

CAMP CREEK PLACER MINE PLAN OF OPERATIONS

Environmental Assessment



**USDA Forest Service
Pacific Northwest Region**

**Umatilla National Forest
North Fork John Day Ranger District
Grant County, Oregon**

JUNE 2004

| | |
|--------------------------------|---|
| Lead Agency: | USDA Forest Service |
| Responsible Official: | Craig Smith-Dixon, District Ranger North Fork John Day Ranger District P.O. Box 158 Ukiah, OR 97880 (541) 427-3231 |
| For Further Information | Ralph Hartman, Supervisory Forester Timber, Recreation, Lands, and Minerals |
| Contact: | North Fork John Day Ranger District |

The United States Department of Agriculture (USDA) prohibits discrimination in its programs based on race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means of communication of program information (Braille, large type, audiotape, etc.) should contact the USDA Office of Communications at (202) 720-2791. To file a complaint, write the Secretary of Agriculture, USDA, Washington, DC 20250, or call 1-800-245-6340 or {TTY} (202) 720-1127. USDA is an equal opportunity employer.

TABLE OF CONTENTS

| | |
|---|-----------|
| CHAPTER I - PURPOSE AND NEED | 1 |
| INTRODUCTION | 1 |
| PROPOSED ACTION | 1 |
| PURPOSE OF AND NEED FOR ACTION | 2 |
| MANAGEMENT DIRECTION | 2 |
| SCOPING PROCESS | 3 |
| KEY ISSUES | 4 |
| <i>Key Issue 1: Water Quality</i> | 4 |
| <i>Key Issue 2: Threatened, Endangered, & Sensitive Species</i> | 5 |
| TRACKING ISSUES | 5 |
| <i>Water Quantity</i> | 6 |
| <i>Wildlife Habitat</i> | 6 |
| <i>Claimant Rights</i> | 6 |
| <i>Noxious Weeds</i> | 6 |
| <i>Wild & Scenic River</i> | 6 |
| <i>Native American Treaty Rights</i> | 7 |
| ISSUES BEYOND THE PROJECT SCOPE | 8 |
| <i>Validity of Claim site</i> | 8 |
| DECISIONS TO BE MADE | 9 |
| CHAPTER II - ALTERNATIVES..... | 10 |
| ALTERNATIVE DEVELOPMENT | 10 |
| ALTERNATIVES STUDIED IN DETAIL | 10 |
| <i>Alternative 1: No Action</i> | 10 |
| <i>Alternative 2: Proposed Action</i> | 10 |
| <i>Alternative 3</i> | 14 |
| ALTERNATIVES DROPPED FROM CONSIDERATION | 18 |
| <i>Withdraw the Area From Mining</i> | 18 |
| <i>NO Approval of the Plan Of Operations</i> | 19 |
| <i>Excavation without construction of a temporary access road</i> | 19 |
| COMPARISON OF ALTERNATIVES | 19 |
| <i>Water Quality</i> | 19 |
| <i>Threatened, Endangered, and Sensitive Species</i> | 20 |
| CHAPTER III - ENVIRONMENTAL CONSEQUENCES | 22 |
| WATER | 22 |
| FISH POPULATIONS AND HABITAT | 28 |
| <i>Threatened, Endangered, and Sensitive Fish Species</i> | 34 |
| WILDLIFE HABITAT | 36 |
| <i>Terrestrial Management INDICATOR SPECIES</i> | 36 |
| <i>Threatened, Endangered, and Sensitive Terrestrial Species</i> | 37 |
| <i>Species of Interest</i> | 40 |
| NOXIOUS WEEDS | 40 |

| | |
|---|-----------|
| WILD AND SCENIC RIVER | 43 |
| COMPLIANCE WITH OTHER LAWS, REGULATIONS, AND POLICIES | 45 |
| <i>Endangered Species Act</i> | 45 |
| <i>National Historic Preservation Act</i> | 45 |
| <i>Clean Air Act</i> | 45 |
| <i>Clean Water Act</i> | 45 |
| <i>Executive Orders 11988 and 11990: Floodplains and Wetlands</i> | 47 |
| <i>Executive Order 12898: Environmental Justice</i> | 47 |
| <i>Energy Requirements and Conservation Potential</i> | 47 |
| <i>Prime Farmland, Forestland, and Rangeland</i> | 48 |
| <i>Inventoried Roadless Areas and Wilderness</i> | 48 |
| <i>Forest Plan Consistency</i> | 48 |
| RESOURCE PARAMETER..... | 48 |
| <i>Consumers, Minority Groups, and Women</i> | 49 |
| <i>Unavoidable Adverse Effects</i> | 49 |
| <i>Short-term Use and Long-Term Productivity</i> | 49 |
| <i>Irreversible and Irrecoverable Effects</i> | 49 |
| CHAPTER IV – AGENCIES AND PERSONS CONSULTED..... | 50 |
| BIBLIOGRAPHY | 51 |
| FISH..... | 51 |
| WILDLIFE..... | 52 |
| WATER | 52 |
| APPENDIX A – BEST MANAGEMENT PRACTICES..... | 54 |
| ROAD SYSTEM | 54 |
| MINING..... | 55 |
| WATERSHED MANAGEMENT | 56 |
| APPENDIX B – CUMULATIVE ACTIVITIES CONSIDERED..... | 58 |
| PAST ACTIVITIES..... | 58 |
| ONGOING ACTIVITIES..... | 58 |
| FORESEEABLE FUTURE ACTIVITIES | 59 |
| APPENDIX C – MAPS | 60 |

CHAPTER I - PURPOSE AND NEED

INTRODUCTION

In August 1998, Gary Thompson and Dave Thomas submitted an initial Plan Of Operations for the Camp Creek placer claims. The Camp Creek placer claims are located on National Forest System Land that is open to mineral exploration and development. The project area consists of three claims, Camp Creek 1 & 2 and New Hope, for a total area of approximately 50 acres. The Camp Creek placer claims are located in Grant County approximately six air miles east of Dale, Oregon at T. 7 S., R. 32 E., Section 1 and T.7S., R.33E., Section 6, Willamette Meridian surveyed (see map in Appendix C). This location is within the North Fork John Day/Turner Subwatershed (35C) and North Fork John Day/Otter Subwatershed (35D). These claims also occur within a "Scenic" section of the designated North Fork John Day Wild and Scenic River.

The claim site is west of Camp Creek on a ridge approximately 500 feet above the North Fork John Day River at the end of Forest Road 5507-017. The area around the claims has been explored and mined for mineral resources almost since the first European settlers arrived. The most notable nearby operation was the dredging of the North Fork John Day River during the 1930's and 40's. Exploration of the Camp Creek claims has been ongoing since the 1970s and the most recent Plan Of Operations was approved February 21, 1996. Exploration to date has involved the use of hand tools and a small trommel, with water for the placer operation diverted from Camp Creek via a small ditch (replaced by a pipe more recently). Depressions from two previous settling ponds, a crude road, several test pits, two excavations, and one structure exist on site. The current claimants and Forest Service have completed substantial clean up of debris on site left by previous claimants.

PROPOSED ACTION

The North Fork John Day Ranger District of the Umatilla National Forest proposes to approve the Plan Of Operations as submitted by the claimants for the Camp Creek placer claims. This Plan Of Operations is displayed as Alternative 2 in chapters 2 and 3 of this document. Approval of the Plan Of Operations would authorize occupancy and use of Federal lands under the terms and conditions specified in the approved Plan Of Operations.

A summary of the claimants proposed Plan Of Operation is to begin operations in 2001 with construction of 450 feet of temporary road. Excavation of approximately 5,000 cubic yards of material per year would occur, and additional testing would occur concurrently. Gold-bearing gravel would be processed on site using a closed loop, recirculating wash plant and sluice that would remove gold through gravity sorting. Water would be diverted from Camp Creek at up to a rate of 150 gallons per minute (under an existing water right) to assist with processing. This would only occur periodically as needed to fill processing ponds used in a closed-loop wash system. The

excavation site is on a steep side canyon of Camp Creek and the processing area would be located at the top of the canyon rim. When excavation of an area has been completed, reclamation of the excavated area and associated portion of temporary road would occur concurrent with excavation of the next area. Alternative 2 in Chapter 2 provides a detailed description of the activities associated with this Plan Of Operation.

As required by Forest Service policy, “[r]eclamation bonds, sureties, or other financial guarantees shall ordinarily be required for all mineral activities that require a Plan of Operations; dollar amounts of such guarantees shall be sufficient enough to cover the full cost of reclamation”¹.

PURPOSE OF AND NEED FOR ACTION

The purpose of this action is to address the Forest Plan management goal of providing "for exploration, development, and production of a variety of minerals on the Forest consistent with various resource objectives, environmental quality, and cost efficiency" (Forest Plan p. 4-3). Additionally, mining is a legitimate use of National Forests:

- The 1872 Mining Law confers a statutory right to enter upon public lands to prospect for, mine, and develop valuable minerals.
- The Mining and Minerals Policy Act of December 31, 1970, states that the continuing policy of the Federal Government is to foster and encourage the development of domestic mineral resources.
- The National Materials and Minerals Policy, Research and Development Act of October 2, 1980, mandates the Forest Service to integrate the development and use of mineral resources to the fullest extent possible under the laws governing mineral disposal.

However, as per the Organic Administration Act of 1897, these operations must be conducted in such a manner that National Forest resources (such as water, fish, etc.) are maintained to the extent permissible within the 1872 Mining Law.

The need for this action was generated in August 1998, when an initial Plan Of Operations was received from Gary Thompson and Dave Thomas for work on the Camp Creek placer claims. Mr. Thompson and Mr. Thomas are proposing to excavate and process placer gravels for the purpose of gold extraction (see Alternative 2 in Chapter 2 for details).

MANAGEMENT DIRECTION

This Environmental Assessment (EA) process and documentation have been completed in accordance with direction contained in the National Forest Management Act, the National Environmental Policy Act, the Council on Environmental Quality regulations, the Clean Water Act, the Clean Air Act, and the Endangered Species Act. This EA is

¹ Forest Service Manual at 2840.3(5).

tiered to the Umatilla National Forest Land and Resource Management Plan Final Environmental Impact Statement (FEIS) and Record of Decision approved June 11, 1990, and incorporates by reference the accompanying Land and Resource Management Plan (Forest Plan). This includes the clarifying direction of Plan Amendment #10 *“Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California”* (PACFISH), dated February 24, 1995, which is intended to arrest and reverse the decline in anadromous fish habitat in the Pacific Northwest Region until a more in-depth analysis is completed. This EA is also tiered to the Managing Competing and Unwanted Vegetation FEIS, its Mediated Agreement, and the Record of Decision (December 8, 1988). This EA incorporates by reference the Environmental Assessment for the Management of Noxious Weeds and its Decision Notice (May 24, 1995); the North Fork of the John Day Wild and Scenic River Management Plan and its Environmental Assessment and Decision Notice (September 13, 1993); and other sources of information, documents, published studies, and books referred to in this document and its analysis file.

The Forest Plan identifies the type and intensity of management that may occur on Umatilla National Forest lands through designation of “management areas”. The Camp Creek placer claims occur within the A7-Wild and Scenic River management area, which is briefly summarized here:

A7-Wild and Scenic Rivers: (Forest Plan Chapter 4, pp. 121-127). The goal is to manage this area to appropriate scenic standards as defined by the Wild and Scenic Rivers Act (Public Law 90-542) and expanded by the Omnibus Oregon Wild and Scenic Rivers Act of 1988 (Public Laws 100-557). The Desired Future Condition is to protect and enhance the values for which the river was classified and to provide public use and enjoyment of those values. Evidence of human activity may be present but will not detract from the near natural appearance and scenic qualities of the immediate environment. This management area is open to mineral entry.

The portion of the North Fork John Day Wild and Scenic River corridor containing the Camp Creek placer claims is classified as "Scenic". Evidence of human activity may be present but will not detract from the near natural appearance and scenic qualities of the immediate environment.

SCOPING PROCESS

Scoping is the process the Forest Service uses to identify potential concerns (or “issues”) associated with the proposed action, develop alternatives to the proposed action, and determine the extent of environmental analysis necessary for reaching an informed decision. Scoping was begun by listing the project in all quarterly issues of the Umatilla Schedule of Proposed Activities since the Fall 2000 issue. On March 19, 2001, the North Fork John Day Ranger District sent 77 interested organizations, Tribes, agencies, and individuals a letter describing the project’s purpose, proposed Plan Of Operations, and preliminary issues. Three letters and two phone calls were received in

response to public scoping: two from environmental organizations, two from an industry organization, and one from a local individual. Scoping also included discussions with specialists at District and Forest headquarters and an interdisciplinary team field tour of the claims with claimant Gary Thompson.

An Environmental Assessment for this project was previously released for public comment in June of 2002. Those comments and further analysis brought about the need for revisions to the original Environmental Assessment.

KEY ISSUES

Public comments and internal concerns generated several issues. The Interdisciplinary Team reviewed these and determined which issues were “key” to the project. Key issues are defined as resource or other values that drive the development of an alternative to the proposed action, may be adversely affected by the proposed action, or are “unresolved conflicts regarding alternative uses of available resources” [NEPA sec. 102(2)(E)]. Key issues provide the focus for the analysis and are used in defining the alternatives.

KEY ISSUE 1: WATER QUALITY

Response to public scoping revealed concern that the proposed action would not protect water quality in Camp Creek and the North Fork John Day River, particularly when added to the effects of past mining and other management actions in this watershed. Construction of temporary access roads exposes soil to rutting and channelizes overland water flow. The results of these actions can be compounded when construction occurs in draws, adjacent to creeks, or on steep grades. Excavation of minerals exposes soil to erosive forces and usually results in stockpiles of loose fill. Settling ponds (used to recycle water for the processing of gold-bearing gravel) could overflow, sending water containing fine material into adjacent streams or eroding the dam and soil downslope of the ponds. All of these occurrences could increase sediment and, indirectly, temperatures in Camp Creek, which flows into the North Fork John Day River. Currently, the North Fork John Day River is on the State of Oregon's 1998 List of Water Quality Limited Water Bodies for exceeding temperature standards.

Mining proponents believe that with the implementation of mitigation measures and best management practices, the claim site can be developed with little or no direct effect on water quality.

Response to this issue measured using:

- Change in stream flow as measured by estimating the amount of water (cubic feet per second) that would be removed from Camp Creek and duration of the removal.
- Potential for mass movement of soil (landslide).
- Predicted changes in temperature in the North Fork John Day River.

KEY ISSUE 2: THREATENED, ENDANGERED, & SENSITIVE SPECIES

While fish have not been documented in Camp Creek, this creek empties into the North Fork John Day River, which hosts several threatened and sensitive species of fish. Adult bull trout (listed as Threatened under the Endangered Species Act) use this section of the North Fork John Day River as migratory habitat during the late fall to early spring and some Mid-Columbia steelhead (Threatened) spawning may also occur. Chinook salmon (listed as Sensitive by the Forest Service Pacific Northwest Region) spawn and rear to some extent downstream of the claims in the North Fork John Day River. The John Day River system is presently designated critical habitat for Mid-Columbia steelhead trout and essential fish habitat for chinook salmon. Many fish habitat elements have been assessed as not functioning at appropriate levels based on National Marine Fisheries Service ratings. Concern has been expressed that proposed construction of the temporary access road and excavation of placer deposits could further decrease fish habitat quality and complexity within the Texas Bar (35B), North Fork John Day /Turner (35C), North Fork John Day /Otter (35D) subwatersheds. Snow plowing, as proposed for year round operation, could introduce sediment into Texas Bar Creek or downstream into the North Fork John Day River during critical fish spawning and rearing seasons.

Bald eagles (listed as Threatened) use the North Fork John Day River corridor during the winter months while foraging and day roosting. While the ponderosa pine stand within and surrounding the claim site does not provide roosting habitat, human presence and equipment noise associated with mining operations could disturb eagles wintering along the North Fork John Day River. Wolves (Endangered), Canada lynx (Threatened), California wolverine (Sensitive), peregrine falcon (Sensitive), and Columbia spotted frog (Sensitive) all have potential to occur within or adjacent to the claim site.

Mining proponents believe that with the implementation of mitigation measures and best management practices, the claims can be developed with little or no direct effect on fish or wildlife habitat.

Response to this issue measured using:

- Time of year that operations would occur (as related to wildlife and fish activities).
- Estimated potential for suspended sediment to reach fish populations in the North Fork John Day River.

TRACKING ISSUES

Issues that were not “key” to alternative development, but that were important in the context of the proposal or required by law or regulation to be disclosed are identified below. These issues are generally of high interest or concern to the public or are necessary to understand the full extent of the alternatives.

WATER QUANTITY

The water withdrawal from Camp Creek to support the processing phase described in the proposed Plan Of Operations could limit water quantity within Camp Creek. Based on observed stream flows in late summer, water withdrawal during this time would have the potential of temporarily drying up a portion of the creek, which supplies cool water to the North Fork John Day River (listed as water quality limited due to stream temperatures). The loss of cool water from Camp Creek could stress downstream fish.

The claimants have an existing, valid Oregon Water Right, permit #31277, to divert up to 1 cubic foot per second from Camp Creek. This water right applies year-round and requires maintenance and use of adequate treatment facilities to remove sediment before returning water to the stream. The State of Oregon has the authority to allocate water for beneficial uses (which includes mining) within the state.

WILDLIFE HABITAT

Management indicator species, such as Rocky Mountain elk and pileated woodpeckers, potentially use the claim site. Neotropical birds likely use the area surrounding the claims for foraging and nesting. Disturbance associated with mining (noise and motion) could result in reduced foraging and nesting success by altering habitat and/or causing individuals to avoid the area.

CLAIMANT RIGHTS

There is a concern that the claimants rights under the 1872 Mining Law to develop the mineral potential of a claim site could be restricted beyond what would be considered as reasonable.

NOXIOUS WEEDS

Exposure of mineral soil caused by mining activity creates ideal conditions for the spread of noxious weeds. Noxious weeds easily spread by vehicular traffic and establish quickly where mineral soil is exposed.

WILD & SCENIC RIVER

The claims occur within the corridor of the North Fork John Day Wild and Scenic River, which was designated in 1988. The claims occur within a segment designated as Scenic. The Wild and Scenic Rivers Act requires that a river be free flowing and possess one or more "outstandingly remarkable values." The outstandingly remarkable values identified for this area are: scenic, recreation, fisheries, wildlife, and historic. The proposed Plan Of Operations could impact these values.

NATIVE AMERICAN TREATY RIGHTS

The Forest Service, through the Secretary of Agriculture, is vested with statutory authority and responsibility for managing resources of the National Forests. No sharing of administrative or management decision-making power is held with any other entity. However, commensurate with the authority and responsibility to manage is the obligation to consult, cooperate, and coordinate with Indian Tribes in developing and planning management decisions regarding resources on National Forest System land that may affect tribal rights.

In 1855, two treaties that affect the Umatilla National Forest were signed between the United States government and several Indian tribes. The treaty with the Walla Walla, Cayuse, and Umatilla tribes and bands of Indians in Washington and Oregon Territories (today referred to as the Confederated Tribes of the Umatilla Indian Reservation) was signed on June 9, 1855. On June 26, 1855, a treaty was signed with the Tribes of Middle Oregon (these groups are now known as the Confederated Tribes of the Warm Springs Indian Reservation).

In the treaty between the Confederated Tribes of the Umatilla Indian Reservation and the United States, the Tribes reserved for themselves the following provisions:

“ . . . That the exclusive right of taking fish in the streams running through and bordering said reservation is hereby secured to said Indians, and at all other usual and accustomed stations in common with citizens of the United States, and of erecting suitable buildings for curing the same; the privilege of hunting, gathering roots and berries and pasturing their stock on unclaimed lands in common with citizens, is also secured to them” (Treaty with the Walla Walla, Cayuse and Umatilla, June 9, 1855).

The Camp Creek Placers Plan of Operations Environmental Assessment analysis area lies within the area ceded to the United States by the Warm Springs Indian tribe and Confederated Tribes of the Umatilla Indian Reservation (CTUIR), as a result of the 1855 Treaty. The treaty was subsequently ratified by Congress and proclaimed by the President in 1859. As a result of the treaty, elements of the Tribes' culture, such as tribal welfare, land and resources were entrusted to the United States government. Trust responsibilities resulting from the Treaty dictate, in part, that the United States government facilitate the execution of treaty rights and traditional cultural practices of the Tribes by working with them on a government to government basis in a manner that attempts a reasonable accommodation of their needs, without compromising the legal positions of the Tribes or the Federal Government.

Both Tribes submitted comment letters during the 2002 EA comment period. The Tribes expressed concern with the effects of the proposed action and alternatives on tribal interests and outlined Treaty Rights resources that could be affected by the project. These concerns included:

- Treaty-secured tribal fishing, hunting, and gathering rights
- Federal trust responsibilities to protect cultural resources
- Claim validity

- Effects of access improvements, mineral excavation, and possible failure of settling ponds on water quality through increased sedimentation, and the responses to these effects by fish populations in the North Fork John Day River
- The effects of mining activity on wolves, Canada lynx, California wolverine, and others that have the potential to occur within or next to the claim site
- The effect of water diversion from Camp Creek on water quantity and fish populations in Camp Creek
- The spread of noxious weeds resulting from soil disturbance and increased traffic

Because tribal trust activities often occur in common with the public, the Umatilla National Forest will strive to manage tribal ceded land in favor of the concerns of the tribes, as far as practicable, while still providing goods and services to all people.

ISSUES BEYOND THE PROJECT SCOPE

The following issue was identified during scoping, but was eliminated from detailed analysis in this document because it is beyond the scope of the proposed action.

VALIDITY OF CLAIM SITE

Some concerns were raised during public scoping whether the claim site was “valid”; that the proposed development of an access road and processing ponds was perceived to be premature to “discovery”. Forest Service Manual 2815.5 was interpreted by some to mean that until a miner meets the requirements listed in that subsection, the miner is not entitled to any privileges granted by the 1872 Mining Law or other privileges granted a valid claim. The miner is, instead, a prospector with a recognized right of possession only and the Forest Service has the discretion from authorizing any new construction on prospecting claims.

Nothing in mining law, court decisions, or 36 CFR 228 Subpart A requires that the Forest Service verify the validity of a claim site prior to approving a Plan of Operations, unless the proposed operations will occur within certain limited areas such as wilderness areas (36 CFR 228.15), Wild sections of Wild and Scenic Rivers, or other areas that have been withdrawn from mineral entry subject to valid existing rights. These claims are not on land withdrawn from mineral entry. In addition, the miner must be able to explore the claims to perfect discovery, which requires approval from the surface managing agency (in this case the Forest Service) in the form of an approved Plan Of Operation. All activities approved must be reasonably incidental to the proposed mining activity. Access must be appropriate for the type of equipment to be used on the claims and must meet Forest Service requirements for safety and environmental protection.

DECISIONS TO BE MADE

Forest Service authority to require, evaluate, and approve or modify a plan of operations for locatable minerals on National Forest System Lands is based on the 1897 Organic Act and described in regulations found at 36 CFR 228. These regulations direct the Forest Service to prevent unreasonable and unnecessary environmental damage, and provide for reclamation of the surface resources.

The District Ranger of the North Fork John Day Ranger District will serve as the deciding official for this project. The decision to be made is whether to approve the proposed Plan Of Operation as described by the claimants, or modify the Plan Of Operations through changes in design, mitigation, and reclamation requirements. The decision will be based on the follow criteria:

- Development of valuable mineral resources on National Forest Land.
- Protection of claimants' rights.
- Protection of resources, minimizing environmental impacts by the imposition of reasonable conditions.

No authority exists for the Forest Service to deny a plan of operations that meets the purpose of the regulations, including compliance with applicable state and federal laws and regulations relating to air, water, and solid waste (36 CFR 228.5 (a)). While the Forest Service should minimize, mitigate, and repair adverse environmental impacts on National Forest System surface and cultural resources as a result of lawful mining operations, this should be accomplished by imposition of reasonable conditions which do not materially interfere with such operations (FSM 2817.02).

CHAPTER II - ALTERNATIVES

ALTERNATIVE DEVELOPMENT

The claimants provided the interdisciplinary team with the Proposed Action (Alternative 2) through their submitted Plan Of Operations. Alternative 1 was defined as no change from current management; in other words, the claimants would continue to explore the claims using hand tools. The interdisciplinary team developed a third alternative in response to the key issues of Water Quality and Threatened, Endangered, and Sensitive Species. This involved modification of road design and additional mitigation measures to prevent soil erosion and sedimentation and limiting the operating season in order to protect wintering bald eagles from disturbance and to avoid sediment resulting from associated snow plowing.

Since the claimants' proposal is for the specific claim site, there are no alternative locations for the proposed activities. The staked boundary controls the mine location. The interdisciplinary team considered alternatives to the temporary access road as proposed. No alternative locations for the road were available due to the surrounding terrain and location of the mineral deposit. An alternative was considered that would eliminate the need for an access road, however this alternative was dropped from detailed analysis (see that section for a description and rationale). The tracking issues were addressed by avoiding associated activities or mitigating their effects. All the alternatives are consistent with Forest Plan direction and Forest Service Policy, and meet State and Federal laws and regulations.

ALTERNATIVES STUDIED IN DETAIL

ALTERNATIVE 1: NO ACTION

Under this alternative, operations currently occurring on the claims that do not cause significant surface disturbance (otherwise known as "notice-level activity" under 36 CFR 228) would continue. The claimants would continue exploring their claims using hand tools. Access would be limited to the existing unimproved wheel tracks. Gold-bearing gravel would be processed using existing approved methods, with water withdrawn from Camp Creek via the existing pipe system and the used water dispersed across the hillside through a perforated hose (to avoid erosion by allowing waste water to percolate into the soil). With the limited work activity, a reclamation bond would not be required.

ALTERNATIVE 2: PROPOSED ACTION

The North Fork John Day Ranger District of the Umatilla National Forest proposes to approve the Plan Of Operations as submitted by the claimants for the Camp Creek placer claims. Approval of the Plan Of Operations would authorize occupancy and use of Federal lands under the terms and conditions specified in the approved Plan Of Operations. Activities detailed in the Plan Of Operations are described in the

subsections on access and excavation design, processing, reclamation, and structures. The permits and monitoring sections have been added to clarify responsibilities of the claimants and the Forest Service.

Access and Excavation Design

The proposed action covers a Plan of Operations for a 10-year period. Access to the Camp Creek placer claims is via Forest Road 5507 and 5507-017. A track excavator would be used to construct about 450 feet of temporary road from the end of Forest Road 5507-017 to the east side of the placer deposit (above Camp Creek). The road would be 12 feet wide, with 150 feet of the length on top of the ridge and another 300 feet running side-hill through the placer deposit. Some trees would be removed in order to construct the road and excavate the claims. Forest Road 5507-017 would be maintained as necessary.

Excavation of the placer deposit would start at the end of the temporary road and consist of a series of benches being mined above the road to bedrock. Associated equipment would include: a track excavator, D-6 bulldozer, pickup trucks, a 3 to 5 yard capacity dump truck, and hand tools. Where gravels are consolidated and excavation is not practical, a small amount of explosives would be used to loosen material. Mining would continue on a limited scale during the winter months, as weather permits. Excavation would be maintained at approximately ½ acre and surface disturbance overall would be maintained at or below a total of 1 acre. Less than 5,000 cubic yards of material would be processed in any given season.

Testing in the flat area surrounding the ponds and on the western portion of the claim site would occur simultaneously with excavation. A rubber-tired backhoe would be used where testing is needed, and only one test hole would be open at a time. A 540-foot length of wheel track currently accesses the western portion of the placer deposit. A short ramp would need to be constructed from the glory hole pit to the wheel track for access.

Mitigation

1. Trees removed to construct the road will be used for berms or left whole on the ground for wildlife habitat.
2. The access road will be rocked with processed gravels to reduce dust.
3. Both sides of the access road will have drainage, with waterbarring where needed, and the portion of road that travels sideslope will include installation of energy dissipaters at outlets for waterbars, culverts, etc.
4. A berm will be placed along the outside portion of road that travels sideslope to provide for safety and to ensure placer gravel is contained on site.
5. Blasting personnel will be experienced and licensed. No explosives will be stored on site. Material disturbed by blasting will be contained on the bench area and a silt fence will be constructed as necessary to keep material from traveling downslope.
6. The existing stockpile of fines at the pit area, currently held on the slope with re-enforced traps, will be hauled to the processing site and stockpiled.

7. Reclamation of the access road, test holes, and excavation will occur concurrently with new excavation in order to stay below the one-acre or 5,000 cubic yard limit for the duration of the project (see Reclamation section below).

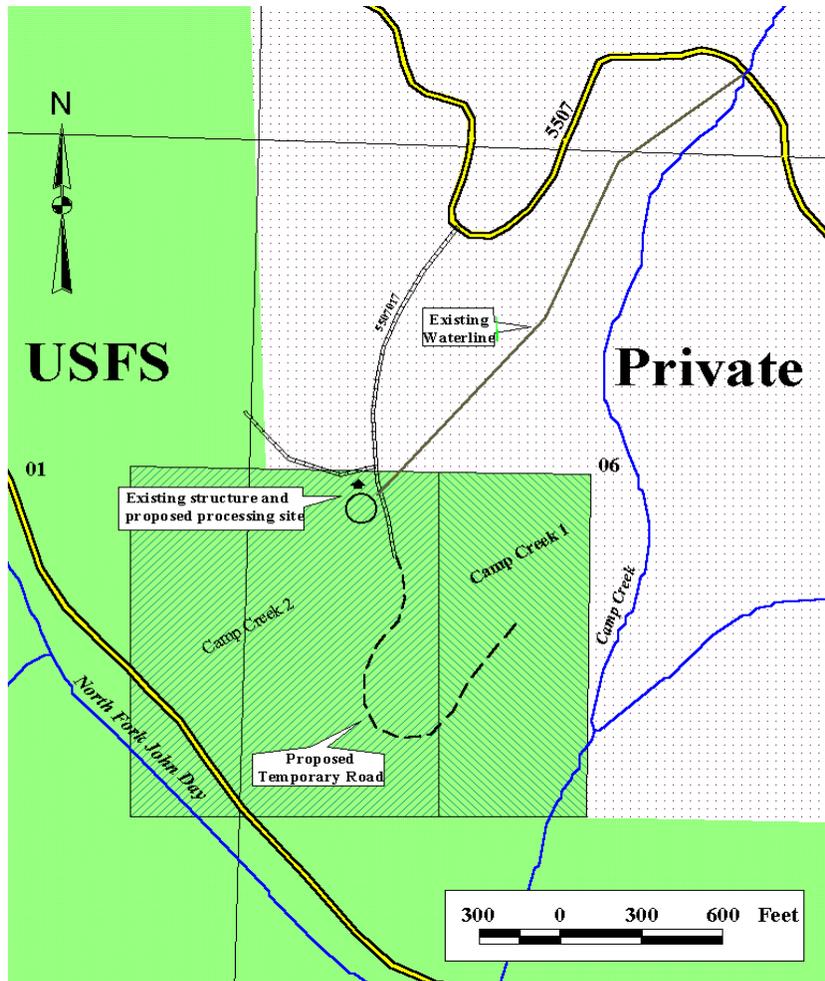


Figure 1: Location of claim site and temporary access road.

Processing

Processing would consist of a small wash plant and sluice (together with water pumps and generators) that could process about 20-30 cubic yards of material per day. A two-inch PVC pipe would deliver water from Camp Creek to the processing site at a rate of 150 gallons per minute during initial set-up and to periodically replace water that has evaporated from the processing system. An existing water right is on file with the State. Water from the wash plant would be discharged into an existing settling pond and re-circulated for processing. There would be no hazardous chemicals used for processing and no discharge of process water. There would be no more than 100 cubic yards of material stockpiled at the processing site at one time.

The existing settling pond would be upgraded to accommodate proper water storage by heightening the berm using a 2:1 slope. Two additional settling ponds (12'x20'x4' each) would be constructed, if needed. Ponds would be cleaned out, as needed, to ensure proper efficiency. Material cleaned out of the ponds would be mixed with the stored topsoil and used for reclamation. Processed material (gravels) would also be used in reclamation activities or as road base.

Mitigation

8. The existing portion of water delivery pipe from the pond down to the excavation pit will be removed, so that the water supply ends at the settling ponds. A shut-off valve on the remaining pipe will control water use to insure the ponds are not overfilled. During seasonal closures (cold weather), the pipe will be drained and shut off at the point of diversion.
9. Soil disturbed during pond reconstruction/construction will be seeded with certified noxious weed free seed to stabilize the berm and prevent erosion.
10. Stockpiled soil and gravel will be stored in a shallow depression to prevent soil movement or sediment. At the end of each season, any stored material will be seeded with certified noxious weed free seed to prevent erosion, storm water contamination, and maintain viability of topsoil.
11. The grassy area around the pond(s) may be kept wet to decrease the risk of fire.
12. The area will be maintained in a clean and orderly fashion to maintain safety and reduce impacts on visual quality viewed from Forest Road 5507.

Reclamation

When excavation on a ½ acre portion of the claims is completed, that section and the associated portion of the access road would be reclaimed as excavation begins on the next section. This will keep soil disturbance under one acre at a time and reduce risk of erosion and sedimentation. Material stockpiled from the road construction and processing phases would be used to fill the excavated area and associated portion of access road. The result would be a slope shaped to match the pre-mined contour as closely as possible. Disturbed soil would be seeded and tree seedlings would be planted at pre-mining densities.

After all mining is completed, the ponds would be drained, filled with soil, and seeded. The existing pond could remain to serve as an upland water source for herbivores. The portion of temporary road outside the excavated area would be returned to contour and seeded as well.

The claimants would furnish the Forest Service with a reclamation bond or other acceptable security. The bond amount would include estimated cost for removal of abandoned structures, equipment, debris, etc. and restoration of disturbed areas.

Structures

One 8x26-foot trailer would be located on site year-round; any other trailers used would be removed seasonally. There is an existing outhouse and a 12-foot x16-foot storage shed to protect equipment. An existing PVC pipe transports water to claim operations.

Permits and Approvals

Road 5507-017, which accesses the claims, crosses private land. The claimant would provide the Forest Service with written approval from the landowner to use the road to administer and monitor claim activity.

The claimant would obtain all applicable State and Federally required permits. A surface mining permit would be required from the Oregon Department of Geology and Mineral Industry. A notification of mine opening (or closing) must be submitted to the U.S. Department of Labor, Mine Safety and Health Administration. The mine is within the corridor of a State Scenic Waterway, so the claimant would need to contact the Oregon Parks and Recreation Department to determine their requirements for working within that corridor. An existing water right is on file with the State of Oregon, Water Resources Department. A snowplowing permit would be required from the Forest Service for winter access. A burning permit would be required from the Forest Service as needed to dispose of trash. All gray water or sanitary waste disposal systems would require a permit from the appropriate State agency. Storm water discharge or application of water from the ponds to surrounding land would require water pollution control facility permits from Oregon Department of Environmental Quality and/or Oregon Department of Geology and Mineral Industries. This list of permits may not be comprehensive; it is the claimants' responsibility to ensure all permits are obtained.

Monitoring

Forest Service personnel will periodically (at least semi-annually) check mining operations to assure mitigations are implemented and functioning.

ALTERNATIVE 3

Under this alternative, the North Fork John Day Ranger District proposes to approve the Plan Of Operations for the Camp Creek placer claims with some modifications to address the key issues of water quality and threatened, endangered, and sensitive species. Activities would occur as described in the original Plan Of Operations except as noted below.

Access and Excavation Design

The temporary access road, testing, and excavation would occur as designed in Alternative 2 with the following exceptions.

The portion of access road that runs sidehill (300 feet) would be outsloped and water bars would be installed as needed. For safety, the curve leading into the sidehill portion would be insloped and a drain dip would be installed on the lower end of the curve to direct water off the road.

No temporary road construction, excavation, processing, or occupancy of the site would be allowed from November 15 to April 30. The intent is to protect wintering bald eagles from disturbance and limit activities on wet soils.

Mitigation

1. Road construction and location must receive prior Forest Service approval.
2. Trees removed in order to construct the road or excavate the deposit will be felled and left in place, where possible, for wildlife habitat. Where such trees will interfere with excavation, they will be moved adjacent to the processing area and stored for use during reclamation. Any slash will be disposed of in a method approved by the Forest Service
3. The road will be rocked, as needed, using dense, graded rock to prevent rutting and dust. If used for road surfacing, washed gravels will need to be mixed with finer material in order to provide a stable, cohesive road surface.
4. No ditches or berms will be constructed beside the road in order to avoid channeling overland water. At the end of every operating season, waterbars will be installed or improved as needed from the bottom of the temporary access road up to the intersection with Forest Road 5507-017 and Forest Road 5507-018 to prevent excessive accumulation of running water on the road surface.
5. No snow plowing will be permitted in order to prevent sedimentation that could affect threatened fish.
6. Mining activities will not occur when soils are saturated with water to prevent soil erosion.
7. Topsoil that is 1 inch or greater in depth and/or other material suitable for the establishment of vegetation (sand, silt, clay with 50% or less rock fragments) will be scraped off operating areas and kept separate from general overburden. Topsoil and other excavated materials will be stockpiled as far as feasibly possible from any drainage.
8. A silt fence will be constructed downhill of the temporary access road and excavation, as necessary to keep material from traveling downslope into Camp Creek or the North Fork John Day River. The silt fence will be cleaned as needed to reduce sediment available for overland transport.
9. If the western portion of the claim site is developed, a chain link fence will be installed to catch rolling rock and Forest Road 5506 (which is below this area) will be signed on both sides below the project area to warn motorists of the possibility of rolling rocks from the mining above.
10. The claimant will avoid and/or protect any threatened or endangered plant and animal species, as well as any cultural resources, discovered during development of the claims. Operations will cease until adequate protection is in place and written approval is given by the Forest Service.

11. Noxious weeds will be treated before soil disturbance on the claim site or travel along an infested route in accordance with the Forest Noxious Weed Management EA. The claimant will be provided with weed identification material and a map of known noxious weed sites to aid in avoidance and early recognition of noxious weeds. All equipment to be operated on the project area will be cleaned in a manner sufficient to prevent noxious weeds from being carried into the project area. This does not apply to passenger vehicles or other equipment used exclusively on roads. Cleaning, if needed, will occur off National Forest System Lands. Cleaning will be inspected and approved by the Forest Officer in charge of administering the project. Machinery moved into the mining area for testing will use one route in and the same route out in order to limit disturbance of existing vegetation and to provide a smaller area exposed to noxious weed invasion.

Processing

Processing, water delivery, and settling pond construction/reconstruction occur as designed in Alternative 2 with the following exception.

A shut off valve would be placed at the pipe's inlet at Camp Creek, so that water overflows the diversion device instead of flowing out the side pipe as currently occurs. This would eliminate erosion of the base of Forest Road 5507. The pipe would be locked closed at the inlet during the winter and whenever the site is unattended during the operating season. Another shut off valve would be installed at the pipe outlet into the settling pond to prevent accidental overflow of the pond.

Mitigation

12. Existing leaky delivery pipe will be replaced with durable pipe from Camp Creek to the settling ponds to reduce erosion and waste of water.
13. Ponds will be drained before November 1 of each year to prevent overflow from winter or spring storms. Water will be dispersed across the landscape via a sprinkler or perforated pipe system to prevent erosion.
14. All seed will be provided by the Forest Service. In addition to seeding, stockpiles of topsoil and gravel will be mulched with certified weed-free straw at the end of each operating season. Mulch will be at least 1 inch and not greater than 4 inches in depth. Straw bales will be stockpiled on site for erosion control in emergencies.
15. Any fuel and hazardous material containers on the site will be stored in such a way that if containers leak, leakage will not reach the soil surface or groundwater. Absorbent material will be located on site in case of a spill of petroleum products.
16. The claimant will comply with Mine Safety and Health Administration regulations for use of explosives as presented in Title 30 CFR 57.6.
17. During work periods at the claim site, proponent will comply with Forest Service regulations for preventing and suppressing fires on the claim site.

18. If the placer deposit is found to extend below the temporary access road, a revised plan of operation will need to be submitted and approved.

Reclamation

Reclamation would occur as designed in Alternative 2 except that all improvements (sheds, water supply pipe and diversion, etc.) would be removed. No ponds would be retained for herbivore water sources and after ponds are filled with soil, they would be re-contoured to match adjacent landform. At least 90 percent of the reclaimed area would need at least two live perennial plants per square foot one year after seeding for revegetation to be considered adequate. To achieve pre-mining densities of trees, at least two seedlings would need to be planted for every tree cut. Seedlings would be protected by cages until they become established. A reclamation bond or other acceptable security would be required as described under Alternative 2.

Structures

No year-round occupancy of the site would occur. The storage shed would remain, but the existing outhouse would be removed and the associated pit reclaimed. When reclamation of the mine is completed, all structures, equipment, and debris would be removed from the claim site.

Mitigation

19. All travel trailers, and campers will be removed from the site from November 15 through April 30.
20. Sewage and gray water will be kept in a separate and removable container, and will be regularly disposed of at a proper sanitation facility.

Permits

The same permits described under Alternative 2 would apply to this alternative.

Monitoring

The following monitoring activities are in addition to the monitoring item described under Alternative 2:

- A totalizing flow meter will be placed at the water diversion and monitored annually by Forest Service personnel to track the amount of water diverted.
- Forest Service personnel will visually monitor claim operations at least twice during the operating season to determine if mitigation is being implemented as designed and whether the mitigation is accomplishing the desired resource protection (e.g. soil protection). Any mitigation not implemented as designed will be corrected immediately. If monitoring determines that the desired resource protection is not occurring, adjustments to mitigation or operation would be made.

- Forest Service personnel will survey the claim site and travel route for noxious weeds before, during, and for five years after activities. If noxious weeds are found, they will be treated according to the process approved by the Umatilla National Forest Management of Noxious Weeds Environmental Assessment (1995).
- Before seasonal operations begin and after earthquakes or intense rainstorms, Forest Service personnel will look for signs of developing landslides (such as cracks in the ground, slumping, soil flows, gullies, tilting trees, etc.). If these are discovered, mining activities will be interrupted until the situation is evaluated and additional mitigation identified and implemented.

ALTERNATIVES DROPPED FROM CONSIDERATION

WITHDRAW THE AREA FROM MINING

One issue raised during scoping was that the claims occur within the corridor of a designated Wild and Scenic River, so the Forest Service should consider an alternative that would withdraw the Wild and Scenic River corridor from mineral extraction. Withdrawal of an area from appropriations under the 1872 Mining Law could be done under Federal Land Policy and Management Act, Section 204 by the Secretary of Interior. However, the need for such a withdrawal would have to be based on compelling reasons why mining is not compatible with the proposed purpose of the withdrawal.

The area has been analyzed in the Forest Plan for associated values under the Wild and Scenic Rivers Act. The Omnibus Oregon Wild and Scenic Rivers Act of 1988 designated this segment of the river (Segment 2) as Scenic. Under this designation, the area was not withdrawn from mineral entry (Forest Plan pages 4-122 and 4-127). As required by the Forest Plan, a management plan was developed for the wild and scenic river titled "*North Fork of the John Day Wild and Scenic River Management Plan*" and was incorporated into the Forest Plan through Amendment #6. This management plan details how to address mining outside of an area withdrawn from mineral extraction to protect outstandingly remarkable values. The interdisciplinary team designed Alternative 3 and its associated mitigation measures to protect these values; therefore, no compelling reason exists to withdraw this area from mineral extraction.

Also, the act of withdrawing an area does not automatically preclude mining activities. A valid existing rights determination would have to be made on the claims prior to approving a proposed Plan Of Operations. Should valid existing rights be established, then approval of the Plan Of Operations would be within the authority of the Forest Service.

NO APPROVAL OF THE PLAN OF OPERATIONS

Under this alternative, the Plan of Operations for continued mineral exploration submitted by the proponent would not be approved. The 1872 United States Mining Law entitles a claimant reasonable access to explore for mineral deposits on lands open to mineral entry. No authority exists for the Forest Service to deny a plan of operations that meets the purpose of its locatable mining regulations, including compliance with applicable state and federal laws and regulations relating to air, water, and solid waste. Adoption of this alternative is outside the legal authority of the Forest Service and, therefore, was not analyzed in detail.

EXCAVATION WITHOUT CONSTRUCTION OF A TEMPORARY ACCESS ROAD

This alternative would use the existing dirt wheel tracks to access the excavation site. Because of the unimproved nature of this access and the steep slope near the existing test holes, excavation could not begin at the test holes moving outward until the periphery of the gravels is reached. Instead, excavation would begin 450 feet upslope of the test holes in order to provide safe access. This would involve greater soil disturbance and exposure due to the uncertainty of the extent and exact location of mineral deposits. Risk of sediment reaching Camp Creek would greatly increase, as would the cost of the claim operation and reclamation. This configuration of excavation would also present safety concerns that would otherwise be addressed by construction of an access road.

COMPARISON OF ALTERNATIVES

WATER QUALITY

Alternative 1 would divert less water from Camp Creek (0.1 cubic feet per second (cfs)) than alternatives 2 and 3 (0.33 cfs). The flow in Camp Creek is so small that total loss of flow, which could occur for short periods (less than a day) under all alternatives, would not affect water temperatures in the North Fork John Day River. At the scale of the North Fork John Day River, the effects resulting from the diversion of water for mining would not be measurable because flow in the river is so much greater than Camp Creek. At the scale of Camp Creek, water diversion would occur for short periods (1-2 hours) and extreme seasonal low flows are common.

The risk of sediment production would be least under Alternative 3 due to the reduced risk of landslide and mitigation and design measures to reduce the potential for overland flow. Mining at this site could not be accomplished without risk of a landslide. The risk for landslides would be greatest under Alternative 1 because the placer deposit would be mined from just above bedrock and the overburden² would not be supported. Alternatives 2 and 3 would remove the overburden before excavating the placer deposit, although the slope angle of the excavation site would still be greater than the angle of repose. There is a constant background risk of landslides because of the local geology,

² Overburden is the material that does not contain the desired mineral deposit.

topography, and soils. However, slides initiated by land management are uncommon within the analysis area, even though there are numerous roads and other activities occurring on the same soils and terrain as the Camp Creek claims. The temporary access road as designed under Alternative 2 would concentrate the overland flow of water, creating a risk of gully erosion and possible road failure if culverts become plugged. Alternative 3 would alleviate this risk by outsloping the road and installing rolling dips and water bars to disperse water across the lower slope.

Under Alternatives 1 and 2, the water diversion device at Camp Creek would continue to cause erosion at the inlet and the deteriorated condition of the pipe would risk sheet or gully erosion due to leaks or breaks. Alternatives 1 and 2 would risk overflow of the settling ponds, though the risk would be lower under Alternative 2 due to a shut-off valve on the pipe at the outlet. Alternative 3 would reduce this risk considerably by putting shut-off valves at the inlet and outlet of the pipe, locking the diversion device in a closed position when not in use, and draining the level of the ponds prior to seasonal shut-down of operations.

Alternatives 2 and 3 require a restoration bond to ensure restoration is satisfactorily completed. In addition, Alternative 3 would require that a certain level of live perennial vegetation exist one year after reclamation has occurred to be considered acceptable, which would better ensure protection of the soil.

Stream temperatures in the North Fork John Day River would not be measurably affected under any alternative.

THREATENED, ENDANGERED, AND SENSITIVE SPECIES

There would be no new activities under Alternative 1, so there would be no change in **chinook salmon, redband trout, steelhead, or bull trout** populations or habitat.

Temporary road construction, excavation, and snowplowing associated with Alternative 2 may affect, but would not likely adversely affect Threatened **Columbia River bull trout** and **Mid Columbia steelhead**, its Designated Critical Habitat, or **Essential Fish Habitat for chinook salmon**. Alternative 3 may also affect, but is not likely to adversely affect bull trout and steelhead or its Designated Critical Habitat, and it does not include the risks associated with snow plowing or temporary road design under Alternative 2. More sediment would likely be mobilized under Alternative 2 than under Alternative 3, though under either alternative sediment would be slight. Increases in sediment could potentially affect spawning and rearing. Bull trout use the North Fork John Day River downstream of the claims only as adults in the late fall to early spring; no spawning or rearing occurs within the analysis area. Little steelhead spawning occurs in the North Fork John Day River downstream of the Camp Creek placer claims. In Alternative 3, no mining activity would occur during steelhead spawning and the previous year's excavation would have been reclaimed and seeded, minimizing erosion. Sediment could still be generated by runoff over the road.

The mining activities under alternatives 2 or 3 may impact Sensitive **Columbia River redband trout** and **Mid-Columbia chinook salmon**, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species. Little redband trout spawning occurs downstream of the Camp Creek placer claims in

the North Fork John Day River. A few chinook spawn in the North Fork John Day River, downstream of the claims. Although mining activity would occur during chinook spawning periods, little impact to chinook would occur under either alternative. This is due to the limited spawning downstream of the mine and the low potential to mobilize sediment during the late summer when chinook are spawning (due to lack of rainfall).

Since Endangered **gray wolves** are not known to currently inhabit the District and existing activities do not affect its habitat, Alternatives 1, 2 and 3 would have no effect on individuals, nor the quality or quantity of habitat.

Under Alternatives 1 and 2, mining activities would occur during the winter so some disturbance to Threatened **Northern bald eagles** (e.g. human presence and equipment noise) could occur during the critical winter period. These alternatives may affect, but will not likely adversely affect northern bald eagles or their habitat. Alternative 3 contains mitigation requiring shutdown of operations during the winter use period, and so would have no effect on bald eagles.

The quality and availability of habitat for Threatened **Canada lynx** would not change under any alternative. In the event that lynx happen to pass through the area, Alternatives 1, 2, or 3 would have no effect on individuals, nor the quality or quantity of habitat. No direct, indirect, or cumulative effects would occur under any alternative because the mining would not occur within lynx habitat and lynx are not known to be on the District.

The quality and availability of habitat components for Sensitive **California wolverine, peregrine falcon, and Columbia spotted frog** would not change under any alternative. While it is possible for short-term disturbance to occur, the likelihood is relatively low. If any of these species happened to be in the area where mining activities were occurring, a brief disturbance could result in animals moving elsewhere. The proposed mining activities would not adversely affect habitat conditions or prey resources, nor cause long-term animal movements. Alternatives 1, 2, and 3 would have no impact on wolverine, peregrine falcon, and spotted frog individuals, nor the quality or quantity of their habitat.

CHAPTER III - ENVIRONMENTAL CONSEQUENCES

WATER

This Environmental Assessment hereby incorporates by reference the *Hydrology Report* in the Project Record (40 CFR §1502.21). The *Hydrology Report* is located in the *Project Analysis* section of the Project Record and contains the detailed data, methodologies, analyses, conclusions, maps, references, and technical documentation that the Hydrologist relied upon to reach the conclusions in this Environmental Assessment.

Existing Condition: The analysis area (see map in Appendix C) for effects on water resources is 14,147 acres and includes two subwatersheds within the North Fork John Day Sub-Basin: North Fork John Day/Turner (35C) and North Fork John Day/Otter (35D). Table 1 illustrates land ownership distributions. The North Fork John Day River is on the State of Oregon's 303(d) list of water quality limited streams because of high temperatures (Oregon DEQ 1996).

Camp Creek and the North Fork John Day River border the claim sites. The proposed operations are approximately 300 feet above Camp Creek and 500 feet above the North Fork John Day River. Consumptive water uses within the analysis area include: livestock watering, fire fighting, road construction and maintenance, mining, and wildlife. The primary non-consumptive uses of surface water are: wildlife, recreation, and aesthetics. The primary downstream consumptive uses are: irrigation, municipal domestic water supply, and industrial (John Day River Basin Plan, Oregon Water Resources Department, 1986).

Table 1: Land Ownership within the analysis area for water resources (acres).

| Subwatershed (SWS) | | Total Area (acres) | National Forest (acres) | Private (acres) | % of SWS in Nat'l Forest |
|--------------------|-------------|--------------------|-------------------------|-----------------|--------------------------|
| 35C | NFJD/Turner | 5,425 | 2,777 | 2,648 | 51% |
| 35D | NFJD/Otter | 8,722 | 7,330 | 1,392 | 84% |
| Total | --- | 14,147 | 10,107 | 4,040 | 71% |

The applicable standard for stream temperature in the analysis area is 64° F. Water temperatures have been measured in the mouth of Otter Creek in Subwatershed 35D for several years. Camp Creek temperatures were under 64° F during the stream survey of 1993, as were temperatures in other streams within the Otter Creek subwatershed during surveys in 1992 (see Water Resources Report for data).

However, the North Fork John Day River has consistently been warmer than the standard. For this reason, the State listed the NFJD on the 303(d) list for 1998/99.

Primary factors that affect the watershed include climate, hydrology, geology, soils, vegetation, and disturbance. The primary details for these factors are summarized below. For additional information, see the Camp Creek Placer Mine Plan Of Operations hydrology report on file at North Fork John Day Ranger District.

Climate: Annual precipitation is in the 20 to 25 inches per year range, most occurring as rain and snow between November and June. Spring and summer storms produce isolated, often intense, thunderstorms. The chance of a given storm producing intense rainfall (1.5 inches of rain during a 30 minute period) is 1 percent in this area (US Dept. of Commerce, 1955). January is the coldest month and August is the warmest month.

Hydrology: Camp Creek drains a watershed of 1,580 acres. Flows have been measured at 1.0 cubic foot per second (450 gallons per minute) on June 30, 1993, and estimated at 0.2 cubic feet per second (cfs) or 90 gallons per minute (gpm) on July 30, 2001. There is a gaging station on Desolation Creek, approximately 7 miles east of the confluence of Camp Creek and the North Fork John Day River. Comparing Camp Creek to Desolation Creek indicates that in most years, peak flows would occur in May or June with the lowest flows occurring between September and November. Given the pattern of discharge recorded on Desolation Creek, the flow in Camp Creek is likely less than 1 cfs (450 gpm) during the low flow period from July to Feb.

Geology: The flatter land at the top of the claim site is the toe of a landslide and debris flow area. This descends into a high gravel bar terrace (placer deposit), which is perched on steep flow volcanics. The claims are within the canyon of the North Fork John Day River. Slopes are 5 to 55 percent.

Soils: Soils within the analysis area have been divided into two general classes based upon the parent material. Residual soils formed from weathering of the underlying bedrock, while ash soils formed from wind-borne ash deposited from volcanic eruptions in the Cascade Range, notably Mount Mazama. Most of the claim site is on residual soil type 928, with the bench at the upper part of the claim site in ash soil type 68 (USDA Forest Service 1978). The soil depth ranges from a few inches to a few feet. These soil types are very unstable and prone to erode.

Vegetation: The vegetation type within and surrounding the claim site is primarily grass habitat with scattered ponderosa pine.

Disturbance: Both subwatersheds have a history of road building, timber harvest, grazing, fire, and mining (see Appendix B).

There are 57 miles of Forest Service system roads (includes open and closed roads) within the analysis area, with a density of 2.6 miles of road

per square mile of publicly owned land (Table 2). The road system database does not include roads created by repeated cross-country driving or roads abandoned prior to the initiation of record keeping. Most of the roads in this analysis area are in good condition.

Table 2: Roads within the water resources analysis area.

| Subwatershed (SWS) | | SWS Area (mi ²) | Road Miles | Road Density (mi/mi ²) | Amount of SWS in Roads (%) |
|--------------------|-------------|-----------------------------|------------|------------------------------------|----------------------------|
| 35C | NFJD/Turner | 8.5 | 25.4 | 3 | 1.7 |
| 35D | NFJD/Otter | 13.6 | 31.2 | 2.3 | 1.3 |
| Total | | 22.1 | 56.6 | 2.6 | 1.5 |

Notes: Road miles are publicly owned roads, both open and closed. An assumption used for calculation purposes is that roads are 30 feet wide, which is likely larger than most of the roads within the analysis area.

A review of literature shows that the effects of roads on annual total water yield are variable and that no or very little increase occurred when less than 8 percent of the watershed area was roaded (King and Tennyson 1984). Several studies showed that there may not be a statistically significant increase in average peak flows until about 12 percent of the watershed area is composed of roads or other compacted area (Harr, 1982). But King and Tennyson (1984) measured a variable but statistically significant change in discharge rates after as little as 1.8 percent of a watershed was affected by road construction. Currently roads occupy approximately 1.5 percent of the analysis area, so based upon the published research it is unlikely that there is a measurable effect of the existing transportation system on annual water yield or average peak flows.

Even though the existing road system may not be affecting annual water yield, roads account for most management-related soil erosion. Persistent low levels of fine sediment from road surfaces or ditches are transported into streams. Large volumes of sediment can enter streams from mass wasting of road fill material, hill slopes undercut by roads, or culverts that fail to drain water during extreme weather. Roads account for most of the artificial soil erosion, though only a percentage of the sediment is transported to the stream system.

Timber has been harvested on approximately 1,200 acres before the Tower Fire and about 300 acres after the fire. Harvest before the fire included a range of intensities from light thinnings to clearcuts. Harvest has removed some soil cover and disturbed soil, causing soil erosion. Past timber harvesting within the analysis area has likely elevated sediment yields. Past harvest practices also removed trees adjacent to streams, reducing stream shade, thus contributing to increased water temperatures.

Other disturbances have also affected water quality. Livestock and other herbivore grazing³ has reduced riparian vegetation (which helps maintain low water temperatures) and increased sedimentation along stream banks. The Pearson Pasture of the Texas Bar Allotment occurs in the northern part of the analysis area. This pasture has been rested since the Tower Fire in 1996, but grazing is expected to resume once the forage has recovered. The Central Desolation Allotment occurs in the southwestern part of the analysis area and is currently grazed. Cattle on this allotment generally stay in the gently sloping uplands above the North Fork John Day River canyon. Numerous mining activities have occurred in the past, particularly along the North Fork John Day River. These activities disturbed soils and in some cases modified the floodplain of the river. The only other currently active claim is the Apache Mine, approximately 1.5 miles west of Camp Creek Placer Mine, which operates in a similar manner. The Tower Fire burned approximately 6,045 acres within the analysis area (43%) in 1996 and the Bridge Creek Fire burned a small area in 2001.

Analysis of effects was done at the subwatershed scale. Water quality factors selected for analysis include water flow, sediment, and stream temperatures. These factors were chosen because they are thought to represent watershed condition and are most likely to be affected by proposed activities. Effects are described in terms of extent, duration, and magnitude. Some information may not be known about private lands within the analysis area or National Forest System Lands that were recently acquired.

The amount of sediment associated with a particular activity is difficult to quantify because of the erratic timing of introduction over large areas of land and the limited duration of sediment concentrations at a given location. As a result, sediment analysis was based on watershed conditions that can contribute to sedimentation, such as road length, area, and density; fire history; harvest history; and soil analysis. Effects on stream temperature were assessed by determining whether activities would change stream shade cast by riparian vegetation or the width of the stream channel.

Alternative 1 Environmental Consequences: Less than 0.1 cfs (45 gpm) of water would continue to be diverted from Camp Creek for a few hours a week, via the existing pipe. In the worst case of low flows, this would be 1/200th of the flow in the North Fork John Day River, which is not a meaningful amount with respect to the river. At the scale of Camp Creek, diversions for this project during the low flow period would reduce flow further and could dry up a portion of the creek for short periods of time. Because the Camp Creek system has developed in an environment of low flows, this diversion would not have a measurable effect (Project File).

At the existing pit, the placer gravel deposit appears to be at least 20 feet thick and excavation has created a slope approaching 100 percent, which has caused the stability of the slope to decrease. Under this alternative, hand tools would continue to be used

³ The number of domestic cattle on National Forest System land peaked in the 1950s, and has since declined, but the population of elk is estimated to be at the highest level since European settlement. Herds of horses were also kept in the Blue Mountains by Native Americans for approximately 100 years before European settlement.

to dig into the side of the slope where the gold-bearing gravel has been found. This would undermine the material above, increasing the risk of a landslide and creating a hazard to the operator. There is a constant background risk of landslides because of the local geology, topography, and soils. However, slides initiated by land management are uncommon within the analysis area, even though there are numerous roads and other activities occurring on the same soils and terrain as the Camp Creek claims. A large landslide would contribute extensive amounts of sediment to the creek or nearby North Fork John Day River, but since the probability for this occurrence is low, there is little risk.

The diversion device at the culvert where Forest Road 5507 crosses Camp Creek directs water against the road prism when the diversion is disconnected at the end of the season, causing some erosion that delivers sediment directly into Camp Creek. The existing pipeline is deteriorated and could break, leak, or be neglected to the extent that slopes between the diversion and the pond could erode or the pond could become overfilled causing a breach and gully erosion. The existing, unused wasteway at the second test pit provides a route by which overland flow could be diverted toward the North Fork John Day River. Cumulatively, these would add to the small amounts of sediment caused by timber harvest, fires, and grazing. However, no streams in the analysis area have been listed as Water Quality Limited by Oregon Department of Environmental Quality because of sediment. The existing road network also funnels sediment into streams within the analysis area, although the sediment resulting from the road network has been reduced over the last decade through road closures and obliterations (Project File). The cumulative effects of this alternative on sediment would not be measurable.

No restoration plan or bond would be required, so recovery of soil disturbance would not be ensured.

The ongoing prospecting under this alternative would not reduce stream shade, but would reduce stream flow. A reduced flow would indirectly affect the temperature of the North Fork John Day River by reducing the amount of cool water from Camp Creek that enters the relatively warmer North Fork John Day River. This effect would be of short duration, lasting at most a few hours per week. Since the amount diverted (1/200th of the flow of the river) is so small, and the difference in temperatures between the streams is slight, the effect on temperature in the North Fork John Day River would not be measurable, even when combined with the effects of past timber harvest, mining, road location, and potential re-initiation of grazing.

Alternative 2 Environmental Consequences: Alternative 2 would not noticeably affect the yield or timing of water flow within the analysis area. Although the claimants have a water right for 1 cfs (450 gpm), they propose to divert only 0.33 cfs (150 gpm) as needed to fill and replenish the settling ponds. The ponds would likely be filled early in the season, and then the diversion turned off. When the diversion is off, all water would remain in Camp Creek. The diversion would be turned back on when the ponds need to be replenished (e.g. after water had been lost to seepage, evaporation, or fire protection). Given the pattern of discharge measured at the nearby Desolation Creek water gage, flow in Camp Creek would likely be less than 1 cfs (450 gpm) and could be

less than 0.33 cfs (150 gpm) during the low flow period from July to February. However, filling an entire 12' x 20' x 4' pond (960 cubic feet) at 150 gpm (0.33 cfs) would take less than an hour. By approving alternative 2 or 3 and allowing excavation with heavy equipment, the claimant is able to mine from the top of the deposit, avoiding undermining the material above the gold-bearing gravel. This is a less risky proposition for landslides than proceeding with hand tools. Alternatives 2 and 3 also enhance the Forest Service's ability to meet its commitment to maintain and restore water quality under the Clean Water Act.

Use of heavy equipment would allow the deposit to be mined from the top and the overburden would not become undermined. This would be less risky for slope instability and operator safety. However, portions of the temporary access road and the mining excavation would increase slope angle, which would increase the risk of initiating or contributing to a landslide. The risk of landslides would increase with intense rain. While this Plan of Operations contains mitigation that would reduce the risk of slope instability, mining at this site could not be accomplished without risk of a landslide. If a large landslide were to occur, it would contribute substantially to the sediment load in Camp Creek and the North Fork John Day River for the period of time the sediment was in transit through the area. Even though the risk is increased, management-related landslides in similar terrain and geology have not been common. In addition, the risk is mitigated by excavating no more than ½ acre at a time.

While construction and maintenance of the temporary access road could concentrate enough water to flow overland and deposit sediment in Camp Creek, installation of energy dissipaters should mitigate this risk somewhat (Alternative 2 mitigation measure 3). However, if the ditches fail (culverts become plugged), water would be even more concentrated, with higher erosive force, which could cause rills or gullies and increase sedimentation. The actual excavation of placer gravel could also concentrate water. This would be mitigated by placing the road and its drainage system below the excavation so that any concentrated water would be captured and dispersed over the slope. As in Alternative 1, the diversion device at Camp Creek would continue to erode the prism of Forest Road 5507. The deteriorated pipeline would still risk sheet erosion due to leaks or breaks. The proposed installation of a shut-off valve at the pipe outlet would improve control of the water level in the ponds, but would not reduce the possibility of a breach if the valve should fail because water would still be allowed to enter the pipe network. If this occurred, sediment could be delivered to Camp Creek because there is no mechanism to draw the ponds down when a breach is imminent. In addition, retaining one of the ponds as a source of water for wildlife after reclamation is completed could cause erosion and sedimentation if a berm failure occurred. Because the claimant would no longer be present on site, a berm failure would likely go unnoticed for some time. The effects of this alternative, together with past, on-going, and future actions would not increase sedimentation in Camp Creek or the analysis area, unless a large landslide is initiated. There is a constant threat of natural landslides in the area, but based on the proposed mitigations and because management-related landslides are uncommon, this alternative would not increase the risk of landslides above the background level.

This alternative would likely have no effect on the temperature of Camp Creek. While water diversion would leave shallower water that would warm more quickly, there would also be less surface area to absorb solar radiation due to the channel's configuration. No tree cutting or other work would occur in the Riparian Habitat Conservation Area, so no additional sunlight would reach the stream. Flow modification associated with the water diversion could affect stream temperatures in Camp Creek (which is not fish-bearing). However, a reduction in the discharge from Camp Creek would not be sufficient to measurably affect stream temperatures in the North Fork John Day River (303(d) listed for temperature), because no more than an amount equal to 2 percent of the flow of the North Fork John Day River would be diverted.

Alternative 3 Environmental Consequences: The effects of Alternative 3 on water flow and stream temperatures in Camp Creek and the North Fork John Day River would be the same as described under Alternative 2.

The risk of initiating or contributing to a landslide caused by increasing the slope angle would be the same as under Alternative 2. However, more mitigation measures would be implemented to reduce overland flow (Alternative 3 mitigation measures 4, 7, 13, 14) and to reduce the supply of sediment available for erosion (Alternative 3 mitigation measures 3, 8, 9, 15). In addition, installing a shut-off valve on the pipe at the point of diversion as well as at the discharge end, and locking the upper valve closed when not in use would reduce the possibility of the ponds overflowing. While ponds generally have a spillway or overflow pipe to relieve high water without immediate human intervention, this type of device would not be appropriate at this site. This type of device could create a wasteway that would be visible from Forest Road 5506 and the North Fork John Day River, which could impact the Outstandingly Remarkable Scenic Value of the Wild and Scenic river.

The risk that the temporary access road would concentrate overland flows would be reduced by outsloping the road surface instead of constructing ditches and installing rolling dips and waterbars to move water off the road. The berm below the road proposed by the claimant would not be constructed, so overland flows would not become channeled and the risk of erosion and sedimentation would be less than under Alternative 2.

Cumulative sediment increases would be less under Alternative 3 because of the additional mitigations, change in road design, and reduced risk of a landslide.

FISH POPULATIONS AND HABITAT

This Environmental Assessment hereby incorporates by reference the *Fish and Aquatic Habitat Specialist's Report* in the Project Record (40 CFR §1502.21). The *Fish and Aquatic Habitat Specialist's Report* is located in the *Project Analysis* section of the Project Record and contains the detailed data, methodologies, analyses, conclusions, maps, references, and technical documentation that the Fisheries Biologist relied upon to reach the conclusions in this Environmental Assessment.

Existing Condition: The analysis area considered for fish includes a third subwatershed 35B (see Water section for details on previous subwatersheds) because of the potential effects of the proposed snow plowing on fish. There are approximately 124 miles of streams within the analysis area (see Table 3). No fish are present in Camp, Sheep, Otter, Sulpher, Bridge, or Raspberry creeks. Texas Bar Creek hosts steelhead (*Oncorhynchus mykiss*), and redband trout (*Oncorhynchus m.*). The North Fork John Day River hosts steelhead, redband trout, chinook salmon (*Oncorhynchus tshawytscha*), and is migratory habitat for bull trout (*Salvelinus confluentis*) (see map in Appendix C).

Table 3: Streams (miles) within the analysis area for fish.

| Subwatershed | | Fish-bearing stream (Class 1 & 2) | Perennial, non-fish-bearing streams (Class 3) | Intermittent streams (Class 4) | Total |
|--------------|-------------|--------------------------------------|--|-----------------------------------|-------|
| 35B | Texas Bar | 6.3 | 11.5 | 25.9 | 43.7 |
| 35C | NFJD/Turner | 3.8 | 5.9 | 19.3 | 29.0 |
| 35D | NFJD/Otter | 4.0 | 21.8 | 25.9 | 51.7 |

Habitat parameters chosen for analysis include: Water temperature, sedimentation (Wolman pebble counts, and substrate embeddedness), and habitat complexity (pool quantity and quality). Water temperature and sediment in the system is discussed in detail in the “Water” section. Since no activities are proposed within riparian areas, there should be no impact on the amount of large wood or shade so these parameters are not discussed here. Lastly, there are no known chemical contaminants in the analysis area and this is not expected to change with the proposed project.

Much of the available habitat data (e.g., pool and riffle widths and lengths) are based upon visual estimates. These estimates have been calibrated from a measured subset, but the variability inherent to visual estimation is a source of potential error. Other components of the habitat data (e.g., pool frequency) depend upon the judgment of the surveyor as to which units to count. Consistency between surveyors in such judgment has not been demonstrated. This weakens comparisons to objectives identified in PACFISH or the Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin.

The National Marine Fisheries Service (NMFS) and the US Fish and Wildlife Service (FWS) have established criteria to rate the functionality of certain water quality and habitat elements. Some of these elements are discussed below and have been rated using their criteria.

Substrate Embeddedness: Substrate embeddedness is a habitat element that measures the potential of an area to provide adequate spawning substrate based on the amount of fines (silt, sand) present. Habitat surveys were completed on Texas Bar Creek during 1992 and on Camp Creek in 1993. The criteria for rating this element are: less than 20

percent embedded (functioning appropriately), 20-30 percent embedded (functioning at risk), and greater than 30 percent embedded (functioning at unacceptable risk). Because the habitat surveys were conducted before development of these criteria, substrate embeddedness was visually estimated as either being above or below 35% and averaged for each reach. Embeddedness was recorded as averaging greater than 35% for Camp Creek Reach 2, and less than 35% for Camp Creek Reach 1 and all three reaches of Texas Bar Creek. Based on these estimates and because embeddedness was not broken down into the percentages used by NMFS, Camp Creek and Texas Bar Creek would both be rated as functioning at risk.

Pool Frequency: Pool frequency was assessed in 1992 for Texas Bar Creek and in 1993 for Camp Creek using the Forest Service Region 6 protocol. The criteria used for rating pool frequency were taken from a study of the median pool density of unmanaged streams within the Blue Mountains ((McKinney et al., 1996). A stream or reach is considered functioning appropriately if it meets or is greater than the median pool frequency. If pool quantity is similar to the median value but quality of pools is lacking, then this element is considered functioning at risk. If pool quantity is considerably lower than the median value, then it is functioning at unacceptable risk. Only reaches 1 and 2 of Texas Bar Creek were above the median pool density. Pool depth is poor in all reaches. Pool complexity is also poor, based on the percent of pools with at least one piece of large woody debris. Table 4 displays these results for each reach sampled. Based on these results, Texas Bar Creek would be considered functioning at risk and Camp Creek would be considered to be functioning at unacceptable risk.

Table 4: Pool frequency and quality within the analysis area.

| Stream | Reach | Pools/ mile | Wetted width (ft) riffle | ICBEMP standard | % with Large Wood | Residual pool depth |
|---------------------------------|-------|----------------|--------------------------------|--------------------|-------------------------|---------------------------|
| | | | | | | |
| | 2 | 34.9 | 5.8 | 25.5 | 6.7 | 1.0 |
| | 3 | 16.0 | 3.7 | 39 | n/a | 0.7 |
| Camp | 1 | 21.9 | 3.8 | 39 | 20 | 1.1 |
| | 2 | 5.6 | 2.9 | 39 | 33 | 1.1 |
| North Fork John Day River | 1 | 6.7 | 43.6 | 2.8 | 18 | |
| | 2 | 0.5 | 77.9 | 1.5 | | |
| | 3 | 1.2 | 71 | 1.5 | | |
| | 4 | 0.8 | 71.5 | 1.5 | | |
| | 5 | 6.6 | 40 | 2.8 | | |

Wetted Width-to-Depth Ratio: Pool width to depth ratios were calculated from data collected for Texas Bar and Camp creeks during 1992 and 1993

stream surveys. The wetted width to depth ratios presented in Table 5 are calculated in pools according to PACFISH and Fish and Wildlife Service specifications, and so are not the more commonly used riffle bankfull width to depth ratios. The standard for wetted width to depth ratio is less than 10 (functioning appropriately), 10 to 12 (functioning at risk), and greater than 12 (functioning at unacceptable risk).

Table 5: Width-to-Depth ratios within the fisheries analysis area.

| Subwatershed | Reach | Pacfish (pool) wetted width/depth | Bankfull (pool) width/depth |
|--------------|---------------------|-----------------------------------|-----------------------------|
| 35B | Texas Bar, Reach 1 | 5.6 | 12.4 |
| | Texas Bar, Reach 2 | 5.7 | 8.8 |
| | Texas Bar, Reach 3 | 4.9 | 4.7 |
| 35D | Camp Creek, Reach 1 | 3.3 | 2.2 |
| | Camp Creek, Reach 2 | 2.6 | 5.3 |

Road Density and Location: Overall, Watershed 35 has 1.6 miles of road per square mile (170.3 total miles of road). Fifty-one percent of the watershed is within the North Fork John Day Wilderness. The road density outside of the wilderness is 3.3 miles per square mile (open and closed). There are 47.9 miles of road within Riparian Habitat Conservation Areas, 23.2 miles of which occur along fish-bearing streams. Roads within this watershed are concentrated in Riparian Habitat Conservation Areas, and 21% of all roads in the watershed are within Riparian Habitat Conservation Areas of perennial streams. The clearing of vegetation and compaction caused by road construction has likely increased overland flow and channelized water, increasing runoff and sedimentation in streams near roads. The criteria NMFS and FWS have established for rating this element are: less than 2 miles of road per square mile and no valley bottom roads (functioning acceptably), 2 to 3 miles of road per square mile with some valley bottom roads (functioning at risk), and greater than 3 miles of road per square mile (functioning at unacceptable risk). Table 6 describes the length of roads within the Riparian Habitat Conservation Areas within the watershed for National Forest System Land only. Data was obtained from GIS Analysis. Based on this data watershed 35 would be considered functioning at risk.

Table 6: Road densities within the analysis area.

| Subwatershed (SWS) | SWS area (mi ²) | Road Density (mi/mi ²) Outside | Road Density Within 300' of Class 1 & | Road Density Within 150' of Class 3 | Road Density Within 100' of |
|--------------------|-----------------------------|--|---------------------------------------|-------------------------------------|-----------------------------|
|--------------------|-----------------------------|--|---------------------------------------|-------------------------------------|-----------------------------|

| | | RHCAs | 2 Streams | Streams | Class 4 streams |
|-----|------|-------|-----------|---------|-----------------|
| 35B | 9.8 | 4.3 | 9.1 | 6.2 | 5.3 |
| 35C | 8.5 | 3.3 | 8.3 | 2.1 | 2.0 |
| 35D | 13.6 | 2.1 | 7.3 | 2.0 | 2.0 |

Riparian Conservation Areas⁴: The riparian conservation area element is a measure of disturbance to riparian vegetation. The criteria for rating this element are: greater than 80 percent of the area intact (functioning acceptably), 70 to 80 percent intact (functioning at risk), less than 70 percent intact (functioning at unacceptable risk). On National Forest System Lands only, 373 acres of timber have been harvested within 150 feet of perennial streams (8% of the area in this zone). Based on data in Table 7, Subwatershed 35D would be rated as functioning acceptably, while Subwatershed 35B would be rated functioning at risk, and Subwatershed 35C would be functioning at unacceptable risk.

Table 7: Timber harvest adjacent to perennial streams

| Subwatershed | Timber harvest within 150' of perennial streams | |
|--------------|---|---------|
| | Acres | Percent |
| 35B | 118 | 22% |
| 35C | 64 | 35% |
| 35D | 90 | 12% |

Alternative 1 Environmental Consequences: Mining by hand and exploration work would continue. Loose material in the existing pit located on the side of the ridge above Camp Creek would continue to erode downslope into Camp Creek. Historical washing of materials at this pit has caused some gully of the slope leading to Camp Creek and material continues to move down this gully following rain events. Sediment that makes it to Camp Creek could eventually travel downstream into the North Fork John Day River, where it could affect fish populations and habitat. This would contribute to substrate embeddedness and suspended sediment, and could contribute to mortality of juvenile fish.

Alternative 2 Environmental Consequences: Under this alternative, the Plan of Operations would be approved as submitted. Because the mining would be located well outside any Riparian Habitat Conservation Areas there would be no change in stream shade, water temperature, large wood, or bank condition. Cumulatively, there would be no increase in stress on fish related to a change in stream temperature. Also, the present condition of habitat elements downstream in the North Fork John Day River (where fish are present) would not change.

⁴ This habitat element has the same definition as PACFISH Riparian Habitat Conservation Areas.

The primary risk to fish or aquatic habitat in this alternative would be via effects to soils or hydrologic characteristics of the watershed, such as increased erosion and delivery of additional fine sediment to stream channels. Construction of the temporary access road and excavation of minerals would increase soil disturbance, which could increase sediment in Camp Creek and the North Fork John Day River. Adding sediment to streams could increase the percent fines in the substrate and increase substrate embeddedness. Increasing fines could decrease the carrying capacity for many species of insects and mollusks, an important source of food for trout. Increasing substrate embeddedness could also reduce the quality of fish rearing habitat by filling spaces between larger substrate components (i.e. gravels and cobbles), which reduces escape and hiding cover for available for fry and juvenile fish. An increase in suspended sediment for extended periods of time could also lead to direct mortality of young fish unable to avoid sediment plumes.

Some sediment would be expected as a result of snowplowing, and associated snow berms would accumulate runoff and channel it off the road (see map in Appendix C). The most probable locations that would experience increased sedimentation from snow plowing is where Forest Road 5507 crosses Texas Bar Creek and a few other Class 3 and Class 4 streams along the proposed route.

Though there is potential for sediment mobilization, several mitigation measures would be used to ensure very little if any sediment reaches streams. The temporary road would be water barred in such a way as to prevent channelization of runoff and erosion of the temporary roadbed. A berm would also be constructed downslope of the road to contain placer gravel on site. Stockpiled fine sediments would be stored in shallow depressions to prevent downslope transport, and no more than 100 cubic yards of material would be stockpiled at a given time. Water used for processing would circulate through settling ponds in a closed system and no overland flow would be permitted. Reclamation would be continuous and would limit the amount of exposed soil at any one time. Some fine sediment (which is most likely to be mobilized) would be mixed with other tailings and backfilled into excavated areas to minimize the potential for soil mobilization. Bare soil would be seeded prior to winter or following reclamation to help stabilize soils and reduce erosion. Because of these mitigation measures and the distance of this mining operation to Camp Creek (300 feet) or the North Fork John Day River (500 feet), there would be a low probability that this project would negatively affect water quality or aquatic species.

The proposed mining would cumulatively add to existing human-caused and natural disturbance within the identified subwatersheds. The Tower Fire burned approximately 50% of subwatersheds 35B, 35C, and 35D in 1996. Timber harvest, grazing, and widespread historic mining all removed vegetation, which provided soil cover on uplands and stream shade, bank stability, and hiding cover along streams. Degradation of these characteristics could decrease pool quality and frequency. Private lands, although a small portion of the affected subwatersheds, have also experienced these activities. The Apache 3 placer claim, located downstream of the Camp Creek placer claims, is a similar type of mining operation and would have the potential to increase sediment production when operations begin. Road density in the North Fork John Day/Otter Subwatershed (35D) would slightly increase for up to 10 years due to

construction of the temporary access road. This increase in road density could also lead to an overall increase in sedimentation and runoff, potentially leading to an increase in suspended sediments downstream in the North Fork John Day River. Future planned activities include improving fish passage within the analysis area by removing culvert barriers at road crossings. This could introduce sediment directly into associated streams for 2 to 3 years. The proposed action, when added to these past and future activities, would potentially incrementally increase soil erosion and sedimentation, highest during the 2 to 3 years following the culvert replacements.

Alternative 3 Environmental Consequences: Additional mitigation measures associated with this alternative include: no snow plowing, outslope the temporary road to avoid ditches that would channelize water, no berm below the road to avoid channelizing water, no mining activities during saturated soil conditions to prevent any unnecessary rutting, and drain ponds prior to November 1st to prevent overflow during winter and spring storms. Draining would be accomplished with a sprinkler or perforated pipe to disperse water across the slope to avoid erosion. These mitigations would reduce the likelihood of sediment reaching streams. As under Alternative 2, stream temperatures would not change. The likelihood of habitat changes due to an increase in sedimentation is much less under this alternative due to the additional mitigations.

THREATENED, ENDANGERED, AND SENSITIVE FISH SPECIES

Existing Conditions: In June of 1998, the United States Fish and Wildlife Service listed Columbia River bull trout as Threatened under authority of the Endangered Species Act, and Mid-Columbia steelhead were listed as Threatened by the National Marine Fisheries Service in March 1999 (Federal Register 1998 and 1999). The John Day River system, which includes the analysis area, is presently proposed as designated critical habitat for Mid-Columbia steelhead trout as well. Mid-Columbia chinook salmon, bull trout, steelhead, and redband have also been listed by the Regional Forester as Sensitive, requiring special management consideration to reduce the likelihood of their becoming listed as Endangered or Threatened. The Regional Forester designated the North Fork John Day River as essential fish habitat for chinook.

Chinook salmon: Chinook salmon throughout the North Fork John Day River. Most spawning and rearing occurs upstream of Camp Creek.

Redband/steelhead trout (also a management indicator species⁵): Redband trout potentially spawn and rear in all fish-bearing streams within the analysis area. Most steelhead spawning occurs in tributary streams to the North Fork John Day River; though some spawning may occur in the North Fork John Day River downstream of the project area. Steelhead numbers have been declining at a rate of about 15 percent a year since 1985 based on spawning surveys throughout the John Day Basin.

⁵ Management Indicator Species are species selected in the Forest Plan to represent the welfare of other species that use the same habitat. The habitat requirements of the selected indicator species are presumed to represent those of a larger group of species.

Bull trout: Adult bull trout use the section of the North Fork John Day River adjacent to the claim site as migratory habitat during the late fall to early spring. Bull trout were apparently once widespread in the John Day River system, but now are restricted to about 25 percent of their former range (Buchanan et al. 1997), occupying primarily the higher elevation and upper headwater streams.

Alternative 1 Environmental Consequences: There would be no new activities under this alternative, so there would be no additional effects to **chinook salmon, redband trout, steelhead, or bull trout** populations or habitat.

Alternatives 2 and 3 Environmental Consequences⁶: Based on the effects described earlier, temporary road construction, excavation, and snowplowing (only associated with Alternative 2) **may affect**, but is **not likely to adversely affect** Threatened Columbia River bull trout and Mid Columbia Steelhead or its Designated Critical Habitat (Project File). More sediment is likely to be mobilized with Alternative 2 than with Alternative 3, though under either alternative sediment would be slight. Increases in sediment primarily affect spawning and rearing. Bull trout use in this area is only by adults in the late fall to early spring; no spawning or rearing occurs downstream of the project area. Little steelhead spawning occurs in the North Fork John Day River downstream of the Camp Creek placer claims. No mining activity would occur during steelhead spawning and the previous year's excavation would have been reclaimed and seeded, minimizing erosion. Sediment could still be generated by runoff over the road.

The mining activities **may impact** Columbia River Redband trout and Mid Columbia Chinook Salmon or their Habitat, but will **not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species** (Project File). Little redband trout spawning occurs downstream of the Camp Creek placer claims. A few chinook spawn downstream of the project area in the North Fork John Day River. Mining activity would occur during chinook spawning periods. Due the limited spawning downstream of the mine and the low potential to mobilize sediment during the late summer when chinook are spawning (due to lack of rainfall), little impact to chinook salmon is expected from this project.

The Camp Creek placer claim occurs within the area designated as Essential Fish Habitat for the Mid-Columbia spring chinook salmon. Based on that analysis, operations occurring on the Camp Creek placer claims would be **unlikely to adversely affect** Essential Fish Habitat that has been designated for Mid-Columbia spring chinook salmon (Project File).

⁶ As required by the Endangered Species Act, the Forest Service consulted with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service on its "may affect – not likely to adversely affect" findings. The Fish and Wildlife Service issued a letter of concurrence on June 16, 2003. The National Marine Fisheries Service issued a letter of concurrence on July 25, 2002.

WILDLIFE HABITAT

This Environmental Assessment hereby incorporates by reference the *Terrestrial Wildlife Report and Biological Evaluation* in the Project Record (40 CFR §1502.21). The *Terrestrial Wildlife Report and Biological Evaluation* is located in the *Project Analysis* section of the Project Record and contains the detailed data, methodologies, analyses, conclusions, maps, references, and technical documentation that the Wildlife Biologist relied upon to reach the conclusions in this Environmental Assessment.

Habitats within the Camp Creek analysis area include mixed conifer forest, ponderosa pine forest, riparian areas, and open scab flats and meadows. The immediate claim site is comprised of bench grassland, and open ponderosa pine that was partially burned in the Tower Fire of 1996. The quantity and quality of wildlife habitat was assessed using aerial photographs, district records, and field reconnaissance. Where quantitative information is available, it is presented.

In order to adequately address cumulative effects on wide-ranging species, the scale of analysis for wildlife includes four subwatersheds: North Fork John Day/Meengs (35A), Texas Bar (35B), North Fork John Day/Turner (35C), North Fork John Day/Otter (35D), and the North Fork John Day River Watershed. Past, ongoing, and future foreseeable projects include: roads, livestock grazing, recreation, the Tower and Bridge Creek fires, past timber harvest, the proposed South Camp timber sale, and other claim sites. A land exchange between the Forest Service and Louisiana-Pacific Corporation occurred about 10 years ago in this area. The claim site is bounded by private land to the north and east, and about 40% of the subwatersheds considered for analysis is currently in private ownership.

TERRESTRIAL MANAGEMENT INDICATOR SPECIES

Existing Condition: Management Indicator Species were identified by the Forest Plan to represent a larger group of wildlife species presumed to share similar habitat requirements:

Rocky Mountain elk: Elk were selected to represent general forest habitat and winter ranges. Elk are common within the analysis area and numbers are near the desired population level, or “management objective”, set by Oregon Department of Fish and Wildlife. The analysis area contains big game winter range, but the immediate area around the claim site is summer range. The nearby Tower Fire reduced hiding cover for big game over a large area, however forage quantity and quality is currently high, and road densities are relatively low.

American marten: This species represents mature forests and riparian areas. Habitat is present along the North Fork John Day River and some tributaries, and particularly within the North Fork John Day Wilderness portion of the analysis area.

Pileated woodpecker and Primary cavity excavators guild: The pileated woodpecker represents dead/down tree habitat in mature and old growth mixed conifer stands. The primary cavity excavators guild represents nearly 100 vertebrate species that depend upon dead standing trees and down logs for

reproduction and/or food gathering. Dead standing tree and down wood densities vary within the analysis area. Areas affected by the Tower Fire have relatively high snag densities. Private land and areas that have been harvested in the past have fewer large snags and down logs. Reproductive habitat for pileated woodpecker appears to be adequate in Dedicated Old Growth stand numbers 1191 and 2212, in the Wilderness, and in additional scattered patches in managed areas.

Northern three-toed woodpecker: This species represents dead/down tree habitat in mixed conifer stands dominated by mature and old growth lodgepole pine stands. Nesting habitat is not available in the analysis area.

Alternative 1 Environmental Consequences: Mining activity would continue as in the past, using hand tools, existing roads, and the existing pipe system, and therefore, existing conditions would not change. Mining activities are currently allowed during the winter, which could cause some stress to big game during the critical winter use period. This low level of activity would generally not affect other management indicator species and their habitats potentially occurring in the area.

Alternative 2 Environmental Consequences: The activities proposed under this alternative would slightly affect management indicator species and their habitats. Around seven trees would be cut during road construction and excavation and left on site to provide down wood habitat. The excavation, access road, and processing area would involve less than 1 acre at a time. Reclamation of excavated areas and the associated portion of access road would occur concurrently with new excavation to keep disturbance within the 1-acre limit. Reclamation upon completion of activities would include all areas of disturbance, and tree seedlings would be planted to replace the trees removed. Human disturbance could cause short-term movements of these species, but populations would not be negatively affected. Mining activities would be allowed during the winter, which could cause some additional stress to big game during the critical winter use period. The proposed activities in combination with past, ongoing, and future foreseeable projects would not adversely affect management indicator species because of the limited duration and intensity of activities, and the small percentage of area affected.

Alternative 3 Environmental Consequences: Effects to wildlife would be similar to Alternative 2, with the exception that activities would be seasonally restricted, thereby reducing disturbance during the critical winter period.

THREATENED, ENDANGERED, AND SENSITIVE TERRESTRIAL SPECIES

Existing Condition: This section of the Environmental Assessment constitutes the Terrestrial Wildlife Biological Evaluation. Threatened and Endangered species are managed under the Endangered Species Act to ensure that federal actions do not result in a downward population trend. Sensitive species are those recognized by the Pacific Northwest Regional Forester as needing special management to prevent being placed on Federal or State endangered species lists. Based on local studies, surveys and monitoring, as well as published literature regarding distribution and habitat use, the

following Threatened, Endangered, and Sensitive wildlife species have the potential to occur in or adjacent to the analysis area:

Gray wolf (Endangered): The gray wolf could occur in the area, although use has not been documented. A radio-collared gray wolf dispersed to the Blue Mountains from Idaho in March 1999, and was captured on the District for relocation to Idaho. Another wolf was killed in October 2000, north of Ukiah. Other wolves have been reported in the Blue Mountain region. The Idaho wolf population has been increasing steadily, and dispersion into the Blue Mountains will likely continue. The Blue Mountains offer relatively high prey densities, large tracts of publicly owned land, and low human populations

Northern bald eagle (Threatened): Bald eagles (typically single birds) use the North Fork John Day River corridor during the winter months (December through March) while foraging and day roosting. The Camp Creek claims are located approximately 500 feet above the North Fork John Day River. The ponderosa pine stand within and surrounding the claim site does not provide roosting habitat for bald eagles because the stand is relatively open and does not contain prominent snags or trees that could be used by eagles as vantage points for viewing the river. Nesting by the bald eagle is not known to occur on the District.

Canada lynx (Threatened): The Blue Mountains are considered to be on the fringe of the range of Canada lynx. Lynx are known to have occurred in the area historically, and several recent, but unconfirmed sightings have been reported in the Blue Mountains. Surveys have been ongoing and to date no lynx have been detected. The majority of potential lynx habitat is found at higher elevations (>5000 feet) in cool, moist habitat types. The majority of the analysis area is not within lynx habitat, but a portion of the North Fork John Day/Otter Subwatershed (35D) is within the Kelsay Lynx Analysis Unit. The Camp Creek mine is approximately 3 air miles away from this mapped lynx habitat.

California wolverine (Sensitive): Wolverines are wide-ranging carnivores that could be present in the analysis area at any time. No wolverine presence has been documented on the District since surveys began in 1991; however, several sightings have been reported in the Blue Mountains.

Peregrine falcon (Sensitive): This species is not known to occur within the analysis area, but has been observed foraging on the District during the non-breeding season. Potential nesting habitat on the District has been surveyed since 1991, and no peregrine nesting has been found.

Columbia spotted frog (Sensitive): *Rana luteiventris* have been observed in the analysis area. None are known to occur along Camp Creek, but no formal surveys have been completed. Suitable habitat may be present along the creek, and possibly in nearby ponds.

Alternative 1 Environmental Consequences: Since **gray wolves** are not known to currently inhabit the District and existing activities do not affect its habitat, Alternative 1 would have **no effect** on individuals, nor the quality or quantity of habitat (Project File).

Since mining activities are currently allowed during the winter, some disturbance to **bald eagles** (e.g. human presence and equipment noise) could occur during the critical winter period. Therefore, this alternative **may affect, but will not likely adversely affect** northern bald eagles or their habitat⁷ (Project File).

The quality and availability of habitat for **lynx** would not change under this alternative. In the event that lynx happen to pass through the area, Alternative 1 would have **no effect** on individuals, nor the quality or quantity of habitat (Project File).

The quality and availability of habitat components for **wolverine** or **peregrine falcon** would not change. In the event that wolverine or peregrine falcons happen to pass through the area, Alternative 1 would have **no impact** on individuals, nor the quality or quantity of habitat (Project File).

No change in **spotted frog** habitat is expected, so there would be **no impact** on this species or its habitat (Project File).

Alternatives 2 and 3 Environmental Consequences: The proposed activities under **either alternative would have no effect on wolves**, nor on the quality or quantity of their habitat. Wolves are not known to be in the area, and no denning or rendezvous sites are known. Cumulatively, the proposed activities in combination with other past, ongoing, and future foreseeable projects would not affect wolves or their habitat because of the small percentage of area impacted, and the current lack of wolf sightings in this area (Project File).

Under Alternative 2, bald eagle prey resources such as fish and small mammals would not likely be impacted, and large pine and fir trees near waterways (downslope of the claims) would not be affected. However, bald eagles wintering in the area could be affected by mining activities such as human presence and equipment noise. Therefore, **Alternative 2 may affect, but will not likely adversely affect northern bald eagles** or their habitat. Under Alternative 3, disturbance to wintering bald eagles would not occur, since work would be suspended during the winter. Large pine and fir trees near waterways (downslope of the claims) would not be affected, and prey resources such as fish and small mammals would not likely be impacted. Therefore, **Alternative 3 will have no effect on the northern bald eagle** (Project File). The proposed activities, in combination with past, ongoing, and future foreseeable projects, would not adversely affect bald eagle because disturbance would be limited to less than 1 acre at a time and intensity of operations would be limited to one to two people operating equipment from April to November.

The activities proposed under **either alternative will have no effect on the Canada lynx** or its habitat. No direct, indirect, or cumulative effects are expected because the mining project does not occur within lynx habitat and lynx are not known to be on the District (Project File).

Alternatives 2 or 3 will have no negative impact on wolverine or peregrine falcon (Project File). While it is possible for short-term disturbance to occur, the likelihood is

⁷ As required by the Endangered Species Act, the Forest Service consulted with the U.S. Fish and Wildlife Service on its "may affect – not likely to adversely affect" findings. The Fish and Wildlife Service issued a letter of concurrence on June 16, 2003.

relatively low. If a wolverine or peregrine falcon happened to pass through the area where mining activities were occurring, a brief disturbance could result in animals moving elsewhere. The proposed mining activities would not adversely affect habitat conditions or prey resources, nor cause long-term animal movements. The proposed activities in combination with past, ongoing, and future foreseeable projects would not adversely affect wolverine because of the small percentage of area affected.

Alternatives 2 or 3 would have no negative impact on spotted frogs. Proposed activities under either alternative would maintain the quality of spotted frog habitat. Human disturbance could cause short-term displacement of spotted frogs. The proposed activities in combination with past, ongoing, and future foreseeable projects would not adversely affect spotted frogs because of the limited duration and intensity of activities, and the small percentage of area affected (Project File).

SPECIES OF INTEREST

Existing Conditions: Neotropical migratory birds occupy a wide variety of habitats. Most birds in eastern Oregon ponderosa pine forest are “foliage-gleaners”, which forage primarily by gleaning collecting insects or fruit from vegetation rather than from the ground (Sallabanks et al. 2001). Priority habitat types in the *Conservation Strategy for Landbirds* (Altman 2000), such as “Dry Forest” and “Riparian Woodlands”, are present in the analysis area. Riparian vegetation is particularly important to neotropical migratory songbirds (Sallabanks et al. 2001). Camp Creek, the North Fork John Day River, and small seeps, springs, and ponds contain a variety of riparian habitat conditions. Riparian habitat conditions are poor where mining, roads, and other activities have degraded it, and good in the North Fork John Day Wilderness and some other areas. Dry forest and mixed conifer areas vary in conditions as well. The Tower Fire eliminated a great deal of habitat, and private lands in the area have been heavily managed, while the Wilderness provides undisturbed conditions.

Alternative 1 Environmental Consequences: There would be no change in current mining activities, so existing conditions would not change. Area bird species and their habitats potentially occurring in the area would will generally not be affected by this low level of activity and small amount of area affected (Project File).

Alternatives 2 and 3 Environmental Consequences: Disturbance associated with mining (noise and motion) could result in reduced foraging and nesting success for some species; however, due to the small amount of area involved, there would be no measurable impacts (Project File). The proposed activities in combination with past, ongoing, and future foreseeable projects would not adversely impact neotropical migratory birds because the incremental increase of this project would be so small.

NOXIOUS WEEDS

This Environmental Assessment hereby incorporates by reference the *Noxious Weed Report* in the Project Record (40 CFR §1502.21). The *Noxious Weed Report* is located in the *Project Analysis* section of the Project Record and contains the detailed data,

methodologies, analyses, conclusions, maps, references, and technical documentation that the Range Management Specialist relied upon to reach the conclusions in this Environmental Assessment.

Existing Condition: Past mining, road construction, grazing, timber harvest, and other soil disturbing activities within the analysis area have provided environments for noxious weed species establishment, vectors for noxious weed dispersal, and infestations to provide reproductive material. However, noxious weed surveys in the vicinity of the claims did not locate any infestations of weeds currently under inventory. There are five diffuse knapweed sites (totaling 5 acres) and 16 sulfur cinquefoil site (totaling 100 acres) along the access route (Forest Road 55, between Highway 395 and the junction with Forest Road 5507). The diffuse knapweed is under treatment and at very low densities, but the sulfur cinquefoil remains untreated with some sites containing high plant densities and occasional sites occurring at roadside. The closest high priority, "new invaders/established" noxious weed sites—one sulfur cinquefoil and one spotted knapweed (virtually eradicated)—are located along Forest Road 5506 below the claims. Also along Forest Road 5506, but further from the claim, are additional spotted knapweed, diffuse knapweed, and sulfur cinquefoil sites (Table 8 and map in Appendix C).

Three low priority, "established" weeds (Canada thistle, bull thistle, and St. Johnswort) are widespread on the Forest and are so extensive that they are not generally inventoried. St. Johnswort and bull thistle are less invasive and/or persistent than the high priority weeds, and generally do not out-compete desirable vegetation in the mid to late stages of plant community development.

Table 8: Weeds adjacent to the Camp Creek placer claims and access route.

| Noxious Weed Species | # of Sites/ Total Acres | Treatment Prioritization Category | Remarks |
|--|----------------------------|--|--|
| <i>Centaurea diffusa</i> (diffuse knapweed) | 6/5 | New Invader/ Established ¹ | An annual or short-lived perennial; spread by animals, wind, vehicles; highly competitive. |
| <i>Centaurea biebersteinii</i> (spotted knapweed) | 3/3 | New Invader/ Established | A short-lived perennial; tolerates shade; spread by vehicles, animals; highly invasive; establishes quickly after introduction. |
| <i>Potentilla recta</i> (sulfur cinquefoil) | 20/150 | New Invader/ Established | A long lived perennial; adapted to many different site conditions – can invade properly grazed rangeland in good condition; spread by vehicles, animals. |

| Noxious Weed Species | # of Sites/ Total Acres | Treatment Prioritization Category | Remarks |
|--|------------------------------|-----------------------------------|---|
| <i>Hypericum perforatum</i> (St. Johnswort) | Present, but not inventoried | Established | A perennial; well established on roadsides, but very slow in spreading beyond roadside; while difficult to control, currently under biological control on District. |
| <i>Cirsium arvense</i> (Canada thistle) | Present, but not inventoried | Established | A creeping perennial; establishes slowly; difficult to control because of rhizomes; prolific seed producer; seeds spread by wind/water. |
| <i>Cirsium vulgare</i> (Bull thistle) | Present, but not inventoried | Established | Common in harvest units; persistent for about 2 years. |

Species listed as "New Invaders/Established" are presently controllable, but are approaching "Established" infestation levels so are a priority for early treatment.

Alternative 1 Environmental Consequences: Passenger vehicles (claimant's and Forest Service's) would be the primary vector for introduction or spread of noxious weeds. Soil disturbance within the project area would be minimal due to the limitation of hand tool exploration. A natural rate of spread and introduction would be expected.

Alternative 2 Environmental Consequences: No activity associated with the mining operations is proposed along Forest Road 5506, so noxious weed populations along that road should not be disturbed or dispersed. The knapweed and sulfur cinquefoil populations along Forest Road 55 could be spread farther along the access route or even to the claim site. In addition, other noxious weeds could be introduced to the site by equipment used to construct the access road and excavate the claims.

Any soil disturbance on the claim site would be at risk of noxious weed invasion, until the disturbance is fully revegetated. While active disturbance would be limited to less than one acre at a time, reclaimed areas would be more susceptible to noxious weed invasion until full vegetative recovery is achieved. This could mean that several acres would be at risk at a time, depending on how quickly excavation and revegetation progresses. In addition, this alternative would allow mining activities throughout the winter months. Even on a limited scale, the chances of rutting, mineral soil exposure, and/or soil compaction would be greatly increased if operating during saturated soil conditions.

As areas of disturbance (access road, excavation, ponds, etc.) are no longer needed, they would be reclaimed using certified noxious weed free seed. In addition, stored material (soil, gravel, etc.) would be seeded at the end of each season. These actions would provide soil cover and competition for potential weed invaders.

Alternative 3 Environmental Consequences: The knapweed and sulfur cinquefoil sites along Forest Road 55 would be treated before travel to the site occurs and all equipment (except passenger vehicles) would be cleaned of plant material (seeds, etc.) prior to entry of National Forest System lands. The affected portion of Forest Road 55 would be monitored annually following treatment for five years, and retreated as necessary. Machines used for testing portions of the claim site would use the same route for ingress and egress to limit soil disturbance and the area that could be exposed to noxious weeds. All of the actions listed above would limit the transport of noxious weeds. The claimants would be provided with weed identification material and a weed infestation map to assist in catching invading noxious weeds before they become established.

Mining activity would not be allowed from November 15 through April 30, and additional mitigation states that activities would not occur when soils are saturated with water. These measures would greatly reduce the impacts on soil and consequently, the potential for noxious weed spread.

In addition to seeding, stored topsoil and gravel would be mulched with certified weed-free straw at the end of each operating season. This would provide a barrier to noxious weeds and improve establishment of the seeded grass. The additional requirement for reclamation that at least 90 percent of the reclaimed area would have a minimum of two live perennial plants per square foot one year after seeding would further ensure an adequate barrier against noxious weed invasion. However, full recovery of pre-project vegetative cover would take three years or more. Because of these mitigations, the risk of introduction and spread of noxious weeds would be less than under Alternative 2.

WILD AND SCENIC RIVER

Existing Condition: The Camp Creek placer claims are located within a Scenic segment of the North Fork John Day Wild and Scenic River corridor. Although the Wild and Scenic Rivers Act specifically withdraws from mineral entry lands within ¼-mile of each riverbank of Wild rivers from operation of the federal mining law, subject to valid existing rights⁸, no such withdrawals apply to Scenic or Recreational river segments.

The outstandingly remarkable values for this area are: fisheries, wildlife, scenic, recreation, and historic. The existing condition for fisheries is described on pages 27-31 and wildlife is described on pages 34-39. The scenic, recreation, and historic outstandingly remarkable values are discussed below.

The claims are primarily on the upper reaches of a south-facing slope with scattered ponderosa pine trees over sparse grasses and forbs. At the lower elevation near the river, a mixture of ponderosa pine and Douglas-fir trees and a convex, steep slope screen the proposed excavation and processing site from view.

Recreation centers primarily on water-related activities due to the steep, narrow river canyon. Two developed campgrounds occur near the Camp Creek placer claims: Gold

⁸ 16 U.S.C. § 1280(a)(iii)

Dredge Campground (about 1½ miles northwest) and Oriental Campground (3½ miles southeast). Dispersed recreation includes rafting, fishing, sight seeing, and scattered dispersed campsites.

The historic outstandingly remarkable value as defined for this segment is tied mainly to gold mining. However, no cultural properties were located within the boundary of the claim site.

Evidence of management activity within this part of the corridor includes a developed, two lane gravel road (Forest Road 5506), some past timber harvest and fuels treatments, and tailings remaining from past, large-scale mining (primarily in the 1950's). There has been some reclamation of dredge tailings within the last few years, but many remain. One other claim (Apache #3) has a proposed Plan Of Operations within this section of the Wild and Scenic corridor, and is located approximately 1½ miles northwest of the Camp Creek placer claims.

Alternative 1 Environmental Consequences: Effects on fisheries and wildlife values are discussed under those sections earlier in this chapter. Activities associated with manual mining methods would not affect scenic values. Recreation use within the Wild and Scenic River corridor would remain near current levels. No historic properties were located within the boundary of the claim site, so there would be no effect on the historic outstandingly remarkable value.

Alternatives 2 and 3 Environmental Consequences: Effects on fisheries and wildlife are discussed under those sections earlier in this chapter. There would be no impacts to these outstandingly remarkable values.

Field review has shown that the local topography would hide activity on the Camp Creek placer claims from view of recreationists on or adjacent to the river, thus protecting the scenic outstandingly remarkable value.

Alternatives 2 and 3 would have little affect on developed recreation sites or dispersed activities. Alternative 3 includes mitigation that if the western portion of the claim site were developed, a chain link fence would be installed to catch rolling rock that could otherwise reach Forest Road 5506. Forest Road 5506 would also be signed on both sides below that portion of the claim site to warn motorists of the possibility of rolling rocks from the mining above. This would provide more safety for recreationists within the river corridor than Alternative 2.

As stated under Alternative 1, there would be no affect on the historic outstandingly remarkable value.

Based on local topography, mitigation under alternatives 2 and 3, and the effects discussed above, this project would comply with the Wild and Scenic Rivers Act.

COMPLIANCE WITH OTHER LAWS, REGULATIONS, AND POLICIES

ENDANGERED SPECIES ACT

Threatened and endangered wildlife and fish species were discussed under the associated sections above. Surveys and a Biological Evaluation for endangered, threatened, proposed, and sensitive plant species have been completed. The Biological Evaluation found that the proposed activities would have **no impact** on regionally sensitive species and **no effect** on *Silene spaldingii*, a species proposed for listing under the Endangered Species Act.

NATIONAL HISTORIC PRESERVATION ACT

No cultural properties were located within the boundary of the claim site. Therefore, activities associated with alternatives 2 and 3 would have **no effect** on any listed or eligible historic properties and so would comply with the National Historic Preservation Act.

CLEAN AIR ACT

This project would have no impact on air quality. Burning of trash could occur, but would be conducted within the limits set by a burning permit, and smoke emissions would be minimal and localized, not affecting any areas designated for protection under the State of Oregon's Smoke Management Program. The temporary road construction and mining activity could create a limited amount of dust, but this would be confined to the project area.

CLEAN WATER ACT

The Clean Water Act of 1977 focuses on the restoration and maintenance of the chemical, physical, and biological integrity of the Nation's waters. This was amended in 1987 to protect waters against pollution from both point and non-point sources. As part of the implementation of this act, the State of Oregon maintains an inventory of water quality limited streams, based on standards developed by the Oregon Department of Environmental Quality. The State of Oregon plans to identify the Total Maximum Daily Load for the North Fork John Day River (which contains the Camp Creek placer claims analysis area) in 2003.

Table 9 lists the beneficial water uses for the Camp Creek placer claims analysis area as defined by the State of Oregon for the John Day River Basin, as well as the water quality parameters associated with these beneficial uses. Land disturbing activities such as roads and timber harvest can result in non-point sources of pollution. Beneficial uses most likely to be affected by mining the Camp Creek placer claims are: salmonid fish rearing, salmonid fish spawning, and resident fish and aquatic life. Water quality standards most likely to be affected by the proposed actions are: habitat modification, temperature, and sedimentation.

Table 9: Beneficial uses and associated water quality parameters for North Fork John Day Subbasin, which includes the Camp Creek placer claim site.

| Beneficial Use | Associated Water Quality Parameter |
|--------------------------------|--|
| Public Domestic Water Supply | Turbidity, Chlorophyll a |
| Private Domestic Water Supply | Turbidity, Chlorophyll a |
| Industrial Water Supply | Turbidity, Chlorophyll a |
| Irrigation | None |
| Livestock Watering | None |
| Anadromous Fish Passage | Biological Criteria, Dissolved Oxygen, Flow Modification, Habitat Modification, pH, Sedimentation, Temperature, Total Dissolved Gas, Toxics, Turbidity |
| Salmonid Fish Rearing | Dissolved Oxygen, Flow Modification, Habitat Modification, Sedimentation, Temperature |
| Salmonid Fish Spawning | Same as Salmonid Fish Rearing |
| Resident Fish and Aquatic Life | Same as Anadromous Fish Passage |
| Wildlife and Hunting | None |
| Fishing | Aquatic Weeds or Algae, Chlorophyll a, Nutrients |
| Boating | None |
| Water Contact Recreation | Aquatic Weeds or Algae, Bacteria, Chlorophyll a, Nutrients, pH |
| Aesthetic Quality | Aquatic Weeds or Algae, Chlorophyll a, Nutrients, Turbidity |

Standards for individual parameters are established by the State; for example, the standard for water temperature is as follows:

“Seven (7) day average of the daily maximum shall not exceed the following values unless specifically allowed under a Department-approved basin surface water temperature management plan:

- 1) 64° F

2) 55° F during times and in waters that support salmon spawning, egg incubation, and fry emergence from the egg and from the gravels

3) 50° F in waters that support Oregon Bull Trout

{except when the air temperature exceeds the 90th percentile of the 7-day average daily maximum air temperature for the warmest 7-day period of the year}"

The reach of North Fork John Day River that lies within the Camp Creek placer claims analysis area is on the State of Oregon's 1998 303(d) list as water quality limited due to temperature. The Camp Creek placer mining project will comply with the standards of the Clean Water Act because associated activities were designed to avoid any increases in sedimentation or stream temperatures, and no activities that could modify aquatic habitat would take place in the Riparian Habitat Conservation Areas.

The Plan Of Operation is in compliance with the Clean Water Act. The water diversion under all alternatives could substantially decrease flows in Camp Creek (non-fish bearing) for an hour or two during low flow months. Although the Act prohibits flow modifications that are harmful to fish, it also defers to the States in granting water rights. The claimants have a legal state water right for withdrawals from Camp Creek to support this Plan Of Operations. The diversion is under a legal water right, water would be withdrawn for short periods at a time, and Camp Creek normally has very low summer flows.

EXECUTIVE ORDERS 11988 AND 11990: FLOODPLAINS AND WETLANDS

Executive Order #11988 provides for the protection of flood plains, while Executive Order #11990 protects wetlands. This project would comply with these orders because activities would avoid these areas.

EXECUTIVE ORDER 12898: ENVIRONMENTAL JUSTICE

Executive Order 12898 requires that federal agencies adopt strategies to address environmental justice concerns within the context of agency operations. With implementation of any of these alternatives, there would be no disproportionately high and adverse human health or environmental effects on minority or low-income populations. The actions would occur in a remote area and nearby communities would not be affected.

ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

Some form of energy would be necessary for road construction, excavation of mineral deposits, processing, and reclamation. Processing would involve small machines (water pump, electric generator), while the other activities would require heavy machinery for a small amount of time. Both possibilities would result in minor energy requirements.

PRIME FARMLAND, FORESTLAND, AND RANGELAND

No prime farmland, rangeland, or forestland occurs within the analysis area.

INVENTORIED ROADLESS AREAS AND WILDERNESS

The proposed project is not located within any inventoried roadless areas or wilderness. The North Fork John Day Wilderness is located about 2 miles southeast of the claim site. Because of this distance and the rugged terrain, there should be no change in visual condition as viewed from the Wilderness.

FOREST PLAN CONSISTENCY

The Umatilla National Forest produced the Land and Resource Management Plan (Forest Plan) in accordance with the National Forest Management Act of 1976. This plan provides guidelines for all natural resource management activities and establishes management standards. Guidelines developed to provide and maintain riparian and fish habitat (Forest Plan 4-59 to 4-62) are presented in Table 3.16.

Table 10: Forest Plan Standards and Guidelines for riparian and fish habitat.

| RESOURCE PARAMETER | STANDARD AND GUIDELINE |
|--|---|
| Stream Bank Stability | 80% of length in stable condition |
| Stream shade for class 1,2,and 3 streams | Ecological potential if known, else 80% |
| Water Temperature | Meet state standards |
| Dispersion (0-10 year age class) | <30% of subwatershed area |

The Umatilla Forest Plan was amended in 1995 to incorporate PACFISH. PACFISH defines Riparian Habitat Conservation Areas surrounding streams and other riparian features, and identifies associated Riparian Management Objectives. Within the Camp Creek placer claims analysis area, Riparian Habitat Conservation Area boundaries extend 300 feet from fish bearing streams, 150 feet from perennial, non-fish bearing streams and wetlands larger than one acre, and 100 feet from intermittent streams or wetlands smaller than one acre.

Effects discussed under each alternative detail how this project would be consistent with the Standards and Guidelines of the 1990 Forest Plan, as amended. In particular, no activities would occur in PACFISH Riparian Habitat Conservation Areas, so PACFISH objectives, stream bank stability, and stream shade should not be affected. The Plan Of Operations includes a reclamation plan and a reclamation bond would be required under Alternative 3. Road construction would be kept to a minimum to access the excavation area, and the access road would be closed, obliterated, and stabilized when mining activity is completed. Activities would be inspected regularly by the District minerals technician, who would monitor for compliance with the Plan of Operations and any mitigation measures, as well as monitor for erosion associated with the mining activity. After reclamation work is completed, the area would be monitored for five years.

CONSUMERS, MINORITY GROUPS, AND WOMEN

Plans of Operation contain a term that states, “*Approval of this plan does not relieve [the applicant] of responsibility to comply with other applicable state or federal laws, rules, or regulations.*” This includes laws and regulations pertaining to civil rights. Because this proposal involves a small operation with the claimants conducting development themselves, no quantitative output, lack of output, or timing of output associated with this project would affect the civil rights, privileges, or status quo of consumers, minority groups, and women.

UNAVOIDABLE ADVERSE EFFECTS

Implementation of any of the alternatives, including the No Action alternative, would inevitably result in some adverse environmental effects. The severity of the effects would be minimized by adhering to the direction in the management prescriptions and Standards and Guidelines in Chapter IV of the Forest Plan and additional mitigation proposed in Chapter 2 of this document. Potential adverse effects include: erosion, sediment, disturbance of wildlife, and spread of noxious weeds. These adverse environmental effects are discussed at length under each resource section.

SHORT-TERM USE AND LONG-TERM PRODUCTIVITY

Short-term uses are generally those that determine the present quality of life for the public. At the claim site, this includes wildlife use of habitat, and mineral extraction, and use of water. Long-term productivity refers to the land's capability to support sound ecosystems producing a continuous supply of resources and values for future generations.

Alternatives 2 and 3 Environmental Consequences: Proposed construction of the temporary access road and excavation of mineral deposits would provide short-term income to the claimants and local communities. The proposed Plan of Operations and mitigation measures should have little effect on long-term productivity of the site. The claimants would be required and bonded to reclaim the site upon completion of excavation. Alternative 3 includes mitigation that at least 90 percent of the reclaimed area would need at least two live perennial plants per square foot one year after seeding and that at least two seedlings would need to be planted for every tree cut. This would help return the disturbed area to productivity.

IRREVERSIBLE AND IRRETRIEVABLE EFFECTS

An “**Irreversible**” commitment of resources refers to a loss of future options with nonrenewable resources. An “**Irretrievable**” commitment of resources refers to loss of opportunity due to a particular choice of resource uses.

Alternatives 2 and 3 Environmental Consequences: The construction of the temporary access road and mineral excavation would produce irreversible changes in the natural appearance of the landscape. Project design, mitigation, and Best Management Practices (Appendix A) would prevent irreversible loss of soils due to erosion. The mining of gold from the placer deposits represents an irreversible commitment of resources, which is acceptable under the Forest Plan.

CHAPTER IV – AGENCIES AND PERSONS CONSULTED

Scoping letters were sent to the mail list of interested parties maintained at the Umatilla National Forest Supervisor's Office. This included the Confederated Tribes of the Warm Springs Reservation of Oregon and the Confederated Tribes of the Umatilla Indian Reservation and Oregon Department of Fish and Wildlife. One individual from nearby Baker City, Oregon, one industry group (Mountain States Legal Foundation), and two environmental interest groups (The Lands Council and Blue Mountain Biodiversity Project) responded to scoping. A list of individuals, organizations, and government agencies that receive the Environmental Assessment for the 30-day public review is available in the Camp Creek Placer Mine Plan Of Operations environmental analysis file.

Interdisciplinary Team members were:

| | |
|---------------|------------------------------------|
| Bob Reed | Team leader and Mineral Technician |
| Holly Harris | Wildlife Biologist |
| Kristy Groves | Fisheries Biologist |
| Ed Farren | Hydrologist |
| Janel Lacey | NEPA and writer/editor |

Additional support came from:

| | |
|------------------|--------------------------------|
| Craig Buszkohl | Forest Soils Scientist |
| Dean McFettridge | Noxious Weed Specialist |
| Karen Kendall | Recreation Specialist |
| Gary Popek | Zone Archeologist |
| Scott Riley | Forest Botanist |
| Chris Helberg | Geographic Information Systems |
| Danny Evans | Transportation Specialist |
| Greg Visconty | Area Geologist |

BIBLIOGRAPHY

FISH

- Belt, G.H.; J. O’Laughlin; T. Merrill. Design of forest riparian buffer strips for the protection of water quality: Analysis of scientific literature. Idaho Forest, Wildlife and Range Policy Analysis Group Report No. 8. 1992. 35 pgs.
- Beschta, R.L. Effects of fire on water quality and quantity. In: Walstead, J.D.; Radosevich, S.R.; Sandberg, D.V. Natural and prescribed fires in Pacific Northwest forests. Oregon State University Press, Corvallis. 1990: 219-232.
- Buchanan, D.V.; Gregory, S.V. Development of water temperature standards to protect and restore habitat for bull trout and other cold water species in Oregon. Proceedings of the Friends of the Bull Trout conference. Calgary, Alberta; 1997.
- Buchanan, D.V.; Hanson, M.; Hooten, R. Status of Oregon’s bull trout. Oregon Department of Fish and Wildlife, Portland: 1997.
- Dunaway, Bill, E. Dill, and K. McDonald 1993. Camp Creek stream survey. Umatilla National Forest. Portland, OR: USDA, Forest Service, Pacific Northwest Region.
- Federal Register. Endangered and threatened wildlife and plants; Determination of threatened status for the Klamath River and Columbia River distinct population segments of bull trout. 63(111): 1998. 31647 – 31674.
- Federal Register. Endangered and threatened species: Threatened status for two ESUs of steelhead in Washington and Oregon. 64(57): 1999: 14517-14528.
- Huntington, C.; Nehlsen, W.; Bowers, J. A survey of healthy native stocks of anadromous salmonids in the Pacific Northwest and California. Fisheries. 21(3): 6-14. 1996.
- Knelly, Leah and Douglas Corkran 1992. Texas Bar Creek stream survey. Umatilla National Forest. Portland, OR: USDA, Forest Service, Pacific Northwest Region.
- McKinney, S.P.; O’Conner, J.; Overton, C.K.; MacDonald, K.; Tu, K.; Whitwell, S. A characterization of inventoried streams in the Columbia River Basin. Aqua-Talk no. 11 (R-6 Fish Habitat Relationship Technical Bulletin). USDA Forest Service, Pacific Northwest Region; 1996.
- Rieman, B.; Clayton, J. Wildfire and native fish: issues of forest health and conservation of native species. Fisheries. 22(11):6-15. 1997.
- Rinne, J.N. Short term effects of wildfire on fishes and aquatic macroinvertebrates in the southwestern United States. North American Journal of Fisheries Management. 16(3):653-658. 1996.

WILDLIFE

- Altman, Bob. 2000. Conservation strategy for landbirds in the northern Rocky Mountains of eastern Oregon and Washington. Oregon-Washington Partners in Flight. 86pp.
- Bull, Evelyn L.; Parks, Catherine G.; Torgersen, Torolf R. 1997. Trees and logs important to wildlife in the interior Columbia River basin. Gen. Tech. Rep. PNW-GTR-391. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 55 p.
- Issacs, F.B.; Anthony, R.G.; Vander Heyden, M.; Miller, C.D.; Weatherford, W. 1996. Habits of bald eagles wintering along the upper John Day River, Oregon. Northwest Science. 9 pp.
- Ruggerio, Leonard F; Aubrey, Keith B; Buskirk, Steven W.; Koehler, Gary M.; Krebs, Charles J.; McKelvey, Kevin S.; Squires, John R. 1999. Ecology and conservation of lynx in the United States. Gen. Tech. Rpt. RMRS-GTR-30. Ogden, UT: U.S. Dept. of Agriculture, Forest Service, Rocky Mountain Research Station. 480 p.
- Sallabanks, R; Marcot, B.G.; Riggs, R.A.; Mehl, C.A.; Arnett, E.B. Wildlife of eastside (interior) forests and woodlands. Chapter 8 (pages 213-238) In: Wildlife-Habitat Relationships in Oregon and Washington. 2001. Oregon State University Press. Johnson, D.H.; O'Neil, T.A., Managing Directors.
- U.S. Dept. of Agriculture (USDA), Forest Service. 1990. Land and resource management plan: Umatilla National Forest. Portland, OR: USDA, Forest Service, Pacific Northwest Region.
- U.S. Dept. of Agriculture (USDA), Forest Service; U.S. Dept. of Interior, Bureau of Land Management; U.S. Dept. of Interior, National Park Service. 2000. Canada lynx conservation assessment and strategy. Missoula, MT: USDA, Northern Region. 119 p.

WATER

- Agee, James K. 1993. Fire ecology of Pacific Northwest forests. Washington, D.C.: Island Press.
- Bunte, K.; McDonald, L.H. 1998. Scale considerations and the detectability of sedimentary cumulative watershed effects. pp. 229-231.
- Cornell University, Legal Information Institute Website, <<http://cfr.law.cornell.edu/cfr/>>, Ithaca, NY, accessed 2/20/2002.
- Dunbar, Robert G. 1983. Forging New Rights in Western Waters. University of Nebraska Press, Lincoln.
- Ehmer, Lee and Geist, J.M. undated, but approximately 1978. Soil Resource Inventory of Umatilla National Forest. USDA Forest Service, Pacific Northwest Region, Umatilla National Forest. Portland, Oregon.

- Geist, J.M.; Hazard, J.W.; Seidel, K.W. Assessing physical condition of some Pacific Northwest volcanic ash soils after forest harvest. Soil Science Society of America, Journal. 53(3):946-950.
- Harr, R.D., A. Levno, R. Mersereau. 1982. Streamflow Changes after Logging 130-Year-Old Douglas Fir in Two Small Watersheds. Water Resources Research. Vol. 18, No. 3, pp. 637-644.
- Harris, R.M. and C.F. Clifton. 1999. Upper Umatilla River Sediment Analysis. In press.
- Keller, Edward A. 1996. Environmental Geology, 7th Edition. Prentice Hall, Upper Saddle River, NJ.
- King, J.G. and L.C. Tennyson. 1984. Alterations of Streamflow Characteristics Following Road Construction in North Central Idaho. Water Resources Research, Vol. 20, No. 8 pp. 1159-1163.
- Oregon Department of Environmental Quality. 1998. DEQ's 1996/1998 303(d) List of Water Quality Limited Waterbodies.
- State of Oregon, Department of Environmental Quality, Listing Criteria for Oregon's 1998 303(d) List of Water Quality Limited Water Bodies, <<http://www.deq.state.or.us/wq/303dlist/Listing/Criteria.html>>, accessed 2/2002.
- State of Oregon, Water Resources Department web site, @ <http://www.wrd.state.or.us/cgi-bin/choose_gage.pl?huc=17070202>, accessed 3/15/2002
- U.S. Department of Agriculture, Forest Service. 1993. Survey of Camp Creek. on file at North Fork John Day Ranger District, Umatilla National Forest.
- U.S. Dept. of Agriculture, Forest Service. 1999. Desolation Ecosystem Analysis. USDA Forest Service, Umatilla National Forest.
- U.S. Department of Agriculture, Forest Service. 1990. Land and Resource Management Plan Final Environmental Impact Statement. Umatilla National Forest. p. III-7.
- US Department of Agriculture, Forest Service. 2001. Rimrock Environmental Impact Statement Water Resources Report. Heppner, OR. p. 8.
- US Department of Commerce, Rainfall Intensity Curves, Technical Paper no. 25, p. 53, 1955, in USDA Forest Service, Rimrock EIS Water Resources Report, Heppner, OR, 2001, p. 8.
- Walker, George W, and MacLeod, Norman S. 1991. Geologic Map of Oregon, USGS.
- Walker, George W. 1973. Reconnaissance geologic map of the Pendleton Quadrangle, Oregon and Washington.

APPENDIX A – BEST MANAGEMENT PRACTICES

Best Management Practices (BMPs) are the primary mechanisms used to enable the achievements of water quality standards (Environmental Protection Agency, 1987). The EPA has certified the Oregon Forest Practices Act and Washington Forest Practices Rules and Regulations as BMPs. The States of Oregon and Washington compared Forest Service practices with these State practices and concluded that Forest Service practices meet or exceed State Requirements. Following are the Best Management Practices that apply to the Camp Creek Placer Mine Plan Of Operations.

ROAD SYSTEM

R-7. *Control of Road Surface Drainage*

Description - Minimize possible detrimental effects of surface drainage of roads

Location - Roads used to access the claims, including the proposed temporary road

Effects - Reduce sedimentation associated with roads

Application - Alternative 2 mitigations #2, #3, #4 and #7, and Alternative 3 mitigations #1, #3, #4, #7, and #9 and outsloping the temporary access road would minimize the erosive effects of water concentrated by road drainage features and disperse runoff from the road

R-18. *Maintenance of Roads*

Description - Provide for water quality protection by maintaining roads through the control of waste material placement, keeping drainage facilities open, and by repairing ruts and failures

Location - All used to access the claims, including the proposed temporary road

Effects - Detrimental impacts to water quality from road maintenance activities are reduced.

Application - Alternative 2 mitigation #10 identifies where to place waste material to protect water quality. Alternative 3 mitigation #4 requires installation or improvement of waterbars to provide adequate drainage.

R-19. *Road Surface Treatments to Prevent Loss of Material*

Description - Minimize the erosion of road surface materials and consequently reduce the likelihood of sediment production from those areas

Location - All roads used to access the claims, including the proposed temporary road

Effects - Detrimental impacts to the road prism from erosion and adjacent water sources are prevented.

Application - Alternative 1 mitigation #2 and Alternative 3 mitigation #3 would place rock on the temporary access road to control dust during dry periods

R-20. *Traffic Control During Wet Periods*

Description - Reduce road surface damage and rutting of roads to lessen sediment washing from road surfaces

Location - Roads used to access the claims, including the proposed temporary road

Effects - Detrimental impacts to forest road surfaces and forest road users are reduced

Application - Alternative 3 mitigation #7 would protect roads during wet conditions

R-21. *Snow Removal Controls to Avoid Resource Damage*

Description - Minimize the impact of melt water on road surfaces and consequently reduce the probability of sediment production resulting from snow removal operations

Location - All roads used by the claimant

Effects - Damage to roads from erosion/water movements is minimized.

Application - Alternative 3 mitigation #6 would prevent snow plowing

MINING

M-1. *Water Resources Protection on Locatable Mineral Operations*

Description - Protect the quality of water from degradation by physical and chemical constituents resulting from locatable mineral exploration, development, production, and associated activities

Location - Claim site, processing site, and water diversion

Effects - Soil erosion and related sedimentation is minimized and riparian vegetation remains in tact to shade nearby streams. Pollutants are not released into Camp Creek or the North Fork John Day River.

Application - Alternative 2 mitigation #4, #5, #6, #7, #8, #9, #10; Alternative 3 mitigation #7, #8, #9, #13, #14, #15, #16, #19, and 21, as well as the associated reclamation plans would minimize soil movement and prevent chemicals or organic pollutants (oil, sewage, etc.) from entering Camp Creek or the North Fork John Day River.

WATERSHED MANAGEMENT

W-4. *Hazardous Substance Spill Contingency Plan and Spill Prevention Control & Countermeasure Plan*

Description - Prevent contamination of Umatilla National Forest from accidental spills

Location - entire claim site; spill plan is located at the Umatilla N.F. Supervisor's Office

Effects - Oil products are prevented from entering the navigable waters of the United States

Application – Alternative 3 mitigation 16 would ensure fuel and hazardous materials will be stored in a manner to protect the soil and groundwater and that absorbent materials will be on hand in case of a spill.

W-5. *Cumulative Watershed Effects*

Description - Protect the beneficial uses of water from the cumulative effects of past, present, and future management activities that could result in degraded water quality or stream habitat

Location - Claim site (including processing site) and access roads

Effects - Activities that could result in cumulative damage to water quality are altered or eliminated as appropriate

Application - A cumulative watershed effects analysis was conducted for the Camp Creek placer claims analysis area and beneficial uses that comply with applicable State requirements for protection of waters have been identified in the Environmental Assessment

W-7. *Water Quality Monitoring*

Description - Determine the effects of the proposed action on the beneficial uses of water, monitor baseline watershed conditions for comparison with State Water Quality and Forest Plan standards and estimate long-term trends, ensure the health and safety of water users, and evaluate BMP effectiveness

Location - Entire project area

Effects - Monitoring would ensure that mitigation to protect water quality is effective, and, if not, would recommend changes for future activities

Application - The first, second, and fourth monitoring items under Alternative 3 (pages 18 and 19) address monitoring for water conditions.

W-8. *Management by Closure to use (Seasonal, Temporary, and Permanent)*

Description - Exclude activities that could result in damage to either resources or improvements, such as roads and trails, resulting in impaired water quality

Location - Claim site (including processing area) and access routes

Effects - Maintain downslope water quality, sustain the current condition of the watershed, and exclude activities that may result in additional resource damage and impair healthy water systems

Application - Alternative 3 mitigation #6, #7, and #14 place seasonal limitations and exclude activities during wet or snowy periods.

APPENDIX B – CUMULATIVE ACTIVITIES CONSIDERED

PAST ACTIVITIES

Timber Harvest: 5,774 acres of over last 30 years (see Appendix C for a map): reduction of tree cover (in particular, old forest structure), increased stream temperatures from shade removal, reduction in large instream wood, soil compaction noxious weed species establishment and dispersal, and increased sediment from landings, roads, and skid trails, changed timing of water runoff

Road Construction: increased sediment and stream temperatures, increase disturbance of wildlife, noxious weed species establishment and dispersal

Fire Suppression: change in forest cover and wildlife habitat types, delay of large instream wood production

Wildfire: increased sediment and stream temperatures from loss of vegetation and soil cover, reduction in large instream wood

Livestock Grazing: decreased pool frequency, increase stream temperatures, loss of riparian vegetation, increased sediment, noxious weed species establishment and dispersal

Past Mining: increased sediment, noxious weed species establishment and dispersal

ONGOING ACTIVITIES

Livestock Grazing: decreased pool frequency, increase stream temperatures, loss of riparian vegetation, increased sediment

Drilling at the Lucky Strike claim site

OHV trail use and maintenance: disturbance of wildlife

Dispersed Campsite Improvements: increased riparian vegetation and reduced sediment

Firewood, Post and Pole Harvest

Aspen Enhancement/Protection

Fencing: enhancement of unique wildlife habitat

Fire Suppression: increased stream temperatures due to use of streams as a water source

FORESEEABLE FUTURE ACTIVITIES

Dissolution of Big Game Security Areas: increased road density in
Subwatershed 36C

Road Obliteration: reduced long-term sediment and stream temperatures

APPENDIX C – MAPS