

**ENVIRONMENTAL ASSESSMENT
FOR
RING BUTTE DIATOMITE MINE/MILL
OR-030-2000-06**

**Prepared by:
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I. INTRODUCTION

A. BACKGROUND

Diatomite occurrences in the Harper-Westfall area have been mined sporadically since 1910. DiaSource, LLC., and its predecessors of interest, West & Southern Mining & Mineral, Inc., and Diachemical Resources, LLC., have been attempting to develop a diatomite deposit since 1975. DiaSource, Inc. has been periodically extracting small amounts diatomite ore from the Ring Butte deposit since 1995, under a Notice of Operations (OR-50740) on file with the BLM Vale District Office. The existing operation involves about 3 acres of disturbance and some 4,200 tons of ore have been extracted to date. The material has been, and continues to be, hauled to a milling facility outside of Oregon.

Diatomite, or diatomaceous earth as it is also called, is a soft, crumbly, very light-weight, light-colored, highly porous sedimentary rock, consisting predominately of microscopic siliceous skeletons of diatoms, single-celled plants related to algae. The material is essentially chemically inert in most liquids and gases, has a low thermal conductivity and relatively high fusion point. Consequently, it has a number of uses, among them: filter aids, paint fillers, abrasives, anti-caking agents, low-impact insecticides, insulation, and a plant-growth medium.

B. PURPOSE AND NEED

This Environmental Assessment is prepared in compliance with the National Environmental Policy Act (NEPA) and the implementing regulations found in 43 CFR 3809.2-1. As the mine and proposed mill site are located on unpatented mining claims located on public lands administered by the Bureau of Land Management, the operations must comply with the provisions of the Surface Management Regulations (43 CFR 3809). In addition, as the mill site involves physical structures capable of being occupied, its operation must comply with the provisions of the Use and Occupancy Regulations (43 CFR 3715). These regulations recognize the statutory right of mining claim holders to develop federal mineral resources, as well as occupy the site(s) for mining-related purposes, and encourage such development consistent with the Mining and Mineral Policy Act of 1970 and the Federal Land Policy and Management Act of 1976 (FLPMA). The regulations require BLM to review proposed operations, including occupancy, to ensure that:

1. Adequate provisions are included to prevent undue and unnecessary degradation of federal lands.
2. Reasonable measures are included to reclaim disturbed areas resulting from the proposed operation and occupancy;

3. Use and occupancy of the lands are reasonably incidental to mining, and
4. The proposed operations and occupancy will comply with other applicable federal, state, and local laws, land use plans, and regulations.

C. CONFORMANCE WITH OTHER PLANS, AGREEMENTS, LAWS AND REGULATIONS

The proposed action is consistent with the following laws, regulations and plans:

The General Mining Law of 1872

This is the basic law governing the appropriation and purchase of federal mineral lands. It grants the right of an individual or company to use public lands for mining and associated activities (e.g., milling or waste disposal). This is a statutory right granted by the U.S. Congress. The BLM does not have the right to deny these actions except where they would: jeopardize rare or endangered plants and/or animals, or result in unnecessary or undue degradation of the environment. In those cases, denial is also non-discretionary.

The Mining and Mineral Policy Act of 1970

This law establishes the national policy of encouraging mineral development without undue hindrance.

The Federal Land Policy and Management Act of 1976

This law establishes the environmental protection requirements for the use, occupancy, and development of the public lands. Section 302 of the act directs the Secretary of the Interior to: (1) Manage the public lands under the principles of multiple use and sustained yield in accordance with approved land use plans, (2) To regulate the use, occupancy and development of the public lands, and (3) To prevent unnecessary and undue degradation of the public lands.

The 43 CFR 3715 Regulations

These regulations provide management controls over mining related use and occupancy of public lands, to ensure that those activities are reasonably related to mining.

The 43 CFR 3809 Regulations

These regulations provide surface management controls over mineral related activities, other than Wilderness Study Areas, to ensure that unnecessary or undue degradation of the public lands does not occur.

Northern Malheur Management Framework Plan. (1979)

This plan contains the decisions and overall plans for the use of public land in portions of Malheur County. The proposed action conforms to the multiple use intent of the plan and specifically with objective M-1, which calls for the retention of all public land known or suspected to contain valuable mineral or energy deposits for exploration, discovery, detailed quantity and quality determination and eventual mining.

Oregon State-wide Planning Goals (1985)

This document outlines the planning goals of the Oregon Department of Land Conservation and Development. The proposed action generally conforms with those goals, and more specifically with Goal 9-Economy of the state.

Malheur County Comprehensive Land Use Plan

This plan contains the official goals and policies of Malheur County concerning land use planning, including a policy of encouraging mineral development where it will improve the economy of the county, consistent with state, federal and environmental laws.

II. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

1. PROPOSED ACTION

DiaSource, LLC., proposes to expand an existing diatomite mine on Ring Butte and to construct a mill site about 0.5 miles southeast of the mine. The proposed operations would be situated on the E/B 2-5 placer mining claims (ORMC 149940-149943), held by Resource Holding LLC, which has entered into a lease agreement with DiaSource, LLC. for the mining and milling of the Ring Butte Deposit. Both operations would be situated on public lands that have been previously disturbed by mining and milling operations, and, therefore, no new disturbance is proposed. The proposed operations are located about 30 road miles west-northwest of Vale, in western Malheur County, Oregon, and are accessed via US Highway 20, the Harper-Westfall Highway (both paved) and Dahle Road (gravel). The sites are located on the following described land (see Figures 1 through 4, attached).

WILLAMETTE MERIDIAN

T.18 S., R. 41 E.

Section 34: SW¹/₄NW¹/₄NE¹/₄, NW¹/₄SW¹/₄NE¹/₄, SE¹/₄NE¹/₄NW¹/₄, NE¹/₄SE¹/₄NW¹/₄
(Mining Operation),
SW¹/₄SW¹/₄NE¹/₄SE¹/₄, SE¹/₄SE¹/₄NW¹/₄SE¹/₄, NE¹/₄NE¹/₄SW¹/₄SE¹/₄,
NW¹/₄NW¹/₄SE¹/₄SE¹/₄ (Milling Operation)

Mining Operations

Diatomite ore would be periodically extracted (3-4 times/year for 3-4 days/operation) using surface-mining methods throughout the proposed 5-year life of the project. Equipment would include a front-end loader, 1-2 tractor-trailer trucks and a mobile screening unit, and employ two to four people.

Approximately 6.1 acres on the top of Ring Butte would be mined. No pit would be produced; rather, the mining operation would “plane” off the top of the butte, lowering the elevation approximately 50 feet. To accommodate surface water runoff, the top of Ring Butte would be sloped to the west and northwest, where any runoff would be disbursed over a series of benches and pre-existing channels down the slope into a natural drainage; no storm water would be discharged from the mine site.

An estimated 33,500 tons of raw diatomite would be removed during the five-year life of this plan. However, DiaSource, Inc., has indicated that there is a substantial resource base in the area and there is a potential for the operation to last in excess of 25 years, expand in size to perhaps 1500-2000 acres and extract in excess of 10 million tons of ore. Should market conditions warrant, and the operation is expanded beyond its projected size, the plan would be modified or amended, or a new plan submitted, and additional environmental documentation prepared.

The mine would be accessed by an existing 12 foot wide haul spur/haul road that runs from Dahle Road to the top of Ring Butte. This road would be periodically graded to smooth the surface and reduce wear on trucks. Grading would usually be done after summer thundershowers or in the spring, when natural moisture is available to aid in compacting the surface. However, should the heavier truck traffic cause excessive powdering, soil cement, gravel, or asphalt would be considered to aid in making the road more truck resistant. As the top of Ring Butte Road becomes very dry during the summer months, a magnesium wetting agent and water would be used to control dust. Also, DiaSource trucks utilizing the road would be restricted to a maximum speed of 10 mph to help avoid excessive road wear and reduce dust levels.

In-place diatomite contains about 34% moisture. Mining would consist of plowing a 6 to 8 inch layer with a front-end loader. Loosened material would be temporarily stockpiled and run through a mobile screen unit, then re-stockpiled and sun-dried until the moisture content was reduced to 20%. Several stockpiles would be maintained to allow for quality segregation; low quality (reject) material would be used for road maintenance or stockpiled on the perimeter of the pit for later reclamation or marketing as a soil enhancement for agricultural purposes (see Figure 6). The field-dried diatomite would be trucked to a covered shed crude storage section of the mill facility by tractor-trailer for final drying prior to processing.

Mine Reclamation

As the proposed operation would not produce a pit, reclamation would consist largely of blending overburden and topsoil stockpiles into the adjacent natural soil. The material will be spread evenly over the disturbed area, contoured, disked and reseeded with a mixture approved by the BLM.

Milling Operations

The milling facility would be constructed on land previously graded for a milling operations during the late 1960s, and would be contained within a 5-acre, previously disturbed site, which includes a series of levees constructed to disperse any water collected during storm events onto the adjacent alluvial plain and into Bully Creek (see Figures 4 & 5). However, as previously mentioned in the description of the mining operations, extraction activities have the potential to expand substantially. Should that happen, the mill site could expand to as much as 250 acres, requiring the submission of either a plan modification or new plan and the preparation of additional environmental documentation.

The milling operation would be served with a 3-phase, above ground power line, which would consist of 6 power poles, 300 feet apart, and would run from Idaho Power's existing power line on the west side of the Harper-Westfall Highway to the mill, along the south side of Dahle Road; total distance would be about 2,160 feet (see Figure 4). Telephone service would be provided by Midvale Telephone, which would "plow" an underground line from its service pedestal across Dahle Road to the main mill building, a distance of approximately 700 feet (see Figure 5).

As the plant process is dry, water would be used only for a restroom facility and dust abatement along the Ring Butte Road, and would be obtained from local sources, either a re-activated abandoned water well, located about 100' south of Dahle Road, or a new well to be drilled. Should additional water be needed for dust control, it would be obtained from the Vale Oregon Main Canal manager and hauled to the project area by use of a water truck. Road abatement would also use a magnesium wetting agent, for

better control and lower water consumption. The total amount of water use during the life of the project is estimated to be 32,500 gallons.

The mill site will contain the following structures (see Figures 4 & 5):

1. Main Plant Building – 100 x 170' (17,000 ft²) with one exterior recessed truck loading dock, a 14' x 28' (392 ft²) pad for a product holding tank, an 75' long (approximate) recessed truck scale and 4' x 4' (16 ft²) product heating unit pad. The building will contain the milling and processing equipment as well as a quality control lab and restroom.
2. Two story Administrative Office and Conference Room/Sales Exhibits building – 30' x 30' (1,800 ft²) immediately adjacent and to the front of the main plant building.
3. Pre-manufactured office and restroom facilities – 8' x 50' (400 ft²) adjacent and to the rear of the main plant building. The restroom facilities would be connected to a septic tank and drain field system.
4. Custom Blending Building — 50' x 60' (3,000 ft²), containing blending tank, rotary heater, mixing and bagging equipment, as well as finished bagged equipment and an exterior recessed truck dock.
5. Shop Building – 70' x 40' (2,800 ft²) for repairs, welding and machinery, consisting of floor-mounted machine tools, hand tools, welders, air compressors, etc.
6. Fuel Depot pad – 60' x 20' (1,200 ft²) with surrounding containment berm for propane, gasoline and diesel storage tanks.
7. Belly dump ramp over Claybaker, located near the Main Plant's raw crude storage. Ramps would be approximately 140' x 14' over a claybaker unit with conveyor to the covered crude ore storage within the main plant building.

The milling operation would process the raw diatomite extracted from the Ring Butte mine and trucked to the mill site from the Ring Butte Road on an existing road to the mill (see Figure 4). Processing would consist of crushing, grinding, drying, sizing, and packaging the products, which would range from aggregate size to micron size

powders. To reduce fugitive dust emissions, all mill systems would use their own separate close-circuit dust collector (recycle) baghouse units. A dust collector unit would be installed to reduce fugitive dust generated when loading bulk trucks. The milling process is illustrated on the attached flow chart.

Mill Abandonment and Reclamation

Upon abandonment of the mining/milling operations, the mill would be decommissioned, and all structures torn-down and removed. After removal of the buildings, equipment and perimeter fencing, the concrete would be drilled for drainage holes; dirt would be graded over and revegetated with a BLM-approved seed mixture. Roads and stockpile pads would be ripped and blended with the underlying soil, graded to contour and revegetated with a BLM-approved seed mixture. Power and utility lines would be disconnected from their source at their County road right-of-way locations, power poles removed, and the lines reclaimed.

B. NO ACTION ALTERNATIVE:

Under this alternative, continued operation of the mine and development of the mill would not be allowed. The No Action Alternative is required by NEPA. Under the provisions of the General Mining Law of 1872, DiaSource, Inc., has the legal right to develop mineral deposits it has located on public lands. It is the BLM's responsibility to ensure that compliance with the applicable Federal and State Laws, such as the Endangered Species Act, the National Historic Preservation Act, The Oregon Mined Land Reclamation Act and both the 43 CFR 3715 (Use and Occupancy) and the 43 CFR 3809 (Surface Management) regulations is obtained.

It is also BLM's responsibility to insure implementation of reasonable reclamation and for specification of measures necessary to prevent unnecessary and undue degradation of the federal lands. The BLM could prevent implementation of the project only if the proposed actions violated one or more of the applicable laws and regulations and must specify changes in the proposed Plan of Operations needed to meet the requirements of law.

III. AFFECTED ENVIRONMENT

Air Quality: The proposed mine & mill site are situated in a rural area with no concentrated industrial activity. Consequently, air quality is good, although it is occasionally impacted by dust and smoke.

Water Resources: No perennial or intermittent water sources lie within the project area. The area consists of ephemeral drainages that have small catchments. Runoff flows north from

the site into the perennial waters of Bully Creek.

Wildlife: The area provides habitat for wildlife typical of Great Basin areas. Surveys conducted in 1998 documented use by mule deer, coyote, brewers sparrow, meadow lark, brown-headed cowbird, and sage sparrow. The location of the project area, adjacent to permanent water in Bully Creek, probably resulted in heavy historic livestock grazing. Past mining activities disturbed soils, increased human activities and reduced the amount of native plants upon which wildlife depends. Crested wheatgrass was seeded onto this low rainfall site many years ago and big sage has recovered to pre-treatment densities, now providing habitat for some wildlife species. Assessment of the health (Standards and Guidelines, 1995) of the habitat for native wildlife in 1998 documented that the area was “functional at risk”. That is, habitat was suitable for some species but conditions could deteriorate if management didn’t improve. Habitat conditions provided adequate sagebrush canopy cover for most wildlife, but the lack of herbaceous understory reduced the value of the area for many species. The proposed mining, hauling and processing would occur during spring, summer and early fall, when most wildlife species are breeding. The proposed project area is important deer winter range; however, no mining, hauling or processing is expected to occur during winter.

Vegetation: General vegetation at the base of the diatomite hill and surrounding country is characteristic of the extremely arid conditions of this area and consists primarily of an overstory of Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) with bunchgrasses (bluebunch wheatgrass - *Pseudorogneria spicata*; bottlebrush squirreltail - *Elymus elymoides*; Sandberg bluegrass - *Poa secunda*) and sparse forbs in the understory. Crested wheatgrass (*Agropyron cristatum*) has been seeded on the flats and benches surrounding Ring Butte. Other shrubs in the area include spiny hopsage (*Grayia spinosa*) and gray rabbitbrush (*Chrysothamnus naseosus*). Several distinctive plant communities are found surrounding the summit of Ring Butte, the most notable of which is a monardella (*Monardella odorotissima*) and wooly eriophyllum (*Eriophyllum lanatum*) community which occurs on the loose, white, diatomaceous substrate. Thelypody (*Thelypodium laciniatum*) and a cryptantha (*Cryptantha* sp.) is also found on the summit on the fringes of the monardella community. Another community near the summit consists of bottlebrush squirreltail, wooly eriophyllum, Indian paintbrush (*Castilleja chromosa*), penstemon (*Penstemon miser*), thread-stalk milk-vetch (*Astragalus filipes*) and an arenaria (*Arenaria* sp.), with a few scattered plants of ochre-flowered buckwheat (*Eriogonum ochraceophalum* ssp. *calcareum*). An annual fiddleneck (*Amsinckia* sp.) is found in most disturbed locations such along roadsides and on mounds of burrowing animals. Vegetation on the flats and benches consists primarily of Wyoming big sagebrush and a sparse understory of crested wheatgrass with scattered individuals of Indian ricegrass (*Oryzopsis hymenoides*).

Threatened/Endangered Species: There are no known Threatened, Endangered, or proposed wildlife species in the project area. Based on the information provided, activities

conducted in the proposed project area are unlikely to affect listed or proposed species off the project area assuming efforts to control storm water runoff and blowing dust on actively mined areas, roads, and processing areas are successful. Special Status Species likely present includes only loggerhead shrike. Other species that may have been present in the past or that may still occasionally occur includes sage grouse, pygmy rabbit, desert horned lizard and collard lizard.

There are no plant species being considered for listing under the Endangered Species Act, nor are there any state listed or Bureau sensitive species known in the area identified for mining operations or in the immediate vicinity. There is one BLM tracking species located on Ring Butte: ochre-flowered buckwheat.

Weeds: Whitetop (*Cardaria* ssp.) and Russian knapweed (*Acroptilon repens*), long-lived, invasive, perennial weeds, are well established in the area, especially along the Bully Creek drainage within a mile of the proposed mine site. Scotch thistle (*Onopordum acanthium*), an aggressive biennial weed, is moving into the area from large populations near the Harper-Westfall road.

Livestock Grazing: The project area is located in the 2,697 acre Bully Creek pasture that is grazed by cattle in rotation with eleven other pastures within Allotment #2.. The average stocking rate is approximately 7 acres per AUM. There are 385 AUMs of forage available to cattle within the pasture. The primary grazing season is from 04/01 to 05/01 with some late fall use. However, the pasture has only been grazed once in the past 7 years because of its poor ecological condition.

The pasture consists of 70% native range and 30% seeding The native range portion of the pasture is comprised of Wyoming big sagebrush with a sparse understory of bluebunch wheatgrass and bottlebrush squirreltail. The crested wheatgrass seeding is in poor ecological condition due to the low density and vigor of the crested wheatgrass plants.

The pasture was recently assessed for the Standards for Rangeland Health and determined to be “Functioning At Risk” primarily due to historic livestock use, historic and current diatomite exploration/mining, and erodible soils. Also, high sagebrush cover and lack of species diversity have contributed to the “Functioning At Risk” status.

Lands & Realty: Three existing rights-of-way are located in the vicinity of the proposed mill site location. These are a road right-of-way for Dahle Road (OR-011924) issued October 26, 1961, an electric power line right-of-way (OR-721 issued May 23, 1967 and a telephone line right-of-way (OR-39898) issued November 4, 1986. All would be utilized to provide access or utilities to the proposed mill site.

Topography: The mine site is situated on Ring Butte, a locally prominent hill located near the junction of the Harper-Westfall Highway and Dahle Road, and has been the site of extensive mining-related surface disturbance. Ring Butte is a moderately steep sided ($\pm 30\%$ grade), nearly flat-topped erosion feature that slopes the northwest, where it is drained by an intermittent stream that empties into Bully Creek. Local relief is approximately 298 feet, ranging from a low of some 3,000 feet at the base of Ring Butte, to a high of some 3,298 feet at the top (see Figure 4).

The mill site is situated on a low bench that has been previously graded for a mill site. The terrain surrounding the mill slopes gently to the northeast, onto a gently northeast-trending alluvial valley, which is traversed by an intermittent stream that empties into the Zimmerman Ditch, then into Bully Creek. Local relief around the mill is approximately 20 feet, ranging from a low of some 2,975 feet above sea level near the northwest corner of the property, near the main mill facilities, to a high of some 2,995 feet above sea level near the southeast corner of the property, near the fuel storage shop (see Figures 4 & 5).

Soils: Soils in the area consist of exposed lacustrine sediments and gravelly and silty alluvium. Slopes range from 5 to 60 percent with very little vegetation on the steeper areas. These soils have the potential to be highly erosive without vegetative cover and on steep slopes.

Geology/Mineral Resources: The area of the mine and mill site is underlain by interbedded sedimentary and volcanic rocks of the late Miocene Bully Creek Formation, ranging from less than 100 feet in thickness (mill site) to approximately 400 feet in thickness (Ring Butte). The main rock types consist of tuffaceous diatomite and diatomite, with minor occurrences of air-fall tuff and tuffaceous siltstone. The broad stream valley separating the mine and mill sites is blanketed by a relatively thin (less than 50 feet thick) Pliocene through Holocene slope wash/alluvial fan deposit of sand, gravel, and silt, derived from the surrounding highlands.

The diatomite and tuffaceous diatomite occurs as white, bedded deposits, and range in thickness from less than 1" to over 10'. Known reserves are estimated to be in excess of 50,000 tons, although only 40,000 tons are considered of sufficient quality to be mined. However, as there is a substantial resource base in the area, ultimate reserves are estimated to be in excess of 10 million tons.

Recreation: The project site is located within an area which receives dispersed recreational activities such as hunting and driving for leisure. People may presently drive to the top of the butte to see the existing excavation and a view of the surrounding area. On occasion, the hills to the south of the proposed mill site draw some additional non-motorized vehicle

use due to their contrasty and esthetically appealing appearance. Presently, there are no significant off-road motorized vehicle use activities occurring within or adjacent to the project area. This is a circumstance desirable to retain over the long term.

Visual Resources: The project area is within a VRM Class IV area. Overall, the visual quality of the project area is moderately low. However, it is adjacent to the existing asphalted Harper-Westfall county road, a primary artery used year-long by local rural residents of the area and by persons pursuing dispersed recreation activities on public lands. Thus, this road is a primary observation point for the adjacent viewshed of mining and milling operations, and increases the visual sensitivity of the landscape associated with that road.

Cultural Resources:

Prehistoric

The Native people of the Northern Great Basin practiced their ancestral lifeways into the 19th century and were heirs to an extremely ancient cultural tradition. Their technology was effective and efficient, utilizing many multi-functional, light-weight and expendable tools. Gathering activities are attested to by digging sticks, carrying baskets, and milling stones, and hunting is represented by the atlatl and dart, bow and arrow, stone projectile points, stone knives and scrapers. .

Historic

Cultural resources associated with the historic use of this area are tied to landforms as transportation corridors: wagon roads, historic homesteads, early irrigation project features, early mining activity areas, and remains of stage and telegraph stations. Exploration into this area by white Europeans began in the early 1830's. In 1845, Stephen Meek guided a train of 214 wagons up the Malheur River into central Oregon. The route of Meek's Cutoff passes the project area heading for Westfall before continuing westward. When miners searching for gold in the area were unsuccessful, they turned to farming and livestock production, particularly in the lower valleys, grassy hills and the many drainages that eventually flowed into the Malheur River. The Ontario to Burns Freight Road, in operation from 1844-1913, heads northwest out of Westfall. Hanna Stage Station is located on this road.

During the 1880's, small communities were established near reliable water sources, and during the 1890's, production of both cattle and sheep prospered. A rapid increase in population occurred in the northern part of Malheur County between 1930 and 1950 as a result of the development of the Vale and Owyhee Irrigation projects.

Paleontological Resources: The exploration for fossil localities has been limited, and confined to Pliocene, Miocene or Pleistocene age soils. Sediments associated with old lake beds may contain plant, fish or other marine animal remains since they have been located

in similar old lake sediments at Beulah Reservoir and south of Vale.

Native American Concerns: There are no known Native American concerns in this area. The old boundary of the Malheur Indian reservation was west of this location. There are no known plant gathering or tool stone quarries in this area.

Other Mandatory Elements: The following mandatory elements are either not present or would not be affected by the proposed action

Prime and Unique Farmlands

Fisheries

Wetlands/Flood plains

Wilderness/Wilderness Study Areas

Areas of Critical Environmental Concern

Wild & Scenic Rivers

Hazardous/Solid Wastes

Environmental Justice

IV. ENVIRONMENTAL CONSEQUENCES AND PROPOSED MITIGATION

A. **Proposed Action**

Air Quality: During operating periods air quality in the area would be slightly degraded as a result of the generation of dust and other particulate matter. However, due to the small size and intermittent nature of the operations, impacts would be expected to be small and localized and should not appreciably affect the surrounding area.

Water Resources: Soil erosion would increase as a result of surface disturbance and loss of vegetative cover. Under this alternative, erosion rates would be greater than under the no action alternative due to the disturbance of the site. Some sediment would be carried in the ephemeral drainages to Bully Creek.

After reclamation of the site, soil erosion rates would decrease as the seeded perennial species gained dominance over the annual species currently occupying the site. This would provide more protection of the soil surface. Perennial vegetation would reduce soil erosion and down stream sedimentation by providing improved protection of the soil surface.

Wildlife: The three facets of the proposed mining operation would impact wildlife habitat; the mine, along the haul road, and at the mill site. At the mine there would be the loss of vegetated habitat for up to 6 acres during the life of the operation plus an area around the mine where the disturbance from heavy equipment and other human activities would eliminate or greatly reduce the number of species and individuals present. Because mining operations would occur primarily from late spring to early fall, impacts would primarily be to one to several pair of breeding songbirds. Because operations would be sporadic, there would be time periods with no activity during which songbirds may built nests and be raising young; followed by several days of intense activity which would result in them deserting the nest.

Activities along the haul road should not destroy additional habitat, however, the increased traffic by large haul trucks, water trucks and other human activities could reduce the number of feeding visits adult birds make to nests adjacent to the existing road. The low speed of traffic would reduce the risk of striking and killing wildlife.

Impacts at the mill site would be similar to those at the mine. In this location, 5 acres of habitat would be directly impacted by removal of the vegetation, plus an unknown area around the mill would be disturbed by human activities to the level that some wildlife likely would be eliminated. Because of the erratic nature of disturbances, some songbirds could be unsuccessful in raising young, and other nest attempts could fail due to repeated disturbances at vulnerable stages in their life cycle.

Because the project would remove the vegetation from the mine and mill site there would be a loss of habitat for breeding and migrating songbirds. This loss would continue after the site is abandoned and rehabilitated due to the time necessary for vegetation to grow to the minimum height necessary for each species. This loss probably would be limited to 1-2 breeding pairs of 2-4 species of neotropical migratory songbirds for the length of the mining operation plus an estimated 10 years for vegetation recovery.

Vegetation: Where mining operations occur, all plants and plant communities would be destroyed. There would be a significant increase in the amount of annual species such a fiddleneck and cheatgrass on the disturbed areas and as rehabilitation would be conducted. The communities found on Ring Butte and surrounding area are represented in the general vicinity of the mining operation, so that no significant lose would occur to biodiversity and plant community representation with development of the mine site.

Where it occurs on Ring Butte, ochre-flowered buckwheat would be destroyed. However, no change would be expected to the long-term survival of this subspecies due to this project.

Threatened/Endangered Species: No impacts to Threatened, Endangered or Proposed animal species are expected from this project because none utilize the project area. If additional species are Proposed or Listed under the ESA there maybe need to amend this plan in the future.

No impacts to Threatened or Endangered plant species are expected from this project as none occur in the area.

Weeds: As no further disturbance is proposed, the site would be no more susceptible to domination by existing area weed populations than at present. However, mining equipment and company and worker vehicles from out of the area, may inadvertently introduce new weed species onto the site.

Topography: Approximately 28 acres of the project area (mine, mill site, “landing strip”, and Ring Butte Road) have been disturbed by previous mining-related activity; consequently, no undisturbed land would be affected by this project. However, as Ring Butte consists almost entirely of diatomite, the resulting mining operation would essentially remove the top of the butte, lowering its elevation approximately 50 feet.

As the mill site location was previously graded for a mill several years ago, only minor leveling, pouring of concrete for foundations and the erection of the necessary building, support facilities, and perimeter fencing, would be required. The resulting impact on the topography would be negligible

Soils: Soils in the area will not be altered from native conditions as DiaSource’s proposed activities will be a redisturbance of the site. Further disturbance would cause some accelerated erosion during mining activities.

Geology: Approximately 40,000 gross tons of diatomite ore would be excavated from Ring Butte during the projected 5-year life of this plan, of which some 33,500 tons would be processed in the mill, resulting in the depletion of a non-renewable resource. However, it has been estimated that the area contains several million tons of potentially mineral diatomite; consequently, the resultant impact would considered to be minor.

Lands & Realty: The proposed electric power line to be located in the SE¼, sec. 34, T. 18 S., R. 41 E., would be approximately 1,500 feet in length. The proposed telephone line to serve the site would be some 700 feet in length. Both of these facilities would require separate rights-of-way, presumably to be filed by the appropriate electric and telephone utility companies (Idaho Power Company and Midvale Telephone Company).

The construction of the overhead electric power line would require the placement of

several wooden poles, and the stringing of conductor. Soil disturbance would occur at the sites where the poles would be placed. Vegetation disturbance would occur at the pole sites and where construction vehicles would be driven.

The telephone line would be buried in the ground by the direct plowing method. Limited soil and vegetation disturbance would occur along the route of the telephone line.

Soil and vegetation disturbance associated with these activities would be considered to be insignificant.

Recreation: Due to the project area's relatively small size, excluding the recreating public from the project area would not cause a significant adverse impact on the recreating public. Through access on an existing east-west road through the project area would need to be maintained, or alternate access provided by the mining operator. There exists substantial opportunities for dispersed recreational activities adjacent to and removed from the project site. The extent of surface disturbing activities by the mining and milling development could more so result in increased off-highway motorized vehicle (OHV) uses. Without controlled access into the project area, there would be a proliferation of unnecessary and undesirable OHV uses and associated soil damage on steeper, erosive slopes, and would subject public land users to unsafe conditions associated with mining and milling activities.

Visual Resources: The proposed activities would be in concurrence with VRM Class IV management objectives. All reasonable measures to reduce visual impact of project activities as viewed from the Harper-Westfall Road would benefit the high visual sensitivity of the project's location and its proximate location to that road.

Cultural Resources: A cultural resource survey of the area was conducted on June 3, 1994. No prehistoric or historic cultural resources were located during that survey. The proposed action would have no affect on cultural resources. The inadvertent discovery of cultural resources that may be located during operations would be covered by the standard mitigation measures.

Paleontological Resources: There are no known vertebrate fossil localities within the proposed area. The proposed action would have no affect on paleo resources. The inadvertent discovery of fossil resources located during operations would be covered by the standard mitigation measures.

Native American Concerns: There is a lack of suitable plant and toolstone resources that would have attracted Native Americans to this area.

A. No Action Alternative

Air Quality: The minor increase in vehicle exhaust and fugitive dust generated by the proposed action would be reduced to zero following reclamation of the mine site.

Water Resources: Potential damages to water quality would be avoided under this alternative.

Wildlife: With cessation of DiaSource's operation and immediate reclamation of the mine site, potential losses to all vulnerable species of wildlife and wildlife habitat described under the proposed action would be avoided. Disturbances and noise associated with mill construction and operation would be eliminated, and natural recovery processes would continue at the previously disturbed sites.

Fisheries: As fisheries would not be affected by the proposed action, there would be no impact to this resource should the proposed action be denied and immediate reclamation of the mine site occur.

Vegetation: The ochre-flowered buckwheat occurrence on Ring Butte would not be impacted. The temporary loss of vegetative productivity would be shortened by immediate reclamation of the Ring Butte mine site.

Livestock Grazing: The loss of 2 AUMs per year described in the proposed action would be restored 15 to 20 years earlier due to denial of the proposed action and immediate reclamation of the Ring Butte mine site.

Threatened & Endangered Species: As no known T&E plant, animal or fish species are found in the project area, there would be no impact as a result of the denial of the proposed action and cessation of the existing mining operations.

Weeds: The potential introduction and/or spread of noxious weeds would not occur if the proposed action were denied, the existing operation ceased and immediate reclamation of the Ring Butte mine site initiated.

Lands & Realty: The construction of the power and telephone lines would not occur if the proposed action is denied. Consequently, associated surface disturbances, albeit minor, would not occur.

Topography: Potential changes to the topography of the mine site, most particularly, the lowering of the elevation of Ring Butte by some 50 feet, would not occur if the proposed action were denied. As the site of the proposed mill was graded several years ago, and no significant leveling was proposed, denial of the proposed action would

have no impact on the topography.

Soils: The site would remain in its disturbed condition with less chance of erosion losses under this alternative.

Geology/Mineral Resources: Immediate cessation of DiaSource's operation would reduce the amount of ore removed to the estimated 4,200 tons that have already been mined.

Recreation: An increase in off-highway motorized use, subsequent soil damage on steeper slopes and unsafe conditions associated with mining/milling activities would not occur with denial of the proposed action.

Visual Resources: Although visual quality in the project area is relatively low, denial of the proposed action, cessation of DiaSource's existing mining operation, and immediate reclamation of the mine site would result in a slight increase in visual quality, especially to those persons using the Harper-Westfall county road to pursue dispersed recreation activities.

Cultural Resources: A cultural resource survey of the area was conducted on June 3, 1994. No prehistoric or historic cultural resources were located during that survey. The no action alternative would have no affect on cultural resources.

Paleontological Resources: There are no known vertebrate fossil localities within the proposed area. The no action alternative would have no affect on paleo resources.

Native American Concerns: There is a lack of suitable plant and toolstone resources that would have attracted Native Americans to this area. The no action alternative would have no affect on Native American Concerns.

B. Proposed Mitigation Measures

In order to protect other resources which may be affected by implementation of the proposed action, the following mitigation measures/stipulations would be applied:

1. If archaeological or fossil material is discovered during operations, ground disturbing activities in that area must cease, the material must be left in place, and the Authorized Officer notified immediately. Such material shall remain the property of the United States.

2. Surface soil material from all disturbed areas (access roads, pits, trenches, drill pads, etc.) will be stockpiled for later reclamation in an area designated by the authorized officer.
3. All existing developments, including fences, cattle guards, roads, public land survey monuments, etc., will be maintained in serviceable condition at all times. Damaged or destroyed developments will be replaced, restored or appropriately compensated for as determined by the Authorized Officer.

In addition, implementation of the following measures will prevent unnecessary or undue degradation of the federal lands.

1. Maintain hand tools for fighting fire at the work site and be prepared to suppress any wildfires resulting from your operations. Report any wildfires to the BLM Vale District Office at (541) 473-6270 immediately.
2. All garbage and refuse will be removed from the site to an approved sanitary landfill.
3. Operations will be suspended during periods of wet or muddy road or soil conditions. If an access route becomes very dry and powdery, the road must be repaired or operations suspended. All roads must be maintained in a condition similar to that which existed prior to commencement of operations.
4. Dust abatement/suppression measures will be taken during periods of extreme dust generation and as otherwise determined by the authorized officer. Surfactants used for dust abatement must be of such a nature as not to prevent or interfere with vegetation regrowth and must not adversely affect water quality. Their use must be approved by the authorized officer.
5. Upon completion of surface disturbing activities, disturbed areas will be reclaimed, except for the evidence of mineralization, by sloping and contouring

to conform as much as possible to the natural terrain, replacing surface soil material over the restored area, and reseeded.

6. All disturbed areas will be drilled with the following mixture of pure live seed, certified as weed-free. If the seed is broadcast, the application may be doubled and raked into the soil. Apply seed in the fall, between October 15 and November 15.

SEED MIXTURE	RATE
“Secar” bluebunch wheatgrass	8 lbs./acre
bottlebrush squirreltail	1 lb./acre
“Magnar” Great Basin wildrye	2 lbs./acre
Woolly eriophyllum	0.5 lb./acre
Scarlet globemallow	0.5 lb./acre
Western yarrow	0.5 lb./acre
“Ladak” alfalfa	0.5 lb./acre

7. To ensure new noxious weeds are not introduced into the project area (and/or spread outside of the project area), all ground disturbing equipment and support vehicles (including trailers) must be thoroughly washed before coming onto public lands (and thoroughly washed before leaving the project area).
8. Boundaries of the project area will be posted to notify public land users to drive motorized vehicles only on existing routes. Within the project area, safety signs will be appropriately placed to warn public land users of dangers and/or restrictions of access.
9. Motorized vehicle access will be provided for the public at the existing east-west dirt road which traverses the project area, or an alternate motorized vehicle access route to meet that need will be constructed so by the mining operator. Any new such road alignment and construction must have prior BLM approval, and must be constructed so as to meet BLM’s best management practices for road construction and maintenance. Upon completion of

mining activities, motorized vehicle use routes determined by the BLM as not needed for access purposes and/or to minimize environmental impacts will be reclaimed so as to blend with the surrounding landscape setting.

10. Motorized access to the mine-site will be limited to the existing Ring Butte haul road. No new motorized routes will be developed on the western slopes of Ring Butte without prior BLM approval.
11. The extent of shiny, light-reflective structural materials will be kept to a minimum. All structural facilities will be painted in accordance with BLM specifications. Structural facilities and cleared areas will be designed, constructed and placed so as to preclude and/or minimize their visual presence as viewed from the Harper-Westfall Road as much as possible.
12. In order to minimize environmental disturbance resulting from the construction and operation of the utility lines proposed to serve the mill site, the rights-of-way for the proposed telephone line and electric power line would be issued subject to the Malheur Resource Area standard stipulations for rights-of-way.

D. Cumulative Impacts

Cumulative impacts are the combination of effects of past, present, and reasonably foreseeable future activities on the subject parcel and where they may add incrementally to the effects from activities on nearby areas.

No significant cumulative impacts have been identified for most resources. Those that have been identified have been discussed below.

1. Regional Mining Activity

Within a radius of 15 miles from the project area, there has been a substantial amount of past mineral activity, mainly unsuccessful attempts to develop the diatomite deposits in the area. and which has resulted in a great deal of surface disturbance. Currently the only activity mining in a small diatomite mine operated

by DiaSource, Inc., on Ring Butte, the site of the proposed action, under a Notice of Operations (OR-50740) which is on file with the BLM Vale Office. Approximately three acres of land has been disturbed and some 4,200 tons of diatomite ore has been removed.

Aside from three small BLM-administered community pits that are only mined sporadically, and one common use area that involves no surface disturbance, no active mining is occurring in the general vicinity of the project area. There has, however, been recent exploration in the area, mainly for gold and diatomite, involving eight notices and one plan of operations. Four operations have either been abandoned or inactive, although successful reclamation has not yet been completed; the other five operations have been successfully reclaimed.

Given the very large resource base for diatomite in area, and the small size of the proposed action, cumulative impacts to mineral resources would be minor.

2. Wildlife

The proposed project will remove breeding habitat being used by several neotropical migratory bird species. Because of measurable declines in several migratory species there is growing concern for the loss of additional big sagebrush habitat throughout the Great Basin. Individual pairs of birds will return from wintering areas in south and central America and not find suitable habitat while the mine is operational and during the rehabilitation process. Typically, all available nesting areas are occupied and the pairs losing this acreage will not be able to find a vacant territory or the existing territories will be smaller and provide less food to nestlings. Loss of this habitat will be in addition to losses throughout the Great Basin from all causes (agriculture, human dwellings and businesses, fires, mining, conversion projects etc.). Regardless, fewer individuals will migrate from North America in fall and return next spring. There is no existing mechanism to track all the acreage losses of sagebrush habitat that occur, but this project will contribute to the total.

Cumulative impacts to other wildlife species, both migratory and non-migratory, would be insignificant.

V. RELATIONSHIP BETWEEN SHORT-TERM USE TO LONG-TERM PRODUCTIVITY

Although mining would be sporadic, impacts to livestock grazing and wildlife habitat would continue year-round for the life of the project due to the removal of vegetation. However,

impacts would be localized at the mine, along the haul road and at the mill site. The area of impact would not extend beyond approximately 1/4 mile from the area of activity. A considerable amount of unaffected area would exist, which would support livestock and wildlife in the period until vegetation recovered.

Ultimate reclamation of the project area would eventually replace the vegetative cover that has been removed in the past and would remain bare during the life of the mining/milling operation; however, it would take several decades for the vegetative productivity to be restored to approximately the naturally occurring community following site reclamation.

VI. COMMITMENT OF RESOURCES

The commitment of resources would extend for the life of the project. Reclamation, including reshaping topsoil and reseeding would allow the disturbed areas to approximate the surrounding landscape. Diatomite ore removed from the mine will represent a commitment of resources.

VII. CONSULTATION AND COORDINATION

A. Individuals and Agencies Consulted

Dick Evons, DiaSource, Inc.

Mined Land Reclamation Program
Department of Geology & Mineral Industries (DOGAMI)

U.S. Department of Agriculture
Rural Development
Rural Business Cooperative Service

B. Participating members

<u>Name</u>	<u>Position</u>
Bob Alward	Outdoor Recreation Planner
Al Bammann	Wildlife Biologist
Jean Findley	Botanist
Bill Holsheimer	Geologist, Team Leader
Diane Pritchard	Archaeologist
Jon Freeman	Realty Specialist
Shaney Rockefeller	Hydrologist/Soil Scientist
Cynthia Tait	Fishery Biologist
Tom Hilken	Rangeland Specialist

C. Public Scoping

A total of 37 individuals, organizations and government agencies were sent notices that an Environmental Assessment was being prepared for the proposed action. A list is available for public review at the Vale District Office.

D. Public Interest: None of Record

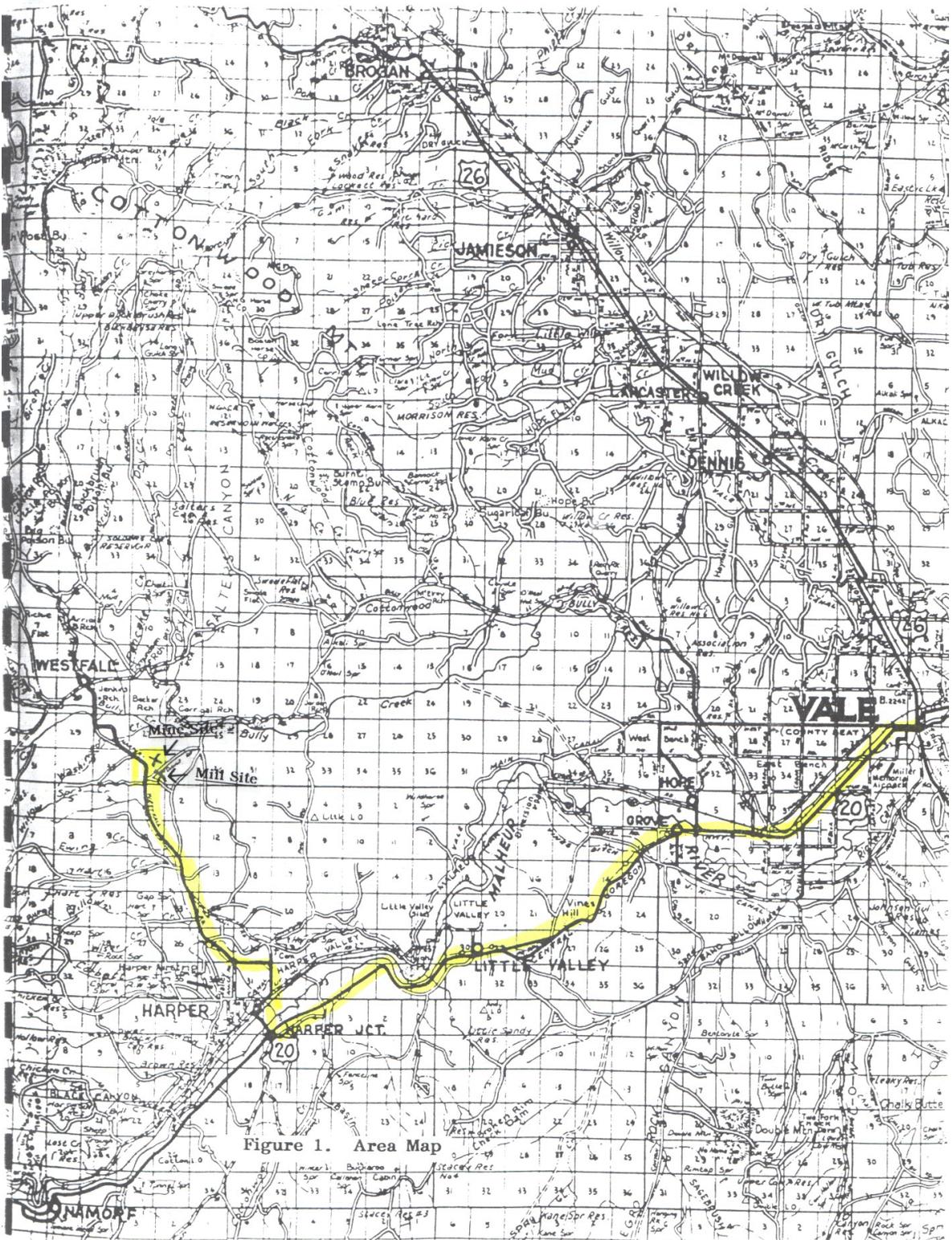


Figure 1. Area Map

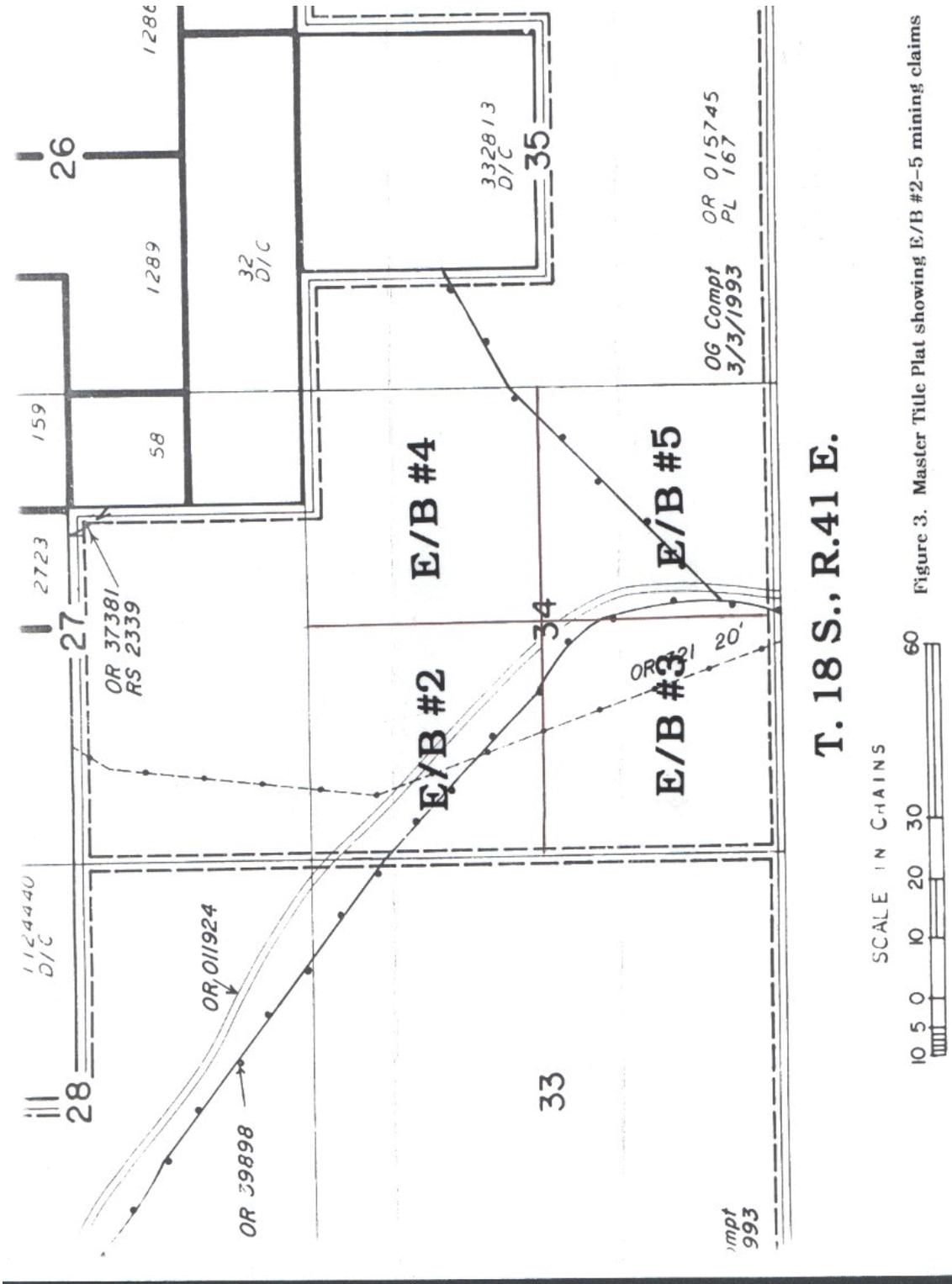


Figure 3. Master Title Plat showing E/B #2-5 mining claims

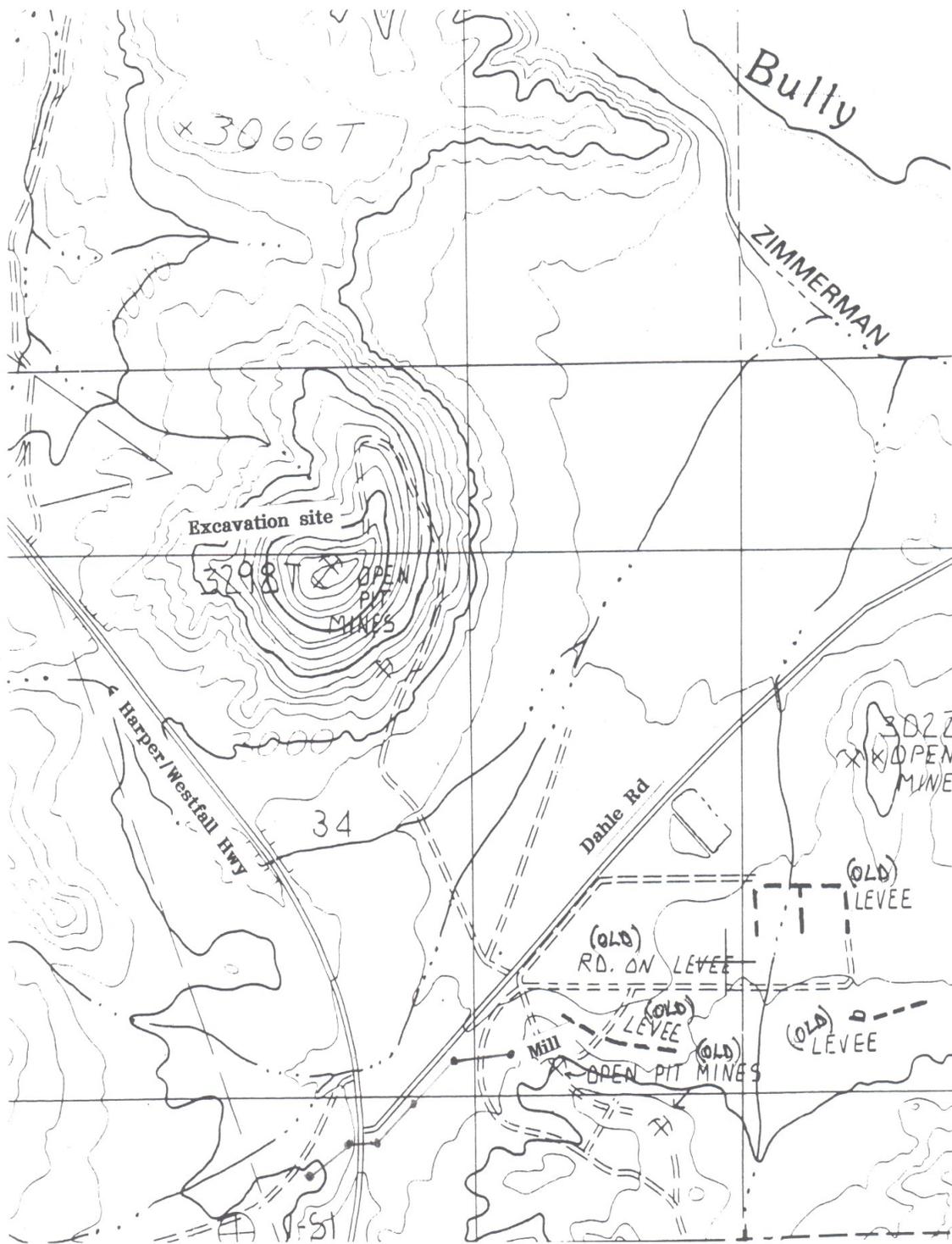


Figure 4. Mill Facility Site
POWER LINE ROUTE

Scale: 1" = 800'

Deposit Excavation Plan of 6.1 acres
Surveyed by Edwards & Cummings Engineering

scale: 1" = 270'

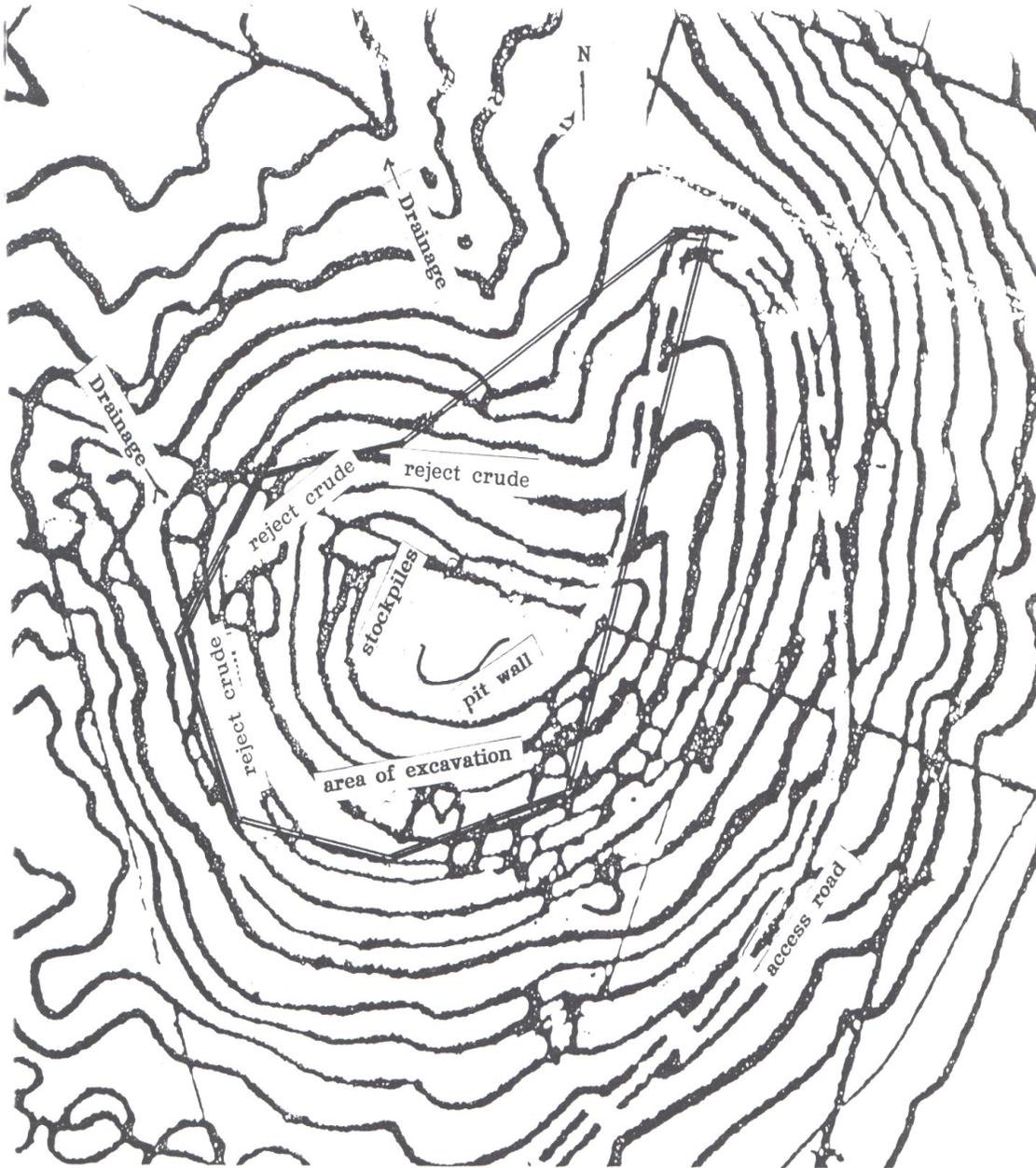


Figure 6. Deposit Plan

DiaSource Processing Plant

Flow Chart

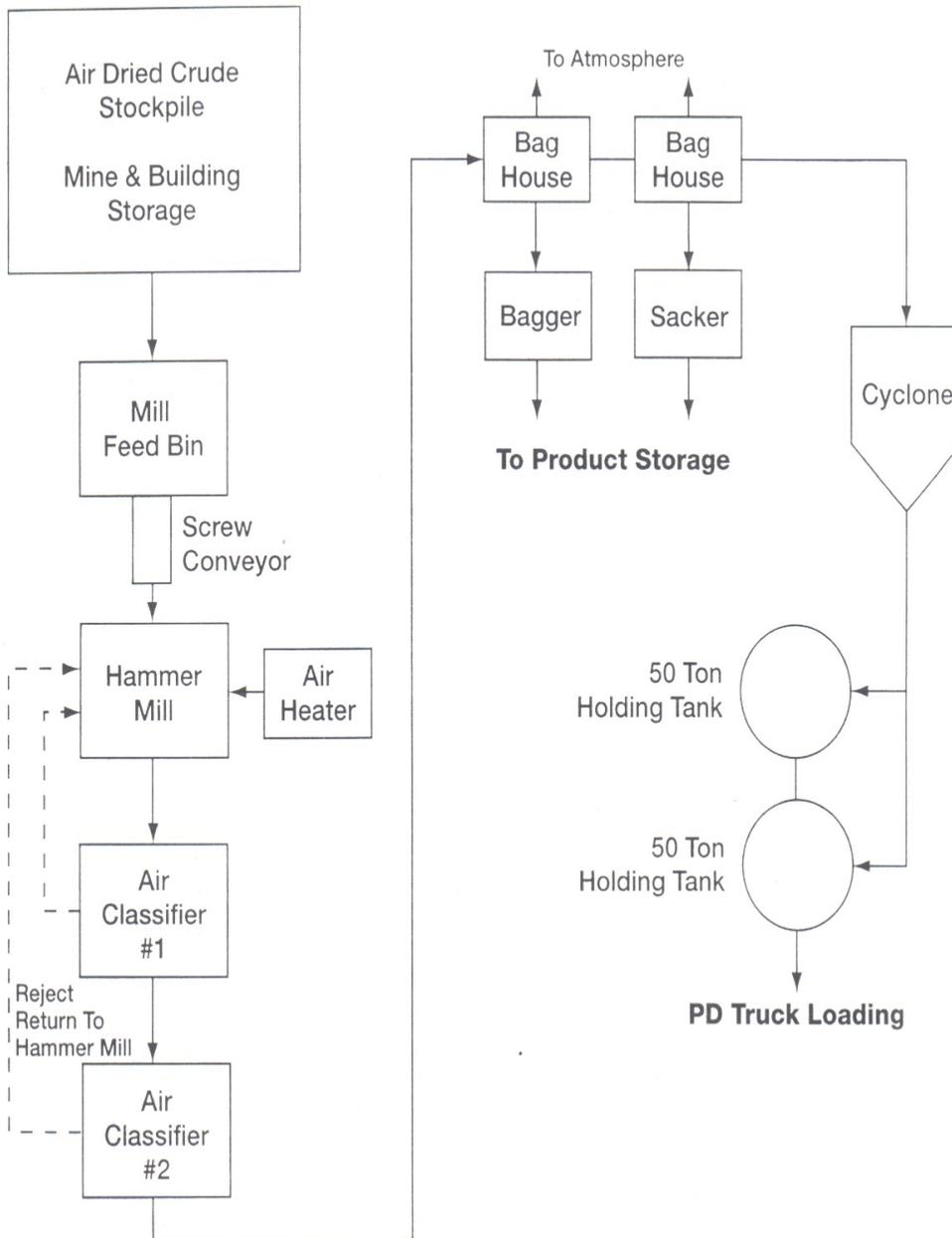


Figure 7.

FINDING OF NO SIGNIFICANT IMPACT

I have reviewed this environmental assessment, including the explanation and resolution of any potentially significant impacts. I have determined that the proposed action with the mitigation measures described in the EA will not have any significant impacts on the human environment and that an EIS is not required. I have determined that the proposed action is in conformance with the approved land use plan.

Authorized Official: _____ Roy L. Masinton _____
Field Manager, Malheur Resource Area

Date: 7/10/2000

DECISION RECORD

It is my decision to approve the proposed action for the DiaSource, LLC plan of operations, as described in EA OR-030-2000-06, including mitigation measures described below, and contingent upon receipt of an adequate reclamation bond.

Mitigation Measures

1. If archaeological or fossil material is discovered during operations, ground disturbing activities in that area must cease, the material must be left in place, and the Authorized Officer notified immediately. Such material shall remain the property of the United States.
2. Surface soil material from all disturbed areas (access roads, pits, trenches, drill pads, etc.) will be stockpiled for later reclamation in an area designated by the authorized officer.
3. All existing developments, including fences, cattle guards, roads, public land survey monuments, etc., will be maintained in serviceable condition at all times. Damaged or destroyed developments will be replaced, restored or appropriately compensated for as determined by the Authorized Officer.
4. Maintain hand tools for fighting fire at the work site and be prepared to suppress any wildfires resulting from your operations. Report any wildfires to the BLM Vale District Office at (541) 473-3221 immediately.
5. All garbage and refuse will be removed from the site to an approved sanitary landfill.
6. Operations will be suspended during periods of wet or muddy road or soil conditions. If an access route becomes very dry and powdery, the road must be repaired or operations suspended. All roads must be maintained in a condition similar to that which existed prior to commencement of operations.
7. Dust abatement/suppression measures will be taken during periods of extreme dust generation and as otherwise determined by the authorized officer. Surfactants used for dust abatement must be of such a nature as not to prevent or interfere with vegetation regrowth and must not adversely affect water quality. Their use must be approved by the authorized officer.
8. Upon completion of surface disturbing activities, disturbed areas will be reclaimed, except for the evidence of mineralization, by sloping and contouring to conform as much as possible to the natural terrain, replacing surface soil material over the restored area, and reseeded.

9. All disturbed areas will be drilled with the following mixture of pure live seed, certified as weed-free. If the seed is broadcast, the application may be doubled and raked into the soil. Apply seed in the fall, between October 15 and November 15.

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10. To ensure new noxious weeds are not introduced into the project area all ground disturbing equipment and support vehicles (including trailers) must be thoroughly washed before coming onto public lands.
11. Boundaries of the project area will be posted to notify public land users to drive motorized vehicles only on existing routes. Within the project area, safety signs will be appropriately placed to warn public land users of dangers and/or restrictions of access.
12. Motorized vehicle access will be provided for the public at the existing east-west dirt road which traverses the project area, or an alternate motorized vehicle access route to meet that need will be constructed so by the mining operator. Any new such road alignment and construction must have prior BLM approval, and must be constructed so as to meet BLM’s best management practices for road construction and maintenance. Upon completion of mining activities, motorized vehicle use routes determined by the BLM as not needed for access purposes and/or to minimize environmental impacts will be reclaimed so as to blend with the surrounding landscape setting.
13. Motorized access to the mine-site will be limited to the existing Ring Butte haul road. No new motorized routes will be developed on the western slopes of Ring Butte without prior BLM approval.
14. The extent of shiny, light-reflective structural materials will be kept to a minimum. All structural facilities will be painted in accordance with BLM specifications. Structural facilities and cleared areas will be designed, constructed and placed so as to preclude and/or minimize their visual presence as viewed from the Harper-Westfall Road as much as possible.

Authorized Official: s/Roy L. Masinton
 Field Manager, Malheur Resource Area

Date: 8/14/2000