

**BUREAU OF LAND MANAGEMENT
LAKEVIEW DISTRICT**

NOTICE OF AVAILABILITY

**Cornerstone Industrial Minerals, Inc.
Tucker Hill Quarry Plan of Operations Amendment
Environmental Assessment (EA# OR-010-2008-01) and
Finding of No Significant Impact (FONSI)**

The Bureau of Land Management (BLM) has analyzed a proposal and one alternative authorizing the use of a new disposal area for waste material from the Tucker Hill perlite mine. To date, waste rock has been placed in an old gravel pit at the base of Tucker Hill site near Highway 31. This old gravel pit site has been almost completely filled. A new disposal site is needed. The proposed 9.2 acre disposal site is located approximately 39 miles northwest of Lakeview in Township 34 South, Range 19 East, Sections 23-26, 34, and 35. Project activities would consist of moving and stockpiling growth media, transporting waste material from the quarry and depositing it on the site, covering the site with the growth media, and reseeded the area.

The EA and FONSI document the potential effects of each alternative. Copies are available for review by writing to the BLM, Lakeview District Office, 1301 South G Street, Lakeview, Oregon 97630, or by calling Paul Whitman at (541) 947-2177. An electronic copy is also available at <http://www.blm.gov/or/districts/lakeview/plans/index.php>. If you wish to comment on the proposal, you must do so in writing at the address above by February 21, 2008.

FINDING OF NO SIGNICANT IMPACT

CORNERSTONE INDUSTRIAL MINERALS, INC. TUCKER HILL QUARRY PLAN OF OPERATIONS AMENDMENT EA# OR-010-2008-01

Background

The Bureau of Land Management, Lakeview Resource Area, has analyzed a proposal and one alternative related to authorizing the use of a new disposal area for reject perlite material from the Tucker Hill perlite mine. Cornerstone Industrial Minerals, Inc. currently operates a perlite quarry on top of Tucker Hill. The BLM originally approved a mining Plan of Operations (POO) for the quarry in April of 1996, based upon analysis contained in an Environmental Impact Statement (EIS). The BLM has analyzed the effects of approving an amendment to the POO which authorizes the use of the new disposal site in the attached environmental assessment (EA).

The existing operation consists of mining perlite from the quarry and transporting to a plant in Lakeview for processing and shipping. Waste rock has been placed at the base of Tucker Hill in an old gravel pit site near Highway 31 formerly operated by Lake County as part of the reclamation plan for the County gravel pit. This old gravel pit site has been almost completely filled. A new disposal site is needed.

The proposed disposal site is located in Lake County, Oregon, approximately 39 miles northwest of Lakeview (Figure 1.1.1 of EA). Project-related activities would consist of moving and stockpiling growth media from the existing gravel pit, transporting reject perlite material from the Tucker Hill Quarry and depositing it in the pit, covering the perlite material with the stockpiled growth media, and reseeding the area (Figure 1.1.2 of EA). The project area is located in Sections 23 through 26, 34, and 35, Township 34 South, Range 19 East and covers approximately 9.2 acres.

Conformance with Existing Plans

The proposed project is not consistent with the approved POO (as currently amended) for the Tucker Hill Quarry. Approval of the proposed disposal area would amend the POO to allow the use of the abandoned gravel pit for disposal of perlite material.

The proposed project is also consistent with the mineral and other resource management goals in the BLM's Lakeview Resource Management Plan and Record of Decision (RMP/ROD; BLM 2003b). Conformance with this plan is detailed further in the attached EA.


Summary of Impacts

There are no areas of critical environmental concern, research natural areas, wilderness study areas, designated wilderness areas, areas with wilderness characteristics, wild and scenic rivers, prime and unique farmlands, floodplains, special status plants, wetlands, riparian areas, fisheries or aquatic habitats, recreation areas, wild horses, cultural resources, or paleontological resources in the project area. None of the alternatives analyzed would have any impacts to low income or minority populations.

Impacts to other resource values (soils, air quality, water quality, vegetation, noxious weeds, wildlife, threatened, endangered or sensitive wildlife species, livestock grazing management, native American religious concerns, socio-economic conditions, hazardous materials, and visual quality) are minor and have been mitigated to extent practical. These impacts are described further in the attached EA.

Finding

On the basis of the analysis contained in the attached EA (#OR-010-2008-01) and all other available information, my determination is that none of the alternatives analyzed would constitute a major federal action which would adversely impact the quality of the human environment. Therefore, an Environmental Impact Statement (EIS) is unnecessary and will not be prepared.


Thomas E. Rasmussen, Manager
Lakeview Resource Area


Date

**CORNERSTONE INDUSTRIAL MINERALS, INC.
TUCKER HILL QUARRY PLAN OF OPERATIONS
AMENDMENT**

**Environmental Assessment
EA# OR-010-2008-01**

January 2008

**U.S. Department of the Interior
Bureau of Land Management
Lakeview District Office**

**CORNERSTONE INDUSTRIAL MINERALS, INC.
TUCKER HILL QUARRY PLAN OF OPERATIONS AMENDMENT
ENVIRONMENTAL ASSESSMENT**

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ACRONYMS

ACEC	Area of Critical Environmental Concern
BLM	Bureau of Land Management
BMPs	Best Management Practices
CEQ	Council on Environmental Quality
CERCLA	Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DOI	Department of the Interior
DEIS	Draft Environmental Impact Statement
EA	Environmental Assessment
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
MOA	Memorandum of Agreement
MSHA	Mine Safety and Health Administration
NRCS	Natural Resources Conservation Service
NEPA	National Environmental Policy Act
OHV	Off-highway vehicle
POO	Plan of Operations
RCRA	Resource Conservation and Recovery Act
RMP/ROD	Resource Management Plan/Record of Decision
USC	United States Code
VRM	Visual Resource Management

**CORNERSTONE INDUSTRIAL MINERALS, INC.
TUCKER HILL QUARRY PROJECT
ENVIRONMENTAL ASSESSMENT**

1 INTRODUCTION / PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

Cornerstone Industrial Minerals, Inc. (Cornerstone) currently operates a perlite quarry on top of Tucker Hill. The BLM originally approved a mining Plan of Operations (POO) for the quarry in April of 1996 (BLM 1996a), based upon analysis contained in an Environmental Impact Statement (EIS) (BLM 1995; 1996b). Since that time, the POO has been amended on three occasions. Previous amendments dealt with the use of a portable, on-site crusher in 1999, minor changes to pit development design, including a blasting schedule revision in 2001, and haul road modification in 2005. At this time, Cornerstone has proposed an amendment to the POO involving the use of a new waste rock disposal site. Cornerstone proposes to backfill an existing abandoned gravel pit with waste rock perlite material excavated from the Tucker Hill Quarry (Project). This Environmental Assessment (EA) will incorporate information and analysis contained in the Draft Environmental Impact Statement (DEIS) (BLM 1995) and the Final Environmental Impact Statement (FEIS) approved for Atlas Perlite, Inc.'s Tucker Hill Quarry (BLM 1996b), where appropriate. Atlas Perlite, Inc. was the former operator of the Tucker Hill Quarry and Cornerstone is the current operator.

The proposed disposal site is located in Lake County, Oregon, approximately 39 miles northwest of Lakeview (Figure 1.1.1). Project-related activities would consist of moving and stockpiling growth media from the existing gravel pit, transporting reject perlite material from the Tucker Hill Quarry and depositing it in the pit, and then covering the perlite material with the stockpiled growth media (Proposed Action) (Figure 1.1.2). The Project is located on public land administered by the Bureau of Land Management's Lakeview District Office (BLM) in Sections 23 through 26, 34, and 35, Township 34 South, Range 19 East (T34S, R19E), Willamette Baseline and Meridian.

1.2 Purpose and Need for Action

The existing operation consists of mining perlite from the quarry and transporting to a plant in Lakeview for processing and shipping. Waste rock has been placed at the base of Tucker Hill in an old gravel pit site near Highway 31 formerly operated by Lake County (see Figure 1; BLM 1996b) as part of the reclamation plan for the gravel pit. This gravel pit site has been almost completely filled with waste or rejected material. A new disposal site is needed. The purpose of the Proposed Action is to permanently store reject perlite material from the existing perlite quarry as part of on-going efforts to meet demands for products made from perlite in the United States and Canada. Perlite is utilized for the manufacture of ceiling tiles for building construction, as a filter aid, and for a variety of agricultural purposes, including potting soil. The Tucker Hill Quarry provides a close and relatively inexpensive source of perlite for west coast markets resulting in less cost to the consumer and less use of fossil fuels.

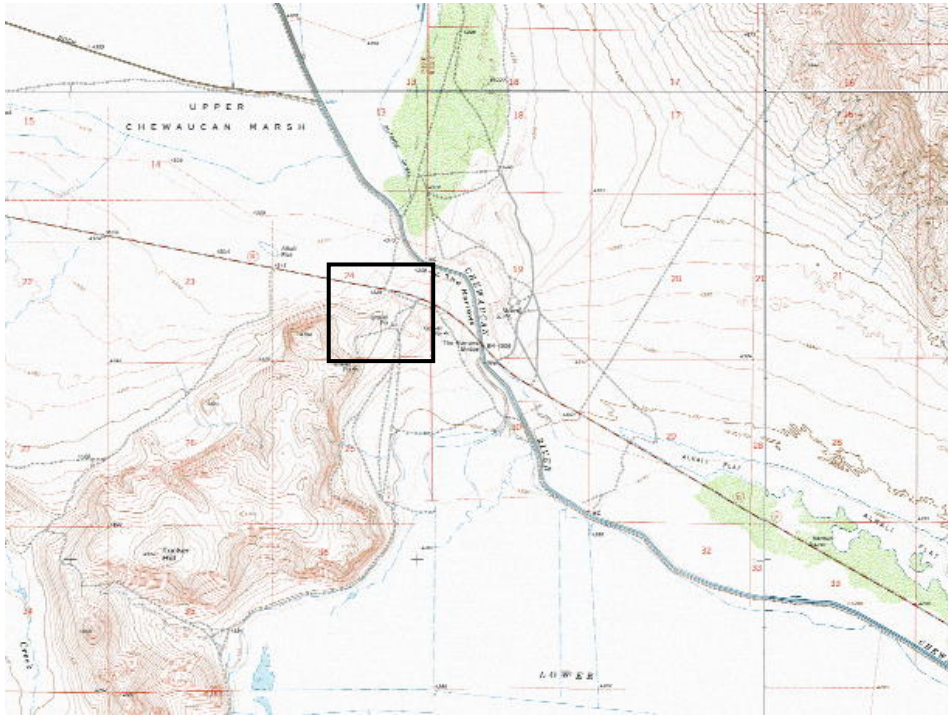
1.3 Conformance with Existing Plans

The Proposed Action is not consistent with the approved POO (as amended) for the Tucker Hill quarry. Approval of the Proposed Action would amend the POO to allow the use of the abandoned gravel pit for disposal of perlite material.

This EA was prepared in conformance with the policy guidance provided in BLM's National Environmental Policy Act (NEPA) Handbook (BLM Handbook H-1790-1). The BLM Handbook provides instructions for compliance with the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA and the Department of the Interior's (DOI's) manual on NEPA (516 DM). This EA complies with this guidance.

This Proposed Action is consistent with the mineral management goals in the BLM's Lakeview Resource Management Plan and Record of Decision (RMP/ROD; BLM 2003b). Specifically, the Energy and Mineral Resources section of the RMP/ROD states that, "within legal constraints, all federal mineral estate locatable, leasable, and salable mineral will be available for exploration, development, and production, subject to existing regulations and standard requirements and stipulations" (pages 88 to 89). Mineral management goal 1 of the RMP/ROD is to "provide opportunity for the exploration, location, development, and production of locatable minerals in an environmentally sound manner" (page 89). Map M-10 shows Tucker Hill and lands located immediately to the northeast are open to locatable mineral activity, but are subject to certain restrictions. Appendix N-3, Attachment 1, further describes the guidelines and restrictions that would be applied to locatable mineral development activities (pages A-177 to A-179).

In addition, the RMP/ROD contains management direction for other resources or management concerns that may be present in the Project area, including noxious weeds (pages 37 to 38), cultural resources (pages 74 to 79), air quality (page 80), and visual resource (page 88) management goals, and best management practices (BMPs) (Appendix D, pages A-2 to A-7) that may be applicable to the proposed Project area.



LOCATION MAP
Proposed Tucker Hill
Gravel Pit Fill & Reclaim

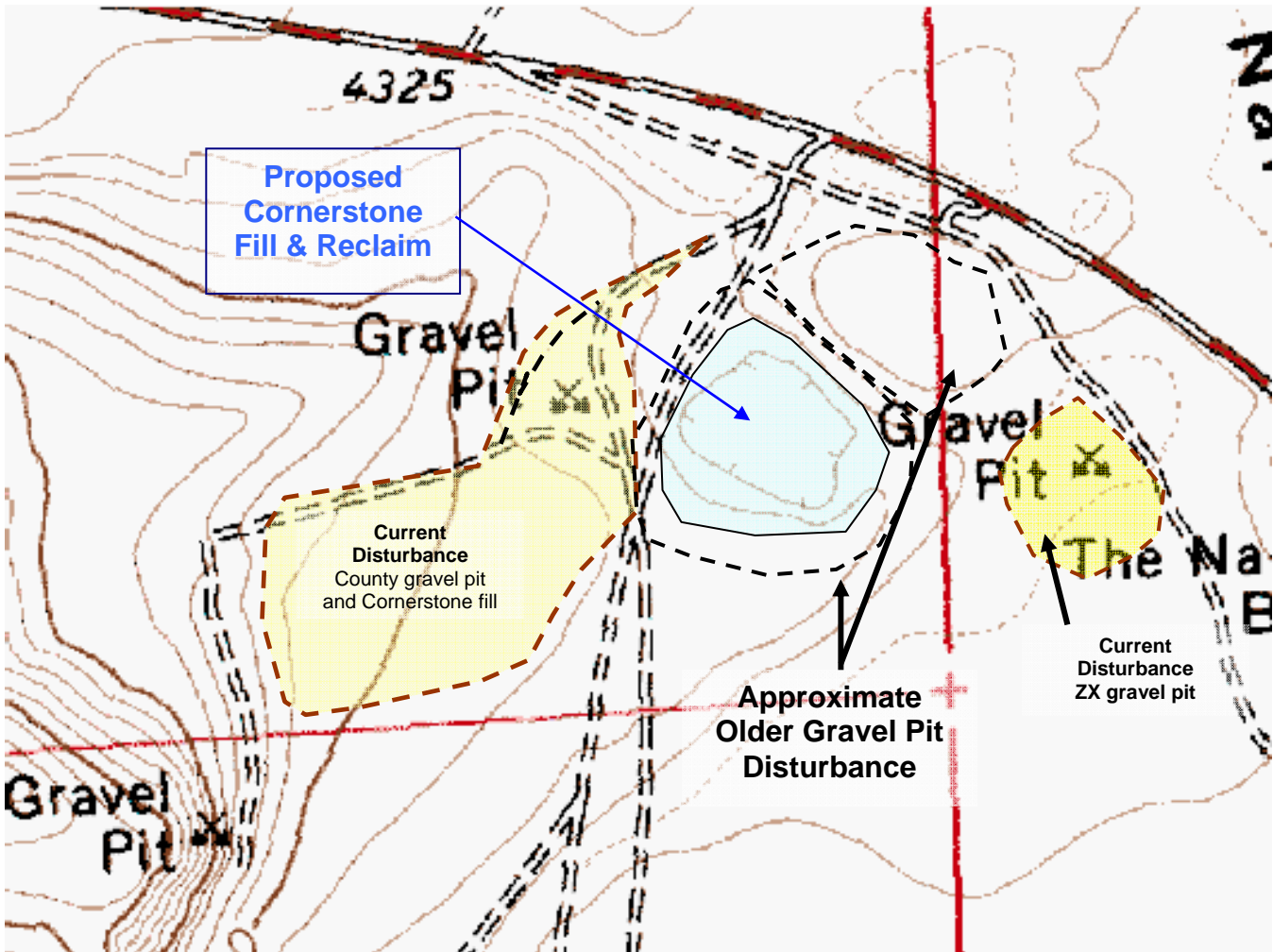


Figure 1.1.1 Project Area

Map source: G. French

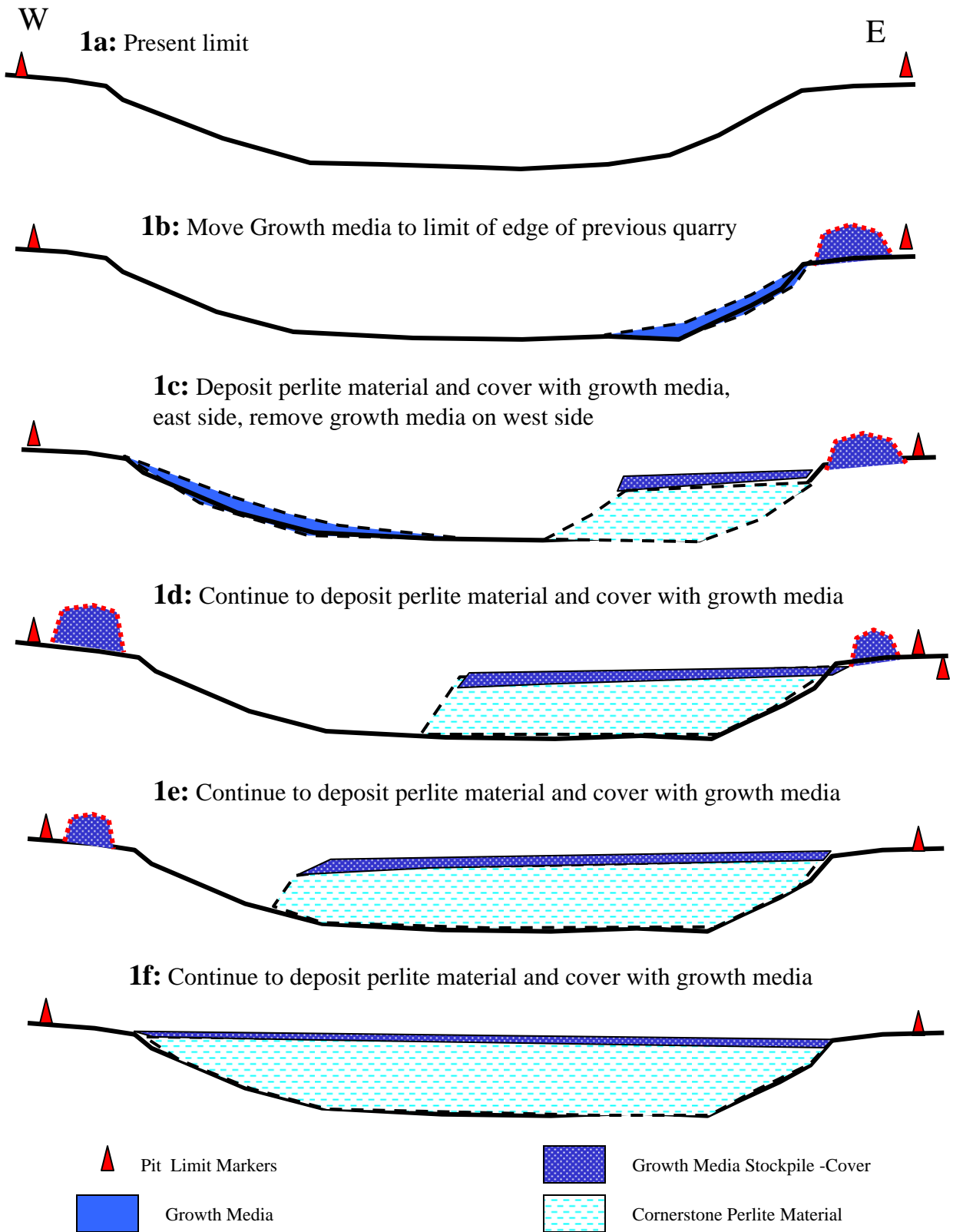


Figure 1.1.2 East-West Diagrammatic Section of the Proposed Action

2 ALTERNATIVES INCLUDING THE PROPOSED PLAN

2.1 Introduction

This chapter provides a description of Cornerstone's Proposed Action to backfill an existing gravel pit with reject perlite material excavated from the Tucker Hill Quarry and the No Action Alternative.

2.2 No Action Alternative

In accordance with BLM NEPA guidelines H-1790-1, Chapter V (BLM 1988), this EA evaluates the No Action Alternative. The objective of the No Action Alternative is to describe the environmental consequences that would result if the Proposed Action were not implemented. The No Action Alternative forms the baseline from which the impacts of all other alternatives can be measured.

Under the No Action Alternative, the BLM would not approve the Proposed Plan Amendment and would not authorize the Proposed Action. The area would remain available for other management purposes, as approved by the BLM.

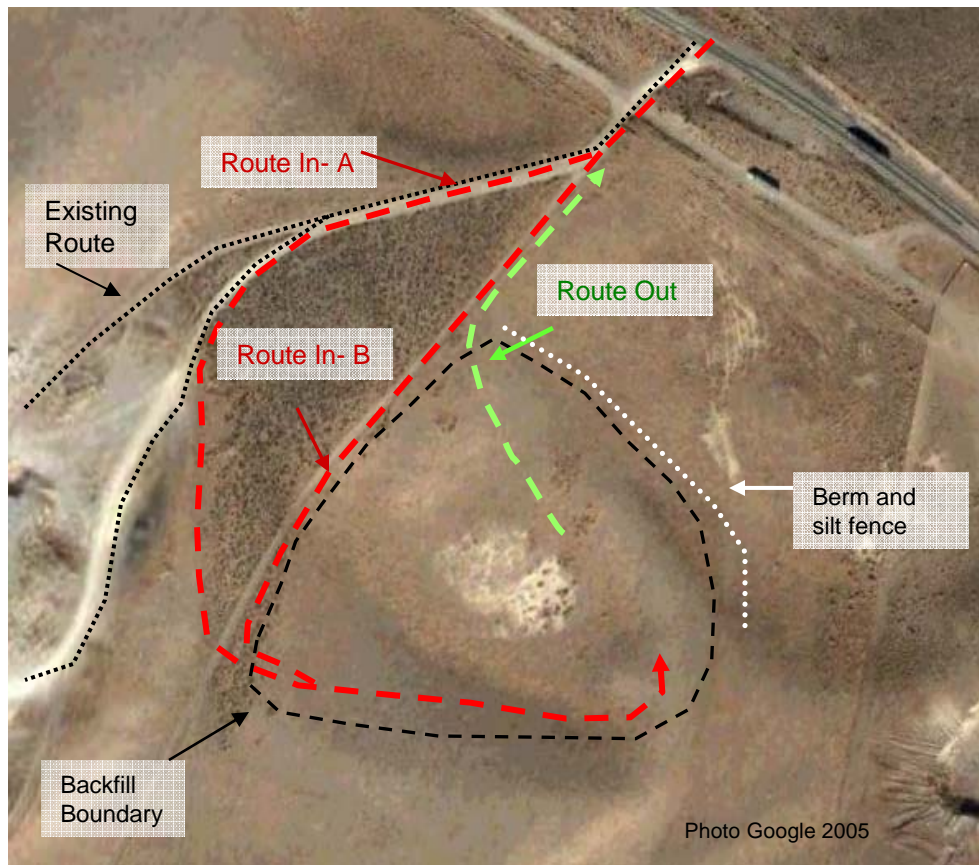
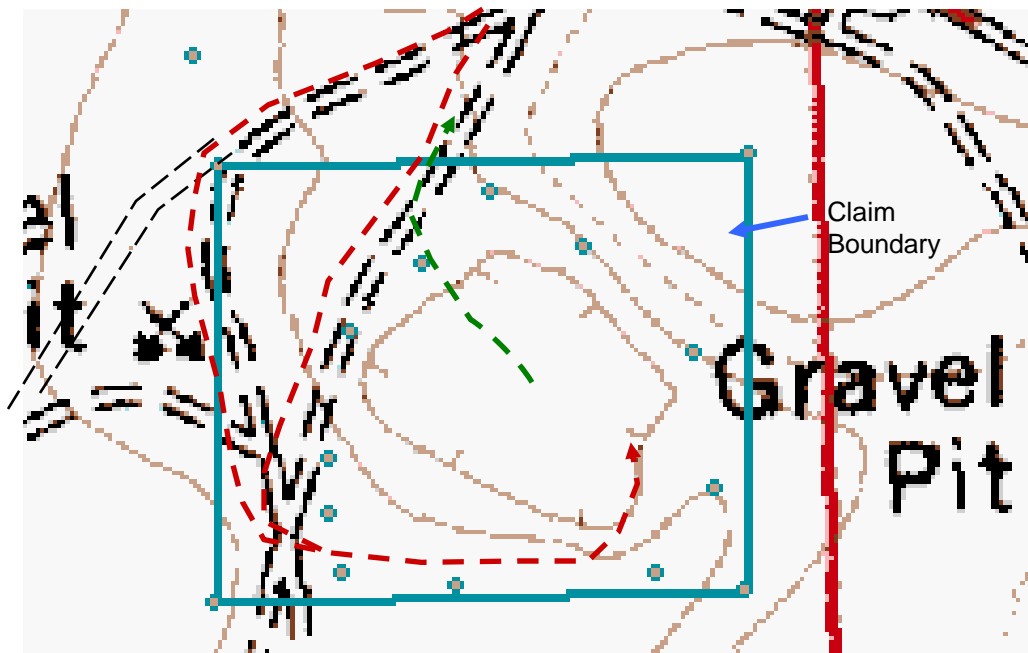
2.3 Proposed Plan

Cornerstone proposes to backfill an existing gravel pit with perlite material excavated from the Tucker Hill Quarry. Project-related activities would consist of moving growth media from the east side of the existing gravel pit to the east edge of the pit. Perlite material would be transported from the Tucker Hill Quarry via one of the two routes illustrated on Figure 2.3.1. The perlite material would be deposited first on the east side of the existing gravel pit and covered with growth media. Growth media would then be removed from the west side of the existing gravel pit and stockpiled on the west edge of the pit. Perlite material would continue to be deposited from the east side of the pit to the west side of the pit with a growth media cover placed on top. Trucks transporting the perlite would exit the existing gravel pit via the route illustrated on Figure 2.3.1. The Proposed Action disturbance would cover approximately 9.2 acres on public lands. No new roads would be constructed as part of the Proposed Action and existing roads would be utilized for Project-related activities. No soil would be removed from the Project area.

2.3.1 Environmental Protection Measures

Cornerstone commits to the following environmental protection measures to prevent unnecessary and undue degradation during construction, operation, and reclamation of the Project. The measures are derived from the general requirements established in the BLM's Surface Management Regulations at 43 Code of Federal Regulations (CFR) 3809, as well as other water, air quality, and environmental protection regulations.

- The dust generated from the use of roads would be minimized to the extent reasonable and practicable by using Best Management Practices (BMPs) such as minimizing vehicular traffic, using prudent vehicle speeds, and watering to minimize fugitive dust created by travel. Cornerstone has an agreement with ZX Ranch and would utilize water from a well located at the ranch for watering.



Map source: G. French

Figure 2.3.1 Proposed Access Routes

- BMPs for sediment control would be employed, when necessary, during construction, operation, and reclamation to minimize sedimentation from disturbed areas.
- Pursuant to 43 CFR 10.4(g), Cornerstone would notify the BLM authorized officer, by telephone and with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR 10.2). Further pursuant to 43 CFR 10.4 (c) and (d), the operator would immediately stop all activities in the vicinity of the discovery and not commence again for 30 days or when notified to proceed by the BLM authorized officer.
- Cornerstone would not knowingly disturb, alter, injure, or destroy any historical or archaeological site, structure, building, or object. If Cornerstone discovers any cultural resource that might be altered or destroyed by operations, the discovery would be left intact and reported to the authorized BLM officer. Cornerstone would maintain a 100-foot buffer between historic prospect pits, trenches, or other features and Project related disturbance.
- Public safety would be maintained throughout the life of the Project. All equipment and other facilities would be maintained in a safe and orderly manner in accordance with Mine Safety and Health Administration (MSHA) regulations.
- Pursuant to 43 CFR 8365.1-1(b)(3), no sewage, petroleum products, or refuse would be dumped from any vehicle.
- Cornerstone would comply with all applicable federal and state fire laws and regulations and would take all reasonable measures to prevent and suppress fires in the area of operations. Cornerstone and contractors would carry fire extinguishers, hand tools, and/or backpack type water pumps in their vehicles to suppress small fires.
- Reseeding would be consistent with all BLM recommendations for mix constituents, application rate, and seeding methods. Seed for the Project would be purchased commercially or acquired from Cornerstone's partnership with the native seed nursery program of the Red Knoll Sage Grouse Habitat Restoration project.
- Regulated wastes would be removed from the Project area and disposed of in a state, federally, or locally designated area.
- All refuse generated as a result of the Project would be removed and disposed of in an authorized landfill facility off site, consistent with applicable regulations. No refuse would be disposed of or left on site.
- If noxious weeds were introduced as a result of the Proposed Action, they would be controlled through implementation of preventive BMPs and eradication measures.
- Cornerstone would conform to the guidelines outlined in the BLM Handbook 3042-1 "Solid Minerals Reclamation Handbook" for reclamation of the Project.

3 AFFECTED ENVIRONMENT

3.1 Introduction

The affected environment for the proposed disposal area covers Sections 23 through 26, 34, and 35, T34S, R19E, located on public lands administered by the BLM near Valley Falls, Oregon. The Proposed Action disturbance would consist of 9.2 acres of public lands within an area of previous disturbance. This chapter will incorporate by reference and tier off of the affected environment in Chapter 3 of the EIS for Atlas Perlite, Inc.'s Tucker Hill Perlite Project (BLM 1995), where applicable.

The affected environment chapter describes the environmental setting and provides a description of possible impacts from the Proposed Action. This chapter addresses the critical elements, as well as non-critical elements, that are present within the Project area or could be affected by the Proposed Action including: Land Use; Areas of Critical Environmental Concern; Air Quality; Water Resources; Soils; Vegetation; Noxious Weeds; Range Resources; Wildlife; Threatened, Endangered, and Sensitive Species; Cultural Resources; Native American Religious Concerns; Socioeconomics; and Visual Resources.

3.2 Land Use/Access

The proposed access to the Tucker Hill Quarry crosses 0.8 mile of private land owned by the Simplot Company, which is operated as a cattle ranch. Cornerstone acquired permission to use and/or improve the road where it crosses private land (BLM 1995, page 60; BLM 1996b). The Project area is located entirely within an area of previous disturbance.

3.3 Areas of Critical Environmental Concern

Although there are no areas of critical environmental concern (ACEC) located in the Project area, the Red Knoll ACEC is located to the south of the Project area. The Red Knoll ACEC was established to protect cultural/tribal resources and consists of 11,127 acres. Off-highway vehicle (OHV) use in the Red Knoll ACEC is limited to designated roads and trails. Grazing is permitted in certain areas of the Red Knoll ACEC. Mineral development within the ACEC is prohibited or is subject to certain restrictions (BLM 2003b).

3.4 Air Quality

Lakeview and much of northern Nevada are designated PM₁₀ (particles with a diameter of 10 microns or less) nonattainment due to high emissions from wood burning during winter months. This means that in these areas, the air has had concentrations of PM₁₀ in excess of the National Ambient Air Quality Standards. Although Lakeview has shown attainment for the past few years, it is still an area of concern and has not been formally redesignated as an attainment area. No air quality monitoring occurs in the Project area. A major source of emissions in the area is from prescribed and wildland fires in the summer months (BLM 2003b).

3.5 Water Resources

The Project area and vicinity are relatively arid and receive approximately 10.25 inches of precipitation per year. The water table is relatively deep. Additionally, no surface waters, other

than intermittent waters from storm events exist at the site (BLM 1995, page 68). The nearest source of surface water is the Chewaucan River located north and east of the Project area.

3.6 Soils

The Natural Resources Conservation Service (NRCS) has classified soils in the proposed disposal area as McDonnell very gravelly sandy loam on two to 15 percent slopes and Redcanyon-Rock outcrop complex on 30 to 50 percent slopes (NRCS 2007). The McDonnell series consists of very deep soils formed in gravelly alluvium. They are located on fans and lake terraces. Typically the surface is brown very gravelly sandy loam ten inches thick. The upper part of the subsoil is lightish gray very gravelly coarse sandy loam 12 inches thick. The lower part of the subsoil and substratum to a depth of 60 is multicolored stratified very gravelly coarse sand to extremely gravelly loamy sand (BLM 1995, page 49). The Redcanyon series consists of moderately deep, well drained soils formed in colluvium from basalt and tuff. They are on sideslopes of hills and mountains. Typically the surface is brown and dark brown extremely bouldery loam 18 inches thick. The upper part of the subsoil is pale brown extremely bouldery loam 11 inches thick over calcareous light yellowish brown extremely bouldery loam two inches thick (BLM 1995, page 49). Although the soils are mapped as described above, all the soils in the proposed disposal area have been previously disturbed.

3.7 Vegetation

Vegetation in the proposed disposal area is limited due to the previous disturbance at the site. The proposed disposal area burned in 2002 as part of the larger Tucker Hill wildland fire and was not reseeded (personal communication, BLM, Paul Whitman, Planning and Environmental Coordinator, January 2, 2008). Vegetation in the proposed disposal area prior to the fire likely consisted of a plant community dominated by greasewood (*Sarcobatus vermiculatus*) with grasses and forbs in the understory (BLM 1995, page 53; BLM 1996b). Current vegetation in the proposed disposal area consists of the following native species: shadscale (*Atriplex confertifolia*), greasewood, winter fat (*Krascheninnikovia lanata*), bottlebrush squirreltail grass (*Elymus elymoides*), Great Basin wildrye (*Leymus cinereus*), and wild tobacco (*Nicotiana quadrivalvis*) (present as seeds in the soil) (personal communication, Lucile Housley, BLM Botanist, December 20, 2007).

3.8 Noxious Weeds

Cornerstone has conducted weed control in the Project area and vicinity for a nuisance weed, Russian thistle (*Salsola tragus*). Although no noxious weeds are known to occur in the proposed disposal area, medusahead (*Taeniatherum caput-medusae*) is known to occur in the Red Knoll ACEC located just south of the proposed disposal area (BLM 2003a). Nonnative species in the proposed disposal area include cheatgrass (*Bromus tectorum*) and tumble mustard (*Sisymbrium altissimum*) (personal communication, Lucile Housley, BLM Botanist, December 20, 2007).

3.9 Range Resources

The proposed disposal area is located within the 0409 Tucker Hill Allotment. The Tucker Hill Allotment is located on approximately 3,534 acres of public land administered by the BLM and 323 acres of private land. Currently, the Tucker Hill Allotment is managed for zero livestock

animal unit months (AUMs). Twenty wildlife AUMs are designated within the Tucker Hill Allotment, with 15 AUMs for mule deer (*Odocoileus hemionus*)/pronghorn antelope (*Antilocapra americana*) and five for other wildlife (BLM 2003a). Forage or browse resources in the Project area are limited due to the fact that it is a previously disturbed site.

3.10 Wildlife

Although vegetation and wildlife habitat in the proposed disposal area is limited due to previous disturbance, wildlife habitat in the area surrounding the Project area consists of big sagebrush (*Artemisia tridentata*), rabbitbrush (*Chrysothamnus* sp.), and greasewood. These vegetation communities represent breeding habitat for birds such as chukar (*Alectoris chukar*), greater sage-grouse (*Centrocercus urophasianus*), ravens (*Corvus corax*), golden eagles (*Aquila chrysaetos*), prairie falcons (*Falco mexicanus*), barn owls (*Tyto alba*), Canada geese (*Branta canadensis*), mammals, and reptiles, and foraging habitat for raptors and larger mammals such as mule deer and pronghorn antelope (BLM 1995, page 57; BLM 1996b).

3.11 Threatened, Endangered, and Sensitive Species

There are no known threatened, endangered, candidate, or other sensitive wildlife species in the proposed disposal area or immediate vicinity (BLM 1995, pages 59 and 60; BLM 1996b). Habitat for threatened, endangered, and sensitive species is limited in the proposed disposal area due to previous disturbance. Sensitive species that could occur in the broader surrounding vicinity of the proposed disposal area include the peregrine falcon (*Falco peregrinus*), pygmy rabbits (*Brachylagus idahoensis*), Preble's shrew (*Sorex preblei*), Merriam's shrew (*Sorex merriami*), northern sagebrush lizard (*Sceloporus graciosus graciosus*), sandhill crane (*Grus canadensis*), and the white-faced ibis (*Plegadis chihi*) (BLM 1995, pages 59 and 60; BLM 1996b). Additional sensitive species identified by the BLM as potentially occurring in the vicinity of the proposed disposal area include the ferruginous hawk (*Buteo regalis*), Swainson's hawk (*Buteo swainsoni*), greater sage-grouse (*Centrocercus urophasianus*), desert horned lizard (*Phrynosoma platyrhinos*), and western toad (*Bufo boreas*). The bald eagle (*Haliaeetus leucocephalus*) which was formerly listed as endangered is now currently listed as a BLM sensitive species is known to occur in the vicinity of the proposed disposal area.

3.12 Cultural Resources

The proposed disposal area is located adjacent to the Tucker Hill Traditional Cultural Property Area. The plants and features in the vicinity of Tucker Hill are critical for the continuation of the Northern Paiute's cultural practices. The area also contains numerous archaeological sites (BLM 2003a). A BLM cultural survey determined that the Project area contains no eligible cultural sites (BLM Project Tracking Form under the Oregon BLM/SHPO Protocol, January 4, 2005).

3.13 Native American Religious Concerns

The proposed disposal area is located in an area of previous disturbance. Consultation between the BLM and the Klamath Tribes and the Burns Paiute Tribe began with the Tucker Hill Quarry Project and is ongoing. No issues regarding the Project have been identified as a result of consultation.

3.14 Socioeconomics

The population for Lake County and Lakeview increased between 1990 and 1994 from 7,186 to 7,400. As of July 1, 1994, the population of Oregon had grown to 3,082,000; the population of Lake County had grown to 7,400; and the population of Lakeview, the county seat, had grown to 2,575. The population trend since 1960 in the area has been relatively stable (BLM 1995, pages 60 and 61). In 2000, the population of Oregon in 2000 had increased to 3,421,399 and the population of Lakeview had decreased to 2,474 (U.S. Census Bureau 2007).

In 2000, 57.3 percent of the Lakeview population 16 years and over were in the labor force compared to 63.9 percent for the country. Per capita income in 1999 was \$15,649 in Lakeview compared \$21,587 for the country (U.S. Census Bureau 2007).

The median value of Lakeview homes in 1999 was \$63,100 compared to \$119,600 for the country. There were 603 single-family owner-occupied homes in Lakeview in 1999 (U.S. Census Bureau 2007).

Cornerstone is the fifth largest employer in Lake County, Oregon, and is the largest shipper on the Lake County Railroad (greater than 60 percent).

3.15 Visual Resources

The proposed disposal area is located less than one mile of Highway 31. The area falls within an area designated as visual resource management (VRM) Class III (BLM 2003b, Map VRM-3). Management objectives for Class III are to “partially retain the existing character of the landscape. Moderate levels of change are acceptable. Management activities may attract attention, but should not dominate the view of a casual observer. Within a Class III, changes should conform to the basic elements of the predominant natural features of the characteristic landscape” (BLM 2001; Appendix M3, page A-290).

However, the Project area is located within a designated scenic buffer associated with the Oregon Outback National Scenic Byway along Highway 31 (Map R-9). Management direction requires “all developments, land alterations, and vegetation manipulations within a three-mile buffer...of all major travel routes and recreation use areas will be designed to minimize visual impacts...All projects will be designed to maximize scenic quality and minimize scenic intrusions” (BLM 2003b, page 88).

3.16 Hazardous Materials

Though no known hazardous materials or waste sites are located in the Project area, proposed activities have the potential to introduce hazardous materials into the environment. Project construction/implementation includes the use of vehicles, heavy equipment, or other materials that could potentially spill or leak hazardous substances (i.e., oil, gasoline, radiator fluid, drip torch fuel, herbicides, etc.).

4 ENVIRONMENTAL CONSEQUENCES

The following resources and/or critical elements of the human environment either are not present or would not be affected by any of the alternatives analyzed: Aquatic Resources; Farm Lands (prime or unique); Floodplains; Forest Resources; Migratory Birds; Other Minerals; Paleontological Resources; Recreation; Wetlands/Riparian Zones; Wild Horses; Wild and Scenic Rivers; and Wilderness, Wilderness Study Areas, or other Areas with Wilderness Character.

4.1 Introduction

The impacts of the development and subsequent operation of the perlite mine on top of Tucker Hill were previously analyzed in an EIS completed in 1996. The majority of the impacts analyzed in the EIS remains unchanged and will not be repeated in this analysis. The reviewer should refer to the EIS for more information (BLM 1995; 1996b). This chapter will focus on describing the site-specific impacts of using an abandoned gravel pit at the base of Tucker Hill as a disposal site for waste rock material. Where appropriate, the analysis will incorporate and/or tier off of the analysis of environmental consequences in Chapter 4 of the EIS for Atlas Perlite, Inc.'s Tucker Hill Perlite Project (BLM 1995; 1996b).

It is assumed for this analysis that under the No Action Alternative, the Project would not be approved and a short-term disruption in operations could occur until other alternatives are found. The disruption could consist of a temporary shut down of operations until use of another disposal site is located and approved. If no feasible alternative disposal site is located in the long-term, then the operations at the Tucker Hill Quarry could cease ahead of schedule.

4.2 Land Use/Access

4.2.1 Proposed Action

Cornerstone has obtained access from the private landowner to allow access along the haul road to the existing gravel pit. No measurable impact to traffic on Oregon State Highway 31 or United States Highway 395 are anticipated as a result of the Project, above those already addressed in the EIS (BLM 1995; 1996b), due to the small number of trucks and the few trips that would be made (i.e., five to 15 trips per day).

4.2.2 No Action Alternative

The potential impacts to land use and access associated with the Proposed Action would not occur under the No Action Alternative.

4.3 Areas of Critical Environmental Concern

4.3.1 Proposed Action

There are no ACECs within the proposed disposal area. The Proposed Action would not have impacts on the relevant and important values associated with the Red Knoll ACEC located south of the proposed disposal area, above those already addressed in the EIS (BLM 1995; 1996b).

4.3.2 No Action Alternative

Under the No Action Alternative, there would be no impacts to the Red Knoll ACEC.

4.4 Air Quality

4.4.1 Proposed Action

Proposed activities at the existing quarry pit are expected to have minimal short-term impacts on air quality in the Project area from fugitive dust and hydrocarbon emissions from haul and water trucks. During the Project, fugitive dust from haul roads would be controlled using water sprays as necessary. The Proposed Action would result in a maximum of 9.2 acres of surface disturbance in a previously disturbed area, which would occur in phases with no more than three acres of disturbance at one time to minimize dust emissions and reduce impacts to air quality. Over time, it is anticipated that vegetation would cover much of the exposed area, thereby limiting the majority of the fugitive dust emissions. None of these impacts are expected to violate air quality standards.

4.4.2 No Action Alternative

The potential impacts to air quality associated with the Proposed Action would not occur under the No Action Alternative.

4.5 Water Quality

4.5.1 Proposed Action

Water utilized for dust suppression activities on access roads would be purchased from a nearby ranch. The amount of ground water required for the Project would not increase from current use. Therefore, no additional impacts would occur to water quality or quantity as a result of the Proposed Action.

4.5.2 No Action Alternative

The potential impacts to water quality associated with the Proposed Action would not occur under the No Action Alternative.

4.6 Soils

4.6.1 Proposed Action

The Proposed Action would result in a maximum of 9.2 acres of surface disturbance in a previously disturbed area, which would occur in phases with no more than three acres of disturbance at one time. The salvage of topsoil/growth media and concurrent reclamation, including re-seeding would minimize impacts to soils and reduce potential surface erosion.

4.6.2 No Action Alternative

The potential impacts to soils associated with the Proposed Action would not occur under the No Action Alternative.

4.7 Vegetation

4.7.1 Proposed Action

The Proposed Action would result in a maximum of 9.2 acres of surface disturbance in a previously disturbed area, which would occur in phases with no more than three acres of disturbance at one time. Short-term impacts would consist of the removal of vegetation while the existing gravel pit is filled. Concurrent seeding with native species would minimize long-term impacts to vegetation.

4.7.2 No Action Alternative

The potential impacts to vegetation associated with the Proposed Action would not occur under the No Action Alternative.

4.8 Noxious Weeds

4.8.1 Proposed Action

The Proposed Action would result in a maximum of 9.2 acres of surface disturbance in a previously disturbed area, which would occur in phases with no more than three acres of disturbance at one time. New surface disturbance from the Proposed Action could increase the potential for and promote the establishment of invasive, nonnative species. Cornerstone would continue to monitor and treat noxious weeds in disturbed areas until reclamation has been completed and insure that all equipment is weed-free before traveling to and from the Project area so that noxious weeds are not spread to new locations. If noxious weeds are encountered in the Project area, Cornerstone would provide documentation of their location and extent to the BLM as soon as possible. Cornerstone would obtain approval from the authorized officer prior to any herbicide application.

4.8.2 No Action Alternative

The potential impacts to noxious weeds associated with the Proposed Action would not occur under the No Action Alternative.

4.9 Range Resources

4.9.1 Proposed Action

The Proposed Action would have no impact on livestock grazing management as the additional surface disturbance would not have a significant or long-term effect on available forage within the surrounding allotment.

4.9.2 No Action Alternative

Under the No Action Alternative, there would be no impacts to range resources.

4.10 Wildlife

4.10.1 Proposed Action

The Proposed Action would result in a maximum of 9.2 acres of surface disturbance in a previously disturbed (and subsequently reclaimed) area, which would occur in phases with no more than three acres of disturbance at one time. The proposed disposal area, in its current condition, has limited value for wildlife. Potential impacts to wildlife could consist of temporary habitat loss, displacement as the result of removal of vegetative cover, and disturbance from human activity and noise. Wildlife foraging activities within the Project area could continue to be dispersed, allowing wildlife to move around Project activities. Impacts to wildlife would be minimized by reclaiming disturbed areas as quickly as possible. No long-term impacts to wildlife habitat are likely to occur since reclamation and reestablishment of native species would likely take place within a few years of Project completion. Wildlife habitat in the Project area would be improved as a result of reseeding. Therefore, the Proposed Action would have minimal impacts on wildlife species and their habitat.

4.10.2 No Action Alternative

The potential impacts to wildlife associated with the Proposed Action would not occur under the No Action Alternative.

4.11 Threatened, Endangered, and Sensitive Species

4.11.1 Proposed Action

No threatened, endangered, or sensitive species have been recorded in the proposed disposal area. Although potential habitat exists for some species in the broader surrounding vicinity of the proposed disposal area, the Project area has been previously disturbed and no potential habitat currently exists; therefore, no Project-related impacts to special status species are anticipated.

4.11.2 No Action Alternative

No impacts to threatened, endangered, and sensitive species would occur under the No Action Alternative.

4.12 Cultural Resources

4.12.1 Proposed Action

There are no cultural resources in the Project area; therefore, the Proposed Action would have no impact on cultural resources.

4.12.2 No Action Alternative

Under the No Action Alternative, there would be no impacts to cultural resources.

4.13 Native American Religious Concerns

4.13.1 Proposed Action

A Memorandum of Agreement (MOA) among the Advisory Council on Historical Preservation, BLM, and the Oregon State Historic Preservation Office regarding the Tucker Hill Mining Project was issued on May 10, 1996. The MOA ensures that the Project area would be surveyed, and that the BLM consult with the Klamath Tribes and Burns Paiute Tribe to ensure the protection of culturally significant resources. BLM consultation with the tribes has been ongoing since the Tucker Hill EIS (BLM 1995; 1996b) was prepared and comments have been received concerning the Proposed Action. No Project-related impacts to Native American religious concerns have been identified. Therefore, there would be no additional impacts to Native American religious concerns beyond those addressed in the EIS (BLM 1995; 1996b).

4.13.2 No Action Alternative

Under the No Action Alternative, there would be no additional impacts to Native American religious concerns beyond those addressed in the EIS (BLM 1995; 1996b).

4.14 Socioeconomics

4.14.1 Proposed Action

Cornerstone is the fifth largest employer in Lake County, Oregon, and is the largest shipper on the Lake County Railroad (greater than 60 percent) and provides an economic benefit to the local economy. With the approval of the Proposed Action, there would be a continued economic benefit to Lake County.

4.14.2 No Action Alternative

Under the No Action Alternative, the Project would not be approved and a short-term disruption in operations could occur until other alternatives are found. The disruption could consist of a temporary shut down of operations and employee lay-offs until use of another disposal site is located and approved. If no alternative disposal site is located in the long-term, operations could cease. If no feasible alternative is found, then the operations at the Tucker Hill Quarry could cease ahead of schedule. The resulting loss of employment and wages would have a negative economic effect on the local economy.

4.15 Visual Resources

4.15.1 Proposed Action

The removal of vegetation and placement of waste material at the proposed disposal area would be visible from Highway 31. To minimize impacts to the viewshed, Cornerstone would utilize

growth media stockpiles (berms) along the eastern and northern edges of the gravel pit to minimize the views of the Project from the highway (Figure 2.3.1). This design feature complies with the visual resource management direction in the Lakeview RMP/ROD (BLM 2003b, page 88).

4.15.2 No Action Alternative

The potential impacts to visual resources associated with the Proposed Action would not occur under the No Action Alternative.

4.16 Hazardous Materials

4.16.1 Proposed Action

Though no known hazardous materials or waste sites are located in the Project area, proposed activities have the potential to introduce hazardous materials into the environment. Project construction/implementation includes the use of vehicles, heavy equipment, or other materials that could potentially spill or leak hazardous substances (i.e., oil, gasoline, radiator fluid, drip torch fuel, herbicides, etc.).

Liability could arise from the release of a hazardous substance or waste (as defined in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, 42 United States Code [USC] 9601, et seq. or the Resource Conservation and Recovery Act (RCRA) of 1976, 42 USC 6901 et seq.) on authorized use areas and is the responsibility of the contractor, operator, their agents, or a unrelated third party. A release/spill as defined in 40 CFR 300 and CERCLA section 101 (22) to include any "spilling, leaking, discharging, injecting, pumping, pouring, emitting, escaping, leaching, dumping, or disposing into the environment, including abandoning or discarding barrels, containers, and any other closed receptacles containing an hazardous substance or pollutant or contaminant."

To minimize this potential impact, the contractor or operator responsible for implementing the Project shall develop and submit to the Authorized Officer a hazardous material spill contingency plan prior to beginning the Project. Should a spill or release of hazardous materials occur, the contractor/operator will follow the contingency plan. A release of a hazardous substance or a petroleum product that may exceed the reportable quantities would require a Notification to the National Response Center and/or the Oregon Department of Environmental Quality. Once contamination occurs, compliance with the CERCLA and the RCRA laws would be required. Coordination would also be required with the BLM hazardous materials specialist.

4.16.2 No Action Alternative

Under the No Action Alternative, there would be no impacts to hazardous materials.

4.17 Cumulative Impacts

The current conditions on the land affected by the Proposed Action resulted from a multitude of natural and human actions that have taken place over many decades. A catalogue and analysis, comparison, or description of all individual past actions and their effects which have contributed

to the current environmental conditions would be difficult to compile. Cataloguing the effects of each of these individual past actions would not provide a clearer understanding of the existing environmental conditions. It is possible to implement more accurate ways to obtain the information concerning those past actions which are necessary for an analysis of the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.” (See definition of “cumulative impact” in 40 CFR § 1508.7.)

A description of the current state of the affected environment inherently includes the effects of past actions and serves as a more accurate and useful starting point for a cumulative effects analysis, rather than attempting to establish such a starting point by “adding up” the described effects of all individual past actions. The importance of “past actions” is to set the context for understanding the incremental effects of the Proposed Action. This context is determined by combining the current conditions with available information on the expected effects of other present and reasonably foreseeable future actions. Here the cataloguing and analysis of the effects of other similar present and reasonably foreseeable actions is necessary and has been described below. By comparing the total effect of the no action alternative to the effects described when adding the Proposed Action or any action alternative, one can discern the incremental cumulative impact resulting from a given alternative.

Further, the information available on individual past actions is largely anecdotal and does not constitute a scientifically acceptable methodology capable of illuminating or predicting the direct or indirect effects of the Proposed Action and its alternatives. The basis for predicting the direct and indirect effects of the Proposed Action and its alternatives should be based on generally accepted scientific methodologies such as empirical research. That said, a brief discussion of the types of past mineral exploration and development activities that have occurred in the Lakeview Resource Area is included in the Lakeview Proposed RMP/Final EIS (BLM 2003a), pages 2-90 to 2-95. This analysis provides a broader (resource area scale) context within which to consider the potential incremental cumulative impacts of the Proposed Action alternative. Mining activity occurs in three distinct categories governed by different mining laws and regulations: salable, leasable, and locatable. The proposed mining plan of operation amendment falls under the locatable mineral category. A discussion of the cumulative impacts of all three mineral activities at the resource area scale is included below.

Appendix N1 of the Draft Lakeview RMP/EIS (BLM 2001), pages A-292 and A-293, summarized historic mineral activity within the resource area. In 1997 and 1998, 34 historic mining districts and two isolated prospect areas were inventoried to document historic, abandoned, or unreclaimed mining sites. A total of 491 small, individual abandoned workings were found, each generally under an acre in size. Abandoned mine workings are currently being reclaimed within the Lakeview Resource Area under the abandoned mine lands program at a rate of one or two sites each year based on site priority and funding. When new mineral development occurs in one of these old, abandoned sites, they are also reclaimed when the recent mineral development is done.

A detailed discussion of historic salable mineral activity is included in Appendix N1, pages A-292 to A-297 (BLM 2001). For salable minerals there are an estimated 50 to 100 existing sand, gravel, rock, and cinder pits scattered across the Lakeview Resource Area (Map M-3). These sites disturb an average of approximately 15 to 20 acres of land each, but may be as large as 40

acres. The Lakeview Proposed RMP/Final EIS (BLM 2003b) estimated and analyzed opening 15 to 30 new salable mineral sites over the life of the plan. This represents 600 to 1,200 acres of potential additional mining disturbance (based on an estimated average size of 40 acres), the impacts of which are discussed in the secondary, indirect, and cumulative impacts section on page 4-139. Since the Lakeview Proposed RMP/Final EIS was completed, six new pits have been analyzed or approved for development (Walnut Orchard, Rabbit Hills, West Gulch, Winter Rim, Miners Draw, and Pitcher Lane). These new pits represent approximately 195 additional acres of surface disturbance.

Leasable mineral activity includes all energy minerals and sodium. In 1999, there was no leasable mineral activity in the Lakeview Resource Area. The Lakeview Proposed RMP/Final EIS (BLM 2003b), pages 2-90 to 2-95, and Appendix N2, pages A-215 to A-219, estimated that two to four oil and gas leases or geophysical activities would occur per year in the resource area disturbing up to 670 acres. Up to four geothermal exploration actions per year were expected with approximately 12 acres of disturbance. Currently, neither oil or gas, geothermal, nor sodium development activity has occurred since the RMP was completed in 2003.

A discussion of locatable mineral exploration and development and historical activity is also included in the Lakeview Proposed RMP/Final EIS (BLM 2003b), pages 2-90 to 2-95, and in Appendix N2, pages A-209 to A-219. As of September 1999 (immediately prior to initiation of the Lakeview RMP), there were 368 active mining claims recorded in the resource area. Eighty percent of those claims were located in the Rabbit Basin sunstone area. The remaining claims were in the Tucker Hill perlite area and Christmas Valley diatomaceous earth area. The total number of claims has not changed significantly from 1999 to 2007. In 1999, activity on these claims included 67 mining notices and two mining plans of operations. Disturbance for mining notices averaged 2.3 acres per notice. Disturbance for mine development requiring mining plans of operation ranged from five to several hundred acres. The Lakeview Proposed RMP/Final EIS (BLM 2003b) estimated an average of 67 mining notices and two mining plans would be open at any point in time during the life of the plan (with a total estimated disturbance ranging from 160 to 660 acres). In 2006, there were a total of 65 mining notices and two mining plans active. One of the largest mining plan areas (diatomaceous earth) is very close to closure, having completed 90 percent of the final site reclamation and rehabilitation. The no action alternative represents no additional or incremental acres of mining related surface disturbance. The Proposed Action represents an additional or incremental 9.2 acres of locatable mineral surface disturbance.

The current estimated acres of total mining related surface disturbance, including the incremental acres associated with the no action and Proposed Action alternatives, are well within the range of mineral development impacts anticipated and previously analyzed within the Lakeview Proposed RMP/Final EIS (BLM 2003b; see Table 1).

In addition, cumulative impacts associated with the Tucker Hill Perlite Quarry were also analyzed at the basin scale in the previous EIS (BLM 1995; 1996b). The reader should refer to this EIS for a more detailed discussion. The following section addresses the incremental cumulative impacts that have been identified in addition to the direct impacts described by specific resource sections.

Table 4.1.1: Total Acres of Mining-Related Disturbances in the Lakeview Resource Area

	Historic (pre-RMP)	Expected during the Life of the RMP	Actual to Date (post-RMP)
Abandoned Mine Lands	<500	0	0
Salable	750–2,000	600-1,200	-
<u>New Pits</u>			
Walnut Orchard			73
Rabbit Hills			11
Winter Rim			5
West Gulch			1
Miners Draw			45
Pitcher Lane			60
Locatable	No estimate available	160-660	115
Leasable	0	682	0

As described in Tucker Hill Perlite Quarry EIS (BLM 1995; 1996b), the landscape within the 322,000-acre Chewaucan River basin has been modified greatly. The marshes have been drained and used for agriculture along with the development of communities and roads. Tucker Hill has been explored for minerals since 1948 with intensive exploration beginning in 1982. The landscape on Tucker Hill has been somewhat modified as the result of road construction, drill site construction, and perlite mining. Previous exploration has been rehabilitated; however, evidence of previous and current exploration is visible. The proposed disposal site is located in an area of past and present gravel quarry operations managed by various state, county, and private operators.

The surrounding Tucker Hill area is part of the larger Chewaucan River Basin that was historically important for Native Americans based on previous archaeological inventories in the area and communication with tribal members. Tucker Hill was utilized in conjunction with other areas in the river basin as an important source of obsidian and was utilized for a variety of traditional activities.

Consultation with Native Americans regarding the Project is ongoing. Impacts to the spiritual/religious nature of the Tucker Hill formation have occurred in the vicinity of the Project area due to past quarry development. The cumulative effects of the additional 9.2 acres of surface disturbance on the sacred values of the Chewaucan River Basin are minimal because the area has been previously disturbed.

The cumulative incremental impacts of an additional 9.2 acres of surface disturbance on range resources, wildlife, soils, potential for increasing noxious weed populations, vegetation, air quality, land use, water quality, socioeconomics, and health and safety are within the range of those previously addressed in the Lakeview Proposed RMP/Final EIS (BLM 2003a) and would be insignificant when considered within the context of reasonably foreseeable future mineral management activities in the larger Chewaucan River Basin.

4.18 Irreversible/Irretrievable Impacts

No irreversible/irretrievable impacts are associated with the Project.

5 CONSULTATION AND PUBLIC INPUT

5.1 List of Preparers

Bureau of Land Management

Ken Tillman Project Manager
Paul Whitman Planning and Environmental Coordinator

Enviroscientists, Inc.

Richard DeLong Project Principal
Opal Adams Project Manager
Michele Lefebvre Senior Resource Specialist

5.2 Persons, Groups and Agencies Contacted

Federal Agencies

United States Environmental Protection Agency

State Agencies

State Historic Preservation Office
Native Plant Society of Oregon
Oregon Department of Fish and Game
Oregon Department of Environmental Quality
Oregon Department of Geology and Mineral Industries

Local Agencies

Lake County Commissioners
Lake County Chamber of Commerce
Town of Lakeview

Organizations

Cornerstone Industrial Mineral Corporation
Minerals Management Service
Elder Ranch Inc.

Native Americans

Burns Paiute Tribe, Charisse Snapp, Linda Jerofke
Fort McDermitt Tribal Council
Confederated Tribes of Warm Springs Reservation, Fara Ann Currim, Sally Bird
Klamath Tribes, Gerald Skelton
Fort Bidwell Indian Community Council

Individuals

Jack Flynn
Jim Lynch
Jo and Julia Flynn
Nora Flynn

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