

Abandoned Mine Lands Initial Investigation Report Hubbard Mine Northport, Washington

Prepared for
Washington State
Department of Ecology

December 28, 2006 17274-00(HU)







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Rick Roeder, Project Manager

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Prepared by Hart Crowser, Inc.

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ABANDONED MINE LANDS INITIAL INVESTIGATION REPORT HUBBARD MINE NORTHPORT, WASHINGTON

1.0 EXECUTIVE SUMMARY

Information obtained during this assessment is summarized in Table 1.

Table 1 - Hubbard Data Summary

Mine Name:	Hubbard Mine (Royal Gold)
Last Known Operation:	Huntting (1956) reports one carload of ore shipped, no date or
	volume given. The mine includes five unpatented claims.
	Development was 275-foot and 125-foot long adits, and two
	shafts reported about 30 feet deep. Ore is lead, zinc, silver,
	gold, and copper. The site has been repeatedly claimed and
	explored from 1977 to 1984. All claims have been closed. It is
	currently owned by the Colville National Forest.
Location:	10 miles west (by road) of railroad at Northport, Washington, on
	Forest Service Road.
	On top of peak at head of Squaw Creek,
	Stevens County, Washington.
	Latitude/Longitude: 48.92068, 117.86625 (lower)
	48.92101, 117.86860 (upper)
	Quad Map: Northport Quadrangle
	TRS: Township 40N, Range 39E, Section 32, E 1/2
Features Observed	Five adits
	One shaft
	Three waste rock piles (2,345 cubic yards)
	Three buildings
Results above Criteria	Waste rock and sediments typically exceed human health criteria
	for arsenic, cadmium, lead, and occasionally mercury. Most
	samples exceed Ecological Protection criteria for antimony,
	arsenic, cadmium, lead, nickel, selenium, silver, and zinc. Waste
	rock has the potential to fail TCLP dangerous waste criteria for
	arsenic, cadmium, lead, and silver.
Work by Others	EPA, 2002 "Preliminary Assessments and Site Inspections
	Report, Upper Columbia River Mines and Mills, Stevens County,
	Washington" TDD: 01-02-0028, START-2, Region 10, Seattle,
	Washington.
	- Transming-orn
Potential Receptors /	Human health risks possible for recreational users. Risk to

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2.0 INTRODUCTION

This report summarizes the results of the initial limited soil and surface water investigation at the Hubbard Mine site located near Northport, Washington (Figure 1). Hart Crowser performed this preliminary assessment (PA) for the Washington State Department of Ecology (Ecology) under Contract No. C06254 according to the Ecology Statement of Work (SOW) and project Sampling and Analysis Plan (SAP) prepared by Hart Crowser (Hart Crowser 2006).

The objectives of this PA are to:

- Determine whether the site has released or has a high potential to release hazardous substances to the environment at concentrations above Model Toxics Control Act (MTCA) human health or ecological screening levels, to identify sites that may require additional investigation and sampling;
- Identify and document waste source areas including estimates of waste mass and/or volume; and
- Identify and document the presence of potential waste transport pathways and receptors.

For this study, samples were collected of the soil-like fractions of waste rock, mine tailings, and/or natural soils that were potentially affected by mining. Analytical results were compared to the MTCA criteria for soils. Use of terms such as "soils" or "waste rock", etc. are for convenience only and do not indicate potential future designation in accordance with Chapter 173-350 WAC, or Chapter 173-303 WAC, or other regulatory criteria.

Subsurface openings observed for this study may include shafts, adits, prospect pits, collapsed stopes, and/or excavations completed for other purposes. The terms used in this report are based on visual interpretation in the field and may not fully characterize historical site use.

Prior to the site visit, Hart Crowser performed file reviews; evaluated aerial photographs, U.S. Forest Service and USGS maps; reviewed the Inventory of Washington Minerals; and reviewed county tax assessor records to:

- Identify the location of mines and associated features/structures;
- Identify property owners, mineral claimants, and mine operators; and
- Obtain contact information to gain permission for site access.

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Table 2 presents the project team members and their roles and responsibilities for this investigation. A site visit was accomplished on July 15, October 31, and November 1, 2006.

3.0 SITE DESCRIPTION, OPERATIONAL HISTORY, AND WASTE **CHARACTERISTICS**

3.1 Site Location

The Hubbard Mine is located approximately on Colville National Forest property 4 miles west of Northport, Washington (Figure 1). Directions to the mine are as follows:

- From Northport, head north on Center Avenue/WA-25.
- Turn left onto Sheep Creek Road. Set odometer to zero.
- At 3.3 miles make a slight left onto NF-350.
- At 4.3 miles stay right at the fork, continuing on NF-350.
- At 6.0 miles NF-350 becomes NF-1500960.
- At 7.3 miles, there will be a small clearing on the right side, which leads to an overgrown road. Park here.
- Follow this road for several hundred feet to the lower portion of the Hubbard Mine. The road continues to the Upper Hubbard Mine, as described below.

The access description provided herein is based on observations at the time the site was visited for this work. References to roads do not reflect property ownership, and does not imply that public access is available.

This site is located on Steven's County Parcel No 8008737.

3.2 Site Description

The Hubbard Mine is an inactive lead, zinc, silver, gold, and copper mine.

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Lower Hubbard

Building 1 is the first feature encountered on the site. It is an open-topped building filled with waste rock that sits adjacent to the access road at the south corner of the site. It has two chutes that face the road and may have been used to load rail cars. The waste rock pile, WR-1, lies in and around Building 1 and is also adjacent to the access road, extending across the southeast boundary of the site (Photograph 1). WR-1 is approximately 660 cubic yards in size and is generally composed of a dry, gray, slightly silty, sandy Gravel with cobbles. A small trestle-like structure at the top of WR-1 may have been used to transport ore to Building 1. An ephemeral drainage channel runs over the top of WR-1 and connects with a natural break where the waste rock meets Building 1. The access road forks west near Building 1 and switches back, passing over Adit 1. A second building, potentially used as a dwelling, is located at the switchback.

A collapsed adit, Adit 2, is located at the north corner of WR-1. A pile of boards sits on top of the adit and small pieces of metal debris are scattered within the prospect (Photograph 2). Adit 1 is an open adit northwest of WR-1. There is water within the adit and an ephemeral drainage channel courses from the adit, through the prospect, and ends. Partially collapsed timbers support boards and metal that hang over the prospect of Adit 1 (Photograph 3). Boards and a small tank, about 2 by 2 by 1.5 feet in size, lie in front of the adit (Photograph 4). A cool breeze could be felt near Adit 1. This breeze may be due to airflow from the shaft above, or changing temperature gradients created by the shade inside the prospect.

East Adit

A road departs from the Lower Hubbard site in an eastern direction. A small trail is located near the first switchback, leading to the east adit, Adit 3. The east adit is a small prospect with about a 5- by 10-foot opening that extends approximately 12 feet into a rock face. The prospect is solid rock on all sides, and we did not observe any water or drainage channels (Photograph 5).

Upper Hubbard

Continuing on from Lower Hubbard, the road switches back several times before reaching the Upper Hubbard site. Prior to reaching Upper Hubbard, we encountered a cabin and debris pile. The cabin contains a bed frame and stove, and the roof is collapsed. An outhouse-like structure is located nearby, to the west, but no pit was identified (Photograph 6). A pile of metal debris and tires is located on the southwest side of the cabin. Glass bottles, rusted cans, a bed

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frame, a stove, and an unidentified wood and metal structure (Photograph 7) were observed within the pile of debris.

The road into the Upper Hubbard Mine site leads past a building (Building 3) before reaching Adits 4 and 5 and WR-2 (Photographs 8 and 9). The building contains a stove and shelves and may have been used as housing. Adits 4 and 5 were filled with water, although Adit 4 appears to be shallow and may not extend more than approximately 15 feet into the rock face. The road cuts through WR-2 and continues east below the waste rock pile. WR-2 contains damp, tan, slightly silty, very sandy Gravel with cobbles and is approximately 1,275 cubic yards in volume.

A shaft and a third waste rock pile, WR-3, are located south of WR-2. The shaft is approximately 10 feet in diameter, but the depth could not be determined. A metal trashcan was observed near the shaft. WR-3 is 410 cubic yards in volume (Photograph 10). Wood debris (boards and timbers) lie at the top of the pile.

3.3 Site Ownership and Operations History

Information on site ownership and operations is based on readily available public information and may not reflect all details of ownership and operations. An ownership timeline is shown below in Table 3.

Table 3 – Ownership Timeline

Year	Owner	Source
Current Land	Colville National Forest	Parcel No. 8008737, Stevens
Ownership		County Tax Assessor
Current Claim	No patented claims located on site.	Stevens County Tax Assessor,
Ownership		BLM
1956	Mines Management	Huntting (1956)
1949	Hubbard Mining Corp.	Huntting (1956)
1945	Bruder Mining Co.	Huntting (1956)

4.0 SITE INVESTIGATION ACTIVITIES

The initial investigation of the Hubbard Mine site took place on July 15, 2006. A second visit was made on October 31 and November 1, 2006. Site sketches were created, GPS data and waste rock samples were collected, and site photos were taken. Sample locations, site photo locations and directions, and GPS waypoints are presented on Figures 3 and 4.

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4.1 Soil and Waste Pile Sampling

During the initial site visit, three waste rock samples were collected from WR-1 and were sieved through an ASTM No. 10 sieve. On a second visit, four additional samples were collected from WR-2 and WR-3. Sample descriptions and locations are presented in Table 4 and on Figures 3 and 4.

4.2 Surface Water and Seep Sampling

Although water was present within Adit 1, a sample could not be collected due to the debris hanging over the prospect. Water was not draining from the adit at the time of observation. The water within Adits 4 and 5 was not collected because it was stagnant. Because of the configuration of the adit openings, it is unlikely that surface water discharges from these adits. No seeps were observed on the site.

4.3 Sediment Sampling

A sediment sample, Hubbard-Sed 1, was collected from the drainage pathway below Adit 1, since water could not be collected in this area as discussed above.

5.0 ANALYTICAL RESULTS AND ENVIRONMENTAL HAZARD ASSESSMENT

Soil and water quality data were compared to regulatory criteria for screening purposes as discussed below. Further analysis, including risk-based analyses may be appropriate in additional future site assessments.

5.1 Surface Water and Sediment

The sediment sample collected exceeded MTCA Method A criteria for cadmium, MTCA Method B criteria for arsenic, and ecologic protection criteria for aluminum, cadmium, mercury, selenium, and zinc.

5.2 Soil

Soil and waste rock sample analytical results (Table 5) were compared with applicable MTCA Method A cleanup levels, MTCA Method B cleanup levels for soil ingestion, soil ingestion and dermal contact combined, and with criteria for ecological protection of plants, soil biota, and wildlife.

The metals concentrations in the three samples collected from WR-1 exceeded MTCA Method A criteria for arsenic and cadmium. These samples also

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exceeded MTCA Method B criteria for arsenic and ecological protection criteria for arsenic, lead, selenium, and zinc. Sample Hubbard-WR1-S1 exceeded ecological protection criteria for nickel. Samples Hubbard-WR1-S2 and Hubbard-WR1-S3 exceeded Method A criteria for arsenic and ecological protection criteria for silver. Sample Hubbard-WR1-S3 also exceeded ecological protection criteria for nickel.

The metals concentrations in the three samples collected from WR-2 exceeded MTCA Method A criteria for arsenic, cadmium, and lead; MTCA Method B criteria for arsenic; and ecological protection criteria for antimony, arsenic, cadmium, copper, lead, mercury, selenium, silver, and zinc. Samples Hubbard-WR2-S1 and Hubbard-WR2-S2 also exceeded the Method A criteria for mercury. Sample Hubbard-WR2-S3 exceeded the MTCA Method B criteria for cadmium.

One waste rock sample was collected from WR-3. The metals concentrations in the this sample exceeded MTCA Method A criteria for arsenic, cadmium, lead, and mercury, Method B criteria for arsenic; and ecological protection criteria for arsenic, cadmium, lead, mercury, silver, and zinc.

It should be noted that the Method A criterion for cadmium and mercury are based on groundwater protection. Cadmium concentrations in all but one of the collected samples (Hubbard-WR2-S3) and all mercury sample concentrations were below the Method B direct contact criterion.

5.3 Air

No air monitoring was conducted. The coarse, damp nature of the waste rock makes it unlikely that contaminated airborne dust is a concern at this site. In addition, no residences or cabins were observed in the vicinity.

5.4 Methodology for Threatened and Endangered Species Information

We contacted the Washington State Department of Natural Resources (DNR), the Washington State Department of Fish and Wildlife (WDFW), the U.S. Fish and Wildlife Service (USFWS), and the Colville National Forest - USDA Forest Service to obtain information on the presence of state and federal threatened or endangered terrestrial and aquatic species. We determined that the WDFW maintained the most accurate and up-to-date information on species distribution in its Priority Habitats and Species (PHS) Database. We requested maps and narratives identifying documented species presence at the Bonanza Mine. In addition, we contacted DNR and requested information on rare plants and high quality native wetland and terrestrial ecosystems within the vicinity of the Hubbard Mine.

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Our search ranges included a 4-mile radius for terrestrial species and a 15-mile radius for aquatic species.

We reviewed approximately 86 PHS maps and accompanying narratives to determine whether any threatened or endangered species were documented within our search ranges. We drew 4- and 15-mile radii around the Bonanza Mine on a Colville National Forest Map. We then examined the PHS maps in relation to the search ranges for our project areas. All state and federal threatened and endangered species and habitats that occurred within our search ranges were recorded. Species and habitats that occurred on the edge of our search range were considered within the range and recorded.

A summary of the threatened and endangered species within our search ranges is provided in Table 6.

6.0 SUMMARY AND CONCLUSIONS

The Hubbard Mine site contains three waste rock piles totaling approximately 2,345 cubic yards. The three waste rock piles and some nearby sediments contain metals at concentrations above MTCA Method A, MTCA Method B, and/or the ecological protection screening criteria. The main contaminants of concern are arsenic, cadmium, lead, mercury, selenium, silver, and zinc. Although no toxicity characteristic leaching procedure (TCLP) analyses were conducted, the concentrations of arsenic, cadmium, lead, and silver have the potential to fail TCLP criteria for dangerous waste. Additional sampling and TCLP analysis are recommended.

No residences were observed on the site. Human health risks are likely limited to recreational and occupational site users since there are no residences in the vicinity. MTCA Method A and B screening levels may overestimate risk to recreational users since their exposure duration is less than the duration for residential exposure. A site-specific terrestrial ecological evaluation (TEE) would be required to evaluate ecological risks.

7.0 USE OF THIS REPORT

Work for this project was performed, and this report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed, in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of the Washington State Department of Ecology for specific application to the referenced property. This

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report is not meant to represent a legal opinion. No other warranty, express or implied, is made.

The information in this report is intended to be used to determine whether the site has released or has a potential to release hazardous substances to the environment at concentrations above Model Toxics Control Act (MTCA) human health or ecological screening levels.

8.0 REFERENCES

BLM (Bureau of Land Management) Website http://www.geocommunicator.gov/

Ecology 1990. Washington Ranking Method Scoring Manual. Ecology Publication 90-14. Revised April 1992.

Ecology 2001a. Model Toxics Control Act Cleanup Levels and Risk Calculations (CLARC II) Update. November 2001.

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Huntting, Marshall T., 1956, "Inventory of Washington Minerals", Part II Metallic Minerals, 2 volumes. State of Washington Department of Conservation and Development, Bulletin No. 37, Washington State printing office, Olympia, Washington.

Henry Day, "The Records of the Aurum Mining Company" University of Idaho Special Collections, accessed on 6/26/06 by PLR, at http://www.lib.uidaho.edu/special-collections/Manuscripts/dmginv/mg235.htm

Mindat.org website http://www.mindat.org/index.php

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Stevens County Tax Assessor's Website:

http://www.co.stevens.wa.us/assessor/assessor.htm

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Table 2 - Project Team Roles and Responsibilities

	Personnel	
Project Role	Assignment	Roles/Responsibilities
Ecology Project Manager	Rick Roeder	Client Project Manager
	Ecology	
	(509) 454-7837	
Program Manager	Mike Bailey	Ensures that all work is carried out in accordance with
	Hart Crowser	contractual obligations and the Delivery Order statement of
	(206) 324-9530	work. Assists the Project Manager as needed with
		technical decisions and in resolving issues. Final reviewer.
Project/Task Manager	Roger McGinnis	Overall responsibility for execution of the Work Plan.
	Hart Crowser	Coordinate with Client, Field Manager and Program
	(206) 324-9530	Manager as necessary to resolve issues.
Corporate Health and	Mike Ehlebracht	Overall responsibility for review and answering questions
Safety Officer (HSO)	Hart Crowser	regarding H&S.
	(206) 324-9530	
Field Manager and Site	Abby Bazin/Pat Reed	Ensures that explorations are conducted and samples are
Safety Coordinators (SSC)	Hart Crowser	collected in accordance with project specifications.
	(206) 324-9530	Coordinates field activities with Project and Program
		Managers.
Mine Information Research	Pat Reed	Determined location of mine, access route, and ownership
	Mike Swenson	
	Hart Crowser	
	(206) 324-9530	
Project Chemist	Erin Breckel	Performs laboratory coordination and data quality review to
	Hart Crowser	assure analytical methods and data are consistent with
	(206) 324-9530	project needs and data quality objectives.
Laboratory Services	Harvey Jacky	Analyzes soil, sediment, and water samples.
	Columbia Analytical	
	Services	
	(360) 577-7222	

Table 4 – Hubbard Mine Sample Inventory

Sample Name	Sample Location	Sample Description
Waste Rock Sample	es	
Hubbard-WR1-S1	At top of WR-1 on east end.	Dry, gray to dark gray, slightly
		silty, sandy Gravel with cobbles
Hubbard-WR1-S2	Center of WR-1, near trestle.	Dry, light gray to gray, slightly silty,
		sandy Gravel with cobbles
Hubbard-WR1-S3	Western portion of WR-1.	Dry, tan to light brown, slightly
		silty, sandy Gravel with cobbles
Hubbard-WR2-S1	Top center of WR-2	Damp, tan, slightly silty, very
		sandy Gravel with cobbles
Hubbard-WR2-S2	Center of WR-2	Damp, tan, slightly silty, very
		sandy Gravel with cobbles
Hubbard-WR2-S3	Bottom center of WR-2	Damp, tan, slightly silty, very
		sandy Gravel with cobbles
Hubbard-WR3-S1	Top center of WR-3	Damp (frozen), orange and gray,
		silty, sandy Gravel with cobbles up
		to 4 inches. Very soil-like with
		organic (decaying vegetation)
		odor.
Sediment Sample		
Hubbard – Sed 1	In drainage channel near Adit 1.	

Table 5 - Analytical Results for Soil and Sediment Samples - Hubbard Mine

SDG	MTCA	MTCA	A Method B	Ecological	K0606045	K0606045
Sample ID	Method A	Soil	Soil	Protection (c)	Hubbard-Sed 1	Hubbard-WR1-S1
Sampling Date	(a)	Ingestion (b)	Ingestion &	Plant/Soil Biota/Wildlife	7/15/2006	7/15/2006
			Dermal Contact (b)			
Total Solids in %					51.1	99.7
Total Metals in mg/kg						
Aluminum		80,000	72,072	50 / /	1,910	
Antimony		32	29	5 / /	0.38	2.64
Arsenic	20	0.67	0.62	10 ^d / 60 / 132	3.5	48.6
Beryllium		160	144	10 / /	0.1	0.91
Cadmium	2	80	74	4 / 20 / 14	23	3.09
Chromium	2,000 ^e	120,000 ^e	44,571 ^e	42 / 42 / 67	2.8	11.7
Copper		2,960	2,700	100 / 50 / 217	11.8	44.9
Iron		24,000	21,622	/ /	2710	
Lead	250			50 / 500 / 118	33.2	84.4
Manganese		11,200	10,090	1,100 / / 1,500	805	
Mercury	2	24	18	0.3 / 0.1 / 5.5	0.18 J	0.07 J
Nickel		1,600	1,441	30 / 200 / 980	29.8	46.2
Selenium		400	360	1 / 70 / 0.3	9.8	7.9
Silver		400	360	2 / /	0.08	1.96
Thallium		5.6	5.0	1 / /	0.06	0.09
Zinc		24,000	22,000	86 / 200 / 360	2,840	279

Notes:

U = Not detected at the detection limit indicated.

- J = Estimated value.
- -- Not established or Not applicable.

Bold - Concentration exceeds ecological criterion.

Box - Concentration exceeds MTCA Method A or Method B criterion.

- (a) WAC 173-340-740(2), WAC 173-340-900 (Table 740-1). Model Toxics Control Act (MTCA) Method A.
- (b) WAC 173-340-740(3). MTCA Method B Unrestricted land use soil cleanup standards. For carcinogenic constituents, the value presented is the lower of the non-carcinogenic and carcinogenic level calculated using Equations 740-1 and 740-2 for ingestion only. Equations 740-4 and 740-5 for ingestion and dermal contact. Information from CLARC 3.1 was used unless otherwise noted.
- (c) WAC 173-340-740(3)(b)(ii), WAC 173-340-749, WAC 173-340-900 (Table 749-3).
- (d) Based on Arsenic V (10 mg/kg)
- (e) Based on Chromium III

Table 5 - Analytical Results for Soil and Sediment Samples - Hubbard Mine

SDG	K0606045	K0606045	K0609838	K0609838	K0609838
Sample ID	Hubbard-WR1-S2	Hubbard-WR1-S3	Hubbard-WR2-S1	Hubbard-WR2-S2	Hubbard-WR2-S3
Sampling Date	7/15/2006	7/15/2006	10/31/2006	10/31/2006	10/31/2006
Total Solids in %	94.4	99.4	85.7	84.3	78.8
Total Metals in mg/kg					
Aluminum					
Antimony	17.1	0.66	3240	623	166
Arsenic	91.8	48.7	2010	1310	614
Beryllium	0.52	0.94	0.3	0.52	0.53
Cadmium	35.4	4.25	32.8	18.8	313
Chromium	38.2	2.7	10.1	12	9.26
Copper	44.3	13	299	177	127
Iron					
Lead	1,880	461	75700	35000	21300
Manganese					
Mercury	0.1 J	0.02 UJ	3.85	2.28	1.85
Nickel	39.5	12.6	7.65	9.71	22.4
Selenium	3.4	4.8	6.4	5.4	10.1
Silver	4.63	5.04	238	112	48.7
Thallium	0.22	0.06	0.29	0.27	0.15
Zinc	4,950	419	4660	3220	41200

Notes:

U = Not detected at the detection limit indicated.

- J = Estimated value.
- -- Not established or Not applicable.

Bold - Concentration exceeds ecological criterion.

Box - Concentration exceeds MTCA Method A or Method B criterion.

- (a) WAC 173-340-740(2), WAC 173-340-900 (Table 740-1). Model Toxics Control Act (MTCA) Method A.
- (b) WAC 173-340-740(3). MTCA Method B Unrestricted land use soil cleanup standards. For carcinogenic constituents, the value presented is the lower of the non-carcinogenic and carcinogenic level calculated using Equations 740-1 and 740-2 for ingestion only. Equations 740-4 and 740-5 for ingestion and dermal contact. Information from CLARC 3.1 was used unless otherwise noted.
- (c) WAC 173-340-740(3)(b)(ii), WAC 173-340-749, WAC 173-340-900 (Table 749-3).
- (d) Based on Arsenic V (10 mg/kg)
- (e) Based on Chromium III

Table 5 - Analytical Results for Soil and Sediment Samples - Hubbard Mine

SDG	K0609838
Sample ID	Hubbard-WR3-S1
Sampling Date	11/01/2006
Total Solids in %	90.4
Total Metals in mg/kg	
Aluminum	
Antimony	2.07
Arsenic	24.9
Beryllium	0.31
Cadmium	7.65
Chromium	16.1
Copper	41.6
Iron	
Lead	483
Manganese	
Mercury	2.25
Nickel	16.1
Selenium	1.4
Silver	4.04
Thallium	0.17
Zinc	582

Notes:

U = Not detected at the detection limit indicated.

- J = Estimated value.
- -- Not established or Not applicable.

Bold - Concentration exceeds ecological criterion.

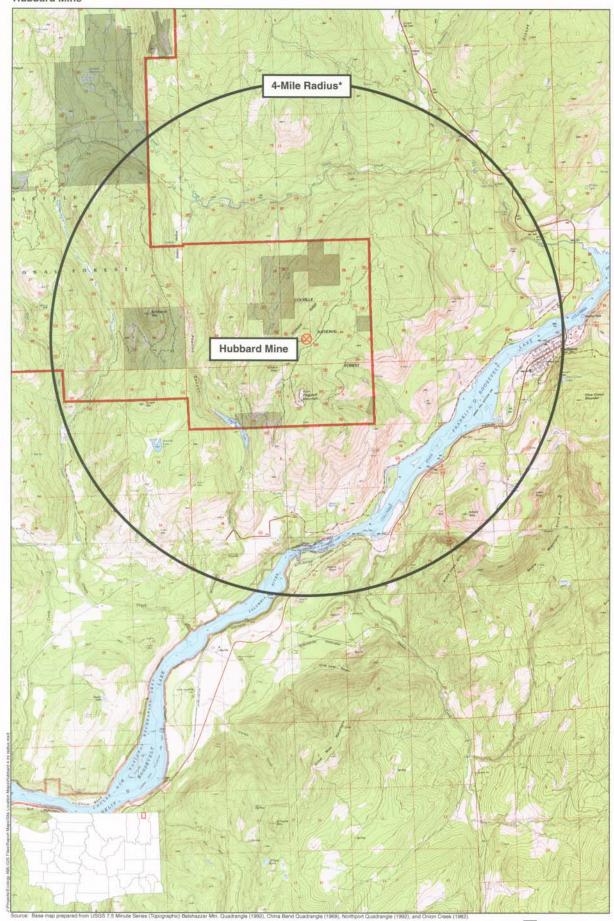
Box - Concentration exceeds MTCA Method A or Method B criterion.

- (a) WAC 173-340-740(2), WAC 173-340-900 (Table 740-1). Model Toxics Control Act (MTCA) Method A.
- (b) WAC 173-340-740(3). MTCA Method B Unrestricted land use soil cleanup standards. For carcinogenic constituents, the value presented is the lower of the non-carcinogenic and carcinogenic level calculated using Equations 740-1 and 740-2 for ingestion only. Equations 740-4 and 740-5 for ingestion and dermal contact. Information from CLARC 3.1 was used unless otherwise noted.
- (c) WAC 173-340-740(3)(b)(ii), WAC 173-340-749, WAC 173-340-900 (Table 749-3).
- (d) Based on Arsenic V (10 mg/kg)
- (e) Based on Chromium III

Table 6 - Threatened and Endangered Species

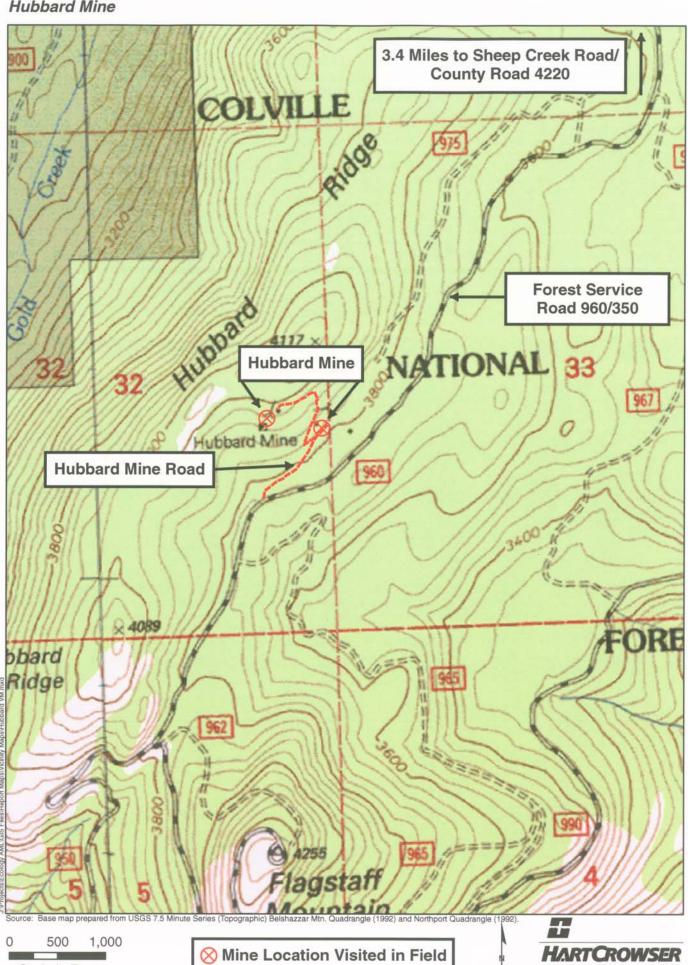
Species	Federal	Status	State Status	3	Narrative
	T	Е	Т	Е	
Bull trout (Salvelinus confluentus)	X				Lower reach of Onion Creek, lower reach of Boulder Creek, Deep Creek, and Big Sheep Creek
Lynx (Lynx canadensis)	X		X		Big Sheep Creek and American Fork

Site Location Map Hubbard Mine





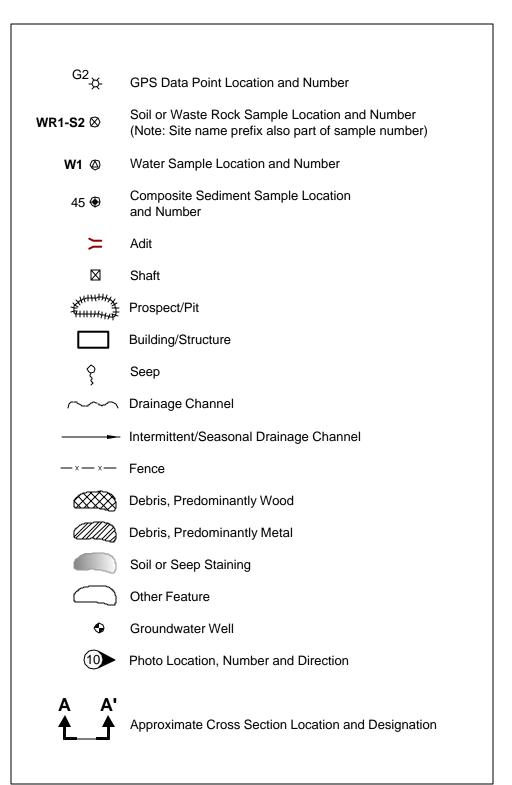




Scale in Feet

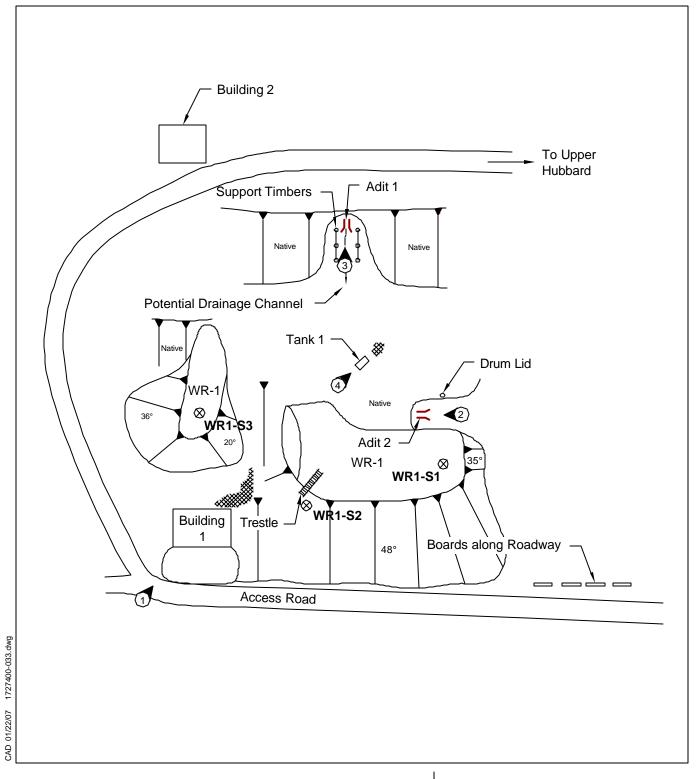
17274-00 (HU) Figure 2

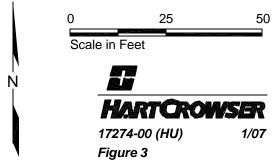
Standard Key for Site Plan Hubbard Mine



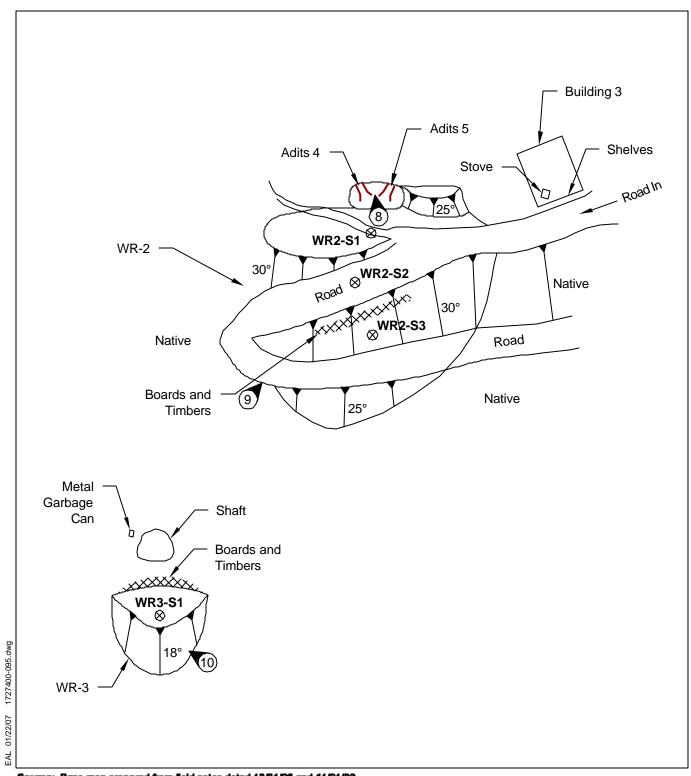


Site Plan Lower Hubbard Mine



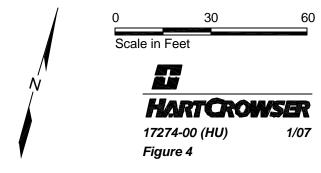


Site Plan Upper Hubbard Mine

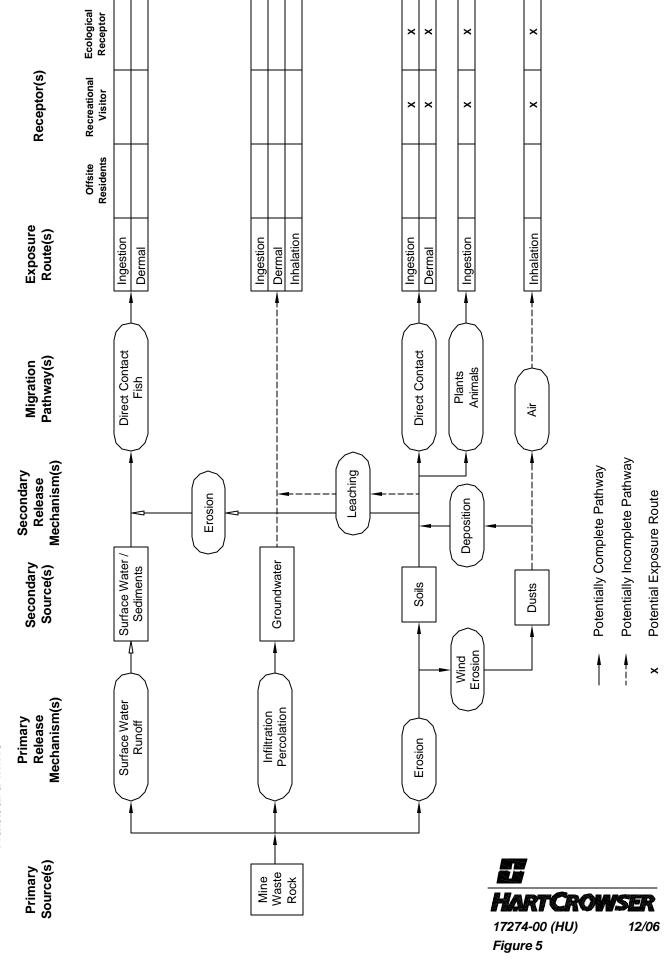


Source: Base map prepared from field notes dated 10/31/05 and 11/01/08.

Note: Location of Photographs 5, 6, and 7 are not shown.



Mine Waste Rock Conceptual Site Model for Human and Ecological Risk Hubbard Mine



APPENDIX A FIELD DOCUMENTATION

Directions to Sit	Directions to Site (from a main road or landmark appearing on map)	ad or landmark	k appearing	on map)				į						
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													·	
	·													
					ļ. 									
													7	
Terrain Slope (C	Terrain Slope (Circle where applicable):		1. Flat	2. Vertical	3. Sloped (if slope	3. Sloped (if sloped, report approx slope angle)	ope angle)							
Physical Easterns / Commen	of Courses				slope angle:	deg	•				-			
Mine Openings:	shaff(s)	(s)	bit(s)		other (explain)			7	story st	andropes out	- Howker structures overhead may	٤		
: : :	Open / closed / collepsed / flooded	_ =	iter Present]		Peran	Parameters:	A		المراجعة المراجعة	peron inorem	· the		
Opening Type / Count ID / John?		in feet 5 x 10 x R		Flowrate in GPM	£	Cond in mS	Temp in C	/	fig: bals other!	fig. bels. other) Photos-Dete)	GPS:		Desertation	
H.PV	565	547		202	to way	2005 made/	vader 14.7		7	Butte - P3 - 6/15	G7: 1278958, 476985		Adit on northeast side of WR-2	
Har-	As-12 Lovened	~4×6	2	ممركم	(1 1	N		2 2			#04r35 +	Boards tweet streps	Marsiely & Possiely
	*Elevation Measure	Elevation Measurement Method: Baharameter T = Tone Man C = Onter females	arometer T =	Tono Man O - O	A Carleston									drains Though
Mining Activity-Related Piles:	nted Piles:	waste	waste rock pile(s)		tailings pile(s)	§	leach pile(s)	ore / leach pile(s) debris pile(s)		other (explain)				Charles No.
City Total	_	į		Distressed Seepage: Active / % Vegetative Cover (trees / brush Vegetation	% Vegetative Co	ver (frees / brush	Distressed Vegetation	Recent Human	J					
(Le.) WR-	(Le.) WR-1 150 x 50 x 3	2000000	(X/W)	Inschie	3806/	moss)				SdS	Sample Name(s)	Esumaled Paracle Gradation	Soile Classification:	
1-72	SKOTA	48	T	MISCONG	78/5/1		z	bottles, footprints	G1:G4 (see below)	5	Butte - WR1 - S1:S4	0.5" - 4"	moist, gray, sl sitty, v sandy, Gravel	
					,									- 1
			1				-							
														_

8urvey Date 7/5/00

Feature ID HALPARE

AML Feature inventory

sample Inventory

(Site - Feature - Sample Number)	Location	GPS Name	Northing/Easting		
Je.) Butte - WR1-S1	Southern and of WR-1, top.	G9: Butte - WR4 - 21			Seived?
Who knd - vel - 51				motst, gray, sity, v. gravelly, Sand	Y, ASTM #10
Word - WILL - 52					٤
111-1-Km1-57					S
7					
John Indon					5
					-7
	The second secon				
	e.				
	The state of the s	1,000			
The second secon					
Millian Market		مستنيم كتشميخ تندست فيتناطب	The second secon	The second secon	

Adolf has a slight cool breeze flowing from, it. No odor

.

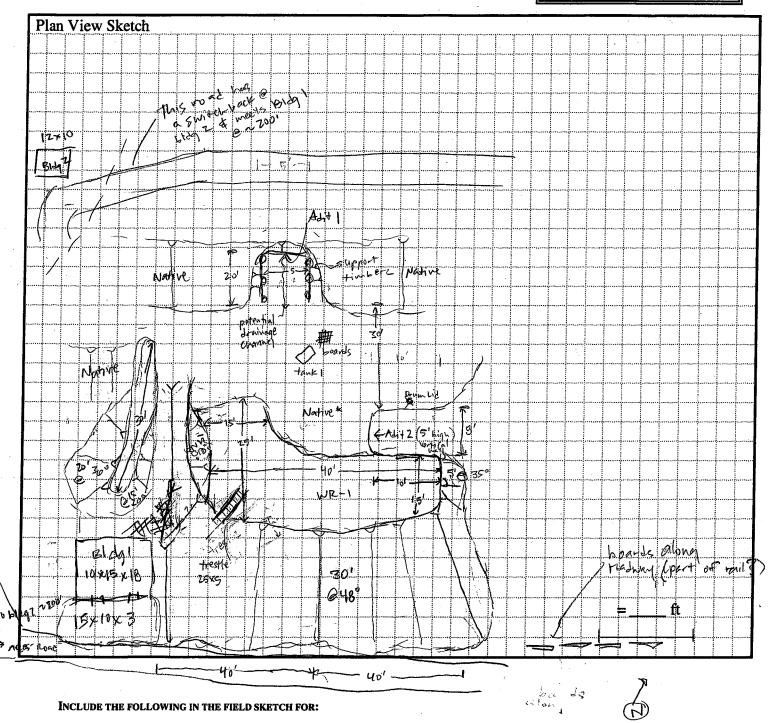
AML Feature Inventory	Inventory								•			,		
Feature ID Surveyor(s)	ASPS ASPS	MJS	36.						•	Survey Date	NO/51/L	page 2		
Physical Featur	s / Sources (Co	(penu							•	• .				
Mining Activity-Rel	Mining Activity-Related Ponds or Liquid Containment Structures:	ontainment Struct	tures:		esch pond(s) tailings pond(s	tallings pond(s		tailings impoundment(s)	other (explain)	xplain)				
Pond Type / Count ID		Lined (Y/N)	Liquid Present (Y/N)	H	Parameters: Cond in mS	eters: Temp in C		Animals Present (e.g. bets, other)	Samble Name(s)	Vame(s)	Vac			
[4] (a.)	50×30×4	z	z	-		1			Butte - LP1 - S1:S2	25:	G5: 1278965, 476985	385		
Turne / Count ID		1	Pond(s) Lake(s)											
(i.e.) Flume Creek	GPS 427840E 4708EE			Location		Sample Name	Name	Flowrate in GPM	Hd	Cond in mS	Temp in C	rarameters:	Odor shoon	Sections
William Clock	12/8496, 4/9865		southern site border	rder		Butte - Flume Creek 1	ne Creek 1	0.1	6.2	0.153	10.9		None None	Iscoloration?
	llг													
Type / Count ID	49 Seep Staining	.			Color	Distance fron	Distance from Potential Contaminant Source to	minant Source to					-	
(ie) Stain 1	soil downslope of Adit 1	1	models and the second	20	1 9	Receptor 100' instance of Etume Cook	Receptor Etumo Crook		Source & Receptor		Notes	S		
							N N N N N N N N N N N N N N N N N N N		USU.		ferricrete-like			
Seasonal Flow Paths or Channels	is or Channels		•											
. Count / ID	Water Present	d	,		-			Parameters:	978:		Order of the Control			
(ie) Drainage 1	Z	Ritte - Sed 1	. Name	04.4070045	GPS	Flowrate in GPM	£	Cond in mS	Temp in C		Source to Receptor	uar Contamnant eceptor	Source & Receptor	Beepfor
Drainage	2	15-13- Zugant	15-18	G1: 12/3645, 4/6965	4/0965	•	1	•	•		discharges into Flume Creek	me Creek	fish	
Wetlands	Desinge is likely although Forthway once estiting prospect is when	tely although	h uspeet is und	<u>د</u> <u>د</u>										,
Count / ID	S49 (Flowmate in GPM	Hd	Cond in mS	ters: Temo in C		Distance from Potential	ofential					
(ie) Wetland 1	G7: 127856, 476985		1 L/min		0.2			Confaminant Source to Rec 50' N of Pend Oreille River	eptor	Source & Receptor None	Receptor			
												=		

2 ore Elites facing readment page 3 Survey Date 7/15/0∪ emicals Assoc with Mill possibly part of open live 9 other (explain) Distance from Potential Contaminant Other (explain) ____ machinery timbers (some charred), rails, stakes, and sheet metal vail いんって ナーマ・サイト Se はっかっ Distressed Vegetation? 7 つかない partially collapsel that of boserds ____ scrap metal to boad mil cons rugted, small boles, halfscrap as star ex drum(s) arterities other (explain) SW Intake(s) Pit Toilet(s) Evidence of Wildlife or Recent Human Activity (Auturen fortprints en failings Bergan C) scrap lumber rusted. Lid only WR Storage Solo mear bilds assay equip & retorts drum(s) 55 dry, rusted, no lid 2×2×1.5 Bldg. Footprint in ft. ² Mill Footprint in ft. ² GW Well(s) 10+15 5-5-5×10'×1' 2×5×5 5×7 Surveyor(s) ASIS MJS Physical Features / Sources (Continued) ح Feature ID + Poblic 5 do 1 Liquid or Waste Containment Structures: Mill Prosent AML Feature Inventory Water Supply Structures: (ie) scrap lumber & metal Other Building (a) 4x Buildings / Structures Other Observations: Type/ID Type/ID Debris / Refuse: 1××1 Ground Cover

AML Field Checklist Page

AML FEATURE INVENTORY/MONITORING **FIELD FORM**

Feature ID Hubbard Lower Date Weather



North Arrow

Scale Bar

Photo Location(s) and View Direction(s) Sample Location(s) and ID(s):

W-# Water

S-# Soil

T-# Tailings

R-# Rock (Waste)

O-# Ore

S-# Other (Describe)

FOOTPRINT(S) OF:

MILLS

BUILDINGS

STRUCTURES

MINING-RELATED PILES

OTHER

SURFACE WATER (PONDS, SEEPS, ETC.)

GPS Collection Location 🌣

Elevation (Topographic Variation)

Slope Direction

+ WR-like material W/2-3" vegetative must overlying

J:\Jobs\1727400\AML Field Forms\AML Feature Inventory Sketch Forms.doc Last modified 6/6/2006

21,	GB: Butte - WR1 - S1 G7: 1278956. 4796921 mioist, gray, silly, v. gravelly, Sand Y. A.	GPS Name NorthrolEasting	Sed / Rooded Dimensions Water Present Conding France of Tomp in C Tomp in C (in talk other) Provent Photo # (Site-	ffle) [V] actit(s) [prit(s) [cther (explain)			Adit on north modes, gries, at sills, v.	988. 476886 888. 476886 891 Description	Stare Photo & Citter Photo Bulle - P3 - 6115 Bulle - P3 - 6115 Garage Garage	t fumen (c)		atope of freeped, report atope angle: atope angle: atope angle: At Const A	2. Vertical 1. Control of the contr	Southern end of	where applicable ources Ources
Location GPS Name Northing Easting Southern end of WR-1, top. GR. Budge - WR1 - S1 G7: 1278968. 479682.1 moist, gray, silly, v, gravely, Sand S5	Location GPS Name Northrol Fasting	_	5 x 10 x 8 Y 0.5 Lmin 3.4 0.254 14.7 n n n n n n n n n	1	1. Field 2. Vertical 3. Shoped (if shoped, moort approx alone) 1. Field 2. Vertical 3.4 Conditions C	1. Fat 2. Verteal 3. Shoped (Fagues age)									
Location GR. Budge - WR1 - S1 Gr. 1278966. 479897 moles, gray, silly, v. gravely, Sand	Location GP's Name Northing Easting		5 x 10 x 8 Y 0.5 L/min 3.4 0.254 14.7 n n Buttle - P3 · G17 12786956 Adit on norther Cover (Inces / Parts) Dates in CV/NV Seepage Acide > 2004 / 3074 / 15% Nogetion CV/NV Incepte	18 18 18 18 18 18 18 18	1. Flat 2. Vertical 3. Stoped (if signed, report approx slope angle) 1. Stoped (if signed, report approx slope angle) 1. Stoped (if signed, report approx slope angle) 2. Vertical 3. Stoped (if signed, report approx slope angle) 2. Stoped (if signed, report approx slope angle) 2. Stoped (if signed)	3. Stopped of wagest experies stope angles) 4. Stopped of wagest report apparex stope angles) 5. Stopped of wagest report apparex stope angles) 5. Stopped of wagest report apparex stope angles) 6. Stopped o									
Location GP'S Name Northing Easting Southern end of WR-1, top. GR: Buds - WR-1 - S1 G7: 1278966, 479882.1 molet, grav, silly, v, gravely, Sand S5 Description S5 D	Location GPS Name Northrog Easting		5 x 10 x 8 Y 0.5 Lmin 3.4 0.254 14.7 n Buttle -P3 - 6/15 GS - 1278656, 478656 Adit on norther continuous state of positions in the same process of the continuous state of positions in the continuous state of the continuous sta	18 18 18 18 18 18 18 18	1. Flat 2. Veritical 3. Sloped (if Reloped, report approx aligne) and the supplies and the	3. Shoped (if sepsed, report approx shope analys) 3. Shoped (if sepsed, report approx shoped) 3. Shoped (if seps					12		\	.2	
Continue	C Soil Descrition	.2.	5 x 10 x 8 Y 0.5 Lmin 3.4 0.254 14.7 n Buttle -P3 - 6/15 GT - 1278656, 478656 Adit on norther the sale of the copient of	17 17 17 18 17 18 18 18	1. Flat 2. Veritical 3. Sloped (if aloped, report approx alope angle) addition pritical price proper pr	3. Shoped (I s	molst, gray, sl silly, v s		e below)		ΧI	20% / 30% / 15%	inactive	1	x 20 x 3
Southern end of WR1. bt. Cit. Builds - WR1	C	1 1 1 1 1 1 1 1 1 1	5 x 10 x 6 Y 0.5 Lmin 3.4 0.254 14.7 n Blutte - P3. G115 G27. 1278656, 478665 Nessulengent Method: Bi-baronneller, T = Topo Map, Q = Other (explain) District Active / \$4. Vogetishe Cover (lense / brish Vogetishe) District Active / \$4. Vogetishe Cover (lense / brish Vogetishe) Annother than the cover	17 17 17 17 17 17 17 17	addite)	3. Shoped (if shoped, report approx a lope angle) 2. Shoped (if shoped, report approx a lope angle) 3. Chord (explain) 4. Shoped (if shoped, report approx a lope angle) 5. Chord (explain) 6. Chord (explain) 7. Chord (explain)			GPS	Г	a	(ssom ssem)		15	∦
Security Continue	Security disperse	CANN Construction CANN Construction CANN Construction CANN Construction CANN Construction CANN Construction CANN Cannot	5 x 10 x 8 Y 0.5 Lmin 3.4 0.254 14.7 In Butte - P3 - G115 G7: 1278656, 478655	Second Present Proto # Cond in mS Temp in C Institute Cond in mS Temp in C Cond in mS Temp	1. Flat 2. Vertical 3. Stoped (if soped, report approx slope angle) addition prite) other (explain) Phandelora 1. Flat 2. Vertical 3. Stoped (if soped, report approx slope angle) addition Phandelora 1. Flat 2. Vertical 3. Stoped (if soped, report approx slope angle) 1. Flat 2. Vertical 3. Stoped (if soped, report approx slope angle) 1. Flat 2. Vertical 3. Stoped (if soped, report approx slope angle) 1. Flat 2. Vertical 3. Stoped (if soped, report approx slope) 1. Flat 2. Vertical 3. Stoped (if soped, report approx slope) 1. Flat 2. Vertical 3. Stoped (if soped, report approx slope) 1. Flat 3. Stoped (if soped, report approx slope) 1. Flat 3. Stoped (if soped, report approx slope) 1. Flat 3. Stoped (if soped, report approx slope) 1. Flat 3. Stoped (if soped, report approx slope) 1. Flat 4. Stoped (if soped, report approx sloped) 1. Flat 4. Stoped (if soped, report approx sloped) 1. Flat 4. Stoped (if soped, report approx sloped) 1. Flat 4. Stoped (if soped, report approx sloped) 1. Flat 4. Stoped (if soped, report approx sloped) 1. Flat 5. Stoped (if soped, report approx sloped) 1. Flat 5. Stoped (if soped, report approx sloped) 1. Flat 5. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if soped, report approx sloped) 1. Flat 6. Stoped (if sop	3. Shoped (if sloped, report agroot slope angle) alope angle:			(explain)	Recent Human	4	% Vegetative Cover (Iree	Seepage: Active /	Seepage Visible?	
Stepage Stepage Active Activity / Management Activity / Management Activity / Management Activity / Management Activity / Activity / Management Activity / Activity / Management Activity / Activity	Steepage Visible? Seepage: Adivo / \$V Vogetative Cover (tross / Incidence of Particle Steepage)	icos in Sepage Sepage Active Cover (trees / Vogetation Cover (trees /	3.4 0.254 14.7 n Butte - P3 - 6/15 G7: 1278956, 478965	Conditions Tamp in C	1. Flat 2. Vertical 3. Stopped (of slopped of slo	3. Stoped (If stoped, report approx stope angle) stoped (If stoped, report approx stoped angle) stoped (If stoped, report approx sto					Tabella demail and	ner (explain)	= Topo Map. O = Oth	Method: B=barometer, waste rock pile	evalibn Measurement les:
Stock Southern end of WR-1, top. Cite Copien)	Steel in Ste	in Measurement Method: B-baromities, T = Topo Map, Q = Other (explain) Assessed to the place of the child of	5 x 10 x 8		addite) pitte 2. Vertical 3. Shoped (if eloped, report approx alope angle) addite) Other (exchain) **Reference Present Proto #* Conditions** Temp in C ** 0.5 L/min 3.4 0.254 14.7* in Buttle - P3 - 6/15 G7, 1278656, 478865 **Aurins Fresent Proto #* Conditions** Temp in C ** 0.5 L/min 3.4 0.254 14.7* in Buttle - P3 - 6/15 G7, 1278656, 478865 **Aurins Fresent Proto #* Conditions** Temp in C ** 0.5 L/min 3.4 0.254 14.7* in Buttle - P3 - 6/15 G7, 1278656, 478865 **Aurins Fresent Proto #* Conditions** Temp in C ** 0.5 L/min 3.4 0.254 14.7* in Buttle - P3 - 6/15 G7, 1278656, 478865 **Aurins Fresent Proto #* Conditions** Temp in C ** 0.5 L/min 3.4 0.254 14.7* in Buttle - P3 - 6/15 G7, 1278656, 478865 **Aurins Fresent Proto #* Conditions** Temp in C ** 0.5 L/min 3.4 0.254 14.7* in Buttle - P3 - 6/15 G7, 1278656, 478865 **Aurins Fresent Proto #* Conditions** Temp in C ** 0.5 L/min 3.4 0.254 14.7* in Buttle - P3 - 6/15 G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 3.4 0.254 14.7* in Buttle - P3 - 6/15 G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 3.4 0.254 14.7* in Buttle - P3 - 6/15 G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 3.4 0.254 14.7* in Buttle - P3 - 6/15 G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 3.4 0.254 14.7* in Buttle - P3 - 6/15 G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 3.4 0.254 14.7* in Buttle - P3 - 6/15 G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 1.8** G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 1.8** G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 1.8** G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 1.8** G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 1.8** G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 1.8** G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 1.8** G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 1.8** G7, 1278656, 478865 **Aurins Fresent Proto #* 0.5 L/min 1	3. Shoped (if sloped, report approx alope angle) 3. Shoped (if sloped, report approx aloped) 4. Shoped (if sloped, report approx aloped) 4. Shoped (if sloped, report approx aloped) 5. Shoped (if sloped, report approx aloped) 6. Shoped (if sloped, report approx alope								2	5
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Continue	Companies Comp	St. 10.26 Control of the Control			2. Vertical	USGS Clade:					B	slope angle:			Durces
St. 10 see Communication	10	Abraham	slope angle: deg			Section Control Contro	7				(approx slope angle)	3. Sloped (If sloped, rapor	-		where applicable
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2. S Bopes of the large of more required to the control of the con	2. Showed of import mentitations uses a region and the state of the st	3. Sloped (if sipped, special	3. Sloped (if sloped, report approx slope angle) slope angle: deg		om a main road or landmark appearing on map)		90						ing on map)	r landmark appear	m a main road or

AML Feature Inventory

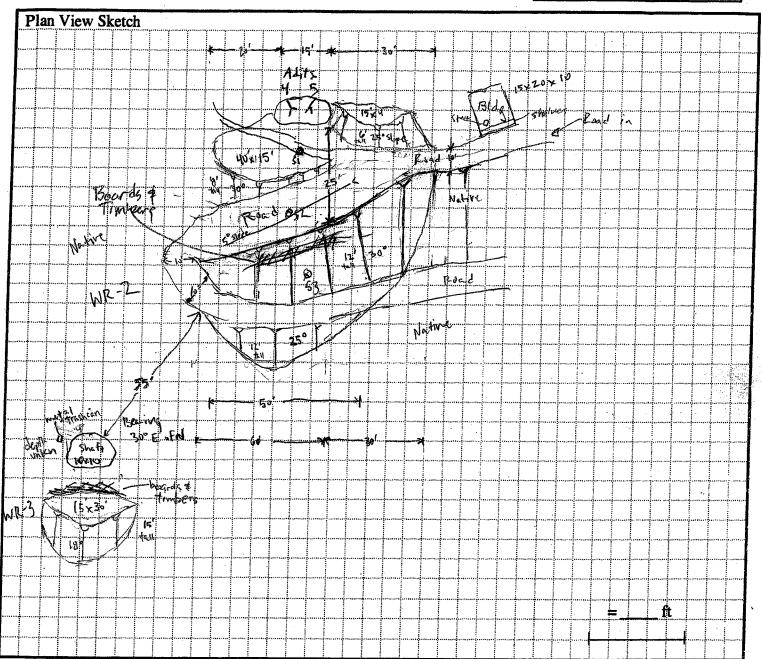
AML Field Checklet Page 1

AML Feature Inventory	nventory												
Feature ID										Survey Date	10 31	2 oged	
Surveyor(s)	1 MSP3, M15	135											
Physical Featur	Physical Features / Sources (Continued)	(penuj								•			
Mining Activity-Rela	Mining Activity-Related Ponds or Liquid Containment Structures:	ontainment Struc	tures:		seach pond(s)	tallings pond(s		tallings impoundment(s)		other (explain)			
Pand Type / Count ID		Lined (Y/N)	Liquid Present (Y/N)	Hď	Parameters: Cond in mS	Hers. Temp in C		Animals Present (e.g. bats. other)	Samole	Samola Namo(e)		4	
(i.e.) LP 1	1 50×30×4	z	z	•				z	Butte - LP1 - S1:S2	51:52	G5: 1278965, 476985	476985	
Seep(s)	.	Pond(s)	B) Lake(s)									Parameters:	
(i.e.) Flume Creek	G3: 1278408 470885		4,000	Location		Sample	Sample Name	Flowrate in GPM	Hď	Cond in mS	Temp in C		Odor, sheen, discolorati
1000	20. 121 0480, 41 800	D	southern site border	der		Butte - Flu	Butte - Flume Creek 1	0.1	6.2	0.153	10.9		None
Soil Staining	g 🔲 Seep Staining	_			7								
Type / Count ID	Location				Color	Distance from	Distance from Potential Confaminant Source to	minant Source to	į		;		
(ie) Stain 1	soil downslope of Adit 1	it 1			orange/brown	100' unslope of Flume Creek	Flume Creek		30//CB	Source & Mecepitar	Ž	Notes	
١											Terricrete-like		
Seasonal Flow Paths or Channels	is or Channels												
Count / 1D	Water Present	Sema	Semula Memo					Parameters:	lers:		Distance from Po	Distance from Potential Contaminent	
(ie) Drainage 1	Z	Butte - Sed 1		G1: 1279645.	5. 476985	riowrate in GFM		Cond in ms	rempin C		Source		Source & Receptor
1									,		discharges into Flume Creek		fish
Wetlands												*	
Count				L	Parameters:	viers:		Distance from Detendial	Gridandia				
	SHS	2	Flowrate in GPM	Ħ	Cand in mS	Temp in C		Conteminant Source to Receptor	e to Receptor	Source	Source & Receptor		
(ie) Wetland 1	G7: 127856, 476985		1 L/min	5.9	0.2	12.1	-	50' N of Pend Oreille River		None			
								-					
											÷		

Survey Date ((((2)) (()) () () ()		Georgia	Chambels Asses with Mills	Germant Germant	other (explain)		Comments	
	Other (explain)	-		Pertilo of Plant #	Suspecind Contents Suspecind Contents Suspecind Contents The contents con	Description framed), rails, stakes, and sheet metal	Endengered / Distressed Thristined / Vesticition?	
	SW intaite(s) PR Tolled(s)		West Associated with Mills	Summer Metr. Un	tanti(e) Loth	isp of mili 3ト レゼニム Umbers (some cha	Description Quantity 5-1071- pros. Note as 4555	
thachard ASIS Mas	Well(s)		AMI Present (Y MM Footprint	Biss Footprint	Cour Volume in Gat 1 55 6 S A S A S A S A S A S A S A S A S A S	δχ10χ1' -3,	uman Activity Col versel - 1-13-4	
Feature ID Surveyor(s)	Physical Features / Sources (Continued) Water Supply Structures:	Type/ID knoe	A SERVICE SERV	Buildings / Structures Other Buildings	Liquid or Waste Containment Structures: Type / ID Coun Go) druns 1 Cruss / Cruss 2 Debris / Refuse: a Type / ID Number	i metal	Other Observations: Ground Cover Vegatation Evidence of Wildlife or Recent Human Activity	

AML FEATURE INVENTORY/MONITORING FIELD FORM

Feature ID Date 106 £11 Weather



INCLUDE THE FOLLOWING IN THE FIELD SKETCH FOR:

North Arrow

Scale Bar

Photo Location(s) and View Direction(s) Sample Location(s) and ID(s):

W-# Water

S-# Soil

T-# Tailings

R-# Rock (Waste)

O-# Ore

S-# Other (Describe)

FOOTPRINT(S) OF:

MILLS

BUILDINGS

STRUCTURES

MINING-RELATED PILES

OTHER

SURFACE WATER (PONDS, SEEPS, ETC.)

GPS Collection Location 🌣

Elevation (Topographic Variation)

Slope Direction

Ecology AML

Hubbard (Lower)

Coordinate Name	Northing	Easting	Altitude
HUBBARD-RD1+FS960	1318451	2273457	3711
HUBBARD-WR1-S1	1319200	2274058	3793
HUBBARD WR1 S2	1319341	2273532	3891
HUBBARD WR1 S3	1319325	2273515	3906
Average	1319079	2273640	3825

Hubbard (Upper)

Coordinate Name	Northing	Easting	Altitude
HUBBARD CABIN	1319040	2274227	3730
HUBBARD ADIT 3	1319531	2274132	3843
HUBBARD ADIT 4 + 5	1319379	2273531	3907
HUBBARD SHAFT 1	1319263	2273457	3878
HUBBARD WR3 S1	1319245	2273459	3873
Average	1319291	2273761	3846

Notes:

Northings and Eastings are reported in units of US Feet, relative to NAD 83 State Plane Coordinate System, Washington Zone South.



Photograph 1 - View of Building 1 and WR-1 (note chutes on side of structure)



Photograph 2 - View of Adit 2.



Photograph 3 - View of Adit 1 and support timbers



Photograph 4 - Tank and boards in front of Adit 1.



Photograph 5 - View of Adit 3 ← Up



Photograph 6 - View of collapsed outhouse-like structure



Photograph 7 - Unidentified wood and metal structure.



Photograph 8 - View of Adits 4 and 5



Photograph 9 - View of WR-2



Photograph 10 - View of WR-3 ←Up