnosed suckers	The alternative to discharge stormwater into the West Langell Valley Road drainage ditch will be dropped from further consideration in the FEIS. Since there will be no impact on the Lost River no further action is warranted.
	28M4	Analysis Area	Pg 3.4-45 Tble 3.4-8 Analysis area should include all depositional areas	The depositional area is associated with air emissions. Potential impacts are covered in the Risk Assessment (Appendix C). Based on the analysis in the Risk Assessment there is negligible or no risks to wildlife from air emissions. A brief statement will be included in this section on the findings of the risk assessment.
	28N4	Vegetation	Pg 3.4-52 Tble 3.4-8 ODA manages Oregon endangered plants not ODFW	The correction will be made in the FEIS.
	28O4	Vegetation	Pg 3.4-52 Tble 3.4-8 Description of Baker's Globe Mallow should include ponderosa pine forests	The habitat description for Baker's globe mallow will be revised to include ponderosa pine forest.
	28P4	Vegetation	Pg 3.4-53 Tble 3.4-8 Elevation limits need to be updated	The elevation for flaccid sedge will be revised to reflect the new information.
	28Q4	Vegetation	Pg 3.4-55 Tble 3.4-8 Same comment as 18J4	The correction will be made in the FEIS.
	28R4	Editorial	Pg 3.5-1 Delete last two sentences, 1st para	The referenced sentence will be deleted.
	28S4	Hydrology	Pg 3.5-1 Revise 3rd sentence "Seasonal Irrigation flows in the Lost River …" Peak flows are influenced by multiple watersheds, need to state and analyze.	Comment noted. The text will be modified to include "irrigation flows," but the request to include that the basin is influenced by multiple watersheds and analyzing this influence does not change the analysis of alternatives or potential impacts so no further changes are proposed in the FEIS
	28T4	Hydrology	Pg 3.5-1 Same as comment 28L2	See response to Comment 28L2.
	28U4	Hydrology	Pg 3.5-2 Same as comment 28O2	See response to Comment 28L2.
	28V4	Editorial	Pg 3.5-2 Shortnosed sucker was listed in 1988 not 1998	The correction on the date of listing will be made in the FEIS. A reference for the listing will be added.
	28W4	Editorial	Pg 3.5-3 Lost River sucker was listed in 1988 not 1998	The correction on the date of listing will be made in the FEIS. A reference for the listing will be added.
	28X4	Analysis Area	Pg 3.5-2 Relative to analysis of impacts on fish. Same comment as 28B3	See response to comment 28B3.
	28Y4	Fish	Pg 3.5-3 Insert a new section—text provided	The text provided by BLM for a new Section 3.5.1.3 has been included in the FEIS.
	28Z4	Fish	Pg 3.5-3 Should cross reference information in Appendix C of FEIS	The text of the FEIS has been revised to reference the reader to the Biological Assessment (BA).
	28A5	Fish	Information in BA (Appendix C) supports including new text, see Cmt 28Y4	See response to Comment 28Y4.
	28B5	Fish	Pg 3.5-3 Should include potential for increase in abundance of non-native species	There will be no direct impacts to fish habitat on site because there is no fish habitat on site. In addition, there will be no in-direct impacts to surface water systems and fish habitat with the implementation of BMPs to control erosion and sedimentation. The application of wastewater on the irrigated pasture will be in approved agronomic rates (See Section 3.3.2.1) and will not result in surface runoff. Stormwater will be discharged into an infiltration basin. Road and other construction will use BMPs (see comment 28C2) to prevent or minimize erosion that could indirectly impact surface waters. No
	28C5	Transportation	Pg 3.6-2 Impact 3.6.1 Should consider a ride-share incentive program	Although an analysis of traffic impacts indicates that the level of service on local roads would not be degraded the project proponent's will provide busing of construction workers to limit traffic on Farm to Market roads. The text in the FEIS will be revised.
	28D5	Transportation	Pg 3.6-2 Impact 3.6.2 Not all county roads are asphalt, damage to roads	Public roads that have been designated for truck construction traffic and operational roads to the power plant are asphalt roads (Page 3.6-1). The sentence is not meant to imply all roads are asphalt. No changes are proposed for the FEIS.
	28E5	Transportation	Pg 3.6-2 Impact 3.6.3 Improve safety of Harpold Rd & W. Langell Valley intersection	Based on the projected increase in vehicular traffic there would be no noticeable impacts and the level of service would not be substantially reduced at the referenced intersection. No mitigation measures are proposed.
	28F5	Transportation	Pg 3.6-2, Tble 3.6-3 Discuss why LOS drops to C rating on Highway 140	The LOS is based on the road design, as established by ODOT, and the current usage rates and patterns. Although the increase in traffic is 4 to 5 times the existing level of traffic, the road design and low level of exiting traffic allow a significant increase in traffic without seriously degrading the LOS. No

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	28G5	Transportation	Pg 3.6-7, Tble 3.6.5 Are impacts related to operations traffic, if so differentiate from Table 3.6-2 -3 & -4	The table headings indicate that the comparison is between existing traffic, traffic without the energy facility, and traffic with the energy facility. The headings are self-explanatory and no changes are proposed in the FEIS.
	28H5	Transportation	Pg 3.7-4 1st bullet Suggest including watering of all non-paved roads during const	Watering of nonpaved construction roads will be done on a case-by-case basis to reduce dust. No changes are proposed in the FEIS
	28I5	Air Quality	Pg 3.7-4 Impact 3.7.2 Recommend defining "criteria pollutants."	EPA has set national air quality standards for six common pollutants (also referred to as "criteria" pollutants). These pollutants are listed in Table 3.7-1. The text also lists the criterial pollutants, the text will be revised to reference the pollutants as the criteria pollutants this table.
	28J5	Air Quality	Pg 3.7-4 Impact 3.7.3	The project is complying with the EFSC requirements for mitigation of CO2 and no further mitigation is proposed. As part of final project design a landscaping plan will be prepared and trees or other screening vegetation will be considered at that time. No changes are proposed for the FEIS.
	28K5	Editorial	Pg 3.8.1 Correct designation of the Volcanic Legacy All American Road	This correction will be made in the FEIS.
	28L5	Visual	Add a discussion on the Emigrant Trail Scenic Byway	See response to Comment 28O1.
	28M5	Visual	Pg 3.8.1 &.2 "Bumpheads, Alkali Lake, & Yainax Butte" are shown on the Figures, but not described in text	A brief description of these areas will be added to the FEIS text.
	28N5	Visual	Add new section to describe other BLM lands within, adjacent or within sight of the project area that would be affected by the plant, transmission lines, & roads.	See response to Comment 28O5.
	28O5	Visual	Pg 3.8-3 Complete visual impact analysis using BLM VRM system	The text in the FEIS will be revised to include a visual evaluation based on BLM visual designations.
	28P5	Visual	Recommend planting fast growing hybrid poplars and other visual mitigation	Prior to construction a detailed landscaping plan will be prepared that will include shrubs and trees in the landscape. However, the project is committed to using native plants and hybrid poplar trees are not native to the area. No changes are proposed to be incorporated into the FEIS.
	28R5	Visual	Need to analyze visual impacts of smoke/steam plume	There will be no steam or smoke plume created by the power plant. However, under certain weather conditions (cold weather with high moisture content) water vapor could condense above the HRSG stacks forming light thin wispy clouds that would quickly dissipate. No changes are proposed for the FEIS.
	28S5	Visual	Pg 3.8-5 Have additional transmission line been proposed?	There are no known proposals, including those on Table 3.7-9, to construct additional electrical transmission lines in proximity to the proposed project. No changes are proposed for the FEIS.
	28T5	Visual	Pg 3.8-5 Statement there would be no adverse impacts is not appropriate	The project will not generate a smoke plume or vapor from evaporative cooling. Transmission towers and facility buildings will be visible from public and private lands so the text will be revised to indicate there will be an impact.
	28U5	Visual	Pg 3.8-7 Tble 3.8-1 Add Alkali Lake and Yainax Butte to the table	Alkali Lake and Yainax Butte will be added to the table.
	28V5	Editorial	Pg 3.8-9 & -11, Fig 3.8-1 and -2 what do the 3 circles mean	The text on Page 3.8-3 in the DEIS will be revised to more clearly define the three sets of visual analysis and relationship to the concentric lines on Figures 3.8-1 and 3.8-2.
	28W5	Editorial	Remove the label "Tule Lake (BLM)" from the figures, the Gerber Reservoir Recreation area is a BLM site not a county site. The Klamath Wild & Scenic River designation goes to OR/CA border.	The Tule Lake (BLM) label will be deleted from the figure. The label for the Gerber Reservoir Recreation Site will be revised to read "Gerber Recreation Area," and the font and color changed to indicate that it is managed by the BLM. The figure will be revised to indicate the wild and scenic designation of the upper Klamath River is from the J.C. Boyle Powerhouse to the Oregon-California border.
	28X5	Visual	Pg 3.8-11 Fig 3.8-3 Previous draft had figure of visual impact of the plume, it was not included in the DEIS, should include in FEIS	The project will not generate a smoke plume. The previous visual simulation showed a water vapor plume from cooling towers. The project has been redesigned to use air cooling and eliminating the cooling towers so no visible plumes will be generated by the project. No changes are proposed for the
	28Y5	Editorial	Pg 3.9-1 Cultural Para 3, last sentence should be broken into two	The referenced sentence will be rewritten for clarification.
	28Z5	Cultural	Pg 3.9-4 Recommend ensuring all appropriate Tribes are contacted	One of the requirements for preparing an application for site certification to the Oregon Energy Facility Siting Council is to notify tribes identified by the State Commission on Indian Services. The confederated Tribes of the Siletz and the Klamath Tribes were tribes identified for consultation by the Commission. The Klamath tribes participated in the Cultural Resource Study for the site and supporting facilities. Consultation with the Klamath Tribes then occurred and all known areas findings of cultural significance are being avoided. Since the recommendation does not affect the proposed action or alternatives no further action is warranted.
	28A6	Editorial	Pg 3.9-5 Klamath Tribe should be Klamath Tribes	The recommended change will be made in the FEIS.
	28B6	Visual	Pg 3.9-5 Need a discussion on the visual impacts to spiritual sites on Bryant Mt.	The project proponent has had numerous meetings and discussions, including the recording of oral histories, with the Klamath Tribes and as a result the transmission line was re-routed to avoid potential impacts. Also see response to Comment 28Z5. No further action is warranted.
	28C6	Transmission	Pg 3.10-4 Discrepancy in right-of-way impacts between alternatives	The difference in impacts is related to the amount of work that has to be completed to make the right-of-way trafficable by construction equipment. Existing roads may have to be widened to accommodate construction equipment, but this impact is relatively small compared to construction of new roads. No changes are proposed for the FEIS.
	28D6	Land Use	Pg 3.10-5 The proposed action must comply with the KFRA-RMP ROD	The text will be revised to be consistent with the insert proposed for Page S-7. See response to 28N.
	28E6	Cumulative Impacts	Pg 3.10-17 Should address the pump storage proposal at Bryant Mt	Although this project has been proposed, under various project names for over 12 years, it has never progressed beyond the conceptual stage. The history of the project is described on Page 2-15 of the DEIS and the determination was that it was not considered as a reasonably foreseeable future action. No changes for the FEIS are proposed.

Letter Log #	Comment Code	Topic	Comment Summary	Response
	28F6	Socioeconomics	Pg 3.11-1 Should include the Klamath Falls urban growth boundaries in analysis on socioeconomic, population, and housing.	Comment noted. The comment does not change the analysis of alternatives or potential impacts so no changes are proposed in the FEIS.
	28G6	Socioeconomics	Pg 3.11-2 Address impacts to Bonanza community and businesses	The most likely potential adverse economic impacts during the construction phase of the project will be on the housing market. However, the analysis indicates that within reasonable commuting distance of the project site there is sufficient housing available for the labor force that would temporarily move to the area. Although it is likely that the community of Bonanza would house some of the temporary work force, it is unlikely there will be an impact on the infrastructure of the community. It is also likely that there will be increased opportunities and business activities in the community as a result of the project construction and operation, but the needs and or viability of the opportunities will be determined by the private business sector. No changes
	28H6	Socioeconomics	Pg 3.11-4 It is not clear why local communities will not be significantly impacted	The DEIS states that most of the housing options are in Klamath Falls and it is expected that most of the temporary work force will locate in Klamath Falls because of the greater variety of services provided. Although some workers will locate to the communities of Merrill, Malin, and Bonanza it anticipated that demand for housing in these communities will not exceed existing supply or that workers will elect to locate in other communities in the region where housing is available. Potential impacts of workers locating in and commuting from Klamath Falls is addressed in Section 3.6 Traffic and Circulation and Section 3.12 Public Services. No changes are proposed for the FEIS.
	28I6	Water Resources	Pg 3.12-2 Need to note that Bonanza water sources are contaminated	Comment noted. The project will neither directly or indirectly impact water quality in the community of Bonanza. The comment does not change the analysis of alternatives or potential impacts so no changes are proposed in the FEIS.
	28J6	Solid Waste	Pg 3.12-3 Note the Klamath Falls Landfill ceased operation in 2004 - where will the solid waste go?	The text will be revised to indicate that the Klamath Falls landfill ceased to accept household waste in 2004. However, the landfill will continue to take construction and demolition waste which will be the majority of waste generated during construction of the project. Household waste generated during construction and operation of the facility will be collected by a private waste vendor and handled by one of the three methods, 1) hauled to the Chemult Landfill, 2) hauled to a proposed Transfer Station in Klamath County, or 3) placed in waste rail containers on site and taken to an intermodal facility for direct placement on rail cars.
	28K6	Water Resources	Pg 3.12-6 3rd para - recommend describing local water sources are contaminated	Comment noted. The comment does not change the analysis of alternatives or potential impacts so no changes are proposed in the FEIS.
	28L6	Water Resources	Pg 3.12-7 Impact 3.12.1 Should consider feasibility of providing potable water to the Community of Bonanza	Comment noted. The comment does not change the analysis of alternatives or potential impacts so no changes are proposed in the FEIS.
	28M6	Water Resources	Pg 3.12 Tble 3.12-1 Table should note Bonanza well water is contaminated	Comment noted. The comment does not change the analysis of alternatives or potential impacts so no changes are proposed in the FEIS.
	28N6	Health & Safety	Pg 3.13-1 Include a discussion on use and safety of using herbicides	See response to Comment 28T.
	28O6	Wildlife	Pg 4-1 Only lists Bald Eagles, but the BA lists other species	The text in the FEIS will be revised to include the following Federally listed endangered species:1) Applegate's milk-vetch (Astragalus applegate); 2) Shortnose sucker (Chamistes breviroltris): 3) Lost River sucker (Deltistes luxatus)
	28P6	Recreation	Pg 4-4 There is no discussion of impacts on recreation and tourism	A brief discussion on potential impacts to recreation will be added to the text.
	28R6	Editorial	Pg 6-2 DEQ, Klamath Falls office should be on mailing list	Copies of the DEIS were provided to DEQ and they distributed the documents to appropriate individuals in DEQ. No changes are proposed for the FEIS.
	28S6	Editorial	Pg 6-2 Correct BLM address and list as a federal agency	These corrections will be made in the FEIS.
	28T6	Wildlife - Appendix C	Pg 1-2 Should state the bald eagle territory exists in PM_{10} deposition area	The FEIS will indicate that a bald eagle nest territory has been identified by BLM within a mile of the proposed electric transmission line and there is bald eagle nesting and winter roosts occurring in the Significant Impact Area for Annual PM_{10}.
	28U6	Wildlife - Appendix C	Pg 2-14 Recommends initially monitoring be conducted during peak migration and nesting and fledgling periods	Monitoring schedules will be determined through consultation with USFWS, ODFG, and BLM to optimize seasonality of wildlife populations. No changes are proposed for the FEIS.
	28V6	Wildlife - Appendix C	Pg 4-5 Recommend the marsh or marshes be clearly identified	The marshes are a significant distance from the Babson Well and will not be impact directly or indirectly by construction and operation of the project. Identifying the location of the marshes on a map will not affect the proposed action or alternatives. No further action is warranted.
	28W6	Editorial - Appendix C	Pg 4-5 "wouldet" should be spelled "willet"	The spelling will be corrected in the FEIS.
	28X6	Wildlife - Appendix C	Pg 5-7 Reference to bald eagles foraging in water reservoir, but this has been deleted from the project - correct statement	The water storage reservoir has been removed from the project so the reference will be corrected.
	28Y6	Fish - Appendix C	Pg 5-9 Doubt fish observed was a red shiner, appropriate to say Cyprinidae	The text will be edited to state "these fish were most likely in the Cyprinidae family."
	28Z6	Water - Appendix C	Pg 5-10 Effects of Babson Well test be clearly stated and evaluated, including effects on other wells and probable causes.	The project proponent provided analysis that shows the observed response was borehole-specific and most likely attributable to a leaking well packer. The project proponent has agreed to seal all production wells over much greater depths (between 750 and 1500 feet to address this potential hydraulic connection. As a result, the observed hydraulic effect was not considered as having the potential to effect shallow system water levels when future pumping will occur in properly constructed and sealed wells designed to isolate the shallow and deep portions of the aquifer system. No changes are
	28A7	Wildlife - Appendix C	Pg 6-1 Same as 28U6	Monitoring schedules will be determined through consultation with USFWS, ODFG, and BLM to optimize seasonality of wildlife populations. No changes are proposed for the FEIS.
	28B7	Vegetation - Appendix C	Pg A-8 Recommend long term monitoring to ensure habitat improvement	The monitoring plan proposed in the DEIS was developed as a base plan for monitoring. The frequency and duration of the monitoring will be developed through consultation with USFWS, ODFW, and BLM. No changes are proposed for the FEIS.

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	28C7	Wildlife - Appendix C	Risk Assessment: Pg 1 Should include eagle use at McFall Reservoir, effects of air emissions should be evaluated.	It is acknowledged that Smith Reservoir and bald eagle winter roost locations are within the significant impact area for annual PM10 and that these may be important areas for bald eagles in the region. Information describing these resources will be added to the text. However, no additional analysis is required because the current risk assessment is already based on maximum estimated soil and water concentrations within the significant impact area.
	28D7	Air Quality - Appendix C	Risk Assessment: Sec 2.2 No explanation of how the primary deposition area was determined - define more clearly amount and expected fate.	The text will be revised to read. "The significant impact area represents the area where annual average ambient PM_{10} concentrations of 0.2 ug/m^3 or greater are predicted. Concentrations at or above this value are defined as significant air quality impacts in the Oregon air quality regulations (OAR 340-200-0020). Oregon's PM_{10} significance level is more stringent than the federal PM_{10} significance level of 1 ug/m^3 and is therefore considered to be conservative." The percent of aerial deposition at the Energy Facility and that in the primary deposition area are not measurable within the modeling framework. Given the very small incremental risk from aerial deposition, even within the area of greatest concentrations, it is unlikely that aerial deposition would add to the risk estimate at the water application process area. No changes to the analysis are required; however, the text will be expanded to explain the determination of the significant impact area and the likelihood of risk outside this area. No changes have been made in the FEIS.
	28E7	Air Quality - Appendix C	Risk Assessment: Sec 2.2.1 Unclear if the constituents and concentrations of HAPS are based on what is typical of this type of process	Annual emissions of HAPs were estimated using established EPA emission factors for HAPs (EPA AP-42), supplemented with a recent memorandum from EPA's Office of Air Quality Planning and Standards (OAQPS) regarding formaldehyde emissions from natural-gas-fired combustion turbines employing lean premix combustion. The methods used to estimate HAPs for the COB Energy Facility are described in detail in Section 2 of the air permit application. These methods (including their degree of conservatism) will be summarized in the risk assessment for clarity. No changes to the analysis are required.
	28F7	Air Quality - Appendix C	Risk Assessment: Fig 3.7-1 Windrow does not support Table 1	Figure 3.7-1 in the DEIS indicates that the prevailing winds are from the northwest (i.e., they are blowing in a southeast direction). Therefore, the significant impact area for aerial deposition would be expected to occur to the southeast of the Energy Facility. This is depicted in Figure 1 and is consistent with the windrose portrayed in Figure 3.7-1. (Note: It is assumed that the commentor was referring to Figure 1 as Table 1 does not include directional deposition data, but rather total annual deposition.) No changes to the analysis are required.
	28G7	Appendix C - Air Quality	Risk Assessment: Recommend a model showing deposition of HAPs or additional information to confirm they will remain in the vapor phase and will not impact areas beyond those already identified.	As indicated in the ERA text, USEPA (1999) reports that all organic HAPs are in the vapor phase fraction. Therefore, these are not expected to have significant deposition. The current risk assessment evaluates the area that is predicted to have the greatest deposition. A conclusion of no risk was determined for this area; therefore, areas with lower deposition would also not be expected to pose a risk. No additional analysis is required, but further support for organics remaining in the vapor phase will be added.
	28H7	Air Quality - Appendix C	Risk Assessment: Not clear why a radius of 6 miles was chosen, recommend model assumptions be identified	A 6-mile (or 10-km) radius was selected as a realistic initial grid size for the air emissions model. Within this grid, the concentration of PM_{10} was determined at each receptor point over the time period (annual in this case). Each point along the edge of the grid was checked to ensure that PM_{10} concentrations were below those predicted in the significant impact area (area with concentrations above 0.2 ug/m^3). If they were greater, the grid would have been expanded to encompass a larger area. However, in the case of the COB Energy Facility model, these concentrations were less than those in the impact area and the grid size was kept at 6 miles. Additional text describing the model will be added to the risk assessment. No changes to the analysis are required.
	28I7	Air Quality - Appendix C	Risk Assessment: Generic lake model assumed depth of 20 feet, but most water depths are much less, with an average depth of 5-6 feet. Recommend model be adjusted for actual conditions.	Given the additional information on the reservoirs in the area provided by the reviewer, it is agreed that a 20-foot mixing zone is not appropriate for the evaluation. The mixing zone for the generic reservoir will be changed to 5 feet and the risk will be recalculated. However, it should be noted that for the aquatic screening, no risks were identified using a 2-foot mixing depth assumed for the generic river. Therefore, there will be no risk to aquatic receptors based on the maximum concentration calculated using a 5-foot mixing zone. The exposure estimate for bald eagles will be increased slightly using the 2-foot mixing depth (instead of the 20 feet as is currently done); however, the risk conclusions (i.e., no risk) remain unchanged. Discussion of the Smith Reservoir and Harpold Reservoir will be added; however, no additional analysis is required for these reservoirs because the current risk assessment is already based on maximum estimated soil and water concentrations within the significant impact area. It is assumed that our generic river and generic reservoir are within the Significant Impact Area for Annual PM_{10}.
	28J7	Air Quality - Appendix C	Recommend clarification regarding the literature-derived deposition rate. Is this a standard assumption?	Standard deposition rates for use in wildlife risk assessments have not been developed. However, 0.02 m/s is the value recommended for use by the California Air Pollution Control Officers Association (CAPCOA, 1993) under their risk assessment guidelines (human health) in the air toxics program. As indicated in Section 2.2.1 of the risk assessment, an independent evaluation of this rate (Howroyd, 1984) found that 0.02 m/s is highly conservative and in some cases overestimated deposition by an order of magnitude. Therefore, this rate is considered conservative and appropriate for a screening level assessment and no changes have been made in the FEIS.
	28K7	Wastewater - Appendix C	Risk Assessment: Recommend clarification using the 1.954 factor provide an accurate or conservative estimate of wastewater concentration.	Additional information regarding the calculation of the predicted reject water concentration will be added to the text. This will include additional rationale for the use of the 1.954 factor. No changes to the analysis are required.
	28L7	Wastewater - Appendix C	Risk Assessment: Recommend pathways, such as irrigation, depth to groundwater and other pertinent information be provided.	Additional information will be provided to support the exposure pathways analysis.

Letter Log #	Comment Code	Topic	Comment Summary	Response
	28M7	Wildlife - Appendix C	Risk Assessment: No information was provided to support assumption that exposure by dermal and inhalation is negligible. For biological opinion USFWS will use best available science—exposure needs to be accounted for	It is acknowledged that some inhalation of air emissions by wildlife receptors in the Energy Facility area is likely. Although methods to estimate inhalation exposure for wildlife receptors are generally lacking, a crude estimate of inhalation exposure (subject to significant uncertainty) could be generated. However, because inhalation toxicity data for wildlife receptors are also lacking, the significance of any exposure estimate produced would be unknown. Methods to estimate dermal exposure for wildlife receptors are also lacking, as are dermal toxicity data. This pathway is generally believed to be insignificant compared to oral ingestion. Additionally, fur, feathers, and scales are believed to mitigate dermal exposure by preventing contact of contaminated media with the skin. Additional discussion of the uncertainties and limitations of these pathways will be added to the conceptual model, the exposure characterization, and to the uncertainties analysis. No changes are proposed for the FEIS.
	28N7	Wildlife - Appendix C	Risk Assessment: Sec 3.4 Recommend the model be adjusted to more accurately reflect water depths	It is acknowledged that waterfowl can be a major food source for bald eagles. This information on the varied diet of the local eagles will be added to the risk assessment. Nonetheless, the assumption of a 100 percent fish diet is considered to be conservative and therefore appropriate for a screening-level assessment. Fish are year-round residents to the area, forage exclusively within the area, and will experience 100 percent of their exposure from within the area. In contrast, waterfowl are migratory, will only spend a portion of the year in the area, and will only consume a portion of their diet from the area. Another issue is the availability of bioaccumulation models. Whereas bioaccumulation models are available for fish, such models for birds are lacking. To estimate concentrations in birds, available models for small mammals would have to be used a surrogate (doing so would add an unknown level of uncertainty to the exposure estimate). To evaluate the effects of this on overall exposure estimates, models were re-run using the small mammal models in place of the fish models. A diet of 100 percent small mammals (assumed to represent birds) resulted in exposure estimates that were similar to or less than those calculated assuming a diet of 100 percent fish. Therefore, the authors do not recommend changing the bald eagle assessment as it would result in less conservative exposure estimates, especially for mercury (which accumulates more in fish than in small mammals).
	28O7	Wildlife - Appendix C	Risk Assessment, Sec 3.4 Since waterfowl are food for eagles, recommend that possible uptake by waterfowl be evaluated for seasonal differences in exposure	Background values for Klamath County were available from the USGS for all metals, except cadmium. In the absence of these data, a value from the eastern portion of Washington (which is similar in climate) was used. For comparison, a background concentration of cadmium at a location in California close to the Oregon border was 1.1 mg/kg compared to the Washington value of 1 mg/kg. Additionally, all background values used were generally within the lower range of values measured across the United States (Shacklette and Boergen, 1984). Therefore, these regional background values were assumed to be representative of natural levels in the area and are appropriate for screening-level assessments in which limited site-specific data are available.
				Background concentrations of certain metals (e.g., chromium) often exceed screening benchmarks. This does not necessarily indicate that background values present risk. Rather, this indicates the conservativeness of the screening benchmarks as well as limitations in the toxicity data used to develop the benchmarks. To be protective, screening benchmarks are frequently based on the lowest or 10th percentile concentrations associated with effects. Toxicity tests upon which screening benchmarks are based are often conducted using soluble salts added to test soils. These salts are generally more bioavailable than those forms present in the environment. Additionally, factors such as pH and organic content can reduce or increase the bioavailability of certain metals in the field relative to that in the laboratory tests. No change to the analysis is recommended; however, additional text discussing the implications of the background exceedances will be added.
	28P7	Soils - Appendix C	Risk Assessment, Sec 4.4 Several compounds identified as exceeding screening levels based on background levels - How do these background levels truly reflect the site? Recommend clarification specific to area affected by the project	Background values for Klamath County were available from the USGS for all metals, except cadmium. In the absence of these data, a value from the eastern portion of Washington (which is similar in climate) was used. For comparison, a background concentration of cadmium at a location in California close to the Oregon border was 1.1 mg/kg compared to the Washington value of 1 mg/kg. Additionally, all background values used were generally within the lower range of values measured across the United States (Shacklette and Boergen, 1984). Therefore, these regional background values were assumed to be representative of natural levels in the area and are appropriate for screening-level assessments in which limited site-specific data are available.
				Background concentrations of certain metals (e.g., chromium) often exceed screening benchmarks. This does not necessarily indicate that background values present risk. Rather, this indicates the conservativeness of the screening benchmarks as well as limitations in the toxicity data used to develop the benchmarks. To be protective, screening benchmarks are frequently based on the lowest or 10th percentile concentrations associated with effects. Toxicity tests upon which screening benchmarks are based are often conducted using soluble salts added to test soils. These salts are generally more bioavailable than those forms present in the environment. Additionally, factors such as pH and organic content can reduce or increase the bioavailability of certain metals in the field relative to that in the laboratory tests. No change to the analysis is recommended; however, additional text discussing the implications of the background exceedances will be added.
	28R7	Wildlife - Appendix C	Risk Assessment, Tble 5: Assumption that 100 percent of eagle diet is fish is inaccurate	See response to Comment 28N7.
	28S7	Wildlife - Appendix C	Risk Assessment, Tble 11: Same as 28I7	Given the additional information on the reservoirs in the area provided by the reviewer, it is agreed that a 20-foot mixing zone is not appropriate for the evaluation. The mixing zone for the generic reservoir will be changed to 5 feet and the risk will be re-calculated. However, it should be noted that for the aquatic screening, no risks were identified using a 2-ft mixing depth assumed for the generic river. Therefore, there will be no risk to aquatic receptors based on the maximum concentration calculated using a 5-foot mixing zone. The exposure estimate for bald eagles (Table 11) will be increased slightly using the 2-foot mixing depth (instead of the 20 feet as is currently done); however, the risk conclusions (i.e., no risk) remain unchanged.
	28T7	Wildlife - Appendix E	Avian Monitoring Plan, Pg 3-1 Recommend that the USFWS & ODFW be notified about all dead or injured birds during monitoring efforts.	During monitoring periods and other inspections of right-of-ways observations of all injured or dead birds found in or adjacent to the rights-of-way will be recorded and the USFWS and ODFW will be notified by the next business day. No changes are proposed for the FEIS.

Letter Log #	Comment Code	Topic	Comment Summary	Response
	28U7	Wildlife - Appendix E	Avian Monitoring Plan, Pg 4-3: Reference to FWS significance criteria - the FWS does not set "significance criteria." Expand and correct text.	The text will be revised to clarify how an estimate of total collisions will be evaluated.
EPA COMMENTS				
2COBEF-029	**29A**	Alternatives	The DEIS does not provide sufficient information to demonstrate a rigorous, objective evaluation of alternatives has been conducted by BPA and BLM	The proposed Federal actions of BPA and BLM are, respectively, to grant the interconnection of the COB Energy Facility to the Federal Columbia River Transmission System and to grant a right-of-way across BLM-managed land. The National Environmental Policy Act requires the agencies to consider alternatives within a range dictated by the nature and scope of these proposed actions. Because neither BPA nor BLM is proposing to site or to regulate the COB Energy Facility, alternative sites and regulatory schemes for the COB Energy Facility are outside the scope of the EIS. Chapter 2 of the EIS has been revised to provide additional clarifying information on the site selection process for this project.
	29B	General Impacts	The DEIS presents no evidence that BPA and BLM have conducted their own independent evaluation of the proposed generating facility.	The project proponent has provided additional information on the site selection process and alternatives. See response to Comment 29A.
	29C	Alternatives	Alternative sites are not identified on a map nor is it explained in the EIS why each site was ultimately rejected.	A figure will be added showing general areas that were considered as alternative sites.
	29D	Alternatives	The EIS should include discussions of the reasons for eliminating each alternative from detailed evaluation.	See response to Comment 29A.
	29E	Alternatives	The EIS should include a discussion and assessment of alternative sites that could potentially reduce environmental impacts in closer proximity to the existing gas pipeline, Captain Jack Substation, and the town of Malin	See response to comments 29C and 29D.
	29F	Alternatives	The EIS should more fully discuss how the range of alternatives evaluated represent the only reasonable options for the transmission line	More detailed information will be presented on the alternative transmission line routing in the FEIS.
	29G	Transmission	The EIS should demonstrate that the proposed transmission line has been selected and designed to avoid and minimize environmental impacts	In siting the proposed transmission line, consideration was given to avoiding and minimizing environmental impacts to the greatest extent practicable. More detailed information on the transmission line routing has been provided in the FEIS. In addition, appropriate mitigation measures designed to avoid or minimize potential impacts are identified in the EIS for transmission-related impacts.
	29H	General Impacts	The FEIS should reflect a better understanding of project impacts and appropriate level of protection for the impacted resources.	The lead agencies believe that the EIS for the proposed action reflects a sufficient understanding of project impacts and possible appropriate mitigation measures for potential impacted resources to allow an informed decision by agency decisionmakers. As is appropriate in any EIS process, information in the DEIS has been augmented through responses to the comments received. In addition, the FEIS incorporates by reference other documents that provide additional information on impacted resources as appropriate.
	29I	Mitigation	Mitigation measures should include affirmative statements of what will be done and where.	Mitigation measures are identified in the EIS with the level of specificity required by NEPA. If BPA decides to approve interconnection of the proposed project, this decision will be made through a ROD, which will document the mitigation measures that have been adopted from the FEIS. Consistent with BPA's NEPA Regulations, BPA will also prepare a Mitigation Action Plan following the ROD, but before any action is taken by BPA that is the subject of mitigation, for any mitigation commitments expressed in the ROD. This MAP will explain how this mitigation will be planned and implemented.

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Complete Set of Comments on the COB Energy Facility DEIS

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