

CREAM & JEAN (#61)
(MINFILE# 105M 024)

1. LOCATION AND ACCESS

Access to the adit is from the highway, approximately 400 m to the north either cross country through mature forest or along an overgrown road adjacent to Sandy Creek. The location is given as 63°55'54.4"N and 135°25'52.6"W. Access to the headframe from the adit crosses through dense second growth willow and alder. The headframe may also be reached by heading north from the highway through open spruce forest. The location is given as 63°55'58.4"N and 135°25'44.5"W. The adit is at an approximate elevation of 950 m and the headframe is on an adjacent hillside at an approximate elevation of 960 m. UTM co ordinates are 7089483.498m N 478853.974m E for the adit, and 7089606.565m N 478965.126m E for the headframe.

2. SITE PHYSIOGRAPHY

The site is located uphill (south) of the highway in an area of dense secondary and primary forest. The adit and loadout chute is located on a steep ridge that drains west-northwest into Sandy Creek. Some of the waste rock has fallen into the creek. The headframe and bunkhouse are located approximately 160 m east of the adit on a separate ridge that faces north towards the highway. The immediate area is choked with willow saplings. The local topography at the bunkhouse is quite flat. A creek was noted to the west of this site. A short steep slope is located immediately north of the headframe and drainage from headframe and waste rock pile is down this slope.

3. GEOLOGY AND MINERALIZATION

The site is underlain by Earn Group thin-bedded quartzites, phyllites and graphitic schist, with thin lenses of greenstone and a few thick beds of quartzite. Outcrop in the area is very poor. The Jean Adit dump is composed of two rock types; boulders and cobbles of dark grey-green greenstone with calcite-quartz-siderite veins and disseminated pyrite, and smaller material that is dark grey phyllite. No mineralization was observed at the Jean adit, and the high carbonate content appears to dominate the low pyrite content.

At the Cream Shaft there is considerable mineralized material that occurs at the contact between quartzite and grey-brown phyllite. Quartz-siderite-calcite-limonite-pyrite-sphalerite-galena vein material is common in the dump. Minor tetrahedrite, pyrargyrite and chalcopyrite are also reported here.

The shallow shaft and open cuts 60 m southeast of the Cream Shaft contain quartz-pyrite-arsenopyrite-scorodite mineralization.

4. SITE HISTORY

The Cream inclined shaft was sunk 32.3 m in the 1925 to 1949 period. Three sublevels totaling 29.3 m were driven from the shaft. In 1951 this shaft produced 54.4 tonnes of hand-sorted ore. At least 12 shallow test pits were dug to the northeast of the Cream shaft, testing the quartzite contact. A cluster of at least 6 shallow shafts and test pits were dug about 60m southeast of the Cream headframe.

The Jean adit was driven for 78.9 m in 1955. It did not connect with the Cream workings. No production is noted for the Jean, and no mineralized material is evident on the dump.

A residence was constructed approximately 80 m downstream from the Jean adit circa 1980. It is currently abandoned.

5. MINE DEVELOPMENT

5.1 Mine Openings And Excavations

Jean Adit (photo 61-1)

The portal has completely collapsed, and the site is overgrown with dense alders except for the steep slope of the waste dump (photo 61-2).

Location: See map. Adjacent to Sandy Creek, about 400 m upstream (southeast) of the highway.

Dimensions (L x W x H): About 1.5 m x 1.5 m, reported to be 78.9 m deep.

Supports: Wooden timbered; collapsed.

Condition: Completely collapsed; stable.

Accessibility: Inaccessible.

Cream Shaft (photo 61-4)

A wood headframe about 8 m high stands over the inclined shaft.

Location: See map. In dense scrub forest.

Dimensions (L x W x H): The headframe is approximately 4 m x 6 m x 8 m. The shaft is about 1.5 m x 1.5 m, and is reported to be 32.3 m deep.

Supports: The shaft is timbered, appears to be in fair to good condition.

Condition: Shaft appears to be in good condition; stable.

Accessibility: Wooden doors cover the inclined shaft, and can be opened. Water and ice are present at a depth of approximately 2 m which prevents access to underground, and limits the hazard.

Note: The headframe is photogenic, and is relatively close to the highway. It might be possible to develop this site as a tourist attraction. The mine is a good example of an underground hand-mining operation. The hand-cranked windlass is still in place, and a hoist bucket in good condition is present.

Test Pits

Large number of very small (< 3 m x 2 m x 3 m) test pits that are overgrown.

Location: Strung out in line east of shaft. See map.

Dimensions (L x W x H): All very small

Condition: Overgrown.

Accessibility: Same as shaft.

5.2 Waste Rock Disposal Areas

Waste rock pile - Cream Shaft

The waste rock is from the shaft development and production (photo 61-3). The bottom of the dump is likely weakly mineralized development rock, and the top is highly mineralized vein material discarded during ore production. The surface material is stained due to oxidation. No water was noted to flow over the dump. There is considerable mineralized material that occurs at the contact between quartzite and grey-brown phyllite. Quartz-siderite-calcite-limonite-pyrite-sphalerite-galena vein material is common in the dump. Minor tetrahedrite, pyrargyrite and chalcopyrite are also reported here. The material sampled is very high in sulphide sulphur (over 12%), and has a NP/AP of 0.2. There is high metal content in this dump.

Location: See map. Site is approximately 30 m east of Sandy Creek.

Dimensions (L x W x H): 15 m x 5 m x 2m (estimated at 300 tonnes).

Sampling: One mineralized waste rock sample was collected. See Attachment B for laboratory and field test results.

Waste rock pile – Jean Adit

The Jean Adit dump is composed of two rock types; boulders and cobbles of dark grey-green greenstone with calcite-quartz-siderite veins and disseminated pyrite, and smaller material that is dark grey phyllite. No mineralization was observed at the Jean adit, and the high carbonate content appears to dominate the low pyrite content as no rusting was observed. No drainage was noted through the dump, although the creek does contact the toe of the dump. The dump is derived from underground development.

Location: See map. Site is immediately east of Sandy Creek. The toe of the waste dump is in the creek.

Dimensions (L x W x H): 25 m x 20 m x 4 m (estimated at 400 tonnes).

Sampling: None collected.

5.3 Tailings Impoundments

There were no tailings impoundments at the site.

5.4 Minesite Water Treatment

There is no minesite water treatment at the site.

6. MINE SITE INFRASTRUCTURE

6.1 Buildings

Building 61A – Headframe (photo 61-4)

This is a small headframe with much of the original equipment remaining inside the building.

Location: See map. The building is located approximately 400 m from the highway but is inaccessible by and not visible from the road. The headframe is in dense scrub forest.

Dimensions (L x W x H): 4 m x 6 m x 8 m.

Construction: Wood frame with no floor; uninsulated.

Paint: None.

Asbestos: None.

Non-Hazardous contents: None.

Foundation: No foundation appeared to be present.

Hazardous contents: None.

Surrounding area: One empty barrel; some domestic debris; wood debris; waste rock pile down the slope to the north and northeast.

Building 61B – Bunk/Cookhouse (photo 61-5)

This building appears to have served as a combination bunkhouse and cookhouse. The building has collapsed and much of the building material debris is spread throughout the immediate area.

Location: See map. The building is located approximately 400 m from the highway but is inaccessible by and not visible from the road. The building is in dense scrub forest and is only visible in immediate close range but may be located due to its close proximity to the headframe, approximate 30 m to the northeast.

Dimensions (L x W x H): 11 m x 4 m (collapsed).

Construction: The structure is of wood frame construction.

Paint: None.

Asbestos: None.

Non-hazardous contents: Stove; domestic debris; bed; asphalt sheeting; large amount of debris from collapsed building.

Foundation: No foundation appeared to be present.

Hazardous contents: None.

Surrounding area: Debris from the building; three empty barrels; adjacent waste rock pile (photo 61-3).

6.2 Fuel Storage

All barrels present at the site were empty. No fuel is currently stored at the site.

6.3 Rail and Trestle (photo 61-2)

Location: There is a short rail and loadout chute immediately west of the adit leading down to a former (overgrown) road near Sandy Creek. Rails have been removed and stockpiled adjacent to the adit (photo 61-6).

Fabrication: Horizontal metal rail leading to wooden chute down the slope.

Amount of materials: Approximately 20 m of rail and 30 m wood chute.

Condition: Rail has been removed and stockpiled. Wood chute has deteriorated.

6.4 Milling and Processing Infrastructure

No milling or processing infrastructure is present at the site.

6.5 Electrical Equipment

No electrical equipment was identified at the site.

7. SOLID WASTE DUMPS

No solid waste dumps were noted at the site, however, a large amount of debris was noted at or surrounding the former bunkhouse/cookhouse structure.

8. POTENTIAL CONTAMINANTS OF CONCERN

8.1 Out-of-Service Transformers

No transformers were noted at the site.

8.2 Metals and Hydrocarbons in Soil

No metal or hydrocarbon impacted soil was identified at the site.

8.3 Liquid Hazardous Materials

All barrels present at the site were empty. No liquid hazardous materials were noted at the site.

8.4 Solid Hazardous Materials

No solid hazardous materials were noted at the site.

9. WATER QUALITY

Two upstream water samples were collected for this site, one on Sandy Creek and one on the unnamed creek adjacent to the headframe. The Sandy Creek sample (61-WQ-Str-CD-01) was taken approximately 40 m upstream of the adit, however, it should not be considered background since Betty (#19) is located upstream of Cream&Jean on Sandy Creek. The unnamed creek sample (61-WQ-Str-CD-02) was collected approximately 30 m upstream of the bunkhouse at a distance of 50 m from the building. Field pH and conductivity were not measured at either sample point.

Two samples were collected downstream of the site. Sample 61-WQ-Str-CD-03 was collected approximately 75 m downstream of the bunkhouse on the unnamed creek. A second sample (Sandy Cr-01) and duplicate, were collected by other personnel on Sandy Creek at the upstream side of the culvert crossing the highway, approximately 400 m downstream of the adit.

Laboratory sample analysis and field data is provided in Attachment B.

10. RECLAMATION

There has been no reclamation attempted at either area of the site with the exception of the rails removed from the loadout at the adit. Both areas have extensively overgrown. The headframe remains standing and the bunkhouse/cookhouse has collapsed and debris has spread throughout the immediate area. Waste rock piles present at the two areas remain unvegetated.

11. OTHER INFORMATION AND DATA

Note comments above regarding the tourism potential of the Cream shaft headframe.

12. REFERENCES AND PERSONAL COMMUNICATIONS

United Keno Hill Mines Limited. 1996. *United Keno Hill Mines Limited – Site Characterization*. Report No. UKH/96/01, prepared by Access Mining Consultants Limited.

United Keno Hill Mines Limited. 1996. *United Keno Hill Mines Limited – Site Characterization, Technical Appendices I-VI*. Report No. UKH/96/01, prepared by Access Mining Consultants Limited.

ATTACHMENT B: 1999 CREAM & JEAN WATER SAMPLES

LABORATORY RESULTS

Sample Number	Detection Limit	Units	61-StrCD-01 - Cream & Jean	61-StrCD-02 - Cream & Jean	61-StrCD-03
Site Description			40m upstream of adit	30m upstream of bunkhouse	75m downstream of bunkhouse
pH (field)	N/A	pH	-	-	-
Conductivity (field)	N/A	µS/cm	-	-	-
pH (Lab)	0.01	pH	7.58	7.14	7.54
Conductivity (Lab)	0.01	µS/cm	410	480	365
Total Alkalinity	5	mg CaCO3/L	72	21	62
Chloride	0.25	mg/L	<0.25	0.36	<0.25
Hardness (CaCO3 equiv)	5	mg/L	218	249	193
Nitrate-N	0.05	mg/L	<0.05	0.71	<0.05
Nitrite-N	0.003	mg/L	<0.003	<0.003	<0.003
Sulphate	0.5	mg/L	140	220	122
Total Dissolved Solids	5	mg/L	301	377	265

Analysis by ICP-USN

Aluminum	0.0008	mg/L	0.0216	0.031	0.0229
Antimony	0.005	mg/L	<0.005	<0.005	<0.005
Arsenic	0.01	mg/L	<0.01	<0.01	<0.01
Barium	0.00004	mg/L	0.0282	0.0149	0.0264
Beryllium	0.00001	mg/L	<0.00001	<0.00001	<0.00001
Bismuth	0.0004	mg/L	<0.0004	0.0021	<0.0004
Boron	0.002	mg/L	<0.002	0.008	<0.002
Cadmium	0.00006	mg/L	0.00012	0.00812	0.00018
Calcium	0.002	mg/L	60.9	63.1	54.1
Chromium	0.00006	mg/L	0.00027	0.0004	<0.00006
Cobalt	0.00003	mg/L	<0.00003	<0.00003	<0.00003
Copper	0.00003	mg/L	0.00206	0.00289	0.00114
Iron	0.00001	mg/L	0.02	0.024	0.027
Lead	0.0003	mg/L	<0.0003	0.0003	<0.0003
Lithium	0.001	mg/L	0.001	0.003	0.003
Magnesium	0.0005	mg/L	13	17.8	12
Manganese	0.00002	mg/L	0.0045	0.0271	0.00316
Mercury	0.0001	mg/L	<0.0001	<0.0001	<0.0001
Molybdenum	0.00007	mg/L	0.00018	<0.00007	0.00012
Nickel	0.00001	mg/L	<0.00001	0.0114	<0.0001
Phosphorus	0.03	mg/L	<0.03	<0.03	<0.03
Potassium	0.4	mg/L	<0.4	<0.4	<0.4
Selenium	0.004	mg/L	<0.004	<0.004	<0.004
Silicon	0.004	mg/L	3.07	3.12	3.12
Silver	0.00005	mg/L	<0.00005	<0.00005	<0.00005
Sodium	0.004	mg/L	1.3	3.1	1.4
Strontium	0.00002	mg/L	0.108	0.082	0.0963
Sulphur	0.008	mg/L	45.4	71.7	39
Thallium	0.001	mg/L	<0.001	<0.001	<0.001
Titanium	0.00002	mg/L	0.00037	0.00039	0.00019
Vanadium	0.00003	mg/L	<0.00003	<0.00003	<0.00003
Zinc	0.0002	mg/L	0.0447	2.92	0.0556
Zirconium	0.00004	mg/L			

Analysis by Hydride AA

Arsenic	0.0002	mg/L	0.0007	0.0007	0.0004
Selenium	0.0001	mg/L	<0.0001	<0.0001	0.0003

ATTACHMENT B: 1999 CREAM & JEAN WATER SAMPLES

LABORATORY RESULTS

Sample Number	Detection Limit	Units	Sandy CR-01-Water	Sandy CR-02-Water Sept 20
Site Description			In Sandy Creek, 400m downstream of adit	Duplicate
pH (field)	N/A	pH	-	-
Conductivity (field)	N/A	µS/cm	-	-
pH (Lab)	0.01	pH	7.56	7.49
Conductivity (Lab)	0.01	µS/cm	370	370
Total Alkalinity	5	mg CaCO3/L	53	48
Chloride	0.25	mg/L	0.26	0.34
Hardness (CaCO3 equiv)	5	mg/L	189	192
Nitrate-N	0.05	mg/L	0.1	0.09
Nitrite-N	0.003	mg/L	<0.003	<0.003
Sulphate	1	mg/L	115	116
Total Dissolved Solids	5	mg/L	260	261
Analysis by ICP-USN				
Aluminum	0.0008	mg/L	0.0373	0.0327
Antimony	0.005	mg/L	<0.005	<0.005
Arsenic	0.01	mg/L	<0.01	<0.01
Barium	0.00004	mg/L	0.0252	0.0253
Beryllium	0.00001	mg/L	<0.00001	<0.00001
Bismuth	0.0004	mg/L	<0.0004	<0.0004
Boron	0.002	mg/L	<0.002	<0.002
Cadmium	0.00006	mg/L	0.00102	0.00099
Calcium	0.002	mg/L	49.4	49.2
Chromium	0.00006	mg/L	0.00027	0.00026
Cobalt	0.00003	mg/L	<0.00003	<0.00003
Copper	0.00003	mg/L	0.00247	0.00287
Iron	0.00001	mg/L	0.052	0.054
Lead	0.0003	mg/L	<0.0003	<0.0003
Lithium	0.001	mg/L	0.004	0.003
Magnesium	0.0005	mg/L	12.2	12.1
Manganese	0.00002	mg/L	0.0106	0.0103
Mercury	0.0001	mg/L	<0.0001	<0.0001
Molybdenum	0.00007	mg/L	<0.00007	0.00011
Nickel	0.00001	mg/L	0.0023	0.0022
Phosphorus	0.03	mg/L	<0.03	<0.03
Potassium	0.4	mg/L	<0.4	<0.4
Selenium	0.004	mg/L	<0.004	<0.004
Silicon	0.004	mg/L	2.98	2.98
Silver	0.00005	mg/L	<0.00005	<0.00005
Sodium	0.004	mg/L	1.3	1.4
Strontium	0.00002	mg/L	0.0865	0.0873
Sulphur	0.008	mg/L	37.4	37.5
Thallium	0.001	mg/L	<0.001	<0.001
Titanium	0.00002	mg/L	0.00066	0.00061
Vanadium	0.00003	mg/L	<0.00003	<0.00003
Zinc	0.0002	mg/L	0.394	0.396
Zirconium	0.00004	mg/L		
Analysis by Hydride AA				
Arsenic	0.0002	mg/L	0.0004	0.0003
Selenium	0.0001	mg/L	<0.0001	<0.0001

**ATTACHMENT B: 1999 CREAM & JEAN WASTE ROCK
LABORATORY RESULTS**

Site Number	Detection Limit	Units	61_WR_TPBM_01
Sample Description			Cream shaft waste rock pile
Paste pH (field)	N/A	pH	-
Conductivity (field)	N/A	µS/cm	-
pH in Saturated Paste			
pH	0.1	pH	6.4
pH in Soil (1:2 water)			
pH	0.01	pH	6
ICP Semi-Trace Scan			
Aluminum	5	µg/g	8830
Antimony	2	µg/g	410
Arsenic	2	µg/g	51
Barium	0.05	µg/g	24.5
Beryllium	0.1	µg/g	<0.1
Bismuth	5	µg/g	9
Cadmium	0.1	µg/g	3300
Calcium	5	µg/g	7620
Chromium	0.5	µg/g	13.1
Cobalt	0.1	µg/g	32.9
Copper	0.5	µg/g	4900
Iron	1	µg/g	64000
Lead	1	µg/g	23000
Lithium	0.5	µg/g	9.2
Magnesium	1	µg/g	4060
Manganese	0.5	µg/g	2940
Mercury	0.01	µg/g	1.2
Molybdenum	1	µg/g	1
Nickel	1	µg/g	30.7
Phosphorus	5	µg/g	228
Potassium	20	µg/g	1890
Selenium	2	µg/g	<2
Silicon	5	µg/g	396
Silver	0.5	µg/g	817
Sodium	5	µg/g	62
Strontium	1	µg/g	4
Sulphur	10	µg/g	110000
Thorium	1	µg/g	<1
Tin	1	µg/g	1
Titanium	0.2	µg/g	25.2
Uranium	5	µg/g	<5
Vanadium	1	µg/g	22
Zinc	0.5	µg/g	257000
Zirconium	0.1	µg/g	6.6

**ATTACHMENT 2: 1999 CREAM & JEAN WASTE ROCK LABORATORY RESULTS
MODIFIED SOBEM METHOD ACID-BASE ACCOUNTING TEST**

SAMPLE	SITE DESCRIPTION	PASTE pH	S(T) %	S(SO4) %	AP	NP	NET NP	NP/AP
61_WR_TPBM_01	Cream shaft waste rock pile	6.7	12.30	0.04	383.1	86.5	-296.6	0.2
61_WR_TPBM_01 RE	Duplicate	-	12.60	0.04	392.5	-	-	-

AP = ACID POTENTIAL IN TONNES CaCO₃ EQUIVALENT PER 1000 TONNES OF MATERIAL.

NP = NEUTRALIZATION POTENTIAL IN TONNES CaCO₃ EQUIVALENT PER 1000 TONNES OF MATERIAL.

NET NP = NET NEUTRALIZATION POTENTIAL = TONNES CaCO₃ EQUIVALENT PER 1000 TONNES OF MATERIAL.

NOTE: WHEN S(T) AND/OR S(SO₄) IS REPORTED AS <0.01, IT IS ASSUMED TO BE ZERO FOR THE AP CALCULATION.

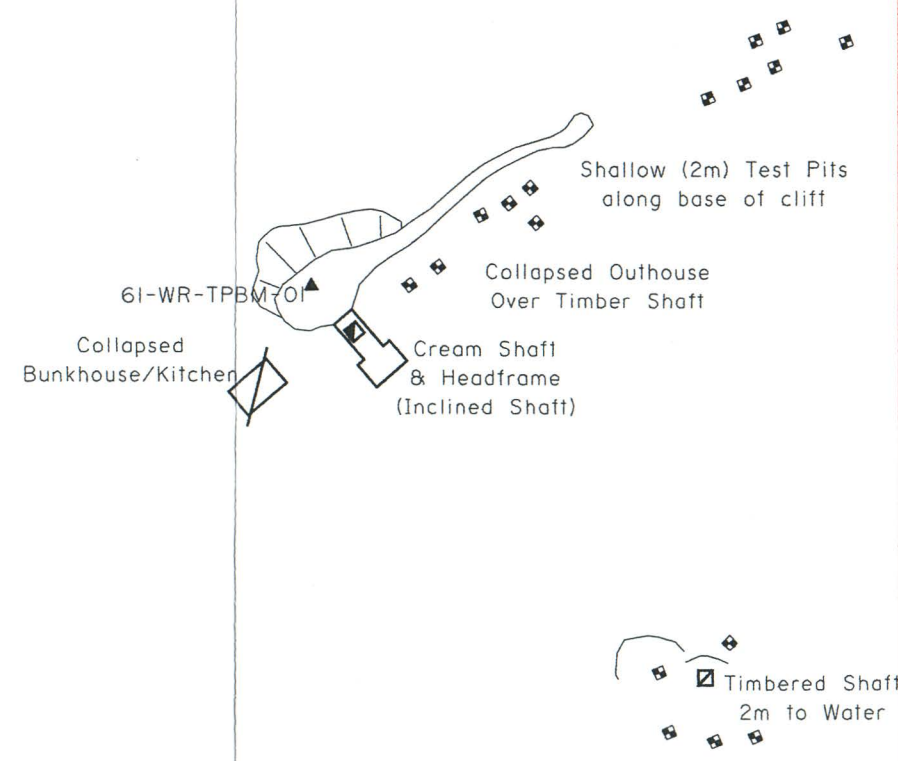
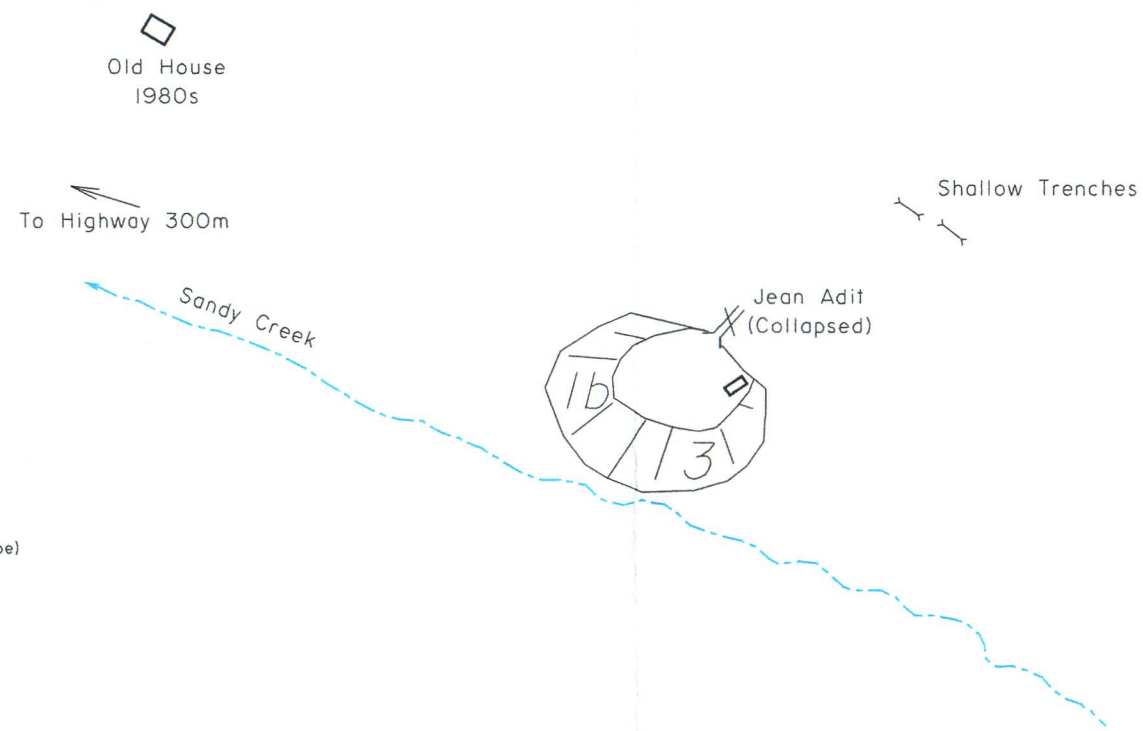
N/D = NO DUPLICATE ASSAY. CALCULATIONS ARE BASED ON ASSAY RESULTS OF THE INITIAL SAMPLE.

RE = REPLICATE.

NOTE - A HIGH LEVEL OF SOLUBLE METALS (ESPECIALLY IRON) WERE OBSERVED IN MANY SAMPLES DURING THE ABA TITRATIONS.

SAMPLES WITH A NEGATIVE NET NP SHOULD BE TESTED FOR MOBILE METALS USING STANDARD SHAKE FLASK EXTRACTION TESTS.

- 22A Building (22A: building site present reference*)
Indicates Asbestos Material
- 22A Collapsed Building
- Adit
- Collapsed Adit
- Shaft
- Collapsed/Backfilled Shaft
- Mine Rock Dump
- Bedrock Open Pit
- Trench
- Stripped Overburden Stockpile
- Stripped / Disturbed Area
- Outcrop Boundary
- Highway
- Road (gravel, 2 wheel drive)
- Road (gravel, 4X4 accessible)
- Road (inaccessible)
- Trail
- Culvert
- 24501-01 1999 Soil Sample (this study)
- Pre 1999 Soil Sample (other sources)
- 25WR04-01 1999 Waste Rock Sample (this study)
- Pre 1999 Waste Rock Sample (other sources)
- WO-12-06 1999 Water Sample
- Pre 1999 Water Sample
- Tension Cracks
- Mass Movement (note: for Forms: BelleKeno)
- Groundwater Seep
- Surface Water Flow (Stream, Creek, River)
- Lake
- Settling Pond / Water Treatment Pond
- Tailings Dam / Tailings Pond / Mill Tails
- Ponded Water / Trench
- Barrels
- Abandoned Equipment (compressors, ore cars, rails, air and water pipe)
- Mine Rails / Trestle
- Collapsed Trestle
- Solid Waste Disposal Site
- Area of Soil Contamination
- *(6) Transformer Location (number of transformer in brackets)
- Power Line
- Power Line Collapsed
- Aerial Transmission Towers
- 5 Photo Site (arrow shows view direction)
- GPS Survey Location
- Former Building Site (Elsa)
- Test Pit



Waste Rock Geological Legend

This legend intended for use as a key to the observed lithological content of the mine dumps and stockpiles of surficial materials investigated. It does not represent regional stratigraphy and no stratigraphic sequence is implied.

Pyrite content as percent: eg. Py 2%. Occurs as an alteration halo adjacent to vein fault structure.

Oxidation: Weak (wOx), moderate (mOx) and intense (iOx).

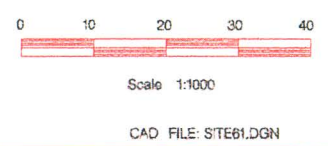
Quaternary: (5) Undifferentiated, unconsolidated colluvium, glacial till.

Veins: (4a) Quartz veins;
(4b) Quartz-pyrite veins;
(4c) Quartz-siderite + trace galena-sphalerite veins;
(4d) Siderite-quartz + trace galena-sphalerite veins;
(4e) Sphide (galena-sphalerite) + quartz-siderite veins.

Greenstone: (3) Amphibole-chlorite-plagioclase metadiorite or metagabbro.

Quartzite: (2a) Thick bedded, blocky gray quartzite;
(2b) Thin bedded, broken, quartzite with carbonaceous phyllite interbeds;
(2c) Calcareous quartzite.

Phyllite: (1a) Broken sericite-chlorite phyllite;
(1b) Carbonaceous phyllite.



Public Works And Government Services Canada Travaux publics et Services gouvernementaux Canada Architectural & Engineering Services Western Region	designed by: conçu par: drawn by: C.S. dessiné par: C.S. approved by: approuvé par:	date: Nov. / 99
	Drawing title: Cream & Jean Site #61 Site Assessment Yukon Territory	Titre du dessin: Cream & Jean Site #61 Site Assessment Yukon Territory



Photo 61-1: Timbers partially obscuring entrance to collapsed adit.



Photo 61-2: Waste rock and loadout structure below adit.



Photo 61-3: Waste rock on slope adjacent to headframe.



Photo 61-4: Wood framed headframe (61A).



Photo 61-5: Wood debris at former bunkhouse/cookhouse building 61B.



Photo 61-6: Wood and metal debris near entrance to adit.