

**PLAN OF OPERATIONS,
RECLAMATION PLAN, AND
FINANCIAL ASSURANCE COST ESTIMATE
EAGLE BIRD MINE CLAIM GROUP
NEAR DOWNIEVILLE
SIERRA COUNTY, CALIFORNIA**

Prepared for
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1.0 INTRODUCTION

This document includes a 5-year Plan of Operations (PoO), a Reclamation Plan, and a Financial Assurance Cost Estimate for the Eagle Bird Mine Claim Group (Site) located east-southeast of Downieville in the Tahoe National Forest, Sierra County, California. A Vicinity Map is shown on Figure 1 Attachment A, a Topographic Map is shown on Figure 2, and a Site Aerial Photo is shown on Figure 3. Condor Earth Technologies, Inc. (Condor) prepared this document at the request of Eugene Shannon, Manager of the Eagle Bird Mining Company, LLC (Operator) to satisfy the requirements of the National Environmental Policy Act regulated by the United States Forest Service (USFS), the California Environmental Quality Act regulated by Sierra County (Lead Agency), and the Basin Plan water quality objectives regulated by the California Regional Water Quality Control Board, Central Valley Region (Regional Board).

2.0 GENERAL INFORMATION

The Site consists of eight mine claims located in the Tahoe National Forest. The claims include the Patrick, Eagle Bird, Eagle Bird No. 1, Elcy, Annex, Pedro, Pedro No. 1, and Golden Slipper. The Site boundaries span an area of approximately 160 acres as shown on DWG-01. Areas of mining activity and primary reclamation boundaries are outlined in red. The Claim Group Map is shown on Figure 4. The Mine Safety Health Administration (MSHA) mine identification number is 0405869.

The owner of surface interests is:

United States Forest Service
Yuba River Ranger District
15924 Highway 49
Camptonville, CA 95922
(530) 288-3231

The owner of mineral interests is:

Eagle Bird Mining Company, LLC
PO Box 680
Conway, NH 03818
Federal ID # 45-2803801

2.1 PROPERTY DESCRIPTION

The Site is located approximately 9 miles east southeast of Downieville. Site elevations range from approximately 5,150 feet to 6,470 feet. Mixed conifer forest is common at the Site. Disturbed areas include past mining operations and access roads. The Site is located on the northwest facing slope of Granite Mountain (elevation 6,482 feet), the summit of which is approximately two-thirds of a mile south



of the Site¹. Granite Mountain forms a northeast-southwest ridgeline approximately 2 miles southeast of the North Yuba River.

Three perennial streams originate near the Site and flow west and north to the North Yuba River. Two of these perennial streams are located within the Site boundary, but not in areas of mining operations. From north to south these perennial streams are:

- An unnamed stream located in the northern section of the Site that flows west northwest towards Quartz Point and then northwest to the North Yuba River. This unnamed stream appears to begin just west of the Eagle Bird No. 1 Claim and flows west through the middle of Pedro No. 1 Claim.
- Shannon Ravine originates near the southwest corner of the Pedro Claim. The headwaters of this perennial stream are approximately 750 feet southwest of the settling ponds on the Pedro Claim. Shannon Ravine descends approximately 1,700 feet west for about a mile then merges with Jim Crow Creek and flows to the North Yuba River.
- Carney Creek originates below the west summit of Granite Mountain where it flows to the west within about 500 feet of the south Site boundary. Carney Creek flows west approximately 1.5 miles dropping 2,140 feet before merging with Jim Crow Creek approximately ½ mile upstream (south) of Shannon Ravine

2.2 LOCATION AND ACCESS

The Site is located in south ½ Section 4 and north ½ Section 9, Township 19 North, Range 11 East Mount Diablo Meridian. The Site coordinates are latitude 39.535, longitude -120.744. Access to the Site is gained from several routes. From Downieville the Site is accessed via State Highway 49 that parallels the North Yuba River.

The Site is accessed via USFS paved and unpaved roads (Figures 1, 2, and 3, and the Claim Group Survey Detail in Attachment B). Vehicular access to all portions of the Site is limited. Key locks are present on the Site access gate and other Site buildings. The keys are to be provided by the USFS and/or the owner(s) to the gate padlock and by the owner, if necessary, to the buildings.

2.3 MINERAL PRODUCTS AND PRODUCTION

Free milled gold from mined ores is the planned mineral product. Production may occur offsite initially then, transition to a small, portable mill onsite. The milling process will include crushing, grinding, screening, filtering, with final gold recovery by gravity methods. No chemicals will be used in the process. A maximum average production rate of 40 tons of ore per day (tpd) is proposed.

2.4 START DATE, MINE LIFE (CLOSURE DATE), EMPLOYMENT

Mining will commence after all applicable permits are obtained from the oversight agencies. Planned operations are expected to commence in the summer of 2014 and continue until mineral reserves are exhausted. An assumed mine life of 25 years is predicted. Site closure will occur once the Central Valley Regional Water Quality Control Board determines that water quality aspects of reclamation are complete and the wastes no longer pose a threat to water quality, Title 27 CCR Section 22510(h). Because of heavy winter snow fall, the operation will be seasonal with the average operation period from mid-May to mid-November.

¹ USGS *Sierra City, CA 7.5 minute Quadrangle* from 1981



3.0 SITE BACKGROUND

The Site mine claims were mined intermittently from the 1880's to the late 1960's. Detailed Site background information is contained in Section 4.1.

3.1 PHYSICAL SETTING

The Site is located within the Sierra Nevada physiographic province, in the Sierra Nevada mountain range.

3.2 VISUAL IMPACTS

Any tree clearing, excavations, or grading at the Site may potentially be visible from dirt roads along the ridgeline on the opposite side of Jim Crow Creek and also from the ridge on the opposite side of the North Yuba River. The Site is not visible from populated areas along the North Yuba River or from Highway 49. Visual impacts are expected to be minimal.

3.3 CLIMATE

The Site, located in the North Yuba watershed, is characterized by cool, wet winters and hot, dry summers with occasional high elevation thunder showers. Annual precipitation for the Site ranges from 65 to 75 inches, increasing with elevation due to orographic lift. The majority of precipitation from mid-November through April is likely to fall as snow. Snow accumulations can routinely reach 10 to 15 feet by the end of the winter, leaving the Site inaccessible for several months. Mean annual air temperature averages approximately 55°F, and the total number of frost free days is approximately 175 days. Summer highs can reach 100°F, and winter lows can reach 0°F².

3.4 HYDROLOGY

The depth to the groundwater is unknown but likely mirrors topography with water occurring in bedrock fractures. Multiple springs exist along the western flank of the northeast-southwest trending ridge. Water was observed flowing from the Eagle Bird No. 2 adit during September 2011 field work.

3.5 VEGETATION AND WILDLIFE

The Site is located in Sierran mixed conifer forest with Ponderosa pine, Douglas fir, White fir, and Incense cedar predominant. Where bedrock is more prevalent and soils are thin, vegetation consists of sparse to dense chaparral brush such as Greenleaf manzanita and White thorn ceanothus and/or grassland including California brome, Blue wild rye, Spanish clover, and yarrow. Canopy cover in the surrounding area ranges from 40 to 80 percent. Previous botanical surveys performed by others on the Site indicate no federal or state Threatened, Endangered, or Sensitive (TES) plant species present in the project area, nor is there Critical Habitat for any TES species³.

Wildlife including many varieties of birds, squirrels and small mammals, and large mammals such as black bear, black tailed deer, and mountain lion are present in the area. Previous biological evaluations prepared by the Tahoe National Forest indicate no TES wildlife species or critical habitat associated with the Site. Suitable habitat is potentially available for two sensitive bat species, the pallid bat (*Antrozous pallidus*), a California Species of Special Concern and Forest Service Region 5 Sensitive Species; and Townsend's big eared bat (*Corynorhinus townsendii*), a U.S. Fish and Wildlife Species of Concern,

² Custom Soil Resource Report for Tahoe National Forest Area, California, Eagle Bird Mine Group, United States Department of Agriculture, National Resources Conservation Service.

³ Environmental Assessment, Reclamation of Abandoned Mine Features at the Dredge and Eaglebird Mines, TNF, USDA Forest Service Pacific SW Region, July 2009.



California Species of Special Concern, and Forest Service Region 5 Sensitive Species. These species are strongly correlated with cave-like roosting habitat within the elevation range of the Site, such as might occur in abandoned mine openings or man-made structures; however, their presence has not been confirmed onsite. A Protected Activity Center (PAC) for spotted owl is located in an adjacent drainage; however, the PAC is further than 0.5 miles from the project Site⁴.

3.6 GEOLOGY

Condor reviewed the regional geology depicted on the *Geologic Map of the Chico Quadrangle, California*⁵ and a *U.S. Geological Survey Map Showing Plutons and Accreted Terranes of the Sierra Nevada, California with a Tabulation of U/Pb Isotope Ages*⁶. The majority of the Site is located within the Paleozoic Bowman Lake Batholith (granitic) and the western edge of the Site appears to lie within the Paleozoic Medasedimentary Shoo Fly Complex (shale/slate). The ore bearing rock has been found along the contact between the two rock types and in fissures and veins extending from the Bowman Lake Batholith. The Site geology is shown on Figure 5.

3.7 SOILS

The National Resources Conservation Service (NRCS) Web Soil Survey website (<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>) provides custom soils reports for sites within the Tahoe National Forest. Based on the Custom Soil Resource Report for Tahoe National Forest Area, California – Eagle Bird Mine Group, four soil types are present at the Site. These are listed below in order from most to least abundant along with distinguishing properties and qualities:

- 1) Chaix variant-Rock outcrop-Cryumbrepts (CKF), well drained, 30 to 50 percent slopes, coarse-loamy, mixed, frigid Dystric Xerochrepts. Physical parameters include a typical soil thickness of 22 to 26 inches that is generally 67 percent sand, 23 percent silt and 10 percent clay (sandy loam). Infiltration rate is moderate (0.2 - 0.8 in/hr) and saturated hydraulic conductivity (Ksat) ranges from 1.98 to 5.95 in/hr (maximum 2.8×10^{-3} cm/sec).
- 2) Hurlbut-Deadwood-Rock outcrop complex (HUG), somewhat excessively drained, 30-75 percent slopes, fine-loamy, mixed, mesic Dystric Xerochrepts. Typical soil thickness is 16 to 26 inches.
- 3) Deadwood-Rock outcrop-Hurlbut complex (DEG), somewhat excessively drained, 30-70 percent slopes, loamy-skeletal, mixed, mesic Dystric Lithic Xerochrepts. Typical soil thickness is 13 to 31 inches.
- 4) Tahoma variant-Hotaw variant-Cryumbrepts (MUE), well drained, 2-30 percent slopes, Fine-loamy, mixed, frigid Ultic Haploxeralfs. Typical soil thickness is 38 to 52 inches.

The Site soils are shallow, poorly developed in places, and much of the Site is not covered by soil. Infiltration rates are typically high where fractured and/or decomposing bedrock is present. Where unfractured bedrock is present infiltration is minimal and runoff can occur. The range of Ksat values for the four soil types is 6.4×10^{-4} to 2.8×10^{-3} cm/sec (0.2 to 5.95 in/hr). The Site soils are shown on Figure 6. The custom soil report is included in Attachment C.

3.8 CURRENT LAND USE

The Site is designated Timber and Range in the Tahoe National Forest's Land and Resources Management Plan (LRMP). This designation allows for multiple uses including timber harvest, mining,

⁴ Environmental Assessment, Reclamation of Abandoned Mine Features at the Dredge and Eaglebird Mines, TNF, USDA Forest Service Pacific SW Region, July 2009.

⁵ Department of Conservation, Divisions of Mines and Geology (DMG, 1992)

⁶ Compiled by William P. Erwin and Joseph L. Wooden, 2001



livestock grazing, and recreation. The Site is currently developed as an underground hard rock gold mine with associated surface facilities such as access roads, adits, tunnels, mining equipment and man-made structures onsite. It has been actively mined off and on since the 1880's; however, it has been mostly dormant since 1969. The USFS previously evaluated a proposed mine closure and reclamation of abandoned mine features project on the Site; however, this project was never implemented⁷.

3.9 CULTURAL RESOURCES

The Eagle Bird Mine is a recorded historic cultural resource, with known historic mining features and equipment on the project Site. The Site was evaluated by the USFS in 2009, and was determined to be ineligible for inclusion on the National Register of Historic Places due to "lack of integrity"; it therefore no longer requires protection or management as a cultural resource⁸.

4.0 PROPOSED MINING PLAN OF OPERATIONS

The Operator intends to perform a small-scale exploration and limited mining program to evaluate the extent of the resource and its viability for economic withdrawal. The rate and timing of this work will likely occur in phases influenced by finances, availability of waste rock and tailings storage, and permitting. The Operator intends to submit plans and specifications for additional tailings storage within the 160-acre mine boundary to the Lead Agency, USFS, and Regional Board following the first season of mining. The general plan and specifications for additional waste rock and tailings storage are described in Section 4.4.5.

The purpose of the PoO is to describe the proposed mining and processing operation. Surface mining operations and the reclamation of mined lands in Sierra County are subject to the requirements in Sierra County Code, Part 33: Surface Mining and Reclamation and the California Surface Mining and Reclamation Act of 1975 (Section 2710 et seq. of the Public Resources Code). This PoO focuses on exploratory and assessment activities necessary to stabilize the Site; clean out collapsed tunnels; and map, extract, and process ore samples in order to assess the extent and quality of the resource. The PoO includes:

- an anticipated production averaging 40 tpd of ore grade material from one or several of the mine sites on the claim;
- both onsite and offsite processing of the ore for gold recovery, and
- the discharge of mine and process waste materials onsite.

4.1 PREVIOUS MINING OPERATIONS

The following information on previous mine development was obtained from reports on the mining claims by Milton Heaney in 1993 and 1994, and Paulsen Research & Development in 1989. After reviewing these documents for mine descriptions and maps, it is estimated that approximately 4.1 acres have been previously disturbed by past mining and processing operations at the Site, as shown on Figure 7. This does not include the area of the various access roads.

Mining and processing operations have taken place on the Site (Patrick, Eagle Bird, Eagle Bird No. 1, Eley, Annex, Pedro, Pedro No. 1 and Golden Slipper) off and on in the mid 1880's, the 1910's, 1930's,

⁷ Environmental Assessment, Reclamation of Abandoned Mine Features at the Dredge and Eaglebird Mines, TNF, USDA Forest Service Pacific SW Region, July 2009

⁸ Environmental Assessment, Reclamation of Abandoned Mine Features at the Dredge and Eaglebird Mines, TNF, USDA Forest Service Pacific SW Region, July 2009



and most recently on the Eagle Bird in 1969. Gold in these mines is coarse and free milling and recovered by gravity concentration after crushing and grinding to approximately minus 60 mesh. On the Eagle Bird Mine, approximately 1,500 to 2,000 feet of development, exploratory and prospecting work was done along the granite/slate contact near the intersection of the north-south and east-west veins.

Most recently, mine equipment consisted of air drills, an air compressor, and track-mounted mine cars. Milling was done using a five-stamp mill located opposite the Eagle Bird No. 2 adit with a crusher and feeder all driven by a 25-horsepower diesel engine. The power source was housed in a 24-foot by 24-foot corrugated metal shop building (Photos 17 and 20). Other buildings onsite were the three-story mill building now demolished (Photo 24), an 8-foot by 8-foot pump house now demolished (Photo 21) and a two-story, four-bedroom house (Photo 19).

The house will be torn down by the end of October during the first mining season and replaced the following mining season with sufficient trailer(s) capacity equivalent to a four-bedroom residence. A shed attached to the shop building was used to house a 3,500-watt gasoline powered generator. One report noted the existence of a pelton water wheel for electric power generation driven by a spring near the Eagle Bird (Photos 22 and 23). A three-stamp mill existed at the Elcy-Annex Claims but it is doubtful that it processed much ore since only very small mill tailings dumps were found. Both stamp mills were removed from the Site a number of years ago.

The Eagle Bird Site consisted of a mill level tunnel, two upper levels, and several sublevels and stopes totaling approximately 2,000 feet in length. The Pedro No. 1 drift reportedly extended approximately 450 feet to below the nearby multilevel workings of the Pedro decline which may extend to some depth below the caved areas. The Patrick Mine consisted of one drift of about 104 feet in length. A mill was apparently planned for installation during 1994 to process ore from the drift on the Patrick Claim, the Pedro, and the Elcy-Annex but installation never took place. Two settling ponds were excavated on the Pedro Claim adjacent to a large graded area that was likely part of the planned mill development. The development on the Elcy and Annex Claims consisted of a number of drifts, raises and a shaft to mine deeper ore. Part of the shaft has been filled with mill tailings. Other drifts were driven on Pedro Claim (No. 5 adit), the Annex Claim (No. 2 and No. 6 adits), but the small size of the mine waste dumps at these locations indicate the development was minor.

4.2 RESOURCE AND PRODUCTION

Previous reports indicate that there is potential to develop economic resources on the Eagle Bird, Patrick, Pedro, Pedro No. 1, and the combined Elcy and Annex Claims. The PoO is based on the proposed re-opening and development of the Pedro, Eagle Bird, and the Patrick, and rehabilitation and limited exploration of the Elcy Annex adit/tunnels. The Pedro No. 2 adit/decline will be evaluated for viability to access the existing workings or if an alternative decline is warranted. The Patrick and Eagle Bird adits will be re-opened and stabilized for mining.

To evaluate the resources and provide a detailed estimate of the quantities of ore and waste material to be mined, an exploration program will occur contemporaneous with re-opening and stabilization work, underground mining, and removal of ore in various areas of each existing mine. This will allow further assessment and development of the resources as well as early recovery of gold to help finance the continued evaluation of the resources and mining development. The exploration program will include sampling and assaying of various portions of the underground mines, but and may also include surface drilling along tunnel alignments on specified mining claims. The surface drilling programs will be recommended at some time prior to or after the start of operations, and the details of the drilling programs will be defined at that time and provided to the Lead Agency, USFS, and Regional Board.



The mining and processing rates will be low at the beginning, particularly with the gradual re-opening of the mines, and will gradually increase up to a maximum of 40 tpd average over the early years. Initially, ore material up to 12-inch diameter will be processed offsite for final concentration and refining at a custom mill while mining and processing rates are low and mill equipment are identified and purchased for onsite milling. Ore exceeding 12-inches will be stockpiled onsite for processing to 12-inch minus or less at a later date. Preprocessing will transition to onsite milling as mining and processing rates increase. Once onsite processing commences, the Operator will have the option to process the ore to approximately ¾-inch minus or final concentrate then transport the material offsite for refining. All ore/concentrate transported off site will be contained in covered 10- to 20 cubic yards (cy) dump trucks. Traffic to and from the mine site is expected to decrease after onsite milling starts. The Operator will notify the Lead Agency, USFS, and Regional Board prior to commencing onsite milling.

An anticipated offsite processing facility is:

Facility Name: **United Milling & Refining Corp (formerly Noble Technologies Corporation)**

Location: **1280 Alexandria Court, McCarran, Storey County, Nevada.** The facility is located on private land in Storey County, within Section 5, Township 19 North, Range 22 East, Mount Diablo Baseline and Meridian, within the town of McCarran, Nevada, approximately 14 miles east of Reno, Nevada.

Permit No.: **Water Pollution Control NEV2009113**

Contact Information: **Robert Kilroy, President, (775) 343-1000**

4.3 WASTE CHARACTERIZATION AND REPORT

In August 2011, Condor submitted a Sampling and Analysis Plan (Plan) for characterization of existing mine waste at the Site to the Regional Board. The Plan was accepted by the Regional Board and mine waste and surface water samples were collected from the Site on September 1, 2011. A Mine Waste Characterization Report was submitted on February 2, 2012, and was accepted by the Regional Board in a 16 February 2012 letter. The sampling was observed by staff of the Regional Board and the USFS. The WCR described the results of the mine waste and surface water sampling and was submitted to the Regional Board on February 2, 2012. The WCR classified the waste as Group C and concluded that discharges to surface and/or groundwater from the waste would be in compliance with the water quality objectives, except for turbidity, based on Title 27 California Code of Regulations CCR (27 CCR) §22480(c). The Regional Board concurred with the Group C classification in correspondence dated February 16, 2012. The Plan is included in Attachment D, and the WCR and Regional Board correspondence is included for reference in the Report of Waste Discharge. As mine development progresses on the described claims, characterization of the waste rock and ore through laboratory testing will continue.

4.4 MINING OPERATIONS

Mine activity will begin with the reopening of disturbed areas located on the Pedro, Patrick and Eagle Bird Claims and rehabilitation and limited exploration of the Elcy-Annex adit/tunnels. The Pedro No. 2 adit/decline will be evaluated for viability to access the existing workings or if an alternative decline is warranted. The Patrick and Eagle Bird adits will be re-opened and stabilized for mining. As the extent of the resource and its viability for economic withdrawal is determined, the rate of mining will be influenced by the availability of finances and waste rock and tailings storage. All mining and processing activities during the initial years of operation will take place within previously disturbed areas. Vegetation within disturbed areas will be stripped and stockpiled to the west of the tailing storage and settling pond. Deposition of waste materials will occur in such a way as to avoid negative impacts to undisturbed areas in and adjacent to the Site. Production of ore grade material will follow and may eventually increase to a maximum average rate of 40 tpd. This production could come from one mine or a combination of mines



on the claim. Anticipated waste to ore ratios range from 0.1waste:1ore to 0.5waste:1ore. At a production rate of 40 tpd ore, the anticipated annual production (6 months) is 7,200 tons ore. At an assumed average waste to ore ratio of ¼:1, the total annual production is 9,000 tons which equates to approximately 5,660 cy (9,000T x 1cy/1.59T). The current planned total site waste rock and tailings storage capacity is 40,000 cy and provides approximately 7 years of storage operating at 40 tpd. Actual ratios and production rates will vary. Specific mining operations for the Pedro, Patrick Eagle Bird, and Elcy-Annex Claims are described in Section 4.4.1. As underground areas are mined out and no additional gold resource is identified, storage of tailings in non-saturated, mined out areas may occur. Presumed locations for underground disposal include the Pedro, Eagle Bird, Patrick, and Elcy Annex Claims. At this time, the volume of available underground disposal is not known. No mining waste will be disposed underground until volumes are identified and presented to the Lead Agency, USFS, and Regional Board for review and concurrence. A discussion of underground mill tailings disposal is included in Section 4.4.4.3.

Mining activity may take place on a 10-hour-per-day, 7-days-per-week basis. As mine and mill production increase, there may be a need to operate on a two 10-hour-shift-per-day basis. Because of heavy winter snow fall, the operation will be seasonal with the average operation period from mid-May to mid-November. The actual length of the operating season will be determined by weather. Considering an average production period of 5 to 6 months per year and 40 tpd, the annual production could be up to 7,200 tons. It is expected that the workforce will include five miners/mill operators, plus a superintendent/watchman. The workforce could increase as production, development, and reclamation needs are expanded. The workforce will live in the existing four-bedroom house during the first season and trailer(s) resting on native soil during subsequent seasons. The trailer(s) will be covered by a wood ramada structure founded on spread footings. The ramada will be constructed to withstand the anticipated snow loads. Prior to the planned disposal of sewage to the existing septic system, the system will be evaluated by a Sierra County approved septic system inspector for reuse by the trailer(s). Potable water will be provided by onsite sources. If planned testing during operations indicates on-site water is non-potable, an offsite source will be imported to the site. Power for the residence facilities and shop will be supplied by generator and possibly a solar/battery unit. Phone service will be provided by a satellite phone or a two-way radio service for emergency calls.

The fuel, lubricant storage, and shop slab area on the Pedro Claim will be covered with a wood ramada structure founded on spread footings to prevent the collection of water in the containment area. All fuel, lubricants, and coolants will be stored in approved closed containers with proper labels as to contents. Storage will also be provided for used coolant and lubricants. Used materials will be hauled to a recycler on a regular basis to minimize storage onsite. All fuel and lubricant containers (new and used) will be taken offsite or emptied prior to seasonal closures. Fuel, lubricant, and parts storage will be fenced and will be located at the mill site area shown on Figure 8. All mining equipment along with fuel and lubricant storage areas will be equipped with proper fire extinguishers.

A watchman's residence trailer resting on native soil shall be located adjacent to the mill site. The trailer will be covered by a wood ramada structure founded on spread footings and constructed to withstand the anticipated snow loads. A portable lavatory/sanitary unit maintained by a contract supplier will be installed at the mill site. The mill area will be equipped with fire extinguishers and a connection for fire hoses to the mill water recycling system. The mine sites and mill will be gated to discourage public access. Adits at all active mining areas will be secured to inhibit entry during non-operation. On the Pedro Claim, the active mining area will be clearly marked to inhibit unauthorized disturbances.

All initial mining and processing activities during the initial operations will take place within previously disturbed areas. Deposition of waste materials may occur in such a way as to not cause negative impacts to undisturbed areas in and adjacent to the Site. Mine waste rock and mill tailings may be re-deposited underground as described in Section 4.4.4.3 in unused or mined out workings where possible in order to



minimize the waste to be stored on surface and to minimize haulage of mine waste. If mine waste cannot be deposited underground, it will be placed in permitted storage areas as described in Section 4.4.4.2. Existing and planned storage areas are shown on Figure 8 and Figure 9. The forest roads coming into the Site area from Granite Mountain and those within each mining area will require periodic maintenance and constant upkeep.

The proposed activities at the Site will produce sufficient soil which can be reused for reclamation purposes to cover planned disturbed areas with the required 3 inches minimum soil thickness. A majority of the available soil will come from Expansion Area No. 2. The area encompasses 27,000 ft² and the anticipated soil thickness is approximately 2 ft⁹ for an anticipated volume of 2000 cy. The anticipated soil need is 2000 cy to cover the two expansion areas (Expansion Area 1 = 13,000 ft and Expansion Area 2 = 27,000 ft) and existing disturbed areas (4.1 acres) with at least 3 inches of topsoil. This is a worst-case scenario as some of the disturbed areas shown on Figure 7 have established vegetation and need no further reclamation. The management of the soil resource at Expansion Area No. 2 is described in Section 4.4.5. There is little natural soil in the disturbed area other than forest thatch and some fines that are mixed with subsoil and coarse and very rocky colluvial material. No typical top soil horizons exist in the previously disturbed areas. Available sub-soil on previously disturbed surfaces will be stripped and stockpiled for use in final reclamation. The amount of soil removed will be kept to a minimum. Stockpiled soil will be seeded with a native grass mix and will not be disturbed until use in re-vegetation. Many of the previously disturbed surfaces are partially covered by volunteer vegetation. Prior to re-disturbance, the vegetation will be stripped and stockpiled separately from the soil/subsoil, and chipped for use as mulch in reclamation. Since little soil exists in disturbed areas, mine waste rock mixed with fines recovered from the mill process settling pond will be mixed and used for cover material on disturbed areas.

Areas of mining activity are outlined in red on DWG-01. The active mine area on the Pedro Claim, will be clearly marked in the field with a sufficiently visible and durable method to prevent unauthorized disturbances. Mine adits on the Eagle Bird, Patrick, and Elcy-Annex Claims will be secured to inhibit entry during non-operation. The following significant site features are included on the DWG-01:

- mine boundary and active mine areas
- milling area which is to include a primary crusher, vibrating screens, ball mill, primary concentrator, secondary concentrator, dewatering screen, and processed tailings temporary storage slab
- waste rock storage
- tailings storage
- settling pond
- soil storage
- ore stockpile
- maintenance shop/ watchman's residence (trailer), portable lavatory
- Eagle Bird retention pond
- roads

⁹ Environmental Assessment, Reclamation of Abandoned Mine Features at the Dredge and Eaglebird Mines, TNF, USDA Forest Service Pacific SW Region, July 2009



4.4.1 Claim-Specific Mining Operations

A portable sanitary facility will be used at each active mine site and will be maintained by a contract supplier. The following claim-specific operations are planned.

4.4.1.1 Pedro No. 2 Adit and Decline

The Pedro No. 2 adit and decline shown on Figure 8 and Photo 5 will be re-opened, stabilized for safety and access purposes, then sampling and mining development will commence. If conditions in the adit prove difficult to stabilize, an alternate decline may be driven to bypass the caved area. The alternate decline will originate in one of two previously disturbed areas shown on Figure 8. Ore will be hauled to the ore stockpile at the mill site shown on Figure 8. Mine development waste rock will be placed in the main waste rock storage area located at the No. 3 cut about 80 feet southwest of the decline opening (Photo 7). After the cut is filled, waste rock will be placed in layers several feet thick from the back of the cut toward the decline. This main waste rock storage area storage will receive waste from other mining areas and rock excavated during the planned construction of Expansion Area No. 1 shown on Figure 8 and DWG-01. The existing waste dump created by mining the Pedro No. 2 decline is approximately 40 feet directly west of the decline and extends down slope into the forest (Photo 6). Since the size and details about each particular mine resource are unknown at this time, the amount of mine waste cannot be predicted; however, it is expected to be minor compared to the quantity of ore material to be mined. The previously disturbed area on the Pedro that will be re-used for mining and processing activities is approximately 1.6 acres.

4.4.1.2 Patrick No. 2 Adit

The Patrick No. 2 adit and waste dumps are shown on Figure 9 and Photos 1 and 2. The adit will be re-opened, stabilized for safety and access purposes, then sampling and development will commence. Previous mining information indicates that there is little or no room for mine waste storage underground; therefore, waste will be removed from the drift and likely stored either at the old stamp mill site on the Eagle Bird as an extension to the existing waste dump (Figure 9), or in a waste storage area at the Pedro (Figure 8). A limited amount of room for waste storage exists directly adjacent to and north of the adit but is not planned for use. Photo 2 shows the two existing waste dumps: one seen at the right of the photo and the other in the upper left of the photo. The cut on the left of the photo with the metal chute extending into it will continue to be used for loading ore and waste material from the adit (out of view to the upper left of the photo). There is also the possibility that a separate level decline may be driven from this point. Ore will be hauled directly to the ore stockpile at the mill site. The area on the Patrick that was previously disturbed and planned for re-use during mining activities is approximately 0.1 acres.

4.4.1.3 Eagle Bird No. 2 Adit

The Eagle Bird No. 2 adit will be re-opened, stabilized, and then sampling and development could commence. The existing configuration and proposed changes are shown on Figure 9. Ore material will be loaded at the adit into a truck for a short haul down to ore stockpile at the mill site on the Pedro Claim. The waste rock that cannot be stored underground at this site will be stored as an extension to the present waste dump that will cover a portion of the former stamp mill site. The access road to the stamp mill site will serve as a base for any additional waste storage (Figure 9). All of this area was previously disturbed.

The metal shop building at this site will remain (Photos 17 and 20), but the wooden house structure (Photos 19) will be torn down by the end of October of the first mining season and replaced the following mining season with sufficient trailer(s) capacity equivalent to a four-bedroom residence. A septic system at this Site is believed to be in good working order and will be evaluated by a Sierra County approved septic system inspector for reuse by the trailer(s). Water is available from spring and surface runoff into a pond about 100 feet south of the residence site (Figure 9 and Photos 22 and 23). This water is available for residential use, although the operator may also choose to have bottled water onsite.



Water drains from the No. 2 adit (Photo 18) year around and currently flows across the access road into a 2 inch pvc pipe and down to the settling pond on the Pedro Claim. The water will be piped from the adit directly to the settling pond which will be utilized in ore treatment operations. Management of the water resource is described in Section 4.6. The remains of the collapsed stamp mill building located at the toe of the Eagle Bird waste dump and west of the shop building (Figure 12 and Photo 24) will be cleaned up and disposed offsite. The area on the Eagle Bird that was previously disturbed and will be re-used for mining activities is approximately 0.5 acres.

4.4.1.4 Elcy and Annex No. 3, 4, and 5 Adits

The cluster of adits bisected by the common boundary of the Elcy and Annex Claims will be rehabilitated to allow limited exploration and sampling to commence. This site is shown in detail on Figure 10 and Photos 8, 9, and 10. The ore will be loaded into a truck at the adits and hauled up to the mill site for processing. Waste will be hauled up to storage areas located near the plant site on the Pedro Claim. No impact to potential wetlands or the drainage on these claims is anticipated. The area on the Elcy and Annex Claims that were previously disturbed and will be re-used for mining activities is approximately 0.35 acres.

4.4.1.5 Areas Planned not to Mine

The older mine workings that will not be reopened and developed will be identified and specified for closure in the Reclamation Plan and Reclamation Cost Estimate. The operator has no interest in developing potential resources on Eagle Bird No. 1, Dorothy Mill site, Pedro No. 1, or the Golden Slipper claims at this time. The older mine workings that will not be reopened and developed are:

- Pedro No. 1, No. 2 Adit
- Pedro No. 5 Adit
- Annex No. 2 Adit
- Annex No. 6 Adit

4.4.1.6 Mining Equipment

Mining equipment proposed to be used onsite to reopen and mine underground and haul to and maintain surface facilities will include, but not be limited to, the following:

- Jackleg drills
- Portable water tank at mine site with pump (approximately 1,000 gallons)
- Portable compressor
- Portable generator
- Electric ventilation fans
- 1 cubic yard (cy) LHD, Eimco 911
- Optional rail mounted mine cars, motor, and mucker
- Powder magazine for secure explosives storage (surface or underground)
- Fuel storage for approximately 500 gallons gasoline, and 2,000 gallons diesel fuel with containment vessels
- Oil, lubricant, coolant storage with appropriate storage/containment vessels



- Bobcat model T300, rubber tracked, or equivalent
- Small dump truck, 5 cy
- Small water truck, approximately 1,000 gallons
- 12 cy dump trucks for offsite ore haulage and mill tailings haulage
- Solid waste (garbage) container
- Excavator, Hyundai 160 size
- Front end loader, 2.5 cy size

The mining equipment will be used on a daily basis for onsite mining and concurrent reclamation work. The 12 cy dump trucks may be used for haulage of initial mine ore production to a custom mill offsite. It is anticipated that two to three trips per day using a 12 cy truck will be made to haul ore offsite until an onsite mill is operational. The use of a 20 cy truck will reduce by 50 percent the number of trips per week. The excavator and loader will be used for a variety of tasks including building demolition and excavation of a mill tailings storage basin.

4.4.2 Ore Processing

Mining wastes are classified as Group A, Group B, or Group C mining wastes based on an assessment of the potential risk to water quality, Title 27 CCR section 22480. Only Group C mining waste will be processed on site. Group B mining waste, if encountered, will be placed from below ground directly into 10 to 20 cy trucks and transported offsite for processing at the location described in Section 4.2. Initial processing of ore up to 12-inch diameter will occur offsite at a custom mill while mining and processing rates are low and mill equipment is identified and purchased for onsite installation.¹⁰ Ore exceeding 12-inches will be stockpiled onsite for processing to 12-inch minus or less at a later date. All ore/ concentrate transported off site will be contained in covered 10 to 20 cy dump trucks. Traffic to and from the mine site is expected to decrease after onsite milling starts.

Onsite processing of ore will occur using a small, portable mill. Since the gold occurrence in the ore is coarse and treatable by free milling techniques, the onsite process will include crushing, grinding, screening, filtering, and final gold recovery will be by gravity methods, likely using a low gravity-force centrifuge and spiral cleaner. The grinding stage may be replaced by a pulverizer which will reduce the amount of water used in the process. Once onsite milling commences, the Operator will have the option to process the ore to approximately ¾-inch minus or final concentrate then transport the material offsite for refining. Mill tailings will consist of a fine- to medium-size sand of about minus 60 mesh (0.25 mm). No chemicals will be used in the process.

The mill site includes the area south of the settling pond and east of the tailings storage and settling pond. The total available mill area is 8,500 ft² shown on Figure 8. The estimated footprint of the milling equipment is 500 ft². The mill site will also contain a 10-foot by 100-foot haulage road (1,000 ft²), a 1,000 ft² ore stockpile concrete pad with sidewalls constructed of pre-fabricated concrete block units, a 1,000 ft² covered and curbed concrete pad, a 100 ft² concrete pad for temporary storage of tailings, and an approximately 12 feet by 15 feet covered fuel, lubricant storage, and shop slab with grease/oil trap for mechanical repair and servicing of mill and mine equipment. The total mill site footprint is approximately 3,600 ft², 45 percent of the total mill site available space. A schematic of the preliminary mill site plan is

¹⁰ United Milling and Refining Corp., can crush material, ranging in size from a golf-ball to much larger baseball/soccer ball size, and this material can be delivered via super-sacks and/or a dump truck as there is no requirement that the material arrive at this facility in a 55-gallon drum. Robert Kilroy, President, UMRC, Email correspondence dated May 22, 2013.



shown on Figure 11. A maximum production rate of 40 tpd is proposed. Considering an average production period of 6 months per year, the annual production could be up to 7,200 tons. The Operator will notify the Lead Agency, USFS, and Regional Board prior to commencing onsite milling.

All milling equipment will be semi-portable and require minimal or no concrete foundation. Stockpiling of the ore will occur on one or both of the 1,000 ft² concrete slabs. The material will be managed using a Bobcat, front end loader or similar equipment. The equipment will load the ore into the crusher where the material will be conveyed to a vibrating screen for size separation. The ¾-inch minus material will convey to the ball mill, then to the low gravity-force centrifuge and spiral cleaner for gold separation. The ¾-inch plus material will convey back to the crusher for additional processing.

The processed tailings will convey to a de-watering screen, dewatered to 15 to 20 percent, then to temporary storage on a concrete slab. The Bobcat, front-end loader or similar equipment, will move the tailings from the slab to the tailings storage area. The mill area will be graded and excess water generated in the milling and dewater process will flow to the settling pond. The perimeter of the mill area will be bermed and adequate drainage control installed to inhibit stormwater runoff.

4.4.3 Mill Equipment

Major processing equipment to be installed in the mill will include, but not be limited to, the following:

- Primary crusher (size TBD)
- Secondary crusher (size TBD) or pulverizer
- Small storage bin
- Ball mill (5-feet by 6-feet approximately)
- Gold jig or a Low-G Horizontal Centrifuge primary concentrator
- Concentration table or a Reverse Multi-Helix Spiral, secondary concentrator
- Various pumps, and cyclones
- Mill tailings thickener and filter or dewatering screen for dewatering tailings
- Covered fuel, lubricant storage, and shop slab with grease/oil trap for mechanical repair and servicing of mill and mine equipment (approximately 12 feet by 15 feet)
- Ore stockpile concrete pad measuring approximately 30 feet by 30 feet with sidewalls constructed of pre-fabricated concrete block units
- Covered and curbed concrete pad measuring approximately 30 feet by 30 feet with sidewalls constructed of pre-fabricated concrete block units
- 100 ft² concrete pad for daily storage of dewatered tailings prior to final storage.

The mill equipment may be covered with a temporary roof (ramada) to protect from rain and snow.

4.4.4 Waste Rock and Ore Management

Regular sampling and analysis of the underground workings will occur to characterize changes in geology and mineralogy of the ore and waste rock. During the first season of operation, samples of the subsurface materials shall be collected during underground drilling to advance each tunnel and during above ground drilling along tunnel alignments to confirm background/pre-mining conditions and the mine waste group prior to excavation and discharge of the material above ground.



If the analyses of the underground workings indicate a Group A or Group B material, the Operator will postpone excavation of the material until additional characterization and sampling is performed. If the additional analyses indicate a Group B material, the Operator will place the material from below ground directly into 10 to 20 cy trucks, cover the material, and transported it offsite for processing at the location described in Section 4.2. Once onsite milling commences, the Operator may elect to place the Group B material on the covered concrete slab located in the milling area to form a waste pile. The cover will be constructed to prevent precipitation from contacting the material. The slab will be constructed with a concrete curb to retain the material on the slab and inhibit water from flowing onto the slab. The area surrounding the slab will be graded to divert sheet flow laterally to drainage swales and away from slab. The material in the waste pile will be dry crushed on the covered concrete slab to $\frac{3}{4}$ -inch minus or less. No water will be used in the processing. The crushed material will be transported off-site in covered 10 to 20 cy trucks for final concentration and refining. No Group B waste piles are planned for construction at the Site.

If the additional analyses indicate a Group A material, the Operator may 1) abandon the resource and initiate reclamation in accordance with the approved Reclamation Plan, or 2) submit a revised ROWD with plans and specifications for the discharge and containment of Group A mining waste on site in accord with Title 27 CCR Chapter 7. No off site processing of a Group A material is planned. No discharge of a Group A or Group B waste will occur onsite unless the Operator submits a revised PoO and ROWD with plans and specifications for the discharge and containment of Group A or B mining waste, Title 27 CCR Section 22490.

4.4.4.1 Waste Rock Disposal

Three waste rock storage areas are present at the site. The main storage areas are on the Pedro Claim at 1) the No. 3 cut northwest of the large disturbed area and 2) south of the settling pond, as shown on Figure 8 and DWG-01. The secondary storage area is on the Eagle Bird Claim, Figure 9, and DWG-01. All waste rock will be placed in layers to maintain a 2 horizontal to 1 vertical (2H:1V) slope face and track or rubber-tired rolled for compaction (60-80 percent relative density). The construction of drainage swales near the crown and toe of the slopes will capture stormwater runoff and direct the runoff to the forest floor. Construction of the swales will limit, to the extent possible, ponding, surface erosion, slope failure, and washout from a 20-year, 1-hour storm.

The No. 3 cut waste rock storage area has a maximum height of 35 feet and length of 150 feet. The area will accommodate an estimated 7,000 cy of waste rock. The pile will extend up to the slope crown and from the crown to the west edge of the large disturbed area. The area south of the settling pond will accommodate an estimated 1,500 cy. The existing conditions and topography at the Eagle Bird No. 2 storage area are shown on pictures in Figure 12 and Figure 13, and Photos 24, 25, and 26. The Eagle Bird No. 2 storage area is suitable for waste rock storage because it is previously disturbed, relatively flat in the area of the planned slope toe for keying and benching into the existing ground (Figure 13 and Photo 25), and the proximity to the Eagle Bird adit will minimize haulage. The area will accommodate an estimated 1,000 cy of waste rock. The estimated Site total waste rock storage is approximately 9,500 yards or approximately 2 to 3 years capacity at a 40 tpd production rate.

No waste rock sliver-fills will be placed at the Site. Prior to the placement of waste rock in storage areas, vegetation will be stripped from the storage area surface, the vegetation chipped, and soil/subsoil and chipped vegetation stockpiled in the soil storage area west of the tailings storage and settling pond on the Pedro Claim. No timber of adequate size and density for salvage is anticipated within the planned waste rock storage areas. A cross section of the Pedro and Eagle Bird Claim waste rock storage areas are shown on Figure 15 and Figure 16, respectively. A typical drainage swale is shown on Figure 14.



4.4.4.2 Mill Tailings Disposal

Mill tailings will consist of a fine- to medium-size sand of about minus 60 mesh. During on-site processing, the tailings will be dewatered after mineral extraction to approximately 15- to 20-percent moisture using a dewatering screen, filter press, or similar method to achieve the desired moisture content, then placed using a Bobcat, front end loader or similar equipment in the tailings storage basin measuring approximately 90 feet by 30 feet and 12 feet below surrounding grade. The perimeter of the pile will reach a height of approximately 2 feet below surrounding grade. The center of the pile will have a maximum height of 5 feet above surrounding grade. The pile surface will slope at a 3H:1V. During all phases of tailings management, the Operator will employ best management practices of the material to prevent a potential threat from turbidity to water quality.

Excess water that may accumulate in the tailings impoundment during operations will flow to the settling pond through a 12-inch diameter corrugated plastic pipe. The greatest potential for water flow to the settling pond is near the end of the mining season when the tailings storage is at or near capacity. The perimeter of the tailings pile solids will remain at least 2 feet below surrounding grade during operations and the perimeter sloped to drain toward the 12-inch pipe. The settling pond will be managed to maintain a surface water elevation of 2 feet below the pipe invert and 4 feet below the lowest elevation of the berm surrounding the settling pond. The ground surface surrounding the tailings storage and settling pond, but not including the mill processing area, shall be graded to direct stormwater away from the tailings storage and settling pond.

Following cessation of seasonal operations, the 12-inch diameter pipe connecting the tailings storage basin and the settling pond will be capped to exclude the infiltration of storm water. The tailings pile will then be covered with a single sheet of 30 mil geosynthetic (string reinforced, medium density, polyethylene having a hydrostatic resistance of 142 pounds per square inch (psi), tear strength of 145 pounds (lbs), tensile strength of 220 lbs, and a weight of 140 lbs per thousand square feet, see Attachment E). The geosynthetic shall be anchored on one long side of the pile in an approximately 2 feet wide by 1 foot deep trench and the balance of the cover perimeter placed in a shallow v-trench (e.g. 6 inches), and secured with sand bags placed 5 feet on-center or the trench backfilled up to surrounding grade with native material. The objective is to secure the cover perimeter and eliminate potential disruption from wind. The majority of the cover shall be anchored using a 10-foot by 10-foot roped grid tethered with UV resistant bags filled with native material.

The estimated capacity of the tailings storage area is 1,000 cy (approximately 27,000 ft³). This will provide approximately 1 year (152 days) of storage at an initial average daily production rate of 10 tons.

4.4.4.3 Mill Tailings Underground Disposal

In the event that a sufficient volume of non-saturated, mined-out areas are present underground, these underground areas meet Title 27 CCR Section 22490 conditions for mining units, and underground storage is equitable, the Operator will provide the Lead Agency, USFS, and Regional Board a revised PoO and ROWD. This document will include a detailed discussion of the planned disposal locations, the plans for managing the tailings underground during the operating and post-closure maintenance period, and adit closure methods at locations where tailings are discharged. The revised PoO and ROWD will describe the methods for the treatment, disposal, and underground storage of the Group C mining waste, which will include, but is not limited to, the following:



- 1) Treatment – Minus-60 mesh tailings shall have moisture content of approximately 15 to 20 percent or less wet unit weight (i.e. no free water). The ratio of water to solids will range from approximately 0.15:1 to 0.20:1¹¹.
- 2) Disposal – The waste will be placed using a 1 cubic yard mobile mechanical scoop (or equivalent equipment).
- 3) Storage – Underground conditions in mined-out locations shall be non-saturated.

The closure of adits and declines that contain tailings is described in Section 5.4.

4.4.5 Additional Onsite Waste Rock and Mill Tailings Storage

During the initial years of operations, a design for additional waste rock and tailings storage on the Pedro Claim and within the mine boundary is planned at two locations shown on Figure 8 and DWG-01. The design will be prepared by a qualified registered professional. The Operator will provide detailed plans and specifications to the Lead Agency, USFS, and Regional Board for review and comment prior to construction. Planned Expansion Area No. 1 is a below grade basin measuring approximately 130 feet by 100 feet and is located east of the No. 3 Cut and north of the Group C Tailings Storage area. The topographic relief at Expansion Area No. 1 is less than 5 feet. Expansion Area No. 2 is a below grade basin measuring approximately 180 feet by 150 feet and is located approximately 50 feet northeast of Expansion Area No. 1. The topographic relief at Expansion No. 2 is approximately 20 feet or less. No cut or fill slopes greater than 50 vertical feet are planned in the two expansion areas.

In general, the design will include the clearing and grubbing of the planned expansion areas. The vegetation from the clearing and grubbing will be salvaged in accordance with CCR 3711(a-d) and stockpiled in the soil storage area west of the tailings storage and settling pond on the Pedro Claim. Little clearing and grubbing is planned in Expansion Area No. 1. Prior to the development of Expansion Area No. 2, the Operator will prepare and submit to the USFS a plan for tree removal and harvesting.

Each expansion area will consist of a basin excavated below grade to competent material (at least 12 feet below adjacent grade based on the existing tailings basin and south settling pond but not greater than 20 feet). The unlined basin floor will slope at 2 percent toward one side or corner of the basin, the interior side slopes will be inclined at 2H:1V, and exterior slopes at 3H:1V. All fill material shall be compacted to 90 percent of the ASTM D1557 maximum dry density, or as determined by the design professional. Anticipated berm height shall not exceed 20 feet. An erosion control drainage swale able to accommodate the design storm will surround each basin to capture stormwater flowing toward the basin. Native slopes above drainage swales will be graded to 2H:1V or less. Water from the swale will discharge to the forest floor. Each basin will be managed to insure at least 2 feet of freeboard is present at all times. A typical drainage swale is shown on Figure 14.

The tailings generated during the first year of mining will be moved by Bobcat, front end loader or similar equipment to Expansion Area No. 1. Continued placement of Group C tailings in Expansion Area No. 1 will occur by Bobcat, front end loader or similar equipment. The reclaimed slope of the tailings stockpiles will be approximately 3H:1V. Working slopes may be as steep as 1H:1V. The Expansion Area No. 1 reclaimed stockpile will range up to 30 feet high when measured from the basin floor. The stockpile height above the top of the berm surrounding the stockpile will be 20 feet or less. The Expansion Area No. 2 reclaimed stockpile will not exceed 50 feet high when measured from the basin floor. The stockpile height above the top of the berm surrounding the stockpile will be 30 feet or less. The stockpile perimeter will be approximately 5 feet below the berm crown. No tailings stockpile will exceed a height of 50

¹¹ Moisture, $w = W_{\text{water}}/W_{\text{solids}}$. Assume $W_{\text{solids}} = 1$, then $W_{\text{water}} = 1*0.15 = 0.15$: Ratio of water, 0.15, to solids, 1, is 0.15:1



vertical feet. Expansion Area No. 1 will accommodate approximately 1.1 to 1.3 years of Group C tailings at a production rate of 40 tpd. Prior to reaching the capacity in Expansion Area No. 1, the Operator will commence construction of Expansion Area No. 2. The Expansion Area No. 2 will accommodate the balance of the 5 years of Group C tailings at a production rate of 40 tpd. Group C waste rock may be placed in Expansion Area No. 2 but not in a volume that will decrease the tailings storage capacity to less than 5 years at a production rate of 40 tpd. To exclude the infiltration of storm water during the rain season, all mill tailings will be covered with a single sheet of geosynthetic (Attachment E). The geosynthetic shall be anchored as described in Section 4.4.4.2. No waste storage area, new or existing tailings storage area, settling pond or retention pond within the mine boundary is located:

- on or near a Holocene fault, Title 27, CCR Section 22490(a)(1) and Table 1.1;
- in an area of rapid geologic change, Title 27, CCR Section 22490(a)(2) and Table 1.1;
- in a perennial, intermittent, or ephemeral stream channel, Title 27, CCR Table 1.2;
- in an area that may cause accelerated stream bank erosion, Title 27, CCR Table 1.2;
- in an area that may increase sediment in surface water, Title 27, CCR Table 1.2; or
- in a flood inundation area, Title 27, CCR Section 22490(b) and Table 1.2.

4.4.6 Dust and Noise Suppression

Ore crushers will be equipped with water sprays on discharge points if dust becomes a concern. The milling and final gold recovery processes will be wet so no dust will be generated. The surface of the tailings storage area will remain damp and is not expected to generate any dust. Vehicular travel in the mill area and various mine areas are not expected to generate high levels of dust, but if it becomes a problem, periodic applications of water spray from a water truck will be sufficient to control the dust generation.

Noise impacts of mobile mine and mill equipment will be attenuated by utilization of equipment with proper mufflers. Noise generated by the milling equipment can also be reduced by the installation of noise suppression panels if necessary around the truck or skid mounted equipment. Equipment housed in enclosed buildings will not be a source of excess noise. Other noise sources will be the muffled noise of underground blasting and the noise generated by the low level of traffic to and from the Site.

4.5 DRAINAGE AND EROSION CONTROL

The State Water Resources Control Board Industrial Storm Water General Permit Order 97-03-DWQ (General Industrial Permit) is a National Pollutant Discharge Elimination System (NPDES) permit that regulates storm water discharges to the environment from mining operation. The General Industrial Permit requires the implementation of management measures that will achieve the performance standard of best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT). The General Industrial Permit also requires the development of a Storm Water Pollution Prevention Plan (SWPPP) and a monitoring plan. Through the SWPPP, sources of pollutants are to be identified and the means to manage the sources to reduce storm water pollution are described. The Annual Comprehensive Site Compliance Evaluation (ACSCE) required by the General Permit would also allow existing Best Management Practices (BMPs) to be evaluated regarding their effectiveness in controlling the discharge of sediment and other pollutants that could be entrained in storm water. The Operator will submit to the State Water Resources Control Board a final Notice of Intent (NOI) to comply with the General Industrial Permit once the WDR's are near completion.

Impacts from stormwater runoff during the mining season are expected to be low. Evaporative losses of 35 inches exceed estimated late spring, summer, and early fall precipitation of 15 inches. To



accommodate the potential for the mobilization of sediment during large summer storms, temporary sediment control materials such as straw wattles and bales shall be maintained on-site to allow for immediate implementation and for rapid response to failures or emergencies. In addition, the perimeter of the active mining areas will be bermed and drainage swales will be constructed on the upslope side of the berms as necessary to prevent stormwater runoff and direct stormwater away from the Site to the forest floor. Stockpiles of waste rock, soil storage, and tailings will be constructed and managed to minimize water and wind erosion. Drainage swales shall be constructed at the crown and toes of waste rock and soil storage stockpiles. All berms and drainage swales shall be constructed to inhibit ponding, flooding, erosion, slope failure from the diverted precipitation, and accommodate the anticipated volume from a 20-year, 1-hour storm. On the Pedro Claim, the relatively flat, active mining areas will be graded to divert sheet flow laterally to drainage swales and away from waste rock storage areas, tailings, and the settling pond. The ground surface in the milling area will be graded to divert water to the settling pond. All diverted precipitation other than from the milling area shall be discharged to the forest floor and not existing drainages. These site features are shown on Figure 8, Figure 9, and DWG-01. Wet ground surface conditions caused by major storms during the mining season will be allowed to dry out prior to commencing operations in the affected areas.

Prior to the conclusion of each mining season, the Operator shall implement necessary erosion control measures and inspect and repair all precipitation and drainage control measures to prevent flooding, erosion or slope failure and maintain design capacity of the system. This includes implementation measures in active mine areas and non-active areas before the onset of rain. Placement of straw wattles, and/or bales or silt fencing will also provide protection as sediment traps. If straw products are used onsite, only “certified weed free” products will be used (i.e., rice straw). All drainage features will remain in place for utilization during and after reclamation.

During the final 2 weeks of ore processing each mining season, the volume of water flowing from the Eagle Bird No. 2 adit to the settling pond will be reduced to decrease the water level in the pond and allow for the accumulation of the up to 75 inches of annual precipitation plus accommodate a 20-year, 1-hour storm. The excess water from the Eagle Bird No. 2 adit will flow to the Eagle Bird retention pond then to the land application area. Management of Eagle Bird No. 2 water during and after cessation of each mining season is described in Section 4.6.4.

4.6 WATER RESOURCES

The water resources available onsite are expected to exceed the demand. The primary source is water that drains from the Eagle Bird No. 2 adit. A second source is a natural spring located south of the Eagle Bird No. 2 adit that flows to the Eagle Bird retention pond. A third source is likely present at depth in the mine workings. The September 2001 laboratory analyses of water are at or below the Basin Plan water quality objectives.

4.6.1 Usage

Water will be needed onsite for the following uses:

- Potable use by employees working or living onsite
- Lavatory use onsite
- Operation of underground air-powered drills
- Periodic dust control on roads if necessary
- Crusher cooling water
- Mill grinding operations



- Screening and washing of processed rock
- Primary and secondary concentrator operation

Total water use in the mill process is not expected to exceed 75 gallons per minute (gpm) at a maximum production rate of 40 tpd. Approximately 30 percent of the demand will be lost during processing and made up by on-site sources. The initial period of lower mine production rates will use less water and any offsite custom milling of ore will also reduce water usage.

4.6.2 Sources

Water sources are available onsite which will likely satisfy most needs of the mining and milling operations. The primary source appears to be the water that constantly drains from the Eagle Bird No. 2 adit. This water is currently conveyed in a 2-inch line to the settling pond at the mill site on the Pedro Claim. The existing 2-inch line will be refurbished to include a combination above-ground and below-ground, closed pipe system and flow to the settling pond on the Pedro Claim, the Eagle Bird retention pond, or the land application area. The locations where the pipe is above ground are indicated by solid lines and where below ground by dashed lines on Figure 8, Figure 9, and Drawing 01. The water will be used in the mill for processing ore and for dust control around the Site.

A second source of water is natural spring and surface runoff on the Eagle Bird Claim that flows through the existing pond about 100 feet south of the existing house onsite. Excess water from the pond could be piped downhill to the settling pond on the Pedro Claim for other uses. A third source of water is expected at some depth in the mine workings in the Pedro No. 2 decline. Any water encountered underground will be tested and characterized as a mine waste. If the water qualifies as a Group C waste, it will need to be pumped out of the mine workings on a periodic basis to the settling pond where it can be used for mill process water.

The amount of water available from the above sources for mining related activities is expected to exceed the use and various losses. During water sampling on September 1, 2011, the measured flow from the Eagle Bird No. 2 adit was 12 gpm. It is estimated that average inflow of 15 gpm will provide close to 21,600 gallons per day (gpd). The estimated consumptive water losses plus evaporation and percolation losses are 11,786 gpd as shown on the settling pond water balance table Settling Pond Water Balance in Attachment F.

4.6.3 Wastewater Management

The wastewater that will be created onsite will be from the mill process plant and from the planned residence trailer(s) on the Eagle Bird Claim. Domestic wastewater from planned residence trailer(s) on the Eagle Bird Claim will flow to the existing septic system located on the Eagle Bird Claim. Since no chemicals will be used in the mill process, there will be no degradation of the source water except that the water will contain a large quantity of sand and silt from the crushing, grinding, and washing operation. Water within the plant will be recycled back through the settling pond adjacent to the mill. As the majority of the solids settle out, the water will be pumped back to the mill for reuse. During mill operations, tailings will be dewatered to obtain a moisture content ranging from 15 to 20 percent with a filter press, dewatering screen, or similar method at the mill and hauled to the storage area. This procedure will minimize the amount of water collecting in the tailings storage basin

To ensure no overflow of the settling pond, the pond will be monitored visually as it is filled to maximum working height of 8 feet below grade prior to milling. Milling requires approximately 44,500 gpd. Water losses from evaporation, infiltration, milling and general use equal approximately 13,250 gpd. This volume will be replaced by flows from the Eagle Bird No 2 adit. The estimated annual precipitation



ranges from 65 to 75 inches, of which approximately 20 percent (13 to 15 inches or 1.1 to 1.25 feet) falls during the mining season. During the mining season, the estimated maximum water volume from precipitation that may accumulate in the south pond, including a 20-year, 1-hour storm (1.5 inches: 0.125 ft.)¹², is approximately 1.4 feet or 10,800 gallons (70 ft. x 15 ft. x (1.25 ft. + 0.125 ft.) x 7.48 gal./ft³). The estimated freeboard is at least 2 feet and the potential for overtopping of the pond is low. The settling pond water balance is shown on table Water Balance Projections in Attachment F.

For about the last 2 weeks of the mining season, the volume of water flowing from the Eagle Bird No. 2 adit to the settling pond will be reduced to an average 7,600 gpd until about 900 gallons remain in the settling pond prior to seasonal shut down so the pond will be relatively empty at the beginning of the seasonal closure. A summary of the daily water balance is shown on the table Settling Pond Daily Water Balance in Attachment F.

During onsite ore processing, the water volume in the settling pond may decrease due to accumulated fines. The fines will be removed and dewatered onsite using a filter press or similar method and placed in tailings storage to maximize the volume of water storage in the settling pond. The Operator will employ best management practices during above grade movement of saturated and nearly saturated material to prevent a potential threat from turbidity to water quality. Excess water that may accumulate in the tailings impoundment will flow to the settling pond through a below-grade 12-inch diameter corrugated plastic pipe as described in Section 4.4.4.2. No discharge from the settling pond is planned.

Water that may potentially discharge from the Patrick No. 2 adit and the Elcy/Annex No. 3, No. 4, and No. 5 will be captured in a poly tank and/ water truck prior to discharge from the adit. The water will be tested to evaluate if it is in compliance with the water quality goals and objectives established in the Basin Plan. Water that is at or below the Basin Plan water quality objectives will be used for milling or pumped to the Eagle Bird retention pond for gravity flow to the land application area. Water not meeting the water quality objectives is addressed below in Section 4.6.4.

4.6.4 Eagle Bird No. 2 Adit Retention Pond

The excess water from the Eagle Bird No. 2 adit will be diverted through a combination above-ground/ below-ground closed-pipe system to a $\geq 3,000$ gallon poly tank, then pumped to the Eagle Bird retention pond located about 100 feet south of the existing house, as shown on Figure 9 and DWG-01. The pond currently measures approximately 70 feet by 30 feet by 7 feet deep, has an ± 8 -inch diameter overflow prevention pipe approximately 2 feet below the berm crown, is heavily overgrown, receives water from a spring on the upslope side, and the upper 3 to 4 feet of the detention berm is breached. The breach is approximately ± 3 feet wide at the base. Repairs to the pond will include the stripping and removal of all vegetation from the pond floor, sidewalls, and berm faces. The sidewalls of the breached area will be excavated to expose competent material and the floor extended to approximately flush with the pond floor. A pipe fitted with an inlet screen and a ball valve will be placed in the floor of the repair for the purpose of draining the pond. The area surrounding the pipe and the breach will be backfilled using organic-free, on-site soils containing at least 30 percent by weight material passing the No. 200 sieve. The material shall be placed in 6- to 8-inch loose lifts and compacted using mechanical equipment to at least 85 percent relative density. The repair and the balance of the berm will be inspected by a California Registered Civil Engineer or Certified Engineering Geologist. The excavated soil/subsoil will be stockpiled in the soil storage area on the Pedro Claim. The drain pipe will be plumbed to a manifold capable of dissipating the discharge to the forest floor without causing ponding, flooding, erosion, or slope failure.

¹² http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=ca September 18, 2012.



Following completion of the repairs, it is anticipated the pond total depth will be 8 feet and the pond capacity, with 2 feet freeboard, will equal approximately 94,000 gallons (70 ft x 30 ft x 6 ft x 7.48 gal/ft³). The capacity will provide approximately 10 days of storage of excess water from the Eagle Bird adit (94,000 gal./9,800 gal./day). Spring flow to the retention pond was not estimated nor the source identified. The pond will be managed to maintain a 2-foot freeboard, retain spring flow, and the anticipated 1.5-inches of precipitation from a 20-year, 1-hour storm event. The water balance for the Eagle Bird Retention Pond Water Balance is in Attachment F.

Once mining commences at the Eagle Bird Claim, testing of the water in the Eagle Bird retention pond will commence to evaluate if the water is in compliance with the water quality goals and objectives established in the Basin Plan. The Pedro Claim settling pond will serve as an alternative water storage location during sampling and testing. Water that is at or below the Basin Plan water quality objectives will gravity flow through the drain pipe to a land application area at a rate less than or equal to the estimated soil infiltration rate of 0.8 in/hr.¹³ It is anticipated that approximately 10,000 gallons will infiltrate a 1,000 ft² in 24 hours. The land application area will measure approximately 100 feet by 50 feet at the location shown on Figure 9 and DWG-01. The system will be above ground and consist of 25 ½-inch diameter tubes spaced approximately 2 feet on-center. The tubes will be oriented perpendicular to the slope direction and anchored to the slope using hold-down wires. Each tube will have a pressure compensating, 0.5 gallon per hour (gph) emitter with a 10 to 50 psi operating pressure spaced 1-foot on center along the tube length. A schematic of the land application system is shown on Figure 17. The discharge rate shall not cause ponding, flooding, erosion, or slope failure. The Operator shall monitor monthly by observation the land application area for evidence of oversaturation resulting in runoff, ponded water, and wet or boggy areas. If saturated conditions are indicated, the Operator shall modify one or more of the following until non-saturated conditions are achieved: 1) the frequency of land application, 2) the number of emitters, and 3) the footprint of the application area.

Prior to cessation of the first mining season and assuming laboratory analyses of waters from the Eagle Bird No. 2 adit continue to indicate compliance with the water quality goals and objectives established in the Basin Plan, water from the Eagle Bird No. 2 adit will be plumbed to bypass the Eagle Bird retention pond and flow directly to the land application area during the non-mining season. If at any time a laboratory analysis indicates an exceedance of the water quality objectives, the Operator will cease underground mining at the Eagle Bird No. 2 adit and perform additional characterization and sampling. If the water continues to exceed the water quality objectives, the Operator will 1) abandon access to the resource through the No. 2 adit, 2) seal off the adit with a concrete bulkhead constructed as described in Section 5.4, 3) consider an alternative excavation route to access the resource, and 4) notify the Lead Agency, USFS, and Regional Board regarding the laboratory results. The Operator may elect to submit a revised PoO and ROWD with plans and specifications for the containment, treatment and discharge of the water.

During late winter and spring melting of the snow pack and spring rains, excess water collecting in the settling pond will be held in the settling pond for use in the mill process. Stormwater that falls adjacent to the tailings basin will be diverted to drainage swales and away from the settling pond. The diverted precipitation shall be discharged to the forest floor and not existing drainages. The existing settling pond loses much of the snowmelt and rainfall to groundwater through fractures in the pond bottom as well as to evaporation.

¹³ Custom Soil Resource Report for Tahoe National Forest Area, California, Eagle Bird Mine Group, United States Department of Agriculture, National Resources Conservation Service.



Stormwater runoff will be managed in compliance with the forthcoming General Industrial Permit. The Operator will submit to the State Water Resources Control Board a final NOI to comply with the General Industrial Permit and prepare a SWPPP once the WDR's are near completion. The SWPPP will reference the planned reclamation schedule and be appended to the Reclamation Plan. Upon completion of mining and processing activities in active mine areas, the re-disturbed land and old mining features will be reclaimed. A Draft NOI to discharge storm water from the Site is included in Attachment G.

4.7 TRAFFIC

Traffic to the mine site is expected to vary depending upon whether processing of ore occurs onsite or offsite. The following scenarios are estimated for traffic to and from the Site on a weekly basis (round trips) at a maximum production rate of 40 tpd.

4.7.1 Process and refine ore and retain tailings onsite

Vehicle trips per week:	Small vehicles (employees/small deliveries)	35
	Fuel delivery	2
	Parts/lubricants	<u>2</u>
	Total	39

4.7.2 Process Ore to 3/4-inch minus or final concentrate then transport offsite for refining

Vehicle trips per week:	Small vehicles (employees/small deliveries)	35
	Fuel delivery	4
	Trucking to custom mill – (10 to 20 cy truck)	5 - 11
	Parts/lubricants	<u>2</u>
	Total	46 - 52

4.7.3 Process onsite to 12-inch minus and truck material offsite for concentration and refining

Vehicle trips per week:	Small vehicles (employees/small deliveries)	35
	Fuel delivery	4
	Trucking to custom mill	10 - 21
	Parts/lubricants	<u>2</u>
	Total	52 - 62

4.8 TENTATIVE MINING SCHEDULE

Reopening, stabilization of mine workings, and an exploration program will occur contemporaneously at the Pedro, Eagle Bird, Patrick Claims and rehabilitation of the Elcy-Annex audit/ tunnels as soon as the permits are approved and resources are available. An anticipated start date is summer 2014. The rate and timing of work will likely occur in phases influenced by finances, availability of waste rock and tailings storage, and permitting. The minimum anticipated mine life is 25 years. On the Pedro Claim, the work will include reopening the No. 2 decline adit or an alternative decline to access the existing workings. Initial ore processing will be done offsite at a custom mill while mill equipment is identified and purchased for onsite installation. Mining rates will increase as more areas are developed underground and will gradually increase to a maximum average processing rate of 40 tpd. It is expected that seasonal closure of work onsite will commence around mid-November of each year, depending upon weather conditions.



5.0 RECLAMATION PLAN

The Eagle Bird Mining Company, LLC is the legal owner and Operator of the mineral rights to the Eagle Bird Mine Claim Group. The following Agents of Eagle Bird Mining Company, LLC have authority to conduct business with oversight agencies and accept responsibility for reclaiming the mined lands in accordance with the Reclamation Plan:

Eugene Shannon – Manager
PO Box 680
Conway, NH 03818
(603) 986-2184

Stephan B. Shannon – Member
PO Box 680
Conway, NH 03818
(603) 986-6819

James D. Weber – Member
PO Box 171
Kearsarge, NH 03847
(603) 387-4884

William H. Weber – Member
46 Old Hill Road
Westport, CT 06880
(203) 858-5359

During and upon completion of mining and processing activities, the re-disturbed land, any newly disturbed lands, and old mining features that are still open to public access will be reclaimed in accordance with a Lead Agency approved reclamation plan, PRC 2770(a). The mining equipment, concrete foundations, and buildings will be removed off site and topography disturbed by mining will be graded and re-vegetated in order to blend with the surrounding topography and native forest vegetation. Closure of old mine openings on the Pedro No. 1, Pedro, Eagle Bird, and Annex claims that will not be used in renewed mining operations will take place concurrently with mine development. All other reclamation grading and mine opening closures will take place as mining in each area is completed to facilitate phased reclamation during operations and for reclamation to occur concurrently with mine operations. The reclamation of mined lands, as provided for in this PoO, will permit the continued mining of minerals and will provide for the protection and subsequent beneficial use of the mined and reclaimed land. Closure of the reclaimed lands will occur once the Regional Board determines that water quality aspects of reclamation are complete and the wastes no longer pose a threat to water quality, Title 27 CCR Section 22510(a)(h)(m).

5.1 FINAL LAND USE

Final land use proposed for the Site is natural mixed conifer forest blending with the surrounding undisturbed forest land, and wildlife habitat. The final use will also focus on maintaining existing surface and groundwater quality in the Site and adjoining areas.

5.2 EQUIPMENT AND FACILITIES

All mining and process mill equipment and facilities such as buildings and concrete foundations will be removed from the Site after mining operations are completed. Currently there are buildings that exist onsite. The house on the Eagle Bird Claim will be torn down and removed from the Site by the end of October of the first mining season and the onset of winter weather. The house will be replaced the following mining season with sufficient trailer(s) capacity equivalent to a four-bedroom residential use during operations. These trailers will be removed during the process of closure and reclamation.

The metal roofing that remains from the stamp mill demolition will be removed from the Site during the first year of work on the Site. The metal shop building that exists on the Eagle Bird Claim will remain and will be used during proposed operations. Upon completion of all mining operations, all buildings and concrete foundations will be dismantled and removed from the Site. All mining and mill processing equipment will also be removed.



5.3 SOILS AND GRADING

Mining activities at the Eagle Bird Mine will produce sufficient soil for reclamation purposes to cover planned disturbed areas with the required 3 inches minimum soil thickness. The natural surface soil and weathered surface material (subsoil) that exist will be stripped prior to re-disturbance and placed in a soil stockpile on the Pedro Claim (Figure 8). Since suspension of mining activity, many of the disturbed areas show evidence of natural re-vegetation from the surrounding forests. Since much of the existing graded areas and mine waste dumps support natural vegetation, soil that will be used for final cover of re-disturbed areas and waste rock and tailings piles will be a mixture of stockpiled soil/subsoil, weathered rock excavated from grading operations, Group C fines excavated from the settling pond produced during operations and chipped plant material from initial grading and subsequent construction of Expansion Area No 2. Stockpiled soil will be seeded with a native grass mix and will not be disturbed until use in re-vegetation. Test plots will be constructed onsite and managed simultaneously with mining to determine the most appropriate planting procedures to be followed to ensure successful implementation of the proposed revegetation plan. Prior to test plot construction, a mixture of stockpiled soil/subsoil, weathered rock, and chipped plant material will be tested in a certified lab to determine the suitability of the soils for the planned vegetative cover.

Where surface mining activities result in compaction of the soil, ripping, disking, or other means shall be used in areas to be revegetated to eliminate compaction and to establish a suitable root zone in preparation for planting. Grading for mine and milling operations will be done in such a way as to minimize slopes that will likely increase erosion. All new mine waste features will have a maximum slope of 2H:1V, a maximum height of 50 feet, and the final cover will include a high percentage of coarser material mixed with fines for the purpose to retard erosion. Grading will be planned to direct runoff from sloped areas into drainage features as quickly as possible and into the existing natural drainages and forest floor.

5.4 RECLAMATION CONCEPTS

After review of older documents and the recent aerial photo, it has been estimated that past mining and processing on the Site disturbed approximately 4.1 acres. This estimate does not include forest and access roads that allowed access to the various activities on the claims and in other local areas.

Since suspension of mining activity, many of the disturbed areas show evidence of natural re-vegetation from the surrounding forests. Even since 1969 when the most recent mining activity took place, there are many places on the Eagle Bird mine dump and Pedro Claim near the settling pond and planned mill site where small trees and shrub seedlings have taken hold. This is a good indication that weathered rocky areas and former mine waste dumps supply enough nutrition to the native plants in the area to promote natural re-vegetation.

The closure of adits and declines that contain tailings will be performed with an engineered concrete bulkhead. The purpose of the bulkhead is to eliminate a potential point-source discharge from the underground workings that could pose a threat to water quality. The final engineered bulkhead would need to consider several variables that cannot be accurately determined presently, or that may change during the life of the mine due to mining activity or changes in ground and seepage conditions. The design factors that will need to be considered in any final design include: 1) estimated long-term maximum hydrostatic forces, 2) rock quality at the bulkhead, 3) corrosion potential of each bulkhead based on rock and/or soil type, and 4) constructability. The bulkhead shall be designed by a registered civil engineer, and construction shall be supervised and certified by a registered civil engineer or a certified engineering geologist, Title 27 CCR 22490(d). While each site will dictate the needs of the final design, we expect some common similarities at each site. These include backfilling the adit/ decline portal up to the crown with 10 to 15 feet of Group C waste rock to form an earth plug. At the location of the bulkhead within the adit/decline, the floor, sidewalls, and crown will be excavated to construct a key to



“lock” in the bulkhead. Keys are typically 6 to 24 inches wide with 6 to 24 inches of embedment. Additional shear resistance can be developed from reinforced rebar “pins” drilled into the embedment notch, as needed. The concrete can be placed as cast-in-place concrete or as reinforced structural shotcrete with reinforcement as required by the design needs, and location constructability constraints. The bulkhead can be cast against conventional wood forms or polyurethane applied on the above-ground side of the earth plug to create a near-vertical form. After the concrete is cured, the balance of the adit will be backfilled with Group C material to the adit portal, as shown on Figure 18.

Tailings are planned for final disposal in Expansion Areas 1 and 2 constructed as described in Section 4.4.5. Reclaimed tailings slopes will have an inclination of 3H:1V or less which is flatter than the critical gradient for the type of material involved, CCR 3502(b)(3)-(b)(4). All reclaimed cut and waste rock fill slopes shall not exceed an inclination of 2H:1V CCR 3704(d) and will be graded to blend with surrounding topography prior to application of final soil cover and re-vegetation CCR 3704(e). The tailings will consist of a fine- to medium-size sand of about minus 60 mesh (0.25 mm) with a moisture content of approximately 15 to 20 percent or less wet unit weight (i.e. no free water). Slope stability of the waste rock piles is not an anticipated issue. The planned 2H:1V waste rock slope inclination considers the likely angular nature of the material, the relatively free-draining properties of the coarse material, a relative density of 60 to 80 percent for rubber tire/ track rolled material, and a minimum angle of internal friction equal to or greater than 30 degrees (i.e. greater than 2H:1V). The waste rock slopes are located in relatively remote areas of the Tahoe National Forest and a potential threat to public safety or adjacent property is low (PRC 3704(d)). The apparent 40-plus year age of the existing slope faces for example at the Eagle Bird No. 2 adit and the fact that the slopes have experienced seismic and precipitation events during that time period indicates these slopes should remain stable.

The general goal of reclamation on this site is to attain a vegetative cover that is similar in diversity and canopy coverage to the surrounding forest that has not been disturbed. It is also important to maintain or enhance wildlife habitat in the disturbed areas. Since the degree of past disturbances and natural re-vegetation vary widely between different mining areas, the following is a description of proposed reclamation activities for each area on each mining claim.

5.4.1 Pedro No. 1

The previous disturbances on the claim include the No. 2 adit and mine waste dump and a pond shown on Figure 7. The adit entrance has been totally closed by caving at the portal and has been covered by fallen trees and natural re-vegetation (see Photo 13). Photo 14 shows the nearly complete state of natural re-vegetation of the mine waste. The access road from the Pedro Claim and the former pond area is also grown over with native vegetation. The former mining features on the Pedro No. 1 will be left as they exist, since any attempt to enhance closure or vegetation would disturb more ground than it would repair.

5.4.2 Pedro

Past disturbances on this claim include the No. 2 adit decline (Photo 5), the No. 3 cut (Photo 7), two settling ponds (Photos 3 and 4), a large graded area between the No. 2 adit and south of the settling ponds (Photo 27), the No. 5 adit and a small pond located in the southwest corner of the claim. Locations of these features are shown on Figure 7. The pond has been totally grown over with natural vegetation in the gully below the road and will need no further reclamation work. The No. 5 adit is partially caved with tree roots growing across the entrance, and the waste dump has trees growing out of it as seen in photos 15 and 16. The access to this mine is totally grown over and wasn't found. Due to the mature trees on the mine dump and the vegetation that has taken over in the cut to the adit, no additional grading or re-vegetation will be attempted since the natural vegetation would be harmed in the process.



The No. 5 adit and tunnel will be inspected for evidence of bats and other wildlife habitation under supervision of a qualified biologist, qualified professional, and per established USFS protocols prior to closure. If little or no evidence is found, then the adit will be closed with a reinforced polyurethane foam plug and covered with dirt by hand. Typically, the adit would be covered 98 percent with wire screen for several weeks prior to final closure to discourage re-habitation of an occasional bat, bird or small mammal. The screen will let an animal get out of one bottom corner of the adit, but they will be discouraged from re-entering the adit, and will look for another place to roost (wildlife exclusion). If there is substantial evidence of use by bats, birds or small mammals, then a bat gate will be installed which will allow the wildlife to continue to use the mine, but eliminate human entry.

Mining activity in and adjacent to the No. 2 adit decline and around the proposed mill site and settling pond is shown on Figure 8 and described in Sections 4.4.1.1, and 4.4.2 through 4.6. Reclamation activities will include grading of fill slopes to a minimum of 2H:1V. On larger waste fills, the slopes will be constructed to a 2H:1V slope as they are placed. The waste fills will be covered with soil/fines stockpile material if needed to fill in around coarse waste rock material, otherwise the fines will be saved for placement on flatter areas.

Depressions such as the tailings storage basin and the settling pond will be filled with Group C waste rock, or waste rock stockpiled nearby and capped with a mixture of finer Group C waste rock, soil stockpile, Group C tailings, and chipped material. All drainage and erosion control features will be left in place, with the exception of the surface diversion berm upslope from the Eagle Bird workings. The diversion berm will be adequately breached to promote natural surface flow through the areas and inhibit ponding. It is anticipated that underground operating areas of the No. 2 adit will not be occupied with wildlife after operations occur, therefore the adit will be filled with waste rock material when mining is completed and closed with a concrete bulkhead as described in Section 5.4.

5.4.3 Patrick

Past disturbances on this claim include the No. 2 adit and the two small associated waste rock dumps. The waste dump below the access road shown in Photo 2 (right side) will be left in place with no reclamation since removal or grading will harm existing natural re-vegetation that has taken place. The upper waste dump adjacent to the adit will be graded and re-vegetated in place if it is re-disturbed by mining activities. If it is not re-disturbed, it will be left as it exists due to some natural re-vegetation on the surface.

The existing adit will be backfilled with Group C waste dump material or waste from the Eagle Bird waste dump and the adit closed with a concrete bulkhead as described in Section 5.4. The surface of the adit fill and excavated waste dump material will be sloped to blend with the existing hillside and re-vegetated.

5.4.4 Eagle Bird No. 1

The Eagle Bird No. 1 Claim will not experience new disturbances of mining activity. The existing disturbances are several discovery cuts and will be left in place since existing vegetation has taken hold and is well established.

5.4.5 Eagle Bird

The past disturbances on this claim include the mining activity on three levels from the No. 2 adit and surface expressions of past mining upslope from the adit. Other disturbances include the mine dump adjacent to the adit, the old stamp mill location and foundation located below the toe of the mine dump, tailings on the forest floor down slope from the old mill, the metal shop building and the two story house



(to be replaced), and the small pond located south of the present house. Past disturbances are estimated to be 1.1 acres.

After cessation of all mining activities, the No. 2 Adit will be backfilled with Group C waste dump material and the adit closed with a concrete bulkhead as described in Section 5.4. Some older mine workings on the Eagle Bird have caved to surface and have been partially filled and likely closed for many years. Several old surface pits also exist on this claim. Natural vegetation has taken hold, and since there is no existing hazard, these areas will not be re-disturbed.

Potential surface subsidence from future mining in all areas will be filled with Group C mine waste from storage areas and/ or Group C tailings. The surfaces will be graded to blend with surrounding topography prior to application of final soil cover and re-vegetation.

The retention pond south of the residence and shop will be backfilled with the existing berm material and Group C waste rock to blend with surrounding topography prior to application of final soil cover and re-vegetation. The waste dump opposite the No. 2 adit will be sloped back on the top using an excavator to approximate a 2H:1V final slope. The excavated waste will be stacked against the cut bank above the dump and sloped over the closed adit and adjoining cut slope as shown on Figure 16. The remaining level portion of the waste dump will be graded to drain runoff in a swale to the access road from the Pedro Claim and to the forest below the ramp to the old stamp mill just as it drains now without first being diverted to the settling pond on the Pedro Claim.

5.4.6 Golden Slipper

The past disturbances on the Golden Slipper consist of four small discovery pits located downslope from the pond on the Eagle Bird Claim. The pits have been naturally re-vegetated and access to the pits cannot be found therefore no reclamation will take place on this claim. There will be not new mining activity on this claim at this time.

5.4.7 Dorothy Mill Site

The only known disturbance on the claim is the pond which has native vegetation around it. It will be left in place as is and no other work will take place on the claim.

5.4.8 Elcy

Past disturbances that exist on the claim include four discovery or exploration pits located just above the adits and the excavated bank above the adits located on the Annex Claim shown on Figure 7 and in Attachment B. The total area of disturbance is approximately 0.2 acres. The pits are totally grown over with native vegetation as shown in Photo 10 and will need no further reclamation efforts. A cabin also existed on the claim but it has been removed and the Site could not be found. The only other disturbance is a portion of the road that allows access to the adits on the Annex Claim.

5.4.9 Annex

Disturbances include three adits and several small waste dumps with a total area of approximately 0.25 acres. All features are shown on Figure 10 and in Attachment B. The No. 2 adit is partially caved and is shown in Photo 12. The access road to the adit is totally grown over with native vegetation and difficult to identify, and the waste dump is very small and also grown over. The adit will be inspected for wildlife habitation per established USFS protocols, and if none is found it will be closed with a reinforced polyurethane foam plug and covered with dirt and rock using hand tools (shovels, picks, etc.) carried to the adit by site personnel. No alteration to the existing drainage crossed to access the adit is planned. If



there is substantial evidence of use by bats, birds or small mammals, then a bat gate will be installed which will allow the wildlife to continue to use the mine, but eliminate human entry.

The No. 6 adit and the access road to it were not found during the initial site visits. However, the closure of this adit will occur in the same manner as the No. 2 adit.

Adit Nos. 3, 4, and 5 are shown on Figure 10 in Attachment B. The three adits have a common entry point which is shown as caved in Photo 8. Photo 9 shows the adit and one adjacent waste dump to the right side. There is additional mine waste stockpiled to the left of the adit, and is partially shown in Photo 8. After completion of all mining activities, the adits will be filled with existing and new mine waste material to a depth of approximately 10 to 15 feet inside the adit opening. The mine waste existing on the sides of the entry to the adits and other waste that may be stockpiled in adjacent areas on previously disturbed ground will be placed over the adit fill and up against the vertical rock wall above the adit. The waste cover will be sloped in the direction of the entry road prior to placement of any available soil and waste fines. Re-vegetation will follow final grading and fines placement.

The other disturbance shown in Photo 11 is thought to be waste deposited by an old three-stamp mill that reportedly was used for a short time. As the photo shows, the natural re-vegetation of the dump is extensive enough that the dump is barely noticeable, thus no further reclamation will occur.

5.4.10 Roads

The USFS system roads in the claim block area and access to the area will be maintained to a stable surface and protected against erosion by maintaining water bars and culverts. Mining claim roads in the claim block area will be reclaimed by installing water bars per the SWPPP to control road erosion and then lightly ripping the compacted surfaces between water bars. The estimated total linear footage of mine roads planned for light ripping is 2,565 feet. This includes 370 feet from the Elcy/ Annex toward the USFS road, 975 feet from the Patrick No. 2 adit to the Eagle Bird waste dump, 1070 feet from the Eagle Bird waste dump to the USFS road opposite the entrance to the Pedro, and 150 feet at the entrance to the Pedro. The ripped areas will also help control erosion and will create a rough surface area to trap plant seeds that are naturally released from the surrounding native vegetation. Native trees and shrubs will be planted by hand on the roads in the density described in Section 5.5.

5.5 RE-VEGETATION

The general goal of the re-vegetation on this site is to attain a vegetative cover that is similar in diversity and canopy coverage to the surrounding forest that has not been disturbed. It is also important that the vegetation effort help to maintain or enhance wildlife habitat in the disturbed areas. Prior to placement of soil cover and revegetation, test plots will be constructed onsite and managed simultaneously with mining to determine the most appropriate soil treatment and planting procedures to be followed to ensure successful implementation of the proposed re-vegetation plan. Prior to test plot construction, a mixture of the available soils/wastes will be tested in a certified lab to determine the suitability of the onsite soils for planting. Two test plots measuring approximately 12 feet by 12 feet each will be located at the site; one on the Elcy-Annex were somewhat excessively drained, loamy-skeletal, mixed soil typically 13 to 31 inches in thickness derived from metasedimentary rock is typical, and one at the Eagle Bird were well drained, coarse-loamy, mixed soil typically 22 to 26 inches thick derived from granodiorite rock is typical. These test plot locations will evaluate the range of substrates, vegetation, and aspect/ elevation conditions expected during re-vegetation. Each soil treatment identified by the laboratory will be randomly placed in each plot to a thickness of approximately 16 to 24 inches. The number of planted species in each plot will be as close to equal as possible and each test plot will include a mapped grid to identify the location of the soil treatment and planted species. Each test plot boundary will be clearly marked. Monitoring of the test plots will occur at least twice per mining season. Plants that die or do not



showing reasonable growth shall be replaced. Standard statistical methods will be employed to compare the soil treatments.

The existing vegetative canopy cover in the area ranges from 40 to 80 percent (as stated in the Environmental Assessment, Reclamation of Abandoned Mine Features at the Dredge and Eagle Bird Mines, Tahoe National Forest, July 2009). The vegetation is classified as a mixed conifer forest with the following trees and shrubs occurring in the area.

Trees: Douglas fir
Ponderosa pine
Incense cedar
White fir

Shrubs: Green leaf manzanita
White thorn ceanothus

The target final canopy cover of trees and shrubs will be 60 percent. The total vegetative cover will be greater as native and perennial grasses are planted between trees and shrubs. The target canopy cover will equate to 150 trees and shrubs per acre and a diversity of four tree and two shrub species per acre. The diversity and density of grasses is not included. The total vegetative cover will be achieved by planting the following native species of trees, shrubs and grasses.

Trees: Douglas fir, Ponderosa pine, Incense cedar, and Jeffery pine
Shrubs: Greenleaf manzanita and White thorn ceanothus
Grass mix: California brome, Blue wild rye, Spanish clover, and yarrow

The canopy cover goal will be met by hand planting seedlings at a spacing of approximately 12 feet over all newly disturbed areas, including mining claim roads. This density of planting will require 300 seedlings planted per acre, and assuming a 50 percent survival rate would produce 150 plants per acre. Four tree seedlings and two shrub seedlings will be planted in equal numbers over the disturbed areas. The grass mix of California brome, blue wild rye, Spanish clover, and yarrow will be broadcast by hand in the areas between the seedlings.

Fertilization at planting time and monthly hand irrigation of approximately 1 gallon each per tree and shrub and additional fertilization during the summer months for the first 3 years of re-vegetation will be necessary to achieve a vegetative cover that will regenerate without continued dependence on irrigation, or fertilizer and to achieve the goal of 50 percent survival rate after 5 years. Hand watering will be done through a perforated PVC pipe installed in the hole with the seedling at the time of planting. Seedlings will be fertilized with a small bag of slow release fertilizer placed in the hole during planting. A small amount of forest soil will also be placed in each hole during planting and the seedlings will be lightly mulched with native forest soil. Planting will likely be done in the early summer months to attain some initial growth prior to the following winter season. A USFS qualified contractor will perform the re-vegetation services.

During the last 2 years there will be no watering or fertilization of planted seedlings. Monitoring to determine success of the re-vegetation will include a count of surviving planted seedlings in comparison to the numbers planted plus species richness and percent cover of native perennial plants. Annual monitoring of vegetation will also record the annual growth of a selected sample of plants. The sample size will be sufficient to produce an 80-percent confidence level. The potential invasion from noxious weeds will be eradicated by hand grubbing or other USFS approved method. No herbicides will be used on USFS property. All ongoing noxious weed eradication will be reported to the USFS.



5.6 RECLAIMED LAND MONITORING PLAN

The reclaimed land will be monitored once each year until success criteria are met to assess the effectiveness of the reclamation process. The inspection will take place in the summer or fall season, and will note any erosion concerns that need repair, and general plant vitality and growth of a selected sample of seedlings. Inspections will also note if there is a need for additional irrigation or fertilization of seedlings. A brief inspection report will be prepared and submitted to the Owner/Operator, the Lead Agency, USFS, and Regional Board. A qualified professional approved by the Lead Agency will perform the monitoring and reporting services.

5.7 FINANCIAL ASSURANCE COST ESTIMATE

Section 2773.1(a) of the Surface Mining and Reclamation Act (SMARA) (1975) states that the lead agency shall require financial assurances for mined land reclamation. The Site was previously mined at various times up through 1969 and some subsequent work was done in excavation of the two settling ponds and grading for a planned plant site in the same area on the Pedro Claim. No reclamation has been done to date; however, substantial native volunteer vegetation has been established around the settling ponds and in previously graded areas.

This Financial Assurance Cost Estimate includes the present cost to complete the reclamation of the existing site as described in Sections 5.2 through 5.6 and reclamation of the areas anticipated to be disturbed during the first year of operation. All mining and milling equipment including, but not limited to equipment listed in sections 4.4.1.6 Mining Equipment and 4.4.3 Milling Equipment, whether leased or owned by the Operator, will be removed from the site during reclamation. The Financial Assurance Cost Estimate is presented in detail in Attachment H.

The Financial Assurance Cost Estimate is presented in accordance with the requirements of SMARA and is listed in two parts. The first part is the listing and description of each task that must be performed under the general headings of *Equipment Removal and Grading, Re-vegetation, and Monitoring and Maintenance*. The text describes the task, the equipment to be used, and the calculations of quantities, equipment production rates, and operating hours. The Financial Assurance Cost Estimate includes construction equipment costs and labor and materials costs for each task identified. A summary of costs lists the total direct cost plus indirect costs including supervision, profit and overhead, contingencies, and mobilization. Also included is a list of sources used to prepare the Financial Assurance Cost Estimate. The cost calculations rely on opinions and information from a number of sources including licensed contractors, registered professional geologists, engineers, material and equipment suppliers, and equipment production estimates identified in the Caterpillar Performance Handbook. Estimates were made of material quantities required to achieve the grading goals, spreading of backfill and soil, and closure of all underground openings. The cost estimate for reclaiming the existing site and the first year disturbances is \$154,215.

6.0 LIMITATIONS

Condor developed this PoO in accordance with generally accepted principles and practice at the time the work was performed. Condor has endeavored to determine as much as practical about the Site using conventional practices given our scope of services. Condor's involvement in the work performed at this site has been limited to collecting and evaluating physical and geochemical data and historical Site information provided to us by others. Condor makes no representation as to the surface and/or subsurface conditions at locations or times other than those sampled by our employees and reported this and other documents provided by Condor. Condor is not responsible for the accuracy and completeness of information collected and developed by others. Conclusions presented in this report are professional

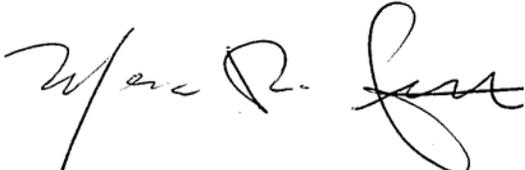


opinions based on limited information obtained at the time of our Site visits and provided by others. Condor shall not be subject to any express or implied warranties whatsoever.

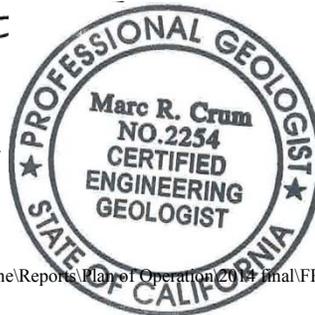
This report was prepared under the supervision of Marc R. Crum, a Certified Engineering Geologist in the State of California. The report was prepared for Eagle Bird Mining Company, LLC at their request. It has been prepared for their sole use in obtaining local, state, and federal permits to allow the exploration and development of potential mineral resources at the Site. The contents of this report may not be used or relied upon by any other person(s) without the express written consent and authorization of the Eagle Bird Mining Company, LLC and Condor. If any changes are made or errors found in the information used for this report, the interpretations and conclusions contained herein shall not be considered valid unless the changes or errors are reviewed by Condor and either appropriately modified or re-approved in writing. Any questions regarding the content of this document should be addressed to Marc Crum at 209.532.0361.

Respectfully submitted,

CONDOR EARTH TECHNOLOGIES, INC.



Marc R. Crum
Certified Engineering Geologist No. 2254



Al Dahlstrand
Senior Mine Geologist

X:\Project\6000_prj\6149 Eagle Bird Mine\6149B Eagle Bird Mine\Reports\Plan of Operation 2014 final\FR 20140604 Eagle Bird PoO update.docx



PHOTOS



6149A Eagle Bird Mine Group: Site Visit, 08/09-11/2011



Photo 1: Patrick Adit #2.



Photo 2: Patrick Dump #2



Photo 3: Pedro Pond



Photo 4: Pedro Pond

6149A Eagle Bird Mine Group: Site Visit, 08/09-11/2011



Photo 5: Pedro Adit #2

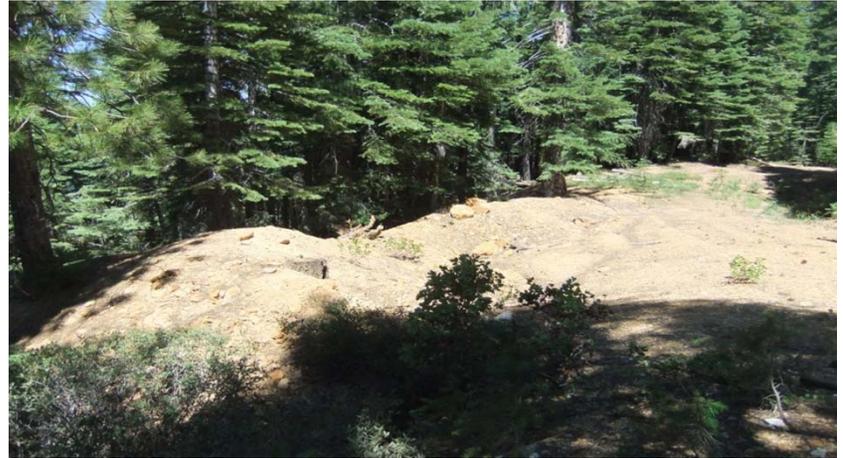


Photo 6: Pedro Dump #2



Photo 7: Pedro Cut #3



Photo 8: Elcy Adits #3, #4, #5; Dump material on left

6149A Eagle Bird Mine Group: Site Visit, 08/09-11/2011



Photo 9: Elcy Dump to right of adits



Photo 10: Elcy Pits #2, #3, and #4



Photo 11: Annex Stamp Mill tails?



Photo 12: Annex Adit #2

6149A Eagle Bird Mine Group: Site Visit, 08/09-11/2011



Photo 13: Pedro #1 Adit #2



Photo 14: Pedro #1 Adit #2 Dump



Photo 15: Pedro Adit #5



Photo 16: Pedro Adit #5 Dump

6149A Eagle Bird Mine Group: Site Visit, 08/09-11/2011



Photo 17: Eagle Bird Adit #2 Dump, shop



Photo 18: Eagle Bird Adit #2



Photo 19: House, Eagle Bird



Photo 20: Shop, Eagle Bird #2 Adit to right,

6149A Eagle Bird Mine Group: Site Visit, 08/09-11/2011



Photo 21: Eagle Bird Pump house



Photo 22: Eagle Bird Pond

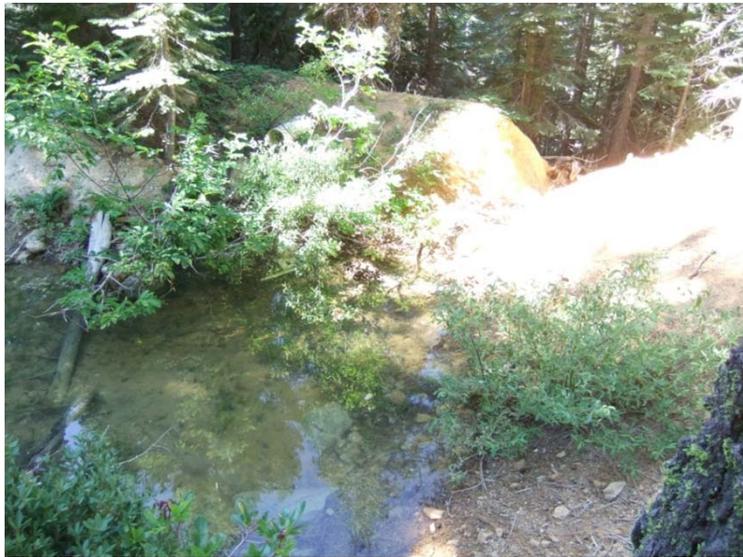


Photo 23: Eagle Bird Pond outflow



Photo 24: Eagle Bird Stamp mill

6149A Eagle Bird Mine Group: Site Visit, 08/09-11/2011



Photo 25: Eagle Bird Stamp Mill tails



Photo 26: Eagle Bird Stamp Mill tails

6149A Eagle Bird Mine Group: Site Visit, Aug. 9-11, 2011

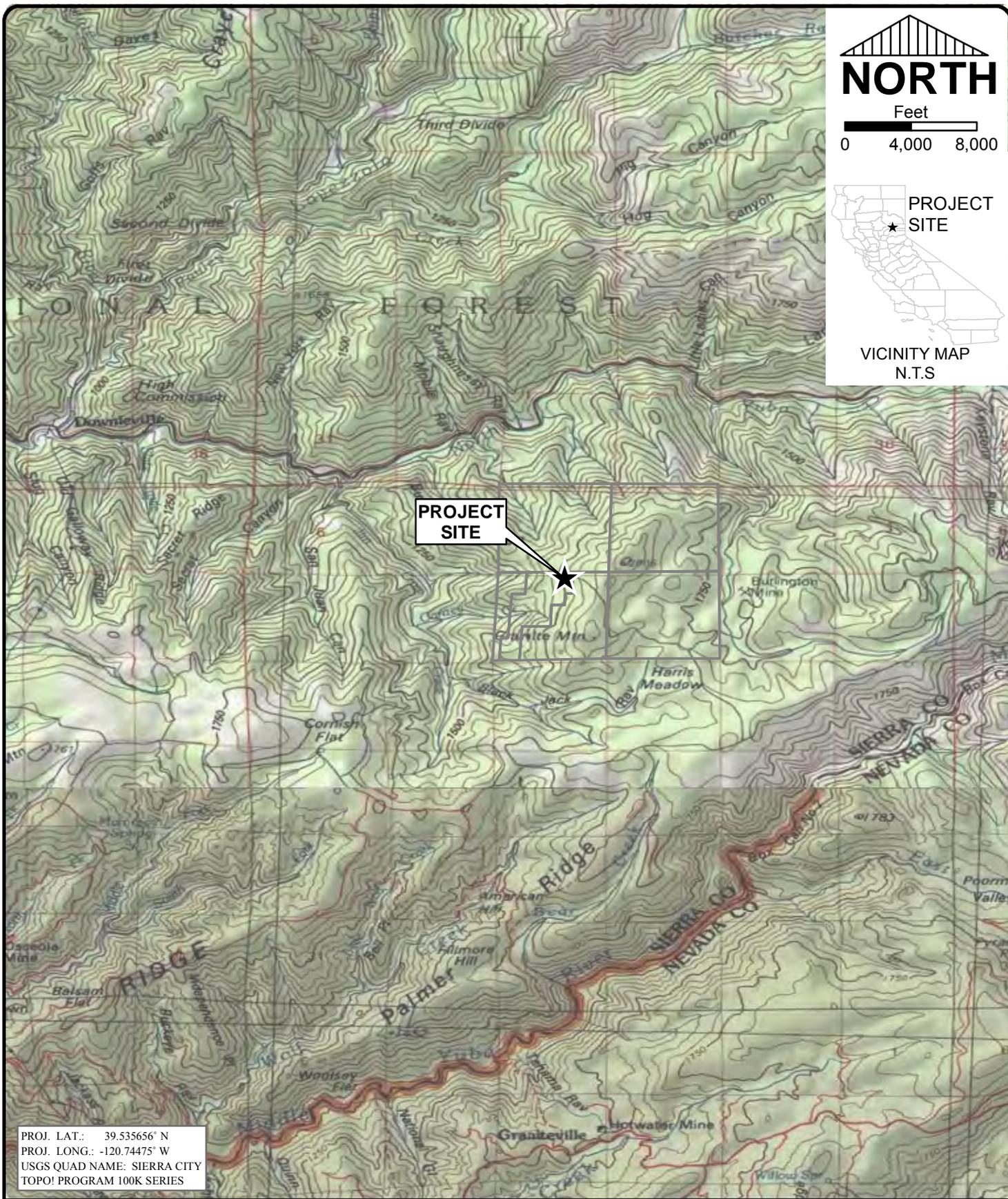


Photo 27: Graded area between No. 2 adit and south of the settling ponds

ATTACHMENT A

Figures





NORTH

Feet
0 4,000 8,000



PROJECT SITE
VICINITY MAP
N.T.S

PROJECT SITE

PROJ. LAT.: 39.535656° N
 PROJ. LONG.: -120.74475° W
 USGS QUAD NAME: SIERRA CITY
 TOPO! PROGRAM 100K SERIES

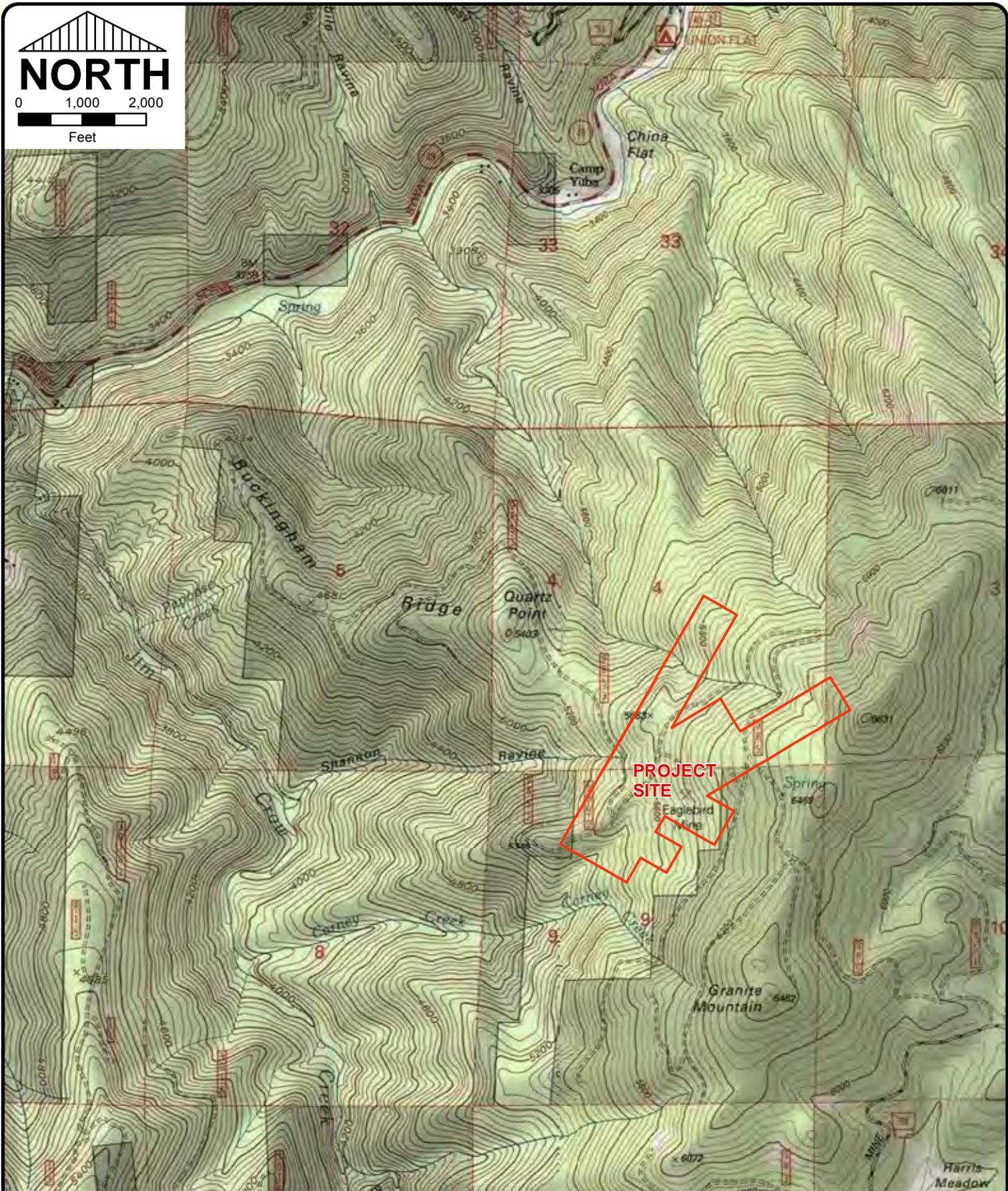
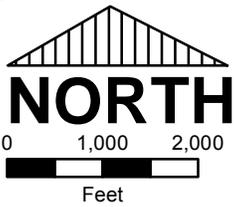
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 fax (209) 532-0773
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Job No.
6149B
 Published Date
05 MARCH 2012
 Scale
AS SHOWN
 Drawn
JDM / Chk'd
PG

VICINITY MAP
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA

FIGURE
1
 File No.
6149_VICINITY_F1



PROJECT SITE



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Chk'd	DAB

TOPOGRAPHIC MAP
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA

FIGURE
2

File No.
 6149_TOPO_F2.mxd



NORTH

Feet



PROJECT
SITE

VICINITY MAP
N.T.S

**PROJECT
SITE**

Legend

- CLAIM GROUP BOUNDARY
- ASSESSOR BOUNDARIES

PROJECTION:
CA STATEPLANE ZII US FT. NAD 83

PROJ. LAT.: 39.535656° N
PROJ. LONG.: -120.74475° W
USGS QUAD NAME: SIERRA CITY
(NAIP AERIAL - MrSID 2010)

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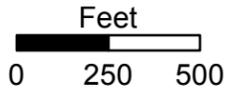
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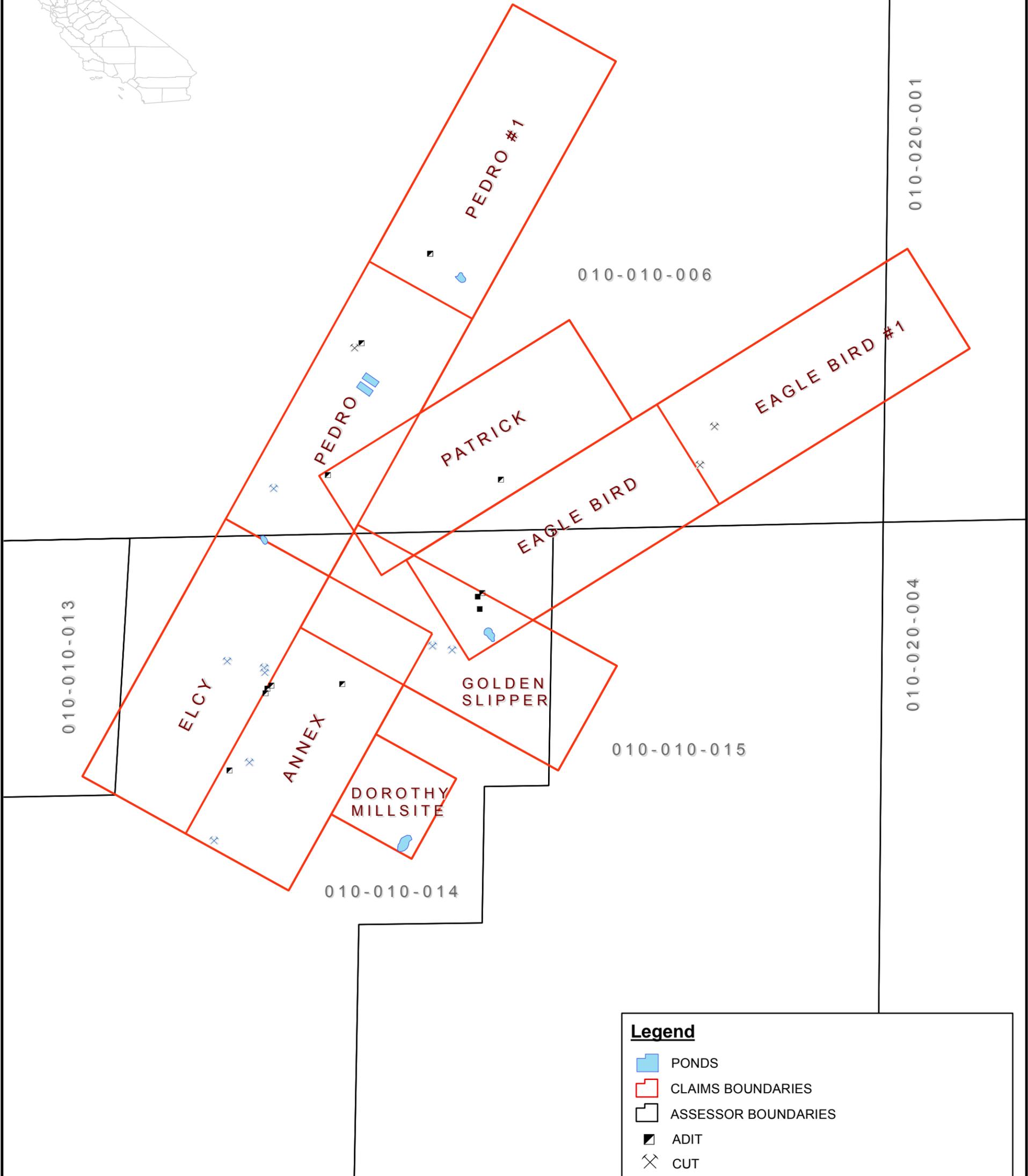
SITE AERIAL PHOTO
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA

FIGURE
3

File No.
6149_SITE_F2



PROJECT SITE



PROJ. LAT.: 39.535656° N
PROJ. LONG.: -120.74475° W
USGS QUAD NAME: SIERRA CITY

Legend

- PONDS
- CLAIMS BOUNDARIES
- ASSESSOR BOUNDARIES
- ADIT
- CUT
- PIT
- STRUCTURE

CONDOR EARTH TECHNOLOGIES, INC.

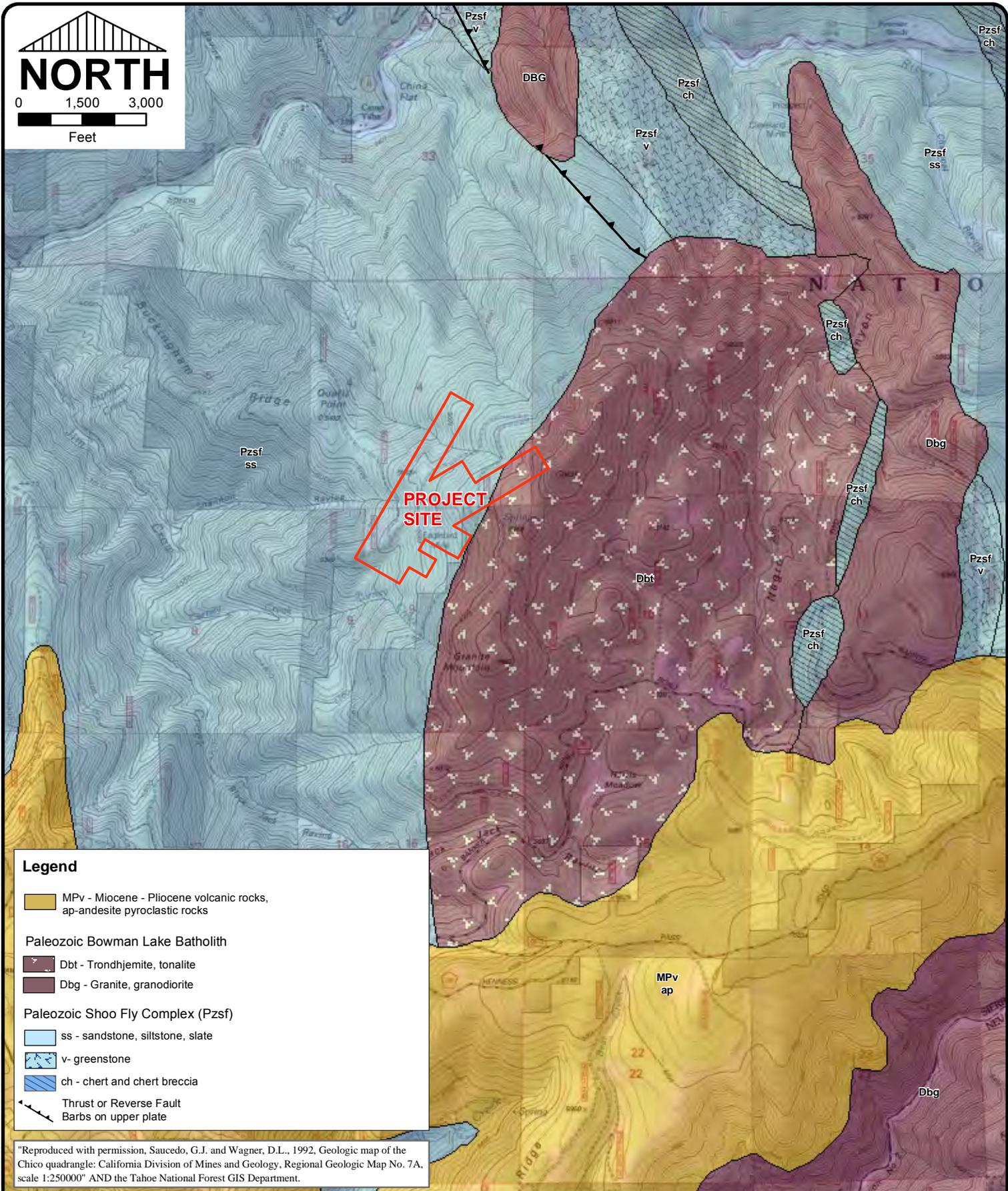
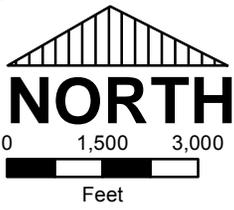
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Job No.	6149A
Published Data	20 DEC. 2011
Scale	AS SHOWN
Drawn	JDM
Chk'd	HW

CLAIMS GROUP MAP
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA

FIGURE
4

File No.
6149_CLAIMS_F4



Legend

- MPv - Miocene - Pliocene volcanic rocks, ap-andesite pyroclastic rocks
- Paleozoic Bowman Lake Batholith**
 - Dbt - Trondhjemite, tonalite
 - Dbg - Granite, granodiorite
- Paleozoic Shoo Fly Complex (Pzsf)**
 - ss - sandstone, siltstone, slate
 - v- greenstone
 - ch - chert and chert breccia
- Thrust or Reverse Fault
Barbs on upper plate

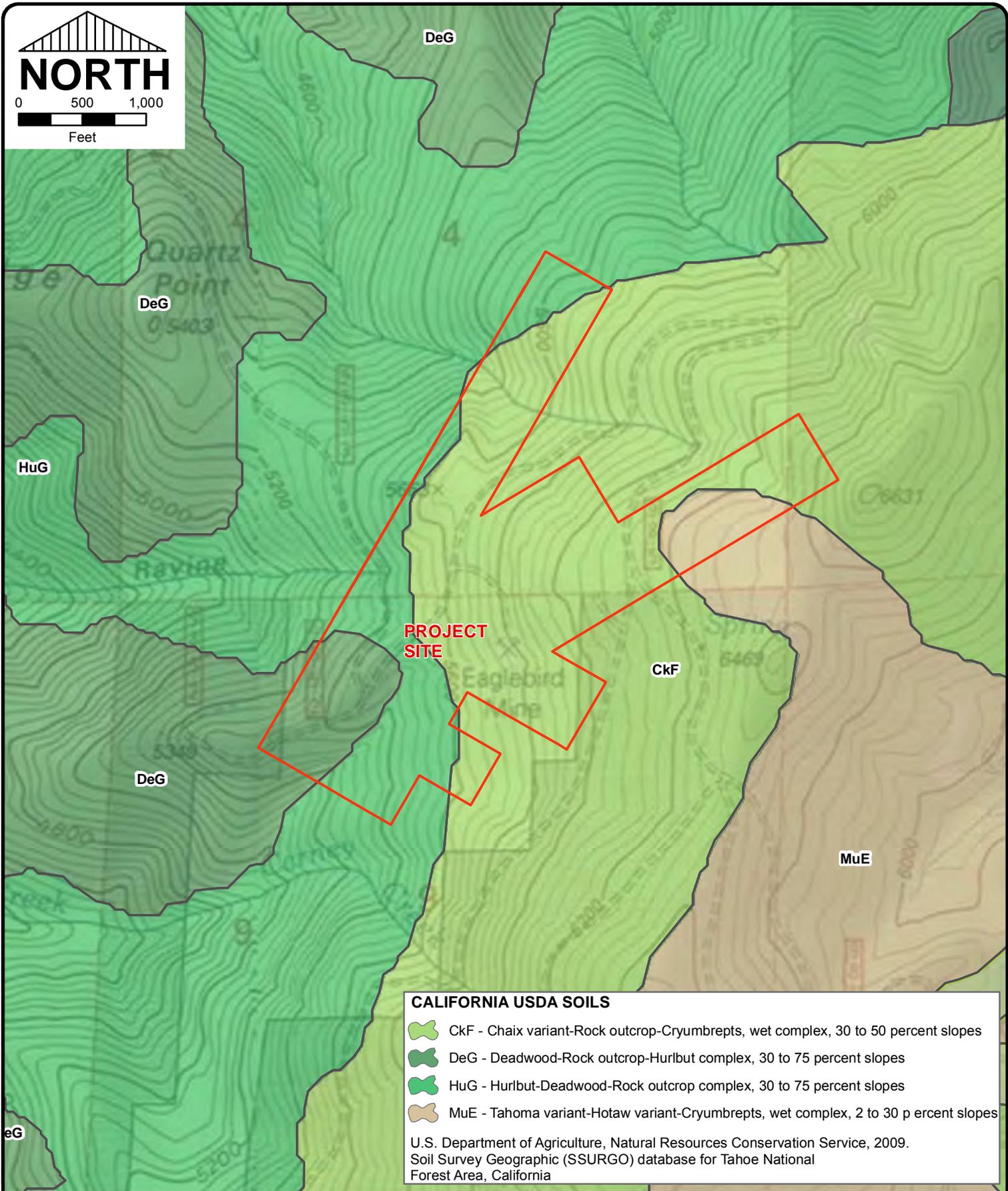
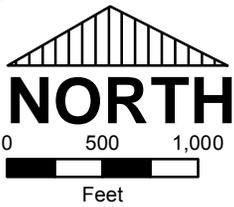
"Reproduced with permission, Saucedo, G.J. and Wagner, D.L., 1992. Geologic map of the Chico quadrangle: California Division of Mines and Geology, Regional Geologic Map No. 7A, scale 1:250000" AND the Tahoe National Forest GIS Department.

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	Published Date 06 MARCH 2012	Scale AS SHOWN
	Drawn JDM	Chk'd DAB

GEOLOGIC MAP
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA

FIGURE
5

File No.
6149_GEO_F1.mxd



CALIFORNIA USDA SOILS

-  CkF - Chaix variant-Rock outcrop-Cryumbrepts, wet complex, 30 to 50 percent slopes
-  DeG - Deadwood-Rock outcrop-Hurlbut complex, 30 to 75 percent slopes
-  HuG - Hurlbut-Deadwood-Rock outcrop complex, 30 to 75 percent slopes
-  MuE - Tahoma variant-Hotaw variant-Cryumbrepts, wet complex, 2 to 30 percent slopes

U.S. Department of Agriculture, Natural Resources Conservation Service, 2009.
Soil Survey Geographic (SSURGO) database for Tahoe National Forest Area, California



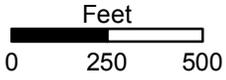
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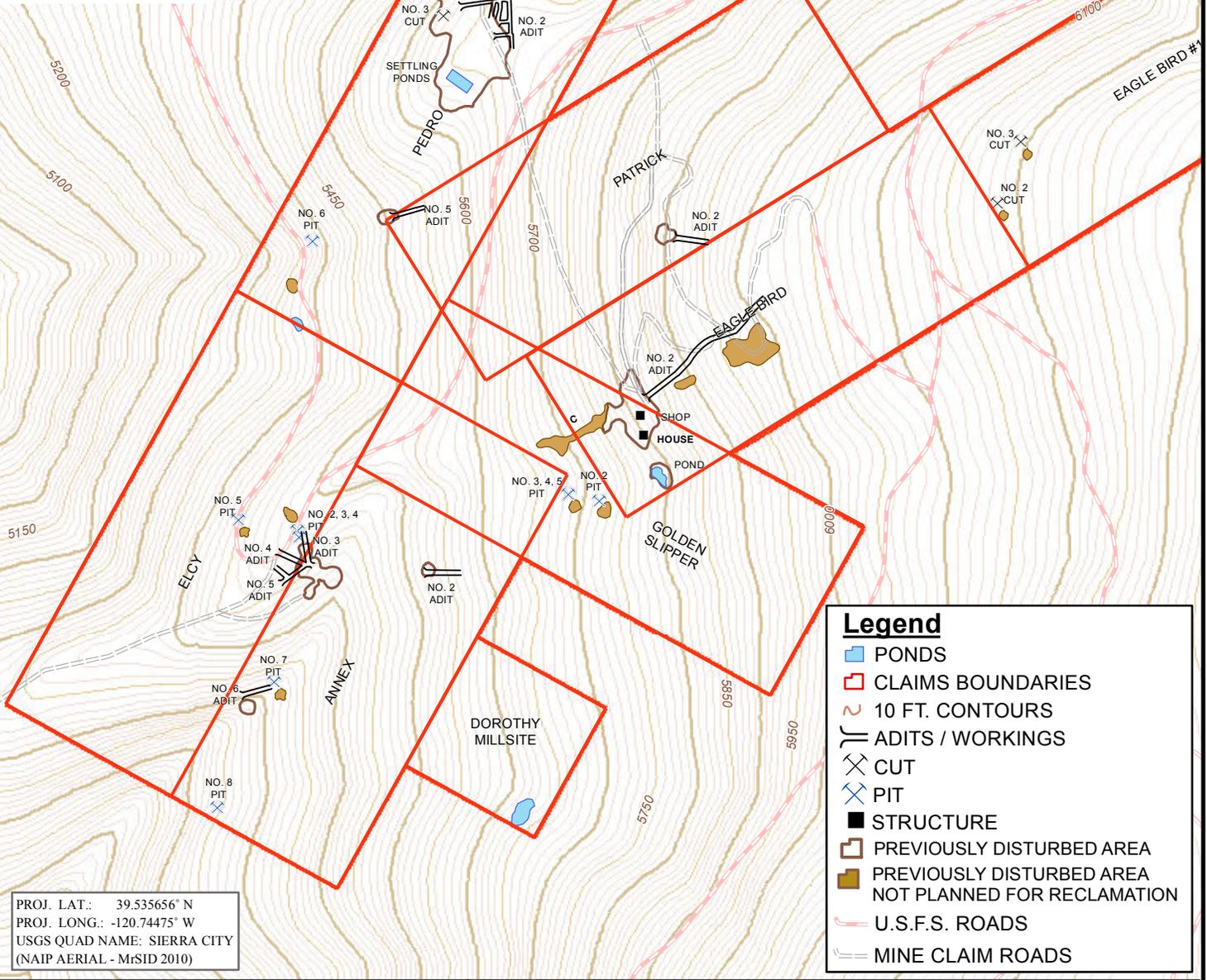
SOIL MAP
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA

FIGURE
6

File No.
6149_SOIL_F6.mxd



VICINITY MAP
N.T.S



PROJ. LAT.: 39.535656° N
PROJ. LONG.: -120.74475° W
USGS QUAD NAME: SIERRA CITY
(NAIP AERIAL - MrSID 2010)

Legend

- PONDS
- CLAIMS BOUNDARIES
- 10 FT. CONTOURS
- ADITS / WORKINGS
- CUT
- PIT
- STRUCTURE
- PREVIOUSLY DISTURBED AREA
- PREVIOUSLY DISTURBED AREA NOT PLANNED FOR RECLAMATION
- U.S.F.S. ROADS
- MINE CLAIM ROADS

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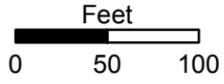
Job No. 6149B
Published Date 07 MARCH 2014
Scale AS SHOWN
Drawn JDM / Chk'd MC

**EXISTING DISTURBED AREAS
PLAN OF OPERATION
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA**

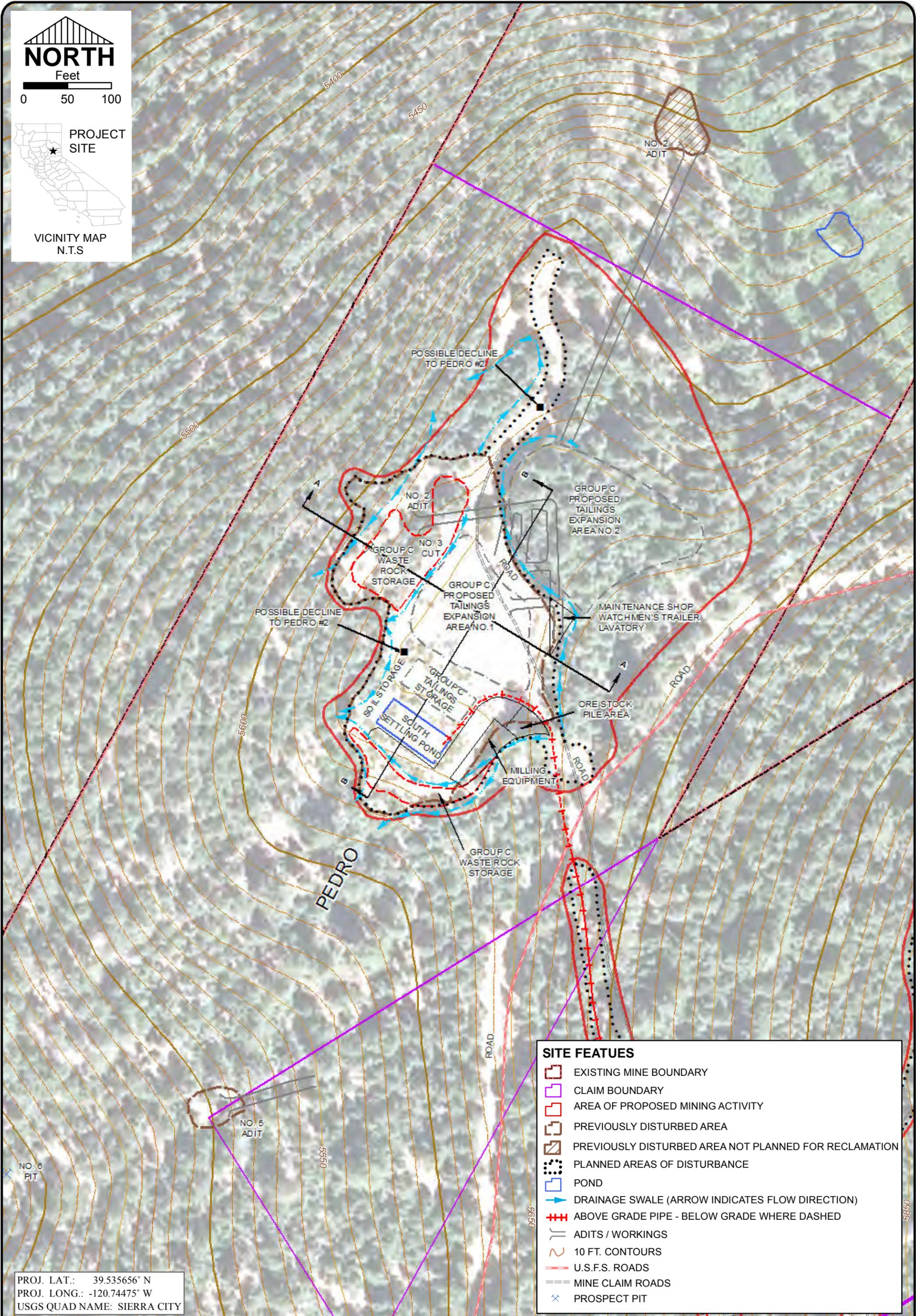
FIGURE 7

File No. 6149_DISTURBED_F7.mxd

NORTH



VICINITY MAP
N.T.S



SITE FEATURES	
	EXISTING MINE BOUNDARY
	CLAIM BOUNDARY
	AREA OF PROPOSED MINING ACTIVITY
	PREVIOUSLY DISTURBED AREA
	PREVIOUSLY DISTURBED AREA NOT PLANNED FOR RECLAMATION
	PLANNED AREAS OF DISTURBANCE
	POND
	DRAINAGE SWALE (ARROW INDICATES FLOW DIRECTION)
	ABOVE GRADE PIPE - BELOW GRADE WHERE DASHED
	ADITS / WORKINGS
	10 FT. CONTOURS
	U.S.F.S. ROADS
	MINE CLAIM ROADS
	PROSPECT PIT

PROJ. LAT.: 39.535656° N
PROJ. LONG.: -120.74475° W
USGS QUAD NAME: SIERRA CITY

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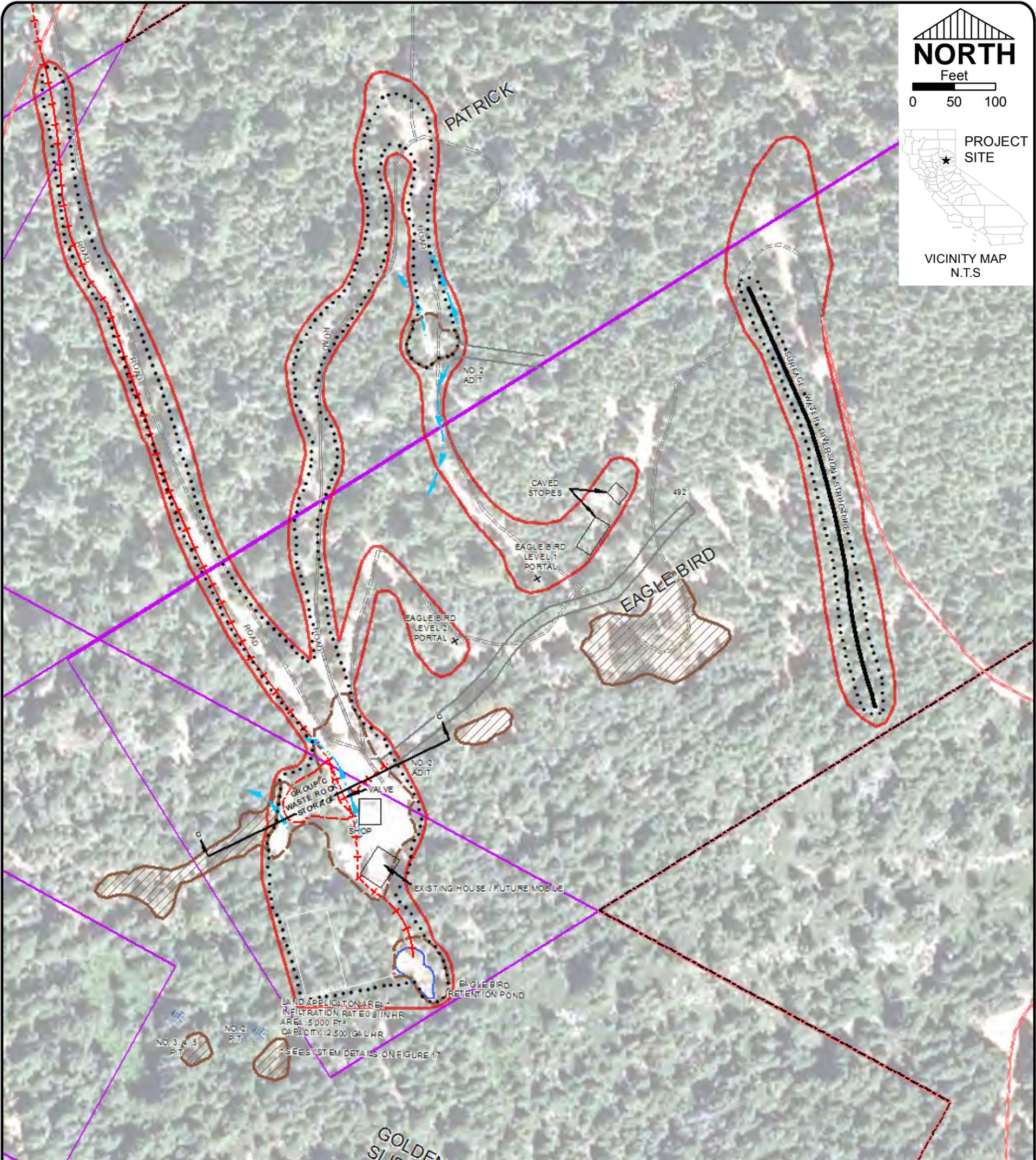
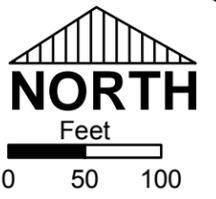
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Job No.
6149B
Published Data
07 MAY 2014
Scale
AS SHOWN
Drawn
JDM
Chk'd
MC

**CLAIMS GROUP MAP
PEDRO ADIT AREA MAP
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA**

**FIGURE
8**

File No.
6149_PEDRO



SITE FEATURES	
	EXISTING MINE BOUNDARY
	CLAIM BOUNDARY
	AREA OF PROPOSED MINING ACTIVITY
	PREVIOUSLY DISTURBED AREA
	PREVIOUSLY DISTURBED AREA NOT PLANNED FOR RECLAMATION
	PLANNED AREAS OF DISTURBANCE
	POND
	DRAINAGE SWALE (ARROW INDICATES FLOW DIRECTION)
	ABOVE GRADE PIPE - BELOW GRADE WHERE DASHED
	ADITS / WORKINGS
	10 FT. CONTOURS
	U.S.F.S. ROADS
	MINE CLAIM ROADS
	PROSPECT PIT

PROJ. LAT.: 39.535656° N
 PROJ. LONG.: -120.74475° W
 USGS QUAD NAME: SIERRA CITY

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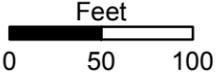
Job No.	6149B
Published Data	07 MAY 2014
Scale	AS SHOWN
Drawn	JDM
Chk'd	MC

**CLAIMS GROUP MAP
 EAGLE BIRD & PATRICK ADIT AREA MAP
 EAGLE BIRD MINING COMPANY, LLC
 NEAR DOWNIEVILLE, SIERRA COUNTY, CA**

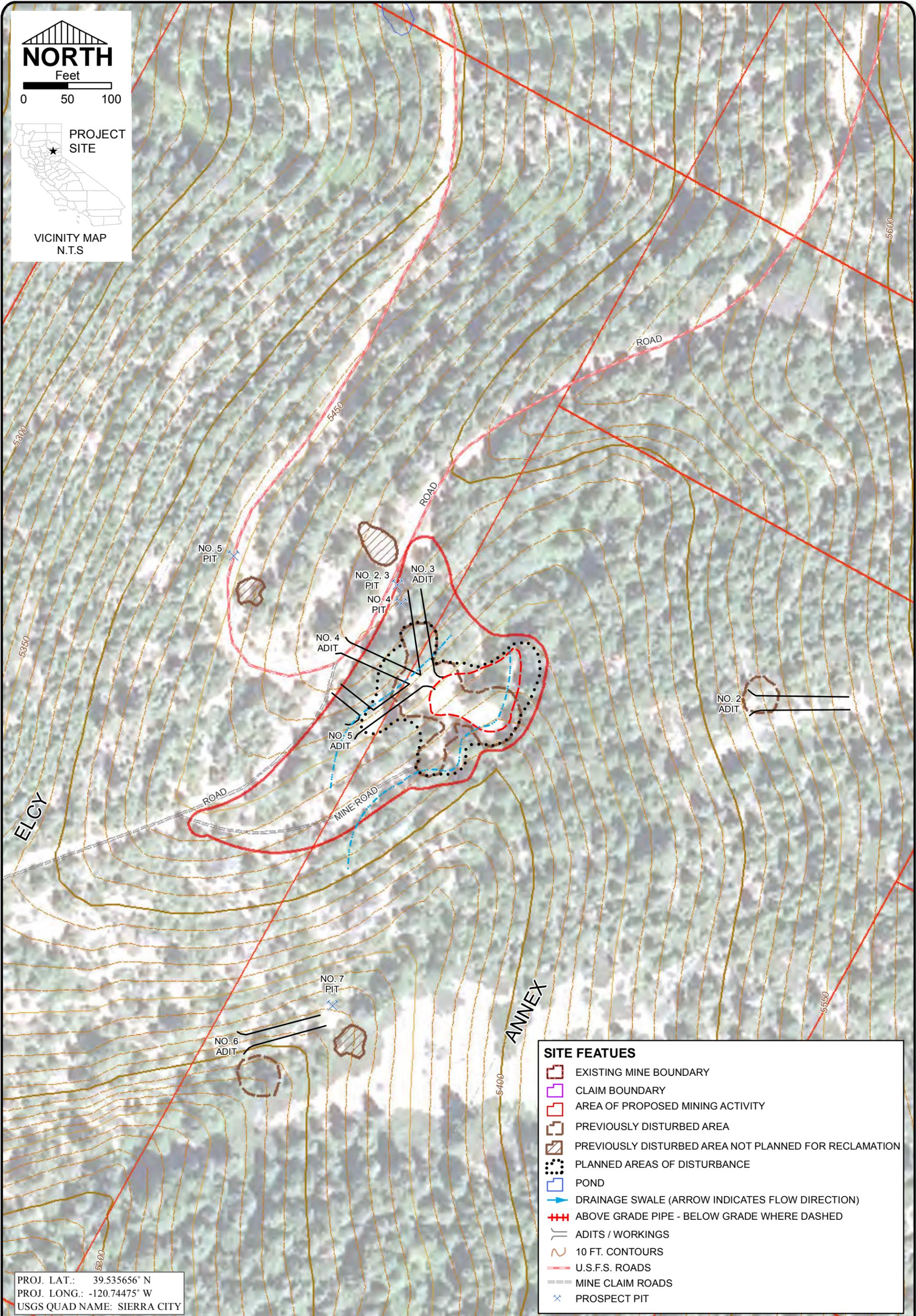
**FIGURE
 9**

File No.
6149_EBIRD

NORTH



VICINITY MAP
N.T.S



PROJ. LAT.: 39.535656° N
PROJ. LONG.: -120.74475° W
USGS QUAD NAME: SIERRA CITY

SITE FEATURES	
	EXISTING MINE BOUNDARY
	CLAIM BOUNDARY
	AREA OF PROPOSED MINING ACTIVITY
	PREVIOUSLY DISTURBED AREA
	PREVIOUSLY DISTURBED AREA NOT PLANNED FOR RECLAMATION
	PLANNED AREAS OF DISTURBANCE
	POND
	DRAINAGE SWALE (ARROW INDICATES FLOW DIRECTION)
	ABOVE GRADE PIPE - BELOW GRADE WHERE DASHED
	ADITS / WORKINGS
	10 FT. CONTOURS
	U.S.F.S. ROADS
	MINE CLAIM ROADS
	PROSPECT PIT

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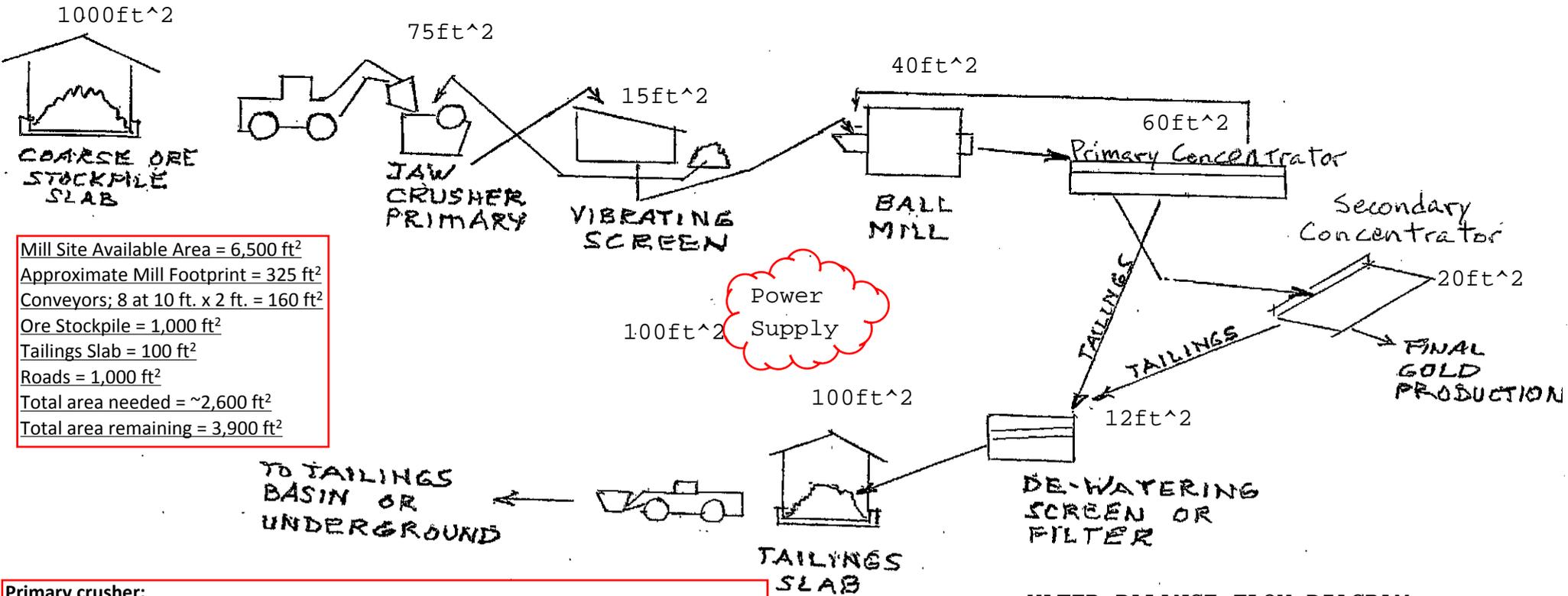
Job No.	6149B
Published Data	07 MAY 2014
Scale	AS SHOWN
Drawn	JDM
Chk'd	MC

**CLAIMS GROUP MAP
ELCY & ANNEX ADIT AREA MAP
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA**

**FIGURE
10**

File No.
6149_ELCY.mxd

Figure 11: Preliminary Mill Site Schematic, Eagle Bird Mine Claim Group



Mill Site Available Area = 6,500 ft²
 Approximate Mill Footprint = 325 ft²
 Conveyors; 8 at 10 ft. x 2 ft. = 160 ft²
 Ore Stockpile = 1,000 ft²
 Tailings Slab = 100 ft²
 Roads = 1,000 ft²
 Total area needed = ~2,600 ft²
 Total area remaining = 3,900 ft²

WATER BALANCE FLOW DIAGRAM

Source Water - Eagle Bird No. 2 adit
 21,600 gpd available, 13,250 gpd used after initial start up

Pond Storage
 62,800 gal.

Milling Production
 44,500 gal.

Water Losses ~30%
 13,250 gal.

~9,800 gallons excess to Eagle Bird Retention Pond for discharge to forest floor after meeting Basin Plan WQOs

Primary crusher:

Production: 6-15 t/hr
 Product Range: 3/8 in. to 3 1/8 in.
 Footprint LxWxH: 15 ft x 5 ft x 6 ft 2 in.

Primary Concentrator

Continuous water and ore feed 99% recovery of free gold down to 100 mesh

 Production: 15 t/hr (¼" minus recommend for peak production)
 Water consumption: 150 - 200 gpm (based on typical water/material ratio of 4:1 and 6:1)
 Power: 7.5 hp 3 phase - 60 Hz electric motor / variable speed hydraulic drive

Secondary Concentrator

16" Reverse Multi-Helix Spiral Cleaner

 Production: 1-2 t/hr (dry weight, ¼" minus recommend for peak production)
 Water consumption: clean water / 15-20 gpm @ 30-40 psi
 Power: 1/2 hp 110v 60hz electric motor / fixed rotation gearbox
 Footprint LxWxH: 7 ft. x 2.5 ft. x 5 ft.

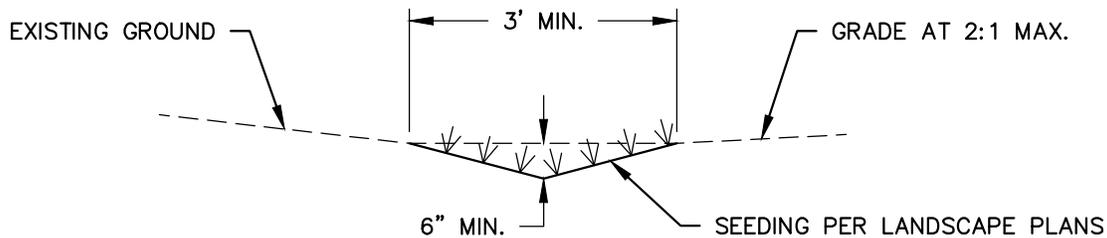
Figure 12

The Eagle Bird No. 2 Planned Waste Rock Storage Area, Upslope View Looking North



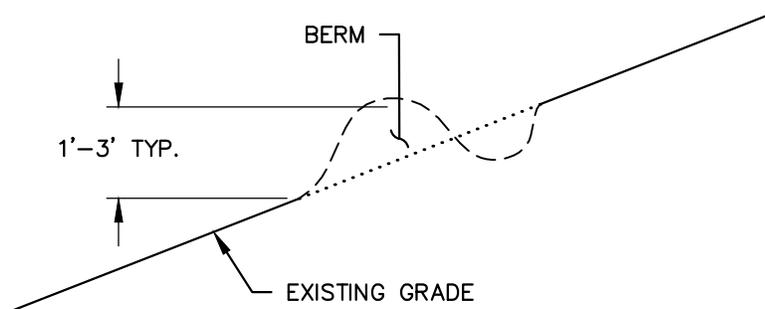
Figure 13 The Eagle Bird No. 2 Planned Waste Rock Storage Area, Toe of Slope Looking West





GRASS LINED SWALE

SCALE: N.T.S.



SURFACE WATER DIVERSION STRUCTURE

SCALE: N.T.S



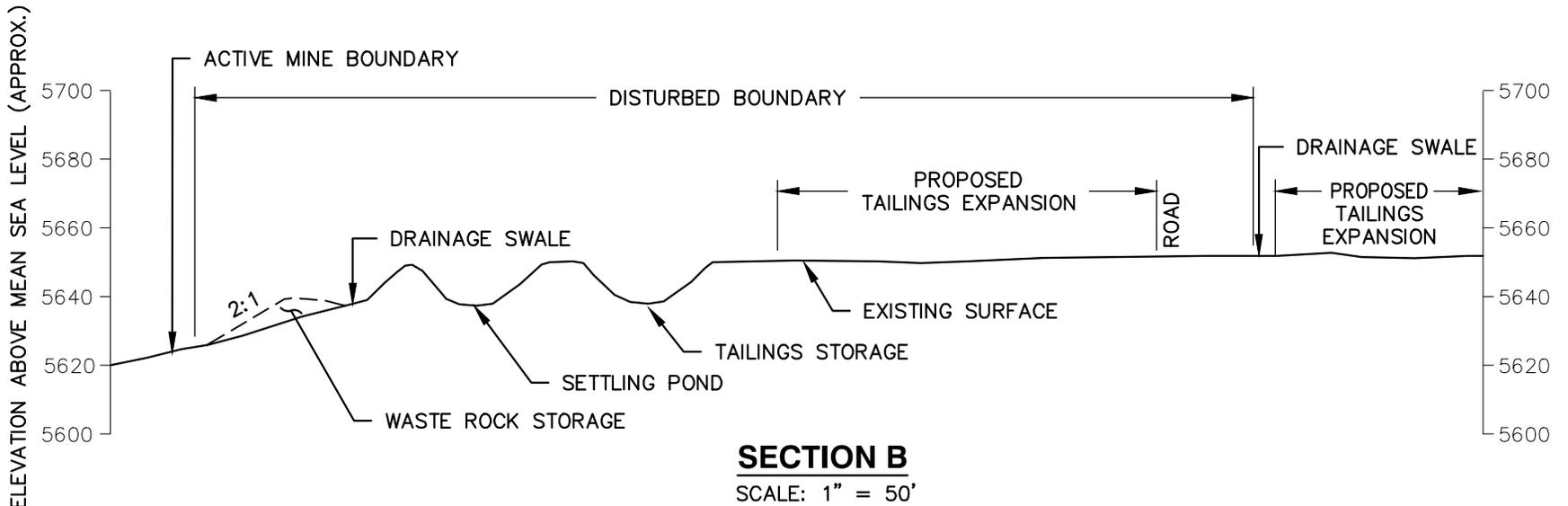
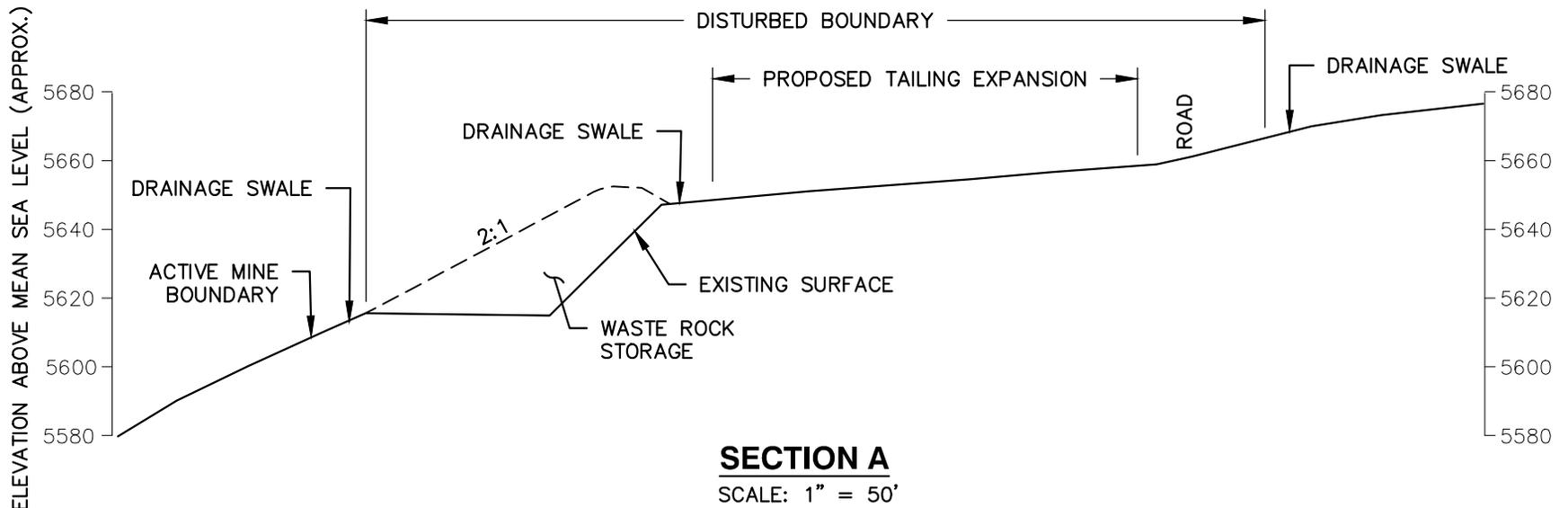
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Job No.	6149B
Published Date	10 FEB 2014
Scale	AS SHOWN
Drawn	JDM
Chk'd	MRC

**TYPICAL DRAINAGE SWALE AND
 DIVERSION STRUCTURE
 WASTE ROCK STORAGE
 EAGLE BIRD MINING COMPANY, LLC
 NEAR DOWNIEVILLE, SIERRA COUNTY, CALIFORNIA**

**FIGURE
 14**

File No.
 6149B_F14-16_18



File No.
6149B_F14-16_18

15

FIGURE

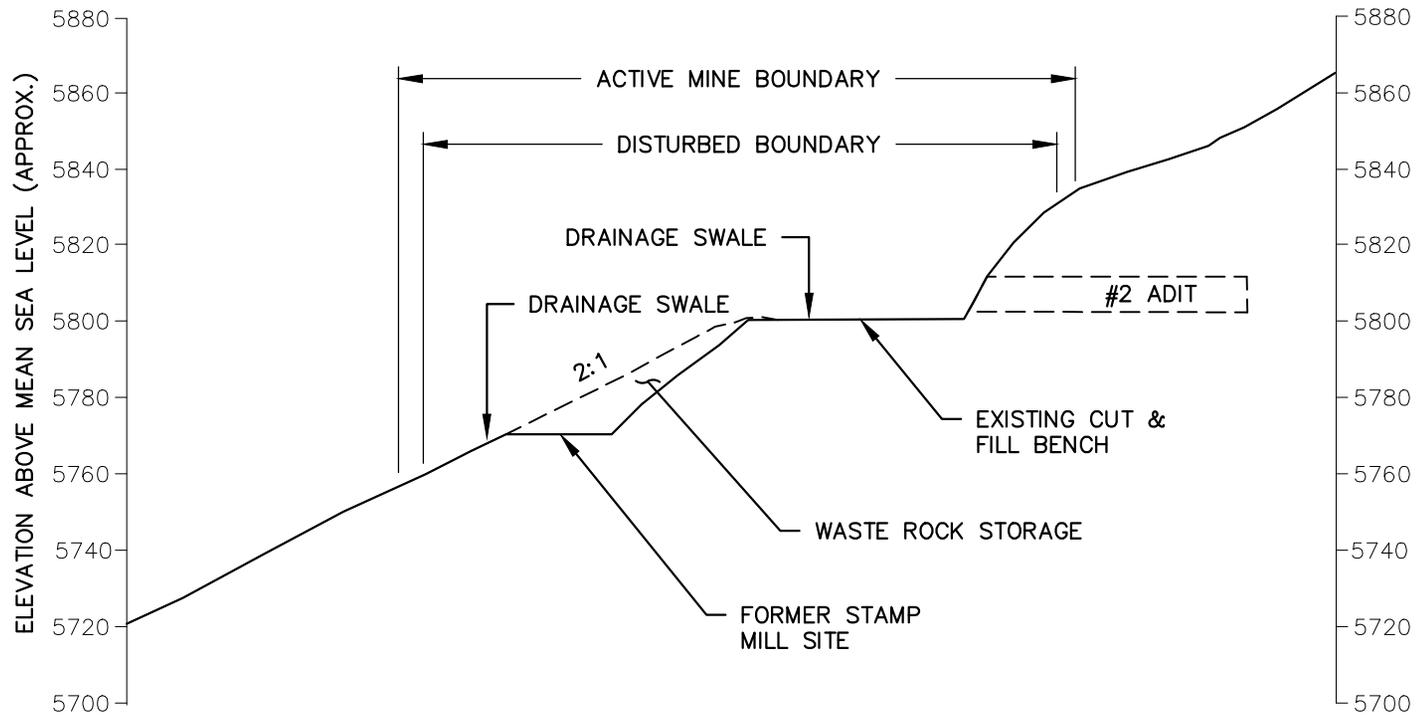


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Chk'd JDM

**PEDRO CLAIM
WASTE ROCK STORAGE AREA PROFILES
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CALIFORNIA**



SECTION C

SCALE: 1" = 50'

File No.
6149B_F14-16_18

16

FIGURE

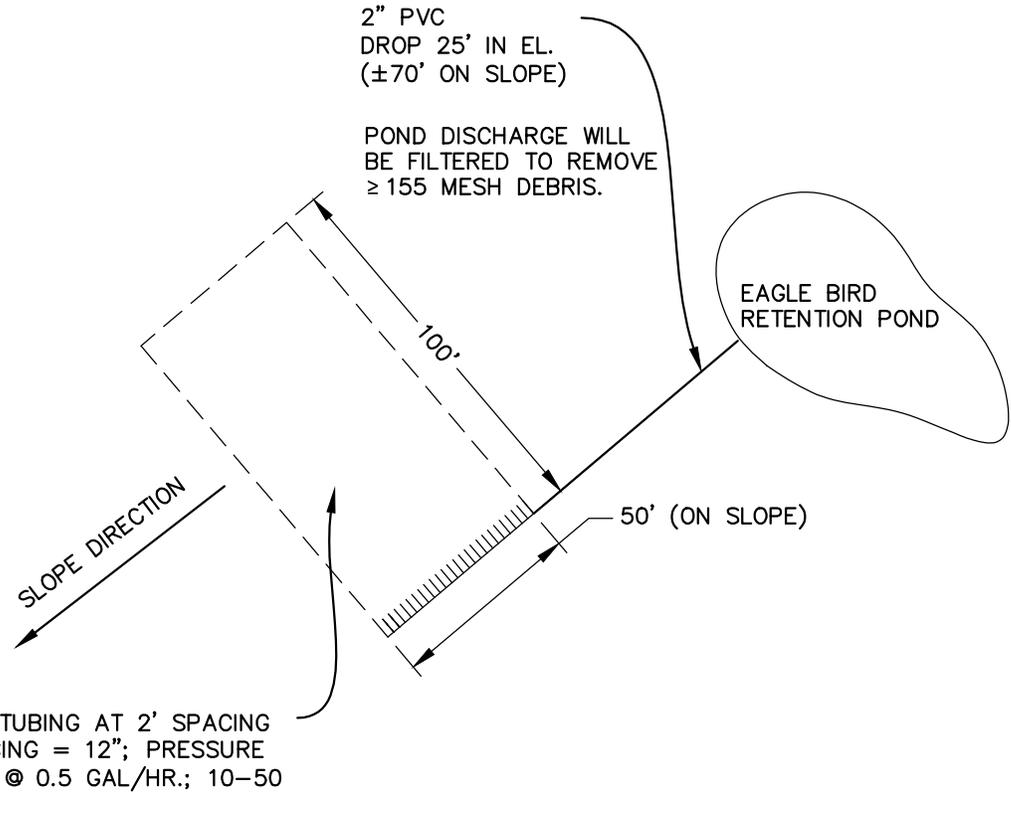
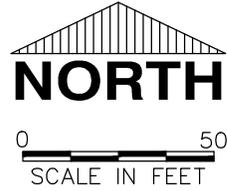


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Date 10 FEB 2014
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Chk'd JDM

**EAGLE BIRD ADIT
WASTE ROCK STORAGE AREA PROFILE
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CALIFORNIA**



LAND APPLICATION SCHEMATIC

SCALE: 1" = 50'

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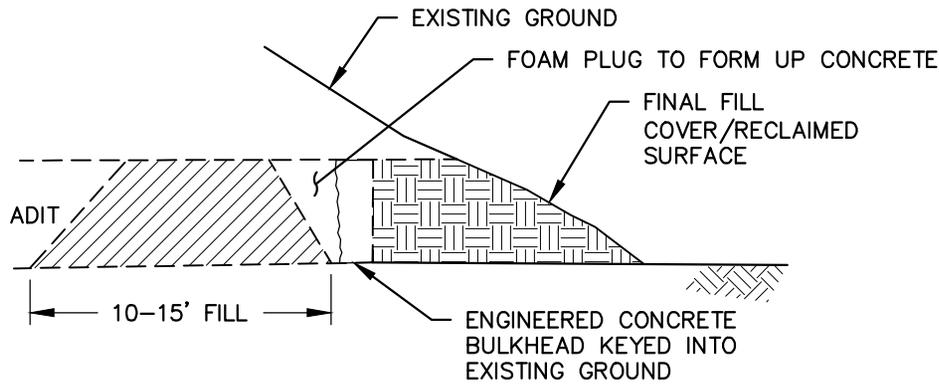
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Chk'd	MC

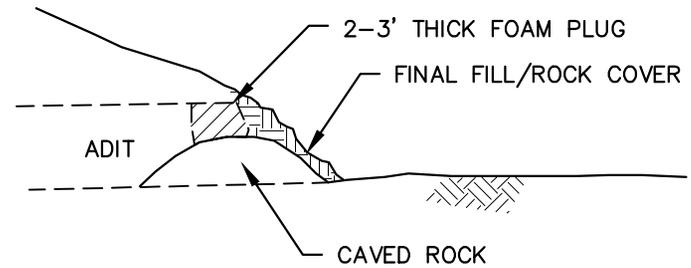
EAGLE BIRD CLAIM
LAND APPLICATION SCHEMATIC
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA.

FIGURE
17

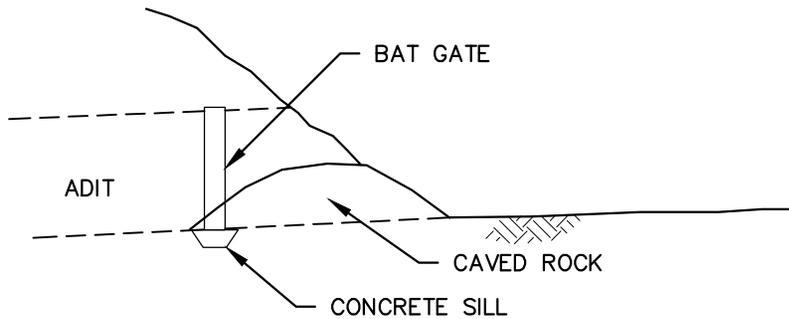
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6149B-F17



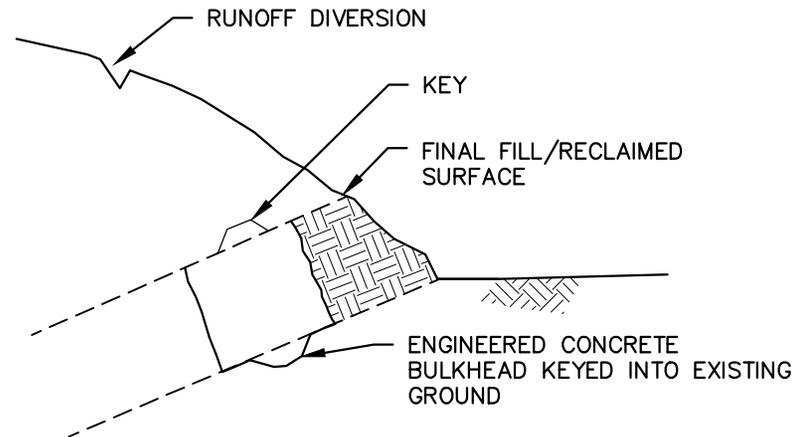
1 **FILL OPTION**
Scale: N.T.S.



2 **CAVE ADIT/FOAM FILL OPTION**
Scale: N.T.S.



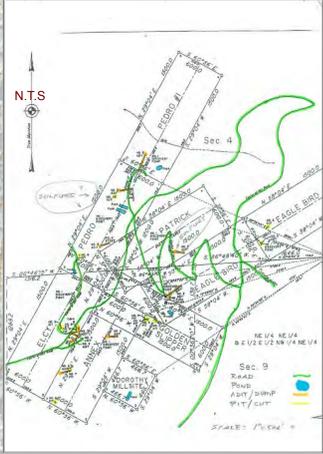
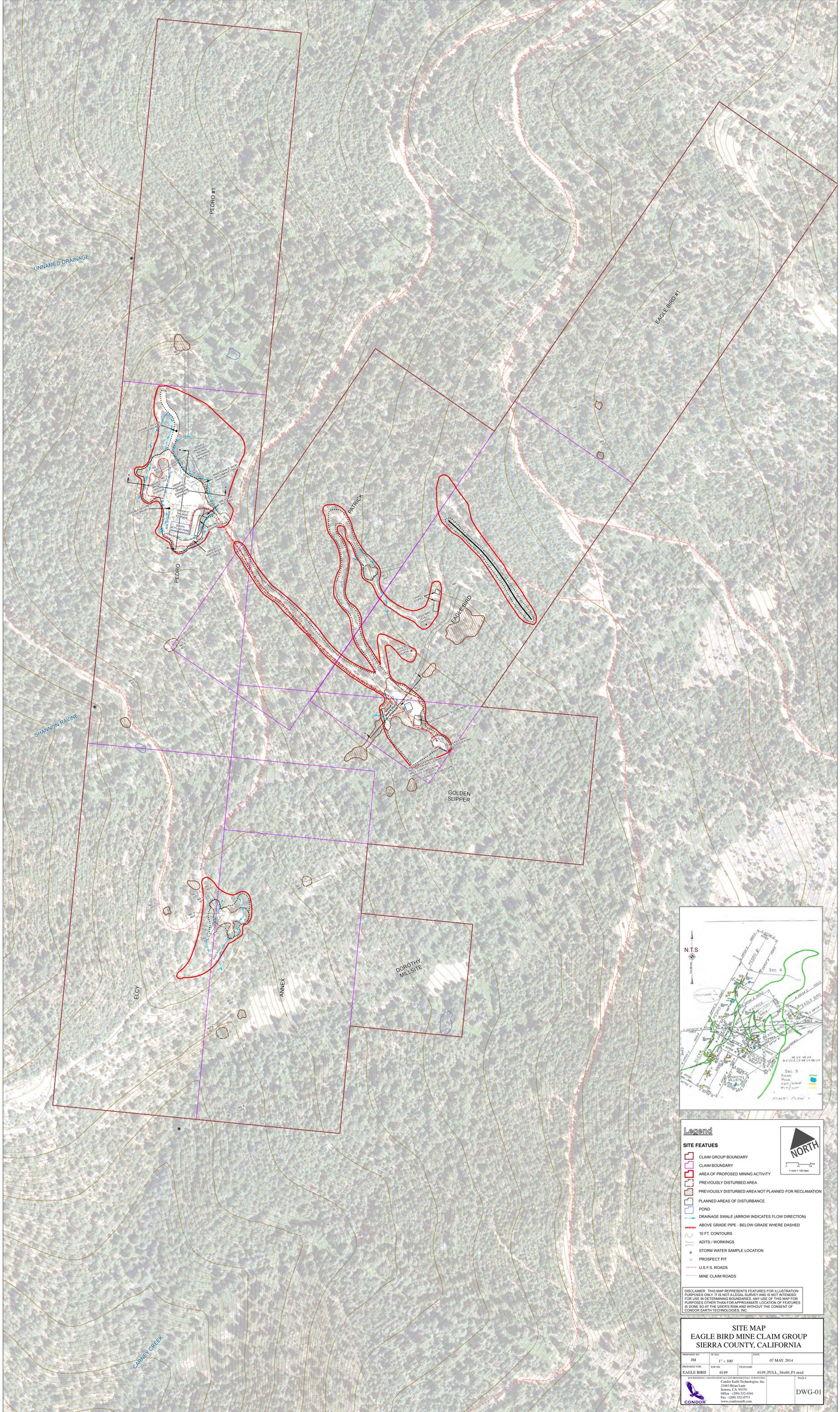
3 **BAT GATE OPTION**
Scale: N.T.S.



4 **DECLINE OPTION**
Scale: N.T.S.

NOTE: OPTIONS ARE FOR PLANNING PURPOSES. FINAL DETAILING AND ENGINEERING REQUIRED PRIOR TO CONSTRUCTION

File No. 6149B_F18	FIGURE 18	 CONDOR	CONDOR EARTH TECHNOLOGIES, INC.		Job No. 6149B	TYPICAL ADIT CLOSURE METHODS EAGLE BIRD MINING COMPANY, LLC NEAR DOWNIEVILLE, SIERRA COUNTY, CALIFORNIA	
			21663 Brian Lane P.O. Box 3905 Sonora, CA 95370 (209) 532-0361 fax(209) 532-0773 www.condorearth.com	Date 13 MAY 2014	AS SHOWN		
			Scale	Drawn KGM			Chk'd MRC



Legend

SITE FEATURES

- CLAIM GROUP BOUNDARY
- CLAIM BOUNDARY
- AREA OF PROPOSED MINING ACTIVITY
- PREVIOUSLY DISTURBED AREA
- PREVIOUSLY DISTURBED AREA NOT PLANNED FOR RECLAMATION
- PLANNED AREAS OF DISTURBANCE
- POND
- DRAINAGE SWALE (ARROW INDICATES FLOW DIRECTION)
- ABOVE GRADE PIPE - BELOW GRADE WHERE DASHED
- 10 FT. CONTOURS
- ADITS / WORKINGS
- STORM WATER SAMPLE LOCATION
- PROSPECT PIT
- U.S.F.S. ROADS
- MINE CLAIM ROADS

DISCLAIMER: THIS MAP REPRESENTS FEATURES FOR ILLUSTRATION PURPOSES ONLY. IT IS NOT A LEGAL SURVEY AND IS NOT INTENDED FOR USE IN DETERMINING BOUNDARIES. ANY USE OF THIS MAP FOR PURPOSES OTHER THAN FOR APPROXIMATE LOCATION OF FEATURES IS DONE SO AT THE USER'S RISK AND WITHOUT THE CONSENT OF CONCOR EARTH TECHNOLOGIES, INC.

SITE MAP
EAGLE BIRD MINE CLAIM GROUP
SIERRA COUNTY, CALIFORNIA

PREPARED BY JM	SCALE 1" = 100'	DATE 07 MAY 2014
PREPARED FOR EAGLE BIRD	JOB NO. 6149	FILE NAME 6149_FULL_36x60_F1.mxd
ENGINEERING/CAD/DTM/SCANNING/ENVIRONMENTAL SURVEYING Concor Earth Technologies, Inc. 21665 Britan Lane Sierra, CA 95370 Office - (209) 532-8561 Fax - (209) 532-8773 www.concor-earth.com		PAGE # DWG-01

ATTACHMENT B
Claim Group Survey Detail – USFS and Mine Claim Roads



ATTACHMENT C
Custom Soil Resource Report for Tahoe National Forest Area, California
Eagle Bird Mine Group





United States
Department of
Agriculture



NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Tahoe National Forest Area, California

Eagle Bird Mine Group



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://soils.usda.gov/sqi/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrsc>) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

Custom Soil Resource Report

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

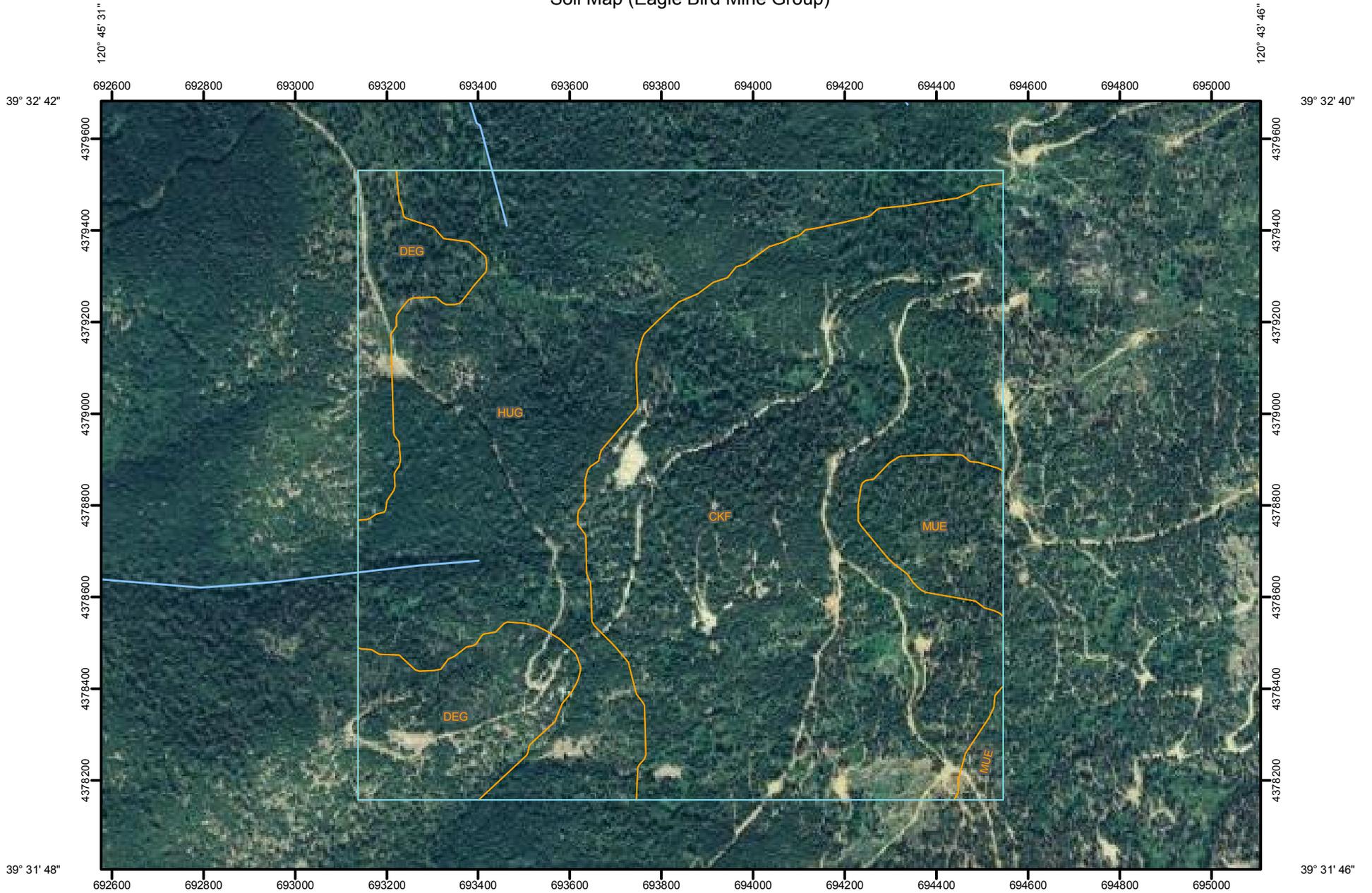
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map (Eagle Bird Mine Group)



Map Scale: 1:12,000 if printed on A size (8.5" x 11") sheet.



120° 43' 47"

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot

 Very Stony Spot

 Wet Spot

 Other

Special Line Features

-  Gully
-  Short Steep Slope
-  Other

Political Features

 Cities

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

MAP INFORMATION

Map Scale: 1:12,000 if printed on A size (8.5" x 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tahoe National Forest Area, California
 Survey Area Data: Version 7, Sep 1, 2009

Date(s) aerial images were photographed: 8/14/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Eagle Bird Mine Group)

Tahoe National Forest Area, California (CA719)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CKF	Chaix variant-Rock outcrop-Cryumbrepts, wet complex, 30 to 50 percent slopes	228.8	47.9%
DEG	Deadwood-Rock outcrop-Hurlbut complex, 30 to 75 percent slopes	55.4	11.6%
HUG	Hurlbut-Deadwood-Rock outcrop complex, 30 to 75 percent slopes	169.6	35.5%
MUE	Tahoma variant-Hotaw variant-Cryumbrepts, wet complex, 2 to 30 percent slopes	24.2	5.1%
Totals for Area of Interest		478.0	100.0%

Map Unit Descriptions (Eagle Bird Mine Group)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

Custom Soil Resource Report

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Tahoe National Forest Area, California

CKF—Chaix variant-Rock outcrop-Cryumbrepts, wet complex, 30 to 50 percent slopes

Map Unit Setting

Elevation: 5,490 to 7,000 feet
Mean annual precipitation: 65 to 75 inches
Mean annual air temperature: 52 to 55 degrees F
Frost-free period: 150 to 175 days

Map Unit Composition

Chaix variant and similar soils: 40 percent
Rock outcrop: 20 percent
Cryumbrepts, wet: 15 percent

Description of Chaix Variant

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 22 to 26 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 6e

Description of Rock Outcrop

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 0 to 4 inches to lithic bedrock

Interpretive groups

Land capability (nonirrigated): 8e

Description of Cryumbrepts, Wet

Setting

Landform: Mountain slopes

Custom Soil Resource Report

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Across-slope shape: Concave

Interpretive groups

Land capability (nonirrigated): 6w

DEG—Deadwood-Rock outcrop-Hurlbut complex, 30 to 75 percent slopes

Map Unit Setting

Elevation: 2,000 to 5,000 feet
Mean annual precipitation: 60 to 65 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 200 days

Map Unit Composition

Deadwood and similar soils: 50 percent
Rock outcrop: 25 percent
Hurlbut and similar soils: 15 percent

Description of Deadwood

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex

Properties and qualities

Slope: 30 to 75 percent
Depth to restrictive feature: 13 to 17 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 7e

Description of Rock Outcrop

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex

Custom Soil Resource Report

Properties and qualities

Slope: 30 to 75 percent

Depth to restrictive feature: 0 to 4 inches to lithic bedrock

Drainage class: Somewhat excessively drained

Interpretive groups

Land capability (nonirrigated): 8e

Description of Hurlbut

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Concave

Across-slope shape: Concave

Properties and qualities

Slope: 30 to 75 percent

Depth to restrictive feature: 27 to 31 inches to paralithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 7e

HUG—Hurlbut-Deadwood-Rock outcrop complex, 30 to 75 percent slopes

Map Unit Setting

Elevation: 2,000 to 5,000 feet

Mean annual precipitation: 60 to 65 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 100 to 200 days

Map Unit Composition

Hurlbut and similar soils: 40 percent

Deadwood and similar soils: 20 percent

Rock outcrop: 15 percent

Description of Hurlbut

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Concave

Custom Soil Resource Report

Across-slope shape: Convex

Properties and qualities

Slope: 30 to 75 percent

Depth to restrictive feature: 22 to 26 inches to paralithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 4e

Description of Deadwood

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Convex

Across-slope shape: Convex

Properties and qualities

Slope: 30 to 75 percent

Depth to restrictive feature: 16 to 20 inches to lithic bedrock

Drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 7s

Description of Rock Outcrop

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Convex

Across-slope shape: Convex

Properties and qualities

Slope: 30 to 75 percent

Depth to restrictive feature: 0 to 4 inches to lithic bedrock

Drainage class: Excessively drained

Interpretive groups

Land capability (nonirrigated): 8e

MUE—Tahoma variant-Hotaw variant-Cryumbrepts, wet complex, 2 to 30 percent slopes

Map Unit Setting

Elevation: 5,500 to 6,500 feet
Mean annual precipitation: 50 to 70 inches
Mean annual air temperature: 54 to 55 degrees F
Frost-free period: 150 to 175 days

Map Unit Composition

Tahoma variant and similar soils: 35 percent
Hotaw variant and similar soils: 20 percent
Cryumbrepts, wet: 15 percent

Description of Tahoma Variant

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear

Properties and qualities

Slope: 2 to 30 percent
Depth to restrictive feature: 48 to 52 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 6e

Description of Hotaw Variant

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Convex

Properties and qualities

Slope: 2 to 30 percent
Depth to restrictive feature: 38 to 42 inches to paralithic bedrock
Drainage class: Well drained

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 6e

Description of Cryumbrepts, Wet

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Concave

Across-slope shape: Concave

Interpretive groups

Land capability (nonirrigated): 6w

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Soil Taxonomy Classification (Eagle Bird Mine Group)

This rating presents the taxonomic classification based on Soil Taxonomy.

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 2003). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. This table shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in sol. An example is Alfisols.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a

Custom Soil Resource Report

suborder indicates the order. An example is Udalfs (Ud, meaning humid, plus alf, from Alfisols).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (Hapl, meaning minimal horizonation, plus udalfs, the suborder of the Alfisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective Typic identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, active, mesic Typic Hapludalfs.

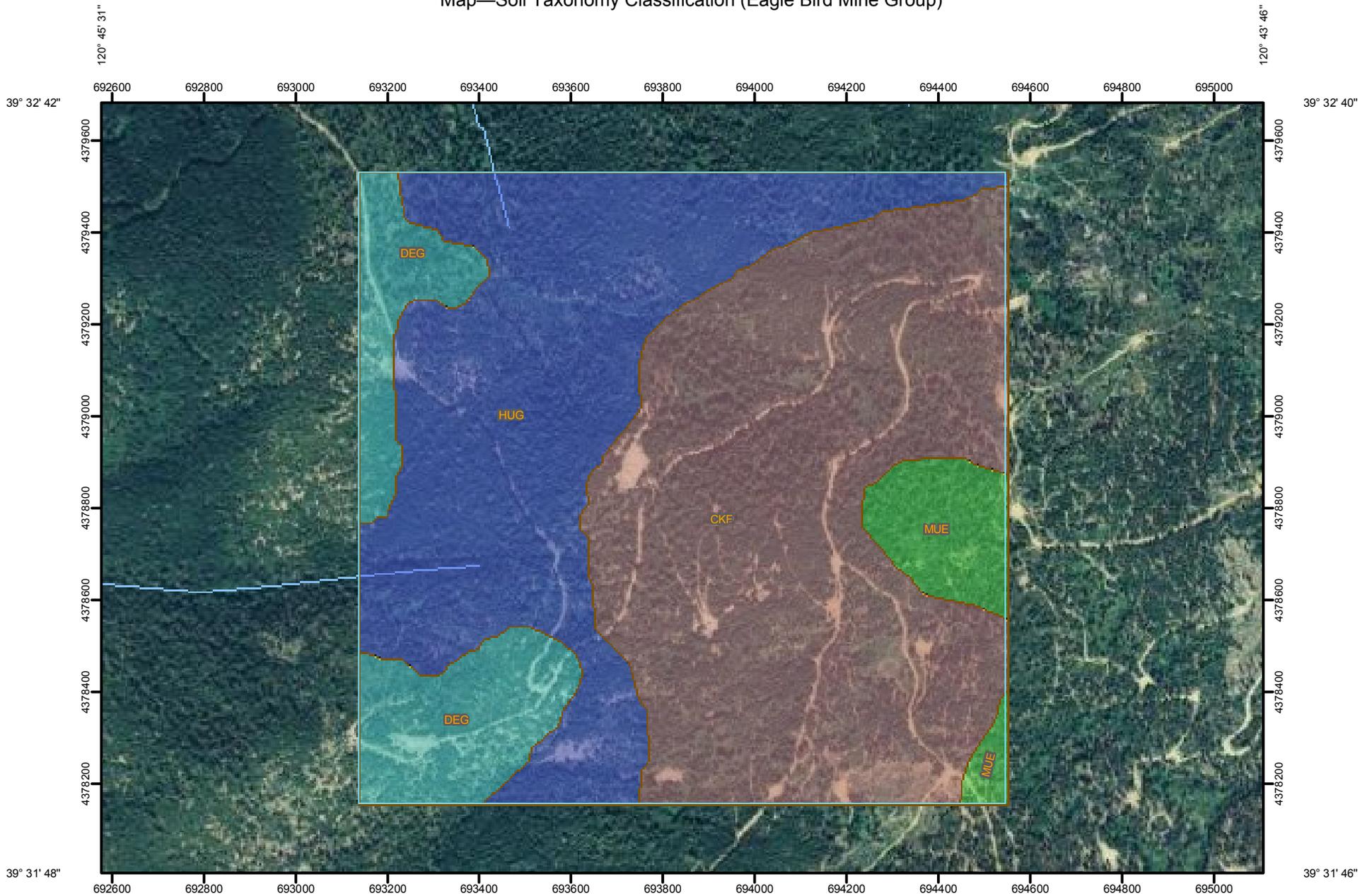
SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

References:

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. (The soils in a given survey area may have been classified according to earlier editions of this publication.)

Custom Soil Resource Report
Map—Soil Taxonomy Classification (Eagle Bird Mine Group)



120° 45' 33"



Map Scale: 1:12,000 if printed on A size (8.5" x 11") sheet.



120° 45' 33"

120° 43' 47"

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

 Coarse-loamy, mixed, frigid Dystric Xerochrepts

 Fine-loamy, mixed, frigid Ultic Haploxeralfs

 Fine-loamy, mixed, mesic Dystric Xerochrepts

 Loamy-skeletal, mixed, mesic Dystric Lithic Xerochrepts

 Not rated or not available

Political Features

 Cities

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:12,000 if printed on A size (8.5" x 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tahoe National Forest Area, California
Survey Area Data: Version 7, Sep 1, 2009

Date(s) aerial images were photographed: 8/14/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Soil Taxonomy Classification (Eagle Bird Mine Group)

Soil Taxonomy Classification— Summary by Map Unit — Tahoe National Forest Area, California (CA719)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CKF	Chaix variant-Rock outcrop-Cryumbrepts, wet complex, 30 to 50 percent slopes	Coarse-loamy, mixed, frigid Dystric Xerochrepts	228.8	47.9%
DEG	Deadwood-Rock outcrop-Hurlbut complex, 30 to 75 percent slopes	Loamy-skeletal, mixed, mesic Dystric Lithic Xerochrepts	55.4	11.6%
HUG	Hurlbut-Deadwood-Rock outcrop complex, 30 to 75 percent slopes	Fine-loamy, mixed, mesic Dystric Xerochrepts	169.6	35.5%
MUE	Tahoma variant-Hotaw variant-Cryumbrepts, wet complex, 2 to 30 percent slopes	Fine-loamy, mixed, frigid Ultic Haploxeralfs	24.2	5.1%
Totals for Area of Interest			478.0	100.0%

Rating Options—Soil Taxonomy Classification (Eagle Bird Mine Group)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Chemical Properties

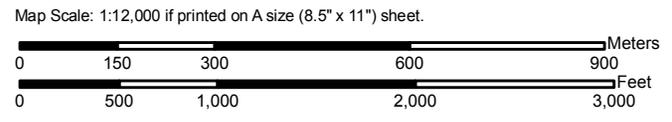
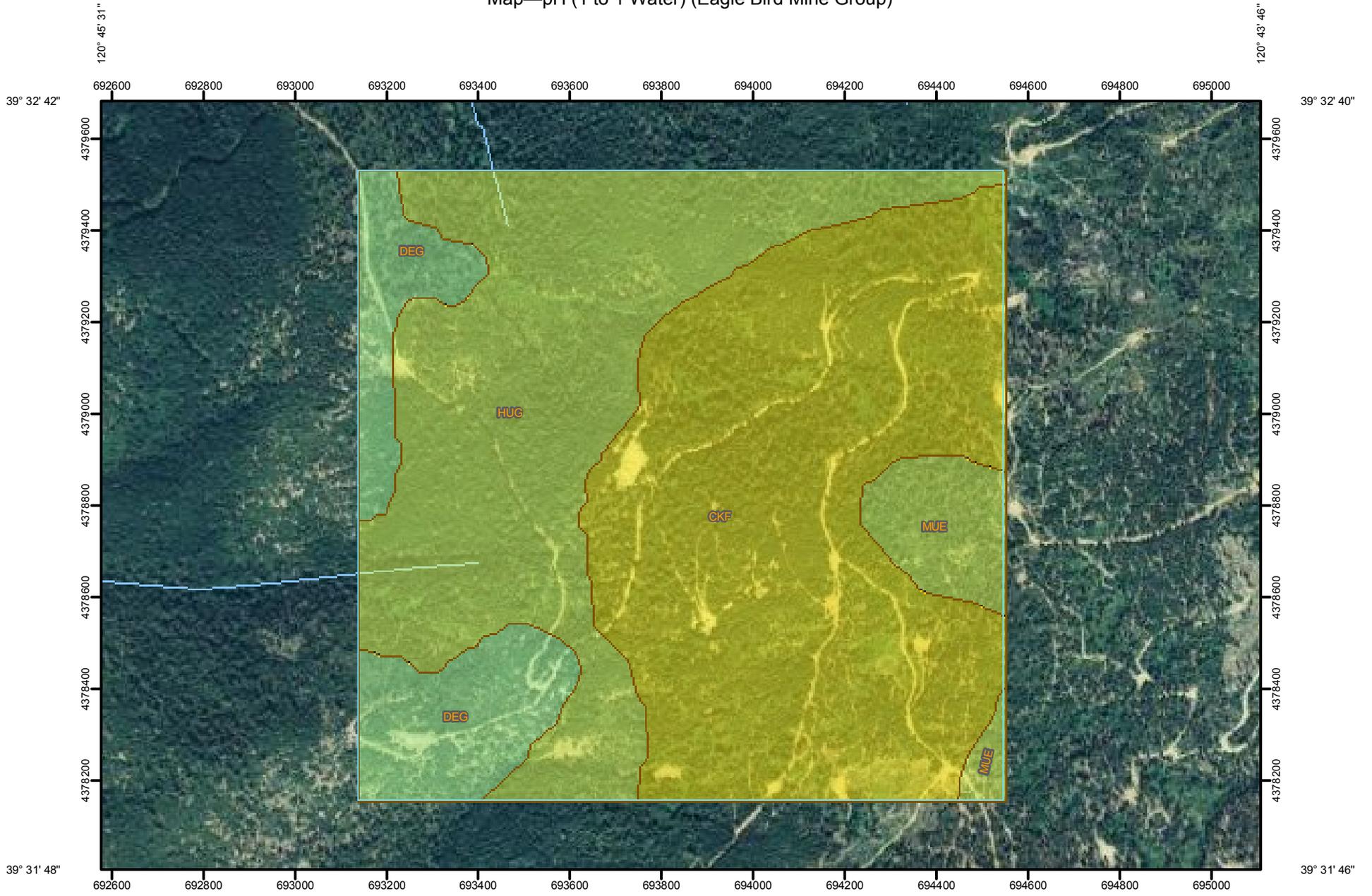
Soil Chemical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil chemical properties include pH, cation exchange capacity, calcium carbonate, gypsum, and electrical conductivity.

pH (1 to 1 Water) (Eagle Bird Mine Group)

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion. In general, soils that are either highly alkaline or highly acid are likely to be very corrosive to steel. The most common soil laboratory measurement of pH is the 1:1 water method. A crushed soil sample is mixed with an equal amount of water, and a measurement is made of the suspension.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report Map—pH (1 to 1 Water) (Eagle Bird Mine Group)



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

-  Ultra acid (pH < 3.5)
-  Extremely acid (pH 3.5 - 4.4)
-  Very strongly acid (pH 4.5 - 5.0)
-  Strongly acid (pH 5.1 - 5.5)
-  Moderately acid (pH 5.6 - 6.0)
-  Slightly acid (pH 6.1 - 6.5)
-  Neutral (pH 6.6 - 7.3)
-  Slightly alkaline (pH 7.4 - 7.8)
-  Moderately alkaline (pH 7.9 - 8.4)
-  Strongly alkaline (pH 8.5 - 9.0)
-  Very strongly alkaline (pH > 9.0)
-  Not rated or not available

Political Features

 Cities

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

MAP INFORMATION

Map Scale: 1:12,000 if printed on A size (8.5" x 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tahoe National Forest Area, California
Survey Area Data: Version 7, Sep 1, 2009

Date(s) aerial images were photographed: 8/14/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—pH (1 to 1 Water) (Eagle Bird Mine Group)

pH (1 to 1 Water)— Summary by Map Unit — Tahoe National Forest Area, California (CA719)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CKF	Chaix variant-Rock outcrop-Cryumbrepts, wet complex, 30 to 50 percent slopes	5.2	228.8	47.9%
DEG	Deadwood-Rock outcrop-Hurlbut complex, 30 to 75 percent slopes	6.1	55.4	11.6%
HUG	Hurlbut-Deadwood-Rock outcrop complex, 30 to 75 percent slopes	5.8	169.6	35.5%
MUE	Tahoma variant-Hotaw variant-Cryumbrepts, wet complex, 2 to 30 percent slopes	5.7	24.2	5.1%
Totals for Area of Interest			478.0	100.0%

Rating Options—pH (1 to 1 Water) (Eagle Bird Mine Group)

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options: Depth Range

Top Depth: 0

Bottom Depth: 24

Units of Measure: Inches

Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

K Factor, Whole Soil (Eagle Bird Mine Group)

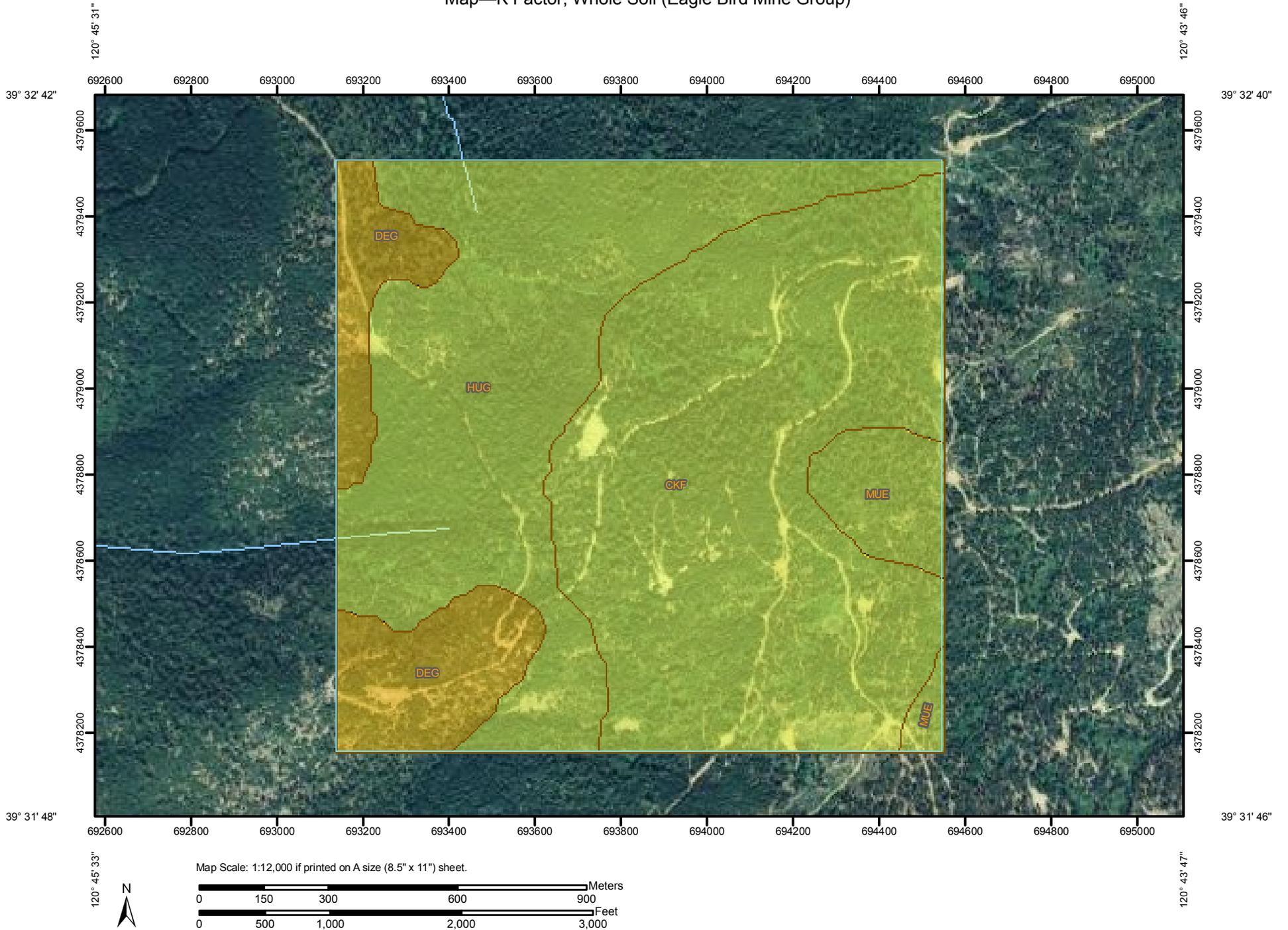
Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Custom Soil Resource Report

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Custom Soil Resource Report

Map—K Factor, Whole Soil (Eagle Bird Mine Group)



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

 .02

 .05

 .10

 .15

 .17

 .20

 .24

 .28

 .32

 .37

 .43

 .49

 .55

 .64

 Not rated or not available

Political Features

 Cities

Water Features

 Streams and Canals

Transportation

 Rails



Interstate Highways



US Routes



Major Roads



Local Roads

MAP INFORMATION

Map Scale: 1:12,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tahoe National Forest Area, California
Survey Area Data: Version 7, Sep 1, 2009

Date(s) aerial images were photographed: 8/14/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—K Factor, Whole Soil (Eagle Bird Mine Group)

K Factor, Whole Soil— Summary by Map Unit — Tahoe National Forest Area, California (CA719)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CKF	Chaix variant-Rock outcrop-Cryumbrepts, wet complex, 30 to 50 percent slopes	.20	228.8	47.9%
DEG	Deadwood-Rock outcrop-Hurlbut complex, 30 to 75 percent slopes	.15	55.4	11.6%
HUG	Hurlbut-Deadwood-Rock outcrop complex, 30 to 75 percent slopes	.20	169.6	35.5%
MUE	Tahoma variant-Hotaw variant-Cryumbrepts, wet complex, 2 to 30 percent slopes	.20	24.2	5.1%
Totals for Area of Interest			478.0	100.0%

Rating Options—K Factor, Whole Soil (Eagle Bird Mine Group)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options: Surface Layer

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

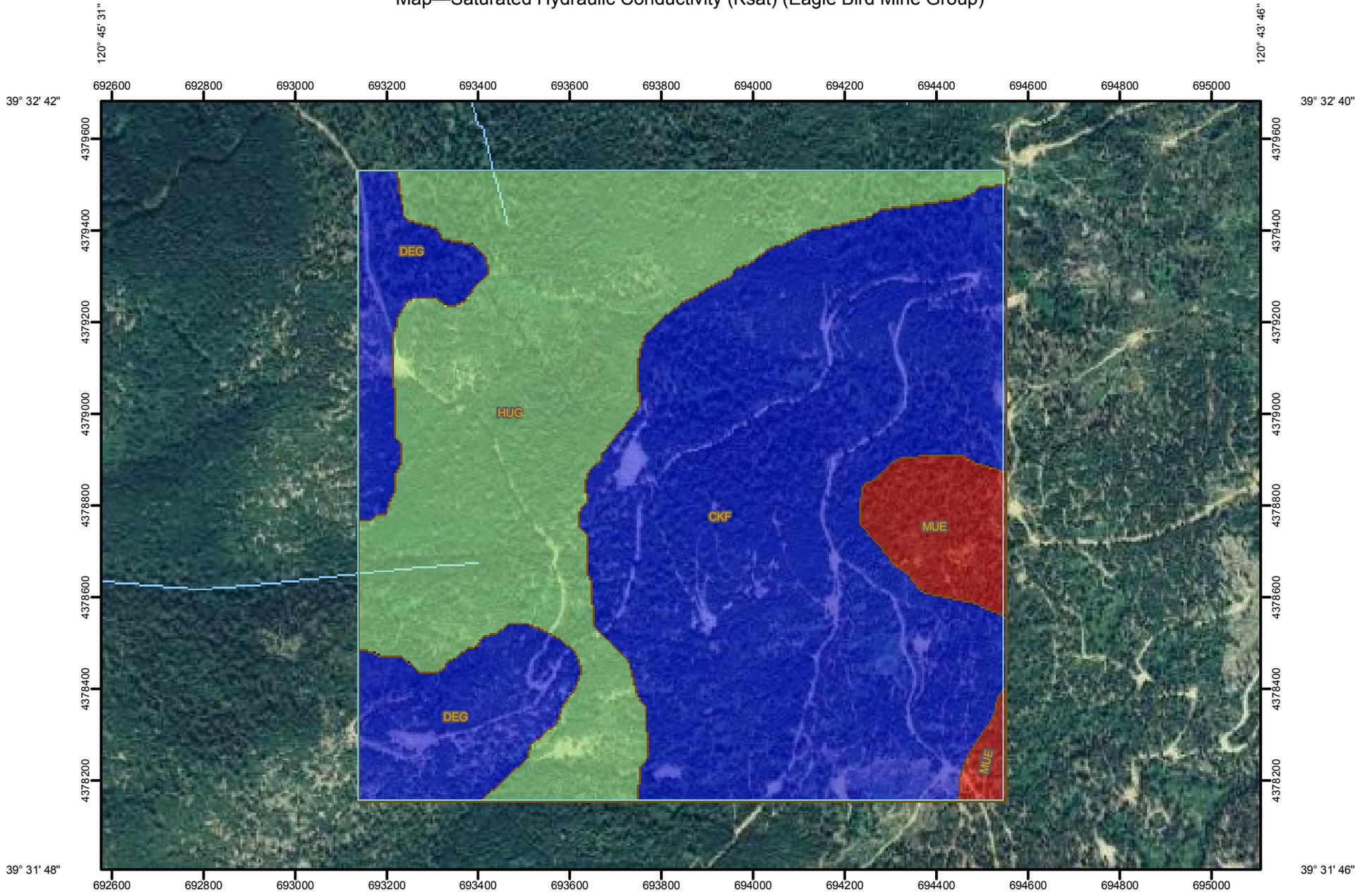
Saturated Hydraulic Conductivity (Ksat) (Eagle Bird Mine Group)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

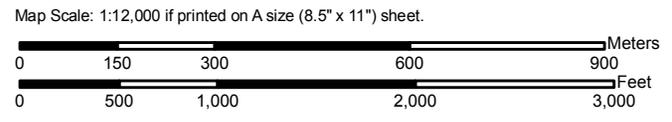
For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Custom Soil Resource Report
Map—Saturated Hydraulic Conductivity (Ksat) (Eagle Bird Mine Group)



120° 45' 33"



120° 45' 33"

120° 43' 47"

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

 ≤ 6.418

 > 6.418 AND ≤ 9

 > 9 AND ≤ 28

 Not rated or not available

Political Features

 Cities

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:12,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tahoe National Forest Area, California
Survey Area Data: Version 7, Sep 1, 2009

Date(s) aerial images were photographed: 8/14/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Saturated Hydraulic Conductivity (Ksat) (Eagle Bird Mine Group)

Saturated Hydraulic Conductivity (Ksat)— Summary by Map Unit — Tahoe National Forest Area, California (CA719)				
Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
CKF	Chaix variant-Rock outcrop-Cryumbrepts, wet complex, 30 to 50 percent slopes	28.0000	228.8	47.9%
DEG	Deadwood-Rock outcrop-Hurlbut complex, 30 to 75 percent slopes	28.0000	55.4	11.6%
HUG	Hurlbut-Deadwood-Rock outcrop complex, 30 to 75 percent slopes	9.0000	169.6	35.5%
MUE	Tahoma variant-Hotaw variant-Cryumbrepts, wet complex, 2 to 30 percent slopes	6.4180	24.2	5.1%
Totals for Area of Interest			478.0	100.0%

Rating Options—Saturated Hydraulic Conductivity (Ksat) (Eagle Bird Mine Group)

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options: Depth Range

Top Depth: 0

Bottom Depth: 24

Units of Measure: Inches

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group (Eagle Bird Mine Group)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

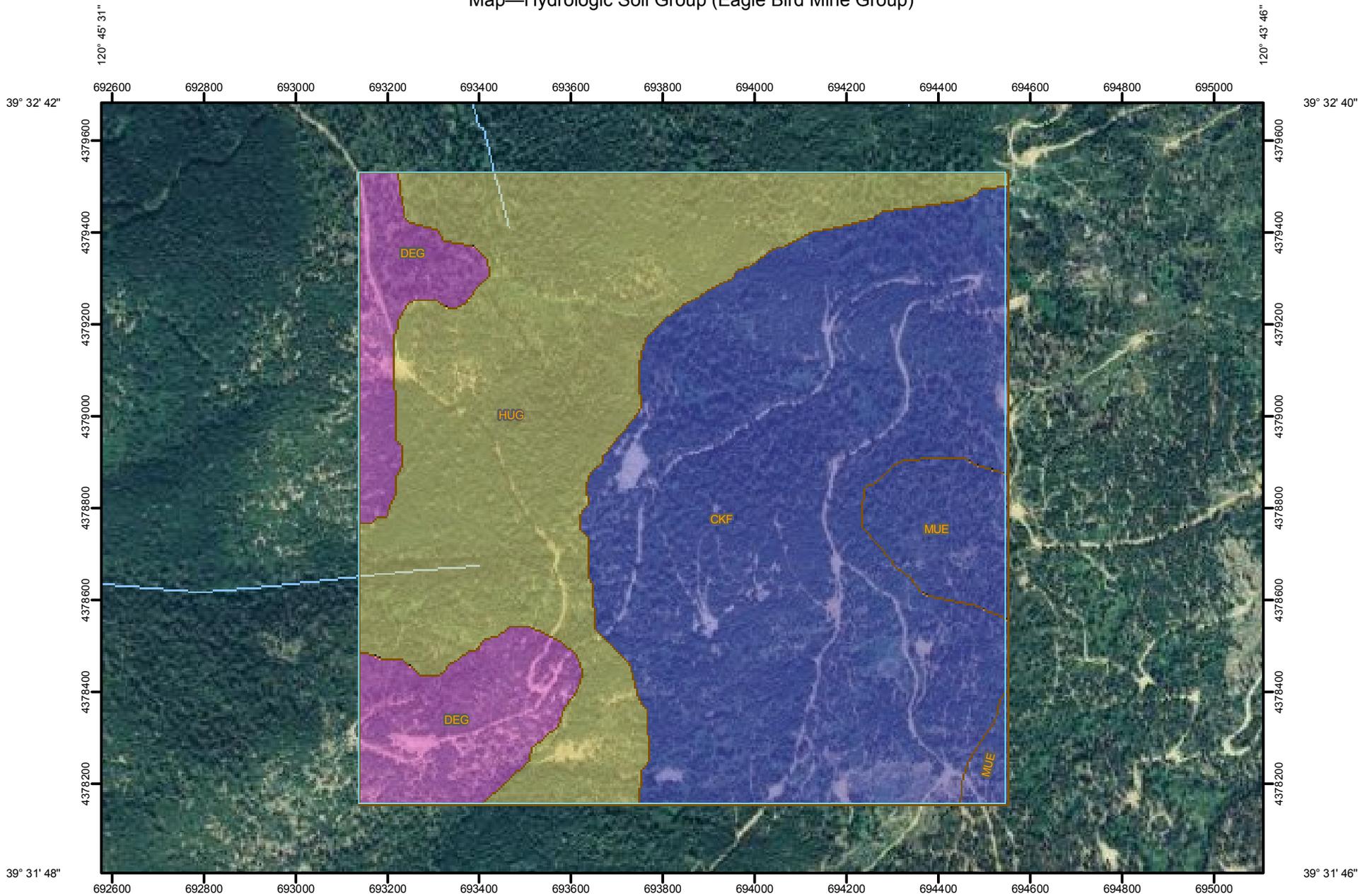
Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

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Map—Hydrologic Soil Group (Eagle Bird Mine Group)



120° 45' 33"



Map Scale: 1:12,000 if printed on A size (8.5" x 11") sheet.



120° 43' 47"

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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

 A

 A/D

 B

 B/D

 C

 C/D

 D

 Not rated or not available

Political Features

 Cities

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

MAP INFORMATION

Map Scale: 1:12,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tahoe National Forest Area, California
Survey Area Data: Version 7, Sep 1, 2009

Date(s) aerial images were photographed: 8/14/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group (Eagle Bird Mine Group)

Hydrologic Soil Group— Summary by Map Unit — Tahoe National Forest Area, California (CA719)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CKF	Chaix variant-Rock outcrop-Cryumbrepts, wet complex, 30 to 50 percent slopes	B	228.8	47.9%
DEG	Deadwood-Rock outcrop-Hurlbut complex, 30 to 75 percent slopes	D	55.4	11.6%
HUG	Hurlbut-Deadwood-Rock outcrop complex, 30 to 75 percent slopes	C	169.6	35.5%
MUE	Tahoma variant-Hotaw variant-Cryumbrepts, wet complex, 2 to 30 percent slopes	B	24.2	5.1%
Totals for Area of Interest			478.0	100.0%

Rating Options—Hydrologic Soil Group (Eagle Bird Mine Group)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Erosion

This folder contains a collection of tabular reports that present soil erosion factors and groupings. The reports (tables) include all selected map units and components for each map unit. Soil erosion factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

RUSLE2 Related Attributes (Eagle Bird Mine Group)

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factors Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the surface horizon.

Report—RUSLE2 Related Attributes (Eagle Bird Mine Group)

RUSLE2 Related Attributes— Tahoe National Forest Area, California								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
CKF—Chaix variant-Rock outcrop-Cryumbrepts, wet complex, 30 to 50 percent slopes								
Chaix variant	40	—	B	.20	2	66.9	23.1	10.0
Rock outcrop	20	—	D	—	—	—	—	—
Cryumbrepts, wet	15	—	D	—	—	—	—	—

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RUSLE2 Related Attributes– Tahoe National Forest Area, California								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
DEG—Deadwood-Rock outcrop-Hurlbut complex, 30 to 75 percent slopes								
Deadwood	50	—	D	.24	1	65.9	19.1	15.0
Rock outcrop	25	—	D	—	1	—	—	—
Hurlbut	15	—	C	.37	2	39.8	37.7	22.5
HUG—Hurlbut-Deadwood-Rock outcrop complex, 30 to 75 percent slopes								
Hurlbut	40	—	C	.37	2	39.8	37.7	22.5
Deadwood	20	—	D	.24	1	65.9	19.1	15.0
Rock outcrop	15	—	D	—	1	—	—	—
MUE—Tahoma variant-Hotaw variant-Cryumbrepts, wet complex, 2 to 30 percent slopes								
Tahoma variant	35	—	B	.37	3	42.1	37.9	20.0
Hotaw variant	20	—	B	.37	2	41.4	37.1	21.5
Cryumbrepts, wet	15	—	D	—	—	—	—	—

Soil Physical Properties

This folder contains a collection of tabular reports that present soil physical properties. The reports (tables) include all selected map units and components for each map unit. Soil physical properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Physical Soil Properties (Eagle Bird Mine Group)

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is

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given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (K_{sat}), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (K_{sat}) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (K_{sat}) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the

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linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

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Physical Soil Properties– Tahoe National Forest Area, California														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
CKF—Chaix variant-Rock outcrop-Cryumbrepts, wet complex, 30 to 50 percent slopes														
Chaix variant	0-10	-67-	-23-	5-10- 15	1.10-1.30	14.00-42.00	0.09-0.11	0.0-2.9	1.0-3.0	.20	.20	2	8	0
	10-22	-67-	-23-	5-10- 15	1.35-1.50	14.00-42.00	0.09-0.12	0.0-2.9	0.5-1.0	.20	.28			
	22-26	—	—	—	—	—	—	—	—					
Rock outcrop	—	—	—	—	—	—	—	—	—					
Cryumbrepts, wet	—	—	—	—	—	—	—	—	—					
DEG— Deadwood-Rock outcrop-Hurlbut complex, 30 to 75 percent slopes														
Deadwood	0-3	-66-	-19-	10-15- 20	1.40-1.50	14.00-42.00	0.02-0.05	0.0-2.9	1.0-3.0	.15	.24	1	8	0
	3-13	-66-	-19-	10-15- 20	1.40-1.50	14.00-42.00	0.02-0.05	0.0-2.9	0.5-1.0	.15	.24			
	13-17	—	—	—	—	—	—	—	—					
Rock outcrop	0-4	—	—	—	—	—	—	—	—			1	8	0
Hurlbut	0-4	-40-	-38-	18-23- 27	1.00-1.25	4.00-14.00	0.12-0.14	0.0-2.9	1.0-3.0	.20	.37	2	8	0
	4-27	-22-	-55-	18-23- 27	1.20-1.40	4.00-14.00	0.10-0.15	0.0-2.9	0.5-1.0	.28	.37			
	27-31	—	—	—	—	—	—	—	—					

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Physical Soil Properties– Tahoe National Forest Area, California														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
HUG—Hurlbut-Deadwood-Rock outcrop complex, 30 to 75 percent slopes														
Hurlbut	0-4	-40-	-38-	18-23- 27	1.00-1.25	4.00-14.00	0.12-0.14	0.0-2.9	1.0-3.0	.20	.37	2	8	0
	4-22	-22-	-55-	18-23- 27	1.20-1.40	4.00-14.00	0.10-0.15	0.0-2.9	0.5-1.0	.28	.37			
	22-26	—	—	—	—	—	—	—	—					
Deadwood	0-1	-66-	-19-	10-15- 20	1.40-1.50	14.00-42.00	0.02-0.05	0.0-2.9	1.0-3.0	.15	.24	1	8	0
	1-16	-66-	-19-	10-15- 20	1.40-1.50	14.00-42.00	0.02-0.05	0.0-2.9	0.5-1.0	.15	.24			
	16-20	—	—	—	—	—	—	—	—					
Rock outcrop	0-4	—	—	—	—	—	—	—	—			1	8	0
MUE—Tahoma variant-Hotaw variant-Cryumbrepts, wet complex, 2 to 30 percent slopes														
Tahoma variant	0-14	-42-	-38-	15-20- 25	1.35-1.50	4.00-14.00	0.11-0.14	0.0-2.9	1.0-4.0	.20	.37	3	8	0
	14-48	-35-	-34-	27-31- 35	1.30-1.40	1.40-4.00	0.16-0.18	3.0-5.9	0.5-1.0	.32	.32			
	48-52	—	—	—	—	—	—	—	—					
Hotaw variant	0-4	-41-	-37-	18-22- 25	1.35-1.50	4.00-14.00	0.11-0.13	0.0-2.9	1.0-3.0	.24	.37	2	8	0
	4-38	-35-	-34-	27-31- 35	1.30-1.40	1.40-4.00	0.12-0.14	3.0-5.9	0.5-1.0	.24	.43			
	38-42	—	—	—	—	—	—	—	—					
Cryumbrepts, wet	—	—	—	—	—	—	—	—	—					

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ATTACHMENT D
Revised Sampling and Analysis Plan



**MINE WASTE CHARACTERIZATION
REVISED SAMPLING AND ANALYSIS PLAN
EAGLE BIRD MINE CLAIM GROUP
NEAR DOWNIEVILLE,
SIERRA COUNTY, CALIFORNIA**

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Project No. 6149A

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ATTACHMENTS

ATTACHMENT A

- Figure 1 Vicinity Map
- Figure 2 Site Map
- Figure 3 Claims Group Map with Proposed Solids and Water Sampling Locations

ATTACHMENT B

- Table 1 Threshold Limit Concentrations – Soils/Solids
- Table 2 Sample Containers Required for Soil & Water Testing, Preservation Methods & Hold Times
- Table 3 Parameters, Detection Limits, & Methods

ATTACHMENT C

- List of Acronyms and Abbreviations

**MINE WASTE CHARACTERIZATION
REVISED SAMPLING AND ANALYSIS PLAN
EAGLE BIRD MINE CLAIM GROUP
NEAR DOWNIEVILLE,
SIERRA COUNTY, CALIFORNIA**

1.0 INTRODUCTION

This site-specific Sampling and Analysis Plan (SAP) has been prepared for the Eagle Bird Mining Company, LLC's (Mining Company), Eagle Bird Mine Claim Group's (Claim Group) mining claims by Condor Earth Technologies, Inc. (Condor). The Claim Group is located east-southeast of the town of Downieville, Sierra County, California (Site) on the Tahoe National Forest (TNF). The Claim Group is shown on Figure 1 Vicinity Map (topography map), Figure 2 Site Map with approximate locations of claims, and Figure 3 Claims Group Map with proposed solids and water sampling locations.

The sampling is being performed in order to assess the potential environmental impacts from a potential gold mining operation onsite, which may result in waste discharge to land that is regulated under Title 27 of the California Code of Regulations (CCR). The details and scope of the potential mining operation have not yet been determined, and will depend upon the results of the mine waste characterization study described herein.

Submittal and prior approval of a Work Plan/SAP for the site is required by the California Regional Water Quality Control Board – Central Valley Region (RWQCB) as a component of the Waste Characterization Report, which must be included in the Report of Waste Discharge (ROWD).

2.0 PURPOSE OF THE SAMPLING AND ANALYSIS PLAN (SAP)

The SAP outlines the proposed field activities and describes the sampling locations shown on Figure 3, the types of materials to be sampled, the constituents to be tested, the details of the sampling and testing procedures and methodologies, and reporting. The SAP's purpose is to characterize existing mine waste for planning purposes and for review by the RWQCB. This will fulfill the requirement in CWC 13260(k) for a report on the physical and chemical characteristics of the waste and the Title 27 CCR requirements for waste characterization and management (Title 27 CCR Section 20200) of the potential discharge of mine waste to land.

The findings of this investigation are specifically intended to provide the following:

- The physical and chemical characterization of the waste materials and their potential to impact water quality pursuant to California Water Code (CWC) 13260(k);
- A technical report evaluating the current placement of tailings at the site, with regard to their potential for acid mine drainage (acidic leachate), pursuant to the RWQCB's *Designated Level Methodology for Waste Classification and Cleanup Level Determination* (DLM; 1989);
- Information about the proposed processing of mineral deposits, and the placement of tailings at the site with regard to their potential for leaching of heavy metals; and
- Information about the proposed mining operation and its potential for release of hazardous substances that includes waste classification pursuant to Title 27 CCR Section 22480.



3.0 SCOPE OF WORK

The Scope of Work for the proposed investigation is as follows:

- Collection of seven (7) samples of possible mining waste and soil/sediment materials will be obtained from the existing Site ponds, waste piles, and adits using hand tools such as a rock hammer, trowel, and shovel. No mechanized equipment will be used. Four of the samples will be two-part composite samples. The samples will be delivered to analytical laboratories under chain-of-custody documentation, crushed if deemed appropriate to pass the No. 10 sieve (2 millimeter) and analyzed. Analyses shall include acid-base accounting (ABA), paste pH, total metals, and if appropriate, extractable metals.
- Four (4) surface water samples will be obtained from the existing Site ponds and adits containing surface water, two of which will be collected as background samples for development of a ROWD. The surface water samples will be delivered to a California State-certified analytical laboratory under chain-of-custody documentation and analyzed for total and dissolved metals, cations and anions, and general water quality parameters.
- Laboratory data and site conditions will be evaluated in general accordance with the DLM.
- Findings will be summarized in a report of waste characterization, which will include classification pursuant to Title 27 CCR Section 22480 that will be submitted to the RWQCB.

4.0 BACKGROUND

The information for the Site background is based on the *Draft Report on The Eagle Bird Mine, Sierra County, California*, prepared by Paulsen Research & Development dated December 28, 1989 and on the following reports prepared by Milton C. Heaney, California Registered Geologist circa 1990s [if a date is available it will be in brackets]:

- *Preliminary Evaluation: Claims – Pedro, Pedro 1, Golden Slipper, Eagle Bird, Eagle Bird 1* report [1-15-94, hand-dated]
- *Patrick Claim (Powder Drift)* report [undated]
- *Elcy – Annex Claims* report [undated]

For additional information, please reference these reports. Other information came from Client documents (lease and survey information), interviews, and from topographic and geologic maps. Site Reconnaissance was performed before preparation of this SAP by Condor.

4.1 SITE DESCRIPTION, HISTORY, AND CURRENT CONDITIONS

Condor understands that portions of the Claim Group were operated intermittently since the late 1800s with moderate production occurring on the Claim Group since about the mid-1880s with the last active mining in 1969. The Eagle Bird Mine group is located in T19N, R11E, Sections 3, 4, & 9, MDBM. Access to the Claim Group was by Good Dozer Road from Henness Pass Road.

It was indicated in the 1989 report that there is an old mine camp, mill and principal mine workings of four mining claims at approximately 80 acres. The available PDF copy of the draft report contains hand written changes to the property description revising the number of mine claims to five, and the acreage to 100 acres. It is unknown which is correct. The claims are unpatented. Mine equipment at this claim included a mine car, track, air lines, small tools, drill steel, and a blacksmith shop. The mill used five 1,000# stamps with a crusher and feeder; there was a 25-hp gasoline engine inside the sheet iron covered mill building. The claim access was by USFS Road 98-5 through a locked steel gate at the entrance to the



Site. Several buildings located on the Site included the following: a 3-story corrugated metal mill building, which has recently collapsed; a small pump house; a 2-story wood with metal-roof house (4 bedroom, 1 bath); a shop building containing equipment such as a grinder and coal burning forge; a small shed; a collapsed trestle from the mill building to the shop building; an old 8x11 jaw crusher; a 5-stamp mill which has been removed from the lower floor of the mill building; and a D311 Caterpillar engine.

Additional information was available in the 1994 Eagle Bird Group report for Robert W. Bailey – Dorothy Wilder Trust. It was a Preliminary Evaluation for the Pedro, Pedro 1, Golden Slipper, Eagle Bird, and Eagle Bird 1 claims; however, it only discussed the Eagle Bird and Eagle Bird 1 claims. Eight lode claims and one mill site were indicated with a number of springs on these claims; one large spring had supplied water to a Pelton wheel for electric generation. The claim elevations were noted as varying from 5,500 to 6,500 feet above mean sea level (amsl).

The Patrick Claim report indicated that a notice of intent (NOI) to patent was filed with the US Bureau of Land Management (BLM) by Mrs. Dorothy Wilder and Mr. Robert W. Bailey and that all mineral survey monuments were in place. Field examinations were performed in 1992 and 1993. The claim has a moderate slope at an elevation of approximately 5,800 to 6,000 feet. Several nearby springs would be used to supply adequate water for milling operations. The owners had purchased mill equipment for the Eagle Bird group and had planned on adding other equipment before construction, possibly starting in spring 1994.

The Elcy – Annex Claims report indicated that the claim overlaps part of Golden Slipper claim and it included two lode claims and the Dorothy Mill site claim. An NOI to patent had also been filed. Early miners had excavated surface areas and a three-stamp gravity mill was eventually set up, but has since been removed. A creek with minor amounts of water was located south of the claim portals and several nearby springs could supply adequate water. The mineral survey monuments were in place and the claims rise steeply west and east from the creek area. The Dorothy Mill is located on the eastern slope on the eastern boundary of the Annex.

Other information indicated that Mr. Robert W. Bailey is the 2010 owner of nine claims and one mill site. A Mineral Survey was performed in 1992 and 1993 for Dorothy Wilder & Mr. Robert W. Bailey on the Eagle Bird, Eagle Bird 1, Golden Slipper, Pedro, Pedro 1, Annex, Patrick, Elcy lodes, and Dorothy Mill site located in T19N, R11E, S 3, 4, and nine MDBM. It was not indicated whether someone had been living on the claim and/or mining intermittently since 1969.

Other than the above mentioned documents, Condor knows of no other Site Assessment.

4.2 PHYSICAL SETTING

The site is situated within the Sierra Nevada physiographic province, in the Sierra Nevada mountain range. The *Sierra City, CA 7.5 minute [1:24,000] Quadrangle 1981* indicates the Site is at an elevation of approximately 5,795 feet amsl and is east of Shannon Ravine (approximately 1,200 feet northwest of the Site), north of Granite Mountain (elevation 6,482), and west of an unnamed Spring (elevation 6,469); Downieville is approximately 9 miles northwest of the Site. Land between the Site and Shannon Ravine slopes steeply west towards the ravine drainage at gradients sometimes steeper than 30 percent; the Shannon Ravine drains into Jim Crow Creek. The steepness of the Claim Group is unknown.



The nearest drainage (according to the topographic map) is an unnamed drainage located approximately 800 feet southwest of the Claim Group. The unnamed drainage flows southwest into Carney Creek that drains into the northwest flowing Jim Crow Creek, which drains into the western flowing North Yuba River at an elevation of approximately 3,120 feet amsl. Carney Creek drains off of the western face of Granite Mountain. The depth-to-groundwater is unknown and some drainage is suspected from some of the Claim Group's adit portals.

Condor reviewed the regional geology depicted on the Geologic Map of the Chico Quadrangle, California [Department of Conservation, Division of Mines and Geology (DMG), 1992]. Referencing the map, the Site is located approximately 4.5 miles east of the north-south trending Melones Fault Zone, approximately 2.0 miles south of a north-south trending unnamed thrust fault, and approximately 5.0 miles west from a northwest-southeast trending unnamed thrust fault. The geology of the Site location is mapped as being the Bowman Lake Batholith – granite/grandiorite rocks near the contact of the Paleozoic Shoo Fly Complex (indicated as greenstone).

4.3 POTENTIAL MINING OPERATIONS

Sierra County regulates surface mining operations in the County under the California SMARA. The County's Mining Ordinance (Title 33), as well as SMARA, defines surface mining to include "surface work incidental to an underground mine," including roads, onsite storage of equipment, structures, stockpiling of materials, ore processing, etc. Once surface disturbance at a surface or underground mine site exceeds either 1 acre or 1,000 cubic yards, the operation triggers SMARA. The current mine operator becomes legally and financially responsible for all site remediation and reclamation requirements under SMARA, even if the surface disturbance was created prior to the operator's involvement.

The Eagle Bird Mine claims are considered unpatented, and are located entirely on National Forest Service lands within the TNF, administered by the Yuba River Ranger District. The USFS regulates surface and underground mining operations in accordance with Forest Service Manual (FSM) 2810 – Mining Claims and the Code of Federal Regulations, 36 CFR Part 228 *Clarification as to When a Notice of Intent To Operate and/or Plan of Operation Is Needed for Locatable Mineral Operations on National Forest System Land* (adopted June 6, 2005). The USFS coordinates closely with the RWQCB. The RWQCB regulates mining activity to protect quality of surface and/or underground waters pursuant to the federal Clean Water Act of 1972 (CWA) and the state's Porter-Cologne Water Quality Control Act.

Final permitting requirements can only be definitively determined once a final project description and plan of operations has been developed for the Claim Group. Plans for the potential mining activities will be developed based on the results of the characterization proposed in this document.

5.0 SITE ACCESS

The site is accessed via USFS paved and unpaved roads (Figures 1 and 2). Vehicular access to all portions of the site is limited. Key locks are present on the site access gate and other site buildings. The keys are to be provided by the USFS and/or the owner(s) to the gate padlock and by the owner, if necessary, to the buildings.

6.0 GENERAL SAMPLING AND ANALYSES PROCEDURES AND ACTIVITIES

There are several claims located within the Eagle Bird Claim group. With each claim are associated adits, waste piles, etc.; there are surface ponds on Site also. The following Sections describe the general field and laboratory procedures for sampling at the Site.



6.1 FIELD EQUIPMENT AND SUPPLIES

The required soils/solids and surface water sampling equipment includes the following:

- First aid and safety equipment
- Hard hat & lamp
- pH buffer and conductivity solutions kits
- Boots
- Disposable nitrile rubber gloves
- GPS unit, camera, & extra batteries
- Ballpoint pen for field forms and permanent marker pen for labels
- Field Forms & notebook
- Chain-of-Custody Forms
- Portable water level meter with engineer's tape measure
- Field analytical equipment/water quality equipment such as pH & conductivity meters (with spare)
- Filters
- Sampling pole (with disposable bailer, or equivalent)
- Pick & shovel
- Stainless and disposable scoops/spoons
- Buckets/bottles & brushes for decontamination
- Deionized water
- Non-phosphate detergent
- Paper towels & wipes
- Laboratory supplied sample containers
- Sample labels
- Intermediate sample containers
- Transfer containers and/or beakers
- Tape measure
- Waste container
- Several large ice chests with Blue Ice®

6.2 RECORD KEEPING

Sampling activities are to be documented on a data sheet or notebook using indelible ink. If any changes are made to the record, the original notation will be crossed out with a single line and initialed. The following observations are to be recorded:

- Sample identification number and location
- Date and time of sampling
- Persons performing sampling
- Unusual sample conditions
- Field or sample conditions that may affect the sample quality

Photographs are to be taken of each sample location and the sample locations are to be recorded on a map, such as an aerial site photograph.

6.3 FIELD QA/QC PROCEDURES

No equipment rinsate samples will be obtained, as single-use containers and equipment are to be used for sample collection. No field duplicate samples or blank samples are proposed.



Field parameters will be collected using water quality field instruments equipped with sensors to monitor temperature, specific conductivity (EC), pH/oxidation-reduction potential (ORP), dissolved oxygen (DO), and total dissolved solids (TDS) for all water samples. Turbidity will also be measured. Prior to each sampling event, the field meters will be calibrated as recommended by the manufacturers; calibration methods and records are to be kept with each meter.

All field analytical equipment will be decontaminated using non-phosphate detergent and double rinsed with deionized water between sample locations in order to protect from cross contamination. As necessary, contact between samples and any foreign matter, including the sampler's hands, must be avoided. A new pair of gloves must be used at the time of actual sample collection. Personnel involved in sample processing and decontamination are to wear sterile, disposable, non-powdered gloves such as nitrile gloves. New gloves are to be worn at each sampling location. Gloves are to be discarded and replaced during sampling whenever glove cleanliness may have been compromised.

6.4 THRESHOLD LIMIT CONCENTRATIONS

Table 1 indicates the California Department of Health Services (DHS) Title 22 Total Threshold Limit Concentrations (TTLCs) and Soluble Threshold Limit Concentrations (STLCs) for inorganics (metals) to be assessed in waste material (soils/solids). The table also lists the corresponding analytical methods and target method detection levels (MDLs), which are discussed later in this plan.

The Target MDLs in Table 1, for extractable metals, may not be achievable for all samples, particularly if a citrate extractant solution is used for the Title 22 Waste Extraction Test (WET). The type of extractant solution (citrate, deionized water, or deionized water adjusted to the local rainwater pH) will be determined per the DLM based on ABA results.

6.5 DATA VALIDATION

Results of the data validation procedures are to be presented in the characterization report. Based on the results of these procedures, the data are to be qualified or accepted without qualification. The data validation includes the following:

- Comparison of total and dissolved concentrations for the water sample
- Verification that sample hold times are not exceeded
- Review of laboratory quality control reports

7.0 SAMPLING AND ANALYSIS

The number of solid and water samples were discussed at the site reconnaissance meeting held on August 10, 2011, and determined based on the number of adits and ponds on the Site. Solid samples of waste material will be obtained from the Site using hand tools. Sample locations will be confirmed in the field in consultation with a representative of the RWQCB. The collection of two upgradient background water samples (3W and 4W) is proposed. The background samples, which may not be representative of subsurface mineralized zones, will be collected for the purpose of developing a ROWD, should it be determined the project continue into the design phase. Figure 3 shows the approximate solid and surface water sample locations. Table 3 lists the analyses to be performed for solid and surface water samples.



Solids

Solid samples are to be collected with a decontaminated stainless steel trowel or a new disposable scoop. Decontaminated equipment (e.g. mining tools, shovel or pick) may be used to facilitate sample collection. No mechanized equipment will be used. Samples are to be placed in laboratory-supplied glass jars or new, resealable freezer-type plastic storage bags. Samples are to be immediately labeled according to the location, date, time of collection, and placed on Blue Ice[®] in a clean, thermally-insulated container.

Non-disposable sampling equipment that is to be used for more than one sample location is to be decontaminated between sample locations. For the collection of soil samples, decontamination may include the use of paper towels and pre-moistened fabric wipes to remove visible soil from the sampling equipment. Disposable equipment and supplies are to be placed in a plastic bag and disposed of properly at an offsite location.

Soil samples are to be pulverized at the laboratory, if determined appropriate based on consultation with the RWQCB representative, to 2 millimeter particle size at the laboratory prior to analysis. Pulverized samples will be tested for acid-base accounting (ABA) and Paste pH testing as well as analyzed for total and extractable Title 22 metals.

Surface Water

Measurement of temperature, EC, pH and turbidity will be taken in the field at the time of surface water sampling from a separate bottle of unfiltered sample. The surface water flow rate exiting the #2 adit on the Eagle Bird claim will be estimated at the time of surface water sampling. Grab surface water samples will be collected in laboratory-supplied polyethylene containers from the surface ponds and possible flooded adits, if deemed necessary, based on consultation with the RWQCB representative. Sediment is not to be disturbed prior to surface water sample collection.

Water samples for unfiltered (total recoverable) analysis will be collected directly into the sample containers provided by the laboratory. Samples for filtered (dissolved) analysis will be filtered at the laboratory, unless otherwise directed by the RWQCB representative. The chain-of-custody form shall be clearly marked to direct the selected state-certified laboratory to immediately filter and/or preserve the samples upon arrival. Surface water samples will be delivered to the analytical laboratory under chain-of-custody documentation and analyzed for total and dissolved metals, cations and anions, and general water quality parameters.

All samples are to be hand-delivered or shipped to the analytical laboratory under chain-of-custody documentation. All sample containers will be labeled immediately after sample collection with location, date and time of collection. The water samples will be kept chilled to approximately 4°C in ice chests with Blue Ice[®]. Samples are to be hand-delivered or shipped, under chain-of-custody procedures, to the analytical laboratories within the designated hold time. The samples will be analyzed using US EPA Methods and California-approved methods under the quality assurance/quality control measures specified for those methods. Table 2 specifies sample containers, preservatives, and hold times. Table 3 summarizes the analytes, methods, and target MDLs. As cited in the RWQCB's Tech Note, Mining Waste Characterization, the laboratory test methods and detection limits are based on the RWQCB criterion quantitation limits pursuant to the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (2005).



7.2 REPORTS

The report of waste characterization and analysis will present the following information:

- Discussion and summary of the field sample collection activities
- Discussion and tabular summary of laboratory results for ABA
- Discussion and tabular summary of laboratory results for TTLC and STLC metals
- Discussion and tabular summary of laboratory results for surface water
- Classification of the mining waste in accordance with Title 27 CCR Section 22480

Based on the investigation findings, the report will describe the following:

- The physical and chemical characterization of the materials currently on Site and to be mined and their potential to impact water quality;
- The processing of ore and the placement of waste rock and tailings at the Site, with regard to their potential for acid mine drainage;
- The processing of ore and the placement of waste rock and tailing at the Site, with regard to their potential for leaching of heavy metals; and
- The proposed mining operation and its potential for release of hazardous organic substances.

The waste characterization reports will be prepared for submittal to the RWQCB. The report submittal will include a transmittal letter, discussion of results, field activity sheets, photographs, and laboratory analytical data. Three copies of the report will be provided to the Mining Company (Client).

8.0 LIMITATIONS AND CERTIFICATION

The Client will be responsible for submission of all required reports to the RWQCB.

Condor developed the interpretations and conclusions, presented herein, in accordance with generally accepted principles and practice at the time the work was performed.

Condor has endeavored to determine as much as practical about the Site using conventional practices given our scope of services. If any changes are made or errors found in the information used for this plan, the changes shall not be considered valid unless the changes or errors are reviewed by Condor and either appropriately modified or re-approved in writing.

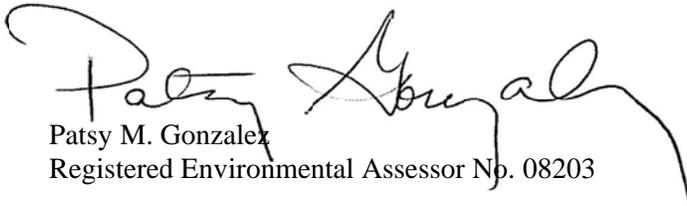
Regulations and professional standards applicable to Condor's services are continually evolving. Techniques are, by necessity, often new and relatively untried. Different professionals may reasonably adopt different approaches to similar problems. Therefore, no warranty or guarantee, expressed or implied, will be included in Condor's scope of service.



The review and preparation of this SAP has been done by, or under the direct supervision of John H. Kramer, a Certified Engineering Geologist registered in the State of California. All results are true and correct to the best of his knowledge. This SAP has been prepared at the request of the Eagle Bird Mining Company, LLC. The contents of the report may not be used or relied upon by any other person(s) without the express written consent and authorization of the Eagle Bird Mining Company, LLC and Condor Earth Technologies, Inc.

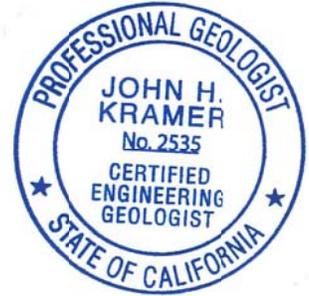
Respectfully submitted,

CONDOR EARTH TECHNOLOGIES, INC.

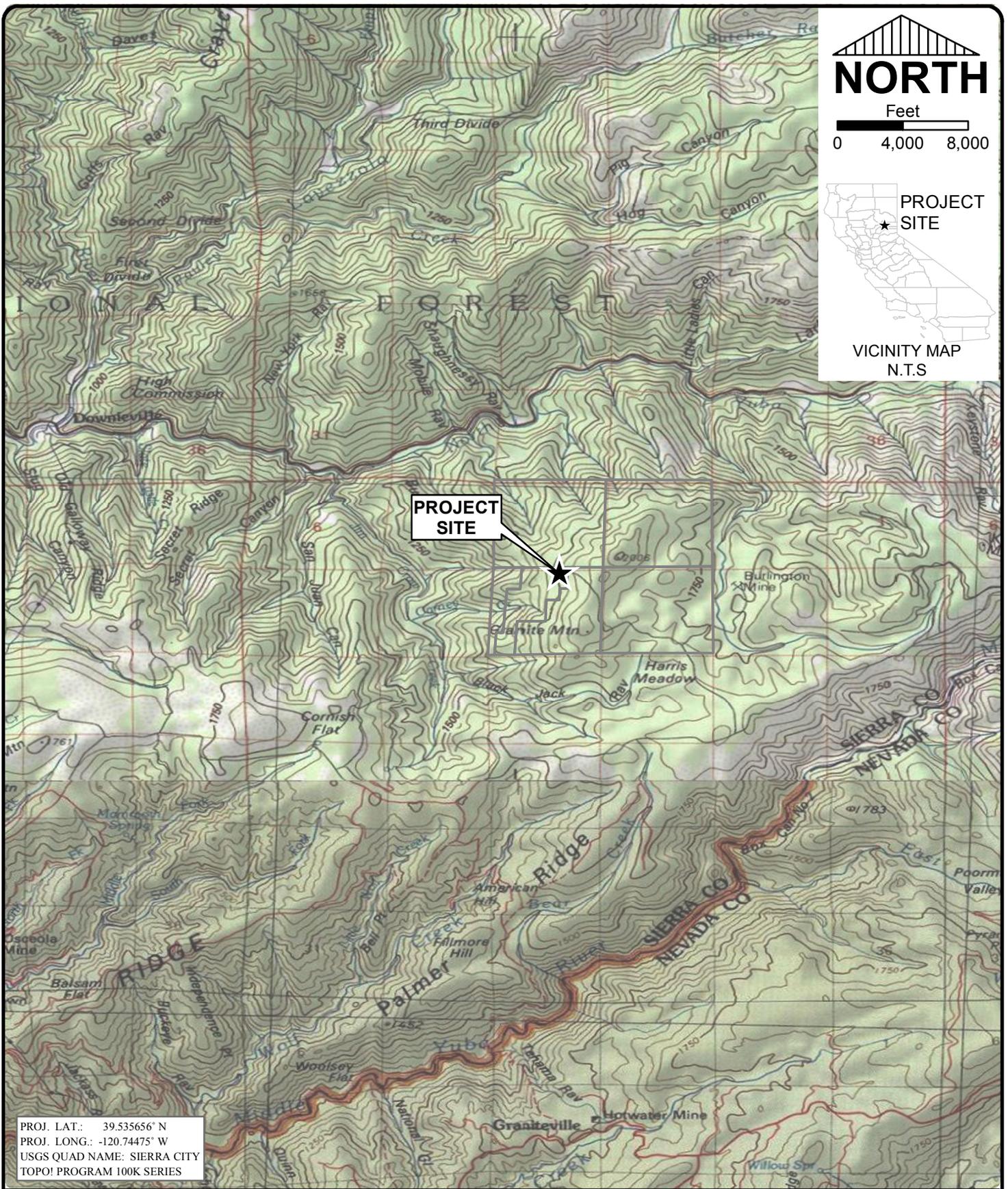

Patsy M. Gonzalez
Registered Environmental Assessor No. 08203


John H. Kramer, PhD
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CA Certified Hydrogeologist No. 182

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ATTACHMENT A
Figures



NORTH
 Feet
 0 4,000 8,000

PROJECT SITE
 VICINITY MAP
 N.T.S

PROJECT SITE

PROJ. LAT.: 39.535656° N
 PROJ. LONG.: -120.74475° W
 USGS QUAD NAME: SIERRA CITY
 TOPO! PROGRAM 100K SERIES

CONDOR EARTH TECHNOLOGIES, INC.
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Job No.
6149A
 Published Date
05 AUG. 2011
 Scale
AS SHOWN
 Drawn
JDM / Chk'd
PG

VICINITY MAP
SAMPLING AND ANALYSIS PLAN
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA

FIGURE
1
 File No.
 6149_VICINITY_F1



NORTH

Feet



PROJECT
SITE

VICINITY MAP
N.T.S

**PROJECT
SITE**

Legend

- CLAIM GROUP BOUNDARY
- ASSESSOR BOUNDARIES

PROJECTION:
CA STATEPLANE ZII US FT. NAD 83

PROJ. LAT.: 39.535656° N
PROJ. LONG.: -120.74475° W
USGS QUAD NAME: SIERRA CITY
(NAIP AERIAL - MrSID 2010)



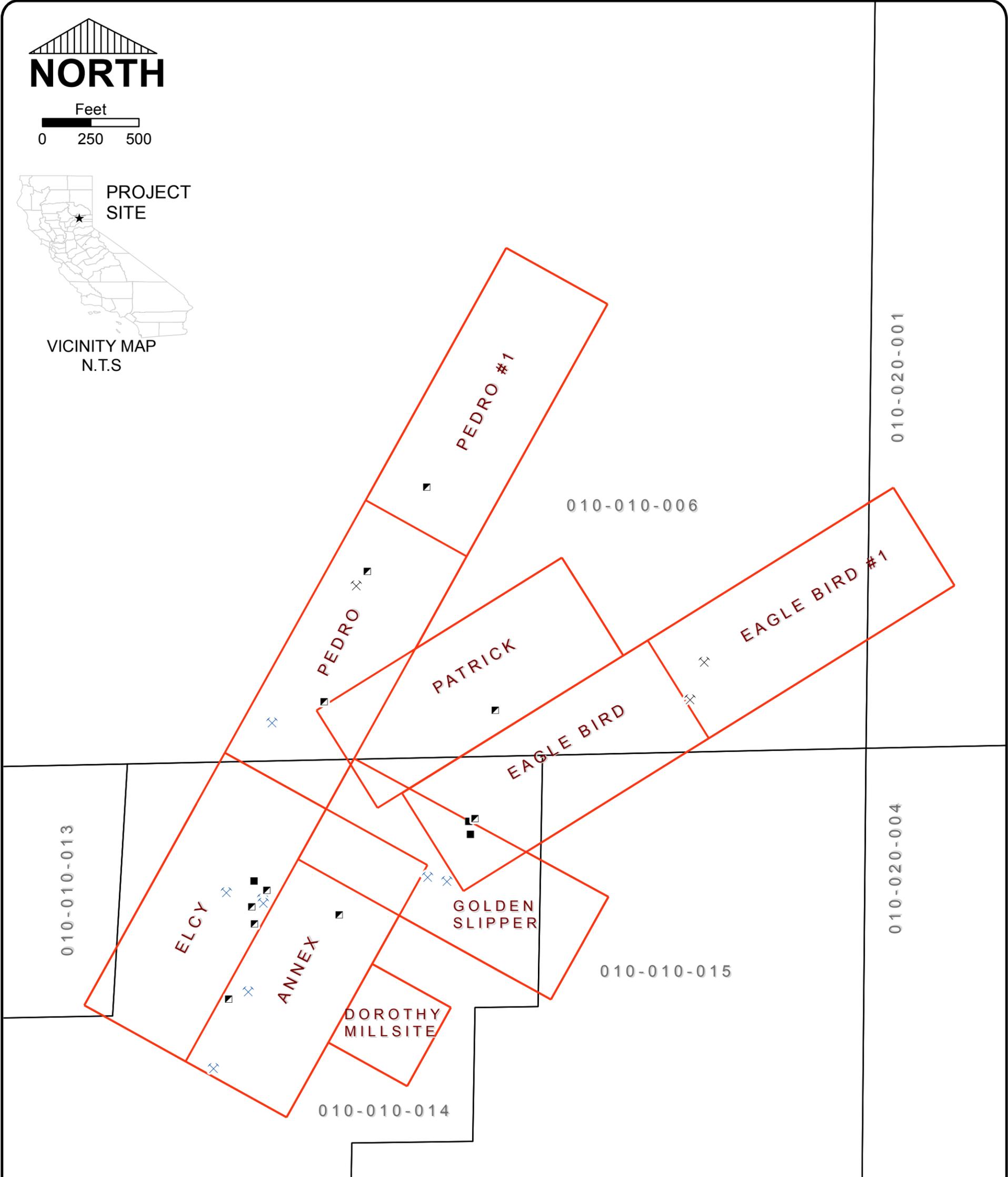
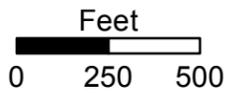
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Published Date	05 AUG. 2011
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Drawn	JDM
Chk'd	PG

SITE MAP
SAMPLING AND ANALYSIS PLAN
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA

FIGURE
2

File No.
6149_SITE_F2



Legend

- CLAIMS BOUNDARIES
- ASSESSOR BOUNDARIES
- ADIT
- CUT
- PIT
- STRUCTURE

PROJ. LAT.: 39.535656° N
 PROJ. LONG.: -120.74475° W
 USGS QUAD NAME: SIERRA CITY

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	Job No. 6149A	Published Data 05 AUG. 2011
	Scale AS SHOWN	Drawn JDM
	Chk'd PG	

**CLAIMS GROUP MAP
 SAMPLING AND ANALYSIS PLAN
 EAGLE BIRD MINING COMPANY, LLC
 NEAR DOWNIEVILLE, SIERRA COUNTY, CA**

**FIGURE
3**

File No.
6149_CLAIMS_F3

ATTACHMENT B
Tables

TABLE 1

Threshold Limit Concentrations - Soils/Solids

Parameter		Method	TTLC (mg/kg)	Target MDL (mg/kg)	STLC (mg/L)	Target MDL (mg/L)
Metals, total						
Antimony	Sb	EPA 6010B	500	5.0	15	0.0002
Arsenic	As	EPA 6010B	500	1.0	5	0.0005
Barium	Ba	EPA 6010B	10,000	0.50	100	0.0001
Beryllium	Be	EPA 6010B	10,000	0.50	0.75	0.0001
Cadmium	Cd	EPA 6010B	100	0.50	1	0.0001
Chromium (III/VI)	Cr	EPA 6010B	2,500/500	0.50	560/5	0.00005
Cobalt	Co	EPA 6010B	2,500	2.5	80	0.00005
Copper	Cu	EPA 6010B	18,000	1.0	25	0.0005
Lead	Pb	EPA 6010B	1,000	2.5	5	0.0001
Mercury	Hg	EPA 7471A	20	0.16	0.2	0.0002
Molybdenum	Mo	EPA 6010	3,500	2.5	350	0.0001
Nickel	Ni	EPA 6011	2,000	0.50	20	0.0002
Selenium	Se	EPA 6012	100	1.0	1	0.0015
Silver	Ag	EPA 6013	500	0.50	5	0.00005
Thallium	Tl	EPA 6014	700	5.0	7	0.00005
Vanadium	V	EPA 6015	2,400	0.50	24	0.00005
Zinc	Zn	EPA 6010B	5,000	2.5	250	0.002

EPA = US Environmental Protection Agency
 MDL = method detection limit
 mg/kg = milligrams per kilogram
 STLC = Soluble Threshold Limit Concentrations
 TTLC = Total Threshold Limit Concentrations

TABLE 2
Sample Containers Required for Soil & Water
Preservation Methods & Hold Times
Eagle Bird Claim Group

Parameter	Sample Container	Filtration/Preservation	Hold Times
Laboratory Analysis			
<i>Water</i>			
Total metals	1000 mL polyethylene	unfiltered, nitric acid, 4°C	180 days (THg 28 d)
Dissolved metals	1000 mL polyethylene	filtered, nitric acid, 4°C	180 days (THg 48 h)
Major ions	1000 mL polyethylene	filtered, unpreserved	28 days
Alkalinity	1000 mL polyethylene	unfiltered, unpreserved, 4°C	14 days
<i>Soils/Solids</i>			
Metals	plastic or glass	unpreserved, 4°C	180 days
Mercury	plastic or glass	unpreserved, 4°C	28 days
*ABA	plastic or glass	unpreserved, 4°C	180 days
Paste pH	plastic or glass	unpreserved, 4°C	180 days
Field Analysis			
pH, conductivity, & temperature	polyethylene	unfiltered, unpreserved	analyze during time of sample collection

mL = milliliter

*ABA = Acid-base Accounting, Modified Sobek Method

TABLE 3

Parameters, Detection Limits, & Methods

Parameters		Target MDL	Tests Method
SOIL/SOLID		mg/kg	
Acid-base Accounting Modified Sobek Method			
Paste pH		na	USDA No. 60 (21a)
ANP		na	EPA 600 (CaCO3 Eqiv/Trtation)
AGP		na	LECO Combustion IR
Non-extractable Sulfur, S		na	LECO Combustion IR
Pyritic Sulfur, S		na	LECO Combustion IR
Sulfate Sulfur, S (HCl extractable)		na	LECO Combustion IR
Total Sulfur, S		na	LECO Combustion IR
Metals, total		mg/kg	
Antimony	Sb	2	EPA 6010B
Arsenic	As	2.5	EPA 6010B
Barium	Ba	0.2	EPA 6010B
Beryllium	Be	0.2	EPA 6010B
Cadmium	Cd	0.2	EPA 6010B
Chromium	Cr	0.6	EPA 6010B
Cobalt	Co	0.6	EPA 6010B
Copper	Cu	1	EPA 6010B
Lead	Pb	0.75	EPA 6010B
Mercury	Hg	0.02	EPA 7471A
Molybdenum	Mo	0.8	EPA 6010B
Nickel	Ni	1	EPA 6010B
Selenium	Se	4	EPA 6010B
Silver	Ag	0.5	EPA 6010B
Thallium	Tl	1.5	EPA 6010B
Vanadium	V	0.5	EPA 6010B
Zinc	Zn	1	EPA 6010B
Metals, extractable		mg/L	
Antimony	Sb	0.0004	WET/EPA 6020/EPA 3050b/EPA 6010
Arsenic	As	0.00054	WET/EPA 6020/EPA 3050b/EPA 6010
Barium	Ba	0.0003	WET/EPA 6020/EPA 3050b/EPA 6010
Beryllium	Be	0.0002	WET/EPA 6020/EPA 3050b/EPA 6010
Cadmium	Cd	0.0002	WET/EPA 6020/EPA 3050b/EPA 6010
Chromium	Cr	0.0004	WET/EPA 6020/EPA 3050b/EPA 6010
Cobalt	Co	0.0005	WET/EPA 6020/EPA 3050b/EPA 6010
Copper	Cu	0.003	WET/EPA 6020/EPA 3050b/EPA 6010
Lead	Pb	0.0001	WET/EPA 6020/EPA 3050b/EPA 6010
Mercury	Hg	0.0002	WET/EPA 3050b/EPA 7470
Molybdenum	Mo	0.0001	WET/EPA 6020/EPA 3050b/EPA 6010
Nickel	Ni	0.002	WET/EPA 6020/EPA 3050b/EPA 6010
Selenium	Se	0.0015	WET/EPA 6020/EPA 3050b/EPA 6010
Silver	Ag	0.0007	WET/EPA 6020/EPA 3050b/EPA 6010
Thallium	Tl	0.0001	WET/EPA 6020/EPA 3050b/EPA 6010
Vanadium	V	0.0004	WET/EPA 6020/EPA 3050b/EPA 6010
Zinc	Zn	0.002	WET/EPA 6020/EPA 3050b/EPA 6010

TABLE 3

WATER		mg/L (unless otherwise indicated)	
General Parameters			
pH	pH	0.1 SU	M150.1
Conductivity		1 µmho/cm	M120.1
Total dissolved solids	TDS	10	M160.2
Total suspended solids	TSS	10	M160.2
Hardness (Dissolved)		5	Calculated
Metals			
Antimony, t&d	Sb	0.0004	EPA 200.8
Arsenic, t recoverable & d	As	0.00054	EPA 200.8
Barium, t&d	Ba	0.0003	EPA 200.8
Beryllium	Be	0.0002	EPA 200.8
Cadmium, t&d	Cd	0.0002	EPA 200.8
Chromium, t&d	Cr	0.0004	EPA 200.8
Cobalt, t&d	Co	0.0005	EPA 200.8
Copper, t&d	Cu	0.003	EPA 200.8
Iron	Fe	0.02	EPA 200.7
Lead, t&d	Pb	0.0001	EPA 200.8
Manganese	Mn	0.005	EPA 200.8
Mercury, t&d	Hg	0.0002	M245.1
Molybdenum	Mo	0.0001	EPA 200.8
Nickel, t&d	Ni	0.002	EPA 200.8
Silver, t&d	Ag	0.0007	EPA 200.8
Thallium, t&d	Tl	0.0001	EPA 200.8
Vanadium, t&d	V	0.0004	EPA 200.8
Zinc, t&d	Zn	0.002	EPA 200.8
Cations & Anions			
Calcium, d	Ca	0.2	EPA 200.7 ICP
Magnesium, d	Mg	0.2	EPA 200.7 ICP
Sodium, d	Na	0.3	EPA 200.7 ICP
Potassium, d	K	0.3	EPA 200.7 ICP
Chloride, d	Cl	1	EPA 300.0
Bicarbonate, d		2	SM2320B-Titrametric
Carbonate, d		2	SM2320B-Titrametric
Total alkalinity, d		0.2	SM2320B-Titrametric
Nitrate/nitrite (as N), d		0.02	EPA 353.2
Silica, d		0.2	EPA 200.7 ICP
Sulfate, d		10	M300.0

- AGP = acid generation potential
- ANP = acid neutralization potential
- EPA = US Environmental Protection Agency
- HCl = hydrochloric acid
- MDL = method detection limit
- mg/kg = milligrams per kilogram
- mg/L = milligrams per liter
- Mxxx = modified method
- t&d = total & dissolved
- WET = waste extraction test using citrate or DI extractant as determi

ATTACHMENT C
List of Acronyms and Abbreviations



ACRONYMS AND ABBREVIATIONS

ABA	Acid-base accounting
AGP	Acid generation potential
amsl	Above mean sea level
ANP	Acid neutralization potential
BLM	US Bureau of Land Management
CCR	California Code of Regulations
CFR	Code of Federal Regulations
Condor	Condor Earth Technologies, Inc.
CWA	US Clean Water Act
DHS	California Department of Health Services
DI-WET	Title 22 Waste Extraction Test – deionized water
DLM	The Designated Level Methodology (1989)
DO	Dissolved oxygen
EC	Electrical conductivity
EPA	Environmental Protection Agency (Federal)
FSM	Forest Service Manual
MDBM	Mount Diablo Base and Meridian
MDL	Method detection limit
mg/kg	Milligram per kilogram
mg/L	Milligram per liter
mi	Miles
NOI	Notice of Intent
RL	Reporting limit
ROWD	Report of Waste Discharge
RWQCB	Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SMARA	CA Surface Mining and Reclamation Act
STLC	Soluble Threshold Concentration Limit
TDS	Total dissolved solids
TNF	Tahoe National Forest
TTLC	Total Threshold Concentration Limit
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
WET	Title 22 Waste Extraction Test (citrate buffer)

ATTACHMENT E
Geosynthetic Material Properties





STRING REINFORCED POLYETHYLENE SRP 20BB & SRP 30BB

Properties	Test Method	SRP 20BB	SRP 30BB
Appearance		Black/Black	Black/Black
Weight Per MSF (lbs)		76	140
Thickness (Nominal)		20 mil	30 mil
Elongation @ Max Load % Diagonal A Diagonal B	ASTM D7003	809% 697%	726% 748%
Grab Tensile (lbs) Diagonal A Diagonal B	ASTM D7004	159 160	220 220
Trapezoidal Tear (lbs) Diagonal A Diagonal B	ASTM D4533	76 72	144 146
Hydrostatic Resistance	ASTM D751, Procedure A	177 psi	142 psi

Note: Test results were compiled by an independent laboratory. Results listed are the mean results of these tests.

ATTACHMENT F
Settling Pond Water Balance Factors
Water Balance Projections
Eagle Bird Retention Pond Water Balance



Table: Settling Pond Daily Water Balance

Assumptions:

- 1) South Settling Pond is used for mill water re-circulation.
- 2) South Settling Pond is full of water in the spring at the start of mining/processing due to snow melt and year around drainage from the Eagle Bird #2 adit.
- 3) Fifteen percent moisture loss to tailings in metamorphic rock, Volume of Tailings = 20.5 ft³/ton
Density of Tailings = 97.6 lb/ft³

South Pond Storage Capacity:

Dimension LxWxD, ft.			Capacity, ft ³	Capacity, gal
70	15	8	8,400	62,800

Table: Water Balance Projections

On Sept. 1, 2011 water flow from the Eagle Bird #2 adit was measured at 12 gpm. During the August site visit three weeks earlier the flow was visually higher. Assume average flow during mid May to mid October operating period is 15 gpm.

Water Production	15 gpm	Total Water Supply	gal/day 21,600
------------------	--------	--------------------	-------------------

Water Demand:

Ball Mill:

Production rate:	4-6 tons per hour		
Water consumption:	10 gpm	Average Water Demand based on 40 tons/10 hr dy production rate:	6,000

Primary Concentrator: 16" Horizontal Centrifuge

Production rate:	15 tons per hour (¼" minus recommend for peak production)		
Water consumption:	150 - 200 gpm (based on typical water/material ratio of 4:1 and 6:1)	Average Water Demand based on 40 tons/10 hr dy production rate:	28,000

Secondary Concentrator: 16" Reverse Multi-Helix Spiral Cleaner

Production rate:	1-2 tons/hour (dry weight, ¼" minus recommend for peak production)		
Water consumption:	clean water / 15-20 gpm @ 30-40 psi	Average Water Demand based on 10% of maximum production rate:	10,500
Total Water Demand			44,500

Water Losses

<u>Operating Period</u>	<u>6</u>	<u>months (mid May - mid October)</u>		
Percolation: assume	5.0%	/dy		
Evaporation	35	in.		
South Settling Pond			Percolation	3,140
			Evaporation	126

Moisture loss to tailings:	15%			
	Production Rate, t/dy	Volume of tailings, ft ³	Moisture Loss, ft ³ /dy	
	40	820	123	920
Mill dust control and road dust control use.				4,000
Mine drilling water use: 6 hrs/day @ 10 gpm				3,600

Total Water Losses			11,786
Remaining water use in mill is re-circulated back to the settling pond after filtering or screening.			
Excess Supply (Demand)			9,814

Table: Water Balance Projections

Day	1 - 140	141	142	143	144	145	146	147	148	149	150	151	152
storage	62,800	62,800	57,176	51,552	45,928	40,304	34,680	29,056	23,432	17,808	12,184	6,560	936
demand	44,500	44,500	44,500	44,500	44,500	44,500	44,500	44,500	44,500	44,500	44,500	44,500	44,500
loss	13,224	13,224	13,224	13,224	13,224	13,224	13,224	13,224	13,224	13,224	13,224	13,224	13,224
supply available	21,600	21,600	21,600	21,600	21,600	21,600	21,600	21,600	21,600	21,600	21,600	21,600	21,600
supply used	13,224	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600	7,600
excess	8,376	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000

all units in gallons per day

Table: Eagle Bird Retention Pond Water Balance

Day	Inflow, gal	Storage Volume, gal	Freeboard	Action
1	9,800	9,800	7.2	
2	9,800	19,600	6.3	sample
3	9,800	29,400	5.5	
4	9,800	29,200	5.5	discharge 10,000 gal
5	9,800	29,000	5.5	discharge 10,000 gal
6	9,800	38,800	4.7	
7	9,800	48,600	3.9	sample
8	9,800	58,400	5.5	
9	9,800	58,200	3.1	discharge 10,000 gal
10	9,800	58,000	3.1	discharge 10,000 gal
11	9,800	57,800	3.1	discharge 10,000 gal
12	9,800	57,600	3.1	discharge 10,000 gal
13	9,800	57,400	3.1	discharge 10,000 gal
14	9,800	67,200	2.3	sample
15	9,800	67,000	2.3	discharge 10,000 gal
16	9,800	66,800	2.3	discharge 10,000 gal
17	9,800	66,600	2.3	discharge 10,000 gal
18	9,800	66,400	2.4	discharge 10,000 gal
19	9,800	66,200	2.4	discharge 10,000 gal
20	9,800	66,000	2.4	discharge 10,000 gal
21	9,800	65,800	2.4	sample/ discharge
22	9,800	65,600	2.4	discharge 10,000 gal
23	9,800	65,400	2.4	discharge 10,000 gal
24	9,800	65,200	2.5	discharge 10,000 gal
25	9,800	65,000	2.5	discharge 10,000 gal
26	9,800	64,800	2.5	discharge 10,000 gal
27	9,800	64,600	2.5	discharge 10,000 gal
28	9,800	64,400	2.5	sample/ discharge
29	9,800	64,200	2.6	discharge 10,000 gal
30	9,800	64,000	2.6	sample/ discharge
31	9,800	63,800	2.6	discharge 10,000 gal

ATTACHMENT G
Draft Notice of Intent to Discharge Stormwater





State Water Resources Control Board

To: STORM WATER DISCHARGER

SUBJECT: CHECKLIST FOR SUBMITTING A NOTICE OF INTENT

In order for the State Water Resources Control Board to expeditiously process your Notice of Intent (NOI), the following items must be submitted to either of the addresses indicated below:

- 1. X NOI (please keep a copy for your files) with all applicable sections completed and original signature of the facility operator;
- 2. X Check made out to the "State Water Resources Control Board" with the appropriate fee. The total annual fee is **\$1359.00**.
- 3. X Site Map of the facility (see NOI instructions). **DO NOT SEND BLUEPRINTS**

U.S. Postal Service Address

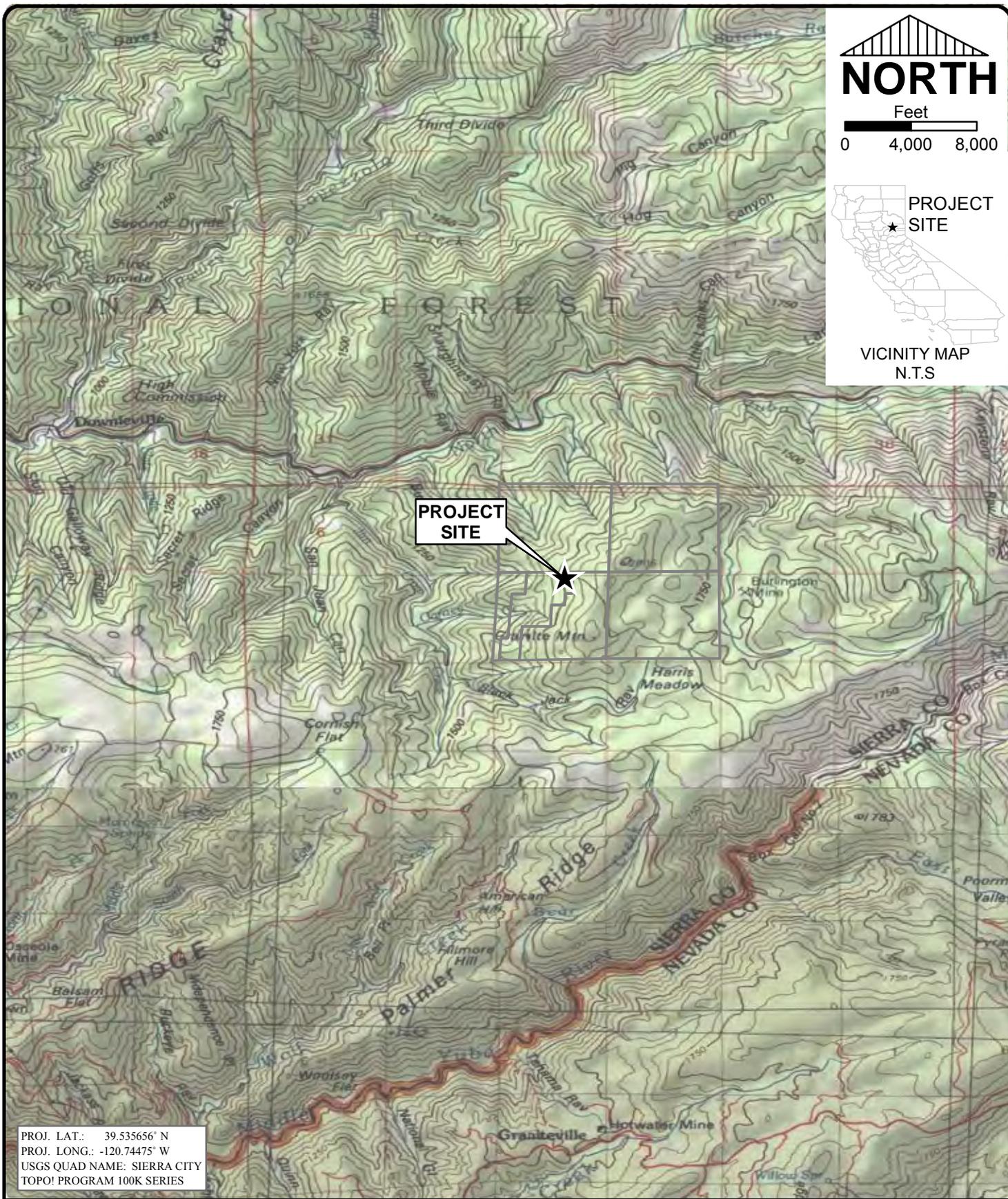
Overnight Mailing Address

State Water Resources Control Board
Division of Water Quality
Attn: Storm Water Section
P.O. Box 1977
Sacramento, CA 95812-1977

State Water Resources Control Board
Division Of Water Quality
Attn: Storm Water, 15th Floor
1001 I Street
Sacramento, CA 95814

NOIs are processed in the order they are received. A NOI receipt letter will be mailed to the facility operator within approximately two weeks. Incomplete NOI submittals will be returned to the facility operator within the same timeframe and will specify the reason(s) for return. If you need a receipt letter by a specific date (for example, to provide to a local agency), we advise that you submit your NOI thirty (30) days prior to the date the receipt letter is needed.

Please do not call us to verify your NOI status. A copy of your NOI receipt letter will be available on our web page within twenty-four (24) hours of processing. Go to <https://smarts.waterboards.ca.gov> and click on View SW data. If you have any questions regarding this matter, please contact us at 1-866-563-3107 or stormwater@waterboards.ca.gov



PROJ. LAT.: 39.535656° N
 PROJ. LONG.: -120.74475° W
 USGS QUAD NAME: SIERRA CITY
 TOPO! PROGRAM 100K SERIES



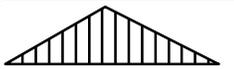
CONDOR EARTH TECHNOLOGIES, INC.
 21663 Brian Lane
 P.O. Box 3905
 Sonora, CA 95370
 (209) 532-0361
 fax (209) 532-0773
 www.condorearth.com

Job No.	6149B
Published Date	28 MARCH 2012
Scale	AS SHOWN
Drawn	JDM
Chk'd	WG

VICINITY MAP
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA

FIGURE
1

File No.
 6149B_F1



NORTH

Feet



PROJECT
SITE

VICINITY MAP
N.T.S

**PROJECT
SITE**

Legend

- CLAIM GROUP BOUNDARY
- ASSESSOR BOUNDARIES

PROJECTION:
CA STATEPLANE ZII US FT. NAD 83

PROJ. LAT.: 39.535656° N
PROJ. LONG.: -120.74475° W
USGS QUAD NAME: SIERRA CITY
(NAIP AERIAL - MrSID 2010)

CONDOR EARTH TECHNOLOGIES, INC.



21663 Brian Lane
P.O. Box 3905
Sonora, CA 95370
(209) 532-0361
fax (209) 532-0773
www.condorearth.com

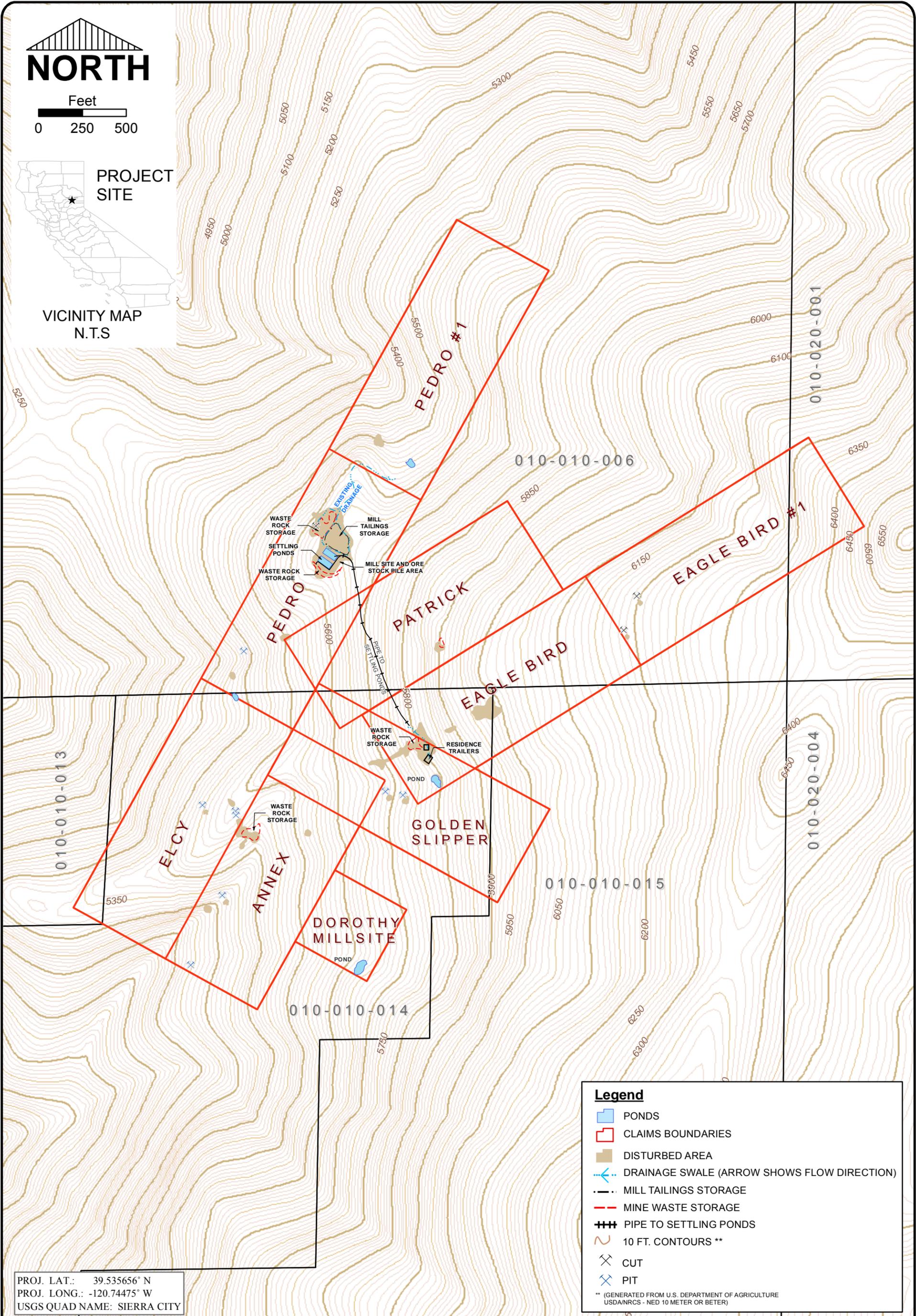
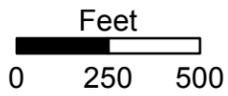
Job No.	6149B
Published Data	28 MARCH 2012
Scale	AS SHOWN
Drawn	Chk'd
JDM	WG

SITE MAP
EAGLE BIRD MINING COMPANY, LLC
NEAR DOWNIEVILLE, SIERRA COUNTY, CA

FIGURE
2

File No.
6149B_F2

NORTH



Legend

- PONDS
- CLAIMS BOUNDARIES
- DISTURBED AREA
- DRAINAGE SWALE (ARROW SHOWS FLOW DIRECTION)
- MILL TAILINGS STORAGE
- MINE WASTE STORAGE
- PIPE TO SETTLING PONDS
- 10 FT. CONTOURS **
- CUT
- PIT

** (GENERATED FROM U.S. DEPARTMENT OF AGRICULTURE USDA/NRCS - NED 10 METER OR BETER)

PROJ. LAT.: 39.535656° N
 PROJ. LONG.: -120.74475° W
 USGS QUAD NAME: SIERRA CITY

CONDOR EARTH TECHNOLOGIES, INC.

21663 Brian Lane
 P.O. Box 3905
 Sonora, CA 95370
 (209) 532-0361
 fax (209) 532-0773
 www.condorearth.com

Job No.	6149B
Published Data	28 MARCH 2012
Scale	AS SHOWN
Drawn	JDM
Chk'd	WG

**FACILITY DIAGRAM
 SAMPLING AND ANALYSIS PLAN
 EAGLE BIRD MINING COMPANY, LLC
 NEAR DOWNIEVILLE, SIERRA COUNTY, CA**

**FIGURE
 3**

File No.
 6149B_F3.mxd

ATTACHMENT H
Financial Assurance Cost Estimate



EAGLE BIRD MINE
FINANCIAL ASSURANCE COST ESTIMATE
March, 2012

Sources for Reclamation Costs	
Annual Monitoring Program Rate	Condor Earth Technologies Fee Schedule 21663 Brian Lane Sonora, CA 95370 (209) 532-0361
Tree & Shrub Seedling Costs	Fowler's Nursery, (Serena) Newcastle, CA (916) 645-8191
Equipment Rental Rates (Excavator, Bulldozer, Etc)	Holt Brothers, (Kevin) CAT Equipment Stockton, Yuba City, CA (209) 462-3660
Operator wages, labor wages	California Department of Industrial Relations Basic and Prevailing Wage Rates for No. CA http://www.dir.ca.gov/dlsr/pwd/Northern.html
	Sinclair Engineering & Construction, Oakdale, CA Sean Sinclair; (209) 768-1895
	Njrich & Sons Construction, Sonora, CA Steve Njrich; (209) 533-2268
Fertilizer Tablets, Tea Bags	www.forestry-suppliers.com Sierra Reforestation Co, RTI, Salinas, CA (831) 424-1494; Neil Anderson
Plant Protector Tubes & Stakes	www.forestry-suppliers.com
Fuel	California Energy Commission, Energy Almanac http://www.energyalmanac.ca.gov Sinclair Engineering & Construction, Oakdale, CA Njrich & Sons Construction, Sonora, CA
Grading Related Operations	Condor Earth Technologies, Inc. 21663 Brian Lane Sonora, CA 95370 (209) 532-0361
Grass Seed Mix	Hedge Row Farms, (Emily) Winters, CA (530) 662-6847
Polyurethane Foam	Foam Concepts Larry Poss; (888) 744-7584 New Mexico
Bat Gates	RPI Construction, Rod Paulson Pahrump, NV (775) 751-8766

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Pedro: Fill No. 2 adit/decline and new decline with 10 lf of rock

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator	1	\$55.98	2	\$111.96
950 Loader	1	\$52.55	2	\$105.10
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$217.06

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator Operator	1	\$51.70	2	\$103.40
950 Loader Operator	1	\$51.70	2	\$103.40
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$206.80

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
2 Hrs. Fuel for 320 Excavator @ 3.5 Gal./Hr.	7	\$4.41	\$30.87
2 Hrs. Fuel for 950 Loader @ 5 Gal./Hr.	10	\$4.41	\$44.10
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$74.97

DIRECT COST FOR THIS TASK **\$498.83**

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Inspect all adits for closure by qualified professional

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
Pickup, (per day)	1	\$125.00	1	\$125.00
.
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$125.00

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
.Qualified professional	1	\$125.00	8	\$1,000.00
.
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$1,000.00

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
.	.	.	\$0.00
.	.	.	\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

TOTAL \$0.00

DIRECT COST FOR THIS TASK \$1,125.00

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Pedro: Fill the No.3 cut and grade.

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
950 Loader	1	\$52.55	3	\$157.65
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$157.65

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
950 Loader Operator	1	\$51.70	3	\$155.10
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$155.10

MATERIALS		\$/UNIT	COST(\$)
3 Hrs. Fuel for 950 Loader @ 5 Gal./Hr.		\$4.41	\$22.05
	QUANTITY		\$0.00
	5		\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$22.05

DIRECT COST FOR THIS TASK **\$334.80**

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Pedro: Grade and fill the two settling ponds. 1 pond nearly full of tailings; 550cy, 5 hrs for D5 dozer

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer	1	\$42.04	5	\$210.20
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$210.20

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer Operator	1	\$51.70	5	\$258.50
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$258.50

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
5 Hrs. Fuel for D5 Dozer @ 3.5 Gal./Hr.	17.5	\$4.41	\$77.18
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$77.18

DIRECT COST FOR THIS TASK

\$545.88

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Pedro: Fill tailings storage excavation and grade fill berms;
 1760 cy

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer	1	\$42.04	12	\$504.48
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$504.48

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer Operator	1	\$51.70	12	\$620.40
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$620.40

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
12 Hrs. Fuel for D5 Dozer @3.5 Gal./Hr.	42	\$4.41	\$185.22
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$185.22

DIRECT COST FOR THIS TASK

\$1,310.10

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Pedro: Cover disturbed areas with 3" of soil/subsoil
 Approximately 159 cy

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer	1	\$42.04	2	\$84.08
950 Loader	1	\$52.55	2	\$105.10
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$189.18

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer Operator	1	\$51.70	1	\$51.70
950 Loader Operator	1	\$51.70	2	\$103.40
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$155.10

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
2 Hrs. Fuel for D5 Dozer @3.5 Gal./Hr.	7	\$4.41	\$30.87
2 Hrs. Fuel for 950 Loader @ 5 Gal./Hr.	10	\$4.41	\$44.10
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$74.97

DIRECT COST FOR THIS TASK **\$419.25**

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Pedro and Annex claims: Close No 5 adit on the Pedro, and No. 2 and 6 adits on the Annex with 1 cy each of polyurethane foam.
 2 laborers @ 4 hrs each per adit.

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$0.00

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
Laborers	2	\$38.50	12	\$924.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$924.00

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
Polyurethane foam: 3 cy @ \$225	3	\$225.00	\$675.00
Shipping of foam:	1	\$200.00	\$200.00
Reinforcing materials: wire mesh, etc.	3	\$25.00	\$75.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$950.00

DIRECT COST FOR THIS TASK **\$1,874.00**

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Pedro: Rip compacted surfaces and 150 lf of entrance road. Rip
 0.52 acres @ 0.25 ac/hr.

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer	1	\$42.04	2	\$84.08
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$84.08

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer Operator	1	\$51.70	2	\$103.40
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$103.40

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
2 Hrs. Fuel for D5 Dozer @ 3.5 Gal./Hr.	2	\$4.41	\$8.82
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$8.82

DIRECT COST FOR THIS TASK

\$196.30

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Pedro:

Demolish concrete walls & pads in mill area and haul to landfill

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
10 cy Truck	1	\$32.88	28	\$920.64
Excavator 320 w/hammer	1	\$105.00	20	\$2,100.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$3,020.64

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
10 cy Truck Operator	1	\$51.70	28	\$1,447.60
Excavator 32 Operator	1	\$51.70	20	\$1,034.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$2,481.60

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
28 Hrs. Fuel for 10 cy Truck @ 4 Gal./Hr.	112	\$4.41	\$493.92
Landfill 7 loads @ \$200	7	\$200.00	\$1,400.00
20 Hrs. Fuel for 320 Loader @3,5 Gal/Hr.	70	\$4.41	\$308.70
			\$0.00
			\$0.00
			\$0.00
			\$0.00

TOTAL \$2,202.62

DIRECT COST FOR THIS TASK \$7,704.86

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Patrick: Fill No. 2 adit with 10 lf of waste rock and fill & grade slot cut to adit.

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator	1	\$55.98	3	\$167.94
950 Loader	1	\$52.55	1	\$52.55
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$220.49

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator Operator	1	\$51.70	3	\$155.10
950 Loader Operator	1	\$51.70	1	\$51.70
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$206.80

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
3 Hrs. Fuel for 320 Excavator @ 3.5 Gal./Hr.	10.5	\$4.41	\$46.31
1 Hrs. Fuel for 950 Loader @ 5 Gal./Hr.	5	\$4.41	\$22.05
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

TOTAL \$68.36

DIRECT COST FOR THIS TASK \$495.65

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Patrick: Fill & grade the truck loading depression below the upper waste dump

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
950 Loader	1	\$52.55	0.5	\$26.28
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$26.28

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
950 Loader Operator	1	\$51.70	0.5	\$25.85
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$25.85

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
0.5 Hrs. Fuel for 950 Loader @ 5 Gal./Hr.	2.5	\$4.41	\$11.03
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

TOTAL \$11.03

DIRECT COST FOR THIS TASK \$63.15

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Patrick: Apply 3" subsoil/tailings cover to adit fill and truck loading area.

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer	1	\$42.04	1.5	\$63.06
950 Loader	1	\$52.55	1.5	\$78.83
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$141.89

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer Operator	1	\$51.70	1.5	\$77.55
950 Loader Operator	1	\$51.70	1.5	\$77.55
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$155.10

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
1.5 Hrs. Fuel for D5 Dozer @ 3.5 Gal./Hr.	5.25	\$4.41	\$23.15
1.5 Hrs. Fuel for 950 Loader @ 5 Gal./Hr.	7.5	\$4.41	\$33.08
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

TOTAL \$56.23

DIRECT COST FOR THIS TASK \$353.21

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Patrick: Rip 975 lf of road from No. 2 adit to Eagle Bird area.
 0.33 acres

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer	1	\$42.04	1.3	\$54.65
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$54.65

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer Operator	1	\$51.70	1.3	\$67.21
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$67.21

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
1.3 Hrs. Fuel for D5 Dozer @ 3.5 Gal./Hr.	4.55	\$4.41	\$20.07
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$20.07

DIRECT COST FOR THIS TASK **\$141.93**

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Eagle Bird: Fill No. 2 adit with 10 lf of waste rock

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator	1	\$55.98	2	\$111.96
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$111.96

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator Operator	1	\$51.70	2	\$103.40
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$103.40

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
2 Hrs. Fuel for 320 Excavator @ 3.5 Gal./Hr.	7	\$4.41	\$30.87
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

TOTAL \$30.87

DIRECT COST FOR THIS TASK \$246.23

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Eagle Bird: Install concrete bulkhead in No. 2 adit

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$0.00

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
Lump sum labor & materials	1	\$3,000.00		\$3,000.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$3,000.00

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

TOTAL \$0.00

DIRECT COST FOR THIS TASK \$3,000.00

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Eagle Bird: Demolish ramadas over trailers

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
Excacator 320	1	\$55.98	1	\$55.98
10cy Truck	1	\$32.88	8	\$263.04
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$319.02

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
Excavator Operator	1	\$51.70	1	\$51.70
10 cy Truck Operator	1	\$51.70	8	\$413.60
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00

TOTAL \$465.30

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
1 Hr. Fuel for 320 Excavator @ 3.5 Gal./Hr.	3.5	\$4.41	\$15.44
8 Hrs. Fuel for 10 cy Truck @ 4 Gal./Hr.	32	\$4.41	\$141.12
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00

TOTAL \$156.56

DIRECT COST FOR THIS TASK \$940.88

P

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Eagle Bird: Demolish and remove existing house. 10 loads in a 10 cy truck (4 hrs per trip). \$200 per load to landfill.

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator	1	\$55.98	5	\$279.90
10 cy truck	1	\$32.88	40	\$1,315.20
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$1,595.10

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator Operator	1	\$51.70	5	\$258.50
10 cy Truck Operator	1	\$51.70	40	\$2,068.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$2,326.50

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
5 Hrs. Fuel for 320 Excavator @ 3.5 Gal./Hr.	17.5	\$4.41	\$77.18
40 Hrs. Fuel for 10 cy Truck @ 4 Gal./Hr.	160	\$4.41	\$705.60
Landfill 10 loads @ \$200	10	\$200.00	\$2,000.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$2,782.78

DIRECT COST FOR THIS TASK

\$6,704.38

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Eagle Bird: Remove old stampmill debris. 1 hr excavator, 1 load 10 cy truck.

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator	1	\$55.98	1	\$55.98
10 cy Truck	1	\$32.88	4	\$131.52
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$187.50

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator	1	\$51.70	1	\$51.70
10 cy Truck	1	\$51.70	4	\$206.80
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$258.50

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
1 Hrs. Fuel for 320 Excavator @ 3.5 Gal./Hr.	3.5	\$4.41	\$15.44
4 Hrs. Fuel for 10 cy Truck @ 4 Gal./Hr.	16	\$4.41	\$70.56
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$86.00

DIRECT COST FOR THIS TASK

\$532.00

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Eagle Bird: Dismantle and remove metal shop building. 20 hrs. labor,
 1 load 10 cy truck

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
10 cy Truck	1	\$32.88	4	\$131.52
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$131.52

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
10 cy Truck Operator	1	\$51.70	4	\$206.80
Laborer	1	\$38.50	20	\$770.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$976.80

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
4 Hrs. Fuel for 10 cy Truck @ 4 Gal./Hr.	16	\$4.41	\$70.56
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$70.56

DIRECT COST FOR THIS TASK **\$1,178.88**

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Eagle Bird: Remove pvc water pipe from No. 2 adit to settling pond and retention pond, and land application piping. Pump & backfill septic system.

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
10 cy Truck	1	\$32.88	4	\$131.52
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$131.52

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
Laborer	1	\$38.50	8	\$308.00
10 cy Truck Operator	1	\$51.70	4	\$206.80
Pump/backfill septic tank	1	\$500.00	1	\$500.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$1,014.80

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
4 Hrs. Fuel for 10 cy Truck @ 4 Gal./Hr.	16	\$4.41	\$70.56
Landfull 1 load @ \$200	1	\$200.00	\$200.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$270.56

DIRECT COST FOR THIS TASK **\$1,416.88**

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Eagle Bird: Slope waste dump to 2:1 and fill against cut bank adjacent to the adit and grade.

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator	1	\$55.98	9	\$503.82
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$503.82

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator Operator	1	\$51.70	9	\$465.30
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$465.30

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
9 Hrs. Fuel for 320 Excavator @ 3.5 Gal./Hr.	31.5	\$4.41	\$138.92
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$138.92

DIRECT COST FOR THIS TASK

\$1,108.04

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Eagle Bird: Rip remaining dump top and road from the waste dump to the forest road access on the Pedro claim (1070 lf). 0.36 acres @ 0.25 ac/hr.

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer	1	\$42.04	1.5	\$63.06
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$63.06

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer Operator	1	\$51.70	1.5	\$77.55
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$77.55

MATERIALS	QUANTITY		COST(\$)
1.5 Hrs. Fuel for D5 Dozer @ 3.5 Gal./Hr.	5.25	\$4.41	\$23.15
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$23.15

DIRECT COST FOR THIS TASK **\$163.76**

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Elcy and Annex: Close No. 2 and No. 6 adits with Polyurethane foam.

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$0.00

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
Laborer	2	\$38.50	8	\$616.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$616.00

MATERIALS	QUANTITY		COST(\$)
Polyurethane foam: 2 cy @ \$225	2	\$225.00	\$450.00
Shipping foam:	1	\$200.00	\$200.00
Reinforcing materials: wire mesh, etc.	2	\$25.00	\$50.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$700.00

DIRECT COST FOR THIS TASK **\$1,316.00**

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Elcy & Annex: Fill adits 3, 4, and 5 with 10 lf of waste rock

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator	1	\$55.98	2	\$111.96
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$111.96

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator Operator	1	\$51.70	2	\$103.40
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$103.40

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
2 Hrs. Fuel for 320 Excavator @ 3.5 Gal./Hr.	7	\$4.41	\$30.87
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$30.87

DIRECT COST FOR THIS TASK

\$246.23

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Elcy & Annex: Place adjoining waste dump material against closed adit and rock face, and slope to road area.

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator	1	\$55.98	1	\$55.98
950 Loader	1	\$52.55	1	\$52.55
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$108.53

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
320 Excavator Operator	1	\$51.70	1	\$51.70
950 Loader Operator	1	\$51.70	1	\$51.70
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$103.40

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
1 Hrs. Fuel for 320 Excavator @ 3.5 Gal./Hr.	3.5	\$4.41	\$15.44
1 Hrs. Fuel for 950 Loader @ 5 Gal./Hr.	5	\$4.41	\$22.05
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$37.49

DIRECT COST FOR THIS TASK

\$249.42

PRIMARY RECLAMATION ACTIVITIES

DESCRIPTION OF TASK:

Elcy & Annex: Rip 370 lf of road from the adit area to the forest road on the Elcy claim. 0.13 acres @ 0.25 ac/hr

EQUIPMENT	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer	1	\$42.04	0.5	\$21.02
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$21.02

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
D5 Dozer Operator	1	\$51.70	0.5	\$25.85
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
				\$0.00
TOTAL				\$25.85

MATERIALS	QUANTITY	\$/UNIT	COST(\$)
0.5 Hrs. Fuel for D5 Dozer @ 3.5 Gal./Hr.	1.75	\$4.41	\$7.72
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
			\$0.00
TOTAL			\$7.72

DIRECT COST FOR THIS TASK **\$54.59**

REVEGETATION

DESCRIPTION OF TASK:

Planting of tree and shrub seedlings on 12 ft. centers, grass mix, hand irrigation 4 times per year for 3 years, fertilization, mulch, install herbivore protection sheaths, .

EQUIPMENT	QUANTITY	\$/DAY	# DAYS	COST(\$)
Pickup for seedling watering: 2 days/mo., 4 mo./yr., 3 yrs	1	\$125.00	24.00	\$3,000.00
				\$0.00
TOTAL				\$3,000.00

LABOR	QUANTITY	\$/UNIT	# HOURS	COST(\$)
Tree and shrub planting (6 min/plant)	897	\$38.50	90	\$3,465.00
Hand irrigation: 12 hrs, 4 times/yr. for 3 yrs.		\$38.50	144	\$5,544.00
Collect forest mulch for planting/mulching		\$38.50	8	\$308.00
Weed control: hand irradiation, 2 yrs		\$38.50	16	\$616.00
TOTAL				\$9,933.00

MATERIALS/PLANT SPECIES	UNIT	# UNITS	\$/UNIT	COST(\$)
Bare Root Planting Stock (seedling)	Bare root	897	\$0.75	\$672.75
"Tea Bag" fertilizer pouch	pouch	897	\$0.090	\$80.73
Grass Seed Mix (native @ 19 lbs/ac)	2.99 acres	57	\$16.76	\$955.32
Fertilizer 150 Lbs/Acre	Acre	2.99	\$86.40	\$258.34
Herbivore Protection Tubes	Tube	897	\$0.35	\$313.95
Bamboo Stakes	Stake	897	\$0.12	\$107.64
1" dia. x 12" plastic irrigation tubes	Tube	897	\$0.75	\$672.75
Soil analysis estimate		1	\$100.00	\$100.00
TOTAL				\$3,161.48

DIRECT COST FOR REVEGETATION

\$16,094.48

PLANT STRUCTURES AND EQUIPMENT REMOVAL

DESCRIPTION OF TASK:

Two loads of bone yard debris will go to landfill or salvage yard. The process plant and mining equipment to be used will be mobile or modular and will be removed from site at no cost or salvage benefit. Only the existing house and shop and existing trash will require removal. For those costs see individual cost sheets.

EQUIPMENT	QUANTITY	GROSS VALUE	REMOVAL COST	NET VALUE/COST
Building	LS	na		\$0.00
Mine Equipment	LS	na		\$0.00
Plant & Modular Equipment	LS	na		\$0.00
Bone Yard/Debris	2	na	200.00	\$400.00
TOTAL				\$400.00

LABOR	QUANTITY	\$/HOUR	# HOURS	COST(\$)
10 cy truck	1	\$32.88	16.00	\$526.08
320 Excavator	1	\$55.98	4.00	\$223.92
10 cy truck operator	1	\$47.00	16.00	\$752.00
320 Excavator operator	1	\$47.00	4.00	\$188.00
Fuel for excavator	1	\$4.41	14.00	\$61.74
Fuel for truck	1	\$4.41	64.00	\$282.24
TOTAL				\$2,033.98

DEMOLITION STRUCTURE/EQUIPMENT	TYPE OF MATERIAL	VOLUME (cubic feet)	QUANTITY	UNIT COST	COST(\$)
See individual cost sheets for the Pedro and Eagle Bird					\$0.00
					\$0.00
					\$0.00
TOTAL					\$0.00

DIRECT COST FOR PLANT STRUCTURES AND EQUIPMENT REMOVAL **\$2,433.98**

SURPLUS/SALVAGE VALUE

Total cost to reclaim plant structures and equipment pursuant to the approved reclamation plan.	\$2,433.98
Net salvage value of the plant structures and equipment.	\$0.00

TOTAL PLANT STRUCTURES AND EQUIPMENT REMOVAL COST **\$2,433.98**

EAGLE BIRD MINE
 FINANCIAL ASSURANCE COST ESTIMATE

MISCELLANEOUS COSTS

ITEM/TASK	QUANTITY	\$/UNIT	COST(\$)
Tree & Shrub Maintenance - watering; see Revegetation cost labor			\$0.00
Monitor & maintain erosion control structures, for 5 Years: 24 hrs. labor/yr. at \$38.50/hr.	5	\$924.00	\$4,620.00
Assess stability of waste rock slopes by qualified professional. (4 hrs. @ \$125)	1	\$500.00	\$500.00
Vehicle	12	\$50.00	\$600.00
TOTAL			\$5,720.00

TOTAL MISCELLANEOUS COSTS **\$5,720.00**

MONITORING

MONITORING TASK	\$/VISIT	# VISITS/ YEAR	# MONITOR- ING YEARS	COST(\$)
Ann. Inspection (Veg./erosion) 4 hrs.+ 3 hrs. travel @ \$125	\$805.00	1	5	\$4,025.00
Ann. Reporting (veg) 8 hrs. @ \$125	\$1,000.00	1	5	\$5,000.00
Annual Monitoring, Facility Inspections, and Reporting*	\$4,500.00	2	5	\$45,000.00
TOTAL				\$54,025.00

* includes SWPPP and MRP compliance, collection of stormwater samples, facility inspections, laboratory analyses, and reporting services.

TOTAL MONITORING COSTS **\$54,025.00**

EAGLE BIRD MINE
 FINANCIAL ASSURANCE COST ESTIMATE

SUMMARY OF COST

		UPDATED June 2014
TOTAL OF ALL PRIMARY RECLAMATION ACTIVITIES COSTS		\$34,047
TOTAL OF ALL REVEGETATION COSTS		\$16,094
TOTAL OF ALL PLANT STRUCTURES & EQUIPMENT REMOVAL COSTS		\$2,434
TOTAL OF ALL MISCELLANEOUS COSTS		\$5,720
TOTAL OF ALL MONITORING COSTS		<u>\$54,025</u>
	TOTAL OF ALL DIRECT COSTS	\$112,320
SUPERVISION	<u>6.3</u> % of Direct costs	\$7,076
PROFIT/OVERHEAD	<u>8</u> % of Direct costs	\$8,986
CONTINGENCIES	<u>15</u> % of Direct costs	\$16,848
MOBILIZATION	<u>8</u> % of Direct costs	<u>\$8,986</u>
	TOTAL OF ALL INDIRECT COSTS	\$41,895
	TOTAL OF DIRECT AND INDIRECT COSTS	<u>\$154,215</u>
	TOTAL ESTIMATED COST OF RECLAMATION	\$154,215