SACRAMENTO MUNICIPAL UTILITY DISTRICT
UPPER AMERICAN RIVER PROJECT
(FERC NO. 2101)

VISUAL ASSESSMENT OF UPPER AMERICAN RIVER PROJECT FEATURES TECHNICAL REPORT

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9.1 Aesthetics Study Plan

9.1.1 Pertinent Issue Questions

The Aesthetics Study Plan addresses the following Recreation and Aesthetics Resource Issue Questions:

42. Are Project facilities and operations consistent with the visual quality objectives in the Forest Service plan?
45. What is the visual impact of spoils pile (e.g. Slab Creek and White Rock adit)?
46. What are the visual impacts of stumps in the lakes (Buck Island or Rubicon Lakes)?
47. What are the Project related effects on aesthetics of lands under transmission lines?
67. What are the effects of Project facilities and operations on wilderness visual quality?

9.1.2 Background

The Aesthetics Resource Study will address visual resources and any specific issues regarding auditory resources associated with existing Project facilities and operations. The study will determine if there are visual Project-related affects associated with on-going Project operations, and if so how they could be mitigated or lessened.

The Project is located within a FERC Project Boundary surrounded by lands under federal management and county jurisdiction, for which there are differing approaches to the management of aesthetic resources. The Forest Service (USFS), which manages most of the land within the FERC Project Boundary, and Bureau of Land Management (USBLM), which manages a 40-acre parcel within the FERC Project Boundary, have established visual management systems that are used in the agency planning process to establish visual management objectives for the respective agency lands and waters. The USFS and USBLM have developed these management systems to comply with the National Environmental Policy Act (NEPA). Neither of these systems addresses auditory resources.

Most of the Project is located within the Eldorado National Forest (ENF) on lands managed by the USFS. The ENF is currently using the USDA Visual Management System (VMS) to manage the visual resources of the Forest (USDA Forest Service, 1974). The visual resources have been inventoried, and the management direction is reflected in the 1988 Land and Resource Management Plan (LRMP) (USDA Forest Service 1988) in terms of visual quality objectives (VQOs). The VQOs represent a composite rating of the scenic integrity or visual "variety" of the landscape, combined with a "sensitivity level" rating that reflects the number and relative concern of viewers for the scenic quality of the landscape. Landscape variety and sensitivity levels are combined with a "distance zone" rating which identifies the distance from which viewers typically experience the landscape. Based on inventory ratings and management direction, areas of the Crystal Basin are managed for retention, partial retention and modification VQOs:

- Preservation (P). "This visual quality objective allows ecological changes only. Management activities, except for very low visual impact recreation facilities are prohibited. The objective applies to Wilderness Areas, primitive areas, other special classified areas, areas awaiting classification and some unique management units which do not justify special classification (USDA Forest Service 1974)." The Desolation Wilderness has a preservation VQO. Approximately 1,200 acres of the FERC Project Boundary, are located within the Desolation Wilderness including the Rubicon diversion, reservoir and tunnel. The 1969 Desolation Wilderness Act (Public Law 91-82) excludes the land within the FERC Project Boundary from wilderness designation. However, the act calls for the excluded lands "to be managed in a manner that is consistent with the adjacent wilderness." Since it is not feasible to achieve a Preservation VQO (ecological change only) for the Project, the Forest Service management goal is to move as close to a Preservation VQO as is reasonable.
- Retention (R). "This visual quality objective provides for management activities which are not visually evident. Under Retention, activities may only repeat form, line, color and texture which are frequently found in the characteristic landscape. Changes in their qualities of size, amount, intensity, direction, pattern, etc., should not be evident (USDA Forest Service 1974)."
- Partial Retention (PR). "Management activities remain visually subordinate to the characteristic landscape when managed according to the partial retention visual quality objective. Activities may repeat form, line, color, or texture common to the characteristic landscape but changes in their qualities of size, amount,

intensity, direction, pattern, etc., remain visually subordinate to the characteristic landscape. Activities may also introduce form, line, color, or texture which are found infrequently or not at all in the characteristic landscape, but they should remain visually subordinate to the visual strength of the characteristic landscape (USDA Forest Service 1974)."

- Modification (M). "Under the modification visual quality objective management activities may visually dominate the original characteristic landscape. However, activities of vegetative and land form alterations must borrow from naturally established form, line, color, or texture so completely and at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type. Additional parts of these activities such as structures, roads, slash, root wads, etc., must remain visually subordinate to the proposed composition. Activities which are predominantly introduction of facilities such as buildings, signs, roads, etc., should borrow naturally established form, line, color, and texture so completely and at such a scale that its visual characteristics are compatible with the natural surroundings (USDA Forest Service 1974)."

The USBLM has a similar system to that of the USFS: the Visual Resource Management (VRM) system (USDI Bureau of Land Management 1984). The White Rock spoil pile is located on a parcel of land that is under BLM management. The applicable VRM classifications will be used for this parcel.

The general plans for El Dorado and Sacramento counties include goals and objectives associated with the protection of visual resources, however there are no inventory and assessment systems similar to those of the Federal agencies for managing visual resources. Therefore the aesthetic assessment of Project facilities on lands outside the ENF (except for BLM lands where the VRM system applies) will use the environmental checklist questions from the CEQA Guidelines for evaluating any on-going visual or auditory effects of the Project within El Dorado and Sacramento counties.

9.1.3 Study Objectives

The study objectives are listed below.

1. Identify the aesthetic condition of Project facilities.
2. Identify the aesthetic condition of Project operations in Project reservoirs and bypass reaches.
3. Identify the consistency of the Project with the aesthetic resource elements of management plans.
4. Identify opportunities to mitigate or lessen on-going Project-related impacts.

9.1.4 Study Area and Sampling Locations

The study area for the aesthetic assessment is defined as the portion of the Project that is within viewsheds managed by their respective agencies for visual quality. Viewsheds include foreground (0 to 0.5 miles) and middleground (0.5-5.0 mile) distance zones.

Within the ENF, sensitive viewing locations include primary and secondary travel routes (trails and roads) and recreation use areas (campgrounds, rivers, reservoirs and Desolation Wilderness) where the concern for visual quality is high. These travel routes and use areas are designated as Sensitivity Level 1 (high) or 2 (moderate) in the VMS. The study area within the ENF, is defined as the area containing Project facilities and operations that can be seen from foreground and middleground distance zones of sensitivity level 1 and 2 travel and river corridors and use areas.

For Project facilities and operations outside the ENF, sensitive viewing locations are defined as scenic vistas, scenic travel routes, and other public use areas of scenic value formally designated in the USBLM, El Dorado and Sacramento County planning documents. The study area is defined as Project facilities and operations that can be seen from foreground and middleground distance zones of sensitive viewing locations.

9.1.5 Information Needed From Other Studies

The following information will be needed from other UARP relicensing studies:

- Recreation Studies - Throughout the analysis, information from the Recreation Supply, Recreation Demand, Recreation Needs, Recreation Carrying Capacity, and Visitor Use and Impact Survey studies will be monitored to identify potential changes to VQOs in response to changes in recreation use patterns that could affect sensitivity level ratings. Results from the Visitor Use and Impact Survey will also be monitored for information on Project areas where noise may be an issue. Noise information will be identified from open-ended survey questions regarding the quality of the recreation experience. Information on the type, source, location and duration of noise sources will be incorporated into the auditory assessment of the Project.

- Hydrology Study - To photographically document the aesthetic effect of on-going Project operations in reservoirs and bypass reaches, hydrology of the Project will be reviewed and representative summer high, normal and low water surface elevations, and the minimum bypass flows will be identified.

9.1.7 Study Methods And Schedule

SMUD's goal for the aesthetic study will be to analyze the existing visual condition to determine to what degree it meets the agencies' respective visual management objectives. The Project will be evaluated by the TYG from sensitive viewing locations to determine if the existing on-going operation of the Project is in compliance with the respective land management direction for the visual resource. Where the Project meets the visual objectives, no actions will be proposed. Where the evaluation shows the management objective is not met, mitigation and/or enhancement measures will be proposed.

The Aesthetics Study will consist of three separate methodologies: 1) a visual assessment of Project facilities; 2) a visual assessment of Project operations; and 3) an auditory assessment of Project facilities and operations.

For Project lands within the ENF, which include Desolation Wilderness, the Forest's current VQO designations will provide visual management direction for the Project. VQO information will be obtained from the ENF, and the Sensitivity Level 1 and 2 areas identified. Areas of the Project where the Existing Visual Condition (EVC) may need field verification and will be noted for field checking.

For lands outside the ENF, the visibility of the Project will be documented and analyzed from scenic vistas, designated scenic highways, and other sensitive viewing locations identified in USBLM, El Dorado County and Sacramento County planning documents. Visual management direction for the USBLM, El Dorado and Sacramento counties is defined by specific goals and objectives in planning documents regarding visual and scenic resources.

Visual Assessment of Project Facilities

Project facilities will be assessed based on their compatability with established management direction for the visual resource. This will be evaluated by documenting the existing visual condition and visibility of Project facilities from Key View Points (KVPs). KVPs are photo locations that will be located in sensitive viewing locations and represent the typical views experienced by visitors in the area. Existing KVPs established by the ENF for the Project will be used where available. Photographs from KVPs will be used to evaluate the visual contrast that exists between Project facilities and the surrounding landscape. The degree of visual contrast with the surrounding characteristic landscape will determine the extent to which Project facilities are consistent with visual management direction.

For the ENF, sensitive viewing locations are defined by sensitivity level 1 or 2 travel and river corridors and use areas. For El Dorado and Sacramento counties, sensitive viewing locations are designated scenic vistas and roadways and other public areas identified in planning documents. For BLM lands, VRM designations for high and moderate sensitivity level areas will define the sensitive viewing locations.

Visual Assessment of Project Operations

The visual assessment of Project operations will identify reservoirs and sections of bypass reaches that are seen from sensitive viewing locations, as defined above. Representative views of each reservoir and bypass reach will be selected as a KVP from which photographs of reservoir water surface elevations, and instream flows will be documented. For Project reservoirs, documentation will consist of a representative summer high, normal and low water surface elevation. For Project bypass reaches, documentation will consist of the minimum instream flow.

Union Valley, Loon Lake and Ice House reservoirs have been identified by the Recreation TWG as Project reservoirs where draw down may potentially affect the aesthetic and recreation experience of visitors. To address this issue, the Licensee will develop a survey instrument in consultation with the Forest Service and other interested parties, and implement it to evaluate visitor's aesthetic expectations for, and satisfaction with water surface elevations at Union Valley and Ice House reservoirs (the Visitor Use and Impact Study will address facility issues such as boating access associated with water surface elevations). The survey will document visitors' historical and current visit to the reservoirs and the expectations and satisfactions with the water surface elevations during those visits. Where visitor use has been displaced due to dissatisfaction or other Project-related factors, the alternate use locations will be identified. Surveys will be conducted during the primary recreation season (Memorial Day through Labor Day) and visual simulations of reservoir surface elevations will be used to assist respondents in identifying historical reservoir elevations that are not present on the day of the survey. The goals of the survey will be to (1) identify a water surface elevation or elevation range, at the reservoirs where visitors' expectations for and satisfaction with water levels are adversely affected by Project operations, and (2) identify actions visitors take when they are dissatisfied and the location of displaced use that may occur as a result of reservoir levels.

Noise Assessment of Project Facilities and Operations

Potential noise issues will be identified during field studies for the visual assessment of Project facilities, which will be conducted during times of recreation use. During field visits, potential sources of noise associated with the Project (generation, transmission, or recreation use) will be noted on field forms, including the source, location, duration and relative sound level. Field information will be cross-referenced with results from the (Visitor Use Survey to determine where noise is perceived to be an issue by visitors. Information on the type, source, location and duration of noise sources will be documented.

9.1.8 Analysis

The aesthetic assessment of the Project from KVPs may identify areas where the Project results in visual contrasts that are inconsistent with visual management direction. Where the Project is determined to not be in compliance with visual management direction, potential measures will be proposed to enhance the aesthetic resources of the Project. The purpose of such measures will be to lessen visual contrasts and bring the Project further into compliance with visual management direction. Examples of such measures could include vegetation screening or painting of facilities.

The auditory assessment of the Project will identify areas where noise is perceived to be an issue by sensitive viewers, primarily recreationists. Where noise issues exist, the source of the noise will be identified, and potential auditory measures to lessen the noise impacts defined. An example of an auditory measure could include development of use regulations to control or limit the generation of noise associated with recreation activities.

9.1.9 Study Output

Preliminary study results will be presented to the Recreation and Aesthetics Technical Working Group (TWG) and the Plenary Group in late 2002. The study output will be a written report that includes issue question(s) addressed, objectives, study area, methods, analysis, results, discussion, and conclusions. The report will include maps of the KVPs and Project facilities, and photographs of the view from KVPs. The report will be prepared in a format that allows the information to be inserted directly into the Licensee's application and will include any recommended PM&Es.

9.1.10 Preliminary Estimated Study Cost

A preliminary cost estimate for this study will be developed after approval by the Plenary Group.

9.1.11 Plenary Group Endorsement

This study plan was approved on February 19, 2002 by the following entities of the TWG: ENF, SWRCB, American River Recreation Association, NPS, BLM and SMUD. This study plan will be sent out to other members of the Recreation and Aesthetics TWG for their consideration. The Plenary Group approved the plan on June 5, 2002. The participants a the meeting who said they could "live with" this study plan were PCWA, El Dorado County, BLM, BOR, USFS, CSPA, SMUD, FOR, PG&E. None of the participants at the meeting said they could not "live with" this study plan.

9.1.12 Literature Cited

SMUD (Sacramento Municipal Utility District). 2001. Initial Information Package for Relicensing of the Upper American River Project.

USDI (Unites States Department of the Interior) Bureau of Land Management. 1984. 8400-Visual Resource Management.

USDA (United States Department of Agriculture) Forest Service. 1988. Eldorado National Forest. Land and resource management plan. USDA Forest Service, Pacific Southwest Region, San Francisco, CA.

USDA Forest Service. 1974. National Forest Landscape Management, Volume 2, Chapter 1, The Visual Management System, Agriculture Handbook Number 462.

VISUAL ASSESSMENT OF THE UPPER AMERICAN RIVER PROJECT FEATURES TECHNICAL REPORT

SUMMARY

The Aesthetics Study Plan calls for the visual assessment of UARP facilities. The visual assessment of UARP features within the ENF was based on the USDA Forest Service Visual Management System (VMS). The Forest Service provided Visual Quality Objective maps and Existing Visual Condition maps, which were used for the assessment. SMUD worked with the Forest Service to develop the visual assessment instrument. Field visits of UARP facilities were conducted in the summer and fall of 2002 and 2003.

UARP features within the Desolation Wilderness meet the Visual Quality Objectives of Retention and Modification as seen from the Key Viewpoint of the Rubicon Trail.

UARP features within the Crystal Basin meet Visual Quality Objectives that range from Retention to Modification, and some facilities are not seen from the Key Viewpoints of the many roads, trails and recreation use sites in the area.

UARP features in the Canyon Lands meet Visual Quality Objectives that range from Partial Retention to Modification and some are not seen from the Key Viewpoints of roads and highways in the area. None of the UARP features generate noticeable levels of noise that detract from visitors' experience.

1.0 INTRODUCTION

This technical report is one in a series of reports prepared by Devine Tarbell & Associates, Inc, (DTA) and Martha Goodavish Planning & Design for the Sacramento Municipal Utility District (SMUD) as an appendix to SMUD's application to the Federal Energy Regulatory Commission (FERC) for a new license for the Upper American River Project (UARP or Project). The report addresses the aesthetic resources and includes the following sections:

- **BACKGROUND** – Summarizes the applicable study plan approved by the UARP Relicensing Plenary Group; a brief description of the issue questions addressed, in part, by the study plan; the objectives of the study plan; the study area, and agency information requests. In addition, requests by resource agencies for additions to and modifications of this technical report are described in this section.
- **METHODS** – A description of the methods used in the study, including a listing of study sites.
- **RESULTS** – A description of the salient data results and analysis of the results, where appropriate.
- **FINDINGS** – A broad statement of the study findings.
- **LITERATURE CITED** - A listing of literature cited in the report.
- **APPENDICES** – Appendices A through F provide additional visual assessment information. Appendices A, C and E are visual assessment tables of UARP features for each of the UARP areas (Desolation Wilderness, Crystal Basin, and Canyon Lands). Appendices B, D and F are site photographs of UARP features.

This technical report does not include a detailed description of the UARP Alternative Licensing Process (ALP) or the UARP, which can be found in the following sections of SMUD's application for a new license: the UARP Relicensing Process, Exhibit A (Project Description), Exhibit B (Project Operations), and Exhibit C (Construction).

Also, this technical report does not include a discussion regarding the effects of the UARP on aesthetics and associated environmental resources, nor does the report include a discussion of appropriate protection, mitigation, and enhancement measures. An impacts discussion regarding the UARP is included in the applicant-prepared preliminary draft environmental assessment (PDEA) document, which is part of SMUD's application for a new license. Development of resource measures will occur in settlement discussions, which will commence in 2004 and will be reported on in the PDEA.

2.0 BACKGROUND

The UARP Recreation and Aesthetics Technical Working Group (Recreation TWG) developed one study plan that pertained specifically to the visual assessment of UARP facilities: the Aesthetics Study Plan. This study plan is discussed below.

2.1 Aesthetics Study Plan

On June 5, 2002, the UARP Relicensing Plenary Group approved the Aesthetics Study Plan that was developed and approved by the Recreation TWG on February 19, 2002 (SMUD 2002). The study plan was designed to address, in part, the following issue questions developed by the UARP Relicensing Plenary Group:

Issue Question 42.	Are Project facilities and operations consistent with the visual quality objectives in the Forest Service plan?
Issue Question 45.	What is the visual impact of spoils pile (e.g. Slab Creek and White Rock adit)?
Issue Question 46.	What are the visual impacts of stumps in the lakes (Buck Island or Rubicon lakes)?
Issue Question 47.	What are the Project related effects on aesthetics of lands under transmission lines?
Issue Question 67.	What are the effects of Project facilities and operations on wilderness visual quality?

The study method was divided into three phases: 1) assess the visual impacts related to UARP facilities; 2) assess the visual impacts related to UARP operations; and 3) assess the noise impacts associated with UARP facilities. Phase 2 is addressed in a separate report titled, *Visual*

Assessment of Upper American River Project Operations Technical Report. The objectives of phases 1 and 3 of the study are to:

1. Identify the aesthetic condition of UARP facilities; and

2. Identify the consistency of the UARP with the aesthetic resource elements of management plans.

This *Visual Assessment of Upper American River Project Features Technical Report* addresses Issue Questions 45, 46, 47, 67, the facility aspects of 42, and the two study objectives stated above. The operational aspects of Issue Question 42 is addressed in the *Visual Assessment of Upper American River Project Operations Technical Report*. The study objective to address the aesthetic condition of UARP facilities includes a noise assessment as well as a visual assessment because auditory effects are a component of aesthetics.

Another study objective was to identify opportunities to mitigate or lessen on-going UARP-related impacts. However, this objective will be accomplished in 2004 by the Recreation TWG and the Settlement Negotiation Group. Thus, this technical report only provides the results of SMUD's assessment.

2.2 Study Area

Within the Eldorado National Forest (ENF), UARP features were assessed from Key View Points (KVPs) which are ENF identified primary and secondary travel routes (trails and roads, and river) and recreation use areas (campgrounds, rivers, reservoirs and the Desolation Wilderness) where the concern for visual quality is high. The visual effect of UARP features on the viewshed seen from these KVPs is what is assessed.

The study area for the visual assessment of UARP features within the ENF is defined as the KVPs from which UARP features that can be seen in the foreground and middle ground distance zones of sensitivity level 1 and 2 travel and river corridors, and recreation use areas.

For UARP features outside the ENF, viewing locations were to include formerly designated scenic use areas and/or travel routes in planning documents. However, after review of the County General Plan, there were no County-designated travel routes, scenic vistas or public use areas from which the UARP could be seen. Forebay Road and Highway 193 were included in analysis to address Issue Question 45, and neither are designated scenic routes. Highway 50 is a state designated scenic highway, however the designation starts at the west end of Placerville and extends east to Lake Tahoe and the UARP is not seen from this section of Highway 50.

2.3 Recreation TWG Determination of Adequacy

At the July 29, 2004 Recreation TWG meeting, the Recreation TWG determined that the *Visual Assessment of Project Features Technical Report*, dated March 2004, is adequate subject to all comments submitted by the TWG participants being incorporated into a new version of the

report. The Recreation TWG had only one comment: make the editorial changes as suggested by the May 13, 2004 resource agencies letter. The editorial changes contained in the May 13, 2004 letter, which are incorporated into this revised report, were: "This is a well-done study with only the following minor corrections needed:

- Appendixes A, B, C, and E were not included on the CD.
- Page 13, Section 4.2.6 change "Foresthill" to Georgetown or delete the entire sentence.
- Page 17, Section 4.2.12, second paragraph, second sentence, change "MM" to "M."
- Page 19, Section 4.2.20, second paragraph, last sentence, change change "MM" to "M."
- Page 19, Section 4.3, third sentence, change "digger" to "gray."
- Page 19, Section 4.3.1, first sentence, change "Pollack" to Pollock."
- Page 19, Section 4.3.1, add a discussion of the transmission lines as viewed from Forebay Road. The existing visual condition is modification.
- Page 23, Section 4.3.2, last sentence, change "MM" to "M." Also add a disclaimer that Highway 193 is not a Forest Service managed viewshed.
- Page 24, first paragraph: the terminology used throughout this paragraph, "visually adverse," needs to be quantified. The ability of visitors to see stumps in the lakes from both foreground and middleground is visually adverse because they do not appear natural and the lakes are managed for a preservation VQO. The paragraph needs to state to what degree the stumps affect the visual resource."

3.0 METHODS

3.1 Visual Assessment of Upper American River Project Features

The visual assessment of UARP features within the ENF was based on the USDA Forest Service Visual Management System (VMS). The Aesthetics Technical Lead met with the ENF on August 19, 2002 to identify the KVPs and UARP features for the analysis. Following the meeting, the Aesthetics Technical Lead continued to consult with the ENF to develop visual assessment forms.

The ENF provided a list of the KVPs, and hard copies of USGS 7.5 minute quadrangle map-overlays of Existing Visual Condition (EVC) (USDA Undated) and Visual Quality Objective (VQO) (USDA 1987) mapping. VQOs represent the ENF management direction to "…assure that visitors will be afforded views of natural looking landscapes seen from Sensitivity Level 1 and 2 roads, trails, streams, and areas of concentrated public use." as stated on page 3-38 of the Land and Resource Management Plan (USDA 1989). EVCs refer to "…the levels of natural character that currently exist within the Forest …and provide a baseline for evaluating the amount of change in visual quality that will result from management activities." (USDA 1989). Information on UARP facilities came from the Project description in the *Initial Information Package for Relicensing of the Upper American River Project* (SMUD 2001).

The UARP was divided into three areas: Desolation Wilderness, Crystal Basin, and the Canyon Lands due to differences in landscape character and management direction. Within each area, the KVP was visited and the visibility of UARP features as seen from the KVP was photographically documented, the photo locations logged on maps, and in field notes. The EVC rating was also reviewed for possible modification, although no changes were made.

There are no proposed changes to the UARP facilities discussed in this report (SMUD 2001). This report does not include the Iowa Hill Development, for which a separate visual assessment will be conducted.

The visual effect of UARP features was assessed in terms of VMS designations for EVC types, variety class, sensitivity levels, distance zones, and VQOs. VMS definitions are given below.

EVC Types

There are six types of EVC found on the ENF:

Type 1 – Areas where only ecological change has taken place except for trails needed for access, and areas are visually untouched by man's activities.

Type 2 – Areas in which change in the landscape are not visually evident to the average person unless pointed out. These areas are unnoticed.

Type 3 – Areas where changes in the landscape are noticed by the average Forest visitor, but they do not attract attention. The natural appearance of the landscape still remains dominant. These areas appear to be minor disturbances.

Type 4 – Areas in which changes in the landscape are easily noticed by the average Forest visitor and may attract some attention. These areas visually appear as disturbances but resemble natural patterns.

Type 5 - Areas in which changes in the landscape are strong and would be obvious to the average Forest visitor. These changes stand out as a dominating impression of the landscape, yet they are shaped so that they might resemble natural patterns when viewed from 3-5 miles or more distance. These areas visually appear to be major disturbances.

Type 6 - Areas in which changes in the landscape are in glaring contrast to the natural appearance. Almost all Forest visitors would be displeased with the effect. These areas visually appear to be drastic disturbances.

Variety Class

Landscape variety classes are a relative classification of the landscape into areas of importance from a scenic quality perspective. The classification is based on the premise that all landscapes

have some value, but those with the most variety or diversity have the greatest potential for high scenic value. There are three variety classes: Class A – Distinctive; Class B – Common; and Class C – Minimal.

Sensitivity Level

Sensitivity levels are an indication of people's concern for the scenic quality of the landscape. The levels are based on the amount of use an area receives and type of user. There are three levels of sensitivity: Level 1 – for primary travel routes and recreation use areas, where visitors are anticipated to have a high concern for the visual quality; Levels 2 and 3 – for areas that are not heavily used, and where users have a moderate or low concern for the visual quality due to a commodity orientation to the landscape.

Distance Zone

KVP viewsheds are divided into distance zones. The distance zone from which a landscape is most commonly viewed determines the distance zone used in EVC and VQO designations. There are three distance zones: Foreground (Fg) is defined as the landscape within 0.5 miles of the observer. Middle ground (Mg) defined as the distance between 0.5 miles and 3 miles. Background (Bg) is defined as the distance beyond the middle ground.

Preservation VQO

The Preservation (P) VQO designation allows for ecological changes only. Management activities, except for very low visual impact recreation facilities are prohibited. The objective applies to Wilderness Areas, primitive areas, other special classified areas, areas awaiting classification and some unique management units that do not justify special classification (USDA Forest Service 1974).

Retention VQO

The Retention (R) VQO provides for management activities that are not visually evident. Under Retention, activities may only repeat form, line, color and texture which are frequently found in the characteristic landscape. Changes in their qualities of size, amount, intensity, direction, pattern, etc., should not be evident (USDA Forest Service 1974).

Partial Retention VQO

Under the Partial Retention (PR) VQO, management activities are to remain visually subordinate to the characteristic landscape. Activities may repeat form, line, color, or texture common to the characteristic landscape but changes in their qualities of size, amount, intensity, direction, pattern, etc., remain visually subordinate to the characteristic landscape. Activities may also introduce form, line, color, or texture, which are found infrequently or not at all in the characteristic landscape, but they should remain visually subordinate to the visual strength of the characteristic landscape (USDA Forest Service 1974).

Modification VQO

Under the modification (M) VQO, management activities may visually dominate the original characteristic landscape. However, activities of vegetative and land form alterations must borrow from naturally established form, line, color, or texture so completely and at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type. Additional parts of these activities such as structures, roads, slash, root wads, etc., must remain visually subordinate to the proposed composition. Activities which are predominantly introduction of facilities such as buildings, signs, roads, etc., should borrow naturally established form, line, color, and texture so completely and at such a scale that its visual characteristics are compatible with the natural surroundings (USDA Forest Service 1974).

Maximum Modification VQO

Under the maximum modification (MM) VQO, management activities of vegetative and landform alterations may dominate the characteristic landscape. However, when viewed in the background distance zone, the visual characteristics must be those of natural occurrences within the surrounding area or character type. When viewed in the foreground or middle ground they may not appear to completely borrow from naturally established form, line, color or texture. Alternations may also be out of scale or contain detail which is incongruent with natural occurrences as seen in foreground or middle ground.

3.2 Noise Assessment of Upper American River Project Features

Noises associated with UARP operations are an aesthetics-related issue. The study plan included an assessment of potential sources of noise from UARP operations. A field assessment of potential noise sources at UARP facilities was conducted in conjunction with the visual assessment field visits. In addition, results from the UARP 2002 recreation survey were also reviewed to see if UARP-facility noise was identified by visitors as an issue.

4.0 RESULTS

The visual analysis of UARP features is presented in Appendices A through F. Appendices A, C and E contain the visual assessment tables, and Appendices B, D, and F contain the photographs supporting the assessment. Below is a summary of the results by the three UARP areas and the KVPs within each of the areas.

4.1 Desolation Wilderness Landscape

The Desolation Wilderness lies within the crest zone of the ENF. The crest zone is characterized as a strongly glaciated landscape with peaks that tower above glaciated rocky basins. Colors vary from gray and tan barren mountains with dense pockets of dark green conifers to light green aspen stands. Meadows, streams, glacial lakes, snowfields and summer wildflowers are common (USDA 1988, EIS page 3-111).

The 1969 Desolation Wilderness Act (Public Law 91-82) excludes the land within the FERC Project Boundary from wilderness designation. However, the act calls for the excluded lands "…to be managed in a manner that is consistent with the adjacent wilderness." Since it is not feasible to achieve a Preservation VQO (ecological change only) for the UARP, the Forest Service management goal is to move as close to a Preservation VQO as is reasonable.

4.1.1 Rubicon Trail KVP

The Rubicon Trail (FS Trail 15E30) begins near Loon Lake Campground and enters the Desolation Wilderness just north of Rock Bound Lake. The trail traverses up the Rubicon River basin, passing along the west side of Rock Bound Lake and Rubicon Reservoir. UARP facilities within the Wilderness are associated with Rubicon Reservoir and include a main and auxiliary dam, intake structure with a gauging station, and an outlet structure with a gauging station. See Figure 1 for the location of the Rubicon Trail, Appendix A for the visual assessment of the UARP facilities seen from the Rubicon Trail KVP in the Desolation Wilderness, and Appendix B for photographs.

Upper American River Project

SMUD

Map 1 Desolation Wilderness and Crystal Basin

Figure 1
Key View Points

Key View Point Road and Trail Sections

Adit
Canal
Channel
Penstock
Tunnel

Divided Highway
Other Highway
County Roads
Other Roads

Transmission Lines

Wilderness Boundary

SCALE 1:75,000

0 0.6 1.2 1.8 2.4 Miles

Prepared by VESTRA Resources, Inc., Redding. CA. Feb. 25, 2004

The Rubicon Reservoir viewshed is managed for the P VQO, as is the entire Wilderness area. Views from the Rubicon Trail are affected by the presence of UARP facilities. The main and auxiliary dams are not noticeable from the trail and meet the R VQO. The intake structure, booms across the reservoir, and gauging structure are adjacent to the trail and dominate the view for about 100 feet. This area meets the M VQO. Heading north from the reservoir the Rubicon Trail splits into two. One trail veers northeast, bypassing the outlet channel and gauging station. No UARP facilities can be seen from this route. The other trail veers northwest and parallels the tunnel outlet channel for about 200 feet. From this trail segment the outlet structure, gauging station, and cable crossing over the channel dominate the view. This area meets the M VQO.

4.2 Crystal Basin Landscape

The Crystal Basin lies within the mixed conifer–red fir zone of the ENF. This landscape is characterized by moderately-steep to steep slopes of relatively uniform dark blue-green colors and an even texture. Variety is low to medium and the screening ability is generally high. There are openings and scattered clusters of small openings where lava caps and rock outcroppings occur. Mixed conifer includes ponderosa pine, white fir, and incense cedar. Red fir areas include red fir, white fir, jeffrey pine, and sugar pine (USDA 1988, EIS page 3-111).

4.2.1 Rubicon Trail KVP

Outside the Desolation Wilderness, the Rubicon Trail continues north passing Rockbound Lake and Buck Island Reservoir on their west sides (Figure 1). After which the trail veers west past Spider Lake, and south along the east side of Loon Lake Reservoir. UARP facilities seen from this section of the Rubicon Trail are associated with Buck Island and Loon Lake reservoirs. There are no UARP facilities at Rockbound or Spider lakes. At Buck Island Reservoir, facilities are a main and auxiliary dam. At Loon Lake Reservoir, facilities are a main and auxiliary dam, dike, intake structure, powerhouse access building, and the Loon Lake–Union Valley transmission line. See Appendix C for the visual assessment of the UARP facilities seen from the Rubicon Trail in the Crystal Basin, and Appendix D for photographs.

Both the Buck Island and Loon Lake reservoir viewsheds are managed for the R VQO. Views from the Rubicon Trail are affected by the presence of UARP facilities. At Buck Island Reservoir the main and auxiliary dams are not noticeable from the Rubicon Trail. These facilities meet the R VQO. At Loon Lake Reservoir, views of UARP facilities are screened nearly entirely by intervening vegetation. Where there are openings in the vegetation, facilities meet the PR VQO.

4.2.2 Loon Lake Reservoir KVP

Loon Lake Reservoir sits at elevation 6,400 feet and covers over two square miles. The reservoir is somewhat rectangular in shape with a large peninsula dividing the reservoir near the main dam into a small, remote, northern end and a much larger, main reservoir, to the south. Both ends have several small islands. Recreation facilities (launch, day use area, campground, and trailhead) are concentrated in the southeast corner of the reservoir. In addition, there is a developed campground and boat launch along the northwest shore and a boat-in campground in

the northeast corner of the reservoir. These recreation sites were included in the assessment of facilities from the reservoir (Appendices C, D and Figure 1).

The Loon Lake Reservoir viewshed is managed for the R VQO. Views from Loon Lake Reservoir are affected by the presence of UARP facilities, including the main and auxiliary dam, dike, intake structure, powerhouse access building, and the Loon Lake–Union Valley transmission line.

The main and auxiliary dam and intake structure meet the PR VQO except in the immediate foreground. None of these structures are seen from the remote northern portion of the reservoir. The powerhouse and dike meet the R VQO. The Loon Lake – Union Valley transmission line meets the PR/R VQO.

4.2.3 North Loon Lake Road KVP

North Loon Lake Road (FS Road 13N18) provides access along the south end of Loon Lake Reservoir and intersects with McKinney Road to the east and Red Fir Road to the west. The road provides access to most of the UARP facilities at Loon Lake Reservoir including the intake, powerhouse access building and the substation for the Loon Lake–Union Valley transmission line (Appendices C, D and Figure 1).

North Loon Lake Road is within the viewshed of Loon Lake Reservoir, which is managed for the R VQO. Views within the immediate foreground of the road are affected by the presence of UARP facilities, including the intake structure, powerhouse access building and the Loon Lake–Union Valley transmission line and substation, and the auxiliary dam. The main dam and dike are not seen. The auxiliary dam, intake structure, powerhouse access building, transmission line and substation meet the M VQO.

4.2.4 Red Fir Access Road KVP

The Red Fir Access Road (FS Road 13N17) provides access along the northwest end of Loon Lake Reservoir and intersects with North Loon Lake Road at the auxiliary dam to the south, and terminates at the main dam. The road provides access to the North Shore Campground, the boat launch at the main dam, and the Rubicon ORV trail. The road is set back from the shoreline and views of UARP facilities are of the auxiliary and main dams. The intake, powerhouse access building, Loon Lake–Union Valley transmission line and substation, and dike are not seen from the road. (Appendices C, D and Figure 1).

Red Fir Access Road is within the viewshed of Loon Lake Reservoir, which is managed for the R VQO. The auxiliary dam can be seen at the south end of the road and the main dam at the north. Both dams meet the M VQO.

4.2.5 McKinney Creek Road KVP

McKinney Creek Road, also known as Loon Lake Road (FS Road 14N01) provides access from Ice House Road to Loon Lake Reservoir. The Loon Lake–Union Valley transmission line can be seen from the road, but no other UARP facilities can be seen (Appendices C, D and Figure 1).

The northern portion of McKinney Creek Road is within the viewshed of Loon Lake Reservoir and is managed for R VQO. The foreground for the remaining section of road is also managed for the R VQO. One tower of the Loon Lake–Union Valley transmission line near the intersection of McKinney Creek and Ice House roads is partially screened and meets the PR VQO. The remainder of the transmission line is not visually evident and meets the R VQO.

4.2.6 Wentworth Springs Road KVP

Wentworth Springs Road is a loop road that intersects with Ice House Road just south of Robbs Forebay. From the intersection, the road travels west and north to Georgetown. None of the UARP facilities can be seen from this road.

4.2.7 Gerle Creek Access Road KVP

Gerle Creek Road begins off of Ice House Road and provides access to the Gerle Creek day use area, campground, and reservoir. None of the UARP facilities can be seen from this road.

4.2.8 Gerle Creek Reservoir KVP

Gerle Creek Reservoir sits at elevation 5,000 feet and covers 60 acres. The reservoir is roughly triangular in shape and extends up Gerle Creek. Recreation facilities (day use area, campground, and shoreline trail) are concentrated at the north end of the reservoir, on both sides of the creek. These recreation sites were included in the assessment of facilities from the reservoir (Appendices C, D and Figure 1).

The Gerle Creek Reservoir viewshed is managed for the R VQO. Views from the reservoir are affected by the presence of UARP facilities, including the dam and intake structures. The Gerle Creek canal cannot be seen. The dam and intake structure cannot be seen from the day use area, campground or the trail between these two areas. The dam and intake structure can be seen from the shoreline trail and meet the PR VQO.

4.2.9 Ice House Road KVP

Ice House Road (FS Road 17N12) is the main access route into the Crystal Basin. This El Dorado County road starts at Highway 50 and extends north past Ice House, and Union Valley reservoirs to the intersection with Wentworth Springs Road (Appendices C, D and Figure 2).

Ice House Road is managed for the R VQO. Views within the immediate foreground of the road are affected by the presence of UARP facilities, including the Gerle Creek canal, Robbs Peak forebay and penstock, and the Jones Fork penstock. Other UARP Project facilities are not seen.

The Robbs Peak forebay area including the Gerle Creek Canal, meets the M VQO, and is seen for a few seconds while traveling on the road. Similarly, the Robbs Peak penstock is seen briefly from the road and meets the M VQO. The Jones Fork penstock crosses under Ice House Road. The east side is not visually evident and the west side meets a PR VQO.

Upper American River Project

SMUD

Map 2 Crystal Basin

Figure 2
Key View Points

Wentworth Springs Road

Wentworth Springs Road

Ice House Road

Robbs Peak Powerhouse

Wolf Creek Road

Yellow Jacket Road

DeerKnob Peavine Rd

Union Valley Reservoir

BikePath

Ice House Road

Junction Reservoir

Bryant Springs Road

Sunset-Fashada Road

Jones Fork Powerhouse

Big Hill Lookout Road

Ice House Wrights Lake Road

Jaybird Powerhouse

Ice House Reservoir

Ice House Road

Key View Point Road and Trail Sections

- Adit
- Canal
- Channel
- Penstock
- Tunnel

- Divided Highway
- Other Highway
- County Roads
- Other Roads

Transmission Lines

N

SCALE 1:75,000

0 0.6 1.2 1.8 2.4 Miles

Prepared by VESTRA Resources, Inc., Redding. CA. Feb. 25, 2004

4.2.10 Wolf Creek Road KVP

Wolf Creek Road provides access to the north side of Union Valley Reservoir via Ice House Road to the east, and Deer Knob Peavine Road to the west. This is a dirt road and the area is heavily forested (Appendices C and D, and Figure 2).

Wolf Creek Road is within the viewshed of Union Valley Reservoir and is managed for a R VQO. There is one tower associated with the north Union Valley transmission line that is seen in the immediate foreground near the intersection of Wolf Creek with Deer Knob Peavine Road which meets a PR VQO.

4.2.11 Yellow Jacket Road KVP

Yellow Jacket Road provides access to Yellow Jacket Campground from Wolf Creek Road. None of the UARP facilities can be seen from this road.

4.2.12 Deer Knob Peavine Road KVP

Deer Knob Peavine Road (FS Road 12N30) provides access to the northwest end of Union Valley Reservoir and intersects with Wolf Creek Road to the east and Bryant Springs Road to the southwest (Appendices C, D and Figure 2). Deer Knob Peavine Road is managed for the PR VQO. Views within the immediate foreground distance zone of the road are affected by the presence of UARP facilities, including the Union Valley dam, intake structure, spillway, powerhouse, north and south Union Valley transmission lines and substation.

Deer Knob Peavine Road crosses over Union Valley dam, providing immediate foreground views to the west of the dam and spillway, powerhouse and substation. This area meets the M VQO. To the east are views of the reservoir and the intake structure which meet a PR VQO.

4.2.13 Sunset/Fashoda Road KVP

Sunset/Fashoda Road provides access from Ice House Road to the Sunset boat launch and campground, the Fashoda Campground, and the Union Valley bike-path. None of the UARP facilities can be seen from this road.

4.2.14 Union Valley Reservoir KVP

Union Valley Reservoir sits at about 5,000 feet elevation and covers over four square miles. The reservoir is about 3 miles in length. Many rivers and creek flow into the reservoir and form numerous coves and inlets. Recreation sites (campgrounds, boat launches, day use areas) nearly encircle the reservoir, except for the south shore. The recreation sites were included as part of the assessment from the reservoir (Appendices C, D and Figure 2).

The Union Valley Reservoir viewshed is managed for the R VQO. Views from on the reservoir are affected by the presence of UARP facilities including Union Valley dam, Robbs Peak penstock and powerhouse, and the north and south Union Valley transmission lines.

All the UARP features dominate the view when seen in the immediate foreground, however from most reservoir locations Union Valley dam, and Robbs Peak penstock and powerhouse meet the M VQO. The north and south transmission lines meet the PR VQO.

4.2.15 Union Valley Bike Path KVP

The Union Valley bike path is approximately five miles in length and generally parallels the eastern shoreline of Union Valley Reservoir from the Jones Fork Campground to the Robbs Peak interpretive site at the path terminus located north of Wench Creek Campground. The bike path is within the viewshed of Union Valley Reservoir, which is managed for the R VQO. Most views of the reservoir are screened due to intervening forested vegetation, and few of the UARP facilities can be seen, except for at the Robbs Peak interpretive site where there are views of the penstock, powerhouse and transmission line which meet the M VQO. In addition the north Union Valley transmission line can also be seen from the terminus of the path and meets the PR VQO.

4.2.16 Big Hill Lookout Road KVP

Big Hill Lookout Road (FS Road 11N58) provides access to the scenic vista point at the top of Big Hill from Ice House Road (Appendices C, D and Figure 2). From the scenic vista point there are middle ground views of Union Valley and Ice House Reservoirs. UARP facilities at Union Valley that can be seen include the Robbs Peak penstock area, the north Union Valley transmission line, and the Jones Fork penstock, which all meet the PR VQO. None of the UARP facilities at Ice House Reservoir can be seen.

4.2.17 Ice House-Wrights Road KVP

Ice House-Wrights Road (FS Road 11N37) provides access from Ice House Road to Ice House Reservoir, including Ice House, Northwind and Strawberry campgrounds. None of the UARP facilities can be seen from this road.

4.2.18 Ice House Reservoir Road KVP

Ice House Reservoir Road (FS Road 11N98) provides access to the day use area at Ice House Reservoir. None of the UARP facilities can be seen from this road.

4.2.19 Ice House Reservoir KVP

Ice House Reservoir sits at elevation 5,450 feet and covers over one square mile. The reservoir is about two miles long, trending east to west, with a sharp bend to the south at the dam. A campground, boat launch and day use area are concentrated along the north shoreline, and two

campgrounds are located above the east shore. These recreation sites were included in the assessment of facilities from the reservoir (Appendices C, D and Figure 2).

The Ice House Reservoir viewshed is managed for the R VQO. Views from on Ice House Reservoir are affected by the presence of UARP facilities, including the main dam, intake structure and two dikes. The main dam meets the M VQO. The intake structure is not visually evident and meets the R VQO. The dikes meet the PR VQO.

4.2.20 Bryant Springs Road KVP

Bryant Springs Road (FS Road 12N30) provides access to the west side of Union Valley Reservoir via Ice House Road from the south and Deer Knob Peavine Road from the north (Appendices C, D and Figure 2).

Bryant Springs Road is within the viewshed of Junction Reservoir, which is managed for the PR VQO. Views within the immediate foreground distance zone of the road are affected by the presence of UARP facilities, including the Union Valley dam, substation, and the Union Valley – Jaybird transmission line. The dam and substation and transmission line meet the M VQO.

4.3 Canyon Land KVPs

The Canyon Lands lie within the front country zone of the ENF. The front country terrain is characterizes by broad rolling uplands dissected by steep rugged river canyons. The landscape is dominated by brush-fields with a mix of tree species including gray pine, oak, and ponderosa pine. The ponderosa pine forests are of light color, more open, and frequently interrupted by large brush fields at the lower elevations (USDA 1988, EIS page 3-111).

4.3.1 Forebay Road KVP

Forebay Road (El Dorado County Road) provides access to the South Fork American River from Pollock Pines, and continues north up to Brush Creek Reservoir (Appendices E, F and Figure 3). The South Fork American River, including Slab Creek Reservoir is managed for the R VQO. UARP facilities associated with the Camino Project affect the view from the South Fork American River. From the river crossing of Forebay Road, the Camino penstock can be seen and meets the M VQO. Only a portion of the Camino Powerhouse and the lines of the Camino – White Rock transmission line can be seen and meet the PR VQO.

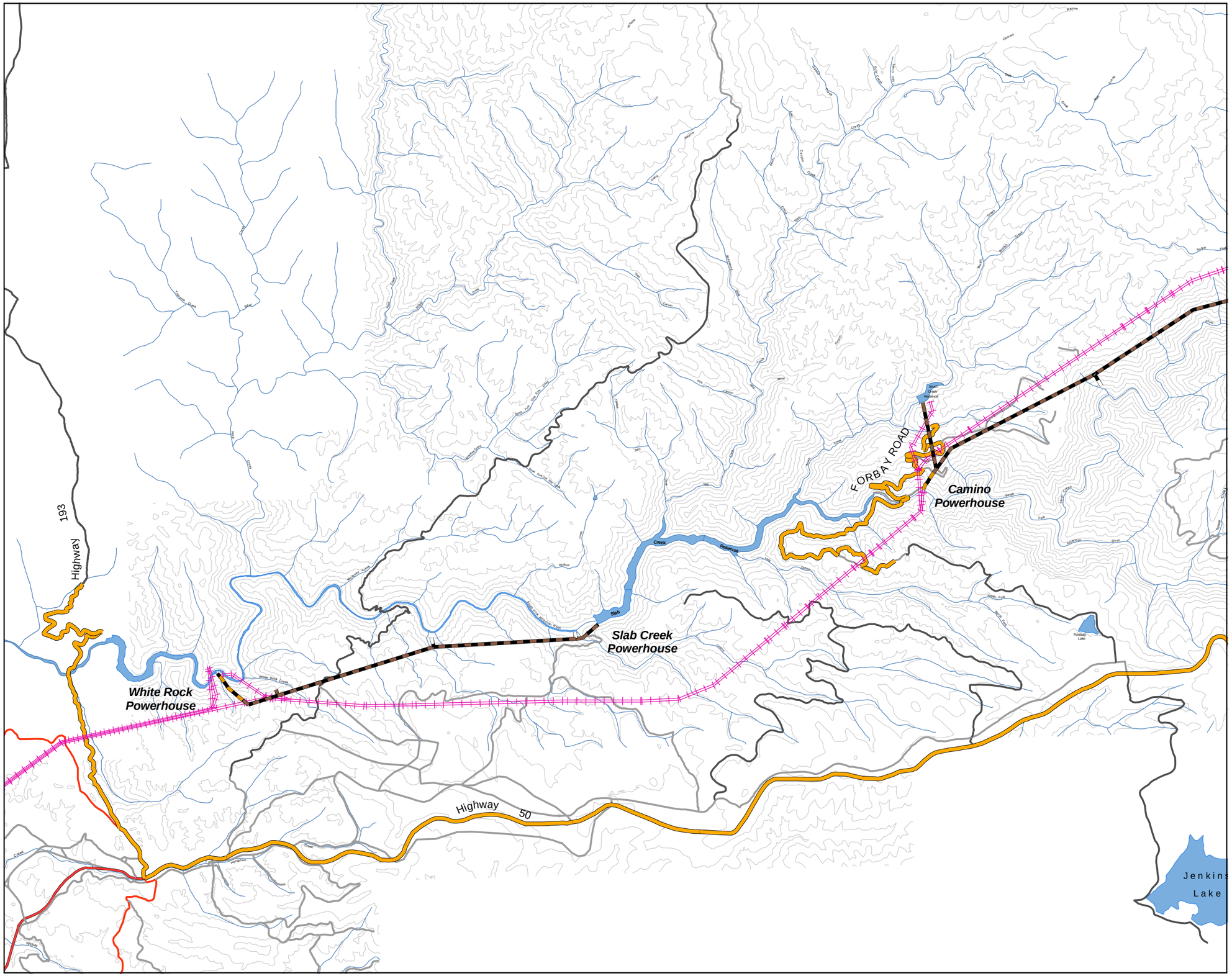
Roughly midway between Pollock Pines and the South Fork American River, Forebay Road passes under two sets of 230 kV transmission lines, one being the UARP transmission line. From the road crossing there are expansive views to the north and east of the ridgetops above the South Fork American River. The combined corridor clearing for both sets of transmission lines creates a wide linear opening of grasses, shrubs and small trees in contrast to the surrounding forested landscape. For less than a quarter mile of road, the transmission corridor clearing and exposed towers dominates the view from the road meeting the M VQO.

Upper American River Project

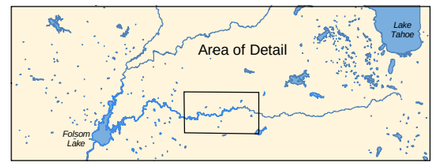
SMUD

Map 3 Canyon Lands

Figure 3
Key View Points



- Key View Point Road Sections
- Adit
- Canal
- Channel
- Penstock
- Tunnel
- Divided Highway
- Other Highway
- County Roads
- Other Roads
- Transmission Lines



N

SCALE 1:75,000

0 0.6 1.2 1.8 2.4 Miles

Prepared by VESTRA Resources, Inc., Redding. CA. Feb. 25, 2004

Forebay Road was used as the KVP from which to assess the visual affect of the Brush Creek spoil pile. The Brush Creek spoil piles sits above the Camino penstock off of Forebay Road on the north canyon slope. Views of the spoil pile are available from the UARP transmission line crossing of Forebay Road (middle ground distance zone) from which the spoil pile meets the PR VQO.

4.3.2 Highway 193 KVP

Highway 193 is a two-lane state highway that provides access between Placerville and Georgetown, and crosses the South Fork American River just downstream of Chili Bar Reservoir (Appendices E, F and Figure 3). Although Highway 193 is outside the ENF and is not a Forest Service, county or state -managed viewshed, it was used as a KVP from which to assess the visual affect of the White Rock spoil pile. The White Rock spoil pile sits in the drainage of White Rock Creek, upstream of the White Rock Powerhouse. The spoil pile can be seen from one section of Highway 193 as travelers descend the north-slope grade down to the river. Under the VMS system the spoil pile would meet the M VQO.

4.3.3 State Scenic Highway 50 KVP

Highway 50 is an all-weather route that provides access over the Sierra Nevada Mountains. The Highway begins in Sacramento and terminates in South Lake Tahoe. The eastern portion of this route is a state designated scenic highway that starts at the western end of Placerville and extends east to South Lake Tahoe (El Dorado County 2004). None of the UARP facilities can be seen from the state designated scenic highway section of Highway 50.

5.0 ISSUE QUESTION 46

In addition to the visual assessment of UARP facilities for consistency with management direction, this study addresses Issue Question 46, which asks, “What are the visual impacts of stumps in the lakes (Buck Island or Rubicon Lakes)?”

Rubicon and Buck Island reservoirs sit in a granite basin of light-colored highly textured rock surrounded by rugged granite slopes interspersed with dark blue green conifers forming a landscape of high visual diversity of form, color and texture. The blue reservoir water is surrounded by a shoreline of rugged, light-colored granite ledges and boulders. The water surface is broken by small islands of granite rocks and boulders, particularly in shallow areas near the shore.

As the reservoirs are drawn down, the tops of brown stumps and new boulders and rocks appear above the water surface in the shallow areas of the reservoirs. The stumps turn white-like in color as they are exposed to the sun. With continued draw down, the brown sediments of the reservoir bottom are exposed and form a line or ring around the reservoir which contrasts in form and color with the highly textured and light-colored surrounding granite rocks and boulders.

At full pool conditions from middle-ground viewing locations, the exposure of the upper portion of stumps appears natural and similar to the exposed granite rock, and does not detract from

reservoir views. From the reservoir foreground the appearance of the upper portion of the stumps is apparent, but does not appear unnatural. At near full pool conditions, the reservoirs appear near natural and meet a PR VQO.

As draw down occurs and shoreline sediments and the stumps become exposed, dark brown colors and a strong line are introduced into the reservoir views that contrast against the highly textured light-colored granite rocks. From middle-ground viewing locations the appearance of dark colored stumps and the line of shoreline sediments is noticeable and appears unnatural but does not dominate the view. From the reservoir foreground the contrasts dominate the view and appear unnatural. As draw down occurs the reservoirs do not appear natural and the appearance of the reservoir meets an M VQO.

6.0 NOISE ASSESSMENT OF UPPER AMERICAN RIVER PROJECT FACILITIES

The field reconnaissance for the visual assessment of the UARP also considered whether noise from UARP facilities was noticeable at recreation sites visited for the assessment. There were no noise impacts identified during the field assessment.

In addition, responses to the following UARP 2002 Visitor Use survey questions: (19) Are there any changes you or improvements that you would like to see at this facility?, and (23) During this visit to the Crystal Basin, are there any non-recreation activities that conflicted with your recreation activities?, showed that none of the UARP visitors identified noise associated with UARP operations as an issue of concern, or detracted from their experience.

7.0 FINDINGS

The UARP was assessed for consistency with ENF established VQOs from 24 KVPs within nine separate viewsheds located in three different landscape settings: Desolation Wilderness, Crystal Basin, and Canyon Lands. The UARP was also assessed for potential noise impacts from UARP operations but none were identified.

7.1 Desolation Wilderness Landscape

Five UARP features were assessed from one KVP within the Rubicon Reservoir viewshed which is managed for the P VQO. UARP features met the R and M VQO, but did not meet the P VQO which allows for ecological changes only.

7.2 Crystal Basin Landscape

Two UARP features were assessed from one KVP within the Buck Island Reservoir viewshed which is managed for the R VQO. Both UARP features met the R VQO.

Six UARP features were assessed from five KVPs within the Loon Lake Reservoir viewshed which is managed for the R VQO. Four UARP features met the R VQO from one or more of the

KVPs. All UARP features were not seen from at least one of the KVPs. Where UARP features were seen they met the PR or M VQO.

Three UARP features were assessed from three KVPs within the Gerle Creek Reservoir viewshed which is managed for the R VQO. UARP features were not seen from three of the KVPs. From the two KVPs where UARP features were seen, a PR VQO was met.

Eleven UARP features were assessed from eight KVPs within the Union Valley Reservoir viewshed which is managed for the R VQO. None of the UARP features met the R VQO when seen from a KVP, but most UARP features are not seen from one or more KVPs. When UARP features were seen, they met the PR or M VQO.

Three UARP features were assessed from four KVPs within the Ice House Reservoir viewshed which is managed for the R VQO. UARP features were not seen from one or more KVPs. When UARP features were visible, they met the PR and M VQO and the Intake structure met the R VQO when seen from Ice House Reservoir.

Five UARP features were assessed from one KVP within the Junction Reservoir viewshed which is managed for the PR VQO. Two of the UARP features were not seen from the KVP and the features met the M VQO.

7.3 Canyon Lands Landscape

Seven UARP features were assessed from one KVP within the Slab Creek Reservoir viewshed which is managed for a R VQO. Three of the UARP features were not seen and the remaining features met a PR or M VQO. Outside the ENF, UARP features were assessed from Highway 193 and Highway 50 east of Placerville. The White Rock Spoil Pile was highly visible from Highway 193, and none of the UARP features were visible from Highway 50.

8.0 LITERATURE CITED

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APPENDIX A

DESOLATION WILDERNESS PROJECT FACILITY ASSESSMENT

DESOLATION WILDERNESS

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DS & VC[1]**	**EVC[2]**	**KVP Name & Type[3]**	**Project Facility**	**EVC**	**VQO**	**Discussion**
Rubicon[4] Reservoir	P	1	1	Rubicon Trail (16NE30)	Dam-Main	II	R	The dam is a human-made structure and therefore does not meet the P VQO. The dam can be seen from the Rubicon Trail south of Onion Flat. The angular form of the dam creates a horizontal line but the span is short. The scale, color and texture of the dam blend in well with the characteristic landscape. A square box-like structure sits on top of the west edge of the dam. The square form of the structure, and grid-like form of the dark metal frame are in contrast to the characteristic landscape. However, the overall scale is small. Overall, the dam is not visually evident to travelers on the Rubicon Trail.
					Dam-Aux	II	R	The dam is a human-made structure and therefore does not meet the P VQO. The western edge of the dam can be seen from the Rubicon Trail. The angular form of the dam is in contrast to the characteristic landscape. However, the scale, color and texture blends well into the landscape. The dam is not visually evident from the Rubicon Trail.

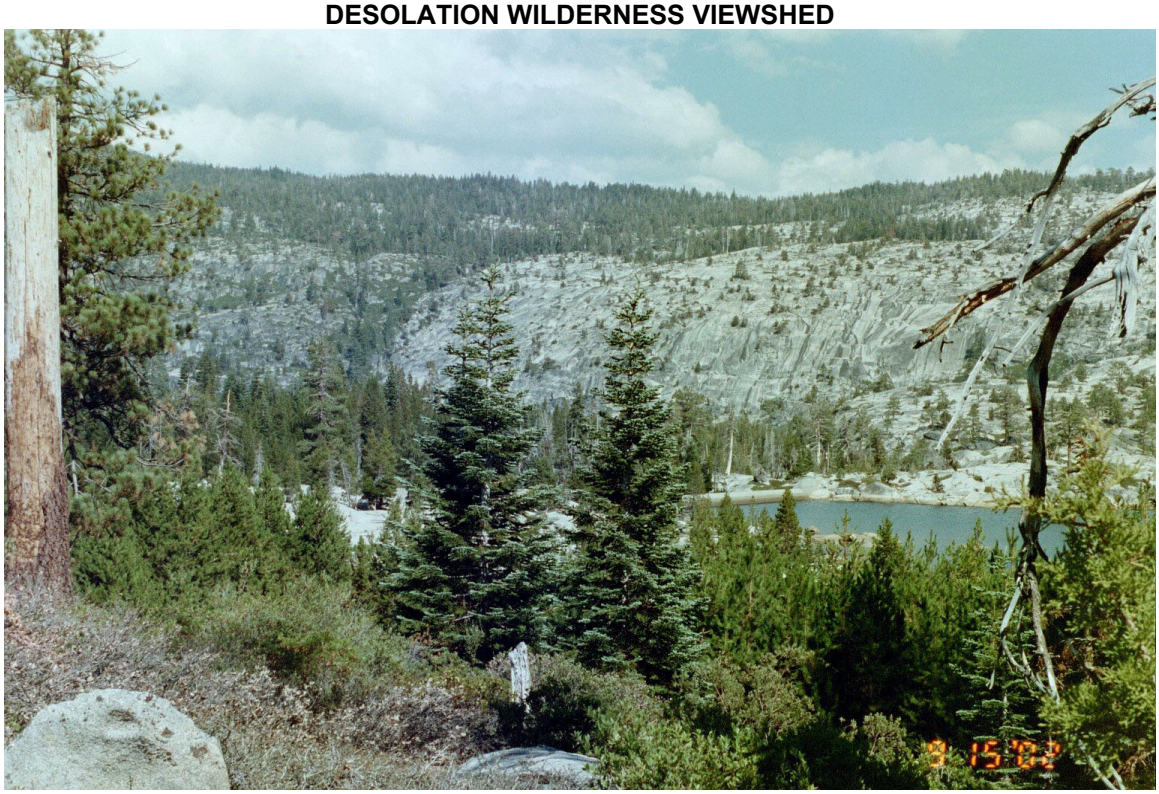
[1] D = distance zone (foreground = 0 – 0.5 miles, middleground = 0.5 – 3.0 miles, background = 3.0 and more), S = Sensitivity Levels (1 = high, 2 = moderate, 3 = low), VC = Variety Class (A = Distinctive, B = -C).
[2] EVC = Existing Visual Condition. EVC = Type I – VI. Type I = untouched, Type II = unnoticed, Type III = minor disturbance, Type IV = disturbance, and Type V = major disturbance.
[3] KVP within the ENF consist of trails, roads, lakes and rivers within areas of Level 1 and 2 Sensitivity.
[4] Rubicon Reservoir is in the Loon Lake Development.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DS & VC[1]**	**EVC[2]**	**KVP Name & Type[3]**	**Project Facility**	**EVC**	**VQO**	**Discussion**
					Intake and Gauging Station	IV	M	The intake tunnel, boom, and gauging station at the intake are human-made structure and therefore do not meet the P VQO. The intake structure itself cannot be seen from the Rubicon Trail. However, the associated corrugated metal booms and cables can. The boom metal and rust colors and linear form contrast against the surrounding rock and water. The gray colored corrugated round shaft, conical roof, solar panels & ramp contrast in form, texture, and color to the characteristic landscape. While the scale of the boom and gauging structure are small, the area can be seen from several locations on the Rubicon Trail which crosses directly over the intake. Due to the scale and concentration of the facilities, overall, the area remains visually subordinate to the surrounding characteristic landscape.
					Gauging Station near Tunnel Outlet	IV	M	The telemetry facilities along the outlet channel are human-made structure and does not meet the P VQO. The light colored metal structures contrast against the dark forested surroundings. The Rubicon Trail lies directly across the outlet channel from the structures. Due to the small scale of the facilities, they remain visually subordinate to the characteristic landscape.
					Tunnel Outlet	IV	M	The tunnel outlet is a human-made structure and does not meet the P VQO. The tunnel outlet is gated with a gray chain link fence that detracts from the surrounding natural landscape. The concrete form, color and texture of the tunnel is similar to the surrounding rock and therefore remains visually subordinate to the characteristic landscape.

APPENDIX B

DESOLATION WILDERNESS PHOTOGRAPHS

DESOLATION WILDERNESS VIEWSHED



B1. Rubicon Main Dam seen from the Rubicon Trail.

B2. Rubicon Auxiliary Dam seen from the Rubicon Trail.

B3. Rubicon Gauging Station and Intake Booms seen from the Rubicon Trail.

B4. Rubicon Tunnel Outlet seen from the Rubicon Trail.

B5. Cable crossing and Bucket on Rubicon Tunnel Outlet Channel seen from the Rubicon Trail.

APPENDIX C

CRYSTAL BASIN PROJECT
FACILITY ASSESSMENT

CRYSTAL BASIN

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
Buck Island Reservoir[4]	R	M1A	Rubicon Trail (16NE30)	Rubicon Trail	Dam – Main	II	R	The horizontal form of the dam is in contrast to the characteristic landscape, however, the scale, color and texture of the dam blends well into the setting. The dam is not visually evident to travelers on the Rubicon Trail.
					Dam - Aux	II	R	The dam is a human-made structure and therefore does not meet the P VQO. The horizontal form of the dam is in contrast to the characteristic landscape, however, the scale, color and texture makes the structure not visually evident in the landscape setting. The dam is not visually evident to travelers on the Rubicon Trail.
Loon Lake Reservoir[5]	R	F1A	Loon Lake	Loon Lake Reservoir	Dam-Main	IV	PR	Scale and horizontal line of dam is in contrast to characteristic landscape. Color and texture of dam blends well with landscape. Dam is visually subordinate from all but FG views.

[1] D = distance zone (foreground = 0 – 0.5 miles, middleground = 0.5 – 3.0 miles, background = 3.0 and more), S = Sensitivity Levels (1 = high, 2 = moderate, 3 = low), VC = Variety Class (A = Distinctive, B = -C).
[2] KVPs within the ENF consist of trails, roads, lakes and rivers within areas of Level 1 and 2 Sensitivity.
[3] EVC = Existing Visual Condition. EVC = Type I – VI. Type I = untouched, Type II = unnoticed, Type III = minor disturbance, Type IV = disturbance, and Type V = major disturbance.
[4] Buck Island Reservoir is in the Loon Lake Development.
[5] Loon Lake Reservoir is in the Loon Lake Development.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					Dam-Aux	IV	PR	Scale and horizontal line is in contrast to characteristic landscape. Color and texture of dam blends well with landscape. Dam is visually subordinate from all but FG views.
					Dike	II	R	Dike is setback from shore. Forms a contrasting horizontal line, but color and texture blend well. Dam is not visually evident from nearly all the reservoir.
					Powerhouse	IV	R	Powerhouse is setback from shoreline and screened by trees. Structure is angular, in contrast to landscape, but similar in color and texture to surrounding landscape. Powerhouse is not visually evident from most of the reservoir.
					Intake	IV	PR	Intake is located near shore. Angular form and light color of structure and surrounding barren slopes make the structure visually evident, but subordinate to the characteristic landscape.
					LL-UV T.L.s[6]	IV	PR/R	The substation and T.L is well screened from the reservoir, except for the one tower which is not visually evident from Mg and Bg views. The T.L. is not visually evident from most of the reservoir.
				Pleasant CG Shoreline (boat-in)	Dam-Main	IV		Not seen.
					Dam-Aux	IV		Not seen.
					Dike	II		Not seen.
					Powerhouse	IV		Not seen.
					Intake	IV		Not seen.

[6] LL-UV T.L.s = Loon Lake to Robbs Peak 69 kV transmission line, and the Loon Lake to Union Valley 69 kV transmission line.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					LL-UV T.L.s[7]	IV		Not seen.
				Loon Lake CG Shoreline	Dam-Main	IV	R	Not noticeable from CG. Scale, color, texture form appear as part of natural landscape. Dam is not visually evident.
					Dam-Aux	IV	R	Not noticeable from CG. Scale, color, texture form appear as part of natural landscape. Dam is not visually evident.
					Dike	II		Not seen.
					Powerhouse	IV		Not seen.
					Intake	IV		Not seen.
					LL-UV T.L.s	IV		Not seen.
				North Shore CG Shoreline	Dam-Main	IV		Not seen.
					Dam-Aux	IV		Not seen.
					Dike	II		Not seen.
					Powerhouse	IV	R	Structure well screened by conifers. Structure not visually evident.
					Intake	IV	PR	Light color and angular form of structure (roof reflects light during certain times of day) on shoreline contrasts against forested landscape that surrounds it. However, scale of the structure is small in the context of the surrounding landscape and remains visually subordinate.
					Dike	II		Not seen.

[7] LL-UV T.L.s = Loon Lake to Robbs Peak 69 kV transmission line, and the Loon Lake to Union Valley 69 kV transmission line.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					LL-UV T.L.s	IV		Not seen.
				Red Fir CG & BR Shoreline (Group)	Dam-Main	IV		Not seen.
					Dam-Aux	IV		Not seen.
					Dike	II		Not seen.
					Powerhouse	IV		Not seen.
					Intake	IV		Not seen.
					LL-UV T.L.s	IV		Not seen.
			Rubicon Trail (15E30)	Rubicon Trail (15E30)	Dam-Main	IV	R	Structure mostly screened from trail with a few Intermittent views. Appears as part of surrounding landscape due to scale of structure, color and texture. Not visually evident.
					Dam-Aux	IV	PR	Structure mostly screened from trail with a few Intermittent views. Horizontal line of dam is noticeable, color and texture blend well with surrounding landscape. Structure is visually subordinate.
					Dike	II		Not seen.
					Powerhouse	IV	R	Structure is well screened from trail with a few Intermittent views. Structure appears as part of natural landscape and is not visually evident.
					Intake	IV	PR	Structure is mostly screened from trail with a few intermittent views. Angular form and light color contrast against dark forested background. Due to Mg views, structure is visually subordinate to the surrounding landscape.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					LL-UV T.L.s	IV	PR	Substation and most of T.L is well screened, except for the one tower on the knoll. Overall, T.L. is visually not evident, except for the one tower which is subordinate.
			McKinney Creek Road (14N01)	McKinney Creek Road (14N01)	Dam-Main	IV		Not seen.
					Dam-Aux	IV		Not seen.
					Dike	IV		Not seen.
					Powerhouse	IV		Not seen.
					Intake	IV	PR	Not seen.
					LL-UV T.L.s	IV	PR	One tower seen near intersection with IH Road. Fg view, partial view due to vegetative screening. Rest of line is visually not evident.
			North Loon Lake Road (13N18)	North Loon Lake Road (13N18)	Dam-Main	IV	M	Not seen.
					Dam-Aux	IV	M	Fg views when near and crossing dam. Angular form contrasts against surrounding characteristic landscape, but similar in color and texture. From Fg views, dam dominates, but borrows color and texture from characteristic landscape.
					Dike	IV		Not seen.
					Intake	IV	M	Portion of structure seen, but remains visually subordinate.
					Powerhouse	IV	M	Structure is seen in Fg, but partially screened by conifers. Scale and form of structure dominates view, but borrows color and texture from characteristic granite rock in the landscape.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					LL-UV T.L.s	IV	M	One tower is seen in Fg on south side of road. Fg views of substation in ROW on north side. Otherwise views of T.L. and substation are screened by vegetation along road. The T.L. tower and substation dominate the view from the road for a short distance.
			Red Fir Access Road (13N17)	Red Fir Access Road (13N17)	Dam-Main	IV	M	Road ends at south end of dam. Dam seen in Fg. Dominates view.
					Dam-Aux	IV	M	Road ends at south end of dam. Dam seen in Fg. Dominates view.
					Dike	II		Not seen
					Intake	IV		Not seen.
					Powerhouse	IV		Not seen.
					LL-UV T.L.s	IV		Not seen.
Gerle Creek Reservoir[8]	R	F1A	Gerle Crk Access Road (13N26)	Gerle Crk Access Road (13N26)	Dam	V		Not seen.
					Intake	V		Not seen.
					Canal	V		Not seen.
			Wentworth Springs Road (17N13)	Wentworth Springs Road (17N13)	Dam	V		Not seen.
					Intake	V		Not seen
					Canal	V		Not seen.
			Gerle	Day	Dam	V		Not seen.

[8] Robbs Peak Development.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
			Creek Reservoir	Use Area & Trail to CG	Intake	V		Not seen.
					Canal	V		Not seen.
				Shoreline Trail	Dam	V	PR	Dam introduces a contrasting angular form and smooth texture into characteristic landscape. Color is similar to surrounding granite rock. Background of forested hillsides softens contrasts of dam. Small scale of structure, color, and forested background allows structure to remain visually subordinate to characteristic landscape.
					Intake	V	PR	Dam introduces a contrasting angular form and smooth texture into characteristic landscape. Color is similar to surrounding granite rock. Background of forested hillsides softens contrasts of dam. Small scale of structure, color, and forested background allows structure to remain visually subordinate to characteristic landscape.
					Canal	V		Not seen.
				Gerle Creek CG	Dam	V		Not seen.
					Intake	V		Not seen.
					Canal	V		Not seen.
Union Valley	R	F1B			LL-UV T.L.s[10]	IV		Not seen.

[9] Union Valley Development.
[10] LL-UV T.L.s - the Loon Lake to Robbs Peak now is the Robbs Peak to Union Valley 69kV transmission line.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
Reservoir[9]			Icehouse Road (17N12)	Near RP Forebay Area	GC Canal	IV	M	Canal not seen from road, except near RP dam where travelers have a glimpse of the canal in Fg on the west side of the road. Canal and access road form linear feature and contribute to developed character of the forebay site. Overall scale of area is small and does not dominate the landscape.
					RP Dam Area	IV	M	Area not seen from IH Road except in the immediate vicinity where it is seen in the Fg on west side of road for short period of time. Dam gates, intake structure, fences and gates, cleared area, and small building, give the site a developed character. Angular forms of structure, light color of building and exposed areas of soil contrast against surrounding landscape. however, overall scale of area is small and does not dominate the characteristic landscape.
					RP Penstock and T.L.	IV	M	Brief view of penstock due to clearing of vegetation around it. Penstock forms dominant line.
					RP Powerhouse	IV		Not seen.
				Near JF	S UV T.L.[11]	IV/V		Not seen.

[11] S UV T.L. = Jones Fork-Union Valley 69 kV transmission line.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
				Powerhouse	JF Penstock	IV	PR	Penstock crosses under IH Road south of the UVR. On east side penstock is well screened by vegetation and is not noticeable. On west side, gate, road and penstock are seen due to clearing from road. Light color of penstock and bare soil contrasts with surrounding dark green vegetation. However, scale of feature is small and duration of viewing is short. Appearance is visually subordinate to characteristic landscape.
					JF Powerhouse	IV		Not seen.
	PR	2	Deer Knob Peavine Road (12N30)	Deer Knob Peavine Road (12N30)	UV Dam	V	M	Seen only near dam. Fg views as traveling near dam. Dam dominates Fg views, but has similar color and texture as surrounding landscape, angular form contrasts. Not seen from other road locations
					UV Powerhouse	V	M	Seen in Fg, below dam only. Not seen from other road or reservoir locations. Angular form and color contrasts, but scale of structure is small. However, proximity to substation adds to developed character of area Powerhouse area dominates view below dam due to concentration of facilities in a confined canyon setting.
					UV Switchyard	V	M	Seen in Fg, below dam only. Not seen from other road or reservoir locations. Towers and lines form texture, form and color contrasts, and large scale of area dominates the view below the dam due to concentration of facilities in a confined canyon setting.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					UV Intake	III	PR	Intale structure seen from reservoir and road, but partially screened by vegetation. Light color of building contrasts against dark green vegetation. However scale is small, and duration of view short. Feature is visually subordinate to the characteristic landscape.
					RP Penstock & T.L.	IV		Not seen.
					RP Powerhouse	IV		Not seen.
					N UV T. L.[12]	IV		Not seen.
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen.
					S UV T.L.	IV/V		Not seen.
	PR	F2B	Big Hill Lookout Road (11N58)	Big Hill Lookout (Vista Point)	UV Dam	V		Not seen.
					RP Penstock & T.L.	V	PR	Exposed light colored soil around penstock contrasts with surrounding dark green vegetation. Scarred hillside above road is large and attracts attention to the area. The scale of the penstock in the surrounding landscape is small and is visually subordinate to the characteristic landscape.

[12] N UV T.L. = Robbs Peak to Union Valley 69 kV transmission line and the Loon Lake to Union Valley 69 kV transmission line.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					UV Powerhouse	V		Not seen.
					UV Switchyard	V		Not seen.
					N UV T. L.[13]	IV	PR	T.L. may bee seen depending on light conditions, but generally most of towers are screened by the surrounding forest. T.L. is visually subordinate to the characteristic landscape and is not visually evident from most locations.
					JF Penstock	IV	PR	Penstock can be seen from three locations where there are forest opening, otherwise penstock is screened by dark green forest vegetation. Where visible, the light colored penstock and exposed light-colored soil contrasts against the dark green forest. However, the scale of the penstock is visually subordinate to the surrounding characteristic landscape.
					JF Powerhouse	IV		Not seen.
					S UV T.L.	IV/V		Not seen.
	R	1		Wolf Creek Road (12N52)	UV Dam	V		Not seen.
					RP Penstock & T.L.	V		Not seen.

[13] N UV T.L. = Robbs Peak to Union Valley 69 kV transmission line and the Loon Lake to Union Valley 69 kV transmission line.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
			Wolf Creek Road (12N52)		RP Powerhouse	V		Not seen.
					N UV T. L.	IV	PR	Portions of 2 towers can be seen in the Fg in the vicinity of Deer Knob. Most of the towers are screened. No other views of T.L. Views from road are mostly forested, partial views of towers do not visually dominate the landscape and are visually subordinate to it.
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen.
					S UV T.L	IV/V		Not seen.
			Yellow Jacket Road (12N33)	Yellow Jacket Road (12N33)	UV Dam	V		Not seen.
					RP Penstock & T.L.	V		Not seen.
					RP Powerhouse	V		Not seen.
					N UV T. L.	IV		Not seen.
					JF Penstock	IV		Not seen.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					JF Powerhouse	IV		Not seen.
					S UV T.L	IV/V		Not seen.
			Sunset/ Fashoda Road	Sunset/ Fashoda Road	UV Dam	V		Not seen.
					RP Penstock & T.L.	V		Not seen.
					RP Powerhouse	V		Not seen.
					N UV T. L.	IV		Not seen
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen.
					S UV T.L.	IV/V		Not seen.
			Union Valley	Union Valley	UV Dam	V		Not seen.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
			Bike Path	Bike Path	RP Penstock & T.L.	V	M	Not seen from the bike path except at the north end where there is an interpretive sign of the Robbs Peak powerhouse area. Penstock color blends well with surrounding soil. Exposed soil contrasts against surrounding forest, particularly area above road. The penstock together with the surrounding features: powerhouse, T.L., exposed slopes, dominate the characteristic landscape.
					RP Powerhouse	V	M	Not seen from the bike path except at the north end where there is an interpretive sign of the Robbs Peak powerhouse area. Dark color of powerhouse contrasts against the surrounding light colored soil. The powerhouse together with the surrounding features: powerhouse, T.L., exposed slopes, dominate the characteristic landscape.
					N UV T. L.	IV	PR	Most of towers screened by surrounding forested landscape. Top portion of towers and lines can be seen, but are visually subordinate to the characteristic landscape and not visually evident from most locations.
					JF Penstock	IV		Not seen
					JF Powerhouse	IV		Not seen.
					S UV T.L.	IV/V		Not seen

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
	R	F1B	Union Valley Reservoir	Union Valley Reservoir	UV Dam	V	M	From Fg dam scale and angular form dominates the view. From Mg locations the dam appears subordinate to the characteristic landscape. From many background locations on the east end of the reservoir, the dam is not seen due to intervening topography, and where there are views, the horizontal form of the dam is apparent, but the texture, color and scale result in it being visually subordinate to the characteristic landscape.
					RP Penstock & T.L.	V	M	Penstock color blends well with surrounding soil. Exposed soil contrasts against surrounding forest, particularly area above road. The penstock together with the surrounding features: powerhouse, T.L., exposed slopes, dominate the characteristic landscape.
					RP Powerhouse	V	M	Dark color of powerhouse contrasts against the surrounding light colored soil. The powerhouse together with the surrounding features: powerhouse, T.L., exposed slopes, dominate the characteristic landscape.
					N UV T. L.	IV	PR	Most of towers screened by surrounding forested landscape. Top portion of towers and lines can be seen, but are visually subordinate to the characteristic landscape and not visually evident from most locations.
					JF Penstock	IV		Not seen. Penstock and Powerhouse located up JF, behind bends in the river that screen views of the structure.
					JF Powerhouse	IV		Not seen.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					S UV T.L.	IV/V	PR	Visibility is temporarily increased due to 1997 fire. Location behind reservoir facing ridges, and below ridgeline reduce visibility of T.L. for most of route. T.L. is visually subordinate to the characteristic landscape, and not visually evident from most locations.
				West Point CG Shoreline	UV Dam	V	M	Fg views. Dam dominates views to the west.
					RP Penstock & T.L.	V		Not seen.
					RP Powerhouse	V		Not seen.
					N UV T. L.	IV		Not seen.
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen
					S UV T.L.	IV/V		Not seen.
				Camino Cove CG Shoreline	UV Dam	V		Not seen.
					RP Penstock & T.L.	V		Not seen.
					RP Powerhouse	V		Not seen.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					N UV T. L.	IV		Not seen.
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen.
					S UV T.L.	IV/V		Not seen.
				Wolf Creek CG Shoreline	UV Dam	V		Not seen.
					RP Penstock & T.L.	V		Not seen.
					RP Powerhouse	V		Not seen.
					N UV T. L.	IV		Not seen.
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen.
					S UV T.L.	IV/V	PR	Visibility is temporarily increased due to 1997 fire. Location below ridgeline for most of route reduces visibility of T.L. T.L. is seen in Bg and is visually subordinate to the characteristic landscape.
				Yellow Jacket	UV Dam	V		Not seen.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
				CG & BR Shoreline	RP Penstock & T.L.	V		Not seen.
					RP Powerhouse	V		Not seen.
					N UV T. L.	IV		Not seen.
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen.
					S UV T.L.	IV/V	PR	Visibility is temporarily increased due to 1997 fire. Location below ridgeline for most of route reduces visibility of T.L. T.L. is seen in Bg and is visually subordinate to the characteristic landscape.
				SMUDEA Shoreline	UV Dam	V		Not seen.
					RP Penstock & T.L..	V		Not seen.
					RP Powerhouse	V		Not seen.
					N UV T. L.	IV		Not seen.
					JF Penstock	IV		Not seen.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					JF Powerhouse	IV		Not seen.
					S UV T.L.	IV/V		Not seen.
				Wench Creek CG Shoreline	UV Dam	V		Not seen.
					RP Penstock & T.L.	V		Not seen.
					RP Powerhouse	V		Not seen.
					N UV T. L.	IV		Not seen.
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen.
					UV Dam	IV		Not seen.
					S UV T.L.	IV/V		Not seen.
				Azalea Cove CG Shoreline (bike/walk-in)	UV Dam	V		Not seen.
					RP Penstock & T.L.	V		Not seen.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					RP Powerhouse	V		Not seen.
					N UV T. L.	IV	PR	Most of towers screened by surrounding forested landscape. Top portion of towers and lines can be seen, but are visually subordinate to the characteristic landscape and not visually evident from most locations.
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen.
					S UV T.L.	IV/V		Not seen.
				Big Silver CG Shoreline (Group CG)	UV Dam	V		Not seen.
					RP Penstock & T.L.	V		Not seen.
					RP Powerhouse	V		Not seen.
					N UV T. L.	IV		Not seen.
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					UV Dam	IV		Not seen.
					S UV T.L.	IV/V		Not seen.
				Fashoda CG & Beach Shoreline (walk-in)	UV Dam	V		Not seen.
					RP Penstock & T.L.	V	M	Penstock color blends well with surrounding soil. Exposed soil contrasts against surrounding forest, particularly area above road. The penstock together with the surrounding features: powerhouse, T.L., exposed slopes, dominate the characteristic landscape.
					RP Powerhouse	V	M	Dark color of powerhouse contrasts against the surrounding light colored soil. The powerhouse together with the surrounding features: powerhouse, T.L., exposed slopes, dominate the characteristic landscape.
					N UV T. L.	IV	PR	Most of towers screened by surrounding forested landscape. Top portion of towers and lines can be seen, but are visually subordinate to the characteristic landscape and not visually evident from most locations.
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen.
					S UV T.L.	IV/V		Not seen.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
				Sunset CG & BR Shoreline	UV Dam	V	PR	The dam is seen in the Mg. The horizontal form of the dam is apparent, but the texture, color and scale result in it being visually subordinate to the characteristic landscape.
					RP Penstock & T.L.	V		Not seen.
					RP Powerhouse	V		Not seen.
					N UV T. L.	IV	PR	Most of towers screened by surrounding forested landscape. Top portion of towers and lines can be seen, but are visually subordinate to the characteristic landscape and not visually evident from most locations.
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen.
					S UV T.L.	IV/V		Not seen.
				Lone Rock CG Shoreline	UV Dam	V		Not seen.
					RP Penstock & T.L.	V		Not seen.
					RP Powerhouse	V		Not seen.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					N UV T. L.	IV		Not seen.
					JF Penstock	IV		Not seen.
					JF Powerhouse	IV		Not seen.
					S UV T.L.	IV/V	PR	Temporary increased visibility of areas due to 1997 fire. Due to the use of wooden poles and their similarity to snags, and siting of the line off the ridge top and behind knolls, the T.L. is visually subordinate to the characteristic landscape, if not, visually not evident.
				Jones Fork CG Shoreline	UV Dam	V		Not seen.
					RP Penstock & T.L.	V		Not seen.
					RP Powerhouse	V		Not seen.
					N UV T. L.	IV		Not seen.
					JF Penstock	IV		Not seen.
					JF Powerhouse	V		Not seen.
					S UV T.L.	IV/V		Not seen.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
Icehouse Reservoir[14]	PR	F2B	Big Hill Lookout Road (11N58)	Visit Point	Main Dam	V		Not seen.
					Intake	V		Not seen.
					1 & 2 Dikes	III		Not seen.
	R	F1B	Icehouse Reservoir Road (11N98)	Icehouse Reservoir Road (11N98)	Main Dam	V		Not seen.
					Intake	V		Not seen.
					1 & 2 Dikes	III		Not seen.
			Icehouse-Wrights Road (11N37)	Icehouse-Wrights Road (11N37)	Main Dam	V		Not seen.
					Intake	V		Not seen.
					1 & 2 Dikes	III		Not seen.
	R	F1B	Ice House Reservoir	Icehouse Reservoir	Main Dam	V	M	There are Fg and Mg views of the dam from the western end of the reservoir. Angular form contrasts against the surrounding landscape. Color and texture borrow from the landscape. Scale of structure is noticeable, but does not dominate the landscape.
					Intake	V	R	Not seen from most locations on the reservoir except right in front of the intake. Small point of land and surrounding trees provides screening of area. Structure is not visually evident.
					1 & 2 Dikes	III	PR	Structures are low and similar in color, texture and form to the surrounding exposed reservoir shoreline soil. Structures are not visually evident.
				Icehouse PA Shoreline	Main Dam	V	M	Structure seen in Fg. Angular form contrasts against the surrounding landscape. Color and texture borrow from the landscape. Scale of structure is noticeable, but does not dominate the landscape.

[14] Jones Fork Development.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
					Intake	V		Not seen.
					1 & 2 Dikes	III	PR	Structures are low and similar in color, texture and form to the surrounding exposed reservoir shoreline soil. Structures are visually subordinate to the characteristic landscape.
				Icehouse BR Shoreline	Main Dam	V	M	Structure seen in Fg. Angular form contrasts against the surrounding landscape. Color and texture borrow from the landscape. Scale of structure is noticeable, but does not dominate the landscape.
					Intake	V		Not seen.
					1 & 2 Dikes	III		Not seen.
				Icehouse CG Shoreline	Main Dam	V	M	Structures are low and similar in color, texture and form to the surrounding exposed reservoir shoreline soil. Structures are visually subordinate the characteristic landscape.
					Intake	V		Not seen.
					1 & 2 Dikes	III	PR	Structures are low and similar in color, texture and form to the surrounding exposed reservoir shoreline soil. Structures are visually subordinate the characteristic landscape.
				Northwind CG Shoreline	Main Dam	V		Structure seen in Fg. Angular form contrasts against the surrounding landscape. Color and texture borrow from the landscape. Scale of structure is noticeable, but does not dominate the landscape.
					Intake	V		Not seen
					1 & 2 Dikes	III		Not seen.
				Strawberry Point	Main Dam	V		Not seen.
					Intake	V		Not seen.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**UARP Facilities**	**EVC[3]**	**VQO**	**Discussion**
				CG Shoreline	1 & 2 Dikes	III	PR	Structures are low and similar in color, texture and form to the surrounding exposed reservoir shoreline soil. Structures are visually subordinate the characteristic landscape.
				Mt. Camp 2 Shoreline (organizational camp)	Main Dam	V		Not seen.
					Intake	V		Not seen.
					1 & 2 Dikes	III	PR	Structures are low and similar in color, texture and form to the surrounding exposed reservoir shoreline soil. Structures are visually subordinate the characteristic landscape.
Junction Reservoir[15]	PR	F2B	Bryant Springs Road (12N30)	Bryant Springs Road (12N30)	UV Dam	V	M	Screened views of dam in Fg for a short distance of road. Scale of dam is large and dominates the view.
					UV Substation	V	M	Screened views of substation in Fg for a short distance of road. Dam behind substation dominates the view.
					UV Powerhouse			Not seen.
					UV-Jaybird T.L.	IV/V		Towers and lines visible in Fg intermittently along road. Towers are partially screened by forest vegetation, but can be seen from openings in the road. T.L. towers are visually subordinate, but lines dominate the view.
					Junction Dam	IV		Not seen.

[15] Jaybird Development.

APPENDIX D

CRYSTAL BASIN PHOTOGRAPHS

APPENDIX E

CANYON LANDS PROJECT
FACILITY ASSESSMENT

CANYON LANDS

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**Visible Project Facilities**	**EVC[3]**	**VQO**	**Discussion**
Camino Diversion Reservoir[4]	NA[5]	NA	There are no County or Forest Service managed viewsheds in the vicinity of the reservoir.	NA	NA	NA	NA	Not seen.
Slab Creek Reservoir[6]	R	F1B	South Fork American River	Forebay Road (EDC)	Junction-Camino T.L. (in)	IV		Not seen.
					Brush Creek - Camino T.L. (in)	IV		Not seen.
					Brush Creek Dam	III		Not seen.

[1] D = distance zone (foreground = 0 – 0.5 miles, middleground = 0.5 – 3.0 miles, background = 3.0 and more), S = Sensitivity Levels (1 = high, 2 = moderate, 3 = low), VC = Variety Class (A = Distinctive, B = -C).
[2] KVPs within the ENF consist of trails, roads, lakes and rivers within areas of Level 1 and 2 Sensitivity as seen from the foreground and middleground distance zones.
[3] EVC = Existing Visual Condition. EVC = Type I – VI. Type I = untouched, Type II = unnoticed, Type III = minor disturbance, Type IV = disturbance, and Type V = major disturbance.
[4] Camino Development.
[5] NA = Not applicable
[6] Slab Creek/White Rock Development.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**Visible Project Facilities**	**EVC[3]**	**VQO**	**Discussion**
					Brush Creek Spoil Pile	III	PR	Not seen. (Spoil pile can be seen in the Mg from Forebay Road where the T.L. crosses. The light color of the pile contrasts with the surrounding forested landscape, but the rounded form is similar to other land form features, scale of pile appears small, and is visually subordinate to the characteristic landscape.
					Camino Penstock	IV	M	Penstock seen in Fg. Contrasts in linear form and color against surrounding dark green forested hillside. Penstock visually dominates the view upstream due to Fg view. Only visible in the immediate area.
					Camino Powerhouse	IV	PR	Only a small portion of the substation and powerhouse can be seen from the bridge crossing the river. The powerhouse area is visually subordinate to the surrounding landscape.
					Camino-White Rock T.L. (out)	IV	PR	T.L. crosses over canyon from PH to knoll above river. Only the lines can be seen from the river corridor. T.L. is visually subordinate from the bridge.
White Rock Reservoir[7]	NA	NA	There are no County of Forest Service managed viewsheds in the vicinity of the reservoir. However Recreation TWG identified	State Highway 193	White Rock Spoil Pile	NA	NA	The spoil pile can be seen in the Mg from one location on Highway 193. The light color, triangular form, and scale of the spoil pile contrasts against the surrounding forested landscape. Scale, color and form

[7] Slab Creek/White Rock Development.

ENF Baseline Information							Assessment	
Viewshed	**VQO**	**DSVC[1]**	**KVP Name & Type[2]**	**KVP Assessment Location**	**Visible Project Facilities**	**EVC[3]**	**VQO**	**Discussion**
			the visual affect of the spoil pile as an issue.					contrast against characteristic landscape. Feature dominates view and does not borrow visually from the surrounding landscape.
All Project Facilities	NA	NA	State Designated Scenic Highway 50 (Starts at west end of Placerville and continues east to Lake Tahoe.	Highway 50 between Placerville and Ice House Road	All Project Facilities	NA	NA	Not seen.

APPENDIX F

CANYON LANDS PHOTOGRAPHS

CANYON LANDS VIEWSHEDS

F1. Camino Penstock seen from Forebay Road at the South Fork American River.

F2. Brush Creek Spoil Pile seen from Forebay Road at the SMUD Transmission Line.

F3. SMUD UARP transmission lines seen from Forebay Road.

F4. White Rock Spoil Pile seen from Highway 193.