093790

1997 SUMMARY REPORT

GROUND GEOPHYSICAL AND GEOCHEMICAL, AND DIAMOND DRILL PROGRAMS CONDUCTED ON THE PUCK 1-80 AND CUP 1-24 CLAIMS FINLAYSON LAKE AREA, YUKON TERRITORY

YB55979-YB56058 AND YB87695 – YB87719
NTS 105 G/8
Latitude 61 23'N, Longitude 130 03'W
WATSON LAKE MINING DISTRICT

VOLUME 1

prepared for

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by

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March 17, 1998

RPT/98-012

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 80,750.00.

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

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1.0 INTRODUCTION

The PUCK property, located in the Finlayson Lake area of Southeast Yukon, consists of 80 claims owned by Expatriate Resources Limited (Expatriate) and is currently operated under an Option Agreement by Westmin Resources Limited (Westmin). The property now also consists of a further 24 fractional claims staked by Westmin Resources Limited in 1996. The PUCK property lies immediately south of the Westmin/ATNA FOOT claims which host the Wolverine Deposit, and covers the southern extension of the stratigraphic package which is believed to host both the Wolverine and the Kudz Ze Kayah (or ABM) Volcanogenic Massive Sulfide deposit.

Archer, Cathro and Associates Ltd. (ACA), on behalf of Expatriate Resources Ltd., staked the PUCK property in 1994. During the summer of 1995 a soil geochemical sampling program was conducted by ACA on the northern half of the property. In November and December of 1995 Westmin flew an Airborne Geophysical Survey over all of its properties in the Finlayson Lake area which included the PUCK. In December of 1995 Westmin entered into an agreement with Expatriate regarding the evaluation of several of Expatriate's properties in the area as potential joint venture projects whereby Westmin had the right to direct $1 Million of exploration on four selected properties by purchasing shares in Expatriate. The PUCK property was one of the selected properties and an intensive exploration program was carried out in 1996, which, due to the proximity of Westmin's infrastructure at Wolverine Lake, was conducted by Westmin. In September of 1996 Westmin formally selected the PUCK property at which time an option agreement came into effect whereby Westmin could earn a 50% interest in the property by fulfilling a work commitment of $2 Million over the next 2 years (inclusive the 1996 exploration program). An area of influence clause in the Westmin Resources Ltd.–ATNA Resources Ltd. Wolverine Joint Venture agreement currently includes ATNA in any agreements concerning any PUCK

claims lying within a 3km radius of the original FOOT claim block that covers the Wolverine Deposit. Discussions are ongoing between Westmin and ATNA that would see ATNA become a party to the option agreement concerning the entire PUCK property.

Exploration on the PUCK property in 1997 continued where the 1996 program left off. Five drill holes were completed as follow-up holes to the previous drilling and another five drill holes were completed as step out holes to the north and south of the previous year's work. This year's diamond drilling totaled 8828' (2691m) bringing the total footage completed on the property to date to 13,206' (4025m) in 16 drill holes. A total of 26km of linecutting and subsequent ground geophysical surveys (MAX-MIN and magnetics) were completed on the southern half of the property between the area examined in 1996 and the southern claim boundary. The completion of work on this 2.3km long area completes ground geophysical surveys on a total of 71km of grid lines covering the entire 6.8km strike length of the prospective stratigraphy on the property. Also, a small soil sampling program, totaling 128 samples, was completed on the west side of Go Creek in order to test for any potential fault repetitions of the stratigraphy.

Geologically, there still exists considerable potential for the discovery of a massive sulfide orebody on the PUCK property. The most encouraging results of the drilling to date were located in holes PK97-14 and 16. Hole 14 intersected an interesting zone of sericite (plus minor silicification) at the wolverine horizon, which contained abundant disseminated pyrite and occasional sphalerite stringers. This represents the first time that sphalerite mineralization, which has normally been observed higher in the section around the Carbonate Exhalite and Iron Formations, had been encountered at the wolverine horizon. Hole 16 was also a very interesting hole which was drilled as a follow up to the discovery of the Sable Zone that was made on the FOOT claims on the northern edge of the PUCK property by Westmin in late August. Hole 16 encountered minor sphalerite

mineralization and fairly intense sericite alteration of footwall Rhyolitic lapilli tuffs at (and below) the wolverine horizon, and may indicate that the Sable massive sulfide extends onto the northern end of the PUCK property. The alteration found in hole 16 may also indicate that other massive sulfide lenses exist in the area (ie. Down-dip).

2.1 PROPERTY LOCATION AND CLAIM INFORMATION

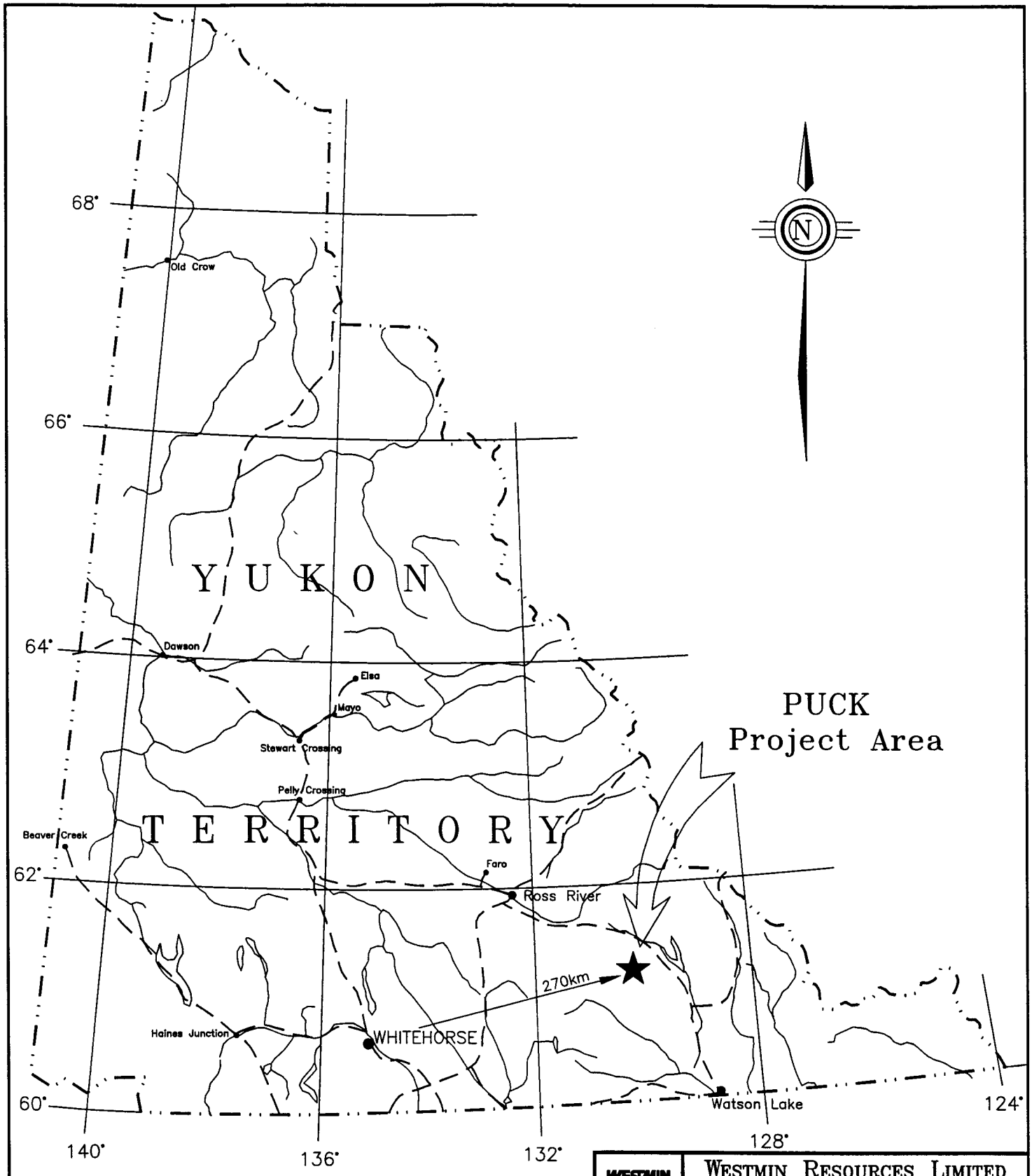
The PUCK property is located in southeast Yukon and is roughly centered on latitude 61°23'N and longitude 130°03'W (UTM 442500E, 6807000N) on NTS map sheet 105G/8 (figure 1). The property lies approximately 270 kilometres to the east-northeast of Whitehorse, and roughly half way (or 150 kilometres) between Ross River and Watson Lake. It comprises 80 contiguous quartz mineral claims which are located within the Watson Lake Mining District and are registered in the name of Archer, Cathro & Associates (1981) Limited which holds them in trust for Expatriate Resources Limited. An additional 24 fractional claims were staked in October of 1996 by Westmin Resources Limited (see figure 2). Claim registration data is tabulated in table 1.

Claim Name	Grant Number	Date of Expiration
PUCK 1 - 80	YB55979 - YB56058	March 17, 2009
CUP 1 - 24	YB87695 – YB87719	March 17, 2001

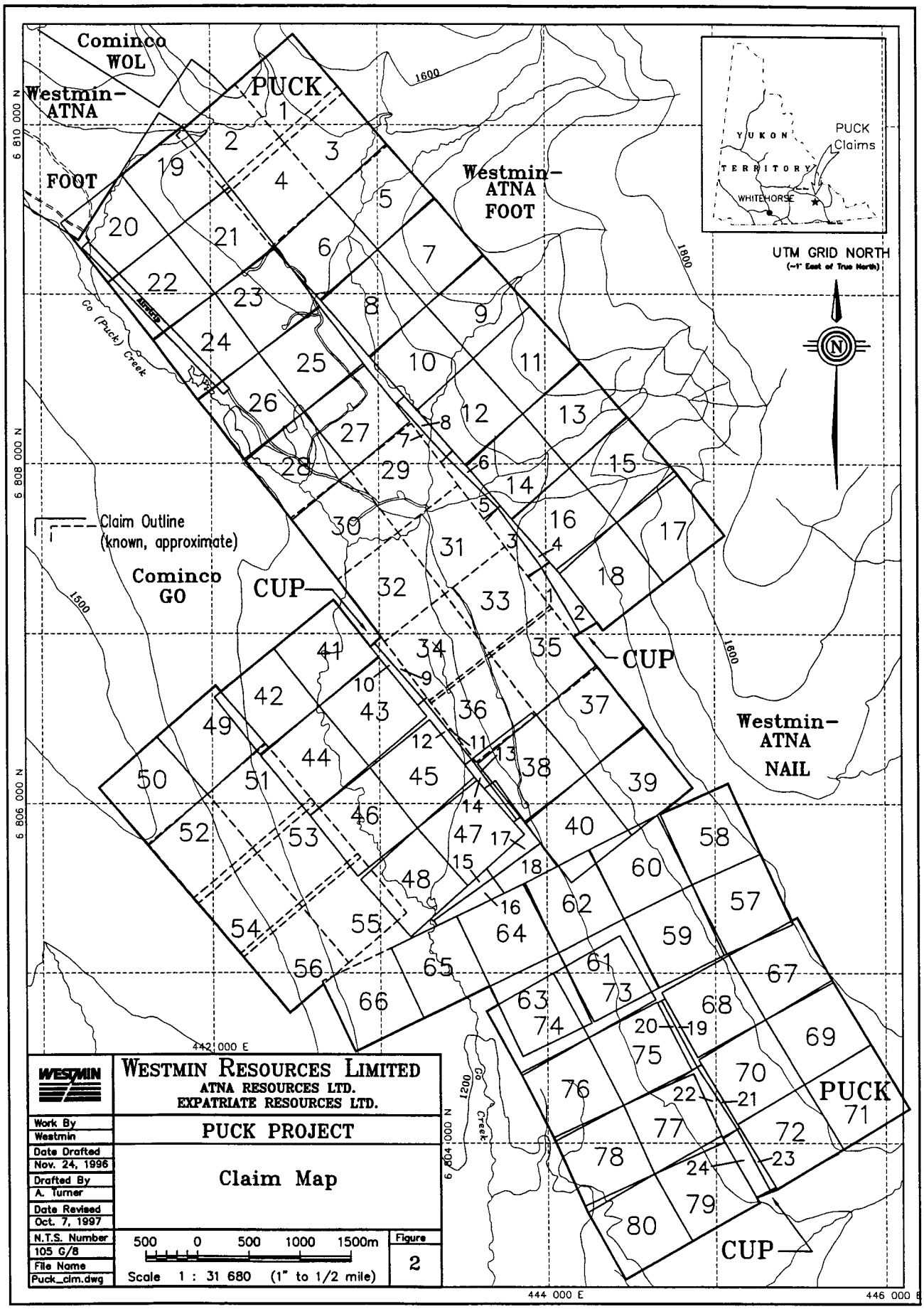
Table 1. Summary of Claim Information.

2.2 PROPERTY ACCESS

The 1997 exploration program on the PUCK property was coordinated from, and was aided by its proximity to, Westmin's Wolverine Lake basecamp. In order to support their exploration activities efficiently, Westmin constructed a



WESTMIN	WESTMIN RESOURCES LIMITED ATNA RESOURCES LIMITED EXPATRIATE RESOURCES LIMITED
Work By Westmin	PUCK PROJECT
Date Drafted Nov. 24, 1996	Project Location Sketch
Drafted By A. Turner	
N.T.S. Number	50 0 50 100 150km Scale 1 : 5 000 000
File Name Puck_loc.dwg	Figure 1


Cominco
WOL
Westmin-
ATNA
PUCK
FOOT
Westmin-
ATNA
FOOT
Cominco
GO
CUP
Westmin-
ATNA
NAIL
CUP
PUCK
CUP
Claim Outline
(known, approximate)
YUKON
TERRITORY
WHITEHORSE
PUCK
Claims
UTM GRID NORTH
(~1° East of True North)
N
1600
1800
1500
1200
6 810 000 N
6 808 000 N
6 806 000 N
6 804 000 N
442 000 E
444 000 E
446 000 E
Co (Puck) Creek
Co Creek
WESTMIN
WESTMIN RESOURCES LIMITED
ATNA RESOURCES LTD.
EXPATRIATE RESOURCES LTD.
PUCK PROJECT
Claim Map
Work By
Westmin
Date Drafted
Nov. 24, 1996
Drafted By
A. Turner
Date Revised
Oct. 7, 1997
N.T.S. Number
105 G/8
File Name
Puck_clm.dwg
500 0 500 1000 1500m
Scale 1 : 31 680 (1" to 1/2 mile)
Figure
2

~3000 foot gravel airstrip in February and March of 1996 which is located in the northwest corner of the PUCK property. The property can be accessed in approximately 1.5 hours from Whitehorse by light fixed wing aircraft (Cessna 207, or Shorts Sky Van) operated by Summit Air Charters Ltd. The airstrip is a federally registered aerodrome and can only be used in emergency situations or with the expressed written consent of Westmin Resources Limited prior to use.

The property may also be accessed by a combination of road and helicopter from Watson Lake to the south or Ross River to the north. The property is a short 5-minute helicopter trip from a staging area that is located approximately 150km north of Watson Lake at the turn off to the Frances Lake campground on the Robert Campbell Highway. The property is a slightly longer 10-15 minute helicopter trip from a second staging area located in a gravel pit approximately 150km south of Ross River, also on the Robert Campbell Highway, at the Nouga (Wolverine) Creek crossing. Direct helicopter access from either Watson Lake or Ross River requires a little more than 1 hour of flying.

2.3 PROPERTY PHYSIOGRAPHY

The PUCK Property covers the bottom and northeast sides of a fairly narrow U-shaped glacial valley and adjacent upland area near the northern edge of the Campbell Range in the Pelly Mountains. Elevations range from a minimum of approximately 1210m (3975') in the southern portions of the property to nearly 1700m (5575') on the east central edge of the property. The airstrip is at an elevation of approximately 1325m (or 4350').

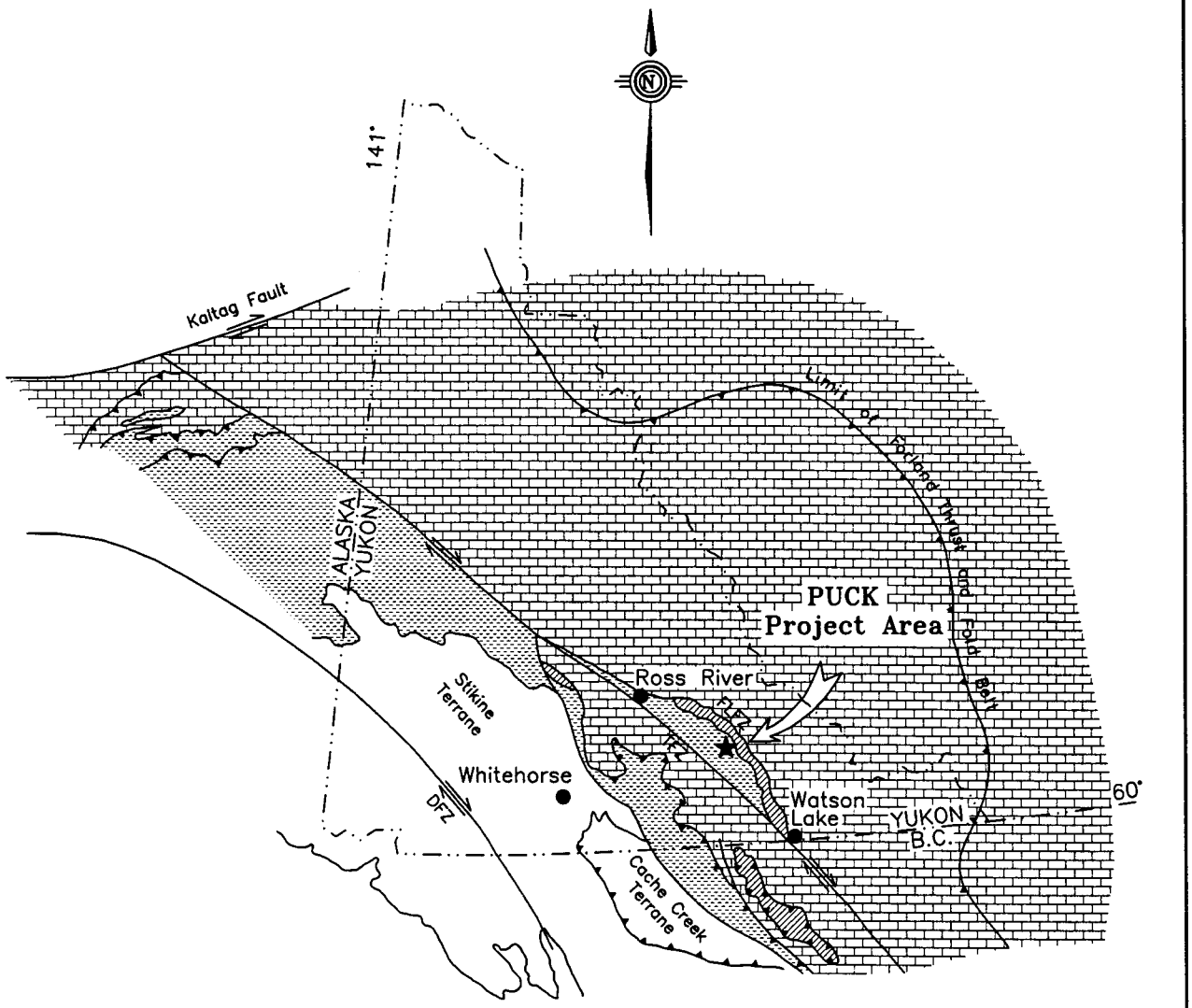
Vegetation on the property consists of thick patches of buckbrush and willow in valley bottoms which give way up slope to thickets of stunted black spruce, balsam, and willow which in turn give way to a mixture of thick buckbrush and open grassy patches nearer the tops of the hills. The southern two thirds of

the property, which covers a gentle southwest facing slope on the east side of Go Creek valley, was burned by a natural forest fire in 1994. Permafrost has been encountered throughout the property where the insulation provided by tree cover exists.

The main geographic feature on the property is a U-shaped valley which hosts the informally named Go Creek which flows to the south to Money Creek, a tributary to Frances River, which is a part of the Liard River watershed. Go creek itself has a very gentle grade of approximately 1-2°. However, slopes on the sides of the valley average 10-15° and can reach upwards of 20°. The valley bottoms are filled with coarse glacial/fluvial material which gives way up slope to till covered terraces and finally talus covered slopes (Wengzynowski, 1996). Overburden thicknesses encountered during the 1996 and 1997 drill programs ranged from 2.1m to 7.9m and consisted primarily of clay-rich till with occasionally abundant bedrock boulders. Overburden thickness is presumed to increase to greater than 10 m in the bottom of the main valley. Outcrop on the PUCK property is limited to the upper portions of the hilly areas above 1400m and averages only 1-2%.

3.0 REGIONAL GEOLOGY

The property is situated within the Finlayson Lake Belt of the southeastern Yukon, an elongate composite body bounded on the southwest by the Tintina Fault Zone and on the northeast by the Finlayson Lake Fault Zone (figure 3). The Tintina Fault Zone is a major transcurrent structure along which approximately 450 km of dextral offset occurred in Late Cretaceous and/or early Tertiary time (Tempelman-Kluit et al., 1976). The Finlayson Lake Fault Zone is described by Mortensen (1996, personal communication) as a complex structure which may in part represent a transgressive dextral paleosuture.



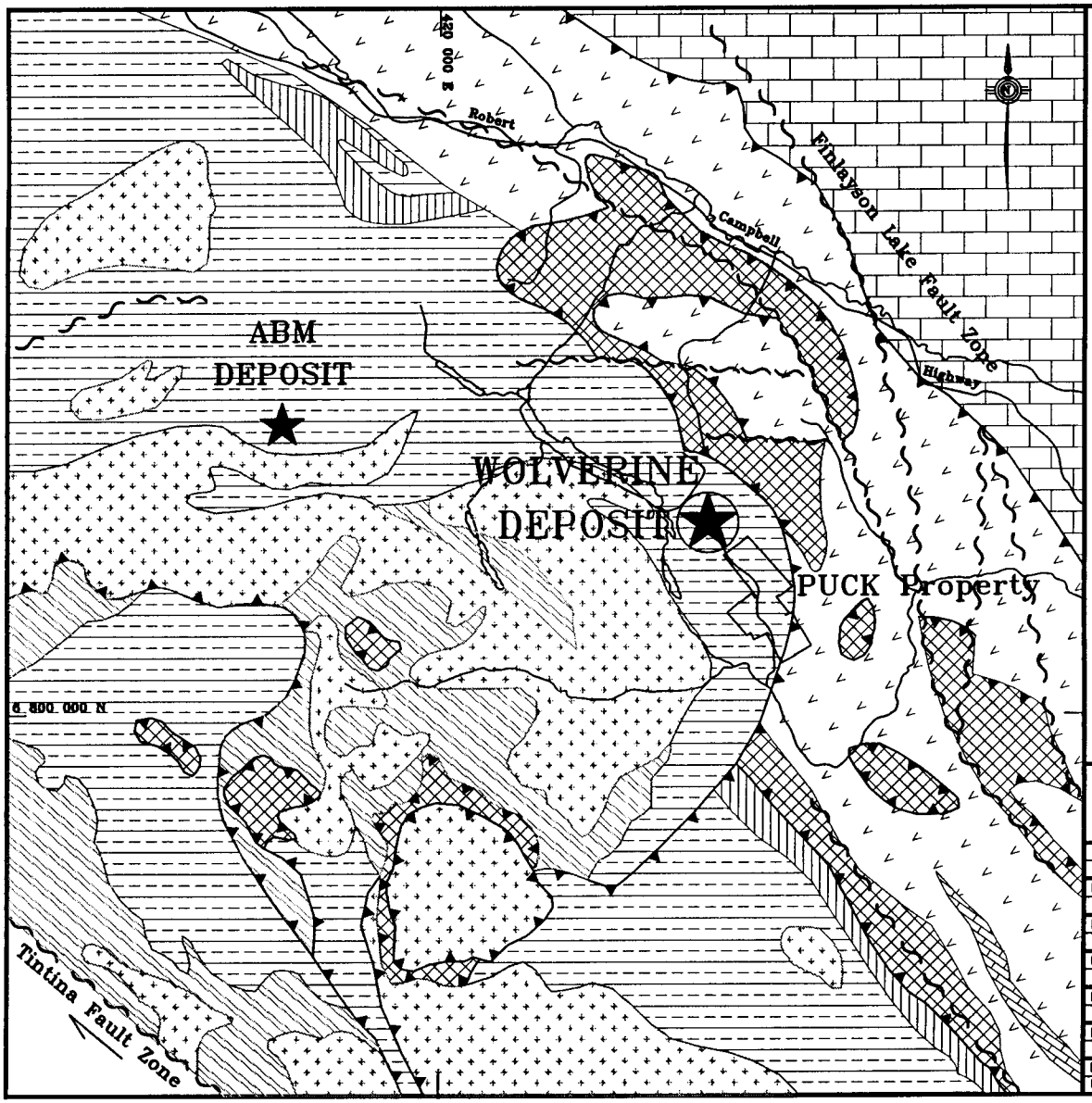
LEGEND

- North American Miogeoclinal Strata
- Yukon – Tanana Terrane
- Slide Mountain Terrane
- Thrust Fault
- Strike–Slip Fault, with sense of movement
  - FLFZ – Finlayson Lake Fault Zone
  - TFZ – Tintina Fault Zone
  - DFZ – Denali Fault Zone

WESTMIN	WESTMIN RESOURCES LIMITED ATNA RESOURCES LTD. EXPATRIATE RESOURCES LTD.
Work By	PUCK PROJECT
Date Drafted Nov. 24, 1996	Tectonic Setting
Drafted By A.T. & J.K.	after Mortensen and Jilson (1985)
N.T.S. Number	100 0 100 200 250km Scale1 : 10 000 000
File Name YUK_TAN.DWG	Figure 3

Much of the Finlayson Lake Belt is underlain by rocks grouped with the Yukon Tanana Terrane (YTT) by Mortensen and Jilson (1985) (see figure 4). The YTT underlies a large area of western to southeastern Yukon and east-central Alaska. The YTT rocks in the Finlayson Lake Belt are believed to be offset along the Tintina Fault from the main body of the YTT in the western Yukon. Mortensen (1992) has divided the YTT in the Yukon into 3 main structural assemblages: 1) the Nisling assemblage, a lower quartzite and marble package of possible Proterozoic and/or Cambrian age; 2) the middle Nasina assemblage, a package of Late Devonian to mid Mississippian carbonaceous metasedimentary and mafic to felsic metavolcanic rocks; and 3) an upper package of mid-Permian felsic metavolcanics (Klondike Schist) and metaplutonic rocks. Recent interpretations conclude that the YTT represents a mid-Paleozoic volcanic-plutonic arc assemblage built on continental crust (Nokleberg and Aleinikoff, 1985; Mortensen and Jilson, 1985; Foster et al., 1987; and Mortensen, 1992). Although the andesitic volcanics one would expect to be voluminous in a continental margin arc setting are seemingly not present in the Finlayson Lake Belt, Mortensen (1996, personal communication) suggests that large K-feldspar megacrystic granitoids which form part of the core of the belt are intermediate in composition and therefore, together with the volcanics, represent a differentiated igneous suite.

Regional metamorphism throughout the YTT ranges from very low grade to amphibolite facies. Radiometric dating suggests that metamorphic events may have occurred at different times in different subterranes. Mortensen and Jilson (1985) have subdivided the YTT in the Finlayson Lake Belt into six major lithologic packages: 1) a sequence of layered metasediments and metamorphic rocks; 2) Paleozoic metaplutonic rocks; 3) middle to late Paleozoic mafic and ultramafic igneous rocks and chert; 4) early Mesozoic clastic rocks; 5) Mesozoic plutonic rocks; and 6) Late Cretaceous and/or early Tertiary volcanic rocks. The



GEOLOGICAL LEGEND

Slide Mountain Terrane

- Carbonate Rocks
- Metavolcanic Rocks and Cherts
- Ultramafic Rocks

Nisutlin Subterrane and Pelly Gneissic Terrane

- Intrusive Rocks : para- and orthogneisses
- Upper Unit : carbonate and quartzite
- Middle Unit : mafic and felsic volcanics and carbonaceous sedfiments
- Lower Unit : quartzite and marble

Autocthonous North American Rocks

- Cambrian Limestones and Shales
- Displaced Cambrian Limestones and Shales lying in and west of the Tintina Fault Zone
- Minor Faults
- Thrust Faults
- Westmin/Expatriate: PUCK property outline

WESTMIN

WESTMIN RESOURCES LIMITED
ATNA RESOURCES LIMITED
EXPATRIATE RESOURCES LIMITED

Work By	WESTMIN
Date Drafted	Nov. 24, 1996
Drafted By	A. Turner
Date Revised	
Revised By	
N.T.S. Number	
File Name	Puck_r_g.dwg

PUCK PROJECT

Regional Geology Map

Modified after Mortensen and Jilson (1985)

4 0 4 8 12km

SCALE 1 : 400,000

Figure 4

layered metamorphic package (LMP) is approximately 3 km thick and is divisible into: 1) a lower Devonian and older quartz+mica+/-garnet schist and quartzite package with an upper marble/calcareous schist unit; 2) a middle dark siliceous to carbonaceous phyllite unit interlayered with mafic and felsic volcanics. U-Pb zircon ages of the felsic metavolcanics range from Late Devonian to mid-Mississippian; and 3) an upper white carbonate/quartzite package of Early Pennsylvanian to Permian age (Mortensen and Jilson, 1985). Paleozoic metaplutonic rocks are divided by Mortensen and Jilson (1985) into: 1) the Simpson range plutonic suite of quartz-monzonite to quartz-diorite (349-359 Ma, U-Pb zircon); 2) augen orthogneiss (342 Ma, Rb-Sr); and 3) monzonitic orthogneiss (340-345 Ma, U-Pb zircon). The first two are considered to have an intrusive relationship with the lower layered metamorphic suite due to pyritization of wallrocks in the case of the Simpson suite and a hornfelsed aureole bordering the augen orthogneiss.

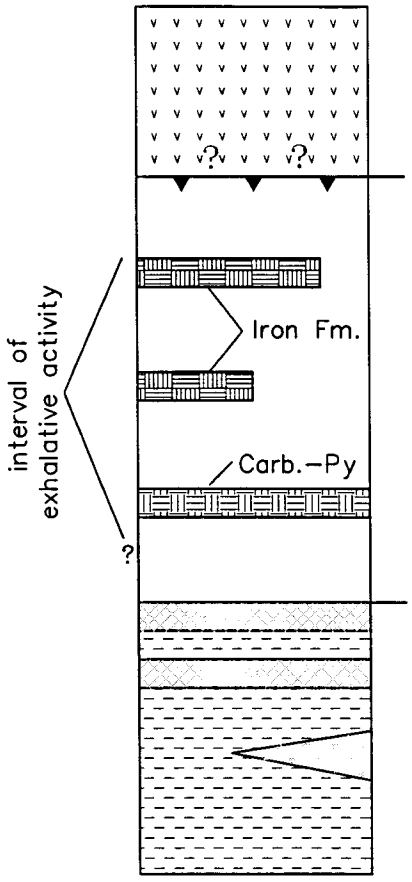
Large bodies of massive to pillowed greenstone, chert, and variably serpentinized ultramafic to mafic plutonic rocks are common in the northeastern portion of the Finlayson Lake belt and have been interpreted (Tempelman-Kluit, 1979 and Mortensen and Jilson, 1985) as fragments of a dismembered ophiolite. Tempelman-Kluit (1979) mapped these rocks as part of the Anvil allochthon whereas they are referred to as the Campbell Range Belt by Mortensen and Jilson (1985). They are thought to correlate with the Slide Mountain terrane in British Columbia and based upon U-Pb zircon dates and fossil ages they range from latest Devonian to Early Permian in age. The southern portion of the Finlayson Lake Fault Zone adjacent to the Wolverine Lake area is overlapped by thrust sheets of the Campbell Range Belt in a flower-fault structural relationship (Mortensen, 1996 personal communication). The ophiolitic package is interpreted to have been thrust from northeast to southwest over the middle package of the LMP in the Wolverine Lake area.

The middle package of the LMP comprises dark fine-grained strongly carbonaceous metasediments interlayered with massive to schistose felsic volcanic to tuffaceous rocks and chloritic to amphibolitic schists after mafic tuffaceous rocks. The most significant massive sulfide occurrences in the Finlayson Lake area (Wolverine, ABM/Kudz Ze Kayah, and Fire Lake) are hosted by this volcano-sedimentary package and are associated with carbonaceous metasediments and/or felsic metavolcanics.

4.0 PROPERTY GEOLOGY

The property has not yet been mapped. This is due primarily to the limited amount of outcrop on the property (less than 5%), the limited budget of the 1995 ACA exploration program, and also to the rapid advancement of the property to the drilling stage in early 1996 which occurred while the property was still snow covered. As a result of the drilling completed to date, which now totals in excess of 13,200' in sixteen widely spaced holes, the subsurface geology of the property is fairly well understood and a relatively consistent stratigraphic column (figure 5) has emerged.

The property is underlain by phyllites with interbedded mafic and felsic volcanics which are part of the middle unit of the Paleozoic Layered Metamorphic Sequence of Mortensen and Jilson (1985). Three basic lithologic packages have been identified on the PUCK property thus far. The lowermost unit in the stratigraphic section is a basal sedimentary sequence that is dominated by carbonaceous argillites and becomes mixed toward its top with quartz and/or feldspar-phyric Rhyolitic tuffs and flows. The lower sedimentary sequence gives way to a middle unit of primarily very fine-grained banded aphyric Rhyolitic volcanics, and minor argillites, and includes several exhalative horizons beginning with a Carbonate-Pyrite+/-Barite unit which is overlain by at least one and occasionally two Iron Formations. The uppermost unit consists of dominantly



Upper Unit

Fairly massive, dark green, fine–grained, intermediate to mafic volcanics; with minor interbedded thinly banded Rhyolite

possible fault contact

Middle Unit

Thinly banded, grey to greenish grey, fine–grained, apheric Rhyolite; with minor Iron Formation and an exhalative Carbonate – Pyrite horizon

Lower Unit

Marked by the appearance of quartz and/or feldspar – pheric Rhyolites, with minor Feldspar Porphyrytic Augen Schists, giving way to carbonaceous sediments

WESTMIN	WESTMIN RESOURCES LIMITED ATNA RESOURCES LTD. EXPATRIATE RESOURCES LTD.
Work By WESTMIN	PUCK PROJECT
Date Drafted Nov. 24, 1996	Stratigraphic Column
Drafted By A.Turner	
N.T.S. Number 105 G/8	Figure 5
File Name Puck_str.dwg	

fine-grained intermediate to mafic volcanic rocks with minor interbedded cherts and argillites. The contact between the lower and middle units appears to be conformable. The contact between the middle and upper units appears to be complicated by a major rheological difference between the underlying brittle aphyric rhyolites and the overlying chrorite-rich andesites. This contact appears to be faulted in holes 4,11, and 12 in the southern part of the PUCK property, but appears conformable in holes to the north. It is more likely however, that this fault is simply a localized structure and not a major detachment zone (as would be expected below rocks of the Slide Mountain Terrane).

Although the property has not yet been mapped in detail, Geologists were able to spend portions of several days prospecting on parts of the gridded area in 1996. Several outcrops of grey and greenish-grey, fine-grained, aphyric Rhyolite with up to 3-5% disseminated magnetite and minor disseminated pyrite, along with several small outcrops of magnetite-rich Iron Formation, were located. These outcrops represent portions of the middle unit of the stratigraphic package. No significant mineralization or alteration was observed, and the attitude of the rocks was consistent with that observed in the drill core and averages 060°/25°. This year the newly gridded southern portion of the property was prospected. No ourcops of aphyric rhyolites were observed presumably due to the thinning of this unit to the south. However, numerous outcrops of the mafic volcanics and associated interflow cherts and argillites were observed in the area around hole 11, and several outcrops of quartz-eye bearing rhyolites were found further downhill. No significant mineralization or alteration was observed in outcrop.

5.0 PREVIOUS WORK

The PUCK 1-80 claims were staked in August of 1994 by ACA in order to cover the southeast extension of the aeromagnetic anomaly which is closely associated with both the Kudz Ze Kayah and Wolverine Deposits (then known as

the Kink Showing). This anomaly was first published as part of a Regional Airborne Geophysical survey undertaken by the Geological Survey of Canada in 1961 (DMTS, 1963). There is no reported work on the property prior to its staking.

5.1 1994 SOIL GEOCHEMICAL SURVEY

Personnel from ACA carried out a brief exploration program on the property between August 23 and September 4 of 1995 which consisted primarily of a soil geochemical sampling program with some prospecting (Wengzynowski, 1996). A total of 210 soil samples were collected on a 100m x 200m spaced grid which covered the northern third of the property. The samples were analyzed for 32 elements by the Inductively Coupled Plasma Emission Spectrometry method (ICP), but were not analyzed for Au.

The geochemical response of all elements was extremely subdued with the possible exception of Cu, which produced isolated anomalies with values ranging between 17ppm and 152ppm. All but 8 of the silver values are below detectable limits, two of which returned a maximum value of only 0.4ppm. Lead and Zinc values were similarly low with respective minima and maxima of <2ppm and 26ppm for Pb and 26ppm and 150ppm for Zn.

5.2 1995 AIRBORNE GEOPHYSICAL SURVEY

A DIGHEMV electromagnetic/resistivity/magnetic/VLF survey was flown on behalf of Westmin Resources Limited over the PUCK property as part of a larger survey that covered most of the nearly 3000 claims in the Finlayson lake area of southeast Yukon in which the company holds an interest. The survey was conducted between November 3 and December 5, 1995. Of the 3509 line-km flown during the survey, 70.3 line-km were flown directly over the PUCK property. A condensed version of the original Dighem report is presented in Appendix D of

the 1996 PUCK assessment report (Turner and Terry, 1996) along with a full set of maps showing the area of the PUCK property.

The 1996 Dighem survey outlined a number of strong magnetic anomalies. The anomalies have been resolved out of the previously recognized broader anomaly and apparently indicate the extents of the Iron Formation(s) on the PUCK property. The positive magnetic anomalies indicate a consistent trend of the stratigraphy to the southeast across the entire length of the claim block. However, the intensity if the anomalies is quite variable. The discontinuity in the magnetic signature of the Iron Formations is interpreted as representing facies changes or "pinch-outs" rather than structural breaks. This is due to the lack of apparent offset of the anomalies and the apparent continuity of the adjacent conductive units. The broad bands of conductive strata on the south west side, stratigraphically underlying, the Iron Formation were interpreted as carbonaceous argillites, possible thrust faults, and potential sulfidic horizons, and were clearly shown to extend well to the south beyond the limits of the Iron Formation. Thus, the 1995 Airborne Geophysical Survey was able to show that the same stratigraphic package that hosts the Wolverine Deposit 2km to the north, complete with Iron Formation(s) and in particular the underlying highly conductive units, extends southward across the entire length of the PUCK property.

5.3 1996 GROUND GEOPHYSICAL SURVEY

A total of approximately 35km of Max-Min Electromagnetic and 40km of Magnetics and VLF surveys were completed on the PUCK grid by personnel from Scott Geophysics Ltd. between March 25 and April 19, 1996. The ground magnetic survey was successful in further resolving and clearly outlining the extent of the Iron Formation across the PUCK property. Also, the Max-Min survey was able to outline a series of strong conductors, which parallel and stratigraphically underlie the Iron Formation along the full length of the grid.

Immediately following the completion of the ground geophysical survey, all of the geophysical data available, including that from three test lines which covered the known extent of the Wolverine Deposit, was presented for interpretation to J. B. Boniwell of Excalibur International Consultants Ltd.

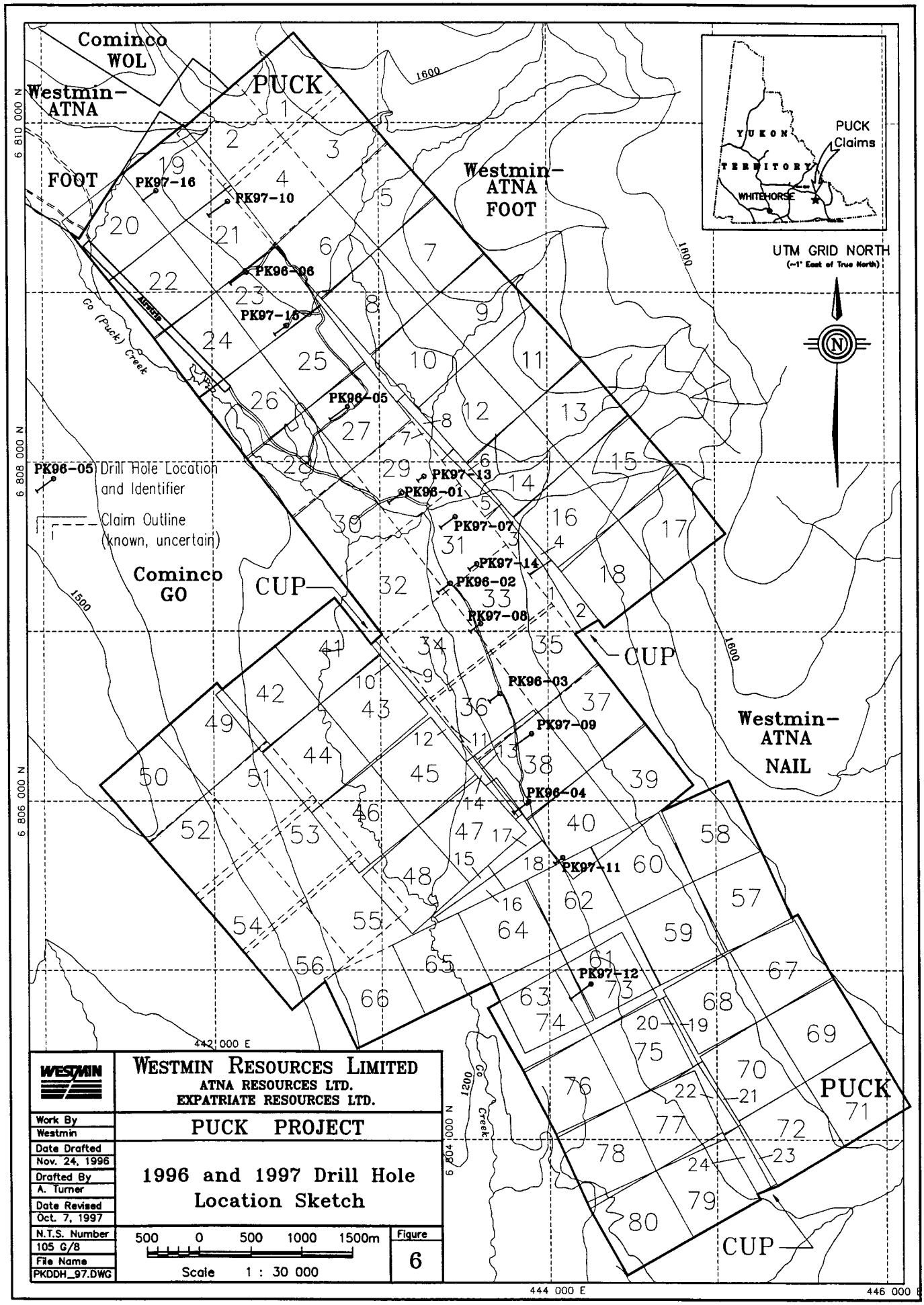
Boniwell recognized the Iron Formation on the PUCK property as being a continuation of that which exists in the hanging wall to the ore sequence at the Wolverine Deposit that is located 2km to the north. The ground survey was able to further resolve the Iron Formations and allow for an estimation of the relative abundance of magnetite. The ground survey was also able to show an approximate 50nT difference in the magnetic response between the argillite dominated lower unit of the stratigraphic package and the rhyolite dominated middle unit which presumably reflects trace amounts of finely disseminated magnetite in the overlying rhyolites.

A preliminary interpretation of the electromagnetic anomalies was also presented. Boniwell suggested that the first conductor to the southwest, stratigraphically below the Iron Formation, was too closely related spatially and was too continuous over the full extent of the gridded area to be the sulfide-bearing horizon. Instead the second conductor below the Iron Formation was considered as the primary target and was tentatively identified as the "base of the ore sequence". All of the conclusions and recommendations of the report were of an extremely tentative and preliminary nature due to the lack of hard geological data from the property, and thus the main recommendation of the report was a stratigraphic drill program to further investigate the geophysical anomalies.

5.4 1996 DIAMOND DRILL PROGRAM

Following the completion of the ground geophysical program, and subsequent preliminary interpretation, a four hole stratigraphic drill program was carried out on the gridded area of the PUCK property during May of 1996. A total of approximately 2982 feet (908.9m) of NQII diamond drilling was completed in four widely spaced holes (PK96-01 to -04, figure 6) which were chosen in order to test specific geophysical anomalies and also to examine the stratigraphy of the property over as much strike length as possible. An additional two drill holes, totaling 1396 feet (425.5m), were completed between September 8 and 19, 1996 (PK96-05 and -06) following the formal decision by Westmin to enter into an option agreement with Expatriate Resources on the PUCK property. Brief summaries of each of the 1996 and 1997 diamond drill holes are presented in Appendix E, along with drill hole sections showing Geology and down-hole Lithogeochemistry. Also, a Compilation Map summarizing all of the geophysical anomalies, along with all 1996 and 1997 diamond drill hole locations, is presented in Appendix F.

The 1996 diamond drill program was successful in allowing the examination of the property in the subsurface and allowing for the formation of a stratigraphic column which was presented in the Property Geology section of this report. The most significant geological discovery resulting from the drill program was the Carbonate-Pyrite (+/- Barite) unit (EXCP) which contained zones of up to 25cm of massive and semi-massive pyrite, which has been interpreted as being of an exhalative origin. The Carbonate-Pyrite unit and the Iron Formation(s) have been grouped together and identified as representing a "zone of exhalative activity". This zone is part of the middle unit of the stratigraphic column (see figure 4), and lies within the aphyric rhyolites which form the hanging wall to the "wolverine horizon" that is marked by the top of the porphyritic rhyolites. Although no base metal mineralization was found in the massive to semi-massive pyrite of



WESTMIN	WESTMIN RESOURCES LIMITED ATNA RESOURCES LTD. EXPATRIATE RESOURCES LTD.
Work By Westmin	PUCK PROJECT
Date Drafted Nov. 24, 1996	1996 and 1997 Drill Hole Location Sketch
Drafted By A. Turner	
Date Revised Oct. 7, 1997	
N.T.S. Number 105 G/8	500 0 500 1000 1500m Scale 1 : 30 000
File Name PKDDH_97.DWG	Figure 6

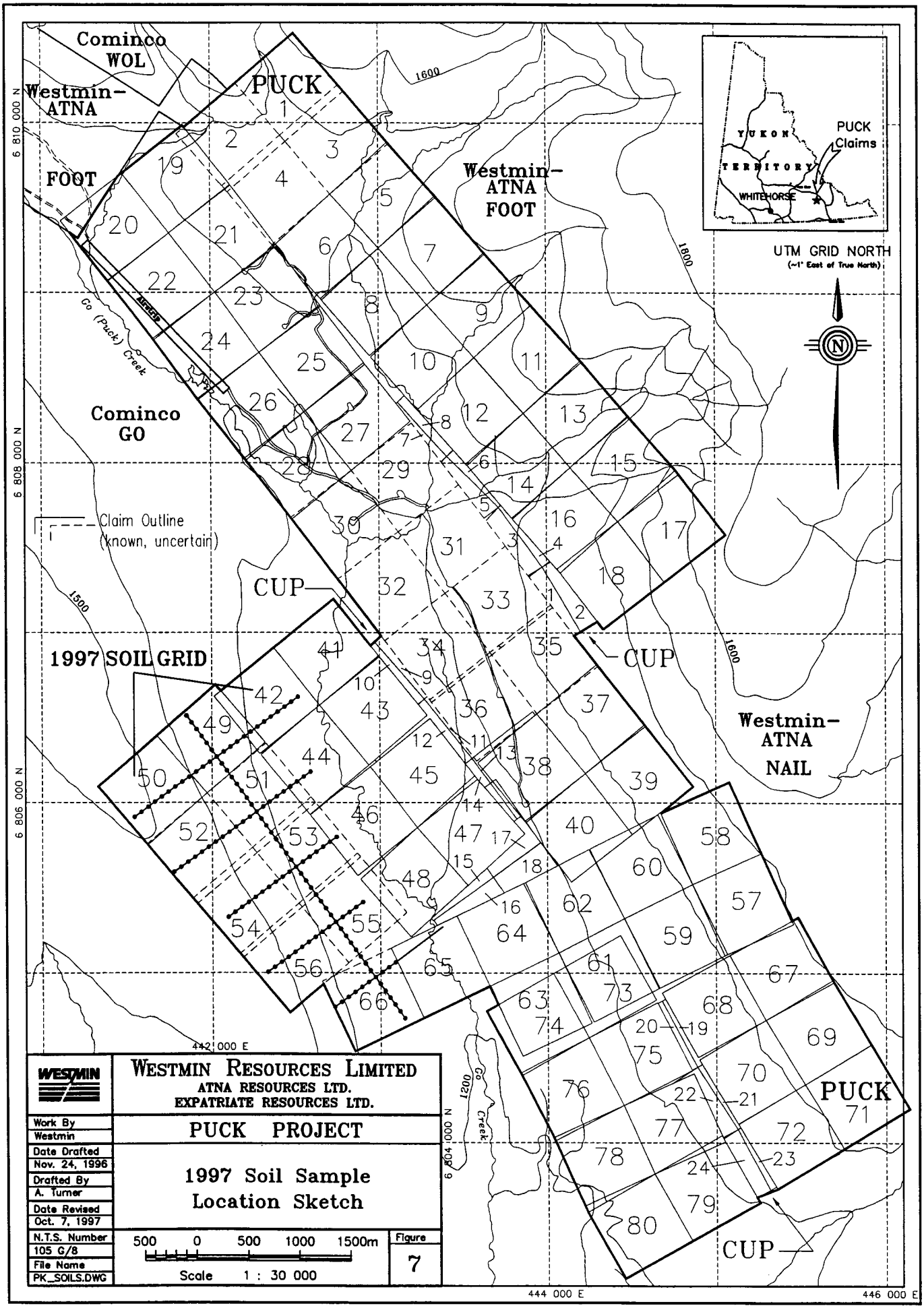
the EXCP, the exhalative zone was found to contain the majority of the significant base metal lithogeochemical anomalies identified by the 1996 drill program.

6.0 1997 PROGRAM OF WORK

Exploration on the PUCK property in 1997 continued where the 1996 program left off. Five drill holes were completed as follow-up holes to the previous drilling and another five drill holes were completed as step out holes to the north and south of the previous year's work. This year's diamond drilling totaled 8828' (2691m) bringing the total footage completed on the property to date to 13,206' (4025m) in 16 drill holes. A total of 26km of linecutting and subsequent ground geophysical surveys (MAX-MIN and magnetics) were completed on the southern half of the property between the area examined in 1996 and the southern claim boundary. The completion of work on this 2.3km long area completes ground geophysical surveys on a total of 71km of grid lines covering the entire 6.8km strike length of the prospective stratigraphy on the property. Also, a small soil sampling program, totaling 128 samples, was completed on the west side of Go Creek in order to test for any potential fault repetitions of the favorable stratigraphy.

6.1 1997 SOIL GEOCHEMICAL SURVEY

A small 128 sample reconnaissance scale soil geochemical survey was undertaken in September in order to test the portion of the property lying on the west side of Go Creek (see figure 7). The sampling program was complicated by the fact that the grid area is a northeast-facing slope and is covered by a fairly thick layer of organic material and permafrost. Consequently, anomalous values may represent organic scavenging as is indicated by the elevated Mn values. This being the case, however, the survey was successful in outlining some interesting anomalies. A statistical summary of the data is presented in table 2



WESTMIN	WESTMIN RESOURCES LIMITED ATNA RESOURCES LTD. EXPATRIATE RESOURCES LTD.
Work By Westmin	PUCK PROJECT
Date Drafted Nov. 24, 1996 Drafted By A. Turner Date Revised Oct. 7, 1997	1997 Soil Sample Location Sketch
N.T.S. Number 105 G/8 File Name PK_SOILS.DWG	500 0 500 1000 1500m Scale 1 : 30 000 Figure 7

and plots of Au, Ag, Cu, Pb, Zn, Ba. And Mn area presented in Appendix C of this report.

Statistics (n=128)					Perectiles						
Element	MAX	MEAN	MIN		99th	95th	90th	80th	75th	50th	25th
Au ppb	380	7.2	2.5	*	84	10	<detec.	<detec.	<detec.	<detec.	<detec.
Ag ppm	1.6	0.2	0.1	*	1.1	0.8	0.6	0.4	0.4	0.1	0.1
Cu ppm	131	30.7	8		105	69	57	45	40	24	17
Pb ppm	46	16.7	6		43	28	24	20	18	16	14
Zn ppm	254	110.2	36		228	201	167	138	129	102	82
Ba ppm	3030	1224.8	680		2602	1886	1682	1378	1313	1120	1020
Al %	8.25	6.23	4.25		8.17	7.61	7.09	6.78	6.65	6.26	5.79
Be ppm	3.5	1.9	1		3.4	2.5	2.5	2.5	2	2	1.5
Bi ppm	6	1.2	1	*	6	2	1	1	1	1	1
Ca %	2.73	0.86	0.15		2.63	2.03	1.31	1.11	1.06	0.76	0.50
Cd ppm	4.5	0.6	0.25	*	3.4	1.8	1.2	0.5	0.5	<detec.	<detec.
Co ppm	12	5.3	1		12	10	9	7	7	5	4
Cr ppm	111	57.2	17		106	91	82	70	67	56	46
Fe %	5.17	2.74	1.41		4.49	3.77	3.53	3.24	3.02	2.62	2.42
K %	4.14	2.17	1		3.94	2.88	2.75	2.55	2.51	2.18	1.80
Mg %	1.46	0.76	0.29		1.35	1.28	1.07	0.97	0.93	0.74	0.58
Mn ppm	885	367.0	110		824	718	628	462	431	318	254
Mo ppm	6	1.7	0.5	*	5	4	3	3	3	1	1
Na %	2.39	1.10	0.42		2.06	1.67	1.48	1.36	1.28	1.07	0.86
Ni ppm	60	24.6	7		53	40	36	32	29	23	19
P ppm	4420	1151.6	370		3919	2206	1793	1522	1380	955	765
Sr ppm	544	161.8	69		381	279	248	200	184	148	119
Ti %	0.52	0.27	0.16		0.46	0.38	0.33	0.30	0.29	0.26	0.23
V ppm	404	118.8	52		215.11	188.65	174.6	157.6	143	112.5	83
W ppm	<detec.	<detec.	<detec.	*	<detec.	<detec.	<detec.	<detec.	<detec.	<detec.	<detec.
* - data below detectable limits replaced by a value equal to of one half of the detection limit.											

Table 2. Statistical Summary of the 1997 Soil Geochemical Data.

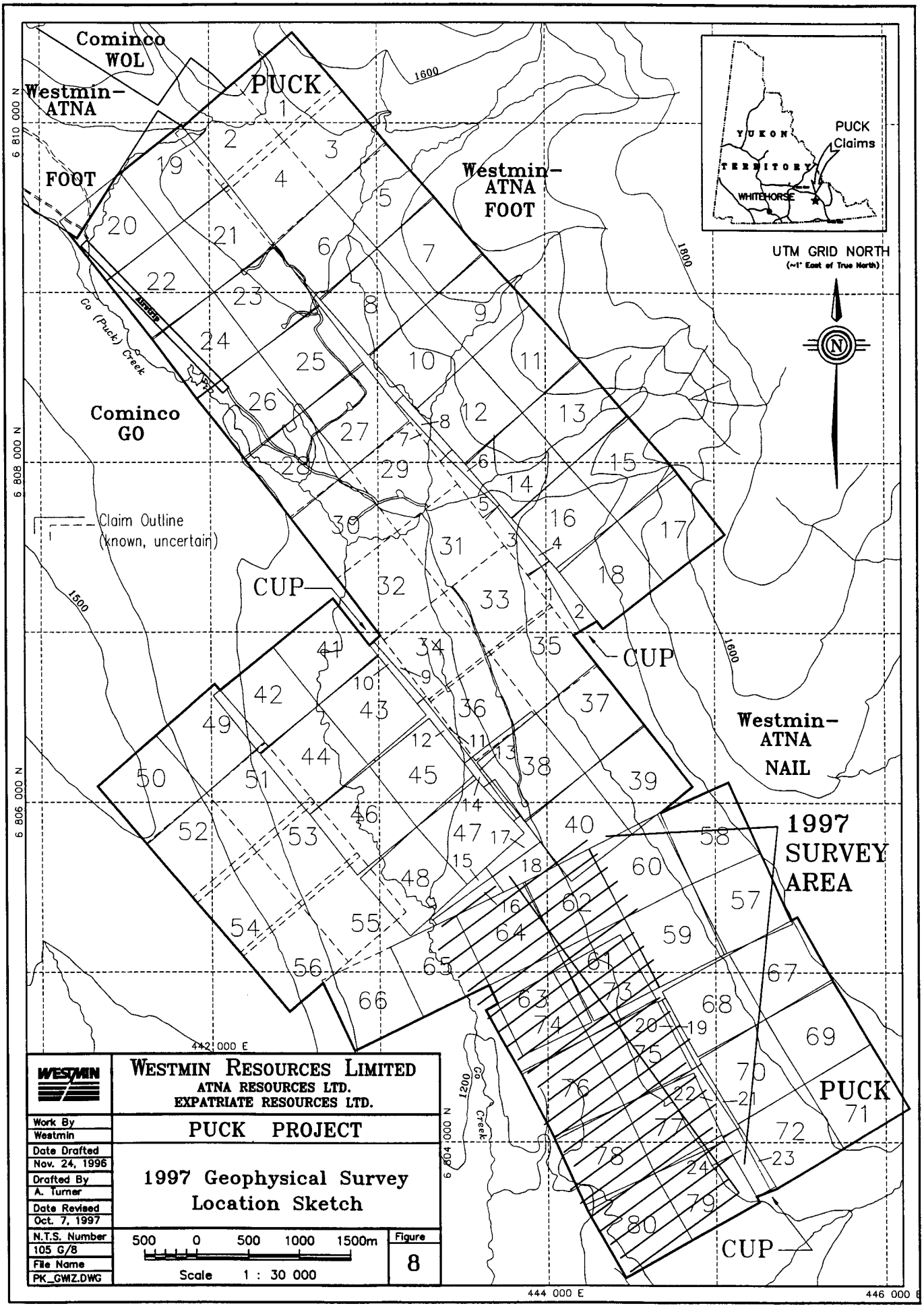
Two weak geochemical anomalies were identified on the 1997 soil grid. The first is represented by a small concentration of anomalous Pb values near the southern end of the grid and is not considered significant. The second, and most significant of the two anomalous areas, is located on the northern end of the grid. This anomaly is marked by coincident elevated values of Ag, Cu, Zn and Ba. The maxima for these elements from this area are 1.6ppm, 131ppm, 254ppm, and 3030ppm respectively. Also present in the northern end of the grid is a single strongly anomalous Au value of 380ppb.

6.2 1997 GROUND GEOPHYSICAL SURVEY

Personnel from Amerok Geoscience Limited completed ground total magnetic field and horizontal loop electromagnetic field surveys over the southern portions of the PUCK property that were not surveyed in 1996. The 1997 survey covered 23.8km of grid lines along a 2.3km extension to the baseline extending to the southern property boundary (see figure 8). A report for the 1997 PUCK Geophysical surveys was prepared by Amerok Geoscience Limited and is presented in Appendix D.

The 1997 magnetic survey was located south of the known extent of the Iron Formation which had been previously defined by the 1996 survey. Thus, as expected, the survey did not encounter any significant anomalies. The survey was able to further define the contact between the rhyolytic/sedimentary rocks and the overlying mafic volcanics. This boundary is marked by an approximate 50nT increase in magnetic susceptibility in the mafic volcanics. The magnetic survey identified several isolated 'bull's-eye' anomalies, however, subsequent drill testing of one of these anomalies on line 700N showed that the anomaly lay within magnetite-rich mafic volcanic units which had apparently been moved to the west along cross-cutting faults that had not previously been recognized.

The 1997 horizontal loop electromagnetic field survey identified 14 anomalies which were grouped into two anomaly systems. The eastern anomaly system was interpreted by Mike Powers of Amerok Geoscience Limited as being a continuation of the main conductive trend identified by the 1996 survey which was determined to be graphitic argillites underlying the Ore Sequence ("wolverine horizon"). One anomaly, in particular, along this trend was identified as being of significance due its geometry and intensity. This anomaly is located near the north end of the eastern anomaly system and roughly joins up with the main conductive trend from the 1996 survey. Subsequent drill testing of this anomaly



WESTMIN	WESTMIN RESOURCES LIMITED ATNA RESOURCES LTD. EXPATRIATE RESOURCES LTD.
Work By Westmin	PUCK PROJECT
Date Drafted Nov. 24, 1996	1997 Geophysical Survey Location Sketch
Drafted By A. Turner	
Date Revised Oct. 7, 1997	
N.T.S. Number 105 G/8	500 0 500 1000 1500m Scale 1 : 30 000
File Name PK_GWIZ.DWG	Figure 8

(PK97-11 on L1400N) showed that it was probably reflecting a very dark black carbonaceous shale that occurs immediately above a thin QFP. The western anomaly system appeared to be located stratigraphically deeper within the footwall argillites. Two anomalies were interpreted as being significant along this trend due to their occurrence proximal to weak magnetic responses. These anomalies were interpreted as potential stringer (cpy-po) mineralized zones beneath massive sulfides. Subsequent drilling showed that one (PK97-12 on L700N), and presumably both, of these anomalies was in fact caused by the overlying mafic volcanics that had been moved westward by cross-cutting structures that were mentioned earlier.

6.3 1997 DIAMOND DRILL PROGRAM

A total of 10 diamond drill holes were completed on the PUCK property in 1997 (PK97-07 to PK97-16, see figure 6), thus bringing the total number of drill holes on the property to 16. The 1997 drilling totaled 8,828' (2,691m) bringing the total footage drilled to date to 13,211' (4,027m). Brief summaries of each of the 1996 and 1997 drill holes, logs for each of the 1997 drill holes, and sections with Geology and down-hole Lithogeochemistry are presented in Appendix E. All drill cores remaining after sampling are stored at the Westmin airstrip on claim PUCK 20.

The 1997 drill program was completed in several stages. The first four drill holes were completed between May 31 and June 19 and included holes 7 through 10. Holes 97-07 to 97-09 were planned to follow-up holes 96-01 to 96–04 in order to test the Carbonate Exhalite unit that they encountered. The first phase also included hole 97-10 which was planned to test a strong conductor in the northern part of the property closer to the FOOT claims (and the Wolverine deposit).

The second phase of drilling was completed between July 23 and August 7. This phase included holes 97-11 through 97-15. Briefly, holes 11 and 12 were collared to test the two most interesting geophysical anomalies outlined by the 1997 ground geophysical survey on the southern portion of the grid. Holes 13 and 14 were collared to test down-dip of the two holes which to date had encountered the greatest concentration of sphalerite stringers, holes 1 and 2. Hole 15 was the last hole completed during the second phase of drilling in 1997 and was intended to be the last hole of the program. Hole 15 was collared in order to test a strong conductor and to examine the stratigraphy in the large untested area between holes 96-05 and 96-06.

The final drill hole of the 1997 program was hole 97-16 which was completed between Aug 18 and Aug 19. This short hole was collared in order to test the stratigraphy approximately 250m southeast along strike from the Sable Zone where, in early August, Westmin Resources had intersected a thin, but high grade, massive sulfide horizon just inside the FOOT claims at the north end of the PUCK property.

7.0 DRILL PROGRAM DISCUSSION

The following discussion summarizes both the 1996 and 1997 PUCK drill programs. A slightly more detailed summary of each of the 16 drill holes has been included in Appendix E iii at the back of this report. It is important to note that the drilling to date has examined two different stratigraphic targets. The first is the "Wolverine Horizon" (WH) which refers to the stratigraphic position of the Wolverine Deposit, which occurs approximately 3km northwest of the PUCK claims. The WH is marked throughout the area by the sudden transition from quartz and/or feldspar-phyric rhyolites to a package of sediments and rhyolites devoid of phenocrysts. The second target, or zone of interest, is the zone of exhalative activity associated with the Iron Formation(s) and, more importantly,

the calcite-pyrite horizon. This zone is located anywhere from <5m to nearly 20m in the hanging wall to the WH on the PUCK property.

7.1 Target 1: Wolverine Horizon

With the possible exception of drill hole PK96-01, no significant base metal mineralization has been observed along the WH on the PUCK property to date. Also, little evidence of extensive chlorite or sericite alteration at or near the WH has thus far been encountered. Hole 1 intersected a 0.9m zone of gouged black argillite and minor sphalerite-galena ruble which returned values of 1.16% Pb and 2.72% Zn. Also of interest was the association of this mineralization and an underlying thin, fault gouged, chloritic (Mg-sericitic?) altered Rhyolite lapilli tuff. This mineralization was tested further to the east with hole 7, and down-dip with hole 13. Both of these follow-up holes failed to intersect any significant mineralization or alteration.

The most interesting zones of alteration and mineralization encountered at the WH to date were found in holes 14 and 16. Hole 14 was drilled down-dip from hole 2 and encountered minor stringers of sphalerite averaging 0.5% Zn over 2.6m between 254.2m and 256.8m. This mineralization is associated with sericite alteration (and silicification) of QFP's and Rhyolite lapilli tuffs. Hole 16 was drilled as a long step out from the Sable Zone, a thin high-grade massive sulfide that was recently discovered on the adjacent FOOT claims. This final hole of the 1997 drill program encountered significant (Mg) sericite alteration and minor sphalerite stringers averaging 0.26% Zn over 9.7m between 124.7m and 134.4m, which may indicate that Sable mineralization extends onto the north end of the PUCK property.

7.2 Target 2: The Carbonate-Pyrite Horizon

The second target, which can best be described as a zone of exhalative activity, is located well up in the hanging wall to the WH and contains the majority of the sphalerite stringer mineralization that has been encountered thus far. The most interesting intersections are in holes 2, 3, 7, and 10. All of these holes encountered abundant thin sphalerite stringers in the hanging wall to the WH, and holes 2 and 3 encountered an interesting pyrite-rich carbonate exhalite with semi-massive to massive py over 1-2m but with little or no base metal mineralization.

7.3 Geology

In order to better guide future exploration on the PUCK property and to make the inevitable comparison with the Wolverine deposit area it is important to examine the geological information that has been gained from the PUCK drilling in terms of the regional geological framework.

It has been shown that the same stratigraphic package that hosts the Wolverine deposit exists over a strike length of some 5-6km on the PUCK claims. Over this length, several broad patterns are apparent with the most important being the changing geometry of the stratigraphic section. The zone of exhalative activity from the WH to the top of the Iron Formation(s), representative of the entire stratigraphic package, shows a consistent thinning toward the south across the PUCK property. The stratigraphic thickness of this zone appears to thin consistently from slightly more than 100m in hole 10 in the north to only a few metres in holes 11 and 12 in the south (note: the Fe Fm is not present in holes 11 and 12, therefor the zone of exhalative activity is taken from the WH to the carbonate exhalite). In fact the Iron formation itself simply pinches out in the middle of the property. This trend, along with changes in grain size in the underlying tuffaceous porphyrytic rhyolites, appears to indicates that as one moves south on the PUCK property one is moving more and more distal to the

source(s) of volcanic and potential massive sulfide vents. This might mean that the current strike of the rocks is nearly perpendicular to that of the basin in which they were deposited. The implication of this interpretation would be that any trend or structural axis that may be controlling mineralization at the Wolverine Deposit, would be sub-parallel to the current attitude of the rocks and, therefor, down-dip or skyed-out at the PUCK property. The case could be made that due to late transverse faulting this trend may be brought back onto the northern part of the PUCK property in the area around the Sable Zone. The geophysical surveys completed to date however do not appear to indicate the presence of other major cross-cutting faults elsewhere on the property (other than the fault interpreted between lines 1400N and 700N which have already been drill tested).

8.0 CONCLUSIONS AND RECOMMENDATIONS

Although the drilling results to date have been less than spectacular, it is important to note that the drilling includes only 16 fairly short holes which have tested a 5km long strike extension of the wolverine stratigraphy on the PUCK claim block. This has resulted in a relatively wide drill spacing of approximately 3-400m. Also, most of these drill holes have targeted relatively shallow geophysical anomalies. The 1996 and 1997 exploration programs have, however, resulted in the subsequent identification of a fairly specific area of interest on the gridded portion of the PUCK property.

The most obvious areas for future exploration on the PUCK claims are the areas around drill holes PK97-14 and PK97-16. The area at the north end of the PUCK claims, near hole 16, should be examined in order to test for a possible extension to the Sable Zone. The area near hole 14 should be examined further with a number of drill holes. Potential follow-up holes in this area should be arrayed in such a way as to test both along strike and down dip from the existing drill holes for a possible new zone of mineralization which may be associated with

the interesting sericite alteration that was encountered at the Wolverine Horizon in hole 14 this year.

A possible third area of interest would be the large thickness of mafic rocks which overly the entire package and may be part of the Slide Mountain terrane. These rocks host the Money Cu-bearing massive sulfide showing that occurs just northeast of the PUCK claims. This area has the potential to host a Cu-Co-Au deposit similar either to the Fire Lake deposit of Columbia Gold Mines to the west, or the Ice deposit of Expatriate Resources to the north. To date there has been little work, other than a few prospecting traverses, conducted on this part of the claim block.

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APPENDIX A

STATEMENTS OF QUALIFICATIONS,
PERSONNEL LIST
AND
STATEMENT OF EXPENDITURES

STATEMENT OF QUALIFICATIONS

I, Andrew J. Turner of #302, 1144 St. George's Avenue, North Vancouver, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT I am a Geologist in the employ of Westmin Resources Limited with offices at #904-1055 Dunsmuir Street, Vancouver, British Columbia.

2. THAT I have practiced my profession with various mining companies in Alberta, Ontario, the Northwest Territories, and the Yukon Territory for eight years.

3. THAT I am a graduate of the University of Alberta (1989) and hold a Honors Bachelor of Science Degree in Geology.

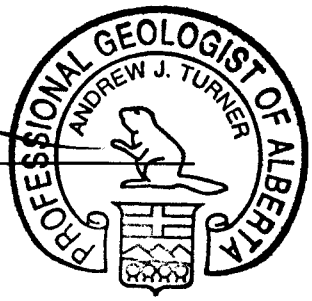
4. THAT I have been registered as a Professional Geologist with the Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA) since 1994.

5. THAT I am a member of the Prospectors and Developers Association of Canada, and the British Columbia and Yukon Chamber of Mines.

6. THAT this report is based upon work on the property that I have either personally conducted or supervised between May 1 and October 1, 1997.

7. THAT I have no direct interest in the property described herein, nor do I expect to receive any such interest.

DATED at Vancouver, British Columbia this 15 day of April, 1998.



Andrew J. Turner, P. Geol.

RPT/98-012

STATEMENT OF QUALIFICATIONS

I, David A. Terry of 1568 Maplehurst Circle, Burnaby, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT I am a Project Geologist with Westmin Resources Limited with offices at #904-1055 Dunsmuir Street, Vancouver, British Columbia.

2. THAT I have practiced my profession with various mining companies in Ontario, Quebec, British Columbia, Yukon, the United States, and Argentina for nine years.

3. THAT I am a graduate of the University of Western Ontario and hold a Bachelor of Science in Geology (1988) and a Doctor of Philosophy in Geology (1997).

4. THAT I am a member of the Prospectors and Developers Association of Canada, the Geological Society of America, and the Society of Economic Geologists.

5. THAT this report is based on property work I personally supervised between July 15 and Sept. 9, 1997, 1997.

6. THAT I have no direct interest in the property described herein, nor do I expect to receive any interest.

DATED at Vancouver, British Columbia this 15 day of April, 1998.

David A. Terry, Ph.D.,
Project Geologist

PERSONNEL LIST

Andrew J. Turner, P.Geol. (Project Geologist)
#302, 1144 St. George's Avenue
North Vancouver, B.C.
V7L 3H8

David A. Terry, Ph. D. (Geologist)
#904-1055 Dunsmuir St.
Vancouver, B.C.
V7X 1C4

Geoff Bradshaw (Geologist)
#904-1055 Dunsmuir St.
Vancouver, B.C.
V7X 1C4

Jan Tindle (Field Assistant)
3341 Lakeside Road
Whistler, B.C
V0N 1B3

STATEMENT OF EXPENDITURES

I, Andrew J. Turner as agent for Westmin Resources Limited, #904-1055 Dunsmuir Street, Vancouver, B.C. do believe and solemnly declare that a field program consisting of linecutting, ground geophysical surveys, soil sampling, prospecting, and diamond drilling was carried out on the PUCK claims between May 1 and October 1, 1997.

The following expenses were incurred during the course of this work.

PUCK PROJECT	
Item	**Cost**
Geophysical Contractors	$9,834
Linecutting	$11,654
Diamond Drilling	$260,680
Bulldozing	$3,988
Labour	$19,537
Helicopter	$36,830
Camp Expenses	$62,245
Geochem-Assays	$21,245
Total Expenditures	**$426,013**

Calculation of Average Costs		
Total Drilling Expenditures	$	400,685
Total Geophysical Expenditures	$	21,488
Total Soil Sampling Expenditures	$	3,840
Total	$	426,013
Number of metres Drilled		2691
Number of metres Surveyed		23800
Number of Soil Samples		128
Cost per metre Drilled	**$**	**148.91**
Cost per metre Surveyed	**$**	**0.90**
Cost per Soil Sample	**$**	**30.00**

Note 1: Figures from Westmin Resources Ltd. Dec 31, 1997 Statements of Expenditures.
Note 2: The Average costs calculated above were used to determine the total amount spent on each claim for assessment purposes. (see Table 4)

Table 3. Summary of Exploration Expenditures

1. Wages are based on actual man days spent on the property.
2. Travel expenses relate only to travel to and from the project within the Yukon Territory.
3. Helicopter charges are based on actual hours flown.
4. Assay charges are based on actual numbers of samples from the property.

And I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

Dated at Vancouver, in the Province of British Columbia, this 15th day of April, 1998.

Andrew J. Turner, P.Geol.

RPT/98-012

Table 4. Exploration Expenditures by Claim.

Claim Number	Grant Number	Drilling (m)	Drilling Costs	Geophys. (m)	Geophys. Costs	Soil Samples	Soil Costs	total $'s per claim
PUCK 1	55979							$ -
PUCK 2	55980							$ -
PUCK 3	55981							$ -
PUCK 4	55982							$ -
PUCK 5	55983							$ -
PUCK 6	55984							$ -
PUCK 7	55985							$ -
PUCK 8	56986							$ -
PUCK 9	55987							$ -
PUCK 10	55988							$ -
PUCK 11	55989							$ -
PUCK 12	55990							$ -
PUCK 13	55991							$ -
PUCK 14	55992							$ -
PUCK 15	55993							$ -
PUCK 16	55994							$ -
PUCK 17	55995							$ -
PUCK 18	55996							$ -
PUCK 19	55997	210.4	$ 31,330.51					$ 31,330.51
PUCK 20	55998							$ -
PUCK 21	55999	409.7	$ 61,008.12					$ 61,008.12
PUCK 22	56000							$ -
PUCK 23	56001	178.9	$ 26,639.86					$ 26,639.86
PUCK 24	56002							$ -
PUCK 25	56003							$ -
PUCK 26	56004							$ -
PUCK 27	56005							$ -
PUCK 28	56006							$ -
PUCK 29	56007	264.3	$ 39,356.71					$ 39,356.71
PUCK 30	56008							$ -
PUCK 31	56009	634.0	$ 94,408.46					$ 94,408.46
PUCK 32	56010							$ -
PUCK 33	56011	230.7	$ 34,353.36					$ 34,353.36
PUCK 34	56012							$ -
PUCK 35	56013							$ -
PUCK 36	56014							$ -
PUCK 37	56015							$ -
PUCK 38	56016	282.5	$ 42,066.86					$ 42,066.86
PUCK 39	56017							$ -
PUCK 40	56018	172.8	$ 25,731.52	210	$ 189.60			$ 25,921.12
PUCK 41	56019							$ -
PUCK 42	56020					7	$ 210.00	$ 210.00
PUCK 41	56021							$ -
PUCK 44	56022					3	$ 90.00	$ 90.00
PUCK 45	56023							$ -
PUCK 46	56024							$ -

Table 4 cont'd. Exploration Expenditures by Claim.

Claim Number	Grant Number	Drilling (m)	Drilling Costs	Geophys. (m)	Geophys. Costs	Soil Samples	Soil Costs	total $'s per claim
PUCK 47	56025							$ -
PUCK 48	56026							$ -
PUCK 49	56027					17	$ 510.00	$ 510.00
PUCK 50	56028					9	$ 270.00	$ 270.00
PUCK 51	56029					17	$ 510.00	$ 510.00
PUCK 52	56030					9	$ 270.00	$ 270.00
PUCK 53	56031					16	$ 480.00	$ 480.00
PUCK 54	56032					8	$ 240.00	$ 240.00
PUCK 55	56033					14	$ 420.00	$ 420.00
PUCK 56	56034					9	$ 270.00	$ 270.00
PUCK 57	56035							$ -
PUCK 58	56036							$ -
PUCK 59	56037			120	$ 108.34			$ 108.34
PUCK 60	56038			460	$ 415.31			$ 415.31
PUCK 61	56039	307.5	$ 45,789.59	2160	$ 1,950.17			$ 47,739.76
PUCK 62	56040			2160	$ 1,950.17			$ 1,950.17
PUCK 63	56041			2290	$ 2,067.54			$ 2,067.54
PUCK 64	56042			2580	$ 2,329.37			$ 2,329.37
PUCK 65	56043			680	$ 613.94			$ 613.94
PUCK 66	56044					19	$ 570.00	$ 570.00
PUCK 67	56045							$ -
PUCK 68	56046							$ -
PUCK 69	56047							$ -
PUCK 70	56048							$ -
PUCK 71	56049							$ -
PUCK 72	56050							$ -
PUCK 73	56051			215	$ 194.11			$ 194.11
PUCK 74	56052			540	$ 487.54			$ 487.54
PUCK 75	56053			2320	$ 2,094.63			$ 2,094.63
PUCK 76	56054			1760	$ 1,589.03			$ 1,589.03
PUCK 77	56055			2210	$ 1,995.31			$ 1,995.31
PUCK 78	56056			1780	$ 1,607.09			$ 1,607.09
PUCK 79	56057			1760	$ 1,589.03			$ 1,589.03
PUCK 80	56058			1880	$ 1,697.37			$ 1,697.37
Cup 1	87695							$ -
Cup 2	87696							$ -
Cup 3	87697							$ -
Cup 4	87698							$ -
Cup 5	87699							$ -
Cup 6	87700							$ -
Cup 7	87701							$ -
Cup 8	87702							$ -
Cup 9	87703							$ -
Cup 10	87704							$ -
Cup 11	87705							$ -
Cup 12	87706							$ -

Table 4 cont'd. Exploration Expenditures by Claim.

Claim Number	Grant Number	Drilling (m)	Drilling Costs	Geophys. (m)	Geophys. Costs	Soil Samples	Soil Costs	total $'s per claim
Cup 13	87707							$ -
Cup 14	87708							$ -
Cup 15	87709							$ -
Cup 16	87710							$ -
Cup 17	87711							$ -
Cup 18	87712			465	$ 419.83			$ 419.83
Cup 19	87713			65	$ 58.69			$ 58.69
Cup 20	87714			80	$ 72.23			$ 72.23
Cup 21	87715							$ -
Cup 22	87716			65	$ 58.69			$ 58.69
Cup 23	87717							$ -
Cup 24	87718							$ -

Table 5. Dates of Work

Hole	Claim	Start Date	End Date
Diamond Drilling:		May 31	Aug 19
PK97-07	PUCK 31	May 31	June 5
PK97-08	PUCK 33	June 7	June 11
PK97-09	PUCK 38	June 9	June 12
PK97-10	PUCK 21	June 13	June 19
PK97-11	PUCK 40	July 23	July 24
PK97-12	PUCK 61	July 25	July 28
PK97-13	PUCK 29	July 29	July 31
PK97-14	PUCK 31	July 31	Aug 3
PK97-15	PUCK 23	Aug 4	Aug 7
PK97-16	PUCK 19	Aug 18	Aug 19
Line Cutting		May 30	June 16
Geophysical Surveys		June 13	June 26
Soil Sampling		Aug 28	Aug 29

APPENDIX B

CERTIFICATES OF ANALYSIS AND ANALYTICAL PROCEDURES

Chemex Labs Ltd.

Analytical Chemists *Geochemists* *Registered Assayers*

212 Brooksbank Ave.
North Vancouver, B.C.
Canada V7J 2C1
Phone: (604) 984-0221
Fax: (604) 984-0218

Sample Preparation - Crushing

The entire sample is passed through TM Rhino crusher to yield a crushed product where greater than 60% of the sample passes a -10 mesh screen. A split in the range of 200-250g (weight depends on parameters requested) is then taken using a stainless steel Jones riffle splitter.

Different crushing codes are used depending on the weight of the original sample:

Chemex Code	Sample Weight
226	0 - 3 Kg (Small rock chip samples packed in porous bags only)
294	4 - 7 Kg
276	8 - 12 Kg
273	13 - 18 Kg
270	19 - 26 Kg

Sample Preparation - Ring Grinding

Geochem. Assay & Geochem Ring

A crushed sample split (200 - 300 g) is ground using a ring mill pulverizer with a chrome steel ring set. The Chemex specification for this procedure is that greater than 90% of the ground material passes a 106 micron (Tyler 150 mesh) screen.

Chemex Codes:

205 Geochem samples
208 Assay samples
255 Rush Geochem samples
258 Rush Assay samples

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Fire Assay - Gold and Silver

Fire Assay - Gravimetric Finish

Gold analyses are done by standard fire assay techniques. A prepared sample (1 assay ton (29.166 grams)) is fused in litharge, carbonate and silicious fluxes. The lead button containing the precious metals is cupelled in a muffle furnace. The Ag and Au bead is weighed, parted in dilute nitric acid, annealed and weighed as Au. The difference in weights is the Ag.

Chemex Code	Element	Symbol	Detection Limit	Upper Limit
955	Gold - rush	Au	0.07 g/t	1.000 g/t
997	Gold	Au	0.07 g/t	1.000 g/t
473	Silver - rush	Ag	3 g/t	1.000 g/t
384	Silver	Ag	3 g/t	1.000 g/t

Fire Assay - Gold

Atomic Absorption Spectroscopy (FA-AA)

A 30g sample is fused with a neutral lead oxide flux inquarted with 6mg of gold-free silver and then cupelled to yield a precious metal bead.

These beads are digested for 30 minutes in 0.5ml diluted 75% nitric acid, then 1.5ml of concentrated hydrochloric acid are added and the mixture is digested for 1 hr. The samples are cooled, diluted to a final volume of 5ml, homogenized and analyzed by atomic absorption spectroscopy.

Chemex Code	Element	Symbol	Detection Limit	Upper Limit
983	Gold	Au	5 ppb	10.000 ppb
991	Gold - rush	Au	5 ppb	10.000 ppb

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Geochemical Procedure - 30-Element Geochemistry Package (30-ICP)

Nitric Aqua Regia Digestion
Inductively-Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES)

This package was developed to provide a ICP qualitative scan of material with significant mineralization.

A prepared sample (0.4g) is digested with concentrated nitric and aqua regia acids at medium heat for two hours. The acid solution is diluted to 100ml with de-mineralized water, mixed and analyzed using a inductively coupled plasma spectrometer after calibration with proper standards. The analytical results are corrected for spectral inter-element interferences.

Chemex Code		Element	Symbol	Detection Limit	Upper Limit
233		Digestion		N/A	N/A
4002	*	Aluminum	Al	0.01%	15%
4001		Silver	Ag	1 ppm	0.01%
4003		Arsenic	As	10 ppm	5%
4004	*	Barium	Ba	20 ppm	20%
4005	*	Beryllium	Be	5 ppm	0.01%
4006		Bismuth	Bi	10 ppm	5%
4007	*	Calcium	Ca	0.01%	30%
4008		Cadmium	Cd	5 ppm	0.01%
4009		Cobalt	Co	5 ppm	5%
4010	*	Chromium	Cr	10 ppm	2%
4011		Copper	Cu	5 ppm	5%
4012		Iron	Fe	0.01%	30%
4013		Mercury	Hg	10 ppm	1%
4014	*	Potassium	K	0.01%	10%
4015	*	Magnesium	Mg	0.01%	30%
4016		Manganese	Mn	10 ppm	5%
4017		Molybdenum	Mo	5 ppm	5%
4018	*	Sodium	Na	0.01%	20%
4019		Nickel	Ni	5 ppm	5%
4020		Phosphorus	P	0.01%	1%
4021		Lead	Pb	5 ppm	5%
4022		Antimony	Sb	10 ppm	1%
4023	*	Scandium	Sc	5 ppm	1%
4024	*	Strontium	Sr	5 ppm	1%
4025	*	Titanium	Ti	0.01%	10%
4026	*	Thallium	Tl	20 ppm	1%
4027		Uranium	U	20 ppm	1%
4028		Vanadium	V	20 ppm	5%
4029	*	Tungsten	W	20 ppm	1%
4030		Zinc	Zn	5 ppm	5%

** Elements for which the digestion is possibly incomplete.*

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PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9728447

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9728447

(GP W) - WESTMIN RESOURCES LTD.

Project: PUCK
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 1-JUL-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	75	Geochem ring to approx 150 mesh
294	75	4-7 Kg crush and split
3202	75	Rock - save entire reject
285	75	ICP - HF digestion charge
287	75	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	75	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
13	75	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	75	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	75	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	75	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	75	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	75	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	75	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	75	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	75	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	75	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	75	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	75	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	75	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	75	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	75	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	75	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	75	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	75	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	75	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	75	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	75	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	75	Pb ppm: 24 element, rock & core	AAS	2	10000
582	75	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	75	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	75	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	75	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	75	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

Chemex Labs Ltd.

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o: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :1-A
Total Pages :2
Certificate Date: 01-JUL-97
Invoice No. :I9728447
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9728447

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
174099	205	294	15	12	2.4	< 10	0.4	2.50	430	1.0	< 2	0.13	< 0.5	5	192	69
174100	205	294	< 5	6	0.4	20	0.2	2.45	1140	1.5	< 2	0.07	< 0.5	4	189	58
174101	205	294	< 5	6	< 0.2	110	< 0.2	2.96	1690	2.0	< 2	0.19	< 0.5	5	109	58
174102	205	294	205	1	< 0.2	30	< 0.2	1.04	2750	2.0	< 2	2.29	< 0.5	< 1	224	30
174103	205	294	15	1	0.2	270	< 0.2	1.21	580	2.5	< 2	0.96	3.0	3	148	71
174104	205	294	10	2	0.2	470	0.4	2.76	1200	4.0	< 2	0.27	2.5	8	168	78
174105	205	294	< 5	1	0.2	150	1.6	1.97	770	1.5	< 2	0.15	< 0.5	6	178	44
174106	205	294	< 5	1	0.6	220	1.0	1.95	950	1.5	< 2	0.22	< 0.5	6	193	71
174107	205	294	< 5	2	1.6	1350	0.4	2.65	590	1.5	< 2	0.67	2.0	6	157	68
174108	205	294	10	4	0.2	230	0.4	3.16	600	1.5	< 2	2.59	< 0.5	6	123	84
174109	205	294	30	1	0.2	10	0.2	2.53	1540	1.0	< 2	2.78	< 0.5	1	117	41
174110	205	294	< 5	1	0.8	560	1.0	1.98	2270	0.5	< 2	1.06	1.5	7	92	74
174111	205	294	< 5	2	< 0.2	10	0.4	3.11	1400	1.0	< 2	1.70	< 0.5	17	110	120
174112	205	294	< 5	12	0.2	< 10	< 0.2	2.74	1810	1.0	< 2	1.39	< 0.5	10	126	61
174113	205	294	< 5	10	0.2	60	< 0.2	2.71	2600	1.0	< 2	2.01	0.5	7	164	86
174114	205	294	15	8	0.2	< 10	< 0.2	4.96	5040	1.5	< 2	3.55	< 0.5	5	52	66
174115	205	294	< 5	12	0.4	< 10	< 0.2	5.85	6590	1.5	< 2	3.12	0.5	8	69	83
174116	205	294	< 5	6	0.2	< 10	< 0.2	2.81	1760	1.5	< 2	5.06	< 0.5	4	117	69
174117	205	294	20	8	0.6	150	< 0.2	2.29	260	2.0	< 2	0.16	< 0.5	6	136	77
174118	205	294	< 5	4	0.6	180	< 0.2	2.21	660	2.0	< 2	0.52	< 0.5	4	152	68
174119	205	294	15	2	0.4	140	0.4	2.27	660	2.0	< 2	0.29	0.5	6	160	80
174120	205	294	< 5	1	0.2	< 10	< 0.2	1.06	1070	2.0	< 2	8.95	< 0.5	< 1	82	19
174121	205	294	< 5	4	< 0.2	< 10	< 0.2	2.65	2170	2.0	< 2	3.46	< 0.5	4	129	57
174122	205	294	< 5	1	< 0.2	30	< 0.2	2.61	880	1.5	< 2	2.72	< 0.5	10	178	77
174123	205	294	< 5	1	< 0.2	< 10	< 0.2	5.18	4800	2.0	< 2	3.84	0.5	7	68	74
174124	205	294	< 5	6	0.2	30	< 0.2	3.70	820	2.0	< 2	2.25	< 0.5	11	106	67
174125	205	294	< 5	18	0.2	30	< 0.2	3.92	1510	2.0	< 2	1.16	1.0	19	120	123
174126	205	294	10	14	< 0.2	20	< 0.2	3.37	2200	2.0	< 2	2.11	< 0.5	11	122	116
174127	205	294	30	12	0.2	20	< 0.2	3.46	1330	2.5	< 2	5.58	0.5	10	97	102
174128	205	294	10	8	< 0.2	< 10	< 0.2	5.17	2090	3.5	< 2	2.15	< 0.5	8	80	87
174129	205	294	< 5	12	< 0.2	< 10	< 0.2	4.63	2200	3.5	< 2	4.19	< 0.5	7	108	60
174130	205	294	< 5	10	< 0.2	< 10	< 0.2	4.68	2380	3.5	< 2	7.25	< 0.5	5	85	52
174131	205	294	< 5	6	0.2	< 10	< 0.2	3.85	450	4.5	< 2	2.34	< 0.5	7	128	72
174132	205	294	25	2	0.6	240	< 0.2	3.02	380	5.5	< 2	3.68	7.0	6	153	68
174133	205	294	25	1	0.4	10	< 0.2	2.36	240	4.0	< 2	6.68	< 0.5	3	117	43
174134	205	294	10	1	0.2	10	< 0.2	2.90	310	4.5	< 2	1.76	0.5	5	146	68
174135	205	294	15	6	0.6	380	0.4	3.81	300	5.5	< 2	2.37	1.5	8	153	86
174136	205	294	20	16	0.8	170	0.2	1.69	310	4.0	< 2	12.60	2.0	4	67	39
174137	205	294	15	14	1.0	120	0.4	2.44	360	5.5	< 2	7.96	1.5	4	100	70
174138	205	294	20	14	1.8	140	0.4	2.59	360	5.0	< 2	5.71	2.5	5	86	58

CERTIFICATION: Hart Bichler

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Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 01-JUL-97
Invoice No. :I9728447
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9728447

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
174099	205	294	2.02	0.72	0.33	530	1	0.05	42	90	4	48	0.14	77	< 10	54
174100	205	294	1.04	0.97	0.23	210	5	0.05	33	50	10	61	0.11	90	< 10	176
174101	205	294	1.12	1.20	0.30	145	3	0.17	38	90	24	89	0.12	102	< 10	252
174102	205	294	13.30	0.09	0.18	530	1	0.01	5	260	< 2	740	0.05	78	< 10	220
174103	205	294	24.2	0.13	0.26	565	8	0.01	16	360	< 2	275	0.08	157	< 10	1895
174104	205	294	1.42	1.18	0.33	100	5	0.10	35	120	24	292	0.11	173	< 10	1160
174105	205	294	0.74	0.85	0.23	65	2	0.10	43	220	14	167	0.06	114	< 10	238
174106	205	294	0.89	0.83	0.19	105	3	0.06	55	220	42	108	0.07	118	< 10	418
174107	205	294	1.13	1.18	0.26	205	1	0.08	57	130	30	116	0.07	133	< 10	1520
174108	205	294	1.43	1.58	0.29	620	< 1	0.04	55	140	26	200	0.11	146	< 10	374
174109	205	294	4.88	1.04	0.50	2830	2	0.05	14	570	58	193	0.09	127	< 10	28
174110	205	294	0.75	0.68	0.15	240	13	0.11	41	130	270	112	0.06	121	< 10	764
174111	205	294	4.00	1.66	0.44	3630	< 1	0.13	44	410	22	114	0.11	122	< 10	60
174112	205	294	3.93	1.49	0.45	3530	< 1	0.08	28	500	66	71	0.11	124	< 10	80
174113	205	294	3.57	1.50	0.44	2220	1	0.06	21	370	50	86	0.13	128	< 10	542
174114	205	294	4.00	2.85	0.79	2390	2	0.09	11	790	16	119	0.25	97	< 10	60
174115	205	294	4.22	3.40	0.89	1770	< 1	0.14	13	1210	14	105	0.31	140	< 10	204
174116	205	294	2.78	1.61	0.34	1330	< 1	0.04	14	400	16	219	0.12	108	< 10	50
174117	205	294	1.41	1.19	0.21	150	1	0.04	61	60	62	6	0.09	157	< 10	392
174118	205	294	2.93	0.97	0.28	540	1	0.21	53	340	8	56	0.09	131	< 10	262
174119	205	294	1.96	0.96	0.24	515	4	0.09	42	150	68	44	0.09	158	< 10	244
174120	205	294	5.22	0.36	0.24	2660	< 1	0.03	4	410	< 2	385	0.04	94	< 10	16
174121	205	294	1.56	1.20	0.25	760	< 1	0.12	15	380	< 2	163	0.09	108	< 10	20
174122	205	294	3.97	0.88	0.37	1845	1	0.32	22	440	20	114	0.09	123	< 10	70
174123	205	294	3.76	2.48	0.60	1765	< 1	0.09	10	1060	8	111	0.27	148	< 10	38
174124	205	294	2.53	1.78	0.42	1360	< 1	0.07	38	740	62	56	0.17	131	< 10	194
174125	205	294	1.90	1.90	0.31	885	1	0.05	43	570	172	25	0.16	120	< 10	676
174126	205	294	2.79	1.63	0.37	1530	< 1	0.05	47	510	46	42	0.14	136	< 10	302
174127	205	294	4.59	1.64	0.53	4160	< 1	0.05	29	700	24	92	0.14	110	< 10	378
174128	205	294	4.70	2.55	0.49	1905	< 1	0.12	12	660	8	34	0.25	94	< 10	36
174129	205	294	2.67	2.20	0.39	1130	< 1	0.20	14	1120	42	74	0.23	126	< 10	30
174130	205	294	2.32	2.19	0.36	1695	< 1	0.18	15	850	32	139	0.22	104	< 10	48
174131	205	294	3.27	1.87	0.44	1460	< 1	0.07	35	770	50	41	0.19	159	< 10	98
174132	205	294	7.01	1.10	0.67	4380	4	0.24	53	1470	80	105	0.13	183	< 10	1055
174133	205	294	8.52	0.74	0.72	4940	2	0.16	19	950	72	142	0.09	149	< 10	46
174134	205	294	5.49	1.41	0.59	2220	1	0.03	54	620	86	35	0.14	181	< 10	204
174135	205	294	4.68	1.86	0.49	1290	1	0.04	78	570	204	46	0.16	194	< 10	858
174136	205	294	6.44	0.74	0.42	3830	5	0.03	32	950	196	283	0.07	124	< 10	488
174137	205	294	8.74	1.18	0.55	3930	5	0.04	40	1150	300	200	0.11	197	< 10	480
174138	205	294	4.90	1.27	0.35	2430	3	0.02	21	1070	182	144	0.10	193	< 10	532

CERTIFICATION: Stewart Bradley

Chemex Labs Ltd.

*Analytical Chemists * Geochemists * Registered Assayers*

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

o: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page I er :2-A
Total Pages :2
Certificate Date: 01-JUL-97
Invoice No. :19728447
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9728447

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
174139	205	294	30	16	1.2	210	0.4	1.71	260	4.5	< 2	8.52	8.0	7	105	56
174140	205	294	15	2	0.6	290	< 0.2	1.51	190	3.5	< 2	11.70	10.5	4	72	32
174141	205	294	< 5	2	0.4	30	0.4	2.91	280	7.5	< 2	5.52	3.0	11	94	55
174142	205	294	15	6	1.4	250	0.4	4.19	250	6.0	< 2	0.30	3.0	17	122	98
174143	205	294	10	1	0.6	< 10	0.4	4.10	230	5.5	< 2	0.52	< 0.5	13	157	78
174144	205	294	25	18	3.0	40	0.4	2.07	230	3.0	< 2	2.84	< 0.5	8	137	64
174145	205	294	20	24	3.4	10	2.2	2.57	170	3.5	< 2	1.69	< 0.5	7	146	60
174146	205	294	< 5	34	3.6	40	0.8	2.88	130	3.5	< 2	0.91	< 0.5	16	188	72
174147	205	294	< 5	14	1.0	60	0.6	6.09	230	4.5	< 2	3.00	2.5	28	192	77
174148	205	294	< 5	4	2.0	40	1.4	4.47	210	4.5	< 2	2.52	6.5	16	162	87
174149	205	294	< 5	2	< 0.2	< 10	< 0.2	6.84	1450	4.5	< 2	2.26	0.5	3	88	11
174150	205	294	< 5	4	0.2	< 10	< 0.2	6.59	1560	3.5	< 2	2.53	0.5	2	113	6
174151	205	294	< 5	8	0.4	10	< 0.2	6.36	670	3.0	< 2	1.04	2.5	3	85	18
174152	205	294	< 5	8	< 0.2	< 10	< 0.2	6.65	3730	3.0	< 2	0.80	0.5	< 1	89	5
174153	205	294	< 5	6	< 0.2	< 10	< 0.2	6.68	5700	3.0	< 2	0.83	0.5	< 1	86	5
174154	205	294	< 5	8	4.2	< 10	< 0.2	6.63	1120	3.0	< 2	0.73	0.5	1	114	6
174155	205	294	< 5	8	3.0	< 10	< 0.2	7.21	960	3.0	< 2	0.80	< 0.5	2	106	6
174156	205	294	< 5	18	1.8	120	< 0.2	6.90	480	2.0	< 2	0.53	0.5	2	140	8
174157	205	294	< 5	16	1.6	80	2.0	6.53	500	1.5	< 2	0.82	0.5	3	98	6
174158	205	294	< 5	10	1.4	30	< 0.2	7.98	690	2.0	< 2	1.19	< 0.5	2	84	7
174159	205	294	5	8	1.6	10	< 0.2	6.97	400	2.0	< 2	0.82	< 0.5	3	117	7
174160	205	294	< 5	6	1.8	50	< 0.2	6.51	410	2.0	< 2	2.88	0.5	3	101	7
174161	205	294	< 5	6	1.0	< 10	< 0.2	6.58	340	2.0	< 2	3.31	< 0.5	3	79	7
174162	205	294	< 5	4	0.6	< 10	< 0.2	6.76	640	2.5	< 2	2.63	< 0.5	3	79	7
174163	205	294	< 5	4	0.6	< 10	< 0.2	7.35	400	2.0	< 2	2.10	< 0.5	6	91	9
174164	205	294	< 5	6	1.6	10	1.0	7.79	320	2.0	< 2	1.63	< 0.5	16	172	14
174165	205	294	< 5	4	< 0.2	< 10	< 0.2	6.62	1180	2.0	< 2	1.82	0.5	3	82	9
174166	205	294	< 5	18	0.6	< 10	< 0.2	6.65	860	2.0	< 2	1.57	< 0.5	3	78	10
174167	205	294	< 5	8	0.2	< 10	< 0.2	6.07	1170	1.5	< 2	2.36	< 0.5	3	96	11
174168	205	294	< 5	2	0.4	130	< 0.2	7.57	930	1.5	< 2	0.55	< 0.5	4	120	11
174169	205	294	< 5	4	1.6	40	0.4	6.25	250	2.0	< 2	0.75	2.0	11	186	65
174170	205	294	< 5	4	2.0	90	0.4	6.02	190	2.0	< 2	0.57	2.0	12	188	79
174171	205	294	< 5	8	3.8	70	0.2	4.17	210	1.5	< 2	0.37	0.5	9	158	70
174172	205	294	< 5	16	4.0	60	0.4	4.76	170	2.0	< 2	0.25	3.0	11	173	62
174173	205	294	15	10	3.8	60	0.4	4.59	260	1.5	< 2	0.72	2.0	9	156	72

CERTIFICATION: _____

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :2-B
Total Pages :2
Certificate Date: 01-JUL-97
Invoice No. :I9728447
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9728447

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
174139	205	294	7.66	0.88	0.89	8990	3	0.01	24	720	210	250	0.06	147	< 10	1405
174140	205	294	8.56	0.83	1.47	>10000	2	0.01	17	930	134	385	0.07	144	< 10	1595
174141	205	294	5.65	1.48	0.55	3300	1	0.04	36	1200	136	258	0.13	209	< 10	586
174142	205	294	3.45	2.21	0.38	290	< 1	0.09	38	450	78	23	0.14	177	< 10	822
174143	205	294	2.91	2.22	0.49	335	1	0.09	47	370	42	34	0.15	146	< 10	28
174144	205	294	1.97	1.08	0.24	520	< 1	0.03	35	1490	40	146	0.08	131	< 10	26
174145	205	294	2.16	1.26	0.28	365	3	0.03	46	1240	48	91	0.09	202	< 10	22
174146	205	294	2.55	1.39	0.25	215	1	0.06	67	780	60	60	0.10	143	< 10	24
174147	205	294	3.29	2.63	0.63	1025	2	0.82	80	1660	54	171	0.52	262	< 10	852
174148	205	294	4.87	1.82	0.74	870	28	0.06	122	1710	110	174	0.16	570	< 10	1125
174149	205	294	2.76	2.94	0.68	660	2	0.15	6	370	24	133	0.26	36	< 10	130
174150	205	294	2.30	2.49	0.56	415	< 1	1.04	3	460	18	162	0.20	26	< 10	86
174151	205	294	1.49	2.89	0.63	210	4	0.36	13	750	44	62	0.14	104	< 10	240
174152	205	294	1.39	1.86	0.26	170	< 1	2.40	4	630	22	111	0.12	27	< 10	54
174153	205	294	1.28	1.88	0.30	165	< 1	2.14	4	610	22	111	0.13	27	< 10	52
174154	205	294	1.33	2.96	0.87	140	< 1	0.91	4	460	22	69	0.13	26	< 10	90
174155	205	294	1.39	3.68	0.98	120	< 1	0.65	4	700	20	85	0.15	29	< 10	50
174156	205	294	3.85	3.36	0.62	80	1	0.73	6	670	24	95	0.15	40	< 10	208
174157	205	294	2.92	3.06	0.40	115	1	0.79	6	540	26	123	0.16	39	< 10	106
174158	205	294	2.12	3.76	0.31	130	2	0.59	4	790	96	162	0.18	32	< 10	42
174159	205	294	1.98	3.05	0.19	90	1	0.34	4	630	26	102	0.16	31	< 10	20
174160	205	294	2.46	3.01	0.17	320	2	0.18	6	660	22	210	0.15	32	< 10	110
174161	205	294	1.36	3.15	0.25	360	1	0.16	12	640	22	166	0.15	30	< 10	48
174162	205	294	1.18	3.18	0.25	265	1	0.18	5	600	20	111	0.15	32	< 10	42
174163	205	294	1.54	3.39	0.35	320	1	0.19	8	570	68	86	0.15	54	< 10	24
174164	205	294	2.38	3.57	0.32	475	1	0.23	18	780	294	78	0.22	96	< 10	150
174165	205	294	1.43	3.01	0.29	420	< 1	0.16	7	740	28	75	0.15	49	< 10	120
174166	205	294	1.56	3.00	0.27	400	< 1	0.16	5	570	16	69	0.14	36	< 10	48
174167	205	294	2.16	2.63	0.30	580	1	0.14	7	610	18	104	0.16	45	< 10	70
174168	205	294	1.81	3.31	0.32	325	1	0.24	9	570	38	91	0.17	53	< 10	54
174169	205	294	3.04	2.60	0.82	290	2	0.15	72	720	16	98	0.28	234	< 10	196
174170	205	294	3.52	2.54	0.72	255	3	0.17	65	740	6	110	0.21	252	< 10	236
174171	205	294	2.82	1.81	0.43	105	4	0.15	51	650	6	113	0.14	188	< 10	112
174172	205	294	2.51	2.10	0.43	85	9	0.15	62	710	8	91	0.16	275	< 10	234
174173	205	294	2.56	1.93	0.60	175	6	0.11	55	810	8	84	0.16	252	< 10	206

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

o: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9730428

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9730428

(GP W) - WESTMIN RESOURCES LTD.

Project: PUCK
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 5-JUL-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
244	1	Pulp; prev. prepared at Chemex

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
316	1	Zn %: Conc. Nitric-HCL dig'n	AAS	0.01	100.0

Chemex Labs Ltd.

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To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 05-JUL-97
Invoice No. : I9730428
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9730428

SAMPLE	PREP CODE	Zn %
174236	244 --	3.50

CERTIFICATION: Said Leung

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

o: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9728794

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9728794

(GP W) - WESTMIN RESOURCES LTD.

Project: PUCK
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 1-JUL-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	63	Geochem ring to approx 150 mesh
226	63	0-3 Kg crush and split
3202	63	Rock - save entire reject
285	63	ICP - HF digestion charge
287	63	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	63	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
13	63	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	63	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	63	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	63	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	63	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	63	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	63	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	63	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	63	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	63	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	63	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	63	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	63	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	63	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	63	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	63	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	63	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	63	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	63	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	63	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	63	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	63	Pb ppm: 24 element, rock & core	AAS	2	10000
582	63	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	63	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	63	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	63	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	63	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

Chemex Labs Ltd.

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V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :1-A
Total Pages :2
Certificate Date: 01-JUL-97
Invoice No. :I9728794
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9728794

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
174174	205	226	< 5	2	0.2	< 10	< 0.2	2.95	460	0.5	< 2	0.47	< 0.5	7	173	74
174175	205	226	< 5	1	< 0.2	10	< 0.2	3.26	680	1.5	< 2	0.38	< 0.5	10	160	86
174176	205	226	100	1	2.4	70	< 0.2	3.54	260	1.0	< 2	3.77	< 0.5	17	195	145
174177	205	226	< 5	1	0.4	< 10	0.6	3.15	570	1.0	< 2	0.93	< 0.5	8	184	72
174178	205	226	< 5	1	0.2	< 10	< 0.2	2.61	890	0.5	< 2	0.53	< 0.5	5	143	88
174179	205	226	55	1	< 0.2	< 10	< 0.2	1.90	310	< 0.5	< 2	0.41	< 0.5	3	174	76
174180	205	226	< 5	1	0.4	< 10	< 0.2	3.37	760	1.0	< 2	0.16	< 0.5	7	144	66
174181	205	226	< 5	1	< 0.2	< 10	< 0.2	2.78	3970	1.0	< 2	0.73	< 0.5	11	173	70
174182	205	226	< 5	1	< 0.2	< 10	< 0.2	3.34	4090	1.5	< 2	0.29	< 0.5	9	140	58
174183	205	226	< 5	2	< 0.2	< 10	< 0.2	3.57	2030	2.0	< 2	0.67	< 0.5	14	128	51
174184	205	226	< 5	1	< 0.2	< 10	< 0.2	3.06	3480	1.5	< 2	0.89	< 0.5	9	119	40
174185	205	226	< 5	1	0.2	< 10	< 0.2	4.04	3050	1.5	< 2	0.59	< 0.5	10	178	47
174186	205	226	< 5	1	0.2	< 10	< 0.2	3.84	2720	1.5	< 2	0.11	< 0.5	10	126	57
174187	205	226	< 5	1	0.2	< 10	< 0.2	2.65	3340	0.5	< 2	0.34	< 0.5	8	201	40
174188	205	226	< 5	1	0.2	< 10	< 0.2	3.11	4250	1.0	< 2	0.18	< 0.5	8	113	52
174189	205	226	10	1	1.8	20	1.0	4.55	950	2.0	< 2	0.26	< 0.5	18	218	121
174190	205	226	20	1	0.6	10	0.4	2.74	380	1.0	< 2	0.42	< 0.5	6	166	58
174191	205	226	< 5	2	0.4	30	< 0.2	3.05	590	1.5	< 2	0.45	< 0.5	8	159	65
174192	205	226	< 5	4	0.4	90	< 0.2	3.49	1000	2.5	< 2	0.11	< 0.5	5	140	60
174193	205	226	< 5	1	0.6	540	< 0.2	2.36	420	2.0	< 2	0.10	1.5	6	136	47
174194	205	226	15	1	1.0	1160	0.8	2.24	290	5.5	< 2	0.29	13.0	20	138	101
174195	205	226	25	1	< 0.2	1990	< 0.2	0.57	290	1.5	< 2	0.08	< 0.5	1	136	14
174196	205	226	10	1	< 0.2	3520	< 0.2	0.81	350	1.0	< 2	0.09	< 0.5	< 1	74	11
174197	205	226	40	1	< 0.2	5450	< 0.2	0.68	360	1.5	< 2	0.12	< 0.5	< 1	126	9
174198	205	226	5	2	< 0.2	1410	< 0.2	2.14	230	8.5	< 2	0.23	< 0.5	1	107	100
174199	205	226	< 5	1	0.2	470	< 0.2	3.25	390	3.0	< 2	0.23	< 0.5	9	177	61
174200	205	226	45	1	0.2	230	< 0.2	3.02	320	1.5	< 2	2.61	< 0.5	5	99	69
174201	205	226	15	1	0.2	270	0.4	2.25	180	1.0	< 2	1.90	< 0.5	8	182	73
174202	205	226	< 5	1	0.2	210	0.4	1.92	240	1.0	< 2	1.60	< 0.5	6	111	88
174203	205	226	10	1	0.4	240	0.4	1.54	130	0.5	< 2	3.68	< 0.5	9	94	69
174204	205	226	30	1	0.2	160	< 0.2	3.71	1660	1.5	< 2	1.35	< 0.5	5	65	87
174205	205	226	< 5	1	0.2	600	< 0.2	4.95	1130	1.5	< 2	1.73	< 0.5	13	86	103
174206	205	226	20	1	0.4	750	< 0.2	3.98	240	2.0	< 2	2.95	< 0.5	15	95	57
174207	205	226	< 5	2	0.2	1610	< 0.2	2.54	270	6.5	< 2	1.39	< 0.5	7	110	65
174208	205	226	10	1	0.2	1200	< 0.2	2.27	370	2.0	< 2	3.77	< 0.5	14	83	114
174209	205	226	40	1	0.6	160	0.8	2.72	460	3.5	< 2	3.19	< 0.5	19	83	117
174210	205	226	10	1	1.0	80	< 0.2	5.51	1130	5.5	< 2	12.15	< 0.5	12	63	106
174211	205	226	10	1	2.0	730	1.4	2.91	160	4.0	< 2	11.95	14.0	9	104	80
174212	205	226	< 5	1	1.4	820	0.4	3.19	240	4.5	< 2	4.94	14.5	7	94	61
174213	205	226	< 5	1	1.0	270	0.4	2.80	260	5.0	< 2	6.51	4.0	10	121	79

CERTIFICATION: Hart Bichler

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :1-B
Total Pages :2
Certificate Date: 01-JUL-97
Invoice No. :I9728794
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9728794

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
174174	205	226	1.91	1.12	0.42	575	< 1	0.09	52	220	10	60	0.17	103	< 10	108
174175	205	226	2.55	0.90	0.35	690	6	0.61	55	210	14	100	0.14	103	< 10	76
174176	205	226	>25.0	0.63	1.43	>10000	14	0.05	38	1430	< 2	545	0.14	216	10	120
174177	205	226	2.78	1.21	0.55	610	4	0.07	108	400	12	112	0.22	125	< 10	142
174178	205	226	2.03	0.92	0.41	660	15	0.08	50	1020	8	164	0.14	82	< 10	66
174179	205	226	7.53	0.60	0.42	1340	3	0.09	12	590	2	82	0.09	102	< 10	62
174180	205	226	1.75	1.24	0.35	670	1	0.08	50	240	12	41	0.15	108	< 10	78
174181	205	226	1.74	0.89	0.61	1775	< 1	0.05	35	200	8	55	0.14	59	< 10	54
174182	205	226	1.86	1.00	0.42	1075	< 1	0.07	34	250	8	33	0.17	73	< 10	54
174183	205	226	1.94	1.31	0.51	2070	< 1	0.07	41	370	6	39	0.20	87	< 10	58
174184	205	226	1.60	0.97	0.60	1675	< 1	0.04	34	250	10	43	0.17	59	< 10	52
174185	205	226	1.95	1.49	0.58	1350	< 1	0.10	39	250	12	44	0.23	74	< 10	66
174186	205	226	2.20	1.54	0.41	700	< 1	0.08	39	230	8	23	0.19	77	< 10	64
174187	205	226	1.53	0.96	0.41	1030	< 1	0.05	29	190	12	27	0.14	50	< 10	40
174188	205	226	1.99	1.17	0.61	415	< 1	0.06	36	230	6	29	0.17	61	< 10	44
174189	205	226	3.28	1.70	0.92	1020	5	0.08	193	750	10	57	0.23	172	< 10	332
174190	205	226	1.93	1.12	0.58	425	< 1	0.06	60	340	10	74	0.13	108	< 10	114
174191	205	226	1.93	1.15	0.48	705	3	0.06	64	680	10	100	0.16	103	< 10	110
174192	205	226	1.65	1.36	0.35	560	4	0.09	39	140	72	106	0.15	120	< 10	292
174193	205	226	1.19	0.93	0.22	80	7	0.10	39	120	138	175	0.09	102	< 10	1610
174194	205	226	6.20	0.91	0.40	525	42	0.05	59	610	520	53	0.13	147	< 10	7280
174195	205	226	>25.0	0.17	0.09	325	4	0.02	9	190	6	15	0.02	108	10	168
174196	205	226	>25.0	0.13	0.13	695	< 1	0.02	6	250	< 2	11	0.02	136	< 10	46
174197	205	226	>25.0	0.16	0.10	910	9	0.06	8	290	< 2	8	0.03	165	< 10	106
174198	205	226	23.7	0.78	0.25	2110	13	0.11	12	310	< 2	32	0.10	226	< 10	108
174199	205	226	3.09	1.46	0.32	775	18	0.10	43	240	20	57	0.13	145	< 10	420
174200	205	226	9.23	1.33	0.81	6410	4	0.05	27	290	18	208	0.12	143	< 10	112
174201	205	226	5.68	0.86	0.41	4290	11	0.04	29	380	18	108	0.09	160	< 10	26
174202	205	226	6.12	0.85	0.45	4010	7	0.06	25	410	24	82	0.08	132	< 10	42
174203	205	226	12.45	0.61	0.69	9640	< 1	0.03	18	500	202	175	0.06	104	< 10	64
174204	205	226	3.35	2.02	0.41	6610	1	0.09	28	470	16	93	0.14	119	< 10	66
174205	205	226	4.24	2.73	0.78	6720	1	0.17	26	760	28	137	0.24	130	< 10	84
174206	205	226	5.90	2.18	0.62	3810	2	0.13	41	1110	50	233	0.20	191	< 10	146
174207	205	226	5.25	1.28	0.34	1430	3	0.10	15	1120	8	96	0.10	183	< 10	98
174208	205	226	2.63	0.57	0.37	3360	1	0.06	14	580	8	253	0.08	122	< 10	16
174209	205	226	3.28	0.67	0.91	3940	1	0.07	41	1430	308	322	0.11	185	< 10	116
174210	205	226	6.88	1.46	1.75	8310	5	0.09	52	990	50	280	0.24	218	< 10	152
174211	205	226	7.11	0.16	1.21	7010	6	< 0.01	52	780	2300	212	0.13	188	< 10	3500
174212	205	226	9.81	0.26	1.29	4910	4	0.04	24	1160	86	104	0.12	205	< 10	3920
174213	205	226	10.25	0.92	0.93	7630	4	0.04	25	1280	156	140	0.12	192	< 10	1095

CERTIFICATION: _____

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 01-JUL-97
Invoice No. : I9728794
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9728794

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
174214	205	226	5	8	1.6	210	< 0.2	2.74	250	7.0	< 2	5.24	2.5	11	154	54
174215	205	226	10	10	2.8	20	< 0.2	0.91	180	2.0	< 2	14.10	< 0.5	< 1	69	48
174216	205	226	5	8	3.0	20	< 0.2	3.59	480	5.0	< 2	0.67	< 0.5	15	186	99
174217	205	226	10	8	4.0	50	1.4	2.99	270	4.5	< 2	4.46	< 0.5	10	203	71
174218	205	226	10	8	4.2	20	0.8	4.51	430	5.0	2	1.96	0.5	13	245	62
174219	205	226	< 5	1	1.4	30	< 0.2	4.93	570	3.0	< 2	1.54	1.0	6	198	47
174220	205	226	< 5	1	0.8	10	< 0.2	6.81	680	4.0	< 2	1.11	< 0.5	4	142	13
174221	205	226	< 5	6	1.6	170	< 0.2	7.45	580	2.5	< 2	1.46	0.5	1	146	9
174222	205	226	< 5	20	3.8	770	< 0.2	6.99	1920	2.0	< 2	0.68	< 0.5	< 1	119	8
174223	205	226	< 5	8	4.2	3270	< 0.2	7.07	920	2.0	< 2	0.36	4.0	3	150	12
174224	205	226	< 5	10	3.4	1000	< 0.2	6.98	710	1.5	< 2	0.39	1.5	2	140	11
174225	205	226	< 5	6	2.0	150	< 0.2	6.40	680	2.0	< 2	1.87	0.5	2	124	9
174226	205	226	< 5	6	1.8	180	< 0.2	6.12	540	2.5	< 2	2.65	1.0	2	141	8
174227	205	226	< 5	2	1.4	40	< 0.2	6.34	650	2.0	< 2	2.75	< 0.5	2	75	6
174228	205	226	< 5	4	1.4	20	< 0.2	7.88	750	1.5	< 2	2.78	< 0.5	3	61	7
174229	205	226	< 5	10	2.6	40	< 0.2	6.86	640	1.5	< 2	3.16	< 0.5	3	142	11
174230	205	226	< 5	4	1.6	30	< 0.2	7.02	620	1.5	< 2	2.31	< 0.5	2	71	7
174231	205	226	< 5	1	1.2	10	< 0.2	7.18	950	2.0	< 2	1.34	< 0.5	3	100	7
174232	205	226	< 5	1	2.4	< 10	< 0.2	6.87	850	1.5	< 2	0.78	< 0.5	3	138	6
174233	205	226	< 5	1	1.0	10	< 0.2	6.28	2830	1.5	< 2	1.25	< 0.5	< 1	116	8
174234	205	226	< 5	2	0.2	< 10	< 0.2	7.01	3520	1.0	< 2	1.74	< 0.5	< 1	100	5
174235	205	226	< 5	1	0.6	90	0.4	7.27	950	1.5	< 2	1.39	0.5	3	166	8
174236	205	226	35	12	19.0	15500	16.0	5.58	470	1.5	< 2	0.46	131.5	4	148	41

CERTIFICATION: _____

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 01-JUL-97
Invoice No. : I9728794
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9728794

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
174214	205	226	6.60	1.30	0.44	2950	1	0.04	28	860	160	151	0.11	180	< 10	408
174215	205	226	13.20	0.35	0.16	3160	< 1	0.02	3	360	202	428	0.02	73	< 10	34
174216	205	226	4.05	1.79	0.32	405	3	0.07	33	450	74	26	0.15	164	< 10	36
174217	205	226	3.61	1.49	0.33	1070	< 1	0.03	43	2250	80	195	0.12	206	< 10	66
174218	205	226	3.62	2.14	0.62	805	5	0.07	58	1610	58	101	0.26	240	< 10	192
174219	205	226	2.41	2.36	0.75	575	2	0.17	32	470	24	96	0.18	88	< 10	226
174220	205	226	1.79	2.33	0.36	300	1	1.70	16	810	26	111	0.13	46	< 10	60
174221	205	226	1.90	3.56	0.57	325	3	0.77	6	590	44	148	0.13	45	< 10	112
174222	205	226	3.86	4.58	0.24	150	3	0.31	5	730	44	214	0.12	35	< 10	96
174223	205	226	2.33	4.45	0.16	110	3	0.32	10	720	294	163	0.16	58	< 10	1480
174224	205	226	1.52	3.22	0.19	70	3	0.42	9	550	154	89	0.16	54	< 10	480
174225	205	226	0.99	3.00	0.37	305	2	0.17	8	510	28	157	0.16	48	< 10	88
174226	205	226	0.84	2.79	0.30	420	4	0.15	7	700	22	192	0.15	42	< 10	116
174227	205	226	0.87	2.87	0.14	425	< 1	0.15	4	580	24	201	0.15	28	< 10	24
174228	205	226	1.02	3.55	0.16	565	1	0.19	5	610	24	214	0.19	40	< 10	34
174229	205	226	1.62	3.16	0.13	515	1	0.19	9	750	22	256	0.16	59	< 10	24
174230	205	226	0.86	3.21	0.13	405	2	0.16	5	670	18	249	0.17	37	< 10	34
174231	205	226	1.18	3.26	0.16	290	1	0.24	5	670	24	177	0.17	34	< 10	50
174232	205	226	1.53	3.23	0.17	455	2	0.20	6	610	16	112	0.19	37	< 10	28
174233	205	226	1.11	2.99	0.14	325	1	0.19	7	690	22	158	0.16	48	< 10	60
174234	205	226	0.58	2.93	0.08	240	< 1	0.62	5	640	28	186	0.15	49	< 10	36
174235	205	226	1.33	3.18	0.18	355	1	0.46	9	720	100	146	0.16	50	< 10	272
174236	205	226	2.63	2.40	0.17	135	< 1	0.23	10	530	4500	51	0.11	49	< 10	>10000

CERTIFICATION: Stuart Bichler

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9729548

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9729548

(GP W) - WESTMIN RESOURCES LTD.

Project: PUCK
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 6-JUL-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	112	Geochem ring to approx 150 mesh
294	112	4-7 Kg crush and split
3202	112	Rock - save entire reject
285	112	ICP - HF digestion charge
287	112	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	112	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
13	112	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	112	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	112	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	112	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	112	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	112	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	112	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	112	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	112	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	112	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	112	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	112	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	112	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	112	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	112	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	112	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	112	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	112	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	112	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	112	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	112	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	112	Pb ppm: 24 element, rock & core	AAS	2	10000
582	112	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	112	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	112	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	112	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	112	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
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PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 06-JUL-97
Invoice No. :I9729548
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9729548

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
174237	205	294	10	2	< 0.2	< 10	< 0.2	3.10	3420	0.5	< 2	0.46	< 0.5	6	164	192
174238	205	294	20	1	< 0.2	< 10	< 0.2	3.93	6100	1.0	< 2	0.38	0.5	9	208	152
174239	205	294	10	1	< 0.2	< 10	< 0.2	7.09	1660	0.5	< 2	3.46	< 0.5	48	493	118
174240	205	294	10	1	< 0.2	< 10	< 0.2	4.09	4410	0.5	< 2	0.73	< 0.5	11	175	72
174241	205	294	10	1	< 0.2	< 10	< 0.2	4.09	5730	1.0	< 2	0.26	0.5	7	78	88
174242	205	294	5	1	0.2	< 10	< 0.2	7.23	1840	0.5	< 2	3.88	< 0.5	32	205	119
174243	205	294	10	2	< 0.2	< 10	< 0.2	3.11	3610	0.5	< 2	0.41	< 0.5	6	129	107
174244	205	294	10	1	< 0.2	< 10	< 0.2	3.10	1110	0.5	< 2	1.00	< 0.5	7	169	65
174245	205	294	10	1	< 0.2	< 10	< 0.2	3.05	3770	0.5	< 2	0.43	0.5	9	102	80
174246	205	294	< 5	1	< 0.2	< 10	< 0.2	2.85	5040	0.5	< 2	0.18	0.5	9	200	104
174247	205	294	10	1	< 0.2	< 10	< 0.2	4.24	6630	1.5	< 2	0.21	0.5	11	188	103
174248	205	294	< 5	1	< 0.2	< 10	< 0.2	2.96	1620	1.0	< 2	0.88	< 0.5	7	197	49
174249	205	294	10	24	< 0.2	< 10	< 0.2	2.63	970	0.5	< 2	0.50	< 0.5	6	161	72
174250	205	294	< 5	1	< 0.2	10	< 0.2	1.26	350	1.5	< 2	0.83	< 0.5	< 1	150	34
174251	205	294	< 5	1	< 0.2	< 10	< 0.2	0.62	930	1.5	< 2	0.71	< 0.5	< 1	55	36
174252	205	294	< 5	1	< 0.2	< 10	< 0.2	2.31	9040	3.5	< 2	1.19	0.5	< 1	154	33
174253	205	294	< 5	1	< 0.2	< 10	< 0.2	1.05	370	3.0	< 2	0.47	< 0.5	1	118	31
174254	205	294	25	1	< 0.2	20	< 0.2	0.90	160	3.5	< 2	0.24	< 0.5	3	233	39
174255	205	294	15	1	< 0.2	< 10	< 0.2	1.76	580	2.5	< 2	2.75	0.5	4	100	55
174256	205	294	20	1	< 0.2	150	< 0.2	2.38	460	1.0	< 2	2.11	< 0.5	7	210	75
174257	205	294	10	1	< 0.2	< 10	< 0.2	2.88	1180	1.0	< 2	1.17	< 0.5	11	144	75
174258	205	294	10	1	< 0.2	< 10	< 0.2	4.49	3330	1.0	< 2	1.53	< 0.5	8	123	74
174259	205	294	10	8	< 0.2	< 10	< 0.2	5.13	990	1.5	< 2	2.38	< 0.5	9	116	64
174260	205	294	20	10	< 0.2	< 10	< 0.2	2.83	260	1.5	< 2	1.89	< 0.5	10	135	44
174261	205	294	15	1	< 0.2	< 10	< 0.2	2.15	610	1.5	< 2	3.04	< 0.5	13	73	31
174262	205	294	10	1	1.4	80	< 0.2	2.29	410	5.5	< 2	7.82	13.0	7	127	58
174263	205	294	40	44	2.8	10	0.8	2.22	260	3.0	< 2	1.32	< 0.5	6	179	58
174264	205	294	15	34	4.8	40	1.4	2.08	160	2.5	< 2	2.05	< 0.5	8	203	83
174265	205	294	< 5	1	< 0.2	< 10	< 0.2	7.07	5980	4.5	< 2	1.65	0.5	3	116	12
174266	205	294	10	32	2.6	70	0.4	5.91	330	2.5	< 2	1.32	2.0	3	113	30
174267	205	294	< 5	4	0.6	20	< 0.2	6.48	400	2.0	< 2	1.43	0.5	1	162	8
174268	205	294	< 5	12	1.0	120	< 0.2	7.31	430	1.5	< 2	0.51	< 0.5	1	69	7
174269	205	294	< 5	12	1.8	80	< 0.2	7.16	270	1.5	2	1.74	0.5	< 1	116	8
174270	205	294	< 5	6	2.0	< 10	< 0.2	7.95	290	2.5	2	0.71	< 0.5	1	94	8
174271	205	294	< 5	1	0.4	< 10	< 0.2	6.75	620	2.5	< 2	0.93	< 0.5	1	127	7
174272	205	294	< 5	1	0.2	< 10	< 0.2	6.63	2030	2.0	< 2	2.76	< 0.5	1	94	6
174273	205	294	< 5	1	0.2	< 10	< 0.2	6.39	1990	2.0	< 2	3.12	< 0.5	1	88	7
174274	205	294	< 5	1	0.6	< 10	< 0.2	7.21	2620	1.5	< 2	2.40	< 0.5	1	93	12
174275	205	294	< 5	1	0.2	< 10	< 0.2	6.65	1500	1.5	< 2	2.48	< 0.5	2	117	15
174276	205	294	< 5	1	0.6	< 10	< 0.2	6.80	1220	2.0	< 2	2.23	< 0.5	1	39	7

CERTIFICATION: Hart Bichler

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 06-JUL-97
Invoice No. :I9729548
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9729548

SAMPLE	PREP CODE	Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
174237	205 294	1.78	1.17	0.84	335	2	0.46	34	120	6	75	0.16	78	< 10	62
174238	205 294	2.48	1.79	1.22	1465	< 1	0.45	36	190	< 2	183	0.21	74	< 10	68
174239	205 294	5.81	1.06	2.74	3010	1	2.91	188	810	2	390	0.64	219	< 10	104
174240	205 294	2.64	1.53	1.20	955	< 1	1.07	41	260	< 2	134	0.27	91	< 10	64
174241	205 294	2.24	1.86	1.01	635	< 1	0.82	31	150	< 2	67	0.21	69	< 10	68
174242	205 294	6.15	0.83	2.90	1595	< 1	2.90	79	790	< 2	334	0.86	265	< 10	88
174243	205 294	1.67	1.39	0.77	325	1	0.20	32	110	< 2	18	0.15	79	< 10	54
174244	205 294	1.76	1.49	0.79	1605	< 1	0.11	50	350	< 2	136	0.18	88	< 10	76
174245	205 294	1.54	1.22	0.69	1385	1	0.32	32	220	8	91	0.17	54	< 10	44
174246	205 294	1.57	1.17	0.60	1005	< 1	0.29	30	190	4	130	0.14	43	< 10	44
174247	205 294	2.26	1.91	0.96	1195	< 1	0.36	43	270	< 2	124	0.22	74	< 10	74
174248	205 294	1.85	1.22	0.72	720	< 1	0.08	44	250	32	110	0.15	79	< 10	78
174249	205 294	2.15	1.06	0.48	1960	8	0.08	63	170	10	64	0.15	86	< 10	86
174250	205 294	18.55	0.24	0.26	2240	26	0.01	17	410	22	317	0.06	96	< 10	412
174251	205 294	22.9	0.12	0.08	425	33	0.13	8	280	< 2	506	0.03	83	< 10	16
174252	205 294	10.25	0.70	0.27	400	8	0.07	9	330	< 2	535	0.12	158	< 10	16
174253	205 294	19.45	0.15	0.14	805	21	0.01	6	230	< 2	327	0.06	113	< 10	86
174254	205 294	14.55	0.10	0.17	2180	20	< 0.01	17	270	8	163	0.06	98	< 10	318
174255	205 294	3.48	0.58	0.23	910	9	0.03	36	420	14	275	0.07	113	< 10	82
174256	205 294	3.64	0.98	0.35	1890	4	0.07	38	260	48	149	0.09	131	< 10	444
174257	205 294	1.91	1.49	0.33	1980	1	0.10	46	350	68	102	0.11	115	< 10	76
174258	205 294	3.65	2.81	0.77	1995	2	0.13	24	840	80	90	0.22	118	< 10	120
174259	205 294	3.49	2.80	0.79	2160	1	0.44	29	1080	20	169	0.26	147	< 10	28
174260	205 294	5.77	1.20	0.65	6930	4	0.09	39	1610	44	317	0.13	224	< 10	84
174261	205 294	3.22	0.85	0.59	6510	2	0.19	28	620	12	440	0.09	152	< 10	184
174262	205 294	6.59	0.94	0.40	3240	4	0.03	28	960	124	344	0.10	161	< 10	2930
174263	205 294	3.34	1.05	0.22	370	3	0.04	35	1500	48	68	0.09	148	< 10	32
174264	205 294	3.52	0.82	0.36	580	4	0.01	77	1420	90	165	0.07	145	< 10	58
174265	205 294	2.89	3.50	0.83	510	5	0.32	6	390	12	125	0.29	28	< 10	68
174266	205 294	2.25	2.61	0.37	375	4	0.19	14	540	58	111	0.14	70	< 10	186
174267	205 294	1.50	3.22	0.41	240	3	0.24	7	660	26	134	0.15	46	< 10	80
174268	205 294	2.04	3.04	0.33	145	2	1.33	4	780	26	65	0.14	33	< 10	38
174269	205 294	1.88	2.96	0.44	175	5	1.94	6	810	32	216	0.13	43	< 10	138
174270	205 294	1.63	4.27	0.95	170	3	0.44	6	760	34	74	0.16	44	< 10	74
174271	205 294	1.49	3.65	0.79	220	1	0.38	4	860	22	64	0.13	31	< 10	46
174272	205 294	0.99	3.25	0.26	410	3	0.18	4	650	18	117	0.15	33	< 10	34
174273	205 294	1.01	3.01	0.16	465	2	0.18	5	750	18	98	0.14	30	< 10	48
174274	205 294	1.13	3.18	0.15	400	2	0.24	9	720	24	94	0.15	52	< 10	16
174275	205 294	1.11	3.05	0.26	375	3	0.21	7	730	18	104	0.13	46	< 10	72
174276	205 294	1.24	3.10	0.27	305	3	0.21	6	680	24	90	0.12	36	< 10	24

CERTIFICATION: Ian Bradley

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PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :2-A
Total Pages :3
Certificate Date: 06-JUL-97
Invoice No. :I9729548
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9729548

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
174277	205	294	< 5	1	0.2	< 10	< 0.2	6.54	1290	1.5	< 2	1.85	< 0.5	8	144	9
174278	205	294	< 5	1	0.6	< 10	< 0.2	7.45	2030	2.0	< 2	0.92	0.5	40	145	60
174279	205	294	10	1	0.6	< 10	< 0.2	7.19	660	2.0	< 2	1.34	< 0.5	12	158	59
174280	205	294	10	1	0.4	< 10	< 0.2	6.75	570	2.0	< 2	0.73	0.5	19	170	62
174281	205	294	10	1	0.4	< 10	< 0.2	3.51	250	1.5	< 2	4.70	< 0.5	2	142	42
174282	205	294	< 5	2	0.4	100	< 0.2	2.19	1130	1.5	< 2	0.71	< 0.5	5	187	23
174283	205	294	< 5	1	0.4	70	< 0.2	3.25	1380	1.5	< 2	2.47	< 0.5	3	161	48
174284	205	294	5	8	0.6	200	< 0.2	3.30	>10000	2.0	< 2	0.58	2.0	14	177	50
174285	205	294	10	24	1.4	< 10	< 0.2	0.63	280	< 0.5	< 2	17.40	< 0.5	< 1	78	19
174286	205	294	10	2	1.0	10	< 0.2	1.61	1130	1.0	< 2	2.34	< 0.5	3	150	67
174287	205	294	5	1	0.4	< 10	< 0.2	1.31	250	1.0	< 2	3.80	< 0.5	< 1	98	18
174288	205	294	< 5	1	0.4	< 10	< 0.2	0.79	220	< 0.5	< 2	6.03	< 0.5	< 1	73	18
174289	205	294	< 5	1	1.2	250	< 0.2	2.62	880	1.5	< 2	0.44	< 0.5	15	171	75
174290	205	294	< 5	1	1.6	240	< 0.2	2.09	290	1.5	< 2	0.47	< 0.5	4	191	76
174291	205	294	15	1	0.6	< 10	< 0.2	1.22	510	1.0	< 2	0.18	< 0.5	3	220	55
174292	205	294	25	1	0.4	< 10	< 0.2	1.01	3230	< 0.5	< 2	0.26	< 0.5	< 1	115	26
174293	205	294	10	6	0.4	< 10	< 0.2	0.39	1820	< 0.5	< 2	0.32	< 0.5	< 1	125	20
174294	205	294	60	4	1.4	< 10	< 0.2	0.79	270	< 0.5	< 2	1.16	< 0.5	7	138	31
174295	205	294	10	1	0.4	90	< 0.2	2.60	980	0.5	< 2	0.20	< 0.5	6	168	112
174296	205	294	10	1	0.4	40	< 0.2	2.72	2290	0.5	< 2	0.21	< 0.5	6	163	60
174297	205	294	< 5	1	0.4	40	< 0.2	2.23	2100	0.5	< 2	0.96	< 0.5	3	163	35
174298	205	294	< 5	1	0.4	20	< 0.2	2.48	6020	0.5	< 2	0.16	0.5	3	168	50
174299	205	294	< 5	1	0.6	10	< 0.2	2.65	370	0.5	< 2	0.46	< 0.5	5	182	54
174300	205	294	< 5	2	0.8	10	< 0.2	3.10	290	0.5	< 2	0.67	< 0.5	6	193	54
174301	205	294	< 5	1	1.4	20	< 0.2	2.54	240	0.5	< 2	0.73	< 0.5	4	190	57
174302	205	294	< 5	1	0.6	< 10	< 0.2	2.47	350	0.5	< 2	0.74	< 0.5	5	180	54
174303	205	294	15	4	0.6	20	< 0.2	2.83	1110	1.0	< 2	0.75	< 0.5	8	195	78
174304	205	294	< 5	1	0.8	10	< 0.2	3.73	440	1.0	< 2	2.82	< 0.5	6	193	38
174305	205	294	10	1	1.4	30	< 0.2	4.15	580	1.0	< 2	0.80	< 0.5	11	190	74
174306	205	294	< 5	1	0.4	< 10	< 0.2	3.51	5890	1.0	< 2	1.12	0.5	5	137	56
174307	205	294	10	10	0.4	40	< 0.2	1.93	3740	0.5	< 2	2.57	0.5	7	177	79
174308	205	294	10	1	1.0	50	< 0.2	1.99	410	1.5	< 2	0.94	< 0.5	5	162	71
174309	205	294	10	1	3.2	80	< 0.2	3.75	1170	2.0	< 2	0.27	< 0.5	11	80	51
174310	205	294	< 5	1	0.6	90	< 0.2	2.55	250	2.0	< 2	0.36	< 0.5	6	170	62
174311	205	294	< 5	1	0.4	< 10	< 0.2	3.45	1500	2.0	< 2	0.46	< 0.5	8	133	45
174312	205	294	< 5	2	0.6	< 10	< 0.2	3.42	1410	2.0	< 2	0.29	< 0.5	8	147	55
174313	205	294	< 5	1	0.4	80	< 0.2	1.78	800	1.5	< 2	0.40	< 0.5	6	85	48
174314	205	294	< 5	1	0.8	170	< 0.2	2.20	760	2.0	< 2	0.78	< 0.5	5	91	58
174315	205	294	20	1	1.8	170	0.4	2.37	220	3.0	< 2	0.20	< 0.5	7	175	91
174316	205	294	10	38	2.4	70	0.4	1.13	100	2.0	< 2	5.39	< 0.5	1	146	43

CERTIFICATION: Ian Bichler

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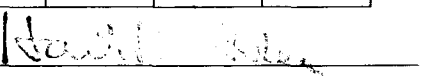
To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page per :2-B
Total Pages :3
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CERTIFICATE OF ANALYSIS A9729548

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
174277	205	294	1.44	2.91	0.29	360	4	0.21	29	760	30	103	0.14	33	< 10	76
174278	205	294	3.27	3.29	1.13	1185	6	0.21	78	660	20	96	0.38	190	< 10	158
174279	205	294	3.03	2.93	1.14	305	3	0.20	51	620	14	123	0.31	185	< 10	154
174280	205	294	3.13	2.74	1.13	425	3	0.21	57	590	18	96	0.30	182	< 10	160
174281	205	294	2.60	1.56	0.88	1470	3	0.24	14	350	8	245	0.08	76	< 10	24
174282	205	294	0.80	1.01	0.28	250	5	0.10	19	230	8	96	0.07	106	< 10	226
174283	205	294	0.92	1.55	0.49	565	< 1	0.09	23	130	8	222	0.10	101	< 10	188
174284	205	294	1.07	1.19	0.55	275	6	0.13	48	140	26	218	0.08	100	< 10	506
174285	205	294	0.94	0.25	0.39	3340	5	< 0.01	34	520	50	860	0.01	52	10	12
174286	205	294	0.74	0.62	0.21	565	14	0.05	21	210	8	230	0.06	112	< 10	50
174287	205	294	14.10	0.30	0.35	1400	9	0.05	6	360	< 2	244	0.07	108	< 10	12
174288	205	294	13.30	0.08	0.26	1590	9	0.01	3	270	< 2	439	0.03	67	< 10	10
174289	205	294	1.54	0.70	0.33	150	8	0.13	55	130	10	226	0.09	112	< 10	490
174290	205	294	5.06	0.69	0.41	2070	10	0.03	45	190	< 2	76	0.08	96	< 10	530
174291	205	294	2.92	0.37	0.20	710	7	0.01	38	130	< 2	25	0.05	56	< 10	38
174292	205	294	22.2	0.18	0.24	760	26	0.02	8	910	< 2	56	0.05	130	< 10	16
174293	205	294	20.1	0.06	0.11	630	97	< 0.01	5	1070	< 2	42	0.01	88	< 10	10
174294	205	294	16.85	0.18	0.33	2000	76	< 0.01	31	750	< 2	64	0.05	89	< 10	24
174295	205	294	1.55	0.99	0.47	130	6	0.06	71	140	8	71	0.14	82	< 10	222
174296	205	294	1.65	1.06	0.49	170	1	0.08	65	130	4	82	0.15	77	< 10	102
174297	205	294	1.46	0.83	0.48	605	< 1	0.03	24	100	< 2	114	0.11	61	< 10	68
174298	205	294	1.39	0.84	0.54	135	1	0.04	26	110	4	56	0.13	72	< 10	56
174299	205	294	1.77	0.92	0.71	165	2	0.05	54	190	6	145	0.13	96	< 10	116
174300	205	294	2.21	1.07	0.91	210	1	0.06	60	260	6	196	0.15	117	< 10	112
174301	205	294	1.79	0.84	0.62	380	1	0.05	41	130	6	89	0.12	81	< 10	76
174302	205	294	1.63	0.92	0.59	255	1	0.05	63	150	6	157	0.13	87	< 10	80
174303	205	294	1.55	1.09	0.53	370	2	0.06	59	140	4	113	0.17	79	< 10	80
174304	205	294	2.23	1.13	1.04	620	< 1	0.28	42	700	6	336	0.19	99	< 10	72
174305	205	294	2.63	1.50	1.08	260	4	0.11	81	780	10	132	0.17	115	< 10	170
174306	205	294	2.68	0.87	1.01	1170	2	0.04	44	170	4	141	0.20	78	< 10	70
174307	205	294	1.48	0.51	0.90	2130	9	0.01	91	130	4	194	0.09	63	< 10	208
174308	205	294	1.20	0.58	0.50	370	2	0.02	68	80	8	86	0.07	72	< 10	164
174309	205	294	1.04	1.39	0.45	80	3	0.15	56	160	10	221	0.12	91	< 10	240
174310	205	294	1.74	0.95	0.37	105	3	0.07	58	90	8	53	0.09	77	< 10	132
174311	205	294	0.89	1.46	0.53	120	< 1	0.11	42	90	4	137	0.11	82	< 10	18
174312	205	294	0.94	1.41	0.48	80	1	0.13	36	120	8	141	0.11	81	< 10	36
174313	205	294	0.63	0.66	0.20	110	1	0.09	39	40	8	148	0.05	58	< 10	126
174314	205	294	0.90	0.91	0.27	250	1	0.11	49	90	6	153	0.07	85	< 10	532
174315	205	294	1.60	1.17	0.30	75	7	0.04	46	120	60	11	0.09	128	< 10	776
174316	205	294	2.56	0.49	0.16	945	6	0.01	12	790	34	183	0.03	76	< 10	308

CERTIFICATION: 

Chemex Labs Ltd.

*Analytical Chemists * Geochemists * Registered Assayers*

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :3-A
Total Pages :3
Certificate Date: 06-JUL-97
Invoice No. :I9729548
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9729548

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
174317	205	294	10	6	1.4	60	< 0.2	1.58	180	3.0	< 2	1.33	< 0.5	3	229	65
174318	205	294	10	8	1.2	290	< 0.2	1.15	180	4.0	< 2	16.90	< 0.5	1	56	40
174319	205	294	< 5	1	< 0.2	< 10	< 0.2	0.35	140	2.5	< 2	13.40	< 0.5	< 1	58	23
174320	205	294	< 5	1	< 0.2	510	< 0.2	1.33	360	2.5	< 2	6.16	1.0	< 1	79	38
174321	205	294	< 5	1	0.4	< 10	< 0.2	2.28	790	4.5	< 2	3.54	< 0.5	3	204	40
174322	205	294	< 5	6	1.8	110	< 0.2	2.53	890	3.5	< 2	0.48	< 0.5	3	101	62
174323	205	294	< 5	4	0.4	1590	< 0.2	2.10	270	3.0	< 2	0.30	4.0	8	222	73
174324	205	294	< 5	1	0.2	10	< 0.2	1.40	340	2.0	< 2	10.05	< 0.5	3	98	50
174325	205	294	15	14	0.2	< 10	< 0.2	1.89	870	2.5	< 2	3.15	< 0.5	2	130	52
174326	205	294	30	20	0.2	10	< 0.2	3.78	880	4.0	< 2	1.95	< 0.5	9	128	83
174327	205	294	< 5	2	0.4	110	< 0.2	2.17	210	2.5	< 2	7.29	4.5	3	118	56
174328	205	294	10	4	0.6	60	< 0.2	2.63	160	3.0	< 2	5.34	0.5	8	92	67
174329	205	294	10	1	1.0	10	< 0.2	2.08	170	2.0	< 2	7.80	< 0.5	4	94	49
174330	205	294	< 5	1	0.6	30	< 0.2	1.45	140	2.0	< 2	12.35	< 0.5	2	49	34
174331	205	294	< 5	1	0.4	160	< 0.2	3.08	240	5.0	< 2	6.70	2.5	10	114	70
174332	205	294	15	6	7.2	90	0.6	3.96	230	5.5	< 2	2.52	2.5	18	176	103
174333	205	294	< 5	1	2.2	20	< 0.2	3.49	270	1.5	< 2	8.54	< 0.5	26	172	74
174334	205	294	< 5	18	0.6	< 10	< 0.2	5.27	580	2.0	< 2	8.98	< 0.5	23	249	35
174335	205	294	< 5	18	1.0	< 10	< 0.2	6.43	520	2.0	< 2	7.71	< 0.5	27	205	47
174336	205	294	< 5	26	0.4	< 10	< 0.2	6.43	3150	2.5	< 2	7.35	< 0.5	27	210	35
174337	205	294	10	1	3.2	30	< 0.2	3.15	130	3.0	< 2	2.39	0.5	15	232	92
174338	205	294	< 5	1	2.2	< 10	< 0.2	3.81	340	1.5	< 2	0.39	< 0.5	9	206	65
174339	205	294	< 5	10	5.2	250	< 0.2	4.64	340	2.0	< 2	1.62	2.0	4	204	60
174340	205	294	15	44	15.5	730	2.4	7.25	330	3.5	4	1.07	6.5	7	108	99
174341	205	294	< 5	1	1.4	120	< 0.2	7.66	370	3.5	< 2	1.15	< 0.5	1	113	6
174342	205	294	< 5	4	3.4	50	< 0.2	7.08	340	2.5	< 2	1.57	< 0.5	2	83	5
174343	205	294	< 5	2	2.6	50	< 0.2	7.40	360	2.5	< 2	2.16	< 0.5	1	83	6
174344	205	294	< 5	4	3.4	210	1.0	5.78	330	2.0	< 2	1.05	3.0	1	143	33
174345	205	294	15	20	13.0	690	2.0	6.67	270	2.5	< 2	0.45	7.0	2	147	22
174346	205	294	< 5	1	1.0	10	< 0.2	6.72	610	3.0	< 2	0.31	< 0.5	1	88	5
174347	205	294	< 5	1	1.0	< 10	< 0.2	6.67	620	2.5	< 2	0.59	< 0.5	1	152	4
174348	205	294	< 5	1	0.8	< 10	< 0.2	6.49	650	2.5	< 2	0.63	< 0.5	1	90	5

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
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To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :3-B
Total Pages :3
Certificate Date: 06-JUL-97
Invoice No. :I9729548
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9729548

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
174317	205	294	2.70	0.72	0.19	220	4	0.01	29	200	66	40	0.06	118	< 10	232
174318	205	294	2.43	0.50	0.24	1730	14	< 0.01	12	2070	90	287	0.04	131	10	1345
174319	205	294	6.58	0.07	0.36	2380	6	< 0.01	6	390	42	182	0.01	50	< 10	58
174320	205	294	1.51	0.45	0.19	715	10	0.19	10	1420	56	272	0.04	95	< 10	716
174321	205	294	3.65	1.03	0.35	960	5	0.20	11	280	< 2	231	0.09	107	< 10	22
174322	205	294	0.99	0.82	0.30	90	15	0.26	20	320	14	84	0.08	156	< 10	88
174323	205	294	1.33	1.01	0.19	65	12	0.03	26	990	66	9	0.08	159	< 10	4560
174324	205	294	2.74	0.68	0.24	1200	6	0.01	10	730	42	176	0.05	98	< 10	62
174325	205	294	13.30	0.41	0.26	1060	9	< 0.01	20	450	6	68	0.06	95	< 10	34
174326	205	294	2.63	1.68	0.58	610	31	0.06	53	1000	104	46	0.20	187	< 10	172
174327	205	294	9.06	0.48	1.01	4610	7	0.02	39	1760	120	286	0.10	183	< 10	1040
174328	205	294	7.77	0.78	0.69	6590	8	0.08	40	1020	80	201	0.12	188	< 10	316
174329	205	294	8.13	0.71	0.77	5600	7	0.03	21	660	72	208	0.10	130	< 10	50
174330	205	294	10.05	0.41	0.87	7260	7	< 0.01	12	840	104	378	0.07	112	< 10	274
174331	205	294	7.27	1.28	0.88	6060	4	0.06	44	830	124	333	0.15	184	< 10	1155
174332	205	294	3.49	1.78	0.68	845	8	0.03	74	1100	74	169	0.18	221	< 10	396
174333	205	294	2.68	0.83	0.54	1515	4	0.90	74	2340	68	482	0.42	137	< 10	162
174334	205	294	2.88	1.75	1.40	1410	2	1.47	66	1790	6	697	0.74	175	< 10	24
174335	205	294	2.65	2.25	1.13	1090	1	1.95	55	1980	4	601	0.99	200	< 10	24
174336	205	294	4.61	3.13	2.22	1380	< 1	0.68	56	1730	< 2	453	1.17	214	< 10	30
174337	205	294	4.66	1.43	0.87	1540	6	0.04	97	1600	34	124	0.13	159	< 10	372
174338	205	294	2.30	1.59	0.64	130	< 1	0.08	58	300	8	65	0.25	112	< 10	112
174339	205	294	1.64	2.25	0.58	440	5	0.08	35	310	96	62	0.13	91	< 10	470
174340	205	294	3.00	3.73	0.83	200	20	0.16	27	550	292	91	0.17	162	< 10	1065
174341	205	294	2.08	3.51	0.75	165	4	1.01	3	530	28	146	0.17	17	< 10	62
174342	205	294	1.86	2.95	0.43	180	4	1.17	3	520	22	230	0.15	15	< 10	42
174343	205	294	1.37	3.17	0.47	175	3	1.13	3	560	28	408	0.16	15	< 10	76
174344	205	294	1.73	2.88	0.67	225	4	0.17	9	590	70	76	0.12	69	< 10	336
174345	205	294	3.63	2.99	0.71	95	5	0.21	8	510	54	56	0.13	41	< 10	636
174346	205	294	1.59	2.76	0.99	75	2	0.78	3	610	22	57	0.11	22	< 10	44
174347	205	294	1.58	2.17	0.90	90	1	1.84	4	590	18	69	0.10	22	< 10	58
174348	205	294	1.40	2.27	1.08	75	1	1.07	2	760	18	74	0.09	20	< 10	44

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
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PHONE: 604-984-0221 FAX: 604-984-0218

o: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9737197

Comments: ATTN: DAVID TERRY -VANCOUVER OFFICE

CERTIFICATE A9737197

(GP W) - WESTMIN RESOURCES LTD.

Project: PUCK
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 20-AUG-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	24	Geochem ring to approx 150 mesh
294	24	4-7 Kg crush and split
3202	24	Rock - save entire reject
285	24	ICP - HF digestion charge
287	24	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	24	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
13	24	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	24	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	24	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	24	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	24	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	24	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	24	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	24	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	24	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	24	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	24	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	24	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	24	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	24	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	24	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	24	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	24	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	24	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	24	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	24	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	24	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	24	Pb ppm: 24 element, rock & core	AAS	2	10000
582	24	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	24	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	24	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	24	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	24	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

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Project : PUCK
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Page Number :1-A
Total Pages :1
Certificate Date: 20-AUG-97
Invoice No. :I9737197
P.O. Number :
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CERTIFICATE OF ANALYSIS A9737197

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
204034	205	294	< 5	12	0.4	< 10	< 0.2	7.78	260	< 0.5	< 2	6.77	< 0.5	43	244	90
204035	205	294	< 5	8	< 0.2	< 10	< 0.2	4.27	620	0.5	< 2	1.15	< 0.5	16	159	136
204036	205	294	< 5	7	0.2	< 10	< 0.2	1.11	580	< 0.5	< 2	0.90	< 0.5	6	55	11
204037	205	294	< 5	5	0.2	< 10	< 0.2	3.97	2680	1.5	< 2	0.63	< 0.5	11	185	69
204038	205	294	< 5	6	0.2	< 10	< 0.2	3.26	1410	1.0	< 2	0.21	< 0.5	15	173	68
204039	205	294	< 5	5	0.2	< 10	< 0.2	3.35	3980	1.5	< 2	0.31	< 0.5	11	201	54
204040	205	294	< 5	13	1.0	10	< 0.2	2.92	90	2.0	< 2	0.26	0.5	8	161	69
204041	205	294	10	12	2.0	< 10	< 0.2	2.50	60	1.5	< 2	3.26	< 0.5	5	132	113
204042	205	294	< 5	19	0.6	< 10	< 0.2	5.03	5430	3.0	< 2	2.22	< 0.5	9	98	67
204043	205	294	5	19	1.4	< 10	< 0.2	3.64	70	1.0	< 2	2.89	< 0.5	6	117	101
204044	205	294	< 5	12	1.2	< 10	< 0.2	3.17	130	1.0	< 2	5.94	< 0.5	8	89	58
204045	205	294	< 5	41	3.0	90	< 0.2	4.36	70	7.0	< 2	6.19	2.0	12	171	108
204046	205	294	< 5	20	1.0	80	< 0.2	3.27	140	4.0	< 2	5.23	3.0	14	142	74
204047	205	294	< 5	40	3.6	60	0.4	3.92	80	4.5	< 2	2.36	4.0	11	164	77
204048	205	294	< 5	9	0.4	< 10	< 0.2	7.63	1950	3.0	< 2	0.80	< 0.5	1	55	6
204049	205	294	< 5	8	0.2	< 10	< 0.2	7.37	2560	3.0	< 2	0.33	< 0.5	2	78	5
204050	205	294	< 5	37	1.0	< 10	< 0.2	8.79	370	5.0	< 2	1.86	0.5	3	67	6
204051	205	294	< 5	70	1.0	10	< 0.2	6.96	120	3.0	< 2	1.06	< 0.5	1	108	7
204052	205	294	< 5	20	1.6	80	< 0.2	6.57	230	2.5	< 2	1.09	1.5	1	93	14
204053	205	294	< 5	11	0.4	< 10	< 0.2	6.46	3600	2.5	< 2	1.12	0.5	1	99	7
204054	205	294	< 5	15	1.4	10	< 0.2	6.12	230	1.5	< 2	1.65	< 0.5	< 1	102	7
204055	205	294	< 5	29	1.6	10	< 0.2	6.63	400	2.0	< 2	1.95	0.5	1	135	8
204056	205	294	< 5	9	5.8	90	< 0.2	7.21	1030	1.5	< 2	0.71	< 0.5	1	101	7
204057	205	294	< 5	5	3.0	10	< 0.2	6.78	1610	2.0	< 2	0.70	0.5	3	148	25

CERTIFICATION: Ian B...

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
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Project : PUCK
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Page Number : 1-B
Total Pages : 1
Certificate Date: 20-AUG-97
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CERTIFICATE OF ANALYSIS A9737197

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
204034	205	294	5.47	0.09	4.32	1150	< 1	2.34	75	390	< 2	157	0.61	261	< 10	66
204035	205	294	2.11	0.55	0.91	875	< 1	1.51	39	230	< 2	296	0.26	110	< 10	44
204036	205	294	0.85	0.14	0.43	240	< 1	0.31	20	150	< 2	39	0.12	37	< 10	14
204037	205	294	2.19	1.68	1.24	1170	< 1	0.18	43	310	4	88	0.23	74	< 10	78
204038	205	294	1.91	1.13	0.83	1080	< 1	0.12	44	250	2	27	0.20	69	< 10	56
204039	205	294	2.00	0.88	0.73	1270	< 1	0.09	40	250	4	28	0.17	64	< 10	62
204040	205	294	3.45	0.65	0.48	505	2	0.14	63	260	18	41	0.11	115	< 10	596
204041	205	294	5.96	0.47	0.71	3120	2	0.08	34	480	20	136	0.08	139	< 10	102
204042	205	294	3.71	1.93	1.08	2520	1	0.18	28	1210	30	160	0.25	160	< 10	92
204043	205	294	8.24	0.86	1.00	5330	3	0.13	42	1560	78	217	0.12	254	< 10	78
204044	205	294	4.05	1.00	0.59	6180	< 1	0.13	31	1350	12	266	0.13	206	< 10	32
204045	205	294	2.95	1.74	0.66	2600	5	0.10	68	1700	86	466	0.17	342	< 10	1295
204046	205	294	3.66	1.23	0.56	2550	1	0.07	48	1010	156	317	0.14	168	< 10	1140
204047	205	294	3.76	1.55	0.64	1245	4	0.10	51	760	106	145	0.15	182	< 10	562
204048	205	294	0.73	4.41	0.22	180	< 1	0.34	5	560	26	145	0.18	23	< 10	28
204049	205	294	0.64	4.59	0.12	90	1	0.33	4	550	20	76	0.13	19	< 10	16
204050	205	294	1.52	3.90	0.33	410	2	0.34	5	650	14	215	0.21	36	< 10	106
204051	205	294	3.13	2.99	0.70	155	2	0.23	8	820	16	73	0.16	39	< 10	106
204052	205	294	1.79	2.29	0.77	225	< 1	0.42	6	900	30	81	0.14	45	< 10	236
204053	205	294	1.40	2.43	0.75	310	1	0.64	8	790	20	83	0.13	44	< 10	58
204054	205	294	1.25	2.56	0.16	265	2	0.22	6	750	20	108	0.12	36	< 10	16
204055	205	294	1.16	2.82	0.17	450	3	0.23	12	780	18	109	0.15	81	< 10	100
204056	205	294	1.09	2.99	0.20	125	1	0.30	6	740	48	71	0.12	34	< 10	210
204057	205	294	1.73	2.90	0.61	250	1	0.22	21	780	26	90	0.19	100	< 10	92

CERTIFICATION: [signature]

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9738065

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9738065

(GP W) - WESTMIN RESOURCES LTD.

Project: PUCK
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 24-AUG-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	20	Geochem ring to approx 150 mesh
226	20	0-3 Kg crush and split
3202	20	Rock - save entire reject
285	20	ICP - HF digestion charge
287	20	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	20	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
13	20	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	20	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	20	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	20	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	20	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	20	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	20	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	20	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	20	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	20	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	20	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	20	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	20	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	20	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	20	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	20	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	20	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	20	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	20	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	20	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	20	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	20	Pb ppm: 24 element, rock & core	AAS	2	10000
582	20	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	20	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	20	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	20	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	20	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number : 1-A
Total Pages : 1
Certificate Date: 24-AUG-97
Invoice No. : I9738065
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9738065

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
204148	205	226	< 5	6	0.2	80	< 0.2	2.89	450	1.5	< 2	0.20	< 0.5	6	159	48
204149	205	226	10	4	< 0.2	430	< 0.2	2.67	1270	2.5	< 2	0.39	< 0.5	6	178	49
204150	205	226	< 5	1	0.2	30	< 0.2	1.64	80	2.5	< 2	0.26	< 0.5	< 1	196	18
204151	205	226	< 5	2	< 0.2	210	< 0.2	3.05	600	2.5	< 2	0.24	< 0.5	6	142	52
204152	205	226	< 5	2	< 0.2	380	< 0.2	2.74	1130	2.0	< 2	0.22	< 0.5	7	207	51
204153	205	226	< 5	1	< 0.2	160	< 0.2	1.23	210	2.0	< 2	1.45	< 0.5	1	128	29
204154	205	226	< 5	1	< 0.2	< 10	< 0.2	1.43	1900	3.5	< 2	1.27	< 0.5	< 1	160	16
204155	205	226	< 5	2	< 0.2	490	< 0.2	2.31	810	1.5	< 2	0.36	0.5	6	208	74
204156	205	226	< 5	1	< 0.2	120	0.4	1.94	1150	1.0	< 2	1.12	< 0.5	3	219	63
204157	205	226	10	2	0.2	100	0.4	2.94	310	1.5	< 2	1.46	< 0.5	4	180	71
204158	205	226	< 5	2	< 0.2	160	0.8	1.85	3050	0.5	< 2	3.21	1.0	5	181	51
204159	205	226	< 5	2	< 0.2	50	< 0.2	3.89	430	1.0	< 2	3.57	< 0.5	10	116	100
204160	205	226	< 5	4	< 0.2	< 10	< 0.2	4.10	1600	1.0	< 2	1.78	< 0.5	8	78	46
204161	205	226	< 5	2	< 0.2	< 10	< 0.2	5.16	1930	1.5	< 2	1.75	< 0.5	7	91	70
204162	205	226	< 5	6	< 0.2	< 10	< 0.2	5.46	5440	1.0	< 2	3.93	< 0.5	5	78	39
204163	205	226	< 5	6	< 0.2	< 10	< 0.2	5.73	7150	1.5	< 2	5.46	0.5	3	55	27
204164	205	226	20	10	< 0.2	< 10	< 0.2	4.32	800	1.5	< 2	4.02	< 0.5	5	102	57
204165	205	226	15	2	< 0.2	40	< 0.2	3.61	410	1.5	< 2	2.45	< 0.5	6	107	75
204166	205	226	20	1	< 0.2	10	< 0.2	2.81	560	5.5	< 2	3.57	< 0.5	5	117	56
204167	205	226	5	1	< 0.2	80	< 0.2	4.14	150	4.0	< 2	4.68	< 0.5	8	80	49
204168	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204169	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204170	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204171	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204172	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :1-B
Total Pages :1
Certificate Date: 24-AUG-97
Invoice No. :I9738065
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9738065

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
204148	205	226	1.31	1.08	0.35	190	2	0.09	47	120	16	104	0.12	96	< 10	230
204149	205	226	0.93	1.12	0.28	180	7	0.12	38	100	70	121	0.10	103	< 10	1080
204150	205	226	9.88	0.30	0.31	160	3	0.01	6	350	< 2	75	0.09	129	< 10	60
204151	205	226	1.18	1.38	0.34	120	3	0.13	53	110	58	89	0.12	107	< 10	500
204152	205	226	0.94	1.14	0.32	100	7	0.12	56	100	80	102	0.11	109	< 10	766
204153	205	226	20.5	0.36	0.21	470	20	0.04	12	280	< 2	488	0.06	118	< 10	584
204154	205	226	12.35	0.43	0.17	535	7	0.03	7	1080	< 2	590	0.07	117	< 10	48
204155	205	226	1.18	0.96	0.27	150	7	0.12	45	110	20	227	0.08	129	< 10	684
204156	205	226	1.01	0.84	0.20	320	3	0.08	34	110	12	206	0.05	103	< 10	126
204157	205	226	3.08	1.32	0.42	1380	1	0.05	42	230	92	76	0.11	153	< 10	114
204158	205	226	3.02	0.84	0.32	1845	11	0.07	18	230	96	191	0.06	104	< 10	448
204159	205	226	5.48	2.12	0.53	3690	8	0.19	26	370	26	223	0.13	138	< 10	132
204160	205	226	4.40	2.21	0.63	3890	1	0.09	18	440	12	72	0.15	85	< 10	44
204161	205	226	4.00	2.50	0.84	2030	1	0.09	11	790	12	72	0.26	98	< 10	40
204162	205	226	3.30	2.38	0.83	2260	3	0.58	8	790	12	145	0.27	95	< 10	22
204163	205	226	2.89	2.76	0.75	2760	3	0.30	11	840	16	194	0.25	85	< 10	20
204164	205	226	3.93	2.24	0.69	2770	4	0.12	40	600	60	182	0.21	142	< 10	50
204165	205	226	6.42	1.77	0.79	4360	3	0.29	57	700	80	204	0.16	176	< 10	166
204166	205	226	6.15	1.25	0.65	2700	3	0.08	27	1120	10	421	0.13	215	< 10	34
204167	205	226	5.11	2.12	0.66	5740	3	0.10	34	1150	50	343	0.18	174	< 10	80
204168	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204169	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204170	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204171	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204172	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9739483

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9739483

(GP W) - WESTMIN RESOURCES LTD.

Project: PUCK
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 8-SEP-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	57	Geochem ring to approx 150 mesh
294	57	4-7 Kg crush and split
3202	57	Rock - save entire reject
285	57	ICP - HF digestion charge
287	57	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	57	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
13	57	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	57	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	57	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	57	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	57	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	57	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	57	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	57	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	57	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	57	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	57	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	57	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	57	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	57	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	57	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	57	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	57	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	57	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	57	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	57	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	57	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	57	Pb ppm: 24 element, rock & core	AAS	2	10000
582	57	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	57	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	57	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	57	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	57	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

Chemex Labs Ltd.

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212 Brooksbank Ave., North Vancouver
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To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 08-SEP-97
Invoice No. :I9739483
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9739483

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
N204091	205	294	< 5	2	< 0.2	< 10	0.2	3.15	5770	1.0	< 2	0.30	0.5	10	176	62
N204092	205	294	< 5	54	0.4	< 10	< 0.2	2.59	2490	0.5	< 2	0.78	0.5	10	210	70
N204093	205	294	5	6	1.0	< 10	0.2	4.58	630	1.5	4	0.44	< 0.5	14	197	88
N204094	205	294	10	2	0.8	10	0.2	4.71	600	1.5	2	0.56	0.5	16	211	100
N204095	205	294	< 5	1	0.6	20	0.4	3.86	650	2.0	< 2	0.60	0.5	12	232	77
N204096	205	294	10	2	1.8	60	0.4	1.83	270	2.0	< 2	1.43	< 0.5	3	227	38
N204097	205	294	< 5	1	1.2	60	0.2	2.13	130	5.0	< 2	1.10	< 0.5	4	145	38
N204098	205	294	< 5	2	0.4	1170	0.2	1.80	510	2.5	< 2	2.82	2.0	8	165	56
N204099	205	294	< 5	2	0.4	110	0.4	1.81	770	1.0	< 2	0.24	< 0.5	4	154	59
N204100	205	294	< 5	4	0.2	50	0.2	1.93	420	1.0	< 2	0.48	< 0.5	5	207	41
N204101	205	294	40	1	0.8	10	0.2	2.11	390	1.0	< 2	4.32	< 0.5	4	160	42
N204102	205	294	180	1	1.0	30	0.2	3.55	440	2.0	< 2	1.54	< 0.5	5	158	99
N204103	205	294	< 5	2	0.2	20	0.4	1.82	580	1.5	< 2	0.55	< 0.5	7	214	69
N204104	205	294	< 5	2	0.4	< 10	< 0.2	2.54	500	1.5	< 2	0.92	< 0.5	3	180	27
N204105	205	294	< 5	2	0.4	50	< 0.2	2.45	550	1.5	< 2	1.67	< 0.5	7	174	51
N204106	205	294	< 5	6	2.2	350	0.2	1.99	740	1.5	< 2	0.17	< 0.5	14	135	55
N204107	205	294	< 5	2	0.4	120	0.4	2.82	1010	3.0	< 2	0.98	< 0.5	7	113	51
N204108	205	294	< 5	4	0.2	240	0.2	2.01	310	3.0	< 2	0.36	< 0.5	5	204	70
N204109	205	294	< 5	2	0.4	380	< 0.2	2.43	260	4.5	< 2	0.16	1.5	6	154	58
N204110	205	294	< 5	1	1.0	30	0.2	0.95	130	9.5	< 2	1.41	< 0.5	5	199	40
N204111	205	294	25	16	1.8	180	< 0.2	1.88	220	3.0	< 2	0.06	0.5	7	202	64
N204112	205	294	10	8	1.2	290	< 0.2	2.56	290	4.5	< 2	0.05	2.0	8	203	65
N204113	205	294	< 5	2	0.4	30	< 0.2	1.93	310	8.0	< 2	0.36	0.5	6	224	35
N204114	205	294	< 5	2	0.6	10	< 0.2	1.72	350	15.0	< 2	0.24	< 0.5	5	216	37
N204115	205	294	< 5	1	0.4	< 10	< 0.2	1.16	230	9.5	< 2	0.20	< 0.5	2	189	14
N204116	205	294	< 5	10	1.0	430	< 0.2	2.47	220	3.5	2	0.14	3.0	7	191	71
N204117	205	294	< 5	10	0.6	250	< 0.2	2.70	450	3.5	< 2	0.23	3.0	7	164	52
N204118	205	294	< 5	8	2.2	740	< 0.2	1.84	320	3.0	< 2	0.45	6.0	6	162	49
N204119	205	294	< 5	2	1.0	50	< 0.2	2.20	210	3.0	< 2	5.55	0.5	6	145	66
N204120	205	294	< 5	36	0.6	190	< 0.2	2.42	300	3.0	< 2	2.65	7.5	8	186	60
N204121	205	294	< 5	10	0.2	< 10	< 0.2	2.00	550	2.5	< 2	10.60	< 0.5	5	137	31
N204122	205	294	< 5	4	0.4	10	< 0.2	1.85	360	4.0	< 2	1.82	< 0.5	4	197	49
N204123	205	294	< 5	14	0.2	< 10	< 0.2	3.75	550	3.5	< 2	5.29	< 0.5	8	103	67
N204124	205	294	15	10	0.4	120	< 0.2	4.18	340	3.5	2	2.32	4.0	11	166	83
N204125	205	294	< 5	6	0.6	10	< 0.2	3.97	280	3.5	< 2	4.20	0.5	8	138	67
N204126	205	294	< 5	2	1.0	370	0.2	2.82	280	4.5	2	1.81	19.0	7	176	56
N204127	205	294	< 5	4	1.8	140	0.4	2.33	240	4.5	< 2	8.30	4.5	7	108	65
N204128	205	294	25	42	3.0	400	0.2	1.68	220	3.0	< 2	12.85	5.0	5	104	42
N204129	205	294	10	34	2.4	600	0.2	2.78	310	7.5	2	5.20	19.5	9	131	66
N204130	205	294	< 5	12	1.0	110	< 0.2	2.97	200	7.0	< 2	1.93	6.5	18	154	65

CERTIFICATION: _____

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 08-SEP-97
Invoice No. : I9739483
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9739483

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
N204091	205	294	1.87	1.26	0.70	1030	< 1	0.15	37	200	10	70	0.17	62	< 10	56
N204092	205	294	1.94	0.94	0.71	7100	1	0.13	144	290	10	187	0.15	81	< 10	170
N204093	205	294	3.13	1.74	0.91	4810	< 1	0.10	146	300	12	88	0.30	145	< 10	212
N204094	205	294	3.09	1.82	0.97	3330	1	0.23	182	370	10	132	0.28	155	< 10	280
N204095	205	294	2.66	1.52	0.64	780	1	0.09	109	610	10	176	0.16	131	< 10	272
N204096	205	294	4.78	0.53	0.25	930	2	0.05	27	250	6	119	0.08	85	< 10	190
N204097	205	294	14.75	0.56	0.24	500	3	0.06	25	260	< 2	224	0.10	121	< 10	236
N204098	205	294	1.16	0.68	0.19	615	7	0.09	53	400	48	338	0.05	118	< 10	2450
N204099	205	294	1.11	0.72	0.16	245	1	0.10	39	100	24	132	0.05	87	< 10	404
N204100	205	294	0.91	0.79	0.23	215	1	0.05	36	630	18	40	0.07	104	< 10	174
N204101	205	294	4.96	0.53	0.52	2730	1	0.04	31	500	4	258	0.09	122	< 10	282
N204102	205	294	7.29	1.14	0.67	2950	< 1	0.06	31	450	< 2	92	0.13	103	< 10	136
N204103	205	294	1.80	0.62	0.21	600	12	0.05	35	350	12	49	0.08	97	< 10	74
N204104	205	294	2.94	1.01	0.28	1030	1	0.06	19	440	2	71	0.09	97	< 10	64
N204105	205	294	3.78	0.99	0.43	1805	< 1	0.05	30	380	10	118	0.09	107	< 10	198
N204106	205	294	0.87	0.75	0.18	70	4	0.09	74	80	36	109	0.06	67	< 10	584
N204107	205	294	0.97	1.18	0.30	190	2	0.10	54	200	16	141	0.10	115	< 10	286
N204108	205	294	1.69	0.99	0.23	220	3	0.05	50	110	24	32	0.08	141	< 10	824
N204109	205	294	1.84	1.18	0.26	135	3	0.06	43	140	26	37	0.10	124	< 10	1545
N204110	205	294	18.50	0.16	0.18	1485	6	0.03	32	430	< 2	172	0.04	74	< 10	288
N204111	205	294	2.14	0.87	0.19	125	2	0.04	61	120	48	17	0.08	106	< 10	846
N204112	205	294	2.04	1.22	0.27	260	11	0.06	68	100	22	18	0.11	126	< 10	1535
N204113	205	294	6.00	0.53	0.21	935	3	0.06	52	280	2	180	0.10	84	< 10	328
N204114	205	294	4.94	0.53	0.19	430	3	0.07	30	290	< 2	109	0.10	87	< 10	144
N204115	205	294	15.90	0.19	0.14	285	3	0.04	18	520	< 2	209	0.07	83	< 10	122
N204116	205	294	1.91	1.10	0.28	135	4	0.06	62	190	24	57	0.10	127	< 10	1390
N204117	205	294	1.31	1.23	0.31	115	3	0.12	53	160	18	106	0.09	110	< 10	974
N204118	205	294	1.70	0.73	0.22	490	5	0.08	52	270	28	119	0.06	107	< 10	2150
N204119	205	294	4.60	0.87	0.40	2040	7	0.07	34	590	20	199	0.07	101	< 10	576
N204120	205	294	3.27	1.14	0.26	1035	4	0.04	30	1060	136	45	0.09	127	< 10	1425
N204121	205	294	2.94	0.72	0.29	1565	3	0.05	24	470	20	316	0.06	62	< 10	88
N204122	205	294	5.43	0.42	0.30	665	5	0.11	16	460	< 2	122	0.07	129	< 10	110
N204123	205	294	4.08	1.85	0.43	1515	2	0.06	21	1690	20	83	0.19	120	< 10	48
N204124	205	294	3.12	2.06	0.41	1055	< 1	0.08	26	780	62	30	0.22	145	< 10	740
N204125	205	294	3.27	1.94	0.40	1315	1	0.07	38	930	190	58	0.19	164	< 10	120
N204126	205	294	4.64	1.38	0.58	1880	< 1	0.05	66	810	652	29	0.14	181	< 10	3580
N204127	205	294	11.40	0.69	0.82	5060	6	0.05	41	1060	520	159	0.09	139	< 10	1005
N204128	205	294	7.70	0.79	0.39	3580	7	0.03	27	1540	450	273	0.06	132	< 10	1830
N204129	205	294	8.68	1.33	0.60	3550	4	0.05	49	850	650	125	0.12	181	< 10	4370
N204130	205	294	3.37	1.51	0.43	1235	1	0.04	46	880	164	47	0.12	188	< 10	894

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 08-SEP-97
Invoice No. :I9739483
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9739483

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
N204131	205	294	< 5	2	0.6	140	< 0.2	3.67	220	6.0	< 2	1.12	7.0	25	160	89
N204132	205	294	< 5	4	0.4	110	< 0.2	4.45	180	6.5	< 2	0.61	1.5	23	140	79
N204133	205	294	< 5	2	0.4	< 10	< 0.2	4.23	620	6.0	< 2	0.35	< 0.5	11	156	58
N204134	205	294	< 5	12	3.8	30	0.6	2.32	310	4.0	< 2	1.38	< 0.5	6	170	54
N204135	205	294	< 5	26	6.2	40	0.6	2.55	250	4.0	< 2	0.98	< 0.5	8	169	48
N204136	205	294	< 5	30	4.4	30	1.2	2.93	80	5.0	< 2	0.88	< 0.5	9	233	56
N204137	205	294	< 5	26	3.6	20	1.0	3.14	100	4.5	< 2	0.64	< 0.5	8	201	69
N204138	205	294	< 5	40	6.2	40	1.2	2.91	90	4.5	< 2	0.75	< 0.5	12	207	57
N204139	205	294	< 5	24	5.6	30	0.8	3.04	120	4.5	< 2	0.87	< 0.5	6	197	50
N204140	205	294	< 5	22	6.0	40	0.8	2.47	90	3.5	< 2	1.02	< 0.5	10	207	47
N204141	205	294	< 5	50	0.8	10	< 0.2	6.55	750	3.5	2	7.79	2.5	39	220	37
N204142	205	294	< 5	2	0.4	10	< 0.2	5.87	700	3.5	< 2	1.79	1.0	5	116	18
N204143	205	294	< 5	2	0.8	10	< 0.2	7.63	890	3.5	< 2	1.66	< 0.5	2	70	9
N204144	205	294	< 5	8	0.4	< 10	< 0.2	7.30	1290	3.0	< 2	1.27	0.5	2	87	7
N204145	205	294	< 5	8	0.8	40	< 0.2	5.58	670	2.5	< 2	1.01	1.0	3	127	19
N204146	205	294	< 5	6	0.6	30	< 0.2	4.36	590	2.0	< 2	0.82	< 0.5	4	138	27
N204147	205	294	< 5	2	0.2	< 10	< 0.2	6.51	4730	3.5	2	0.57	0.5	< 1	82	4

CERTIFICATION:_____

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 08-SEP-97
Invoice No. :I9739483
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9739483

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
N204131	205	294	2.41	1.88	0.45	550	< 1	0.08	52	530	60	34	0.13	194	< 10	1180
N204132	205	294	3.11	2.32	0.55	370	< 1	0.11	52	490	36	29	0.16	172	< 10	256
N204133	205	294	1.91	2.15	0.48	200	1	0.10	37	210	50	19	0.18	136	< 10	32
N204134	205	294	2.50	1.15	0.29	300	1	0.05	39	4070	60	67	0.09	170	< 10	28
N204135	205	294	2.49	1.29	0.30	415	2	0.05	39	2050	56	47	0.10	184	< 10	28
N204136	205	294	2.86	1.42	0.34	265	11	0.06	60	2510	64	51	0.11	241	< 10	86
N204137	205	294	2.75	1.41	0.33	235	3	0.07	52	2350	62	46	0.11	254	< 10	28
N204138	205	294	3.28	1.42	0.29	280	14	0.06	77	1320	116	45	0.10	286	< 10	34
N204139	205	294	2.67	1.54	0.32	225	4	0.07	49	2880	76	54	0.11	309	< 10	42
N204140	205	294	2.92	1.19	0.31	230	6	0.05	53	2120	84	57	0.09	251	< 10	48
N204141	205	294	4.42	2.95	2.18	1395	< 1	0.46	91	1450	40	445	0.54	190	< 10	254
N204142	205	294	1.80	2.75	0.98	445	< 1	0.13	20	590	18	118	0.15	54	< 10	124
N204143	205	294	1.91	3.23	0.87	295	3	0.62	6	480	14	103	0.17	19	< 10	94
N204144	205	294	1.77	3.45	1.00	250	< 1	0.45	5	560	18	88	0.18	29	< 10	66
N204145	205	294	1.45	2.60	0.75	225	1	0.14	16	690	16	58	0.14	66	< 10	122
N204146	205	294	1.68	1.50	0.49	225	< 1	0.80	23	400	8	88	0.10	55	< 10	58
N204147	205	294	1.44	1.83	0.32	205	< 1	2.21	5	660	20	129	0.11	23	< 10	50

CERTIFICATION:

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To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9739489

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9739489

(GP W) - WESTMIN RESOURCES LTD.

Project: PUCK
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 9-SEP-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	33	Geochem ring to approx 150 mesh
294	33	4-7 Kg crush and split
3202	33	Rock - save entire reject
285	33	ICP - HF digestion charge
287	33	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	33	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
13	33	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	33	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	33	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	33	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	33	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	33	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	33	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	33	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	33	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	33	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	33	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	33	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	33	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	33	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	33	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	33	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	33	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	33	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	33	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	33	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	33	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	33	Pb ppm: 24 element, rock & core	AAS	2	10000
582	33	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	33	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	33	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	33	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	33	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

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To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 09-SEP-97
Invoice No. : I9739489
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9739489

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
N204058	205	294	< 5	24	2.0	< 10	0.2	2.59	160	0.5	< 2	0.66	< 0.5	9	228	33
N204059	205	294	< 5	36	4.8	20	< 0.2	1.88	120	0.5	< 2	1.06	< 0.5	6	243	16
N204060	205	294	35	70	4.4	10	< 0.2	1.68	80	0.5	< 2	2.70	< 0.5	3	140	41
N204061	205	294	< 5	46	3.2	10	< 0.2	2.70	110	1.0	< 2	1.20	< 0.5	7	182	82
N204062	205	294	< 5	80	1.4	< 10	< 0.2	4.33	140	1.5	< 2	1.24	0.5	8	145	83
N204063	205	294	< 5	86	3.0	< 10	< 0.2	2.58	50	1.5	< 2	2.55	< 0.5	9	169	61
N204064	205	294	< 5	50	2.0	10	< 0.2	3.05	60	2.5	< 2	1.42	1.0	13	160	61
N204065	205	294	< 5	44	1.4	< 10	< 0.2	2.66	90	2.5	< 2	1.43	3.0	9	198	53
N204066	205	294	< 5	56	2.0	< 10	< 0.2	2.11	110	2.0	< 2	2.92	1.0	16	193	47
N204067	205	294	< 5	20	2.0	20	< 0.2	1.65	80	1.5	< 2	10.15	1.5	7	155	25
N204068	205	294	< 5	6	3.4	40	< 0.2	1.17	60	2.0	< 2	13.65	< 0.5	3	84	28
N204069	205	294	< 5	12	2.4	30	< 0.2	3.06	120	2.5	< 2	4.61	1.5	14	162	62
N204070	205	294	< 5	8	6.4	40	< 0.2	2.31	70	3.0	< 2	1.64	0.5	9	216	61
N204071	205	294	< 5	20	4.2	40	< 0.2	3.95	80	2.0	< 2	2.60	1.5	4	174	30
N204072	205	294	< 5	14	1.8	< 10	< 0.2	6.96	2500	3.5	< 2	0.88	< 0.5	1	123	7
N204073	205	294	< 5	4	0.8	< 10	< 0.2	6.54	810	1.5	< 2	0.64	0.5	2	163	5
N204074	205	294	< 5	2	0.8	< 10	< 0.2	6.41	4300	1.5	< 2	0.54	0.5	< 1	111	4
N204075	205	294	< 5	6	1.0	< 10	< 0.2	6.00	420	3.0	< 2	2.42	2.0	< 1	146	7
N204076	205	294	< 5	10	4.0	80	< 0.2	6.34	230	4.0	< 2	1.29	7.0	2	123	10
N204077	205	294	< 5	2	0.6	< 10	< 0.2	6.75	5330	2.5	< 2	0.61	1.0	< 1	127	2
N204078	205	294	< 5	2	0.6	< 10	< 0.2	7.71	840	2.5	< 2	0.68	< 0.5	2	94	4
N204079	205	294	< 5	2	0.4	< 10	< 0.2	8.10	4140	2.5	< 2	0.64	0.5	< 1	109	4
N204080	205	294	< 5	2	1.4	20	< 0.2	6.62	490	3.0	< 2	1.28	< 0.5	2	126	7
N204081	205	294	< 5	2	0.8	50	< 0.2	6.55	410	2.5	< 2	0.97	1.0	1	114	9
N204082	205	294	< 5	2	0.8	60	< 0.2	6.59	360	2.5	< 2	0.87	1.0	3	81	6
N204083	205	294	< 5	1	2.0	< 10	< 0.2	6.58	1610	2.5	< 2	1.40	0.5	2	108	5
N204084	205	294	< 5	2	2.2	< 10	< 0.2	6.95	2900	3.0	< 2	1.57	0.5	1	140	6
N204085	205	294	< 5	2	2.0	10	< 0.2	6.75	580	2.5	< 2	3.09	0.5	2	128	7
N204086	205	294	< 5	2	2.0	30	< 0.2	6.27	1210	1.5	2	1.55	< 0.5	3	136	7
N204087	205	294	< 5	2	4.8	130	< 0.2	4.86	140	1.5	< 2	1.51	4.5	7	182	65
N204088	205	294	< 5	6	3.6	40	< 0.2	4.47	110	2.0	< 2	4.46	< 0.5	8	136	42
N204089	205	294	< 5	2	3.4	50	< 0.2	4.45	160	1.5	< 2	2.47	0.5	6	149	41
N204090	205	294	< 5	2	4.4	10	< 0.2	4.33	280	1.5	< 2	1.83	0.5	9	137	68

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

.o: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page I er :1-B
Total Pages :1
Certificate Date: 09-SEP-97
Invoice No. :I9739489
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9739489

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
N204058	205	294	1.66	0.87	0.43	1500	1	0.08	30	170	8	59	0.11	63	< 10	54
N204059	205	294	2.01	0.32	0.54	1165	3	0.05	24	130	14	51	0.06	66	< 10	154
N204060	205	294	10.65	0.35	0.94	6190	6	0.06	11	430	4	97	0.04	99	< 10	18
N204061	205	294	3.42	0.88	0.55	1910	2	0.07	22	580	22	51	0.10	119	< 10	116
N204062	205	294	5.09	1.71	0.73	2290	1	0.12	24	750	46	72	0.18	129	< 10	320
N204063	205	294	4.74	1.01	0.80	4990	1	0.08	33	960	10	147	0.07	136	< 10	112
N204064	205	294	4.68	1.14	0.48	3840	1	0.07	32	770	18	94	0.09	110	< 10	136
N204065	205	294	2.62	1.08	0.55	695	3	0.05	35	440	12	74	0.08	139	< 10	418
N204066	205	294	2.08	0.71	0.29	960	3	0.04	26	1110	24	68	0.06	131	< 10	226
N204067	205	294	2.48	0.36	0.57	2910	8	0.03	27	400	82	166	0.04	99	< 10	306
N204068	205	294	4.69	0.39	0.17	1590	17	0.06	15	280	144	183	0.03	77	< 10	198
N204069	205	294	3.91	1.09	0.52	2260	5	0.08	36	750	128	108	0.12	145	< 10	494
N204070	205	294	3.20	1.06	0.33	745	3	0.04	52	1190	64	58	0.08	132	< 10	104
N204071	205	294	2.99	1.48	0.32	580	7	0.09	31	960	50	101	0.08	145	< 10	294
N204072	205	294	4.15	3.97	0.55	200	3	0.25	4	320	58	86	0.15	24	< 10	36
N204073	205	294	1.31	5.15	0.18	120	1	0.33	4	350	20	140	0.09	14	< 10	56
N204074	205	294	0.62	5.01	0.11	90	1	0.29	3	410	22	83	0.08	14	< 10	10
N204075	205	294	1.12	2.92	0.34	320	2	0.17	7	310	30	119	0.10	45	< 10	160
N204076	205	294	3.01	3.44	0.40	140	6	0.21	16	690	42	146	0.16	98	< 10	532
N204077	205	294	0.60	5.45	0.13	70	2	0.34	3	440	24	89	0.10	15	< 10	16
N204078	205	294	1.00	6.19	0.14	75	1	0.63	3	460	42	97	0.11	18	< 10	16
N204079	205	294	0.56	5.24	0.09	65	1	2.16	3	680	14	106	0.12	18	< 10	14
N204080	205	294	1.74	3.35	0.61	115	3	0.35	7	650	30	123	0.15	37	< 10	72
N204081	205	294	1.83	3.37	0.87	85	2	0.48	6	670	20	91	0.15	37	< 10	210
N204082	205	294	2.00	3.10	0.76	145	1	0.93	6	590	16	60	0.14	34	< 10	174
N204083	205	294	1.53	2.99	0.64	240	2	0.70	5	850	14	58	0.13	30	< 10	50
N204084	205	294	1.65	3.14	0.69	260	3	0.28	6	600	18	72	0.13	34	< 10	62
N204085	205	294	1.36	3.00	0.23	390	1	0.21	7	650	20	128	0.13	39	< 10	68
N204086	205	294	1.60	2.52	0.49	425	1	0.17	12	700	14	69	0.12	38	< 10	36
N204087	205	294	2.40	1.83	0.99	220	6	0.13	60	1290	10	89	0.13	298	< 10	404
N204088	205	294	2.32	1.93	2.60	420	7	0.11	38	400	8	102	0.10	77	< 10	26
N204089	205	294	1.92	2.00	1.81	255	1	0.08	29	400	< 2	85	0.12	58	< 10	48
N204090	205	294	2.21	1.76	1.67	260	< 1	0.08	31	360	6	73	0.14	52	< 10	70

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
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PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9739498

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9739498

(GP W) - WESTMIN RESOURCES LTD.

Project: PUCK
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 8-SEP-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	46	Geochem ring to approx 150 mesh
294	46	4-7 Kg crush and split
3202	46	Rock - save entire reject
285	46	ICP - HF digestion charge
287	46	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	46	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
13	46	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	46	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	46	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	46	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	46	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	46	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	46	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	46	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	46	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	46	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	46	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	46	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	46	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	46	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	46	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	46	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	46	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	46	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	46	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	46	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	46	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	46	Pb ppm: 24 element, rock & core	AAS	2	10000
582	46	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	46	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	46	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	46	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	46	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

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V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :1-A
Total Pages :2
Certificate Date: 08-SEP-97
Invoice No. :I9739498
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9739498

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
N204173	205	294	15	2	0.2	1780	< 0.2	2.22	70	3.5	< 2	2.62	46.5	6	162	65
N204174	205	294	< 5	1	0.4	80	< 0.2	2.30	70	3.0	< 2	4.64	3.5	6	159	66
N204175	205	294	< 5	2	0.4	990	< 0.2	2.38	70	3.5	< 2	4.41	34.5	5	166	42
N204176	205	294	15	16	0.6	10	< 0.2	2.22	70	4.0	< 2	7.04	0.5	6	129	58
N204177	205	294	10	2	0.4	< 10	< 0.2	1.72	80	4.0	< 2	10.95	< 0.5	5	96	39
N204178	205	294	< 5	14	1.2	< 10	< 0.2	1.73	90	3.5	< 2	8.74	< 0.5	6	94	44
N204179	205	294	< 5	1	0.4	20	< 0.2	2.01	90	5.0	< 2	8.65	0.5	6	105	46
N204180	205	294	< 5	1	0.4	70	< 0.2	2.22	110	6.5	< 2	8.03	5.5	9	100	44
N204181	205	294	< 5	24	2.8	80	< 0.2	2.43	70	6.0	< 2	3.41	1.5	14	129	67
N204182	205	294	20	14	3.4	30	< 0.2	1.83	60	4.5	< 2	1.16	< 0.5	8	131	69
N204183	205	294	10	20	4.0	10	< 0.2	2.00	50	4.0	2	1.65	< 0.5	11	141	105
N204184	205	294	< 5	12	1.2	< 10	< 0.2	4.40	130	6.5	< 2	0.73	< 0.5	17	145	81
N204185	205	294	< 5	1	1.4	30	< 0.2	3.81	130	5.5	< 2	1.12	< 0.5	12	165	63
N204186	205	294	< 5	32	3.4	10	< 0.2	2.05	70	2.5	< 2	1.22	0.5	7	202	55
N204187	205	294	20	80	9.6	30	1.0	1.39	60	2.0	< 2	2.19	< 0.5	6	135	35
N204188	205	294	20	58	12.5	20	1.0	2.44	50	3.0	< 2	3.41	0.5	8	142	53
N204189	205	294	< 5	1	0.6	< 10	< 0.2	5.16	400	3.0	< 2	1.35	0.5	2	105	10
N204190	205	294	< 5	16	0.4	< 10	< 0.2	6.61	700	5.5	< 2	1.40	< 0.5	1	90	9
N204191	205	294	< 5	84	12.0	150	< 0.2	4.46	120	3.5	< 2	0.93	2.5	7	187	89
N204192	205	294	< 5	1	0.2	< 10	< 0.2	6.04	3060	3.5	< 2	0.47	0.5	< 1	67	5
N204193	205	294	< 5	2	< 0.2	< 10	< 0.2	6.31	2980	3.5	< 2	0.84	0.5	< 1	98	7
N204194	205	294	< 5	2	< 0.2	< 10	< 0.2	6.01	2940	3.0	< 2	0.53	0.5	< 1	77	8
N204195	205	294	< 5	1	< 0.2	< 10	< 0.2	6.52	3430	3.5	2	0.45	0.5	< 1	92	6
N204196	205	294	< 5	2	< 0.2	< 10	< 0.2	6.24	3630	3.0	< 2	0.84	0.5	< 1	74	5
N204197	205	294	< 5	2	0.4	10	< 0.2	6.27	350	2.5	< 2	0.62	0.5	1	106	7
N204198	205	294	< 5	2	1.8	70	< 0.2	7.31	320	1.5	< 2	0.31	0.5	1	86	8
N204199	205	294	< 5	2	2.2	120	< 0.2	7.74	420	0.5	< 2	0.25	2.0	2	88	9
N204200	205	294	< 5	6	2.0	120	0.8	5.62	1370	1.5	< 2	0.56	0.5	1	76	8
N204201	205	294	< 5	4	1.2	50	< 0.2	5.88	300	1.5	< 2	0.24	< 0.5	1	95	5
N204202	205	294	< 5	26	3.6	90	< 0.2	5.51	320	2.0	< 2	0.13	< 0.5	1	74	5
N204203	205	294	< 5	36	3.4	90	< 0.2	5.08	1700	1.5	< 2	0.21	0.5	1	134	7
N204204	205	294	< 5	30	2.6	40	< 0.2	4.20	1200	0.5	< 2	0.09	< 0.5	1	126	6
N204205	205	294	< 5	56	4.2	100	0.4	5.32	1360	1.5	< 2	0.72	< 0.5	1	113	9
N204206	205	294	< 5	14	3.4	50	< 0.2	5.79	430	1.5	< 2	0.17	< 0.5	1	85	6
N204207	205	294	< 5	66	4.2	1210	1.4	5.93	870	1.5	< 2	0.30	2.5	1	98	5
N204208	205	294	< 5	24	3.2	600	0.6	6.68	340	2.0	< 2	0.69	1.0	1	81	7
N204209	205	294	< 5	38	5.0	720	0.6	6.55	2190	1.5	< 2	0.36	2.0	1	103	7
N204210	205	294	< 5	10	3.6	1210	0.4	5.35	240	1.0	< 2	0.41	5.0	2	101	7
N204211	205	294	< 5	22	3.2	430	< 0.2	5.34	1560	1.5	< 2	0.61	2.0	1	117	7
N204212	205	294	< 5	20	3.6	220	0.4	5.89	550	1.5	< 2	0.86	0.5	3	102	7

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
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To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 08-SEP-97
Invoice No. :I9739498
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9739498

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
N204173	205	294	7.03	1.08	0.60	3710	6	0.44	30	810	42	210	0.06	153	< 10	>10000
N204174	205	294	7.02	0.83	0.53	3240	3	0.24	29	850	22	240	0.07	142	< 10	490
N204175	205	294	6.63	0.64	0.55	3610	3	0.33	25	830	48	306	0.08	146	< 10	6350
N204176	205	294	6.36	0.97	0.50	3900	4	0.05	26	940	102	216	0.08	166	< 10	86
N204177	205	294	9.53	0.87	0.73	6580	3	0.03	13	1000	62	270	0.08	132	< 10	48
N204178	205	294	11.15	0.83	0.75	8740	4	0.03	14	1480	80	243	0.08	157	< 10	64
N204179	205	294	7.25	0.93	0.63	5610	2	0.05	24	890	132	251	0.09	146	< 10	132
N204180	205	294	7.29	0.95	0.65	5160	1	0.05	27	1010	104	259	0.10	168	< 10	994
N204181	205	294	4.65	1.22	0.29	1175	< 1	0.06	30	640	66	170	0.07	149	< 10	206
N204182	205	294	6.34	0.89	0.18	365	1	0.04	18	550	132	53	0.05	144	< 10	14
N204183	205	294	11.75	1.00	0.17	545	2	0.05	18	580	38	81	0.06	124	< 10	16
N204184	205	294	3.22	2.18	0.50	445	< 1	0.12	47	450	40	32	0.14	155	< 10	24
N204185	205	294	2.65	1.89	0.41	490	3	0.10	34	500	36	32	0.12	148	< 10	46
N204186	205	294	2.84	0.78	0.26	410	3	0.03	37	1470	30	64	0.05	168	< 10	92
N204187	205	294	12.60	0.66	0.13	570	4	0.05	14	730	78	59	0.04	113	< 10	18
N204188	205	294	7.99	1.08	0.27	915	3	0.05	23	530	64	150	0.07	154	< 10	116
N204189	205	294	2.40	1.30	0.38	405	4	0.99	5	320	40	76	0.09	29	< 10	96
N204190	205	294	2.36	2.77	0.68	655	4	0.37	3	280	6	89	0.17	21	< 10	66
N204191	205	294	5.05	2.01	0.49	200	11	0.12	75	2080	126	82	0.11	234	< 10	230
N204192	205	294	1.31	2.17	0.45	125	1	0.16	5	630	16	43	0.11	29	< 10	52
N204193	205	294	1.33	1.94	0.39	200	1	0.16	5	640	20	59	0.11	29	< 10	54
N204194	205	294	1.23	2.31	0.57	125	< 1	0.16	8	510	18	43	0.11	26	< 10	56
N204195	205	294	1.37	2.13	0.45	80	1	0.17	9	660	18	78	0.11	28	< 10	52
N204196	205	294	1.11	2.02	0.42	155	1	0.17	6	630	20	68	0.12	24	< 10	50
N204197	205	294	1.81	3.06	0.67	105	3	0.18	6	740	14	75	0.13	36	< 10	82
N204198	205	294	1.62	3.11	0.23	75	3	0.45	7	560	22	57	0.16	50	10	62
N204199	205	294	1.30	3.23	0.07	30	2	0.29	9	950	24	51	0.19	55	< 10	132
N204200	205	294	3.83	3.11	0.15	85	4	0.37	6	870	24	166	0.10	35	< 10	128
N204201	205	294	1.84	3.58	0.15	75	3	0.34	5	740	18	130	0.10	35	< 10	30
N204202	205	294	2.65	3.48	0.15	70	3	0.22	5	540	22	79	0.10	34	< 10	30
N204203	205	294	2.82	3.72	0.11	55	2	0.24	7	870	26	132	0.10	36	< 10	34
N204204	205	294	2.67	3.35	0.07	35	3	0.23	5	350	22	132	0.08	27	< 10	16
N204205	205	294	5.37	3.15	0.14	115	4	0.22	5	720	24	353	0.11	38	< 10	20
N204206	205	294	1.96	3.24	0.13	55	3	0.24	6	680	22	101	0.13	39	< 10	20
N204207	205	294	5.76	2.87	0.14	90	3	0.25	4	700	248	102	0.14	31	< 10	1010
N204208	205	294	2.56	2.85	0.22	125	2	0.39	9	890	78	138	0.13	34	< 10	480
N204209	205	294	3.43	2.89	0.18	105	4	0.24	14	530	160	85	0.12	31	< 10	634
N204210	205	294	1.81	2.11	0.13	70	3	0.61	10	540	110	62	0.11	34	< 10	1380
N204211	205	294	3.29	2.30	0.17	90	1	0.24	8	690	90	84	0.12	36	10	498
N204212	205	294	3.38	2.42	0.21	100	1	0.59	6	680	130	94	0.12	35	< 10	258

CERTIFICATION:

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Project : PUCK
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Certificate Date: 08-SEP-97
Invoice No. :19739498
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CERTIFICATE OF ANALYSIS A9739498

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
N204213	205	294	< 5	2	2.0	50	< 0.2	6.60	390	2.0	< 2	1.67	< 0.5	2	109	6
N204214	205	294	< 5	2	0.6	20	< 0.2	6.59	710	2.0	< 2	1.70	< 0.5	1	84	5
N204215	205	294	< 5	1	0.8	10	< 0.2	6.77	370	2.5	< 2	1.66	< 0.5	1	66	6
N204216	205	294	< 5	1	0.2	10	< 0.2	8.13	1840	2.0	< 2	1.48	0.5	1	70	6
N204217	205	294	< 5	1	1.4	10	< 0.2	6.43	180	1.5	< 2	1.23	0.5	1	93	8
N204218	205	294	< 5	1	0.4	< 10	< 0.2	6.47	710	2.0	< 2	1.29	< 0.5	1	86	6

CERTIFICATION:_____

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

o: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 08-SEP-97
Invoice No. : I9739498
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9739498

SAMPLE	PREP CODE	Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
N204213	205 294	1.26	3.14	0.34	285	< 1	0.19	5	670	24	173	0.14	36	< 10	44
N204214	205 294	0.86	3.26	0.44	380	3	0.18	5	680	20	158	0.15	36	< 10	42
N204215	205 294	1.40	3.32	0.37	525	1	0.20	5	590	16	123	0.15	32	< 10	30
N204216	205 294	1.39	2.77	0.30	480	4	0.27	6	760	14	122	0.19	44	< 10	46
N204217	205 294	1.65	3.01	0.23	315	1	0.20	6	610	18	94	0.14	38	< 10	42
N204218	205 294	1.81	3.04	0.38	455	2	0.18	5	380	40	124	0.14	35	< 10	24

CERTIFICATION: Ian A. Bradley

Chemex Labs Ltd.

*Analytical Chemists * Geochemists * Registered Assayers*

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9739512

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9739512

(GP W) - WESTMIN RESOURCES LTD.

Project: PUCK
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 8-SEP-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	5	Geochem ring to approx 150 mesh
294	5	4-7 Kg crush and split
3202	5	Rock - save entire reject
285	5	ICP - HF digestion charge
287	5	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	5	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
13	5	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	5	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	5	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	5	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	5	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	5	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	5	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	5	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	5	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	5	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	5	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	5	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	5	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	5	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	5	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	5	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	5	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	5	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	5	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	5	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	5	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	5	Pb ppm: 24 element, rock & core	AAS	2	10000
582	5	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	5	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	5	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	5	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	5	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 08-SEP-97
Invoice No. :I9739512
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9739512

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
N204168	205	294	10	2	0.2	390	< 0.2	2.27	100	5.0	< 2	3.40	0.5	9	131	77
N204169	205	294	5	22	0.6	190	< 0.2	0.88	70	3.5	< 2	5.36	< 0.5	5	56	24
N204170	205	294	< 5	30	0.4	120	< 0.2	0.55	100	3.5	< 2	8.67	< 0.5	5	62	35
N204171	205	294	< 5	2	0.2	70	< 0.2	1.28	130	5.0	< 2	4.40	1.5	3	99	36
N204172	205	294	< 5	2	0.2	110	< 0.2	2.00	120	3.0	< 2	5.84	3.0	7	119	47

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
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To: WESTMIN RESOURCES LTD.
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P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 08-SEP-97
Invoice No. : I9739512
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9739512

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
N204168	205	294	3.89	1.14	0.39	3970	1	0.11	22	930	< 2	209	0.09	177	< 10	120
N204169	205	294	14.20	0.35	0.08	1580	1	0.05	11	440	12	55	0.02	64	< 10	104
N204170	205	294	18.90	0.25	0.08	2150	4	0.03	7	270	140	194	0.01	68	< 10	78
N204171	205	294	6.50	0.41	0.42	5150	5	0.20	17	980	12	310	0.05	118	< 10	490
N204172	205	294	6.65	0.87	0.68	4880	5	0.27	44	930	14	398	0.07	126	< 10	676

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

TO: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9740147

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9740147

(GP W) - WESTMIN RESOURCES LTD.

Project: PUCK
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 11-SEP-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	40	Geochem ring to approx 150 mesh
226	40	0-3 Kg crush and split
3202	40	Rock - save entire reject
285	40	ICP - HF digestion charge
287	40	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	40	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
13	40	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	40	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	40	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	40	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	40	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	40	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	40	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	40	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	40	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	40	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	40	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	40	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	40	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	40	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	40	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	40	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	40	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	40	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	40	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	40	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	40	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	40	Pb ppm: 24 element, rock & core	AAS	2	10000
582	40	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	40	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	40	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	40	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	40	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 11-SEP-97
Invoice No. : I9740147
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9740147

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
204219	205	226	10	1	0.6	40	< 0.2	2.00	170	2.5	< 2	0.35	< 0.5	3	191	31
204220	205	226	40	1	2.0	180	< 0.2	1.11	60	1.5	< 2	0.07	< 0.5	1	199	27
204221	205	226	< 5	1	1.6	230	< 0.2	0.79	100	1.0	< 2	0.15	< 0.5	2	199	6
204222	205	226	25	2	3.2	250	< 0.2	1.21	150	0.5	< 2	0.09	< 0.5	3	148	56
204223	205	226	15	1	5.2	260	< 0.2	1.32	100	1.0	< 2	0.18	< 0.5	8	176	69
204224	205	226	15	2	0.6	30	< 0.2	2.35	330	2.0	< 2	0.06	< 0.5	4	151	86
204225	205	226	5	2	0.2	10	< 0.2	2.09	510	2.0	< 2	0.07	< 0.5	5	169	64
204226	205	226	10	1	1.2	410	< 0.2	1.52	110	1.5	< 2	0.28	< 0.5	2	175	46
204227	205	226	20	1	4.8	1340	< 0.2	0.61	90	0.5	< 2	4.19	< 0.5	2	114	18
204228	205	226	10	1	3.8	420	< 0.2	2.66	80	2.0	2	0.75	< 0.5	5	166	91
204229	205	226	30	1	0.2	110	< 0.2	2.00	160	1.5	< 2	1.10	< 0.5	4	138	43
204230	205	226	20	4	0.4	70	< 0.2	2.37	200	1.0	< 2	1.10	< 0.5	8	176	74
204231	205	226	10	6	0.2	500	< 0.2	4.64	170	4.0	< 2	4.14	5.0	10	128	86
204232	205	226	15	2	0.8	50	< 0.2	2.44	100	3.5	< 2	6.85	2.5	6	123	59
204233	205	226	20	10	0.8	130	< 0.2	2.05	70	2.5	< 2	7.97	3.0	6	102	56
204234	205	226	10	2	0.8	470	< 0.2	2.50	140	3.0	< 2	6.84	5.5	7	119	47
204235	205	226	10	1	< 0.2	340	< 0.2	4.22	160	7.0	< 2	2.68	1.5	15	134	82
204236	205	226	10	8	< 0.2	30	< 0.2	3.57	300	6.0	2	0.56	0.5	19	136	101
204237	205	226	30	74	11.5	340	2.0	1.66	80	2.5	< 2	2.39	8.5	43	258	142
204238	205	226	< 5	2	0.2	40	< 0.2	2.30	720	1.5	< 2	1.83	0.5	4	213	45
204239	205	226	60	2	1.2	150	0.6	7.24	350	4.0	2	2.31	4.0	3	138	69
204240	205	226	< 5	1	0.4	10	< 0.2	7.47	490	3.0	2	2.77	1.0	1	101	7
204241	205	226	< 5	2	0.2	40	0.4	8.21	420	3.5	2	2.09	2.5	2	117	29
204242	205	226	< 5	1	< 0.2	< 10	< 0.2	8.32	800	3.5	< 2	1.91	< 0.5	1	102	5
204243	205	226	< 5	6	0.2	90	< 0.2	7.78	530	4.0	< 2	2.65	1.5	1	113	6
204244	205	226	< 5	6	< 0.2	20	< 0.2	7.36	710	3.5	< 2	2.16	2.0	1	126	7
204245	205	226	< 5	40	0.2	< 10	< 0.2	7.15	1150	3.0	< 2	2.95	0.5	1	127	9
204246	205	226	< 5	2	1.4	100	0.6	6.33	300	3.0	< 2	2.02	1.5	1	174	26
204247	205	226	< 5	8	0.4	10	< 0.2	7.45	670	3.5	< 2	0.72	0.5	1	107	6
204248	205	226	< 5	4	0.2	10	< 0.2	6.58	1070	3.0	< 2	0.47	< 0.5	< 1	118	4
204249	205	226	< 5	2	0.2	< 10	< 0.2	7.28	1370	3.5	< 2	0.52	0.5	< 1	120	4
204250	205	226	< 5	2	0.6	10	< 0.2	6.81	370	3.0	< 2	0.55	0.5	1	142	7
204251	205	226	< 5	2	0.2	< 10	< 0.2	7.15	280	3.0	< 2	0.56	0.5	< 1	116	5
204252	205	226	< 5	1	0.2	< 10	< 0.2	7.37	280	3.0	< 2	0.33	< 0.5	< 1	112	4
204253	205	226	< 5	2	0.4	< 10	< 0.2	6.92	380	3.5	< 2	0.36	< 0.5	< 1	100	4
204254	205	226	< 5	6	0.6	< 10	< 0.2	6.74	440	4.0	< 2	1.21	< 0.5	1	64	5
204255	205	226	< 5	4	0.4	< 10	< 0.2	7.37	1140	3.5	< 2	0.42	0.5	1	96	5
204256	205	226	< 5	2	0.2	< 10	< 0.2	6.89	2270	3.0	< 2	0.41	0.5	< 1	116	4
204257	205	226	< 5	2	1.6	30	< 0.2	6.76	690	3.0	< 2	1.33	0.5	1	121	4
204258	205	226	< 5	4	0.4	10	< 0.2	7.26	710	3.0	< 2	0.74	< 0.5	< 1	81	4

CERTIFICATION: Ian Bichler

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 11-SEP-97
Invoice No. :I9740147
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9740147

SAMPLE	PREP CODE	Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
204219	205 226	4.92	0.35	0.21	225	1	0.05	36	1570	< 2	70	0.08	233	< 10	100
204220	205 226	4.60	0.06	0.08	110	3	0.02	17	280	< 2	19	0.04	84	< 10	28
204221	205 226	7.62	0.02	0.12	1020	2	0.01	19	290	< 2	8	0.03	69	< 10	56
204222	205 226	10.85	0.02	0.14	50	10	0.02	21	160	< 2	13	0.01	44	< 10	20
204223	205 226	7.38	0.12	0.11	455	17	0.03	37	750	< 2	27	0.04	72	< 10	32
204224	205 226	1.39	0.81	0.14	35	4	0.08	30	330	< 2	113	0.08	126	< 10	12
204225	205 226	1.16	0.64	0.15	60	4	0.06	32	230	< 2	90	0.07	121	< 10	8
204226	205 226	5.81	0.16	0.19	940	4	0.03	34	1030	< 2	52	0.05	144	< 10	46
204227	205 226	13.00	0.03	0.85	3440	10	0.02	17	850	< 2	132	0.02	52	< 10	50
204228	205 226	8.36	0.33	0.46	1685	1	0.04	28	390	< 2	43	0.14	176	< 10	42
204229	205 226	7.82	0.43	0.50	2310	< 1	0.05	32	250	< 2	101	0.10	131	< 10	50
204230	205 226	3.26	0.74	0.38	1745	2	0.07	52	210	< 2	123	0.08	115	< 10	146
204231	205 226	4.22	2.05	0.57	1540	3	0.09	38	1190	96	68	0.22	171	< 10	1430
204232	205 226	6.76	0.82	0.68	3310	5	0.06	35	1330	380	202	0.10	181	< 10	798
204233	205 226	7.21	0.84	0.58	4630	5	0.04	27	950	116	184	0.09	159	< 10	638
204234	205 226	6.08	0.84	0.63	5170	1	0.09	32	1290	90	289	0.11	168	< 10	1270
204235	205 226	5.03	1.75	0.64	3150	1	0.26	69	970	110	220	0.15	241	< 10	836
204236	205 226	1.61	1.67	0.35	795	1	0.08	40	300	18	36	0.12	194	< 10	86
204237	205 226	5.07	0.77	0.23	525	12	0.03	180	2780	112	121	0.05	277	< 10	792
204238	205 226	1.40	1.02	0.29	400	< 1	0.04	33	200	12	96	0.08	62	< 10	156
204239	205 226	1.88	3.43	0.68	330	8	0.15	20	540	152	138	0.16	107	< 10	692
204240	205 226	1.91	3.55	0.95	330	4	0.15	4	370	28	220	0.15	37	< 10	104
204241	205 226	2.23	3.94	0.84	275	4	0.40	7	530	36	179	0.18	68	< 10	206
204242	205 226	1.90	3.91	0.86	280	3	0.62	3	520	18	154	0.17	22	< 10	50
204243	205 226	1.79	3.61	0.94	315	2	0.34	4	460	18	195	0.16	22	< 10	372
204244	205 226	1.65	3.31	0.76	270	4	0.49	9	540	24	139	0.13	44	< 10	140
204245	205 226	1.45	3.46	0.60	325	3	0.29	5	830	14	214	0.12	27	< 10	46
204246	205 226	1.69	3.09	0.64	240	< 1	0.12	7	560	32	122	0.11	39	< 10	174
204247	205 226	1.55	2.78	0.69	130	1	1.03	6	1100	14	75	0.10	35	< 10	66
204248	205 226	1.23	2.00	0.59	115	< 1	1.68	4	620	16	59	0.09	25	< 10	44
204249	205 226	1.32	2.74	0.96	115	1	1.02	5	750	20	65	0.10	26	< 10	54
204250	205 226	1.57	2.58	0.85	90	1	1.00	5	700	22	62	0.08	29	< 10	62
204251	205 226	1.77	3.01	1.04	90	2	0.37	4	650	22	74	0.09	26	< 10	46
204252	205 226	1.95	2.95	1.16	75	1	0.31	4	560	14	60	0.09	25	< 10	50
204253	205 226	1.81	2.42	1.09	80	2	0.74	4	490	20	60	0.09	21	< 10	46
204254	205 226	2.02	1.86	0.95	85	1	0.99	4	850	12	100	0.07	21	< 10	38
204255	205 226	1.49	1.64	0.68	55	< 1	2.13	4	690	12	119	0.09	27	< 10	62
204256	205 226	1.26	1.63	0.59	55	2	2.23	4	700	20	90	0.09	26	< 10	54
204257	205 226	1.51	2.06	0.59	150	2	1.47	4	590	12	203	0.09	23	< 10	54
204258	205 226	1.75	1.80	0.37	160	< 1	2.45	4	720	10	169	0.11	14	< 10	44

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9741558

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9741558

(GP W) - WESTMIN RESOURCES LTD.

Project: PUCK
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 11-SEP-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
244	1	Pulp; prev. prepared at Chemex

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
316	1	Zn %: Conc. Nitric-HCL dig'n	AAS	0.01	100.0

Chemex Labs Ltd.

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212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
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.o: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : PUCK
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page I er :1
Total Pages :1
Certificate Date: 11-SEP-97
Invoice No. :19741558
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9741558

SAMPLE	PREP CODE		Zn %									
N204173	244	--	1.25									

CERTIFICATION: Said Ertan

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9741624

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9741624

(GP W) - WESTMIN RESOURCES LTD.

Project: WOLVERINE
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 22-SEP-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	90	Geochem ring to approx 150 mesh
294	90	4-7 Kg crush and split
3202	90	Rock - save entire reject
285	90	ICP - HF digestion charge
287	90	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	90	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
13	90	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	90	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	90	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	90	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	90	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	90	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	90	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	90	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	90	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	90	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	90	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	90	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	90	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	90	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	90	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	90	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	90	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	90	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	90	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	90	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	90	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	90	Pb ppm: 24 element, rock & core	AAS	2	10000
582	90	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	90	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	90	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	90	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	90	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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o: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : WOLVERINE
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 22-SEP-97
Invoice No. : I9741624
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9741624

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
204811	205	294	< 5	1	< 0.2	< 10	< 0.2	2.63	1800	2.5	2	0.19	< 0.5	5	100	60
204812	205	294	< 5	4	0.4	< 10	< 0.2	3.11	1630	2.5	4	0.26	< 0.5	5	119	43
204813	205	294	< 5	4	0.8	100	< 0.2	2.64	750	2.0	< 2	0.15	< 0.5	6	127	48
204814	205	294	< 5	6	0.2	370	< 0.2	2.17	690	3.0	< 2	0.19	< 0.5	6	123	52
204815	205	294	10	< 2	0.2	< 10	< 0.2	1.71	500	3.5	< 2	0.76	< 0.5	1	148	14
204816	205	294	< 5	8	0.4	360	< 0.2	2.63	180	4.5	< 2	0.28	< 0.5	4	148	57
204817	205	294	5	6	1.8	350	0.4	1.43	140	2.0	< 2	6.08	< 0.5	3	124	44
204818	205	294	10	6	1.8	320	0.4	2.12	110	3.5	< 2	0.11	< 0.5	3	150	80
204819	205	294	< 5	4	2.4	160	0.2	2.42	100	3.5	2	0.43	< 0.5	4	112	48
204820	205	294	< 5	2	1.8	60	0.4	1.78	100	2.5	< 2	0.81	< 0.5	1	131	43
204821	205	294	< 5	2	1.4	140	0.4	1.58	110	2.5	< 2	0.30	< 0.5	1	155	56
204822	205	294	< 5	24	1.8	420	< 0.2	1.23	260	2.0	< 2	6.21	< 0.5	11	132	39
204823	205	294	< 5	6	1.8	70	< 0.2	1.67	160	3.0	2	3.90	< 0.5	3	126	46
204824	205	294	< 5	8	1.2	170	< 0.2	1.64	160	4.0	2	2.16	0.5	5	118	69
204825	205	294	< 5	4	1.0	10	< 0.2	1.00	130	2.5	2	16.50	< 0.5	2	56	37
204826	205	294	20	16	2.2	10	0.4	1.35	80	5.5	< 2	0.71	< 0.5	2	125	60
204827	205	294	< 5	< 2	1.6	130	< 0.2	0.73	100	3.5	< 2	20.2	< 0.5	< 1	48	33
204828	205	294	< 5	4	2.4	1240	0.6	1.41	200	3.0	2	0.26	0.5	5	149	65
204829	205	294	< 5	< 2	0.8	10	< 0.2	0.86	220	2.0	2	21.2	< 0.5	< 1	55	45
204830	205	294	< 5	< 2	0.8	10	< 0.2	3.36	210	6.5	< 2	0.69	< 0.5	7	142	70
204831	205	294	15	2	< 0.2	10	< 0.2	2.52	280	4.5	2	1.02	< 0.5	4	143	64
204832	205	294	< 5	2	< 0.2	10	< 0.2	2.54	380	4.0	< 2	0.22	< 0.5	6	155	98
204833	205	294	50	< 2	1.2	10	< 0.2	1.88	120	2.5	2	3.14	< 0.5	9	109	102
204834	205	294	15	< 2	0.2	< 10	< 0.2	2.80	380	2.5	< 2	2.56	< 0.5	7	127	119
204835	205	294	5	26	< 0.2	< 10	< 0.2	3.22	3330	2.0	< 2	1.83	0.5	15	121	117
204836	205	294	< 5	10	< 0.2	< 10	< 0.2	3.67	4560	2.0	< 2	2.72	0.5	8	123	65
204837	205	294	< 5	8	< 0.2	< 10	< 0.2	3.32	400	2.5	< 2	2.66	< 0.5	8	140	80
204838	205	294	< 5	10	1.2	80	< 0.2	3.05	180	2.5	< 2	1.23	2.5	6	137	72
204839	205	294	10	< 2	2.4	70	< 0.2	2.32	90	3.0	< 2	7.09	0.5	6	126	58
204840	205	294	15	2	2.0	< 10	0.4	2.59	100	1.0	2	4.76	< 0.5	6	184	52
204841	205	294	10	4	2.0	30	< 0.2	1.37	90	1.5	< 2	12.10	< 0.5	3	77	38
204842	205	294	10	2	3.2	270	< 0.2	1.99	70	2.5	< 2	12.60	< 0.5	4	86	46
204843	205	294	< 5	< 2	8.8	1330	< 0.2	2.80	110	3.0	2	9.83	11.0	8	121	65
204844	205	294	< 5	< 2	10.0	< 10	< 0.2	3.72	90	4.0	2	1.41	< 0.5	16	191	85
204845	205	294	< 5	2	2.2	350	< 0.2	2.10	120	3.5	2	0.68	5.0	7	220	47
204846	205	294	20	12	6.2	110	0.6	2.33	60	4.0	< 2	1.04	1.5	8	251	58
204847	205	294	15	18	7.2	170	0.4	3.07	90	5.0	2	0.68	4.0	8	201	56
204848	205	294	20	30	14.0	1040	0.8	2.39	90	3.0	< 2	0.50	33.0	7	292	48
204849	205	294	15	56	17.5	1330	1.2	4.07	80	3.5	< 2	5.99	5.5	43	315	117
204850	205	294	< 5	12	6.6	120	< 0.2	3.48	190	2.5	2	4.89	0.5	23	264	60

CERTIFICATION: _____

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : WOLVERINE
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :1-B
Total Pages :3
Certificate Date: 22-SEP-97
Invoice No. :I9741624
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9741624

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
204811	205	294	0.97	1.03	0.26	85	< 1	0.13	36	100	< 2	330	0.09	92	< 10	14
204812	205	294	0.93	1.36	0.34	125	6	0.08	35	120	4	161	0.11	101	< 10	26
204813	205	294	0.71	1.20	0.28	90	1	0.05	55	100	6	47	0.09	93	< 10	250
204814	205	294	0.77	0.82	0.25	70	5	0.11	43	70	< 2	135	0.07	94	< 10	378
204815	205	294	6.93	0.64	0.23	175	1	0.09	7	1240	< 2	204	0.09	96	< 10	18
204816	205	294	2.07	1.15	0.36	130	22	0.08	18	200	< 2	83	0.08	123	< 10	1125
204817	205	294	1.34	0.74	0.29	785	7	< 0.01	44	490	48	265	0.05	96	< 10	1910
204818	205	294	1.88	1.02	0.22	70	5	0.01	23	130	90	10	0.08	163	< 10	1275
204819	205	294	1.67	1.18	0.26	110	9	0.01	25	220	24	18	0.09	152	< 10	628
204820	205	294	1.41	0.89	0.20	150	4	< 0.01	18	220	74	31	0.07	108	< 10	222
204821	205	294	1.46	0.79	0.18	80	1	< 0.01	17	130	92	12	0.06	121	< 10	646
204822	205	294	0.85	0.63	0.36	805	14	< 0.01	77	890	38	196	0.05	88	< 10	2970
204823	205	294	1.68	0.86	0.22	450	10	< 0.01	21	150	28	108	0.06	110	< 10	210
204824	205	294	1.77	0.71	0.20	370	15	< 0.01	31	290	36	51	0.07	159	< 10	640
204825	205	294	4.09	0.24	0.25	3590	22	< 0.01	12	1050	56	254	0.03	115	< 10	60
204826	205	294	2.50	0.52	0.12	85	4	< 0.01	10	150	64	17	0.04	156	< 10	14
204827	205	294	8.55	0.35	0.50	4110	14	< 0.01	13	1610	80	315	0.03	111	< 10	322
204828	205	294	2.08	0.44	0.16	55	6	0.05	21	150	28	29	0.04	115	< 10	836
204829	205	294	1.36	0.27	0.23	1825	14	0.01	9	650	16	481	0.03	83	< 10	18
204830	205	294	4.22	1.58	0.76	750	3	0.14	31	180	6	77	0.12	162	< 10	20
204831	205	294	2.49	0.99	0.47	320	3	0.08	21	460	10	64	0.10	156	< 10	16
204832	205	294	1.37	0.89	0.28	50	15	0.06	20	660	16	25	0.09	196	< 10	20
204833	205	294	9.86	0.90	0.40	2110	4	< 0.01	16	410	10	63	0.07	79	< 10	84
204834	205	294	3.49	1.33	0.33	805	< 1	0.01	19	620	20	52	0.13	153	< 10	36
204835	205	294	3.08	1.61	0.41	1210	1	< 0.01	30	610	46	49	0.17	150	< 10	122
204836	205	294	2.24	1.94	0.41	910	< 1	< 0.01	19	820	10	72	0.21	141	< 10	24
204837	205	294	3.44	1.62	0.53	1485	2	0.01	37	650	20	63	0.19	172	< 10	40
204838	205	294	2.75	1.50	0.45	840	3	0.01	54	330	390	38	0.16	197	< 10	732
204839	205	294	10.40	0.83	0.99	7690	7	0.04	32	1250	62	183	0.11	193	< 10	294
204840	205	294	7.93	0.27	1.05	1555	6	0.03	17	1010	56	77	0.09	140	< 10	44
204841	205	294	7.46	0.60	0.62	5570	6	< 0.01	16	810	90	218	0.07	117	< 10	116
204842	205	294	10.55	0.55	0.96	6660	4	0.01	16	1590	150	251	0.11	155	< 10	1135
204843	205	294	6.49	1.17	0.84	4430	3	< 0.01	45	780	300	250	0.14	168	< 10	5620
204844	205	294	5.94	1.92	0.93	1165	2	0.02	52	470	172	53	0.16	199	< 10	60
204845	205	294	1.83	1.09	0.29	340	< 1	0.01	26	1000	40	26	0.08	113	< 10	932
204846	205	294	3.65	1.21	0.33	350	< 1	0.01	37	1720	84	42	0.08	169	< 10	272
204847	205	294	2.79	1.53	0.44	255	6	0.02	47	1380	60	48	0.10	248	< 10	612
204848	205	294	4.80	1.08	0.24	155	15	0.02	56	640	136	45	0.09	247	< 10	3950
204849	205	294	4.55	1.65	0.48	1355	6	0.03	143	2070	72	249	0.18	288	< 10	2200
204850	205	294	2.30	1.56	1.09	1380	6	0.03	61	730	32	189	0.14	191	< 10	320

CERTIFICATION: Ian Bickle

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

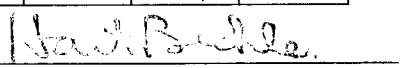
,o: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
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VANCOUVER, BC
V7X 1C4

Project : WOLVERINE
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 22-SEP-97
Invoice No. : I9741624
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Account : GP W

CERTIFICATE OF ANALYSIS A9741624

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
204851	205	294	< 5	4	2.0	10	< 0.2	2.60	2850	1.0	< 2	0.69	< 0.5	6	170	37
204852	205	294	< 5	1	5.4	30	< 0.2	2.73	630	1.0	< 2	0.96	< 0.5	7	179	51
204853	205	294	< 5	14	13.0	10	< 0.2	3.03	290	1.0	2	1.33	< 0.5	10	179	77
204854	205	294	< 5	128	24	70	< 0.2	5.23	200	2.0	2	0.23	< 0.5	16	168	106
204855	205	294	< 5	106	12.5	10	< 0.2	1.64	120	0.5	< 2	2.71	< 0.5	4	221	39
204856	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204857	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204858	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204859	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204860	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204861	205	294	< 5	8	1.8	290	2.8	3.21	150	< 0.5	12	0.33	14.0	6	107	1175
204862	205	294	< 5	1	0.6	550	4.8	4.01	60	0.5	18	0.21	38.5	27	113	3350
204863	205	294	< 5	22	0.6	270	1.2	5.78	650	1.0	8	1.02	6.5	29	165	1255
204864	205	294	< 5	2	1.4	30	0.4	5.82	1340	2.0	4	0.72	1.0	6	194	48
204865	205	294	< 5	16	8.4	1210	0.4	6.52	1320	1.5	8	0.93	13.5	12	110	23
204866	205	294	< 5	138	15.0	1620	0.4	4.06	430	1.0	8	1.21	10.5	21	215	13
204867	205	294	< 5	2	3.4	< 10	< 0.2	6.22	1140	1.5	2	0.22	< 0.5	4	145	4
204868	205	294	< 5	1	1.6	10	< 0.2	6.52	1090	2.0	< 2	0.46	< 0.5	4	108	32
204869	205	294	< 5	1	1.8	10	< 0.2	6.23	790	1.5	2	0.95	< 0.5	8	108	6
204870	205	294	< 5	2	1.6	70	< 0.2	7.63	1350	2.5	6	1.37	1.5	5	119	44
204871	205	294	< 5	6	2.2	60	0.6	6.73	250	2.5	< 2	2.26	1.0	3	145	27
204872	205	294	< 5	2	0.4	20	2.4	8.14	990	1.5	14	0.81	< 0.5	10	73	239
204873	205	294	< 5	40	2.0	190	1.2	8.02	290	3.0	2	1.34	3.0	5	135	47
204874	205	294	< 5	10	2.8	40	< 0.2	7.07	530	2.5	< 2	1.51	< 0.5	1	132	6
204875	205	294	< 5	2	1.0	60	< 0.2	6.52	1950	2.0	< 2	0.52	< 0.5	2	151	6
204876	205	294	< 5	1	1.0	< 10	< 0.2	8.26	350	2.5	4	0.78	< 0.5	3	110	5
204877	205	294	< 5	2	0.4	< 10	< 0.2	7.32	3920	3.0	< 2	0.31	< 0.5	1	112	5
204878	205	294	< 5	4	0.4	< 10	< 0.2	7.05	2700	3.0	< 2	0.53	0.5	1	130	5
204879	205	294	< 5	1	0.4	< 10	< 0.2	7.36	2680	2.5	4	0.67	< 0.5	2	133	5
204880	205	294	< 5	2	< 0.2	< 10	< 0.2	7.11	3050	3.0	2	0.94	< 0.5	3	124	5
204881	205	294	< 5	2	0.2	< 10	< 0.2	6.91	2330	2.5	< 2	0.62	< 0.5	2	131	5
204882	205	294	< 5	1	0.2	< 10	< 0.2	7.24	1610	2.5	< 2	0.63	< 0.5	2	125	4
204883	205	294	< 5	1	0.2	< 10	< 0.2	7.20	1790	2.5	< 2	0.98	< 0.5	2	121	5
204884	205	294	< 5	2	0.2	< 10	< 0.2	7.13	1320	3.0	2	0.85	< 0.5	1	137	5
204885	205	294	< 5	1	0.2	< 10	< 0.2	6.87	1040	2.5	2	0.77	< 0.5	2	122	5
204886	205	294	< 5	1	0.2	< 10	< 0.2	6.90	990	2.5	2	1.07	< 0.5	3	119	5
204887	205	294	< 5	2	0.2	< 10	< 0.2	7.27	1190	2.5	< 2	0.79	< 0.5	3	138	5
204888	205	294	< 5	2	0.4	10	< 0.2	7.27	1190	2.5	2	1.08	< 0.5	3	119	5
204889	205	294	< 5	1	0.2	< 10	< 0.2	6.68	1130	2.5	2	1.22	< 0.5	1	109	5
204890	205	294	< 5	1	< 0.2	< 10	< 0.2	7.14	1320	2.5	2	0.92	< 0.5	1	126	5

CERTIFICATION: 

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : WOLVERINE
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 22-SEP-97
Invoice No. :I9741624
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9741624

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
204851	205	294	1.38	1.09	0.55	450	< 1	0.03	31	230	2	65	0.11	61	< 10	60
204852	205	294	1.71	1.03	0.74	980	1	0.03	36	270	4	94	0.12	66	< 10	68
204853	205	294	1.85	1.10	0.98	880	1	0.03	54	300	< 2	120	0.11	70	< 10	58
204854	205	294	2.86	2.19	0.84	170	5	0.10	110	400	< 2	46	0.15	171	< 10	258
204855	205	294	1.36	0.74	0.42	715	< 1	0.02	40	180	30	45	0.04	45	< 10	38
204856	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204857	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204858	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204859	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204860	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204861	205	294	6.48	0.26	2.33	585	< 1	0.01	5	730	260	25	0.04	36	< 10	1980
204862	205	294	9.53	0.64	2.24	725	2	0.05	6	410	184	22	0.07	22	< 10	4170
204863	205	294	7.84	1.42	2.26	860	2	0.09	3	400	58	61	0.14	18	< 10	1125
204864	205	294	1.02	2.80	0.54	160	1	0.15	4	430	20	56	0.10	22	< 10	144
204865	205	294	1.28	3.24	0.42	140	3	0.17	5	680	30	69	0.11	38	< 10	1380
204866	205	294	8.25	1.90	0.19	60	1	0.11	11	420	40	45	0.06	25	< 10	1160
204867	205	294	0.97	3.07	0.38	50	2	0.15	3	640	4	52	0.09	37	< 10	24
204868	205	294	2.59	2.94	1.13	405	< 1	0.14	5	670	< 2	56	0.13	41	< 10	130
204869	205	294	4.71	2.25	1.62	690	3	0.12	3	620	4	66	0.11	32	< 10	128
204870	205	294	3.09	3.33	1.29	500	1	0.16	5	890	66	102	0.18	38	< 10	284
204871	205	294	2.04	3.33	0.64	350	3	0.16	10	760	28	132	0.12	89	< 10	146
204872	205	294	7.22	2.23	3.67	655	3	0.16	< 1	610	22	74	0.13	25	< 10	200
204873	205	294	2.46	4.06	1.05	215	5	0.20	10	690	40	123	0.13	92	< 10	304
204874	205	294	3.89	3.55	0.79	155	< 1	0.28	5	670	20	98	0.11	27	< 10	48
204875	205	294	1.68	3.02	0.58	65	3	0.61	4	630	20	70	0.10	23	< 10	56
204876	205	294	2.28	3.38	0.87	85	1	1.26	3	600	22	81	0.13	23	< 10	32
204877	205	294	1.46	2.83	1.17	70	1	0.64	4	740	20	62	0.12	25	< 10	54
204878	205	294	1.50	2.68	1.05	100	1	1.00	4	800	26	75	0.11	23	< 10	100
204879	205	294	1.57	2.38	0.71	155	< 1	2.15	4	730	32	113	0.12	25	< 10	52
204880	205	294	1.32	2.33	0.71	230	< 1	1.98	4	670	28	101	0.15	27	< 10	52
204881	205	294	1.37	2.12	0.78	140	1	1.85	3	580	18	80	0.14	23	< 10	46
204882	205	294	1.52	2.58	0.92	150	< 1	1.77	4	620	20	93	0.15	24	< 10	48
204883	205	294	1.39	2.76	0.86	210	1	1.47	2	670	22	105	0.13	24	< 10	64
204884	205	294	1.57	2.65	0.77	220	< 1	1.71	3	660	34	104	0.13	23	< 10	60
204885	205	294	1.44	2.20	0.65	175	< 1	2.21	3	580	22	113	0.13	24	< 10	56
204886	205	294	1.42	2.19	0.61	215	1	2.35	4	630	24	124	0.13	22	< 10	58
204887	205	294	1.50	2.44	0.67	175	< 1	2.24	4	650	20	110	0.13	23	< 10	46
204888	205	294	1.56	2.47	0.69	210	< 1	2.19	3	700	20	120	0.13	22	< 10	54
204889	205	294	1.30	2.34	0.67	205	2	1.99	1	810	20	116	0.12	22	< 10	54
204890	205	294	1.43	2.64	0.71	175	1	1.91	3	620	18	110	0.13	23	10	38

CERTIFICATION: _____

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

.o: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : WOLVERINE
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :3-A
Total Pages :3
Certificate Date: 22-SEP-97
Invoice No. :I9741624
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9741624

SAMPLE	PREP CODE		Au ppb FA+AA	As ppm	Sb ppm	Hg ppb	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)
204891	205	294	< 5	1	0.2	< 10	< 0.2	7.28	1520	2.5	2	1.00	< 0.5	2	146	5
204892	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204893	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204894	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204895	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204896	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204897	205	294	< 5	1	2.0	90	< 0.2	6.95	340	2.0	< 2	1.82	< 0.5	1	199	8
204898	205	294	< 5	1	1.4	50	< 0.2	6.24	350	2.0	< 2	2.21	< 0.5	3	221	11
204899	205	294	< 5	2	0.8	30	< 0.2	5.76	390	2.0	< 2	2.23	< 0.5	3	156	9
204900	205	294	< 5	1	0.8	20	< 0.2	6.37	690	2.0	< 2	1.67	< 0.5	3	130	9
204926	205	294	< 5	2	1.0	30	< 0.2	6.91	310	2.5	2	1.42	< 0.5	3	197	12
204927	205	294	< 5	2	0.8	40	< 0.2	5.46	450	2.0	< 2	3.23	1.0	1	206	7
204928	205	294	< 5	2	0.4	< 10	< 0.2	7.19	2540	2.5	< 2	1.62	< 0.5	1	150	5
204929	205	294	< 5	1	0.2	< 10	< 0.2	7.13	2300	2.5	2	2.01	< 0.5	2	142	5
204930	205	294	< 5	1	0.2	< 10	< 0.2	7.04	2940	2.5	< 2	1.97	< 0.5	2	127	5
204931	205	294	< 5	1	0.4	< 10	< 0.2	7.22	1000	2.5	2	0.64	< 0.5	3	130	5
204932	205	294	< 5	2	0.2	< 10	< 0.2	7.10	1200	2.5	< 2	1.73	< 0.5	3	138	5
204933	205	294	< 5	1	0.2	< 10	< 0.2	7.06	2840	2.5	< 2	1.66	< 0.5	1	121	5
204934	205	294	< 5	1	< 0.2	< 10	< 0.2	7.02	2370	2.5	< 2	1.55	< 0.5	2	123	4
204935	205	294	< 5	6	0.2	< 10	< 0.2	6.96	1950	2.0	< 2	1.73	< 0.5	3	156	6

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : WOLVERINE
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :3-B
Total Pages :3
Certificate Date: 22-SEP-97
Invoice No. : I9741624
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9741624

SAMPLE	PREP CODE		Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
204891	205	294	1.46	2.92	0.76	185	3	1.62	4	630	24	106	0.14	24	< 10	48
204892	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204893	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204894	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204895	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204896	--	--	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd	NotRcd
204897	205	294	1.47	3.38	0.33	290	2	0.14	8	670	16	124	0.14	52	< 10	120
204898	205	294	1.40	3.14	0.39	235	< 1	0.11	9	820	14	128	0.14	59	< 10	70
204899	205	294	1.32	2.90	0.49	210	1	0.10	9	690	14	106	0.12	55	< 10	80
204900	205	294	1.13	2.63	0.54	150	1	0.13	7	780	16	112	0.13	56	< 10	54
204926	205	294	1.76	3.43	0.60	120	1	0.18	10	830	16	103	0.14	65	< 10	98
204927	205	294	1.44	2.67	0.45	400	1	0.14	7	480	12	133	0.10	41	< 10	172
204928	205	294	1.49	3.34	0.66	230	< 1	0.18	4	930	16	107	0.14	32	< 10	56
204929	205	294	1.32	2.63	0.64	265	< 1	0.91	4	800	18	107	0.12	23	< 10	42
204930	205	294	1.53	2.70	0.89	235	< 1	0.70	4	1140	18	106	0.12	23	< 10	50
204931	205	294	1.64	2.62	0.80	125	< 1	1.40	4	640	20	90	0.12	24	< 10	56
204932	205	294	1.47	2.61	0.60	330	1	1.49	4	690	16	102	0.12	25	< 10	50
204933	205	294	1.35	2.83	0.58	285	1	1.15	4	530	18	100	0.12	26	< 10	46
204934	205	294	1.28	2.52	0.54	235	< 1	1.45	3	610	20	99	0.12	26	< 10	44
204935	205	294	1.47	3.27	0.61	250	2	0.20	5	580	20	105	0.15	31	< 10	42

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9741666

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9741666

(GP W) - WESTMIN RESOURCES LTD.

Project: 6412
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 19-SEP-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
201	128	Dry, sieve to -80 mesh
202	128	save reject
285	128	ICP - HF digestion charge

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	125	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
578	128	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	128	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	128	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	128	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	128	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	128	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	128	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	128	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	128	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	128	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	128	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	128	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	128	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	128	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	128	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	128	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	128	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	128	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	128	Pb ppm: 24 element, rock & core	AAS	2	10000
582	128	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	128	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	128	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	128	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	128	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
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To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : 6412
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 19-SEP-97
Invoice No. :19741666
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9741666

SAMPLE	PREP CODE	Au ppb FA+AA	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	K % (ICP)	Mg % (ICP)
1500N-3200E	201 202	< 5	< 0.2	6.03	910	2.5	< 2	0.91	0.5	3	79	9	1.41	2.26	0.55
1500N-3250E	201 202	< 5	0.6	7.26	1060	2.5	< 2	0.79	0.5	5	65	21	3.22	2.28	0.84
1500N-3300E	201 202	< 5	0.6	6.67	970	2.5	< 2	0.71	0.5	5	78	15	3.77	2.30	0.88
1500N-3350E	201 202	< 5	0.2	6.46	1330	2.0	< 2	0.44	0.5	4	72	23	2.76	2.19	0.87
1500N-3400E	201 202	< 5	< 0.2	5.91	1290	1.5	< 2	0.35	0.5	3	62	23	2.60	1.96	0.80
1500N-3450E	201 202	20	0.4	6.23	1030	2.0	< 2	0.49	< 0.5	5	76	26	4.00	1.93	1.06
1500N-3550E	201 202	< 5	0.6	6.13	1480	1.5	6	2.73	1.0	9	107	35	4.34	1.18	1.46
1500N-3600E	201 202	10	0.4	6.09	1390	2.0	6	2.62	0.5	10	102	53	3.77	1.37	1.36
1500N-3650E	201 202	< 5	0.6	6.32	1230	2.0	< 2	1.54	0.5	7	58	31	2.70	1.73	0.96
1900N-3000E	201 202	< 5	< 0.2	6.55	1450	2.0	< 2	0.35	0.5	4	37	23	2.77	2.71	0.37
1900N-3050E	201 202	20	< 0.2	4.78	980	1.5	< 2	0.76	< 0.5	7	111	17	3.33	1.55	0.97
1900N-3100E	201 202	< 5	< 0.2	5.33	950	1.5	< 2	0.55	< 0.5	4	45	16	2.84	2.23	0.52
1900N-3150E	201 202	< 5	< 0.2	5.81	910	2.0	< 2	0.58	0.5	3	41	14	2.20	2.44	0.45
1900N-3200E	201 202	< 5	< 0.2	4.73	1360	1.5	< 2	0.37	0.5	5	61	39	3.01	1.62	0.72
1900N-3250E	201 202	< 5	< 0.2	5.35	930	2.5	< 2	0.61	0.5	4	57	23	2.50	1.75	0.63
1900N-3300E	201 202	< 5	< 0.2	5.91	930	3.0	< 2	0.73	< 0.5	5	88	18	3.24	2.24	0.78
1900N-3350E	201 202	< 5	< 0.2	6.19	1270	2.0	< 2	0.39	0.5	2	67	17	1.76	2.28	0.58
1900N-3400E	201 202	< 5	< 0.2	6.07	970	2.5	< 2	0.76	< 0.5	3	72	13	2.34	1.74	0.74
1900N-3450E	201 202	< 10	< 0.2	6.47	1130	1.5	< 2	0.59	< 0.5	4	53	25	2.65	1.63	0.90
1900N-3550E	201 202	< 5	< 0.2	5.09	1020	1.5	< 2	0.38	< 0.5	4	58	26	2.52	1.87	0.63
1900N-3600E	201 202	5	< 0.2	5.35	1280	1.0	6	2.59	< 0.5	10	98	31	3.71	1.00	1.29
1900N-3650E	201 202	< 5	< 0.2	4.41	680	2.0	< 2	0.87	< 0.5	6	53	25	2.28	1.34	0.73
1900N-3700E	201 202	< 5	0.6	7.55	1050	3.0	2	1.12	< 0.5	7	61	45	3.60	1.30	0.90
2300N-3000E	201 202	< 5	< 0.2	6.61	920	2.0	< 2	0.60	< 0.5	1	38	11	1.53	2.53	0.43
2300N-3050E	201 202	< 5	< 0.2	5.82	900	1.5	< 2	0.42	< 0.5	3	40	12	2.79	2.45	0.44
2300N-3100E	201 202	< 5	< 0.2	4.89	1710	1.5	< 2	0.26	0.5	4	56	40	3.05	1.67	0.52
2300N-3150E	201 202	< 5	< 0.2	5.36	1720	2.0	< 2	0.34	< 0.5	4	46	45	3.01	2.12	0.58
2300N-3200E	201 202	< 5	< 0.2	6.07	1090	1.5	< 2	0.54	< 0.5	4	51	16	2.59	2.46	0.49
2300N-3250E	201 202	< 5	< 0.2	7.01	1050	1.5	< 2	0.56	< 0.5	1	28	19	1.83	2.88	0.35
2300N-3300E	201 202	< 5	< 0.2	6.64	1020	1.5	< 2	0.80	< 0.5	2	29	14	1.77	2.56	0.42
2300N-3350E	201 202	not/ss	< 0.2	7.19	1120	2.5	< 2	0.81	4.5	4	41	25	2.44	2.37	0.51
2300N-3400E	201 202	not/ss	< 0.2	8.03	930	2.5	< 2	0.82	2.0	3	20	12	2.14	2.93	0.46
2300N-3450E	201 202	< 5	< 0.2	7.62	1060	2.5	< 2	1.09	< 0.5	5	45	19	2.69	2.78	0.75
2300N-3550E	201 202	< 5	< 0.2	7.05	1180	2.0	< 2	0.72	0.5	5	59	18	2.61	2.81	0.74
2300N-3600E	201 202	< 5	0.4	6.82	990	1.5	< 2	0.88	< 0.5	3	40	18	2.14	1.98	0.58
2300N-3650E	201 202	< 5	< 0.2	6.51	1000	2.0	< 2	0.62	< 0.5	5	60	19	2.76	1.72	0.73
2300N-3700E	201 202	< 5	< 0.2	6.00	1040	2.0	< 2	0.94	< 0.5	6	55	16	2.33	2.54	0.66
2300N-3750E	201 202	< 5	0.4	6.64	1070	2.0	< 2	1.17	< 0.5	7	52	25	2.62	2.01	0.72
2300N-3800E	201 202	< 10	0.2	6.96	1310	2.5	< 2	1.89	< 0.5	11	90	71	3.92	1.86	1.14
2700N-2900E	201 202	< 5	< 0.2	8.01	1100	3.0	< 2	0.17	0.5	3	18	43	3.01	4.14	0.29

CERTIFICATION: B. Caufield

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

o: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : 6412
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :1-B
Total Pages :4
Certificate Date: 19-SEP-97
Invoice No. :19741666
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9741666

SAMPLE	PREP CODE		Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)			
1500N-3200E	201	202	230	< 1	1.52	19	580	16	179	0.31	76	< 10	38			
1500N-3250E	201	202	400	1	1.43	24	750	46	206	0.33	119	< 10	124			
1500N-3300E	201	202	355	< 1	1.32	24	1380	26	152	0.33	118	< 10	84			
1500N-3350E	201	202	230	3	0.84	21	490	18	93	0.27	134	< 10	102			
1500N-3400E	201	202	185	1	0.77	18	700	12	98	0.23	129	< 10	90			
1500N-3450E	201	202	370	4	0.83	27	1190	16	94	0.30	138	< 10	106			
1500N-3550E	201	202	775	2	1.17	30	1030	34	152	0.52	210	< 10	138			
1500N-3600E	201	202	615	1	1.17	36	860	28	159	0.46	174	< 10	172			
1500N-3650E	201	202	550	3	1.64	25	1550	20	256	0.26	103	< 10	134			
1900N-3000E	201	202	300	3	0.86	22	790	20	125	0.26	104	< 10	128			
1900N-3050E	201	202	400	< 1	1.16	36	1660	14	84	0.32	141	< 10	84			
1900N-3100E	201	202	265	1	1.02	24	780	18	110	0.26	83	< 10	106			
1900N-3150E	201	202	285	1	1.23	16	710	18	133	0.28	70	< 10	80			
1900N-3200E	201	202	270	3	0.69	33	2010	24	86	0.23	163	< 10	146			
1900N-3250E	201	202	245	1	1.23	20	880	16	120	0.28	91	< 10	84			
1900N-3300E	201	202	335	1	1.48	29	780	20	109	0.36	98	< 10	82			
1900N-3350E	201	202	150	1	0.96	13	410	12	114	0.29	127	< 10	62			
1900N-3400E	201	202	570	< 1	1.49	20	880	16	150	0.31	98	< 10	66			
1900N-3450E	201	202	250	1	1.32	18	730	14	199	0.22	103	< 10	88			
1900N-3550E	201	202	210	2	0.72	22	700	14	94	0.23	127	< 10	100			
1900N-3600E	201	202	535	1	1.08	37	830	12	157	0.43	177	< 10	78			
1900N-3650E	201	202	415	1	0.78	30	850	28	90	0.19	71	< 10	126			
1900N-3700E	201	202	650	1	1.54	42	1800	26	245	0.25	96	< 10	172			
2300N-3000E	201	202	195	< 1	1.26	9	610	16	165	0.32	71	< 10	36			
2300N-3050E	201	202	235	< 1	0.91	17	3780	16	101	0.24	66	< 10	64			
2300N-3100E	201	202	170	6	0.59	29	1630	20	69	0.26	163	< 10	128			
2300N-3150E	201	202	280	4	0.69	29	1110	22	103	0.22	165	< 10	138			
2300N-3200E	201	202	255	1	1.05	18	740	16	135	0.33	104	< 10	86			
2300N-3250E	201	202	230	2	1.40	10	520	12	224	0.26	84	< 10	68			
2300N-3300E	201	202	260	1	1.68	8	610	12	281	0.26	75	< 10	58			
2300N-3350E	201	202	345	3	1.17	18	1430	16	228	0.20	119	< 10	126			
2300N-3400E	201	202	260	3	0.98	9	910	14	210	0.22	55	< 10	74			
2300N-3450E	201	202	350	1	1.24	19	880	12	178	0.27	73	< 10	68			
2300N-3550E	201	202	340	1	1.28	23	780	16	166	0.33	94	< 10	92			
2300N-3600E	201	202	255	< 1	1.55	16	1000	12	275	0.26	75	< 10	72			
2300N-3650E	201	202	355	1	1.13	25	740	18	136	0.27	102	< 10	114			
2300N-3700E	201	202	370	< 1	1.28	22	980	16	162	0.26	83	< 10	100			
2300N-3750E	201	202	595	1	1.27	26	1250	16	205	0.23	96	< 10	106			
2300N-3800E	201	202	835	< 1	0.98	45	1300	30	158	0.35	160	< 10	158			
2700N-2900E	201	202	175	3	0.62	26	830	22	77	0.21	52	< 10	228			

CERTIFICATION: B. Caughlin

Chemex Labs Ltd.

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212 Brooksbank Ave., North Vancouver
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PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : 6412
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 19-SEP-97
Invoice No. : I9741666
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9741666

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	K % (ICP)	Mg % (ICP)
2700N-2950E	201	202	< 5	< 0.2	7.60	1150	2.5	< 2	0.27	0.5	2	22	23	2.56	4.00	0.37
2700N-3000E	201	202	< 5	< 0.2	5.31	1520	1.5	< 2	0.34	< 0.5	4	49	38	2.59	1.94	0.40
2700N-3050E	201	202	< 5	< 0.2	5.55	1940	1.5	< 2	0.40	< 0.5	5	62	41	3.32	1.68	0.78
2700N-3100E	201	202	< 5	< 0.2	5.16	2230	1.5	< 2	0.41	0.5	7	66	59	5.17	1.54	0.84
2700N-3150E	201	202	< 5	< 0.2	6.07	1310	1.5	< 2	0.60	< 0.5	3	47	18	1.93	2.15	0.51
2700N-3200E	201	202	< 5	< 0.2	5.41	1950	1.5	< 2	0.29	< 0.5	3	45	49	2.59	2.09	0.36
2700N-3250E	201	202	< 5	< 0.2	6.38	1070	1.5	< 2	0.44	< 0.5	1	31	12	1.60	2.56	0.38
2700N-3300E	201	202	< 5	< 0.2	8.25	1020	1.5	< 2	0.99	< 0.5	2	17	16	1.70	3.13	0.42
2700N-3350E	201	202	< 5	< 0.2	7.76	970	2.0	< 2	0.90	0.5	3	46	25	2.58	2.29	0.49
2700N-3400E	201	202	< 5	< 0.2	7.00	970	2.0	< 2	0.74	< 0.5	3	32	14	2.22	2.52	0.50
2700N-3450E	201	202	< 5	< 0.2	6.25	1140	2.0	< 2	0.52	< 0.5	5	52	15	2.64	2.47	0.79
2700N-3550E	201	202	< 5	< 0.2	6.54	1070	2.5	< 2	0.62	0.5	7	63	19	2.80	2.56	0.84
2700N-3600E	201	202	< 5	< 0.2	6.52	1210	2.5	< 2	0.68	< 0.5	4	40	20	2.40	2.85	0.60
2700N-3650E	201	202	10	< 0.2	6.49	1090	2.0	< 2	1.17	< 0.5	5	40	22	2.34	2.46	0.62
2700N-3700E	201	202	< 5	0.8	6.62	1110	2.0	< 2	1.08	0.5	5	51	38	2.47	2.18	0.69
2700N-3750E	201	202	< 5	1.2	6.76	1280	2.0	< 2	0.86	0.5	7	91	65	3.25	2.15	0.78
2700N-3800E	201	202	< 5	1.0	6.66	1470	2.0	< 2	0.90	0.5	8	82	53	3.25	2.17	0.91
2700N-3850E	201	202	< 5	1.0	6.46	1070	1.5	< 2	1.05	< 0.5	9	51	33	2.84	1.93	0.69
2700N-3900E	201	202	< 5	0.4	6.26	1190	2.0	< 2	0.78	1.0	7	66	33	2.84	1.98	0.83
3100N-2900E	201	202	< 5	< 0.2	7.66	1050	2.5	< 2	0.32	< 0.5	2	36	9	2.61	3.53	0.43
3100N-2950E	201	202	< 5	< 0.2	6.96	800	1.0	< 2	2.01	< 0.5	7	19	20	2.56	1.86	1.09
3100N-3000E	201	202	< 5	< 0.2	4.33	1620	1.5	< 2	0.29	0.5	4	45	49	2.59	1.48	0.76
3100N-3050E	201	202	< 5	< 0.2	4.81	1560	1.5	< 2	0.40	< 0.5	5	54	44	3.27	1.54	0.84
3100N-3100E	201	202	95	< 0.2	4.68	1770	1.5	< 2	0.85	0.5	5	64	51	3.59	1.39	1.01
3100N-3150E	201	202	< 5	< 0.2	4.64	1770	1.5	< 2	0.28	0.5	4	54	35	2.37	1.63	0.42
3100N-3200E	201	202	< 5	< 0.2	5.49	1140	1.5	< 2	0.74	< 0.5	4	46	19	2.64	2.11	0.60
3100N-3250E	201	202	< 5	< 0.2	5.52	1070	1.5	< 2	0.77	< 0.5	4	54	20	2.46	2.22	0.66
3100N-3300E	201	202	55	< 0.2	4.25	1930	1.5	< 2	0.15	0.5	4	54	48	2.60	1.47	0.41
3100N-3350E	201	202	< 5	< 0.2	6.63	860	1.5	< 2	0.51	< 0.5	1	21	10	1.58	2.87	0.31
3100N-3400E	201	202	380	< 0.2	5.88	1000	1.5	< 2	0.48	< 0.5	3	42	17	2.24	2.55	0.39
3100N-3450E	201	202	< 5	< 0.2	5.84	920	1.5	< 2	0.41	< 0.5	1	35	8	1.92	2.72	0.32
3100N-3550E	201	202	10	0.6	6.13	1020	1.5	< 2	1.27	< 0.5	5	39	27	2.07	2.07	0.69
3100N-3600E	201	202	not/ss	1.6	5.87	1000	1.5	< 2	1.08	0.5	3	41	26	1.90	1.93	0.65
3100N-3650E	201	202	< 5	0.6	5.24	1570	1.5	< 2	0.94	2.0	7	59	50	2.74	1.78	0.94
3100N-3700E	201	202	< 5	0.8	5.71	1840	2.0	< 2	1.21	1.5	10	64	70	3.23	1.93	0.97
3100N-3750E	201	202	< 5	1.0	5.52	1430	1.5	< 2	1.36	1.5	10	55	70	3.19	1.80	0.85
3100N-3800E	201	202	< 5	0.8	5.29	1640	2.0	< 2	1.26	1.5	7	62	68	3.00	1.73	1.01
3100N-3850E	201	202	< 5	0.6	5.44	1780	2.0	< 2	1.00	1.5	8	62	57	2.83	1.84	1.05
3100N-3900E	201	202	< 5	0.6	5.32	1520	1.5	< 2	1.07	1.5	11	63	69	2.80	1.73	0.93
3100N-3950E	201	202	< 5	0.4	5.81	1230	1.5	< 2	1.22	< 0.5	8	60	35	2.52	1.83	0.94

CERTIFICATION:

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
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WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : 6412
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 19-SEP-97
Invoice No. : I9741666
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9741666

SAMPLE	PREP CODE		Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)			
2700N-2950E	201	202	185	< 1	0.76	18	820	20	96	0.25	58	< 10	134			
2700N-3000E	201	202	185	4	0.75	27	1320	18	111	0.26	158	< 10	124			
2700N-3050E	201	202	255	3	0.78	32	2340	26	114	0.28	176	< 10	160			
2700N-3100E	201	202	335	5	0.57	44	3970	46	96	0.27	200	< 10	216			
2700N-3150E	201	202	200	< 1	1.06	16	1010	16	174	0.28	114	< 10	68			
2700N-3200E	201	202	120	5	0.81	25	830	24	147	0.24	159	< 10	120			
2700N-3250E	201	202	165	1	1.02	10	390	12	139	0.27	80	< 10	70			
2700N-3300E	201	202	265	< 1	2.08	8	480	10	392	0.25	53	< 10	68			
2700N-3350E	201	202	420	5	1.72	15	790	16	326	0.28	113	< 10	112			
2700N-3400E	201	202	245	2	1.39	12	620	14	233	0.25	73	< 10	80			
2700N-3450E	201	202	330	1	0.95	21	960	14	125	0.23	101	< 10	104			
2700N-3550E	201	202	430	< 1	1.06	25	850	20	131	0.25	92	< 10	108			
2700N-3600E	201	202	250	< 1	0.97	20	990	18	138	0.21	71	< 10	86			
2700N-3650E	201	202	450	1	1.07	20	1240	16	172	0.19	83	< 10	104			
2700N-3700E	201	202	280	1	1.43	23	1220	14	262	0.22	157	< 10	98			
2700N-3750E	201	202	335	4	1.01	37	1670	18	194	0.23	404	< 10	168			
2700N-3800E	201	202	435	3	1.02	39	1420	16	173	0.25	191	< 10	166			
2700N-3850E	201	202	675	1	1.39	20	1310	14	245	0.21	112	< 10	100			
2700N-3900E	201	202	470	1	1.07	25	1600	14	157	0.23	140	< 10	130			
3100N-2900E	201	202	200	< 1	0.95	14	420	16	86	0.28	77	< 10	64			
3100N-2950E	201	202	345	< 1	2.39	10	730	6	544	0.30	94	< 10	56			
3100N-3000E	201	202	230	3	0.81	23	1680	18	92	0.21	139	< 10	104			
3100N-3050E	201	202	315	4	0.71	31	2430	16	96	0.25	162	< 10	146			
3100N-3100E	201	202	300	3	0.76	35	4420	20	114	0.23	188	< 10	170			
3100N-3150E	201	202	155	3	0.67	26	880	18	81	0.23	168	< 10	116			
3100N-3200E	201	202	320	1	1.22	20	1090	16	162	0.27	97	< 10	84			
3100N-3250E	201	202	305	1	1.24	21	820	12	158	0.29	99	< 10	78			
3100N-3300E	201	202	110	5	0.45	32	1100	16	74	0.19	178	< 10	138			
3100N-3350E	201	202	195	1	1.39	7	370	12	186	0.29	52	< 10	60			
3100N-3400E	201	202	210	2	1.06	17	740	16	132	0.31	94	< 10	94			
3100N-3450E	201	202	210	< 1	0.95	12	420	14	106	0.31	77	< 10	72			
3100N-3550E	201	202	380	1	1.56	22	1380	12	257	0.21	73	< 10	98			
3100N-3600E	201	202	205	1	1.40	18	1790	10	232	0.19	79	< 10	104			
3100N-3650E	201	202	375	3	0.67	33	2030	12	130	0.17	157	< 10	224			
3100N-3700E	201	202	445	2	0.71	40	2050	12	206	0.18	180	< 10	254			
3100N-3750E	201	202	885	1	0.89	32	1190	14	201	0.16	139	< 10	160			
3100N-3800E	201	202	385	3	0.63	35	1530	16	135	0.18	155	< 10	218			
3100N-3850E	201	202	330	2	0.68	35	1580	16	139	0.21	166	< 10	204			
3100N-3900E	201	202	715	2	0.73	45	1610	14	140	0.21	151	< 10	196			
3100N-3950E	201	202	655	3	1.29	26	1250	14	217	0.26	118	< 10	116			

CERTIFICATION: B. Caplin

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : 6412
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :3-A
Total Pages :4
Certificate Date: 19-SEP-97
Invoice No. :19741666
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9741666

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	K % (ICP)	Mg % (ICP)
3100N-4000E	201	202	< 5	0.4	5.66	1320	2.0	< 2	1.07	0.5	8	72	58	2.91	1.82	1.05
3100N-4050E	201	202	< 5	0.4	5.46	1170	2.0	< 2	1.34	2.5	10	75	116	3.04	1.69	1.08
3100N-4100E	201	202	< 5	< 0.2	5.23	1160	1.5	< 2	1.86	2.0	5	76	25	2.73	1.35	0.98
3500E-1200N	201	202	< 5	< 0.2	5.83	1360	1.0	< 2	2.40	1.0	12	87	51	3.74	1.15	1.27
3500E-1250N	201	202	< 5	< 0.2	5.78	1210	1.0	6	2.63	0.5	12	93	53	3.66	1.25	1.32
3500E-1300N	201	202	< 5	0.4	6.13	1480	1.5	< 2	2.04	0.5	10	82	43	3.50	1.36	1.34
3500E-1350N	201	202	< 5	< 0.2	5.49	1110	1.0	< 2	2.43	< 0.5	5	86	11	2.77	1.23	1.04
3500E-1400N	201	202	< 5	< 0.2	6.05	1120	1.5	< 2	1.00	< 0.5	4	64	22	2.65	1.99	0.83
3500E-1450N	201	202	< 5	< 0.2	6.14	1240	2.0	< 2	0.48	0.5	5	69	30	3.18	2.04	1.03
3500E-1500N	201	202	< 5	< 0.2	6.28	1200	2.0	< 2	0.47	< 0.5	6	67	34	3.42	2.22	0.95
3500E-1550N	201	202	20	< 0.2	6.79	1070	2.5	< 2	0.59	0.5	5	69	42	3.50	2.08	0.73
3500E-1600N	201	202	< 5	0.4	8.22	1150	3.5	< 2	0.43	0.5	8	91	42	4.55	2.62	1.10
3500E-1650N	201	202	< 5	0.4	7.37	1050	2.5	2	0.50	0.5	7	80	30	4.04	2.66	0.88
3500E-1700N	201	202	< 10	< 0.2	6.45	1260	1.5	< 2	0.43	< 0.5	4	58	28	2.40	2.40	0.70
3500E-1750N	201	202	< 5	< 0.2	6.25	1180	1.5	< 2	0.37	< 0.5	5	59	28	2.65	2.19	0.78
3500E-1800N	201	202	< 5	< 0.2	6.12	1190	2.0	< 2	0.55	< 0.5	4	56	30	2.58	2.25	0.68
3500E-1850N	201	202	< 5	< 0.2	6.88	880	3.5	< 2	0.89	< 0.5	7	93	13	3.26	2.67	1.10
3500E-1900N	201	202	< 5	< 0.2	6.25	960	2.5	< 2	0.62	< 0.5	4	79	16	2.58	2.34	0.94
3500E-1950N	201	202	< 10	< 0.2	6.22	1280	2.0	< 2	0.31	< 0.5	4	63	35	2.49	2.29	0.67
3500E-2000N	201	202	< 5	< 0.2	6.38	1280	2.0	< 2	0.53	< 0.5	4	59	22	2.15	2.42	0.73
3500E-2050N	201	202	< 5	< 0.2	6.65	1340	2.0	< 2	0.24	< 0.5	6	67	36	3.36	2.31	1.02
3500E-2100N	201	202	< 5	0.4	6.50	1100	2.5	2	0.41	< 0.5	6	70	39	2.91	2.13	0.84
3500E-2150N	201	202	< 5	< 0.2	6.40	950	3.0	< 2	0.75	< 0.5	5	70	16	2.67	2.38	0.97
3500E-2200N	201	202	< 5	< 0.2	6.99	1120	2.5	< 2	0.52	< 0.5	4	29	10	2.42	3.77	0.48
3500E-2250N	201	202	< 5	0.4	7.32	960	1.5	< 2	1.12	< 0.5	3	29	16	1.72	2.40	0.56
3500E-2300N	201	202	< 5	< 0.2	6.92	1140	2.5	< 2	0.78	< 0.5	6	50	14	2.89	2.59	0.69
3500E-2350N	201	202	< 5	< 0.2	6.72	1140	2.5	< 2	0.90	0.5	6	62	19	2.55	2.28	0.93
3500E-2400N	201	202	< 5	< 0.2	6.91	900	2.0	< 2	1.18	< 0.5	6	47	17	2.55	1.45	0.73
3500E-2450N	201	202	< 5	< 0.2	6.62	920	2.0	< 2	1.09	< 0.5	3	35	14	1.99	2.52	0.60
3500E-2500N	201	202	< 5	< 0.2	6.57	1120	2.5	< 2	0.83	< 0.5	5	55	17	2.68	2.52	0.78
3500E-2550N	201	202	< 5	0.4	6.12	940	2.0	< 2	0.99	3.0	3	49	24	2.37	2.18	0.69
3500E-2600N	201	202	< 5	< 0.2	6.69	1050	2.0	< 2	0.92	< 0.5	6	52	16	2.50	2.38	0.76
3500E-2650N	201	202	< 5	< 0.2	6.58	1050	2.5	< 2	0.74	< 0.5	6	56	15	2.61	2.75	0.72
3500E-2700N	201	202	< 10	0.4	6.40	1100	2.5	< 2	0.73	< 0.5	6	53	22	2.32	2.31	0.76
3500E-2750N	201	202	< 5	< 0.2	6.55	1130	2.0	< 2	0.76	0.5	8	60	14	2.59	2.51	0.80
3500E-2800N	201	202	< 5	< 0.2	6.77	1060	2.0	< 2	0.75	< 0.5	5	45	17	2.62	2.76	0.59
3500E-2850N	201	202	< 5	< 0.2	6.94	1180	2.0	< 2	0.76	0.5	5	54	15	2.46	2.54	0.74
3500E-2900N	201	202	< 5	< 0.2	5.50	1040	2.0	< 2	1.01	1.0	10	83	23	2.52	1.80	0.88
3500E-2950N	201	202	< 5	< 0.2	6.55	1020	2.0	< 2	0.66	< 0.5	4	43	12	2.33	2.83	0.52
3500E-3000N	201	202	< 5	< 0.2	6.98	1050	2.0	< 2	0.84	1.0	5	53	17	2.81	2.63	0.73

CERTIFICATION: B. Caughlin

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221 FAX: 604-984-0218

To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : 6412
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Certificate Date: 19-SEP-97
Invoice No. : I9741666
P.O. Number :
Account :GP W

CERTIFICATE OF ANALYSIS A9741666

SAMPLE	PREP CODE		Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)			
3100N-4000E	201	202	605	2	0.94	33	1740	10	153	0.24	139	< 10	136			
3100N-4050E	201	202	795	1	0.88	60	1480	10	143	0.25	132	< 10	158			
3100N-4100E	201	202	440	< 1	0.88	21	1950	8	142	0.36	159	< 10	86			
3500E-1200N	201	202	635	1	1.04	28	540	28	167	0.42	189	< 10	146			
3500E-1250N	201	202	755	< 1	1.11	36	710	18	176	0.45	190	< 10	110			
3500E-1300N	201	202	660	3	1.14	29	950	24	174	0.39	167	< 10	150			
3500E-1350N	201	202	420	< 1	1.01	21	550	12	168	0.45	181	< 10	50			
3500E-1400N	201	202	315	1	0.90	19	920	14	142	0.29	130	< 10	72			
3500E-1450N	201	202	260	1	0.65	26	960	10	89	0.24	138	< 10	108			
3500E-1500N	201	202	315	2	0.76	26	1490	14	116	0.25	141	< 10	110			
3500E-1550N	201	202	595	2	0.89	25	2290	22	130	0.30	133	< 10	120			
3500E-1600N	201	202	625	3	0.94	38	1290	30	106	0.33	149	< 10	154			
3500E-1650N	201	202	720	1	0.96	27	1320	30	112	0.36	141	< 10	112			
3500E-1700N	201	202	250	1	1.00	19	520	12	151	0.23	114	< 10	84			
3500E-1750N	201	202	285	2	0.87	20	770	14	123	0.23	119	< 10	82			
3500E-1800N	201	202	275	3	1.04	23	550	14	165	0.25	118	< 10	94			
3500E-1850N	201	202	410	1	1.47	37	820	20	136	0.37	89	< 10	86			
3500E-1900N	201	202	305	< 1	1.11	27	500	16	120	0.32	100	< 10	82			
3500E-1950N	201	202	195	3	0.73	23	700	10	114	0.26	141	< 10	96			
3500E-2000N	201	202	225	1	1.03	18	540	12	158	0.23	110	< 10	74			
3500E-2050N	201	202	240	2	0.58	29	940	14	75	0.22	135	< 10	124			
3500E-2100N	201	202	280	2	0.80	29	940	18	98	0.25	137	< 10	114			
3500E-2150N	201	202	325	< 1	1.24	25	720	16	130	0.28	95	< 10	80			
3500E-2200N	201	202	270	1	0.82	17	940	16	120	0.23	53	< 10	90			
3500E-2250N	201	202	280	< 1	1.99	9	710	10	350	0.23	64	< 10	52			
3500E-2300N	201	202	535	3	1.22	18	1210	18	154	0.28	83	< 10	70			
3500E-2350N	201	202	425	1	1.40	27	1060	16	187	0.29	88	< 10	88			
3500E-2400N	201	202	420	1	1.82	20	740	18	291	0.27	66	< 10	70			
3500E-2450N	201	202	310	< 1	1.82	14	860	12	311	0.26	54	< 10	58			
3500E-2500N	201	202	395	1	1.24	22	1030	18	139	0.28	82	< 10	84			
3500E-2550N	201	202	275	1	1.11	22	1510	18	146	0.22	79	< 10	106			
3500E-2600N	201	202	435	1	1.20	21	910	20	156	0.24	86	< 10	100			
3500E-2650N	201	202	315	< 1	1.19	27	940	20	132	0.27	78	< 10	116			
3500E-2700N	201	202	350	1	1.29	24	920	14	153	0.25	80	< 10	76			
3500E-2750N	201	202	555	< 1	1.26	29	1070	14	145	0.28	92	< 10	114			
3500E-2800N	201	202	350	1	1.36	20	1040	16	183	0.27	86	< 10	100			
3500E-2850N	201	202	365	2	1.21	19	940	12	148	0.28	107	< 10	102			
3500E-2900N	201	202	565	2	1.26	31	1210	12	140	0.26	121	< 10	96			
3500E-2950N	201	202	290	1	1.15	18	860	14	135	0.27	74	< 10	100			
3500E-3000N	201	202	435	1	1.09	23	1180	14	147	0.25	102	< 10	130			

CERTIFICATION: _____

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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British Columbia, Canada V7J 2C1
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To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : 6412
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page N. :4-A
Total Pages :4
Certificate Date: 19-SEP-97
Invoice No. : I9741666
P.O. Number :
Account : GP W

CERTIFICATE OF ANALYSIS A9741666

SAMPLE	PREP CODE		Au ppb FA+AA	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	K % (ICP)	Mg % (ICP)
3500E-3050N	201	202	< 5	< 0.2	6.36	1010	2.0	< 2	0.86	< 0.5	4	46	16	2.21	2.44	0.58
3500E-3100N	201	202	10	< 0.2	6.62	1010	2.0	< 2	0.77	< 0.5	5	54	19	2.55	2.62	0.59
3500E-3150N	201	202	< 5	0.6	6.37	1000	1.5	< 2	0.70	0.5	2	51	27	2.00	2.13	0.45
3500E-3200N	201	202	< 5	0.2	5.97	1330	1.5	< 2	1.30	0.5	5	52	45	2.42	1.93	0.78
3500E-3250N	201	202	< 5	< 0.2	6.25	1910	2.0	< 2	1.21	0.5	4	50	60	2.80	1.89	0.75
3500E-3300N	201	202	< 5	< 0.2	6.51	2740	2.0	< 2	0.87	0.5	7	70	76	3.36	2.20	1.34
3500E-3350N	201	202	< 5	0.8	5.91	3030	2.0	< 2	1.22	3.5	10	66	131	3.34	1.73	1.29
3500E-3400N	201	202	< 5	0.8	5.79	1670	1.5	< 2	1.17	1.5	6	47	64	2.56	1.82	1.06

CERTIFICATION: B. Campbell

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Project : 6412
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page No. :4-B
Total Pages :4
Certificate Date: 19-SEP-97
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Account : GP W

CERTIFICATE OF ANALYSIS A9741666

SAMPLE	PREP CODE		Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)			
3500E-3050N	201	202	260	< 1	1.34	22	980	16	170	0.28	80	< 10	96			
3500E-3100N	201	202	300	< 1	1.37	23	890	14	187	0.32	104	< 10	118			
3500E-3150N	201	202	220	3	1.38	15	2740	14	247	0.24	126	< 10	82			
3500E-3200N	201	202	270	< 1	1.26	31	1310	10	249	0.25	126	< 10	108			
3500E-3250N	201	202	280	3	1.35	27	1300	12	261	0.23	150	< 10	94			
3500E-3300N	201	202	385	4	0.84	35	1820	14	160	0.30	217	< 10	172			
3500E-3350N	201	202	625	4	0.42	56	1530	12	136	0.23	174	< 10	228			
3500E-3400N	201	202	740	1	0.96	37	1740	12	188	0.22	117	< 10	152			

CERTIFICATION: B. Grant

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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To: WESTMIN RESOURCES LTD.
PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

A9742365

Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

CERTIFICATE A9742365

(GP W) - WESTMIN RESOURCES LTD.

Project: WOLVERINE
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 25-SEP-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	10	Geochem ring to approx 150 mesh
294	10	4-7 Kg crush and split
3202	10	Rock - save entire reject
285	10	ICP - HF digestion charge
287	10	Special dig'n with organic ext'n

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
983	10	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
13	10	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
22	10	Sb ppm: HCl-KClO3 digest, extrac	AAS-BKGD CORR	0.2	1000
20	10	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	10	100000
578	10	Ag ppm: 24 element, rock & core	AAS	0.2	100.0
573	10	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	10	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	10	Be ppm: 24 element, rock & core	ICP-AES	0.5	1000
561	10	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	10	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	10	Cd ppm: 24 element, rock & core	ICP-AES	0.5	500
563	10	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	10	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	10	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	10	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	10	K %: 24 element, rock & core	ICP-AES	0.01	10.00
570	10	Mg %: 24 element, rock & core	ICP-AES	0.01	15.00
568	10	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	10	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	10	Na %: 24 element, rock & core	ICP-AES	0.01	10.00
564	10	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	10	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	10	Pb ppm: 24 element, rock & core	AAS	2	10000
582	10	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
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556	10	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	10	Zn ppm: 24 element, rock & core	ICP-AES	2	10000

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British Columbia, Canada V7J 2C1
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PROJECT: WOLVERINE
P.O. BOX 49066, THE BENTALL CENTRE
VANCOUVER, BC
V7X 1C4

Project : WOLVERINE
Comments: ATTN:DAVID TERRY-VANCOUVER OFFICE

Page Number :1-A
Total Pages :1
Certificate Date: 25-SEP-97
Invoice No. :I9742365
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CERTIFICATE OF ANALYSIS A9742365

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SAMPLE	PREP CODE	Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)	Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)
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CERTIFICATION: Ian Ruddock

*INTERFERENCE: Cu ON Bi AND P.

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Samples submitted to our lab in Vancouver, BC.
This report was printed on 30-SEP-97.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
244	1	Pulp; prev. prepared at Chemex

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
301	1	Cu %: Conc. Nitric-HCL dig'n	AAS	0.01	100.0

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Account :GP W

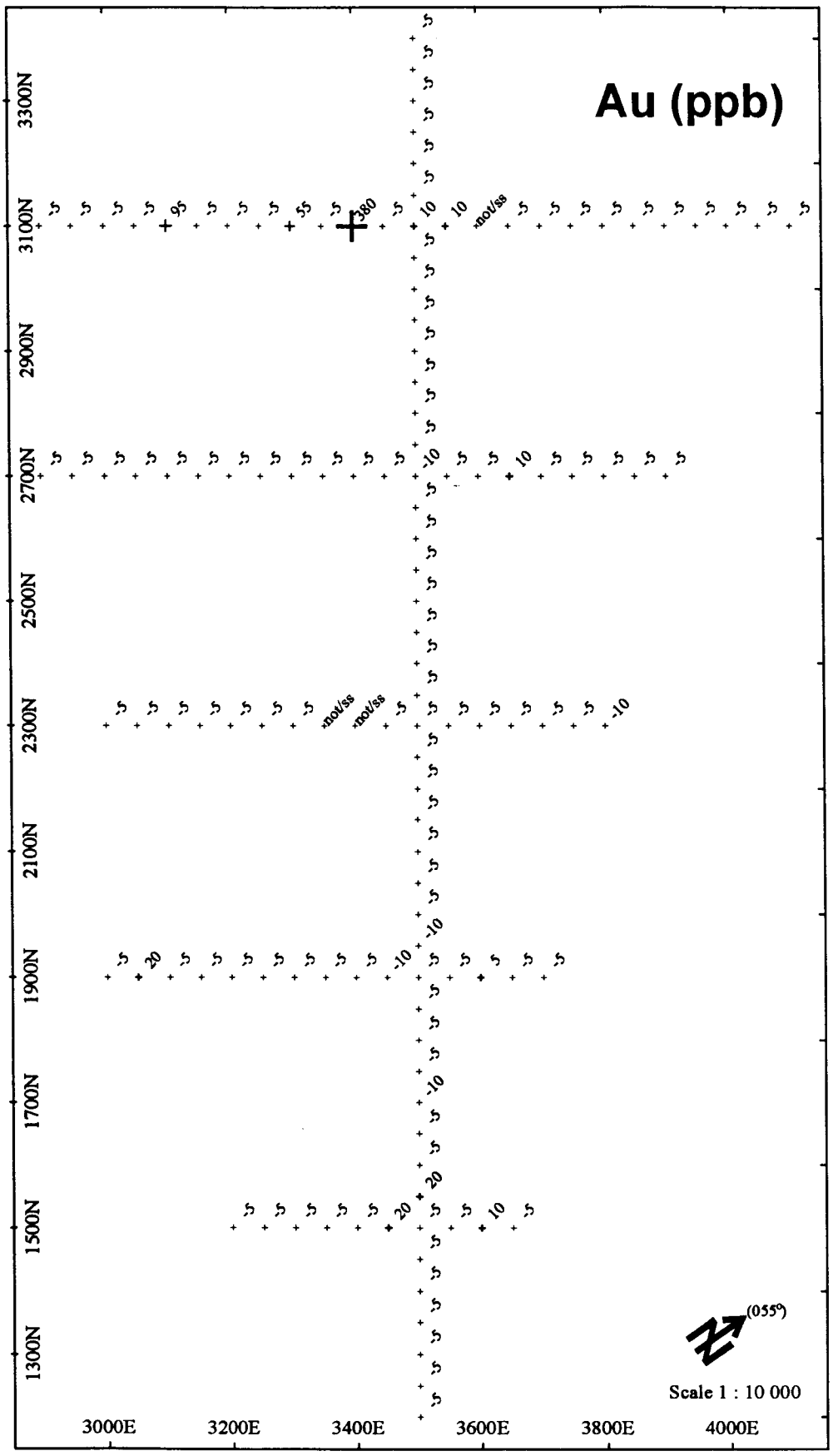
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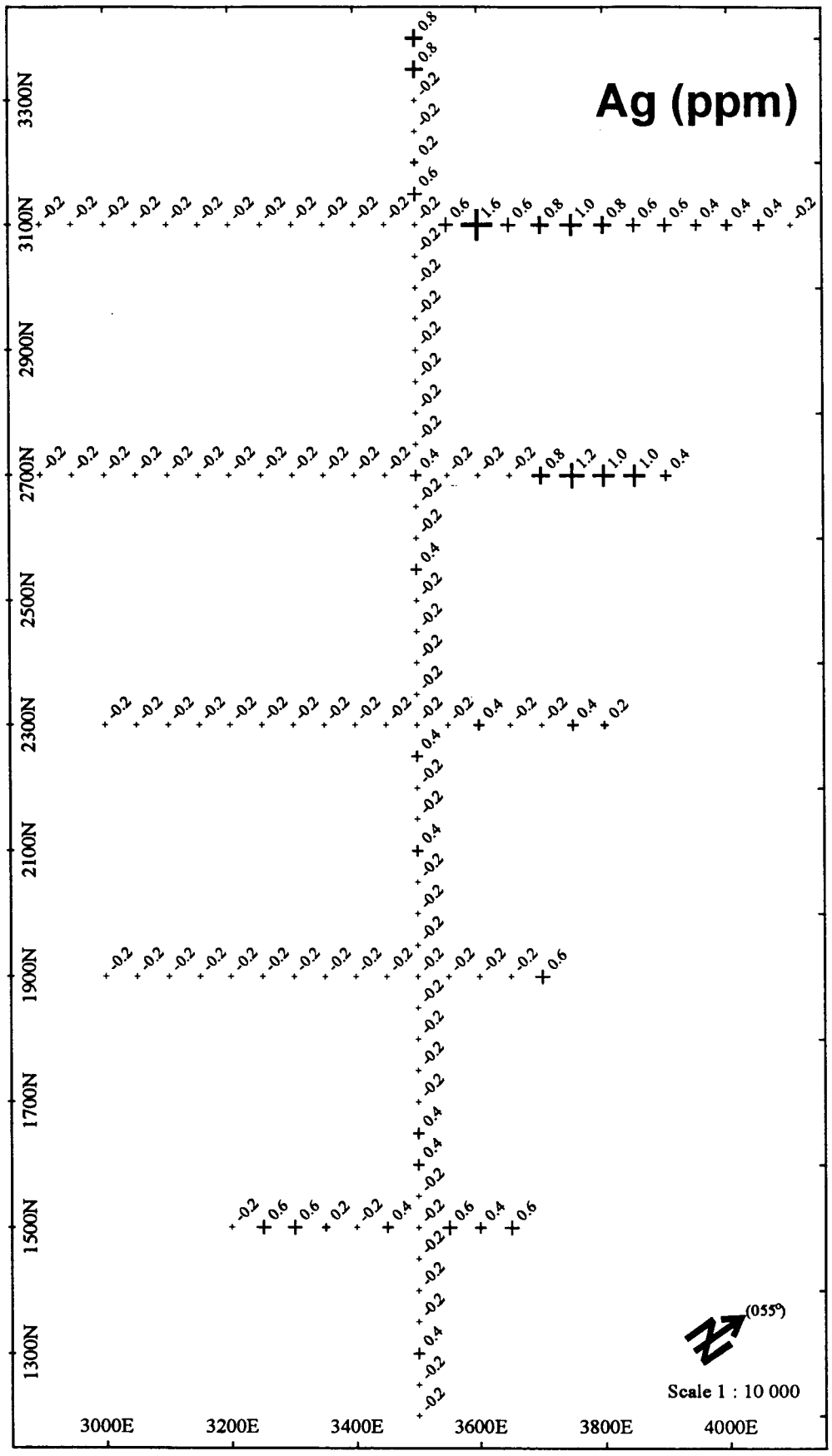
CERTIFICATION: Said Leung

APPENDIX C

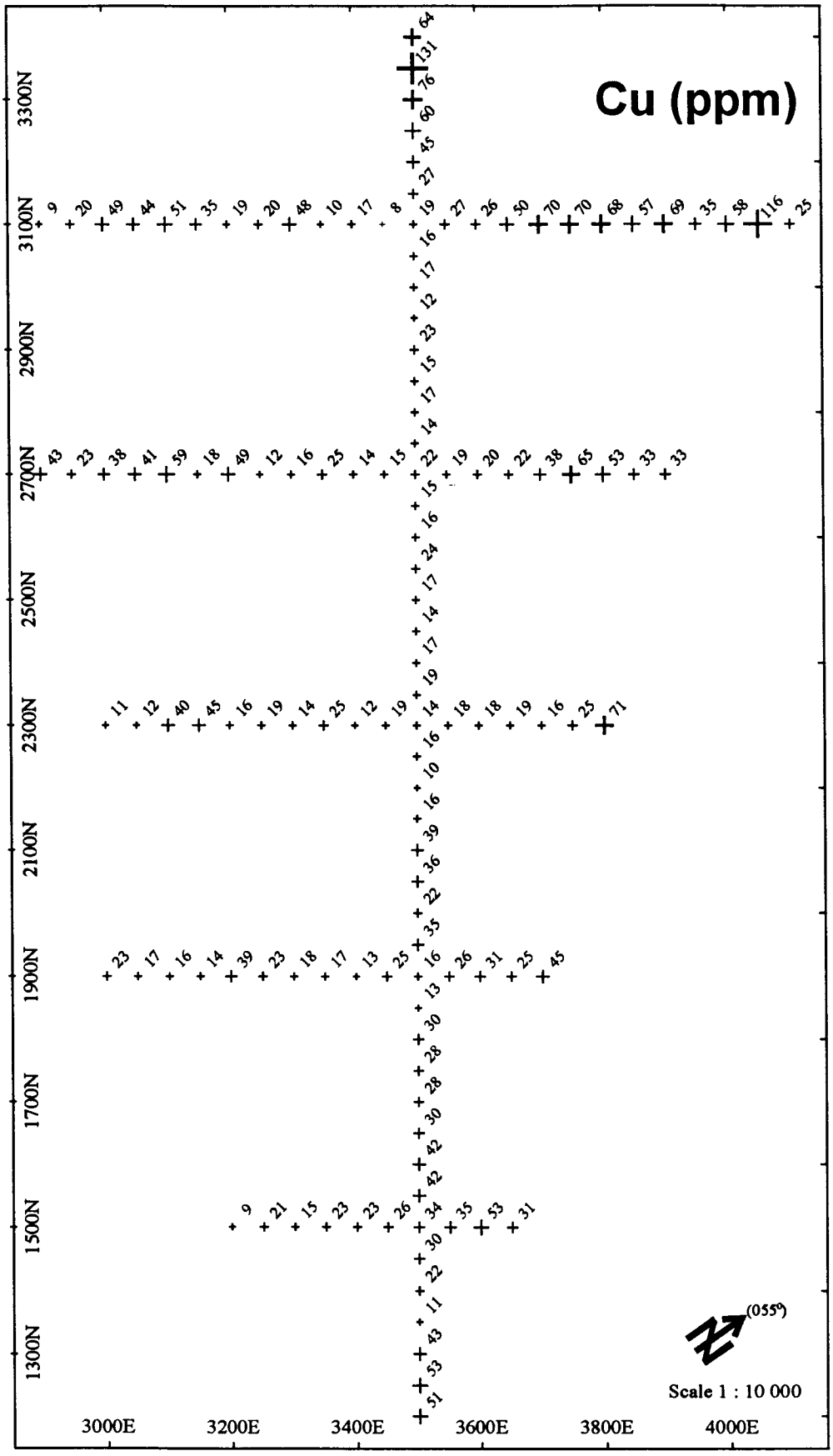
1997 SOIL GEOCHEMICAL PLOTS (Au, Ag, Cu, Pb, Zn, Ba, and Mn)



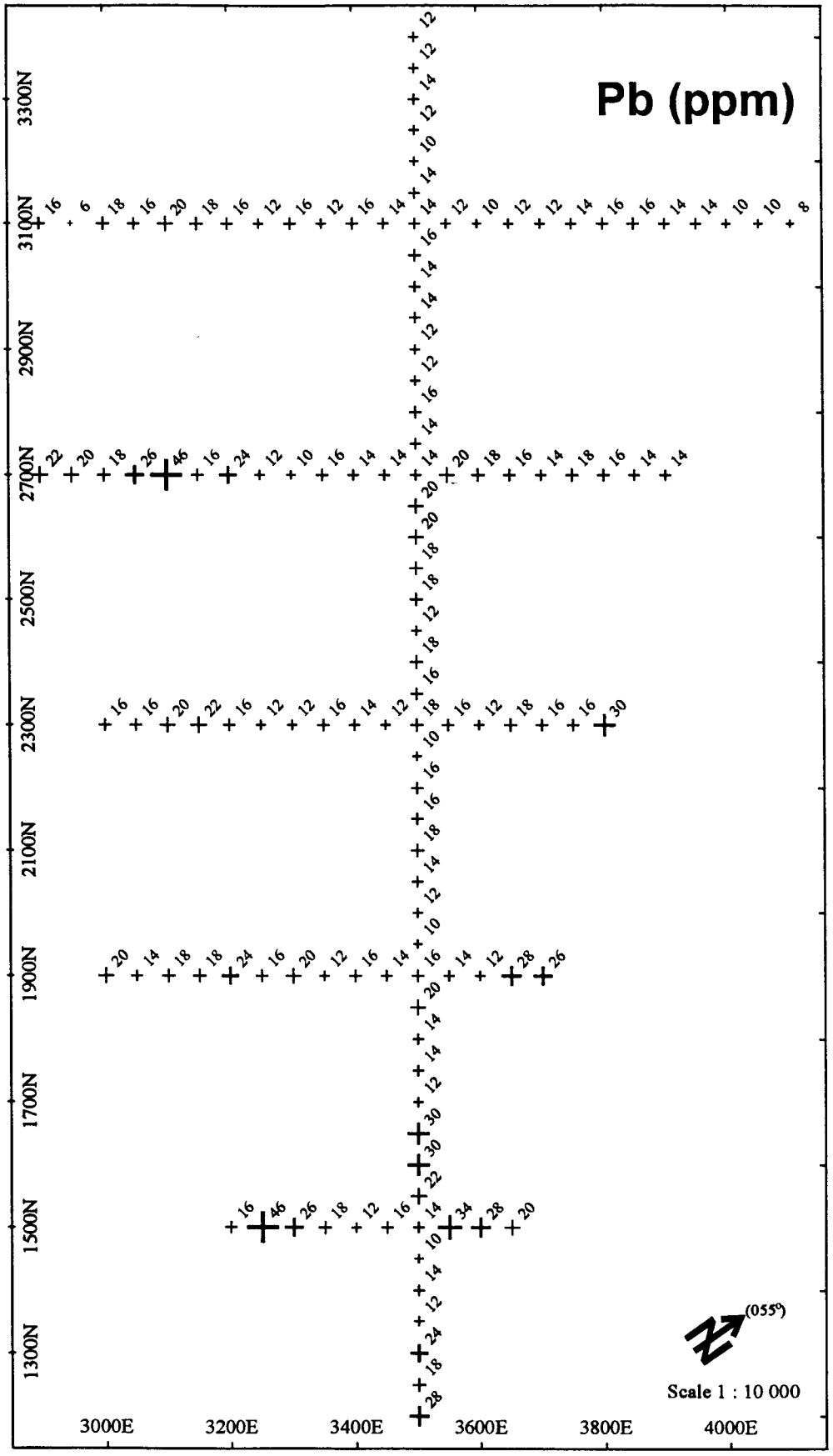
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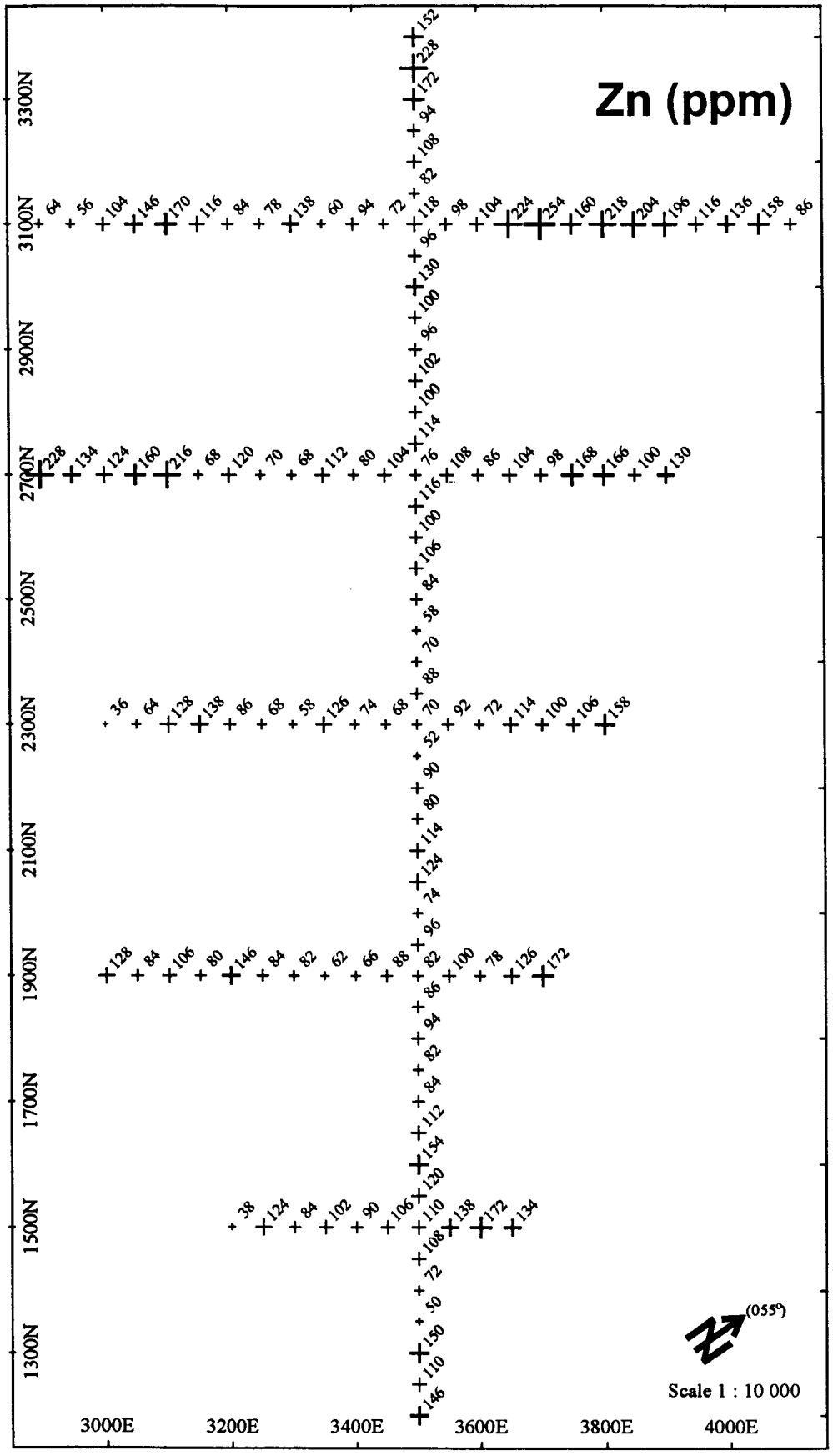
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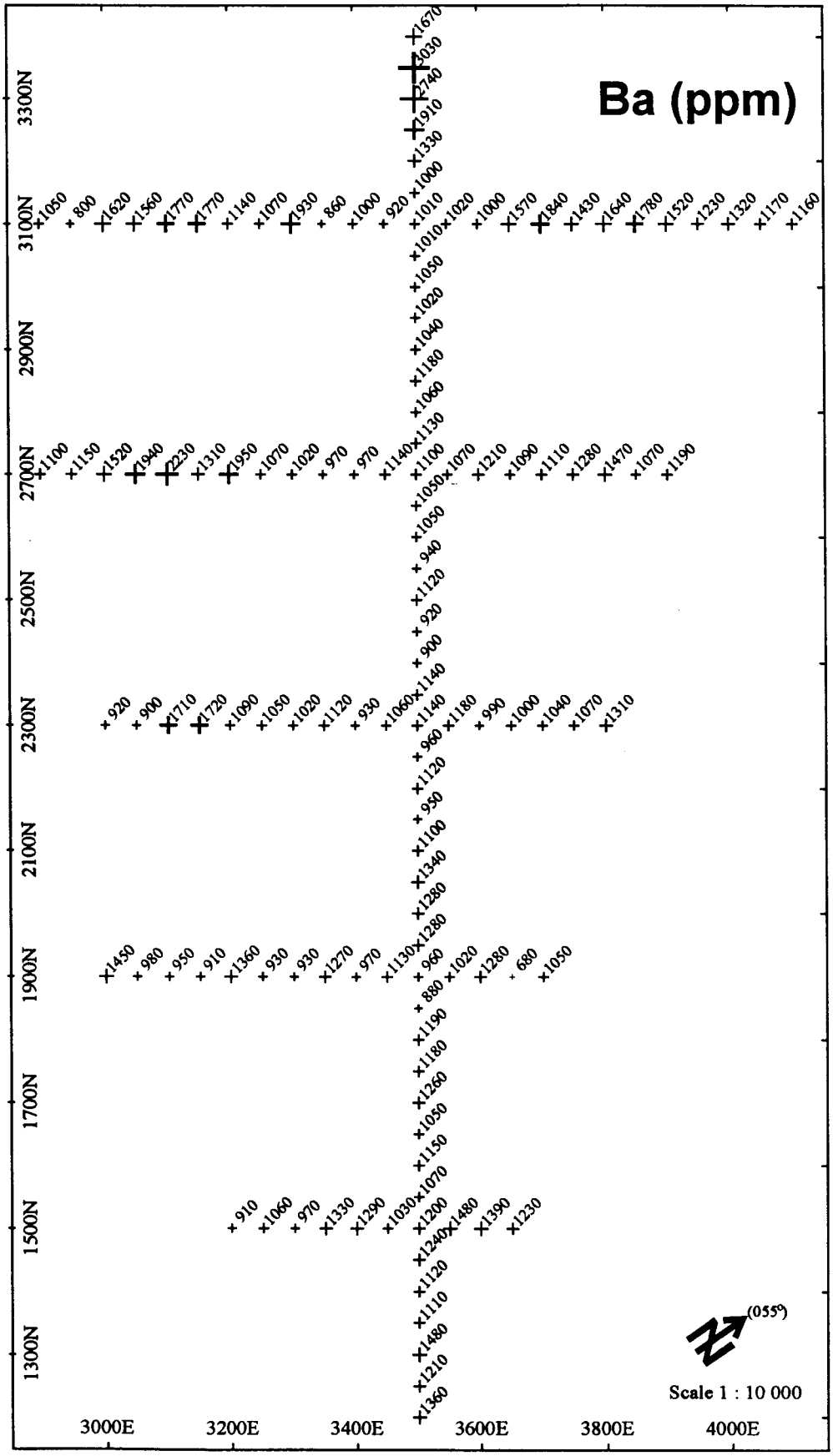
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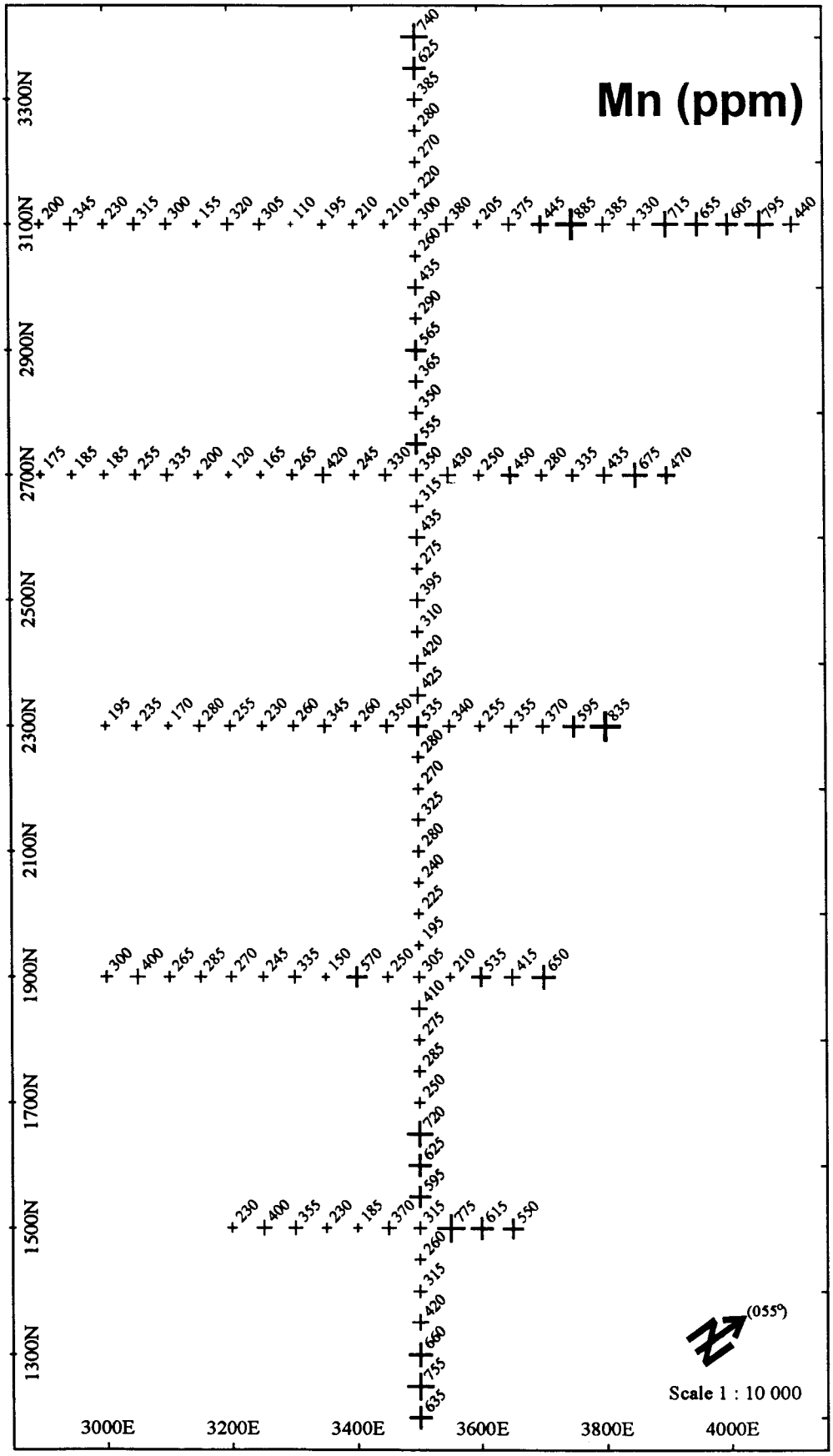
1997 PUCK Soil Geochemistry (West of Go Creek) - Pb



1997 PUCK Soil Geochemistry (West of Go Creek) - Zn



1997 PUCK Soil Geochemistry (West of Go Creek) - Ba



1997 PUCK Soil Geochemistry (West of Go Creek) - Mn

APPENDIX D

1997 GROUND GEOPHYSICAL SURVEY REPORT AND MAPS

i) AMEROK GEOSCIENCE REPORT

ii) GEOPHYSICAL MAPS SHOWING TOTAL FIELD MAGNETICS, AND 440Hz, 880Hz, 1760Hz, AND 3520Hz ELECTROMAGNETICS

AMEROK GEOSCIENCES LTD.

WESTMIN RESOURCES LIMITED

GROUND TOTAL MAGNETIC FIELD AND HLEM SURVEYS OF THE PUCK AND TOE PROPERTIES, FINLAYSON AREA, SOUTHERN YUKON TERRITORY

M.A. Power M.Sc. P. Geo.

PROPERTIES

PUCK

Centred at: 61° 29' N 130° 15' W
NTS: 105 G
Mining District: Watson Lake, YT
Date: July 15, 1997

SUMMARY

Ground total magnetic field and horizontal loop electromagetic field (HLEM) surveys were conducted on the Puck Property near Wolverine Lake from June 13 to 26, 1997. The surveys were conducted to map stratigraphy favourable for the location of volcanogenic massive sulphide (VMS) deposits and, if possible, to directly locate VMS mineralization based on the geophysical responses. HLEM surveys were conducted using a coil spacing of 100 m, station spacing of 25 m and reading frequencies of 440, 880, 1760 and 3520 Hz. Total magnetic field surveys were conducted using a station spacing of 12.5 m. A total of 23.8 line-km were surveyed on the Puck grid.

HLEM surveys identified 14 anomalies grouped into two anomaly systems in the western and eastern portions of the grid respectively. The eastern anomaly system is a continuation of an anomaly system mapped on the northern portion of the property in 1996. This horizon, after mapping with geophysical surveys and testing by drilling, was interpreted to be the top of the footwall argillite underlying the Ore Sequence at the Wolverine deposit. One target of interest with favourable target geometry, conductance and a very weak associated positive magnetic response was located along this anomaly system. The western anomaly system appears to occur stratigraphically beneath the eastern anomaly system and thus may be within the footwall argillite. The anomaly exhibits strong EM response and wide conductor widths, suggesting that it is caused by graphitic argillite. There is a weak, discontinuous positive magnetic anomaly 100 m grid E and upsection of this system and it appears to follow the system along its length. This magnetic anomaly shows no coincident EM response and is interpreted to be caused by magnetite, possibly within an exhalite horizon overlying the graphitic argillite. Two favourable targets were identified in the western anomaly system. Both appear to overlie the inferred graphitic argillite conductor forming the axis of the system. These conductors appear to be favourable targets based on their stratigraphic location, target widths and conductances.

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1.0 INTRODUCTION

Amerok Geosciences Ltd. was retained by Westmin Resources Limited to conduct ground total magnetic field and horizontal loop electromagnetic field (HLEM) surveys on the Puck Property near Wolverine Lake in the south central Yukon Territory. The surveys were conducted from June 13 to June 26, 1997 in support of an exploration program for volcanogenic massive sulphide deposits. This report describes the surveys performed, the data, results and interpretation.

2.0 SURVEY PROCEDURES

A cut grid consisting of 23.7 line-km was centred over the inferred location of the Ore Sequence. The grid consisted of a cut slope corrected base line and cut, slope chained (not slope corrected) survey lines. Grids were picketed at a 25 m interval using tagged survey lathe.

Ground total magnetic field surveys and HLEM surveys were conducted on the Puck Property on June 13-20 and June 26, 1997. The surveys were conducted by M. Power, D. Goodwin and D. Hall. The geophysical surveys were performed with the following instruments:

HLEM instruments

Apex Parametrics Maxmin I-9 with attached MMC (datalogger/computer). This instrument operates at 110, 220, 440, 880, 1760, 3520, 7040, 14,080 and 28,160 Hz. Cables at lengths of 50, 100 and 150 m were used in the surveys.

Magnetic field instruments

2 Omni Plus proton precession magnetometers, 1 Omni IV proton precession magnetometer.

Other

P-75 laptop computer, Fujitsu colour printer. All data was processed and plotted in GEOPAK.

The HLEM surveys were performed using the 100 m cable and frequencies of 440, 880, 1760 and 3520 Hz reading stations every 25 m. The HLEM method requires that the coils be held a constant distance apart and be coplanar. In steep irregular terrain, the coils will frequently be less than the nominal coil spacing (short coiling) and may

not be coplanar. These variations in coil geometry produce strong in-phase errors and these must be removed from the data before plotting and interpretation. The method used to mitigate these effects requires a slope chained grid and requires the operator to measure the station-to-station terrain slope in percent with a clinometer. This is normally done by the receiver operator who was in the lead position on most surveys. The correct slope required to maintain the coils coplanar is the arithmetic average of the station to station slopes in the interval between the two coils. The operators hold the coils coplanar during the surveys by holding their coils at this orientation which is calculated and displayed for each reading station by the Maxmin MMC. The effect of short coiling created by irregular topography was removed with Apex Parametrics data processing software (MMCFIX1). The numerical method is described in Varre (1990)(pp AII-3-4).

The magnetic field surveys were conducted using a 12.5 m station spacing. The base station magnetometer was synchronized with the field units daily, prior to the surveys and cycled at 15 to 20 s during the surveys. Corrections to the field data for temporal geomagnetic variation during the surveys were performed either by on-board software or, after dumping, by computer software. The data was levelled between operators and relevelled to the datum used in the 1996 magnetic field survey.

3.0 GEOLOGICAL SUMMARY AND TARGET CHARACTERISTICS

The following notes are drawn from discussions with A. Turner, P. Lhotka and D. Terry and form the framework within which the geophysical data was interpreted. The PUCK grid is underlain by the mid-Devonian Middle Unit of Mortensen and Jilsen (1985). From top to bottom the rock units encountered on the property include:

Unit	Thickness	Lithology
Mafic-intermediate volcanics	?	Predominantly andesites
Ore sequence	to 200 m	Aphyric rhyolite and lesser argillite, calcite-pyrite and barite exhalite, iron formation and massive sulphides
Footwall argillite	500 m or more	Siliceous to carbonaceous, locally graphitic black argillite

Porphyritic rhyolite unit	variable	Intrudes footwall argillite. Argillaceous quartz-eye feldspar crystal tuff; quartz feldspar intrusive flows; quartz-eye bearing crystal tuff.

The footwall argillite contains both conductive and non-conductive sections depending upon the graphite content. The argillite is weakly mineralized with disseminated pyrite and is strongly foliated subparallel to compositional layering. The porphyritic rhyolite occurs in domal complexes intruding the argillite. These appear to be the hypabyssal sources of the extrusive rocks and pyroclastics in the Ore Sequence. The complexes are composed of an intrusive core draped by a fragmental quartz-eye feldspar crystal tuff containing silica encapsulated clasts of footwall argillite. The Ore Sequence overlies both the footwall argillite and the porphyritic rhyolite and consists of rhyolite with interbedded graphitic argillite over the dome complexes grading laterally into tuffaceous mudstone. The massive sulphides are located on the flanks of the Wolverine intrusive complex at the base of the Ore Sequence. An extensive magnetite iron formation occurs from 30 to 80 m up-section of the massive sulphide horizon and extends laterally for up to 10 km. This horizon consists of one to two separate magnetite rich siliceous exhalite layers up to 5 m thick. Above the massive sulphides, a calcite-pyrite exhalative unit is also encountered but this is not laterally extensive. The Ore Sequence varies in thickness along strike with pinching occurring over the intrusive complexes; this probably reflects the influence of paleotopography on the deposition of this unit. Rocks are presumed to dip NE (grid E) on the Puck grid and to dip N (grid N) on the Toe grid. Steeply dipping normal faults oblique to the local strike are known to be present.

Economic mineralization encountered to date occurs in a 1 to 15 m thick massive sulphide horizon south of Wolverine Lake. The Wolverine and Lynx zones appear to be separate 'puddles' in a larger (500 m by 700 m) massive sulphide deposit. Footwall stringer mineralization consists of chalcopyrite, pyrrhotite, pyrite and lesser galena-sphalerite in a strong zone of chlorite alteration and in most intense in a paleotopographic high between the two deposits. This may be the original source vent. At depth, the chlorite alteration grades into intense sericite alteration. The massive sulphide layer consists of >80% pyrite-sphalerite-chalcopyrite-pyrrhotite-galena and lesser tetrahedrite in bedded layers with local interbeds of graphitic argillite. The massive sulphide layer is capped by a hanging wall tuffaceous graphitic argillite. Approximately 30 m above the deposit is a calcite-pyrite exhalative unit containing 5-20% fine grain pyrite-pyrrhotite-chalcopyrite-galena in whispy bands.

3.1 Physical properties of rock units

Measurements of electrical resistivity and magnetic susceptibility were taken on selected core samples from DDH WOLV-95-20. Magnetic susceptibility was measured with an Exploranium KT-9 susceptibility meter and electrical resistivity was measured both wet and dry using standard DC methods described in Telford *et. al.* (1990). Results are tabulated below:

DESCRIPTION	MAGNETIC SUSCEPTIBILITY (SI UNITS X 10^{-3})	ELECTRICAL RESISTIVITY (OHM-M)
Footwall rhyolite	-0.01	>2530
Massive sulphides: massive py-ga-sp±cpy, banded, > 80% sulphides (272 m)	0.01 - 0.23 (avg 0.03)	22 (dry) 1.8 (wet)
Massive sulphides: heavily disseminated (50%) py-cpy-sph with quartz and chlorite (273 m)	-0.05 to 0.09	210 (dry/wet)
Massive sulphides: cpy-pyr-po in massive bedded sulphide folded parallel to core axis. Possible stringer zone mineralization (275 m)	43	3.6 (dry) 1.4 (wet)
Hanging wall argillite: black, soft graphitic argillite (268 m)	-0.01	44 (dry) 35 (wet)
Hanging wall argillite: as above but not as soft and less graphite (266m)	-0.04	319 (dry) 210 (wet)

This limited suite of measurements suggests the following:

1. The massive sulphide horizon is an excellent electrical conductor and the

rocks show some magnetic susceptibility. Chalcopyrite rich lower massive sulphide bands carrying pyrrhotite are magnetically susceptible while the more zinc-rich upper massive sulphide bands show little or no magnetic susceptibility.

2. The hanging wall black argillite is locally quite conductive but not uniformly so. Highly graphitic intervals are quite conductive but much of the argillite horizon is only slightly conductive. These remarks would probably also apply to the footwall argillite which this unit resembles.

3. The underlying rhyolites and probably those overlying the deposit are not conductive nor are they magnetically susceptible.

4.0 HLEM AND MAGNETIC FIELD INTERPRETATION PROCEDURES

A brief summary of the HLEM method is contained in Appendix D. The data were interpreted using standard plate models appropriate to the geological framework discussed above. The following notes summarize important aspects of the interpretation:

1. Anomalous responses and conductor axis locations were taken from the 3520 Hz data (highest operating frequency). Some of these anomalies have no response at lower frequencies because of their low conductance.

2. Conductors were interpreted as dipping thin-plate responses conformable with the geology and conductor axes indicate the horizontal projection of the conductor apexes. There were no responses which could be realistically interpreted as arising from compact (eg. sub-spherical) or flat-lying conductors.

3. Some responses show excess width in the response (ie. greater than 100 m between zero base level cross-overs in the trough of the HLEM anomaly). This is often an indicator of significant conductor width and the excess width can be used to estimate the thickness of the conductor. This excess width is prone to error, particularly in the case of weak responses. Excess width is indicated in metres on the lower right hand side of the anomaly symbols.

4. Conductance symbols at each conductor location show the conductor parameters interpreted at 3520 Hz. Indicated response width is the lesser of the IP and Q response widths where they differ. Massive sulphide conductors show target conductances varying from 1 to 40 Siemens, depending upon the mineralogy. Massive sulphide horizons with heavy concentrations of chalcopyrite and pyrrhotite have high conductances while assemblages with abundant galena-sphalerite-pyrite show lower conductances. Zinc-rich

conductors are at the lower limit of the quoted conductance range.

5. Conductances were determined from the 3520 Hz data. Conductance determinations will vary with frequency. Conductance is derived from the ratio of the IP to Q which, when plotted on characteristic curves permits, the determination of a response parameter. The response parameter in turn, can be decomposed to produce a conductance estimate (conductivity thickness product). The response parameter is the product of the conductor's magnetic susceptibility, conductivity and thickness, the operating frequency and the coil spacing. The change in IP/Q versus the change in response parameter is often used to determine the nature of a conductor. Conductors which are inductively thick (ie. greater than one skin depth) show a drop off in IP/Q with increasing response parameter. Most conductive massive sulphide horizons are inductively thick because their skin depth is only a few metres. Other geological targets, with the possible exception of very conductive graphite, are inductively thin. Plots of IP/Q versus response parameter show a linear trend in the case of inductively thin targets. IP/Q versus response parameter plots were made for several intersections where there were interpretable responses at 440 through 3520 Hz. These are contained in Appendix C.

6. Dips were not estimated from the HLEM data because the interference between conductors distorted the shape of the flanking positive anomalies. The ratio of the height of the larger peak to the smaller peak is used to determine the dip of the conductor; if this is distorted by a nearby conductor or by footwall or hanging wall conductivity, the dip estimate will be in error.

Magnetic field anomaly interpretation was assisted by running forward models with REVS, a potential field forward modelling program developed by Geopak Systems Ltd. The response of the most plausible stratabound source body - an extensive magnetite sheet representing an exhalite horizon - was examined to guide subsequent interpretation. An example of the output is shown in Figure 1. This indicates the response of a magnetic sheet dipping at 45° and striking grid N in the local magetic field encountered on the property. Two model responses are shown; one for a shallow source and the other for a source buried by 50 m of overburden. All geometric parameters including grid orientation, magnetic field orientation and conductor dimensions were chosen to match those expected at the Puck Property. The results demonstrate that the response of a dipping magnetic horizon consists of an asymmetric high centred over the target apex with a trough on the SW side of the anomaly and a declining positive response on the NE side of the target.

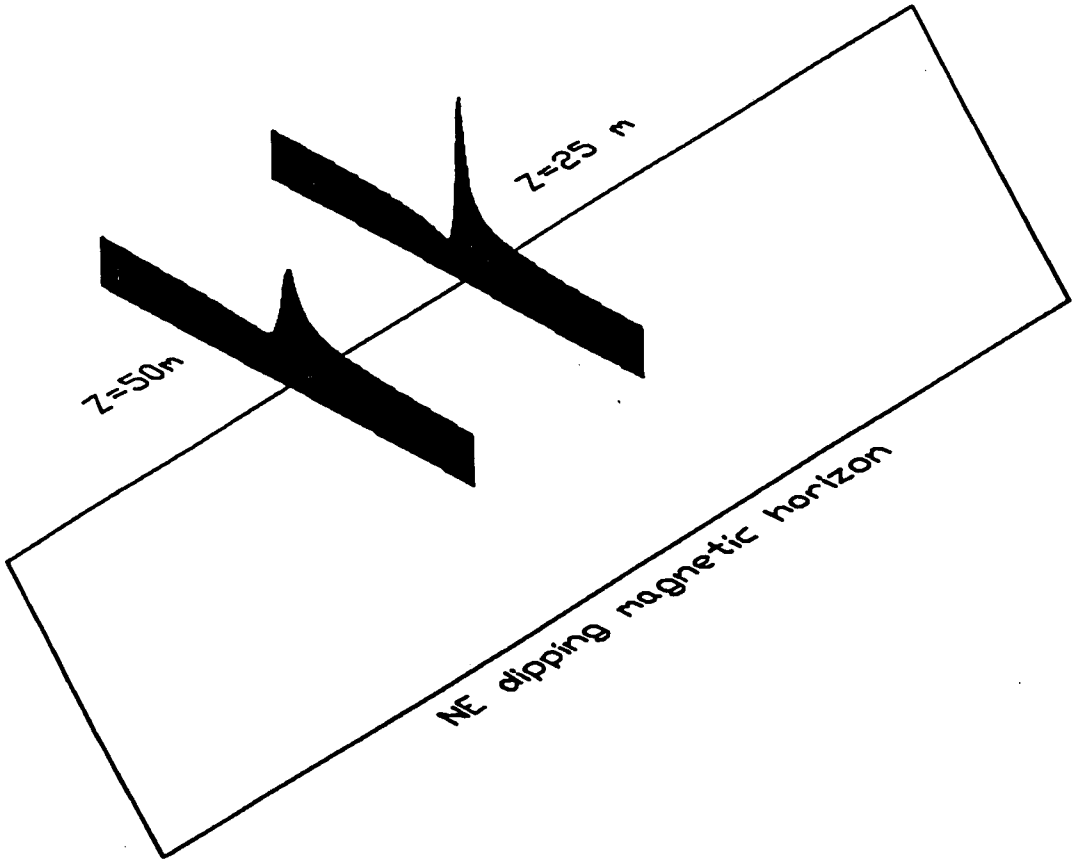


Figure 1. Forward model of total magnetic field response of a dipping magnetic dike in the magnetic field at the Puck property. Magnetic field parameters: Declination 30° inclination 75°, field intensity 58400 nT (International Geomagnetic Reference Field). Body parameters: Strike 143°, dip 50° NE, thickness 5 m, length 5000 m, depth extent 1000 m, magnetic susceptibility 10×10^{-3} SI units. Data is from a profile at right angles to the target over the centre of the target. Maximum amplitude is 162 nT.

5.0 DATA PRESENTATION AND FORMATS

Digital data is appended to this report in ASCII XYZ format. Each file has a header on the first line showing the data contained in the columns beneath. For the magnetic field data, the common format is:

Line Station X Y Corr_mag

For the HLEM data, the common format is:

Line Station X Y 440IP 440Q 880IP 880Q 1760IP 1760Q 3520IP 3520Q

Corr_mag denote total magnetic field data corrected for diurnal variation. xxxIP and xxxQ denotes in-phase and quadrature components at the prefixing frequency in percent of the vertical primary magnetic field (H_z) corrected for terrain effect.

HLEM data is displayed in stacked profile plots showing the survey grid and the in-phase and quadrature readings as solid and dashed line profiles. The zero level on each profile is coincident with the survey line and the direction of the positive response is shown diagrammatically in the legend. A scale of 20% H_z per cm was used in the plotting. Along the grid lines, the small tick marks show the station locations and every 100 m is indicated by a larger tick. Conductors of interest are indicated with symbols at each intersection. All anomalies were interpreted as thin tabular conductors unless otherwise indicated. Conductor axes formed by linking similar line-to-line responses are indicated by thick lines.

Total magnetic field data is displayed in colour contoured maps. These show the locations of the grid lines, marked in the same fashion as in the HLEM plots and contoured values of the total magnetic field. Superimposed on this is a full colour contour plot and any HLEM conductor axes.

6.0 RESULTS

Copies of the digital data are appended to this report in the standard format. Plots of the data collected are contained in the back pockets of this report. The following figures display the data collected on this property:

Figure	Location	Description
PK-1	Pocket	Maxmin I-10 / 440 Hz - 100 m coils stacked profiles
PK-2	Pocket	Maxmin I-10 / 880 Hz - 100 m coils stacked profiles
PK-3	Pocket	Maxmin I-10 / 1760 Hz - 100 m coils stacked profiles
PK-4	Pocket	Maxmin I-10 / 3520 Hz - 100 m coils stacked profiles
PK-5	Pocket	Total magnetic field with HLEM anomalies.

In-phase HLEM noise levels at 440 Hz are estimated at $\pm$ 1% H_z based on measurements of station-to-station excursions from average base level in quiet areas. The noise level on the 3520 Hz plots rises to $\pm$ 2% H_z and includes the effect of conductive overburden. Total magnetic field noise levels were estimated using a similar procedure from a stacked profile plot and appear to be $\pm$ 10 nT in quiet areas rising to $\pm$ 25 nT in areas of outcrop. The magnetic noise levels reflect the presence of near surface magnetic material and are well above the instrument noise levels.

Anomalies located on the Puck grid are tabulated in Appendix B. A total of 14 conductors were delineated based on line-to-line comparisons of HLEM responses. All conductances were derived from the 3520 Hz data.

In general terms, the EM can be grouped into two anomaly systems. Anomalies **PK-1-3,5,8,10-14** form a system on the western portion of the grid and anomalies **PK-4,6,7** form a second system on the eastern side of the grid. Both systems contain wide, laterally extensive, low conductance conductors which appear to be graphitic argillite units. Positive magnetic responses occur approximately 100 m grid E of each anomaly system.

The backbone of the western anomaly system is anomalies **PK-3**, the northern portion of **PK-10** and **PK-14**. These form a continuous system of EM responses running the length of the grid. They occur in an area of low magnetic relief with the exception of the southern portion of **PK-10** which is coincident with a magnetic field high on L200S to L400S. The anomalies show apparent conductor widths of up to 100 m. Some of the responses can also be interpreted as originating from two conductors but it is impossible to discriminate between the two possibilities without resurveying at a shorter coil spacing. Dips cannot be read accurately from these responses and the

conductors are presumed to be stratabound and dipping to the NE (grid E). Conductances range from <1 to 15 Siemens and thus overlap the lower portion of the range encountered with massive sulphide conductors. The southern section of anomaly **PK-3** from L100N to L300N may be a separate anomaly. The response on **PK-3** at L500N is complicated by the presence of **PK-8** and the apparent width may be caused by two conductors. The width of the responses, their conductivities and the absence of any directly associated magnetic responses except on a short section of **PK-10** suggest that these conductors are probably graphitic argillite units. Consequently, they are probably of little economic interest.

Approximately 100 m grid E and presumably stratigraphically above the spine of the western anomaly system is a series of three asymmetric magnetic field highs. These anomalies have steep western sides and more gently sloped eastern flanks; consequently their responses resemble those expected of dipping magnetic dykes or sheets conformable with the stratigraphy. The absence of coincident EM responses indicates that the source of the magnetite anomalies is magnetite. These anomalies are interpreted to be non-conductive magnetite exhalite beds or perhaps mafic volcanic flows overlying the argillite.

Anomalies **PK-1,2,11** and **PK-13** occur to the west (stratigraphically below) the spine of the western anomaly system and thus appear to be graphitic argillite. Consequently, they are probably of little economic interest.

Two anomalies in the western anomaly system appear to be of possible economic interest based on their response and their inferred stratigraphic position. Anomaly **PK-8** is located stratigraphically above the inferred top of the argillite defined locally by **PK-3** and is stratigraphically below the largest and most intense magnetic high on the grid. Intersections show discrete target conductances of 4 to 7 Siemens which is in the lower range of those encountered in massive sulphide deposits. This conductor may merge with **PK-3** at L500N 4100E. A plot of IP/Q versus response parameter for the intersection at this point shows a non-linear trend indicating that the conductor is inductively thick. The conductor at this point could either be wide (100 m) or consist of two adjacent conductors. The latter interpretation seems more plausible because there is no excess width in the response to the N and S. If the conductor is phyically thin and shows a non-linear trend in IP/Q versus response parameter, this suggests that it may be a sulphide conductor. The stratigraphic position of **PK-8** immediately overlying the footwall argillite, the presence of an overlying magnetite horizon, the thin indicated conductor widths and the favourable conductance make it a viable target. The absence of any coincident positive magnetic response is a mark against it.

The southern section of anomaly **PK-3** from L100N to L300N appears to be a separate anomaly from the rest of **PK-3** and is of economic interest. It occurs 100 m grid E of a weak (70 nT) magnetic anomaly and appears to immediately overly the top

of the argillite defined locally by **PK-10**. Responses show no excess width and conductances range from 4 to 7 Siemens. IP/Q versus response parameter plots for intersections on L200N and 300N show a linear trend suggesting that the conductor is inductively thin and thus is not likely to be a very conductive massive sulphide body. The stratigraphic position of this anomaly immediately overlying the inferred argillite, the presence of a possible overlying magnetite horizon, the thin indicated conductor widths and the favourable conductance make it a viable target. The absence of any coincident positive magnetic response and the IP/Q versus response parameter trend are marks against it.

The eastern anomaly system consists of anomalies **PK-4,6,7** and appears to be the southern extension of a band of argillite on the northern half of the Puck property mapped by geophysical surveys and confirmed by drilling in 1996 - 1997. Anomaly **PK-4** forms the spine of the system and may represent the most favourable target in the area. Conductances on this anomaly range from 1 to 11 Siemens in the section from L1300N to L1500N and there is a very weak (perhaps negligible) 30 nT positive coincident magnetic field response at L1400N 4625E. Indicated conductor widths are in the range of 10 to 12 m and IP/Q versus response parameter plots show linear trends indicating that the target is inductively thin. The stratigraphic position, favourable conductance, narrow widths and very weak coincident magnetic response render the northern section of **PK-4** a viable target; the response parameter behaviour is a mark against it.

Anomaly **PK-9** has a strike oblique to those of other nearby conductors and follows a very weak (30 nT) magnetic break between relatively magnetic rocks to the N and less magnetic rocks to the south of the conductor. Target conductances are very weak (<1S) and outside the range normally expected of massive or heavily disseminated sulphides. This conductor is interpreted to be a fault.

There appears to be two packages of conductive argillites on the grid and this poses a problem both in the interpretation of the data and in the ranking of the anomalies. The results of the 1996 geophysical surveys and drilling program defined the top of the footwall argillite at the base of the Ore Sequence along the trend of anomaly **PK-4**. This anomaly appears to feather out to the south and disappears in all but the high frequency response by L1100N. The western anomaly system appears to originate stratigraphically below the top of the footwall argillite and extends the length of the grid. The absence of a strong magnetic anomaly up-section from the western anomaly system suggests that it may be an altogether different stratigraphic horizon than the eastern anomaly system and its economic significance is unknown.

7.0 CONCLUSIONS

The results of the surveys on the Puck grid suggest the following conclusions:

a. Two anomaly systems are present on the eastern and western sides of the grid. The eastern anomaly system is an extension of the interpreted top of the footwall argillite underlying the Ore Sequence and is present only in the northern portion of the grid. The western anomaly system appears to be a separate graphitic argillite unit at a lower stratigraphic level within the footwall argillite.

b. The northern section of anomaly **PK-4** in the eastern anomaly system is the most favourable target based on its stratigraphic position, very weak coincident positive magnetic response, target conductance and width.

c. Anomaly **PK-8** in the western anomaly system is a favourable target based on its stratigraphic position with respect to the lower argillite, the presence of an overlying magnetic horizon, the narrow target widths, the target conductances and the IP/Q versus response parameter behaviour. The absence of an associated positive magnetic response is a mark against it.

d. The southern section of anomaly **PK-3** is also a favourable target in the western anomaly system based on its stratigraphic position with respect to the lower argillite, the presence of a weak overlying magnetic horizon, the narrow conductor widths and target conductances. The absence of an associated positive magnetic response is a mark against it.

8.0 RECOMMENDATIONS

The following recommendations are made:

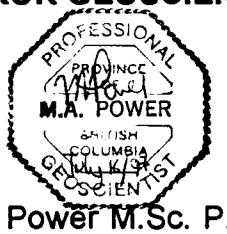
a. Anomaly **PK-4** should be tested on line 1400N. The conductor apex is at 4625E and the conductor is presumed to be conformable with local bedding. The uncertainty in the conductor apex location is ± 25 m.

b. Anomaly **PK-8** should be tested on line 700N. The conductor apex is at 4175E and the conductor is presumed to be conformable with local bedding. The uncertainty in the conductor apex location is ± 25 m.

c. Anomaly **PK-3** should be tested on line 200N. The conductor apex is at 4125E and the conductor is presumed to be conformable with local bedding. The uncertainty in the conductor apex location is ± 25 m.

These recommendations should be reviewed in the light of available new geological mapping, particularly if this sheds light on the source of the magnetic field anomlies associated with the western anomaly system.

Respectfully submitted
AMEROK GEOSCIENCES LTD.



M. A. Power M.Sc. P.Geo.
Geophysicist

July 15, 1997

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APPENDIX A. CERTIFICATE

I, Michael Allan Power, M.Sc. P.Geo., with business and residence addresses in Whitehorse, Yukon Territory do hereby certify that:

1. I am a member of the Association of Professional Engineers and Geoscientists of British Columbia (registration number 21131) and licensed as a Professional Geophysicist by the Northwest Territories Association of Professional Engineers, Geologists and Geophysicists.

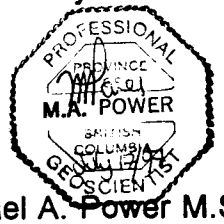
2. I am a graduate of the University of Alberta with a B.Sc. (Honours) degree in Geology obtained in 1986 and a M.Sc. in Geophysics obtained in 1988.

3. I have been actively involved in mineral exploration in the Northern Cordillera since 1988 and am familiar with the Wolf Lake and Finlayson Lake areas.

4. I conducted the geophysical surveys described in this report.

Dated this 15th day of July, 1997 in Whitehorse, Yukon.

Respectfully submitted,



Michael A. Power M.Sc. P.Geo.

APPENDIX B. ANOMALY LISTINGS

Anomaly PK-1

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L1400N 4050E	15		0	0.36
L1300N 4050E	N/I	N/I	0	N/I
L1200N 4025E	N/I	N/I	0	N/I
L900N 4050E	N/I	N/I	0	N/I
L800N 4100E	15	N/I	0	0.36

Anomaly PK-2

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L1500N 4175E	N/I	N/I	0	N/I
L1400N 4125E	N/I	N/I	0	N/I

Anomaly PK-3

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)

L1500N 4225E	N/I	N/I	34/	N/I
L1400N 4250E	18	N/I	0	5.4
L1300N 4225E	10	N/I	58/	>10.8
L1200N 4225E	N/I	N/I	132/	N/I
L1100N 4225E	10	N/I	82/	6.9
L1000N 4225E	N/I	N/I	0	N/I
L900N 4200E	13	N/I	0	7.9
L800N 4175E	N/I	60	106/	N/I
L700N 4150E	18	60	0	6.9
L600N 4100E	18	IP-45 Q-75	0	4.3
L500N 4100E	16	N/I	100/112	5.0
L400N 4100E	20	N/I	0	4.7
L300N 4175E	15	N/I	0	3.6
L200N 4125E	14	N/I	0	5.4
L100N 4100E	<10	N/I	0	7.0

Anomaly PK-4

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L1500N 4625E	15	N/I	10/	1.4
L1400N 4625E	20	N/I	10/	10.8
L1300N 4600E	24	N/I	12/	10.8
L1200N 4575E	N/I	N/I	70/	N/I
L1100N 4575E	N/I	N/I	16/	N/I
L1000N 4450E	N/I	N/I	0	N/I
L900N 4425E	N/I	N/I	0	N/I
L800N 4425E	N/I	N/I	0	N/I
L700N 4400E	N/I	N/I	0	N/I
L600N 4375E	22	N/I	0	0.7
L500N 4375E	N/I	N/I	0	N/I

Anomaly PK-5

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L1300N 4275E	N/I	N/I	0	N/I
L1200N 4300E	N/I	N/I	0	N/I

Anomaly PK-6

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L1200N 4650E	N/I	N/I	0	N/I

Anomaly PK-7

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L1100N 4750E	N/I	N/I	0	N/I
L1000N 4700E	12	N/I	20/34	1.1
L900N 4700E	N/I	N/I	0	N/I

Anomaly PK-8

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L700N 4175E	18	N/I	0	6.9
L600N 4150E	18	N/I	0	4.3

Anomaly PK-9

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L900N 4825E	N/I	N/I	0	N/I
L800N 4725E	N/I	N/I	114/	N/I
L700N 4625E	18	N/I	28/	0.5
L600N 4575E	18	N/I	0	0.7
L500N 4500E	19	N/I	0	0.7
L400N 4475E	N/I	N/I	0	N/I

Anomaly PK-10

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L400N 4025E	22	N/I	0	6.9

L300N 4025E	<10	N/I	0	4.4
L200N 4000E	12	N/I	0	0.7
L100N 4000E	15	N/I	0	14.4
L0N 3975E	12	N/I	0	3.6
L100S 4025E	19	N/I	71/76	5.5
L200S 4025E	N/I	N/I	0	N/I
L300S 4075E	N/I	N/I	0	N/I
L400S 4050E	N/I	N/I	0	N/I
L500S 4100E	N/I	N/I	0	N/I
L600S 4100E	N/I	N/I	0	N/I

Anomaly PK-11

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L200S 3850E	N/I	N/I	20/	N/I
L300S 3825E	23	N/I	0	2.5
L400S 3800E	20	N/I	0	<0.4

Anomaly PK-12

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L100S 4200E	20	N/I	0	<0.4
L200S 4175E	N/I	N/I	0	N/I
L300S 4175E	N/I	N/I	0	N/I

Anomaly PK-13

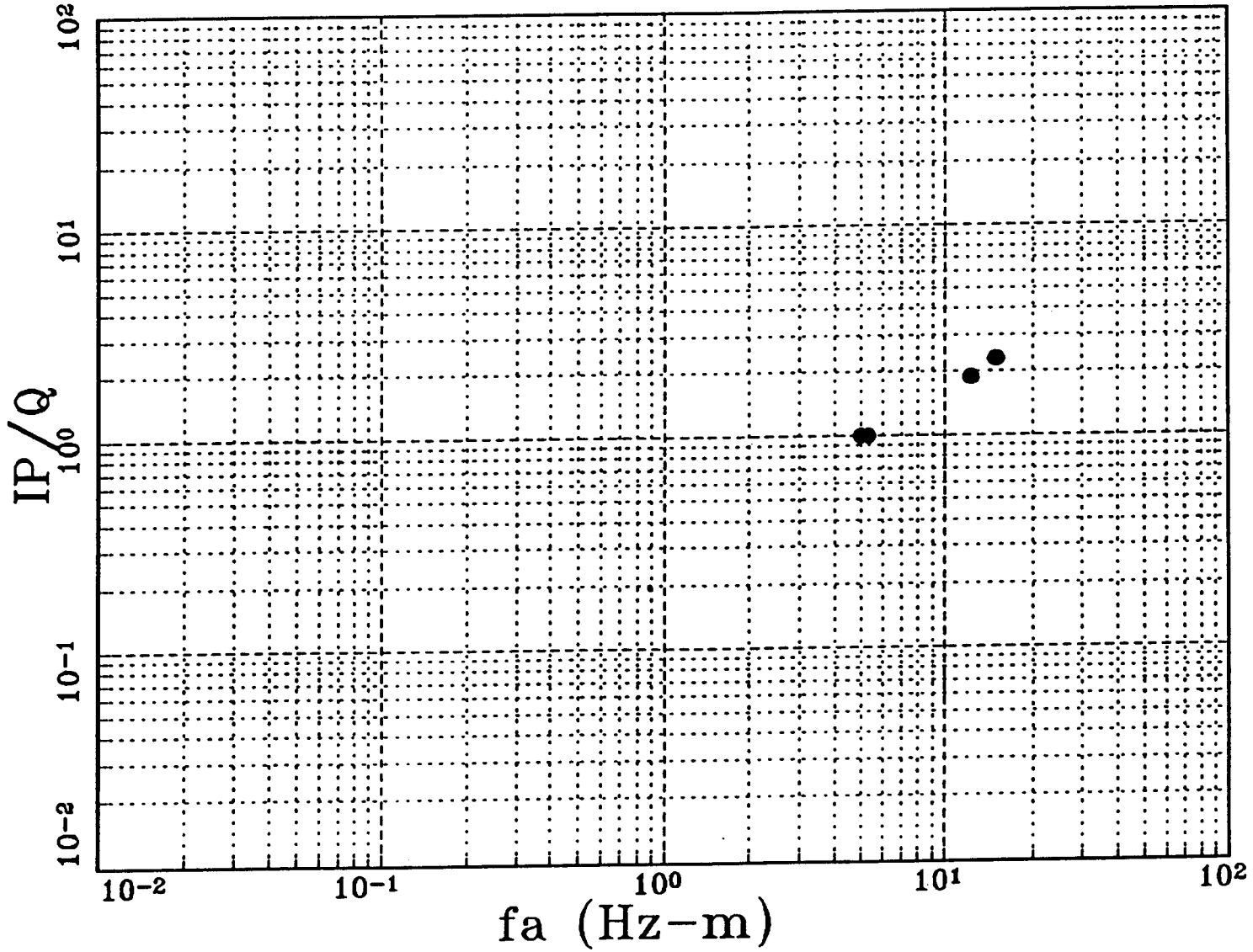
Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L500S 3900E	N/I	N/I	52/38	N/I
L600S 3925E	N/I	N/I	10/38	N/I
L700S 3925E	N/I	N/I	60/	N/I
L800S 3900E	N/I	N/I	14/80	N/I

Anomaly PK-14

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L300S 3950E	33	N/I	0	1.9
L400S 3925E	17	N/I	24/	4.7
L500S 3925E	N/I	N/I	52/38	N/I
L600S 3950E	N/I	N/I	10/38	N/I
L700S 3975E	N/I	N/I	60/	N/I
L800S 3925E	N/I	N/I	14/80	N/I

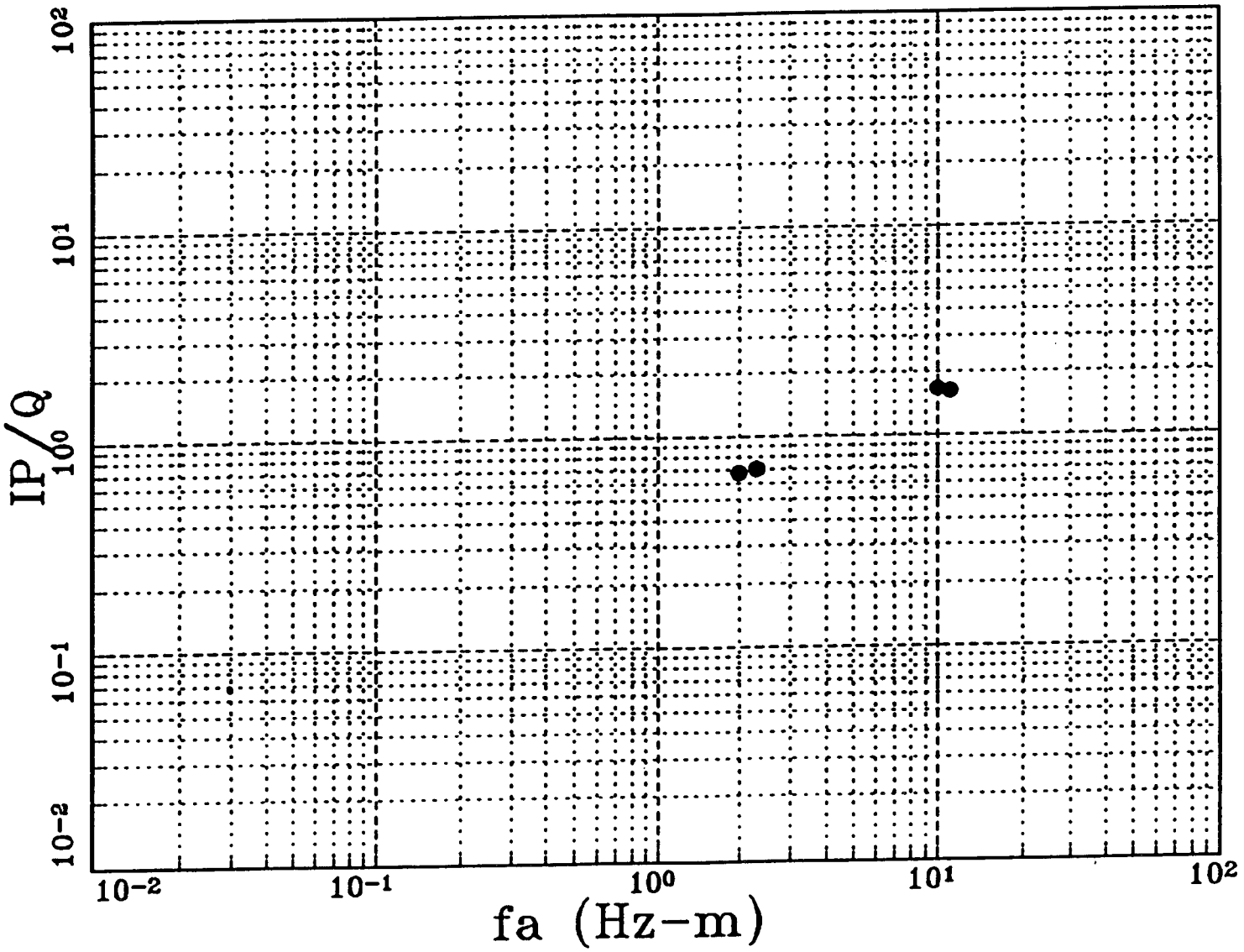
APPENDIX C. IP/Q VERSUS RESPONSE PARAMETER PLOTS

Inductive Thickness Plot

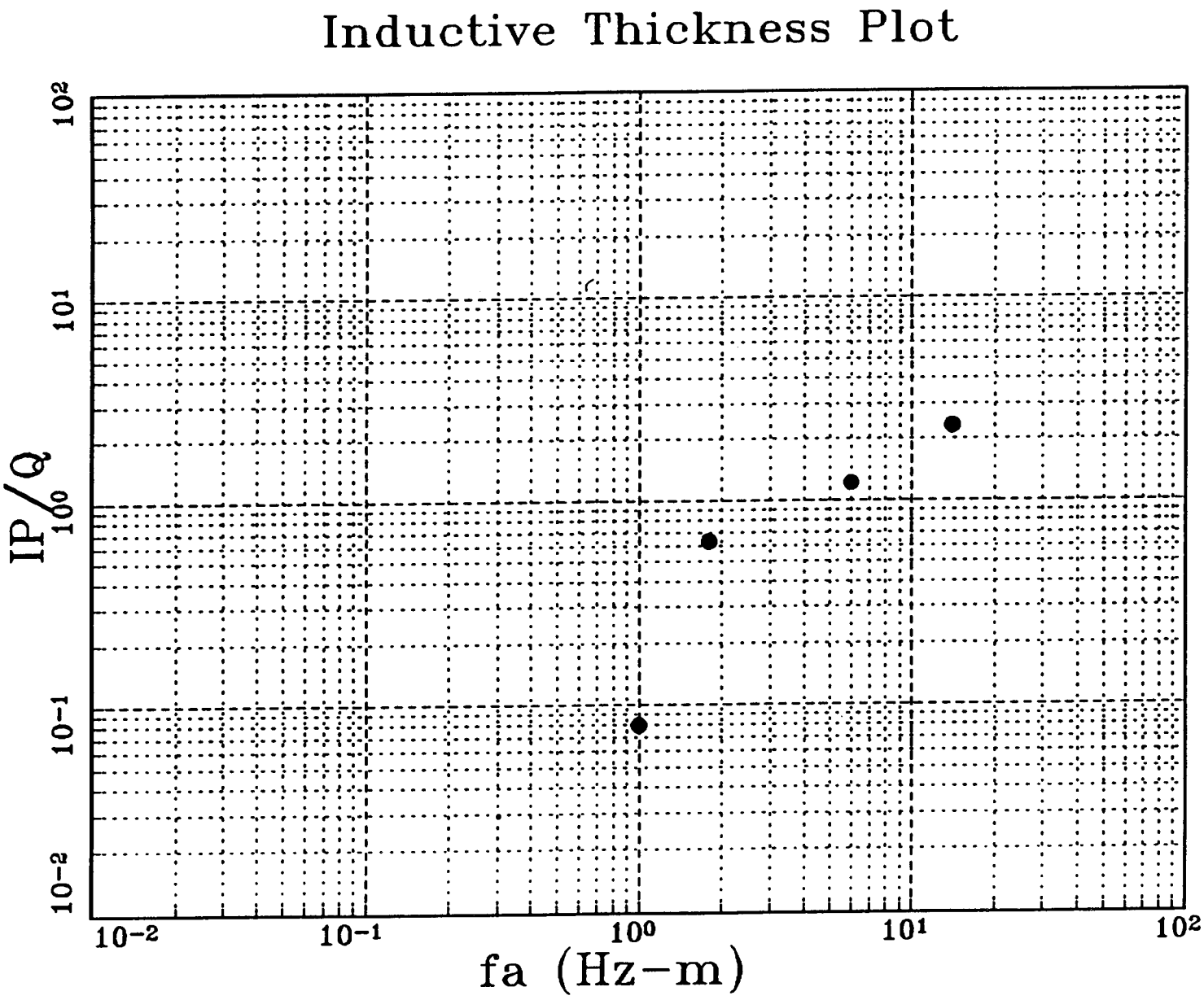


IP/Q versus response parameter plot for anomaly PK-3 at L200N 4125E.

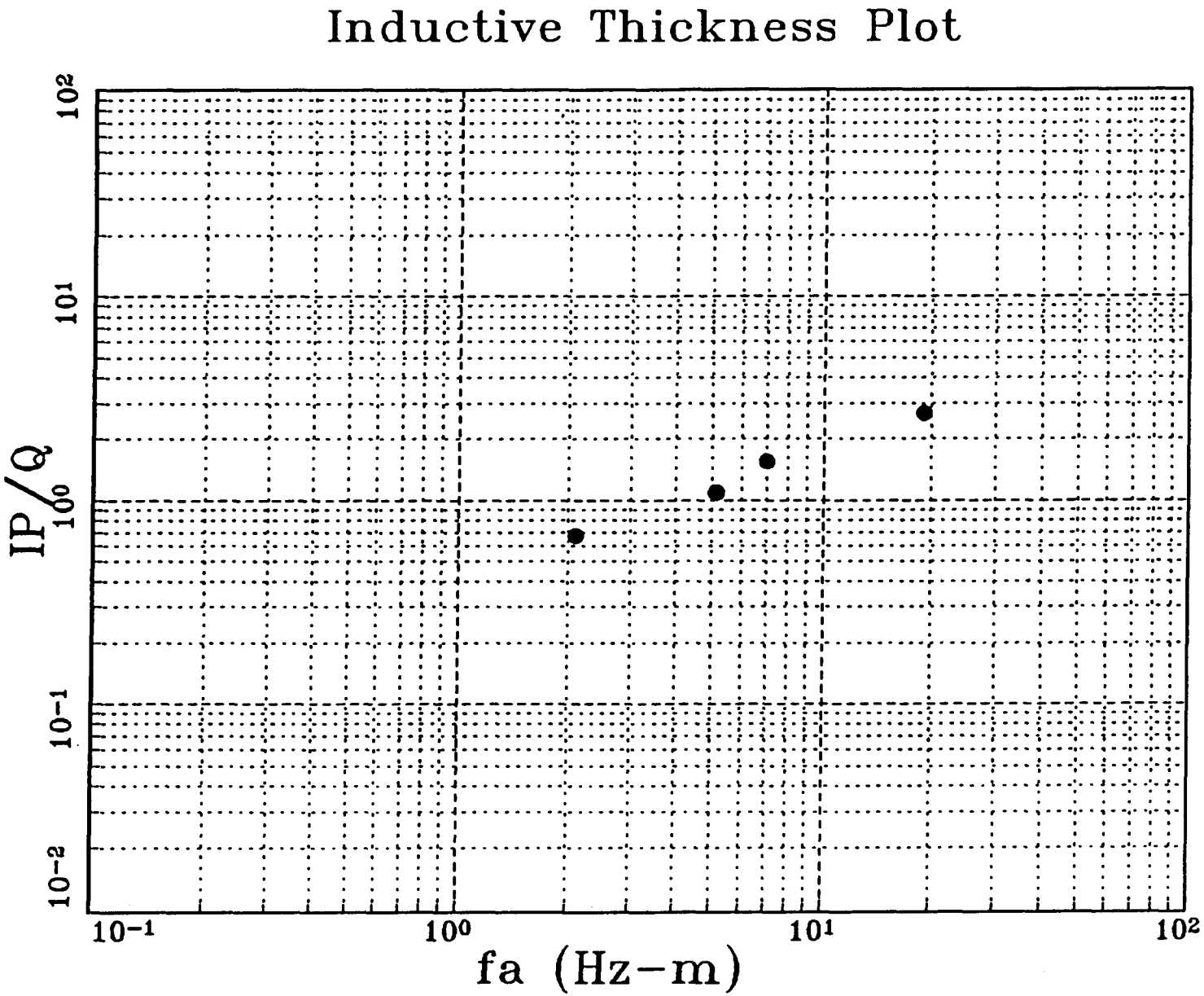
Inductive Thickness Plot



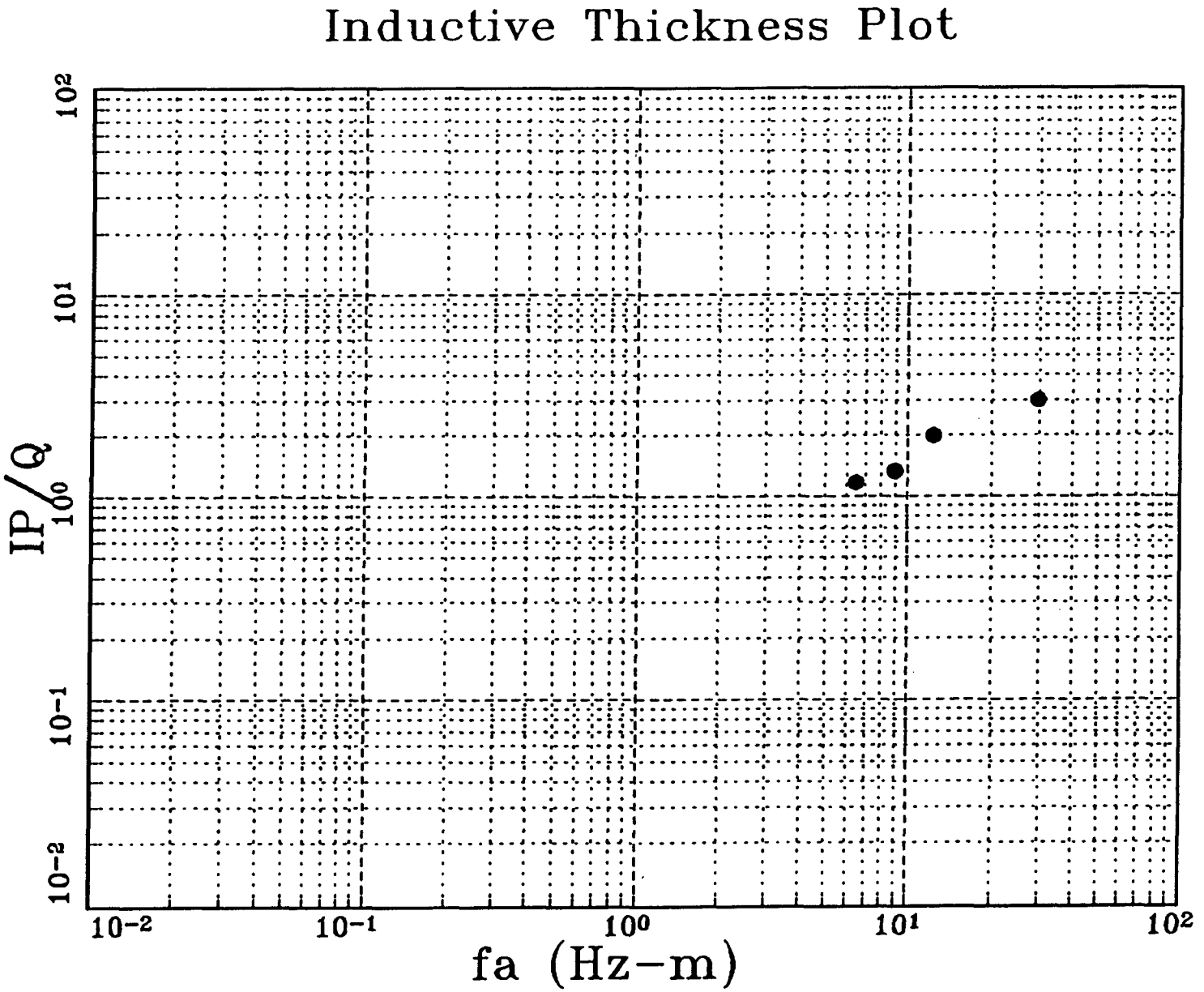
IP/Q versus response parameter plot for anomaly PK-3 at L300N 4175E.



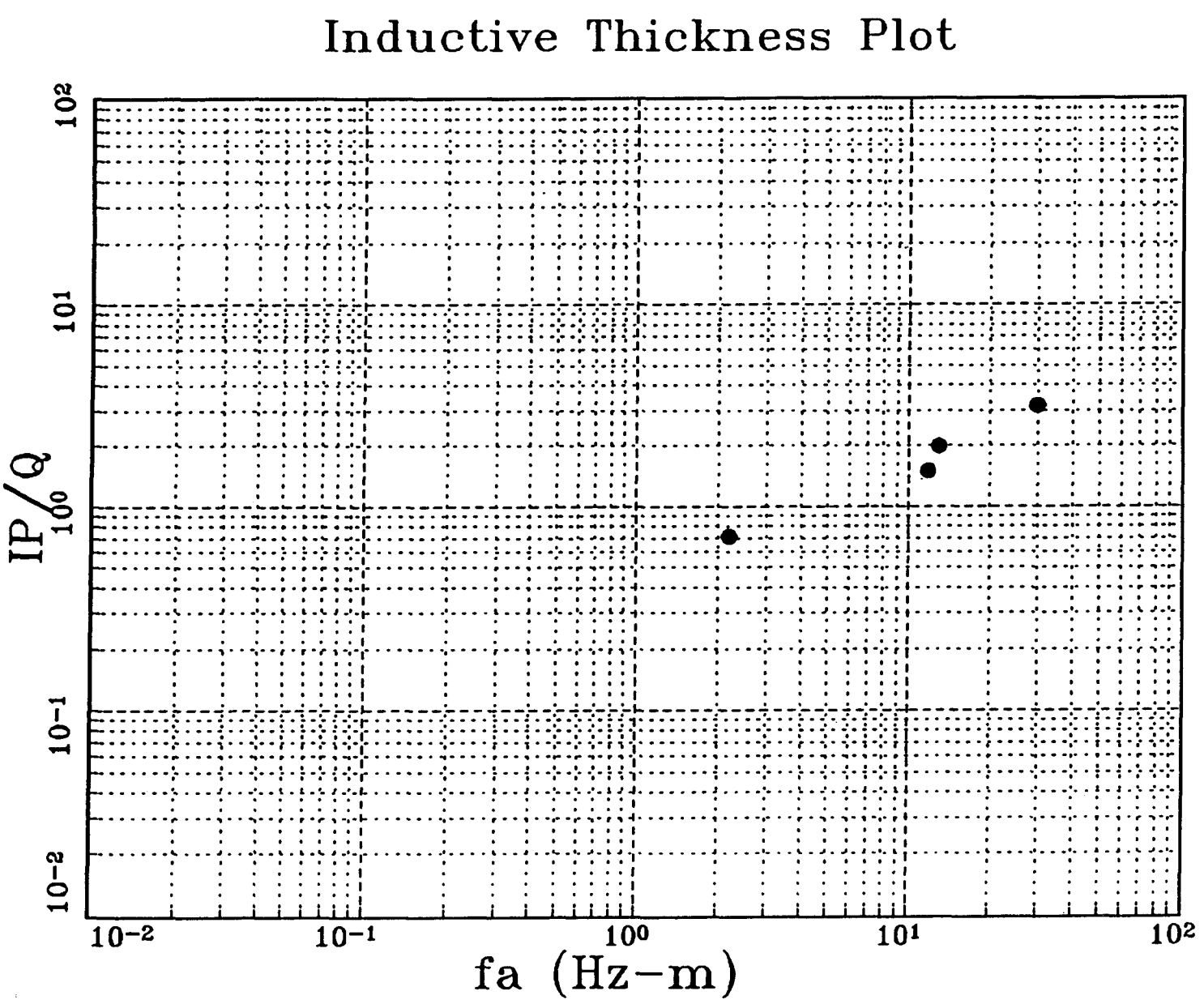
IP/Q versus response parameter plot for anomaly PK-3 at L500N 4100E.



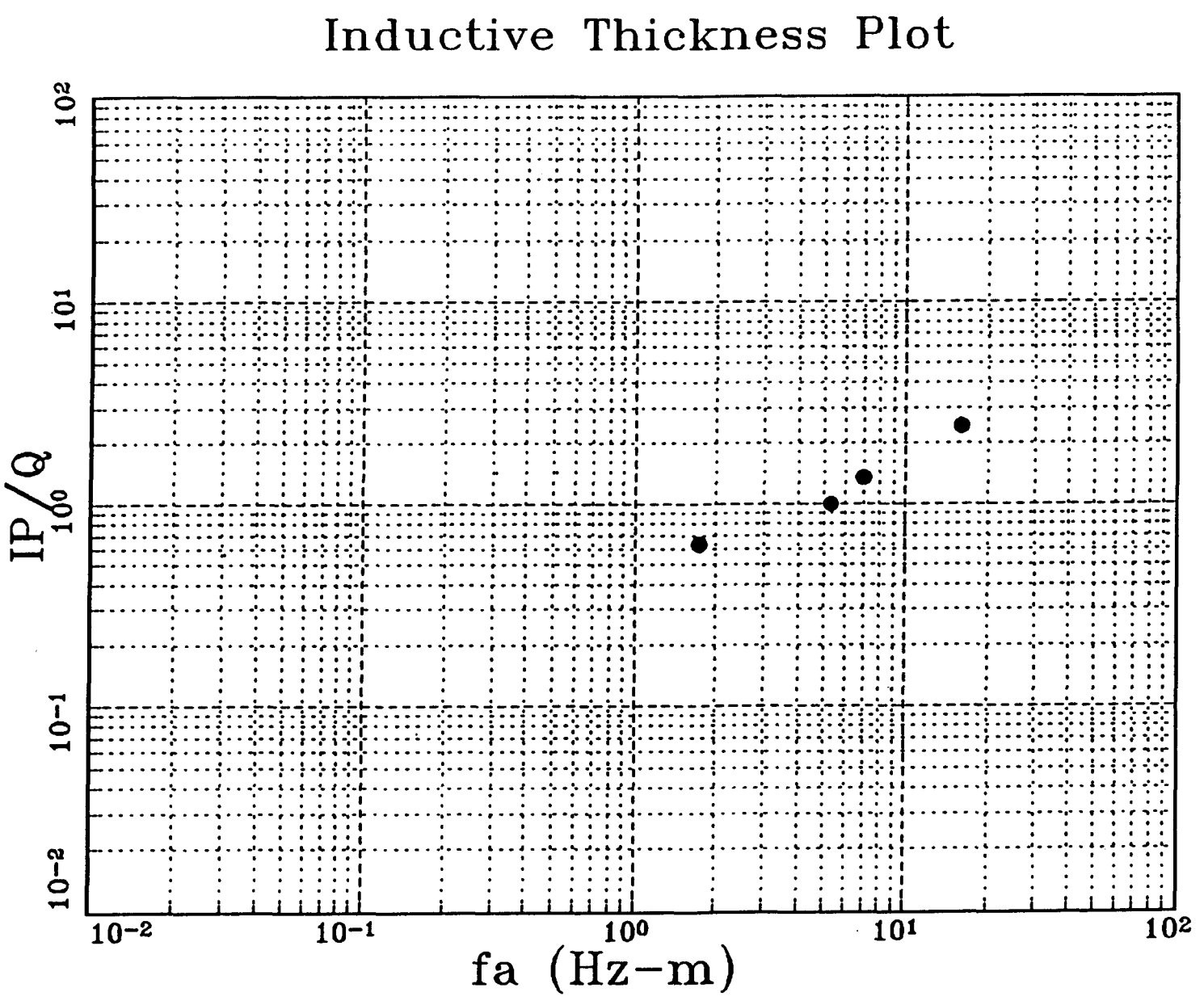
IP/Q versus response parameter plot for anomaly PK-3 at L1100N 4225E.



IP/Q versus response parameter plot for anomaly PK-4 at L1300N 4600E.



IP/Q versus response parameter plot for anomaly PK-4 at L1400N 4625E.



IP/Q versus response parameter plot for anomaly PK-4 at L1500N 4625E.

APPENDIX D. NOTES ON THE HLEM METHOD

The horizontal loop EM method is well described in standard texts such as Telford *et. al.* (1990) and Ketola and Puranen (1967). This section summarizes the key features of the HLEM method and describes the interpretation algorithms used in this survey program.

The HLEM method involves the use of a pair of separated horizontal coils (Figure MM1). Most commonly, the surveys are conducted in the frequency domain. In this method, a sine wave of variable frequency is sent through one of the coils to create a time-varying vertical magnetic dipole source. The second coil is a receiver which detects both the primary signal from the transmitting coil and a secondary signal created by magnetic induction in a conductive target in the earth. There are two variants of the method in the frequency domain are the Slingram or conventional HLEM method and the Genie method.

The Slingram method (commonly referred to as HLEM) requires that a sample of the transmitted signal be sent along a wire to the receiver where it is used to synchronize the phase of the receiver with the transmitter. This permits the receiver to remove the effect of the transmitter signal (primary field) and to split the remaining secondary field into two components. One component represents the portion of the secondary field which is synchronized or in-phase with the primary field (in-phase component). The second component is the portion of the secondary field which lags the primary field by one quarter cycle (90°) (quadrature component). The ratio of the in-phase to quadrature components is used to determine the electrical conductance of a target.

HLEM instruments remove the primary field from the signal to leave only the secondary field. By convention, a secondary field in the same direction as the primary field is recorded as positive while a secondary field in the opposite direction to the primary field is recorded as negative. HLEM data is commonly plotted as profiles with the reading plotted at the midpoint between the transmitter and receiver. The reason for this is that the response from a steeply dipping conductor, the most common target of this method, is strongest when the two coils straddle the conductor. Normally, the in-phase response is plotted as a solid line and the quadrature response as a dashed line.

The HLEM response of a flat lying body is shown in Figure MM 2(a). Magnetic field lines (flux) are directed primarily into the region beneath the transmitter loop. Lenz's Law dictates that the induced secondary field will oppose the primary field. Consequently, at the receiver, both the primary and secondary field will be in the same direction. As a result, the response from a flat lying conductor consists of a

positive response over the target. At the edge of the conductor, there is a negative response which occurs when both coils are straddling the edge of the conductor. When either the transmitter or receiver coil is over the edge of the conductor, there is no secondary field and the response is zero. As the depth to the flat lying conductor increases, the strength of the response is attenuated. The effective depth of investigation of the HLEM method for flat lying conductors is approximately 1.5 times the coil spacing.

The HLEM response of a steeply dipping conductor is shown in Figure MM2(b). Field lines from the transmitter are horizontal at a point midway between the two coils and in this orientation, cut the conductor at right angles creating the best coupling. Lenz's Law dictates that the secondary field will oppose the primary field and at the receiver coil, the secondary field is in the opposite direction to the primary field. As a result, the response when profiling over a steeply dipping conductor consists of a trough with peak negative value occurring when the coils straddle the conductor. The flanking positive peaks result from induction effects as the pair of coils are close to but not straddling the conductor. When either of the coils is directly over the target, the response is zero because the primary field is not well coupled with the target (ie it is perpendicular to the edge of the conductor) and little secondary field is created.

A dipping tabular conductor can be specified by the dip and dip direction, depth to top, target width and electrical conductance (conductivity thickness product or σt). The effect of varying these parameters is shown in Figure MM3 for the case of a response from a single isolated HLEM conductor. Asymmetry in the positive shoulders indicates the dip direction and the ratio of the positive shoulder responses can be used to estimate the dip (Figure MM3(a)). The strength of the response is largely determined by the depth to the top of the conductor. Increasing the depth to the top of the conductor decreases the amplitude of the response but does not otherwise change the shape of the response (Figure MM3(b)). The effective depth of investigation of the HLEM method for steeply dipping targets is approximately one half the coil spacing. If the conductor is wide, the location of the zero crossovers, normally equal to the coil spacing, will increase. If the width reaches approximately one half the coil spacing, the trough of the response for shallow targets will start to deflect slightly to the positive. If the width of the target approaches that of the coil spacing, the positive return in the trough will be apparent at any depth to target (Figure MM3(c)). As noted above, the electrical conductance controls the ratio of the in-phase to quadrature response. Weak targets show only a quadrature response. As the target conductance increases the strength of the in-phase component will increase. Very high conductance targets are characterized by strong in-phase responses and weak to very weak quadrature responses (Figure MM3(d)).

Interpretation procedures for HLEM data are dependent upon the model to which the data is to be fitted. In most cases, the characteristic shape of the response will dictate

the likely overall geometry of the source and thus the model to which the response should be fitted. Flat lying targets can be directly modelled with computerized calculations of target responses. Dipping tabular body responses on the other hand cannot be numerically modelled and must either be approximated through finite-element models or interpreted using characteristic curves. Characteristic curves for tabular dipping conductors incorporate several key features of the responses described in Figure 3 into simple charts. These responses are derived from model experiments. The ratio of positive shoulders responses and the ratio of in-phase to quadrature peak negative values are the commonly used features of the response. An example of these charts is shown in Figure MM4.

The data contained in this report was interpreted using characteristic curves developed by Ketola and Puranen (1967). The procedure, normally done by hand, has been automated in proprietary software (MMPLOT) developed by Amerok Geosciences Ltd. The characteristics of each response are entered into a computer program which creates a batch plotting file. The data is plotted directly on a CADD diagram with each of the characteristic curves on a different layer. The operator is able to quickly match the data to the curve which best fits the data by selecting different characteristic curves (ie. by changing layers). Where the data falls between two curves, the conductance and depth to top parameters can be interpolated but the dip cannot be reliably interpolated.

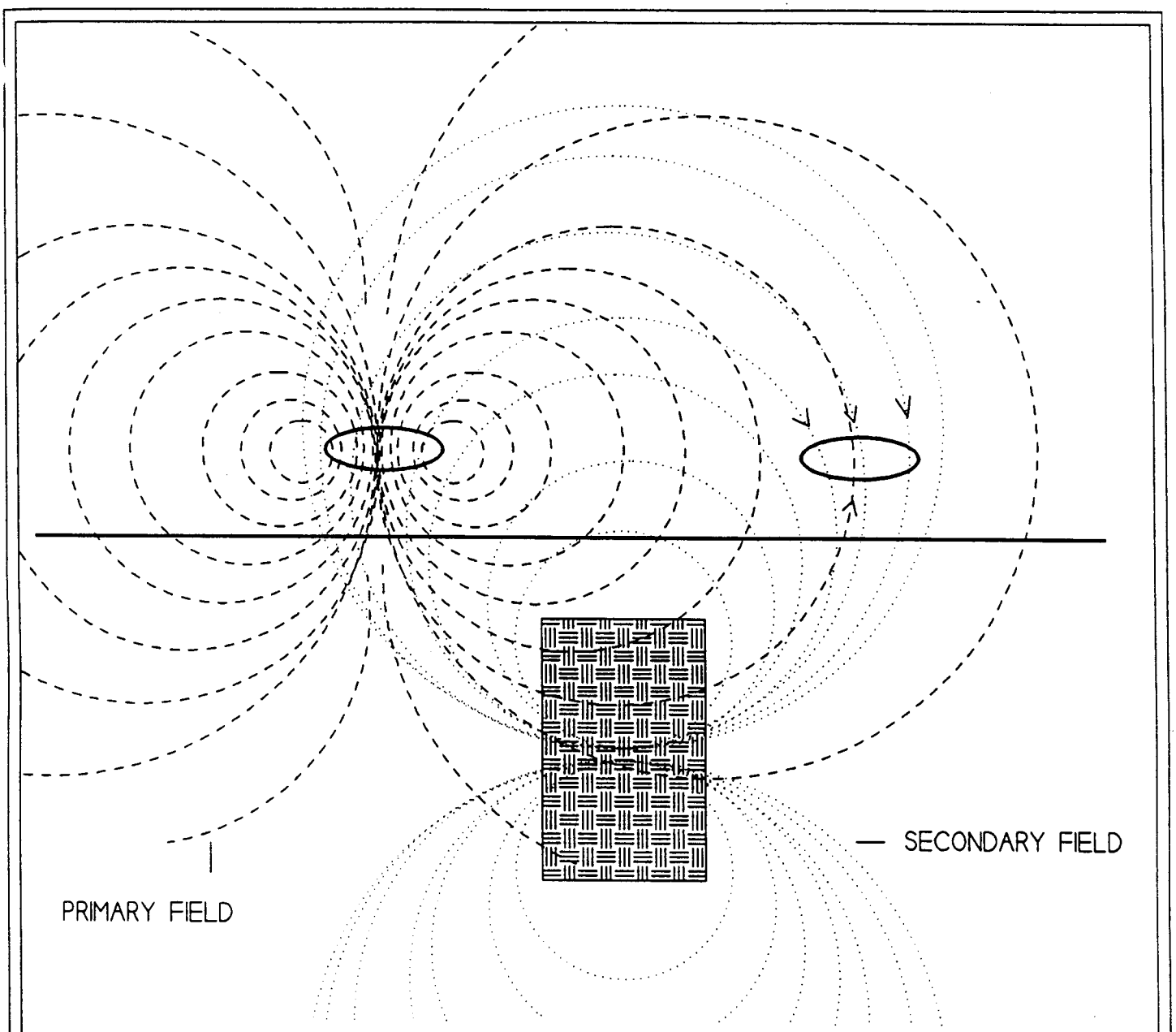


Figure MM1. HLEM source field. The field from the transmitter loop produces an oscillating vertical magnetic dipole. This induces a secondary field in a conductive body in the earth. At the receiver coil, both the primary field and secondary field are received.

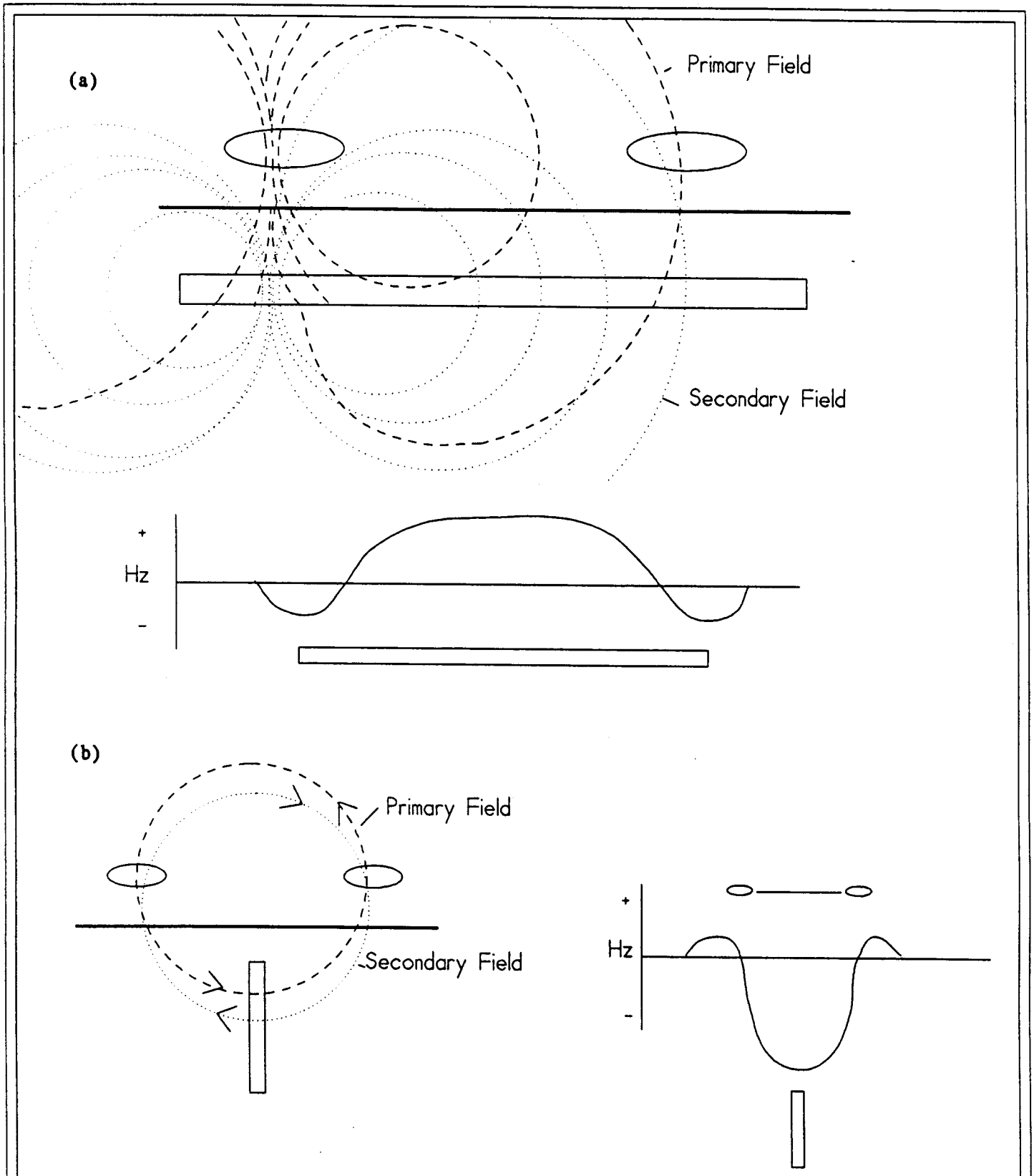


Figure MM2. HLEM responses. (a) Response over a flat-lying conductor consists of a positive response. (b) Response over a dipping conductor consists of a negative response.

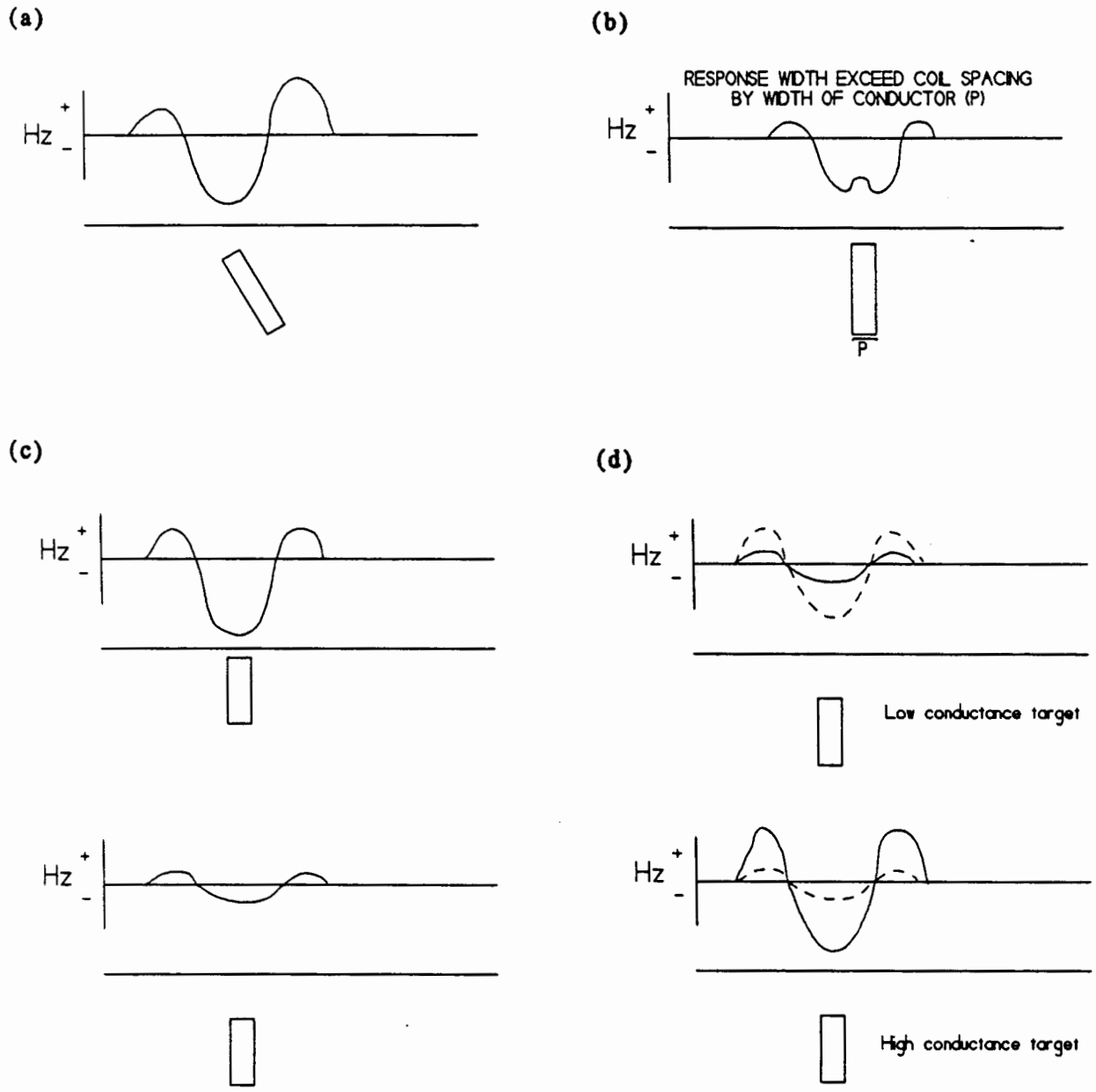
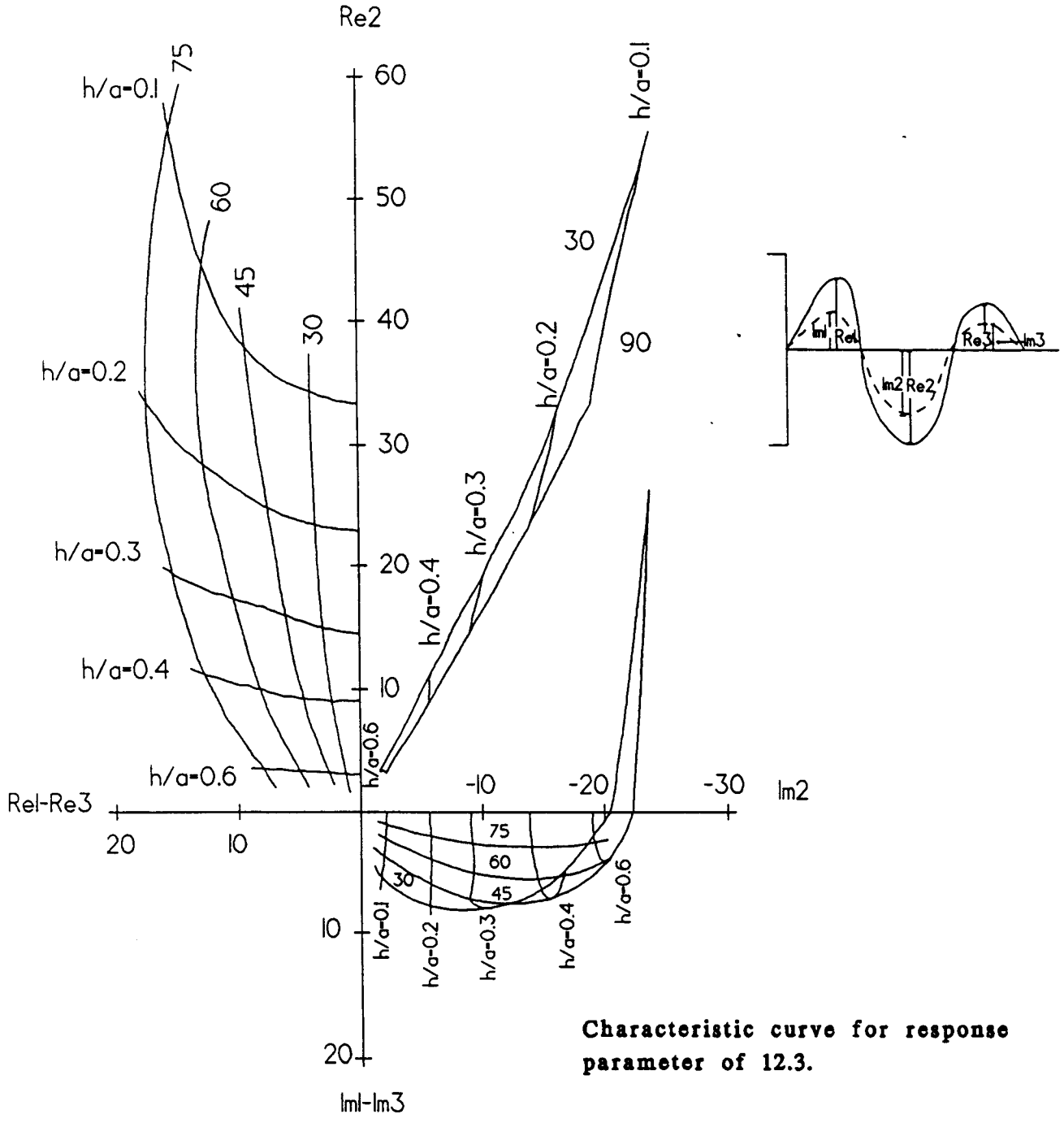
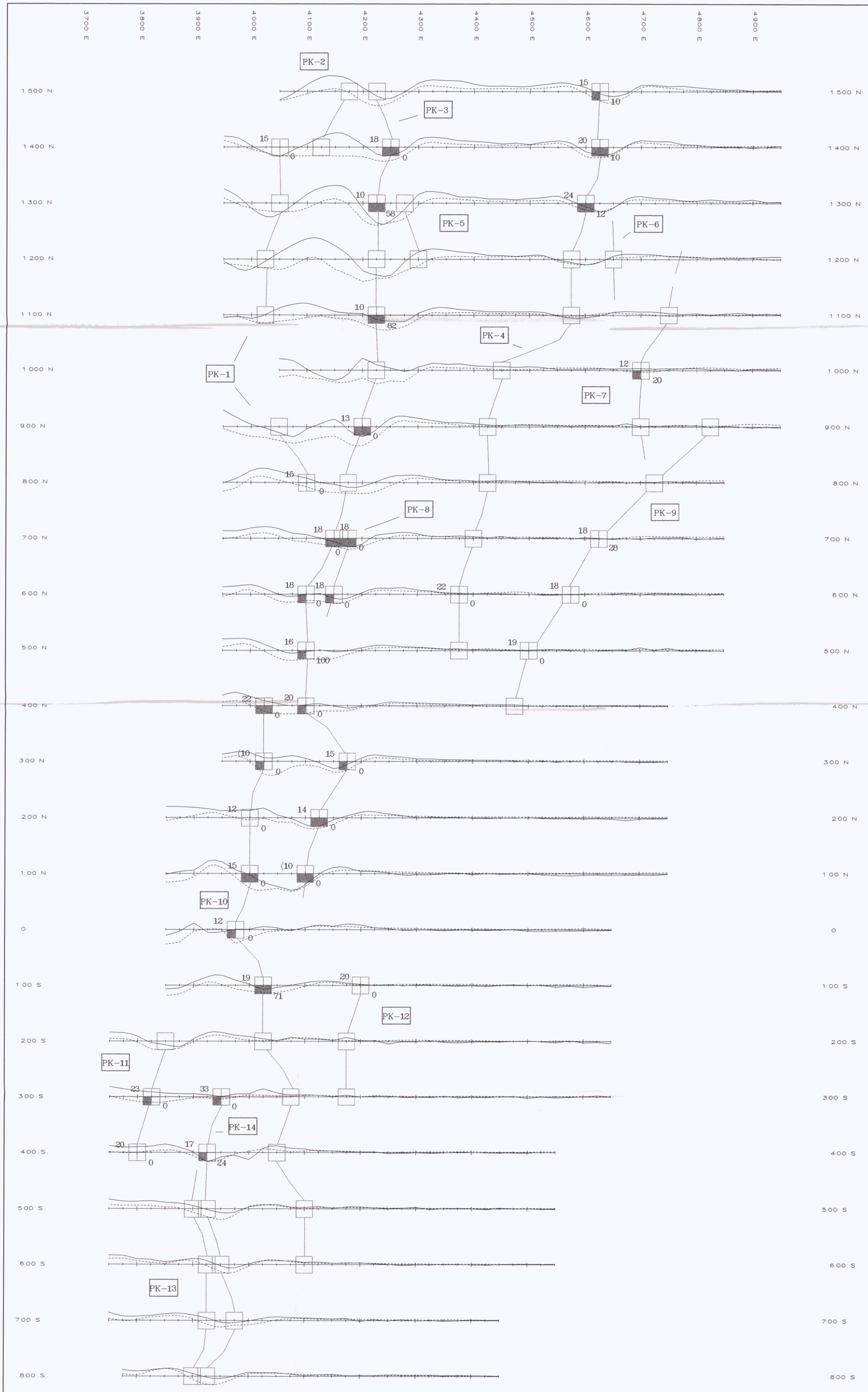


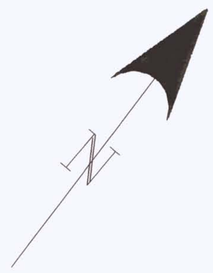
Figure MM3. HLEM response of dipping tabular conductors. (a) Effect of dip on HLEM response. (b) Effect of depth. (c) Effect of conductor width. (d) Effect of conductance.



Characteristic curve for response parameter of 12.3.

Figure MM4. Characteristic curve for a dipping tabular conductor from Ketola and Puranen (1967). Critical measurements of the response shown in the upper right are extracted and plotted to determine the geometry and conductance of the target.

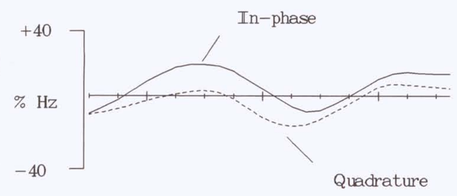




CONDUCTANCE
(3520 Hz)

- 〉 50 S
- 20 – 50 S
- 5 – 20 S
- 1 – 5 S
- 〈 1 S
- CONDUCTANCE UNKNOWN
- — — — CONDUCTOR AXIS

Depth (m)
15
4
Excess width (m)



Scale: 1:3000

0 250m

WESTMIN RESOURCES LIMITED

PUCK PROPERTY

(NTS 105 G 8)

FIGURE PK-1 093790

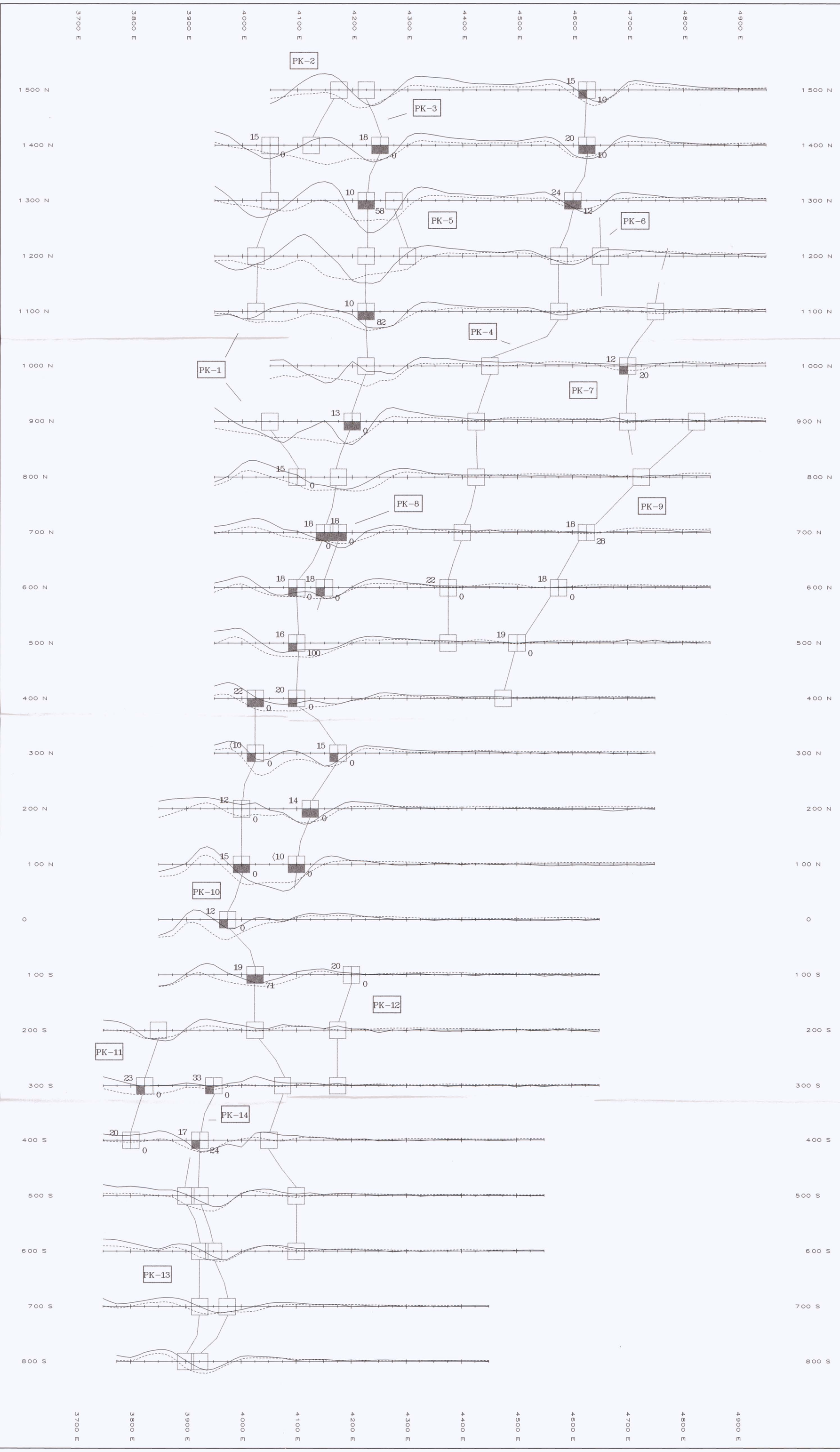
MAXMIN I-10 SURVEY

440 Hz – 100m coils

vol.1
#2

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N

CONDUCTANCE

(3520 Hz)

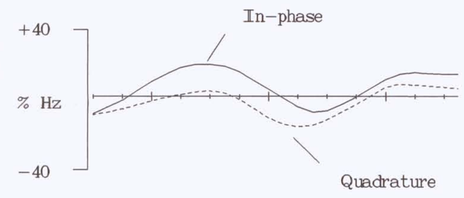
- 〉 50 S
- 20 – 50 S
- 5 – 20 S
- 1 – 5 S
- 〈 1 S
- CONDUCTANCE UNKNOWN

Depth (m)

15 4

Excess width (m)

— — — CONDUCTOR AXIS



Scale: 1:3000

0 250m

WESTMIN RESOURCES LIMITED

PUCK PROPERTY

(NTS 105 G 8)

FIGURE PK-2

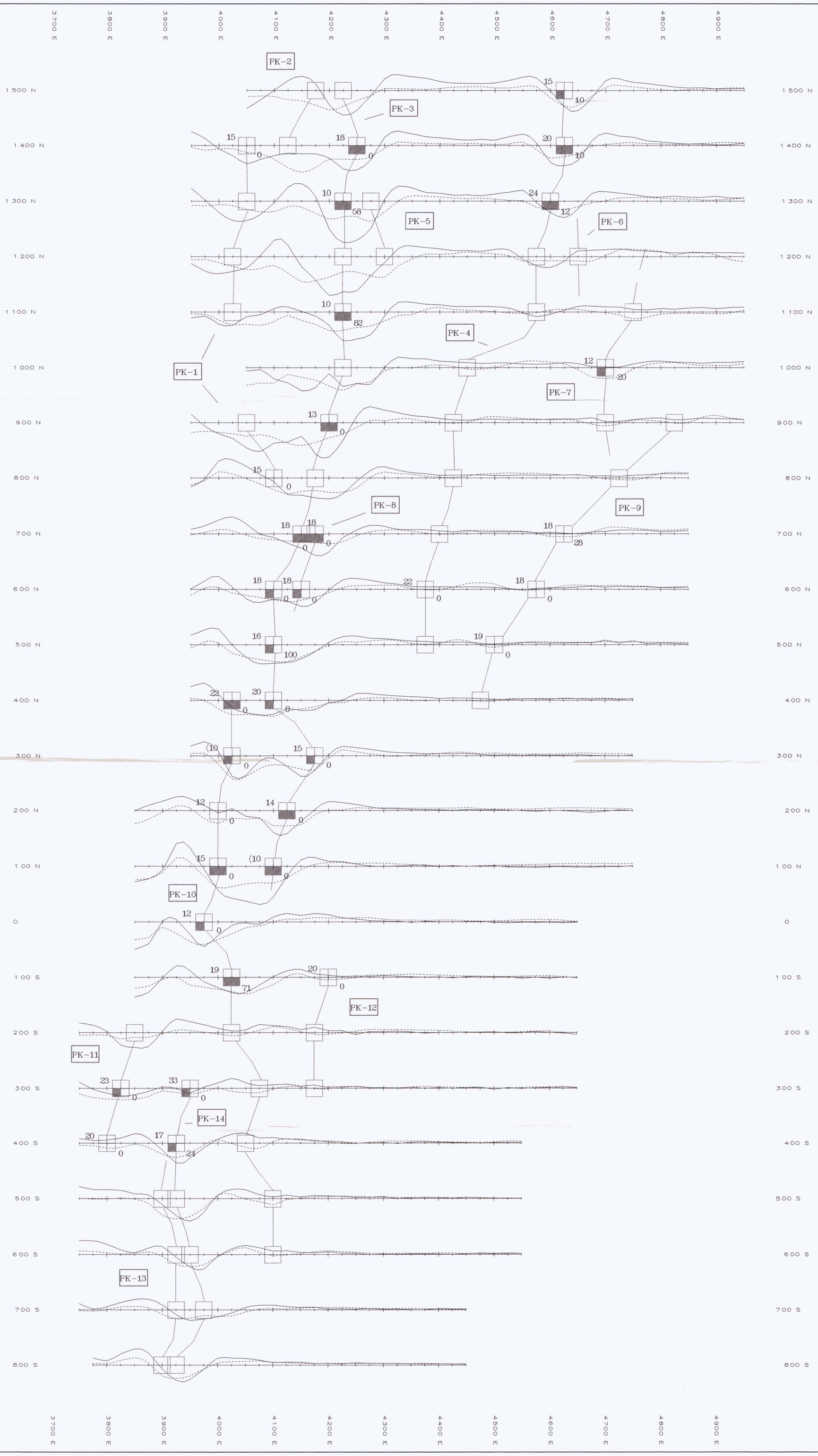
MAXMIN I-10 SURVEY 093790

880 Hz – 100m coils

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CONDUCTANCE

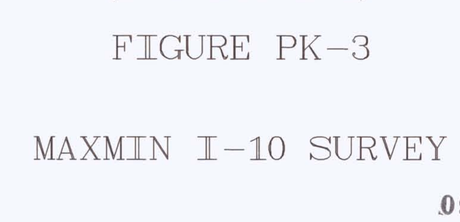
(3520 Hz)

- ⟩ 50 S
- 20 – 50 S
- 5 – 20 S
- 1 – 5 S
- ⟨ 1 S
- CONDUCTANCE UNKNOWN
- CONDUCTOR AXIS

Depth (m)

15 4

Excess width (m)



Scale: 1:3000

0 250m

WESTMIN RESOURCES LIMITED

PUCK PROPERTY

(NTS 105 G 8)

FIGURE PK-3

MAXMIN I-10 SURVEY

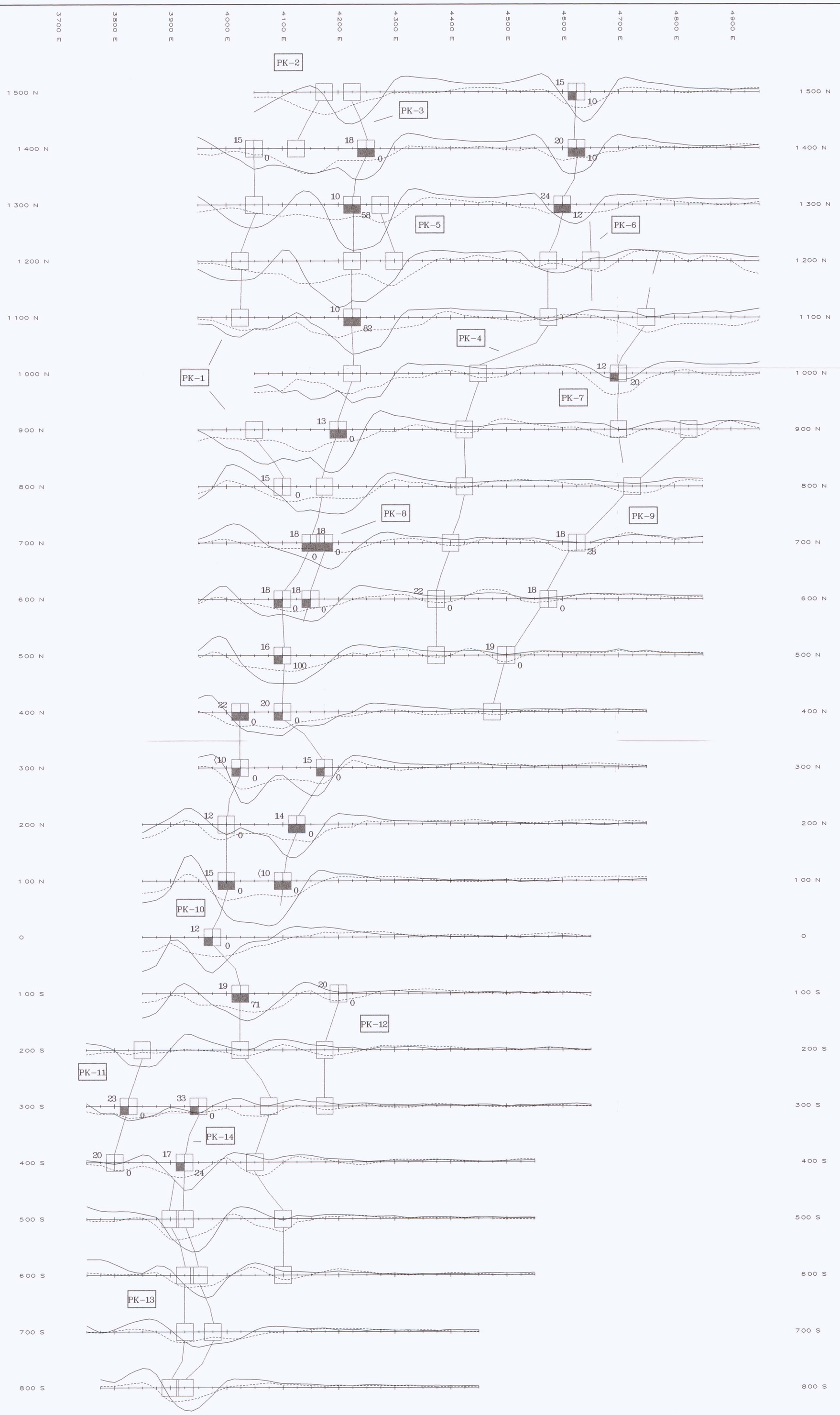
093790

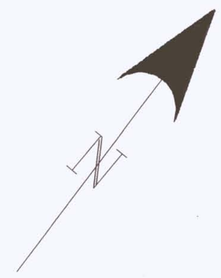
1760 Hz – 100m coils

Vol. 1
#4

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CONDUCTANCE

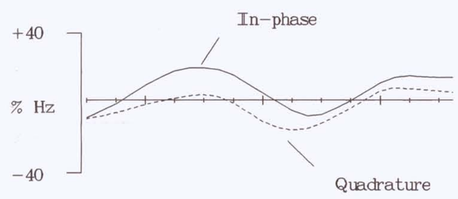
(3520 Hz)

- ⟩ 50 S
- 20 – 50 S
- 5 – 20 S
- 1 – 5 S
- ⟨ 1 S
- CONDUCTANCE UNKNOWN
- CONDUCTOR AXIS

Depth (m)

15 4

Excess width (m)



Scale: 1:3000

0 250m

WESTMIN RESOURCES LIMITED

PUCK PROPERTY

(NTS 105 G 8)

FIGURE PK-4

MAXMIN I-10 SURVEY

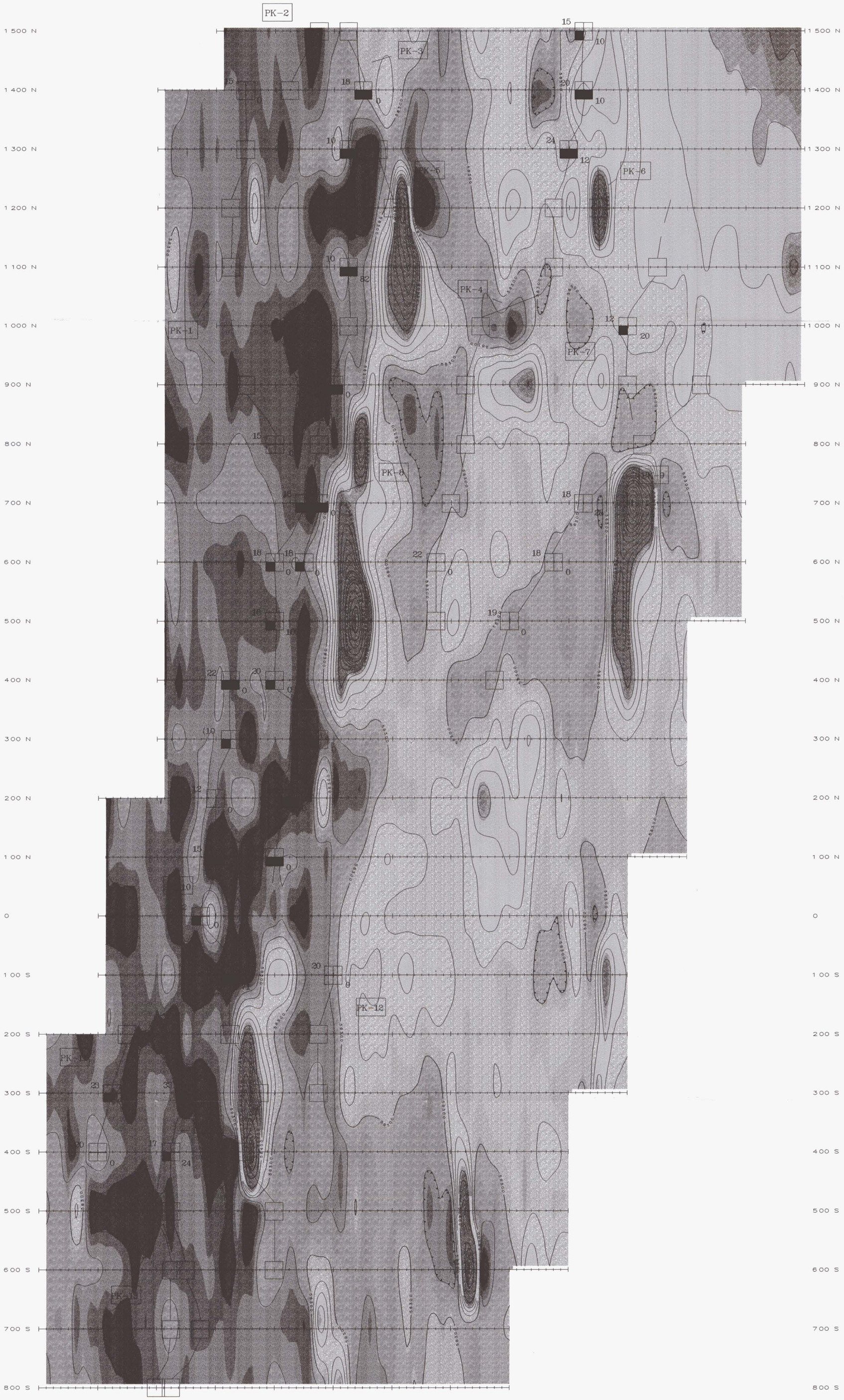
3520 Hz – 100m coils

093790

vol.1 #5

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CONDUCTANCE

(3520 Hz)

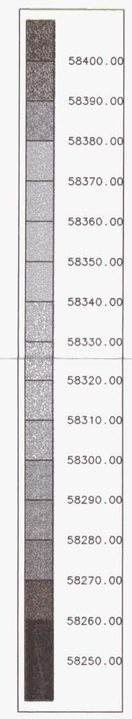
- 〉 50 S
- 20 – 50 S
- 5 – 20 S
- 1 – 5 S
- 〈 1 S
- CONDUCTANCE UNKNOWN

Depth (m)

15 4

Excess width (m)

— — — CONDUCTOR AXIS



Contour intervals: 20, 100nT

Scale: 1:3000

0 250m

WESTMIN RESOURCES LIMITED

PUCK PROPERTY

(NTS 105 G 8) 093790

FIGURE PK-5

TOTAL MAGNETIC FIELD SURVEY

CONTOUR MAP

Vol.1

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APPENDIX E

1997 DIAMOND DRILL PROGRAM

i) DRILL LOGS (PK97-07 to 16)

ii) DRILL HOLE SECTIONS WITH LITHOGEOCHEMISTRY

a) L 700N : PK97-12
b) L 1400N : PK97-11
c) L 1800N : PK96-04
d) L 2100N : PK97-09
e) L 2400N : PK96-03
f) L 2800N : PK97-08
g) L 3100N : PK96-02 and 97-14
h) L 3400N : PK97-07
i) L 3700N : PK97-01 and 97-13
j) L 4300N : PK96-05
k) L 4900N : PK97-15
l) L 5300N : PK96-06
m) L 5700N : PK97-10
n) L 6000N : PK97-16

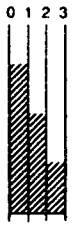
ii) 1996 AND 1997 DRILL HOLE SUMMARIES

EQUITY ENGINEERING LTD.

DRILL LOG

PROJECT: PUCK	GROUND ELEV.: 1334 m
HOLE NO.: PK97-07	BEARING: 233° (GN)
LOCATION: 3400N 5480E	DIP: -70
	TOTAL LENGTH: 314.9
LOGGED BY: G. BRADSHAW	HORIZONTAL PROJECT:
DATE: JUNE 1 / 1997	VERTICAL PROJECT:
CONTRACTOR: BOISVENU	
CORE SIZE: NQ	
DATE STARTED: May 31 / 1997	
DATE COMPLETED: JUNE 5 / 1997	
DIP TESTS: 152.4 m - 63.5° (acid etch) 304.8 m - 58.5°	

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



traces only
< 1%
1% – 3%
3% – 10%
> 10%

COMMENTS

- Lots of xenoliths in upper portion of hole. (ending at 95.9)
- thick sequence of a distinctive green rhyolite fragmental unit (65.5 - 72.1)
- zone of "exhalative activity" starts at 182.4 with the first Iron Formation and ends at 233.3.
- within this zone are 5 distinct exhalative units consisting of varying amounts of chert, magnetite, calcite and pyrite. Sphalerite (+ traces of cpy) stringer mineralization is common in this zone.
- A sharp "transition" from dominantly volcanic rocks to a lower zone of crystal rich volcanic sediments and graphitic argillites occurs at 248.8.

LEGEND

PAGE 1 OF | PROJECT: | HOLE NO. PR07-07

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	ALTERATION B (SER)	ALTERATION C (EP)	ALTERATION D (CBS)	ALTERATION E	FRACTURE INTENSITY	% VEIN QTZ.
				0-6.1 CASING							
				OHCS							
				6.1-21.8 GREEN FINE GRAINED MASSIVE ANDESITE							
				ADMS - dark green massive intermediate volcanic							
				(flow?) with a very finely crystalline texture and very fine white specks.							
				- Very weak foliation. Fairly soft rock (chlontic)							
				- Banding is rare but present usually 1-2mm parallel to foln. Bands are mainly biotite (≈2-3% overall; brown soft mineral - micaceous cleavage)							
				Possible leucoxene? (brown soft skeletal texture)							
			60°	rare qtz blebs (associ w/ micaceous bands)							
				- rare calcite stringers (secondary)							
				- occ. intervals of more tuffaceous (banded) andesite up to 30cm. See next unit for description. Sharp lower contact at 60°							
				ADMS							
			60°								
			75°	21.8-23.4 GREEN/GREY/BROWN BANDED FINE GRAINED ADTT ANDESITE TUFF							
				- well banded. 1mm-1cm wide							
				- interbanded green very fine grained chlontic material (older green chlontic mtl. pale green bands filled with brown <1mm biotite? specks, and rare siliceous blebs and bands.							
				- rarely bands are planar, undulating with variable width. Forms a fragmental appearance. Sharp irregular contact (not // to foln)							
				ADMS							

PAGE 2 OF	PROJECT:	HOLE NO. PK97-07

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						
- Andesite barren of sulphides										

PAGE 3 OF | PROJECT: | HOLE NO. 97-07

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A	B	C	D	E	FRACTURE INTENSITY	% VEIN QTZ.
29		ADMS		23.4 - 37.8 ADMS	GREEN FINE GRAINED MASSIVE ANDESITE. - same as 6.1 - 21.8 above. Bulk of unit is so massive one angle is impossible to measure. - upper irregular contact possibly a flow top? - sharp lower ct at 80°							
30												
31												
32												
33												
34												
35												
36			75°									
37				37.8 - 42.3 ADTT	GREEN/GREY/BROWN FINE GRAINED ANDESITE TUFF - same as above 21.8 - 23.4. - 38.2 - 38.7 - dark green more massive interval with sand between chunks of broken core.							
38		ADTT	80° ct									
39												
40												
41												
42												
43		ADMS	80° ct	42.3 - 57.9 ADMS	GREEN FINE GRAINED MASSIVE ANDESITE - same as 23.4 - 37.8 very massive possibly a flow unit. - 2-3 % biotite bands // to fdn - rare quartz bands / blebs (up to 5mm) - rare stringers of calcite, X-cut fdn. Gradational contact w/ a more tuffaceous andesite.							
44												
45												
46												
47												
48												
49			15°									
50												
51												

PAGE 4 OF	PROJECT:	HOLE NO. PK07-07

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 5 OF | PROJECT: | HOLE NO. PK97-07

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	B	C	D	E	FRACTURE INTENSITY	% VEIN QTZ.
52	ADMS										
53											
54											
55											
56											
57				57.9-62.1 ADTT: GREEN/BROWN/BLACK FINE GRAINED BANDED ANDESITE TUFF (SEDIMENT)							
58			70°	Another of what is probably an "interflow sediment" Variably textured, banded green - pale greyish green andesite bands. Regular to wavy biotite partings, + specks of biotite (<1mm).							
59	ADTT		60° cf								
60				60.1-60.4 - dark grey - black aphanitic siliceous rock (siliceous arg?) Fairly shp. lower contact.							
61											
62			60° cf								
63	ADMS			62.1-68.2 ADMS: GREEN MASSIVE FINE GRAINED ANDESITE very massive difficult to measure foln. Occasional biotite 1-2mm bands - stringers. Rare calcite veins. Same as ADMS units above. Sharp irregular lower contact.							
64											
65											
66											
67				68.2-69.4 ADTT: GREEN/BROWN WELL BANDED FINE GRAINED ANDESITE TUFF - same as 57.9-62.1 1-2 cm bands of dk grey siliceous arg							
68				From 68.5-69.0. within arg bands to discontinuous webs of silica - up to 1cm wide. Sharp lower ct.							
69	ADTT		65°								
70			60° 65°								
71	ADMS			69.4-95.9 ADMS: GREEN MASSIVE FINE GRAINED ANDESITE same as ADMS above (62.1-68.2) Rare banded intervals with minor qtz similar to ADTT units but only continuous for ~30 cm. (eg 73.8-74.1)							
72											
73											
74											

PAGE 6 OF	PROJECT:	HOLE NO. PK97-37

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 7 OF | PROJECT: PUCK | HOLE NO. PK97-37

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
75		ADMS	65°	ADMS (cont.)							
76											
77											
78											
79											
80											
81											
82											
83											
84			65°	83.7 - 84.1 - 40 cm of dark grey siliceous org w/ internal bands of light green chlontic tuffaceous and. (as in ADTT units) from 1-5 mm. sharp upper contact at 75° sharp lower contact at 65°							
85											
86											
87				85.9 - 86.0 - 10 cm of siliceous org - dark grey to black w/ ovoid alt (Frags?) blebs at lower contact and siliceous blebs and bands thit. sharp contacts upper 75°, lower 70°							
88											
89											
90				88.3 - 89.2 - 90 cm internal of mixed light green andesite and dark grey siliceous org. Quartz bands // to Foln (1-4 mm) + siliceous blebs and patches. 10 cm internal andesite band. (~1/3 of internal is andesite 1 mm - 10 cm bands) sharp contacts: upper - 75° lower - 80°							
91											
92											
93											
94											
95				91.3 - 95.0 - change in texture of and, white speckles (lath shaped plag.) become coarser. ob fine circle specks (up to 2mm) towards lower ct sharp lower ct. at 60°.							
96			60°								
97											

PAGE 8 OF	PROJECT:	HOLE NO. PK97-07

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 9 OF | PROJECT: | HOLE NO. PK97-07

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	ALTERATION B (SER)	ALTERATION C (EP)	ALTERATION D (CO_3)	ALTERATION E	FRACTURE INTENSITY	% VEIN QTZ.
98		RHAT		95.9–114.6 GREY/BROWN/BLACK ARGILLACEOUS LAPILLI TUFF RHAT - upper contact sharp, but no evidence of faulting. Based on first appearance of flattened siliceous lapilli sized fragments.							
99				- ab. calcite near upper contact, <1mm bands and diss within siliceous frags, minor amounts thr unit (up to several %)							
100			70°	- very distinctive unit has a well banded appearance. Fragments white, massive aphyric.							
101				- ranges from 10–80% very siliceous lapilli sized fragments. Flattened, typically 4 mm x 30 mm. Usually ovoid w/ ragged fragment terminations							
102				- some fragments larger and lack terminations							
103											
104				104.2 - minor Folding + fault w/ ~5 mm offset - appear as siliceous bands to 1.5 cm wide.							
105				- matrix consists of sub-mm brown-blk mrgaceous banding, parallel to frln, but usly wavy and undulating - prominent tht. unit.							
106				- typically ~40% of rock but quite a bit of variation.							
107				- Only a weak argillaceous component typically ~5% but locally up to ~60%. - forms an aphanitic black matrix which surrounds frags.							
108			70°								
109											
110				103.8 - 104.5 green-brown banded interval w/ ab calcite, white calcite bands (<1mm) dissemination and cutting stringers. Andesite tuffs??							
111											
112				107.8 - 108.8 Type section for RHAT							
113				113.2 - 113.8 strong argillaceous comp. ~60% with ~3% diss stringer pg							
114				sharp irregular contact w/ quartz vein.							
115				114.6 - 115.5 WHITE MASSIVE QUARTZ VEIN - 2-3% inclusions QTVN of light green (chl.?) and mrgaceous wall rock.							
116											
117				115.5 - 172.1 GREEN - WHITE MASSIVE - FRAGMENTAL RHFS APHANITIC FELSITE (RHYOLITE) (RHFG) very lengthy unit with some textural variation, very distinct.							
118			75°	Uniform aphanitic (non-grainy) texture.							
119				Very siliceous (lots of complaints from millers)							
120				cont →							

PAGE 10 OF	PROJECT:	HOLE NO. PK97-07

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						
- Trace py tht. as disseminations + stringers, pø common locally up to ~ 3%. <1% sulphides overall.										
- trace - 1% fine grained diss pyrite along fdn. present tht unit. Traces of cpy (fine, diss.)										

PAGE	OF	PROJECT:	HOLE NO. PK97-07

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
121		RHFS		- RHFS (cont.)							
122			75°	- silica bands - fragments, 1mm - 2cm wide. massive aphanic w/ occasional microlites. locally show nice jagged fragment terminations, micaceous (mainly green sericite)							
123				- brown - black (sericite + biotite?) 1-3mm bands persist through entire unit. Either bands para. to foln separating larger massive siliceous bands or an undulating matrix, sub-parallel to foln separating siliceous fragments.							
124				- About 5% micaceous partings overall. (dark forest green)							
125				- green colour to this unit is very distinctive. - prob. hydrothermal (chl?) altn due to pervasive fluid flow. Often green colour appears to be an altn. halo surrounding micaceous partings. (larger siliceous bands + frags maintain patchy white centers away from partings)							
126											
127											
128											
129											
130			80°								
131				- calcite patches and bands common tht. 1-2% overall.							
132				- could be an actual fragmental rhyolite - or a massive rhyolite deformed and altered. Also seems to be some "exhalative looking silica (translucent white, banded.)							
133				- occasional qtz or cc. cross cutting stringers / veins. Some also contain an unidentified orange mineral (soft, streaks white)							
134				- local traces of magnetite.							
135				- greenish brown sericite locally very abundant (30-40%)							
136				- occasional qtz veins up to ~20cm.							
137											
138											
139											
140											
141			75°								
142											
143											

PAGE 12 OF	PROJECT:	HOLE NO. PK97-07

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 13 OF | PROJECT: | HOLE NO. PK97-07

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
144	RHFS			RHFS (cont.)							
145											
146											
147											
148											
149											
150											
151											
152											
153											
154				154.0 - 154.3 - possible "chalcedonic" silica here - well banded - textureless.							
155											
156				Could be a fine "buff" towards lower ct. Has a more sugary (instead of aphanitic) texture - and is more regularly banded.							
157											
158											
159				Sharp lower contact, 75°							
160											
161											
162											
163											
164											
165											
166											

PAGE 14 OF	PROJECT:	HOLE NO. PK97-7

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 15 OF | PROJECT: | HOLE NO. PR97-07

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION CHL A	SER B	EP C	CO_3 D	E	FRACTURE INTENSITY	% VEIN QTZ.
					RHFS (cont.)							
167		RHFS	70°									
168												
169												
170												
171												
172			75° ct		172.1-176.7 BLACK-GREY TUFFACEOUS ARGILLITE							
173		ARTF			ARTF black argillite (mod. siliceous) w/ ~5% grey-wht 0.5-10 mm siliceous tuffaceous bands. (some bands look more like massive RHFS). ab py →							
174												
175					(173.5-173.8 - like RHAR, msv rhy and arg interbedded on a cm scale)							
176					(175.5-175.9 clay like gouge, minor bx.							
177			70° ct / 65°		(176-176.3 wht quartz vein.) ab ser bnds.							
178		RHFS			176.7-178.9 GREY MASSIVE APHYRIC RHYOLITE - msv, aph. very siliceous, crackled texture 5-10% 0.5-1mm green-straw sericite patchys. Gradual lower contact exhalitive silica?							
179												
180		RHAR	20°		178.9-180.0 INTERBEDDED ARGILLITE & APHANITIC RHYOLITE RHAR msv aph rhy. as abv. - interbedded w/ black arg - sub mm - 5mm. ~60% arg, 40% rhy Gradational l. ct silica bands to 2cm.							
181												
182					180.0-182.4 GREY/BROWN/WHITE MASSIVE-TUFFACEOUS RHYOLITE. msv. aph. aplitic silica 70% of rock, diffuse discontinuous bnds, blebs up to 30% brown 0.5-1mm sericite bands shp l.ct.							
183		EXMT	30° ct		RHTT							
184			75° ct		182.4-183.4 BLACK MASSIVE-BANDED MAGNETITE IRON FM. EXMT · sharp contacts, internal qv from 182.7-182.9 · ~5% calcite, esp nght at base of 20cm qv w/ hematitic bands. (irr. stairs + patches) · magnetite is massive + granular, minor diss. · fine mm-scale banding present but indistinct. Minor qtz "ganaue" minor light gm epidote ass/ w/ qtz vein.							
185												
186												
187		RHFS	75°		183.4-189.8 GREY MASSIVE-BANDED, APHANITIC-TUFFACEOUS RHFS RHYOLITE / EXHALATIVE SILICA? well banded w/ tuffaceous grain size near upper ct. Grades to massive aph. silica w/ up to 10% feldspar							
188												
189												

PAGE 16 OF	PROJECT:	HOLE NO. PK97-07

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
- 3-5% foln. para. py stringers + cross cutting stringers. Trace pø also.						
		176.7	178.9	2.2	174099	
		178.9	180.0	1.1	174100	
		180.0	182.4	2.4	174101	
- 2-3% banded - diss. fg py.						
		182.4	182.9	0.5	174102	
		182.9	183.4	0.5	174103	
- 75-80% magnetite overall 1-2 % red 0.5-1mm hematite bands, Tr sph as a 1mm stringer w/ trace oss galena. Tr. clotted cpy ass'd w/ a 3mm irregular qtz vein. 2-3 % pyrite.		183.4	185.0	1.6	174104	
		185.0	186.5	1.5	174105	
		186.5	187.6	1.1	174106	
- 2% very thin (0.1-1mm) pyrite + tr sph bands parallel to foln.		187.6	188.7	1.1	174107	
188.3 → spider like sub mm sph + py stars		188.7	189.8	1.1	174108	

PAGE 17 OF | PROJECT: | HOLE NO. PR97-07

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION CHL A	SER B	EP C	CO_3 D	E	FRACTURE INTENSITY	% VEIN QTZ.
					RHFS (cont.) ... microlites. Periodic brown-lt. grn 1-5 mm sericitic bands. 5-6 cm. intervals of msv. Calcite occur towards base. Sharp lower ct - 1st appearance of mt.							
190			30°									
191		EXMT	75°									
192				189.8-193.0 EXMT	GREY/BROWN/BLACK SILICA MAGNETITE CALCITE EXHALITE - MT POOR IRON FORMATION ~10% magnetite as well defined bands - but bands are diss grainy mt - not msv. Typically 1 cm wide, up to 5 cm. Bulk of unit is massive to structureless prob. enriched silica - 2-3% green-brown sericitic bands (0.5-1mm) tht. unit. 5mm-3cm calcite bands occur periodically - parallel to foln w/ very sharp contacts. Lower contact uncertain - rock gradually becomes more fragmental							
193												
194												
195												
196												
197												
198		RHLT	75°	193.0-201.0 RHLT	GREY/BROWN/BLACK CALCAREOUS RHYOLITE LAPILLI TUFF - FRAGMENTAL. Strange rock - dominantly white-grey siliceous rhyolite bands - fragments (ovoid frags w/ pinched or looped terminations often visible) ≈ 60-70% of unit. avg 5-10 mm - dark brown 1-2 mm bands (ser + biot?) tht unit. brown to dominate after 196.4 (40-50% of rock) - wavy bands form mtx. - very calcareous - bands of msv. grainy cc up to 10 cm (198.2) - 5% tiny calcite specks tht. unit. Mt. persists ~70 cm below lct as grainy bands to 1 cm w/ minor chl. Shp. lower ct.							
199												
200												
201												
202		EXSP										
203												
204												
205												
206				201.0-206.8 EXSP	GREY/BLACK/WHITE BANDED SILICA-MAGNETITE CALCITE EXHALITE (MT-POOR IRON FORMATION) - 75% approx. silica w/ sparse microlites. Whitish grey well banded on a 5mm-1cm calc. Very probably exhalative. - 10% grainy accumulations as distinct periodic bands from 1mm-7cm. Also as coral zenotaxic voids and stringers. (typical exhalite) - 5% magnetite as distinct 1-2 cm bands. The whitish voids are crystals of coarser mtx - some pseudomorphs (herringbone crystals) - disseminated within silica also. - remainder is pale grn-grey sericitic [illegible]							
207		RHIT	15°									
208												
209			15° 75°									
210		RHAT										
211												
212												

PAGE 18 OF	PROJECT:	HOLE NO.

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
		189.8	190.5	0.7	174109	
		190.5	191.8	1.3	174110	
2-3% banded - diss pyrite, <1% sph and trace cpy. occur on partings w/ micas (sericite) or assi w/ banded calcite lht. unit. moderate coarse dark. int V tnls (up to 1mm) common. Disseminated throughout entire unit. Also trace py		191.8	193.0	1.2	174111	
		193.0	194.7	1.7	174112	
		194.7	196.4	1.7	174113	
		196.4	198.0	1.6	174114	
Tr - 1% diss - stringer py (sub-mm) along foln.		198.0	199.5	1.5	174115	
		199.5	201.0	1.5	174116	
		201.0	202.0	1.0	174117	
		202.0	203.0	1.0	174118	
		203.0	204.1	1.1	174119	
		204.1	204.8	0.7	174120	
		204.8	205.8	1.0	174121	
- 5% sulphides overall. 2-3% diss - clotted fine - coarse grained py - bisul on foln. 1-2% sph as occ fine grained foln para. stars. up to 1mm. often assi w/ py. Traces of galena. (diss.)		205.8	206.8	1.0	174122	
		206.8	207.8	1.0	174123	
		207.8	209.0	1.2	174124	
		209.0	210.0	1.0	174125	
		210.0	212.0	2.0	174126	

PAGE 12 OF | PROJECT: | HOLE NO. [illegible]

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
		RHAT		206.8-209.0	GREY/WHITE CALCAREOUS TUFFACEOUS RHYOLITE							
				RHTT	· very similar to unit directly after first iron fm.							
					· ~60% blebby silica perfectoval shapes avg 3-5mm. generally aligned with foliation.							
			75°		· ~20% calcite as irregularly shaped areas up to 1mm wavy bands to 3cm or very fine specks.							
					· remainder is fine grained, prob. rhyolitic tuffaceous material forming sub mm bands this unit - usu w/ interstitial calcite. Slightly grad. b/c.							
				209.0-222.2	DARK GREY/BLACK CALCAREOUS ARGILLACEOUS							
				RHAT	RHYOLITE LAPILLI TUFF / FRAGMENTAL							
					- similar to 95.9-114.5 but ab. CC. this unit (10%) as fine specks or distinct msv bands to 16cm.							
					~30% arg is a fine matrix of distinct 1mm-1cm bands. black, siliceous, weak sericite.							
			30°		70% rmy, grey siliceous fragment-lenticulous only locally visible. Massive, aphanitic.							
		EXMT										
				222.2-224.6	GREY MAGNETITE CALCITE-PYRITE ± HALITE							
				EXMT	distal [illegible]							
			80°		ovoid blebs near upper ct 30% mt							
					mt bands transitional to this diss/wl [illegible] + minor chl. 1-3cm. also ab coarser diss mt. ~10% calcite blebs to [illegible] (esp 223.1-223.7)							
		RHAR			"Matrix" is grey cryptic silica.							
				224.6-227.7	GREY-BLACK INTERBEDDED APHANITIC RHYOLITE							
				RHAR	AND SILICEOUS ARGILLITE							
					2-3% calcite as flecks and irr. blebs.							
					± 1% diss - streaky mt persists to ~225.1							
					Similar to 209.0-222.2 above but mainly 1mm-cm rhythmically banded arg + rhyolite (~50/50) with only rare fragments visible.							
		EXCP										
				227.7-233.3	CALCITE-PYRITE EXHALITE							
				EXCP	- more typical calcite pyrite unit seems to be within a rock similar to 224.6-227.7 above; several intervals of a dark siliceous possibly fragmental unit.							
			30° 75°		- ~60% calcite as massive, often wavy bands from a few mm - >10cm.							
		ARTF										

PAGE 20 OF	PROJECT:	HOLE NO. [illegible]-07

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
Trace py on fracture surfaces in fgln.		212.0	214.0	2.0	174127	
		214.0	216.0	2.0	174128	
		216.0	218.0	2.0	174129	
		218.0	220.0	2.0	174130	
		220.0	222.3	2.3	174131	
- 1-2% diss. py + trace sph on fgln. Trace pyrrhotite (209.0 - 209.1, sph. stringers ~2%)		222.3	223.4	1.2	174132	
		223.4	224.6	1.2	174133	
		224.6	226.0	1.4	174134	
		226.0	227.7	1.7	174135	
5-7% py, 1-3 mm "exhalative" bands py +/- pyrrhotite on fracture surfaces minor cross cutting stringers of py. Trace sph as fine stringers (223.0) wavy banded exhalative py ass. w/ qtz and cc.		227.7	228.5	0.8	174136	
- 3% pyrite - po. ab po from 226.3 - 227.7 in bluish qtz / silica lenses.		228.5	229.5	1.0	174137	
		229.5	230.5	1.0	174138	
		230.5	231.5	1.0	174139	
		231.5	233.3	1.8	174140	
- 5-7% sulphides overall. banded 1-3 mm exhalative pyrite +/- pyrrhotite but not as ab. as in previous [illegible] in other PK holes. (~3% py, 2% po veinlets and stringers ~1% sph sub-mm stringers [illegible] silica.						

PAGE 21 OF | PROJECT: | HOLE NO. PK97-07

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (Chl)	ALTERATION B (Ser)	ALTERATION C (Gp)	ALTERATION D (CO_3)	ALTERATION E	FRACTURE INTENSITY	% VEIN QTZ.
				EXCP (cont.)							
				- these calcite intervals occur as pulses in a banded argillaceous rhy. w/ ? and silicic frags.							
				227.7 - 228.5 calcite - py + sph							
				228.5 - 228.8 magnetite 2-3 mm bands + stks.							
				228.8 - 229.2 calcite - min py + py							
				229.6 - 230.2 calcite + pyrite							
				230.7 - 231.5 banded qtz + arg + sil - py + sph.							
				231.5 - 233.1 arg + cc fragmental texture to much of the calcite							
				233.1 - 233.3 arg + cc vein 1 mm sph str. at upper ct.							
			242.1 - 242.3 graphitic gouge	- local intense graphitic gouge (see above) ~1% overall.							
			~ up 2 folds chaotic?	Appr. ~ parallel to bds of adjacent cc.							
			233.3 - 248.8 ARTF	BLACK - GREY TUFFACEOUS ARGILLITE							
			Folding	- dark, dark siliceous argillite (40-70%)							
				- 20-30% grey siliceous tuffaceous bands - fragments this unit. usu 1-2 mm grey indistinct bands locally ragged fragment textures are visible.							
				- arg. is very fine (sub-mm) banding between siliceous bands							
				- ~3-4% calcite blebs and bands - this unit some intervals stringers intense alteration zone up to 15 cm							
			10 hair folding								
			graphitic gouge	- local intense folding of silica and calcite bands.							
			WOLVERINE HORIZON?	- locally graphitic partings							
				appearance of fine tuffaceous brown (biot) bands towards lct. (~247.9)							
				50 cm of graphitic gouged core at lct							
				WOLVERINE HORIZON??? very shp. contact (faint contact?)							
			80°								
			248.8 - 254.7 RHLT	GREY-GREEN SERICITIC CALCAREOUS ARGILLACEOUS RHYOLITE LAPILLI TUFF. could be ? lava altered ? ? ? Moderate							
			sharp lower ct change in grain	siliceous and weak chl alt. ? ? ?							
				252.3							
				~5% calcite vein/fill 0.5 mm angular clasts prob. altered felsic frags (felds?)							
				sig. graphitic comp. ~50%) after 252.3 only cc.							
				white ovoid calcite ? pseudomorphs (avg 2x5 mm) + fine tuffaceous sized frags.							

ARTF

RHLT

RPTF

PAGE 22 OF	PROJECT:	HOLE NO. [illegible]

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
231.2 - sph [illegible] assoc. [illegible]						
231.0 - ab. clotted pyrrhotite		232.3	235.5	2.2	[illegible]	
		235.5	237.5	2.0	174142	
		237.5	239.5	2.0	174143	
		239.5	241.5	2.0	174144	
		241.5	243.5	2.0	174145	
1-4% sulphides - py > po > sph. ab. Foln. // sub-mm py stringers ± t. Local po clots and stringers. 1% sph as localized sub-mm rd-brown stringers.		243.5	245.8	2.3	174146	
		245.8	248.2	2.4	174147	
		248.2	248.8	0.6	174148	
		248.8	250.6	1.8	174149	
		250.6	252.3	1.7	174150	
		252.3	254.7	2.4	174151	
- Trace - 1% py along Foln.		254.7	256.7	2.0	174152	
		256.7	258.7	2.0	174153	

PAGE 23 OF | PROJECT: | HOLE NO. PK 97-3

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (Chl)	B (Ser)	C (Ep)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
		RPTF		254.7 - 271.6 GREY FINE GRAINED QUARTZ FELDSPAR XTL TUFF RPTF - very fine grained siliceous tuff - only fine (crushed) lapilli size particles. - well foliated weakly sericitic matrix, locally moderately sericitic. - feldspar crystals are white, subrounded to rectangular, avg size ~ 1-2 mm. ~ 3-4% overall but locally more abundant (up to 10%) - quartz eyes are 1-2 mm blue crystals quite sparse - 1% overall.							
				264.3 minor quartz vein							
				267.5 - 271.6 more massive interval w/ more qtz eyes and feldspar, moderate sericite.							
				~ 50° ct contact							
		RHLT		271.6 - 280.6 RHLT + minor amphibole gouged zone GREY BANDED RHYOLITE LAPILLI TUFF WITH RARE QUARTZ EYES - grey sheared up dominantly felsic volcanic unit which looks similar to the unit in the underlying. Contact of the deposit not without the alteration. - very strong foliation w/ weak crenulation - 10-20% very flattened white grey lapilli size felsic fragments, possibly feldspar crystals? - carbonate (cc) bands and blebs common thru unit (2-3%) - gradual ct. - disappearance of lapilli sized clasts.							
				35							

PAGE 24 OF	PROJECT:	HOLE NO. PK97-07

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
2-3% PY, clots assoc w/ qtz + qtz-cb veinlets parallel bands (1-5mm) int unit.		258.7	260.7	2.0	174154					
		260.7	263.0	2.3	174155					
		263.0	265.2	2.2	174156					
		265.2	267.4	2.2	174157					
		267.4	269.6	2.2	174158					
		269.6	271.6	2.0	174159					
Trace - 1% py on foln.		271.6	273.9	2.3	174160					
		273.9	276.2	2.3	174161					
		276.2	278.5	2.3	174162					
		278.5	280.6	2.1	174163					

PAGE 25 OF | PROJECT: | HOLE NO. PK97-07

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
				280.6 - 291.3 RHYT	GREY FINE GRAINED ARGILLACEOUS VOLCANIC SANDSTONE WITH RARE QUARTZ EYES.						
282					- moderately strong, well foliated						
283					- mixed volcanic and sedimentary grains						
284					- blue 3 mm quartz eyes present but sparse (<1%)						
285					- weakly sericitic (on fsp planes)						
286					- occ. calcite bands and x-cutting stringers.						
287					- 282.2 - 282.7 - fault gouge						
288					- 290.5 - 291.5 contorted and folded strongly foliated contact with a light zone - change from a sandy to an aphanitic texture - increase in carbon content.						
289			75°								
290											
291											
292				291.3 - 314.9 ARGR	BLACK GRAPHITIC ARGILLITE						
293					- black moderately to strongly graphitic aphanitic						
294					- ab. calcite and quartz fragments and bands (2mm - 4cm) which decrease away from upper contact						
295					- 4-5% calcite bands + x-cutting veins + stringers overall.						
296					- ab. gouged and broken core thru unit						
297			75°								
298											
299											
300											
301					301.1 - 302.1 - very graphitic gouge						
302											
303											
304			75°								

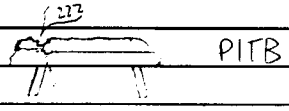
RHYT

ARGR

PAGE 26 OF	PROJECT:	HOLE NO. P[illegible]-7

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
Tr - 1% pyrite along foln.		280.6	282.8	2.2	174164					
		282.8	285.0	2.2	174165					
		285.0	287.2	2.2	174166					
		287.2	289.3	2.1	174167					
		289.3	291.3	2.0	174168					
2-3% pyrite - diss-banded. usu along foln.		291.3	293.5	2.2	174169					
		293.5	295.7	2.2	174170					
		295.7	297.8	2.1	174171					
		297.8	299.8	2.0	174172					
		299.8	301.8	2.0	174173					

PAGE 27 OF 27 | PROJECT: | HOLE NO. PK97-07

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	B	C	D	E	FRACTURE INTENSITY	% VEIN QTZ.
305											
306			1 @ 45°	306.5 - 314.9 graphitic fault gouge and fault breccia.							
307											
308											
309											
310											
311											
312											
313				314.9 - EOH							
314			1 @ 45°	 PITB							
315											

EQUITY ENGINEERING LTD.

DRILL LOG

PROJECT: PUCK	GROUND ELEV.: 1355
HOLE NO.: PK97-08	BEARING: 233 (GN)
LOCATION: 5230E 2800N	DIP: -70
	TOTAL LENGTH: 230.7
LOGGED BY: G. BRADSHAW	HORIZONTAL PROJECT:
DATE: JUNE 8/97	VERTICAL PROJECT:
CONTRACTOR: F. BOISVENU	
CORE SIZE: NQ	
DATE STARTED: JUNE 6	
DATE COMPLETED: JUNE 9	
DIP TESTS: 114.9 m - 63° (acid etch.) 227.7 m - 60°	

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



traces only
< 1%
1% – 3%
3% – 10%
> 10%

COMMENTS

- Massive andesites to 77.4 m.
- First Iron formation intersected at 119.2 m - this is a small upper iron formation very rich in epidote not observed in PK97-07. Occurs from 119.2 - 119.7 and 122.8 - 123.0 m
- Rhyolite and minor argillite seperate these upper iron formations from the main zone of exhalative activity starting at 167.9 m
- Consists of a massive magnetite-pyrite iron fm. from 167.9 - 171.3, and a sequence of silica-mt-calcite-pyrite exhalites from 172.0 - 191.0 m. which contain trace amounts of sphalerite.
- The sharp transition to crystal rich sediments/volcanics as described in PK97-07 is again easily identifiable and occurs at 200.3 m.

LEGEND

PAGE 1 OF | PROJECT: | HOLE NO. PK97-8

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
				0-6.1 CASING DHCS							
				6.1-77.4 GREEN MASSIVE FINE GRAINED ANDESITE ADMS - uniform, massive, finely crystalline andesite (sheet flow). - very little textural variation (same as Top of PK-97-07) - weak foliation, occasionally defined by irregular discontinuous biotite bands (2-3%) - occasional qtz veining (see ADMS in PK97-07 for full description of this unit)							

ADMS

60°

55°

PAGE 2 OF	PROJECT:	HOLE NO. PK97-08

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						
- Negligable mineralization in the Andesites.										

PAGE 3 OF | PROJECT: | HOLE NO. PK97-8

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	ALTERATION D	ALTERATION E	FRACTURE INTENSITY	% VEIN QTZ.
29	ADMS	V		ADMS (cont.)							
30		V									
31		V									
32		V									
33		V									
34		V									
35		V	65°								
36		V									
37		V									
38		V									
39		V									
40		V									
41		V									
43		V									
43		V									
44		V									
45		V	65°								
46		V									
47		V									
48		V									
49		V									
50		V									
51		V									

PAGE 4 OF	PROJECT:	HOLE NO. PK97-08

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 5 OF | PROJECT: | HOLE NO. PK97-08

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
52		V									
53		V									
54		V									
55		V									
56		V									
57		V									
58		V	60°								
59		V									
60		V									
61		V									
62		V									
63		V		63.9 - 66.3 ⇒ grey - very dark grey (C-rich) siliceous interval - possibly rhyolite flow. Massive aphanitic silica w/ frequent intervals of 2-5 mm rusty brown bands. (Iron-Mg (CO_3) - (Fizzes slightly, well when powdered) sharp contacts								
64		V	65°								
65		V									
66		V									
67		V	30° 65°	66.9 - 67.5 - siliceous interval as abv. Well banded. 1mm sericitic bands - dark green. Sharp upper and lower contacts.							
68		V	55° 35°								
69		V		68.1 - 70.2 - siliceous interval as above (68.5 - 68.7 - wht bull qtz vein) irregular upper contact w/ qtz veining (4 cm) very sharp conformable lower contact at 65°							
70		V	65°								
71		V		(could be small interflows - start of felsic volcanism. or possibly interflow sediments)							
72		V		71.8 - 72.1 - dirty calcite vein with argillite inclusions							
73		V									
74		V									

PAGE 6 OF	PROJECT:	HOLE NO. PK97-08

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 7 OF | PROJECT: | HOLE NO. PK97-08

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
75	ADMS	V									
		V	50°								
76		V									
		V		77.4 - 96.5 (RHAT) RHFR	DARK GREY - WHITE SILICEOUS RHYOLITE LAPILLI TUFF / FRAGMENTAL.						
77		V 60°			- same unit as RHAT in PK97-07,						
78					- dark grey fine matx. w/ sericitic partings, but very little argillite - so not a true RHAT but the texture looks very similar.						
79					- ~20-30% white-grey siliceous lapilli sized "fragments" 1x4 mm up to 1x4 cm. Ovoid shaped mostly quite stretched out visible terminations						
80					- sericite is main component of matx; grey - slightly green, sub mm anastamosing bands minor brown biotite also.						
81					- ab quartz veining near upper ct:						
82					77.5 - 77.7 → v small wht qv's up to 8 cm.						
83					77.9 - 79.1 → solid wht qv w/ ~5% bands of w.r.						
84			65°		79.4 - 79.7 → blebby qv w/ inclusions of w.r.						
85					79.9 - 80.7 → broken up qv w/ ~15% bands of biotite rich wall Rock.						
86					- minor calcite fnt w/ siliceous frags.						
87	RHAT				- Approximate contact as next unit is quite similar. (Gradational ct)						
88											
89											
90											
91											
92											
93											
94											
95			68°								
96											
97		60 V									

PAGE 8 OF	PROJECT:	HOLE NO. PK97-08

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						
- Negligable mineralization in this unit.										

PAGE 9 OF | PROJECT: | HOLE NO. PK97-08

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
		RHFS/RHFR		96.5 - 113.4 GREEN-WHITE MASSIVE - FRAGMENTAL APHANITIC							
98				RHFR FELSITE / RHYOLITE							
99				RHFG (GREEN FRAGMENTAL) - distinctive green unit - same as 115.5 - 172.1 in PK97-07. (see PK97-07 for full desc.)							
				- green may be a result of pervasive but weak chl alt'n.							
100				- typically 30-40% green-wht rounded ovoid aphanitic siliceous fragments often containing tiny microlites							
101				- size ranges from 2x4 mm to 2.5 x 4 cm.							
102				- occasionally no terminations are visible and rock has a more regular banded appearance.							
103				- matrix consists of regular to wavy anastamosing brown micaceous bands typically 1-2 mm wide. (mainly biotite.)							
104											
105				- sharp lower contact at 70°.							
106											
107											
108			70°								
109											
110											
111											
112											
113				113.4 - 119.2 BLACK-GREY TUFFACEOUS ARGILLITE							
		ARTF	70°	ARTF - black argillite w/ ~20-30% siliceous tuffaceous and lapilli sized frags, with occ. intervals up to ~50 cm that are dominantly rhyolite (RHFS)							
114											
115			60°	- argillite prescut tht. as foln parallel bands from <1mm up to 30 cm, black, moderately carbonaceous							
116				- silica occurs as 5-10 mm bands, texture varying from tuffaceous ("grainy") to more massive and aphanitic. Fragment terminations frequently visible. very shp. l. ct.							
117											
118											
119			65°								
		EX MT	65°								
120											

PAGE 10 OF	PROJECT:	HOLE NO. PK97-08

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
1-2% pyrite, frequently occurs as fdn. parallel stringers/clots.		116.5	118.0	1.5	174174					
		118.0	119.2	1.2	174175					

PAGE 11 OF | PROJECT: | HOLE NO. PK97

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION CHL A	SER B	EP C	CO_3 D	E	FRACTURE INTENSITY	% VEIN
121	ARTF		65°	119.2 - 119.7 EXMT	YELLOW-GREEN - BLACK BANDED MAGNETITE IRON FORMATION - distinct yellow-greenish colour prob. due to chl + epidote altn. - interbanded massive mt (up to 15 mm) and yellowish green chl+ep altered rhy (up to 20 mm) - also sparse coarse diss. mt, 1-2%. - ~ 20% mt overall. - very sharp contacts. (depositional)							
122	RHFS		90									
123	EXMT											
124												
125												
126				119.7 - 121.4 ARTF	BLACK-GREY TUFFACEOUS ARGILLITE - same as 113.4 - 119.2 above. Grad l. ct.							
127												
128				121.4 - 122.8 RHFS	WHITE GREEN BANDED APHANITIC RHYOLITE very similar to 96.5-113.4 but well banded here. 5 mm - 1cm aph. siliceous bands (some w/ slight green-blue tinges) separated by sub-mm biotite bands (only 2-3% overall) shp. l. ct.							
129												
130												
131			60°	122.8 - 123.0 EXMT	YELLOW-GREEN - BLACK BANDED MT FE-FM. - same as 119.2-119.7 abv, ~10% mt, mainly ~2 mm bands. (para to foln.)							
132												
133				123.0 - 157.9 RHFS	LIGHT GREY MASSIVE APHANITIC RHYOLITE - broken and blocky core tht. unit - mainly l. gray grey aph. rhy broken into "domains" by 5% greyish-green sericitic partings. (1-2 mm) - local more 'tuffaceous' intervals w/ a more granular texture to the siliceous component and up to 50% sericitic bands. (interflow sediments?) - totally aphyric but for rare microlites - slight greenish tinge tht unit but seems slightly more developed towards lower ct - similar to RHFR above - possibly weak chl altn.							
134												
135												
136												
137												
138												
139												
140												
141			65°									
142												
143												

PAGE 12 OF	PROJECT:	HOLE NO. PK97-08

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
- ~1% pyrite, fol'n para. and X-cutting stringers tr py.		119.2	119.7	0.5	174176	
		119.7	121.4	0.7	174177	
		121.4	122.8	1.4	174178	
		122.8	123.0	0.2	174179	
		123.0	124.9	1.9	174180	
- 1-2% py. stringers/clots on fol'n.						
- <1% py. X-cutting stringers to 1mm.		127.0	129.0	2.0	174181	
- 1% diss. fol'n // stringer pyr + py.						
		131.0	133.0	2.0	174182	
- Trace pyrite clots on fol'n and fractures.						
		135.0	137.0	2.0	174183	
		139.0	141.0	2.0	174184	

PAGE 13 OF | PROJECT: | HOLE NO. PK97-08

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION CHL A	SER B	EP C	CO_3 D	E	FRACTURE INTENSITY	% VEIN QTZ.
144	RHFS										
145											
146											
147											
148			30°								
149											
150											
151											
152				151.5 - 154.6 - broken + pebbly core, poor recovery. Minor clay gouge.							
153			BC								
154											
155											
156											
157				156.7 - 157.9 - broken pebbly core. 25% recovery. sharp lithological boundary at end of run.							
158	ARGR										
159			BC	157.9 - 160.7 ARGR - 157.9 - 159.4 - bkn core w/ min. gouge, 60% recovery - 159.4 - 160.6 - 66% recovery. gouged graphitic arg. From 160.4 - 160.7 - sooty graphitic argillite, mostly bkn core tht. unit. - small alt vein (7cm) at ~160.0 m.							
160											
161											
162											
163				160.7 - 165.1 RHAR INTERBEDDED DARK GREY SILICEOUS ARGILLITE AND GREY APHANITIC RHYOLITE. ~ 60% rhy - similar to RHFS above, interbanded on a mm-cm scale w/ 40% arg. Minor serrate, rare fragment terminations visible in the rhy.							
164											
165			65°								
166											

PAGE 14 OF	PROJECT:	HOLE NO. PK97-08

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
		143.0	145.0	2.0	174185	
		147.0	149.0	2.0	174186	
		151.5	155.1	3.6	174187	
		155.1	157.9	2.8	174188	
		157.9	160.7	2.8	174189	
tr-1% pyrite, disseminated.						
		160.7	162.9	2.2	174190	
		162.9	165.1	2.2	174191	
1-2% sub mm py stars // to foli.						

PAGE 15 OF | PROJECT: | HOLE NO. PK97-08

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
	RHFS			165.1 - 167.9 RHFS GREY - TAN APHANITIC BANDED RHYOLITE (SILICA EXHALITE?) - well banded (5mm - 1cm). aph rhy w/ minor 1-2mm green sericitic partings (2%)							
167			55°								
168											
169	EXMP			167.9 - 171.3 EXMP BLACK - GOLDEN WEAKLY BANDED - MASSIVE MAGNETITE - PYRITE IRON FORMATION - hot looking unit, but no base metal sulphides. - massive - semi massive pyrite within black coarsely crystalline magnetite. ~ 60% mt overall. - More banded w/ peppery texture near contacts - "Gangue" is interstitial silica (~10%)							
170			75°								
171											
172	RHFS										
173	EXMT			171.3 - 172.0 RHFS GREY MASSIVE APHANITIC FELSITE / RHYOLITE aph silica, min microlites 1-7mm green/brn. tuf. bands.							
174											
175				172.0 - 180.2 EXMT GREY / BUFF / BLACK SILICA-MAGNETITE - CALCITE EXHALITE (MT. POOR IRON FORMATION) - dominantly white - dark grey banded silica (avg 5mm) - partings are pale green sericite + pyrite (0.5 - 1mm) - Mt occurs often thr unit as distinct intervals consisting of 1-5mm msv. E.g. stars and coarse xtalline disseminations, often ass/ w/ buff colored calcite. ~ 15-20% mt overall, and 5% calcite							
176			60°								
177											
178											
179											
180	EXSP		70°	180.2 - 181.7 EXSP DARK GREY - DIRTY BROWN FROTHY SILICA - PYRITE EXHALITE? - strange texture, siliceous rock - but frothy (vuggy), silica often looks interstitial to pyrite (net texture). 3-5% calcite. minor sericite on foln. Shp lct.							
181											
182	EXCA			181.7 - 189.9 EXCA WHITE - DARK GREY BANDED CALCITE EXHALITE - grainy textured white calcite thr unit, relatively "pure" for first 2m then interbanded with tan-brown carbonates pale green - brown sericite darker green chl. minor banded - disseminated mt + hematite, trace 'grainy' bright green epidote and minor 1-2mm silica bands. (~30% calcite overall) - Typical dirty texture, chl+ser+ep intervals avg 20-30 cm (185.5 - 2cm of diss. mt + hem.) - sharp lower ct.							
183											
184											
185											
186											
187			53°								
188											
189											

PAGE 15 OF	PROJECT:	HOLE NO. PK97-08

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
- 1% fine-coarse pyrite stringers		165.1	166.5	1.4	174192	
		166.5	167.9	1.4	174193	
		167.9	168.7	0.8	174194	
- ~30% pyrite overall, up to ~80% over 40cm. Fine grained irregularly shaped clots w/i mt, crude bands up to 4-5 cm and massive coarsely crystalline pyrite up to 40 cm.		168.7	169.2	0.5	174195	
		169.2	169.9	0.7	174196	
		169.9	170.6	0.7	174197	
		170.6	171.3	0.7	174198	
- tr fine py strgrs.		171.3	172.0	0.7	174199	
		172.0	172.8	0.8	174200	
- 2-3% fine disseminated to clotted pyrite.		172.8	173.8	1.0	174201	
		173.8	174.8	1.0	174202	
		174.8	175.7	0.9	174203	
		175.7	177.7	2.0	174204	
- ~20-25% very fine grained pyrite in crude bands and dissemination. Very fine pyrite is dark brown, lesser slightly coarser pyrite bands are lighter coloured.		177.7	178.9	1.2	174205	
		178.9	180.2	1.3	174206	
		180.2	181.7	1.5	174207	
- 3-4% pyrite, typically 1-2mm fg. stringers, often quite localized up to 8-10% over 20cm. Often interstitial to calcite.		181.7	183.2	1.5	174208	
		183.2	184.8	1.6	174209	
- Traces of sphalerite, 1-2mm stringers (186.6, 186.9 - sph stringers)		184.8	185.6	0.8	174210	
		185.6	186.5	0.9	174211	
		186.5	187.0	0.5	174212	
		187.0	188.5	1.5	174213	
		188.5	189.9	1.4	174214	

PAGE 17 OF | PROJECT: | HOLE NO. PK97-08

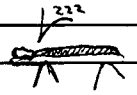
DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (chl)	ALTERATION B (ser)	ALTERATION C (ep)	ALTERATION D (CO_3)	ALTERATION E	FRACTURE INTENSITY	% VEIN QTZ.
190	EXCP		60°	189.9 - 191.0 EXCP: GREY CALCITE-PYRITE EXHALITE. More typical EXCP, very sharp contacts esp btm. ~60% white-dark grey grainy calcite sometimes crudely banded - forms a matrix for pyrite bands (see over →). Minor qtz vns.							
191			65°	(End of exhalative activity.)							
192											
193	ARTF			191.0 - 200.3 ARTF: GREY-BLACK TUFFACEOUS-LOCALLY GRAPHITIC ARGILLITE. dominantly argillite; carbonaceous to locally graphitic. - well foliated mm scale banding. - 1-2 mm white-grey siliceous bands tht unit, ~ 10-15% overall, often diffuse discontinuous, prob. tuffaceous layers. - 2-3% carbonate within siliceous bands, also occurs as veins and X cutting stgrs. - 20 cm of gouged core at l. ct - possible fault contact - This contact represents transition from upper exhalative horizons to lower crystal rich horizon. - Minor irregular qtz veining.							
194											
195											
196											
197											
198											
199											
200				Transition WOLVERINE HORIZON?							
201	RHTT		60°	200.3 - 206.4 RHTT: GREY-TAN FINE GRAINED RHYOLITE TUFF - well foliated, very fine tuff (mm scale bands) - separate tht as light brown (tan) - pale green 1-3 mm bands - separate f.g. siliceous mtl - blue quartz eyes (1 mm) are sparse but present tht. unit (1%) - occ. 1-2 mm continuous white calcite bands (1-2% overall) - gradational lower contact.							
202											
203											
204											
205											
206											
207	RPAT		75°	206.4 - 212.4 RPAT: DARK GREY HETEROLITHIC QUARTZ FELDSPAR CRYSTAL TUFF / VOLCANIC SANDSTONE - appears to have both volcanic and non-volcanic origin - mainly dark grey very fine, weakly argillaceous sediment w/ up to 30% coarser "lapilli" size felsic volcanic 'fragments' (avg 0.5 x 3 mm) - blue eye shaped qtz xtals and white feldspars (both avg. 1 mm) are sparse but present tht. unit (~ 1-2%)							
208											
209											
210											
211			70°								
212											

PAGE 18 OF	PROJECT:	HOLE NO. PK97-08

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
- 35% pyrite, v. fine gr, (less often medium gr.), wavy bands from 2mm - 4cm		189.9	191.0	1.1	174215	
		191.0	193.5	2.5	174216	
1-2% diss - clotted pyrite.						
		193.5	195.5	2.0	174217	
		195.5	197.5	2.0	174218	
		197.5	200.3	2.8	174219	
		200.3	202.3	2.0	174220	
3% pyrite - fine gr disseminations to crude bands, also occurs locally as very thin (0.2mm) dark foln para. stars.		202.3	204.3	2.0	174221	
		204.3	206.4	2.1	174222	
		206.4	207.4	1.0	174223	
1-2% fine diss - broad py. more ab near upper ct, several 1mm sph stringers + trace gn. (206.6 - 207.4)		207.4	209.4	2.0	174224	
		209.4	211.3	1.9	174225	
		211.3	212.4	1.1	174226	

PAGE 19 OF | PROJECT: | HOLE NO. PK97.

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	ALTERATION B (SER)	ALTERATION C (EP)	ALTERATION D (CO_3)	ALTERATION E	FRACTURE INTENSITY	% VEI.
213		RPTF			RPTF (cont.) 1-2 cm crystal rich layers are segregated from 206.4-206.8. (10-20% qtz + fp.) distinct boundaries - demonstrates different origins (sources) for alternating sedimentary layers. sharp lower ct.							
214												
215												
216		RAAT		212.4 - 215.3 RPTF	LIGHT GREY FINE SERICITIC RHYOLITE TUFF similar to 200.3 - 206.4. Light grey fine siliceous rhyolite w/ ab very fine sericitic bands (pale grn - grey) sparse qtz eyes (1-2%) and rare wht feldspar Xtls. Gradational l. ct.							
217												
218												
219		RPTF		215.3 - 218.5 RPAT	DARK GREY QUARTZ-FELDSPAR CRYSTAL TUFF / ARGILLACEOUS VOLCANIC SANDSTONE same as above 206.4 - 212.4 gradational contacts							
220			65°									
221												
222				218.5 - 222.3 RPTF	LIGHT GREY FINE SERICITIC QUARTZ FELDSPAR BEARING RHYOLITE XTAL TUFF same as 212.4 - 215.3 above, but w/ up to 5% blue qtz eyes and 2-3% distinct wht. rectangular feldspar crystals							
223												
224												
225												
226		RPAT		222.3 - 230.7 RPAT	DARK GREY QUARTZ FELDSPAR CRYSTAL TUFF / VOLCANIC SANDSTONE same as above. 215.3 - 218.5 minor sericite on fol'n. traces of calcite							
227			70°									
228												
229												
230												
231					230.7 - EOH							
232												
233												
234												
235												



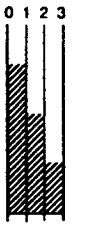
PAGE 20 OF 20 | PROJECT: | HOLE NO. PK97-08

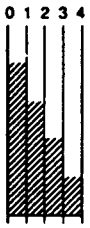
MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
		212.4	213.8	1.4	174227	
		213.8	215.3	1.5	174228	
		215.3	216.8	1.5	174229	
Tr - 1% diss py						
		216.8	218.5	1.7	174230	
		218.5	220.5	2.0	174231	
Tr - 1% diss py						
		220.5	222.3	1.8	174232	
Tr - 1% diss py						
		222.3	224.6	2.3	174233	
		224.6	226.7	2.1	174234	
- Tr - 1% banded diss py. 230.1 - 230.7 . 2-3% sph stringers within siliceous bands // to foln. up to 1cm.		226.7	228.8	2.1	174235	
		228.8	230.7	1.9	174236	

EQUITY ENGINEERING LTD.

DRILL LOG

PROJECT: PUCK	GROUND ELEV.: 1360m
HOLE NO.: PK-97-09	BEARING: 233 (GW)
LOCATION: 2100N 5090E	DIP: -70
	TOTAL LENGTH: 282.5 m.
LOGGED BY: G. BRADSHAW	HORIZONTAL PROJECT
DATE: JUNE 11	VERTICAL PROJECT
CONTRACTOR: F. Boisvenu	ALTERATION SCALE
CORE SIZE: NQ	
DATE STARTED: JUNE 9/97	TOTAL SULPHIDE SCALE
DATE COMPLETED: JUNE 12/97	
DIP TESTS: 142.3 - -63.0° 282.5 - -59.0°	





COMMENTS

- Very lengthy sequence of massive andesites to 129.4 m.
- Two distinct upper iron formations (rich in chl. and epidote) as in PK-97-08. These occur from 124.0 - 124.5 and 127.7 - 129.2 m
- Long sequence of massive - fragmental rhyolites 129.2 - 208.8 m
- Main zone of exhalative activity is from 208.8 - 226.3. consisting of 2 distinction formations and two silica-calcite pyrite exhalative units.
- well developed calcite-pyrite unit from 224.8 - 226.3 m contains 1-2 % sph. stringers.
- Sharp transition to the 'footwall' units as in PK97-07, and 08 · occurs at 229.4 m.

LEGEND

PAGE 1 OF | PROJECT: | HOLE NO. PK97-09

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
90	ADMS			0 - 3.0 OHCS							
91				3.0 - 120.4 ADMS GREEN FINE GRAINED MASSIVE ANDESITE - same as top of PK97-07, PK97-08 - massive, weakly foliated, finely crystalline, textureless green andesite - prob. sheet flows. - periodic interflow very fine grained dark argillaceous sediments (up to 40cm) Rare until approaching lower contact (see below) - also quite siliceous (chert?) - occasionally slightly coarser grained, - minor calcite locally. (X-cutting stringers) up to 2cm.							
92											
93											
94			60°								
95											
96											
97											
98											
99											
100											
101											
102											
103											
104											
105											
106			60°								
107											
108											
109				111.4 - 114.6 - light-dark grey banded aphanitic siliceous rhyolite (flow?) Very sharp contacts minor sedatic partings 1-2 cm scale bands, dark grey (argillaceous?) - light grey - whitish silica. (flow bands?) or chert ??							
110											
111											
112											

PAGE 2 OF	PROJECT:	HOLE NO. PK97-09

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						
Rare traces of diss. py										

PAGE 3 OF | PROJECT: | HOLE NO. PK97-09

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION CHL A	SER B	EP C	CO_3 D	E	FRACTURE INTENSITY	% VEIN QTZ.
	ADMS				114.6 - 115.0 andesite as above, but v/c broken core + pebbles.							
113			70°									
					115.0 - 116.6 grey + brown banded tuffaceous? rhyolite. More granular texture, 1-2% biotite on partings very siliceous.							
114												
115												
116												
117					117.9 - 118.7 - white - green - brown banded rhy similar to bulk of unit after 120.4.							
118			70°									
					- sharp lower ct, and becomes slightly coarser							
119			35°									
120												
			65°		120.4 - 124.0 RHFS GREY APHANITIC SILICEOUS RHYOLITE white - light grey aph. silica (rhyolite) is bulk of unit, but high density (10%) of sub-mm brown biotite and pale green sericite bands - mainly parallel to foln rarely anastamosing resulting in a "pseudo-fragmental" texture. Silica bands typically 2mm - 1cm. <1% diss. 1mm cubic magnetite crystals. Traces of diss. calcite. very sharp l. ct.							
121												
122												
123	RHFS		65°									
124			65°									
	EXMT		70°									
125												
					124.0 - 124.5 EXMT YELLOW-GREEN/BROWN MAGNETITE - EPIDOTE CHLORITE IRON FORMATION. crazy yellow iron formation 20% magnetite see full des. below							
126	RHTT											
127												
			70°		124.5 - 127.7 RHTT GREY/BROWN SILICEOUS RHYOLITE (TUFF) up to 20% very fine sub-mm brown biot. bands with 1-5 mm grey siliceous bands and minor carbonate. Minor diss magnetite							
128	EXMT											
129			70°									
					125.7 - 125.9 - 10%, 1-2mm mt bands, also light brown (CO_3?) bands and minor epidote 2% mt overall shp. lower contact.							
130			70°									
131												
					127.7 - 129.2 EXMT YELLOW-GREEN/GREEN MAGNETITE - EPIDOTE - CHLORITE IRON FORMATION. 15-20% magnetite well defined bands 2mm - 2cm as well as coarse disseminations thr. unit. - conspicuous yellow-green ep as bands + irr. patches. - 8% overall, (20% in upper iron Fm.) very fine grained.							
132	RHFS/RHFR											
133												
134												
135												

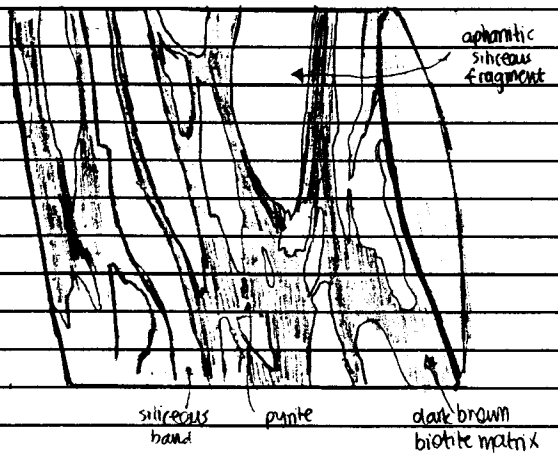
PAGE 4 OF	PROJECT:	HOLE NO. PK97-09

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
- Trace diss. coarse pyrite.		121.0	122.5	1.5	174237	
		122.5	124.0	1.5	174238	
		124.0	124.5	0.5	174239	
		124.5	126.1	1.6	174240	
- negligible mineralization						
		126.1	127.7	1.6	174241	
-						
		127.7	129.2	1.5	174242	
		129.2	130.5	1.3	174243	
- negligible mineralization						

PAGE 5 OF | PROJECT: | HOLE NO. PK97-09

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	B	C	D	E	FRACTURE INTENSITY	% VEIN QTZ.
136				EXMT (cont.) ·							
				· minor siliceous interbands trace calcite							
137				· min. light brown 1-2mm bands (as in RHAT above) - maybe $Fe-CO_3$.							
				- (128.8 - 129.2 · 1-2mm calcite bands 2-3%)							
138				· very fine gr. dark green chl present Pht unit, ass w/ epidote + calcite.							
				· sharp lower contact.							
139			70°								
140				129.2 - 208.8 GREY-GREEN MASSIVE - FRAGMENTAL RHYOLITE							
				RHFR combination of RHFR/FS and RHAT from PK97-07, PK97-08. Impossible to distinguish more than one unit over 79.6 m. interval! Plenty of local textural variations							
141				- mainly white-green aphanitic siliceous bands - fragments (sometimes w/ microlites) within a very biotite rich brown-black 1-2mm micaceous matrix.							
142				- siliceous bands white-green, 1mm - 1cm. Fragments typically 1x4 cm with jagged terminations, but some thin 1-2mm bands also pinch out and resemble frags.							
143				- micaceous bands (matrix) tht unit - ranges from 10-60% of rock, biotite is most common but pale am. sericite is also present.							
144											
145											
146											
147											
148											
149											
150											
151											
152											
153											
154											
155											
156											
157			30°								
158											

RHFS/RHFR



6 cm

175.1 m

occasionally small argillaceous comp. to mtx.

PAGE 6 OF	PROJECT:	HOLE NO. PK97-09

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
- Traces of disseminated py. locally up to 1-2% diss coarse magnetite. (<1% overall.)										
- SPOT SAMPLING. 4 samples taken in middle of RHFR away from upper and lower contacts		148.4	149.8	1.4	174244					
1) 148.4 - 149.8 - white aviod siliceous "Fragments" (lapilli size grains, rounded, pinch out, avg 0.5x2cm) with a biotite + argillaceous mtx.										

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C	D	E	FRACTURE INTENSITY	% VEIN QTZ.
159		RHFR/RHFS		RHFR (cont.)							
				- dark green tinge to the siliceous bands and fragments - especially prevalent after 180.3 m. - may be chl. altn. (also on foln.)							
160				- rare quartz veins (up to 10 cm)							
161			70°								
				152.6 - 153.0 . quartz veining w/ streaks of epidote, biotite and po stringers							
162											
163				- traces of calcite - often as 5-10 mm cross cutting stars.							
164				- locally siliceous frags (bands) have a slightly coarser sugary texture.							
165											
166											
167											
168											
169			65°								
170											
171											
172											
173											
174											
175											
176											
177			75°								
178											
179											
				~ 180.3 - beginning of green chl altn.							
180											
181											

PAGE 8 OF	PROJECT:	HOLE NO. PK97-09

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
2) White 1-2 cm bands, sugary texture only ~ 10% green sericite partings 1-3 mm. Possibly a tuffaceous rock here.		165.2	166.7	1.5	172445					

PAGE 9 OF	PROJECT:	HOLE NO. PK97-09

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
182	RHFR/RHFS			RHFR (cont.)							
183											
184											
185											
186											
187											
188											
189											
190											
191											
192											
193			60°								
194											
195											
196											
197											
198											
199											
200											
201											
202											
203			75°								
204											

PAGE 10 OF	PROJECT:	HOLE NO. PK97-09

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
3) Green siliceous fragmental - dil on foln planes. Aph. large sub angular fragments w visible terminations only - 5% mtx.		183.5	185.0	1.5	174246					
4) gy aph siliceous bands 2-5 mm, ~~30~~ 30% sericite + biot. mtx. diss. mt thn. (1-2%)		200.5	202.0	1.5	174247					

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
205	RHFR				RHFR (cont.)							
					206.3 - Fairly abrupt end to chl altn.							
206			65°									
207					208.6 - 208.9 ep. and minor deformed smeared out red brown garnet. sharp ct. based on 1st appearance of banded mt.							
208												
209	EXMT			208.8 - 215.5	BLACK/WHITE BANDED MAGNETITE IRON FORMATION more "traditional" iron formation than those previous in PK97-09. Alternating 2mm - 1cm bands of black coarse magnetite and white grainy textured silica. About 85% magnetite, 10% silica and 5% disseminated - banded calcite. Massive magnetite in intervals up to 20cm. Quartz veining common after 212.8: 212.8 - 213.3 - wht. qv w/ ab WR. inclusions 213.6, 213.8 - 4 cm wht qv's 214.3 - 214.9 - zone of irregular qtz veining. sharp lower ct.							
210				EXMT								
211												
212												
213												
214			75°									
215												
216	EXSP			215.5 - 218.1	GREY-GREEN SILICA-CALCITE-MAGNETITE EXHALITE (mt-poor BIF) - ~8-10% magnetite + minor ass/dk gm. chl in well defined intervals up to 30 cm. Intervals contain mm scale mt-chl-silica bands as well as peppery diss mt. Exhalative wht calcite (~5%) as well defined intervals w/ shp cts. (up to 8cm). Massive grainy texture. Bulk of unit is massive grey aph. exhalative silica w/ sparse 0.5-1 mm sericitic partings. Lower ct based on end of banded mt-chl intervals.							
217				EXSP								
218	RHTT		30°									
219												
220												
221												
222				218.1 - 222.2	BROWN CHLORITE+CARBONATE ALTERED FINE GRAINED RHYOLITE? - Fine grained rock with no visible clasts or frags. Near upper contact is mainly aph. grey silica w/ ~10% very fine wispy sericitic bands. Grades into a well banded brown and dark grey rock - soft brown biotite + anthophyllite and dark green chl. calcite wht as distinct bands and tiny disseminations. silica blebs rare. sharp lower contact.							
223				RHTT								
224	EXMT		75°									
225			75°									
226	EXCP		65°									
227												

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
		206.3	207.7	1.4	174248	
		207.7	208.8	1.1	174249	
		208.8	210.0	1.2	174250	
- 1-2% py, fine x-cutting stringers, coarse recrystallized euhedral pyrite common		210.0	211.2	1.2	174251	
		211.2	212.4	1.2	174252	
		212.4	213.9	1.5	174253	
		213.9	215.5	1.6	174254	
		215.5	216.8	1.3	174255	
- 2-3% py, fine stringers and diss. fht unit. Traces of dark red sph w/i the chlontic wt. zones		216.8	218.1	1.3	174256	
		218.1	219.4	1.3	174257	
		219.4	220.8	1.4	174258	
		220.8	222.2	1.4	174259	
Tr- 1%. fine diss py.		222.2	223.5	1.3	174260	
		223.5	224.8	1.3	174261	
		224.8	226.3	1.5	174262	
		226.3	227.8	1.5	174263	

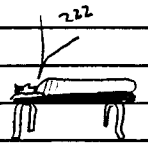
PAGE 13 OF | PROJECT: | HOLE NO. PK97-09

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
228	ARGR			222.2 - 224.8 GREY/BLACK BANDED MAGNETITE IRON FORMATION							
				EXMT well banded (1mm - 2cm) silica, magnetite,							
				minor ep. calcite and minor chlorite. ~30% mt							
229				distinct intervals of 1-2 mm bands + coarse peppery							
				Transition zone! disseminations ass w/ green chl. (up to 30cm intervals)							
				(229.4 m) also coarse peppery diss. mt thr most of unit.							
230	RHTT		75	2-5 mm bands of grainy wht - creamy calcite							
				thr unit (5-10%) Shp l. ct at 75°							
231											
				224.8 - 226.3 GREY BANDED CALCITE - PYRITE EXHALITE							
232				EXCP "dirty" texture, ~50% calcite, grainy							
				white, 1mm - 1cm bands thr unit,							
233				minor amts of chl, pale grn sericite and silica							
				interbanded w/ calcite. Very sharp l. ct.							
234											
	RPAT			226.3 - 229.4 BLACK GRAPHITIC ARGILLITE							
235				ARGR ab. microfolding and deformation of this unit,							
				broken core common, esp 227.6 - 228.6.							
236				~5% calcite thr unit, as frequent 1-2 mm							
				bands and as irregular blotches and							
237				stringers toward lower ct. (lower ct. is							
	QFPH			possibly ? fault ct. - graphitic contorted							
238			75°	foln + ab calcite stringers - very sharp.							
239				229.4 - 231.2 BROWN/GREY FINE GRAINED SERICITIC RHYOLITE TUFF							
				RHTT First of the "footwall" units - upper							
240				contact may be equivalent to Wolverine horizon.							
				Fine grained w/ rare lapilli size siliceous frags.							
241				Pale green - brown sericite as sub mm bands							
				thr unit (~50%) Minor arg band near							
242				upper contact. Sharp possibly faulted l. ct.							
243				231.2 - 236.4 BLACK-GREY ARGILLACEOUS QTZ FELDSPAR CRYSTAL							
				RPAT/STGG TUFF / ARGILLACEOUS VOLCANIC SANDSTONE							
244			LC	ab pebbly, broken and gouged core							
				thr unit. same as RPAT below..							
245											
246				236.4 - 236.8 LIGHT GREY QUARTZ FELDSPAR PORPHYRY.							
				QFPH possible faulted upper contact, very short							
247				(RPTF?) interval of fine grained siliceous porphyry ~5%.							
				2-3 mm subrounded wht feldspar phenos 2%.							
248				rounded eye shaped blue qtz phenos. Very grad. l. ct.							
249				236.8 - 259.7 BLACK - GREY ARGILLACEOUS QTZ FELDSPAR CRYSTAL							
			70°	RPAT TUFF / ARGILLACEOUS VOLCANIC SANDSTONE							
250											

PAGE 14 OF	PROJECT:	HOLE NO. PK97-09

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
- 1-2 %, med-coarse diss. pyrite.		227.8	229.4	1.6	174264	
		229.4	231.2	1.8	174265	
		231.2	233.8	2.6	174266	
- 10 % pyrite, dusty (fine grained) and well banded 0.5 mm up to 1 cm. Amount of py increases towards l.ct. 1-2 % sph, fine red brown 0.5-1 mm stringers - 225.2-225.7		233.8	236.4	2.6	174267	
- 3 % pyrite, fine-med diss. + clots thr. 226.4 - 4 cm fine gr. pyrite band		236.4	237.0	0.6	174268	
		237.0	239.0	2.0	174269	
- Trace pyrite.		239.0	241.0	2.0	174270	
		241.0	246.0	5.0	174271	
- ~1 % pyrite, bands + clots.						
1-2 % fine banded pyrite.		246.0	248.0	2.0	174272	
		248.0	251.3	3.3	174273	
- 1-2 % fine grained 1-2 mm py bands, tr (236.9 - 1 mm calcite band w/ sph) sph. Also py clotted on fractures.						

PAGE 15 OF | PROJECT: | HOLE NO. PK97-09

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
251	RPAT			RPAT (cont.)							
				- dark grey, very fine, weakly-moderately argillaceous sediment w/ up to 30% coarser lapilli size felsic volcanic fragments (avg 0.5 x 3mm)							
252				- blue qtz eyes and white sub angular feldspars (both ~ 1mm) are fairly sparse but present tht.							
253				- Upper part of unit is fine and tuffaceous grading slowly into more lapilli rich portion of unit. (up to 246.9)							
254				- Minor sericite near upper contact.							
255				- sharp irregular lower contact w/ 1 cm CO_3 vein.							
256											
257											
258											
259											
260	ARGR			259.7-282.5 ARGR BLACK STRONGLY GRAPHITIC ARGILLITE							
261				- strongly graphitic - sooty. Entire unit is soft and deformed - folded and contorted tht. - resembles fault gouge in places.							
262				- calcite veins and stringers occur periodically. (up to 5 cm).							
263											
264											
265											
266											
267											
268											
269											
270											
271				 PITB							
272				282.5 EOH							
273											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
		251.3	253.6	2.3	174274					
		253.6	255.6	2.0	174275					
		255.6	257.6	2.0	174276					
		257.6	259.7	2.1	174277					
2-3 % banded, clotted f.g. pyrite occurs throughout unit.										
		259.7	260.9	1.2	174278					
		260.9	263.3	2.4	174279					
		263.3	264.5	1.2	174280					

PAGE	OF	PROJECT:	HOLE NO.

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	B	C	D	E	FRACTURE INTENSITY	% VEIN QTZ.
				base of final iron Fm. 224.8	transition zone. 229.4	4.6 m					

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DRILL LOG

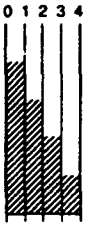
PROJECT: PUCK	GROUND ELEV.: 1495 m
HOLE NO.: PK-97-10	BEARING: 233 (GW)
LOCATION: 5700E 5380N	DIP: -70
	TOTAL LENGTH: 409.7
LOGGED BY: G. BRADSHAW	HORIZONTAL PROJECT
DATE: JUNE 15	VERTICAL PROJECT
CONTRACTOR: F. BOISVENU	
CORE SIZE: NQ	
DATE STARTED: JUNE 13	
DATE COMPLETED: JUNE 19	
DIP TESTS: 204.9 - 59° 409.7 - 55°	

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



traces only
< 1%
1% – 3%
3% – 10%
> 10%

COMMENTS

- Long sequence of argillites and coarser grained greywackes with minor interbedded andesite - to 149.3 m. (the knoo)
- Massive to tuffaceous andesites as in previous PUCK holes to 197.6.
- Rhyolite w/ minor argillite to 281.0 m.
- Two distinct zones of "exhalative activity" separated by several argillite and aphyric rhyolite units.
  - Iron Formation from 281.0 - 293.1 - High magnetite - MSV Magnetite - calcite - silica exhalites from 353.2 - 370.7.
- Transition zone to "footwall" lithologies occurs at about 389.1 m - (probable Wolverine Horizon)
- Best mineralization occurs in the second zone of exhalative activity from 359.3 - 363.2 (dark siliceous exhalite) exhalative sph bands up to 7mm (2-3% over ~4m)

LEGEND

PAGE 1 OF | PROJECT: | HOLE NO. PK97 10

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	ALTERATION B (SER)	ALTERATION C (EP)	ALTERATION D (CO_3)	ALTERATION E	FRACTURE INTENSITY	% VEIN QTZ.
				0-12.2 NW CASING							
				DHCS							
12				12.2-80.5 GREY-BLACK INTERBEDDED ARGILLITE AND							
				ARWK GREYWACKE.							
13				~ 40% black aph. carbonaceous argillite							
				and 60% dark grey grainy fine grained							
14				greywacke							
				- Interbedded tht. unit on a cm to m							
15				scale. (greywacke up to 3m)							
				(possiby turbidite sequences?)							
16			50°	- 1mm - 1cm white CO_3 bands - stringer							
				tht. unit, para. to foln. (~5%)							
17				(15.8 - 16.0 . alt-CO_3 vein)							
				- both sharp and gradual contacts between							
18				very fine and coarser sediments,							
				but no regular sequence observed.							
19				- Occasional light grey sandy limestone							
				beds - 2 - 20 cm with sharp contacts.							
20											
				-(18.3 - 18.6 squished andesitic fragments -							
21				avoid light green frags - 2x10mm.)							
22			65°	- well foliated tht.							
23		ARWK									
24											
25											
26											
27											
28											
29											
30											
31											
32											
			58°								
33											

PAGE 2 OF	PROJECT:	HOLE NO. PK97-10

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						
- traces of fine diss. pyrite										

PAGE 3 OF | PROJECT: | HOLE NO. PK97-10

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	B	C	D	E	FRACTURE INTENSITY	% VEIN QTZ.
34			65°	ARWK (cont.)							
35											
36											
37											
38				37.8 - 37.9 · cc bands to 3 cm.							
39											
40											
41				40.2 - 40.4 · quartz vein w/ irregular patches of CO_3							
42				40.8 - 41.3 · zone of CO_3 veins up to 20 cm w/ inclusions of epidote							
43											
44			50°	43.7 · nicely microfolded 2-3 mm calcite bands w/ blk arg.							
45				 — S-folds indicate reverse sense of shear							
46											
47											
48											
49											
50											
51											
52											
53											
54											
55											
56											

ARWK

PAGE 4 OF	PROJECT:	HOLE NO. PK97-10

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 5 OF | PROJECT: | HOLE NO. PK97-10

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
57		ARWK	66°	ARWK (cont.)							
58				58.3 - 59.8 graphitic fault gouge and fault breccia.							
59				60.2 - 60.8 - crushed core + fault gouge							
60											
61											
62											
63											
64											
65											
66				66.9 - 67.4 - interbeds of green andesitic rock up to 4 cm - ab calcite bands (1 mm) ~50% green and over this interval.							
67											
68			55°								
69											
70											
71											
72											
73											
74											
75											
76											
77											
78			70°								
79											

PAGE 6 OF	PROJECT:	HOLE NO. PK97-10

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 7 OF | PROJECT: | HOLE NO. PK97-10

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	ALTERATION B (SER)	ALTERATION C (EP)	ALTERATION D (CO_3)	ALTERATION E	FRACTURE INTENSITY	% VEIN QTZ.
80	ARWK				ARWK (cont.)							
					- Slightly gradational contact.							
81			70°	80.5 - 83.6	LIGHT GREEN CALCAREOUS ANDESITE TUFF.							
		ADTT		ADTT	- soft pale green banded unit - well foliated.							
82					- very fine grained - aphanitic homogeneous texture.							
					- 10-15% white 1-5 mm foln. para. calcite bands tht. unit. lesser irregular blebs, stringers							
83					and veins of calcite up to 4 cm wide.							
			30°		- ~2% biotite as sub mm stringers on partings							
84					- fairly gradual cts. w/ more argillite dominated							
			68°		sediments.							
85												
				83.6 - 144.8	DARK GREY - BLACK INTERBEDDED ARGILLITE AND							
86				ARWK	GREYWACKE (SILTSTONE)							
					- same as 12.2 - 80.5 above. Maybe 70%							
87					greywacke, 30% argillite. Occ. grey grainy							
					"sandy limestone" awg. - 10 cm.							
88					- ab. broken core tht unit, minor fault gouge.							
					- 1-2 mm calcite bands and blebs common							
89					tht unit. about 5% overall.							
					- increasing abundance of more siliceous							
90					(poss. tuffaceous) bands and lens shaped							
					fragments towards lower contact. up to							
91					1 cm wide light grey and indistinct.							
					- occ 1-3 cm quartz veins							
92												
			70°									
93												
94												
95												
96					96.1 - 96.6 - broken core and minor fault gouge.							
97												
98												
99												
100					100.7 - 101.0 - bc + minor fault gouge							
101			65°									
102	ARWK											

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PAGE 8 OF	PROJECT:	HOLE NO. PK97-10

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
no mineralization observed.										
Tr - 1%, pyrite, foln // and x-cutting sub mm stringers. Rare dissemmations										

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	B	C	D	E	FRACTURE INTENSITY	% VEIN QTZ.
103		ARWK		ARWK (cont)							
104											
105			30°	105.8 - 10cm of graphitic clay gouge and pebbles.							
106				106.2-108.2 - broken core.							
107											
108											
109				109.7-110.1 - 40cm of crushed/broken ore (possibly fault breccia) - sharp irregular low angle contacts with intact core on either side.							
110											
111											
112			70°								
113											
114											
115											
116				116.2-116.7 - zone of minor (3-4 cm) quartz veining and b.c.							
117											
118											
119											
120											
121											
122			35°								
123											
124											
125											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	B	C	D	E	FRACTURE INTENSITY	% VEIN QTZ.
				ARWK (cont.)							
126											
127				126.8 - 4 cm quartz vein							
128			60°								
129											
130											
131			35°	131.0 - 132.0 · zone of interbedded green andesitic tuffs (same as ADTT above)							
132											
133											
134											
135											
136											
137											
138											
139											
140			30°	140.6 - 140.7 · distinct "sandy limestone" bed							
141			80°	· 10 cm. sharp contacts at 80° (// to fdn.) up to 40 cm.							
142											
143											
144				144.8 - 149.3 INTERBEDDED BLACK TUFFACEOUS ARGILLITE AND							
145			35°	ARGT GREEN ANDESITE TUFF.							
146				~13% green tuffaceous andesite with minor biotite (as above). Mostly as bands from 1cm - 8cm w well defined contacts. Rarely show							
147				jagged terminations - squashed fragments. - argillite is full of calcite and siliceous (tuffaceous)							
148				bands - usu light grey - indistinct w/ occ.							

ARWK

ARGT

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A	B	C	D	E	FRACTURE INTENSITY	% VEIN QTZ.
149			35°	80	ARGT (cont.) · visible fragment terminations size range from 1mm - 2cm · ≈ 10% of argillite. · Sharp lower contact.							
150												
151					149.3 - 166.4 ADMS	GREEN FINE GRAINED MASSIVE ANDESITE. · similar to top of all previous 97 PUCK holes. no banding						
152						· very massive, difficult to measure foln. · finely crystalline texture, featureless.						
153						· occ. irregular calcite blebs and stringers, up to several cm.						
154						· occ. irregular patches and stringers of biotite, often ass w/ a pale green carbonate (fizzes slightly) · saussurite? which occurs in irregular patches. 2-3% of unit.						
155												
156						· rare "biotite books"						
157												
158												
159												
160												
161												
162			80°									
163												
164						163.9 - 164.2 - distinct argillaceous interbed w/ 40% felsic bands and fragments.						
165												
166												
167			20°		166.4 - 169.3 ARGT	INTERBEDDED BLACK TUFFACEOUS ARGILLITE AND GREEN ANDESITE Same as ARGT above - 20% green tuffaceous interbeds with sharp contacts, up to 40 cm.						
168												
169												
170					169.3 - 173.3 ADTT	GREEN BANDED ANDESITE TUFF 3-5% biotite, brown wavy sub mm bands thr. unit 1% 1-2mm calcite bands + patches						
171												

ADMS

ARGT

ADTT

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS			
		FROM	TO	WIDTH					
· Rare traces of cpy (165.7)									
(ie. one tiny speck was observed)									
· trace pØ									

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A	B	C	D	E	FRACTURE INTENSITY	% VEIN QTZ.
172	ADTT				ADTT (cont.) - sharp lower ct. (171.7 - 173.3 - zone of CO_2 veins - several cc veins up to 40 cm comprise ~50% of interval)							
173				173.3 - 186.7 ARTF	BLACK - GREY TUFFACEOUS ARGILLITE							
174					- several small (up to 20cm) ADTT (as above) interbeds near upper ct. well defined shp cts. occur periodically thr. unit (avg 5mm - 1cm)							
175			75°		- contains up to 50% 1mm - 1cm grey siliceous bands many with visible termination. Interpreted as layers of felsic volcanic ash and lapilli sized fragments within fine argillaceous sediment. (Fine blk arg. mtx.)							
176					- calcite is common thr unit, as 1-2mm bands and as irregular stringers within the more siliceous mtl. ~5% overall							
177					lower contact is gradual, as argillite becomes less abundant.							
178												
179												
180												
181	ARTF											
182			35°									
183												
184												
185												
186												
187			35°	186.7 - 194.9 RHTT	GREY/BROWN BANDED SILICEOUS TUFF well banded fine grained tuffaceous unit. Fairly siliceous thr. 20-30% of rock is 1-2 mm fine biotite bands (para. to foln.) - interbanded with grainy textured slightly thicker 2-3 mm grey siliceous (tuffaceous) bands.							
188												
189					- several late qvs all at low angles to core axis 189.6 - 189.8, 191.4 - 191.6, 191.9 - 192.8.							
190	RHTT		90	quartz veins, low angle to CA.								
191					- 193.9 - 194.2 - angle close to // w/ foln.							
192			30°		- occasional thicker (2-3 cm) bands of aph. aphyric silica (occ. w/ fine microlites).							
193					- minor amounts of pale green sericite							
194			65°		- gradual lower ct → occ green andesitic tuffaceous bands towards lower ct.							

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS			
Trace py stringers - very fine grained.									
Trace amounts of sulphides, mainly py. Trace cpy + po at base of qtz vein (189.8)									

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
				194.9-197.6	GREEN FINE GRAINED BANDED ANDESITE TUFF							
195				ADTT	well banded soft green rock with ~2-3%							
					1-2mm brown biotite bands tht and ~							
196					3-5% disseminated-banded (up to 5mm)							
					calcite. occ irr. patches/veins of calcite							
197					Both contacts gradational. (11 to frm.)							
		ADTT	80°									
198				197.6-213.4	GREY/GREEN/BROWN VARIABLE FINE GRAINED							
				RHTT	BANDED TUFF							
199					· finely banded throughout unit on a							
					mm-cm scale.							
200					- compositionally quite variable:							
					- dominantly tuffaceous - lapilli size siliceous							
201					(rhyolite) fragments (bands) size ranging							
					from 1mm-1cm. (avg 3-4mm)							
202					often contain diss calcite (CO_3) within							
					- 1-2mm brown biotite and/or dark							
203					green sericite bands usually separate							
					the more siliceous bands (fragments)							
204					- fragmental texture is locally well							
					developed. (203.0-203.1, 211.4-211.8							
205					212.4-213.4) large (avg 1cm) aph							
					siliceous fragments w/ jagged terminations							
206					separated by an anastamosing biotite							
					matrix (1mm)							
207					- lapilli sized felsic volcanic frags occupy							
					about 30% of rock, while finely banded							
208					tuffaceous rhyolite occupies ~ 50%.							
					- fine 1-2mm green tuffaceous and.							
209					bands (see ADTT above) occur tht. unit							
			80°		(intervals from 1cm to 50cm) ~							
210					10% overall.							
					- Remaing 10% is dark very fine							
211					matrix of biotite, sericite and							
					possibly fine argillaceous sediment.							
212					- wht qvs → 199.2-199.5, 205.1, 205.3-205.8, 211.8-212.1							
					- gradual contacts.							
213												
				213.4-218.3	GREY-BLACK ARGILLACEOUS RHYOLITE LAPILLI							
214				RHAT	TUFF/FRAGMENTAL							
					· dominantly lapilli sized (avg 5mm-1cm)							
215					distinct ovoid rhy frags within a mainly							
		RHAT			blk argillaceous mtx.							
216					- About 70% fragments, locally up to 90%							
					- minor calcite (often speckles w/i frags)							
217												

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
- none						
- Trace - 1%, diss - stringer fine py						
- 1-2% fine grained py stringers para and X-cutting foln.						

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION CHL A	SER B	EP C	CO_3 D	E	FRACTURE INTENSITY	% VEIN QTZ.
218				RHAT (cont.)							
			85°	· black argillaceous varies in amt from 0-80%, avg. ~ 10-20%.							
219				· strong micaceous comp. to matrix also							
				· sharp lower contact.							
220											
				218.3-253.2 GREEN MASSIVE APHANITIC RHYOLITE (FRAGMENTAL)							
221				RHFR (RHFG) · same green rhyolite as in all previous PK. 1997 DDH's.							
222			80°	· very distinctive dark forest green colour (chl + ser altn?)							
223				· dominated by (90%) grey-green aphanitic - very fine grained siliceous bands - fragments avg size 1-2 cm.							
224				· locally varies from regular rhythmic 1-2 cm bands to distinct 1-2 cm wide ovoid fragments.							
225				· bands/frags separated by <1mm - 3mm dark green - brown sericitic ± chlorite partings. (~10% of unit)							
226				· minor calcite within siliceous fragments and bands							
227				· ~1% disseminated fine-med (up to 1mm) magnetite crystals thr much of unit. (rounded - rectangular)							
228			80°	· generally a hard, competent and massive (not well foliated, only							
229	RHFR			erasionally banded) unit.							
230											
231				· Fairly uniform for entire 34.9 m length							
232											
233											
234											
235											
236											
237											
238			80°								
239											
240											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						
Tr-1% diss fine-med grained pyrite.										
Tr diss cpy! (243.5 m)										

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	ALTERATION D	ALTERATION E	FRACTURE INTENSITY	% VEIN QTZ.
241	RHFR			RHFR (cont.)							
242											
243			80°								
244											
245											
246											
247											
248											
249											
250				sharp lower contact, 85°.							
251											
252											
253			85°	253.2-265.2 ARS1 DARK GREY - BLACK SILICEOUS-TUFFACEOUS ARGILLITE. - variable unit. - dominantly a very finely laminated black siliceous argillite (cherty) - felsic bands and fragments are very abundant locally (up to 90%) and occupy ~30% of overall unit. - 253.2 - 255.9 ⇒ upper contact sharp, mm scale brown-grey tuffaceous bands and quartz veins, followed by a 1.7 m interval of well developed rhyolite frags with jagged terminations (1x4 cm avg.) with an argillaceous mtl. - 255.9 - 262.1 ⇒ siliceous argillite with indistinct diffuse mm scale grey-blush siliceous laminations tht. - carbonaceous. (260.5-260.8 - crushed graphitic srq) 262.1 - 262.6 - wht qv w/ chl+arg inclusions 262.1 - 265.2 - gradual change from a carbonaceous arg w/ minor tuffaceous							
254	ARS1										
255											
256											
257											
258											
259											
260											
261											
262											
263											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
2-3% fine pyrite stringers thruout.										

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION
264	ARSI			ARSI (cont.) bands to a very fine grained siltstone of felsic ashy volcanics and argillaceous sediment. Felsic component gradually increases and lapilli sized fragments are visible towards lower contact. Gradual lower contact - disappearance of argillite.
265				
266			80°	
267				
268				265.2 - 281.0 RHFS GREY MASSIVE - WEAKLY BANDED APHANITIC - FINE GRAINED APHYRIC RHYOLITE (FELSITE) varies from very massive and textureless aphanitic siliceous grey rhy. to a weakly banded (foliated) more tuffaceous (grainy) looking rhy w/ 2-3% sub mm pale green sericite partings.
269				
270				
271				- numerous calcite exhalites with sharp contacts occur tht unit
272				
273				270.4 - 270.8 . cc exh. w/ green dirty texture. Mainly calcite w/ several % biotite, chlorite and qtz.
274	RHFS			271.3 - 10 cm band of cream coloured calcite w/ minor chl + qtz.
275			70°	271.9 - 14 cm calcite band - sharp contacts
276				275.5 - 25 cm patchy calcite exh w/ min chl + biot.
277				279.1 - 279.6 . dark grey - black calcareous interval possibly cc exhalite mixed with fine carb. sediment
278				280.9 - 281.0 - cream - white pure calcite, crudely banded - sharp lower contact.
279				
280				281.0 - 284.3 EXMT GREY-BLACK BANDED MASSIVE MAGNETITE IRON FM. - well developed iron fm w/ ~ 80% magnetite ml.
281			75° 25°	- the remaining rock is ~ 15% calcite and 5% siliceous mtl.
282				- mt. occurs tht as regular 1-2 mm bands except for 283.4 - 284.3 where mt is
283	EXMT			massive w/ interstitial calcite (3-5%)
284			80°	- also occurs as pepper like fine-med grained disseminations tht.
285			80°	- calcite tht unit as irr. patches and stringers. sharp lower contact.
286				- traces of chlorite.

ALTERATION						FRACTURE INTENSITY	% VEIN QTZ.
CHL A	SER B	CEP C	CO_3 D	E			

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
- 1-2 %, fine-medium disseminated to stringer py - usu on foln and fractures		270.4	272.1	1.7	174281	
		272.1	274.6	2.5	174282	
		274.6	277.1	2.5	174283	
		277.1	279.1	2.0	174284	
		279.1	279.8	0.7	174285	
- 2-3 %. medium grained diss. pyrite occurs tht. unit.		279.8	281.0	1.2	174286	
		281.0	282.9	1.9	174287	
		282.9	284.3	1.4	174288	

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION CHL A	SER B	EP C	CO_3 D	E	FRACTURE INTENSITY	% VEIN QTZ.
287		RHFS	crazy quartz vein zone	284.3 - 288.8	GREY MASSIVE APHANITIC RHYOLITE - grey aph. aphyric silica (with occ microlites) with 2-3% sub mm wavy sericitic partings, minor chl.							
				RHFS								
288					286.4 - 10 cm zone with creamy brown dolomite/ankerite? as a very fine groundmass for several % diss. mt and min chl + ep.							
289			85°		286.5 - begins slow gradation into siliceous arg.							
290					287.9 - 288.8 - very broken and fractured q.v. zone. Inclusions of yellow-brownish CO_3 (saussurite?)							
291		EXMT		288.8 - 293.1	BLACK MASSIVE MAGNETITE IRON FORMATION							
				EXMT	- different from previous EXMT. B.C at sharp upper ct. mainly very fine (aphanitic) massive mt, often w/ purplish tinged metallic looking mt XTLS diss within calcite and typical salt+pepper texture conspicuously absent. ~85% mt. overall							
292					- Remainder of rock is silica (blebs and bands to 1 cm and min. chl + ep. (occ inaistinct 1-2 mm bands and stringers.)							
293					- 290.8 - cluster of pale grey - slightly greenish garnets? Irregularly shaped with inclusions of and interstitial magnetite (over a 10 cm interval)							
294												
295												
296												
297		RHFR	broken and rubbly core		sharp lower contact.							
298			85°	293.1 - 301.2	GREY-GREENISH APHANITIC - FINE GRAINED RHYOLITE							
			80°	RHFR	variable texture but resembles Green Rick rhyolite as in 218.3 - 253.2. Mainly 1-2 cm bands of aph. silica w/ fragment terminations occ. visible. Greenish tinge locally. Typically 2-3 % brown-green sub-mm sericitic partings. Local more well banded 'tuffaceous' looking intervals.							
299												
300												
301												
302		ARCB			sharp contact ab b.c tht unit - shp l. ct.							
303				301.2 - 305.8	BLACK CARBONACEOUS ARGILLITE.							
				ARCB	ab broken core tht, quite carbonaceous minor siliceous bands + blebs up to 1 cm.							
304												
305				305.8 - 314.2	INTERBEDDED BLACK CARBONACEOUS ARGILLITE							
				RHAR	AND GREY APHANITIC - TUFFACEOUS RHYOLITE							
306			40°		about 50% argillite, generally 1-2 mm bands parallel to foln, often in clusters up to several cm. Siliceous (rhyolite) bands usu 1-2 cm wide but vary in texture. Mainly grey massive and aphanitic but occasionally ovoid blebs or fine grainy texture							
			possible fault contact?									
307		RHAR	85°									
308												
309												

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
3% fine grained diss - stringer pyrite Local sph stringers. 284.5, 286.3		284.3	286.2	1.9	174289	
		286.2	287.0	0.8	174290	
		287.0	288.8	1.8	174291	
		288.8	290.3	1.5	174292	
		290.3	291.6	1.3	174293	
- 2-3% f.g. - diss - stringer py.		291.6	293.1	1.5	174294	
		293.1	295.1	2.0	174296	
		295.1	297.1	2.0	174296	
		297.1	299.1	2.0	174297	
- Tr - 1% f.g. diss - stringer py -		299.1	301.2	2.0	174298	
		301.2	302.9	1.7	174299	
- Tr - 1% diss - clotted py - on fractures and foliation planes.		302.9	305.8	1.9	174300	
- 1-2% very fine stringer pyrite - usu parallel to foln.		305.8	307.9	2.1	174301	
		307.9	310.0	2.1	174302	

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
310	RHAR			RHAR (cont.) calcite locally abundant as grainy grey 2mm-2cm foln para. bands and as blobs and cross cutting stringers. 311.6-311.8 - quartz veins one broken quartz vein has well developed qtz crystals up to 1cm long!							
311											
312			80°								
313											
314											
315	ARGR			314.2-316.5 ARGR BLACK-GREY GRAPHITIC ARGILLITE mainly sooty black arg., mb broken core and minor gouge. 5-10% felsic bands and frags. sharp lower contact.							
316											
317	RHTT			316.5-321.5 RHTT GREEN FINE GRAINED RHYOLITE TUFF grainy textured tuffaceous rhyolite w/ a distinct pale green colour. Uniformly fine grained. Local 2cm aph. white rhy bands with microlites (similar to RHFS) ab b.c. tht. unit. sharp lower contact.							
318											
319											
320											
321											
322	ARGR/STGG		BC	321.5-328.9 ARGR/STGG BLACK GRAPHITIC ARGILLITE / FAULT GOUGE mainly graphitic fault gouge and broken up graphitic argillite. Pebbly ore poor recovery. minor felsic component. (poor recovery in this unit) core becomes more intact with increasing felsic component towards lower ct.							
323											
324											
325											
326											
327			BC								
328											
329	RHFS			328.9-347.1 RHFS GREY MASSIVE-BANDED APHANITIC RHYOLITE typical RHFS, grey aph. siliceous rock w/ up to several % pale green 0.5-2mm wispy sericite bands. Gives a banded appearance to most of rock. Varies from very smooth bluish grey silica w/ occ. microlites to a slightly							
330			80°								
331											
332											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
		310.0	312.1	2.1	174303	
		312.1	314.2	2.1	174304	
		314.2	316.5	2.3	174305	
		316.5	319.0	2.5	174306	
		319.0	321.5	2.5	174307	
- Tr. diss. fg pyrite.		321.5	324.3	2.8	174308	
		324.3	328.9	4.6	174309	
- 1-2% pyrite, occ. well defined 1-3 mm py bands // to foln + tr. fine diss pyrite. Hnt unit.		328.9	331.3	2.4	174310	

PAGE 29 OF | PROJECT: | HOLE NO. PK97-10

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION CHL A	SER B	EP C	CO_3 D	E	FRACTURE INTENSITY	% VEIN QTZ.
333	RHFS			RHFS (cont.)							
				grainy more banded texture.							
				· calcite is common tht as discontinuous blebs and disseminations. 3.4%							
334				- minor fault brecciation at lower							
335			75°	contact. (angular rhy frags w/ a grainy green chloritic matrix).							
336											
337											
338											
339											
340											
341											
342			85°								
343											
344											
345				347.1 - 353.2 RHFR: DARK GREY ARGILLACEOUS RHYOLITE FRAGMENTAL WITH MINOR EXHALATIVE CALCITE.							
346				- appears similar to Wolverine fragmental rhy. but dark grey colour prob. due to presence of fine carbonaceous sediment tht. unit.							
347				- local finely laminated black argillite.							
348				- texture varies from grayish crackly fragment supported rhy w/ wispy jagged interstitial argillite to dark grey wormy looking silica bands w/ thin sub-mm intervening argillite bands							
349				349.6 - calcite veining, angular bxd w.R.							
350				349.9-350.1 - dirty grey exhalative CC w/ min qtz							
351	RHFR			351.3 - 6 cm creamy white-yellow band of exhalative calcite							
352			80°	- siliceous tht. unit.							
353				- fairly approximate lower contact.							
354	EXCA			(DOES NOT correlate w/ previous RHFR's in other PUCK holes) green							
355											

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PAGE 30 OF	PROJECT:	HOLE NO. PK97-10

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
		333.3	335.3	2.0	174311	
		337.3	339.3	2.0	174312	
		341.3	343.3	2.0	174313	
- 3-5% pyrite, fine grained foln // stringers common tht. with traces of sph. (exhalative bands) also ab diss - clotted py on foln. and fractures.		345.1	347.1	2.0	174314	
		347.1	349.1	2.0	174315	
		349.1	351.1	2.0	174316	
- 349.6 - inegular and rectangular pyrite clots w/i calcite vein. 352.5 - trace sph ass/ w/ py stringers.		351.1	353.2	2.1	174317	
		353.2	354.7	1.5	174318	

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
	EXMT			353.2 - 354.7 EXCA: INTERBEDDED BLACK SILICEOUS ARGILLITE AND GREY CALCITE EXHALITE							
356			90°	356.5 - 357.0 silica exhalite: ~50% thinly laminated black siliceous argillite and 50% well banded - wavy grey - wht exhalative calcite. - up to ~5 cm. Sharp ct -							
357				end of mt rich horizons but still mostly exhalative Si: first appearance of magnetite.							
358											
	RHES			354.7 - 357.8 EXMT: GREY SILICA - CALCITE - MAGNETITE EXHALITE (MT-POOR IRON FORMATION)							
359											
360				sharp contact; ab sph bands: heterogeneous unit ~ 90% Si 40% cc, 20% mt. mt usu. in distinct zones 5-15 cm w 2-3 mm stringers and peppery disseminations. cc is brdd-msv, 1mm - several cm, white - creamy. Finely brdd exhalative Si							
361				CO_3 flooding 360.9 - 361.2							
362											
363	ARSI/EXSP?			357.8 - 359.3 RHES: GREY BANDED APHANITIC FELSITE (SILICA EXHALITE?) grey aph. aplunic silica minor sericitic portions near upper contact - possibly a mix of exhalite and tuffaceous rhy. Sharp ct - colour change.							
364			50								
365				359.3 - 363.2 ARSI / EXSP: DARK GREY SILICEOUS ARGILLITE (SILICA EXHALITE?) very dark grey-black due to presence of minor very fine carbonaceous sediment but otherwise a silica exhalite as above. wormy texture.							
366											
367				362.0 - 362.2 - 20cm interval of MSV Mt + min. chl + epidote sharp lower ct at 50° (vein?)							
368	EXCP										
				363.2 - 370.7 EXCP: GREY VARIABLE BANDED - MOTTLED CALCITE - SILICA - MAGNETITE - PYRITE EXHALITE							
369			80	variable texture but very calcareous tht. prob ~ 50-60% CO_3, as exhalative zones (avg. 10cm), discontinuous blebs and bands + ab secondary X-cutting veins + stars. Silica occurs tht as 1-10 mm bands. 1-5 mm ovoid							
370											
371											
372				← poor recovery: silica blebs may be felsic volcanic fragments. Distinct zones of banded - diss Mt, ~10% overall.							
373	ARGR			minor chl + ep <1% indistinct greenish bands Overall mottled and dirty texture, shp l.ct.							
374											
				370.7 - 375.7 ARGR: BLACK - BROWN CALCAREOUS - GRAPHITIC ARGILLITE grades from a dark siliceous rock to a mainly gouged graphitic argillite.							
375											
376			70°	371.2 - 374.0 · graphitic gouge, poor recovery							
	APMS			374.0 - 375.7 · ab. calcite bands + stringers · sub-mm, 30-40% of interval patches of brown biotite rich rock. (374.1 - 374.4)							
377											
378											

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PAGE 32 OF	PROJECT:	HOLE NO. PK97-10

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
- 5-7% sulphides. Primary fine grained pyrite bands 1-4mm. ab stringers.		354.7	355.7	1.0	174319	
1-2% sphalerite - light brown to darker red brown bands up to 3mm.		355.7	356.7	1.0	174320	
(354.1-354.2)		356.7	357.6	0.9	174321	
		357.6	359.3	1.7	174322	
- 3-5% sulphides - ab pyrite - brdd - semi-massive ass'l wl mt rich zones ab fine diss py. Tr-1% sub-mm sph stringers - ass'l wl py.		359.3	360.5	1.2	174323	
		360.5	362.0	1.5	174324	
- ~2% med gr. diss - star pyrite.		362.0	362.2	0.2	174325	
		362.2	363.2	1.0	174326	
		363.2	364.7	1.5	174327	
- HOT MINERALIZATION - 7% sulphides 4-5% py, 2-3% sph (dark red-brown) 359.3-360.5 - ab sph bands (primary) up to 7mm. Primary pyrite up to 1 cm - very fine grained.		364.7	366.2	1.5	174328	
		366.2	367.7	1.5	174329	
		367.7	369.2	1.5	174330	
- 8-10% sulphides, mainly pyrite, ab very fine grained wavy 1-5mm bands. ab stringers both para to fol'n and crosscutting. ~2% sph as red-brown bands + stars 1-5mm. (esp. 369.3-369.5). Pos is locally ab. ass'd w/ mt.		369.2	370.7	1.5	174331	
		370.7	374.1	3.4	174332	
		374.1	375.7	1.6	174333	
- 1-2% f.g. py stringers.						

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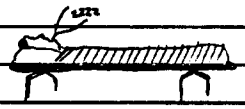
DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
379	ARMS		75° biotite rich! metamorphism or alteration?	375.7 - 381.2 ARMS: LIGHT BROWN FINE GRAINED BIOTITE CALCITE ROCK ~70% biotite overall, finely laminated distinct light brown colour. Also contains sub mm speckles of calcite tht, as well as lesser 0.5 - 2mm white calcite bands. Local interbedded more typical blk arg - 1-5 cm. Prob. a pelitic sediment similar to argillites.						
380											
381											
382	ARGR		35°	381.2 - 389.1 ARGR: BLACK GRAPHITIC ARGILLITE / FAULT GOUGE intact until 382.8, mainly black gr. arg w/ minor (2-3%) felsic fragments.							
383			45° grey clay and pebbles								
384			20 cm of sericitic rhy w/ biot maybe part of footwall lapilli tuff	383.1 - 383.3 - minor broken greenish sericitic rhy w/ minor (8 cm) of blk quartz vein							
385				385.0 - start of fault zone, gouged core tht difficult to determine lithology - may obscure actual transition zone with footwall rhy. lapilli tuffs. Actual transition - somewhere between 383.1 - 389.1. Ab cc. tht gouge (3-5%) - very shp. l.ct.							
386			Faulted + gouged core								
387			(lost core)								
388											
389	RHLT		70°	389.1 - 395.0 RHLT: GREY/GREEN COARSE RHYOLITE LAPILLI TUFF - similar to WOLVERINE footwall unit, but less sheared / altered. - very crowded, 50-60%, squashed oval qy felsic "lapilli" avg size 3x7 mm. - lesser dark grey - black 0.5-1 mm squashed glassy volcanic fragments - sub mm ~~wispy~~ green - straw coloured, sericitic mtx - calcite bands tht up to 4 cm. (~3% of unit) - very sharp l.ct at 70°						
390			Possible Transition Zone! 389.1 m.								
391											
392			65°								
393											
394											
395	ARGR		70°	395.0 - 398.4 ARGR: BLACK GRAPHITIC ARGILLITE / FAULT GOUGE - dark fine grained sediment with minor felsic volcanic component - fault gouge after 395.1. graphite + clay. Actual lithological ct may be somewhere w/i fault gouge.							
396			~~wispy~~ grey fault gouge similar to abv.								
397											
398											
399	RPQL		80°	398.4 - 409.7 RPQL: GREY-BROWN RHYOLITE LAPILLI TUFF WITH QUARTZ EYES - dirty brown texture well foliated. Large (5 mm - 1 cm) squashed blue-grey felsic bands - fragments common tht - 20-30%.							
400											
401											

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PAGE 34 OF	PROJECT:	HOLE NO. PK97-10

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
1% - star pyrite - fine gr, para to foln.		375.7	377.5	1.8	174334	
		377.5	379.3	1.8	174335	
		379.3	381.2	1.8	174336	
		381.2	383.1	1.9	174337	
2-3% py. ob. bands, clots and tiny sub-mm X-cutting stgrs.						
		383.1	384.2	1.1	174338	
		384.2	386.6	1.4	174339	
		386.6	389.1	2.5	174340	
- 1-2% f.g. banded pyrite		389.1	391.4	2.5	174341	
		391.4	392.9	1.5	174342	
		392.9	395.0	2.1	174343	
- 1-2% f.g. pyrite.		395.0	396.6	1.6	174344	
		396.6	398.4	1.8	174345	
		398.4	400.0	1.6	174346	
- 1% sub-mm ~~foln.~~ para and cross-cutting py stringers.		400.6	401.5	1.5	174347	
		401.5	403.5	2.0	174348	

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
402	RPQL			RPQL (cont.)							
403				- wispy sub mm - 2mm matx of sericite							
404				+ biotite. Locally banded - gritty texture.							
405				- blue 0.5-1mm quartz eyes are							
406			75°	sparse (~1%) but distinct							
407				- ab sheared and b.c fnt. unit.							
408											
409											
410				409.7 - EOH							
				 PITB							
				BASE OF LAST IRON FM TO TRANSITION ZONE							
				389.1 - 357.8 = 31.3 m							

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DRILL LOG

PROJECT: PUCK	GROUND ELEV.: 1300 m
HOLE NO.: PK 97-11	BEARING: 233° (=S)
LOCATION: 1400 N, 4805 E	DIP: -70
	TOTAL LENGTH: 172.8 m
LOGGED BY: G. BRADSHAW	HORIZONTAL PROJECT
DATE: July 25	VERTICAL PROJECT
CONTRACTOR: BOISVENU	
CORE SIZE: NQ	
DATE STARTED: JULY 23	
DATE COMPLETED: JULY 24	
DIP TESTS	

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



traces only
< 1%
1% – 3%
3% – 10%
> 10%

COMMENTS

- Upper andesite package persists to 87.0 m
- grey siliceous Puck fragmental similar to previous holes underlies the andesites and continues to 130.3 m.
- 132.6 - 137.3 m ⇒ banded to brecciated exhalative unit containing mainly calcite and silica with minor magnetite. Pyrite is common in this unit, but no other sulphides observed.
- Exhalative zone is immediatly underlain by a graphitic argillite - which correlates fairly well w/ the surface conductor.
- Transition to footwall lithologies marked by a sharp contact between graphitic argillite and a megacrystic feldspar porphyry. (Possible Wolverine Horizon)
- Hole ended in an argillaceous crystal tuff - locally graphitic. Probably footwall argillites.

LEGEND

PAGE	OF	PROJECT:	HOLE NO. PK97-11

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
3	ADMS	v		0-2.2 CASING DHCS							
4		v v		2.2-66.3 GREEN FINE GRAINED MASSIVE ANDESITE ADMS - dark green msv intermediate-mafic							
5		v		volcanic (flow?) with very finely crystalline texture							
6		v		- biotite tht, 1-2%, brown irregular bands, 0.5-1mm.							
7				- tiny sub mm white volcanic tephra speckled tht. (2-3%)							
8		v		1cm							
9		v	70°	- local dark grey argillaceous interflow sediments - intervals up to 30 cm.							
10		v		- mainly massive, but local more banded "tuffaceous" intervals							
11		v		- cross cutting calcite stringers common (<1mm).							
12		v									
13		v		- same unit as in PK97-07, PK97-08, and other PUCK holes.							
14		v		- foliated greenstone unit of YTT.							
15		v									
16		v									
17		v									
18		v									
19		v									
20		v	50°								
21		v									
22		v									
23		v									
24		v									
25											

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PAGE 2 OF	PROJECT:	HOLE NO. PK97-11

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
Traces of py and po. Fine dissem-inations.										

PAGE 3 OF | PROJECT: | HOLE NO. PK97-11

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
26		ADMS		ADMS (cont.)							
27											
28			75°								
29											
30											
31											
32											
33											
34											
35			70°								
36											
37											
38											
39											
40											
41											
42											
43											
44											
45											
46											
47			70°								
48											

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PAGE 4 OF	PROJECT:	HOLE NO. PK97-11

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 5 OF | PROJECT: | HOLE NO. PK97-11

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
49											
50											
51											
52											
53											
54			70°								
55											
56											
57											
58											
59											
60											
61											
62											
63											
64											
65				66.3 - 72.4 RHTT GREY-BROWN BANDED FINE GRAINED RHYOLITE TUFF.							
66				- some intercalated dark grey very fine argillaceous MH near upper contact.							
67				- grades into grey moderately siliceous rock dominated by very fine - aphanitic rhyolitic bands 2-3 mm wide. Form ~ 60% of rock.							
68			65°	- Remaining 40% - frequent, regular 0.5 - 1 mm light grey-brown micaceous partings - give rock a strongly banded appearance (mainly biotite).							
69											
70											
71			B C								

ADMS

RHT

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PAGE 6 OF	PROJECT:	HOLE NO. PK97-11

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
		61.1	63.1	2.0	204034					
- No mineralization observed.		66.3	68.3	2.0	204035					

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
72	RHTT				RHTT (cont.)							
73				72.4-87.0 ADMS	GREEN FINE GRAINED MASSIVE ANDESITE same as above, but more variably textured with some coarse grained intervals and frequent siliceous intervals - similar to RHTT above (up to ~60cm)							
74												
75			65°									
76												
77												
78					77.8-78.3 - 15cm qV, then green clay like gouge w/ min sericite.							
79												
80												
81	ADMS											
82			65°									
83					83.0-85.3 - clots (1-3cm) of fine grained light yellow-green epidote common over this interval							
84												
85					lower contact is irregular, sharp, and possibly faulted. (Intact but soft and clay-like.							
86												
87				87.0-130.3 RHFG	GREY MASSIVE SILICEOUS APHANITIC RHYOLITE FRAGMENTAL.							
88					- lengthy unit very similar to green "PUCK fragmental" observed in previous holes - example 218.3-253.2 in PK-97-10.							
89												
90					- However, lacks the distinct green colour (slight green tinge locally)							
91	RHFG				- Dark grey for ~10m due to sub-mm intercalated carbonaceous org.							
92			65°		- Dominated by (80-90%) grey aphanitic siliceous bands - fragments (terminations occ. sible) typically 1cm.							
93												
94												

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PAGE 8 OF	PROJECT:	HOLE NO. PK97-11

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS			
- no mineralisation observed.									
		83.3	85.3	2.0	204036				
- Traces of fine diss. pyrite. tht.									

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
95				RHFG (cont.)							
96			60°	- frequent 0.5-4 mm micaceous partings. Regular to wavy. Mainly brown biotite, min pale grn ser							
97				- locally black sparsely diss. mt. crystals. <<1% overall.							
98				- locally more chloritic (dark green chl alng. partings).							
99				- often aph. rhyolite bands/frags are highly fractured							
100											
101											
102											
103											
104											
105											
106		RHFG	60°								
107											
108											
109											
110											
111											
112											
113											
114											
115											
116			65°								
117											

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PAGE 10 OF	PROJECT:	HOLE NO. PK97-11

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS			
		94.7	96.7	2.0	204037				
		112.6	114.6	2.0	204038				

PAGE 11 OF	PROJECT:	HOLE NO. PK97-11

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
118	RHFG		65°	RHFG (cont.)							
119											
120											
121											
122											
123											
124											
125				10-15 cm qtz veins + ~20cm of sericitic gouge and bkn. qtz veins at 1. ct.							
126											
127			35°								
128				130.3 - 132.6 RHFS GREY MASSIVE APHANITIC RHYOLITE very siliceous unit, breccia often brecciated texture. Min (1-2%) grn-silvery sericite on foln. Typically massive, aphanitic - often angular (~5mm) aph frags within a grainy matrix - poss. flat breccia. Shp l.ct.							
129											
130											
131	RHFS										
132				132.6 - 137.3 EXCP GREY BANDED - BRECCIATED CALCITE - PYRITE - MAGNETITE EXHALITE. intact (unbrecciated) core displays 1-2 mm wavy laminae (typical of EXCP) of calcite, silica and py. Disseminated mt locally present (0.5 mm crystals) ~5% Mt. 50-60% Calcite overall, banded + Mottled. Much of unit is bkn and brecciated w/ 5 mm - 2 cm jigsaw frags.							
133											
134											
135	EXCP										
136											
137			25°	← microfolding, faulting, kinks (graphitic) Very sharp low angle lower contact, possibly faulted.							
138				137.3 - 141.8 ARGR BLACK GRAPHITIC ARGILLITE WITH LOCAL CALCITE EXHALATIVE ZONES							
139	ARGR		calcite zone	folded + faulted blk gr. arg w/ low C.A to 138.2 After that unit is mainly finely laminated arg but has local white-buff well defined calcite							
140			60°								

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PAGE 12 OF	PROJECT:	HOLE NO. PK97-11

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
- ~3% pyrite, medium grained disseminations - gb diss - crudely banded py near upper ct. - min. py after 170.7		128.3	130.3	2.0	204039	
		130.3	132.6	2.3	204040	
		132.6	134.1	1.5	204041	
- Banded to disseminated fine brown dusty pyrite to slightly coarser gold coloured pyrite. Irregular stringers within brecciated zones, wavy bands within intact exhalative zones (~ 5% overall)		134.1	135.1	1.0	204042	
		135.1	136.1	1.0	204043	
		136.1	137.3	1.2	204044	
		137.3	138.8	1.5	204045	
- 1-2% fine diss pyrite		138.8	140.5	1.7	204046	

PAGE 13 OF | PROJECT: | HOLE NO. PK97-11

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
141	ARGR				ARGR (cont.) Zones to ~ 40 cm. very sharp lower contact.							
142	FDPH			141.8 - 147.9 RDPH	GREY MASSIVE MEGACRYSTIC FELDSPAR PORPHYRY.							
143					- massive unit, superimposed late foliation - but looks very weak compared to RPAT below.							
144					- only minor development of pale green sericite on foln. 2-3% wavy sub-mm partings.							
145					- ~15% distinct mega-crystic feldspars. (up to 1 cm diam.) "augen-like" sub-rounded to rectangular.							
146					- "clean looking" v. fine-grnd siliceous groundmass							
147												
148			40°									
149			40°	147.9 - 172.3 RPAT	GREY - DARK GREY WELL FOLIATED ARGILLACEOUS RHYOLITE CRYSTAL TUFF dirty grey - almost black tuffaceous (resedimented) rhyolitic sediment. 1-2 mm grainsize, sparse (1-2%) distinct blue qtz eyes (up to 1mm) <1% - 1% white feldspar crystals (0.5 - 1mm)							
150												
151												
152												
153					sub-mm black argillaceous partings thr most of unit.							
154			90°		- sericite / muscovite ob. on foln. gives unit a strong foliated appearance.							
155					- Unaltered							
156					- sharp, faulted? contact w/ more uniform graphitic unit.							
157												
158												
159												
160												
161												
162												
163												

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PAGE 14 OF	PROJECT:	HOLE NO. PK97-11

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
		140.5	141.8	1.3	204047	
		141.8	143.5	1.7	204048	
- Trace pyrite mineralization.						
		143.5	145.4	1.9	204049	
		145.4	147.9	2.5	204050	
		147.9	149.9	2.0	204051	
- 1-2 % pyrite, common as mm-scale foln parallel diss bands.		149.9	152.0	2.1	204052	
		152.0	154.0	2.0	204053	
		157.6	159.6	2.0	204054	
		160.9	163.0	2.1	204055	

PAGE 15 OF | PROJECT: | HOLE NO. PK97-11

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
164	RPAT			RPAT (cont.)							
165											
166											
167											
168											
169			55°								
170											
171											
172			- folding, kinks.								
			55°	172.3 - 172.8 ARGR: BLACK GRAPHITIC ARGILLITE / FAULT GOUGE strongly graphitic. 9 guard up 1-2% fine diss. pyrite							
173											
174				172.8 - EOH. PITB							
175											
176				SAMPLES: 166.9 - 168.9 2.0 204056							
177				170.8 - 172.8 2.0 204057							
178											
179											
180											
181											
182											
183											
184											
185											
186											

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DRILL LOG

PROJECT PUCK	**GROUND ELEV.** 1280 m (GPS - 1290m)
HOLE NO. PK97-12	**BEARING** 233 (G)
LOCATION 700N 4900E 444263E 6804900N	**DIP** -60°
	TOTAL LENGTH 307.5
LOGGED BY G. BRADSHAW	**HORIZONTAL PROJECT**
DATE JULY 26	**VERTICAL PROJECT**
CONTRACTOR F. BOISVENU	**ALTERATION SCALE**
CORE SIZE NQ	
DATE STARTED JULY 25	
DATE COMPLETED JULY 28	**TOTAL SULPHIDE SCALE**
DIP TESTS 307.5 m ⇒ 47°	
COMMENTS	**LEGEND**



absent

slight

moderate

intense



traces only

< 1%

1% – 3%

3% – 10%

> 10%

PAGE | OF | PROJECT: | HOLE NO. PK97-12

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (IO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
17				0 - 16.5 CASING DHCS							
18				16.5 - 215.6 ADMS GREEN MASSIVE FINE - MEDIUM GRAINED LOCALLY CALCAREOUS ANDESITE.							
19				- similar to green andesitic - mafic volcanic near the top of previous PUCK DDH's.							
20				- almost uniformly massive, weak foliation sometimes visible.							
21				- texture varies from finely crystalline to green/white medium - coarse mottled appearance.							
22			50°	- unit is locally calcareous - micro stringers and blebs of calcite occur tht. most of unit - some of the coarser areas contain ab v. fine diss cc. Occasional larger (1-2 cm) late calcite veins.							
23											
24											
25				- biotite rare tht. most of unit, but locally present as 0.5 - 1 mm partings (on foln.)							
26											
27				- some areas of broken up core but generally good recovery + RQD.							
28											
29											
30			60°								
31											
32											
33											
34											
35											
36											
37											
38											

ADMS

Westmin Resources

PAGE 2 OF	PROJECT:	HOLE NO. PK97-12

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS			
		FROM	TO	WIDTH					
- No mineralization observed.									

PAGE 3 OF | PROJECT: | HOLE NO. PK97-12

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
40		ADMS		ADMS (cont.) very little variation.							
41											
42											
43											
44											
45											
46			60°								
47											
48											
49											
50											
51											
52											
53											
54											
55											
56											
57											
58											
59											
60			65°								
61											
62											

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PAGE 4 OF	PROJECT:	HOLE NO. PK97-12

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 5 OF | PROJECT: | HOLE NO. PK97-12

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (HL)	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
63				ADMS (cont.)							
64			45°								
65											
66				66.1 - minor broken core, amount of biot. increases. Local carbonaceous interbeds (interflow sediments) up to ~30 cm. but still dominantly andesitic.							
67											
68											
69											
70											
71											
72											
73											
74											
75											
76											
77											
78											
79											
80											
81											
82											
83											
84											
85											

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PAGE 6 OF	PROJECT:	HOLE NO. PK97-12

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

3E 7 OF	PROJECT:	HOLE NO. PK97-12

	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
7	ADMS			ADMS (cont.)							
9				89.1 - 90.5 - interbed of dark grey/black massive weakly gouged argillite - (interflow sediment.)							
11											
13											
95											
97											
99			50°								
101											
103											
105											
107											
109											
111											
113				112.2 - 117.1 - massive, finely laminated argillaceous interflow sediment. Sharp, well defined contacts.							
115											
117			90°								
119				massive andesite - very little variation.							
121			50°								
123											
125											
127											
129				129.0 - 130.0 - calcite stringers minor hydraw brecciation of andesitic wall rk.							
131											

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PAGE 8 OF	PROJECT:	HOLE NO. PK97-12

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 9 OF | PROJECT: | HOLE NO. PK97-12

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
132		ADMS	60°	ADMS (cont.)							
134				massive finely crystalline andesite.							
136				minor cross-cutting calcite veinlets							
138				142.9 - 150.1							
140											
142											
144											
146			60°								
148											
150											
152											
154											
156											
158											
160											
162											
164											
166											
168											
170											
172											
174			50°								
176											

Westmin Resources

PAGE 10 OF	PROJECT:	HOLE NO. PK97-12

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 11 OF | PROJECT: | HOLE NO. PK97-12

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
178				ADMS (cont.)							
180			55°								
182											
184											
186											
188											
190				190.0 - 191.4 - blacks interflow sediments, as above.							
192				193.0 - 194.1 - interbedded black argillaceous seds and green f.g. andesite (tuffs?). Beds typically 10 cm.							
194											
196											
198				202.1 - 203.7 - argillaceous - cherty sediments.							
200			60°								
202				203.7 - 204.5 - silica rich rock, banded on a 5 mm - 1 cm scale with black argillite - chert? Back into andesites at 204.5							
204											
206											
208				208.9 - 215.5 ⇒ grey pebbly fault gauge, poor recovery. And. mixed with argillaceous mtl and minor silica. 5 cm of chlontic andesite and some andesitic and qtz vein pebbles precede an apparently sharp lower contact.							
210											
212				fault gauge - poor recovery							
214											
216				215.6 - 238.1 RHFG - GREY - GREENISH MASSIVE APHANITIC WELL FRACTURED APHYRIC RHYOLITE - RHYOLITE FRAGMENTAL.							
218			80°	- pebbly rhyolite							
220				- minor fault gauge							
222				- dominated by 0.5 - 2 cm aph. siliceous domains - frequent 0.5 - 1 mm sericite partings (pale green - yellow). Lesser biot and chl.							

ADMS

RHFG

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PAGE 12 OF	PROJECT:	HOLE NO. PK97-12

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS			
		FROM	TO	WIDTH					

PAGE 13 OF PROJECT: HOLE NO. PK97-12

DEPTH (m)	% CORE REC		GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_2	E	FRACTURE INTENSITY	% VEIN QTZ.
223			RHFG (cont.)							
			- siliceous domains aphyric. white to grey to locally greenish. very fractured.							
224			- partings fairly regular, fragmental texture rarely visible							
225			- locally chloritic partings cause greenish colour - weak alteration.							
226			-							
227										
228			228.3-228.5 - fault zone - chloritic pebbles and argillaceous clay like gouge							
229			sharp lower contact @ 50°							
230		RHFG								
231										
232										
233										
234										
235										
236										
237										
238			231-240.2 GREY MASSIVE APHANITIC RHYOLITE							
		RHFS	- faint breccia-like texture that unit w/ mono-lithic small 1mm-1cm. very siliceous frags							
239			- generally msv. appearance, aphanitic.							
240			- irregular patches of pale green ser. locally							
241			240.2-256.6 GREY BANDED SILICA-CALCITE-MAGNETITE EXHALATIVE ZONE.							
242			- complex zone with mixed lithologies but dominantly exhalative w/ silica > calcite >> magnetite.							
243		EXSP	- generally well banded on a 1-3 mm scale.							
244			- 5-10% magnetite overall, locally concentrated crystalline diss - fine (1-2mm) stringers.							
245										

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PAGE 14 OF	PROJECT:	HOLE NO. PK97-12

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
		236.6	238.1	1.5	204058					
- 1-2% py - fine diss. tht, local clots on fractures.		238.1	240.2	1.9	204059					
		240.2	241.2	1.0	204060					
- ~5% pyrite overall. Occurs tht. unit as fine-med gr. diss and crude bands. Less		241.2	242.8	1.6	204061					
frequently occurs as brown dusty exhalative bands		242.8	244.9	2.1	204062					
Typically 0.5-1mm wide. Local clots on fractures.										

PAGE 15 OF | PROJECT: | HOLE NO. PK97-12

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D (O_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
246	EXSP			EXSP (cont.) ~70% silica overall, often conspicuously banded w/ frequent graphitic partings (0.1-1mm).							
247			65°	- local weak sericitic alteration, very minor chl.							
248				- Graphitic argillite interbeds frequent (see below)							
249			argillaceous ptgs w/ siliceous xls. - graphitic gouge zone	249.0 - 249.5 ⇒ strongly graphitic fault zone - gradational contacts (slightly) poor recovery							
250											
251				252.0 - 252.5 ⇒ broken up graphitic argillite, sharp contacts.							
252											
253											
254			253.9 - jigsaw brecciated arg w/ calcite mtx. by stringers.	253.9 - 254.2 ⇒ strongly brecciated + deformed argillaceous zone - shp lower ct.							
255			80° minor argillite	- white grainy calcite locally very abundant over 40-50 cm intervals. Otherwise mnr w/ Si							
256			256.3 - 0.5 mm sph bands over ~3 mm								
257	ARGR		256.6 - 259.8 ARGR	BLACK GRAPHITIC - LOCALLY SILICEOUS ARGILLITE - weakly gouged tht wild folded wht calcareous bands (4-5%) ab. qtz vein frags.							
258			crushed + blk grph arg - poss fault 65°	258.6 - 259.0 - grey f.g. siliceous interbed with irregular vein like qtz patches.							
259			259.8 - poss. WH. sharp, irregular contact	- sharp depositional contact with RHT below							
260	RHT		sharp ct - 85°	259.8 - 260.8 RHTT							
261			25°	GREY FINELY LAMINATED, FINE GRAINED WEAKLY SERICITIC TUFFACEOUS RHYOLITE							
262	FDPH			fine grained well foliated rhy tuff w/ weak sericite alteration. Sparse small <1mm fp. XHs. Rare flattened felsic lp. size frags. shp lct.							
263			20° weakly gouged near contact								
264				260.8 - 263.9 FDPH	DARK-LIGHT GREY MEGACRYSTIC FELDSPAR PORPHYRY stg. deformation, ab qv's. Very fine dk gy sic. mtx near up. ct. w/ smaller xtals. Conspicuous red mineral occurs						
265	RPAT		65°		periodically as elong. patches (altn?). Full desc. below↓						
266											
267	FDPH		gradational ct.	263.9 - 266.4 RPAT	GREY WELL FOLIATED FINE GRAINED XTAL TUFF less msv, more sed. like xtal tuff, gradational contacts.						
268				265.4 - 266.8 ⇒ gradation to blk graphitic arg. see full desription below↓ (271.2)							

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HOLE NO. PK97-12

16 OF | PROJECT:

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
ace sph locally, 0.5 mm mas over 3 mm - 256.3 m		244.9	246.8	1.9	204063	
		246.8	248.4	1.6	204064	
		248.4	250.5	2.1	204065	
		250.5	252.4	1.9	204066	
		252.4	254.2	1.8	204067	
		254.2	255.7	1.5	204068	
		255.7	256.6	0.9	204069	
- 1-2% fine diss - patchy pyrite		256.6	258.2	1.6	204070	
		258.2	259.8	1.6	204071	
		259.8	260.8	1.0	204072	
- 2-3% pyrite, wavy 1-3 mm bands fnt. unit.		260.8	262.0	1.2	204073	
		262.0	263.9	1.9	204074	
- 1% diss - banded pyrite.		263.9	265.0	1.1	204075	
		265.0	266.4	1.4	204076	
- 1-2% pyrite, mainly diss locally f.g stringers to 3 mm. (265.2)		266.4	268.0	1.6	204077	

OF | PROJECT: | HOLE NO. PK97-12

LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	ALTERATION B (SER)	ALTERATION C (EP)	ALTERATION D (CO_3)	ALTERATION E	FRACTURE INTENSITY	% VEIN QTZ.
FDPH	sharp ct ~ 80°	266.4-271.2 FDPH GREY MASSIVE SILICEOUS RHYOLITIC MEGACRYSTIC FELDSPAR PORPHYRY → massive looking aphanitic very siliceous groundmass. → ~15% 1mm-1cm (typically ~ 5mm) white sub-rounded to angular "augen-like" feldspar megacrysts. → locally has wavy pale green sub-mm sericitic bands. (eg 270.9-271.2m near lower contact.) → locally, (especially in previous FDPH unit - 260.8-263.9m) feldspars are completely or partially altered to a black colour. (Reason is unknown.) → quartz veins common → 1-5 cm. → sharp lower contact, appears more foliated and sericitic.							
RPAT	80°	271.2-291.7 RPAT GREY WELL FOLIATED FINE GRAINED ARGILLACEOUS QUARTZ FELDSPAR CRYSTAL TUFF. → dirty grey gritty looking fine grained sediment with a weak carbonaceous component. → ~20% very flattened volcanic "lapilli" typically 0.5 x 4 mm. → 3-5% distinct 1-2mm blue quartz eyes - occur thr. unit. → local slightly more sericitic zones (up to ~ 1m) → typical footwall crystal tuff → <1% sparse white 0.5-1mm feldspar crystals.							
	75°	287.0-287.4 - minor gouge.							
		288.5-289.4 - grey gouge zone							
	55°	sharp lower contact within gouged up core.							

82
283
284
285
286
287
288
289
290

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PAGE 18 OF	PROJECT:	HOLE NO. PK97-12

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
~ 1% pyrite. local wavy fine grained bands and f.g. disseminations.		268.0	269.6	1.6	204078	
		269.6	271.2	1.6	204079	
		271.2	273.2	2.0	204080	
		273.2	275.2	2.0	204081	
		275.2	277.5	2.3	204082	
		277.5	279.5	2.0	204083	
		279.5	281.5	2.0	204084	
– <1% pyrite, infrequent f.g. bands - disseminations.						
		284.3	286.5	2.2	204085	
		288.7	291.7	3.0	204086	

PAGE 19 OF | PROJECT: | HOLE NO. PK97-12

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
				291.7 - 298.9 BLACK GRAPHITIC FAULT GOUGE							
292		ARGR		ARGR strongly graphitic, strongly gouged graphitic argillite. Traces of disseminated py.							
293											
294											
295											
296											
297											
298											
299		ARGR / STGG		298.9 - 307.5 GREY-BLACK INTERBEDDED FINELY LAMINATED ARGILLITE AND FINE ARGILLACEOUS CRYSTAL TUFF.							
300			85°	ARMS moderate - strongly carbonaceous well foliated finely laminated dirty grey crystal tuff similar to RPAT above interbedded on a 1-2 cm scale with more massive pure blk. argillite. (about 50% argillite overall)							
301											
302											
303				303.4 - 303.9 - gouge zone							
304		ARMS		qtz + calcite microveins common in fractures.							
305											
306											
307			70°								
308				307.5 - EOH (PIPE)							
309				SAMPLES:							
310				291.7 - 297.8 6.9 204087							
				297.8 - 298.9 1.1 204088							
				298.9 - 300.8 1.9 204089							
				305.7 - 307.5 1.8 204090							

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DRILL LOG

PROJECT: PUCK	GROUND ELEV.: 1325 m
HOLE NO.: PK-97-13	BEARING: 233° (GS)
LOCATION: 3700N 5470E	DIP: -80
	TOTAL LENGTH: 264.3 m.
LOGGED BY: G. BRADSHAW	HORIZONTAL PROJECT:
DATE: July 30	VERTICAL PROJECT:
CONTRACTOR: F. BOISVENU	**ALTERATION SCALE**
CORE SIZE: NQ	
DATE STARTED: July 29	**TOTAL SULPHIDE SCALE**
DATE COMPLETED: July 31	
DIP TESTS: 133.2 → 76.5° 264.3 → 65°	
COMMENTS	LEGEND

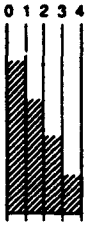


absent

slight

moderate

intense



traces only

< 1%

1% – 3%

3% – 10%

> 10%

PAGE 1 OF | PROJECT: | HOLE NO. PK97-13

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION CHL A	SER B	EP C	CO_3 D	E	FRACTURE INTENSITY	% VEIN QTZ.
7				0-7.6 CASING DHCS							
8		V V		7.6-114.9 GREEN MASSIVE FINE GRAINED ANDESITE							
9		V V		ADMS - very similar to ADMS unit at the top of previous PUCK holes							
10		V V		- green finely crystalline intermediate-mafic volcanic with 1-2% irregular biotite bands. Frequent (1-2%) calcite-ankerite wavy bands and stringers and speckled white tiny lath-like feldspar tephra.							
11		V V									
12		V V									
13		V V		- Contains periodic dark grey-black v. fine argillaceous interbeds (interflow seds) which are often siliceous (cherty)							
14		V V									
15		V V		- generally very massive textureless appearance, does have weak foln.							
16		V V									
17		V V									
18		V V									
19		V V									
20		V V	60°								
21		V V									
22		V V									
23		V V									
24		V V									
25		V V									
26		V V									
27		V V									
28		V V	70°								
29											

ADMS

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PAGE 2 OF	PROJECT:	HOLE NO. PK97-13

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						
- Local traces of diss. po and py.										

PAGE 3 OF | PROJECT: | HOLE NO. PK97-13

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
30	ADMS			ADMS (cont.)							
31			80°								
32											
33											
34											
35											
36											
37											
38				38.0 – 39.8 → argillaceous sediments with jagged fragments of green andesite up to ~20cm. Fairly sharp contacts.							
39											
40											
41											
42											
43				43.4 – 47.2 → interflow sediments - grades from banded cherts and argillites into a fairly massive carbonaceous argillite. sharp lower contact, gradational upper contact.							
44											
45											
46											
47			50°								
48											
49											
50			60°								
51											
52											

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PAGE 4 OF	PROJECT:	HOLE NO. PK97-13

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 5 OF | PROJECT: | HOLE NO. PK97-13

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
53		ADMS		ADMS (cont.) very massive, excellent RQD.							
54											
55											
56											
57											
58			60°								
59											
60											
61											
62											
63											
64											
65				65.0-66.7 → Fairly massive finely laminated carbonaceous argillite. Irregular ab folded str. microveins. Sharp lower contact, more gradational upper ct.							
66			30°								
67											
68											
69											
70											
71											
72											
73											
74			50°								
75											

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PAGE 6 OF	PROJECT:	HOLE NO. PK97-13

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS			
53.1 - zone of 1-2 mm diss-stgr pyrrhotite (~1m)									

PAGE 7 OF | PROJECT: | HOLE NO. PK97-13

ADMS (cont.)

- local banded grey-light green tuffaceous interbands, up to 50-60 cm. but continues to be generally MSV green andesite.

- occ. cherty layers, 5mm-1cm

83.3-83.9 - cherty and green tuffaceous banded interval

87.0-88.5 - tuffaceous, cherty layers.

88.5-95.3 - massive, fine grained.

95.3-96.6 - well foliated (60°) minor thin argillaceous and green banded chloritic interlayers.

96.6-114.9 - becomes very coarse grained and massive, layering sometimes visible strung out chlorite veins and disseminations local fragmental looking texture (~107.3)
local granular biotite to 2mm.
large wispy felsic tephra, partially altered to carbonate (up to 1x5mm)

ADMS

65°

75°

60°

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PAGE 8 OF	PROJECT:	HOLE NO. PK97-13

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						

PAGE 9 OF | PROJECT: | HOLE NO. PK97-13

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
99	ADMS			ADMS (cont.) coarse grained and variably textured up until lower contact.							
100											
101											
102											
103											
104											
105											
106											
107											
108											
109											
110			60								
111				gradual lower contact, becomes siliceous over ~ 50 cm with ab irregular, ovoid siliceous fragments (1-5 mm diam.). Surrounded by anastamosing brown biotite stars.							
112											
113											
114											
115	RHFR		70	114.9 - 127.1 RHFR GREY WELL FOLIATED APHANITIC RHYOLITE FRAGMENTAL.							
116				- very flattened siliceous fragments typically 3 mm x 2 cm occupy ~ 70% of unit. Jagged terminations. Minor finely diss. calcite wi felsic domains (CO_2 alt'n?).							
117											
118				- matrix of regular to anastamosing micaceous bands - typically dark brown biotite, 1-2 mm wide.							
119											
120											
121											

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PAGE 10 OF	PROJECT:	HOLE NO. PK97-13

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS			
- 1-2% pyrite. Sparse fine disseminations throughout unit. Local stringers and clots on fractures. (123.1-123.4)									

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
122	RHFR			RHFR (cont.) - broken and oxidized core at sharp lower contact.							
123											
124											
125											
126											
127			70°	127.1 - 168.3 RHFG: GREY-GREEN MASSIVE APHANITIC RHYOLITE FRAGMENTAL. ("PUCK FRAGMENTAL")							
128				- similar unit to RHFG in previous PUCK holes.							
129				- very siliceous aphanitic, pseudo-fragmental texture.							
130				- green aphanitic - locally sugary felsic domains - size: typically 4×20 mm up to 2 cm - ovoid, flattened.							
131				- fragment terminations frequently visible.							
132				- wavy to anastamosing partings biotite + lesser chl. Local dark green chl bands up to 5 mm.							
133				- local sparsely diss. magnetite crystals							
134				- lengthy competent unit without much textural variation.							
135											
136	RHFG		65°								
137											
138											
139											
140											
141											
142											
143											
144											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
- Traces of fine diss py.										
		143.3	145.2	1.9	204091					

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
145		RHFG		RHFG (cont.)							
146											
147											
148											
149			35°								
150											
151											
152											
153											
154											
156											
157											
158			75°	158.3 - late qtz veins with an associated unknown orange mineral.							
159											
160											
161											
162											
163											
164											
165											
166				~166.1 start of gradual contact w/ argillite. Siliceous aphanitic domains persist, but argillaceous partings are gradually introduced.							
167											
168											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
		166.7	168.3	1.6	204092					

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
		ARMS		168.3 - 172.7 ARMS BLACK FINELY LAMINATED CARBONACEOUS TO TUFFACEOUS ARGILLITE. fairly uniform 'massive looking' argillite, moderately to strongly carbonaceous several % flattened siliceous bands/frags sharp lower contact.							
		ARGR		172.7 - 174.0 ARGR/STGG BLACK GRAPHITIC FAULT GOUGE strongly gouged with sharp contacts probable fault.							
		EXMT		174.0 - 180.4 EXMT BLACK/GREY BANDED SILICEOUS MAGNETITE IRON FORMATION. · quartz veins and poor recovery to 175.5 (minor altn of diss mt to hm) · aphanitic silica rock w/ very thin sericitic micro-partings, <<1mm but up to 2mm. - develops a weak green chloritic alteration associated with mt. - ~30% mt overall begins with ±2mm bands and ab disseminations and cumulates w/ 50cm of MSV magnetite 178.8 - 179.3 m. - occasional qtz veins up to 5cm. · sharp l.ct - 2 cm qv w/ blotchy chl + 1mm ep							
		EXSP	85°	180.4 - 184.6 EXSP GREY APHANITIC BANDED SILICA EXHALITE massive silica (chert) banded on a cm scale. Lesser sugary quartz and cc form bands parallel to foln. Minor volcanic (tuffaceous) component (2-3%) Traces of chl along partings. shp. lower ct. (180.6 - 20 cm interval of banded sugary cc.)							
		EXMT	80°	184.6 - 192.0 EXMT GREEN/GREY/BLACK BANDED SILICEOUS MAGNETITE POOR IRON FORMATION - grey aphanitic highly silicious unit similar to above but for a distinctive green hue - caused by a weak chl altn. (dark green chl and minor light green epidote present as foln. para. bnds) - ~10% mt overall occurs in discrete zones of coarse crystalline dissemination with lesser wavy massive bands (1-5 mm) para. to foln. Much of the mt is altered to a blood red hematite. (~20%)							

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PAGE 16 OF	PROJECT:	HOLE NO. PK97-13

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
- 2-3% pyrite - frequent foln para. bands 1-3 mm thick.		168.3	170.3	2.0	204093	
		170.3	172.7	2.4	204094	
- 1% diss py w/ gouge		172.7	174.0	2.3	204095	
- 3-5% pyrite, disseminated, stringer and clotted fg py common int. Lesser well banded fine grained exhalative looking pyrite.		174.0	178.7	4.7	204096	
		178.7	180.4	1.7	204097	
		180.4	181.9	1.5	204098	
- ~3% sulphides overall, ~2% fine diss - rarely bndd py, ~1% red-brown to honey coloured crude foln parallel sph. stringers. (up to 2mm) (180.6, 181.7-181.8, 182.6)		181.9	183.1	1.2	204099	
		183.1	184.6	1.5	204100	
- ~2% fine-med grained diss py int. unit.		184.6	186.2	1.6	204101	
		186.2	187.5	1.3	204102	
		187.5	189.1	1.6	204103	
		189.1	190.8	1.7	204104	

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
				192.0 - 200.1 EXSP - similar to 180.4 - 184.6 above banded aphanitic silica - cm scale partings colour variation in bands minor tuffaceous component (2-3 %) traces of sericite on partings Periodic intervals of smoky calcite (typically ~5 cm) Sharp ct based on appearance of mt + chl.						
				200.1 - 200.6 EXMT BLACK CRUDELY BANDED MAGNETITE IRON FM. ~40% black coarsely diss to banded (1-2mm) magnetite interwoven with green grainy chl+ep bands (~5% ttl). Aph. siliceous mtx.						
				200.6 - 204.1 RHTT DARK GREY VERY FINE GRAINED RHYOLITIC TUFF WITH CARBONACEOUS PARTINGS. well foliated unit w/ wormy looking fine to aphanitic silica with sub-mm graphitic partings. Minor sericite (possibly clast?)						
				204.1 - 208.6 EXMT GREY SILICEOUS MAGNETITE IRON FM. fractured up aphanitic silica exhalite unit (205.0 - 205.2 - weakly gouged greenish-blk Fe-Fm.) ak green chl veinlets common thr. About 10% coarsely disseminated mt - occurs thr. most of unit local finely interbanded silica + mt. Minor atz veining. sharp lower contact						
				208.6 - 214.4 EXSP GREY BANDED APHANITIC SILICA EXHALITE: similar to 192.0 - 200.1 above - with local carbonaceous interbeds. (sub mm partings) Sharp lower contact with a more complex exhalative unit....						

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PAGE 18 OF	PROJECT:	HOLE NO. PK97-13

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
1-2 % diss - crudely bndd medium grained pyrite.		190.8	192.0	1.2	204105	
		192.0	194.0	2.0	204106	
		194.0	196.0	2.0	204107	
		196.0	198.1	2.1	204108	
		198.1	200.1	2.0	204109	
2-3 % diss - patchy pyrite.						
		200.1	200.6	0.5	204110	
Trace fine diss. py.		200.6	202.6	2.0	204111	
		202.6	204.1	1.5	204112	
- Trace - 1% diss - locally ribbed pyrite.		204.1	205.3	1.2	204113	
		205.3	207.5	2.2	204114	
		207.5	208.6	1.1	204115	
- Tr - 1% diss - crudely banded py (para. to foln.) Trace sph - crude bands on foln. (looks more secondary than exhalative)		208.6	210.7	2.1	204116	
		210.7	212.5	1.8	204117	
		212.5	214.4	1.9	204118	

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EP)	D (CO_3)	E	FRACTURE INTENSITY	% VEIN QTZ.
		EXMT	30°	214.4-223.3 EXMT: GREY/WHITE/GREEN MIXED SILICA-MAGNETITE-CALCITE EXHALITE - well banded exhalative unit with dominantly cherty silica (~70%) but also with significant magnetite (locally abundant 1-2 mm foln. para bands and coarse disseminations, ~15% overall) and calcite (wavy conformable well defined bands up to several cms, ~15% overall) - Dirty brown antente common in calcareous intervals - Minor dark green aranny chl bands within cc/mt bearing intervals (2-3 mm) - Traces of light yellow green epidote - Sharp lower contact							
		EXSP	75°	223.3-227.6 EXSP: DARK GREY BANDED APHANITIC SILICA EXHALITE W/ CARBONACEOUS PARTINGS - wormy looking grey aphanitic silica typically 1-2 cm domains separated by sub-mm black carbonaceous partings. Possibly a minor tuffaceous cpt. - Local intervals (up to 5 cm) contain fg. diss. calcite. Traces of chl also observed - Sharp lower contact							
		EXCP	75°	227.6-230.9 EXCP: DIRTY BROWN-WHITE CARBONATE-PYRITE EXHALITE. well banded - mottled texture - dominantly carbonate; both white sugary calcite and dirty brown antente, msv-wispy bands. Mixed with 3-5% diss crystalline mt. ~10% aphanitic silica. Occ alt veins to ~10 cm. Very sharp l. ct.							
		ARSI	30°	230.9-251.3 ARSI: BLACK FINELY LAMINATED MODERATELY CARBONACEOUS SILICEOUS (CHERTY) ARGILLITE. → dominantly argillaceous sediment but still contains a significant exhalative component. - Faint grey siliceous domains periodically visible but generally a uniform looking black argillite.							
238											

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PAGE 20 OF	PROJECT:	HOLE NO. PK07-13

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
- 3-5% pynte, mainly fine-med grained bands (1-3 mm) Fine disseminations also common Fht. unit. Zones of brown very fine exhalative pynte ass'l w/ calcite (1-5 mm)		214.4	216.4	2.0	204119	
		216.4	218.2	1.8	204120	
		218.2	219.5	1.3	204121	
		219.5	221.4	1.9	204122	
		221.4	223.3	1.9	204123	
		223.3	224.6	1.3	204124	
- ~2% banded red-brown sphalerite mostly occurs from 226.3-227.6. 1-5 mm bands, massive → skeletal texture parallel to foln. 2-3% diss-clotted pynte and lesser po. Rare stringer like bands. (5% overall sulphides)		224.6	226.4	1.8	204125	
		226.4	227.6	1.2	204126	
		227.6	228.6	1.0	204127	
- ~10% overall sulphides mainly py → crowded disseminations with lesser crude wavy bands. → Also 1-2% po ass'l w/ pynte → Trace sub-mm sph stringers (5mm band at 230.9 - 1 ct.)		228.6	229.7	1.2	204128	
		229.7	230.9	1.2	204129	
		230.9	232.7	1.8	204130	
- 2% diss-stringer py on foln. Fht. unit.		232.7	234.7	2.0	204131	
		234.7	236.7	2.0	204132	
		236.7	238.2	1.5	204133	

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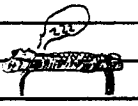
DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EP	D CO_3	E	FRACTURE INTENSITY	% VEIN QTZ.
239	ARS1				ARS1 (cont.) - calcite present (~1%) as thin stringers							
240					- 239.6-239.9 ⇒ graphitic crushed core (minor fault gouge)							
241			70°									
242												
243					242.9-243.9 - crushed graphitic arg + fault gouge							
244												
245				← weakly gouged folds + kinks.	245.0-245.8 - weakly gouged graphitic mudlike minor fault bx, folds and kinks // (?) foliation							
246												
247					sharp lower contact ⇒ possibly the WOLVERINE Horizon.							
248												
249				251.3-253.5 RHTT	GREY-GREENISH FINE GRAINED RHYOLITIC TUFF. - probably a fine rhyolitic sediment well foliated strong sericitic development, minor chl minor qtz and carbonate stringers/veins Fairly siliceous. Cont. fair ser/chl.							
250												
251			80°									
252	RHTT			possible WH?	(Prob. rhyolitic sediment) Very sharp well defined contact.							
253												
254	RPQL		35°	253.5-260.0 RPQL	DARK GREY SILICEOUS RHYOLITIC QTZ EYE CRYSTAL TUFF. well foliated - siliceous unit with 2-3% sub-mm yellowish sericitic partings. Local							
255					- minor carbonaceous sedimentary component (rarely moderately carbonaceous)							
256					- 3-5% bluish smooth 1-3 mm quartz eyes.							
257					- locally abundant coarse (lapilli sized) felsic fragments but generally fine grained.							
258												
259			80°		- sharp lower contact							
260			80°									
261												

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PAGE 22 OF	PROJECT:	HOLE NO. PK97-13

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
		238.2	240.1	1.9	204134	
		240.1	242.3	2.2	204135	
		242.3	244.3	2.0	204136	
		244.3	246.0	1.7	204137	
		246.0	247.7	1.7	204138	
		247.7	249.0	1.3	204139	
- 1-2% very fine grained py bands, trace sph (very fine stringers)		249.0	251.3	2.3	204140	
		251.3	253.5	2.2	204141	
		253.5	255.0	1.5	204142	
- 1% fine grained bndd. py.		255.0	256.6	1.6	204143	
		256.6	258.1	1.5	204144	
		258.1	260.0	1.9	204145	
		260.0	262.1	2.1	204146	
		262.1	264.3	2.2	204147	

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION CHL A	SER B	EP C	CO_3 D	E	FRACTURE INTENSITY	% VEIN QTZ.
262	RPTF			260.0-262.1 RPTF GREY SILICEOUS QUARTZ FELDSPAR CRYSTAL TUFF OR QUARTZ FELDSPAR PORPHYRY? → dominantly massive aphanitic silica with frequent (every 5mm - 1cm) pale green sub-mm sericitic partings separating siliceous domains. Very fractured with ab fractures ~ to core axis cutting through domains. → 1-2% distinct blue quartz eyes, also minor wht. feldspar crystals (~1%) (also possibly sheared out feldspar megacrysts?) → 1-2% fracture controlled py + po							
263	RPTF										
264											
265											
266											
267											
268				262.1-264.3 RPTF GREY-BROWN FINE GRAINED QUARTZ-FELDSPAR crystal TUFF - siliceous (rhyolitic) sediment w/ ~ 40-50% grey aph. flattened siliceous domains typically 1-2 mm thick → Distinctive light brown mm scale micaceous banding comprises most of unit. → Sparse (~1% overall) qtz and feldspar crystals occur thr unit up to 1 mm. → Trace py, diss + along fractures							
269											
270											
271											
272											
273				264.3 - EOH PITB 							
274											
275											
276											
277											
278											
279											
280											
281											
282											
283											
284											

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DRILL LOG

PROJECT: Puck	GROUND ELEV.: 1347m
HOLE NO.: PK 97-14	BEARING: 233 (Grid South)
LOCATION: ~5420 E, 3100 N	DIP: -80°
	TOTAL LENGTH: 319.13m
LOGGED BY: M. Padberg	HORIZONTAL PROJECT:
DATE: August 2/97	VERTICAL PROJECT:
CONTRACTOR: Boisvenu Diamond Drilling	
CORE SIZE: NQ	
DATE STARTED: July 31/97	
DATE COMPLETED: August 4/97	
DIP TESTS (Acid test): 1047' → -61°	

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



traces only
< 1%
1% – 3%
3% – 10%
> 10%

COMMENTS

Interesting mineralization in tuffaceous footwall with variable amounts of fine grained disseminated sphalerite in blue quartz eye bearing units.

LEGEND

- ADTT
- RHAT
- QTVN
- RHTT
- ADTF
- RPQL
- ExCP
- RPTF
- RHFG (Puck Fragmental)
- RHFS
- RPAT
- ARGILLITE
- STGG
- ExSP
- EXMT

PAGE 1. OF 28 | PROJECT: Puck | HOLE NO. PK9714

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EPI)	D (CARB)	E	FRACTURE INTENSITY	% VEIN QTZ.
0	DHCS			0.00-3.66 CASING							
1				DHCS							
2											
3											
3.66				3.66-149.20 TUFFACEOUS ANDESITE							
4				ADTT Fine → med. grained light/limey							
5				green tuff'ceous andes. w/							
5.53 → 5.61	ADTT		25	2-3% disseminated black flakey							
6			60	biotite, + randomly scattered (from							
7				3.66 → 8.46 only) beige, hard, sub-ang.							
8				chert fragments averaging 2×5 mm							
9				in size. mod → str. Fe-ox on							
10				natural fractures. Localized (~10->							
11				20cm) sections of cherty ADMS.							
12				Regional mafic volc's + volc.-sed							
13				interflows: intercalated ARSI/ADMSI							
14	ADTT		50	ADFF. Thickness of ea layer vary							
15				inconsistantly from .1 → 1m							
16				→ 5.53-5.61: STGG: FAULT GOUGE							
17				Angular, variable clast sized							
18				andesitic gouge @ 75° ca.							
19											
20			55								
21				→ 21.60-22.08: QTVN: QUARTZ VEIN							
21.60 → 22.08	ADTT			Coarse x-talline snowy wh.							
22				qtz w/ up to 30% euh							
23			70 10	prismatic actinolite x-tals.							

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PAGE 2 OF 28	PROJECT: Puck	HOLE NO. PK 97 14

	MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											

PAGE 3 OF 28 | PROJECT: Puck | HOLE NO. PK 97 14

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EPI)	D (CARB)	E	FRACTURE INTENSITY	% VEIN QTZ.
				(3.66-149.20 ADFT cont)							
24	ADFT										
25											
26											
27											
28											
29			55								
30											
31											
32											
33											
34	ADFT										
35											
36											
37			68								
38											
39											
40											
41											
42											
43											
44											
45	ADFT										
46											

Westmin Resources

PAGE 4 OF 28	PROJECT: Puck	HOLE NO. PK97-14

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION (13.66-149.20 ADTT cont)	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
47		ADTT	55°								
48											
49											
50											
51											
52											
53											
54											
55			80°								
56											
57		ADTT									
58											
59											
60											
61											
62											
63											
64											
65											
66			70°								
67		ADTT									
68											
69											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						
47										
48										
49										
50										
51										
52										
53										
54										
55										
56										
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
67										
68										
69										

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION (3.66 - 149.20 ADTT cont'd)	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
70	ADTT										
71											
72											
73											
74											
75			65								
76											
77											
78											
79											
80	ADTT										
81											
82											
83											
84											
85			80								
86											
87											
88											
89											
90	ADTT										
91											
92											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
70										
71										
72										
73										
74										
75										
76										
77										
78										
79										
80										
81										
82										
83										
84										
85										
86										
87										
88										
89										
90										
91										
92										

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION (136.66-149.20 ADTT cont)	ALTERATION A (CHL)	B (SER)	C (EPI)	D (CARB)	E	FRACTURE INTENSITY	% VEIN QTZ.
93	ADTT										
94			68								
95											
96											
97											
98											
99											
100											
101											
102											
103	ADTT		65								
104											
105											
106											
107											
108											
109											
110											
111											
112											
113											
114	ADTT		55								
115											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
93										
94										
95										
96										
97										
98										
99										
100										
101										
102										
103										
104										
105										
106										
107										
108										
109										
110										
111										
112										
113										
114										
115										

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION (3.66 - 149.20 ADTT · cont'd)	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
116	ADTT										
117											
118											
119											
120											
121											
122											
123											
124			68								
125											
126											
127				→ 127.80 - 129.24 · QTUN · QUARTZ VEIN Bull wh. qtz vn. ~~ mineralizat~~							
128	ADTT		65								
129			40								
130											
131			70								
132											
133											
134											
135											
136											
137	ADTT		60								
138											

127.89 →
128.24 →

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS			
116									
117									
118									
119									
120									
121									
122									
123									
124									
125									
126									
127									
128									
129									
130									
131									
132									
133									
134									
135									
136									
137									
138									

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION (3.66-149.20 ADTT - cont'd)	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
139	ADTT										
140											
141											
142											
143											
144											
145			65								
146											
147											
148	ADTT										
149 149.20			55	149.20-161.30 ANDESITIC LAPILLI TUFF							
150				ADTF Brownish gray andesitic lapilli tuff w/ frags varying from							
151	ADTF			macro-scopic to ~5 x 25 mm. Str'ly							
151.50				fol'd, localized rare 1->2cm							
152 152.17				silica (qtz) bands vis. V. rare							
152.80 153 153.02			45	v.f.g. py.							
153			60	151.50-152.17: QTVN-QUARTZ VEIN							
154				Bull wh. qtz vn; no							
155			70	mineral							
156				152.80-153.02: QTVN-QUARTZ VEIN							
157				Same as above (151.50-							
158				152.17)							
159											
160	ADTF		45								
161											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS			
139									
140									
141									
142									
143									
144									
145									
146									
147									
148									
149									
150									
151									
152									
153									
154									
155									
156									
157									
158									
159									
160									
161									

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION (149.20 - 161.30 - ADTF cont'd)	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
161.30			bc								
162	EXCP			161.30 - 163.10 CARBONATE EXHALITE							
163.10			bc	EXCP Primarily brkn core. mottled light sky blue + wh w/ mod efferv. from HCl. Rare -> tr mass. blebby py.							
164											
165	RHFG			163.10 - 167.18 PUCK FRAGMENTAL RHFG Similar unit to RHFG in prev. Puck holes. Felsic domains avg's 5x25mm w/ biotite + lesser chl partings. "Pseudo"-fragmental text. mostly siliceous Tr f.g. py disseminated in partings.							
166											
167.18			60								
168			75								
169	RHFS			167.18 - 169.60 MASSIVE RHYOLITE RHFS London Fog grey, mass. aphyric rhy., mostly brkn / shattered core 1% f.g. stringer py. Fine ser. bands							
169.60			65								
170	RHFG										
171				169.60 - 218.00 PUCK FRAGMENTAL RHFG same as above (163.10 - 167.18)							
172											
173											
174											
175											
176			70								
177											
178											
179											
180											
181											
182											
183	RHFG		70								
184											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
162										
163										
164										
165										
166										
167										
168										
169										
170										
171										
172										
173										
174										
175										
176										
177										
178										
179										
180										
181										
182										
183										
184										

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EPI)	D (CARB)	E	FRACTURE INTENSITY	% VEIN QTZ.
				(169.60 - 218.00 RHFG cont)							
185	RHFG										
186											
187											
188											
189											
190			TS								
191											
192											
193											
194											
195											
196	RHFG										
197											
198											
199											
200											
201											
202			TS								
203											
204											
205											
206	RHFG										
207											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS			
185									
186									
187									
188									
189									
190									
191									
192									
193									
194									
195									
196									
197									
198									
199									
200									
201									
202									
203									
204									
205									
206									
207									

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(1169.60 - 218.00 RHFG cont)

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EPI)	D (CARB)	E	FRACTURE INTENSITY	% VEIN QTZ.
208	RHFG										
209			60								
210											
211											
212											
213											
214											
215											
216											
217											
218.00	RHFG			218.00 - 218.55 CARBONACEOUS ARGILLITE							
218.55	ARCB			ARCB Black carbonaceous argillite. 1-2% mass blebby py. Rare wispy fine intercalated siliceous domains v.s. Broken core							
219											
220	ARGR										
221				218.55 - 221.58 GRAPHITIC ARGILLITE							
221.58				ARGR STGG - FAULT GOUGE Jet black graphitic pasty gauge. contacts in broken core							
222											
223											
224				221.58 - 226.52 SILICA EXHALITE							
225	EXSP			EXSP Light fog gray, aphyric, silica exhalite w/ fine anastomizing sericitic stockwork 2-3% fg diss py + 1-2% f.g. reddish sphalerite stringers							
226											
226.52				226.52 - 227.30 MAGNETITE IRON FORMATION							
227	EXMT		80 60 72	EXMT Dk gray/purplish mt Fe formation w/ 15-17% mt + 3% fg -> mass blebby py. V. siliceous (cherty) Rare fine randomly x-cutting carb veinlets.							
227.30											
228	EXSP										
229			80								
229.15	EXMT										
230											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
208										
209										
210										
211										
212										
213										
214										
215										
216										
217										
218										
219										
220										
221		221.65	224.85		204148					
222										
223										
224		224.85	226.52		204149					
225										
226		226.52	227.30		204150					
227		227.30	228.12		204151					
228		228.12	229.15		204152					
229		229.15	230.33		204153					
230										

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HOLE NO. PK 97 14

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
231.20	EXMT		70	227.30-229.15 EXSP: SILICA EXHALITE. Finely laminated cherty silica exh. 2-3% diss. carb microlites, fine random sericitic bands. V. similar to unit above (EXSP- 221.58-226.52)							
232			70								
233				229.15-231.20 EXMT: MAGNETITE IRON FORMATION. DK purple str'ly magn fe formn. w/ 30-35% mt, tr→1% mass dk red sph stringers + v. wkly calcareous anastomozing veinlets throughout. V. hard, cherty.							
234											
235											
236											
237 237.12				231.20-237.12 EXSP: SILICA EXHALITE. Same as above (227.30-229.15) Localized mt content (~3%) near 335m. 2-3% reddish sph stringers + 1 localized fg. PbS stringer near 236.25m.							
237.78	EXMT		58								
238			70								
239											
240											
241				237.12-237.78 EXMT: MAGNETITE IRON FORMATION. Same as above (229.15-231.20) wk perv. carb alt'n.							
242											
243				237.78-244.11 RHAT: ARGILLACEOUS RHYOLITE LAPILLI TUFF. Similar to RHAT sec'n 209.0-222.2 of PK97-07. wkly calcareous partially fragmented RHAT dk gray in colour. Strange unit indeed. wkly laminated w/ variably sized lapilli (felsic) frags.							
244 244.11			70								
245											
246				244.11-249.05 EXMT: BANDED IRON FORMATION. 10% mt. banded Fe formn w/ sil'ceous, calcareous + dk bands of disseminated mt. Rare diss. sph x-tals.							
247											
248											
249 249.05			75								
250			70	249.05-251.52 EXCP: CALCITE PYRITE EXHALITE. Light greenish / sky blue mottled EXCP w/ 25-30% irregularly diss fine→mass. grained py. mod→str'ly effervescent w/ 10% HCl.							
251 251.52											
252	EXMT		75								
253											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS			
		230.33	231.20		204154				
231									
		231.20	232.60		204155				
232									
		232.60	234.13		204156				
233									
234		234.13	235.27		204157				
235		235.27	237.12		204158				
236									
237		237.12	237.78		204159				
238		237.78	239.15		204160				
239		239.15	240.35		204161				
240		240.35	241.65		204162				
241									
		241.65	242.91		204163				
242									
		242.91	244.11		204164				
243									
244		244.11	245.45		204165				
245		245.45	246.60		204166				
246									
		246.60	247.75		204167				
247									
		247.75	249.05		204168				
248									
249		249.05	250.28		204169				
250		250.28	251.52		204170				
251									
		251.52	252.87		204171				
252									
		252.87	254.21		204172				
253									

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
	EXMT			251.52 - 254.21 BANDED IRON FORMATION							
254				EXMT Same as above (244.11 - 249.05)							
254.21											
254.62	55		75								
255			73	254.21 - 254.62 SILICA SPHALERITE EXHALITE							
	EXMT			EXSS Rosey/orangy coloured silica sph exh w/ 8-10% f.g → mass str. sph, + 1-2% stringer py. laminated text (w/ Si + ZnS/FeS_2)							
256											
256.76			80								
257											
			55	254.62 - 256.76 BANDED IRON FORMATION							
258				EXMT Same as above (244.11 - 249.05), str. perv. carb. alt'n., 3% diss sph.							
259											
260				256.76 - 263.78 CARBONATE EXHALITE							
	EXCP			EXCP Gray/beige laminated carb. exh w/ mod'ly fragmented texture mod → str. effervescent w/ 10% HCl. 2-3% mass diss. py (blebby)							
261											
262											
263			76								
263.78											
264			70	263.78 - 273.64 SILICEOUS ARGILLITE							
	ARS1			ARS1 Black arg w/ faint perv. feathery siliceous domains. 5% f.g. diss py (locally higher concentrations exist over ~30 cm). wkly efferv. carb. veinlets exist near U.C. w/ EXCP (fairly gradational contact over 25 cm)							
264											
265											
266											
267											
			75								
268											
269											
270				→ 270.30 - 273.64: 10% stockworked qtz/carb veinlets w/ 5-7% f.g. laminated py bands (possible EXSP?)							
271											
272											
273											
273.64				273.64 - 276.49 FINE GRAINED TUFF							
	RHTT		75	RHTT Gray-tan well fol'd very fine tuff (mm-scale bands) mod ser. tht bds lt brown (tan) → blk green 1-3mm							
274			60								
275											

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
254		254.21	254.62		204173	
255		254.62	255.71		204174	
256		255.71	256.76		204175	
257		256.76	258.25		204176	
258		258.25	259.66		204177	
259		259.66	260.98		204178	
260		260.98	262.40		204179	
261						
262		262.40	263.78		204180	
263		263.78	264.78		204181	
264		264.78	266.56		204182	
265						
266		266.56	267.00		204183	
267		267.00	268.20		204184	
268		268.20	270.34		204185	
269						
270		270.34	271.60		204186	
271		271.60	272.29		204187	
272		272.29	273.64		205188	
273		273.64	274.94		205189	
274		274.94	276.44		205190	
275						
276		276.44	277.25		205191	

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(273.64-276.49: RHTT cont)

bands. Rare → tr f.g. diss. py.

276.49-277.25 SILICEOUS ARGILLITE

ARSI Same as above (270.30-273.64)

→ 276.75-277.81: STGG. FAULT GOUGE

Black arg. gouge grades to gray Rhy. gouge @ 277.25

277.25-285.58 LAPILLI TUFF

RHLT Wk perv ser grading to mod. alt'd @ ~279.00m. DK gray grading to pale/bilish green. Variable Lapilli fragment size from <2x5mm to 1x4 cm. Felsic lapilli domains surrounded by fine ser/c partings. Rare 1mm² blue qtz eyes vis. locally throughout unit

285.58-287.91 QUARTZ-EYE LAPILLI TUFF

RPQL V. dk gray unalt'd lapilli tuff w/ rare 2mm² blue qtz eyes disseminated throughout. Tr → 1% f.g. diss. py. Felsic 1x4mm lapilli surrounded by arg. domains.

287.91-291.57 RHYOLITIC CRYSTAL TUFF

RPTF Fine grained tuffaceous rhy (w/ locally mass. aphyric regions) w/ fine → med grained qtz + fsp x-tals. Patchy wk ser. altn, tr f.g. stringer py. Rare blue qtz eyes.

291.57-298.87 RHY/ARG CRYSTAL TUFF

RPAT Same as RPTF above (287.91-291.57) w/ ↑'d qtz eye + 2-3% f.g. str. py. DK gray tuffaceous rhy w/ mod → str. arg. component. Bull wh qtz veins common from 5cm to 35cm in thickness

ALTERATION: A CHL | B SER | C EPI | D CARB | E

FRACTURE INTENSITY | % VEIN QTZ.

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
277		277.25	279.25		204192	
278						
279		279.25	280.54		204193	
280		280.54	281.93		204194	
281		281.93	283.02		204195	
282						
283		283.02	284.27		204196	
284		284.27	285.58		204197	
285		285.58	286.38		204198	
286		286.38	287.91		204199	
287		287.91	289.42		204200	
288						
289		289.42	291.57		204201	
290						
291		291.57	293.00		204202	
292						
293		293.00	294.52		204203	
294		294.52	295.99		204204	
295						
296		295.99	297.45		204205	
297		297.45	298.87		204206	
298						
299		298.87	300.20		204207	

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION		ALTERATION CHL A	SER B	EPI C	CARB D	E	FRACTURE INTENSITY	% VEIN QTZ.
				(291.57-298.87 - RPAT - cont)								
298.87	RPAT			298.87-301.17	QUARTZ-EYE LAPILLI TUFF							
299			85	RPQL	Light greenish/gray qtz-eye lapilli tuff. v. fine lapilli sized frags. + blue qtz-eyes common w/ wk pervasive sericitic alt'n 3-4% banded f.g. py w/ tr→1% intermixed banded f.g. sph.							
300	RPQL											
301/301.17			20									
302			80									
303				301.17-305.99	RHY/ARG CRYSTAL TUFF							
304	RPAT			RPAT	Same as above (291.57-298.87) 1-2% f.g. sph interbanded w/ 3-5% f.g. py. Irregular cx bands (random).							
305												
305.99			85	305.99-319.13	QUARTZ-EYE LAPILLI TUFF							
306				RPQL	Dk gray qtz-eye bearing 2x5mm lapilli tuff. Mostly foliated, mod argilliceous component 3% f.g→mass banded (randomly) py							
307			85									
308												
309	RPQL											
310												
311												
312												
313												
314			90									
315	315.00		85		315.00-319.13: STGG-FAULT GOUGE Gray, pasty gouge.							
316												
317	RPQL											
318					319.13 - EOH							
319/319.13												

Put it in the net.

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MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
299										
300		300.20	301.17		204208					
301		301.17	302.93		204209					
302										
		302.93	304.46		204210					
303										
304		304.46	305.99		204211					
305										
306		305.99	307.54		204212					
307										
		307.54	309.17		204213					
308										
309		309.17	310.56		204214					
310		310.56	312.13		204215					
311										
312		312.13	313.53		204216					
313										
		313.53	316.35		204217					
314										
315										
316		316.35	319.13		204218					
317										
318										
319										

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DRILL LOG

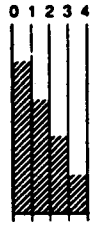
PROJECT: Puck	GROUND ELEV.: 1365m
HOLE NO.: PK 97 15	BEARING: 233° (Grid South)
LOCATION: ~5330E 4900N	DIP: -60°
	TOTAL LENGTH: 178.92 m (587')
LOGGED BY: M. Padberg	HORIZONTAL PROJECT:
DATE: August 7/97	VERTICAL PROJECT:
CONTRACTOR: Boivenu Diamond Drilling	
CORE SIZE: NQ	
DATE STARTED: August 4/97	
DATE COMPLETED: August 7/97	
DIP TESTS: @ 178m (587'): -53°	

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



traces only
< 1%
1% – 3%
3% – 10%
> 10%

COMMENTS

LEGEND

- RHFG (Rock Fragmental)
- QTVN
- RPGR
- ARGILLITE
- RHFS
- EXMT
- EXCP
- STGG
- RHTT
- EXSP

PAGE 1 OF 16 | PROJECT: Puck | HOLE NO. PK 9715

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A	B	C	D	E	FRACTURE INTENSITY	% VEIN QTZ.
0				0.00 - 14.32 CASING / OVERBURDEN							
				DHCS							
14.32				14.32 - 37.15 PUCK FRAGMENTAL							
				RHFG Common frag. unit similar to other RHFG's viewed in other Puck holes. 5×30 mm felsic domains surrounded by biotite + lesser chl'c partings. Localized mod → str Fe ox staining. Poor core recovery; broken core common.							
23											

RHFG

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PAGE 2 OF 16	PROJECT: Puck	HOLE NO. PK9715

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										

PAGE 3 OF 16 | PROJECT: Puck | HOLE NO. PK9715

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION (14.32 - 37.15 : RHFG cont.)	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
	RHFG										
37.15				37.15 - 37.78 QUARTZ VEIN							
37.46		QTVN	70°	QTVN Peachy/white colored qtz vn. (mod perv. Fe-ox) w/ biotitic + argillaceous stringers (2%) No sx mineralization. Brkn core common							
37.78			75°	→ 37.46 - 37.54 : ARTF-TUFFACEOUS ARG. Blk, f.g. tuffaceous arg. Intensely brkn core. Same as unit below							
38			80°								
39		ARTF									
40											
41											
42.00				37.78 - 42.00 TUFFACEOUS ARGILLITE ARTF Fine blk/dk gray, tuff arg w/ common 1x3mm felsic lapilli frags mod Fe-ox. Brkn core common. No vis sx's.							
				37.78 - 37.90 : STGG. FAULT GOUGE Pasty, black/rusty gouge → @ 75° cax.							
43											
44											
45		ARGI									
46											

Westmin Resources

PAGE 4 OF 16	PROJECT: Puck	HOLE NO. PK97 15

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										

PAGE 5 OF 16 | PROJECT: Puck | HOLE NO. PK 97 15

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
				42.00-47.85 SILICIFIED ARGILLITE							
47	ARSI			ARSI Similar to ARTF above but w/ ↑'d Si content; harder. Primarily brkn core; Fe-oxid brkn / shattered qtz veins common							
47.85											
48			35								
49											
	RHFS			47.85-51.20 MASSIVE RHYOLITE							
50			bc	RHFS (?) Very strongly Fe-oxid mass. aphyric rhy. Primarily brkn core. Difficult to determine other qualities or text's due to str. Fe staining.							
51				47.85-47.99: ST66- FAULT GOUGE							
51.20			70								
52	EXMT			Coarse/pebbly subang frags over a silty matrix. Same colour + lith. as above. (47.85-51.20)							
53			bc								
53.25											
54	RHFS										
54.60											
55			75	51.20-53.25 IRON FORMATION							
				EXMT V. weakly → non-magnetic Fe-form w/ 2-3% diss. f.g. red hematite. Str. Fe-oxid. Primarily brkn core. Localize he. bands (1cm thk) vis. He. bands consist of 20% f.g. he. (tr→10% mt)							
56											
57											
58	EXMT										
59											
60				53.25-54.60 MASSIVE RHYOLITE							
60.47				RHFS Same as above (47.85-51.20) str'ly Fe-oxid.							
61			80								
				54.60-60.47 IRON FORMATION							
62	RHFS			EXMT Dk forest green / Dk'ish grey wkly magnetic (rare-locally mass. str mt bands. 3% overall mt) Bands of red hematite visible throughout.							
63											
63.50			80								
64											
	EXMT		70								
65				60.47-63.50 MASSIVE RHYOLITE							
65.47				RHFS London fog grey mass. rhy w/ localized sections looking slightly tuffaceous. V. fine serific partings vis. Brkn core common. Mod'ly Fe-ox on brkn surfaces. Rare f.g. diss py.							
66	EXCP		70								
67.26											
68			75								
	EXMT			63.50-65.47 IRON FORMATION							
69				EXMT Same as above (51.20-53.25)							

Westmin Resources

PAGE 6 OF 16	PROJECT: Puck	HOLE NO. PK 9715

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
47						
48						
49						
50						
51						
52						
53						
54						
55		54.60	55.47		204219	
56		55.47	56.81		204220	
57		56.81	57.92		204221	
58		57.92	59.14		204222	
59		59.14	60.47		204223	
60		60.47	61.48		204224	
61		61.48	63.50		204225	
62						
63		63.50	65.47		204226	
64						
65		65.47	66.34		204227	
66		66.34	67.26		204228	
67		67.26	68.94		204229	
68		68.94	72.40		204230	
69						

PAGE 7 OF 16 | PROJECT: Puck | HOLE NO. PK9715

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
70	EXMT			65.47-67.26	CALCITE PYRITE EXHALITE							
				EXCP	Wkly effervescent calcite py exh w/ 6% med → coarse g'd diss py x-tals. Laminated beige/tan/gray textures. (carb's + Si). Localized fg 1% mt.							
71												
72 72.40												
73				67.26-72.40	IRON FORMATION							
				EXMT	Same as above (51.20-53.25)							
74												
				72.40-78.33	MASSIVE RHYOLITE							
75	RHFS		75	RHFS	London fog, aphyric to fg arry mass aphyric cherty rhyolite w/ 1-2% diss microlites + localized pinkish/mauvish hematite bands. Also tr. localized fine dk green chl. bands.							
76												
77												
78 78.33			75	78.33-84.43	CARBONACEOUS ARGILLITE.							
79	ARGIL			ARGIL	Very poor core recovery; few pebbles signify 10'. Black carbonaceous arg.							
80												
81 81.33					→ 81.33-84.43-ST66-FAULT GOUGE Black pasty gouge							
82												
83	ARGIL											
84 84.43				84.43-96.62	MASSIVE RHYOLITIC PEBBLES							
				RHFS	Name says it all. Very little recovery.							
85												
86												
87												
88												
89	RHFS											
90												
91												
92												

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PAGE 8 OF 16	PROJECT: Puck	HOLE NO. PK9715

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS			
70									
71									
72									
73									
74									
75									
76									
77									
78									
79									
80									
81									
82									
83									
84									
85									
86									
87									
88									
89									
90									
91									
92									

PAGE 7 OF 16 | PROJECT: Puck | HOLE NO. PK9715

(84.43-96.62 RHFS cont)

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EPI)	D (CARB)	E	FRACTURE INTENSITY	% VEIN QTZ.
96.62	STGG/ARGR			96.62-105.76 STGG - FAULT GOUGE (ARGR)							
				ARGR (Graphitic arg. fault gouge.							
				STGG							
105.76				105.76-109.50 FINE GRAINED TUFF							
		RHTT		RHTT Fg, gcay, finely laminated f.g. rhyolitic tuff w/ localized mass. chytic seams (cherty RHFS). Rare f.g. diss. py.							
109.50		ARSI		109.50-111.52 SILICEOUS ARGILLITE							
				ARSI Black ARSI w/ fine wispy/feathery sil bands 1% diss myx → f.g. py, + tr stringer sph. Primarily broken core							
111.52				111.52-115.00 FINE GRAINED TUFF							
				RHTT Same as above (105.76-109.50). Brkn core; v. poor recovery							

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PAGE 10 OF 16	PROJECT: Puck	HOLE NO. PK 9715

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
93										
94										
95										
96										
97										
98										
99										
100										
101										
102										
103										
104										
105										
106										
107										
108										
109										
110										
111										
112										
113										
114										
115										

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DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
				115.00-124.60 SILICEOUS ARGILLITE							
116				ARSI Black, hard sil argillite w/ patch mod perv chl. altn. broken core + flt gouge is common. 2-3% f.g. diss py + tr → rare sph stringers.							
117				→ 115.00 - 124.05: STRONG FAULT GOUGE							
118				Party, arg. gouge.							
119											
120											
121											
122											
123											
124 124.05											
124.60				124.60-128.85 CARBONATE EXHALITE							
125				EXCP Laminated modly effervescent carbonate exh w/ 3% f.g. diss py + 1% str. f.g. sph, as well as 1% f.g. banded mt. Laminated/ fragmented texture w/ 3x20mm si frags.							
126											
127											
128											
128.85				128.85-129.93 SILICA EXHALITE							
129				EXSP Similar laminated/fragmented text as EXCP above w/ dk gray/RCAF. green/beige colours. 2-3% fg → mass stringer py + 1% mass str sph. localized wkly efferv. carb. bands. (up to 3cm thk)							
129.93											
130											
131 131.33											
132											
133				129.93-131.33 FINE GRAINED TUFF							
134				RHTT Similar to RHTT unit above (105.76-109.50) w/ localized fairly mass sections appearing like RHFS. Tr mass. str. py. Serific partings common. Fld L.C. @ 80° c.a.							
135 135.40											
135.62											
136 136.33				131.33-139.29 TUFFACEOUS ARGILLITE							
137				ARTF Black f.g. arg. w/ fine wispy felsic tuffaceous frags. common. Wk → mod graphitic component. Rare f.g. diss py.							
138											

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PAGE 12 OF 16	PROJECT: Puck	HOLE NO. PK 97 15

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
116										
117										
118										
119										
120										
121										
122										
123		123.45	124.60		204231					
124		124.60	126.20		204232					
125										
126		126.20	127.42		204233					
127		127.42	128.80		204234					
128		128.80	129.93		204235					
129		129.93	131.33		204236					
130										
131										
132										
133										
134										
135										
136										
137										
138										

PAGE 13 OF 16 | PROJECT: Puck | HOLE NO. PK9715

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A (CHL)	B (SER)	C (EPI)	D (CARB)	E	FRACTURE INTENSITY	% VEIN QTZ.
				(131.33 - 136.25 - ARTF cont)							
			82	→ 131.46 - 131.80 : QTVN - QUARTZ VEIN							
139	ARTF			Sooty wh., coarse x-talline							
139.29			55	qtz vn w/ 1% f.g. py							
				+ rare argillaceous stringers.							
140				→ 135.10 - 135.62 : QTVN - QUARTZ VEIN							
				Bull wh., no mineral.							
141				→ 135.62 - 136.25 : ST66 - FAULT GOUGE							
				Black gouge, quite							
142				graphitic, 1% diss. f.g. py.							
				→ 136.25 - 139.29 : Lt. grey ~~tuffaceous~~							
143				argillite (greywacke) w/							
				tr qtz eyes vis. (1%							
144				f.g. blebby py).							
	ST GG										
145				139.29 - 148.65 FAULT GOUGE							
				ST66 DK black graphitic fltgouge							
146				grading to serically altd shy							
				lapilli-tuff fltgouge (greyish/green)							
147				in color @ 147.27. Variable clast							
				sized.							
148											
148.65			80								
				148.65 - 178.92 QUARTZ-EYE LAPILLI TUFF							
149				RPQL Variably sericitically altd ~~qtz~~-eye							
			84	bearing (rare 1x1mm x-tals) shy							
150				lapilli tuff. Tuffaceous frags very							
				from 1x5mm → 1x5cm. Tr. mass. str. py							
151				mod fol'd (mod. sheared?). Localized							
				↑d graphitic argillaceous component							
152				(graphitic partings). Localized rare							
				1 → 2 cm regular bullish qtz veins.							
153				// to layering.							
154											
155											
156											
157											
158			82								
159											
160											
161											

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PAGE 14 OF 16	PROJECT: Puck	HOLE NO. PK 9715

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
139										
140										
141		141.50	142.70		204237					
142		142.70	146.10		204238					
143										
144										
145										
146		146.10	148.50		204239					
147										
148		148.50	149.83		204240					
149		149.83	151.48		204241					
150										
151		151.48	153.50		204242					
152										
153		153.50	154.87		204243					
154		154.87	157.37		204244					
155										
156										
157		157.37	158.63		204245					
158		158.63	160.16		204246					
159										
160		160.16	161.63		204247					
161		161.63	163.05		204248					

PAGE 15 OF 16 | PROJECT: Puck | HOLE NO. PK 9715

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION (148.65 - - RPQL cont)	ALTERATION A (CHL)	B (SER)	C (EPI)	D (CARB)	E	FRACTURE INTENSITY	% VEIN QTZ.
162			35								
163											
164											
165											
166											
167											
168											
169											
170											
171											
172											
173											
174											
175											
176											
177											
178											
178.92											



The Puck is in the net.

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PAGE 16 OF 16	PROJECT: Puck	HOLE NO. PK97-5

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
162						
163		163.05	164.40		204249	
164		164.40	166.10		204250	
165						
166		166.10	167.43		204251	
167		167.43	168.67		204252	
168		168.67	170.19		204253	
169						
170		170.19	172.80		204254	
171						
172		172.80	173.70		204255	
173		173.70	175.35		204256	
174						
175		175.35	176.75		204257	
176		176.75	178.92		204258	
177						
178						

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DRILL LOG

PROJECT: Puck	GROUND ELEV.: 1400m
HOLE NO.: PK 97-16	BEARING: 233° (G.S.)
LOCATION: 6000 N, 5180 E	DIP: -70°
	TOTAL LENGTH: 210.00m
LOGGED BY: M. Padberg	HORIZONTAL PROJECT
DATE: Aug. 24/97	VERTICAL PROJECT
CONTRACTOR: Boisvenu Diamond Drilling	
CORE SIZE: NQ. II	
DATE STARTED: August 18	
DATE COMPLETED: August 19	
DIP TESTS: Sperry Sun — 210.0m ⇒ -63.5 ⇒ True 231°, Grid 268°	

ALTERATION SCALE



absent
slight
moderate
intense

TOTAL SULPHIDE SCALE



traces only
< 1%
1% – 3%
3% – 10%
> 10%

COMMENTS

Very interesting mineralization and alteration near the proposed Wolverine / Sable horizon.

LEGEND

- AR
- ARQE
- RHFS
- QFPH
- EXSP
- EXMT
- EXCP
- STGG / STBX
- QTVN
- RHLT
- RPQL

PAGE 1 OF 17 | PROJECT: Puck | HOLE NO. PK9716

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
				0.00 - 8.23 CASING							
	DHCS			DHCS							
8.23				8.23 - 35.50 OVERBURDEN							
	DDH			Andesitic boulders + gravels.							
35.50				35.50 - 48.46 MASSIVE ARGILLITE							
	ARMS			ARMS Jet blk mass. ara w/ 1-2% v.f.g. pyric stringers + pyric laminae. Primarily brkn core +/or rubble. mod Fe-ox staining on fractured surfaces							
46											

Westmin Resources

PAGE 2 OF 17	PROJECT: Puck	HOLE NO. PK 97-16

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES			SAMPLE NUMBER	ASSAYS				
		FROM	TO	WIDTH						
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
34										
35										
36										
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										

PAGE 3 OF 17 | PROJECT: Puck | HOLE NO. PK97-16

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION (35.50 - 48.46: ARMS - cont'd)	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
47	ARMS										
48 / 48.46			bc	48.46-60.65 LOST CORE							
49	DHLC			DHLC 40' of missing core (no recovery) from 159' - 199'							
50											
51											
52											
53											
54											
55											
56											
57											
58											
59											
60 / 60.65				60.65-67.10 MASSIVE RHYOLITE							
61	RHFS			RHFS Fog gray mass. aphyric rhy w/ tr mass. blebby py along fract. planes. WK perv. chl alt'n tht as seen by greenish hue weathering out of fract'd surfaces							
62											
63											
64											
65											
66			bc								
67 / 67.10				67.10-73.20 SILICEOUS ARGILLITE							
68	ARSI			ARSI Black arg w/ faint wispy dk gray siliceous stringers tht. Primarily broken core. Tr. mass blebby py along fract. planes							
69											

Westmin Resources

PAGE 4 OF 17	PROJECT: Puck	HOLE NO. PK97-16

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS				
47										
48										
49										
50										
51										
52										
53										
54										
55										
56										
57										
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59										
60										
61										
62										
63										
64										
65										
66										
67										
68										
69										

PAGE 5 OF 17 | PROJECT: Puck | HOLE NO. Pk 97-16

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION (67.10 - 73.20 - ARSI - cont)	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
				Odd L.C. w/ EXSP. The last piece of ARSI rubble is at the end of box 3, the first piece of EXSP is at the beginning of box 4. The two don't appear to conform.							
73-73.20	ARSI		?								
	EXSP		70	73.20-77.82. EXSP (RHFS?) SILICA EXHALITE Greenish gray/blk/wh rhythmic layered Si exh w/ fine wh. diss. micro-lites + 1% f.g. diss py as well as tr f.g. tiss sph + sphic stringers. Very well bedded, v. siliceous + gradational L.C. to EXMT.							
77.82			65	77.82-78.80 EXMT MAGNETIC IRON FORMATION Laminated fog gray + blk Siliceous Fe form w/ up to 20% mt, tr. sph + tr->1% py Rhythmic fine laminae; gradational U+L ctcs.							
78.80	EXMT										
79.79	EXSP		65	78.80-79.79 EXSP SILICA EXHALITE Same as above (73.20-77.82)							
81.44	EXCP		78	79.79-81.44 EXCP CARBONATE EXHALITE Blk w/ fine wh. calcareous stringers; modly efferv. w/ 10% HCl tht Tr f.g. blebby py. Appears argillaceous v. finely mottled w/ faint wh. calcite.							
84.93			70								
84.95											
88.93	EXSP		72	81.44-88.93 EXSP SILICA EXHALITE V. dk gray Si exh w/ mod arg component (wispy/feathery arg stringers) + 1% f.g. stringer py + tr mass faint fine sphic bands. Brkn core common.							
90.13			70	→ 84.90-84.95: EXCP Same as above (79.74-81.44)							
91.10	EXCP		65	→ 87.25-87.50: EXCP Same as above (79.74-81.44)							
91.77			65								

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PAGE 6 OF 17	PROJECT: Puck	HOLE NO. Pk 97.16

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
70						
71						
72						
73		73.20	74.56	1.36	204811	
74		74.56	75.28	0.72	204812	
75		75.28	76.64	1.36	204813	
76		76.64	77.82	1.18	204814	
77		77.82	78.80	0.98	204815	
78		78.80	79.79	0.99	204816	
79		79.79	81.44	1.65	204817	
80						
81		81.44	82.40	0.96	204818	
82		82.40	84.00	1.60	204819	
83						
84		84.00	85.50	1.50	204820	
85		85.50	86.88	1.38	204821	
86		86.88	87.17	0.29	204822	
87		87.17	88.08	0.91	204823	
88		88.08	88.93	0.85	204824	
89		88.93	90.13	1.20	204825	
90		90.13	90.48	0.35	204826	
		90.48	91.10	0.62	204827	
91		91.10	91.77	0.67	204828	
92		91.77	91.92	0.15	204829	

PAGE 7 OF 17 | PROJECT: Puck | HOLE NO. PK 9716

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
				88.93-91.10	CALCITE PYRITE EXHALITE							
93 92.93 93.33	EXSP			EXCP	mottled sky blue common calc exh. Strly efferv. w/ 10% py, 1% fg→mass banded py, tr. ρθ + tr f.g. stringer sph							
94			B		→90.13-90.48: EXSP same as above (81.44-88.93)							
95 95.22			70									
95.68	EXMT			95.22-95.68	MAGNETIC IRON FORMATION							
96	EXSP		70	EXMT	Purplish/blk mt Fe form w/ up to 15% mt. Localized wkly efferv. calc. bands. V. faint frag appearance							
97 97.07			6	91.10-95.22	SILICA EXHALITE							
98				EXSP	Well banded lt gray Si exh w/ f.g. rhythmic anastomizing py/c (1-2%) + sph/c (tr) bands. Sim to EXSP above @ 73.20-77.82.							
99					→91.77-91.92: EXCP mottled wk cal v. str. efferv.							
100					→92.93-93.33: Dk gray w/ 1-2% f.g. diss mt + wispy feathery calc. frags.							
101 101.08			6									
102			2									
102.69		BX	2	95.68-97.07	SILICA EXHALITE							
103 103.30		BX	50 40	EXSP	V. sim. to mt bearing (1-2%) EXSP of 92.93-93.33. 1% py tr sph							
104				97.07-102.69	SILICEOUS ARGILLITE							
105	EXCM			ARSI (?)	Dk gray/black Si eous arg. w/ faint wispy siliceous frags having a pres arg component wkly efferv. Fe-carb microlites vis tex. Localized stylolitic texts vis. Flt gouge + assoc'd lox from 101.03→103.30							
106					→101.03-102.50: ST66-FAULT GOUGE Dk gray granular flt gouge							
107					→102.50-103.30: STBX-FAULT BRECCIA Angular 1cm³ clasts grading from ARSI→EXCM							
108 108.82			70									
109 109.25	EXSP		85									
110												
111	ARSI											
112 112.47												
113	ARGR/ST66											
114												
115												

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PAGE 3 OF 17	PROJECT: Puck	HOLE NO. PK 97 16

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS			
		91.92	93.33	1.41	204830				
93									
		93.33	94.36	1.03	204831				
94									
		94.36	95.22	0.86	204832				
95									
		95.22	95.68	0.46	204833				
96		95.68	97.07	1.39	204834				
97		97.07	98.20	1.13	204835				
98		98.20	99.80	1.60	204836				
99									
		99.80	101.03	1.23	204837				
100									
101		101.03	102.50	1.47	204838				
102									
		102.50	103.30	0.80	204839				
103									
		103.30	104.70	1.40	204840				
104									
		104.70	105.98	1.28	204841				
105									
		105.98	107.20	1.22	204842				
106									
107		107.20	108.82	1.62	204843				
108									
		108.82	109.25	0.43	204844				
109									
		109.25	110.31	1.06	204845				
110									
		110.31	112.49	2.18	204846				
111									
112									
		112.49	113.70	1.21	204847				
113									
		113.70	115.31	1.61	204848				
114									
115		115.31	116.42	1.11	204849				

PAGE 7 OF 17 | PROJECT: Tuck | HOLE NO. PK97-16

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE		GEOLOGICAL DESCRIPTION	ALTERATION A	ALTERATION B	ALTERATION C	ALTERATION D	ALTERATION E	FRACTURE INTENSITY	% VEIN QTZ.
115.31				102.69-108.82	CALCITE MAGNETITE EXHALITE							
115.65	RM			EXCM	Brown, beige + cream laminated							
116		ARGR/ST66			calc/mt exh w/ 2-3% f.g.							
117					mass fine (1-2mm) pyic bands,							
117.90					3% f.g. diss. mt, tr→1%							
118					mass stringer sph, + localized							
119					tr pp. wk perv. chl. alt'n							
120					as seen by forest green fract.							
					staing.							
				108.82-109.25	SILICA EXHALITE							
121		RHFS		EXSP	Same as above (95.68-97.07)							
122				109.25-112.47	SILICEOUS ARGILLITE							
122.71				ARSI	lt. blk siliceous arg. w/							
123					faint feathery siliceous							
123.45					bands tht 1-2% v.f.g.							
123.87	RHFARGR1				stringer + laminated py + tr							
124					→1% f.g. stringer red sph.							
124.65	QTVN											
125				112.47-115.31	GRAPHITIC ARGILLICEOUS FAULT GOUGE							
126				ARGR/ST66	Shiny jet black graphitic gouge,							
127					well consolidated w/ 3%							
					v.f.g. laminated + stringer py							
128					+ tr→1% f.g. stringer sph							
					str. deformation							
129				115.31-115.65	FINE GRAINED TUFF / FIT GOUGE							
130				RHTT/ST66	str perv. chl alt'd f.g. rhyic							
					tuff w/ tr. f.g. diss py.							
131					Dk green colour. Continued v.							
					str. deformation. V. friable							
132				115.65-117.90	GRAPHITIC ARGILLICEOUS FAULT GOUGE							
				ARGR/ST66	Same as above (112.47-115.31)							
133					w/ 15-25% banded cal. Strike effrm							
133.25					Sharp L.C @ 80° ca							
133.47												
134				117.90-122.71	MASSIVE RHYOLITE							
135		RHTT		RHFS	Fog gray mass rhy w/ wk							
					perv chl + mod perv. ser. alt'n.							
135.90					Rhythmic ser. partgs common							
136					every 7-10mm. Fine wh. micro-likes							
137		RHLT			common.							
138												

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PAGE 10 OF 17	PROJECT: Puck	HOLE NO. PK9716

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
116						
		116.42	117.90	1.48	204850	
117						
118		117.90	119.30	1.40	204851	
119		119.30	121.64	2.34	204852	
120						
121						
		121.64	122.71	1.07	204853	
122						
		122.71	123.45	0.74	204854	
123						
		123.45	124.65	1.20	204855	
124						
		124.65	126.22	1.57	204856	
125						
126		126.22	127.70	1.48	204857	
127						
		127.70	129.60	1.90	204858	
128						
129						
		129.60	131.25	1.65	204859	
130						
131		131.25	131.47	0.22	204860	
132		131.47	133.37	1.90	204861	
133		133.37	134.40	1.03	204862	
134		134.40	135.90	1.50	204863	
135						
		135.90	137.24	1.34	204864	
136						
137		137.24	138.67	1.43	204865	
138						

PAGE 5 OF 17 | PROJECT: Duck | HOLE NO. PK9716

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
	RHLT			122.71-123.45 MASSIVE ARGILLITE							
139				ARMS Jet blk mass. arg w/ fr mass py ic stringers. Silky core.							
140			75	123.45-123.87 FRAGMENTAL RHYOLITE							
141.18				RHFR Dk gray aphanitic felsic (rhy) frags							
	RPQL		70	surrounded by fine arg partings.							
142				1x4 cm avg frag size. 2-3%							
				f.g. blebby py.							
143				123.87-124.65 QUARTZ VEIN							
144.16				QTVN Bullish wh. qtz vein w/ f.t'd							
144.46				L.C. @ 70° cax.							
	ARGL		75								
145.75				124.65-131.25 GRAPHITIC ARGILLICEOUS FAULT GOUGE							
146.0	RPQL		70	ARGR/STGO Same as above (112.47-115.31)							
146.57				w/ perv. ser alt'n + sericic bands							
146.7	ARGL		75	2-3% py, 2% po, 1% cpy, 2%							
			70	sph tht. (8-10% sx total)							
148			75	mass sx frags v/s near 125.50m.							
149				131.25-131.47 QUARTZ VEIN							
150				QTVN milky wh. qtz vn w/ 5-8%							
151				mass buttery cpy blebs +							
151.65				2-3% po in fract. fill.							
	Q=PH			138.47-135.90 FINE GRAINED TUFF							
152			75	RHTT Dk green perv. chl alt'd f.g.							
153				phyic tuff w/ localized qtz							
154				flooding + 8% stringer sx's							
154.1				(2% ea. py, cpy, sph, po). F/t'd							
				L.C @ 55° cax							
155				135.90-141.18 LAPILLI TUFF							
156				RHLT mod perv apple green ser/c							
			70	alt'n in locally qtz flooded							
157				phyic lapilli tuff. 5% f.g.							
				banded sph (locally higher							
158				concentrations from ~138.50-139.50)							
				+ 5-7% f.g. banded py assoc'd w/							
159				sph band'g. Possible correlation to							
				SSMS of WV97106.							
160	RPQL			141.18-144.46 QUARTZ-EYE TUFF							
				RPQL mod perv chl/ser alt'd blue							
161				qtz-eye bearing f.g. phyic tuff							

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PAGE 12 OF 17	PROJECT: Buck	HOLE NO. BK9716

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
		138.67	139.40	0.73	204866	
139						
		139.40	141.18	1.78	204867	
140						
141		141.18	142.35	1.17	204868	
142		142.35	143.53	1.18	204869	
143						
		143.53	144.46	0.93	204870	
144						
		144.46	145.75	1.29	204871	
145						
		145.75	146.57	0.82	204872	
146						
		146.57	147.22	0.65	204873	
147						
		147.22	148.70	1.48	204874	
148						
		148.70	150.08	1.38	204875	
149						
150		150.08	151.65	1.57	204876	
151						
		151.65	153.37	1.72	204877	
152						
153		153.37	155.14	1.77	204878	
154						
155		155.14	156.88	1.74	204879	
156						
		156.88	158.35	1.47	204880	
157						
158		158.35	159.77	1.42	204881	
159						
		159.77	161.23	1.46	204882	
160						
161		161.23	162.48	1.25	204883	

PAGE 2 OF 17 | PROJECT: Puck | HOLE NO. PK9716

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
				(141.18 - 144.46 RPQL cont)							
				+ tr → 1% f.g. diss py + pyritic bands							
162				Localized tr. lapilli frags vis							
163				144.46-145.75 QUARTZ-EYE BEARING ARGILLITE							
				ARQE Blue qtz-eye bearing tuffaceous							
164			70	arg dk gray/blackish in colour.							
				w/ tr → 1% f.g. diss py							
165				145.75-146.57 QUARTZ-EYE TUFF							
				RPQL Same as above (141.18-144.46)							
166											
				146.57-147.17 TUFFACEOUS ARGILLITE							
167				ARTF Blk tuffaceous arg sim. to ARQE							
				above minus blue qtz-eyes. 1-2%							
168				f.g. stringer py.							
169				147.17-151.65 QUARTZ-FELDSPAR PORPHORY							
				QFPH Dk gray feldspar porph +/- qtz,							
170				rare blue qtz-eyes vis. wk perv							
				ser alt'n + 1% f.g. stringer py							
171			75	Fsp's vary in size from <1mm² →							
				>1cm².							
172											
				151.65-179.09 QUARTZ-EYE BEARING TUFF							
173				RPQL Quartz-eye bearing lapilli tuff							
				sim. to that of FW WV97106.							
174				1% f.g diss py wk perv ser alth							
				Localized wk+ blk fsp's vis this							
175				Fairly consistent unit.							
176											
177											
178											
179	179.09		75	179.09-190.09 LAPILLI TUFF							
				RHLT Dk gray strly fol'd shy lapilli							
180			75	tuff w/ occ felsic frags							
				1x5mm in size. Tr → 1% f.g.							
181				py'ic laminae this localized							
				py'ic knockers 2cm² vis							
182											
183											
184											

RPQL

RPQL

RHLT

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PAGE 14 OF 17	PROJECT: Puck	HOLE NO. PK9716

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
162						
		162.48	163.87	1.39	204884	
163						
		163.87	165.45	1.58	204885	
164						
165		165.45	166.87	1.42	204886	
166						
		166.87	168.24	1.37	204887	
167						
		168.24	169.65	1.41	204888	
168						
169						
		169.65	170.99	1.34	204889	
170						
171		170.99	172.50	1.51	204890	
172						
		172.50	173.85	1.35	204891	
173						
		173.85	175.32	1.47	204892	
174						
175		175.32	176.56	1.27	204893	
176						
		176.56	177.83	1.24	204894	
177						
		177.83	179.09	1.26	204895	
178						
179		179.09	180.25	1.16	204896	
180		180.25	181.93	1.68	204897	
181						
		181.93	183.13	1.20	204898	
182						
183		183.13	184.30	1.17	204899	
184		184.30	185.62	1.32	204900	

PAGE 15 OF 17 | PROJECT: Puck | HOLE NO. PK9716

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION A CHL	B SER	C EPI	D CARB	E	FRACTURE INTENSITY	% VEIN QTZ.
				179.09-190.09 - RHLT (cont)							
185		RHLT	70°								
186											
187											
188											
189											
190			75°	190.09-199.64 QFPH: QUARTZ FELDSPAR PORPHYRY greenish/beige QFP w/ 3mm² fspr & blue qtz-eye x-tals V. common. Beige rhythmic ser'n partly tht. wk perv. ser alt'n. Tr → 1% fg. → mass blebby py diss tht. Str foln continues							
191											
192											
193											
194											
195		QFPH									
196			70°								
197											
198											
199											
199.64				199.64-210.09 ARWK: "WACKE" ARGILLITE Blk ags w/ alt gray silty granular texture tht Various x-cutting cords veinlets common Str. foln in fabric ends near 204m.							
200		ARWK									
201											
202											
203											
204			80°								
205											
206											
207											

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PAGE 16 OF 17	PROJECT: Puck	HOLE NO. PK97 16

MINERALIZATION DESCRIPTION	TOTAL SULPHIDES	SAMPLES FROM	SAMPLES TO	SAMPLES WIDTH	SAMPLE NUMBER	ASSAYS
185						
		185.62	187.32	1.70	204926	
186						
187						
		187.32	188.67	1.35	204927	
188						
		188.67	190.09	1.42	204928	
189						
190		190.09	191.61	1.52	204929	
191						
		191.61	192.89	1.28	204930	
192						
		192.89	194.29	1.40	204931	
193						
194		194.29	195.36	1.07	204932	
195						
		195.36	196.95	1.59	204933	
196						
		196.95	198.10	1.15	204934	
197						
198		198.10	199.64	1.54	204935	
199						
200						
201						
202						
203						
204						
205						
206						
207						

PAGE 17 OF 17 | PROJECT: Puck | HOLE NO. PK9716

DEPTH (m)	% CORE REC	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION (199.64-210.00 · ARWK (cont))	ALTERATION A CHL	B SER	C EPI	D CARB.	E	FRACTURE INTENSITY	% VEIN QTZ.
208	ARWK										
209											
210				210.00 · EOH.							

1997 SUMMARY REPORT

GROUND GEOPHYSICAL AND GEOCHEMICAL,

AND DIAMOND DRILL PROGRAMS CONDUCTED ON THE

PUCK 1-80 AND CUP 1-24 CLAIMS

FINLAYSON LAKE AREA, YUKON TERRITORY

093790

YB55979-YB56058 AND YB87695 – YB87719
NTS 105 G/8
Latitude 61 23'N, Longitude 130 03'W
WATSON LAKE MINING DISTRICT

VOLUME 2

prepared for

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by

Andrew J. Turner
and
David A. Terry

March 17, 1998

4300.0 4400.0 4500.0 4600.0

1300.0 1300.0

1200.0 1200.0

1100.0 1100.0

1000.0 1000.0

PK97-12

DHCS 0. 0.

ADMS 0. 0.

ADMS 0. 0.

ADMS 0. 0.

ADMS 0. 0.

ADMS 0. 0.

RHFG 1. 0.

RHFG 1. 0.

RHFS 1. 0.

EXSP 5. 7.

ARGR 1. 0.

RHAT 1. 0.

FSPH 1. 0.

RPAT 1. 0.

RPAT 0. 0.

RPAT 0. 0.

ARGR 0. 0.

ADMS 0. 0.

Andesite

Aphyric Rhyolite

Exhalite (?)

Wolverine Horizon

QFP

Argillite

093790

PROFESSIONAL GEOLOGIST OF ALBERTA
ANDREW J. TURNER

LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — geology code, sulfides (%), magnetite (%)

assay interval — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

WESTMIN

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Expatriate Resources Limited

OFFICE	DEPARTMENT

PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L700N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	#10 v.2

YUKON - YUKON REGION, LIBRARY

4600.0 4700.0 4800.0 4900.0

1400.0 1400.0

1300.0 1300.0

PK97-11

DHCS

ADMS 0. 0.

ADMS 0. 0.

204034. 3. 0. 90. 1. 66. 260.

204035. 3. 0. 136. 1. 44. 620.

204036. 3. 0. 11. 1. 14. 380.

204037. 3. 0. 69. 4. 78. 2580.

204038. 3. 0. 68. 2. 36. 1410.

RHTT 0. 0.

ADMS 0. 0.

RHFO 0. 0.

RHFS 3. 0.

EXCP 5. 5.

ARGS 1. 0.

FDPH 0. 0.

RPAT 2. 0.

RPAT 2. 0.

ARGS 2. 0.

Andesite

(Chert)

Andesite

Aphyric Rhyolite

Carbonate-Pyrite Exhalite

Wolverine Horizon

QFP

Argillite

1200.0 1200.0

1100.0 1100.0

4600.0 4700.0 4800.0 4900.0

093790

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LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — assay interval

geology code, sulfides (%), magnetite (%) — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

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OFFICE	DEPARTMENT

PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L1400N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	#11-Y-2

DIAND - YUKON REGION, LIBRARY

PK96-04

Andesite

Aphyric Rhyolite

Carbonate (+Barite) Exhalite
(Wolverine Horizon ?)

Rhyolitic Quart-eye Lapilli Tuff

Argillite

QFP

Argillite

093790

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ANDREW J. TURNER

LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — assay interval

geology code, sulfides (%), magnetite (%) — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

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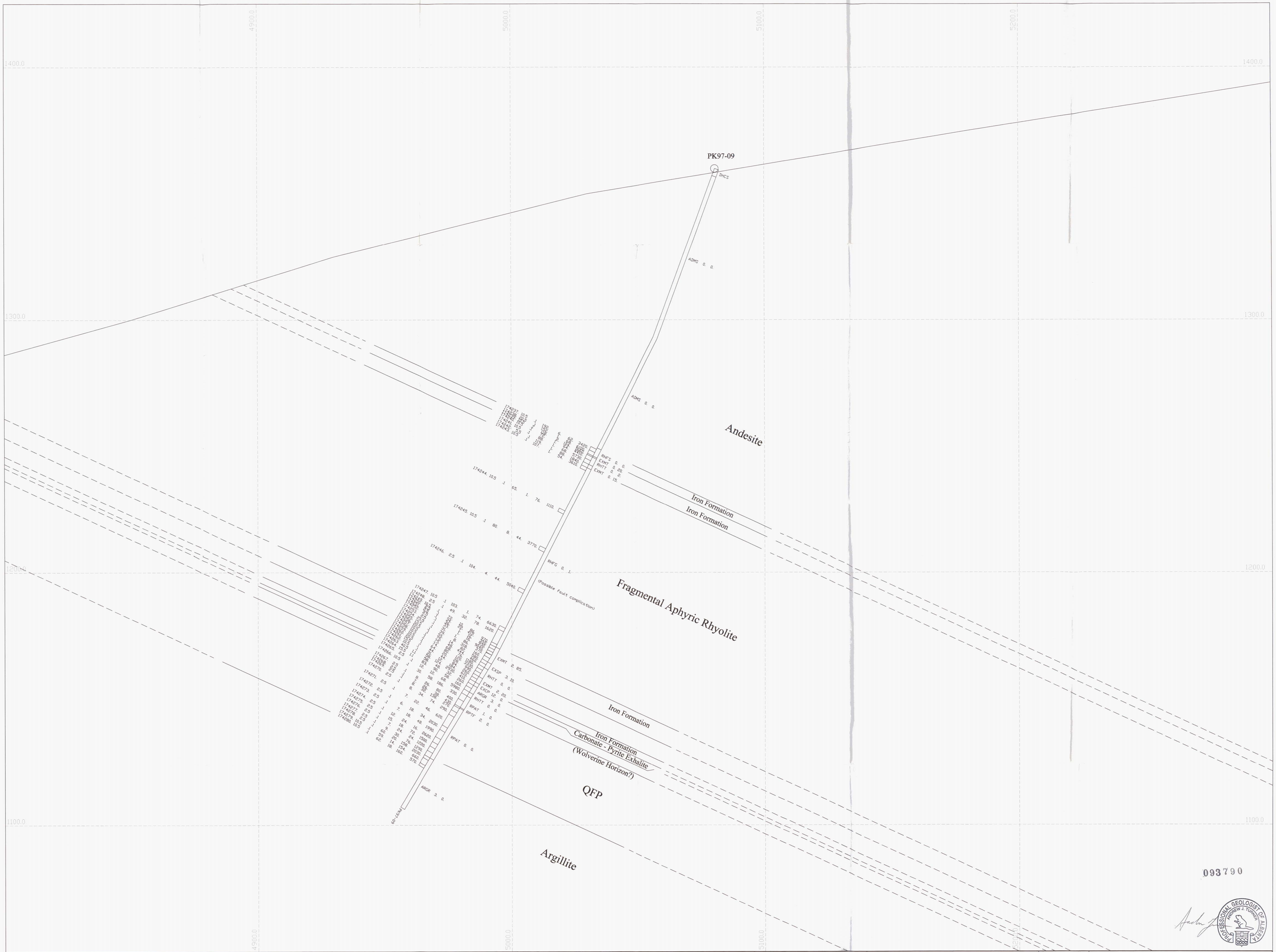
OFFICE	DEPARTMENT

PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L1800N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	#12 V.2

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ANDREW J. TURNER

LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — assay interval

geology code, sulfides (%), magnetite (%) — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

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PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L2100N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	#13 V.2

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4900.0 5000.0 5100.0 5200.0

1400.0

1300.0

1200.0

1100.0

PK96-03

Andesite

Fragmental Aphyric Rhyolite

Iron Formation

Iron Formation

Carbonate-Pyrite Exhalite

(Wolverine Horizon)

QFP

Argillite

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LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — geology code, sulfides (%), magnetite (%)

assay interval — geological interval

(No Sulfide or Magnetite data on this section)

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

WESTMIN

Westmin Resources Limited
ATNA Resources Limited
Expatriate Resources Limited

OFFICE	DEPARTMENT

PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L2400N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	#14 v.2

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5000.0 5100.0 5200.0 5300.0

1400.0

1300.0

1200.0

1100.0

PK97-08

Andesite

Fragmental Aphyric Rhyolite

(weak) Iron Formation

Aphyric Rhyolite

Pyritic Iron Formation

Iron Formation

Carbonate (+silica) Exhalites

Argillite
(Wolverine Horizon)

QFP

093790

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ANDREW J. TURNER

LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — assay interval

geology code, sulfides (%), magnetite (%) — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

WESTMIN

Westmin Resources Limited
ATNA Resources Limited
Expatriate Resources Limited

OFFICE	DEPARTMENT

PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L2800N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	#4 V.2

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PK96-02

PK97-14

Andesite

Fragmental Aphyric Rhyolite

Iron Formation

Iron Formation

Carbonate - Pyrite Exhalites

(Wolverine Horizon)

QFP

Argillite

5100.0

5200.0

5300.0

5400.0

1300.0

1200.0

1100.0

093.50

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LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — geology code, sulfides (%), magnetite (%)

assay interval — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

WESTMIN

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PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L3100N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	HS v2

DIAND - YUKON REGION LIBRARY

5100.0 5200.0 5300.0 5400.0

1300.0 1300.0

1200.0 1200.0

1100.0 1100.0

PK97-07

DHCS

ADMS 0. 0.
ADTT 0. 0.
ADMS 0. 0.
ADTT 0. 0.
ADMS 0. 0.
ADTT 0. 0.
ADMS 0. 0.
ADTT 0. 0.
ADMS 0. 0.

RHFR 0. 0.
GTVN 0. 0.
RHFG 0. 0.

Andesite

Fragmental Aphyric Rhyolite

ARTF 5. 0.
RHFS 2. 0.
EXHT 3. 10.
RHLT 0. 0.
EXSP 5. 5.
RHTT 0. 0.
RHAT 2. 0.
EXHT 2. 20.
RHAR 3. 1.
EXCP 7. 1.
ARTF 4. 0.
RHLT 1. 0.
RPTF 2. 0.
RHLT 0. 0.
RHTT 1. 0.
ARGR 3. 0.

Iron Formation
Iron Formation
(weak) Iron Formation
Iron Formation
Carbonate Exhalite
(Wolverine Horizon)

QFP

Argillite

093790

PROFESSIONAL GEOLOGIST OF ALBERTA
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LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — assay interval

geology code, sulfides (%), magnetite (%) — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

WESTMIN

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ATNA Resources Limited
Expatriate Resources Limited

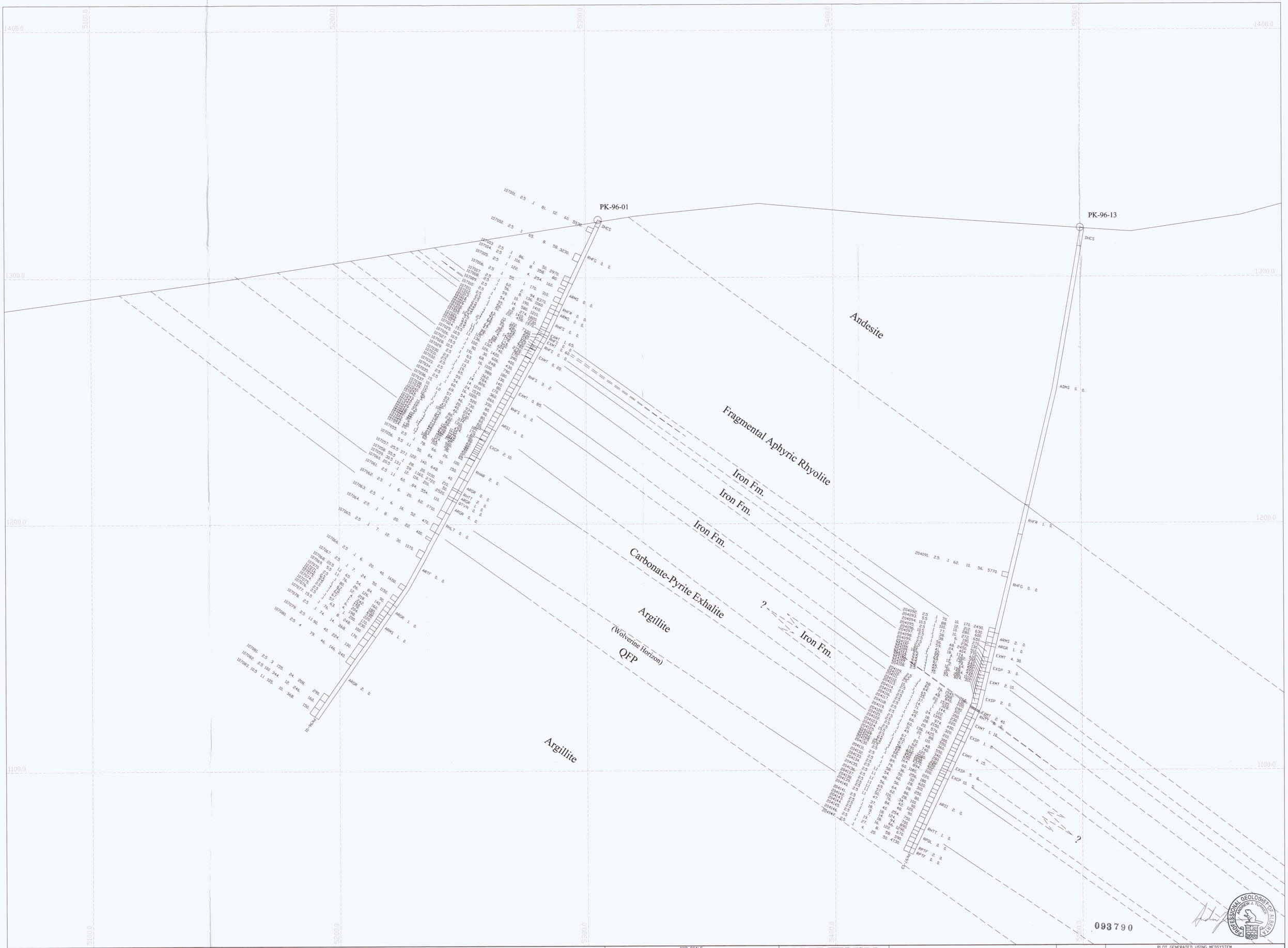
OFFICE	DEPARTMENT

PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L3400N (view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	#10 V.2

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LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — assay interval

geology code, sulfides (%), magnetite (%) — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

WESTMIN

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ATNA Resources Limited
Expatriate Resources Limited

OFFICE	DEPARTMENT

PLOT GENERATED USING MEDSYSTEM

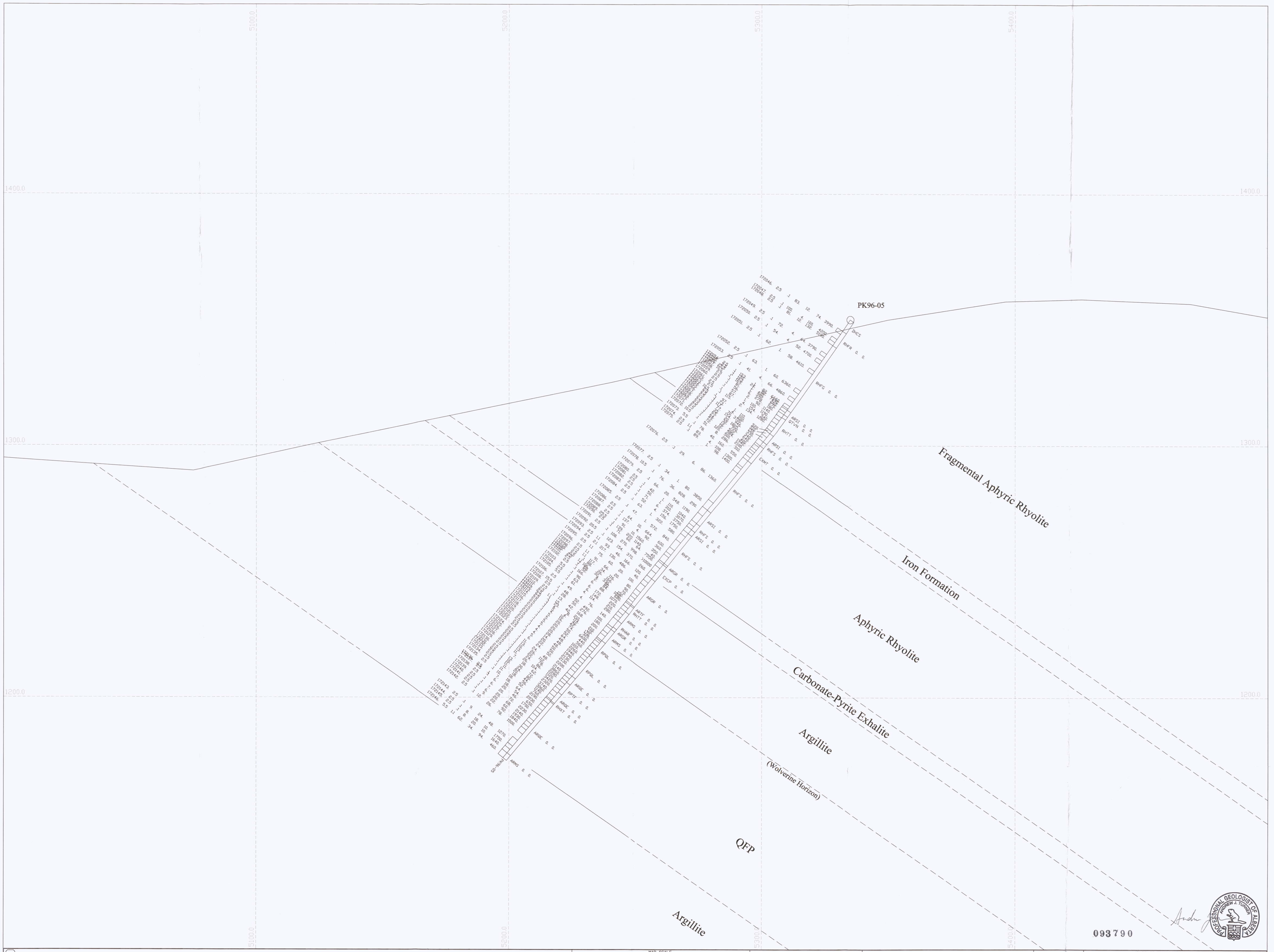
PUCK Cross-Section 3700N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-03-97	1:500.M	#7 Vol.2

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LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — assay interval

geology code, sulfides (%), magnetite (%) — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

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PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L4300N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	#8 v.2

YUKON - YUKON REGION, LIBRARY

5100.0 5200.0 5300.0 5400.0

1400.0

PK97-15

Fragmental Aphyric Rhyolite

Argillite

Iron Formations

Argillite and Aphyric Rhyolite

Carbonate-Pyrite Exhalite

Argillite

(Wolverine Horizon)

QFP

1300.0

1200.0

093790

LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — geology code, sulfides (%), magnetite (%)

assay interval — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

WESTMIN

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Expatriate Resources Limited

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PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L4900N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	#9 v.2

DIAND - YUKON REGION, LIBRARY

5100.0 5200.0 5300.0 5400.0

1400.0 1400.0

1300.0 1300.0

1200.0 1200.0

PK96-06

Aphyric Rhyolite

Iron Formation

Argillite and Rhyolite

Carbonate-Pyrite-Exhalite

Argillite

(Wolverine Horizon)

QFP

093/90

LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — geology code, sulfides (%), magnetite (%)

assay interval — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

WESTMIN

Westmin Resources Limited
ATNA Resources Limited
Expatriate Resources Limited

OFFICE	DEPARTMENT

PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L5300N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	#1 VOL.2

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PK97-10

Argillite and Andesite

Iron Formation

Fragmental Aphyric Rhyolite

Argillite and Rhyolite

Iron Formation

Iron Formation

Argillite and Rhyolite

(weak) Iron Formation

Carbonate-Pyrite Exhalite

Argillite

(Wolverine Horizon)

QFP

093790

5200.0 5300.0 5400.0 5500.0

1400.0 1300.0 1200.0

LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — assay interval

geology code, sulfides (%), magnetite (%) — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

WESTMIN

Westmin Resources Limited
ATNA Resources Limited
Expatriate Resources Limited

OFFICE	DEPARTMENT

PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L5700N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	#2 Y.2

YUKON - YUKON REGION, LIBRARY

5400.0
5100.0
5200.0
5300.0
1400.0
1300.0
1200.0

PK97-16

(Argillite and minor Aphyric Rhyolite)

(weak) Iron Formations

Carb.-Py-Mt-Sil Exhalites

(Wolverine Horizon)

QFP

Argillite

093790

LEGEND

Drill Hole Trace

sample, Au (ppb), Ag (ppm), Cu (ppm), Pb (ppm), Zn (ppm), Ba (ppm) — assay interval

geology code, sulfides (%), magnetite (%) — geological interval

MAP SCALE

SCALE 1:500.

0 5 10 15 20 25 30 35 40 45 50

WESTMIN

Westmin Resources Limited
ATNA Resources Limited
Expatriate Resources Limited

OFFICE	DEPARTMENT

PLOT GENERATED USING MEDSYSTEM

PUCK Cross-Section L6000N
(view to the north)

DATE	SCALE	DRAWING NUMBER
12-05-97	1:500.M	#3 V.2

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1996 AND 1997 DIAMOND DRILL HOLE SUMMARIES

PK96-01, L3700N/5305E, -65/270, 232.3m

- Drilled to test the best geophysical anomaly that most closely resembled the Wolverine with a strong magnetic response (well developed Fe. Fm.) with a strong conductor as interpreted by John Boniwell. Soil Geochemistry reported in the 1995 ACA report (Wengzynowski, 1996) showed no obvious anomalies. Very little mapping or prospecting had been undertaken to date.

- Intersected "Wolverine Stratigraphy". No significant mineralization was encountered. Numerous sphalerite stringers were observed in the exhalative zone around the Fe. Fm.s and EXCP. The best mineralization encountered was a small 2x3cm chunk of semi-massive sphalerite and galena in gouged graphitic argillite at the approximate location of the "Wolverine Horizon". The wolverine horizon is marked in this hole by a transition upward from sericite (+/-chlorite) altered quartz and/or feldspar-phyric Rhyolitic xl and lapilli tuffs to aphyric Rhyolite interbedded with Argillite and exhalative Mt and Ca/Py. Conductors indicated by the ground EM survey were most likely graphitic argillites.

PK96-02, L3100N/5225E, -65/270, 218.9m

- Drilled as a long (600m) step-out to the southeast of hole 1 in order to test another example of the "Wolverine-type" geophysical anomaly. The area has not been previously mapped or soils sampled.

- Intersected "Wolverine Stratigraphy". No significant mineralization was encountered. The Geophysical anomaly was explained by graphitic argillites. An interesting Carbonate-Pyrite Exhalite unit was intersected in the hangingwall which contained semi-massive py (up to 50%), unfortunately no base metals were observed. However, numerous sphalerite stringers were observed in exhalative zone around Fe. Fm.s and other EXCP's. The "Wolverine Horizon" was marked by a transition from sericitic quartz-phyric Rhyolitic tuffs to aphyric Rhyolites and Argillites.

PK96-03, L2400N/5080E, -65/270, 186.8m

- Drilled as a long (700m) step-out further to the southeast from hole 1 in order to test another example of the "Wolverine-type" geophysical anomaly and to follow-up on the interesting EXCP in hole 2. The area had not been previously mapped or soil sampled.

- Intersected "Wolverine Stratigraphy", however, trend now shows a thinning of the package (top of Fe.Fm. to wolverine horizon) to the Southeast. No significant mineralization was encountered (very few sph stringers). Geophysical anomaly was explained by graphitic argillites. An interesting Carbonate-Pyrite Exhalite was again encountered in the hangingwall with semi-massive py (up to 50%), and as with hole 2 no base metals were observed. The wolverine horizon was again marked by a transition from sericite altered quartz-phyric Rhyolitic tuffs (primarily fine grained xl tuffs) to aphyric Rhyolites and Argillites.

PK96-04, (L)1785N/4840E, -65/270, 271.0m

- Drilled as a long (600m) step-out further to the southeast to test the end of the "Wolverine-type" geophysical anomaly (ie. the end of the Fe. Fm.). The areas had not been previously mapped or soil sampled.

- The drill hole was not like the previous three holes in that it was complicated by faulting. The hole was collared in massive Andesites with cherty interbeds. The overlying Andesites were relatively unaffected by the faulting, however, the aphyric Rhyolites underneath were badly faulted and crushed. No Iron Formation was encountered and only a thin EXCP with a 30-40cm baritic bed was observed. The wolverine horizon was marked by graphitic Argillites overlying a Feldspar porphyrytic "Augen" Schist which in turn overlay a thick package of finer grained qtz-feld xl tuffs. No significant mineralization was encountered (very few sph stringers throughout).

PK96-05, L4300N/5340E, -55/270, 221.7m

- Drilled as a long (600m) step-out to the northwest of hole 1 to test the "Wolverine-type" geophysical anomaly in the direction of the deposit. Flat soil geochemistry (Wengzynowski, 1996). The area has not yet been mapped (little or no outcrop).

- Intersected "Wolverine Stratigraphy". No significant mineralization was encountered with very few sphalerite stringers observed. The geophysical anomaly was explained by a graphitic argillite. The hole was drilled in an area with a weak magnetic response, and as expected only very minor disseminated magnetite was observed in aphyric Rhyolites along with an interesting and unusual thin grey to black chert unit. The EXCP in hole 5 was thinner than in the previous drill holes and was carbonate-rich and py-poor. The wolverine horizon was again marked by a transition from sericite altered quartz-phyric Rhyolitic tuffs (primarily fine grained xl tuffs) to aphyric Rhyolite/Argillite. Note, the top of the lapilli tuffs did show a thin (15-20cm) zone of fairly intense apple green sericite alteration, but with very little (<1-1.5%) Mg.

PK96-06, L5300N/5320E, -55/270, 203.6m

- Drilled as a long (1000m) step-out to the north of hole 5 in order to test the "Wolverine-type" geophysical anomaly in the direction of the deposit. Flat soil geochemistry (Wengzynowski, 1996). The area has not yet been mapped (little or no outcrop).

- Intersected "Wolverine Stratigraphy". No significant mineralization was encountered with very few sphalerite stringers observed. The geophysical anomaly was explained by a graphitic argillite. The wolverine horizon was again marked by a transition from sericite altered quartz-phyric Rhyolitic tuffs (primarily fine grained xl tuffs) to aphyric Rhyolite/Argillite. Note, there was a interesting thin Ser-Chl-Bio Schist logged at or near the wolverine horizon which gave a significant Mg response (3.84%), but very little visible alteration or evidence of exhalative activity was observed.

PK97-07, L3400N/5480E, -70/270, 314.9m

- Drilled to test the area between (and a little down-dip from) holes 1 and 2, which at the time. appeared to contain the greatest amount of zinc mineralization.

- The hole intersected a 50 meter wide zone of predominantly exhalative units consisting of varying amounts of magnetite, silica and calcite. Encouraging sulphide mineralization was observed in this zone: locally up to several percent disseminated and stringer-type sphalerite with traces of chalcopyrite and galena. Carbonaceous argillite occurs below the exhalative zone and probably explains the geophysical anomaly. A sharp contact separates this unit from an underlying weakly sericite and chlorite altered rhyolite lapilli tuff very similar to the unit in the immediate footwall of the Wolverine deposit. No base metal mineralization was observed in the vicinity of the wolverine horizon.

PK97-08, L2800N/5230E, -70/270, 230.7m

- Drilled in order to test an area between, and slightly down-dip from, the area tested by PK-96-02 and 03.

- The hole intersected 3.4 m (interval length) of a distinctive magnetite-pyrite iron formation consisting of 30% massive to semi-massive coarse pyrite and coarse crystalline to crudely banded magnetite. This unit is underlain by a more traditional silica-magnetite iron formation immediately followed by 10.8 meters of calcite exhalite with up to several percent pyrite. Only trace amounts of sphalerite were observed in this exhalative zone. As in PK-97-07, tuffaceous to graphitic argillites explain the conductor and are underlain by a weakly sericitic rhyolite with sparse quartz eyes. The hole ended in a distal looking quartz-feldspar crystal-rich Rhyolitic tuff with sparse sphalerite stringer mineralization.

PK97-09, L2100N/5090E, -70/270, 282.5m

- This stratigraphic hole was designed to test the area between, and slightly down-dip, of the area tested by holes PK-96-03 and 04.

- The drill hole intersected a 17.5m zone of exhalative activity consisting of a varying amounts of magnetite, calcite and silica dominated units. Within this interval a thin (1.5 m) calcite-pyrite unit containing 10% pyrite and 1-2% sphalerite stringers was intersected. This unit is immediately underlain by the "hanging wall" graphitic argillite that sufficiently explains the anomalous conductivity in this region. A sharp transition to a moderately sericite altered rhyolite lapilli tuff marks the wolverine horizon but no significant mineralization was observed. The hole was terminated in black, strongly carbonaceous, "footwall" argillites.

PK97-10, L5700N/5480E, -70/270, 409.7m

- The hole was drilled in order to examine the stratigraphy closer to the FOOT claims and the Wolverine Zone. No surface outcrops were observed below the upper andesite and sediment package.

- This hole intersected two distinct and separate zones of exhalative activity with 60 m of intervening argillite and aphyric rhyolite. This thickened section of stratigraphy betweew two exhalative zones is unusual and was not observed in previous drill holes and similar to Wolverine stratigraphy. The lower exhalative zone hosts significant sphalerite mineralization (2-3%) as primary stringers up to 7 mm thick within a dark grey to black silica exhalite. Pyrite and sphalerite occur in minor amounts throughout the 17.5m zone. As in previous holes, this unit is immediately underlain by a graphitic argillite that sufficiently explains the geophysical anomaly. A sharp transition to a weakly sericite altered quartz-eye-bearing Rhyolite Tuff marks the wolverine horizon. No significant mineralization was observed at this horizon. The hole ended in a distal fine-grained rhyolitic tuff with sparse quartz eyes.

PK97-11, L1400N/4800E, -70/270, 172.8m

-The hole was drilled to test a strong conductor that was identified below the stratigraphic position of the Fe. Fm. (note: the Fe. Fm. does not continue onto this portion of the property). The conductor is limited in its strike extent to only 4-5 grid lines (therefor not a "stratigraphic" anomaly?), and was thus ranked as the most interesting anomaly identified by the 1997 geophysical survey (Mike Powers, Amerok Geoscience, 1997). This area has not been soil sampled. The area was prospected and found to contain abundant o/c's of the overlying Andesites and minor o/c's of footwall type quartz phyric Rhyolites.

- The hole was collared in Andesites, which displayed a conformable interbedded relationship with the underlying argillites and aphyric Rhyolites. A thin 4.7m exhalative zone contains calcite, silica, pyrite and minor magnetite. The conductor appears to be a thin graphitic argillite with 2% dis. py which is underlain by 6.1m of the massive feldspar Porphyry which is in turn underlain by a thick package of finer grained argillaceous qtz-phyric xl tuffs. No significant mineralization or alteration was observed.

PK97-12, L3400N/5480E, -60/270, 307.9m

- Drilled to test the second most interesting anomaly identified by the 1997 geophysical survey (Mike Powers, Amerok Geoscience, 199&), which appeared to be in the footwall where a subtle magnetic high lies just above the argillites (stratigraphic conductors). It was hypothesized that the magnetic anomaly at or near the wolverine horizon may represent footwall alteration and Po mineralization.

- The hole intersected approximately 200m of Andesites that overlay a thin section of the aphyric rhyolite which in turn overlay tuffaceous and graphitic argillites with minor porpyrytic rhyolites. The magnetic anomaly was actually located within the Andesites which had been moved southwest by a previously unrecognized crosscutting fault. No significant alteration or mineralization was encountered.

PK97-13, L3700N/5470E, -80/270, 264.3m

- The hole was drilled in order to test the area down dip from hole 1 which, along with holes 2 and 7, contained the greatest amount of zinc mineralization thus far encountered.

- The hole intersected rocks very similar to those observed in hole 1. No significant mineralization and only minor sericitic alteration was observed. The mineralization in hole 1 is probably simply remobilized vein material.

PK97-14, L3100N/5420E, -80/270, 319.1m

- The hole was drilled in order to test the area down dip from hole 2 which, along with holes 1 and 7, contained the greatest amount of zinc mineralization thus far encountered.

- The hole intersected rocks very similar to those observed in hole 2. No massive sulfide was encountered. However, an interesting zone of sericitic alteration, along with some silicification and sphalerite stringer mineralization, was observed at the wolverine horizon. This represents the first time that sphalerite mineralization has been observed at the wolverine horizon (other than the unusual vein-like occurrence in hole 1. The mineralization and alteration located I this hole at the Wolverine Horizon is considered to be significant and warrants further investigation.

PK97-15, L4900N/5330E, -60/270, 178.9m

- The hole was drilled in order to test a strong and very well defined conductor in an unusual area where the lack of a significant magnetic response suggests that the Fe Fm is probably absent but is present along strike to the nothewest and southeast. The hole was also intended to examine the stratigraphy between holes PK-96-05 and 06 which are 1km apart.

- The hole intersected wolverine stratigraphy with some fault complications. The zone of exhalative activity was relatively thin and was marked by a thin pyrite-poor carbonate exhalite unit and a poorly defined zone of fragmental aphyric rhyolite with 1-2% disseminated magnetite. The wolverine

horizon was easily identified by a transition from quartz and/or feldspar bearing lapilli tuffs to graphitic argillite and aphyric rhyolite. Only minor sericite alteration was observed at the wolverine horizon.

PK97-16, L6100N/5180E, -70/270, 210.0m

- This hole was drilled as a follow-up to the intersection of massive sulfide immediately north of the PUCK property at the new Sable Zone located on the FOOT claims. The area was soil sampled by ACA with no significant anomalies identified (Wengzynowski, 1996). The area has not been mapped but has been prospected. Magnetic surveys confirmed the presence of Iron Formation, however, the geophysics also indicated the presence of several cross-cutting faults.

- The hole intersected a relatively undisturbed package of wolverine stratigraphy very similar to that observed in hole 10. The hole encountered the most significant alteration that has thus far been observed on the property with several metres of moderate to intense (Mg) sericite altered QFP at the wolverine horizon. Unfortunately, no massive sulfide was intersected, however, several metres of sphalerite stringers were observed associated with the alteration.

APPENDIX F

PUCK PROPERTY COMPILATION MAP

FOOT

PUCK

Sable Zone

WV97-33
WV97-98
WV97-92
WV97-107
WV97-106
PK97-16
PK97-10
PK96-06
PK97-15
PK96-05
PK97-13
PK96-01
PK97-07
PK97-14
PK96-02
PK97-08
PK96-03
PK97-09
PK96-04
PK97-11
PK97-12

no significant soil geochemical anomalies (remainder of main grid not sampled)

staging area

Airstrip

Go (Puck) Creek

Go Creek

Money Creek

Ag to 1.6ppm
Cu to 131ppm
Zn to 254ppm
Ba to 3030ppm

380ppb Au

Pb tp 46ppm
Zn to 228ppm
Ba to 2230ppm

PUCK

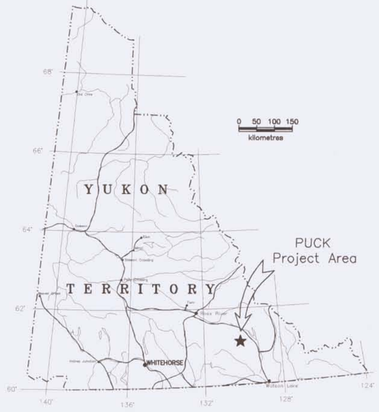
PUCK

Vf
Vm
Sc
BIF

1700
1600
1675
1825
1575
1400
1325
1300
1525
1475
1150
1200

6 810 000 N
6 808 000 N
6 806 000 N
6 804 000 N

442 000 E
444 000 E
446 000 E



Location Map

Scale 1 : 10 000 000

UTM
GRID
NORTH
(~1° East of True North)

LEGEND

1600 — Topographic Contours in 25m Intervals

Lake / Pond

Stream

Road / Cat trail

PK96-06 — Drillhole Location and Identifier, with subsurface trace

Grid Lines (cut to Azm – 053°)
(circles = 1997 soil sample locations)

PUCK Property Outline

Magnetic Contours (ground survey, showing the 58,800 and the 60,000nT contours)

Interpreted Fault showing basis for interpretation
M – magnetics
V – VLF (NLK)
E – electromagnetics

Conductor Axis with apparent width, weak extension, uncertain occurrence

093790

Inferred Geological Contact (Interpreted from Geophysics by consultant John Boniwell)

Sc – Sediments; carbonaceous
Vf,m – Volcanics; felsic, mafic
BIF – Banded Iron Formation

PROFESSIONAL GEOLOGIST OF ALBERTA
ANDREW J. TURNER
29008

Topography compiled by the ORTHOSHOP, Calgary, June 1996 (WO 5710)
Magnetic Declination = 28.5° E (1996)

WESTMIN

WESTMIN RESOURCES LIMITED
ATNA RESOURCES LTD.
EXPATRIATE RESOURCES LTD.

Work By	A. Turner
Date Drafted	Oct. 24, 1996
Drafted By	A. Turner
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Revised By	A. Turner
N.T.S. Number	105 G/8
File Name	PUCKCOMP.DWG

PUCK PROJECT

Compilation Map

Vol.2
#15

200 0 200 400 600m
SCALE 1 : 10,000

Figure –