



United States Department of the Interior
Bureau of Land Management

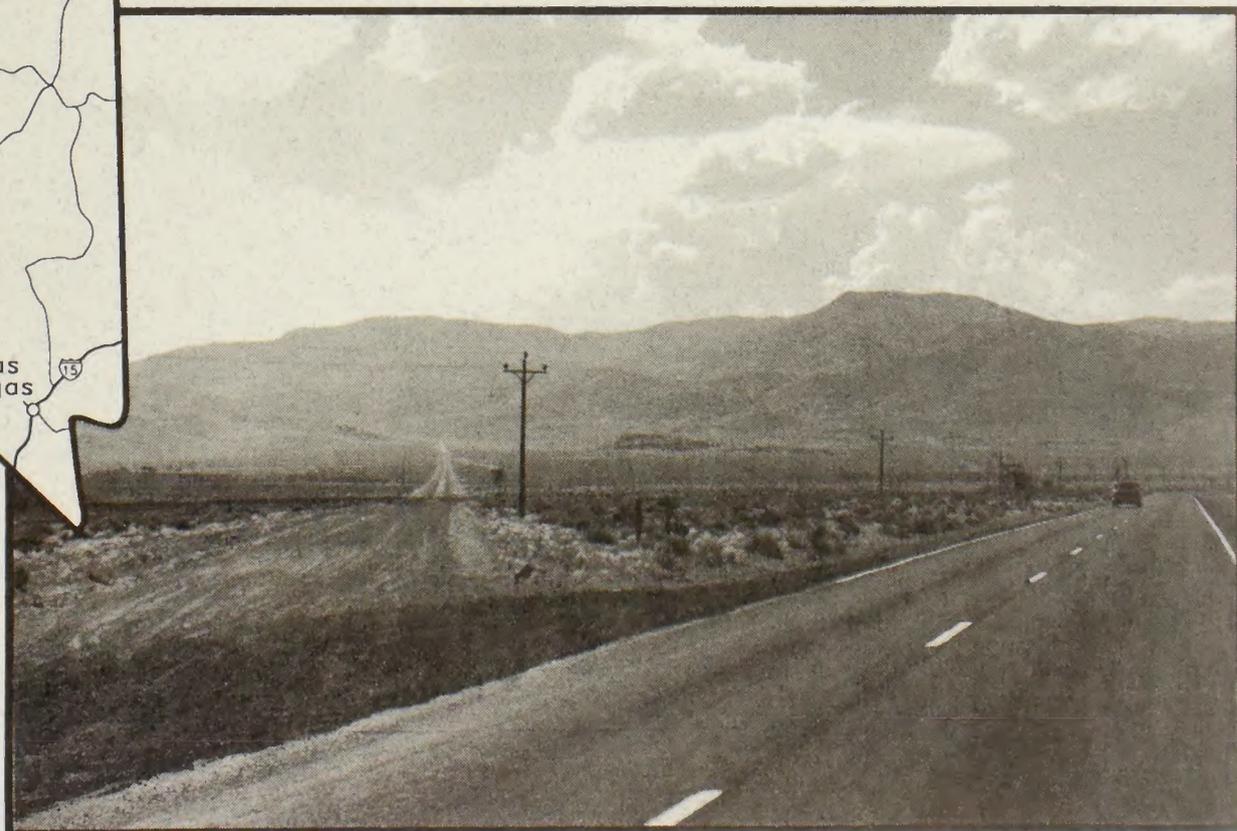
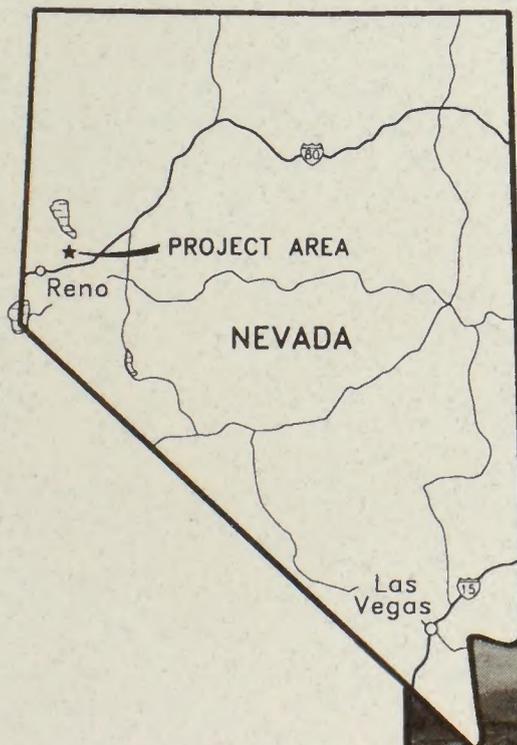
Carson City Field Office
Carson City, Nevada

September 1997



DRAFT

Environmental Impact Statement
Olinghouse Mine Project



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Threatened, Endangered, and Candidate Species. No *threatened, endangered, or candidate* plant or animal species are expected to be affected by the project. The endangered cui-ui and threatened Lahontan cutthroat trout in the Truckee River could be adversely affected if the project were to cause river contamination as a result of toxic discharges or reduced river flows as a result of groundwater pumping; however, neither scenario is likely to occur as a result of the project.

Range Resources. Development of the project is expected to result in the temporary loss of approximately 19 animal unit months (AUMs) of *forage* in the Olinghouse Allotment and the permanent loss of approximately 4 AUMs in the unreclaimed pit area.

Recreation. The Proposed Action is expected to have minimal effect on outdoor recreation in the vicinity of the project area because the area receives only light to moderate use at the present time. Recreational use of lands used exclusively for mining would be lost for the life of the project, and recreational values on lands immediately adjacent to mining activities would be diminished.

Access and Land Use. Under the Proposed Action, there would be no change in land ownership, except that Alta would likely purchase some private lands within the project area. Land use would remain essentially the same except that 502 acres would be used exclusively for mining, and grazing and recreation use would be excluded. Grazing and dispersed recreation would continue without interruption on adjacent lands and on the project area once the mine is abandoned and reclamation occurs. There would be no impacts to existing rights-of-way in the project area or immediate vicinity.

Traffic on the Olinghouse County Road and on State Route 447 through Wadsworth would increase by approximately 120 passenger vehicles and 2-12 trucks per day during project construction. This represents an increase of approximately 14-15% in the number of vehicles

passing through Wadsworth each day. During operations, the mine traffic through Wadsworth would include approximately 228 passenger vehicles and 2-12 trucks per day or an increase of about 27 to 28%.

Visual Resources/Noise. The waste rock dump would be the most visually obtrusive feature of the proposed project. The generally moderate color *contrast* of the dump, combined with the flat top, would introduce a straight, horizontal line element that would be more geometric than the natural line features in the area. However, it would be relatively small in the context of the natural mountain landscape. Overall, the proposed project would be visually prominent from *Key Observation Point (KOP) #1* on State Route 447 directly east of the proposed mine site, but most viewers would be traveling at highway speeds of 55 mph or more and at right angles to the view, so views would be brief and at a distance of approximately 4 mi. As seen from KOP #1, the Proposed Action would meet the standards of the applicable Visual Resource Management (VRM) classes. The proposed project would be most visually prominent from KOP #2, on State Route 447 at the intersection with Olinghouse County Road, where northbound travelers from Wadsworth would have a nearly direct forward view of the project area lasting more than 2 minutes at highway speeds. As seen from this KOP, compliance with VRM Class III standards would be marginal for the waste rock dump at the height of mining, but should be readily achievable after reclamation. The Proposed Action would meet VRM objectives as viewed from KOP #3 on Interstate 80, and after completion of reclamation, most casual viewers would find it difficult to discern the project facilities from that viewpoint.

Worst-case noise levels associated with machinery and equipment operations are projected to be less than 49 *dba* at the nearest residence to the project site. These noise levels would be higher than existing levels in the rural environment, but less than the 65 *dba* level that is generally considered acceptable for exterior noise at a residential area.

(working pond), a single-lined storm event pond, a carbon adsorption plant, a gravity milling plant, an administrative office, an equipment maintenance building, an analytical laboratory, a fuel storage facility, a reagent storage facility, an emergency power generation plant, an off-site well, water pipelines, and power lines.

Access to the mine would be from State Route 447 (the Wadsworth-Nixon Highway) to the Olinghouse County Road. The proposed mine would be located approximately 5 miles from the State Route 447 intersection. Water would be piped underground from a well located in Dodge Flat. Chemical treatment and/or water would be used to control dust on the mine and access roads.

The open mine pits would be located in an area of historical mining adjacent to Green Hill (Green Mountain) just north of Olinghouse Canyon. Mining would be accomplished by conventional truck/loader operation with two shifts operating 7 days a week and would begin in the spring of 1998 and last about 5 years based on proven ore reserves. Following reclamation, postmining land use is expected to return to wildlife habitat and livestock grazing.

This document follows regulations developed by the Council on Environmental Quality (CEQ) for implementing the procedural provisions of NEPA (40 CFR 1500-1508) and the BLM's National Environmental Policy Act Handbook (BLM 1988). This EIS is further guided by BLM Carson City District policy which states:

Clarity of expression, logical thought processes and rational explanations are far more important than length or format in the discussion of impacts. Subjective terms will be avoided. The analysis will lead to pointed conclusions about the amount and degree of change (impact) caused by the proposed action and alternatives. Descriptions of the affected environment will be no longer than is absolutely necessary to understand the impacts of the alternatives. The length of

the EIS will be kept to a minimum by incorporating materials by reference. The EIS will concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail. The EIS will be written in plain language. The EIS writer will reduce paperwork and the accumulation of extraneous background data and emphasize real environmental issues and alternatives. The EIS will be concise, clear, and to the point, and shall be supported by evidence that agencies have made the necessary environmental analyses.

1.1 PURPOSE AND NEED

The purpose of the Proposed Action is to enable the commercial mining and beneficiation of gold ore by a private entity (Alta) pursuant to their rights under the 1872 General Mining Law, as amended, and the authority of BLM. U.S. mining laws, and the regulations by which they are enforced, recognize the statutory right of mining claim holders to develop federal mineral resources to meet continuing national needs and economic demands as long as undue environmental degradation is not incurred. Further, such development is encouraged and is consistent with the Mining and Mineral Policy Act of 1970 and the FLPMA. The need for the project is reflected by the demand for gold, an established commodity with an international market, and an important export commodity for the U.S. to satisfy increasing demands from the global market for jewelry, electronics, and investments.

1.2 RELATIONSHIP TO BLM AND NON-BLM POLICIES, PLANS, AND PROGRAMS

The Olinghouse Plan of Operations has been reviewed for compliance with BLM policies, plans, and programs. The proposal is in conformance with the minerals decisions in the Record of Decision for the Lahontan Resource Management Plan (RMP) approved September 3,

2.0 PROPOSED ACTION AND ALTERNATIVES

This chapter describes the Proposed Action and alternatives to this action. The Proposed Action is to develop a new open pit gold mining operation including an on-site ore processing facility. The No Action Alternative is to reject the Plan of Operations as submitted by the applicant. The No Action Alternative, which assumes continuation of ongoing exploration activities but the absence of further mine development alternatives, also serves as a basis for comparison of anticipated impacts between the mine development alternatives which includes along with the Proposed Action, Alternative A--the construction of an alternative mine access road to bypass the town of Wadsworth.

Alternatives considered in this document are based on issues identified by the BLM and public comments received during the scoping process. The alternatives are intended to reduce or minimize potential impacts associated with the Proposed Action. Alternatives considered but dismissed from detailed analysis are also described in this chapter.

2.1 PROPOSED ACTION

This section summarizes the mine and ore processing facilities as proposed by Alta in their Plan of Operations/Reclamation Plan (Alta 1996) and Water Pollution Control Permit Application (JBR Environmental Consultants Inc. [JBR] 1996f). The complete application (or Plan of Operations) is available for public review at the BLM Carson City Field Office. The Washoe County Special Use Permit application is available at the Washoe County Department of Development and Review in Reno.

2.1.1 Overview of Proposed Action

The proposed Olinghouse Mine Project would be located in Washoe County, Nevada, in portions of Sections 16, 17, 19, 20, 21, 22, 28, 29, 30, and 32 of T21N, R23E, approximately 7 miles

northwest of the community of Wadsworth (Figure 2.1). Two open pits, containing a total of approximately 9,660,000 tons of ore and 43,385,000 tons of *overburden* rock, would be developed in an area of historical mining adjacent to Green Hill (Green Mountain) just north of Olinghouse Canyon. These two pits would eventually merge into one pit. The mine life is expected to be 5 years, but would be extended if ongoing exploration is successful in finding additional reserves. Annual ore production is estimated to be 2,372,500 tons. Access to the site would be from State Route 447 to the Olinghouse County Road.

The Olinghouse Mine Project would involve conventional open-pit mining methods consisting of drilling, blasting, loading, and hauling. The mined ore would be hauled to the crushing plant, crushed, and conveyed to the heap leach pad or gravity mill depending on the grade of the ore. The ore would be processed using conventional heap leach technology for the low-grade ore and a gravity recovery mill for the high-grade ore. Tailings from the gravity mill would be dewatered and blended with the crushed low-grade ore for agglomeration with cement prior to placement on the heap leach pad. Waste rock (*overburden* and *interburden* material mined from above and within the ore deposit) would be hauled to the valley-fill waste rock dump located in Frank Free Canyon. Mine operations would occur 7 days a week. The total area of surface disturbance associated with the Proposed Action would be 502 acres (Table 2.1).

The proposed mining operation includes two open mine pits, a waste rock dump, and haul roads. The proposed process operation includes:

- an ore crushing plant;
- an ore agglomerating system;
- a gravity mill;
- a heap leach pad;
- a carbon adsorption/desorption/recovery (ADR) plant;

the resulting cathodic sludge containing the precious metals would be removed, dewatered, fluxed, and smelted in the propane-fired crucible furnace to produce a doré bullion. The doré bullion would be shipped to a commercial refiner where the gold and silver would be separated, further refined, and sold on the open market.

2.1.3 Ancillary Facilities and Infrastructure

2.1.3.1 Haul Roads

A 70-ft wide haul road, approximately 3.0 miles in length, would be constructed to connect the mine pits, waste rock dump, and ore processing facilities. The haul road would cross Olinghouse County Road near the historic town of Olinghouse, and Alta would coordinate with Washoe County to implement adequate traffic controls at this crossing. Water sprays and chemical treatment (magnesium chloride, or equivalent) would be used to control dust from the road surface.

2.1.3.2 Access Roads

Access to the mine would be from State Route 447 to the Olinghouse County Road, which would be improved by the addition of a gravel surface from the intersection of State Route 447 to the proposed haul road; however, the road would not be widened. Alta would negotiate with the Pyramid Lake Paiute Tribe for access across Reservation lands. Water sprays and chemical treatment (magnesium chloride, or equivalent) would be used to control dust from the road surface. Mine shift schedules would be arranged so as to avoid mine-related traffic during school hours. Car-pooling would be encouraged.

2.1.3.3 Water Supply

Water for the project would be provided by a well to be located in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 24, T21N, R23E in the Dodge Flat area (see Figure 2.1). A buried water line would be constructed along an existing right-of-way (ROW)

to transport the water to a 1.5 million-gal freshwater pond lined with HDPE and located in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 29, T21N, R23E (see Figure 2.4). The pond would be approximately 200 x 200 ft with 3H:1V slopes approximately 7 ft high and would provide storage for fire protection, as well as process and mining needs estimated to range from about 285 gpm in winter to about 460 gpm in summer, with an average annual pumping rate of 356 gpm. An extension of the water pipeline would be run south from the freshwater pond to the process area and would be placed in the haul road ROW to minimize surface disturbance (see Figures 2.3 and 2.4).

2.1.3.4 Electricity

Electricity would be provided by Sierra Pacific from the Wadsworth substation via an existing 12.5-kV overhead power line. A new aboveground power line approximately 500 ft long would furnish power to the freshwater pond, and another new aboveground power line approximately 1.2 miles long would furnish power to the process area. The power line to the process area would follow the haul road ROW to minimize surface disturbance (see Figures 2.3 and 2.4). Standby emergency power would be provided by skid-mounted diesel generators.

2.1.3.5 Administrative Complex

The administrative complex would utilize an existing shop and parking area in NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 29, T21N, R23E, and would require no additional disturbance (see Figure 2.4).

2.1.3.6 Equipment Maintenance/Warehouse Building

The mine maintenance shop/warehouse building would be a metal structure erected on a concrete slab approximately 0.25 mile south of the freshwater pond in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 29, T21N, R23E (see Figure 2.4). A graded parking lot would also be located in front of this building.

BLM-approved seed mixture (see Section 2.1.8) to minimize soil loss from wind and water erosion.

2.1.8 Reclamation

The objective of site reclamation would be to return the area to a condition suitable for premining land uses--mineral development, livestock grazing, and wildlife habitat. The entire disturbed area, with the exception of the interior of the pits, would be topsoiled and reseeded with a BLM-approved seed mixture.

Open pits would be left in their final mining configuration with wall slopes of approximately 1H:1V and 15-ft catch benches at 60-ft intervals. A 5-ft tall safety berm would be constructed around accessible portions of the pit to provide public safety. All roads accessing the pit area would be removed and reclaimed to reduce public access potential, and warning signs would be posted at strategic locations. The equilibrium elevation of the postmining pit lake is estimated to be approximately 5,500 ft, resulting in a 3.4-acre lake approximately 90 ft deep.

The waste rock dump would be graded to an irregular, hummocky surface with outer slopes of approximately 3H:1V. The dump would then be topsoiled, harrowed, broadcast-seeded, and harrowed again. Stormwater diversions would remain in place to divert water around the reclaimed waste rock dumps.

The final closure plan of the leach facility would be coordinated with the NDEP as required by the Nevada Administrative Code (NAC 445.24386). Cyanide detoxification would be accomplished by rinsing the pad with recycled solution and fresh water. The rinse solution would be circulated through the process carbon columns to remove residual metals in the rinse solution, after which it would be evaporated in the working pond where cyanide would continue to break down through natural degradation. Upon completion of rinsing and detoxification operations, the heap would be regraded to approximately 3H:1V slopes,

topsoiled, harrowed, broadcast-seeded, and harrowed. The pad would be sized to contain the entire heap following reclamation without pushing any material off the liner. Stormwater diversions would remain in place to divert water around the reclaimed leach pad.

Liquids in the working and storm event ponds would be allowed to evaporate. Alternatively, spray evaporation or land application, or a combination thereof (in accordance with applicable regulatory requirements), may be employed. Remaining sludge in the bottom of these ponds would be tested with both meteoric waters mobility procedures (MWMPs) and toxicity characteristics leaching procedures (TCLPs). If the sludge fails to meet NDEP guidelines, it would be dewatered and removed for disposal in an appropriately licensed facility. If it is determined that the sludge does not pose a threat to groundwater, the liner would be folded in the bottom of the pond and the earthen berms would be pushed in to fill the depression. The surface would then be contoured, topsoiled, harrowed, and broadcast-seeded. The freshwater pond would be reclaimed by folding the liner in the bottom of the pond, pushing the earthen berms in to fill the area, and topsoiling, harrowing, and broadcast-seeding.

All roads within the permit area would be recontoured to approximate original topography with the exception of the main Olinghouse County Road, which would remain in its upgraded configuration. Maintenance of the Olinghouse County Road would revert to Washoe County. Culverts would be removed as the roadways are recontoured, and road surfaces would be ripped, harrowed, broadcast-seeded, and harrowed a second time. Water bars would be employed on recontoured slopes, as deemed appropriate, to divert run-off.

Mining, ore processing, and ancillary facilities and equipment would be dismantled and removed from the property. Concrete foundations and paved slabs would be broken up and covered with at least 2 ft of topsoil. The underground water pipeline

use of pneumatic fogging sprays at the crushing facilities;

- surface water quality sampling and flow monitoring at springs on-site and in Olinghouse Creek downstream from the mining and processing operations;
- groundwater quality sampling and water level monitoring at monitoring wells around the project area; and
- stormwater discharge sampling and analysis around the operations area, including Frank Free Canyon, to ensure compliance with zero discharge.

The Proposed Action is the agency-preferred alternative provided agreement between Alta and the Pyramid Lake Paiute Tribe can be achieved concerning a ROW for that portion of the Olinghouse County Road that crosses Tribal lands.

2.2 ALTERNATIVE A

Alternative A was developed by the BLM and Alta with the goal of reducing or mitigating environmental impacts while meeting project objectives. Alternative A is identical to the Proposed Action except for the components described in detail as being different.

2.2.1 Alternative A - New Mine Access Road That By-passes Wadsworth

Alternative A involves construction of a mine access road to by-pass both the town of Wadsworth and the Pyramid Lake Indian Reservation (Figure 2.7). This would eliminate the need for mine-related truck traffic through Wadsworth and across tribal lands at the east end of the Olinghouse County Road and would require upgrading of 4 miles of dirt and gravel service road along an existing ROW, primarily on private surface. The road would connect with an existing Interstate 80 frontage road. The access road would have a 40-ft wide gravel running surface and would be treated with water and/or a chemical dust suppressant, as necessary. Surface disturbance for this alternative would be similar to

the Proposed Action except for the addition of 18.9 acres associated with access road construction. Most of this area has been disturbed previously for pipeline installation. Final reclamation of the road would include narrowing to a two-lane configuration.

2.2.2 Alternatives Considered But Not Analyzed In Detail

Several additional alternatives were considered but not analyzed in detail because they were considered unreasonable, impractical, or outside the scope of this EIS. The topography in the vicinity of the proposed mine limits the availability of potentially usable alternative sites for the process area and waste rock dumps. Alta's early mine planning evaluated placement of the process facilities on the hill adjacent to the open pits. Subsequent construction and engineering constraints determined this site to be not feasible. No new alternative facility sites were suggested during scoping, and the placement of the proposed facilities poses no overriding environmental concerns.

An alternative using two waste rock dumps rather than one was considered. This alternative was dropped from detailed evaluation because it did not noticeably reduce visual impacts and disturbed approximately 10% more surface area.

The alternative of total or partial backfilling of the mine pits with waste rock was eliminated from detailed consideration for three principal reasons: 1) future mining of the pits could occur in the event of higher metal prices and/or new mining technologies, and backfilling may make these future options uneconomical; 2) since pit backfilling during mining would interfere with operations, any backfill material would have to be re-excavated from the waste rock dump and hauled uphill to the pits following mine closure--an economically prohibitive option; and 3) water quality in the pit lake is projected to be of good quality.

A selective waste rock handling plan was considered but eliminated from further analysis because of a minimal amount of acid-generating materials.

special conditions; provide buffering between residential developments and incompatible land uses; prevent subdivisions from locating next to Interstate 80 or the Southern Pacific Railroad; develop a solid waste plan with Reno and Sparks; ensure that hazardous materials are handled, stored, and transported in a safe manner; develop a transportation system standard for rural highways in unincorporated Washoe County; and require an EIS for any proposal to pipe wastewater through the planning area. The policy that addresses the development of natural resources lists two conditions for such development.

- Development of such resources shall not be detrimental to surrounding properties, land uses, and the environment in general.
- Review of special use permits required for aggregate pits shall consider access, surrounding land use, visual aspects, and site rehabilitation. Site rehabilitation shall include, as a minimum, provisions to return all affected areas to their original condition.

The Truckee Canyon Area Plan identifies Interstate 80 as a freeway and State Route 447 as a minor arterial. The Nevada Department of Transportation, in its Highway System Plan for 1989-98, lists the widening of State Route 447 from 24 ft to 30 ft from Wadsworth to Nixon as an Additional System Need; however, construction is not expected to begin within the next 10 years.

The lands in the project area are designated in the Truckee Canyon Area Plan as being least suitable for development.

The Washoe County Department of Comprehensive Planning is also a coordinating agency for the Washoe County Regional Open Space Plan, which identifies natural and cultural resources in Washoe County that should be preserved. Implementation of this plan includes activities such as Washoe County's cooperation with the BLM in planning for use of the recently acquired lands in the Pah Rah Range (see Section 3.11.1). Much of the land in the vicinity

of the project area is included in an area designated as potential open space on public lands.

3.11.4 Access and Rights-of-way

Access to the general vicinity is provided by Interstate 80, U.S. Route 50, and Alternate 50 from the east and west; State Route 447 from the north; and U.S. Alternate Routes 50 and 95 from the south. Access to the project area would be from State Route 447 (the Wadsworth-Nixon Highway) northwest from Wadsworth approximately 2 miles to the Olinghouse County Road, then approximately 5 miles west to the project area. The first 0.5 mile of the Olinghouse County Road immediately west of State Route 447 is owned by the Pyramid Lake Paiute Tribe, and no access agreement has been made between the tribe and Washoe County for public use of this section of road.

Wadsworth is located just north of Interstate 80 on State Route 427. Traffic between Interstate 80 and the project area must pass through Wadsworth and, in doing so, must pass the Natchez Elementary School and the proposed site of the Pyramid Lake High School. Traffic volumes on State Route 447 (1.1 miles north of State Route 427) averaged 865 vehicles per day in 1995 (yearly average of 550 to 1,050 vehicles per day from 1986 through 1995)--a relatively light traffic volume (Starnes 1996, 1997). Annual average traffic volumes on State Route 447 just south of Nixon during the same 10-year period ranged from 640 to 1,250 vehicles per day.

Existing ROWs on public land in the vicinity of the project area include the following (see Figure 3.13).

- ROW N38420 permits a water pipeline that serves the mine area and is held by Nevada Land & Resource Company.
- ROW N51086 permits Washoe County to maintain the Olinghouse Road.
- ROW N52282 permits access and buried and aboveground power lines to Great Basin Communications for the Pond Peak communications site.

provide for management activities that require major modifications to the existing character of the landscape.

Under the VRM system, Scenic Quality Rating Units were identified by the BLM Carson City District for the Pah Rah Range. The units correspond to portions of the landscape displaying similar visual characteristics or qualities. Letter values--A (highest), B, or C--were assigned to each unit based on the scenic quality of the unit relative to other units in the area. Generally, the more mountainous portions and the Truckee River corridor were considered to have moderately high scenic values and rated B, whereas the remainder of the area, including mostly the flat land and some lower foothills, was considered common and rated C. Viewer sensitivity of the project area ranked high because of the large number of viewers from Interstate 80 and State Route 447, the long duration of views from residential areas of Wadsworth and Fernley, and the relatively high sensitivity to visual quality attributed to people driving to Pyramid Lake for recreation. Viewing distances from public viewpoints to the project area range from 3 to 6 mi, which is considered "middleground" to "background" under the VRM System. Combining the scenic quality, sensitivity, and distance data results in much of the general vicinity of the project area being classified as Class III, whereas the areas that have been disturbed by previous mining are Class IV.

Three *key observation points (KOPs)* were selected for evaluating visual contrast ratings. These KOPs were selected to represent high-sensitivity and high-volume viewing perspectives of the proposed project: 1) on State Route 447 approximately 1 mile north of Olinghouse County Road; 2) at the intersection of State Route 447 and Olinghouse County Road; and 3) on Interstate 80 at the State Route 427 overpass (Figure 3.14).

KOP #1 is located on State Route 447 approximately 1 mile north of the intersection with the Olinghouse Road and represents views from motorists traveling between Wadsworth and

Pyramid Lake (Figure 3.15). Although views to the proposed mine site are at right angles to the direction of travel, this viewpoint provides an easterly perspective that other viewpoints do not and is closer to the project site than other high-use vantage points.

KOP #2 is located at the intersection of State Route 447 and the Olinghouse Road. Like KOP #1, it presents views to motorists from the state highway (Figure 3.16). Unlike KOP #1, however, it presents nearly straight-on view to motorists traveling northwesterly from Wadsworth. It also presents the view from the town of Wadsworth, although from a closer vantage point.

KOP #3 is located at the Interstate 80 overpass over State Route 427 and is the most distant of the three views--about 9.5 miles from the proposed mine site (Figure 3.17). However, it does present the most open view of the proposed mine site to the largest number of people. More than 5 million people pass this location on Interstate 80 every year. In addition, KOP #3 represents the view that Fernley residents would have of the proposed mine site.

3.12.2 Noise

The area of potential influence for noise effects from the proposed project is generally limited to within 3 to 5 miles of the project area. The nearest occupied residences are about 4.5 miles east-southeast of the proposed location of the main pit, and 3 miles from the nearest major project facility--the waste rock dump.

The principal sources of noise near the project area are natural, including wind, insects, and birds. Ranching- and recreation-related traffic generate occasional vehicular noise; however, traffic is very light. Exploration activity related to the proposed project currently generates noise from heavy equipment operation.

Existing noise levels likely range from 20 to 50 *dBA (A-weighted decibels)* in the more remote

Other county-wide revenues include sales tax, motor vehicle fuel taxes, road tax, and payments-in-lieu-of taxes.

Revenues collected in both Washoe and Lyon Counties are used to provide public services, including general government functions (administration, assessor, planning, etc.), public safety, roads, social services, public works, and parks, to name a few.

3.14.6 Indian Trust Assets

Indian trust assets are legal interests in property held in trust by the U.S. for Indian tribes or individuals. The Secretary of the Interior is the trustee for the U.S. on behalf of the Indian tribes. All Department of the Interior agencies share the duty to protect and maintain trust assets.

The Pyramid Lake Paiute Reservation is approximately 4 miles to the east of the boundary of the proposed Olinghouse Mine Project. The town of Wadsworth has the largest population on the Reservation and is located 7 miles southeast of the proposed project.

3.14.6.1 Water Resources

Groundwater in the Dodge Flat area has been used for irrigation, water supply, stock watering, and mining and milling activities. Numerous wells exist around Dodge Flat, both on and off the Reservation. Additional descriptions of the groundwater resources are located in Section 3.4.2.

3.14.6.2 Fish and Wildlife

The Pyramid Lake Paiute Tribe maintains two fish hatcheries in Sutcliffe and Numana to raise threatened Lahontan cutthroat trout and endangered cui-ui. The Tribe is working cooperatively with federal, state, and private agencies to protect spawning areas and improve river access for spawning. A detailed description

of fish and wildlife resources can be found in Sections 3.7 and 3.8.

The Pyramid Lake Paiute Tribe also manages and controls fishing and hunting rights on the Reservation.

3.14.6.3 Access and Transportation

Access to the general vicinity of the proposed project is provided by Interstate 80, then State Route 447 from Wadsworth and Olinghouse County Road to the project area. The first 0.5 mile of the county road from State Route 447 is owned by the Pyramid Lake Paiute Tribe. No access agreement has been made between the Tribe and Washoe County for public use of this section of the road.

All traffic between Interstate 80 and the project area currently must pass through Wadsworth and, in doing so, must pass the elementary school and the proposed site of Pyramid Lake High School. Additional information may be found in Section 3.11.4 of this document.

3.14.7 Environmental Justice

Under Executive Order 12898 (published in the Federal Register on February 11, 1994), federal agencies are required to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low income populations. Within the area potentially affected by the proposed project, the minority or low income populations are associated with the Pyramid Lake Paiute Reservation, including the community of Wadsworth. During the EIS process, particular efforts were made to ensure that members of the Pyramid Lake Paiute Tribe and residents of the Wadsworth community were informed of the proposed project, the EIS procedures, and the opportunity to provide comments.

the river by 0.1%. Additionally, the predicted cumulative reduction in groundwater discharge from Dodge Flat into the Truckee River is approximately 2,300 acre-ft over 9 years, representing 0.1% of the inflow to Pyramid Lake over that period. During the period of maximum pumping, the regional groundwater inflow to Dodge Flat is predicted to increase by 225 acre-ft. This inflow will likely come from groundwater flowing under the Truckee River from the south and southeast. The predicted flow volume represents only 2% of the groundwater outflow to Dodge Flat and the Tracy segment of the Truckee River from the Fernley area estimated by VanDenburgh and Arteaga (1985).

Because drawdown is expected to be minor and because much of the Dodge Flat alluvial aquifer consists of sand or more coarse-grained material that is not subject to permanent subsidence, worst-case estimates of permanent subsidence are slightly less than 1 ft.

4.4.2 Alternative A

Alternative A includes an access road that completely bypasses Wadsworth by upgrading an existing pipeline service road. Because this ROW is already disturbed and because it crosses alluvial fans with only small ephemeral drainages, no additional long-term impacts to water resources are anticipated from this alternative. Assuming that best management practices are followed during construction, there should be no impacts during this phase.

4.4.3 No Action Alternative

Under the No Action Alternative there would be no further modifications to surface drainage networks from the excavation of Mine Pit #1 nor from placement of waste rock dumps. Dewatering and potential discharge to surface waters would not occur, nor would evaporative water losses from an eventual pit lake. There would be no potential releases of hazardous substances beyond those that could occur now as a result of a spill along the existing Olinghouse County Road.

4.4.4 Monitoring and Mitigation Measures

Monitoring measures currently included in Alta's Plan of Operations and Water Pollution Control Permit Application include geochemical testing of waste rock as it is generated, daily observations of the pad and pond leak detection system, periodic analysis of the process make-up water, and meteorological monitoring to assist in determining water application rates to meet the heap and dust suppression requirements. In order to protect waters of the state, surface water and groundwater should be monitored periodically, and selected mitigation measures should be undertaken as described below.

Additional monitoring of surface water, groundwater, and meteorology should build on the existing baseline monitoring program conducted by Alta. This program should include the following.

- A new monitoring well should be installed directly downgradient of the ultimate pit footprint.
- Groundwater monitoring of all wells should continue on at least a semi-annual basis (i.e., at expected minima and maxima of groundwater levels). Monitoring should focus on improved characterization of the physical hydrology of the regional aquifer, on documentation of water quality trends as dewatering occurs, and on improving the certainty of the pit-lake water quality model. Analytes should include those evaluated in detail in the ecological risk assessment (excluding methyl mercury), those likely to exceed water quality standards, and suitable anions and cations (e.g., sodium vs. calcium, bicarbonate vs. sulfate) to determine the source(s) of groundwater.
- Detailed investigations should be undertaken during drilling, development, and use of the process-water well to improve estimates of Dodge Flat aquifer properties.
- Surface water monitoring should continue on a quarterly (flow) to semiannual

mimic nearby natural hillslopes would be especially effective in reducing visual effects in the long term.

4.12.1.5 Irreversible and Irrecoverable Commitment of Resources

The natural topographic features in the areas of the pit, waste rock dump(s), and heap would be permanently altered.

4.12.1.6 Unavoidable Adverse Effects

The project would permanently modify the existing landscape in the project area. The pits would remain permanently, as would the waste rock dumps and leach heap. Color and texture modifications would be substantially reduced by proposed reclamation measures, but landform modifications would be permanent.

4.12.2 Noise

4.12.2.1 Proposed Action

Major sources of noise from mining and processing operations of the proposed project would include rock drilling, blasting, loading or rock and ore, truck hauling, ore crushing, and crushed ore handling and distribution. Project construction would also include road building activities. Detailed equipment rosters have not been prepared, but noise generation estimates were drawn from experience with similar mining projects in Nevada.

The Proposed Action would be spread over an area about 2 miles north to south and 1 mile east to west. There would be several focal points of activity within that area that would generate noise. The residences south of the Olinghouse County Road and about 2 miles west of State Route 447 would be the nearest sensitive receptors to the proposed waste rock dump, where major activity would include large haul trucks dumping rock, as well as some dozer activity. Estimated worst-case noise levels from these activities would be approximately 96.6 dBA at the 50-ft reference

distance. Conservatively assuming attenuation of the noise only as a result of noise spreading over distance, the noise level experienced at the ranch buildings would be less than 49 dBA. Mining activity in the pits could generate somewhat higher noise levels at the source than the dump activities, but because of the greater intervening distance, noise levels at the ranch would be about the same or slightly higher than those estimated from the waste rock dump. As the project proceeds, pit noise reaching the ranch area would decline because the pit wall would form its own noise barrier, becoming more effective as the pit is deepened. The noise levels estimated at the ranch would be higher than existing levels or levels normally experienced in an undeveloped rural environment, but less than the 65-dBA level that is generally considered acceptable for exterior noise at a residential area.

Residents of Wadsworth would not be likely to experience perceptible changes in ambient noise levels from development and operation of the proposed project due to their increased distances. At worst, they may perceive activities as a low-level hum at times of extremely low background noise when there is no wind and little or no traffic noise.

Blasting noise is not included in the noise level estimates discussed above, primarily because mine blasting is typically an extremely brief event occurring once per day. With modern blasting techniques, the blasting would be experienced by people at the nearest residences and, perhaps, in Wadsworth, as a very brief and muted clap of thunder preceded by a warning whistle or siren. Public acceptance would be improved by scheduling the blasting at the same time every day to reduce the "startle factor."

4.12.2.2 Alternative A

Alternative A would change the pattern of traffic accessing the project site in the vicinity of the ranch. Whereas the time period that traffic noise would be perceived at the ranch would increase, the noise levels from traffic would be low and

The principal revenue increase for Washoe County would result from an increase in assessed valuation attributable to the mine and its support facilities. The total estimated capital expenditures for 1998 would be \$16.8 million, with total capital expenditures for the life of the mine totaling \$19.2 million. Ad valorem tax (property) tax is estimated by multiplying the capital investment by the assessed valuation (35%) by the tax rate (2.5078%). This tax is paid annually based on capital expenditures depreciated at the rate of 1.5% per year. Receipt of property tax revenue on operations would lag one year behind installation of improvements because of conventional assessment and collection practices. The estimated ad valorem tax associated with the proposed mine development would range from about \$147,000 in 1999 to about \$166,000 in 2002 with an average annual tax of about \$156,000 during the period of mine operations.

A net proceeds tax is collected on the production of gold at property tax rates. This tax is based on estimated mining profits, which depends on gold prices in the marketplace and the cost of production. Assuming a continuing market value for gold of \$325/oz based on recent market prices, the estimated cost of mining (\$200/oz) is approximately 61% of the value of production (Cummings 1996a). Under the proposed mine development scenario and production rates, the net proceeds tax would range from about \$640,000 in 1999 to about \$150,000 in 2004 and would total about \$3 million during mining operations. Gold production and the net proceeds tax would drop to zero in 2005.

The mine would also generate sales and use tax to the state and local governments. Estimated expenditure figures for local or regional supplies such as diesel fuel, gasoline, and other motor oils are not available; however, since Reno is a major supplier in the area, sales tax revenues to Reno and Washoe County should be substantial. In addition, numerous supplies could be purchased in the Fernley area.

During construction and operations, there would be increased costs to provide services, including education, to Fernley, Lyon County, and Lyon County School District. These jurisdictions would not share in the property tax or net proceeds revenues from capital investments at the proposed mine, so they would experience increased expenditures and little increase in revenues during the construction and operation phases. The most significant increases in expenditures would likely occur in public safety, schools, and community support activities.

In summary, it is anticipated that the Proposed Action would result in relatively large increases in revenue to Washoe County, whereas Fernley, Lyon County, and the Lyon County School District would likely experience some increased expenditures without corresponding revenue increases. Upon completion of the project, Washoe County would experience reductions in ad valorem and net proceeds tax revenues equivalent to the increases experienced at the outset of the project.

4.14.1.6 Indian Trust Assets

The Proposed Action would affect land resources related to Indian Trust Assets by crossing Tribal lands for the access road connecting the Olinghouse County Road to State Route 447 and by increasing overall traffic volume and hazardous materials transport through Wadsworth adjacent to the Natchez Elementary School. Impacts to water resources and wildlife and fisheries related to Indian Trust Assets are discussed in Sections 4.4.1, 4.7.1, and 4.8.1.

4.14.1.7 Environmental Justice

The Proposed Action would affect the Pyramid Lake Paiute Tribe and its members by increasing local employment opportunities.

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