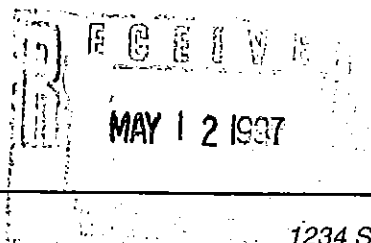




Okanogan County Health District



1234 S. 2nd • Box 231
Okanogan, WA 98840
(509) 422-7140
1-800-222-6410

Date: March 21, 1997

From: Michael Huchton, Okanogan County Health District
RE: Summary of Results of Abandoned Mine Land Investigations

Listed below is a summary of results of analytical testing of soil and surface water from 41 completed investigations of Abandoned Mine Lands in Okanogan County plus 4 in adjacent Whatcom County administrated by Okanogan National Forest. Each of the listed contaminants has been determined to be above MTCA cleanup levels as extracted from the Model Toxics Control Act Cleanup Levels and Risk Calculation (CLARC II) Update, August 31, 1994. These interpretations are based upon consideration of water standing at the portal of a mine and of water flowing on the surface just prior to submerging into soil, as surface water. (Consideration of these waters as groundwater or actually sampling from groundwater would, of course, result in higher factors of contamination as well as additional contaminants considered to be above cleanup levels.)

Pre-field screening (historical records) was utilized to separate sites into four categories of estimated hazard levels: A= High likelihood of hazardous wastes
B= Possible likelihood of hazardous wastes
C= No determination
D= No hazard

A table of priority metals analyzed, together with approximate cleanup levels utilized in this investigation, is included in this transmission.

Haz. Cat.	MINE	CONTAMINATE	FACTOR ABOVE CLEANUP LEVEL	MATRIX	LOCATION TWN/RNG/SEC	NEAR/ WATERSHED
B P S	Just a thought	Arsenic	37X	soil	35 25 NENE 31	Conconully/ Loup Loup (Okanogan River)
		Arsenic	18X	soil		
		Lead	1.9X	soil		
		Arsenic	83X	water		
		Cadmium	36X	water		
		Lead	1.1X	water		
		Copper	2.3X	water		
		Zinc	2.8X	water		
B P S	Last Chance	Arsenic	14X	soil	35 25 C NE 31	Conconully/ Loup Loup (Okanogan River)
A P S	4th of July	Arsenic	5X	soil	34 25 SENW 05	Conconully/ Loup Loup (Okanogan River)
		Lead	1.1X	soil		
A	Sheridan	Arsenic	21.7X	water	38 31 SWNW 24	Wauconda/

D P	Starr	Arsenic Lead	9X 1.1X	water water	37 26 NE 08	Pine Creek/ Aeneas Creek (Okanogan River)
A P	Wheeler	Antimony Arsenic Lead	1.5X 2.5X 16.1X	soil soil soil	35 24 Cen 02	Conconully/ Conconully Reservoir (Salmon Creek)
B P H Wh	Allen Basin	Arsenic	23X	soil	38 17 34	Slate Creek/ Bonita Creek (Slate Creek)
A Ff Wh	Anacortes	Arsenic	3.7X	soil	38 16 23	Slate Creek/ Cascade Creek (Slate Creek)
A Ff S.H. Wh	New Light Gr.	Arsenic Arsenic Lead	20X 17.5X 1.1X	water soil soil	38 17 Cen. S ½ 27	Slate Creek/ Bonita Creek (Slate Creek)
A P Wh	Mammoth	Arsenic Lead Mercury	64X 180X 5X	soil soil soil	38 17 35	Slate Creek/ Bonita Creek (Slate Creek)

The only 'clean' mines investigated to date (including sampling) are the Red Shirt, Minnie (water only), Magnetic, Crystal Butte, Mountain Sheep, Alice, and possibly Arlington. Their locations are:

D P.H	Red Shirt	33 23 NE 19	Twisp / Finley Creek (Methow R.)
A Ff	Minnie	32 22 NWNW 23	Carlton / Leecher Creek (Methow R.)
A Ff, S	Magnetic	40 30 NWNW 24	Chesaw / Gold Creek (Myers Creek)
B, P	Crystal Butte	40 30 Cen W ½ 35	Chesaw / Myers Creek
B, P	Mountain Sheep	40 25 NENW 28	Nighthawk / Similkameen R.
B, Fb	Alice	40 25 NWSW 23	Nighthawk / Similkameen R.
A P, H	Arlington	34 25 NESE 05(&06)	Conconully / Loup Loup (Okanogan R.)

Ten visited mines were recommended to be **No Further Action** (at this time) because it was apparent at first sight that they were either "active" or too insignificant to complete full investigation. These include: active- Four Metals, Billy Goat, Rainbow and insignificant (not sampled)- Hiawatha, Mariposa, Pogue Flat, Poland China, War Eagle, Mazama Queen, and Silver King.

A, Fb	Four Metals	40 25 NWSW 23	Nighthawk / Similkameen R.
B Ff	Billy Goat	38 20 Cen 15	Mazama / Eight Mile Creek (Methow R.)
D, P	Rainbow	39 26 NE 22	Wannacut Lake
D, P	Hiawatha	39 26 NE 10	Wannacut Lake
D, Fb	Mariposa	39 26 NE 10	Wannacut Lake
D, W, S	Pogue Flat	34 26 SE corn 16	Omak



Okanogan County Health District

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MTCA Cleanup Levels (tentative) for metals on Abandoned Mine Lands

NAME	Groundwater (Method B)	Surface Water (Method B)	Soil (Res) (Method B)	Soil (Ind) (Method. C)
	<u>ug/L (ppb)</u>	<u>ug/L (ppb)</u>	<u>mg/Kg (ppm)</u>	<u>mg/Kg (ppm)</u>
Antimony	6.4	1040	32	1400
Arsenic	4.8	17.7	60	2600
Beryllium	80	682	400	17500
Cadmium	8	20.3	80	3500
Chromium	80:1600	162,000	8000	17500
Copper	592	2660	2960	130000
Lead	(5.0)	(50)	(250)	(1000)
Mercury	4.8	-	24	1050
Nickel	320	1100	1600	70000
Selenium	80	-	400	17500
Silver	80	25000	400	17500
Zinc	4800	16500	24000	105000

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10/1/20



Okanogan County Health District

1234 So. Second, PO Box 231, Okanogan, WA

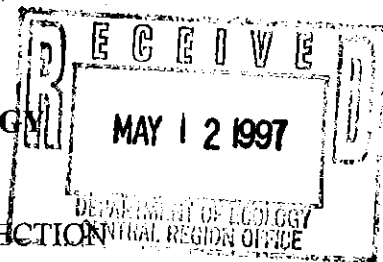
98840

(509)422-7140 or 1-800-222-6410

May 8, 1997

WASHINGTON DEPARTMENT OF ECOLOGY TOXICS CLEANUP PROGRAM

INITIAL INVESTIGATION REPORT / DATA COLLECTION



Site Name: *Pogue Flat Mine*

Location: *Pogue Flat area near Omak, WA* Town: *34N* Range: *26E* Section: *Near SE corner 16*

Site Owner/operator: *State of Washington*

Dates(s) of Initial Inspection / Data Collection: *October 27, 1995*

Samples or field measurements: *no air no soil no ground water no surface water none other*

Photographs: *6* Maps: *3*

Weather: *clear, warm, dry*

Lead Inspector: *R. Michael Huchton*

Signature: *R. Michael Huchton, R.D.*

Other Inspector *None*

Signature(s): _____

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The first of these is the fact that the
government has been unable to
maintain a stable currency.
This has led to a loss of confidence
in the government and its policies.

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The second is the fact that the
government has been unable to
maintain a stable economy.
This has led to a loss of confidence
in the government and its policies.

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May 8, 1997

Initial Investigation- **Pogue Flat Mine site** near Omak, WA

1) Site description/history

The Pogue Flat Mine (Three Buttes Mine) is located in undeveloped range land on the northwest part of Pogue Flat on unspecified Washington state owned property approximately .5 miles north of the High Line (irrigation) Ditch and approximately 1.75 miles northwest of Omak in Okanogan County- Twn. 34N, Rng 26E, near SE corner Sec. 16.

The Pogue Flat Mine is reported to be an abandoned manganese production mine from approximately 1916. The mine produced twenty-five 30-ton carloads of ore containing 20% Mn. The mine is no longer in operation.

The mine property is located on state owned (probable DNR) property not otherwise specified in assessors' records. The pre-investigation screening did not indicate a high likelihood of hazardous conditions at this site (hazard ranking **D**) but it was included in the survey of abandoned mine lands because of its proximity to population coupled with reports of "too dangerous for kids to be playing in" plus the need to validate the assumption of "no hazard" for category **D** hazard ratings.

The manganese minerals occur in stringers in hydrothermally altered 2 ft. wide and 1 ft. wide quartz monzonite veins in decomposed granite and as disseminations in the granite.

The property was developed by at least one adit and several drifts or crosscuts.

2) The Human Hazard Value calculated from U.S. Bureau of Mines methodology was **8.6** (HHAZVAL) and the Environmental Hazard Value was **8.6** (EHAZVAL). These values are a category **D**.

3) Personnel:

Michael Huchton - Okanogan County Health District

4) Site Visit:

On the afternoon of October 27, 1995, Michael Huchton drove to the minesite via Omak-Conconully Road and then parking along the highway opposite the Three Buttes, walked approximately 0.45 miles east along the fence line to the minesite located on the north end of the northernmost of the Three Buttes (as viewed on photo # 471-06).

The first feature encountered was the almost 200 ft. long by 8-35 ft. wide waste pile (#2) which is encountered on both sides of the fenceline as you approach the butte (see photo # 471-01, taken from butte

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((

looking toward highway). No soil samples were collected from the waste pile which was composed mostly of decomposed granite.

A small surface excavation which was not likely to have produced was located near the mid-height of the butte near the north end.

The mostly concealed portal to the mine is located at the extreme north end of the butte about 25 vertical feet above the valley floor below a rock outcrop (photo # 471-05). The opening is more of a shaft than an adit and opens into a cavernous set of drifts and crosscuts. The shaft has a small waste rock pile (#1) in front of it, which is very crumbly and unstable (photos # 471-03 and 471-04). Evidence to support the report of "too dangerous for kids to be playing in" is also seen in the photo # 471-04- a small, frayed, rotten, cotton rope tied to stalk of a small sagebrush! The sheer and unstable rock walls of the shaft (photo # 471-02) would make a ladder or rope necessary for safe ascent and descent into the cavern but the rope in place now is indeed not adequate for "kids" or adults.

There is no water or drainage associated with this shaft and the cavern appears to be inhabited year-round by a colony of pigeons and perhaps also by bats.

Pogue Flat (471)

ALTERNATE NAMES		DISTRICT	COUNTY
Three Buttes			Okanogan
PRIMARY QUADRANGLE	SCALE	1/2° x 1° QUAD	1° x 2° QUAD
Omak	1:24,000	Omak	Okanogan
LATITUDE	LONGITUDE	SECTION, TOWNSHIP, AND RANGE	
48° 26' 21.59" N	119° 33' 29.45" W	near SW corner, sec. 15, 34N, 26E	
LOCATION: elev. 1,400 ft.			
HOST ROCK: NAME	LITHOLOGY	AGE	
Pogue Mountain quartz monzonite	quartz monzonite, granite	Cretaceous?	
COMMODITIES	ORE MINERALS	NON-ORE MINERALS	
Mn	pyrolusite rhodochrosite	quartz, calcite	
DEPOSIT TYPE	MINERALIZATION AGE		
vein disseminated veinlets			

PRODUCTION: In 1916, the mine produced twenty-five 30-ton carloads of ore said to contain 20% Mn (Hunting, 1956, p. 261).

TECTONIC SETTING: The quartz monzonite was probably emplaced in a magmatic arc.

ORE CONTROLS: Two quartz veins are present in the decomposed granite; one is 2 ft wide and the other is 1 ft wide. Manganese minerals occur in stringers in the quartz and as disseminations in the granite (Hunting, 1956, p. 261).

GEOLOGIC SETTING: The deposit occurs in hydrothermally altered quartz monzonite of the Pogue Mountain quartz monzonite (Gulick and Korosec, 1990 p. 24).

REFERENCES

- Gulick, C. W.; Korosec, M. A., compilers, 1990, Geologic map of the Omak 1:100,000 quadrangle, Washington: Washington Division of Geology and Earth Resources Open File Report 90-12, 52 p., 1 pl.
- Hunting, M. T., 1956, Inventory of Washington minerals—Part II, Metallic minerals: Washington Division of Mines and Geology Bulletin 37, v. 1, 428 p.; v. 2, 67 p.
- Pardee, J. T., 1922, Deposits of manganese ore in Montana, Utah, Oregon, and Washington: U.S. Geological Survey Bulletin 725-C, p. 141-243.
- Patty, E. N.; Glover, S. L., 1921, The mineral resources of Washington, with statistics for 1919: Washington Geological Survey Bulletin 21, 155 p., 1 pl.
- Shedd, Solon, 1924, The mineral resources of Washington with statistics for 1922; with an article on coal and coke, by G. W. Evans: Washington Division of Geology Bulletin 30, 224 p.

APPENDIX C. (ML INVENTORY AND INVESTIGATION FORM

U. S. Bureau of Mines

AML INVENTORY FORM

EVALUATOR R. Michael Huchton

Part I - Pre-Field Data (Side 1)

PAGE 1 OF 5

SITE NUMBER

471

DATE OF INVESTIGATION

Oct. 27, '95

1) PROPERTY NAME:

Pogue Flat Mine

Alternate Names

Three Buttes Mine

MILS Sequence No.

MRDS No.

BOM Mineral Property File No.

State ID No.

471

EPA ID No.

2) OWNERSHIP:

What is the current ownership of the site? Check one.

Federal ☐

Indian ☐

State ☒

County ☐

Municipal ☐

Private/Patented ☐

Unknown ☐

Other ☐

If the owner is known, fill in the following information.

Name of Agency

State of Washington

Address

Telephone Number

Ownership includes

Surface only ☐

Minerals only ☐

Both ☒

3) LOCATION DATA:

Fill in location information as available.

State Washington

County OKANOGAN

Township

34

N

Range

26

E

Section

16

Section Subdivision

Near SE corner

Meridian

Latitude

48° 26' 21.59"

Longitude

119° 33' 29.45"

UTM Zone

Northing

Easting

Elevation

1400

Specify units for elevation.

Feet ☒

Meters ☐

Map Name

OMAK

Map Scale

1:24,000

1:250,000 Quadrangle

OKANOGAN

Mining District

Approximate area of site

10 acre

Measured in

Square feet ☐

Acres ☒

Hectares ☐

4) HISTORICAL DATA:

Check all that apply.

Type of Operation:

Surface ☐

Underground ☒

Surface-Underground ☐

Mineral Location ☐

Placer ☐

Prospect ☐

Dredge ☐

Processing Plant ☐

Well ☐

Unknown ☐

No Data ☐

Status of Operation:

Past Producer ☒

Explored Prospect ☐

Raw Prospect ☐

Unknown ☐

Developed Prospect (greater than 300 meters of workings) ☐

SITE NUMBER

471

DATE OF INVESTIGATION

4) HISTORICAL DATA (Continued.)

Check all that apply.

Commodities:

Arsenic ☐

Cadmium ☐

Copper ☐

Lead ☐

Mercury ☐

Zinc ☐

Other (specify)

Manganese

Commodity Groups:

Metals ☒

Coal ☐

Oil and Gas ☐

Uranium or Geothermal ☐

Industrial Minerals ☐

Sand and Gravel ☐

Non-Energy Leasable ☐

Other (specify)

Acid Producers or Indicator Minerals:

Arsenopyrite ☐

Chalcopyrite ☐

Galena ☐

Marcasite ☐

Sphalerite ☐

Sulfide ☐

Iron Oxide ☐

Limonite ☐

Pyrite ☐

Pyrrhotite ☐

Stibnite ☐

Size/Production:

Indicate the total amount of ore produced to date in metric tons (mt).

Small (0-10,000 mt) ☒

Small-Medium (10,000mt-250,000mt) ☐

Medium (250,000mt-500,000mt) ☐

Medium-Large (500,000mt-1,000,000mt) ☐

Large (Over 1,000,000mt) ☐

Mill Method:

Amalgamation ☐

Arrastre ☐

Gravity ☐

Crusher (only) ☐

Heap Leach ☐

Leach ☐

CIP (Carbon-in-Pulp) ☐

Cyanidation ☐

Stamp ☐

Flotation ☐

Jig Plant ☐

Retort ☐

No Mill ☒

Unknown ☐

Neutralizing Host Rock:

Carbonate ☐

Dolomite ☐

Limestone ☐

Marble ☐

Workings/history:

Indicate size, number, and type of mine openings, if available.

1 shaft with crosscuts & drifts

Years of Operation:

From

To

1916

Annual Precipitation:

Check one.

Less than 25 centimeters ☐

More than 25 centimeters ☒

5) SPECIALTY DATA:

Check all that apply.

Site in a known or suspected floodplain:

None ☒

Annual - 10 years ☐

10 - 100 years ☐

100 - 500 years ☐

Less than once every 500 years ☐

Threatened and Endangered Plants and Animals:

a) Are any threatened and/or endangered plants and/or animals on or near the site? Circle one.

YES

NO

b) If present, list type(s).

COMMENTS:

9.6 MHz ①

9.6 MHz ①

①

INVESTIGATION DATE Oct 27, 1995PAGE 3 OF 5GPS LOCATION 48°26' 21.51" N 119°33' 24.45" WSITE NUMBER 477SITE NAME Pogue Flat MineEVALUATOR R. Michael HixtonAGENCY Okemogon Co. Health DistrictADDRESS Box 231, Okemogon, WI 53840TELEPHONE (800) 432-745

1) NEAREST SITE(S) OF HUMAN ACTIVITY (Give distance, circle units, or mark N/A)

Dwelling(s) 1.2 km miSchool 1.4 km miWorkplace 1.5 km miCampground N/A km miTrail N/A km miRoad 1.45 km mi

2) SENSITIVE ENVIRONMENTS

(If any, give name or distance, if known)

Circle one per group

a) Threatened and Endangered Species

UNK

YES

NOb) Wetlands km mi

UNK

YES

NOc) Fisheries km mi

UNK

YES

NOd) Other km mi

UNK

YES

NO3) WATER Are bodies of water found on or within 2 mi (3.2 km) of the site? Circle one, and check all that apply. YES NOStream River Pond Lake Bay Other Name of nearest water body High Line (Irrigation) DitchDistance 1.5 km mi

4) AIRBORNE POLLUTANTS

Circle one per group

a) Dust

UNK

YES

NO

b) Spray

UNK

YES

NO

c) Vapor

UNK

YES

NO

d) Other

Name

UNK

YES

NO

5) RADIATION Did pre-field research indicate this area has produced uranium? Circle one.

YES

NO

If yes, take radiation reading and record value.

 Counts per second (cps)

6) EXPLOSIVES Are any explosives or blasting supplies found on the site? Circle one.

UNK

YES

NO

If present, list type and location.

7) OTHER Are any of the following present? Check all that apply, provide comments as necessary below.

Acrid Odor Drum(s)/Tank(s) Overhead Wire(s) Power Substation(s) Tramway(s) Antennas Fence(s) Pipe(s) Scrap Metal Transformer(s) Aviation Hazard(s) Flume(s) Pole(s) Tower(s) Trestle(s) Bag(s) Headframe(s) Power Line(s) Tram Bucket(s) Wooden Structure(s) Chemical(s) Overhead Cable(s) Other (specify) PigeonsSite appears to have cultural significance or value (Check if yes)8) PHOTOGRAPH NUMBERS 471-06, 05, 01

9) SKETCH NUMBERS

COMMENTS

INVESTIGATION DATE Oct. 27, 1995PAGE 4 OF 5SITE NUMBER 471SITE NAME Pogue Flat Mine

10) FEATURE Number Shaft #1 Fill out one form per feature. Check appropriate box below.

Add <input type="checkbox"/>	Decline <input type="checkbox"/>	Machinery <input type="checkbox"/>	Ore Stockpile <input type="checkbox"/>	Quarry <input type="checkbox"/>	Slope <input type="checkbox"/>
Building <input type="checkbox"/>	Glory Hole <input type="checkbox"/>	Mill Building <input type="checkbox"/>	Pit, Large, >3 m <input type="checkbox"/>	Shaft <input checked="" type="checkbox"/>	Subsidence <input type="checkbox"/>
Cistern <input type="checkbox"/>	Highwall <input type="checkbox"/>	Mill Tailings <input type="checkbox"/>	Pit, Small, <3 m <input type="checkbox"/>	Solution Mining Well <input type="checkbox"/>	Sump <input type="checkbox"/>
Crosscut <input type="checkbox"/>	Leach Pad <input type="checkbox"/>	Mine Dump <input type="checkbox"/>	Placer Mine <input type="checkbox"/>	Solution Pond <input type="checkbox"/>	Trench <input type="checkbox"/>
Other <input type="checkbox"/>					Tunnel <input type="checkbox"/>

11) CONDITION Does the condition of the above identified feature represent a physical hazard? Circle one. YES NO

Check the conditions that best describe the physical character of the above feature.

Breached <input type="checkbox"/>	Collapsed, Partial <input type="checkbox"/>	Empty <input checked="" type="checkbox"/>	Foundation <input type="checkbox"/>	Standing <input type="checkbox"/>	Unstable Walls <input checked="" type="checkbox"/>
Caved <input type="checkbox"/>	Concealed <input type="checkbox"/>	Eroded <input type="checkbox"/>	Intact <input type="checkbox"/>	Subsided <input type="checkbox"/>	Wind Erosion <input type="checkbox"/>
Caved, Partial <input type="checkbox"/>	Concealed, Partial <input checked="" type="checkbox"/>	Eroded, Partial <input type="checkbox"/>	Open to Entry <input checked="" type="checkbox"/>	Unconfined <input type="checkbox"/>	
Collapsed <input type="checkbox"/>	Confined <input type="checkbox"/>	Fenced <input type="checkbox"/>	Rotten Cribbing <input type="checkbox"/>	Other <u>crumbly edges, rotten rope</u>	

12) SIZE OF FEATURE Indicate size of feature and specify units (feet or meters).

Length <u>5</u>	Width <u>6</u>	Depth or Height <u>>35</u>	Actual <input type="checkbox"/>	Feet <input checked="" type="checkbox"/>
			Estimate <input checked="" type="checkbox"/>	Meters <input type="checkbox"/>
Slope (Degrees) <input type="checkbox"/>	Bank Stability: Stable <input type="checkbox"/>	Unstable <input checked="" type="checkbox"/>	Marginally Stable <input type="checkbox"/>	

13) WATER Is water present at the feature? Circle one. YES NO

Is water emanating from or passing through the feature? Circle one. YES NO

a) If water is present, how does it occur? Check all that apply.

Standing <input type="checkbox"/>	Filled <input type="checkbox"/>	Partly Filled <input type="checkbox"/>	Flowing <input type="checkbox"/>	Intermittent <input type="checkbox"/>
b) If present, determine: GPM: <input type="checkbox"/>		Conductivity: <input type="checkbox"/>	pH: <input type="checkbox"/>	

c) Observe water bed color. (Check all that apply, or specify other.)

Brown <input type="checkbox"/>	Green <input type="checkbox"/>	Yellow <input type="checkbox"/>	Yellow-orange <input type="checkbox"/>	Orange <input type="checkbox"/>	Gray-black <input type="checkbox"/>	Other (specify) <input type="checkbox"/>
--------------------------------	--------------------------------	---------------------------------	--	---------------------------------	-------------------------------------	--

14) PLANTS Are plants present on or around the feature? Circle one. YES NO

If yes, check one.

Healthy <input type="checkbox"/>	Stressed <input type="checkbox"/>	Dead <input type="checkbox"/>	Barren <input type="checkbox"/>	Partial Revegetation <input checked="" type="checkbox"/>	Full Revegetation <input type="checkbox"/>	Other (specify) <input type="checkbox"/>
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15) STAINING Stains may indicate spills, oxidation, or alteration. Are non-water-related stains present? YES NO

If stains are present, check appropriate color or specify other.

Yellow-orange <input type="checkbox"/>	Gray-black <input type="checkbox"/>	Other (specify) <input type="checkbox"/>
--	-------------------------------------	--

16) MACHINERY Is machinery present at this feature? Circle one. YES NO

a) Location of machinery. Check all that apply.

Inside Building <input type="checkbox"/>	No Building <input type="checkbox"/>	Outside Building <input type="checkbox"/>	Other (specify) <input type="checkbox"/>
--	--------------------------------------	---	--

b) Type of machinery. Check all that apply or specify other.

Amalgamation Equipment <input type="checkbox"/>	Crusher(s) <input type="checkbox"/>	Ore Bin(s) <input type="checkbox"/>	Stamp Mill(s) <input type="checkbox"/>	Val(s) <input type="checkbox"/>
Arrastre <input type="checkbox"/>	Flotation Cell Group <input type="checkbox"/>	Retort(s) <input type="checkbox"/>	Tank(s) <input type="checkbox"/>	
Ball Mill(s) <input type="checkbox"/>	Leach Tank(s) <input type="checkbox"/>	Rod Mill(s) <input type="checkbox"/>	Thickener(s) <input type="checkbox"/>	
Others (specify) <input type="checkbox"/>				

17) PHOTOGRAPH NUMBERS 471-02, 03, 04, 05

18) SKETCH NUMBERS

COMMENTS

U.S. Bureau of Mines
AML INVENTORY FORM

Part III - Supplemental Data (Notes, Sketches, Photographs, etc.)

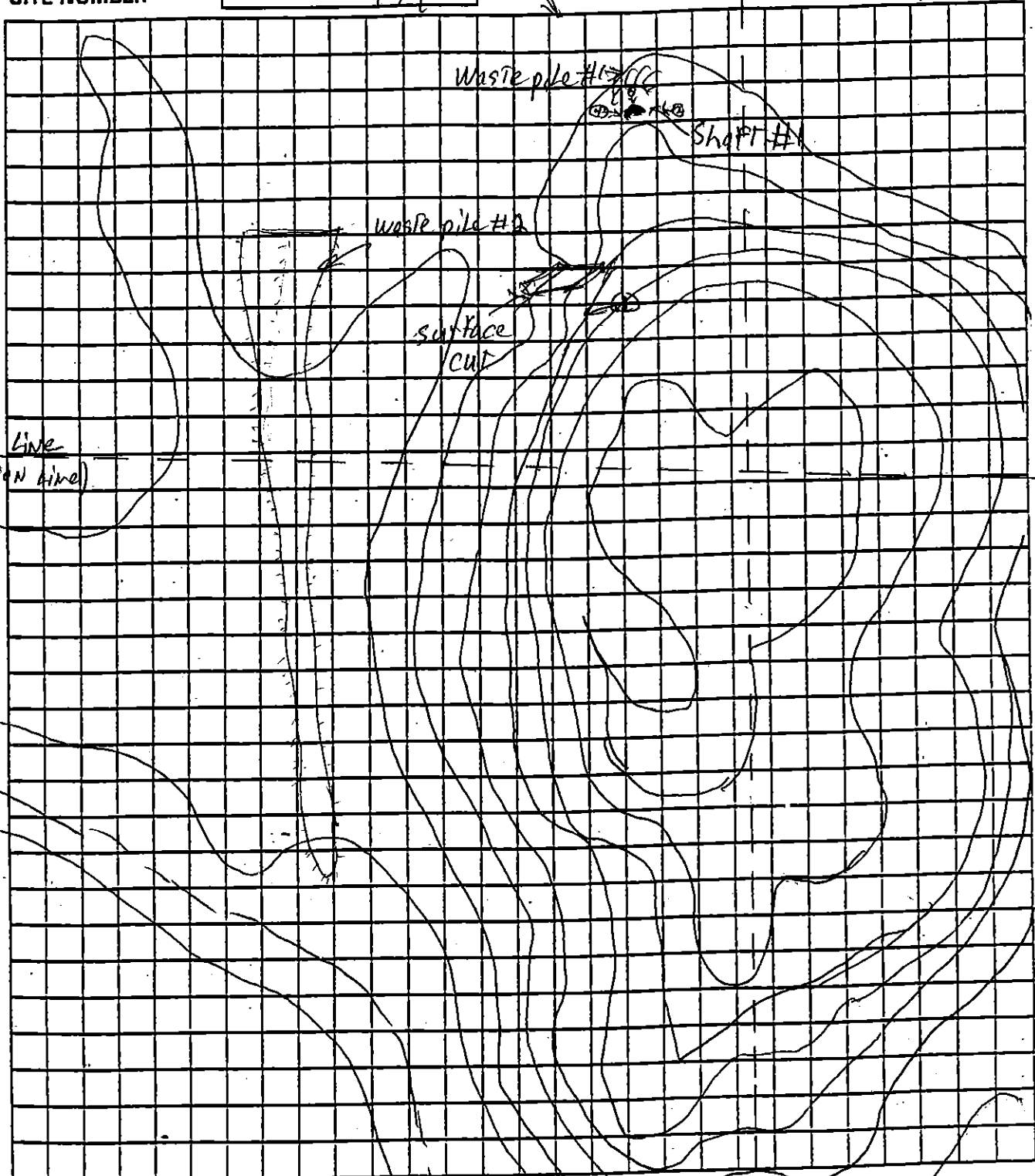
Fence Line
(Section Line)

PAGE 5 OF 5

DATE October 27, 1995

SITE NUMBER

471



NOTE: Be sure to provide a north arrow and the scale on sketch maps.



Okanogan County Health District

1234 S. 2nd • Box 231
Okanogan, WA 98840
(509) 422-7140
1-800-222-6410

October 12, 1995

Sampling and Analysis Plan- **Pogue Flat Mine** site near Omak, WA

1) Site description/history

The Pogue Flat Mine (Three Buttes Mine) is located in undeveloped range land on the northwest part of Pogue Flat on unspecified Washington state owned property approximately .5 miles north of the High Line (irrigation) Ditch and approximately 1.75 miles northwest of Omak in Okanogan County- Twn. 34N, Rng 26E, near SE corner Sec. 16.

The Pogue Flat Mine is reported to be an abandoned manganese production mine from approximately 1916. The mine produced twenty-five 30-ton carloads of ore containing 20% Mn. The mine is no longer in operation.

The mine property is located on state owned (probable DNR) property not otherwise specified in assessors' records. The pre-investigation screening did not indicate a high likelihood of hazardous conditions at this site (hazard ranking **D**) but it was included in the survey of abandoned mine lands because of its proximity to population coupled with reports of "too dangerous for kids to be playing in" plus the need to validate the assumption of "no hazard" for category **D** hazard ratings.

The manganese minerals occur in stringers in hydrothermally altered 2 ft. wide and 1 ft. wide quartz monzonite veins in decomposed granite and as disseminations in the granite.

The property was developed by at least one adits and several drifts or crosscuts.

2) Personnel Involved:

Michael Huchton - Okanogan County Health District

3) Sample Analysis:

Cascade Analytical, Inc. of Wenatchee was determined to be certified for total metals and toxic characteristic leach procedure analysis in soil and was selected on the basis of convenience of delivery to the lab. Request for analysis has been submitted and sample containers have been shipped to Okanogan County Health District office. Samples are to be delivered to Cascade Analytical by Michael Huchton or Brett & Son about November 10, 1995.

4) Sampling:

Proposed date of field sampling - October 27, 1995

Objective - Document the presence/absence of significant contamination concentrations.

Locations - It is intended that one sample be taken from each leaking vat found, one sample taken from at least one heap pile (if any found) at a point where surface water pooling has existed. It is intended that one (and also possibly another) soil sample be taken from any worked tailings pile found. (See attached site sketch for approximate locations.) Sampling locations may change in the field. It is intended that one water sample be taken from any surface water found.

Parameter(s) - Soil samples will be analyzed for:

Total metals - Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, and Zinc

Toxicity Characteristic Leaching Procedure, Metals - Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver

Water samples will be analyzed for:

Dissolved metals - Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, and Zinc

Suspicious sites will also be tested for cyanide residues if warranted.

Matrix - Surface soil (exposed) and/or subsurface soil will be sampled. Surface (mine shaft or pit) water will be sampled if present.

Frequency - One time sampling event only.

Containers - Total metals: For solids (soil)- 8 oz. wide mouth glass with Teflon liners

For liquids (water)- Container sufficient to hold 600 ml minimum, with Teflon lined caps.

Dissolved metals: For liquids- Polyethylene containers sufficient to hold 600 ml minimum with Teflon lined lids.

TCLP: (100% solids)- 8 oz wide mouth glass jars sufficient to hold 600 g, with Teflon lid liners.

Cyanide: 250 ml narrow mouth amber polyethylene.

Preservative - Water samples are to be acidified to pH <2 with HNO₃; samples will be cooled with ice to 4 degrees C. and stored in cooler until delivery to lab. Cyanide samples to be preserved according to field test procedures.

Decontamination - Some sampling equipment (stainless steel spoons) to be dedicated and returned to lab for disposal and some, if used (large stainless steel digging spoon and/or coring tools) to be decontaminated on site using established decontamination procedures.

5) Site-specific field screening:

It is intended that any surface water present, any standing water at the portal, and any drainage or seepage be field screened for pH with pH litmus paper and for conductivity with a portable field conductivity meter. It is also intended to screen significant tailings or waste rock piles for pH using pH litmus paper on paste with distilled water. The waste rock screening will be determined at site at time of sampling event and will be biased toward high likelihood of storm water runoff encounter and appearance of mineralization.

6) Special Service Order Form and Chain of Custody form

completed.

7) Laboratory QA/QC:

Analyses will be done by Cascade Analytical, Inc. of Wenatchee which validates its own analytical program by the use of spike recoveries, establishing detection limits for each matrix, and using QC check samples and blanks for surrogate recoveries, etc.

