

**MONTANA DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU**

**ABANDONED HARDROCK MINE PRIORITY SITES
1995
SUMMARY REPORT**

Prepared For:

**Montana Department of State Lands
Abandoned Mine Reclamation Bureau
1625 Eleventh Avenue
Helena, Montana 59620**

Prepared By:

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Engineering Services Agreement DSL-AMRB No. 94-006

APRIL 1995

The cover photograph is of the Granite Mountain
Mining Co. mill located in Rumsey, Montana.
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**MONTANA DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU
HAZARDOUS MATERIALS INVENTORY
SITE SUMMARY**

Mine/Site Name: <u>True Blue</u>	County: <u>Beaverhead</u>
Legal Description: <u>T 3S R 11W</u>	Section(s): <u>SW 1/4, NE 1/4, Section 2</u>
Mining District: <u>Hecla/Vipond Park</u>	Mine Type: <u>Millsite/Ag, Pb, Au</u>
Latitude: <u>N 45° 36' 18"</u>	Primary Drainage: <u>Trapper Creek</u>
Longitude: <u>W 112° 55' 42"</u>	USGS Code: <u>10020004</u>
Land Status: <u>Private</u>	Secondary Drainage: <u>Spring Creek</u>
Quad: <u>Mount Tahepia</u>	Date Investigated: <u>August 1, 1994</u>
Inspectors: <u>Bisch, Flammang, West</u>	P.A. # <u>01-138</u>
Organization: <u>Pioneer Technical Services, Inc.</u>	

- The volume of tailings observed at the site was estimated to be 5,860 cubic yards. The following elements were elevated to at least three times the background concentrations:

Silver: 81.4 to 85.7 mg/kg	Arsenic: 142J to 3,030J mg/kg
Cadmium: 37.9J to 293J mg/kg	Copper: 767 to 8,970 mg/kg
Mercury: 2.96JX to 90.4JX mg/kg	Lead: 7,780 to 38,400 mg/kg
Antimony: 114J to 1,420J mg/kg	Zinc: 12,800 to 34,000 mg/kg
- The volume of waste rock observed at the site was estimated to be 1,350 cubic yards. The waste rock was sampled for XRF analysis only due to the coarse nature of the material in conjunction with well established vegetation on the dumps. The following elements were elevated at least three times background:

Copper: 337 mg/kg	Iron: 66,247 mg/kg
Manganese: 3,794 mg/kg	
- An unnamed tributary to Sappington Creek flows adjacent to the site on the north side; observed releases to the tributary (sediment) were documented for silver, arsenic, and cadmium.
- No MCLs were exceeded in the tributary; however, the chronic aquatic life criteria for mercury was exceeded in both the upstream and downstream samples, and the chronic aquatic life criteria for lead was exceeded in the upstream sample.
- A spring emanating from near the foot of the mill was sampled during the investigation. The EPA action level for lead and the acute and chronic aquatic life criteria for copper, lead, and zinc were all exceeded in the spring sample.
- Potential safety hazards observed at the site included the collapsing mill building (which is a very large structure) and several collapsing cabins.

True Blue PA# 01-138
AMRB HAZARDOUS MATERIALS INVENTORY
INVESTIGATOR: PIONEER - BISCH
INVESTIGATION DATE: 08/01/94

SOLID MATRIX ANALYSES

Metals in soils
Results per dry weight basis

FIELD ID	Ag (mg/Kg)	As (mg/Kg)	Ba (mg/Kg)	Cd (mg/Kg)	Co (mg/Kg)	Cr (mg/Kg)	Cu (mg/Kg)	Fe (mg/Kg)	Hg (mg/Kg)	Mn (mg/Kg)	Ni (mg/Kg)	Pb (mg/Kg)	Sb (mg/Kg)	Zn (mg/Kg)	CYANIDE (mg/Kg)
01-138-SE1	4.2	54.1 J	21.8	3.8 J	3.6	5.1 J	125	19200 JX	0.60 JX	268 J	9.3	548	22.1 J	537	NR
01-138-SE2	1.2	17.7 J	44.4	1.1 UJ	8.5	8.0 J	47.6	23700 JX	0.43 JX	342 J	13.1	243	14.3 UJ	232	NR
01-138-TP1	81.4	142 J	6.9	37.9 J	2.5	1.3 UJ	767	3620 JX	2.96 JX	724 J	3.2	7780	114 J	12800	NR
01-138-TP2	85.7	3030 J	37.0	293 J	4.6	14.8 J	8970	32800 JX	90.4 JX	2520 J	14.7	38400	1420 J	34000	NR
BACKGROUND	2.1	45.0 J	223 J	2.2 J	10.1	16.2 J	45.7	19600 JX	0.34 JX	1190 J	14.2	275	13.0 UJ	322	NR

U - Not Detected; J - Estimated Quantity; X - Outlier for Accuracy or Precision; NR - Not Requested

Acid/Base Accounting

FIELD ID	TOTAL SULFUR %	TOTAL SULFUR ACID BASE μ /1000t	NEUTRAL. POTENT. μ /1000t	SULFUR ACID BASE POTENT. μ /1000t	SULFATE SULFUR %	PYRITIC SULFUR %	ORGANIC SULFUR %	PYRITIC SULFUR ACID BASE μ /1000t	SULFUR ACID BASE POTENT. μ /1000t
01-138-TP1	<0.01	0.00	200	200	<0.01	<0.01	0.03	0.00	200
01-138-TP2	0.08	2.50	172	169	0.07	<0.01	0.02	0.00	172

WATER MATRIX ANALYSES

Metals in Water
Results in ug/L

FIELD ID	Ag	As	Ba	Cd	Co	Cr	Cu	Fe	Hg	Mn	Ni	Pb	Sb	Zn (mg CaCO3/L)	HARDNESS CALC.
01-138-SW1	0.12	1.9	23.6	4.0 U	8.4 U	6.8 U	5.9 U	37.4	0.13	2.3 U	14.4 U	4.5 J	51.6 U	15.6 U	158
01-138-SW2	0.12 U	2.1	23.3	4.0 U	8.4 U	6.8 U	5.9 U	98.9	0.12	6.4	14.4 U	6.3 J	51.6 U	15.6 U	162
01-138-SW3	1.02	11.8	10.5	4.0 U	8.4 U	9.0	35.2	222	0.25	24.0	14.4 U	252 J	51.6 U	247	109

U - Not Detected; J - Estimated Quantity; X - Outlier for Accuracy or Precision; NR - Not Requested

Wet Chemistry
Results in mg/l

FIELD I.D.	TOTAL DISSOLVED SOLIDS	CHLORIDE	SULFATE	NO3/NO2-N	CYANIDE
01-138-SW1	103	<5.0	5.0	0.14	NR
01-138-SW2	134	<5.0	5.0	0.17	NR
01-138-SW3	56	<5.0	<5.0	<0.05	NR

LEGEND

SE1 - Downgradient of TP1; pile is 340' west and 100' north.

SE2 - Upgradient of mill, just below where three spring flows merge together.

TP1 - Grab sample of the TP1A subsample.

TP2 - Grab sample of the TP1C subsample.

BACKGROUND - From the True Blue Mine (01-138-SB1).

SW1 - Same as sample 01-138-SE1.

SW2 - Same as sample 01-138-SE2.

SW3 - Spring approx. 10' southeast of southeast mill building corner.