

Affected Resources Form: NEPA Document DOI-BLM-

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Chapter 1. Krause Thacke Plan of Operations

1.1. Project Information

NEPA (ePlanning) Number	DOI-BLM-NV-S010-2010-0118-EA
Project Name	Krause Thacke Plan of Operations — Mining in Nelson
Project Lead/Manager	George Varhalmi, Geologist,
Project/Activity Type	Hard rock mining / Mining Law
Case File Number	N-87919
Comment Due Date	June 2, 2010
Applicant/Proponent	Krause Thacke Mining and Minerals, LLC
Cost Code	L19900000 EX0000
General Location	Nelson, Nevada
Legal Description	Township 25 S., Range 64 E., Sections 32 and 33; Township 26 S., Range 64 E., Sections 3, 4 and 5.
Map (7.5-minute USGS topo map)	Nelson, Nevada
Amount of new disturbance (acres)	2.18
Amount of previous disturbance (acres)	2.18
Amount of TOTAL disturbance (acres)	4.91
Duration of project	2010 — 2015
Tiered off EA/EIS/BO/ other	

Project Description:

Krause Thacke Mining and Minerals, L.L.C. (KTM&M) has submitted a Plan of Operations (Plan) to mine BLM administered lands in Nelson, Nevada. Previous activity at the site was under a Notice Level Operation (under 5 acres of disturbance), serialized as N-71698, under which the site deteriorated and expanded beyond 5 acres of disturbance. Between late 2008 and early 2009, KTM&M had begun a massive clean-up of the site reclaiming the vast majority of the site which significantly reduces their bonding requirement. Due to the history of the site and its degradation, KTM&M was required to submit a Plan even though total acres of physical disturbance would encompass only 4.91 acres, which is broken into two segments: the M Hill working and the processing area. This is the first phase of a multi-phased operation.

The new Plan intends to mine out a portion of a hill KTM&M calls M Hill. Mining will involve removing a wedge of material on M Hill between existing historic (pre-1981) trenches creating a modified pit which is open on its two ends and one flank. The pit will remove material down to the elevation of the existing access road to the hill. The total disturbance is approximately 200' across and down to a depth of 57 feet constituting approximately 2.2 acres. Approximately 175,000 tons of material will be extracted and processed through a crushing circuit and concentrated using a gravity separation method. Waste rock constitutes approximately 151,000 tons and the concentrate is approximately 24,000 tons. The concentrate will be transported offsite to a millsite in Arizona for further processing. The waste rock will be stored in a waste rock disposal area with a capacity of 200,000 tons. As mining continues from M Hill, waste rock will be transported back

to mined out portions of the pit to backfill. The crushing, processing and waste rock disposal area will constitute approximately 2.7 acres. Mining claims extend into section 5 but no disturbances is to occur outside of the M Hill area.

Heavy equipment on site will consist of a front end loader, or FEL, a bulldozer, a water truck and a backhoe. The dozer will push and break up material from M Hill, one FEL will transport material to the crusher across a county maintained RS2477 road (A60AK) to the crushing facility. Pit design will be 20' high benches with a bench width of 15'. There would be three benches besides the pit floor.

Crushing will initially begin with a maximum monthly output of 360 tons. If the material is easier to extract and mining cycle times shorten, crushing may increase to a maximum of 3,000 tons per month which is the maximum of the existing crusher's capabilities. The mined material will be crushed to minus 1/10th of an inch in size and be fed to a water separation table (Wilfley Table) to concentrate the minerals. All tails and waste rock will be stored in the waste rock disposal area. Concentrate will be shipped via highway trucks to their millsite in Arizona.

As mining continues and space in the pit opens up, the FEL will take a bucket load of mined material to the crusher and return with a bucket load of waste rock to backfill the pit area. Safety berms half wheel height will be constructed for safety at M Hill and the process facilities.

Mine life of this phase is expected to be 5 years. Phase 2 will consist of an exploration program and will be submitted at a later date for review and approval while mining is occurring during Phase 1. All subsequent submitted phases will be reviewed as Mine Plan Modifications with appropriate NEPA evaluations.

All of the disturbances are on public domain lands which are administered by the Bureau of Land Management (BLM), Las Vegas Field Office. This Plan of Operation is submitted to the BLM for review and approval using public domain land, following the regulatory requirements contained in 43 CFR 3809, pertaining to mineral operations conducted on public land under the Mining Law of 1872, 30 U.S.C. 22 et seq.

COST CODE: L19900000 EX0000

MAPS: Photos and maps uploaded in Maps Folder under Root list.

DETERMINATION OF STAFF: (Choose one of the following abbreviated options for the left column)

- NP = not present in the area impacted by the proposed or alternative actions
- NI = present, but not affected to a degree that detailed analysis is required
- PI = present with potential for relevant impact that need to be analyzed in detail in the EA

Table 1.1. Affected Resources Form

Deter- mina- tion	Resource	Rationale for Determination	Digital check off	Date
NI	Air Quality	Ensure appropriate dust mitigation measures are implemented and ensure dust permits, if required in the site area are obtained and stipulations are in compliance for the duration of the operation(s).	Lisa Christianson, Air Resources Specialist	05/03/2010
NI	Areas of Critical Environmental Concern	The proposed project area is not within an ACEC.	Jessie Stegmeier	6/1/2010
	BLM Natural Areas			
PI	Cultural Resources	An existing data review showed the area of potential effect (APE) has not yet been evaluated for cultural resources. A field trip will be scheduled as soon as possible.	Susanne Rowe	05/06/2010
NP	Cultural Resources	The BLM Archaeologist conducted a reconnaissance level inventory of the proposed project area on July 8, 2010. No cultural materials were noted within the area of potential effect (APE). Portions of the APE have been previously disturbed; however, no historic properties are present. No further evaluation is necessary unless the scope of the undertaking changes.	Susanne Rowe	07/09/2010

NI	Greenhouse Gas Emissions	Currently there are no emission limits for suspected Greenhouse Gas (GHG) emissions, and no technically defensible methodology for predicting potential climate changes from GHG emissions. However, there are, and will continue to be, several efforts to address GHG emissions from federal activities, including BLM authorized uses.	Lisa Christianson, Air Resources Specialist	05/03/2010
	Environmental Justice			
	Farmlands (Prime or Unique)			
NI	Fish and Wildlife Excluding Federally Listed Species	See EA language below for general wildlife and BLM sensitive species.	Jessie Stegmeier	6/1/2010
	Floodplains			
	Fuels/Fire Management			
	Geology / Mineral Resources/Energy Production			
	Hydrologic Conditions			
	Invasive Species/ Noxious Weeds			
	Lands/Access			
	Livestock Grazing			
PI	Migratory Birds	See EA language below.	Jessie Stegmeier	6/1/2010
NP	Native American Religious Concerns	No concerns as proposed.	Susanne Rowe	05/06/2010
NP	Paleontology	No fossil bearing strata will be impacted by the proposed undertaking.	Susanne Rowe	05/06/2010
	Rangeland Health Standards			
	Recreation			
	Socio-Economics			
	Soils			

	Threatened, Endangered or Candidate Plant Species			
PI	Threatened, Endangered or Candidate Animal Species	This project cannot be covered under existing Biological Opinions because it is located within desert tortoise critical habitat, therefore a biological assessment (BA) needs to be prepared and formal consultation with USFWS completed to get a BO. The BA should be contracted by the proponent as we do not have staff and funding available to do it in house. Once an acceptable BA is received, consultation with USFWS will take approximately 135 days to complete. The BA will analyze impacts to listed species and analyze impacts to BLM sensitive species in an appendix. The SOW for the surveys are provided in the project folder named "Wildlife SOW".	Jessie Stegmeier	6/1/2010
	Wastes (hazardous or solid)			
	Water Resources/ Quality (drinking/ surface/ground)			
	Wetlands/Riparian Zones			
	Wild and Scenic Rivers			
	Wilderness/WSA			
	Woodland / Forestry			
	Vegetation Excluding Federally Listed Species			
	Visual Resources			
	Wild Horses and Burros			

	Areas with Wilderness Characteristics			

Migratory Birds

Under the Migratory Bird Treaty Act of 1918 (MBTA) and subsequent amendments (16 U.S.C. 703-711), it is unlawful to take, kill, or possess migratory birds. A list of the protected bird species can be found in 50 C.F.R. §10.13. The list of birds protected under this regulation is extensive and the project site has potential to support many of these species, including the BLM sensitive species the western burrowing owl (*Athene cunicularia*). Typically, the breeding season is when these species are most sensitive to disturbance, which generally occurs from March 15 through July 30.

Wildlife

The proposed project area is adjacent to lands that support wildlife characteristic of the Mojave Desert. Biological diversity varies according to topography, plant community, and proximity to water, soil type, and season.

Several common species of reptiles that may be present in the vicinity of the proposed project site may include the western whip-tail (*Cnemidophorus tigris*), desert iguana (*Dipsosaurus dorsalis*), side-blotched lizard (*Uta stansburiana*), zebra-tail lizard (*Callisaurus draconoides*), desert tortoise (*Gopherus agassizii*), western shovel-nosed snake (*Chionactis occipitalis*) and garter snake (*Thamnophis* sp.).

Common bird species that may be present in the vicinity of the proposed project site may include the rock wren (*Salpinctes obsoletus*), black-throated sparrow (*Amphispiza quinquestriata*), turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), phainopepla (*Phainopepla nitens*), red-tailed hawk (*Buteo jamaicensis*), and western burrowing owl (*Athene cunicularia hypugea*).

Common mammal species include the black-tailed hare (*Lepus californicus*), the desert cottontail (*Sylvilagus audubonii*), coyote (*Canis latrans*), badger (*Taxidea taxus*), kit fox (*Vulpes macrotis*) and many species of rodents.

BLM Sensitive Wildlife Species

According to the definition of a BLM sensitive species (see definition page 9-5 of the Disposal EIS) discussed in the Disposal EIS (pp. 3-26, 3-30 to 3-32), the following sensitive species are known to potentially occur within the parcel: big horn sheep, western burrowing owl, chuckwalla and banded Gila monster.

Western chuckwalla (*Sauromalus obesus*)

The western chuckwalla is a BLM sensitive species that is found throughout the deserts of the southwestern United States and northern Mexico. Chuckwallas inhabit rocky outcrops where cover is available between boulders or in rock crevices, typically on slopes and open flats below 5,000 feet. Typical habitat includes rocky hillsides and talus slopes, boulder piles, lava bed, or other clusters of rock, usually in association Mojave Desert Shrub vegetation. This species

requires shady, well-drained soils for nests. The chuckwalla is a widespread species, but is regionally limited by its requirement for rock outcrops. Chuckwallas likely occur within the project area, but would be localized on rock outcroppings.

Banded Gila monster (*Heloderma suspectum*)

The Gila monster is a large, heavy-bodied lizard with a massive head, a short thick tail, and short limbs with strong claws. It has flamboyant dorsal coloration of black and pink, orange, or yellow and occasionally exceeds 50 centimeters (19.7 inches) in total length. The Gila monster's range includes extreme southwestern Utah, southern Nevada, and adjacent southeastern California south through southern Arizona, southwestern New Mexico, and much of Sonora to Sinaloa, Mexico. Its habitat includes Mojave and Sonoran desert scrub, desert grassland, thorn scrub, and occasionally pine-oak woodland. Threats to this reptile include illegal collection, traffic fatalities, and most severe is habitat destruction from urban and agricultural development.

Western burrowing owl (*Athene cuniculari hypugaea*)

The Western burrowing owl is a diurnal bird of prey specialized for grassland and shrubsteppe habitats in western North America. The owls are widely distributed throughout the Americas and can be found from central Alberta, Canada to Tierra del Fuego in South America. Burrowing owl habitat typically consists of open, dry, treeless areas on plains, prairies, and desert floors. Burrowing owls most frequently use mammal burrows created by other animals such as prairie dogs (*Cynomys* spp.), ground squirrels (*Spermophilus* spp.), coyotes (*Canis latrans*) or desert tortoises (*Gopherus agassizii*). The burrows are used for nesting, roosting, cover, and caching prey. In recent decades, the range and species count have been declining primarily due to agricultural, industrial, and urban development that reduce burrow availability.

Desert bighorn (*Ovis canadensis*)

The desert bighorn sheep (*Ovis canadensis*) is a species of management concern that is found mainly along desert mountain ranges in Nevada and California to west Texas and south into Mexico. Bighorn sheep are gregarious, sometimes forming herds of over 100 individuals, but small groups of 8-10 are more common. Mature males usually stay apart from females and young for most of the year in separate bachelor herds. They usually migrate seasonally, using larger upland areas in the summer and concentrating in sheltered valleys during the winter. The proposed area traverses both crucial and winter Desert Bighorn sheep ranges.

Threatened, Endangered Species

Threatened and endangered species are placed on a federal list by the U. S. Fish and Wildlife Service (USFWS) and receive protection under the Endangered Species Act of 1973, as amended. The only T&E species known to occur in the vicinity of the project area is the threatened desert tortoise (*Gopherus agassizii*). In the Mojave region, the desert tortoise occurs primarily on flats and bajadas with soils ranging from sand to sandy-gravel characterized by scattered shrubs and abundant inter-shrub space for herbaceous plant growth. They are also found on rocky terrain and slopes. Historical survey data indicates that the area surrounding the project site is low density tortoise habitat within desert tortoise critical habitat.

Environmental Effects

Migratory Birds

Migratory birds, including the BLM sensitive species the western burrowing owl (*Athene cunicularia*), may be present on the project site. The proponent will be required to adhere to the following mitigation measures:

- 1) To prevent undue harm, habitat-altering projects or portions of projects should be scheduled outside bird breeding season. In upland desert habitats and ephemeral washes containing upland species, the season generally occurs between March 15th - July 30th.
- 2) If a project that may alter any breeding habitat has to occur during the breeding season, then a qualified biologist must survey the area for nests prior to commencement of construction activities. This shall include burrowing and ground nesting species in addition to those nesting in vegetation. If any active nests (containing eggs or young) are found, an appropriately-sized buffer area must be avoided until the young birds fledge.

Wildlife

Wildlife species in the general area include small mammals, rodents, birds and reptiles. These species would be displaced as lands are disturbed within the project area. The primary direct impact of the proposed action on wildlife would be killing or maiming of ground dwelling animals during mining and the loss of habitat. Additional impacts associated with the mortality from vehicular traffic may also occur. Wildlife species in the general area are common and widely distributed throughout the area and the loss of some individuals and/or their habitat would have a negligible impact on populations of the species throughout the region.

BLM Sensitive Wildlife Species

Western chuckwalla (*Sauromalus obesus*)& Banded Gila monster (*Heloderma suspectum*)

Banded gila monster and western chuckwalla may be killed or injured if they wander into the area of activity. Upon completion of the proposed action, impacts associated with mortality from vehicular traffic will be reduced and habitat will be enhanced and less fragmented.

Western burrowing owl (*Athene cuniculari hypugaea*)

The direct impacts of the proposed action on western burrowing owl would be loss of nesting habitat and forage, mortality and harassment of individual animals, and decrease in habitat value of adjacent remaining “wildland” areas due to increased human activity in the area. The species is protected by the Migratory Bird Treaty Act and the proponent will be required to adhere to above mentioned mitigation measures.

Desert bighorn (*Ovis canadensis*)

Desert bighorns may be disturbed by vehicles operating in their habitat. Animals may seek cover on steep slopes and ridges to avoid vehicular activity and associated noise pollution. Solitude depended species, such as the Desert bighorn sheep, may abandon the area if human activities reduce the quality of their habitat.

Threatened, Endangered Species

T&E language will be provided following completion of consultation with FWS.