Queen Bess Mine

(a.k.a., Grover Crocker Mine & Queen Bess patented mining claim)

Preliminary Assessment Report

Blaine County
State of Idaho

Idaho Department of

Environmental Quality

November 2007

Submitted to:
U. S. Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, WA 98101

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502

C.L. "Butch" Otter, Governor
Toni Hardesty, Director

December 18 , 2007

Mr. Charles T. Ferries
P.O. Box 2221
Ketchum, Idaho 83340

RE: Site Assessment of the Queen Bess Mine (a.k.a., Grover Crocker Mine & Queen Bess patented mining claim)

Dear Mr. Ferries:

The Idaho Department of Environmental Quality (IDEQ) has completed a review of historical mining data and geological information, and subsequent to that review IDEQ conducted a site visit of the Queen Bess Mine and associated claim. During the site visit, mining facilities were mapped and sampled to complete a Preliminary Assessment (PA).

PAs are conducted according to the federal Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA). The reasons to complete a PA include:

1) To identification those sites which are not CERCLIS caliber because they do not pose a threat to public health or the environment (No Remedial Action Planned (NRAP));

2) To determine if there is a need for removal actions or other programmatic management of sites;

3) To determine if a Site Investigation, which is a more detailed site characterization, is needed; and/or

4) To gather data to facilitate later evaluation of the release through the Hazard Ranking System (HRS)

IDEQ also completed PAs under contract with the U.S. Environmental Protection Agency in order to identify risks to human health and the environment, and make recommendations to land owners regarding how risks might be managed, if necessary.

Based on existing conditions and uses, and historic information, IDEQ has determined that No Remedial Action is Planned (NRAP) for this property. Although IDEQ's Source Water Assessments were used to evaluate potential affects of this mine on public drinking water supplies no inferences can be made about the affects that this and adjoining mines have on local private wells. Private well owners are advised that routine testing their wells for metals and other potentially harmful contaminants is a good practice. Because mine waste materials have been dispersed over a broad area, IDEQ could not estimate their volume or extent, and therefore did not take soil samples. However, based on the historical information regarding

mine development and production, IDEQ recommends if you develop the mine site, particularly for residential purposes, you complete a more thorough site characterization and include risk management provisions in development plans.

IDEQ noted one (1) vertical shaft with an observed depth of approximately sixty feet and one (1) partially open adit at the Queen Bess Mine. Although physical hazards are beyond the scope of IDEQ's risk assessments, these openings are dangerous and should be permanently restricted or closed.

Attached is the Preliminary Assessment Report of the property and mine facilities. The report contains a brief mine history, limited geologic information, maps and additional discussion of observations made at the property. Attached is also a brief checklist of how IDEQ came to its recommendation that the property status will be NRAP.

IDEQ very much appreciates your cooperation and approval for our access, and looks forward to addressing any questions you may have regarding our findings. Please call me if you have any comments, questions, or I may be of any other assistance. We very much appreciate any feedback you can give us relative to our services.

Sincerely,

Bruce A. Schuld
Mine Waste Projects Coordinator

attachments

cc: Ken Marcie – U.S. Environmental Protection Agency
Megan Stelma – Blaine County
file

SECTION ONE

Introduction

This document presents the results of the Preliminary Assessment (PA) of the Queen Bess Mine, a.k.a., Grover Crocker Mine and Queen Bess patented mining claim. The Idaho Department of Environmental Quality (IDEQ) was contracted by Region 10 of the United States Environmental Protection Agency (EPA) to provide technical support for completion of PAs at various mines within the Mineral Hill Mining District in Blaine County, Idaho.

IDEQ often receives complaints or information about sites that may be contaminated with hazardous waste. These sites can include abandoned mines, rural airfields that have served as bases for aerial spraying, old landfills, illegal dumps, and abandoned industrial facilities that have known or suspected releases.

In February 2002, IDEQ initiated a Preliminary Assessment Program to evaluate and prioritize assessment of such potentially contaminated sites. Due to accessibility and funding considerations, priority is given to sites where potential contamination poses the most substantial threat to human health or the environment. Priority was also given to mining districts where groups or clusters of sites could be assessed on a watershed basis.

For additional information about the Preliminary Assessment Program, see the following:

http://www.deq.idaho.gov/waste/prog_issues/mining/pa_program.cfm

Prior approval to assess the Queen Bess Mine was provided by Mr. Charles T. Ferries (owner) in 2007. Access to the Queen Bess property is gained by traveling west from Bellevue, Idaho on Broadford Road. The paved road crosses the Big Wood River at 0.3 miles and turns sharply northward 1.0 miles at the intersection with Minnie Moore Gulch. Proceed to the north for another 0.8 miles to Mammoth Gulch Road. The entrance to the road is gated, though not locked, and the caretaker's house lies adjacent. Mammoth Gulch Road continues west for 0.25 miles, where the road forks. The right fork leads to building sites, while the left one fords of an unnamed creek before reaching the entrance to Mammoth Gulch. The workings are located at the base of the slope on the right.

SECTION TWO

Ownership	Claims
Mr. Charles T. Ferries P.O. Box 2221 Ketchum, Idaho 83340	Queen Bess
United States of America Department of Interior U.S. Bureau of Land Management	Adjoining public lands

Although it appears that the mine workings are beneath the patented mining claim, the claim is almost entirely surrounded by lands administered by the Department of Interior, Bureau of Land Management (BLM).

Patented Claim evaluated for this PA was selected because of its proximity to the surface expression of the mine workings and its location in the Big Wood River watershed. Part of this claim extends into the Mammoth Gulch sub-watershed.

SECTION THREE

Site Background

Location

The Queen Bess Mine is located the mouth of Mammoth Gulch near the Big Wood River, approximately 2 miles northwest of Bellevue, Idaho, in Section 27, Township 2 North, Range 18 East of the Boise Meridian, at Latitude 43° 28' 45.12"N, and Longitude 114° 17' 35.71"W (see Figure 1).

History

The mine was known and worked intermittently in the early days. Then after a long period of idleness the mine was reopened in 1949. According to local report the mine produced about $60,000 worth of lead-silver ore during the early operations; the production since has included a small shipment trucked to a Utah smelter in the spring of 1949 (Anderson, et al 1950, p. 21).

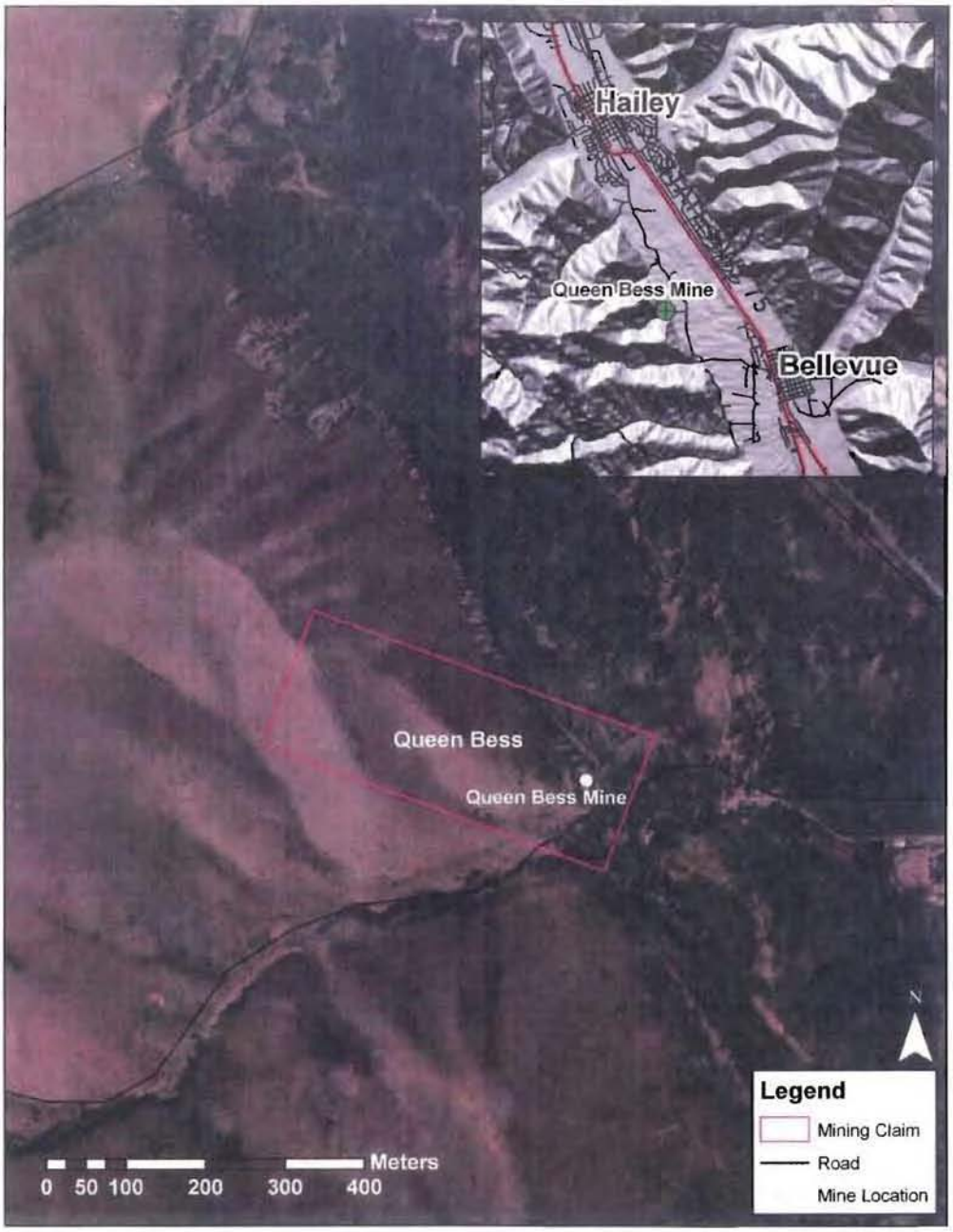

Hailey
Queen Bess Mine
15
Bellevue
Queen Bess
Queen Bess Mine
N
Legend
Mining Claim
Road
Mine Location
Meters
0 50 100 200 300 400

Figure 1

General Geology

The Hailey-Bellevue mineral belt is underlain by a varied assemblage of sedimentary and igneous rocks, which, except for volcanics of mid-Tertiary age and some still younger unconsolidated sedimentary rocks, are all older than the ore deposits. The earlier rocks include fairly wide exposures of the Milligen and Wood River formations-the host of so many of the ore deposits in the Wood River region-and also rather large intrusive bodies of diorite and quartz monzonitic rock which are regarded as outliers of the Idaho batholith. There is also a younger group of intrusive rocks which are of more pertinent interest because of their close association with the mineralization....In addition to the Milligen formation (Mississippian age) and the Wood River formation (Pennsylvanian age), the area contains some strata in and beneath a series of Tertiary volcanics (Oligocene) and much poorly consolidated and unconsolidated slope wash, terrace gravels, and stream alluvium of Quaternary age (Anderson, 1950, p.2). Geological relationships and structural components are illustrated in Figure 2.

The Queen Bess is described by Anderson (et al 1950, pp. 21-22) as follows: *When examined by Hewett (1, p. 244) in 1913, the workings included a lower tunnel caved 60 feet from the portal and an upper 282-foot tunnel 40 feet above. These and two other newer and shorter tunnels 100 feet to the south were caved in 1949 and work was confined to an inclined shaft just above the edge of the valley floor. By September, 1949, this shaft had reached a depth of about 150 feet. Another shaft started at the level of the valley floor earlier in the year had been abandoned.*

The spacing of the workings indicate at least two zones of mineralization, both within a block of moderately folded blackish beds of the Milligen formation. These beds show considering variation in strike and dip, the strike ranging from N. 10° W. to N. 50°., and the dip from 20° to 32° SW. According to Hewett the principal tunnel was along a well-defined hanging wall of N. 85° W. trend which overlies a succession of crushed zones. The ore along the zones was 2 to 3 feet wide and stoped between the two levels for a distance of 60 feet. The new work apparently is on a different zone which appears to strike about N. 80° W. and to dip southwest, with reversed dips causing a succession of "rolls" with local northeast dip. The shaft started earlier in the year reached the trough of such a roll and uncovered ore up to 18 inches thick; but, because the roll carried the ore upward, the shaft was abandoned and the new shaft sunk a short distance to the south to develop the mineralized zone at greater depth on the other side of the roll. The zone controlling mineralization was penetrated about 35 to 40 feet below the collar of the shaft. The zone locally is 6 to 12 inches wide and contains thin seams, small bunches, and irregular nests of siderite. Fractures in the walls also contain siderite with some brownish sphalerite, cubic and gneissic galena, and scattered crystals if arsenopyrite. Ore shipped from the shallow shaft to the north was composed almost entirely of gneissic galena and its oxidation products.

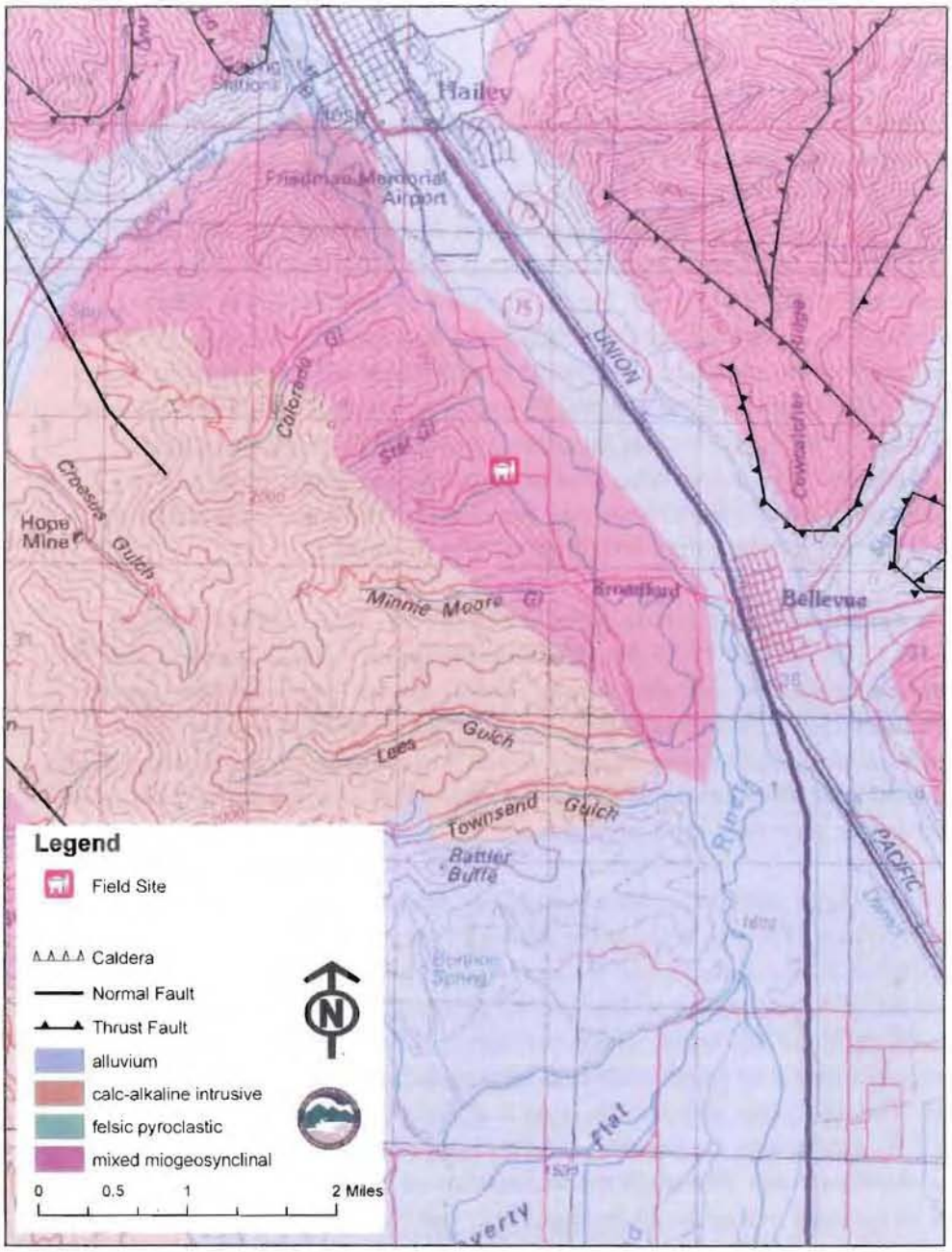

Hailey
Friedman Memorial Airport
Colorado Gl
Star Gl
Union
Cowcatcher Ridge
Croesus Gulch
Hope Mine
Minnie Moore Gl
Broadford
Bellevue
Lees Gulch
Townsend Gulch
Rattler Butte
Pacific
Flat
Legend
Field Site
Caldera
Normal Fault
Thrust Fault
alluvium
calc-alkaline intrusive
felsic pyroclastic
mixed miogeosynclinal
N
0
0.5
1
2 Miles

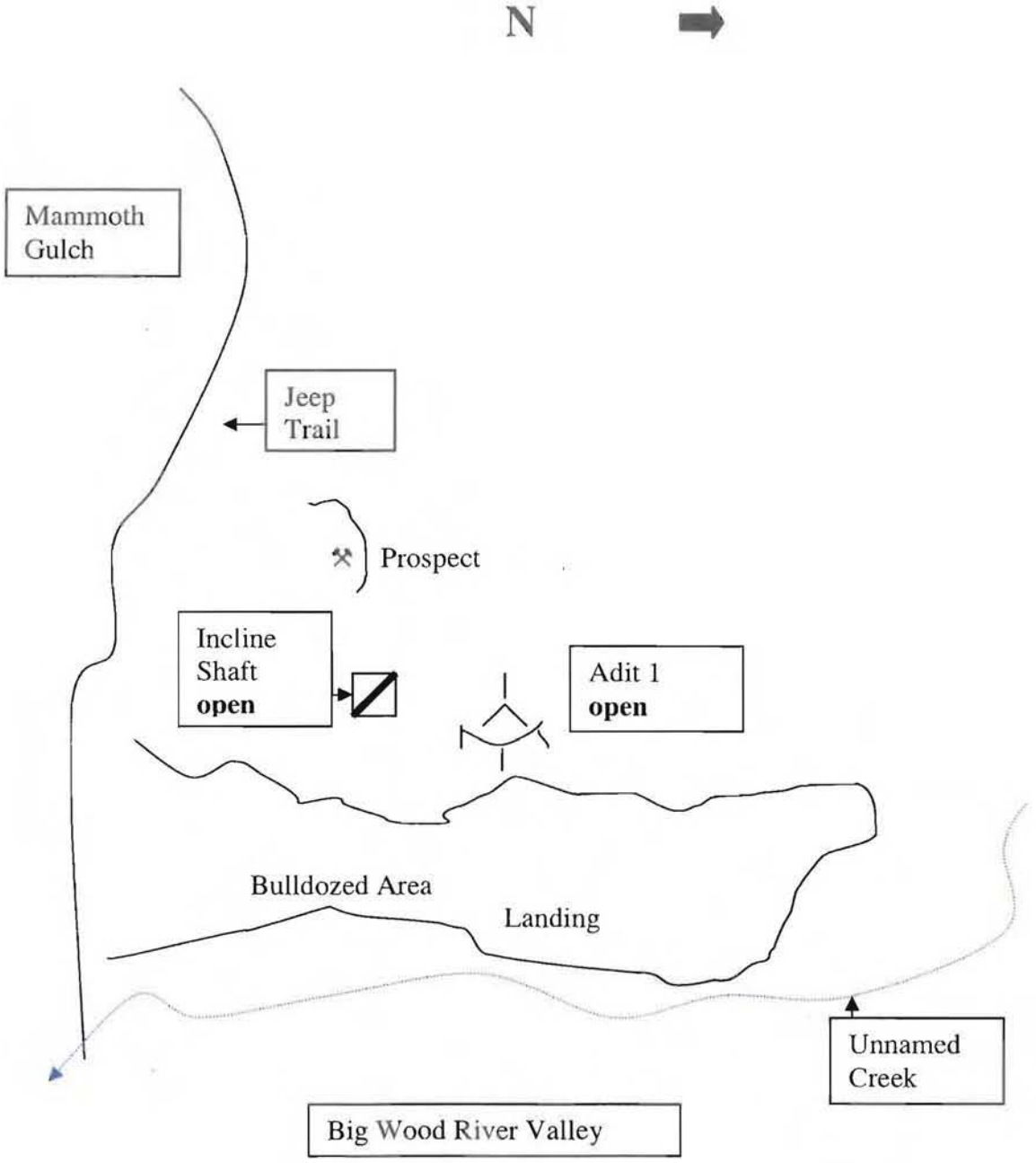
Figure 2

SECTION FOUR

Current Site Conditions

The Queen Bess Mine is situated near the mouth of Mammoth Gulch at the base of the north side slope where it intersects gravels at the valley's margin. An unnamed creek borders the approximate extent of the former waste dumps, though this material has been reworked to create a landing area, possibly for additional building sites. An open inclined shaft and a partially closed adit remain. Warning and private property signs mark the workings. Access to the shaft is mostly blocked by wire fencing. The shaft appears to be flooded. Both of these mine entrances are partially hidden by brush, though readily accessible from the adjacent landing.

Close-up view fence barrier at inclined shaft; fallen rocks obscure danger signage


N
Mammoth Gulch
Jeep Trail
Prospect
Incline Shaft **open**
Adit 1 **open**
Bulldozed Area
Landing
Unnamed Creek
Big Wood River Valley

Interior close-up view of inclined shaft; water (lower left in shadows)

Collapsed portal of adit, open at outcrop face; air circulation pipe & warning sign

Panoramic view of inclined shaft (upper left) and adit (upper right) below "No Trespassing" sign); both partially hidden in the brush

SECTION FIVE

Current and Potential Future Uses

Though the site is fractionally bordered by public lands, recreational (bike riding, hiking and hunting) access appears minimized by the gated roadway. Development of building sites along the unnamed creek and possibly on the landing beside the Queen Bess' workings is evident. The waste rock excavated through the historical openings has apparently been spread across the site and perhaps utilized to stabilize and develop the building sites. Metal concentrations associated with historical production values may yet remain within these reworked areas.

SECTION SIX

Sources

The Queen Bess Mine's workings are located to the northwest of the confluence of Mammoth Gulch and the Big Wood River Valley (see Sketch, below). Waste dump material is ill-defined, probably due to its reworking among the various building sites and along the unnamed creek. The inclined shaft appeared to be flooded though the depth of water was not determined. Owing to the lack of identifiable waste rock and safety concerns, no samples were collected from this site.

SECTION SEVEN

Pathways and Receptors

No precipitation data is available for the Queen Bess. Therefore, precipitation data, maintained from 1948 through 1988, was used from a recording station located 3 miles north-northwest from Hailey at an elevation of 5,350 feet amsl. The mean annual precipitation is 15.89 inches, and the 100-year, 24-hour event is 2.68 inches (WRCC, 2007).

Currently, there are no residences, schools or day-care facilities within 200 feet. The caretaker's house is the nearest residence. It is located approximately 0.28 miles southeast at the intersection of Mammoth Gulch and Broadford roads.

Air

Concentrations of metals in wind borne fugitive dust have been the driving force behind cleanups in the former mining properties of the Wood River area, particularly at the Triumph Mine Site and Minnie Moore Tailings Impoundment. However, the waste dumps are not evident at the Queen Bess, having been dispersed through the site. Furthermore, most of the workings are mostly covered with brush and the riparian zone is well established. Consequently, under the current conditions the likelihood of aerial dispersion of particulates is remote.

Groundwater

During the cleanup activities of the nearby Minnie Moore, the first concerns were related to potential human health risks as a result of contamination of public and private drinking water supplies. Generally speaking, contamination of drinking water systems was thought likely to occur from two types of sources (ore bodies and waste dumps) and along three pathways, as illustrated by the following three scenarios. First, heavy metals are leached from mine waste dumps, enter ephemeral or perennial drains and then contaminate the area's shallow ground water system. Second, heavy metals leach from the local ore bodies and are transported through the geologic structure to the shallow ground water. Third, heavy metals could leach out of the ore bodies, and be discharged from the underground workings as adit water, that is then conveyed through ephemeral and perennial drains to the shallow ground water systems.

For the purposes of completing Preliminary Assessments, Source Water Assessments (completed for local public drinking water supplies) were used to identify any known affects to those systems. Although IDEQ's Source Water Assessments were used to evaluate potential affects of this mine on public drinking water supplies no inferences can be made about the affects that this and adjoining mines have on local private wells.

Source water assessments provide information on the potential contaminant threats to public drinking water sources. In the Big Wood River Valley Idaho, most of those sources (>95%) are ground water (IDEQ 2000). Each source water assessment:

- Defines the zone of contribution, which is that portion of the watershed or subsurface area contributing water to the well or surface water intake (source area delineation)

- Identifies the significant potential sources of drinking water contamination in those areas (contaminant source inventory)

- Determines the likelihood that the water supply will become contaminated (susceptibility analysis)

Each assessment is summarized in a report that describes the above information and provides maps of the location of the public water system, the source area delineation, and the locations of potential contaminant sources. Idaho began developing source water assessments in 1999, and in May 2003 met its obligation under the amendments of the Safe Drinking Water Act by completing delineations for all 2100+ public water systems that were active in Idaho as of August 1999 (IDEQ 2000). Source water assessments for new public drinking water systems are being developed as those systems come online. Each public water system is provided with two copies of its final assessment report. Four source water assessments for drinking water supplies have been used in this Preliminary Assessment Process to evaluate the potential impacts to both public and private drinking water supplies in and around Sun Valley, Ketchum, Hailey and Bellevue.

The information extrapolated from these reports is based on data that existed at the time of their writing, and the professional judgment of IDEQ staff. Although reasonable efforts were made to present accurate information, no guarantees, including expressed or implied warranties of any kind are made with respect to these reports or this Preliminary Assessment by the State of Idaho or any of its agents who also assume no legal responsibility for accuracy of presentation, comments or other information in these publications or this Preliminary Assessment report. The results should not be used as an absolute measure of risk, and they should not be used to undermine public confidence in public drinking water systems.

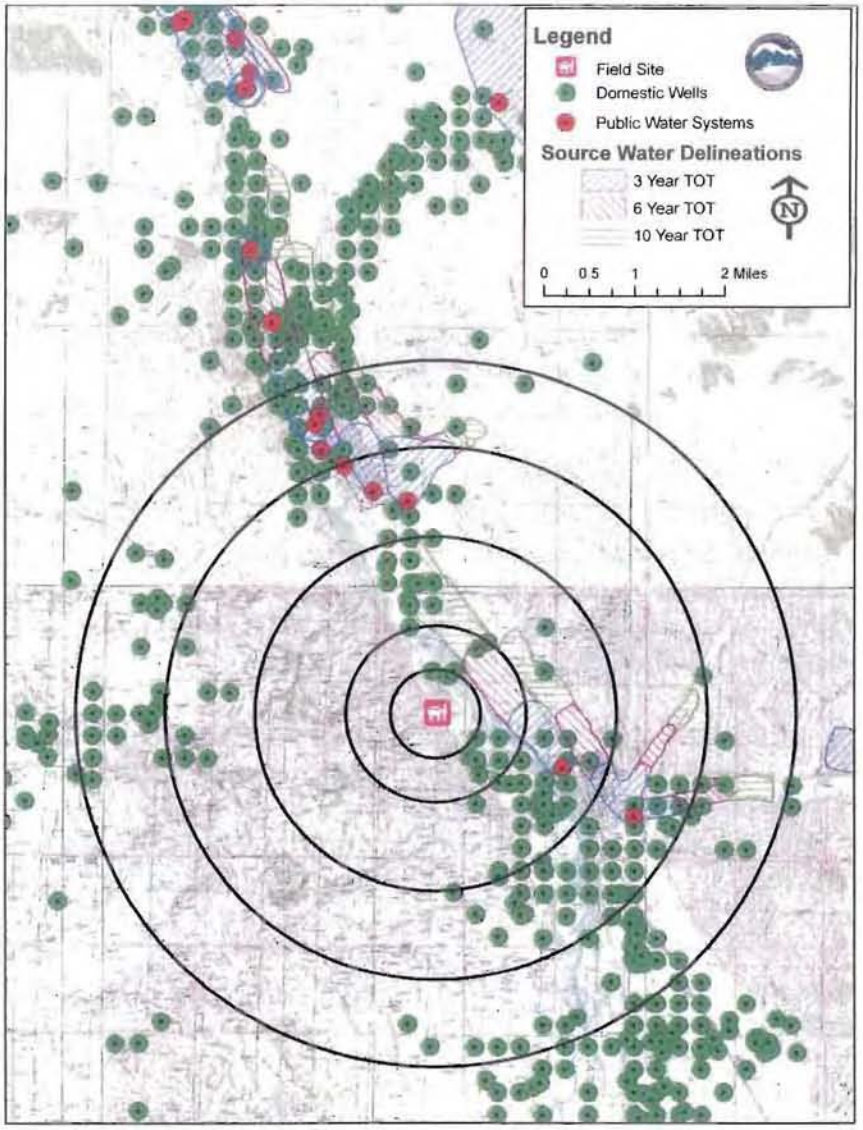


Figure 3

The Source Area delineation process establishes the physical area around a well or surface water intake that becomes the focal point of the source water assessment. The process includes mapping the boundaries of the zone of contribution the area contributing water to the well or to the surface water intake) into time of travel zones (TOT) indicating the number of years necessary for a particle of water to reach a well or surface water intake (IDEQ 2000). The size and shape of the source water assessment area depend on the delineation method used, local hydrogeology, and volume of water pumped from the well or surface water intake.

IDEQ used a refined computer model approved by EPA to determine the 3-year (Zone 1B), 6-year (Zone 2), and 10 year (Zone 3) time of travel associated with the Big Wood River Aquifer and its sources (IDEQ 2000).

This process involves collecting, recording, and mapping existing data and geographical information system (GIS) coverage to determine potential contaminant sources (e.g., gas stations) within the delineated source water assessment area. The potential contaminant source inventory is one of three factors used in the susceptibility analysis to evaluate the overall potential risk to the drinking water supply (IDEQ 2000). The inventory process goal is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water or surface water contamination.

This susceptibility analytical process determines the susceptibility of each public water system well or surface water intake to potential contamination within the delineated source water assessment area. It considers hydrogeologic characteristics, land use characteristics, potentially significant contaminant sources, and the physical integrity of the well or surface water intake. The outcome of the process is a relative ranking into one of three susceptibility categories: high, moderate, and low. The rankings can be used to set priorities for drinking water protection efforts (IDEQ 2000).

There are numerous public and private drinking water supplies in the Big Wood River Basin. The Sun Valley Water and Sewer District operates and maintains nine wells in two groupings (IDEQ 2000). The City of Ketchum drinking water system consists of seven wells in two groupings. The City of Hailey's drinking water system consists of six wells and a spring (IDEQ 2000).The City of Bellevue drinking water system consists of two wells and three springs (IDEQ 2000).

Generally speaking, public drinking waters systems in the Big Wood River Valley are rated as moderate to high (IDEQ 2000). Multiple factors affect the likelihood of movement of contaminants from the sources to the aquifer, which lead to this moderate to high score. Soils in the area are poorly to moderately drained. The vadose zone is predominantly gravel, which increases the score. On the valley floors the average depth to ground water is twenty to fifty feet.

To date, routine water quality monitoring of public drinking water indicates that there are no significant volumes of heavy metals migrating through the regional or localized ground water systems. More specifically, there are not any long-term or recurring water chemistry problems in the Sun Valley Water and Sewer District drinking water sources. One well in the Sun Valley system has had one instance (August 1991) when cadmium exceeded the MCLs (IDEQ 2000). There is no current, long term or recurring water chemistry problems in the City of Ketchum's drinking water sources. Arsenic, nickel, antimony, barium, selenium, chromium, cyanide and nitrate have been detected in Ketchum's wells, but all were well below MCLs (IDEQ 2000). There is no long term or recurring water chemistry problems in the City of Hailey's drinking water sources. Manganese, Zinc, chromium, and mercury have been detected in Hailey's wells, but all were well below MCLs (IDEQ 2001). Currently, there are no data that indicate that any

metal concentrations have exceeded MCLs in the Bellevue drinking water systems (IDEQ 2000).

Surface Water

The Queen Bess lies at the confluence of an ephemeral drain (Mammoth Gulch) and the Big Wood River Valley. When illuminated, the inclined shaft appeared to be flooded, but due to safety concerns no samples were collected. Based upon the dispersal of the waste rock, the degree to which the unnamed creek and subsequently the surface water users have been adversely affected is not known.

There are no drinking water intakes within the 15-mile Total Distance Limit (TDL). The following TDL in-water segment was calculated from the lowest elevation workings on the Queen Bess. The nearest surface water is an unnamed creek which lies immediately east of the site and flows southwest for approximately 1.25 miles until it merges with the Big Wood River. The Big Wood River continues to the south for the remainder of the 15-mile TDL (see Figure 4).

Sensitive Species and Wetlands

The national wetland data base indicates that wetlands exist along the Big Wood River downstream from the Queen Bess Mine (see Figure 5). The riparian areas adjacent to the workings, where not disturbed from construction activities, do not appear to have suffered any phytotoxic affects.

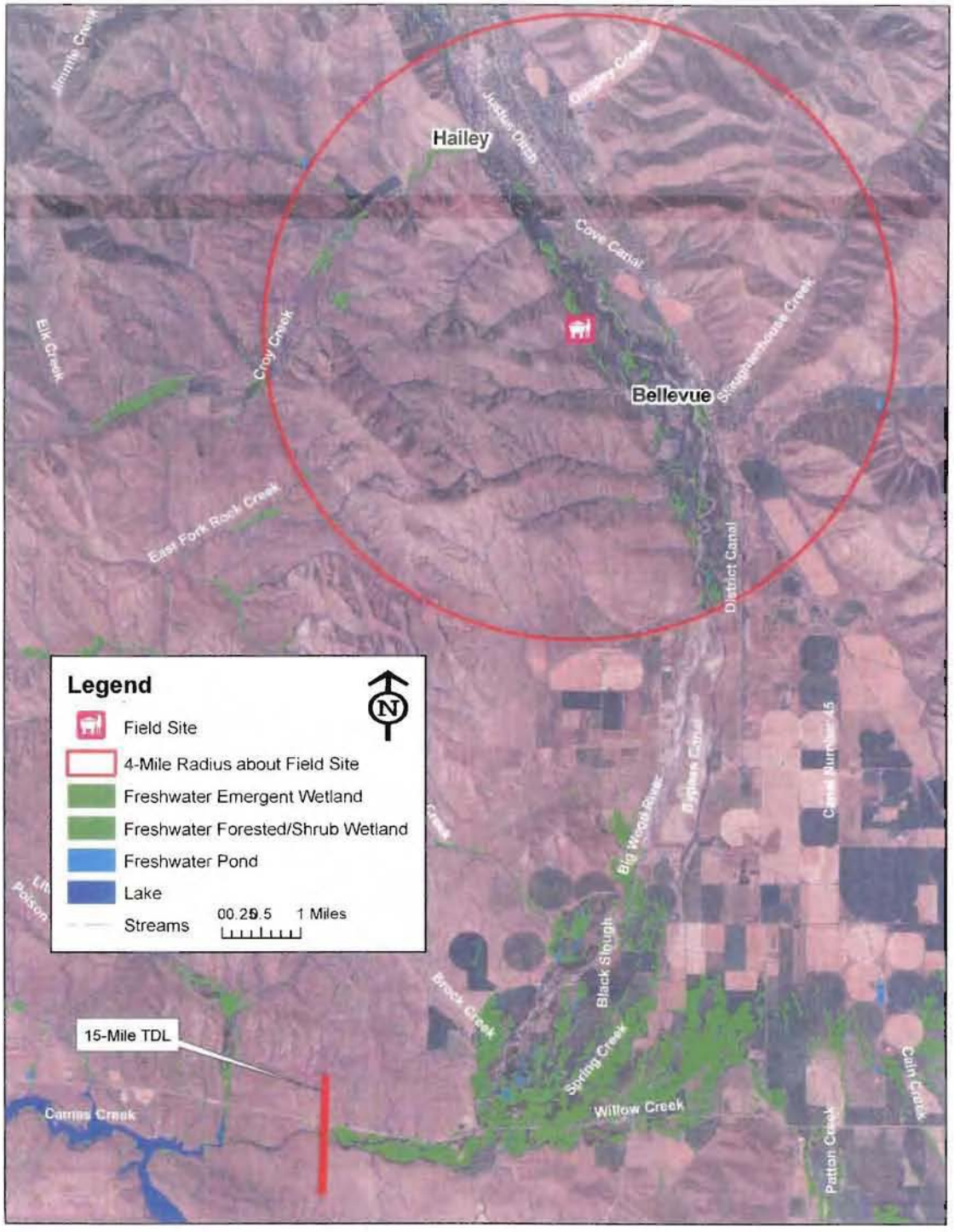

Hailey
Bellevue
Jimmie Creek
Justice Ditch
Quigley Creek
Cove Canal
Elk Creek
Croy Creek
Slaughterhouse Creek
East Fork Rock Creek
District Canal
Big Wood River
Black Slough
Brock Creek
Spring Creek
Willow Creek
Cain Creek
Patton Creek
Camas Creek
15-Mile TDL
Legend
Field Site
4-Mile Radius about Field Site
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Lake
Streams
0 0.25 0.5 1 Miles
N

Figure 4

The site lies to the south of the potential wolf range. However, since wolves range over a wide area, exposure to heavy metals at the site and potentially within the adjacent stream/pond may be limited, thus minimizing any dose. Therefore, it does not appear as though the site could cause adverse affects in this sensitive species.

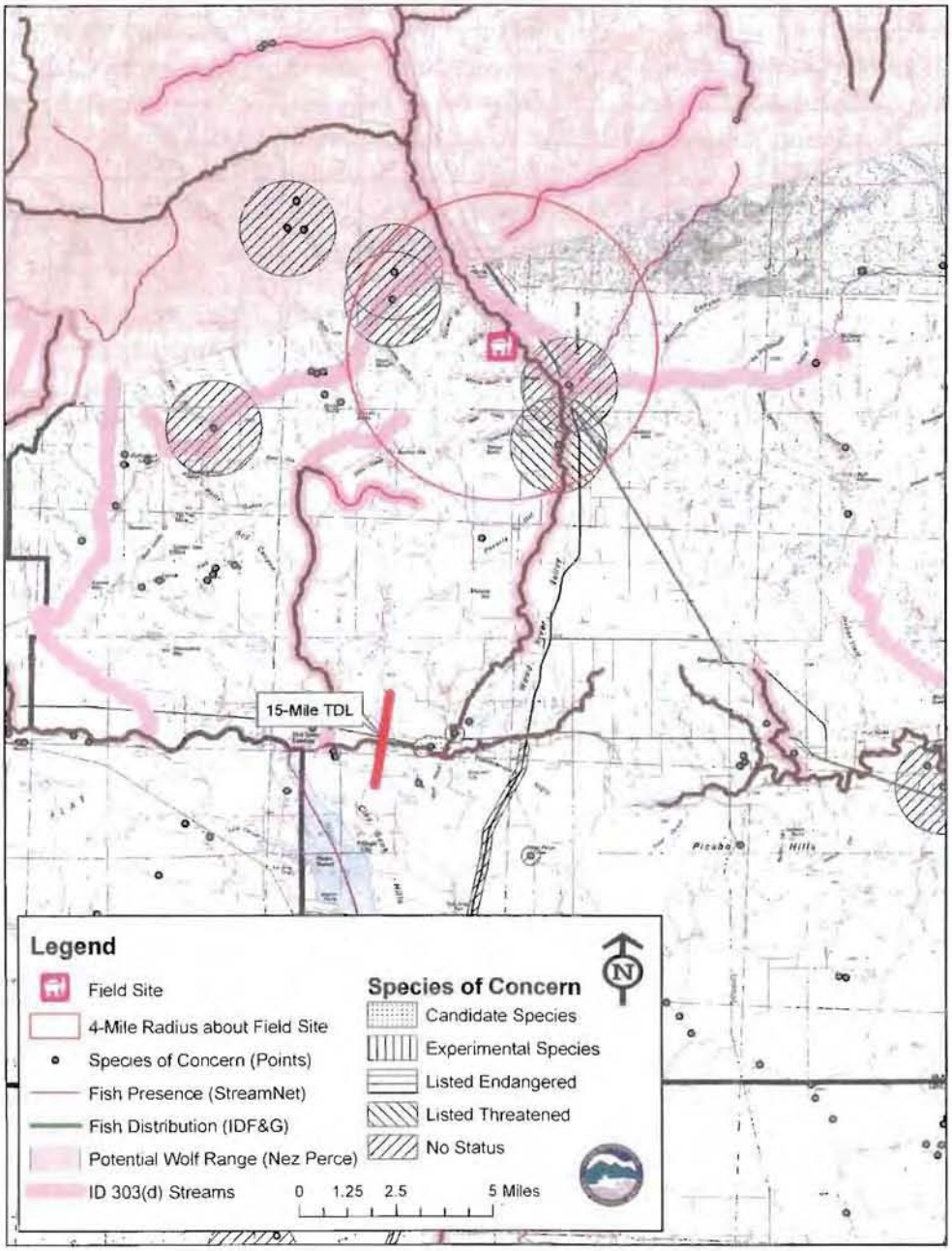


Figure 5

Conclusions and Recommendations

Based on existing conditions and uses and historic information, the IDEQ has determined that No Remedial Action is Planned (NRAP) for this property is warranted. Although IDEQ's Source Water Assessments were used to evaluate potential affects of this mine on public drinking water supplies no inferences can be made about the affects that this and adjoining mines have on local private wells. Private well owners are advised that routine testing of their wells for metals and other potentially harmful contaminants is a good practice. Furthermore, based on the historical information regarding mine development and production, IDEQ recommends if the mine site is developed, particularly for residential purposes, a more thorough site characterization is completed, and development plans include risk management provisions.

The Queen Bess claim has at least one adit and one inclined shaft. The inclined shaft is open to an unknown depth, a portion of which appears flooded. The adjacent adit is partially open as well. Both of these workings warrant closure to minimize safety hazards. If constructions of homes or other buildings do occur above mine workings, unstable ground conditions or subsidence may be experienced.

References

Anderson, A.L., Kiislgaard, T.H., and Fryklund, V.C., Jr., 1950, *Detailed geology of certain areas in the Mineral Hill and Warms Springs mining districts, Blaine County, Idaho;* Idaho Bureau of Mines and Geology, Pamphlet No. 90, 37 p.

Bureau of Land Management, 2006, *Land Patent Details* – BLM GLO Records. http://www.glorecords.blm.gov/PatentSearch/Detail.asp?Accession=IDIDAA+046037&Index=1&QryID=41620.75&DetailTab=1

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Idaho Department of Environmental Quality. 2000. City of Hailey (PWS 5070022) Source Water Assessment Final Report.

Idaho Department of Environmental Quality. 2001. City of Ketchum (PWS 5070028) Source Water Assessment Final Report.

Idaho Department of Environmental Quality. 2000. City of Bellevue (PWS 5070004) Source Water Assessment Final Report.

Umpleby, J.B., Westgate, L.G., and Ross, C.P., 1930, *Geology and ore deposits of the Wood River region, Idaho, with a description of the Minnie Moore and nearby mines by Hewett,* USGS Bulletin 814, 250 p.

Western Regional Climate Center (WRCC), 2007. http://www.wrcc.dri.edu/cgi-bin/cliGCStP.pl?id3942

APPENDIX A

ABBREVIATED PRELIMINARY ASSESSMENT CHECKLIST

This checklist can be used to help the site investigator determine if an Abbreviated Preliminary Assessment (APA) is warranted. This checklist should document the rationale for the decision on whether further steps in the site investigation process are required under CERCLA. Use additional sheets, if necessary.

Checklist Preparer: Bruce A. Schuld - IDEQ (Name/Title) 11/16/07 (Date)
1410 N. Hilton (Address) 208-373-0554 (Phone)
bruce.schuld@deq.idaho.gov (E-Mail Address)

Site Name: Queen Bess Mine (aka Queen Bess Claim aka Grover Crocker Mine

Previous Names (if any): aka Chicago Patented Mining Claim aka Bellevue King Mine

Site Location: **Mammoth Gulch Road 1.5 miles northwest of Bellevue, Idaho**
(Street)

Latitude: **43 28' 45.03"N** **Longitude:** **114 17' 35.68"W**

Describe the release (or potential release) and its probable nature: Sediment and heavy metals were suspected as having been release to the air and both surface an ground waters. Exposures to local residents, recreators, and wildlife was also suspected prior to completing a site visit.

Part 1 - Superfund Eligibility Evaluation

If all answers are "no" go on to Part 2, otherwise proceed to Part 3.	**YES**	**NO**
1. Is the site currently in CERCLIS or an "alias" of another site?		X
2. Is the site being addressed by some other remedial program (Federal, State, or Tribal)?		X
3. Are the hazardous substances potentially released at the site regulated under a statutory exclusion (e.g., petroleum, natural gas, natural gas liquids, synthetic gas usable for fuel, normal application of fertilizer, release located in a workplace, naturally occurring, or regulated by the NRC, UMTRCA, or OSHA)?		X
4. Are the hazardous substances potentially released at the site excluded by policy considerations (i.e., deferred to RCRA corrective action)?		X
5. Is there sufficient documentation to demonstrate that no potential for a release that could cause adverse environmental or human health impacts exists (e.g., comprehensive remedial investigation equivalent data showing no release above ARARs, completed removal action, documentation showing that no hazardous substance releases have occurred, or an EPA approved risk assessment completed)?		X

Please explain all "yes" answer(s).

_____

Part 2 - Initial Site Evaluation

For Part 2, if information is not available to make a "yes" or "no" response, further investigation may be needed. In these cases, determine whether an APA is appropriate. Exhibit 1 parallels the questions in Part 2. Use Exhibit 1 to make decisions in Part 3.

If the answer is "no" to any of questions 1, 2, or 3, proceed directly to Part 3.	**YES**	**NO**
1. Does the site have a release or a potential to release?	X	
2. Does the site have uncontained sources containing CERCLA eligible substances?	X	
3. Does the site have documented on-site, adjacent, or nearby targets?	X	

If the answers to questions 1, 2, and 3 above were all "yes" then answer the questions below before proceeding to Part 3.	**YES**	**NO**
4. Does documentation indicate that a target (e.g., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site?		X
5. Is there an apparent release at the site with no documentation of exposed targets, but there are targets on site or immediately adjacent to the site?		X
6. Is there an apparent release and no documented on-site targets or targets immediately adjacent to the site, but there are nearby targets (e.g., targets within 1 mile)?		X
7. Is there no indication of a hazardous substance release, and there are uncontained sources containing CERCLA hazardous substances, but there is a potential to release with targets present on site or in proximity to the site?		X

Notes: Although the potential exists for a release the source is remotely located, the pathways are incomplete to viable receptors, or there is no indication at the proximity to receptors that and exposure(s) have occurred.

EXHIBIT 1 SITE ASSESSMENT DECISION GUIDELINES FOR A SITE

Exhibit 1 identifies different types of site information and provides some possible recommendations for further site assessment activities based on that information. You will use Exhibit 1 in determining the need for further action at the site, based on the answers to the questions in Part 2. Please use your professional judgment when evaluating a site. Your judgment may be different from the general recommendations for a site given below.

Suspected/Documented Site Conditions		APA	Full PA	PA/SI	SI
1. There are no releases or potential to release.		**Yes**	No	No	No
2. No uncontained sources with CERCLA-eligible substances are present on site.		**Yes**	No	No	No
3. There are no on-site, adjacent, or nearby targets.		**Yes**	No	No	No
4. There is documentation indicating that a target (e.g., drinking water wells, drinking surface water intakes, etc.) has not been exposed to a hazardous substance released from the site.	Option 1: APA SI	**Yes**	No	No	Yes
	Option 2: PA/SI	No	No	Yes	NA
5. There is not an apparent release at the site with no documentation of targets, but there are targets on site or immediately adjacent to the site.	Option 1: APA SI	**Yes**	No	No	Yes
	Option 2: PA/SI		No	Yes	NA
6. There is an apparent release and no documented on-site targets and no documented targets immediately adjacent to the site, but there are nearby targets. Nearby targets are those targets that are located within 1 mile of the site and have a relatively high likelihood of exposure to a hazardous substance migration from the site.		No	**Yes**	No	No
7. There is no indication of a hazardous substance release, and there are uncontained sources containing CERCLA hazardous substances, but there is a potential to release with targets present on site or in proximity to the site.		**No**	Yes	No	No

Part 3 - EPA Site Assessment Decision

When completing Part 3, use Part 2 and Exhibit 1 to select the appropriate decision. For example, if the answer to question 1 in Part 2 was "no," then an APA may be performed and the "NFRAP" box below should be checked. Additionally, if the answer to question 4 in Part 2 is "yes," then you have two options (as indicated in Exhibit 1): Option 1 --conduct an APA and check the "Lower Priority SI" or "Higher Priority SI" box below; or Option 2 -- proceed with a combined PA/SI assessment.

Check the box that applies based on the conclusions of the APA:

	NFRAP		Refer to Removal Program - further site assessment needed
	Higher Priority SI		Refer to Removal Program - NFRAP
	Lower Priority SI		Site is being addressed as part of another CERCLIS site
	Defer to RCRA Subtitle C		Other: _____
	Defer to NRC		

Regional EPA Reviewer: Bruce A. Schuld _____ _____

Print Name/Signature Date

PLEASE EXPLAIN THE RATIONALE FOR YOUR DECISION: ___No direct discharges of mine adit drainage were identified, and the amount of wastes did not cover a large enough area to represent a significant source of human or ecological receptors. Therefore the source pathway and exposure were incomplete.

NOTES: