



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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

April 28, 2011

Mr. Clint Hughes
Minerals Specialist
USFS – Nez Perce National Forest
104 Airport Road
Grangeville, ID 83530

Subject: Site Assessments of the Penman Mine and Homestake Mine/Badger Shafts,
Orogrande Area, Idaho County, Idaho

Dear Mr. Hughes:

The Idaho Department of Environmental Quality (DEQ) has completed a review of historical mining data and geological information for the above referenced mines within mixed ownership lands near Orogrande, Idaho. During the review, DEQ also conducted site visits to the Penman Mine and the Homestake Mine/Badger Shafts. During the visit, mine site activities such as shafts, collapsed tunnels, adits, tailings piles/waste dumps, and collapsed structures were observed and mapped in order to provide a comprehensive analysis necessary to complete an Abbreviated Preliminary Assessment (APA).

The APA is used to help site investigators determine if their findings result in a determination of No Remedial Action Planned (NRAP), or if additional analysis is warranted. The APA documents the rationale for the decision on whether further steps in the site investigation process are required under the Federal Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA). If additional analysis was warranted a Preliminary Assessment (PA) would have been prepared for this site.

PAs are conducted in accordance with CERCLA. The reasons to complete a PA include:

- 1) To identify those sites which are not Comprehensive Environmental Response, Compensation, and Liability Information System (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;

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- 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 of hazardous substances through the Hazard Ranking System (HRS).

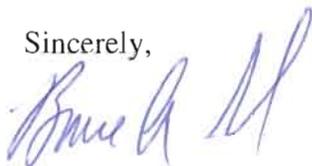
DEQ has also completed PAs under contract with the U.S. Environmental Protection Agency in order to identify risks to human health and the environment and make recommendations to land owners regarding how risks might be managed, if necessary.

DEQ offers the following health and safety recommendations relating to the aforementioned mines. Open adits pose a safety hazard to the general public who often wish to enter and explore them. Although DEQ did not find substantial toxicological risks associated with the heavy metals concentrations in the waste dumps present at these mines, repeated contact with soil and dust from these waste dumps is not advised and should be managed.

Attached are the Abbreviated Preliminary Assessments (APAs) for the Penman Mine and the Homestake Mine/Badger Shafts. Although the Penman Mine is located on private property and DEQ did not have permission from the landowner to access DEQ utilized the FS access road which runs through the property to conduct an assessment. The APAs contain mine history, limited geological information, site photographs, and maps of the property. Based on this information, DEQ is recommending the Penman Mine and the Homestake Mine/Badger Shafts property status be designated as No Remedial Action Planned (NRAP).

If you have any comments or questions about these sites, the reports, DEQ's recommendations, or if I may be of any other assistance, contact me at (208) 373-0554.

Sincerely,



Bruce A. Schuld
Mine Waste Projects Coordinator
Waste Management and Remediation Division

Attachment

cc: Ken Marcy – U.S. Environmental Protection Agency
Penman Mine File
Homestake Mine/Badger Shaft File

ABBREVIATED PRELIMINARY ASSESSMENT

This is an Abbreviated Preliminary Assessment (APA) for the Homestake Mine and Badger Shafts near Orogrande, Idaho. This document provides the rationale for the determination of No Remedial Action Planned (NRAP) or if additional analysis or site investigation is necessary for the Homestake Mine and Badger Shafts. Additional sheets are attached which contain relevant information including photo logs, historical data, and maps generated during site visits or desktop research.

Preparer: Daniel D. Stewart **Date:** 3/23/11
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Site Name: Homestake Mine and Badger Shafts

Note: This site was developed in conjunction with the Penman Mine.

Previous Names (aka): Twin Circles, Badger, Pennsylvania Lode

Site Owners: Homestake Mine: United States Forest Service
Nez Perce National Forest
104 Airport Road
Grangeville, ID 83530

Badger Shafts: United States Forest Service
Nez Perce National Forest
104 Airport Road
Grangeville, ID 83530

Site Location: Access via County Road 233 (the Crooked River Road) is approximately 12 miles south from the junction with State Highway 14 to Old Orogrande. In Old Orogrande FS Road 311 heads southeast 3.9 miles to the Homestake Mine. The Badger Shafts are near Badger Summit, one half mile past the lower workings. The Homestake Mine is on USFS land, and the Badger Shafts are one of the stops on the USFS Gold Rush Loop Tour.

Township 27 North, Range 8 East, Section 19

Homestake Mine: **Latitude:** 45.66531°N **Longitude:** -115.52528°W

Badger Shafts: **Latitude:** 45.66308°N **Longitude:** -115.52165°W

Describe the release (or potential release) and its probable nature:

This site was investigated for potential releases of heavy metals and sediment from mine waste dumps and potential discharges of other deleterious materials, such as petroleum products and ore processing chemicals. No evidence or indications of these materials was located on site. See site photographs at the end of this report.

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 that may be released from 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 that may be released from the site excluded by policy considerations (i.e., deferred to RCRA corrective action)?		x
5. Is there sufficient documentation to demonstrate that there is no potential for a release that constitutes risk to human or ecological receptors? <i>(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)?</i>	x	

Please explain all “yes” answer(s):

A site inspection involving direct observations confirmed contaminants of concern do not exist in concentrations that present a threat to human health or the environment. This site was in close proximity to the Penman Mine and some of the literature ties the Penman, Homestake, and Badger Shafts into a mining group. Remnants of old buildings and structures remain in the area. No standing structures were observed. Various mining related articles are on the site.

Homestake Mine: Two collapsed adits were identified and photographed. Both were well vegetated at the bottom of the trench. Both adits were dry with no water coming from the mines. The Homestake mill site (Lat. 45.66574°N, Long. -115.52543°W) consisted of fallen down buildings and debris. The mill waste dump contained approximately 1000 cubic yards of material. This material was country rock with no ore remaining. No highly mineralized material was present. The mill waste dump had a few young trees growing from it. No pathways existed for airborne or surface water run off to impact any waters or residences.

Badger Mine/Shafts: The Badger Shafts are located on Nez Perce National Forest land at Lat. 45.66338°N, Long. -115.52192°W and Lat. 45.66308°N, Long. -115.52165°W. Both shafts are composed of garnet schist type rock with no massive sulfides present. Both shafts are collapsed and have established vegetations. The shafts are located behind the “Gold Rush Loop Tour Sign.”

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 one 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:

During the site assessments, DEQ used references from several different documents including USGS maps, county tax rolls, and historical reports that have spelled numerous claim names, town sites, and/or geographic features differently from one and another. DEQ’s use of the different spellings is to remain in context with the reference used for each given section of text or written in this report.

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. The assessor should 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. **(Circle or highlight responses)**

Suspected/Documented Site Conditions		APA	Full PA	PA/SI	SI
1. Releases or potential to release are not documented at the site.		Yes			
2. Uncontained sources with CERCLA-eligible substances have not been documented as being present on the site. (i.e. they do exist at site)		Yes			
3. On-site, adjacent, or nearby receptors are not present.		Yes			
4. There is no documentation or observations made leading to the conclusion that a sensitive receptor is present or may have been exposed (e.g., drinking water system user inside four mile TDL) 5. There is documentation that a sensitive receptor has been exposed to a hazardous substance released from the site.	Option 1: APA	Yes			
	Option 2: Full PA or PA/SI	No			
6. There is 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	No			
	Option 2: PA/SI	No			
7. 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 one mile of the site and have a relatively high likelihood of exposure to a hazardous substance migration from the site.		No			
8. There are: no indications of a hazardous substance release; 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			

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 “NRAP” 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:

x	No Remedial Action Planned (NRAP)	Defer to NRC
	Higher Priority SI	Refer to Removal Program
	Lower Priority SI	Site is being addressed as part of another CERCLIS site
	Defer to RCRA Subtitle C	Other: _____

DEQ Reviewer:

Bruce A. Schulz
Bruce A. Schulz

4/25/11

Print Name/Signature

Date

Please Explain the Rationale for Your Decision:

There are no direct airborne, surface or ground water pathways to any potable water sources or residences. At the time of DEQ’s visit there was no evidence the adits and mill site waste dump discharge water. The Badger shafts are collapsed with no evidence of water, but they do have well established vegetation. No streams or water bodies are within close proximity to the mine site. The closest residence is 2.5 to 3 miles away and is separated from the mine by structural geology. No significant evidence of mineralization remains at the mine site with the waste dumps being composed of country rock. Both adits were well vegetated in the trench left from the adits collapsing.

As a result of our observations, DEQ is recommending that this site be designated as “No Remedial Action Planned” (NRAP).

Attachments:

- Historical Information
- Site Photographs
- Maps

Historical Information

Mine History: Taken from the following: *Site Inspection Report for the Abandoned and Inactive Mines in Idaho on US Forest Service Lands (Region 1), Nez Perce National Forest, Vol. III: Elk City, Orogrande, Buffalo Hump, and Surrounding Areas, Idaho County, Idaho, Section A, Idaho Geological Survey 2001, Prepared for the U.S. Forest Service, Region 1, Under Participating Agreement No. FS-01-96-14-2800.*

The Homestake was located by Sam Silverman in the late 1890s. Silverman sunk the Badger Shaft to a depth of 170 feet in 1898 and produced a few hundred tons of ore (Shenon and Reed, 1934). However, the ore did not yield enough gold to pay his expenses, and Silverman dropped the property (Jellum, 1909). (According to Lindgren (1904), the Badger had a ten-stamp mill on Crooked River.) In 1905, James Penman relocated the old Badger mine and later sold the mine to the Homestake Gold Mining Company (Shenon and Reed, 1934). Homestake Gold was incorporated in 1919. During the 1920s, Homestake concentrated its efforts on its other property, the American Eagle Mine. The mine was apparently leased to the Badger Mountain Mining Company (incorporated, 1925; charter forfeited, 1929) for a time, but this company seems to have done only assessment work (IGS mineral property files). According to Shenon and Reed (1934), the James Penman Mines Company took over the mine in 1930. (No corporate information is available on this company.) In 1931, a contract was let for driving a long lower tunnel. A large tonnage of gold ore was developed, and a gas-driven compressor and mining equipment were installed at the property (Bennett and others, 1999). Homestake Gold forfeited its corporate charter in 1932, and Penman Mines Corporation was organized that same year (IGS mineral property files). The following year, the company shipped a test lot of ore. The mine had four tunnels (65 feet, 238 feet, 370 feet, and 1,200 feet), a 200-foot vertical shaft, and numerous short tunnels, shallow shafts, pits, and trenches. A new 50-tpd amalgamation and flotation plant was built in 1934, and nine men completed 200 feet of development work. Plans called for driving a crosscut north from the Homestake vein to the Sadie Vein and then onward to the Badger vein below the old shaft (this crosscut would be completed in 1939). By 1935, thirty men were working and the mill was running at capacity, processing 3,200 tons of ore during the year. Production in 1936 was less than the previous year. The mine was idle the following year because the company was tied up in litigation which lasted until 1940. Work resumed in 1939, but no ore was shipped until the following year. The Homestake vein was being developed from the No. 2 and No. 3 levels, with raises started between levels. The mine employed thirty men in 1940, when about 1,300 feet of new underground workings were completed. An additional seven men worked in the mill. The mine had three main tunnels (1,100 feet, 1,800 feet, and 900 feet long) and a total of 5,325 feet of workings. Mine production peaked at 8,255 tons of ore yielding 1,925 ounces of gold and 1,843 ounces of silver. In 1941, thirty-five miners were employed; these men completed 1,600 feet of new crosscuts and drifts during the year. The mine was the major lode producer in the district. The next year, the work force was reduced to ten miners, but 1,349 feet of new drifts and crosscuts were completed. Most of the 1942 production from the mine was old mill cleanings (Bennett and others, 1999; IGS mineral property files). The mine was closed in 1942 for the duration of World War II by War Production Board Limitation Order L208 (Rains, 1991). Penman Mines forfeited its corporate charter in 1942 (IGS mineral property files). Ross Brattain acquired ownership of the

property sometime after 1934, and Don Alm (the owner as of 1989) obtained the property from Brattain (Rains, 1991). Rains (1991) reported a caved adit less than 500 feet long, a shallow shaft, 700 feet of old trenching, and two prospect pits on the property.

Geologic Features: Taken from the following: *Site Inspection Report for the Abandoned and Inactive Mines in Idaho on US Forest Service Lands (Region 1), Nez Perce National Forest, Vol. III: Elk City, Orogrande, Buffalo Hump, and Surrounding Areas, Idaho County, Idaho, Section A, Idaho Geological Survey 2001, Prepared for the U.S. Forest Service, Region 1, Under Participating Agreement No. FS-01-96-14-2800.*

The geology of the Homestake Mine is summarized in Thomson and Ballard (1924), Shenon and Reed (1934), and Rains (1991). The predominant country rock in the area of the Homestake Mine is a coarse-grained biotite granodiorite which contains abundant inclusions of quartzite, schist, and gneiss. Pegmatite and intermediate-composition dikes intrude the granodiorite. Rains (1991) indicated the Homestake workings are on the northernmost of the three veins described by Thomson and Ballard (1924). The dominant sulfides in the ore were pyrite and galena (Thomson and Ballard, 1924).

One collapsed adit and several collapsed buildings were found at the Homestake Mine. The caved adit forms a large scarp in the slope at the head of a long bulldozed area. The adit is discharging water at a rate of a few gallons per minute. The water forms a pond on the surface of the dump (part of the ponded water was probably snowmelt water), which measures 130 feet long, 45 feet wide, and 20 feet thick. The largest collapsed building is about 100 feet north of the Homestake adit. The total area disturbed at this site covers 2-3 acres.

The Badger shaft site is noted on the topographic map by two shaft symbols, although only one shaft was found. The second shaft has probably been filled in. The remaining, caved shaft is about 8 feet deep, with a dump 95 feet long, 10 feet wide, and 15 feet thick. The area just south of the shaft has several backhoe trenches and pits. The disturbed area covers 1-2 acres.

Site Photographs



Photo 1. Homestake Mine Adit 1, collapsed. (7/29/10)



Photo 2. Homestake Mine Adit 2, collapsed (7/29/10)



Photo 3. Homestake Mill (7/29/10)



Photo 4. Homestake Mill Waste Dump (7/29/10)

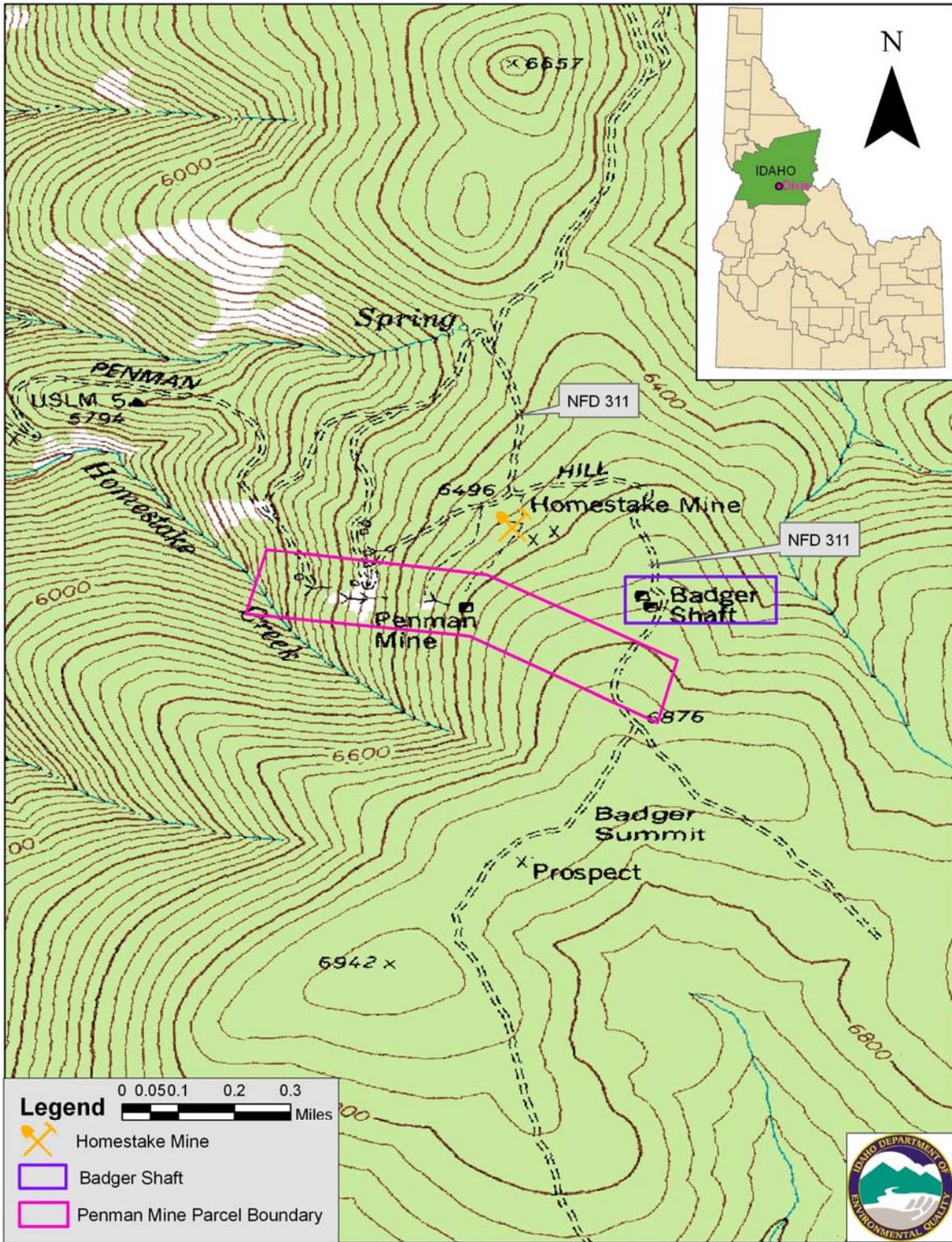


Photo 5. Gold Rush Loop Tour sign in front of Badger Shafts (7/29/10)

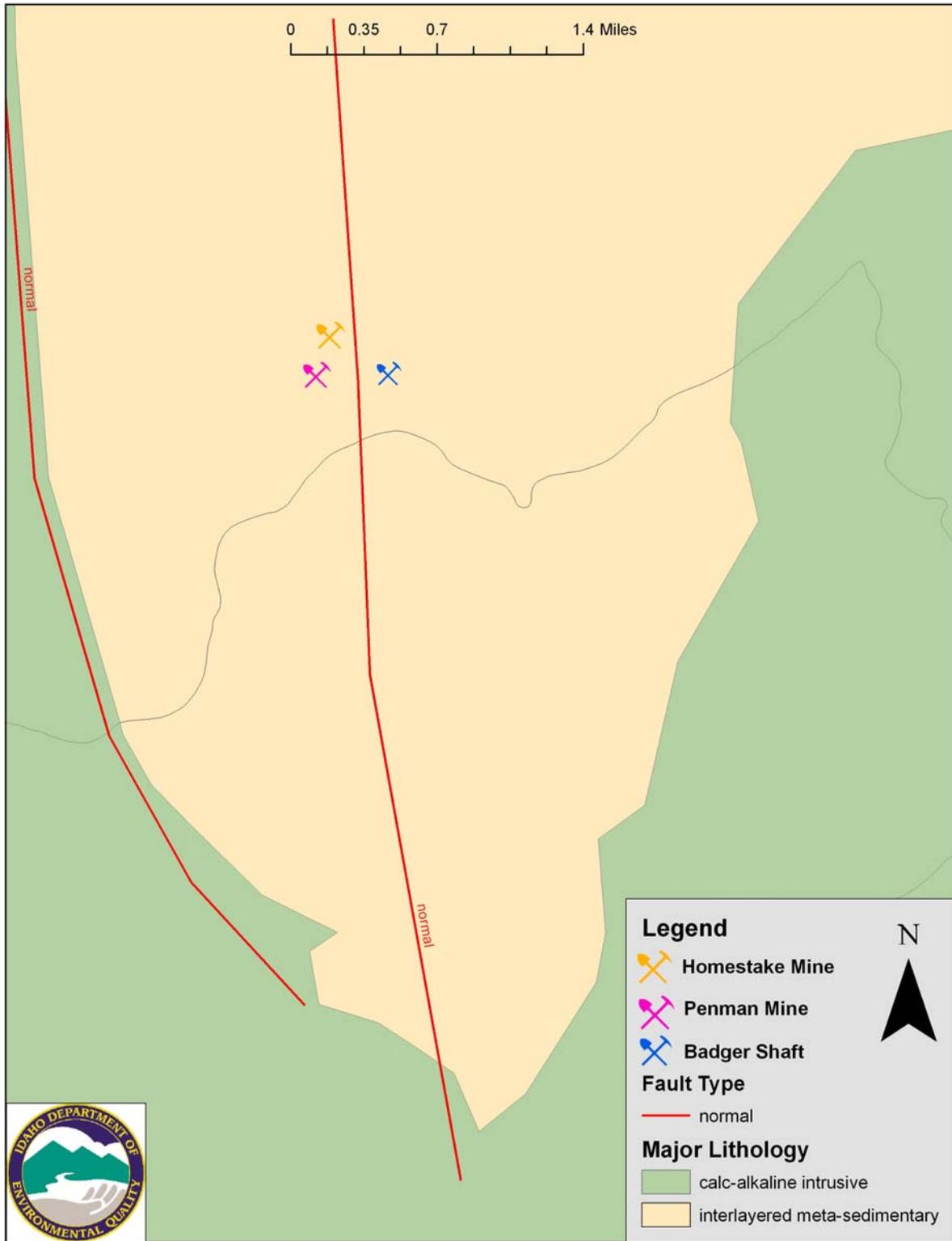


Photo 6. Badger Shaft 1, collapsed with established vegetation (7/29/10)

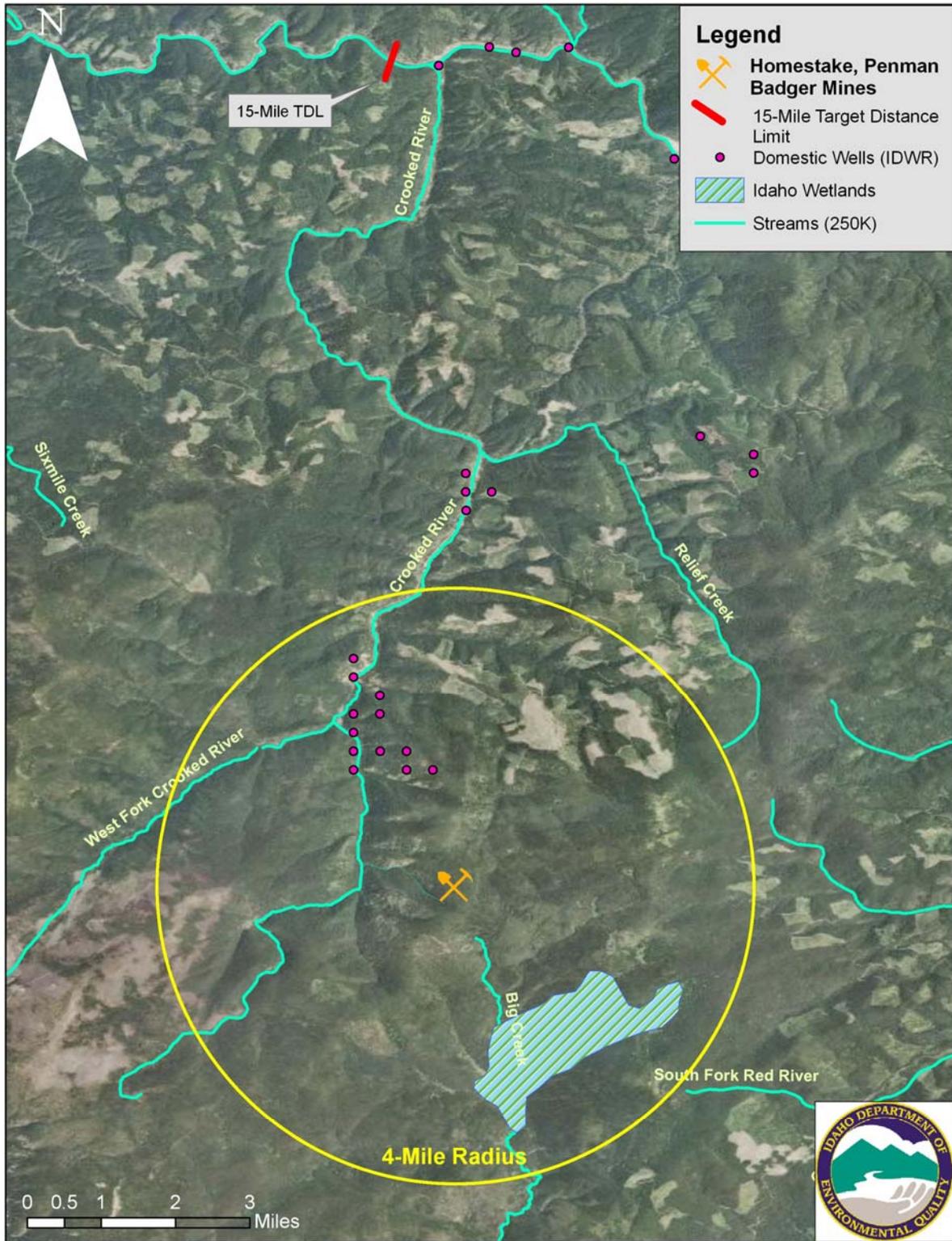
Maps



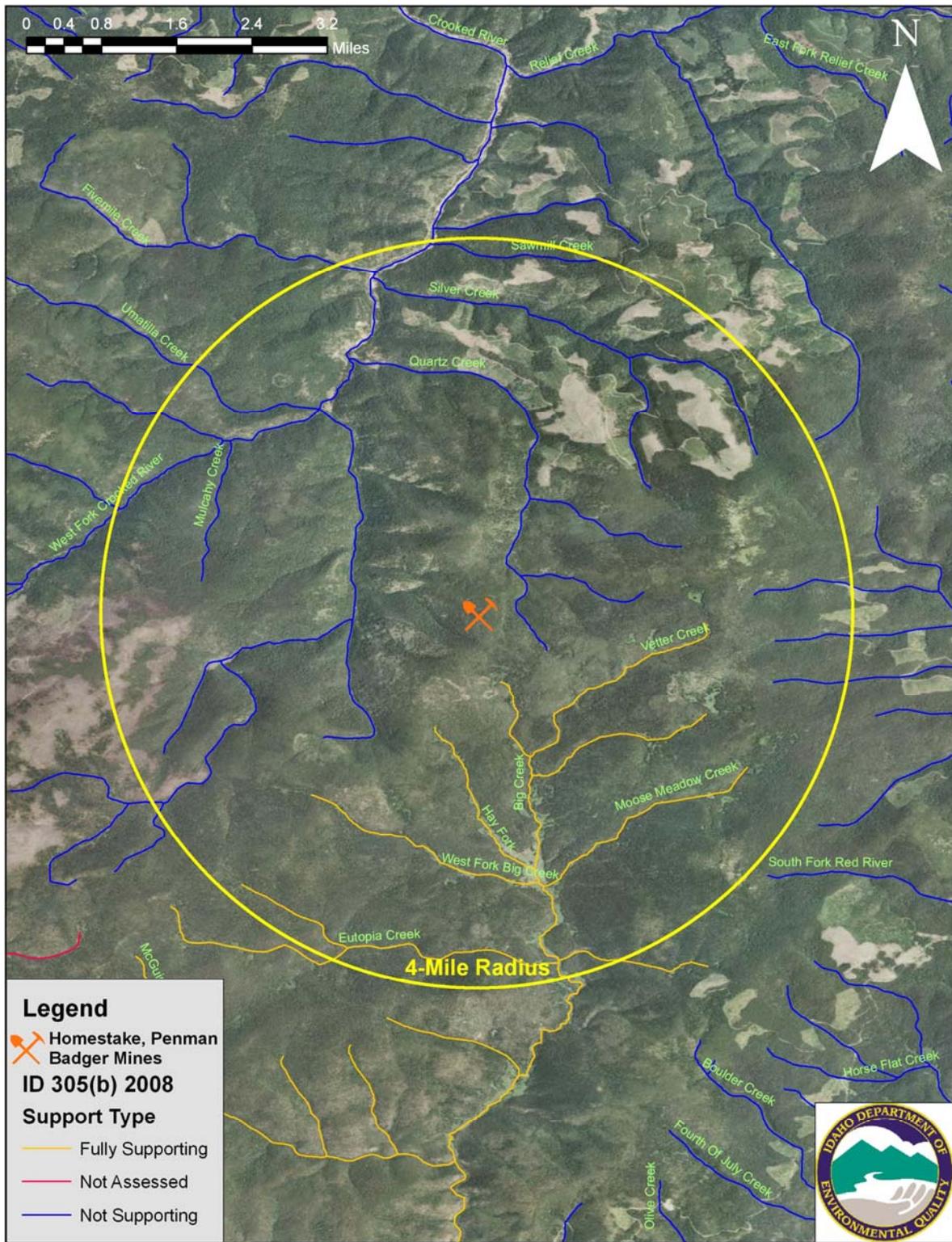
Map 1. Location of Homestake Mine, Badger Shaft, and Penman Mine with Idaho County 2010 Parcel Data Overlay (Map Source: USGS 24k Quads)



Map 2. Major Lithology of Homestake Mine, Badger Shaft, and Penman Mine and Surrounding Area (Map Source: SDE Feature Class, USGS 1995. Idaho DEQ GIS ArcSDE 9.2 Geodatabase)



Map 3. Domestic Well Locations. There are no public water systems within the four mile radius, 15 mile target distance limit (TDL). Wetlands run along Big Creek, however they are segregated by structural geology. (Map Source: 2009 Natural Color 1-meter NAIP Idaho Map)



Map 5. Sensitive Waterways within Four Mile Radius and Surrounding Area (Map Sources: SDE Feature Dataset, Animal Conservation Database and Idaho DEQ GIS ArcSDE 9.2 Geodatabase, 2009 Natural Color 1-meter NAIP Idaho Map)