



***Abandoned Mine Lands
Initial Investigation Report
Alpine-Gold Dollar-Insurgent-
Mammoth Claims
Republic, Washington***

***Prepared for
Washington State
Department of Ecology***

***December 28, 2006
17274-00(AP, GD, IN, MM)***



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Rick Roeder, Project Manager**

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EXPIRES 12/03/2007

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**ABANDONED MINE LANDS INITIAL INVESTIGATION REPORT
ALPINE-GOLD DOLLAR-INSURGENT-MAMMOTH CLAIMS
REPUBLIC, WASHINGTON**

1.0 EXECUTIVE SUMMARY

This report discusses information on four mine claims located near the former Knob Hill Mine, northwest of the town of Republic, Washington. Information obtained during this assessment is summarized in Table 1.

Table 1 - Alpine-Gold Dollar-Insurgent-Mammoth Claims Data Summary

Claim Names:	Alpine-Gold Dollar-Insurgent-Mammoth				
Last Known Operation:	Current Claim/Land Owner: Hecla Mining Company.				
	Three of these sites are claims with no known explorations, adits, or shafts. All are gold and silver mining claims.				
	Claim	Tax Parcel Number			
	Alpine	23727 90000 9000			
	Gold Dollar	Mine Survey #420			
	Mammoth				
	The Insurgent claim was explored by adits from the Lone Pine claim to the southeast. It produced ore in 1908-1912, and in 1927 (Hunting 1956).	23735 9000 10000 Mine Survey #769 (Golden Promise Mine)			
Location:	1.5 to 2 miles north of Republic, Washington, by road, in Ferry County.				
	Quadrangle Map: Republic/Storm King Mountain				
	TRS: Township 37N, Range 32E, Section (see below)				
	Claim	Latitude	Longitude	Section	Qtr Qtr
	Alpine	48.6728	118.7563	27	N2 SE4
	Gold Dollar	48.6722	118.7595	27	W2 SE4
	Insurgent	48.6662	118.7458	35	NW4 NW4
	Mammoth	48.6674	118.7513	27	SE4 SE4
				34	NE4 NE4
Features Observed	One waste rock pile (Gold Dollar) estimated 67 cubic yards in volume.				
	One groundwater well (Gold Dollar) not in use.				
	Five groundwater wells (Mammoth) for environmental monitoring.				
	One trench (Mammoth)				
Results above Criteria	The sample collected from the waste rock on the Gold Dollar Claim exceeds MTCA human health criteria for antimony and arsenic, and ecological criteria for antimony, arsenic, mercury, selenium, silver, and thallium. No other waste rock piles were identified on the other claims.				
Work by Others	No previous site assessment information was identified.				
Potential Receptors / Degree of Hazard	Human health risks possible for recreation users. Risk to ecological receptors is likely. Soil from Gold Dollar claim has the potential to fail TCLP arsenic criteria for dangerous waste.				

2.0 INTRODUCTION

This report summarizes the results of the initial limited soil and surface water investigation at the site of four mining claims located near Republic, Washington (Figures 1 and 2). Hart Crowser performed this initial investigation 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 initial investigation are 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, 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 fraction of waste rock, mine tailings, and/or natural soils that was 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 historic 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.

Table 2 presents the project team members and their roles and responsibilities for this investigation. A site visit was accomplished on August 28-30, 2006.

3.0 SITE DESCRIPTION, OPERATIONAL HISTORY, AND WASTE CHARACTERISTICS

3.1 Site Location

The Alpine-Gold Dollar-Insurgent-Mammoth Claims are approximately 1.5 to 2 miles north of the town of Republic, Washington, on Knob Hill Road. To reach the sites from Republic:

- Go north on Knob Hill Road toward Curlew.

- Alpine. Reset odometer at city limits. Proceed 2.0 miles north past the entrance to the lower Knob Hill Mine. The road sweeps to the right almost 90 degrees. Just past the curve there is a large road entrance on the right (east). Go right and up the hill. Follow this road approximately 600 feet, until it makes a “T” and the tailings pond is visible. Alpine begins in the southern portion of the tailings pond (Figure 2) and runs southeast down to the lower Knob Hill Mine workings.

- Gold Dollar. Reset odometer at city limits. Proceed 2.0 miles north past the entrance to the lower Knob Hill Mine. The road sweeps to the right almost 90 degrees. Just past the curve there is a large road entrance on the right (east). Go right and start up the hill. The Gold Dollar claim begins about 100 feet up the road, crosses it, and runs south-southeast to Knob Hill Road (Figure 2). It does not include the water tower to the east on the hill, nor does it include the Knob Hill Mine buildings to the north.

- Mammoth. The Mammoth claim begins where the road meets the slope to the south, and runs northwest to the Knob Hill Mill, and southeast to the top of the ridge (Figure 2). The eastern limit is defined by the intersection of Knob Hill Road East and the unnamed road coming in from the right on the eastern side of the ridge.

- Insurgent. Reset odometer at city limits. Proceed 1.7 miles north. Turn right (east) on Knob Hill Road East. Stay right at the next intersection, approximately 40 feet east. Continue on Knob Hill Road East approximately 1.0 mile. The road goes east to the next ridge, and turns south. There is a second road coming in from the left, and the road ends at a gate. Approximately 1,000 feet south of the gate the Insurgent claim begins

(Figure 2). It includes a grove of aspens west of the road, and runs west down the hill and across the road to the Last Chance Mine. It begins north of the aspen grove, and continues south just past it. It includes the portion of land east of the road, part way up the ridge to the east.

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.

3.2 Site Description

Alpine

The Alpine Claim includes the southern portion of the tailings pond (probably associated with the former Knob Hill Mine, see Photograph 1), the foundations of a building that may be a wash house (Photograph 2), and several small buildings on the slope below the crest of the hill. The slope faces southeast. There was no evidence of mining (adits, pits, trenches) on the claim. The land is undeveloped, covered with grasses, herbs, and a few pine trees. The drainages follow the slope contours; all the drainages were dry. The buildings on the southern portion of the claim are part of the Knob Hill Mine operation; they were not included in the scope of our work.

Gold Dollar

The northern portion of the Gold Dollar Claim, south of the access road, contains several shallow areas of waste rock from an unknown source (Photograph 3). A sample, GD-WR1-S1, was collected of the waste rock material. There was no evidence of mining (adits, pits, trenches) on the claim. The land is undeveloped, covered with grasses, herbs, and a few shrubs. There is evidence of grading associated with several access roads (Figure 2). The upper part of the claim is a gently sloping terrace, bisected by a shallow, wide ravine in the center, and another terrace below. There is a well on the south end of the claim, adjacent to the intersection of the road to the lower Knob Hill Mine and a road that goes north to the Trade Dollar Mine (Figure 2). The well is in a small wooden manhole under a galvanized metal lid (Photograph 4). No other structures were observed on the claim.

Mammoth

The Mammoth Claim runs southeast from the Knob Hill Mill buildings, across a meadow containing a baseball field, across Knob Hill Road East, and up the ridge to the south to the top. The small valley area contains several roads, an

open pit (east of the claim), and the Knob Hill Mine complex. The meadow in the floor of the valley contains several monitoring wells. According to Arnold Arthur "Smokey" Burbank, the Hecla Site Manager, the wells are sampled monthly for environmental monitoring associated with mine closure.

During the site visit, the Hecla Manager showed us the location of a filled adit, and said that it was filled with waste rock from several areas, and covered with country rock to prevent illegal removal of the waste rock. He said that he thought it was an adit of the Little Cove Mine, now located under the new route of Knob Hill Road East. In our exploration of the claim, we noted a small adit south of the road, in a line with the Little Cove adit location that Mr. Burbank indicated; this is described further in the Little Cove Mine report.

What appears to be a trench prospect on the claim was observed at the top of the ridge to the south of the road (Photograph 5). The trench prospect measured approximately 80 feet long by 4 feet wide by 4 feet deep. A thin cover of gravel, cobbles, and soil approximately 14 cubic yards in volume was observed adjacent to the trench prospect. This material appeared to be a mix of soil and country rock (i.e., non-mineralized, native rock), not waste rock.

Insurgent Fractional

The Insurgent Fractional Claim is on a terrace between Klondike Mountain to the east, and a deep ravine to the west (Figure 2). It encloses an aspen grove and continues west down into the ravine. The aspen grove is in a shallow drainage area that contains a seasonally wet area, and perhaps springs. There was evidence of human activity (a fire pit, rocks arranged for seating, and minor trash). No evidence of mining activity was noted. The vegetation is a thick blend of aspen, low herbs, with some pine and alder. The western half of the claim is more open grassland with shrubs and pines. No evidence of vegetation distress was observed.

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 in Table 3.

Table 3 – Ownership Timeline

Date	Ownership	Claim	Source
Current Claim/ Land Owner	Hecla Mining Co.	Alpine, Gold Dollar, Insurgent, Mammoth	Ferry County Tax Assessor Parcel 23727 90000 9000 (Mine Survey #420), and Parcel 23735 9000 10000 (Mine Survey #769 - Golden Promise Mine)
1981	Day Mines acquired by Hecla Mining Co.	Alpine, Gold Dollar, Mammoth, Insurgent	University of Idaho Manuscript No. 306
1956	Alpine owned by Knob Hill Mines.	Alpine	Huntting (1956)
1951-1981	Insurgent owned by Day Mines, Inc.	Insurgent	Huntting (1956)
1935-1950	Insurgent owned by Aurum Mining Co.	Insurgent	Huntting (1956)
1908-1924	Insurgent owned by Insurgent Gold Mining Co.	Insurgent	Huntting (1956)
1918-1924	Mammoth owned by Little Cove Mining Co.	Mammoth	Huntting (1956)

Insurgent Claim

According to Huntting (1956) the Insurgent Claim was a gold and silver vein believed to be an offshoot of the Lone Pine vein. The ore body was 30 feet long and 2.5 feet wide, but was stoped out by 1956. It was opened by adits on the Lone Pine Claim to the southeast. It produced in 1908-1912, and in 1927.

Alpine, Gold Dollar, and Mammoth Claims

No production history was located for these claims.

4.0 SITE INVESTIGATION ACTIVITIES

An initial site investigation was conducted on August 28-31, 2006. Hart Crowser personnel walked through each claim, choosing routes that would reveal any mining activities. Photographs and GPS coordinates were taken and a single waste rock sample was collected. Mining features (if located) were described. One waste rock sample was collected from the Gold Dollar Claim on August 31, 2006. A sample description is given in Table 4. No surface water drainage or seeps were observed at the time of sampling. Five groundwater wells were identified at or near the Mammoth Claim, and one well on the Gold Dollar Claim. None of the wells were sampled. GPS waypoints of significant features and the sample location are provided in Appendix A.

4.1 Soil and Waste Pile Sampling

One sample of waste rock was obtained on the north end of the Gold Dollar Claim. The source is unknown. The waste rock appears to be a thin (less than 2 feet) mantling of the ground surface in an area of approximately 30 by 30 feet. Total waste rock volume is estimated at 67 cubic yards.

4.2 Surface Water and Seep Sampling

No surface water or seeps were observed on the claims described in this report.

4.3 Sediment Sampling

No sediment was sampled for this report.

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 only waste rock observed on the four claims was on Gold Dollar, as noted previously. The waste rock is on a topographic high, with no definite surface water or sediment channels. Seasonal surface water was observed on the Insurgent Claim; however, no waste rock was observed in the vicinity. Therefore, no water or sediment samples were collected.

5.2 Soil

Soil and waste rock sample analytical results are 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 metal concentrations in sample Gold Dollar-WR-S1 exceed MTCA Method B human health and ecological criteria for antimony and arsenic. The sample also exceeds the ecological criteria for mercury, selenium, silver, and thallium.

While toxicity characteristic leaching procedure (TCLP) tests were not performed, the arsenic concentration in sample Gold Dollar-WR-S1 is sufficiently high to potentially fail TCLP criteria for dangerous waste.

5.3 Air

No airborne dust was observed while on site, though, due to the fine nature of the waste rock, contaminated airborne dust could be generated. Since there are no residences or cabins in the vicinity, this would only pose a risk to recreational users.

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 Alpine-Gold Dollar-Insurgent-Mammoth Claims. In addition, we contacted DNR and requested information on rare plants and high quality native wetland and terrestrial ecosystems within the vicinity of the Alpine-Gold Dollar-Insurgent-Mammoth Claims.

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 Alpine-Gold Dollar-Insurgent-Mammoth Claims 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

These four claims appear to have not been significantly altered from their natural condition. The potential for releases of hazardous substances and the exposure of the ecological environment is thus similar to natural conditions for the vicinity.

The Gold Dollar Claim contains one waste rock pile with an approximate volume of 67 cubic yards. The waste rock sample contains metals at concentrations above MTCA Method A, MTCA Method B, or ecological screening criteria. The main contaminants of concern are antimony, arsenic, mercury, selenium, silver, and thallium. Arsenic concentrations have the potential to fail TCLP criteria for dangerous waste. Additional sampling and TCLP analysis are recommended to determine whether the waste rock would be classified as dangerous waste.

Human health risks are most likely limited to recreational users of the site. MTCA Method A and B screening levels may overestimate risk to recreational users since their exposure duration is less than the duration for a residential scenario. A site-specific terrestrial ecological evaluation (TEE) would be required to evaluate ecological risks.

Potential exposure pathways are shown on Figure 3.

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 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/>

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Table 2 - Project Team Roles and Responsibilities

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

Table 4 - Gold Dollar Claim Sample Inventory

Sample Name	Sample Location	Sample Description
Waste Rock Samples		
GD-WR1-S1	Northeast section of claim: N 1222548, E 2061198	GRAVEL with sand, silt (GM): 70 to 80 percent gravel to 4 inches, predominantly 1/2 inch, angular, quartz, limestone, porphyritic andesite; 10 to 15 percent sand, fine; 10 to 15 percent silt; tan, dry, loose, no organics. (Waste Rock)

Table 5 - Analytical Results for Soil Samples

Lab ID Sample ID Sampling Date	MTCA Method A (a)	MTCA Method B		Ecological Protection (c) Plant/Soil Biota/Wildlife	K0607754-046 Gold Dollar-WR-S1 8/31/2006
		Soil Ingestion (b)	Soil Ingestion & Dermal Contact (b)		
Total Solids in %					97.3
Total Metals in mg/kg					
Antimony	--	32	29	5 / -- / --	34.1
Arsenic	20	0.67	0.62	10 ^d / 60 / 132	383
Beryllium	--	160	144	10 / -- / --	0.13
Cadmium	2	80	74	4 / 20 / 14	0.09
Chromium	2,000 ^e	120,000 ^e	44,571 ^e	42 / 42 / 67	8.91
Copper	--	2,960	2,700	100 / 50 / 217	25.3
Lead	250	--	--	50 / 500 / 118	23.1
Mercury	2	24	18	0.3 / 0.1 / 5.5	0.815
Nickel	--	1,600	1,441	30 / 200 / 980	3.07
Selenium	--	400	360	1 / 70 / 0.3	10.3
Silver	--	400	360	2 / -- / --	69.7
Thallium	--	5.6	5.0	1 / -- / --	2.37
Zinc	--	24,000	22,000	86 / 200 / 360	12.6

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).

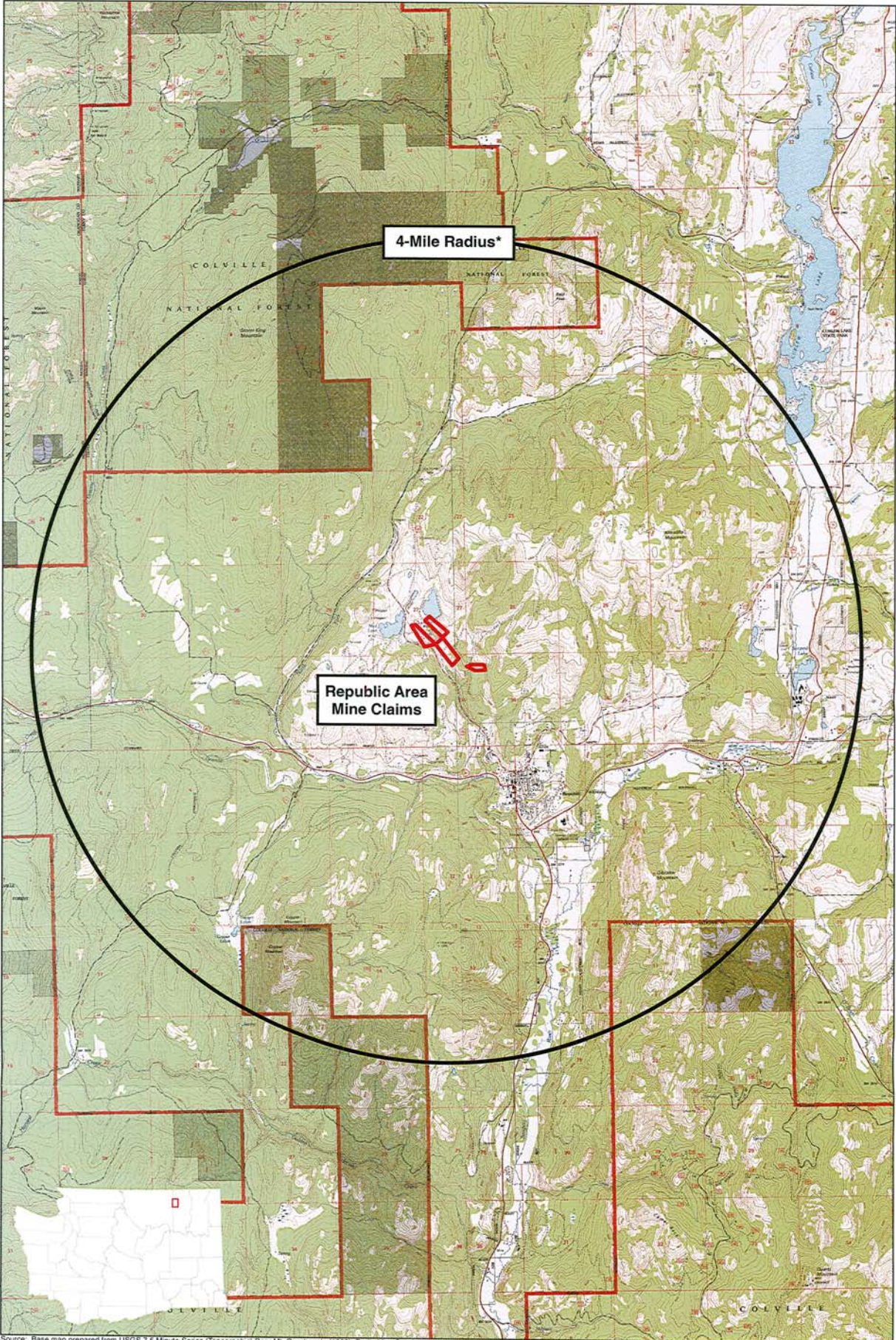
(d) Based on Arsenic V (10 mg/kg)

(e) Based on Chromium III

Table 6 - Threatened and Endangered Species

Site Number	Site Name	Species	Federal Status		State Status		Narrative
			T	E	T	E	
36	Gold Dollar (Claim)	Bald eagle (<i>Haliaeetus leucocephalus</i>)	X		X		Southern portion of Curlew Lake
40	Insurgent (Claim)	Bald eagle (<i>Haliaeetus leucocephalus</i>)	X		X		Southern portion of Curlew Lake
44	Mammoth (Claim)	Bald eagle (<i>Haliaeetus leucocephalus</i>)	X		X		Southern portion of Curlew Lake

Site Location Map
 Alpine, Gold Dollar, Insurgent Fractional, and Mammoth Mine Claims



J:\Project\Ecology\ANALYSIS\FinalReport\Map\Site_Location_Map\Republic_Mine_Claims_4_mile_radius.mxd

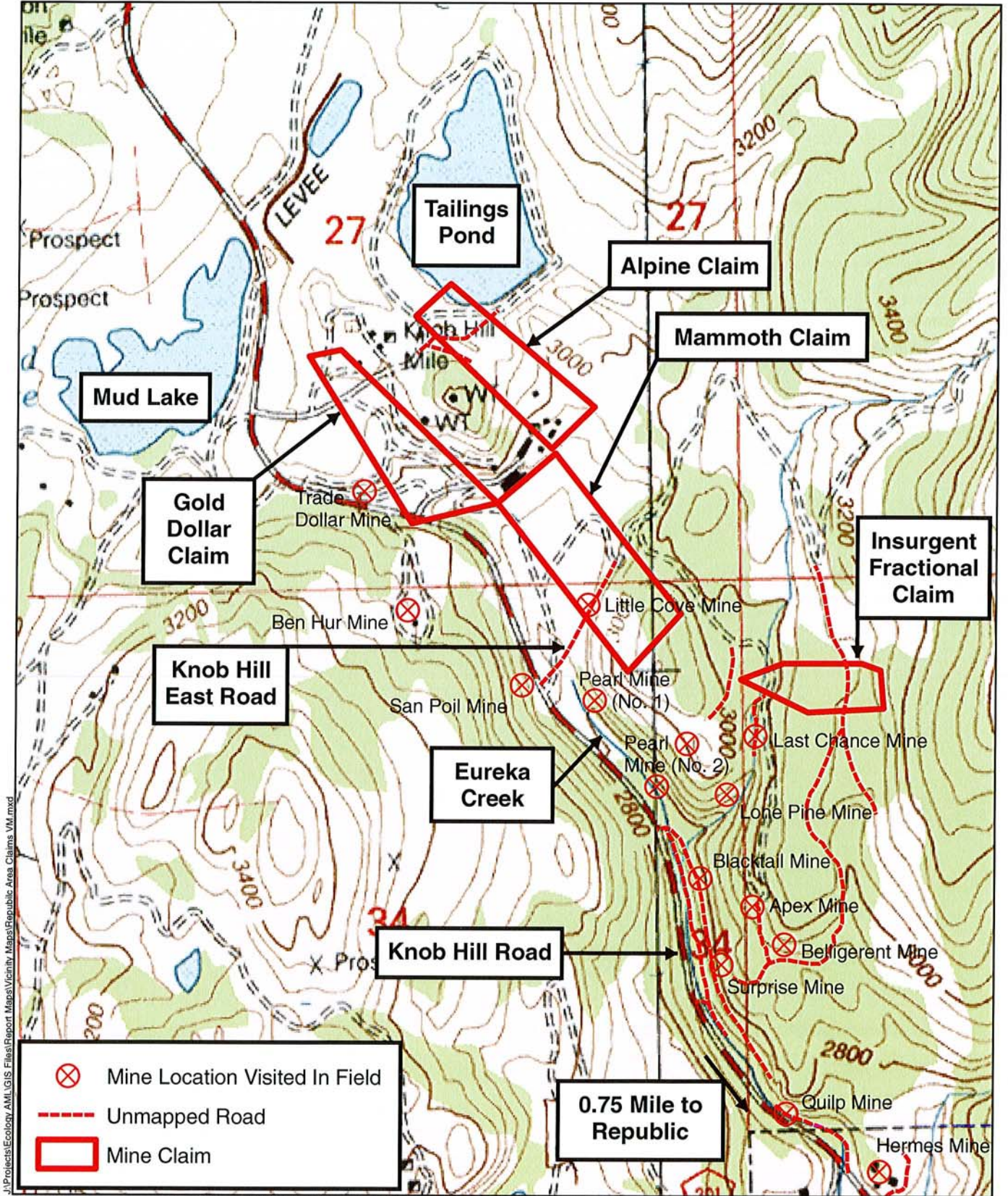
Source: Base map prepared from USGS 7.5 Minute Series (Topographic) Bear Mt. Quadrangle (1992), Boole Mtn. Quadrangle (1992), Karamin Quadrangle (1992), Republic Quadrangle (1992), Swan Lake Quadrangle (1992), and Storm King Mtn. Quadrangle (1992).



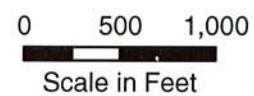
*Circle drawn encompasses a 4-mile radius from all claims and has radius slightly larger than 4 miles.

Vicinity Map

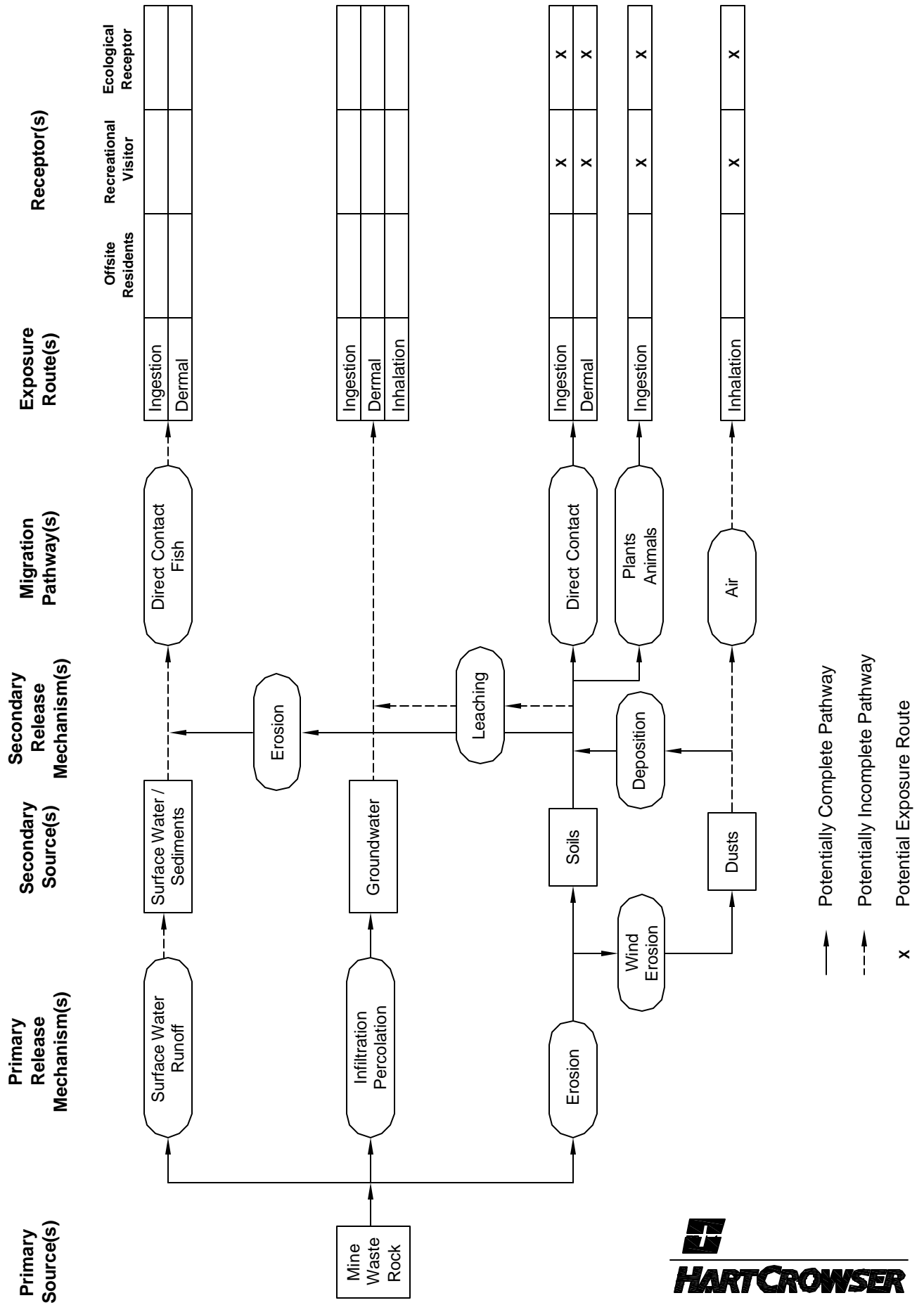
Alpine, Insurgent Fractional, Gold Dollar, and Mammoth Claims



Source: Base map prepared from USGS 7.5 Minute Series (Topographic) Republic Quadrangle (1992) and Storm King Mtn. Quadrangle (1992).



Mine Waste Rock Conceptual Site Model for Human and Ecological Risk



**APPENDIX A
FIELD DOCUMENTATION**

(20)

8/31

Surprise, cont.

WR-2, S-1 } same as WR-1 S1
WR-3 S-2 }

- To Alpine -

Bob + Merdell - Interior water p 24

Pump house @ Spring - Alpine?

Pond 15x20 x ~5' deep

Flow rate ~ 2 gpm into pond

N 122 792

E 206 2525

Alpine WP 1

N 122 2765

E 206 1925

WP3

2886

1970

Top of ridge

N 122 2866

E 206 2748

2067

(21)

8/31

Alpine

Bend in Grand rail - 4' onto side
of road at S end of reach, road

N 122 2942

E 206 1909

R Well at pond area

Drainage from pond goes to pump house
at spring, below

Alpine Str 1

N 122 2799

E 206 1958

Wash or rinse house

Gold Dollar -

Open dry land with rabbit track

Waste rock on surface

Photos from Gold Dollar P, S, H 1

N 122 2548

E 206 1198

WR 2 S 1

Waste rock from checkered

near Knob Hill

GRAVEL with sand, silt (6m)

Gravel to 4" med. 1/2" angular

22

8/31

Gold Dollar - well near
Smith and
N 1221906
E 2061610

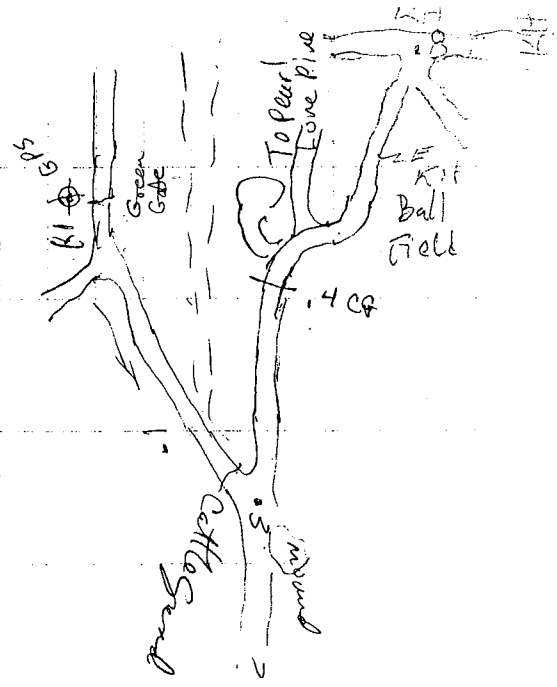
Waste rock mainly in north 1/2.
Vegetation - short brush. Few pines.

Incurgent N 1220251
E 2064575

1180
0251
N 839

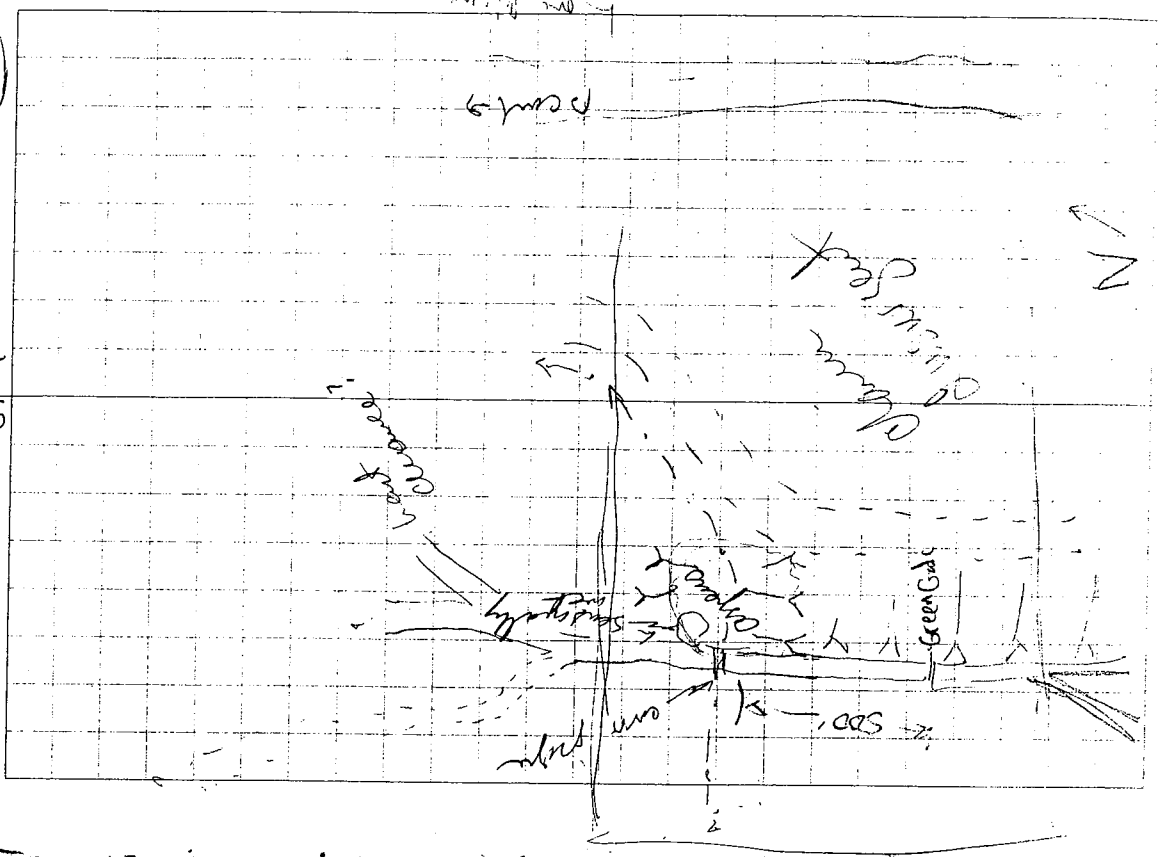
Green
Gate { N 1221180
E 2064507

W 62'

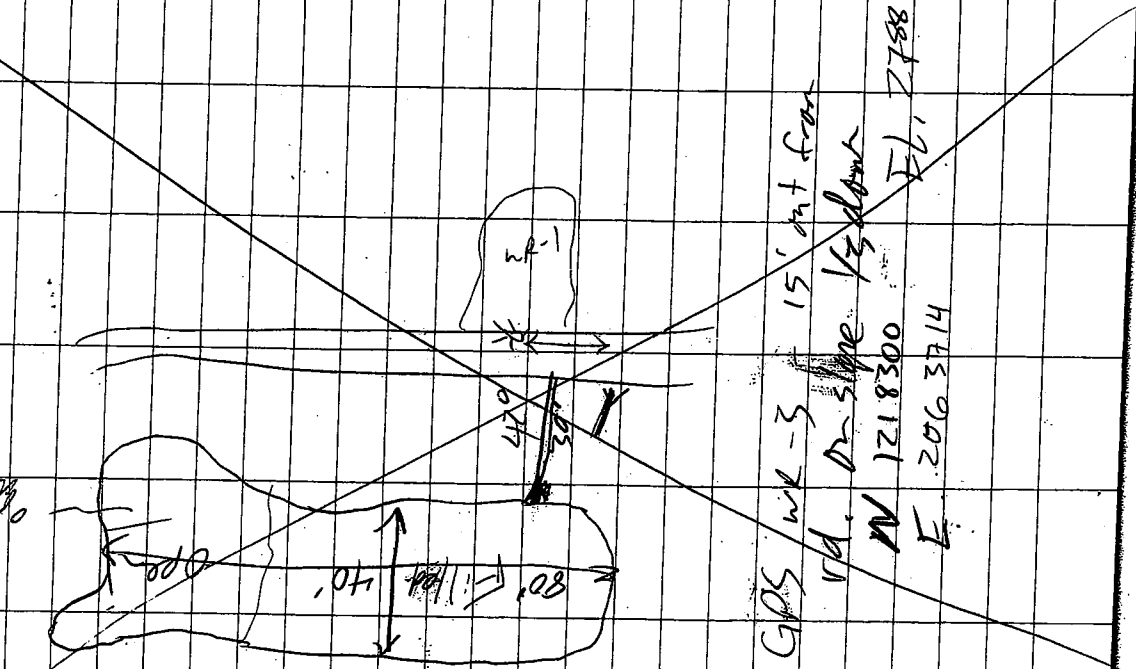


23

8/31



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000
000



GPS wk-3 15' out from
rd. on slope 1/3 down
N 1218300
E 2063714
Feb. 2788

Alpine Clark

- Photos: - pump house & pond
- from Hill looking @
Alpine
- front building looking up
Alpine
- corner of tail. pond
Alpine
- Building Structure (gray
water tank circ. ~~25'~~ 25' dia) 5' tall
west of pond. w. GPS
- Outside Tail. fence
- 45 x 15' corner. found w. sed.
& note in (Structure - 1
first shot of pipeline
door. 3
note 4' deep pit - green
staining
corner. note in vent &
gate = both of pit (10' x 15' x 4')
- 20 x 20 x 10' for comp. pit
near structure. 1

Insurgent

Take ~~Rob~~ Hill E to Green
Gate & Park
hike to Pt.
Gate

N 1221094 EL 3116 -
E 2004574

Insurgent Wayd.
- Set at Apple Grove
10' west of road

N 1220312 EL 3100
E 2004336

Insurgent rem of clear on
E (Main) Road

N 1220422 EL
E 2004692

9" tall wood stake

Bears Adit
6" deep es. on top
Adit
Mammol (?)
Mammol (?)
A.F. Duff
dry (6 dia)
LWR 2 12' x 6' x 0.5'
Adit Bears @ L11 to
8 tall of each

Adit
open

4' x 3' x 20' inside

70° nat.
iron trench

32°
5' tall

NO SREPS

Moss in trench

NO SREPS

NO human act.

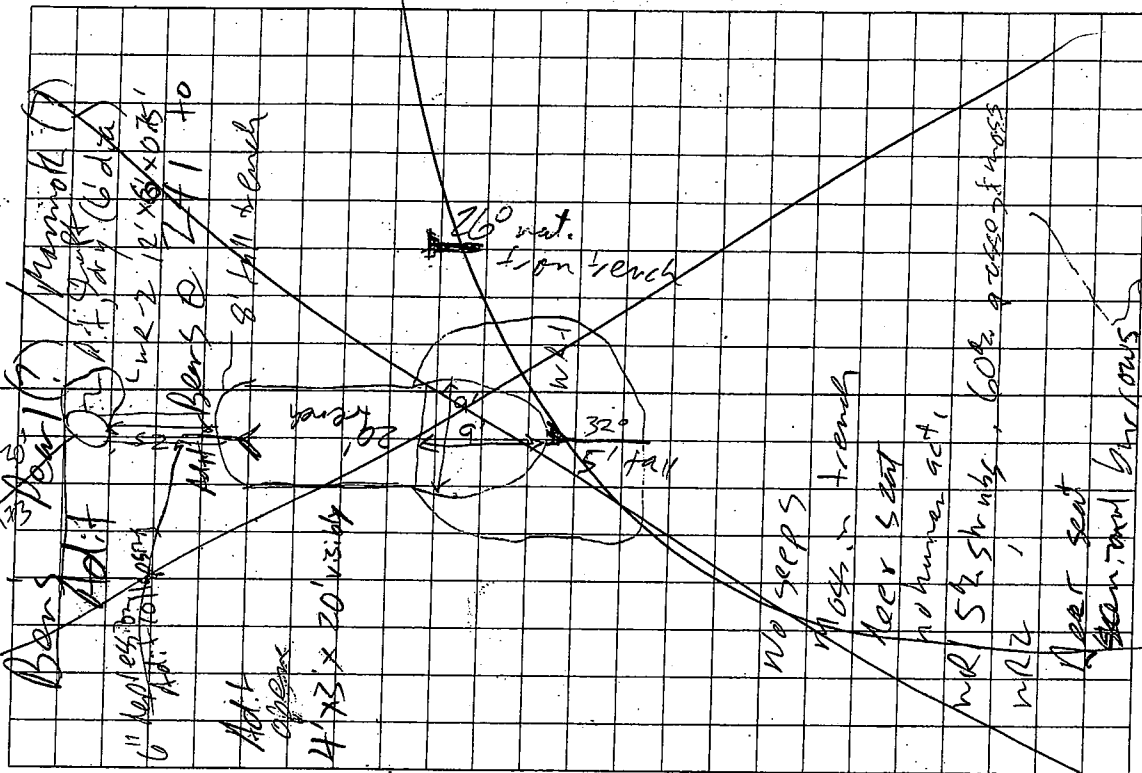
NR 5' shrubby, 60% presence of moss

NR 2

NO SREPS

seen and burrows

Not on
Mammol



Ecology AML

Republic Claims			
Coordinate Name	Northing	Easting	Altitude
SPRING WITH PUMPHOUSEI	1222801	2062523	2926
ALPINE STR 1	1222784	2061963	3084
GOLD DOLLAR POINT 1	1222556	2061210	3054
GOLD DOLLAR WELL 1	1221891	2061616	2914
INSURGENT WAYPT1	1220310	2064349	3012
INSURGENT N-S CEN ON E M	1220431	2064707	3050
MAMMOTH SURV ROD SE CO	1220532	2063074	3004
MAMMOTH TRENCH1	1220842	2063226	3057
Average	1221518	2062833	3013

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 tailings pond that partially lies on the Alpine Claim.



Photograph 2 - View of possible wash house on the Alpine Claim.



Photograph 3- View of waste rock on the Gold Dollar Claim.



Photograph 4- View of covered well on the Gold Dollar Claim.



Photograph 5- View of trench prospect on the Mammoth Claim.