Assessment Report

on the

ATHELSTAN - JACKPOT PROPERTY

Geology, Trenching, Geochemistry, Metallurgy

NTS 82E/2
Lat: 49° 03' 40'' N
Long: 118° 34' 00'' W

Greenwood Mining Division
British Columbia, Canada

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1.0 SUMMARY

The Athelstan-Jackpot property is located about 8 km west of Grand Forks, B.C. and 3 km southeast of the former Phoenix mine. Access and infrastructure are both excellent. The property consists 9 crown grants, 1 reverted crown grant and 1 2-post mineral claim located in the Greenwood Mining District.

The property was staked in the late 1890's, and was worked intermittently from 1901 through to 1940. Total production during this period was about 35,200 tonnes of direct smelting ore at an average grade of about 6.2 g/t Au. Production was from a number of small lenses of massive sulfide ore (up to 12 x 30 x up to 8 m in size). The sulfide lenses are comprised of massive arsenopyrite-pyrite (+/- pyrrhotite and lesser galena) and occur within the large mass of serpentinite and listwanite situated along the regional Lind Creek thrust fault. The lenses sit conformably within the altered serpentinite, and plunge gently eastwards. Near surface sulfide lenses tend to be strongly oxidized, to a depth of up to 5 meters down dip.

The potential for selective mining near surface gold ore from the property had been suggested and a work program of trenching, rock sampling and metallurgical testing was carried out in 2002 pursue this idea.

Trenching was done in two areas, the Trench A-1 zone and the J-34 area. The Trench A-1 zone was exposed intermittently on strike for 75 meters, of which a 45 meter strike length was continuously exposed. The zone is flat lying to gently north dipping and pinches and swells from less than 0.5 meters to locally up to 3 meters in thickness. It is strongly oxidized, locally to a true sulfide gossan. Rare cobbles of massive sulfide (dominantly arsenopyrite) are present. The best results from the A-1 zone were a 3 m true thickness averaging 35.2 g/t Au, 105 g/t Ag and 6.3% As. Fifteen meters east on strike, a 2.5 m true thickness returned 26.2 g/t Au, 35 g/t Ag and 4.4% As.

The J-34 area is located about 200 meters northwest of the Trench A-1 zone. A northwest trending, moderate northeast dipping massive arsenopyrite-pyrite zone occurs in listwanite. Previous sampling in this area returned gold values to 39.3 g/t Au. Two short trenches were dug and rock chip sampling of the mineralized zone was then done, both in the trenches and in old underground workings. This work was preliminary in nature and done to determine whether additional trenching was warranted in this area. In general, gold grades, zone thickness and level of oxidation were all lower at the J-34 area than in the A-1 Zone. The best results obtained were 0.9 m true thickness grading 16.2 g/t Au, 11 g/t Ag and 3.4% As, and 0.85 m true thickness grading 24.5 g/t Au, 29 g/t Ag, and 17.2 % As.

A sample of sulfide ore (assaying 14.92 g/t Au) was submitted for polished thin section analysis. The sample contained pyrite, arsenopyrite and minor chalcopyrite with an interstitial quartz matrix. No gold was visible in the sample. Four polished thin sections were then submitted for scanning electron microscopy in an attempt to determine the size and distribution of the gold. The procedure is capable of seeing very fine (<1 micron size) particles. Despite assay grades of 14.92 g/t Au and 39.26 g/t Au in the samples submitted, gold was not visible in any of the sections examined.

Metallurgical testing (cyanide leach and flotation) was then conducted. Results to date indicate that cyanide leach is a suitable method for recovering gold from oxide ore, with up to 91% gold recovery. Recovery of gold from sulfide ore is more problematic.

Both the Trench A-1 and J-34 zones are open on strike in both directions as well as down dip. Numerous other areas of mineralization are known on the property that have not been suitably explored to determine the level of oxidization, gold grade or extent of mineralization. Trenching is a cost effective method for exploring these near surface areas of mineralization. The potential exists to define a small tonnage of reasonably high gold grade oxide material which could be treated by cyanide leach.

2.0 INTRODUCTION

2.1 Location, Access, Infrastructure and Physiography

The Athelstan-Jackpot property is located about 8 km west of Grand Forks, B.C. and 3 km southeast of the former Phoenix mine, as shown in Figure 1. Access and infrastructure are both excellent. The two main access roads are the Athelstan-Hartford road which leaves Highway 3 about 10 km west of Grand Forks, and the Hartford Junction road which heads east from the Lone Star haul road 3 km south of Phoenix. The property is crossed by a major high voltage powerline. Most services needed for exploration are available in Grand Forks. The closest full-service airports are located in Kelowna, Penticton or Castlegar.

The claims are situated north of Skeff Creek, on the moderate east facing slope above July Creek. Elevations range from about 950 meters in the eastern part of the property, to about 1280 meters in the west.

Vegetation consists of moderate to open mature fir, larch and pine forest. A portion of the claims have been clearcut logged. Outcrop is moderate to scarce throughout forested areas. Along the abandoned railgrade in the eastern part of the property and along the powerline there is good rock exposure. Numerous areas of disturbance from past mining and exploration efforts also provide good rock exposure.

The climate is moderately dry, with hot summers and little rainfall. Snowfall is minimal, generally in the order of 1-2 meters and the property is generally snow free from early May to mid-November. Water would be available for drilling from Skeff Creek just south of the property, or from flooded mine workings on the adjoining Golden Crown property.

2.2 Property and Ownership

The Athelstan - Jackpot property consists of eleven mineral claims (9 crown grants, 1 reverted crown grant and 1 2-post mineral claim) located on map sheet 082E.008 in the Greenwood Mining District. The claims are shown in Figure 2 and summarised in Table 1. Expiry dates listed are after filing this report. All claims are owned 100% by Wilber Hallauer.

CLAIM NAME	TENURE #	UNITS	EXPIRY DATE
MP Fraction	214153	1	July 16, 2013
Bay Horse Fraction	215520	1	July 16, 2013
Coronet Fr.	L 677	1	
Athelstan Fr.	L 1065	1	
Butte	L 1067	1	
Oro	L 1167	1	
Athelstan Fr.	L 1320	1	
Iron Clad	L 1489	1	
Molley Pritchard	L 1554	1	
Jackpot	L 2224	1	
Jackpot Fr.	L 3158	1	

Table 1: Claim Information

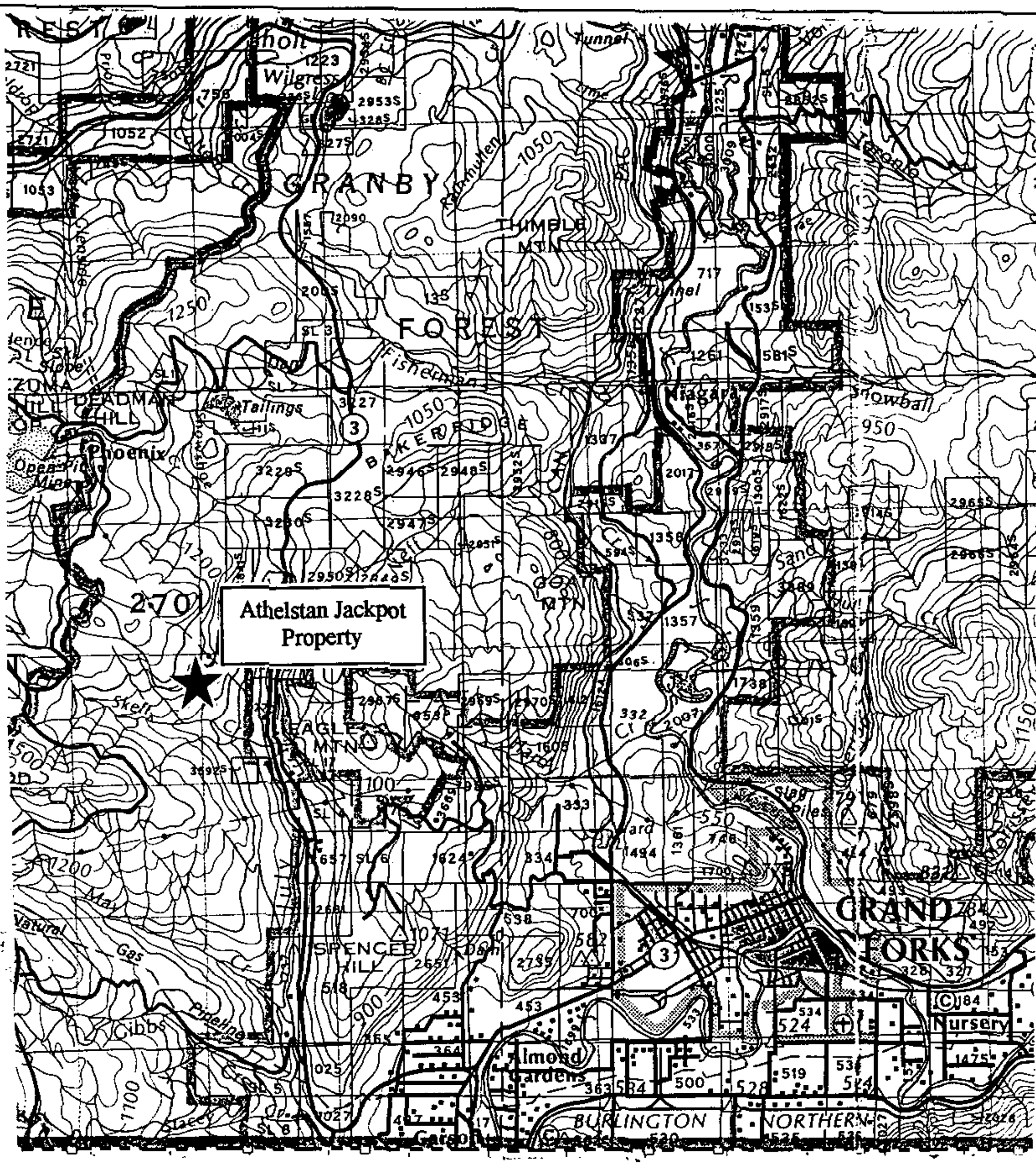


Figure 1

Athelstan-Jackpot Property, Greenwood Mining Division

Location Map

082E/SE
Scale 1:100,000

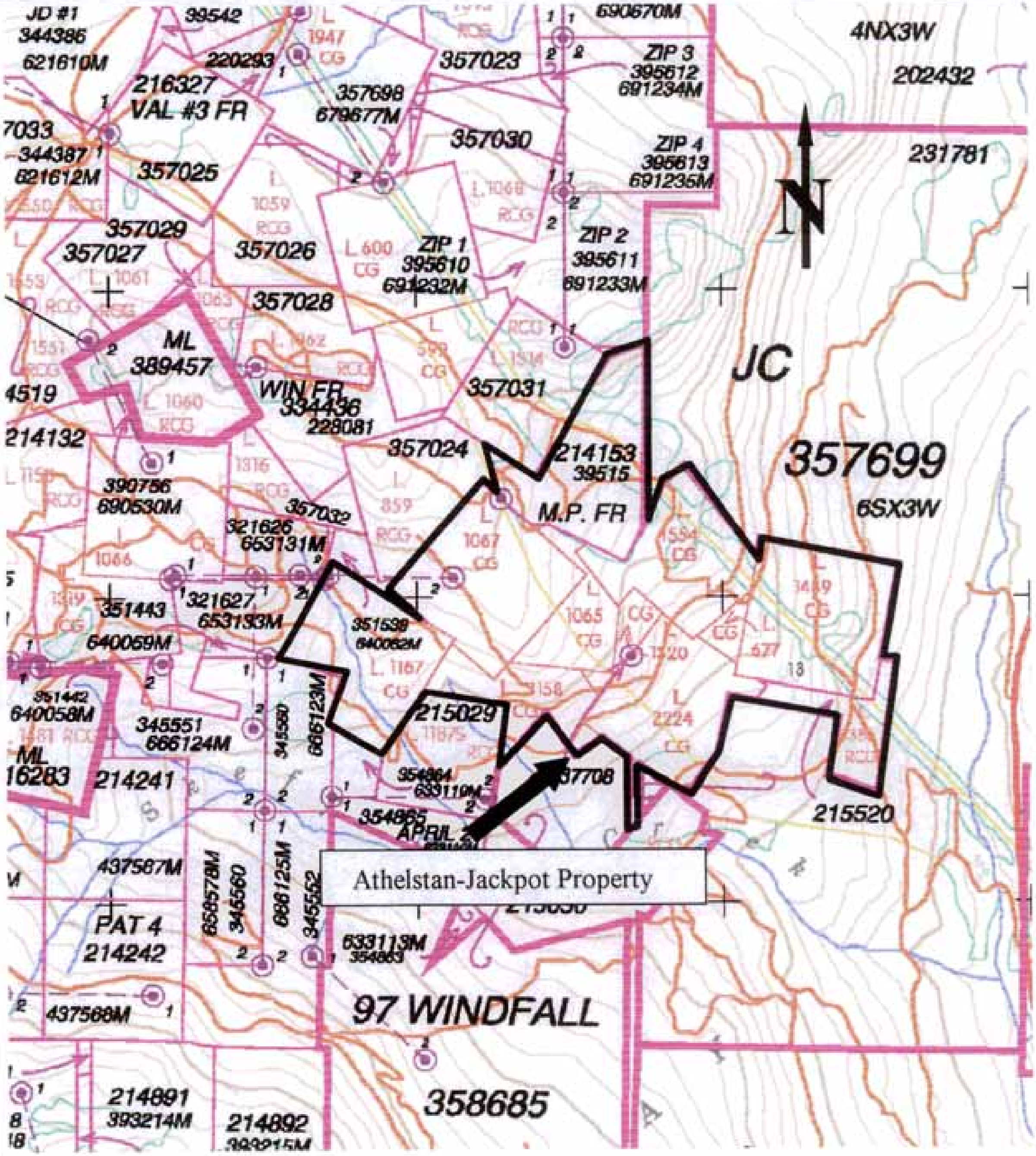


Figure 2

Athelstan-Jackpot Property, Greenwood Mining Division
Claim Map

082E.008
Scale 1:20,000

2.3 *History of Exploration*

Regional Exploration History

The Boundary District has a long history of exploration and mining activity. Excellent historical accounts for portions of the district are provided by Peatfield (1978), Church (1986), Fyles (1984) and others. The reader is referred to these sources for a more thorough discussion of the subject. The following discussion pertains only to the regional exploration history in the Greenwood Camp, in the more immediate vicinity of the Athelstan-Jackpot property and is taken largely from an earlier report by the same author (Caron, 2002c).

In the Greenwood Camp, exploration dates back to the early 1880's. This first phase of exploration and development focused on primarily high grade gold and silver veins, with work continuing through the early part of the 20^{th} century. Significant producers were the Jewel, with about 124,000 tonnes averaging 9.9 g/t Au, the Athelstan (33,000 tonnes @ 5.4 g/t Au), and the adjoining Winnipeg mine (56,000 tonnes @ 7.2 g/t Au) (Church, 1986).

In 1890, high grade copper skarn mineralization was discovered at Phoenix (about 4 kilometers northwest of the Athelstan-Jackpot property). The original Granby Company was formed to work in the area in 1896, and by 1899 the Canadian Pacific Railway had extended a branch line to Phoenix and underground mining of copper and gold ores began. In 1900 the City of Phoenix was incorporated and the Granby Smelter in Grand Forks was completed. Production rates from the camp at this time varied widely with a maximum rate of approximately 3000 tons per day achieved. In 1919, the Granby mine and smelter closed due to low copper prices, lower ore grades and a shortage of coking coal for the smelter furnaces.

In 1956 the Granby Company re-evaluated the Phoenix property with the intent of mining by open pit trackless mining methods. Open pit production at Phoenix began in 1960 at a rate of 900 tons per day, was increased to 2000 tons per day in 1961 and further increased to 3000 tons per day in 1972. By 1973, declining production was supplemented by processing low grade copper ore stockpiled in previous years. Mill feed was further augmented by ore trucked from the Lone Star Mine, 20 kilometers to the south in Washington State. Granby terminated mining operations at Phoenix in 1976, and later dismantled and moved the Phoenix mill. For a 20 year period while the mine was operating, exploration in the camp was booming, although dominated by the work of Granby and virtually controlled by the Phoenix copper skarn model.

Total production at Phoenix during the period 1900 - 1976 is reported at 27 million tonnes at a grade of 0.9% Cu and 1.12 g/t Au, from a number of different ore bodies (Church, 1986). This amounts to over 1 million ounces of gold production from the Phoenix deposit. Exploration and development of the Motherlode copper skarn deposit just west of Greenwood follows a similar history to the Phoenix, with production until 1918 by underground methods, and then reopening as an open pit operation in 1956. Production from the Motherlode is reported at 4.2 million tonnes at a grade of 0.8% Cu and 1.3 g/t Au.

Exploration in the camp was rekindled in the early 1980's with the discovery of the Sylvester K gold bearing sulfide zone north of the Phoenix. The zone ranges up to 12 meters in width, with grades in the order of 10 g/t Au, from both massive pyrite and pyrrhotite and from underlying pyritic volcanic siltstones. The Sylvester K is contained within a very characteristic, repeatable sequence of Brooklyn sediments and volcanics (the upper portion of the regionally mapped sharpstone unit), sitting just below massive Brooklyn limestone. Complex faulting offsets mineralization and has hampered exploration.

The discovery of numerous gold mines in the late 1980's and early 1990's, nearby in Washington State, revived exploration in the Greenwood. Crown Resources' Crown Jewel deposit at Chesaw is a gold skarn deposit with reserves of in the order of 7.2 million tonnes @ 6 g/t Au. The deposit occurs in probable Triassic rocks near a Cretaceous intrusion, similar to the geological setting of the major skarn deposits (Phoenix, Motherlode, Oro Denoro) in the Greenwood area (Hickey, 1992). It's discovery brought several major and numerous junior companies in to re-evaluate properties in the Greenwood camp with a gold skarn model, although the exploration completed was less than exhaustive.

Crown Resources/Echo Bay's success at discovering a new style of gold deposit in the Belcher District, in the Curlew Lake area just south of the border, has opened the door to a new style of mineralization in the camp. Gold-bearing, magnetite-pyrrhotite-pyrite syngenetic volcanogenic mineralization is hosted within Triassic Brooklyn Formation, with as least part of the gold mineralization attributed to a later stage epigenetic event. In 1997, Echo Bay Minerals Co. entered into a joint venture agreement to explore certain claims in the Greenwood camp for this style of mineralization.

History of Exploration - Athelstan-Jackpot Property

The first record of work on the Athelstan-Jackpot Property dates back to 1898, and most of the claims within the present property were staked, by separate owners, prior to 1900. Intermittent production is reported from 1901-1912, with the Athelstan and Jackpot mines operated separately in these years. Total production for the property to 1930 is reported as 33, 300 tonnes averaging 5.4 g/t Au and 6.3 g/t Ag (McNaughton, 1945).

The property was acquired by W.E. McArthur in the 1930's, and further production of 1865 tonnes averaging 19.9 g/t Au, 24.7 g/t Ag and 12.47% As is reported for the years 1934 and 1936-40. By 1942, the total underground development on the property is said to have included 91 meters of shaft sinking and 570 meters of tunnelling.

Kermeen (1983) reports that limited exploration programs were carried out on the property during the late 1960's and early 1970's by Sabina Mines, Colby Resources and Scurry Rainbow Oil and Gas. This work apparently included 12 percussion drill holes, of which 8 encountered open stopes. No significant results were reported from the drilling.

Mr. W. Hallauer, the current owner of the property, acquired the claims from W.E. McArthur in the 1970's. Arrowhead Resources Ltd. explored the property from 1978-83, under the direction of A.R. Grant. Significant work programs were completed including geological mapping and sampling of surface outcrops and mine workings, soil sampling, and magnetometer and VLF/EM surveys. Arrowhead Resources also drilling 28 vertical percussion drill holes over an area of about 200 meters by 600 meters, to test for a near surface, open-pittable resource. Values were found to be erratic although some good intersections were returned in the vicinity of the Jackpot workings. Arrowhead then drilling 3 vertical diamond drill holes adjacent to percussion holes near the Jackpot workings.

The property was optioned to Rimacan Resources Ltd. in 1983 and Canadian Pawnee in 1985, but apart from very minor rock sampling (Kermeen, 1983) there is no record of any work completed.

Max Minerals Inc optioned the property in 1986 and significant work programs were carried out in 1986 and 1987. Detailed geochemical and geophysical programs were completed. A very strong Au-As soil anomaly was defined, roughly east-west trending and in the area of the Athelstan and Jackpot workings. The anomaly is in the order of 500 m x 150 m, with numerous values exceeding 1000 ppb Au and 10,000 ppm As. Several strong VLF-EM conductors were identified, coincident with the soil anomalies. A number of old trenches and shallow tunnels on the property were reopened and resampled. Several areas of high grade gold mineralization were identified, including the Trench A-1 and J-34 zones. Thirteen diamond drill holes, totalling 452 meters, were then completed. The most significant result was 0.384 oz/t Au over 6 feet in hole 87-8. A 1989 report by McDougall summarizes the work by Max Minerals Inc.

Toscano Resources Ltd. optioned the property in 1989, but did no further work on the claims.

In 1991, Minnova Inc. optioned the claims and completed a 6 hole diamond drill program, totalling 946 meters. The program was designed to test for large, bulk tonnage targets at the intersection of the low angle thrust faults with steeply dipping, later cross faults and was unsuccessful in this regard.

R.E. Miller, completed a program of data review, rock chip sampling and preliminary metallurgical testing in 2001 on behalf of the property owner, W. Hallauer. The possibility of selective mining of near surface gold ore from the property was suggested (Miller, 2001). In the spring of 2002, a further review of available data on the property was completed to pursue this idea (Caron, 2002a). Six target areas were defined and a program of fieldwork and metallurgical testing was recommended to test the two highest priority targets. The first phase of fieldwork work was completed during May and June, 2002 as described in Caron (2002b). This work included establishing the property boundary in several key areas, geological mapping and rock sampling in the target areas, and collecting samples for initial petrographic and metallurgical testing. The work program described in this report was then completed.

2.4 Summary of Work Program (July '02 - January '03)

A trenching program was completed on the Athelstan-Jackpot property between August 28 and September 3, 2002 using a 300 series excavator owned by Lime Creek Logging of Grand Forks and operated by H. Funk. Seven trenches were dug on 2 different targets, for a total of 195 meters of trenching. One hundred and twelve rock samples were collected from the trenches. Samples were shipped to International Metallurgical and Environmental Inc. in Kelowna for Au, Ag, and As assay and for cyanide soluble gold assay.

A petrographic examination of typical sulfide ore from the property was completed by Harris Exploration Services in Vancouver. Scanning electron microscopy was also done at the University of British Columbia, to provide information for metallurgical testing. Cyanide leach and flotation testing was done at International Metallurgical and Environmental Inc. in Kelowna to test the feasibility of processing Athelstan-Jackpot ore in either the Echo Bay cyanide mill near Republic or the Bow Mines flotation mill at Boundary Falls. Bulk density testing was also completed. In addition, a sample of sulfide ore was also sent to Polymet Resources in Cobalt, Ontario to test for suitability for processing in that facility.

The program was managed by R. Walters of Spokane, Washington. L. Caron of Grand Forks completed trench layout, geological mapping and reporting. J. Kemp of Grand Forks assisted in the trenching program with trench cleanout, sampling and timber removal.

3.0 GEOLOGY

3.1 Regional Geology, Structure and Metallogeny

The Athelstan-Jackpot property is situated within the Boundary District of southern British Columbia and northern Washington State. The following discussion of the geological setting and metallogeny of the Boundary District is taken largely from an earlier report by the same author (Caron, 2002c).

The Boundary District straddles the Canada-USA border and includes the Republic, Belcher, Rossland and Greenwood Mining Camps. It is a highly mineralized district with total contained gold (produced + known reserves) exceeding 10 million ounces. Within the Boundary District, the majority of gold production is from the Republic and Rossland areas. At Republic, an excess of 2.5 million ounces of gold, at an average grade of better than 17 g/t Au, has been produced from epithermal veins. In the Rossland Camp, almost 3 million ounces of gold averaging 16 g/t Au was mined from massive pyrrhotite-pyrite-chalcopyrite veins associated with a Jurassic intrusive.

Portions of the Boundary District have been mapped on a regional basis by numerous people, including Fyles (1984, 1990), Little (1957, 1961, 1983), Church (1986), Parker and Calkins (1964), Muessig (1967) and Cheney and Rasmussen (1996). While different formational names have been used within different parts of the district, the geological setting is similar.

The Boundary District is situated within Quesnellia, a terrane which accreted to North America during the mid-Jurassic. Proterozoic to Paleozoic North American basement rocks are exposed in the Kettle and Okanogan metamorphic core complexes. These core complexes were uplifted during the Eocene, and are separated from the younger overlying rocks by low-angle normal (detachment) faults. The distribution of these younger rocks is largely controlled by a series of faults, including both Jurassic thrust faults (related to the accretionary event), and Tertiary extensional and detachment faults.

The oldest of the accreted rocks in the district are late Paleozoic volcanics and sediments. In the southern and central parts of the district, these rocks are separated into the Knob Hill and overlying Attwood Groups. Rocks of the Knob Hill Group are of dominantly volcanic affinity, and consist mainly of chert, greenstone and related intrusives, and serpentinite. The serpentinite bodies of the Knob Hill Group represent part of a disrupted ophiolite suite which have since been structurally emplaced along Jurassic thrust faults. Commonly, these serpentinite bodies have undergone Fe-carbonate alteration to listwanite, as a result of the thrusting event. Serpentinite is also commonly remobilised along later structures. Unconformably overlying the Knob Hill rocks are sediments and volcanics (largely argillite, siltstone, limestone and andesite) of the late Paleozoic Attwood Group.

The Paleozoic rocks are unconformably overlain by the Triassic Brooklyn Formation, represented largely by limestone, clastic sediments and pyroclastics. Both the skarn deposits and the gold-bearing volcanogenic magnetite-sulfide deposits in the district are hosted within the Triassic rocks. Volcanic rocks overlie the limestone and clastic sediments of the Brooklyn Formation and may be part of the Brooklyn Formation, or may belong to the younger Jurassic Rossland Group. In the western part of the district, the Permo-Triassic rocks are undifferentiated and grouped together as the Anarchist Group.

At least four separate intrusive events are known regionally to cut the above sequence, including the Jurassic aged alkalic intrusives (i.e. Lexington porphyry, Rossland monzonite, Sappho alkalic complex), Triassic microdiorite related to the Brooklyn greenstones, Cretaceous-Jurassic Nelson intrusives, and Eocene Coryell (and Scatter Creek) dykes and stocks.

In the Greenwood area, Fyles (1990) has shown that the pre-Tertiary rocks form a series of thrust slices, which lie above a basement high grade metamorphic complex. A total of at least five thrust slices are recognised, all dipping gently to the north, and marked in many places by bodies of serpentine. There is a strong spatial association between Jurassic thrust faults and gold mineralization in the area.

Eocene sediments and volcanics unconformably overlie the older rocks with the distribution of these Tertiary rocks largely controlled by a series of faults. Regionally, three Tertiary fault sets are recognised, an early gently east dipping set, a second set of low angle west dipping, listric normal (detachment-type) faults, and a late, steep dipping, north to northeast trending set of right or left lateral or west side down normal faults (Fyles, 1990). Traditionally, the Tertiary rocks were believed to be deposited in a series of local, fault-bounded grabens (i.e. Republic graben, Toroda graben). Although these terms are still used to describe the geographic distribution of the Tertiary rocks, recent work (Cheney and Rasmussen, 1996; Fyles, 1990), shows that rather than being deposited in down-dropped blocks, these younger rocks are instead preserved in the upper plates of low-angle listric normal (detachment-type) faults related to the uplifted metamorphic core complexes. Epithermal gold mineralization, related to Eocene structural activity, has been an important source of gold in the district.

The oldest of the Tertiary rocks are arkosic and tuffaceous sediments of the Eocene Kettle River Formation (O'Brien Creek Formation in the US). These sediments are overlain by andesitic to trachytic Eocene Marron volcanics (termed Sanpoil volcanics in the US part of the Boundary District), which are in turn unconformably overlain by lahars and volcanics of the Oligocene Klondike Mountain Formation.

The important gold deposits within the district can be broadly classified into six deposit types, including gold and copper-gold skarns, mesothermal gold veins, epithermal gold veins, Jurassic alkalic intrusives with Cu, Au, Ag +/- PGE mineralization, gold mineralization associated with serpentine (or listwanite), and gold-bearing volcanogenic magnetite-sulfide deposits. Details of the different styles of mineralization are given in Caron (2002c) and will not be repeated here.

3.2 Property Geology and Mineralization

The Athestan-Jackpot property is situated at the intersection of two major, regional fault zones. The Lind Creek fault is an east-west trending, moderate north dipping, Jurassic thrust fault and has a close spatial relationship with much of the gold mineralization in Greenwood area. The fault zone is commonly marked by serpentinite which is locally altered to listwanite (as at the Athelstan-Jackpot property). On the property, the serpentinite/listwanite body is a gently north dipping body, exposed intermittently along the Lind Creek fault for up to 2 km in strike. The serpentinite has an exposed thickness of several hundred meters in the hanging wall of the thrust fault, where it intrudes greenstones and diorite of probably Knob Hill Group. At the eastern end of the property, the Lind Creek fault is cut by the July Creek fault, a northeast trending, steeply dipping, Tertiary fault. The serpentinite is smeared out along the July Creek fault, resulting in a significant thickening near the intersection of the two regional structures.

A Jurassic aged quartz-feldspar porphyry also occurs along the Lind Creek fault at the Athelstan-Jackpot property. This intrusive has a regional association with gold mineralization in the Greenwood area. At the Lexington property, located about 7 km southwest of the Athelstan-Jackpot, mineralization occurs along a similar regional serpentine thrust fault in an altered quartz feldspar porphyry intrusion.

The total production from the Athelstan-Jackpot property was about 35,200 tonnes of direct smelting ore at an average grade of about 6.2 g/t Au. Production was from a number of small lenses of massive sulfide ore (up to 12 x 30 x up to 8 m in size on the Jackpot crown grant). The sulfide lenses are comprised of massive arsenopyrite-pyrite (+/- pyrrhotite and lesser galena) and occur within the large mass of serpentinite and listwanite situated along the Lind Creek fault zone. The lenses sit conformably within the altered serpentinite, and plunge gently eastwards. They are displaced by a number of northeast trending, moderate northwest dipping, normal faults. These faults are related to the larger July Creek fault which cuts and offsets the earlier Lind Creek fault. Near surface sulfide lenses tend to be strongly oxidized, to a depth of up to 5 meters down dip.

Numerous authors, including McNaughton (1945), Grant (1983) and McDougall (1989), describe the geology and mineralization on the Athelstan-Jackpot property in more detail.

4.0 TRENCHING

A trenching program was completed on the Athelstan-Jackpot property between August 28 and September 3, 2002 using a 300 series excavator owned by Lime Creek Logging of Grand Forks and operated by H. Funk. Seven trenches were dug on 2 different targets, for a total of 195 meters of trenching. The program was managed by R. Walters. Trench layout and geological mapping was completed by L. Caron. J. Kemp assisted with trench cleanout and sampling.

A total of 112 rock samples were collected from the trenches. Sample descriptions are included in Appendix 1. Samples were shipped to International Metallurgical and Environmental Inc. in Kelowna for 2 tonne Au, Ag, and As assay and for cyanide soluble gold assay. Analytical results are included in Appendix 2.

Trenching was done in two areas, the Trench A-1 zone and the J-34 area, as shown on Figure 3. Both areas occur within strongly Fe-carbonate altered serpentinite (listwanite).

Trench A-1 Zone

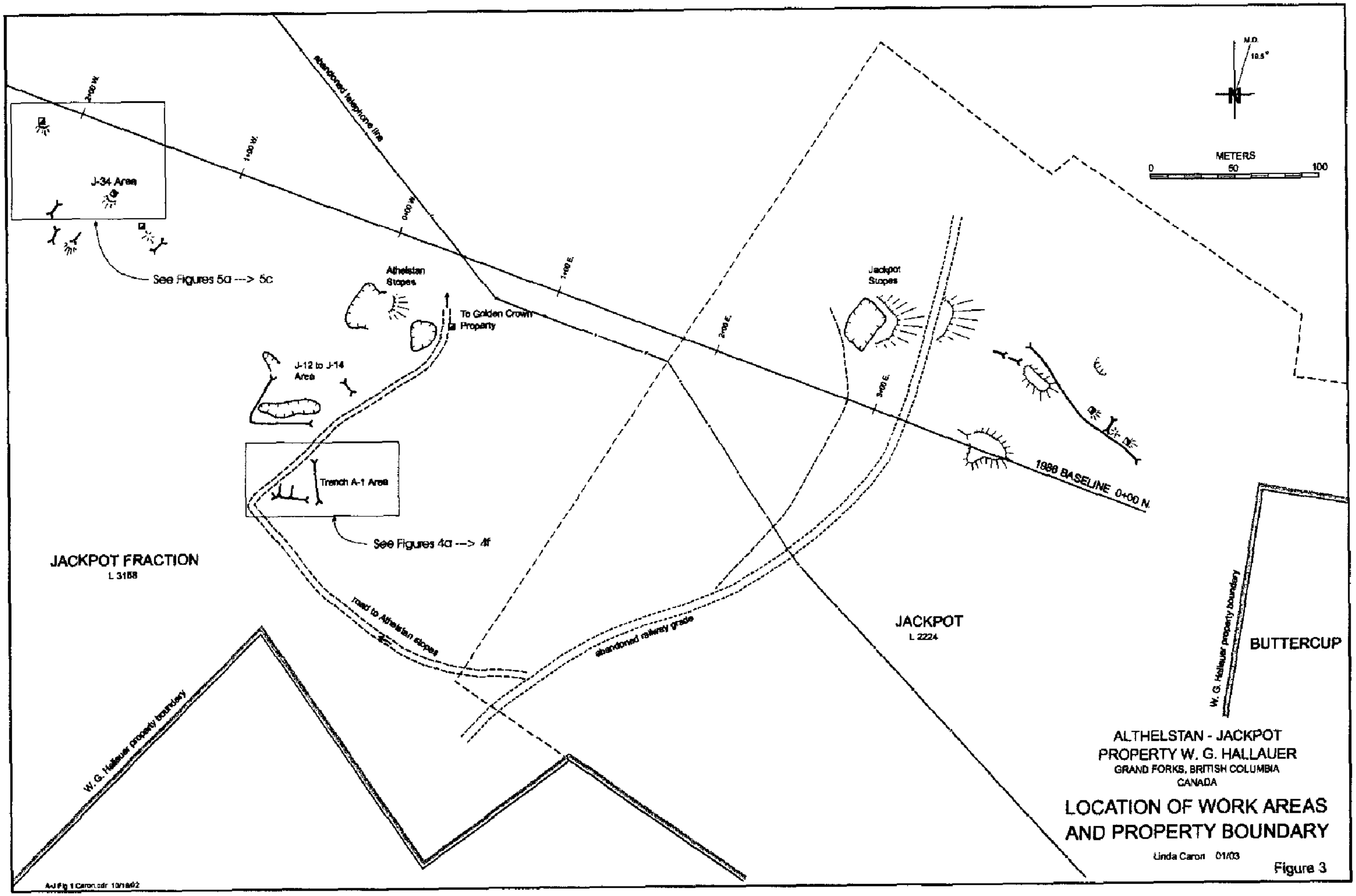
The Trench A-1 zone is located about 100 meters southwest of the Athelstan stope. Sampling in 1986 (samples J-1 to J-11) showed an average grade of 13.4 g/t Au from a 1 to 1.5 meter thick, flat lying oxidized sulfide layer exposed in trenches in this area. Subsequent sampling by Echo Bay and Minnova returned high grade assays from this same zone (to at least 85 g/t Au). These grades were confirmed by sampling in the spring of 2002, as detailed by Caron (2002b), however previous trenches were badly sloughed and the zone was poorly exposed. Additional trenching in this area was undertaken to provide a better estimate of the thickness, extent and overall grade of the mineralized zone and to explore the possibility of selective near surface mining of oxide ore for shipment to Echo Bay's cyanide leach mill near Republic.

Four cross trenches were dug on the A-1 zone, as shown on Figure 4a. The zone was then trenched on strike for a distance of about 45 meters. In total, the zone was exposed, with continuously or intermittently, over a strike length of about 75 meters. It is a flat lying to gently north dipping zone which pinches and swells from less than 0.5 meters to locally up to 3 meters in thickness. The zone is strongly oxidized, locally to a true sulfide gossan. Rare cobbles of massive sulfide (dominantly arsenopyrite) are present.

Overburden in this area ranges from 1 to + 3 meters in thickness. The westernmost trench (A-4) was unable to penetrate the hardpan layer and was abandoned in overburden. The A-1 zone remains open on strike in both directions, as well as down dip.

Samples were collected from the floor and walls of trenches through the mineralized zone and within the hangingwall and footwall of the zone. Figure 4a shows the locations of samples in plan view for the A-1 zone. Samples collected on trench walls are shown in section view on Figure 4d. Sample descriptions are included in Appendix 1. Gold assays and cyanide soluble gold assays are plotted on Figures 4b and 4e. Cyanide soluble gold assays (recorded in % of total gold recovered) are a good indication of the level of oxidation of the zone. Silver and arsenic values are plotted on Figures 4c and 4f. Analytical results are also included in Appendix 2.

The best results were in Trench A-1, where a 3 meter true thickness across the zone returned an average of 35.2 g/t Au, 105 g/t Ag and 6.3% As, with 94% gold recovery in the cyanide soluble gold assay (Samples 3516-3518). Fifteen meters east on strike, a 2.5 meter true thickness interval in Trench A-5 returned an



N
M.D.
METERS
0
50
100
abandoned telephone line
2+00 W.
1+00 W.
0+00 W.
1+00 E.
2+00 E.
3+00 E.
J-34 Area
See Figures 5a ---> 5c
Althelstan
Stopes
To Golden Crown
Property
J-12 to J-14
Area
Jackpot
Stopes
1986 BASELINE 0+00 N.
Trench A-1 Area
See Figures 4a ---> 4f
JACKPOT FRACTION
L 3168
road to Althelstan stopes
abandoned railway grade
JACKPOT
L 2224
BUTTERCUP
W. G. Hallauer property boundary
W. G. Hallauer property boundary
ALTHELSTAN - JACKPOT
PROPERTY W. G. HALLAUER
GRAND FORKS, BRITISH COLUMBIA
CANADA
LOCATION OF WORK AREAS
AND PROPERTY BOUNDARY
Linda Caron 01/03
Figure 3

average 26.2 g/t Au, 35 g/t Ag and 4.4% As, with 85% gold recovery in the cyanide soluble gold assay (Samples 3535-3542).

J-34 Area

The J-34 area is the site of several shafts, old trenches and short adits, located about 200 meters northwest of the Trench A-1 zone as shown in Figure 3. A northwest trending, moderate northeast dipping massive arsenopyrite-pyrite zone occurs in listwanite. Where exposed in old workings, the zone ranged from less than 20 cm to a maximum of about 1 meter in thickness. Previous sampling in this area returned gold values to 39.3 g/t Au.

Two short trenches were dug adjacent to two old inclined shafts, separated along strike on the zone by about 65 meters. Rock chip sampling of the mineralized zone was then done, both in the trenches and in underground workings. This work was done to determine whether additional trenching was warranted in this area. The zone is open on strike in both directions, as well as being open at depth.

Figure 5a shows the locations of trenches and of rock samples. Sample descriptions are included in Appendix 1. Gold assays and cyanide soluble gold assays are shown on Figure 5b, while silver and arsenic values are plotted on Figure 5c. Analytical results are also included in Appendix 2.

In general, gold grades, zone thickness and level of oxidation were all lower than in the A-1 Zone. The best results obtained were 0.9 meter true thickness grading 16.2 g/t Au, 11 g/t Ag and 3.4% As, with 96% gold recovery in the cyanide soluble gold assay (Sample 3558), and 0.85 meter true thickness grading 24.5 g/t Au, 29 g/t Ag, and 17.2 % As, with only 57% gold recovery by cyanide soluble gold assay (Sample 3560).

5.0 PETROGRAPHY AND METALLURGY

Preliminary metallurgical testing in 2001 (Miller, 2001) suggested that oxidized ore from the Athelstan-Jackpot property would be amenable to processing in Echo Bay Mines' Kettle River Operations cyanide leach mill near Republic, Washington. A program of petrographic work and further metallurgical testing was completed to further explore this idea, and to test for the possibility of processing ore in the Bow Mines flotation mill at Boundary Falls.

A sample of sulfide ore from Trench A-1 (Sample # 3464; 14.92 g/t Au, Caron (2002b)) was sent to Harris Exploration Services in Vancouver for polished thin section analysis. This report is contained in Appendix 3. The sample contained 55% pyrite, 35% arsenopyrite and trace chalcopyrite with an interstitial quartz matrix. Sulfides were fine grained. Arsenopyrite was generally finer grained than pyrite and no gold was visible in the sample.

Four polished thin sections (Sample #3464; 14.92 g/t Au and Sample #3473; 39.26 g/t Au, Caron (2002b)) were then submitted for scanning electron microscopy, at the University of British Columbia in an attempt to determine the size and distribution of the gold. The procedure is capable of seeing very fine (<1 micron size) particles. Despite the grades of 14.92 g/t Au and 39.26 g/t Au, gold was not visible in any of the sections examined. A copy of this report is also included in Appendix 3.

A bulk sample of oxidized ore from the Trench A-1 zone was collected for metallurgical testing. The sample was a composite over a 3 meter length of the exposed zone in the trench and was collected from a known high grade zone, in the vicinity of Section B-B', as shown on Figure 4e. The zone was strongly oxidized where sampled, and consisted of red-brown soil and gossan. Very rare small cobbles of sulfide ore were present. A 5 gallon bucket of material was collected and shipped to International Metallurgical and Environmental Inc. in Kelowna for cyanide leach testing.

The bulk sample had a head grade of 69 g/t Au and 196 g/t Ag. Two leach tests were done at different grind particle sizes to bracket the normal Echo Bay Kettle River mill grind. Gold and silver recoveries were 91% and 28.9%, respectively. The fact that the gold solubilized relatively quickly, with about 80% of gold in solution by 8 hours, suggests that the gold is very fine grained and does not occur as small nuggets. Results of the metallurgical testing are included in Appendix 3.

A specific gravity determination was done on the oxide ore, which gave an average value of 2.265 g/cc, but with a fairly high standard deviation of 0.34 g/cc. These results are also contained within Appendix 3.

Cyanide leach tests run on sulfide ore in 2001 (Miller, 2001) showed very low gold recoveries, and further leach testing of sulfide ore was not carried out.

Flotation bench tests were also run at International Metallurgical and Environmental Inc. in Kelowna to test the feasibility of flotation for processing Athelstan-Jackpot ores. The Bow Mines flotation mill at Boundary Falls is located less than 20 km by road from the Athelstan-Jackpot property. Testing was done on a sample of oxide ore from the Trench A-1 zone. The sample was a composite sample comprised of twenty-two samples from the Trench A-1, with a calculated head grade of 23.5 g/t Au. Recoveries in the bench scale test were generally low, with a maximum of 60.6% Au and 30.8% Ag recovered, although there was a significant upgrading in gold grade in the concentrate. A copy of the test results is included in Appendix 3.

Flotation testing was also done on a composite sample of sulfide ore comprised of seven samples from the A-1, J-34, Athelstan and Target B zones (Caron, 2002b). The composite sample had a head grade of 20.7

g/t Au (and 20.1% As). Although reasonable gold recoveries were achieved at fine grinds, this was only achieved with a high concentrate volume (more than 60% by volume of the original rock) and as a result, little upgrading in gold values.

A 3 kg sample of sulfide ore (sample 3464, 14.92 g/t Au, the same sample submitted for petrography) was shipped to Polymet Inc. in Cobalt, Ontario to explore the possibility of processing sulfide ore through Polymet's facility. Polymet's operation is primarily a mixing station which combines various ores for re-shipment to smelters. These results are contained in Appendix 3, and indicate that this facility would be an option only for arsenical sulfide ore with gold grades in excess of 1 – 5 oz/t Au.

6.0 RECOMMENDATIONS

Results to date indicate that cyanide leach is a suitable method for recovering gold from oxide ore. Recovery of gold from sulfide ore is more problematic.

Both the Trench A-1 and J-34 zones are open on strike in both directions as well as down dip. Numerous other areas of mineralization are known on the property which have not been suitably explored to determine the level of oxidization, gold grade or extent of mineralization.

Trenching is a cost effective method for exploring these near surface areas of mineralization. The potential exists to define a small tonnage of reasonably high grade oxide material which could be treated by cyanide leach.

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8.0 STATEMENT OF QUALIFICATIONS

I, Linda J. Caron, certify that:

1. I am an independent consulting geologist residing at 717 75th Ave (Box 2493), Grand Forks, B.C., V0H 1H0

2. I obtained a B.A.Sc. in Geological Engineering (Honours) in the Mineral Exploration Option, from the University of British Columbia (1985) and graduated with an M.Sc. in Geology and Geophysics from the University of Calgary (1988).

3. I have practised my profession since 1987 and have worked in the mineral exploration industry since 1980. Since 1989, I have done extensive geological work in Southern B.C. and particularly in the Greenwood - Grand Forks area, both for exploration companies and as an independent consultant.

4. I am a member in good standing with the Association of Professional Engineers and Geoscientists of B.C. with professional engineer status.

5. I carried out the geological field work on the Athelstan-Jackpot property described in this report.

6. I have no direct or indirect interest in the property described herein.

L. Ca

Linda Caron, M.Sc., P. Eng.

PROFESSIONAL
PROVINCE OF
L. J. CARON
BRITISH COLUMBIA
ENGINEER

Jan 10/03

Date

APPENDIX 1

Trench Sample Descriptions

ATHELSTAN-JACKPOT PROPERTY AUGUST 2002 TRENCHING PROGRAM

Sample #	Trench	Sample Interval (m)	Type	Description
3486	Trench A-1	1.5	channel	25-26.5 m White hwall listw, v weak Fe ox
3487	Trench A-1	2	channel	23-25 m Hwall listw, mod-str Fe ox, minor stringers of gossan
3488	Trench A-1	2	channel	21-23 m Hwall listw, bleached, weak Fe ox, 1-2% coarse diss py
3489	Trench A-1	2	channel	19-21 m Hwall listw, mod-strong Fe ox (not gossan)
3490	Trench A-1	2	channel	17-19 m Hwall listw, weak-mod Fe ox
3491	Trench A-1	0.8 m vert	vert channel	16.25-17m 80 cm vertical sample, below 17 m in trench. Immed hwall of gossan zone. Listw with v low Fe ox.
3492	Trench A-1	0.45	channel	15.8-16.25m Sample 3492 and 3493 are channels across the gossan zone. 3492=upper; 3493=lower. Zone tt=1.2 m 3492=mixed gossan and str Fe ox listw, patchy Cu ox. Sample ~ 30% gossan.
3493	Trench A-1	0.8	channel	15-15.8m See above. Gossan.
3494	Trench A-1	1	channel	14-15m Footwall listw. Mod-str Fe ox.
3495	Trench A-1	1	channel	13-14m Footwall listw. General fol'n in listw is 240°/25-30°NW. Mod Fe ox. Sample includes narrow qtz vein.
3496	Trench A-1	1	channel	12-13m Footwall listw, mod Fe ox. Includes 0.5 m silica knob with 2% coarse diss py @ 12.5 m.
3497	Trench A-1	1	channel	11-12m Footwall listw, strong Fe ox.
3498	Trench A-1	1	channel	10-11m Footwall listw, strong Fe ox.
3499	Trench A-1	2	channel	8-10m Footwall listw, weak-mod Fe ox with seams of massive fine grained arsenopyrite.
3500	Trench A-1	2	channel	6-8m Footwall listw, weak Fe ox, typical qtz-carb listw.
3501	Trench A-1	3	channel	3-6m Weak Fe ox listw.
3502	A-1 low grade muck pile	n/a	grab	representative grab from low grade Trench A-1 muck pile. Est. 3 tonnes material in pile.
3503	A-1 high grade muck pile	n/a	grab	representative grab from high grade Trench A-1 muck pile. Est. 4 tonnes material in pile.
3504	West A-1, Bench		panel	oversize sample - 3 bags. Panel sample of mixed iron cake and gossan. ~35% gossan.
3505	West A-1, Bench	0.7 m vert	vert channel	vertical channel sample in gossan above 3504 panel sample.
3506	Trench A-1, E wall	1 m vert	vert channel	Samples 3506-3509 are continuous channels across zone, from hwall to fwall. Approx tt on zone is 3.7 m (samples 3506-3509). Well defined hwall contact @ 40° dip. Well defined fwall contact @ 20° dip. Fwall contact rolls over to S. Zone contains scattered mass sulfide boulders to 0.25 m in diam, with oxide rims to 10 cm thick. Zone is mixed oxide/sulfide. Oxide >> sulfide.
3507	Trench A-1, E wall	1 m vert	vert channel	See 3506
3508	Trench A-1, E wall	1 m vert	vert channel	See 3506
3509	Trench A-1, E wall	0.7 m vert	vert channel	See 3506
3510	Trench A-1, E wall	1.3 m vert	vert channel	Footwall listw below 3509.

Sample #	Trench	Sample Interval (m)	Type	Description
3511	Trench A-1, E wall	2 m vert	vert channel	In footwall of fault and possible hwall of offset min zone or (possible lower zone?). Sample starts at soil line. Mod Fe ox list.
3512	Trench A-1, E wall	1 m vert	vert channel	Vert channel below 3511. In fwall of flt and poss hwall of min zone. Heavy Fe ox listw with seams of massive arsenopyrite.
3513	Trench A-1, E wall	0.4 m vert	vert channel	Vert channel below 3512, to sill level (@ start of sample 3499 on trench floor). Mixed oxide/sulfide sample with 20% massive arsenopyrite in sample. Offset main zone or possible lower zone?
3514	Trench A-1, W wall	1 m vert	vert channel	Samples 3514-3519 are continuous channels from hwall, through zone, and including fwall. Approx 3 mm tt on zone, in high grade part of Trench A-1. Sample 3514 is from soil contact down in rusty str Fe ox hwall listw.
3515	Trench A-1, W wall	1 m vert	vert channel	Below 3514, in weak Fe ox hwall listw, immed above zone.
3516	Trench A-1, W wall	1 m vert	vert channel	Below 3515, 1 m channel through upper part of zone (3515-3518 are all in zone). Sample is 50% high grade gossan.
3517	Trench A-1, W wall	1 m vert	vert channel	In zone, below 3516. Sheared heavy Fe ox listw.
3518	Trench A-1, W wall	1 m vert	vert channel	In zone, below 3517. Sheared heavy Fe ox listw with abund clay and numerous gossan seams.
3519	Trench A-1, W wall	0.5 m vert	vert channel	In footwall of zone, below 3518.
3520	Trench A-1, W wall	1 m vert	vert channel	Samples 3520-3522 are continuous channels from bench level (sampled as 3514) through partially exposed zone to footwall. 3520 is 1 m channel across top part of zone, in gossan.
3521	Trench A-1, W wall	1 m vert	vert channel	Below 3520, across lower part of zone. Gossan.
3522	Trench A-1, W wall	1.7 m vert	vert channel	Below 3521 in footwall of zone. Poor quality sample because of very siliceous rock. Discontinuous sample.
3523	Trench A-5	1.5	channel	15.5-17m Weak-mod Fe ox listw with strong silica flood. Hwall listw.
3524	Trench A-5	1.5	channel	14-15.5m 2 m vertical channel (1.5 m horiz) on floor of trench in hwall listw.
3525	Trench A-5	1	channel	13-14m Weak Fe ox hwall listw.
3526	Trench A-5	2	channel	11-13m Heavy Fe ox hwall listw. May include top part of zone. Zone cuts trench at low angle.
3527	Trench A-5	2	channel	Samples 3527-3532 are continuous channels across zone. Zone trends ~ 320°/45°NE, cutting trench at a low angle. tt of zone is ~ 2 m. Gossan core in heavy Fe ox listw "iron cake" zone. Sample 3527 is from 9-11m. Channel across upper part of zone, in heavy Fe ox listw.
3528	Trench A-5	1	channel	8-9m In zone, v heavy Fe ox "iron cake", not gossan.
3529	Trench A-5	1	channel	7-8m In zone, v heavy Fe ox "iron cake", with silica inclusions. Not gossan.
3530	Trench A-5	1.2	channel	5.8-7m In core of zone. Sample in floor, to base of ledge in trench. Mixed oxide/sulfide sample. V heavy Fe ox "iron cake" and gossan with 30 cm fresh massive apy zone (50% fine grained arsenopyrite in silica).
3531	Trench A-5	0.4	channel	5.4-5.8m 1 m vertical sample in floor of trench, on face of ledge+E59. V heavy Fe ox & clay. Iron cake.

Sample #	Trench	Sample Interval (m)	Type	Description
3532	Trench A-5	1.6	channel	3.8-5.4m Mod-heavy Fe ox in lower part of zone, not gossan.
3533	Trench A-5	1	channel	2.8-3.8m Footwall listw.
3534	A-5 muck pile	n/a	grab	Random representative grab from dump of Trench A-5, from v heavy Fe ox zone material.
3535	Trench A-5, W Wall	1 m vert	vert channel	at 13 m in trench. 1 m vert channel across zone. Mod Fe ox. From soil contact down to footwall. Hwall not exposed. Narrow zone of footwall exposed in trench wall below sample level (not sampled).
3536	Trench A-5, W Wall	0.75 m vert	vert channel	at 11 m in trench. 0.75 m vert channel across zone, from soil contact to footwall. Hwall not exposed. Gossan.
3537	Trench A-5, W Wall	1.25 m vert	vert channel	at 11 m in trench, below 3536. Mod Fe ox footwall listw. Includes 7-8 cm gossan at top of sample ie. break between samples 3536 and 3537 is slightly off the contact of the zone.
3538	Trench A-5, W Wall	1.7 m vert	vert channel	at 9 m in trench. 1.7 m vert channel across zone, from soil to sill level. Neither hwall or fwall exposed. Sheared, mod Fe ox listw.
3539	Trench A-5, W Wall	2 m vert	vert channel	at 8 m in trench. 2 m vert channel across zone from soil to sill level. Neither hwall or fwall exposed in wall. V heavy Fe ox sheared listw with 5-10% gossan.
3540	Trench A-5, W Wall	2.5 m vert	vert channel	at 7 m in trench. 2.5 m vert channel across zone, from soil to sill level. Neither hwall or fwall exposed in wall. Heavy Fe ox sheared listw with minor gossan near base of sample at sill level.
3541	Trench A-5, W Wall	2.5 m vert	vert channel	at 5.8 m in trench. 2.5 m vert channel across zone, from soil to sill level. Neither hwall or fwall exposed in wall. Heavy Fe ox with ~20% gossan at sill level.
3542	Trench A-5, W Wall	2.6	channel	Horizontal channel in W wall of trench, from 5.4-8 m. 2.6 m horiz sample across zone. ~30% gossan. Most of gossan is in interval 5.4-6m.
3543	Trench A-5, E Wall	1.4 m vert	vert channel	at 13 m in trench. 1.4 m vert channel in hwall of zone. Soil to sill level in weak Fe ox hwall listw.
3544	Trench A-5, E Wall	1.6 m vert	vert channel	at 11 m in trench. 1.6 m vert channel in hwall of zone. Soil to sill level in weak Fe ox hwall listw.
3545	Trench A-5, E Wall	1.4 m vert	vert channel	at 9 m in trench. 1.4 m vert channel in hwall of zone. Soil to sill level in hwall listw.
3546	Trench A-5, E Wall	1.3 m vert	vert channel	at 8 m in trench. 1.3 m vert channel from hwall to sill level across zone. Mod Fe ox sheared listw. ~30 cm hwall listw exposed in wall above zone, not sampled.
3547	Trench A-5, E Wall	1.8 m vert	vert channel	at 7 m in trench. 1.8 m vert channel across zone. Soil to sill level. Neither hwall or fwall exposed in wall. Heavy Fe ox listw with some gossan (especially at base of sample).
3548	Trench A-5, E Wall	1.9 m vert	vert channel	at 5.8 m in trench. 1.9 m vert channel across zone. Soil to sill level. Heavy Fe ox with abund choc brown gossan.
3549	Trench A-6, W wall	1.4 m vert	vert channel	at 15.3 m in trench. 1.4 m vert channel across zone, from hwall to fwall in heavy Fe ox "iron cake". Fwall at sill level. Hwall listw exposed in wall, not sampled.

Sample #	Trench	Sample Interval (m)	Type	Description
3550	Trench A-6	2	channel	Samples 3550-3552 are continuous channels in trench floor, across zone. Zone cuts trench at a low angle, Trends approx 317°/10-35°NE. tt~1.2 m. Sample 3550 is from 12-14m in heavy Fe ox "iron cake". Sample cuts zone diagonally.
3551	Trench A-6	2	channel	10-12m 2 m channel across zone in heavy Fe ox "iron cake" with abund mariposite and Mn.
3552	Trench A-6	2	channel	8-10m channel across zone in trench floor. Heavy Fe ox "iron cake".
3553	Trench A-6	2	channel	6-8m footwall listw. Weak Fe ox.
3554	Trench A-6, W wall	0.9 m vert	vert channel	at 11.4 m in trench. 0.9 m vert channel on W wall. Channel across zone, from soil to footwall. Hwall not exposed. 40 cm of fwall exposed in trench wall, not sampled. Sample is heavy Fe ox "iron cake", highly sheared.
3555	Trench A-6, E wall	1 m vert	vert channel	at 11 m in trench. 1 m vert channel on E wall. Channel across zone, from soil to fwall at sill level. Heavy Fe ox "iron cake", highly sheared.
3556	Trench J34-1, u/g in stope	0.8 m vert	vert channel	Underground on E wall of old stope (dump of this stope was sampled previously as 3476). 0.8m sample across 0.8m tt of zone. Heavy Fe ox listw with 30% good gossan.
3557	Trench J34-1	0.85 m vert	vert channel	at 7 m in trench. 0.85 m vert sample across part of zone. Sample 3557 represents 0.85 m tt of 1 m tt zone (balance sampled as 3558, see below). Heavy Fe ox listw with 30% good gossan.
3558	Trench J34-1	0.9	channel	at 7 m in trench. 0.9 m channel across part of zone exposed in trench floor, under sample 3557. Sample 3558 represents a tt of 0.15 m. Total tt of zone (3557+3558) = 1m. Sample 3558 is iron cake with 20% gossan.
3559	Trench J34-1	1.15	channel	at 3.6 m in trench. 1.15 m channel across floor of trench, across 0.8 m tt zone. Iron cake with 25-30% good gossan.
3560	Trench J34-2, u/g in stope	0.85 m vert	vert channel	underground on W wall of old stope. Mixed sulfide/oxide sample across 0.85 m tt zone. Dump of this stope was sampled previously as 3473.
3561	Trench J34-2	1.2 m subvert	subvert channel	at 3.5 m in trench. 1.2 m subvert channel across approx 1.2 m tt on zone. Mod-strong Fe ox listw with v minor gossan, tr Cu ox.
3562	Trench J34-2	0.7 m vert	vert channel	at 6.5 m in trench. 0.7 m vert channel across 0.7 m tt on zone. Strong Fe ox.
3563	Trench J34-2, u/g in stope	1.5 m vert	vert channel	at top of inclined stope, on W wall. Vert channel across 1.5 m tt on zone. Zone trends 128°/27°NE. Strong Fe ox listw. Zone contains minor cobbles of massive apy at this level, but sample does not.
3564	Trench J34-2, u/g in stope	0.8 m vert	vert channel	underground in stope, on south wall of W level drift. Sample is 0.8 m vert channel across 0.8 m tt zone, Mixed oxide/sulfide sample, but > sulfide than oxide.
3565	Trench J34-2, u/g in stope	0.7 m vert	vert channel	underground in stope, on south wall of E level drift. Sample is 0.7 m channel across 0.7 m tt zone. Strong Fe ox with minor sulfides.
3566	Trench J34-2, u/g in stope	1.35 m vert	vert channel	underground in stope, on W wall of stope. 1.35 m channel across 1.35 m tt of zone. Fault zone, sheared, strong Fe ox listw. Zone contains a 1x2 m massive apy boulder just up dip of sample. Note that zone appears to flatten and wrap up at base of stope and disappear above stope level. End of stope looks to be in fwall listw on quartz seams.

Sample #	Trench	Sample Interval (m)	Type	Description
3567	Trench J34-2, u/g in stope	0.6 m vert	vert channel	underground in stope, on E wall of stope. Zone is total 1 m tt, sampled by 3567&3568. 0.6 m vert channel across upper part of zone in sheared, shattered listw bx with heavy Fe ox.
3568	Trench J34-2, u/g in stope	0.4 m vert	vert channel	underground in stope, on E wall of stope. 0.4 m vert channel below 3567, on lower part of zone. 3568 is ~50% massive apy. Sample includes clay seam at base of sample.
3569	Bench level, W of Trench A-1	0.65 m subvert	subvert channel	Samples 3569-3573 are a continuous line of channels from soil level down, through the zone and into the footwall. Sample 3569 is 0.65 m sub vert channel across ferricrete/colluvium.
3570	Bench level, W of Trench A-1	3.5	channel	horizontal channel across strong Fe ox hwall listw.
3571	Bench level, W of Trench A-1	1.25	channel	horizontal channel across zone. Strong Fe ox "iron cake". tt of zone ~ 0.8 m.
3572	Bench level, W of Trench A-1	3.4	channel	horizontal channel across fwall of zone. Mod-str Fe ox sheared listw with 2-5% diss py.
3573	Bench level, W of Trench A-1	0.35 m subvert	subvert channel	subvert channel across 0.35 m tt rusty iron cake zone in fwall of main zone.
3574	Bench level, W of Trench A-1	0.9 m subvert	subvert channel	Samples 3574-3576 are a line of channels from soil level, through hwall and into zone. Sample 3574 is 0.9 m rusty hwall - mixed colluvium and sheared str Fe ox listw. May include some ferricrete at soil contact.
3575	Bench level, W of Trench A-1	1.55 m subhoriz	subhoriz channel	1.55 m subhoriz channel across zone, tt~1.2 m. Lower part of sample has 25-30 cm semi-oxidized massive apy seam. Upper part of sample is iron cake and str Fe ox listw.
3576	Bench level, W of Trench A-1	1.4	channel	horiz channel in fwall of zone, in base of shallow pit which has dug through the zone. Approx tt of fwall represented by this sample is ~0.3 m. Top of sample (against zone) is str Fe ox listw. Base of sample is weaker Fe ox listw with diss py.
3577	Bench level, W of Trench A-1	n/a	grab	random, representative grab from dump of shallow pit through zone. Zone has been sampled in place as 3575 and 3578. tt on zone is ~1.2m.
3578	Bench level, W of Trench A-1	1.25 m subvert	subvert channel	1.25 m subvert channel across probable zone. Same zone sampled by 3575. tt~1.0 m. Mod-str Fe ox listw.
3579	Bench level, W of Trench A-1	1 m vert	vert channel	Samples 3579 and 3580 are a line, from soil level through zone. Sample 3579 is 1 m vert channel across 1 m tt, ferricrete zone at soil contact, above main zone.
3580	Bench level, W of Trench A-1	3.2	channel	horiz channel below 3579, across zone. Est tt of zone is 1.7 m. Strong Fe ox listw with minor gossan.
3581	Bench level, W of Trench A-1	0.7 m vert	vert channel	Samples 3581 & 3582 are in line, from soil level down through zone and into fwall. Sample 3581 is 0.7 m vert channel across 0.7 m tt of zone, from soil level down through zone. Iron cake + minor gossan. Hwall not exposed. Zone tops out in soil.
3582	Bench level, W of Trench A-1	1.4	channel	1.4 m channel across fwall listw and siliceous fsp porph dyke (approx tt of fwall represented by sample is 1m).

Sample #	Trench	Sample Interval (m)	Type	Description
3583	Trench A-2	0.5 m subvert	subvert channel	on E wall of Trench A-2, below bench level. 0.5 m sub vert channel across 0.5 m tt of lower zone. Mixed gossan and iron cake. Hwall of this zone is siliceous fsp porph dyke.
3584	Trench A-2	0.5 m subvert	subvert channel	on E wall of Trench A-2. 0.5 m subvert channel across 0.5 m tt of lower zone. Dark gossan and iron cake.
3585	Trench A-2	1.1 m subvert	subvert channel	on E wall of Trench A-2. 1.1 m subvert channel across 1.1 m tt of lower zone. Mod Fe ox sheared listw and iron cake. Mixed oxide/sulfide sample with ~15% apy.
3586	Trench A-2	0.5 m vert	vert channel	0.5 m vert channel across 0.5 m tt of main (upper) zone on E wall of Trench A-2. Iron cake.
3587	Trench A-2	0.8 m vert	vert channel	0.8 m vert channel across 0.8 m tt of lower zone in Trench A-2. Weak Fe ox listw with diss py. V heavy, dense rock.
3588	Trench A-2	0.6 m vert	vert channel	0.6 m vert channel across 0.6 m tt of main (upper) zone on W wall of Trench A-2. Mod Fe ox, sheared listw with minor gossan. 10 cm massive apy seam at base of sample.
3589	Trench A-2	0.65 m vert	vert channel	0.65 m vert channel across 0.65 m tt of lower zone on W wall of Trench A-2. Top of sample is hard qtz-carb listw. Lower part of sample is sheared heavy Fe ox listw.
3590	Bench level between Trench A-2 and A-3	0.9 m vert	vert channel	0.9 m vert channel across 0.9 m tt of main zone. V heavy Fe ox, sheared listw and iron cake.
3591	Bench level between Trench A-2 and A-3	3	channel	footwall listw below 3590. 3 m horiz channel across ~ 1m tt footwall. Heavy Fe ox, no gossan.
3592	Bench level between Trench A-2 and A-3	1.6 m subhoriz	subhoriz channel	1.6 m subhoriz channel across 1.3 m tt of zone. Mixed oxide/sulfide sample. Iron cake with minor massive apy seams.
3593	Trench A-3	2.1 m subvert	subvert channel	2.1 m subvert channel across 2.1 m tt of zone on E wall of Trench A-3 @ start of cut. 6-8 cm spongy gossan mixed with massive apy at centre of sample. Rest of sample is heavy Fe ox listw.
3594	Trench A-3	1.1 m vert	vert channel	1.1 m vert channel across 1.1 m tt of zone on E wall of Trench A-3. ~ 1 m sheared listw hwall exposed above zone, not sampled. Sample is v crumbly, sheared, str Fe ox listw with v minor massive apy.
3595	Trench A-3	1.3 m vert	vert channel	1.3 m vert channel across 1.3 m tt of zone on W wall of Trench A-3. V sheared, str Fe ox listw, with one 8 cm cobble of massive apy.
3596	Trench A-3	1.4 m subvert	subvert channel	1.4 m subvert channel across 1.2 m tt of zone, just W of Trench A-3. Heavy iron cake at top of sample. Rest of sample is massive apy. Heavy sulfide sample. Sample includes a few cm of sheared listw hwall.
3597	Bench level, W of Trench A-1	1.5	channel	horizontal channel across bleached, weak Fe ox listw on projection of main zone, between samples 3504 and 3571.

APPENDIX 2

Analytical Results

International Metallurgical and Environmental Inc.
Certificate of Analysis

Client: Caron
Project: Athelstan-Jackpot Property
Date: Sept 5, 2002
Certificate No: 4617

Sample	Au g/t	Au (g/t) CN Leach	Ag g/t	As %	Sample	g/t Au	Au (g/t) CN Leach	Ag g/t	As %
3486	4.03	3.1	11.5	0.9	3523	0.24	—	<2.5	<.03
3487	8.01	1.9	20.0	2.3	3524	0.47	—	2.5	0.2
3488	0.32	—	3.5	0.6	3525	0.76	—	3.0	0.1
3489	0.31	—	3.5	0.6	3526	0.28	—	<2.5	0.8
3490	0.19	—	2.5	0.3	3527	0.57	—	3.5	0.5
3491	0.13	—	3.5	0.4	3528	0.47	—	2.5	2.0
3492	4.75	4.1	9.0	6.9	3529	0.48	—	<2.5	2.0
3493	18.57	15.7	36.0	6.9	3530	5.96	1.0	<2.5	11.0
3494	2.65	1.7	8.0	2.6	3531	1.16	<1.0	3.5	1.6
3495	1.54	<1.0	3.5	0.3	3532	0.21	—	<2.5	0.3
3496	4.32	4.0	6.5	0.6	3533	0.43	—	3.5	0.2
3497	0.25	—	3.0	0.4	3534	29.33	28.4	44.0	4.9
3498	0.67	—	4.5	0.4	3535	4.10	6.0	14.0	2.3
3499	5.64	2.6	9.0	6.1	3536	27.26	25.6	30.5	6.1
3500	0.24	—	<2.5	0.2	3537	6.73	6.4	8.0	3.4
3501	0.28	—	<2.5	0.4	3538	6.73	6.8	10.0	3.4
3502	3.07	2.1	8.0	2.0	3539	8.07	7.9	9.8	2.3
3503	33.25	24.0	52.0	8.2	3540	13.06	11.5	13.5	2.7
3504	30.55	27.7	56.5	4.9	3541	61.87	58.6	74.5	6.1
3505	6.06	5.4	26.0	4.9	3542	53.00	47.1	54.5	6.1
3506	10.11	8.5	14.0	13.5	3543	0.13	—	<2.5	0.3
3507	13.11	13.1	20.0	12.4	3544	0.93	<1.0	<2.5	0.1
3508	4.73	2.7	5.5	8.7	3545	0.15	—	<2.5	0.2
3509	3.55	3.24	6.5	7.4	3546	3.37	3.12	7.0	2.3
3510	0.48	—	4.0	0.8	3547	38.60	32.6	40.0	4.5
3511	2.70	1.8	16.0	3.4	3548	13.49	12.86	16.0	5.8
3512	3.76	1.4	11.5	6.1	3549	0.55	—	2.5	0.6
3513	8.49	5.3	7.5	12.4	3550	1.31	<1.0	<2.5	0.7
3514	1.68	<1.0	5.0	0.8	3551	1.09	<1.0	3.5	0.6
3515	1.77	1.4	17.5	2.0	3552	0.52	—	<2.5	0.2
3516	62.38	56.2	164.0	6.5	3553	0.66	—	<2.5	0.1
3517	0.74	—	12.0	2.0	3554	0.51	—	<2.5	0.6
3518	40.70	42.6	140.0	10.5	3555	4.11	3.8	3.0	1.6
3519	1.28	<1.0	6.0	0.5	3556	11.61	11.0	10.5	2.0
3520	31.92	26.7	74.0	6.5	3557	13.92	13.2	13.0	2.3
3521	40.57	35.6	114.0	7.4	3558	16.16	15.5	10.5	3.4
3522	0.85	—	9.0	0.5	3559	6.13	5.4	79.0	1.6
					3560	24.53	14.1	29.0	17.2

Approved: ________________
Jeff Austin, President

International Metallurgical and Environmental Inc.
Certificate of Analysis

Client: Caron
Project: Athelstan-Jackpot Property
Date: Sept 10, 2002
Certificate No: 4621

Sample	Au g/t	Au (g/t) CN Leach	Ag g/t	As %	Sample	g/t Au	Au (g/t) CN Leach	Ag g/t	As %
3561	7.60	5.8	54.0	4.5	3580	1.94	1.1	6.5	2.9
3562	6.37	5.5	35.0	6.4	3581	1.51	1.2	6.5	3.8
3563	2.04	1.4	13.5	5.6	3582	0.30	—	<2.5	0.3
3564	14.13	7.5	24.0	14.3	3583	5.54	4.7	7.5	9.5
3565	18.32	16.8	70.0	8.9	3584	4.78	5.1	8.0	6.6
3566	2.29	1.3	28.0	6.9	3585	2.85	1.5	6.0	6.2
3567	0.87	<1.0	11.0	3.2	3586	2.25	1.7	3.0	3.3
3568	10.07	6.3	38.5	13.0	3587	0.28	—	<2.5	0.2
3569	0.69	—	4.0	0.7	3588	6.52	3.0	5.5	11.0
3570	2.08	1.1	7.5	0.8	3589	0.68	—	<2.5	0.4
3571	4.65	3.6	18.0	6.1	3590	3.51	1.1	3.0	7.8
3572	0.20	—	2.5	0.4	3591	0.47	—	<2.5	0.7
3573	4.51	4.3	6.5	5.6	3592	1.88	<1.0	<2.5	4.3
3574	4.59	3.9	8.0	4.8	3593	3.73	2.5	4.0	6.5
3575	3.36	1.6	31.0	8.6	3594	7.29	3.6	5.5	10.5
3576	0.37	—	3.0	0.4	3595	2.99	1.6	3.0	6.1
3577	3.10	2.0	11.0	4.0	3596	7.23	3.3	4.5	11.6
3578	0.20	—	<2.5	0.4	3597	0.60	—	3.0	0.7
3579	1.55	1.1	8.5	2.1					

Approved: ________________
Jeff Austin, President

APPENDIX 3

Petrographic and Metallurgical Results

The University of British Columbia
CIMI - Center for Industrial Minerals Innovations
www.cimi.mining.ubc E-mail: cimi@mining.ubc.ca
6350 Stores Rd., Vancouver, BC, Canada, V6T 1Z4
ph: (604) 8223986, fax: (604) 8225599

Microscopic Study of Arsenic-Rich Samples

Prepared for
International Metallurgical and Environmental Ltd.
Attention to Mr. Jeff Austin

by:
Dr. Sonia Veiga, Dr. Marcello Veiga and Dr. Bern Klein

September 2002

The University of British Columbia
CIMI - Center for Industrial Minerals Innovations
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SUMMARY

This report summarizes the results of a microscopic study of Arsenic-rich samples provided by International Metallurgical and Environmental Ltd (IME). The minerals present in the samples were studied by Scanning Electron Microscopy (SEM) coupled with Energy Dispersive X-ray Analysis System (EDS). The IME provided four polished thin section samples identified as 3464A, 3464B, 3473A and 3473B for SEM/EDS analysis. The main purpose of this study was to identify the occurrence of gold in the samples.

Arsenopyrite, pyrite and galena were identified as the main minerals in the four samples and gold was not visible or identified in any of them.

PROCEDURES

The four polished thin section were covered with carbon to increase their electric conductivity. Backscattered electrons were used for SEM/EDS micrographies to enhance the minerals with high atomic number elements. This procedure makes all heavy minerals brighter and is frequently used to find very fine (< 1μm) particles of gold. Chemical compositions of possible gold grains was determined using EDS.

RESULTS

The results of the SEM/EDS analysis of the four polished sections are as follows:

Sample # 3464A

The minerals identified in the sample # 3464A by SEM/EDS were: quartz, arsenopyrite, monazite, apatite and a Ca, Al, Mg and Fe silicate probably an amphibole such as hornblende. Figure 1 shows a SEM micrograph of grains of arsenopyrite associated with quartz.

The central particle shown in Figure 1 consists of quartz with fine apatite dissiminated in the interior of the grain. Figure 2 provides a higher magnification of the apatite grains. Very fine (2.5 μm) particles of monazite, (La, Ce)PO_4, with rare earth elements such as Nd in its structure are highlighted (bright fine particles) associated with apatite.

An Al, Fe silicate associated with arsenopyrite and pyrite particles is shown in the Figure 3. As noticed in Figure 3, the texture is very fractured and liberation of arsenopyrite is below about 50 μm.

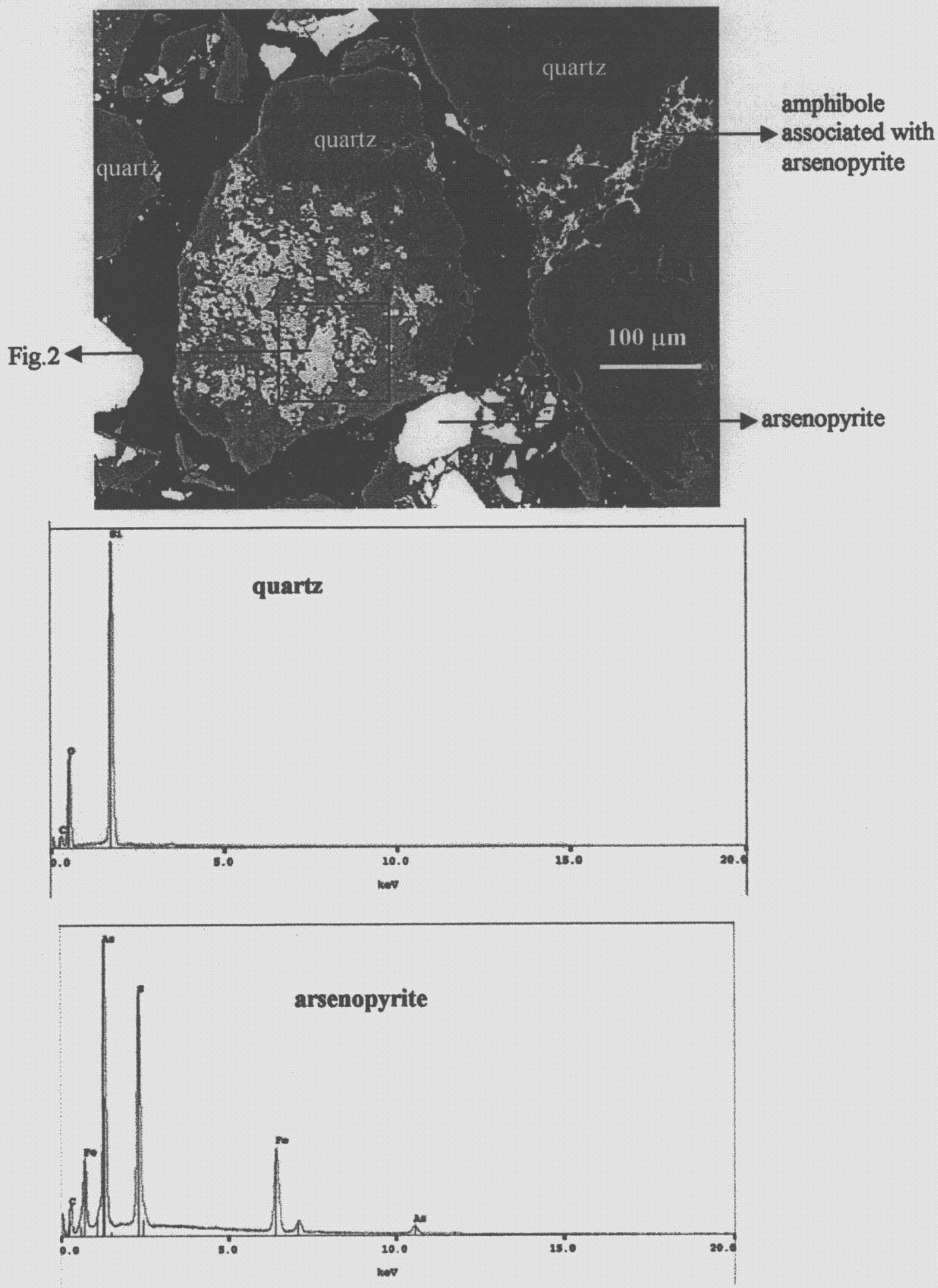


Figure 1: SEM micrograph and EDS analyses of sample 3464A.

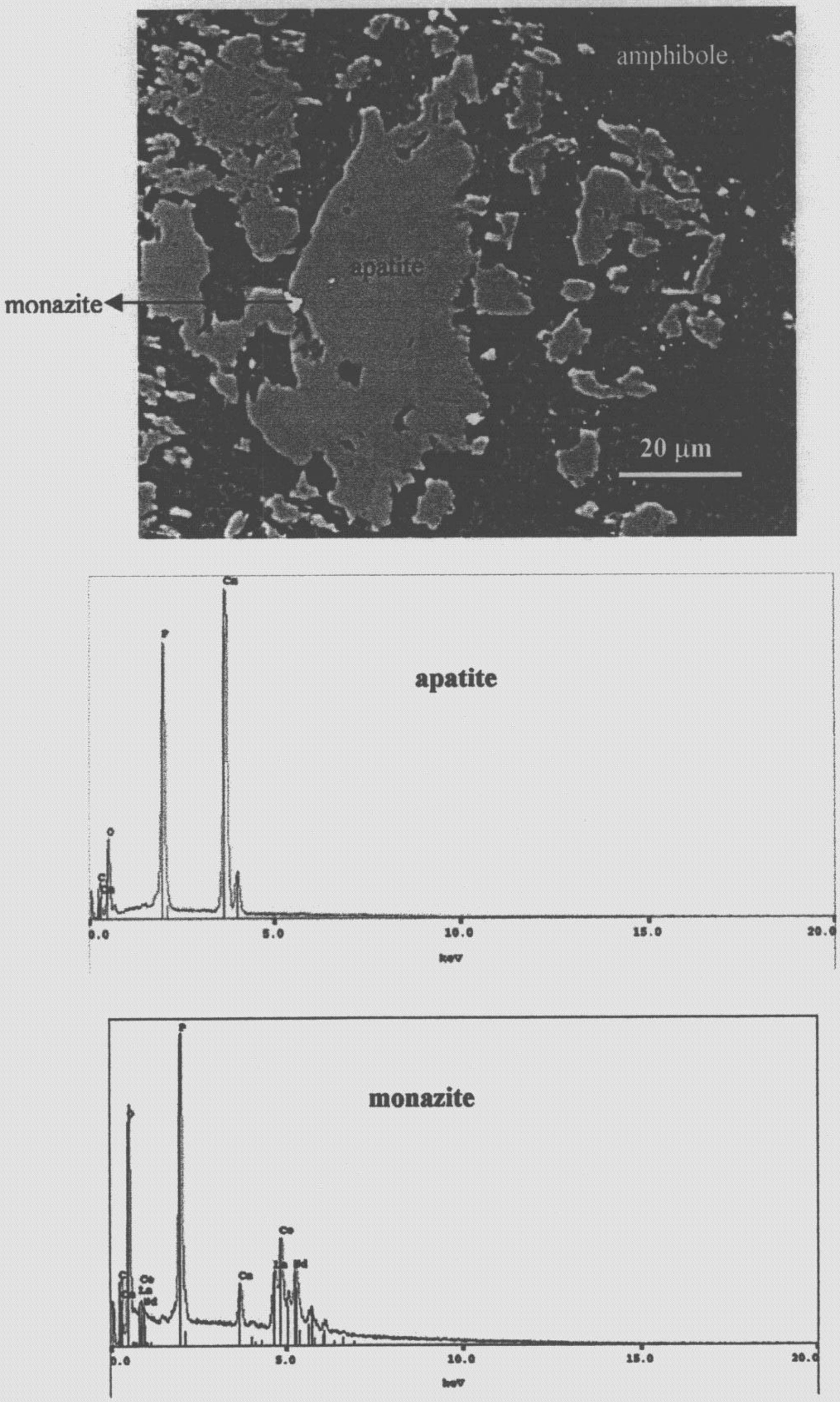


Figure 2: SEM micrograph and EDS analyses of apatite, monazite and Ca, Al, Mg and Fe silicate, detail of sample 3464A.

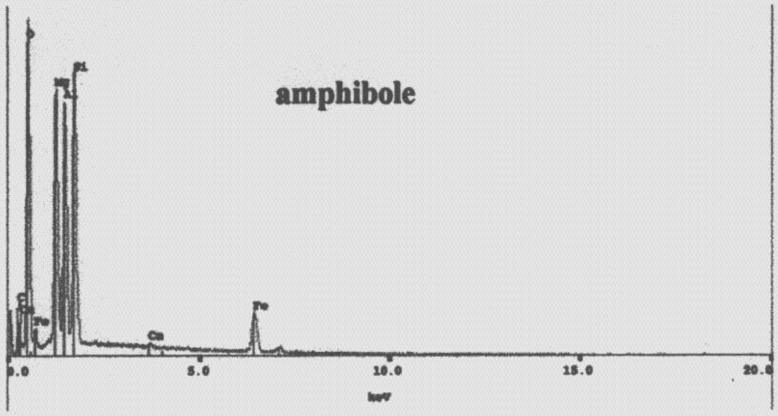
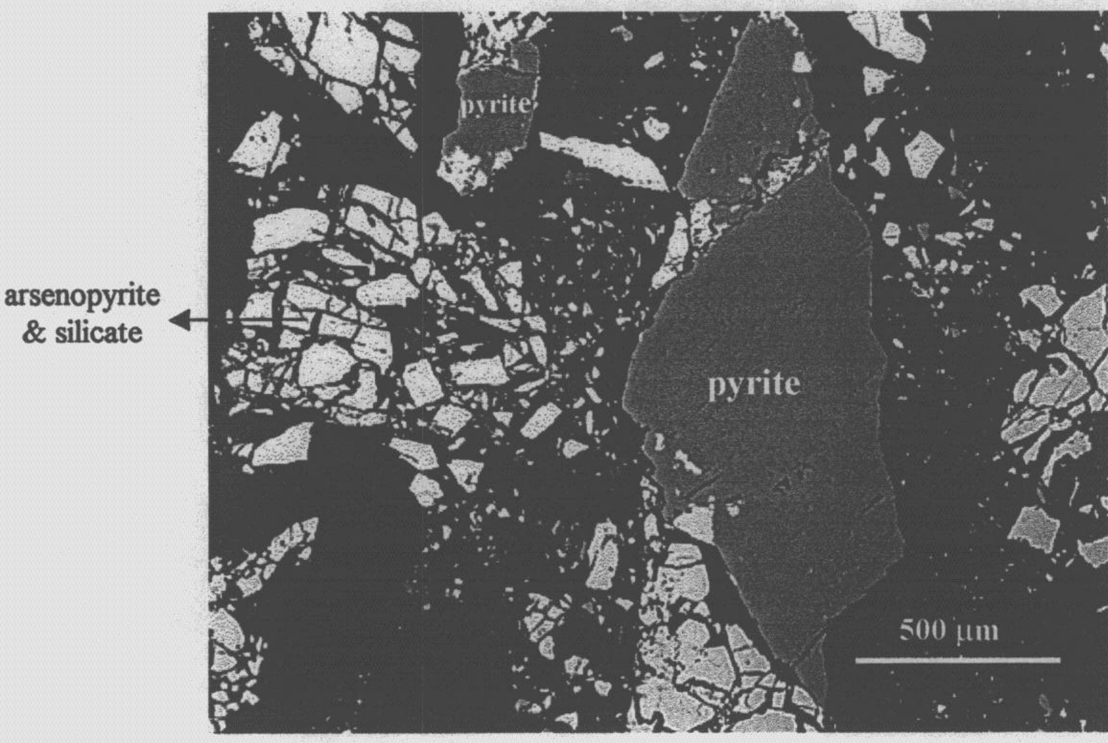


Figure 2: SEM micrograph and EDS analyses of apatite, monazite and Ca, Al, Mg and Fe silicate details of sample 3464A.



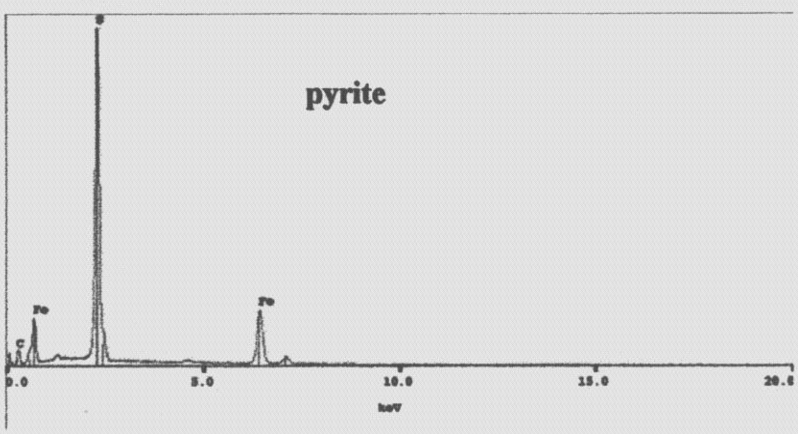


Figure 3: Al, Fe silicate associated with arsenopyrite and pyrite particles in sample #3464A.

Sample # 3464B

The SEM/EDS analysis of the sample # 3464B, figure 4, identified quartz, arsenopyrite and pyrite. Quartz is associated with arsenopyrite in a very fractured texture. Figure 5 shows oxidation of arsenopyrite forming a rim of HFO. The oxidation of arsenopyrite indicates that the ore is semi-altered.

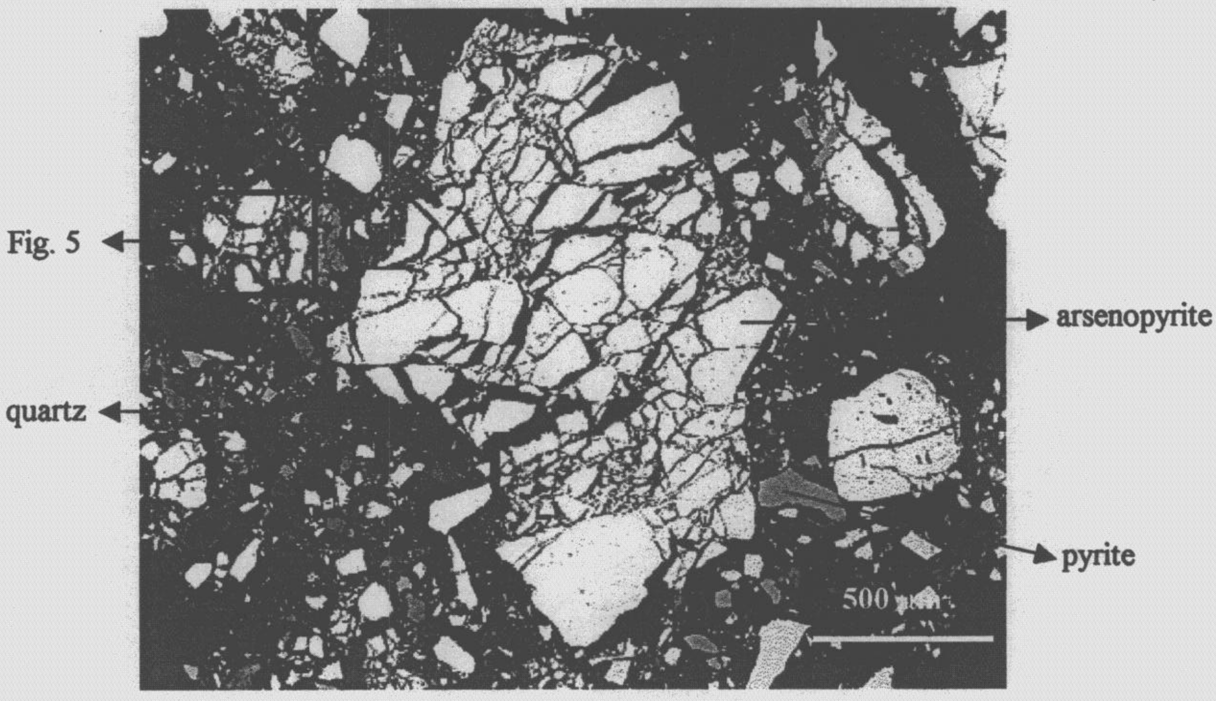
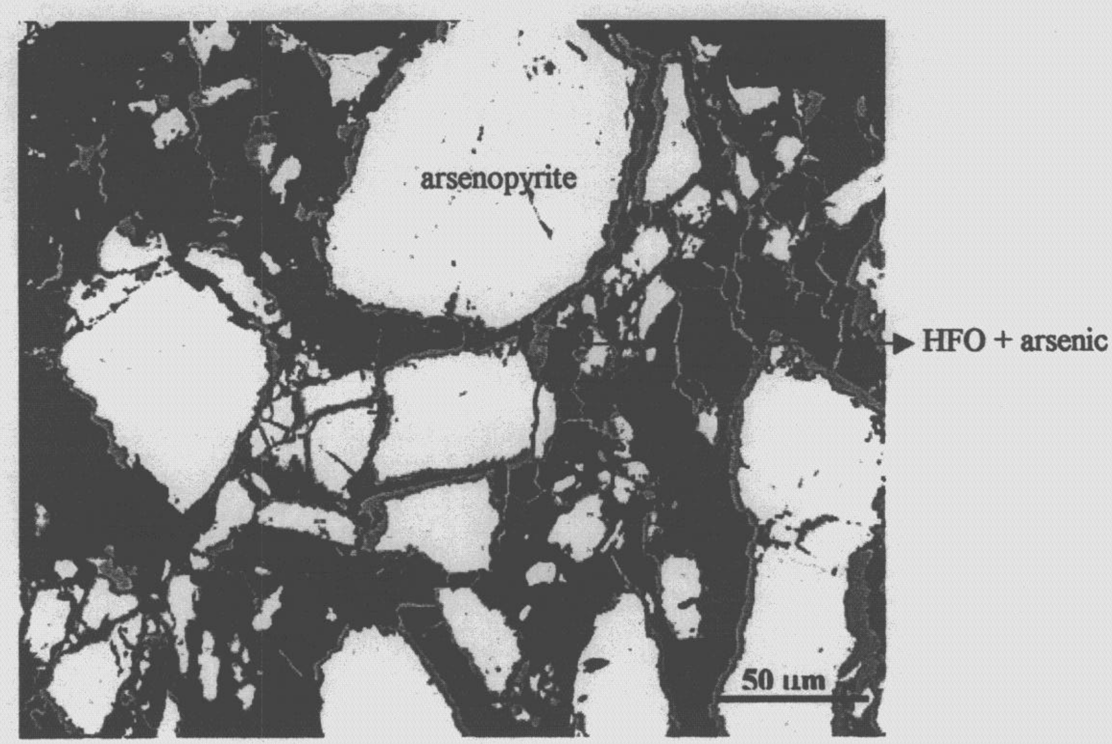


Figure 4: SEM micrograph of sample # 3464B showing quartz, arsenopyrite and pyrite minerals.



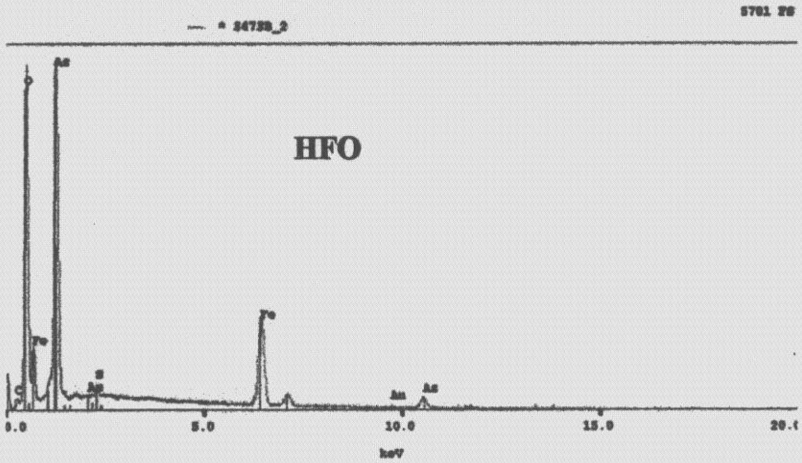


Figure 5: SEM micrography of sample # 3464B showing oxidation of arsenopyrite forming HFO.

Sample # 3473A

The SEM/EDS analysis of sample #3473A shows islands of arsenopyrite in a matrix of hydrous ferric oxide (HFO). The HFO contains As that seems to have been co-precipitated. Usually the chemical adsorption of oxidized As (V) species forms a stable compound with HFO.

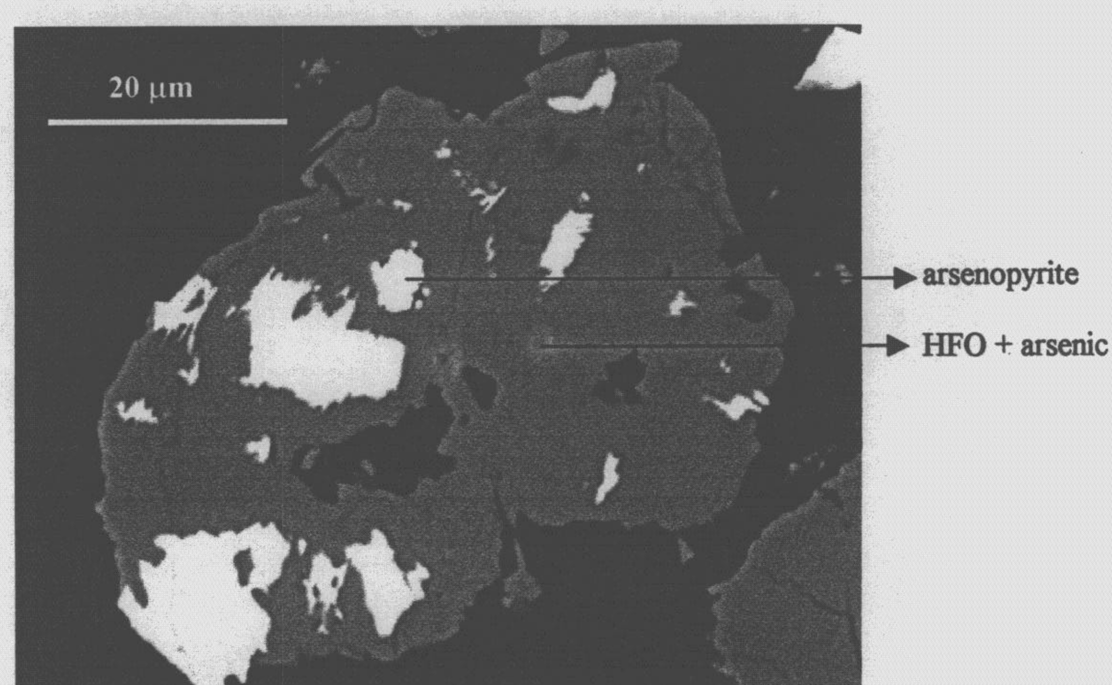


Figure 6: SEM micrograph of sample #3473A showing islands of arsenopyrite in a HFO matrix.

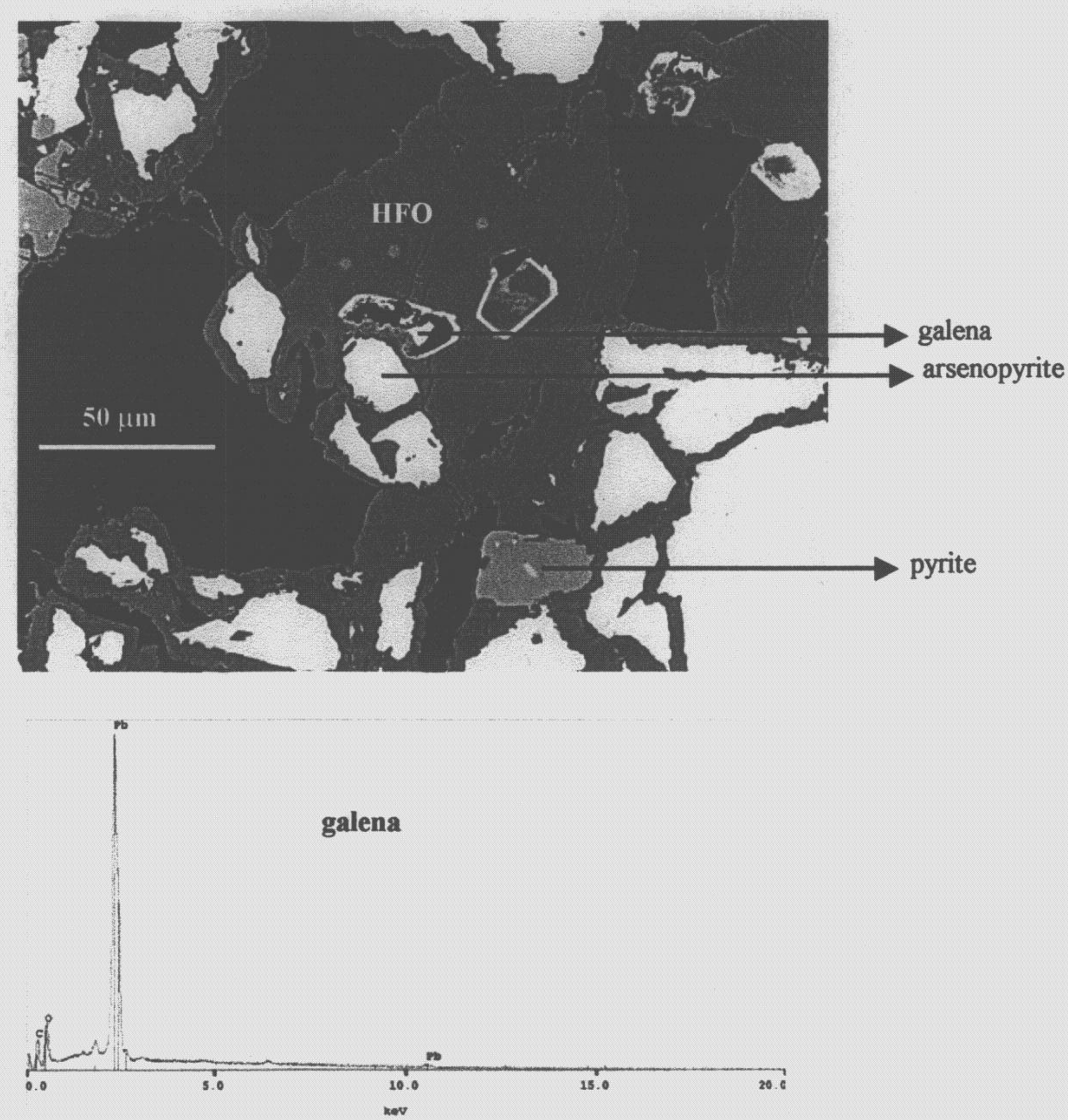


Figure 7: SEM micrograph of sample #3473A showing galena, pyrite, arsenopyrite in a HFO matrix. EDS analysis of galena.

Sample # 3473B

The sample # 3473B also shows arsenopyrite and its oxidation product (HFO) at the border of the grains. It was observed particles of galena. The grains of the minerals are very porous.

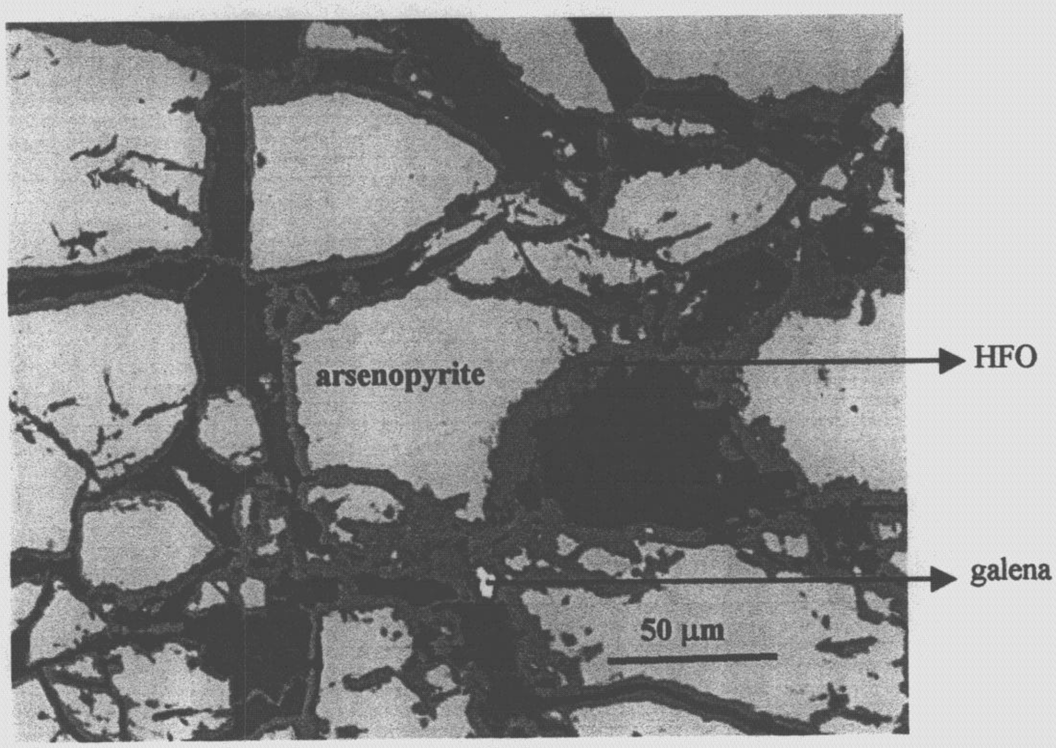


Figure 8: SEM micrograph showing grains of galena, arsenopyrite and hydrous ferric oxide.

Harris
EXPLORATION
SERVICES

MINERALOGY AND GEOCHEMISTRY

534 ELLIS STREET, NORTH VANCOUVER, B.C., CANADA V7H 2G6 TELEPHONE (604) 929-5867

Report for: I.M. & E. Inc.,
13 - 2550 Acland Rd.,
KELOWNA, B.C.
V1X 7L4

Report 02-21

June 19, 2002

MINERALOGICAL EXAMINATION OF MASSIVE SULFIDE SAMPLE

Introduction:

A hand specimen of sulfidic rock, numbered 3464, was submitted for sectioning and microscopic examination. A typical portion of the sample was prepared as a polished thin section (slide 02-5390).

Description:

MASSIVE SULFIDES

Estimated mode

Pyrite	55
Arsenopyrite	35
Chalcopyrite	trace
Quartz	10
Chlorite	trace
Rutile	trace

This sample is of simple mineralogy, consisting essentially of a compact aggregate of varigranular pyrite and lesser arsenopyrite, with minor quartz as a pervasive interstitial/matrix phase.

The pyrite occurs as close-packed subhedral grains, 0.1 - 2.0 mm in size. The arsenopyrite tends to be somewhat finer grained, occurring as aggregates of grain size 0.01 - 0.5 mm. The two sulfides generally show a high degree of segregation, as essentially monomineralic clumps and bands on a scale of 0.1 - 5.0 mm, although a few small pyrite grains are occasionally seen within the areas of dominant arsenopyrite (and vice versa).

Quartz forms a small-scale, intergranular network (on a scale of 0.01 - 0.3 mm) cementing the compact sulfide intergrowth. Rare traces of chlorite and rutile are also occasionally seen. The quartz is of cherty, often lamellar/fibrous textural character.

Careful examination revealed the presence of rare traces of chalcopyrite as the only other sulfide species. This occurs as tiny inclusions, 2 - 20 microns in size, within a few pyrite grains. No Au could be found in the sectioned portion, either in pyrite or arsenopyrite.

J.F. Harris Ph.D.

International Metallurgical and Environmental Inc.
#13-2550 Acland Road, Kelowna, B.C., Canada, V1X 7L4, Telephone: (250) 491-1722, Facsimile: (250) 491-1723

MEMORANDUM

Date: *July 20, 2002*

To: Linda Caron

From: Jeff Austin

Re: *Bulk density of in-situ material from Athlestan project*

Dear Linda,

We have completed work on the high grade bulk density testing for the Athlestan project. I am not certain the results will help you as they are variable over a wide range. We used 10 pieces of competent (relative term) rock for this test work and measured dry weights and volumes in order to determine a bulk density.

Results are as follows:

Rock sample	Bulk Density – g/cc
1	2.06
2	2.34
3	1.93
4	2.23
5	1.77
6	2.23
7	2.13
8	2.59
9	2.99
10	2.38

The average value is 2.265 g/cc with a standard deviation of 0.34 g/cc.

Please call with any questions.

Yours truly,

Jeffrey B. Austin, P.Eng. – President
International Metallurgical and Environmental Inc.

#13-2550 Acland Road, Kelowna, B.C., Canada, V1X 7L4
Telephone: (250) 491-1722
Facsimile: (250) 491-1723
E-mail: imeinc@silk.net

International Metallurgical and Environmental Inc.

Fax

To:	Linda Caron	**From:**	Bryan Tatterson
Attention:		**Date:**	July 15, 2002
Fax:	(250) 442-0256	**Pages:**	3
Re:	**Athelstan Leach Results**	**CC:**	

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

•Comments:

Dear Linda,

The results of two leach tests carried out on the Athelstan Oxidized ore are attached.

The two tests were carried out at different grind particle sizes that bracket the normal Echo Bay Kettle River mill grind. The results show that at the test grinds used the gold and silver extractions were 91% Au and 28.9% Ag. The head grade of the sample was 69 g/t Au and 196 g/t Ag.

Please call if you have any questions.

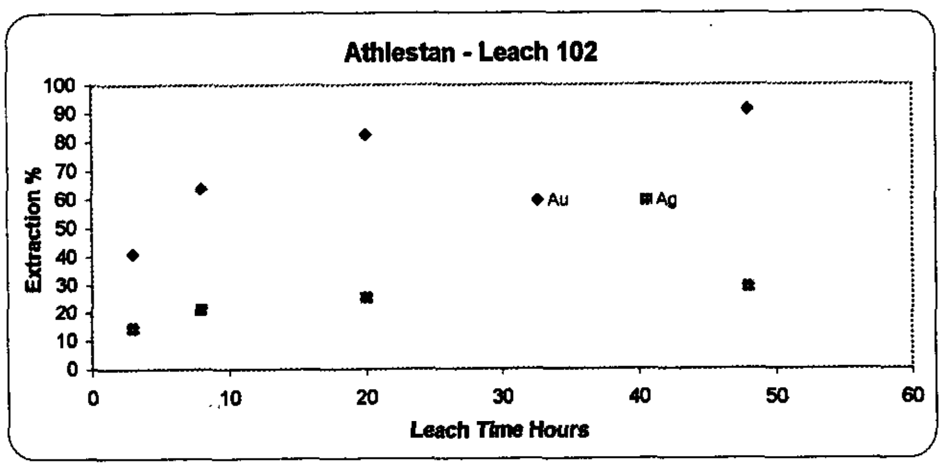
Best regards,

Bryan

International Metallurgical and Environmental Inc.
Cyanidation Test

Client: Linda Caron
Project: Athelstan
Test No. 102
Test Sample: Oxidized Ore Sample Bucket received July 2002)
Test Objectives Cyanidation test at 0.4 g/l NaCN
Grind: 4 minutes with 1/2 rod charge in stainless steel mill. 80% passing 89 µm.
Pre-aeration: Nil

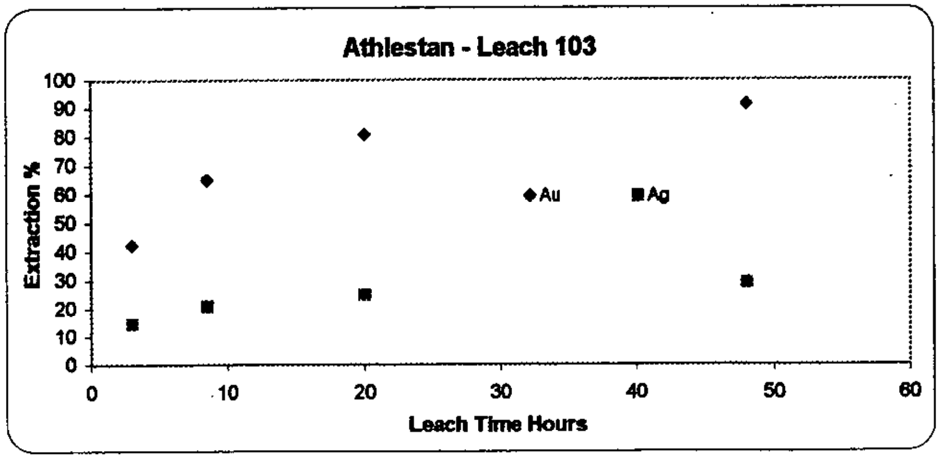
		Pre-aeration and Leach Chemistry			*Reagent Consumption*		Assays		Distribution	
Sample	Wt g	pH	Adjusted pH	NaCN g/l	NaCN Kg/t	Lime Kg/t	Au (mg/l-g/t)	Ag (mg/l-g/t)	Au %	Ag %
0 Hour		7.9	10.5	0.40	0.00	5.1				
3 Hour		9.4	10.5	0.24	0.80	7.6	12.23	12.9	41.2	14.4
8 Hour		9.8			1.32	7.6	18.94	18.7	63.8	20.9
20 Hour		9.7	10.5	0.20	1.35	9.2	24.46	22.5	82.4	25.1
48 Hour Final soln	929.5	9.4		0.34	1.05	9.2	27.05	25.8	91.2	28.9
Final Residue	428.0		Overall Reagent Consumption		1.05	9.2	5.69	138.0	8.8	71.1
Percent Solids	31.5				Calculated Head		64.43	194.0		
					Assayed Head		69.14	196.0		



International Metallurgical and Environmental Inc.
Cyanidation Test

Client: Linda Caron
Project: Athelstan
Test No. 103
Test Sample: Oxidized Ore Sample Bucket received July 2002)
Test Objectives Cyanidation test at 0.4 g/l NaCN
Grind: 5 minutes with 1/2 rod charge in stainless steel mill. 80% passing 67 µm.
Pre-aeration: Nil

		Pre-aeration and Leach Chemistry			Reagent Consumption		Assays		Distribution	
Sample	Wt g	pH	Adjusted pH	NaCN g/l	NaCN Kg/t	Lime Kg/t	Au (mg/l-g/t)	Ag (mg/l-g/t)	Au %	Ag %
0 Hour		9.1	10.5	0.40	0.00	5.4				
3 Hour		9.6	10.5	0.26	0.72	7.9	12.92	14.1	42.2	14.6
8.5 Hour		9.9			1.25	7.9	19.90	20.1	64.9	20.9
20 Hour		9.7	10.5	0.24	1.13	9.4	24.70	23.9	80.6	24.8
48 Hour Final soln	890.5	9.8		0.30	1.01	9.4	27.90	27.9	91.1	28.9
Final Residue	435.6		Overall Reagent Consumption		1.01	9.4	5.60	140.0	8.9	71.1
Percent Solids	32.8				Calculated Head		62.63	197.0		
					Assayed Head		69.15	196.0		



Oxide Composite Sample for Flotation Testing

A 22 sample composite, comprised of the following samples:

3492
3493
3503
3506
3507
3516
3517
3518
3520
3521
3530
3531
3534
3536
3538
3539
3540
3541
3542
3546
3547
3548

Calculated Head Grade = 23.5 g/t Au

Sulfide Composite Sample for Flotation Testing

A 7 sample composite, comprised of the following samples (see Caron, 2002b for locations and assays):

3451
3454
3461
3464
3472
3473
3478

Calculated Head Grade = 23.5 g/t Au

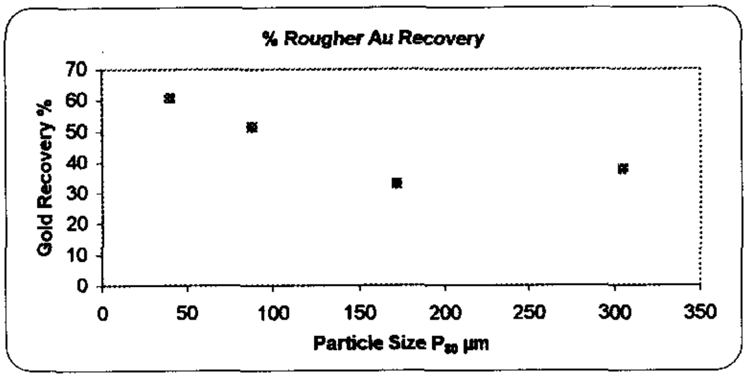
International Metallurgical and Environmental Inc.
Flotation Test Summary

Project: Athelstan
Test Sample: Oxide Composite Sample
Test Objectives: Gold and Silver Recovery

Metallurgical Balance

	Sample	Grind	Wt. %	Assays		Distribution	
		P_{80} µm		Au g/t	Ag g/t	Au %	Ag %
202	Rougher #1 (0-5 mins)		0.7	88.1		2.8	
	Scav Conc (0-5 mins)		1.2	669.3		34.9	
	Final Tail	305	98.1	14.4		62.3	
	Calculated Head		100.0	22.7			
203	Cleaner Concentrate		0.7	847.0		29.7	
	Rougher Concentrate		1.6	444.5		32.9	
	Final Tail	172	98.4	14.4		67.1	
	Calculated Head		100	21.2			
205	Cleaner Concentrate		1.3	702.3		46.3	
	Rougher Concentrate		3.5	285.4		51.3	
	Final Tail	88	96.5	9.9		48.7	
	Calculated Head Assayed Head		100.0	19.7 19.6			
207	Cleaner Concentrate		1.5	801.3	571	56.4	25.2
	Rougher Concentrate		5.0	257.4	209	60.6	30.8
	Final Tail	40	95.0	8.8	25	39.4	69.2
	Calculated Head Assayed Head		100	21.2 20.2	33.9 31.6		

Oxide Composite	Au g/t	Ag g/t	As %
Calculated Head (22 samples)	23.5	42.8	6.25



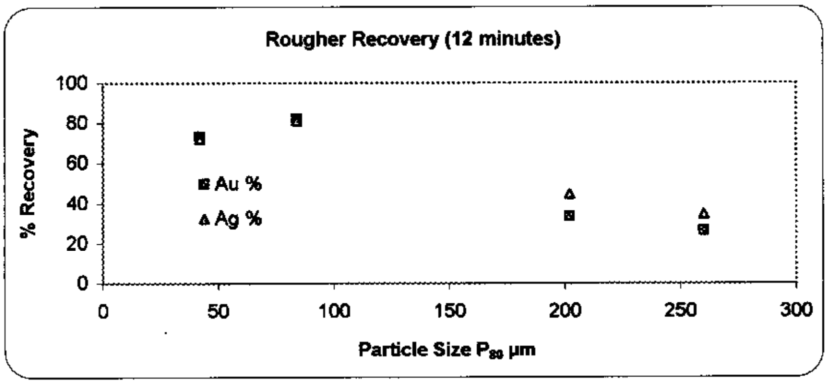
International Metallurgical and Environmental Inc.
Flotation Test Summary

Project: Athelstan
Test Sample: Sulphide Composite Sample
Test Objectives: Gold and Silver Recovery

Metallurgical Balance

	Sample	Grind	Wt. %	Assays		Distribution	
		P_{80} µm		Au g/t	Ag g/t	Au %	Ag %
200	Rougher (0-12 mins)		21.6	26.9	116	33.6	44.6
	Scav Conc (0-4 mins)		22.8	23.8	56	31.4	22.7
	Final Tail	202	38.1	10.9	33	35.1	32.7
	Calculated Head		100.0	17.3	56		
	Assayed Head			16.8	57		
201	Rougher (0-12 mins)		18.0	27.3	109	26.4	34.6
	Scav Conc (0-22 mins)		44.7	23.2	57	55.8	45.2
	Final Tail	260	37.3	8.8	31	17.8	20.2
	Calculated Head		100	18.6	56		
	Assayed Head			15.2	54		
204	Rougher (0-12 mins)		57.0	24.0	115	82.4	81.4
	Scav Conc (0-22 mins)		5.0	17.3	103	5.2	6.3
	Final Tail	84	38.1	5.4	26	12.4	12.3
	Calculated Head		100.0	16.6	81		
	Assayed Head			16.2	97		
206	Rougher (0-12 mins)		47.0	24.2	65	73.3	72.1
	Scav Conc (0-22 mins)		13.1	16.8	31	14.2	9.8
	Final Tail	42	39.8	4.9	19	12.5	18.2
	Calculated Head		100	15.5	42.1		
	Assayed Head			16.8	38.0		

Sulphide Composite	Au g/t	Ag g/t	Cu %	As %	S %
Calculated Head (7 samples)	20.7	34.9	0.144	20.1	19.4



PolyMet RESOURCES INC.
1 Presley St, P.O. Box 699, Cobalt, Ontario, Canada P0J 1C0
Tel: (705) 679-5500 • Fax: (705) 679-5519

July 24, 2002

Ms. Linda Caron, M.Sc., P.Eng.
Consulting Geologist
P.O. Box 2493
Grand Forks British Columbia V0H 1H0

Tel: (250) 442-5078 Fax: (250) 442-0256

Re: Gold Arsenide Ore for Processing/Milling from the Athelstan-Jackpot Property in British Columbia.

Dear Linda Caron and Dick Walters,

Here is the following assay analysis on the Athelstan-Jackpot Property sample sent to us recently. (Analysis Attached)

Polymet Operations

Our operation is primarily a bulk-sampling and mixing station which can combine other products for re-shipment to large smelters such INCO, Falconbridge and Noranda.

We can provide Bulk-Sampling services where which the results gain can be used for a feasibility study and/or to gain access to "third party" smelters.

We can also provide "dry" semi-processing and blending capabilities to gain contracts with third party smelters.

We could blend your material if the Gold grade were in excess of 1-5 oz/ton Au. However, there is no payable value to you at 0.5 to 1.0 oz/ton Au from Polymet.

Moreover, we cannot upgrade your feedstock in order to bring the Gold content high enough for CIP or Autoclave extraction anyway!

I would strongly recommend that your organization contact mining companies with Autoclave technology.. I believe the Con Mine in the North West Territories had those capabilities.

In our area, here are the following mines/mills:

Foxpoint Resources (Macassa Mine) in Kirkland Lake (Ray Belecque is the Mill Supetintendant and Steve Davies is the Mine Manager -- Steve and I went to the Haileybury School of Mines together). Foxpoint is looking for custom feedstock.

If the Arsenopyrite has significant Cobalt values then I would strongly suggest **Canmine Resources** in Cobalt. Canmine has an Autoclave with pressure leaching capabilities and solvent extraction circuitry which could be amenable to your feedstock with/or with out Cobalt content. Ted Ellwood is the company President. Canmine has the capabilities to handle Arsenic content well *in excess of 10% As from Cobalt Arsenide concentrates/mill* clean-ups derived from the Cobalt "Silver' Mining Camp.

Canmine, however, does not have a size reduction mill circuit to break down its feedstock necessary for the Ball Mill. Canmine will accept 1/8" to 1/4" sized feedstock material If I am correct, Canmine requires 150 to 200 mesh sized feedstock in its Autoclave. I am not sure whether Canmine can upgrade products via flotation or by gravity methods.

Polymet can provide the size reduction service by bringing the material to an acceptable 20-40 mesh size.

As stated earlier, If your material had Cobalt and/or by-product Nickel, Canmine may be interested. Another reason to contact Canmine is that the company also recovers by-product Silver and Gold! It appears however that the Jackpot property doesn't have appreciable Silver values which is not helpful.

Roxmark's Northern Empire Mill in Beardmore of western Ontario (north of Lake Superior) should be able to handle your material as well. I know Roxmark is looking for custom feedstock. Contact Mr. Dave Malouf, President (416) 860-1636 or Fax (416) 360-7355 or FAX (807) 875-2876.

There is also Placer Dome in Timmins and St.Andrews Goldfields in Matheson (but down). And I am sure there is a whole host of mills in Quebec to consider.

Anyway, I hope this helps you out.

Thank you for the enquiry and stay in touch. We are very interested in Slags, Mill-Clean-ups, Photographic Canister wastes and certain electronic components & computer circuit board feedstocks. If you have any leads please contact us.

Sincerely,

Gino Chitaroni,
Manager

Original by Mail

PolyMet Laboratories

Project/Job No. Linda Caron
Athelstan-Jackpot Prop. - Southern B.C.
Date 7/23/02

Assay Certificate **# 473**

Sample Identification	Gold Oz/ton	Silver Oz/ton	Pd Oz/ton	Cu%	Pb %	As%	Be ppm	Ni %
# 3464	0.376	0.32		0.02	0.04	25.95	Nil	

Fees Received ○ Yes ◉ No

Certified by: [signature]
Assayer

Division of PolyMet Resources Inc. 1 Presley St., Cobalt, ON POJ 1CO

Tel: 705-679-5500 Fax: 705-679-5519

APPENDIX 4

Cost Statement

COST STATEMENT

ATHELSTAN - JACKPOT PROPERTY

July 18/02 to January 10/03

Labour

R. Walters	Geologist project supervision, management, geology (including travel, room and board)		$ 5,000.00
L. Caron	Geologist geological mapping, trench supervision, mapping & sampling, report preparation	14 days @ $375/day	$ 5,250.00
J. Kemp	Prospector trench cleanout and sampling	7 days @ $225/day	$ 1,575.00
			$11,825.00

Trenching

Excavator and Operator - Lime Creek Logging, Grand Forks B.C.
31 hours @ $125/hr including mob and demob — $ 3,875.00

Geochemical Analyses

Au, Ag, As Assay + CN Leach Au Assay
International Metallurgical and Environmental Inc., Kelowna B.C.
112 rock samples @ $ 35/sample including shipping — $ 3,920.00

Petrographic and Metallurgical Testing

International Metallurgical and Environmental Inc., Kelowna B.C.

Polished section, SEM, cyanide leach and flotation testing	$ 5,000.00
Polymet Resources, Cobalt ON - assay	$ 28.89
	$ 5,028.89

Misc field & office supplies (paint, bags, copying, etc)	$ 125.00
Drafting (W. Reich, Spokane WA)	$ 1,904.56
	$ 2,029.56

TOTAL: $ 26,678.45

27044

EXPLANATION

2558 Sample number.

● Grab sample

⟝ Channel sample location.

Mineralized horizon; gossan and/or arsenopyrite.

Hardpan; excavator could not penetrate to bedrock.

Overburden

Possible altered diorite.

A-1 × Survey control or turning point (TP).

HW Hanging wall of mineralized horizon.

FW Footwall of mineralized horizon.

listw Listwanite, (host rock = limonitic quartz carbonate schist).

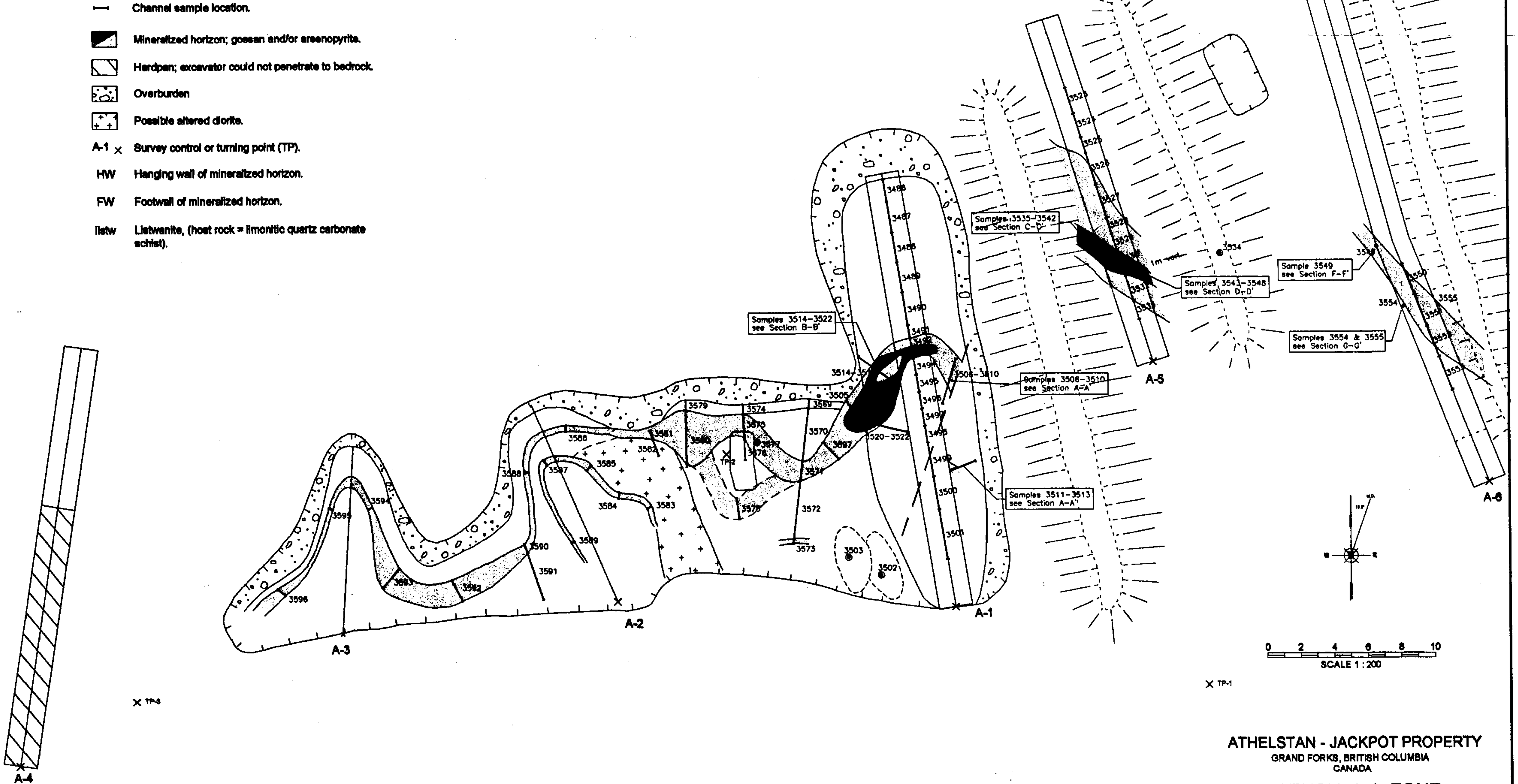


FIGURE 4a

ATHELSTAN - JACKPOT PROPERTY
GRAND FORKS, BRITISH COLUMBIA
CANADA

TRENCH A-1 ZONE
SAMPLE NUMBERS OVERLAY

LC / DW / JK 28/08/02 - 03/09/02

A-J Trench A-1 sample.dwg 9/27/02

M2

27044

EXPLANATION

1.1 - 18.2 / 81	Channel sampled meters - g/t Au / % CN Sol. Au.
18.7 / -	No CN Sol. Au assay.
2.5 @ 33.1 / 72	Weighted average g/t Au / % CN Sol. Au.
tt	True thickness
◉	Grab sample
•	Vertical channel sample location
⟝	Channel sample location.
	Mineralized horizon; gossan and/or arsenopyrite.
	Hardpan; excavator could not penetrate to bedrock.
	Overburden
	Possible altered diorite.
A-1 ×	Survey control or turning point (TP).
HW	Hanging wall of mineralized horizon.
FW	Footwall of mineralized horizon.
listw	Listwanite, (host rock = limonitic quartz carbonate schist).

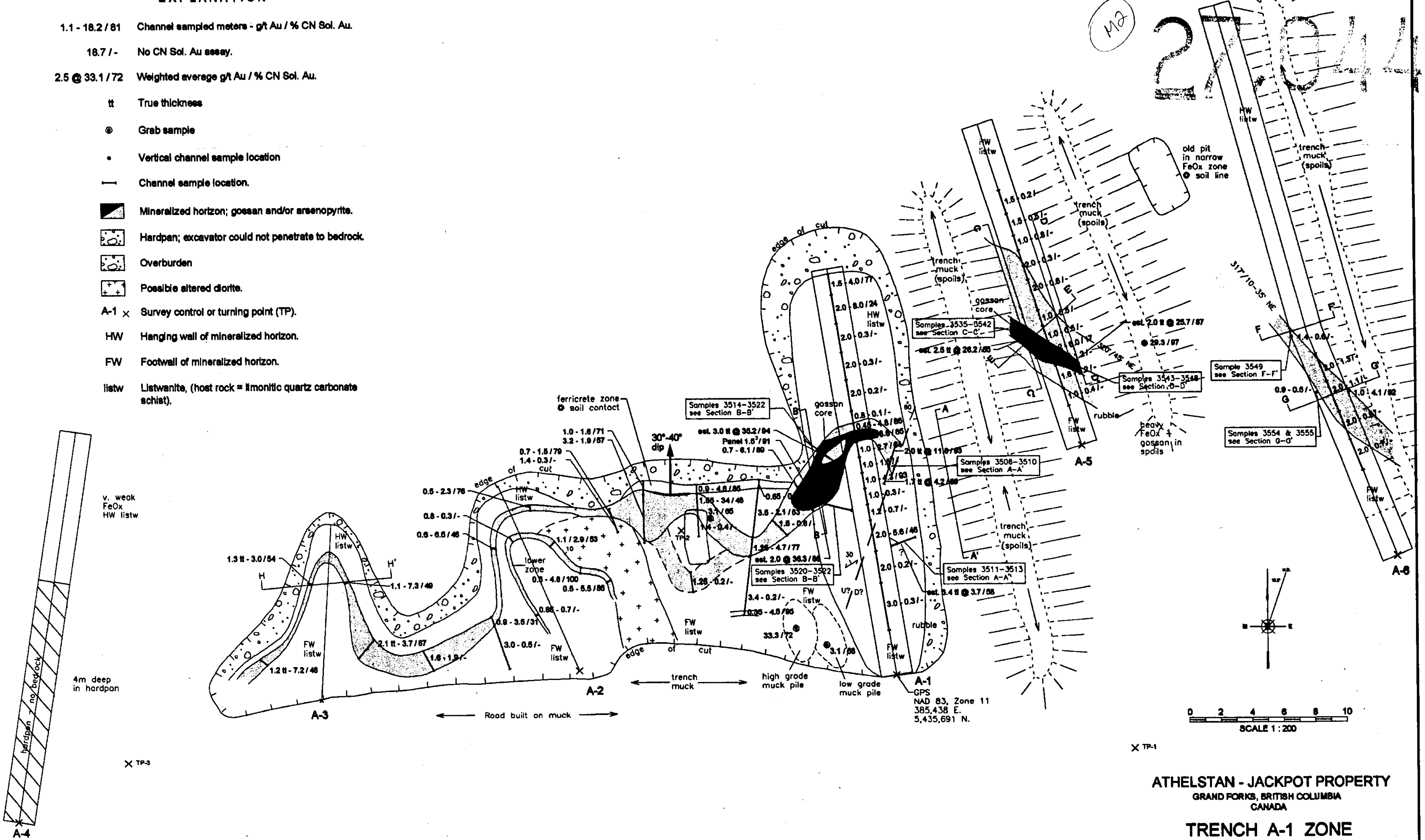


FIGURE 4b

ATHELSTAN - JACKPOT PROPERTY
GRAND FORKS, BRITISH COLUMBIA
CANADA

TRENCH A-1 ZONE
GOLD + CN SOL. GOLD
BASE MAP

LC / DW / JK 28/08/02 - 03/09/02

A-J Trench A-1 Au.dwg 9/27/02

(13)

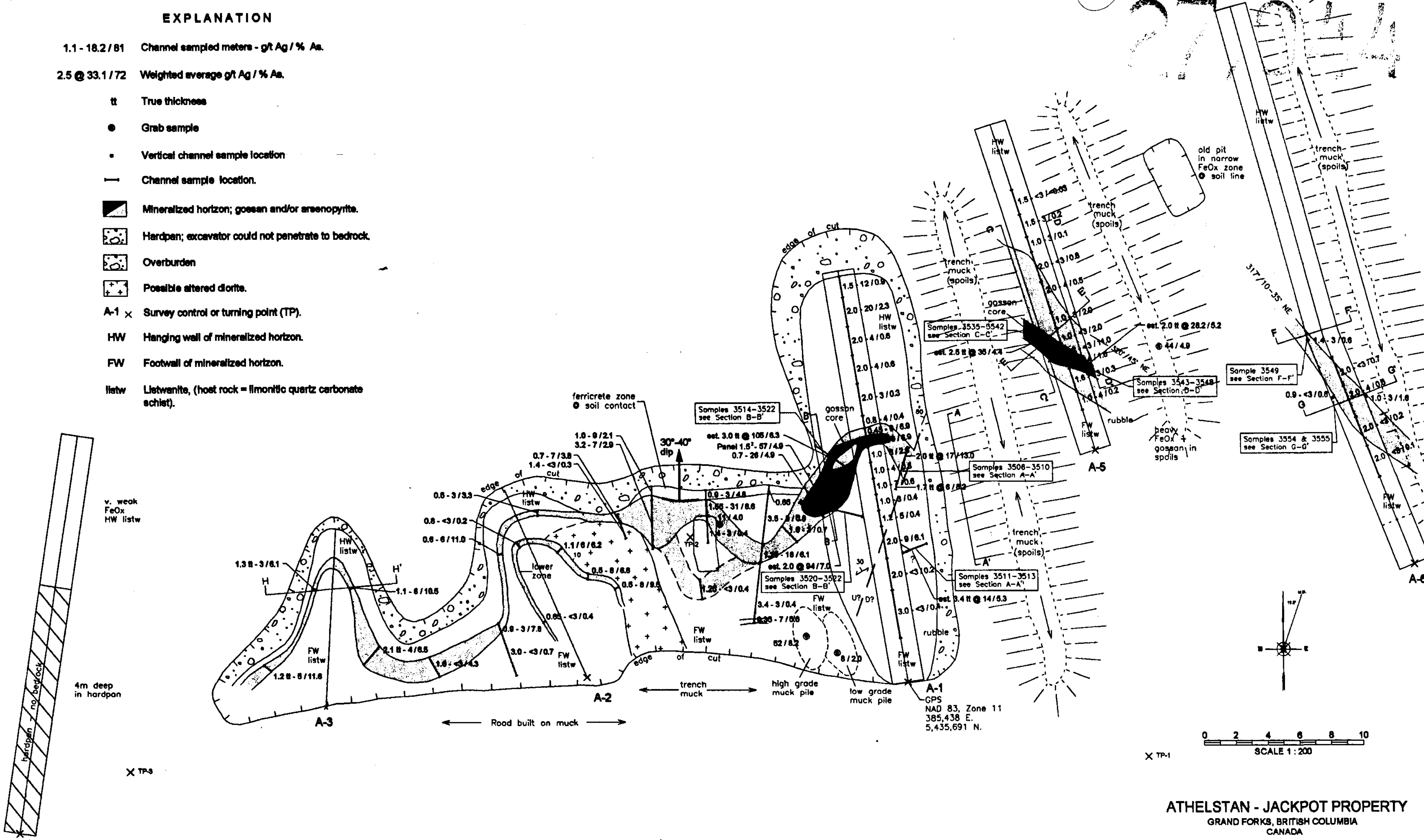


FIGURE 4c

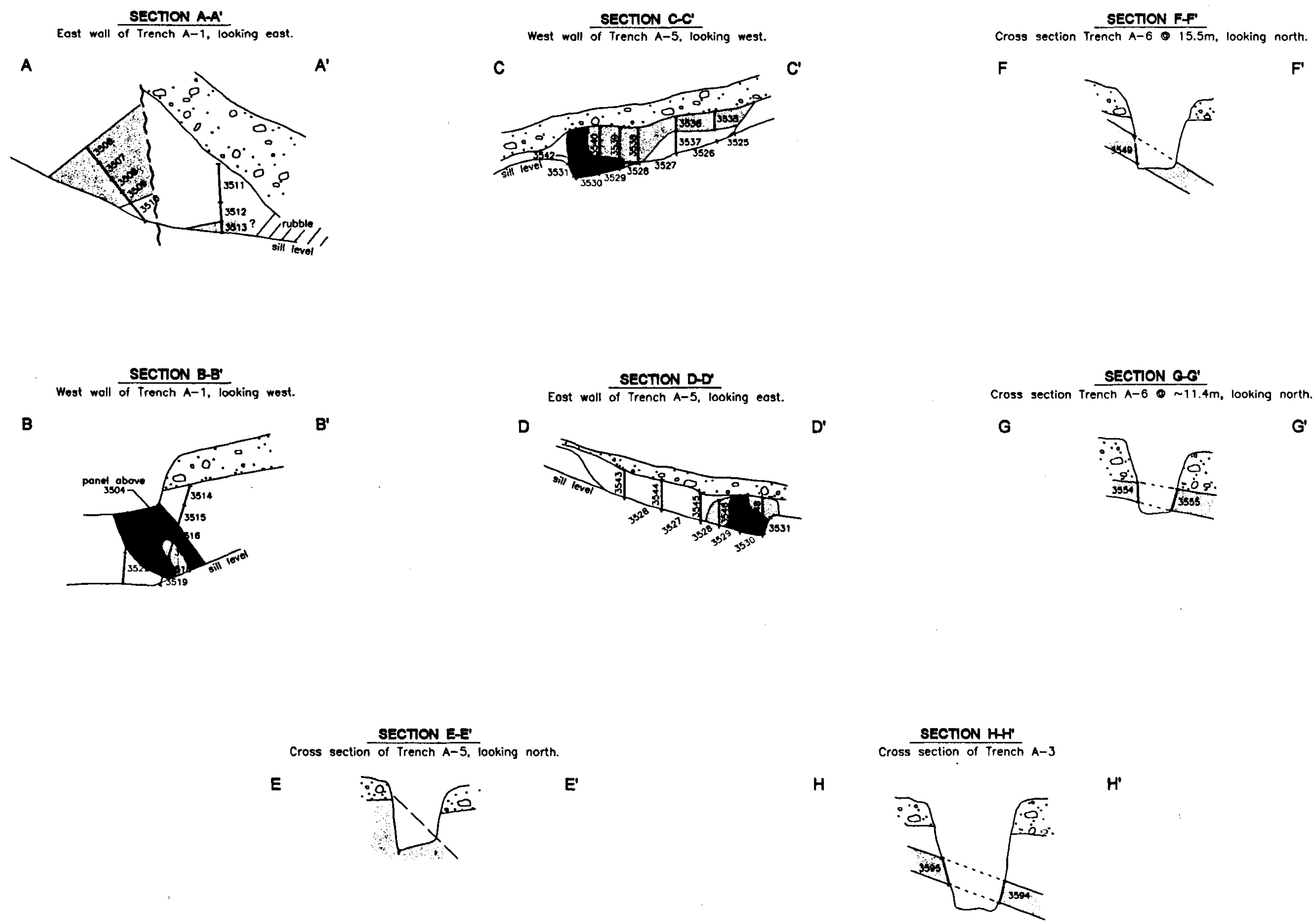
ATHELSTAN - JACKPOT PROPERTY

GRAND FORKS, BRITISH COLUMBIA
CANADA

TRENCH A-1 ZONE
SILVER + ARSENIC OVERLAY

LC / DW / JK 28/08/02 - 03/09/02

A-J Trench A-1 Ag-As.dwg 9/27/02



0 2 4 6 8 10
SCALE 1 : 200

EXPLANATION

2556	Sample number.
⟷	Channel sample location.
◩	Mineralized horizon; gossan and/or arsenopyrite.
⁘	Overburden
HW	Hanging wall of mineralized horizon.
FW	Footwall of mineralized horizon.
listw	Listwanite, (host rock = limonitic quartz carbonate schist).

FIGURE 4d

ATHELSTAN - JACKPOT PROPERTY
GRAND FORKS, BRITISH COLUMBIA
CANADA

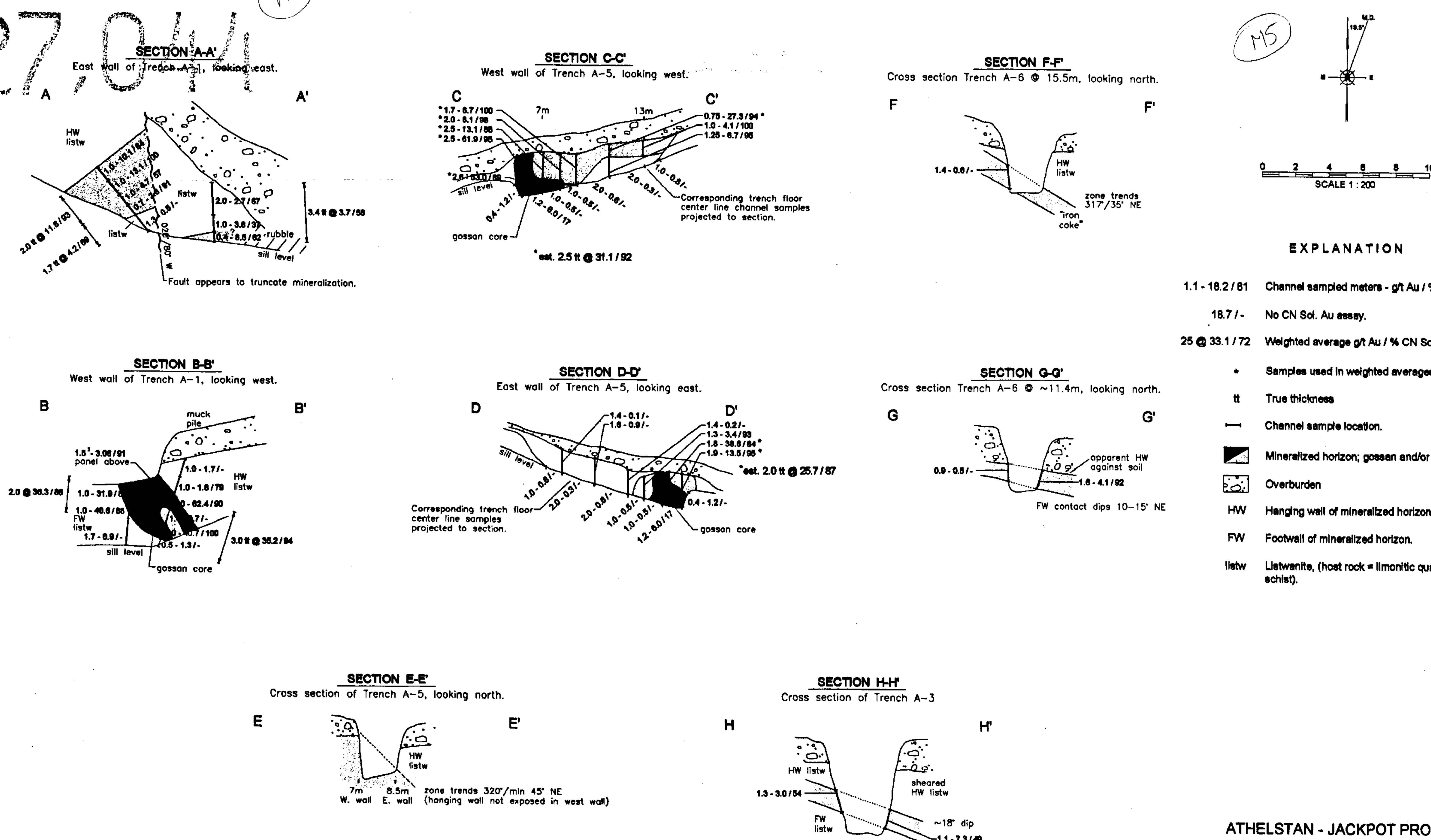
TRENCH A-1 ZONE SECTIONS SAMPLE NUMBERS OVERLAY

LC / DW / JK 28/08/02 - 03/09/02

A-J Trench A-1 Sections sample.dwg 9/27/02

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

27,044



EXPLANATION

1.1 - 18.2 / 81	Channel sampled meters - g/t Au / % CN Sol. Au
18.7 / -	No CN Sol. Au assay.
25 @ 33.1 / 72	Weighted average g/t Au / % CN Sol. Au
*	Samples used in weighted averages.
tt	True thickness
—	Channel sample location.
(black)	Mineralized horizon; gossan and/or arsenopyrite.
(dotted)	Overburden
HW	Hanging wall of mineralized horizon.
FW	Footwall of mineralized horizon.
listw	Listwanite, (host rock = limonitic quartz carbonate schist).

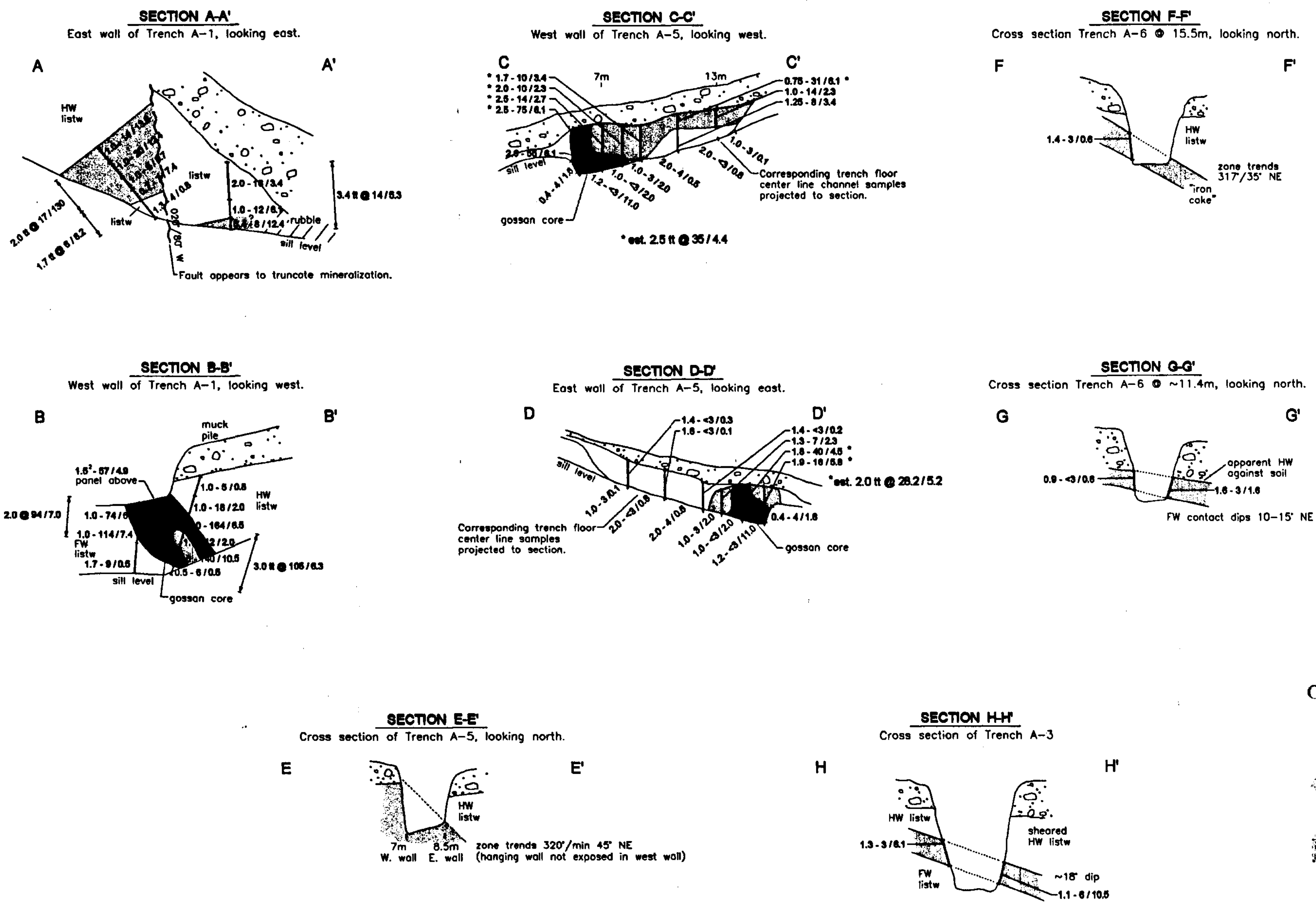
FIGURE 4e

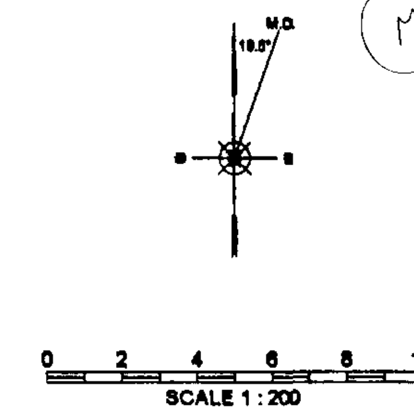
ATHELSTAN - JACKPOT PROPERTY
GRAND FORKS, BRITISH COLUMBIA
CANADA

TRENCH A-1 ZONE SECTIONS GOLD + CN SOL. GOLD BASE MAP

LC / DW / JK 28/06/02 - 03/09/02

A-J Trench A-1 Sections Au.dwg 9/27/02





(M6)

EXPLANATION

1.1 - 18.2 / 81	Channel sampled meters - g/t Ag / % As.
25 @ 105 / 6.3	Weighted average g/t Ag / % As.
*	Samples used in weighted averages.
tt	True thickness
—	Channel sample location.
	Mineralized horizon; gossan and/or arsenopyrite.
	Overburden
HW	Hanging wall of mineralized horizon.
FW	Footwall of mineralized horizon.
listw	Listwanite, (host rock = limonitic quartz carbonate schist).

FIGURE 4f

ATHELSTAN - JACKPOT PROPERTY
GRAND FORKS, BRITISH COLUMBIA
CANADA

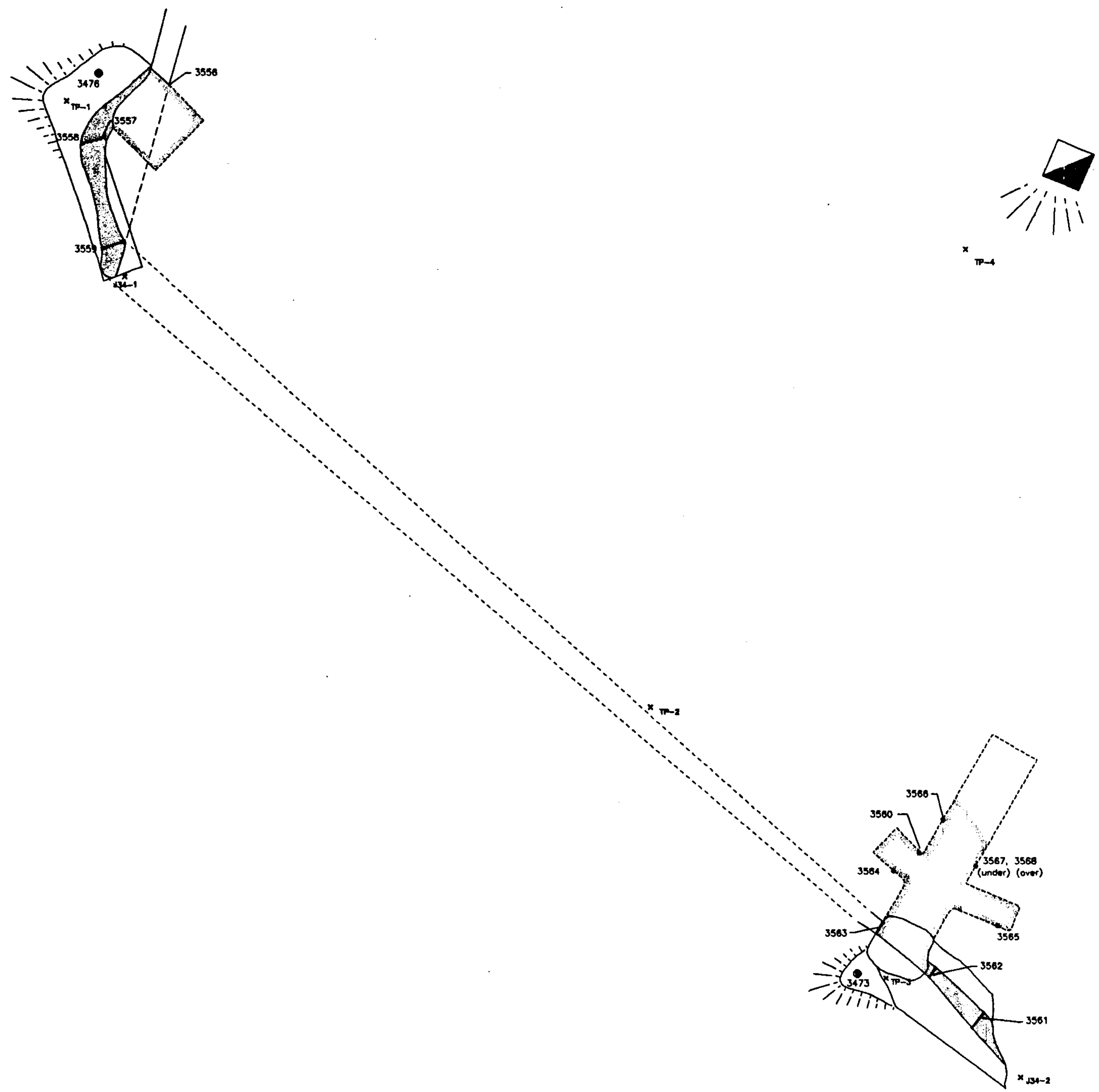
**TRENCH A-1 ZONE
SECTIONS
SILVER + ARSENIC OVERLAY**

LC / DW / JK 28/08/02 - 03/09/02

A-J Trench A-1 Sections Ag-As.dwg 9/24/02

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

27,044



0 2 4 6 8 10
SCALE 1 : 200

EXPLANATION

2556	Sample number
●	Grab sample
•	Vertical channel sample location
⟷	Horizontal or subhorizontal or subvertical channel sample location.
J-34×	Survey control or turning point, (tp).
▒	Mineralized horizon; gossan and/or arsenopyrite.

FIGURE 5a

ATHELSTAN - JACKPOT PROPERTY
GRAND FORKS, BRITISH COLUMBIA
CANADA

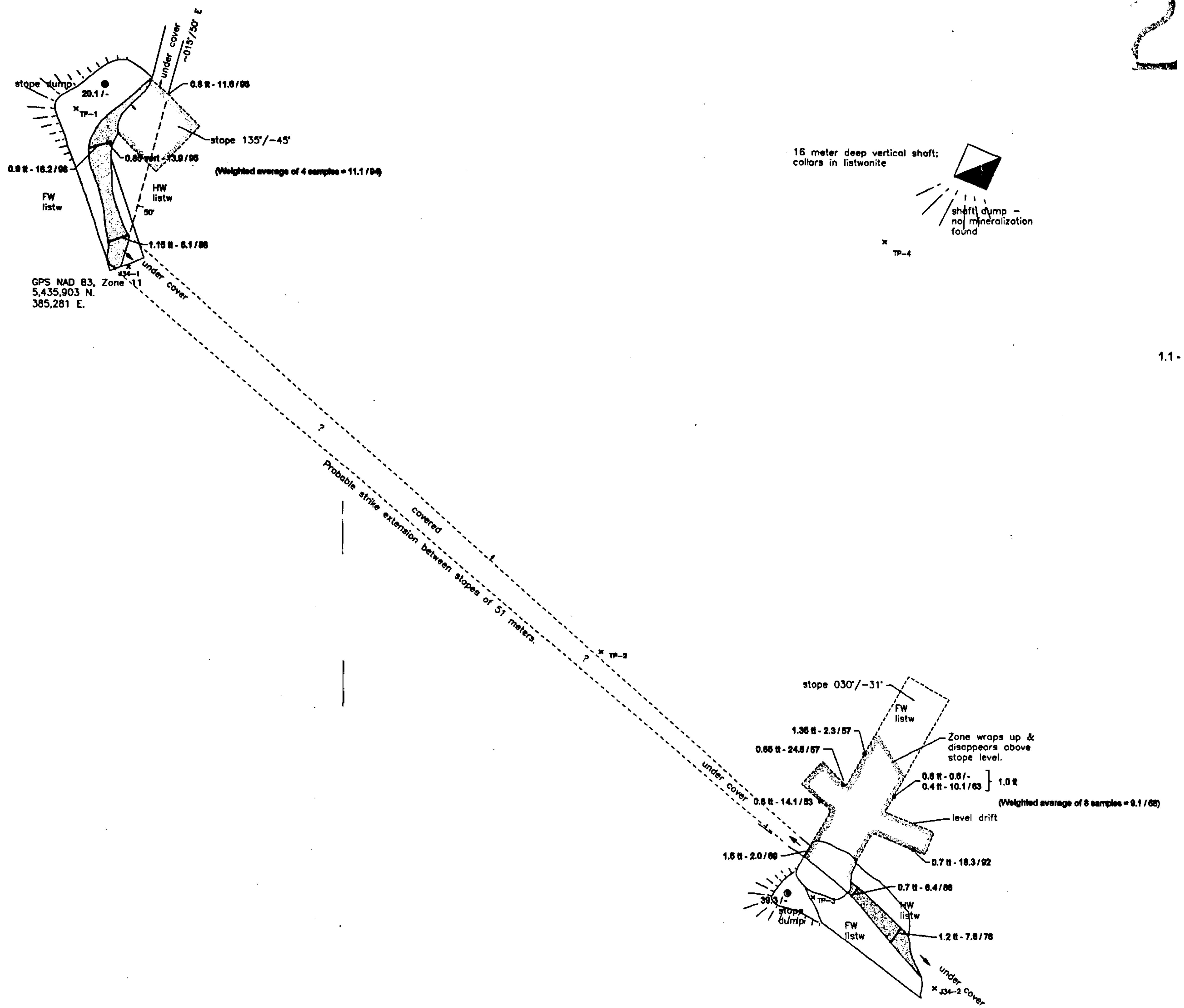
J-34 AREA
SAMPLE NUMBERS OVERLAY

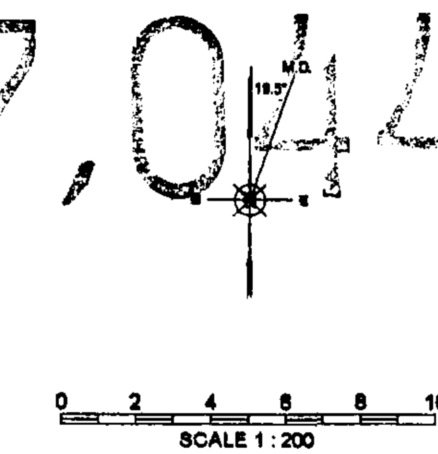
LC / DW / JK 26/08/02 - 03/09/02

A-J Trench J-34 Area- sample.dwg 9/27/02

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

27,044





EXPLANATION

1.1 - 18.2 / 81	Channel sampled meters - g/t Au / % CN Sol. Au
18.7 / -	No CN Sol. Au assay.
tt	True thickness
◉	Grab sample
•	Vertical channel sample location.
—	Horizontal or subhorizontal or subvertical channel sample location.
J-34 ×	Survey control or turning point, (TP).
(shaded box)	Mineralized horizon; gossan and/or arsenopyrite.
HW	Hanging wall of mineralized horizon.
FW	Footwall of mineralized horizon.
listw	Listwanite, (host rock = limonitic quartz carbonate schist).

FIGURE 5b

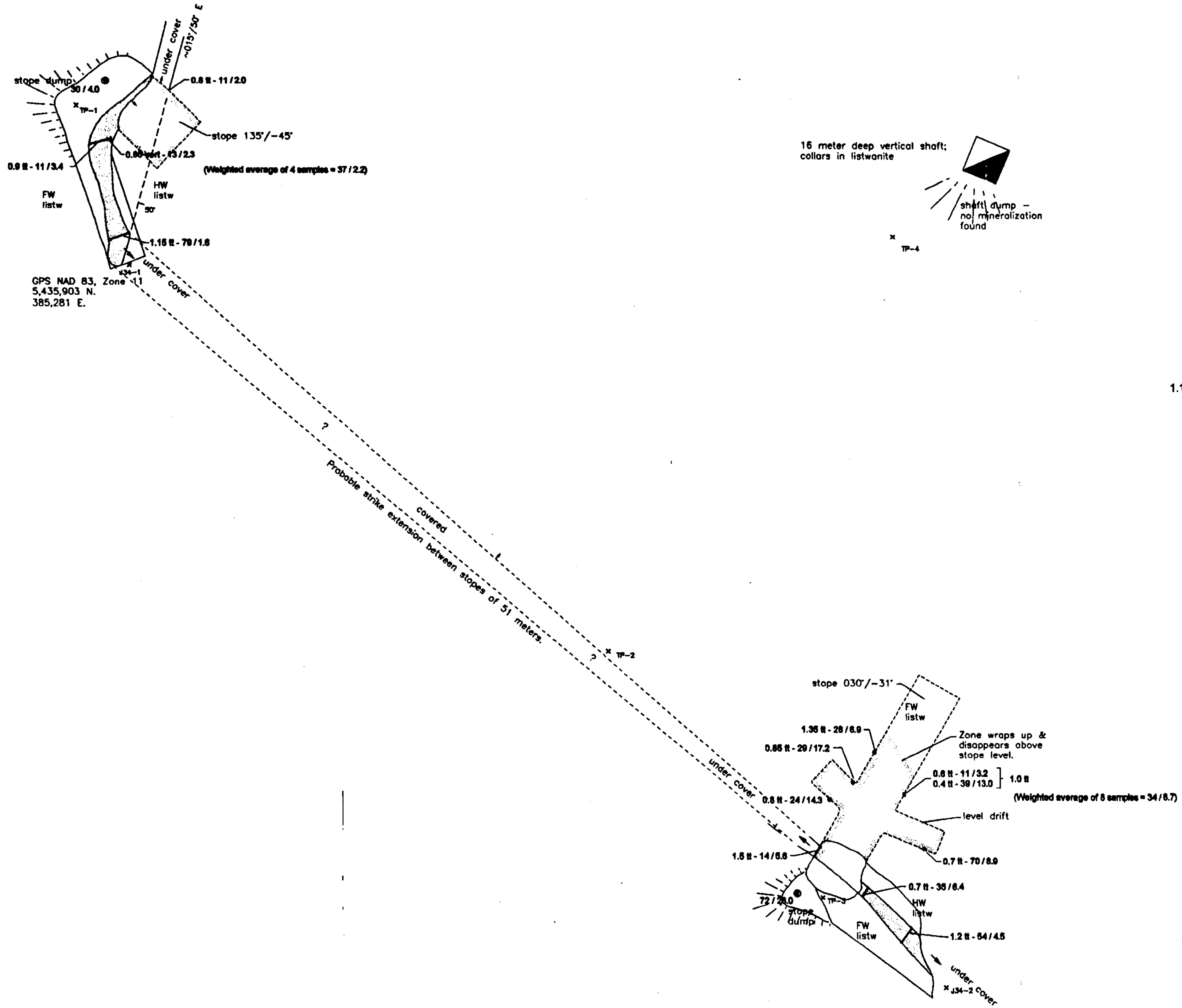
ATHELSTAN - JACKPOT PROPERTY
GRAND FORKS, BRITISH COLUMBIA
CANADA

J-34 AREA
GOLD + CN SOL. GOLD
BASE MAP

LC / DW / JK 28/08/02 - 03/09/02

A-J Trench J-34 Area Au.dwg 9/23/02

27,042



EXPLANATION

1.1 - 28 / 6.9	Channel sampled meters - g/t Ag / % As
tt	True thickness
⊛	Grab sample
•	Vertical channel sample location.
⟝	Horizontal or subhorizontal or subvertical channel sample location.
J-34 ×	Survey control or turning point, (TP).
⬚	Mineralized horizon; gossan and/or arsenopyrite.
HW	Hanging wall of mineralized horizon.
FW	Footwall of mineralized horizon.
listw	Listwanite, (host rock = limonitic quartz carbonate schist).

FIGURE 5c

ATHELSTAN - JACKPOT PROPERTY

GRAND FORKS, BRITISH COLUMBIA
CANADA

J-34 AREA
SILVER + ARSENIC OVERLAY

LC / DW / JK 28/08/02 - 03/09/02

A-J Trench J-34 Area Ag-As.dwg 9/23/02