

GALKENO MINE
(Including Sime, Mcleod, And Sugiyama)
Site No. 11
MINEFILE: 105M 0011,m

1. LOCATION AND ACCESS

The Galkeno site is located on the northeast slope of Galena Hill (Figure 1). The main (300 level) adit and loading area are at an elevation of approximately 3800 feet (1158m), and the associated #35 Vein and Sime #4 and #6 open pits are located at elevations up to 4000 feet (1219m). The NTS coordinates are 7 088 600N, 482 600 E.

Access to the site is via the Calumet Back Road north to Galkeno, approximately 3.9 km from the Duncan Creek road. Alternatively, the site can be reached from Elsa by taking the Calumet Road 3.3 km past the Hector Adit. All roads are gravel and are passable by 4WD vehicle.

2. SITE PHYSIOGRAPHY

The site is located on a moderate northeast-facing slope that is covered with a thick moss ground cover, bushes and evergreen trees. The site drains into Christal Creek located 800 feet (244m) below.

3. GEOLOGY AND MINERALIZATION

According to the Minfile report, the Galkeno deposit is hosted in the Keno Hill Quartzite, near the contact with the Lower Schist. Three main veins make up the deposit. The McLeod vein is a 3-6 m wide breccia that had late fault movement that crushed the ore. The other two veins are less than 1 m wide. All three veins contain galena, sphalerite, and freibergite in a quartz, siderite, pyrite, and minor arsenopyrite gangue. Supergene minerals include limonite, manganese oxide, anglesite, cerussite, beudanite and jarosite. Oxidation reaches to the lowest mining level in all ore shoots.

The wall rocks in the pits show little alteration or mineralization. Most of this is limited to the veins and the rock immediately adjacent to them. However, there are areas of iron oxides, particularly in the Sime Pits. Manganese oxide is common throughout the pits and waste dumps.

4. SITE HISTORY

According to the Minfile report, the Galkeno Mine site was first developed before 1930, with shafts and underground workings focussed on the Sime and McLeod veins. Between 1926 and 1949, two shafts were constructed and the first ore was produced from the McLeod vein. In the 1950's and early 1960's, the 100, 200 and 300 level adits were constructed to mine sections of the Sime, McLeod and Sugiyama veins. Also during this time, the 300 level workings were connected to the Hector-Calumet 750 level.

The Sime #4, Sime #6, and #35 vein open pits were excavated in the 1980's, and the "A" structure area was trenched.

In 1957, an adit was excavated at the 900 level of the mine, approximately 50 m above Christal Lake. This adit was constructed to intersect the McLeod vein as well as for dewatering of the underground workings. No ore was ever produced from this adit but it continues to drain much of the Galkeno workings.

Concern over zinc loadings in the Galkeno drainage led UKHM to install a hydraulic plug in the 900 adit in the Fall of 1993. The purpose of the plug was to flood the workings, thereby limiting oxidation of zinc and other sulfides in the exposed walls and reducing the amount of dissolved metals in the discharge water.

Water from the 900 adit is currently being treated with lime to reduce the zinc concentrations. Details of the Galkeno 900 level adit are provided in a separate report.

5. MINE DEVELOPMENT

5.1 Mine Openings and Excavations

There are two shafts, four adits, and three open pits at the Galkeno 300 site.

i) **Shafts**

McLeod Shaft (Photo 11-1)

Location: On a side road off of the road to the Sime #6 pit.

Dimensions (L x W x D): ~1.5 m² x <2 m deep(?).

Condition: The wood of which the shaft is constructed is rotting.

Supports: There is a wooden A-frame above the shaft that likely once held a pulley. The wooden supports around the shaft are in poor condition, and the ground to the NNE of the shaft is subsiding due to collapsing workings below (Photo 11-2).

Accessibility: Shaft is partially collapsed and blocked by wood debris.

Unnamed Shaft (11-3)

Location: Approximately 25 m north-northwest of the McLeod Shaft, just below the road.

Dimensions (L x W x D): ~1.5 m² x <2 m deep(?).

Condition: The bush has grown up around the shaft that is well hidden. The wooden supports for the shaft entrance has collapsed on one side and there are wooden timbers blocking the entrance.

Supports: The wooden supports around the shaft are in poor condition.

Accessibility: The shaft is inaccessible.

ii) **Adits**

300 level adit (11-4)

Location: On the Duncan Creek to Galkeno 300 road.

Dimensions (H x W): ~2 m x 2 m

Condition: Not actively used for more than 10 years.

Supports: According to the map of the underground mine (UKHM, 1996) the original adit was over 800 m long.

Accessibility: Portal has a wood frame that is in good condition and metal doors that are currently open although there has been an attempt to lock it. Adit is not blocked. There is lots of debris at the adit entrance: wood timbers, metal pipes or rail, insulation (utilidors), 15 m of 5 cm thick cable, retaining wall on either side of adit fairly stable.

200 level adit (Photo 11-5)

Location: On a southeast oriented side road off of the Calumet Back Road. The turn-off to the side road is 800 m from the Galkeno 300 adit.

Dimensions (L x W x D): The portal is ~2 m² but this is difficult to estimate since it is mostly collapsed. The length of the adit is approximately 75m, according to UKHM maps (UKHM, 1996).

Condition: The portal is in poor condition.

Supports: The wooden supports of the portal have mostly fallen.

Accessibility: The portal is accessible but appears unsafe. It was not entered to determine the depth.

100 level adit (Photo 11-6)

Location: Approximately 50 m northwest of the McLeod Shaft. There is no road access directly to the adit.

Dimensions (L x W x D): The portal is completely collapsed so its dimension are unavailable. According to UKHM maps, the adit extended approximately 2200 feet (670 m).

Condition: The portal is in poor condition. A large pile of wooden debris is in a nearby gully (Photo) and there are approximately rails and metal pipe outside the adit.

Supports: The wooden supports around the portal have collapsed. The buttresses to either side are in fair condition.

Accessibility: The portal inaccessible.

Unnamed adit

This adit was not found during the site visit.

iii) Open Pits

#35 Vein Pit, Sime #4 Pit, and Sime #6 Pit (Photos 11-7, 11-8, 11-9)

There are three open pits in the Sime area of the Galkeno property. The pits were excavated in thickly bedded, resistant quartzite much of which is moderately iron stained. All of the pits were dry when they were visited in September, and there was no evidence water ponding at any time of the year. The pits are very steep-sided, and walls reach from between 0 and approximately 100 m high. Therefore, they pose a substantial hazard from both the steep drop-offs and rock fall. Each pit is accessible by car and can be entered on foot.

5.2 Waste Rock Disposal Areas

Waste rock was deposited outside the 100, 200, and 300 level adits, and adjacent to the open pits. Waste rock associated with the open pits is generally composed of quartzite and schist showing little mineralization (Photo 11-10). Waste from the underground mine is generally composed of similar material, but has more alteration and mineralization. The amount of waste at each adit and pit are provided below (UKHM, 1996).

The waste rock dumps appear stable and no tension cracks or slumping were seen. However, a thorough geotechnical review of the dumps was not undertaken.

| Location of Waste Pile | Tonnage* |
|------------------------|----------|
| 100 adit | 11,600 |
| 200 adit | 4,000 |
| 300 adit | 135,000 |
| 900 adit | 20,800 |
| #35 vein pit | ~400,000 |
| Sime #4 pit | ~550,000 |
| Sime #6 pit | ~120,000 |

*Tonnages for the adits are taken from UKHM (1996). Pit tonnages are estimates.

For the application for a water license, UKHM Ltd. assessed the potential for environmental impacts from the waste rock by collecting and analyzing samples of pit wall rock rather than samples of the waste rock itself. The reasoning behind this was that the surface samples of the waste rock limit sampling to the last material that was taken from a given adit or open pit, and are, therefore, not representative of all the material in the waste dump.

Five samples were collected from the Sime pits and the #35 vein pit. Acid Base Accounting, to determine acid generating capacity. Samples were also analyzed for total metals. Results are presented in Appendix I. No additional waste rock samples were collected during the 1999 site visit.

5.3 Tailings Impoundments

No ore was processed at this site. No tailings or dams were encountered during the site visit.

6. MINE SITE INFRASTRUCTURE

6.1 Buildings

There are eight buildings at the Galkeno Mine site, all located at the 300 level portal. These are described below.

Building 11A – Quonset Warehouse (Photo 11-11)

Location: on the Duncan Creek to Galkeno 300 road

Dimensions (L x W x H): 19 m x 10 m x 6 m

Construction material: steel exterior; steel and wood frame doors; fiberglass insulation; windows boarded up from inside

Paint: None

Asbestos: None

Contents: some building material debris; 20 L empty kerosene container

Foundation: concrete; heavily stained (hydrocarbon odour)

Hazardous products: None

Surrounding area: Hydrocarbon staining was found adjacent to the north and west walls of the building. The northern stain measures 8.5 m x 2 m x 3 cm deep, and the contaminant appears to have leaked from inside between concrete and building frame. The west stain measures 6 m x 3.5 m x 3 cm deep and appears to have leaked from an above ground storage tank.

Building 11B – Loading Elevator (Photo 11-12)

This building is very unstable and poses a hazard, particularly since there is good access to the site.

Location: across the Duncan Creek to Galkeno 300 road from the 300 level adit, on the edge of the waste rock pile.

Dimensions (L x W x H): 6 m x 7.8 m x 20 m

Construction material: wood frame, tar paper/shingle covered

Condition: Poor. Very unstable as building is leaning downhill.

Paint: None observed

Asbestos: Unknown; building too unstable to enter

Contents: Unknown

Foundation: Wood (?)

Hazardous products: None observed

Building 11C – Residence

Location: on the Duncan Creek to Galkeno 300 road

Dimensions (L x W x H): 12 m x 9.7 m x 10 m

Construction material: wood frame, tar paper siding, asphalt shingle (deteriorating); foil vapour barrier with tar paper insulation; utilidor conduits (wooden structures housing utility piping to different buildings) lead into house under floorboards.

Condition: One side and roof collapsed

Paint: None observed

Asbestos: None observed

Contents: Debris from house; some electrical wiring, metal sheeting

Foundation: Wooden, built on waste rock pile.

Hazardous products: None

Buildings 11D & 11E – Demolished Buildings

Location: Just below the Duncan Creek to Galkeno 300 road, southeast of the 400 level adit.

Dimensions (L x W x H): NA

Construction material: wood frame, tar paper, shingle roof

Condition: Demolished

Paint: None observed

Asbestos: None observed

Contents: None

Foundation: Concrete

Hazardous products: None observed.

Building 11F - Storage

Location: Just above the Duncan Creek to Galkeno 300 road, approximately 50 m south of the 400 level adit.

Dimensions (L x W x H): 2 m x 2 m x 6 m

Construction material: two-storey, wood frame, tar paper, shingle roof

Condition: Poor but standing

Paint: None observed

Asbestos: None observed

Contents: None observed

Foundation: Wood

Hazardous products: None observed

Building 11G – Residence (Photo 11-13)

Location: on road above the adit. Turnoff to the road is approximately 125 m southwest of adit on the Duncan Creek to Galkeno 300 road.

Dimensions (L x W x H): 10 m x 8 m x 10 m

Construction material: two-storey, wood frame, tar paper, asphalt shingles with vapour barrier insulation. Utilidor conduit runs across front of building.

Condition: Poor. Roof has collapsed.

Paint: Yes – interior.

Asbestos: No. Probably fiberglass insulation but too unstable to sample.

Contents: None

Foundation: None

Hazardous products: None observed

Surrounding area: overgrown shrubs

Building 11H – Residence

Location: on road above the adit. Turnoff to the road is approximately 125 m southwest of adit on the Duncan Creek to Galkeno 300 road.

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

Construction material: one-storey bungalow, wood frame, tar paper exterior (deteriorating)

Condition: Roof and several walls collapsed

Paint: None observed

Asbestos: None observed

Contents: None observed

Foundation: Wood

Hazardous products: None observed

Surrounding area: few empty 20L kerosene cans.

6.2 Fuel Storage

No stored fuel was found on site.

6.3 Rail and Trestle

300 Level Adit

There are tracks running out of adit (Photo 11-4) and along side the loading elevator (Photo 11-14).

Fabrication: Approximately 20 m of steel track attached to the wooden ties. Run out of adit, and some scrap was found on waste dump.

Condition: Rusted but intact.

100 Level Adit

Fabrication: Approximately 30 m of steel rail attached to the wooden ties runs out of adit (Photo 11-6). More rail and other metal and wood debris are deposited on platform outside adit (Photo 11-15).

Condition: Rail bent and in poor condition.

6.4 Milling and Processing Infrastructure

No milling or processing infrastructure was found at this site.

6.5 Electrical Equipment

No electrical equipment was encountered on site.

7. SOLID WASTE DUMPS

The Galkeno 300 mine site has abundant metal and wood debris at different locations.

300 Level Adit

Most debris is at the 300 level adit. There is wood debris as well as rail and track immediately outside the adit (Photo 11-4) and on the top of the waste dump (Photo 11-16).

A large pile of mainly metal debris is located adjacent to the loading elevator (Photo 11-17). Additional debris is located below the waste dump at the 300 level adit, consisting of several empty, rusted barrels, miscellaneous metal debris and tar paper from buildings and large wooden cable spools (Photo 11-18).

100 Level Adit

Some rail and metal piping, and abundant wood debris has been deposited outside this adit (Photos 11-6 & 11-15).

McLeod Shaft

Abundant wood with some metal debris (11-19) surrounds the shaft.

8. POTENTIAL CONTAMINANTS OF CONCERN

Potential contaminants of concern include metals from water discharging from the level 300 adit, and metals washed out of waste rock piles. No hazardous materials were encountered on site.

i) Soil

A few hydrocarbon stains were found around Building 11A - Quonset Warehouse. See Section 6.1, Building 11A. The staining was small in area and was only 3 cm deep. No samples were collected.

ii) Liquid Hazardous Waste (usually in 205L barrels or 20 L containers)

No liquid hazardous waste was encountered on site.

iii) POL Storage Tanks

No POL storage tanks were found on site.

9. WATER QUALITY

9.1 Surface water quality

Surface water quality samples were collected from the 300 level adit (Photo 11-4), and from upstream and downstream of the site in Christal Creek. Location of the adit sample is shown on Figure 2. Results of surface water geochemistry are listed in Table 1.

TABLE 1
Surface Water Quality Results

| Parameter | Detection Limit | Units | 11-1-adit - Galkeno (47711-1) | Christal Cr -01 - Water (47888-11) | Christal - WS - 100 (47886-9) |
|-------------------------|-----------------|------------|-------------------------------|------------------------------------|-------------------------------|
| | | | | Upstream | Downstream |
| Aluminum | 0.0008 | mg/L | 0.0837 | 0.0376 | 0.23 |
| Antimony | 0.005 | mg/L | <0.005 | <0.005 | <0.005 |
| Arsenic | 0.01 | mg/L | 0.12 | <0.01 | <0.01 |
| Barium | 0.00004 | mg/L | 0.00613 | 0.0471 | 0.056 |
| Beryllium | 0.00001 | mg/L | <0.00001 | <0.00001 | <0.00001 |
| Bismuth | 0.0004 | mg/L | <0.0004 | <0.0004 | <0.0004 |
| Boron | 0.002 | mg/L | 0.064 | <0.002 | <0.002 |
| Cadmium | 0.00006 | mg/L | 0.482 | 0.00162 | 0.00082 |
| Calcium | 0.002 | mg/L | 189 | 126 | 100 |
| Chromium | 0.00006 | mg/L | 0.0098 | 0.0001 | 0.00042 |
| Cobalt | 0.00003 | mg/L | 0.11 | 0.00022 | 0.00049 |
| Copper | 0.00003 | mg/L | 0.01 | 0.00103 | 0.00243 |
| Iron | 0.00001 | mg/L | 32.5 | 0.307 | 0.842 |
| Lead | 0.0003 | mg/L | 0.036 | 0.0093 | 0.0033 |
| Lithium | 0.001 | mg/L | 0.029 | 0.015 | 0.01 |
| Magnesium | 0.0005 | mg/L | 40.3 | 21.1 | 20.2 |
| Manganese | 0.00002 | mg/L | 6.25 | 0.34 | 0.198 |
| Molybdenum | 0.00007 | mg/L | <0.00007 | 0.00027 | 0.00034 |
| Nickel | 0.00001 | mg/L | 0.379 | 0.003 | 0.0025 |
| Phosphorus | 0.03 | mg/L | <0.03 | <0.03 | 0.04 |
| Potassium | 0.4 | mg/L | 0.6 | <0.4 | <0.4 |
| Selenium | 0.004 | mg/L | 0.066 | <0.004 | 0.004 |
| Silicon | 0.004 | mg/L | 4.32 | 1.93 | 2.74 |
| Silver | 0.00005 | mg/L | 0.0152 | 0.00068 | <0.00005 |
| Sodium | 0.004 | mg/L | 1.5 | 1.6 | 1.2 |
| Strontium | 0.00002 | mg/L | 0.22 | 0.172 | 0.2 |
| Sulphur | 0.008 | mg/L | 438 | 40.1 | 68.1 |
| Thallium | 0.001 | mg/L | 0.228 | <0.001 | <0.001 |
| Titanium | 0.00002 | mg/L | <0.00002 | 0.0132 | 0.00876 |
| Vanadium | 0.00003 | mg/L | <0.00003 | 0.00073 | 0.00063 |
| Zinc | 0.0002 | mg/L | 23.9 | 0.195 | 0.17 |
| Mercury | 0.0001 | mg/L | <0.0001 | <0.0001 | <0.0001 |
| Arsenic (hydride AA) | 0.0002 | mg/L | 0.0803 | 0.0042 | 0.0033 |
| Selenium (hydride AA) | 0.0001 | mg/L | <0.0001 | 0.0005 | 0.0003 |
| Total Alkalinity | 5 | mg CaCO3/L | 16 | 107 | 111 |
| Chloride | 0.25 | mg/L | <0.25 | 0.57 | 0.65 |
| Electrical Conductivity | 0.01 | µS/cm | 1950 | 750 | 630 |
| Hardness (CaCO3 equiv) | 5 | mg/L | 682 | 442 | 335 |
| Nitrate-N | 0.05 | mg/L | <0.05 | <0.05 | <0.05 |
| Nitrite-N | 0.003 | mg/L | 0.003 | 0.007 | 0.008 |
| pH | 0.01 | pH | 5.88 | 7.76 | 7.82 |
| Sulphate | 1 | mg/L | 1270 | 282 | 207 |
| Total Dissolved Solids | 5 | mg/L | 2010 | 547 | 470 |

300 level adit

A water quality sample was collected at the adit entrance. Flow was approximately 3 L/s and was bright orange (11-4). The pH of the water was 6.7 and the conductivity was 1883 μ S. Approximately 10 cm of bright yellowish-orange precipitate (likely limonite) has been deposited over a 3 m² area outside the adit. The seepage crosses the Duncan Creek to Galkeno 300 road, divides into two streams as it flows down the waste piles near the loading elevator, and then flows into the bush down slope of the mine site (11-20).

No seepage was seen from any of the waste rock dumps, and there appears to be no impact of seepage on vegetation from most waste dump, with the exception of the dump at the 300 level adit. At the base of this dump is an area approximately 100m wide where the vegetation has been impacted. This area narrows downhill to only a meter or so wide. It is likely that this impacted zone resulted from adit drainage during mining, which would have a higher volume than current drainage. The impacted area has begun to revegetate naturally, suggesting that the zone does not result from current runoff from the waste dump.

Christal Creek

The drainage from the 300 level adit was not traced for its full extent. It is possible that the drainage empties into Christal Creek, or disappears into the groundwater before it reaching the creek. Results of water quality data from samples collected upstream and downstream of the Galkeno 300 site are provided in Table 1. However, it should be noted that there are several other mine and exploration sites in the area that are likely impacting the water quality of the creek in this area.

9.2 Groundwater Quality

Groundwater quality samples were collected from four piezometers that were installed by Keno Hill Mining in 1995. Piezometer locations are shown in Figure 2, and geochemical results are listed in Table 2.

TABLE 2
Groundwater Quality Results

| Parameter | Detection Limit | Units | 11-95UKG3/1-99 - Galkeno 300 (47904-16) | 11-95-UKG3/2-99a - Galkeno 300 (47904-17) | 11-95UKG33-99a - Galk 300 47901-3) | 11-95UKG34-99 - Galk 300 (47901-2) |
|---|-----------------|------------|---|---|--|--|
| <i>ICP-USN Total Metals Scan in Water</i> | | | | | | |
| Aluminum | 0.0008 | mg/L | 25.9 | 37.5 | 6.19 | 5.47 |
| Antimony | 0.005 | mg/L | 0.006 | 0.013 | 0.007 | 0.007 |
| Arsenic | 0.01 | mg/L | 0.03 | 0.07 | 0.06 | 0.07 |
| Barium | 0.00004 | mg/L | 0.809 | 1.61 | 0.163 | 0.131 |
| Beryllium | 0.00001 | mg/L | <0.00001 | 0.00378 | 0.00044 | 0.00024 |
| Bismuth | 0.0004 | mg/L | 0.0106 | 0.0056 | 0.0013 | 0.0007 |
| Boron | 0.002 | mg/L | 0.073 | 0.077 | 0.031 | 0.017 |
| Cadmium | 0.00006 | mg/L | 0.67 | 0.406 | 0.00583 | 0.0377 |
| Calcium | 0.002 | mg/L | 231 | 450 | 285 | 223 |
| Chromium | 0.00006 | mg/L | 0.0889 | 0.059 | 0.0085 | 0.00751 |
| Cobalt | 0.00003 | mg/L | 0.0339 | 0.00989 | 0.0216 | 0.0186 |
| Copper | 0.00003 | mg/L | 0.357 | 0.121 | 0.0663 | 0.0564 |
| Iron | 0.00001 | mg/L | 35.2 | 89.7 | 59.2 | 29.4 |
| Lead | 0.0003 | mg/L | 0.406 | 0.854 | 0.0519 | 0.166 |
| Lithium | 0.001 | mg/L | 0.057 | 0.112 | 0.016 | 0.039 |
| Magnesium | 0.0005 | mg/L | 53.7 | 85.8 | 64.5 | 49.8 |
| Manganese | 0.00002 | mg/L | 72.2 | 19.4 | 1.56 | 1.59 |
| Molybdenum | 0.00007 | mg/L | 0.0171 | 0.0209 | 0.00757 | 0.00217 |
| Nickel | 0.00001 | mg/L | 0.633 | 0.444 | 0.0601 | 0.03 |
| Phosphorus | 0.03 | mg/L | 1.11 | 2.19 | 1.93 | 0.96 |
| Potassium | 0.4 | mg/L | 3.4 | 4 | 1 | 1.4 |
| Selenium | 0.004 | mg/L | 0.031 | <0.004 | <0.004 | <0.004 |
| Silicon | 0.004 | mg/L | 33.4 | 43.1 | 13.3 | 13.2 |
| Silver | 0.00005 | mg/L | 0.0192 | 0.00456 | 0.00107 | 0.00213 |
| Sodium | 0.004 | mg/L | 2.2 | 3.7 | 3.1 | 2.9 |
| Strontium | 0.00002 | mg/L | 0.386 | 0.919 | 0.387 | 0.369 |
| Sulphur | 0.008 | mg/L | 445 | 552 | 265 | 144 |
| Thallium | 0.001 | mg/L | <0.001 | <0.001 | <0.001 | <0.001 |
| Titanium | 0.00002 | mg/L | 0.747 | 1.06 | 0.0859 | 0.0952 |
| Vanadium | 0.00003 | mg/L | <0.00003 | 0.0782 | 0.00804 | 0.00914 |
| Zinc | 0.0002 | mg/L | 119 | 88.1 | 1.01 | 1.25 |
| Mercury | 0.0001 | mg/L | 0.0001 | 0.0003 | <0.0001 | <0.0001 |
| Arsenic (hydride AA) | 0.0002 | mg/L | 0.085 | 0.09 | 0.085 | 0.0708 |
| Selenium (hydride AA) | 0.0001 | mg/L | 0.003 | 0.0027 | 0.0012 | 0.0004 |
| Total Alkalinity | 5 | mg CaCO3/L | 6 | 8 | 64 | 215 |
| Chloride | 0.5 | mg/L | <0.5 | <0.5 | <0.5 | <0.5 |
| Electrical Conductivity | 0.01 | µS/cm | 1950 | 2350 | 1500 | 1200 |
| Hardness (CaCO3 equiv) | 5 | mg/L | 965 | 1980 | 959 | 774 |
| Nitrate-N | 0.05 | mg/L | | | 0.4 | 0.7 |
| Nitrate-N | 0.1 | mg/L | 0.2 | 1.1 | | |
| Nitrite-N | 0.003 | mg/L | 0.005 | <0.003 | 0.006 | <0.003 |
| pH | 0.01 | pH | 5.68 | 6.22 | 7.29 | 7.54 |
| Sulphate | 1 | mg/L | 1250 | 1590 | 800 | 430 |
| Total Dissolved Solids | 5 | mg/L | 1950 | 2310 | 1340 | 901 |

10. RECLAMATION

Many of the waste rock piles are beginning to revegetate naturally with small bushes and some grasses. This is particularly true of the waste piles surrounding the open pits (Photo 11-21). Grasses are also growing in the drainage from the 300 level adit.

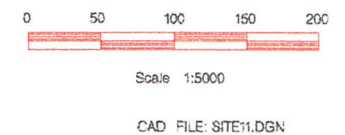
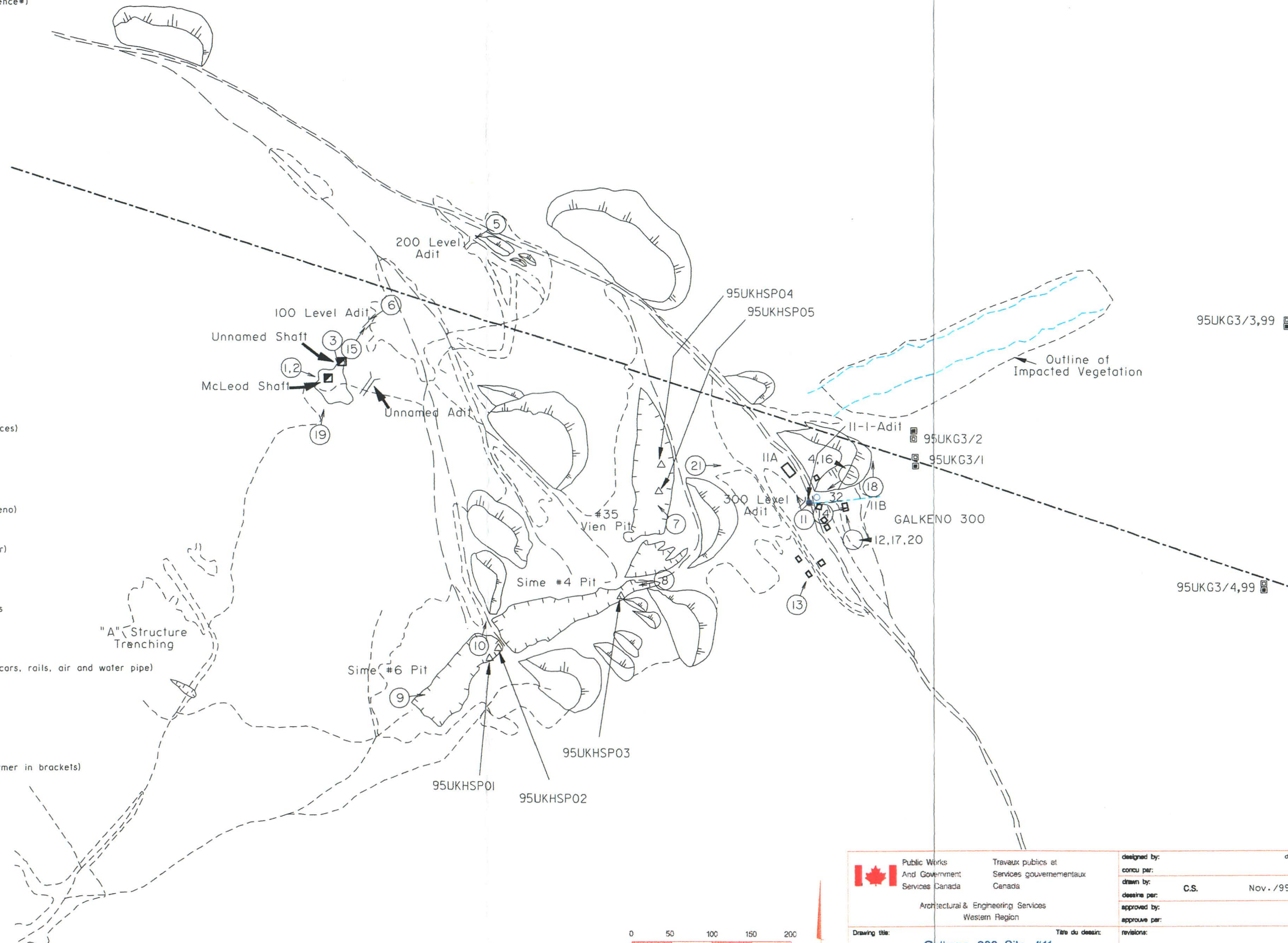
11. REFERENCES AND PERSONAL COMMUNICATIONS

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.



- 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)
- W0-12-06 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
- ⬢ Photo Site (arrow shows view direction)
- ⬢ GPS Survey Location
- ⬢ Former Building Site (Elsa)
- ⬢ 1999 Piezometer Sample
- ⬢ Pre 1999 Piezometer Sample



| | | | | |
|---|--|--|--|---------------------------------------|
| | Public Works And Government Services Canada | Travaux publics et Services gouvernementaux Canada | designed by: _____ | date: _____ |
| | Architectural & Engineering Services Western Region | | drawn by: C.S. | Nov. / 99 |
| Drawing title: Galkeno 300 Site #11 Site Assessment Yukon Territory | | | approved by: _____ | revisions: _____ |
| | | | project no. no. du projet: 125-12.01 | dwg. no. dessin no.: 1 of 1 |

Photo 11-1. McLeod Shaft, looking southeast.



Photo 11-2. Subsidence over adit workings, near the McLeod Shaft. The collapsed area measures approximately one meter across.



Photo 11-3. Unnamed Shaft. The wood constructing the shaft is rotted and unstable, and the area around the shaft is overgrown.



Photo 11-4. Galkeno 300 level adit. Note the iron oxidized (orange) laden water and precipitate. Also note the debris in the area.



Photo 11-5. Galkeno 200 level adit. Portal is open but is unsafe. The timbers of the portal are collapsing.



Photo 11-6. Galkeno 100 level adit. Portal is completely collapsed. Note rails exiting adit.

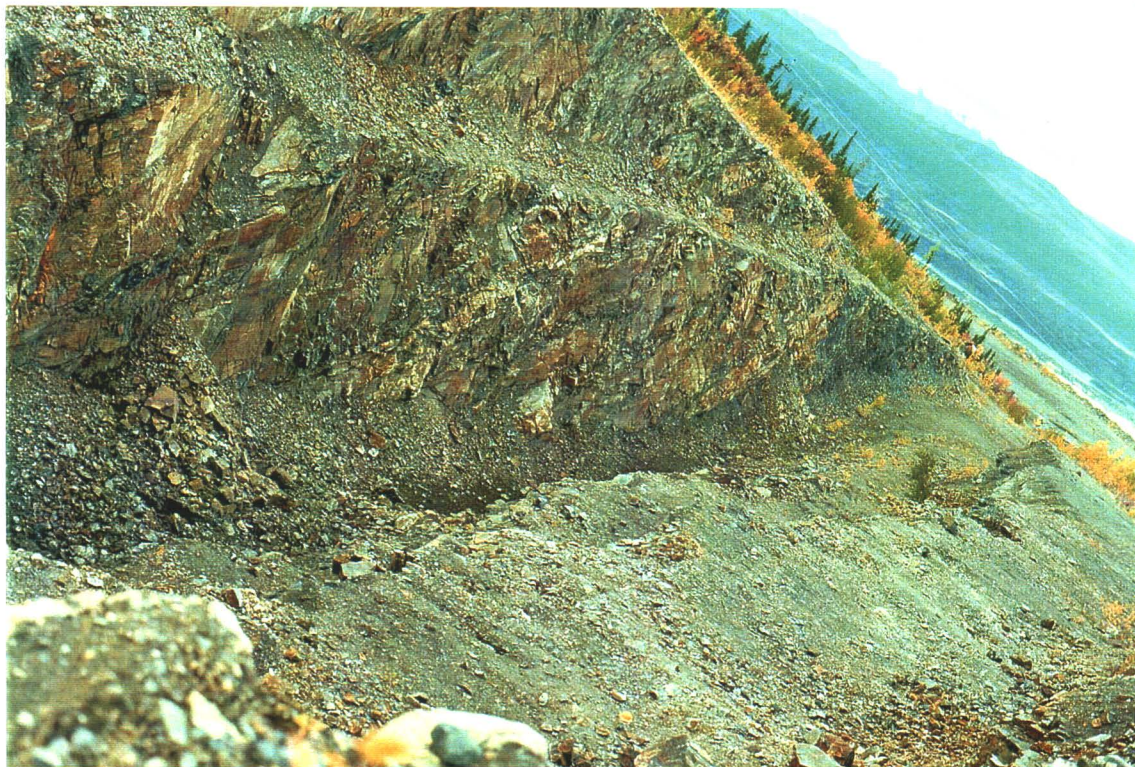


Photo 11-7. #35 Vein Pit. Note steep pit walls.



Photo 11-8. Sime #4 open pit.



Photo 11-9. Sime #6 open pit.



Photo 11-10. Waste rock dump located adjacent to the Sime #4 open pit (lower right-hand corner of photograph).



Photo 11-11. Building 11A - Quonset Warehouse, looking northwest. Located near the 300 level adit.



Photo 11-12. Building 11B - Loading Elevator, looking northwest. The building is located on the waste rock dump outside the 300 level adit. Note how the building is leaning away from the waste dump (also see Photo 11-14).



Photo 11-13. Building 11G, showing the remaining walls.



Photo 11-14. The top of the Loading Elevator, looking northeast. There is wooden boards and discarded rails out side this building.



Photo 11-15. Debris outside the 100 Level adit.



Photo 11-16. Debris outside the 300 Level adit, on the dump surface.



Photo 11-17. Debris outside the 300 Level adit, adjacent to the Loading Elevator.



Photo 11-18. Debris at the bottom of the 300 level waste rock

Photo 11-19. Debris around the McLeod Shaft.



Photo 11-20. Drainage from the 300 level adit as it flows past the Loading Elevator and down below the mine site.



Photo 11-21. Natural revegetation of the some of the waste rock piles. Revegetation is more extensive in areas such as this where the material has a range of grain sizes. Contrast this with Photo 11-10 where there has been less revegetation.