BC Geological Survey Assessment Report 31872

#### **ASSESSMENT REPORT**

on the

## **MOFFAT PROPERTY**

MTO Events # 4795493 + 4813032

CARIBOO MINING DIVISION, British Columbia Latitude 52°06' N, Longitude 121°12' W

**Prepared for Operator:** 

FJORDLAND EXPLORATION INC. 1100 – 1111 Melville Street Vancouver, B.C., Canada V6E 3V6

By:

L. John Peters, B.Sc., P .Geo.

21 December, 2010 Vancouver, B.C.

Та	able of Contents	page
1.	Summary	1
2.	Property Location, Size, Access and Physiography	2
3.	History	6
4.	Geological Setting	9
	4.1 Property Geology	9
	4.2 Mineralization	11
5.	2010 Exploration Program	11
6.	Interpretation and Conclusions	17
7.	Recommendations	17
8.	Statement of Expenditures	17
9.	References	18
10	). Authors Statement of Qualifications	19

# List of Tables

1.	List of Claims	3

# List of Figures

2.	Location Map Claim Map	2 4+5
	Geological Setting	7
4.	Exploration Location	10
5.	Soil Gechemistry – Sample Numbers	12
6.	Soil Gechemistry –	13
7.	Soil Gechemistry –	14
8.	Soil Gechemistry –	15
9.	Analytical Comparison Chart (Cu)	16

# Appendices

Appendix A: Logistical Report - IP Survey Appendix B: Laboratory Certificates Appendix C: Laboratory Procedures

## 1. SUMMARY

This report covers MTO Event Numbers 4795493 + 4813032 dated 24 September and 29 November 2010.

From 5 July to 11 November 2010 several programs, consisting of prospecting, soil geochemistry and IP geophysical surveys, were completed on the Moffat property. Work was completed by the author, Tom Schroeter of Delta, BC and a geophysical crew employed by Scott Geophysics Ltd of Vancouver, BC. The total cost of the surveys was \$53,424.<sup>86</sup>.

The Moffat Property is located south of Moffat Creek 4 kilometres northeast of Murphy Lake and 36 kilometres northeast of the town of Lac La Hache. At the date of this report, the Moffat Property consists of 58 mineral claims with a total area of 24,477 hectares.

The Moffat property is underlain by the Late Triassic to early Jurassic-aged Takomkane Batholith. The 2010 surveys were located near the Harrison Creek MINFILE showing, discovered by P. Schiarizza (2008), consisting of a grab sample analyzed to contain 1671 ppm copper, 105 ppb gold, and 1432 ppb silver.

Visible copper mineralization was observed in outcrop. This area coincides with an airborne magnetic anomaly that was verified on the ground as pertaining to magnetite mineralization in quartz monzonite to monzodiorite intrusive rocks.

Reconnaissance geochemical sampling was completed in the vicinity of mineralized outcrop. Three zones of coincident copper-gold-molybdenum anomalies were delineated by the survey.

A total of 8 kilometres of IP, in 3 lines spaced 1500 metres apart tested the area of known mineralization. An additional 3 km line IP tested a historic Minfile occurrence (Granite Mt) in the location of previously delineated copper-in-soil anomalies. In lines 1 + 2 of the Harrison Ck grid weak chargeability anomalies were delineated increasing to the west.

More detailed IP is recommended to delineate mineralization at depth and explore for new zones. Grid soil geochemistry is recommended to ascertain mineralizing trends. The cost of the next phase of exploration is estimated to be \$80,000.

## 2.0 PROPERTY LOCATION, SIZE, ACCESS AND PHYSIOGRAPHY

The Moffat Property is located south of Moffat Creek 4 kilometres northeast of Murphy Lake and 36 kilometres northeast of the town of Lac La Hache (Figure 1). The Property is located in the Cariboo Mining Division of central British Columbia, on TRIM map sheets 093A004, 093A05, 093A014, and 093A015 at geographic coordinates; latitude 52°06' N, longitude 121°12' W as shown on Figure 2.

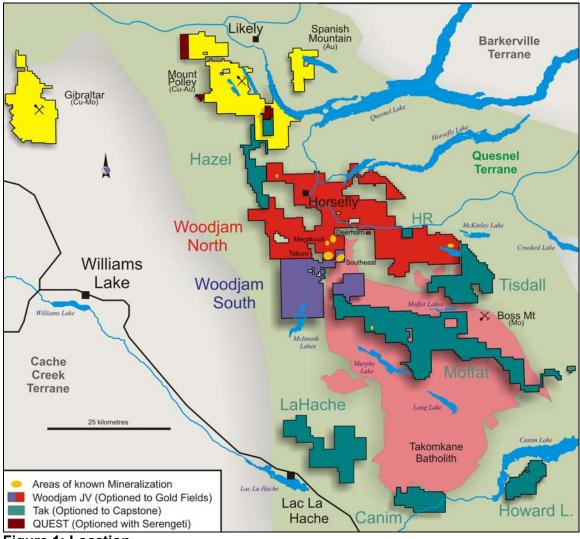


Figure 1: Location

At the date of this report, the Moffat Property consists of 58 mineral claims with a total area of 24,477 hectares. Claim information, as taken from Mineral Titles Online (10 Dec 2010), is listed in Table 1.

Tenure	Issue Date	Good To	Area (ha)	Tenure	Issue Date	Good To	Area (ha)
604565	2009/may/15	2011/sep/10	497	672026	2009/nov/20	2011/sep/10	437
606645	2009/jun/26	2011/sep/10	476	672043	2009/nov/20	2011/sep/10	497
606646	2009/jun/26	2011/sep/10	397	672044	2009/nov/20	2011/sep/10	497
616265	2009/aug/08	2011/sep/10	496	672045	2009/nov/20	2011/sep/10	497
616268	2009/aug/08	2011/sep/10	496	672063	2009/nov/20	2011/sep/10	159
616272	2009/aug/08	2011/sep/10	496	676463	2009/nov/30	2011/sep/10	199
616274	2009/aug/08	2011/sep/10	476	685448	2009/dec/15	2011/sep/10	497
616275	2009/aug/08	2011/sep/10	496	686145	2009/dec/16	2011/sep/10	496
616283	2009/aug/08	2011/sep/10	496	686171	2009/dec/16	2011/sep/10	477
616303	2009/aug/08	2011/sep/10	496	686180	2009/dec/16	2011/sep/10	497
616310	2009/aug/08	2011/sep/10	99	686183	2009/dec/16	2011/sep/10	477
616312	2009/aug/08	2011/sep/10	139	686204	2009/dec/16	2011/sep/10	477
661484	2009/oct/29	2011/sep/10	497	704974	2010/jan/29	2011/sep/10	478
661488	2009/oct/29	2011/sep/10	497	704976	2010/jan/29	2011/sep/10	298
661489	2009/oct/29	2011/sep/10	497	764903	2010/may/01	2011/sep/10	496
661504	2009/oct/29	2011/sep/10	318	764963	2010/may/01	2011/sep/10	477
661523	2009/oct/29	2011/sep/10	159	764983	2010/may/01	2011/sep/10	477
661524	2009/oct/29	2011/sep/10	496	765002	2010/may/01	2011/sep/10	496
661543	2009/oct/29	2011/sep/10	497	765062	2010/may/01	2011/sep/10	497
664223	2009/nov/03	2011/sep/10	100	765082	2010/may/01	2011/sep/10	457
664263	2009/nov/03	2011/sep/10	239	765102	2010/may/01	2011/sep/10	298
664304	2009/nov/03	2011/sep/10	100	765122	2010/may/01	2011/sep/10	496
666023	2009/nov/06	2011/sep/10	498	765142	2010/may/01	2011/sep/10	437
666024	2009/nov/06	2011/sep/10	497	766022	2010/may/03	2011/sep/10	497
666025	2009/nov/06	2011/sep/10	497	766042	2010/may/03	2011/sep/10	497
666026	2009/nov/06	2011/sep/10	497	766062	2010/may/03	2011/sep/10	358
666027	2009/nov/06	2011/sep/10	398	766782	2010/may/04	2011/sep/10	437
666028	2009/nov/06	2011/sep/10	239	766802	2010/may/04	2011/sep/10	497
672003	2009/nov/20	2011/sep/10	496	831531	2010/aug/15	2011/sep/10	496

Table 1: List of Claims

The claims are 100% owned by Fjordland Exploration Inc. Fjordland is a public company incorporated in Canada, with offices at #1100-1111 Melville Street, Vancouver, BC, Canada, V6E 3V6.

The property area is flat to moderately rolling with areas of extensive overburden. The property has been extensively logged and is largely vegetated by second growth fir/pine and alder forests. The entire property lies below treeline. Topography varies from low marshy areas to rolling hills with elevations ranging from 1060 metres above sea level (asl) to the west to 1500 metres asl to the east. Numerous small lakes, many beaver dammed, dot the property and streams tend to be of low gradient and do not cut to bedrock. Exposure of bedrock is severely limited. Lower areas are usually covered by extensive glacial till and alluvium. The last glacial advance appears to have been toward the northwest.

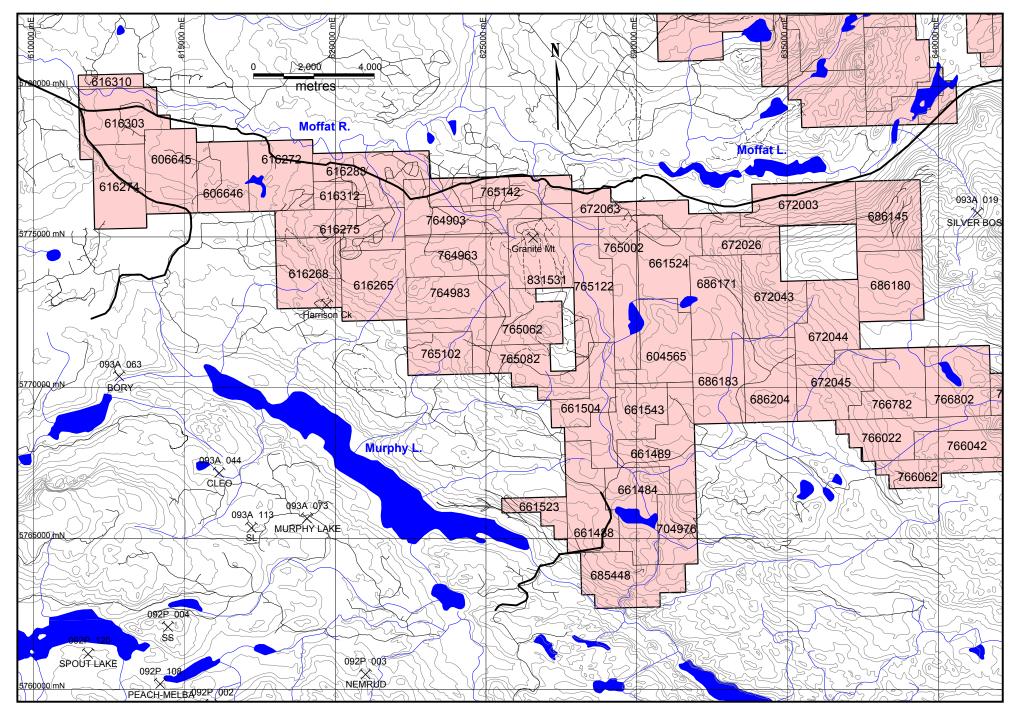


Figure 2: Claim Map (WEST)

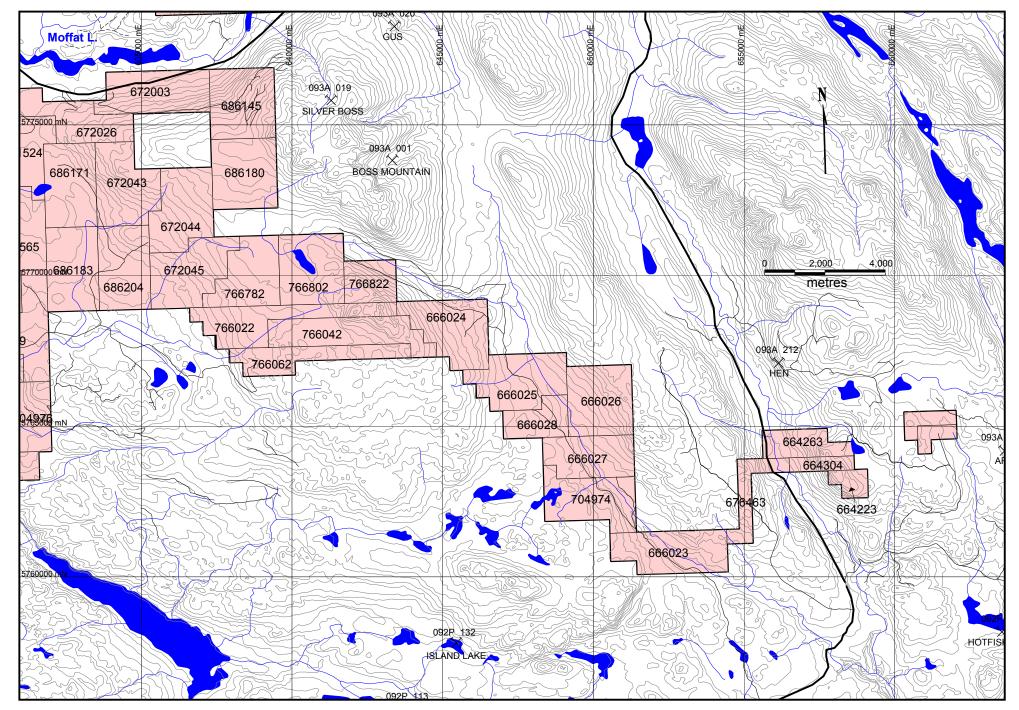


Figure 2b: Claim Map (EAST)

Year round access by road is gained by travelling on Forest Service Roads accessing most of the property. Nearby towns include Lac La Hache, Williams Lake and the village of Horsefly.

Climatic conditions are typical of the central interior of British Columbia. Average minimum low temperatures for January are -18°C and average maximum highs for July are +24 °C. Frost free days last on average from mid-May to mid-August. Between May and September precipitation at a low-elevation station is about 400 millimetres, almost twice that of Williams Lake 50 kilometres to the west. During April snow depths in the Quesnel Plateau (approx. 700 metres asl) are typically one to two metres.

# 2.0 HISTORY

The first gold found in the Cariboo was along the Horsefly River in 1859. A second gold rush period hit the Horsefly area in 1887. Placer gold operations were common throughout the Quesnel Belt during the early 1900's, however, records of activity in the property area are non-existent. The earliest recorded work in the area occurred in the 1960's prompted by the wave of exploration for porphyry copper deposits.

ARIS assessment filings report on several historic exploration activities conducted on the property.

#### Moffat West:

In 1971 Green Land Mining completed 38.3 line-kilometres of IP over tenure 616283 and off the property to the north (AR 03069). Two strong chargeability anomalies were delineated, one within the property limits. In 1972 Green Land Mining completed a soil geochemistry survey to the south of the IP grid (AR 03876). No anomalies were detected.

In 1996 Guardian Enterprises Ltd conducted prospecting including 13 rock samples and 10 soil samples over the southern portion of the property near Coffee Lake (AR 24519). Mineralization encountered included pyrite and magnetite.

In 2006 Candorado Operating Company Ltd conducted a prospecting program to ground truth radiometric anomalies outlined by the recently released government airborne surveys (AR 28,816).

From 2007 to 2008 Eagle Peak Resources Ltd conducted geological mapping and soil geochemistry surveys over the area covered by the Granite Mountain showing (AR 29,405 + 30,333).

## Moffat East:

In 1993 Pioneer Metals Corp completed prospecting traverses and a soil sampling program. Follow-up programs consisted of a soil sampling program conducted in 1997 by Norian Resources Corp. and a prospecting program in 2006 by D. Ridley.

In 2008, Happy Creek Minerals Ltd collected stream sediments north of the geochemical anomaly noted above. Several moderate copper anomalies were delineated.

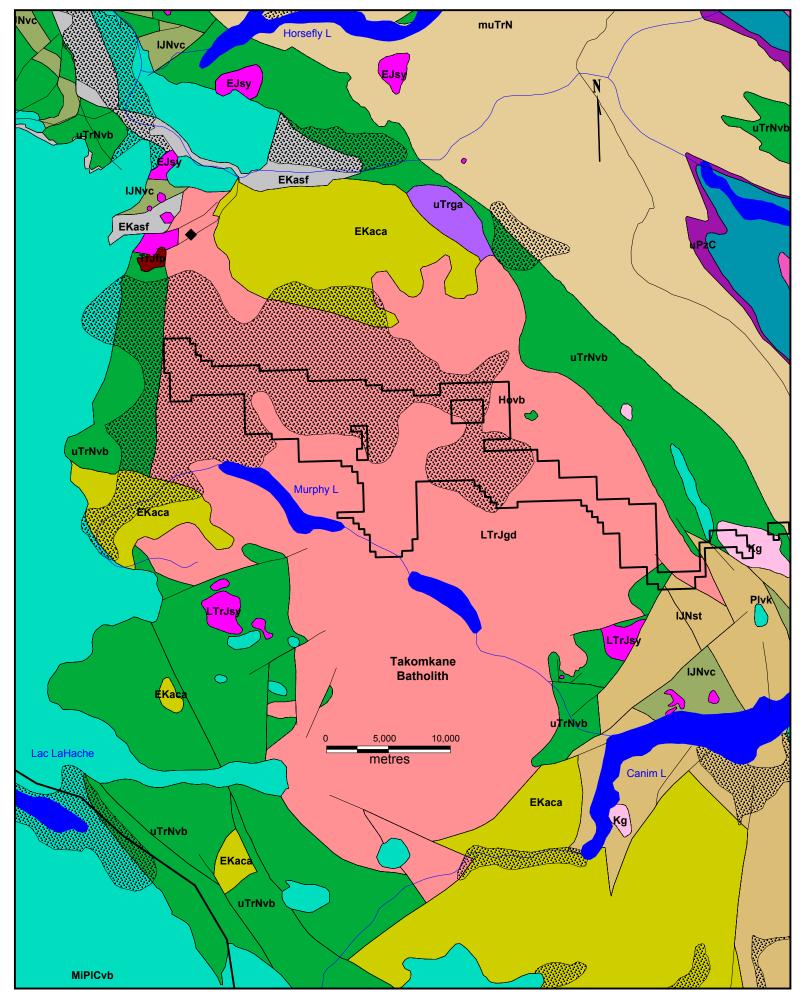


Figure 3: GEOLOGICAL SETTING

# **LEGEND**

Fault or structural lineation

Quaternary - unconsolidated glacial, fluvial and alluvial deposits

UNIT	AGE	ROCK_TYPE
Hovb	Holocene	basaltic volcanic rocks
Plvk	Pleistocene	alkaline volcanic rocks
MiPICvb	Miocene to Pleistocene	basaltic volcanic rocks
EKaca	Eocene	calc-alkaline volcanic rocks
EKasf	Eocene	mudstone, siltstone, shale fine clastic sedimentary rocks
Kg	Cretaceous	intrusive rocks, undivided
MJgd	Middle Jurassic	granodioritic intrusive rocks
ImJcg	Lower Jurassic to Middle Jurassic	conglomerate, coarse clastic sedimentary rocks
EJsy	Early Jurassic	syenitic to monzonitic intrusive rocks
IJNvc	Lower Jurassic	volcaniclastic rocks
IJNst	Lower Jurassic	argillite, greywacke, wacke, conglomerate turbidites
EJsy	Early Jurassic	syenitic to monzonitic intrusive rocks
uTrJfp	Late Triassic to Early Jurassic	coarse crowded feldspar porphyry
LTrJsy	Late Triassic to Early Jurassic	syenitic to monzonitic intrusive rocks
LTrJgd	Late Triassic to Early Jurassic	granodioritic intrusive rocks
uTrNvb	Upper Triassic	basaltic volcanic rocks
muTrN	Middle Triassic to Upper Triassic	undivided sedimentary rocks
uTrga	Upper Triassic	gabbro, pyroxenite, peridotite, minor diorite
PTrCM	Permian to Triassic	limestone, marble, calcareous sedimentary rocks
PTrCsv	Permian to Triassic	marine sedimentary and volcanic rocks
PSB	Permian	limestone, marble, calcareous sedimentary rocks
uPzC	Upper Paleozoic	serpentinite ultramafic rocks
DMQ	Devonian to Mississippian	orthogneiss metamorphic rocks
uPrPzS	Upper Proterozoic to Paleozoic	metamorphic rocks, undivided

After: B.C. Ministry of Energy and Mines, Geofile 2003-21 (N.W.D. Massey, et al) Geology of the Murphy Lake Area, BCGS Open File 93A/03 (Schiarizza, P et al) 2009 Geological Mapping of the Woodjam Property, In-house Report (Bailey, D. et al)

# 4.0 GEOLOGICAL SETTING

The Moffat property is located in the Quesnel Terrane (commonly referred to as the Quesnel Trough), a large regional synclinal marine basin forming at the Triassic-aged continental margin. The sedimentary basin was covered in Late Triassic-aged arc-related volcanism and related coeval intrusives and later intruded by early Jurassic-aged plutons confined primarily to the axis of the synclinal basin. The Quesnel Trough was active in the Miocene to Pliocene with extensional faulting and magmatism resulting in basaltic flows and related sediments of the Chilcotin Group unconformably overlying older rocks in the area.

Measuring approximately 40-50 kilometres wide and extending 1,500 kilometres from the U.S. border in the south to the Stikine River in the north, the belt hosts several large tonnage copper-gold "porphyry type" deposits including New Gold's Afton, Imperial Metals' Mount Polley Mine, Taseko's Gibraltar Mine, Terrane Metals' Mt. Milligan deposit, and Northgate's Kemess Mine.

The Quesnel Trough assemblage is made up of rocks of the Nicola (south), Takla (central) and Stuhini (north) Groups consisting of a series of volcanic islands characterized by generally alkalic to sub-alkalic basalts and andesites, related sub-volcanic intrusive rocks, and derived clastic and pyroclastic sedimentary rocks.

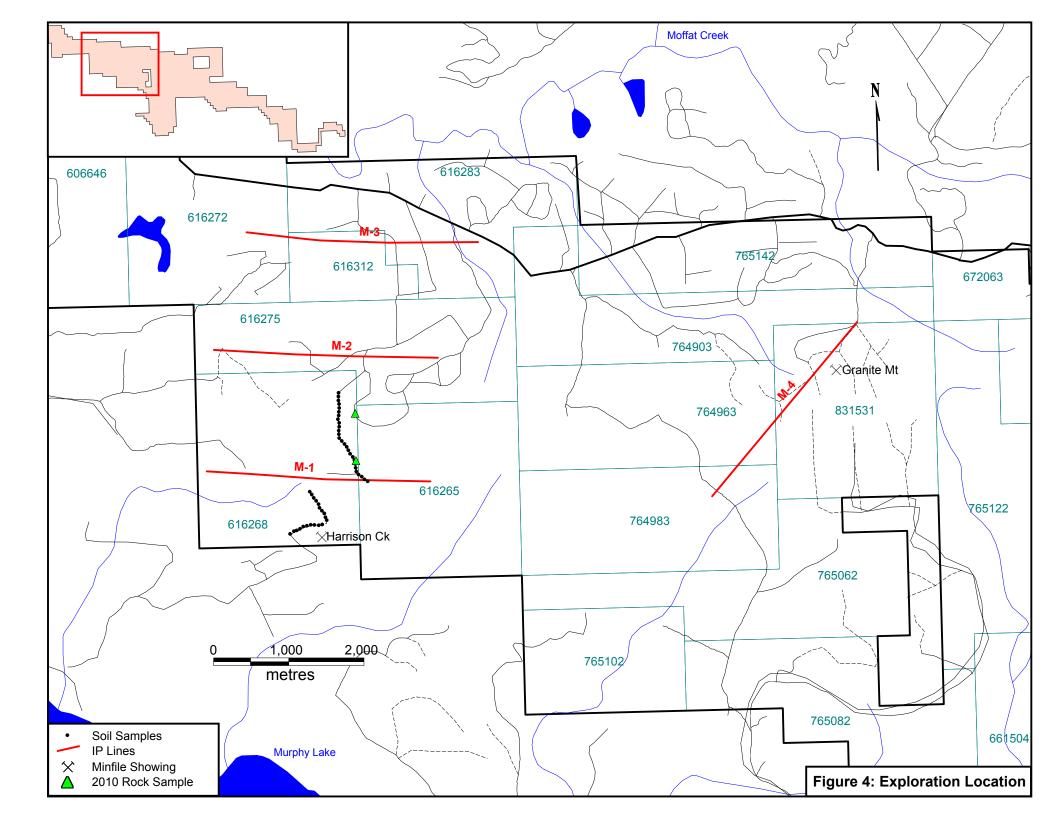
Late Triassic to early Jurassic volcanic centres with high-level alkalic cores of syenite to monzonite composition hosts the porphyry copper-gold deposits along with several gold-rich skarn deposits. They are generally gold-copper deposits consisting of chalcopyrite-pyrite and minor bornite sulphide mineralization. Commonly associated with the plutons is a late fumarolic or hydrothermal stage when large volumes of volcanic rocks were extensively altered to albite, K-feldspar, biotite, chlorite, epidote and various sulphides. The late metasomatic period involves introduction of volatiles and various metals in the vent areas and is a typical and important feature of the final stages of the volcanic cycle.

The Takomkane Batholith (193 ma) is a large predominantly calc-alkalic intrusive with a surface expression of approximately 40 by 50 kilometres. It comprises one of a series of at least six large coeval bodies including the Guichon Batholith (hosting the Highland Valley deposits) and Granite Mountain Batholith (hosting the Gibraltar deposit).

# 4.1 Property Geology

Most of the Moffat property is underlain by the Late Triassic to early Jurassic-aged Takomkane Batholith. The batholith has been reported as a medium grained granodiorite to quartz diorite containing occasional mafic phases in the Coffee Lake area (McCrossan, 1996). At the neighbouring Woodjam property the batholith has been described as a medium to coarse-grained plagioclase-hornblende quartz monzonite (Laird, B, 2009).

The eastern extent of the property extends off the Takomkane Batholith onto mid to upper Triassic-aged Nicola Group rocks comprised of augite andesite-basaltic flows, breccias and agglomerate, tuff, argillite, phyllite, greywacke and black to grey limestone. The Takomkane intrusives and the Nicola Group rocks are apparently fault contacted with younger Jurassic rocks (Campbell, T, 1971) comprising similar looking rocks



containing more sedimentary material. The easternmost portion of the property is intruded by Cretaceous aged intrusives.

# 4.2 Mineralization

The Harrison Creek MINFILE showing, discovered by P. Schiarizza (2008), consists of a grab sample analyzed to contain 1671 ppm copper, 105 ppb gold, and 1432 ppb silver. The author was unable to find mineralization at the location of the showing during the property visit. The 2010 program focused mainly on the area to the north of the showing.

During the recent property examination a grab sample, chipped from a magnetic hornblende quartz monzodiorite outcropping, graded up to 0.29 g/t gold and 0.36% copper. Mineralization consisted mainly of chalcopyrite.

Mineralization at the Granite Mt MINFILE showing consists of minor amounts of chalcopyrite and malachite that occur in and marginal to thin quartz veins within a number of narrow shear zones (Bailey, 2007).

No other MINFILE occurrences are located on the property. A 200x250 m copper-insoils anomaly surrounded by pyrite-chalcopyrite bearing potassic altered diorite float was reported in the southeastern portion of the property (Ridley, D.W., 1997).

# 5.0 2010 EXPLORATION PROGRAM

From 5 July to 11 November 2010 several programs, consisting of prospecting, soil geochemistry and IP geophysical surveys, were completed on the Moffat property. Work was completed by the author, Tom Schroeter of Delta, BC and a geophysical crew employed by Scott Geophysics Ltd of Vancouver, BC.

## **Geochemistry**

A total of 47 soils were collected by the author at 50 metre intervals along logging trails in the vicinity of mineralized outcrop. Sample points were determined in the field using a Garmin 62csx GPS. All samples were taken from the enriched "B" horizon approximately 30 centimetres below surface. Soil samples were taken using a geotool and placed into Kraft paper bags with sample grid locations marked on using a felt pen.

A total of 5 rock samples were collected from 2 outcroppings situated 620 metres apart. Samples were chipped from outcrop, placed into plastic bags and labeled. Locations were marked using GPS.

No sample preparation was conducted by an employee, officer, director or associate of Fjordland prior to delivery to the laboratory for analyses. Samples were delivered by the author to the offices of AGAT Laboratories located at 3104 Beta Avenue, Burnaby, BC.

Samples were analyzed for a 51-element suite of elements. Sample analyses, preparation methods, and QAQC protocols are described in Appendix C. Analytical certificates are located in Appendix B.

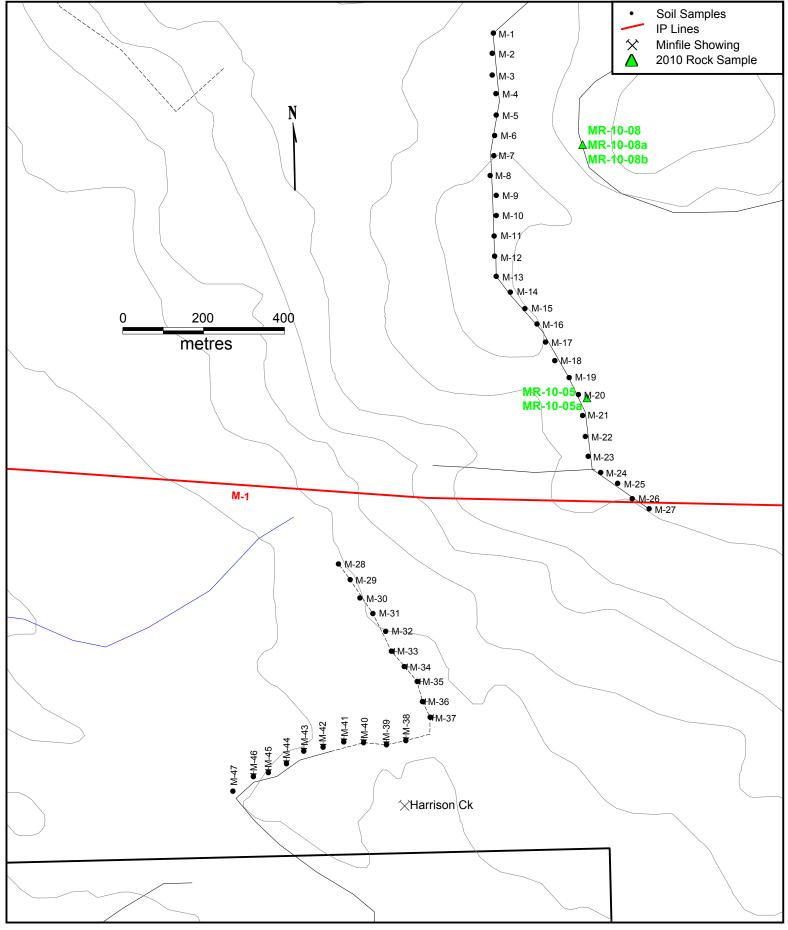


Figure 5: Soil Geochemistry Sample Numbers

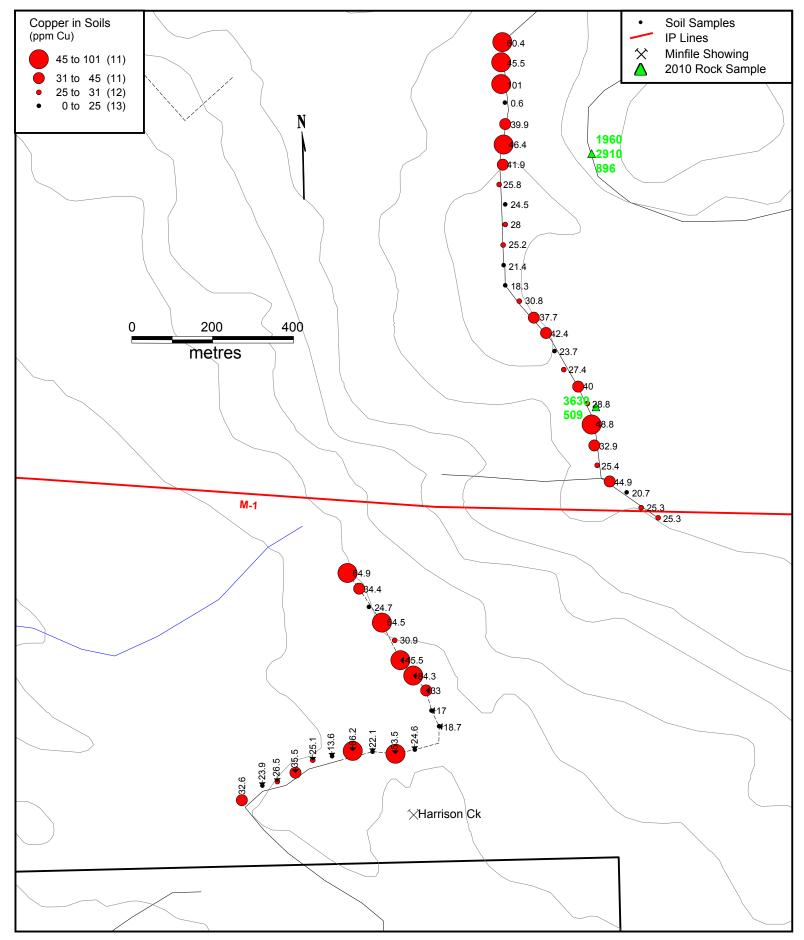


Figure 6: Soil Geochemistry - Copper

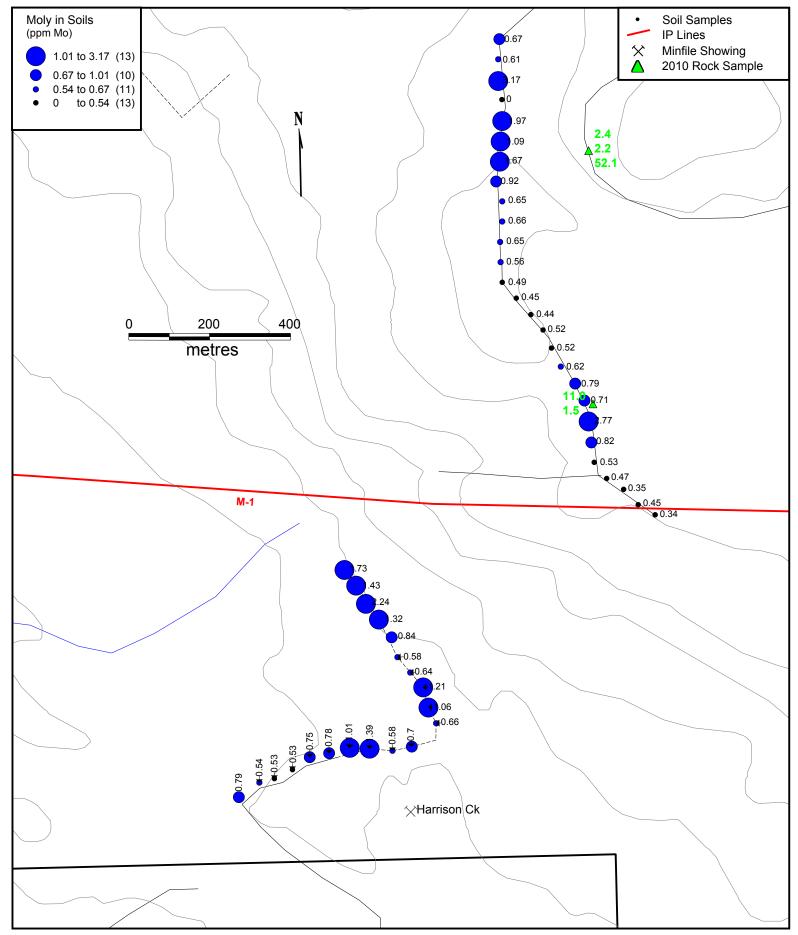


Figure 7: Soil Geochemistry - Molybdenum

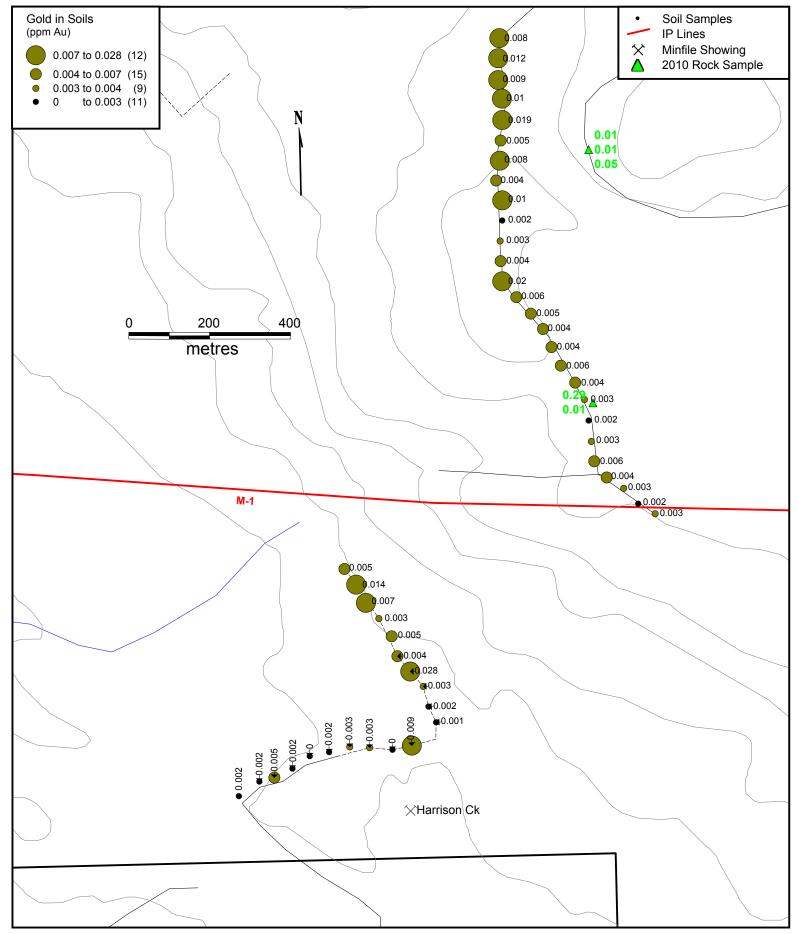


Figure 8: Soil Geochemistry - Gold

The sampling program was in conjunction with a regional sampling program over additional properties in the area. A total of 90 samples (~18%) of the sample pulps from the survey were analyzed for copper using a Niton handheld XRF analyzer. This was to determine the viability of using the analyzer as an alternative to conventional analyses and as a quality check for AGAT's analyses. It was found that below 50 ppm copper the Niton would consistently over report the copper values and above 80 ppm the Niton would consistently under report copper values (Figure 9). This is simply a calibration problem with the Niton and can be adjusted. A total of 16 samples were suspect and a duplicate split and analyses was requested from the lab. At the time of this report the duplicates were not completed.

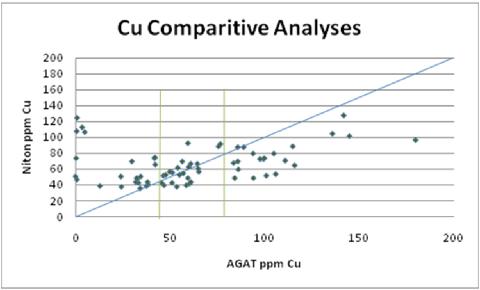


Figure 9: Analytical Comparison Chart (Cu)

Samples from 2 outcroppings located in the area of recent logging activities returned very encouraging copper values (Figure 6) with maximum grab samples grading 0.36% copper and 0.29 g/t gold in the southern showing and 0.29% copper and 0.05 g/t gold in the northern showing. Soil samples were collected to determine a mineralizing trend. Three zones of coincident copper-gold-molybdenum anomalies were delineated by the survey. Coincident anomalous copper, gold and moly values were found in the Harrison Ck Minfile occurrence area to the south and in the vicinity of both newly discovered showings.

# **Geophysics**

A total of 8 kilometres of IP, in 3 lines spaced 1500 metres apart tested the area of known mineralization near the Harrison Ck Minfile showing. An additional 3 km line IP tested the Granite Mt Minfile occurrence in the location of previously delineated copperin-soil anomalies.

Survey methods and results are located in Appendix A. In lines 1 + 2 of the Harrison Ck grid weak chargeability anomalies were delineated increasing to the west. No chargeability anomalies were detected in the vicinity of the Granite Mt showing.

# 6.0 INTERPRETATION AND CONCLUSIONS

Visible copper mineralization has been observed in outcrop on the property. This area coincides with an airborne magnetic anomaly that was verified on the ground as pertaining to magnetite mineralization in quartz monzonite to monzodiorite intrusive rocks. Coincident copper-in-soils were delineated by reconnaissance sampling. Wide spaced IP surveys conducted over the area showed weak chargeability anomalies increasing to the west.

Historically, the Takomkane batholith has not had the success of mineral discovery associated with the Guichon batholith. The Southeast Zone of the Woodjam property, located 15 kilometres to the north, is a large copper-gold-moly porphyry mineralized body located wholly within the intrusives of the Takomkane. Gold Fields is currently defining a resource through drilling. To the southwest, GWR Resources is having drilling success at their Aurizon South zone finding structurally controlled copper-gold-silver mineralization.

## 7.0 RECOMMENDATIONS

More detailed IP is recommended to delineate mineralization at depth and explore for new zones. A more structured and detailed grid soil geochemistry program is recommended to ascertain mineralizing trends. The cost of the next phase of exploration is estimated to be \$80,000.

Item	Description	Total
Scott Geophysics	IP Survey	\$ 41,273.78
Geology	L. John Peters	\$ 2,000.00
	Tom Schroeter	\$ 1,000.00
Analytical		\$ 1,273.50
Accommodations		\$ 506.83
4x4 Rental		\$ 447.58
Food		\$ 307.64
Fuel		\$ 266.27
Supplies		\$ 52.45
Report Writing		\$ 3,000.00
Management		\$ 3,296.81
Total		\$ 53,424.86

# 8.0 STATEMENT OF EXPENDITURES

#### 9.0 **REFERENCES**

- Laird, B. (2008): Assessment Report WOODJAM PROPERTY Including Diamond Drilling And Ground Geophysics
- Bailey, D.G. (2007): 2007 Exploration on the Granite Mountain Project, Moffat Lakes, BC. Assessment Report 29405.
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- Ridley, D. (1993): Prospecting and Geochemical Report on the Stone Group, Clinton, MD, BC. Assessment Report 23277.
- Ridley, D. (1997): Geochemical Report on the Stone Group, Clinton MD, BC. Assessment Report 25060.
- Ridley, D. (2006): Prospecting Report on the Stone Mineral Claims, Clinton MD, BC. Assessment Report 28384.

## 10.0 AUTHOR'S STATEMENT OF QUALIFICATIONS – L. John Peters

## I, L. John Peters, P.Geo do hereby certify that:

- a. I am a consulting geologist with addresses at 6549 Portland Street, Burnaby, BC, Canada, V5E 1A1.
- b. I graduated with a Bachelor of Science degree (Geology) from the University of Western Ontario in 1984.
- c. I am a Professional Geoscientist (P.Geo.) in good standing with the Association of Professional Engineers and Geoscientists of British Columbia (#19010).
- d. I have worked as a geologist for a total of 24 years since my graduation from university.
- e. I am responsible for the preparation of all sections of the technical report titled " Assessment Report on the Moffat Property" and dated 22 December 2010 relating to the Moffat Property. I visited the Moffat Property on numerous times since 2009 and represent Fjordland as the Exploration Manager.
- f. I was not involved in any of the historic work programs on the Moffat Property, however, I have been involved in all aspects of Fjordland's exploration activities on the Property since 2009.
- g. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.

Dated this 21<sup>th</sup> day of December 2010.

#### "Lawrence John Peters"

Appendix A: Logistical Report - IP Survey

## LOGISTICAL REPORT

#### INDUCED POLARIZATION SURVEY

# TAK PROJECT HORSEFLY AREA, B.C.

on behalf of

# FJORDLAND .EXPLORATION INC. 510 – 510 Burrard Street Vancouver, B.C. V6C 3A8

Survey performed: October 16-November 11, 2010

by

Brad Scott, Geologist (GIT) SCOTT GEOPHYSICS LTD. 4013 West 14<sup>th</sup> Avenue Vancouver, B.C. V6R 2X3

November 18, 2010

# TABLE OF CONTENTS

1	Introduction	page 1
2	Survey coverage and procedures	1
3.	Personnel	2
4.	Instrumentation	2

# Appendix

# Statement of Qualifications

# rear of report

Accompanying Maps (all 1:10,000 scale)

Chargeability/resistivity pseudosections Canim Grid: Lines 1E, 2E Hazel Grid: Line 1E Moffat Grid: Lines 1N, 2N, 3N Line 4E Tisdall Grid: Lines 1N, 3N

Accompanying Data Files

One (1) CD-ROM with all survey data and plots in Surfer 8 and pdf formats rear of report

## 1. INTRODUCTION

An induced polarization (IP) survey was performed at the Tak Project, Horsefly area, B.C. within the period October 16-November 11, 2010. In addition, non-differential GPS readings were taken at each station and at all remote ("infinite") current locations.

The survey was performed by Scott Geophysics Ltd. on behalf of Fjordland Exploration Inc. This report describes the instrumentation and procedures, and presents the results of the survey.

## 2. SURVEY COVERAGE AND PROCEDURES

The pole-dipole array was used. Readings were taken with an "a" spacing of 100 metres and "n" separations of 1-6. The on line current electrode locations are detailed below.

GPS readings were taken at each station subject to satellite reception. Elevation measurements are barometric altimeter readings, calibrated to GPS altitude at the beginning of each line.

A total of 23.1 kilometres of IP survey was performed on 4 grids:

- Canim Grid
  - 3.9 kilometres of survey performed
  - Current electrode located south of the potential electrodes on line 1E and north of the potential electrodes on line 2E
- Hazel Grid
  - 3.1 kilometres of survey performed
  - Current electrode located north of the potential electrodes
- Moffat Grid
  - 11.1 kilometres of survey performed
  - Current electrode located east of the potential electrodes on lines 1N, 2N, and 3N and north of the potential electrodes on line 4E
- Tisdall Grid
  - 5 kilometres of survey performed
  - Current electrode located west of the potential electrodes

The chargeability and resistivity results are presented on the accompanying pseudosections. All survey data are archived to the accompanying CD-ROM.

## 3. PERSONNEL

Brad Scott and Jan Hansen were the crew chiefs on the survey on behalf of Scott Geophysics Ltd. John Peters was the representative on behalf of Fjordland Exploration Inc.

## 4. INSTRUMENTATION

A GDD GRx8 receiver and two GDD TxII transmitters (totalling 8.6 kilowatts) were used for the IP survey. Readings were taken in the time domain using a 2 second on/2 second off alternating square wave. The chargeability values plotted on the accompanying pseudosections and plan maps are for the interval 690 to 1050 msec after shutoff.

GPS readings were taken with a Garmin GPSMap 60CSx GPS receiver.

Respectfully Submitted,

Kal

Brad Scott, Geologist (GIT)

#### Statement of Qualifications

for

Brad Scott, Geologist (GIT)

of

## 1230 Harrison Way, Gabriola, B.C. VOR 1X2

I, Brad Scott, hereby certify the following statements regarding my qualifications and involvement in the program of work on behalf of Fjordland Exploration Inc. at the Tak Project, Horsefly area, B.C. as presented in this report November 18:

The work was performed by individuals trained and qualified for its performance.

I have no material interest in the property under consideration in this report.

I graduated from the University of British Columbia with a Bachelor of Science degree (Geology) in 2000.

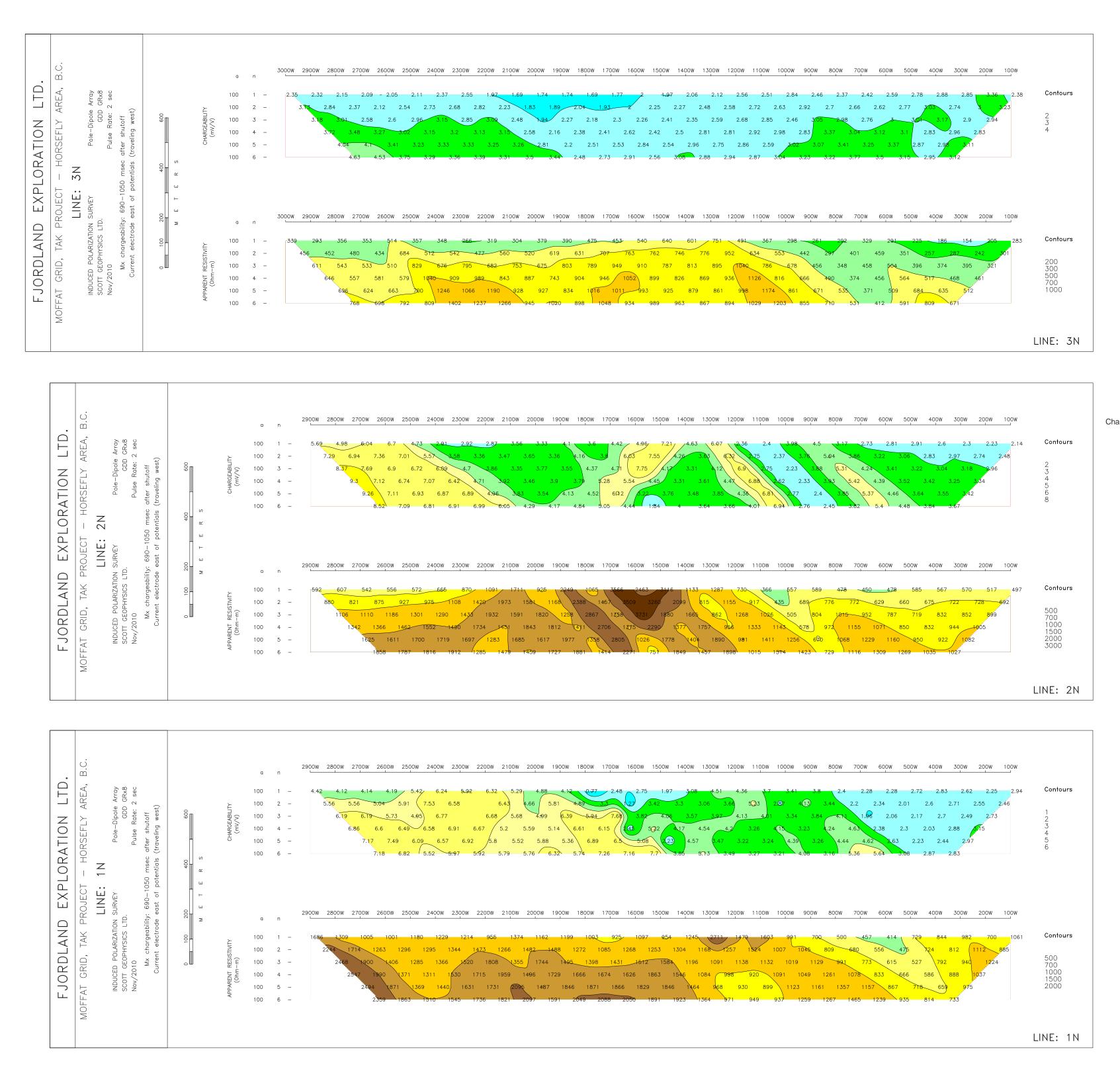
I am a member-in-training of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

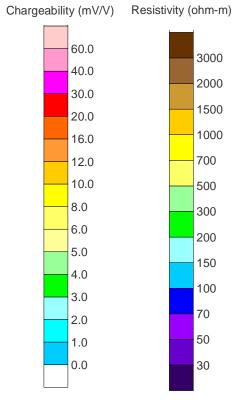
I have been practising my profession in the field of Mineral Exploration since 2000.

Respectfully submitted,

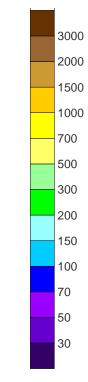
ka

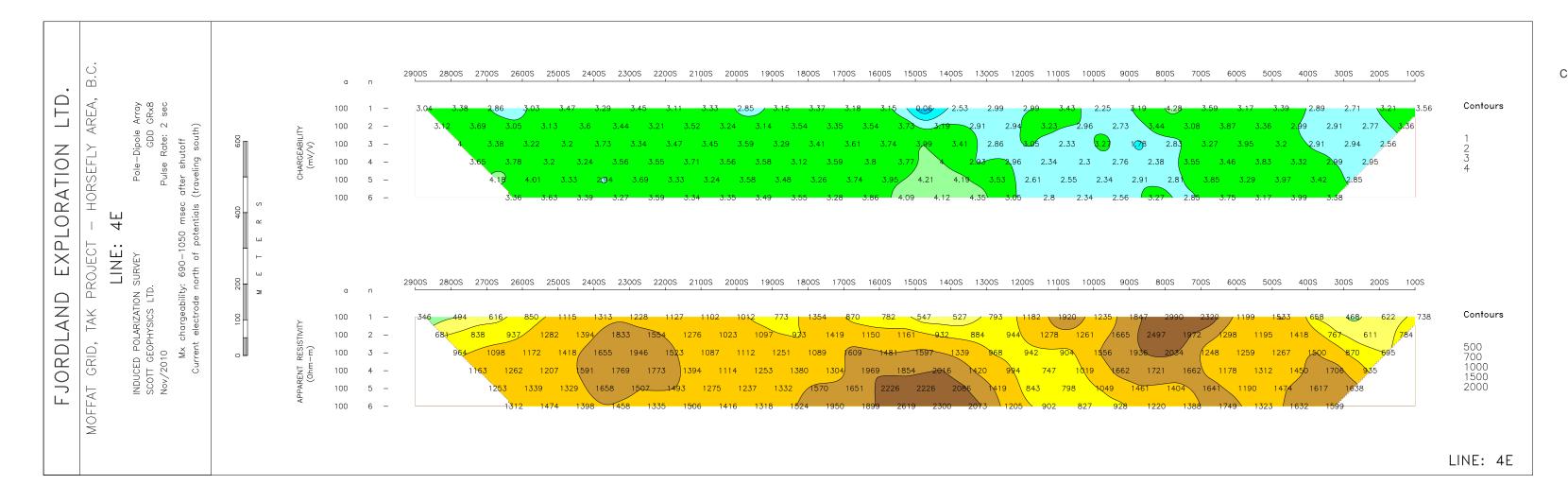
Brad Scott

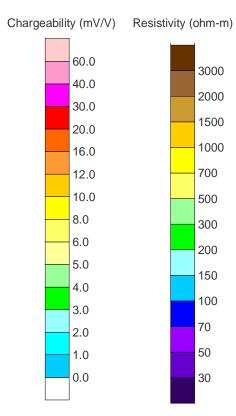












Appendix B: Laboratory Certificates



#### CLIENT NAME: FJORDLAND EXPLORATIONS 11TH FLOOR-1111 MELVILLE ST VANCOUVER, BC V6E3V6

ATTENTION TO: John Peters; Vic Tanaka

PROJECT NO:

AGAT WORK ORDER: 10V443043

SOLID ANALYSIS REVIEWED BY: Milithza Silva, Analytical Supervisor (M.Sc. in Analytical Chemistry)

DATE REPORTED: Oct 15, 2010

PAGES (INCLUDING COVER): 16

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998, or at 1-800-856-6261

\*NOTES

All samples are stored at no charge for 90 days. Please contact the lab if you require additional sample storage time.



AGAT WORK ORDER: 10V443043

PROJECT NO:

5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.aqatlabs.com

#### CLIENT NAME: FJORDLAND EXPLORATIONS

#### ATTENTION TO: John Peters; Vic Tanaka

Aqua Regia Digest - Metals Package, ICP/ICP-MS finish (201074)															
DATE SAMPLED:	Oct 13, 20	010		DATE	RECEIVED	): Oct 13, 20	10	DA	TE REPORT	FED: Oct 15	, 2010	SA	MPLE TYPE	: Soil	
A	nalyte:	Ag	AI	As	Au	В	Ba	Be	Bi	Ca	Cd	Ce	Со	Cr	Cs
	Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Sample Description	RDL:	0.01	0.01	0.1	0.01	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5	0.05
M 1 (-)		0.02	2.15	6.2	<0.01	<5	148	0.38	0.07	0.66	0.05	15.8	9.7	34.9	1.31
M 2 (-)		0.04	2.34	6.0	<0.01	<5	137	0.38	0.06	0.71	0.03	16.0	9.2	35.3	1.38
M 3 (-)		0.12	1.93	4.6	<0.01	<5	156	0.40	0.07	0.80	0.04	18.3	9.2	29.8	1.17
M 4 (-)		<0.01	1.81	0.4	<0.01	<5	<1	<0.05	<0.01	0.84	<0.01	0.05	<0.1	31.0	<0.05
M 5 (-)		0.09	1.49	3.0	<0.01	<5	94	0.35	0.06	0.63	0.06	16.0	8.7	25.8	0.84
M 6 (-)		0.04	2.51	5.6	<0.01	<5	173	0.46	0.06	0.69	0.05	23.0	10.3	32.8	1.21
M 7 (-)		0.08	2.03	4.9	<0.01	<5	158	0.42	0.06	0.82	0.06	20.6	10.0	32.7	1.11
M 8 (-)		0.08	2.07	3.1	<0.01	<5	104	0.43	0.06	0.55	0.05	16.5	8.7	28.5	0.98
M 9 (-)		0.06	1.91	3.0	<0.01	<5	102	0.37	0.06	0.57	0.05	13.4	7.2	28.0	0.82
M 10 (-)		0.06	2.45	3.9	<0.01	<5	142	0.49	0.06	0.57	0.04	15.4	9.7	31.5	0.92
M 11 (-)		0.04	2.16	3.5	<0.01	<5	125	0.44	0.06	0.53	0.04	15.7	8.5	30.4	0.73
M 12 (-)		0.03	1.73	2.8	<0.01	<5	96	0.39	0.05	0.57	0.03	15.6	7.4	29.4	0.65
M 13 (-)		0.03	1.57	2.6	<0.01	<5	91	0.36	0.05	0.46	0.03	13.1	7.2	26.4	0.63
M 14 (-)		0.04	2.20	3.4	<0.01	<5	119	0.47	0.07	0.60	0.02	17.2	8.7	32.6	0.87
M 15 (-)		0.04	2.19	3.8	<0.01	<5	123	0.36	0.05	0.68	0.03	14.1	7.8	30.0	1.05
M 16 (-)		0.03	2.39	4.9	<0.01	<5	143	0.41	0.06	0.72	0.04	17.1	9.8	33.4	1.05
M 17 (-)		0.04	1.67	2.9	<0.01	<5	80	0.37	0.05	0.66	0.03	14.5	7.1	26.0	0.74
M 18 (-)		0.05	1.73	3.0	<0.01	<5	99	0.38	0.05	0.68	0.04	16.0	8.7	26.8	0.81
M 19 (-)		0.03	1.93	5.1	<0.01	<5	154	0.36	0.06	0.83	0.04	19.9	9.0	33.2	1.05
M 20 (-)		0.03	1.77	3.2	<0.01	<5	150	0.46	0.07	0.70	0.02	21.3	8.4	40.9	0.55
M 21 (-)		0.09	1.79	2.4	<0.01	<5	131	0.36	0.19	0.68	0.05	24.5	10.7	37.3	1.75
M 22 (-)		0.05	2.23	4.0	<0.01	<5	110	0.47	0.12	0.53	0.05	15.3	10.4	30.5	1.03
M 23 (-)		0.05	2.02	2.9	<0.01	<5	137	0.44	0.06	0.59	0.04	15.6	8.6	31.9	0.74
M 24 (-)		0.06	2.22	4.9	<0.01	<5	147	0.45	0.06	0.67	0.04	20.6	10.8	39.6	0.92
M 25 (-)		0.03	1.33	2.8	<0.01	<5	95	0.33	0.04	0.55	0.03	16.9	7.6	32.4	0.51
M 26 (-)		0.04	1.53	2.9	<0.01	<5	94	0.37	0.05	0.56	0.03	16.1	8.4	31.9	0.61
M 27 (-)		0.02	1.85	3.1	<0.01	<5	158	0.51	0.06	0.65	0.03	19.9	7.9	40.0	0.61
M 28 (-)		0.08	2.07	5.4	<0.01	<5	154	0.50	0.09	0.84	0.03	25.7	14.4	44.6	1.15
M 29 (-)		0.09	1.65	2.5	<0.01	<5	121	0.34	0.08	0.68	0.05	17.2	10.4	35.3	1.00
M 30 (-)		0.14	1.45	2.5	<0.01	<5	85	0.27	0.11	0.49	0.08	8.07	6.9	34.5	0.93
M 31 (-)		0.11	1.95	1.9	<0.01	<5	247	0.29	0.07	0.68	0.03	15.7	11.9	33.8	1.20
M 32 (-)		0.07	1.33	2.1	<0.01	<5	166	0.21	0.04	0.76	0.03	21.2	11.7	34.6	0.78

Certified By:

Milithya O. Silva



AGAT WORK ORDER: 10V443043

PROJECT NO:

5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.aqatlabs.com

#### CLIENT NAME: FJORDLAND EXPLORATIONS

#### ATTENTION TO: John Peters; Vic Tanaka

		ŀ	Aqua Re	gia Diges	t - Metals	Packag	e, ICP/IC	P-MS fini	ish (2010	74)				
DATE SAMPLED: Oct 13, 20	010		DATE	E RECEIVED	: Oct 13, 20	10	DA	TE REPORT	FED: Oct 15	2010	SAMPLE TYPE: Soil			
Analyte:	Ag	AI	As	Au	В	Ва	Be	Bi	Са	Cd	Ce	Со	Cr	Cs
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.01	0.01	0.1	0.01	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5	0.05
M 33 (-)	0.06	1.95	4.0	<0.01	<5	208	0.25	0.05	0.86	0.04	22.0	12.0	35.0	0.97
M 34 (-)	0.06	2.31	5.1	<0.01	<5	281	0.35	0.07	0.95	0.04	23.2	14.1	40.5	1.55
M 35 (-)	0.02	2.46	3.0	<0.01	<5	164	0.41	0.08	0.43	0.06	12.1	7.9	25.0	1.26
M 36 (-)	0.05	1.78	2.2	<0.01	<5	156	0.25	0.07	0.50	0.05	12.1	9.9	26.8	0.82
M 37 (-)	0.06	1.81	2.1	<0.01	<5	163	0.26	0.06	0.52	0.04	12.0	9.4	25.7	0.78
M 38 (-)	0.09	1.57	2.6	<0.01	<5	165	0.24	0.05	0.67	0.05	15.7	10.9	28.2	0.68
M 39 (-)	0.07	2.06	3.7	<0.01	<5	211	0.32	0.05	0.94	0.05	21.8	13.2	35.0	1.01
M 40 (-)	0.09	1.62	2.4	<0.01	<5	184	0.25	0.05	0.65	0.04	14.1	11.6	26.5	0.76
M 41 (-)	0.10	2.75	4.0	<0.01	<5	408	0.45	0.06	0.64	0.05	16.2	14.0	58.4	1.08
M 42 (-)	0.09	1.47	2.1	<0.01	<5	133	0.23	0.05	0.37	0.05	9.87	9.1	30.8	0.66
M 43 (-)	0.09	1.53	2.0	<0.01	<5	152	0.26	0.05	0.68	0.07	14.8	10.6	26.0	0.84
M 44 (-)	0.05	1.81	3.5	<0.01	<5	186	0.27	0.04	0.85	0.04	22.3	12.4	33.1	0.77
M 45 (-)	0.04	1.50	2.2	<0.01	<5	164	0.25	0.04	0.60	0.05	15.7	10.6	28.1	0.70
M 46 (-)	0.07	1.58	2.3	<0.01	<5	160	0.24	0.03	0.60	0.04	16.0	10.3	27.5	0.61
M 47 (-)	0.04	2.03	1.8	<0.01	<5	204	0.30	0.06	0.50	0.05	12.0	8.7	25.4	0.75

Certified By:

Milithya Q. Silva



AGAT WORK ORDER: 10V443043

PROJECT NO:

5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.aqatlabs.com

#### CLIENT NAME: FJORDLAND EXPLORATIONS

#### ATTENTION TO: John Peters; Vic Tanaka

			Aqua Reg	gia Diges	t - Metals	s Packag	ge, ICP/IC	P-MS fini	ish (2010	74)				
DATE SAMPLED: Oct 13	3, 2010		DATE	RECEIVED	): Oct 13, 20	)10	DA	TE REPORT	FED: Oct 15	, 2010	SAMPLE TYPE: Soil			
Analyte:	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Мо	Na
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
Sample Description RDL:	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05	0.01
M 1 (-)	60.4	3.13	6.69	0.13	0.04	0.04	0.020	0.12	7.7	13.7	0.61	679	0.67	0.03
M 2 (-)	45.5	3.05	6.71	0.13	0.16	0.03	0.022	0.12	7.8	13.3	0.62	623	0.61	0.03
М З (-)	101	2.65	5.98	0.12	0.06	0.03	0.020	0.09	8.9	13.5	0.57	714	3.17	0.04
M 4 (-)	0.6	2.59	<0.05	0.11	<0.02	<0.01	<0.005	0.09	<0.1	<0.1	0.58	782	<0.05	0.04
M 5 (-)	39.9	2.35	5.66	0.13	0.06	0.03	0.018	0.07	7.7	11.9	0.45	548	1.97	0.03
M 6 (-)	46.4	3.07	7.36	0.13	0.06	0.02	0.022	0.11	7.9	13.8	0.61	669	1.09	0.04
M 7 (-)	41.9	2.93	6.51	0.12	0.05	0.02	0.022	0.12	9.3	13.7	0.63	779	1.67	0.04
M 8 (-)	25.8	2.87	6.84	0.10	0.04	0.03	0.019	0.06	8.2	13.4	0.45	479	0.92	0.03
M 9 (-)	24.5	2.78	6.65	0.12	0.04	0.03	0.018	0.06	6.4	12.4	0.39	443	0.65	0.03
M 10 (-)	28.0	3.04	7.60	0.12	0.03	0.03	0.022	0.07	7.0	13.7	0.44	501	0.66	0.03
M 11 (-)	25.2	2.79	6.56	0.12	0.05	0.03	0.019	0.06	7.2	11.2	0.40	415	0.65	0.03
M 12 (-)	21.4	2.36	6.02	0.13	0.05	0.03	0.017	0.06	7.5	11.7	0.40	432	0.56	0.03
M 13 (-)	18.3	2.30	5.41	0.11	0.04	0.02	0.015	0.05	6.5	11.6	0.36	381	0.49	0.02
M 14 (-)	30.8	2.52	6.69	0.13	0.04	0.02	0.022	0.07	8.4	13.4	0.50	458	0.45	0.03
M 15 (-)	37.7	2.57	6.49	0.11	0.10	0.02	0.022	0.11	6.8	13.5	0.56	503	0.44	0.04
M 16 (-)	42.4	2.95	6.84	0.11	0.06	0.02	0.024	0.13	7.4	12.8	0.64	624	0.52	0.04
M 17 (-)	23.7	2.26	5.56	0.11	0.04	0.02	0.018	0.06	6.9	11.5	0.43	456	0.52	0.04
M 18 (-)	27.4	2.05	5.95	0.13	0.04	0.02	0.020	0.08	7.5	12.3	0.46	601	0.62	0.04
M 19 (-)	40.0	2.87	6.16	0.12	0.14	0.02	0.022	0.14	9.3	11.8	0.65	672	0.79	0.05
M 20 (-)	28.8	3.04	6.19	0.12	0.25	0.02	0.019	0.10	11.4	12.2	0.51	597	0.71	0.04
M 21 (-)	48.8	3.25	6.31	0.13	0.04	0.03	0.020	0.10	11.1	23.5	0.60	592	2.77	0.03
M 22 (-)	32.9	3.16	7.05	0.11	0.04	0.03	0.021	0.08	6.5	12.1	0.44	559	0.82	0.02
M 23 (-)	25.4	3.01	6.23	0.12	0.10	0.02	0.018	0.06	6.7	11.5	0.45	415	0.53	0.03
M 24 (-)	44.9	3.27	6.85	0.12	0.10	0.02	0.021	0.14	9.0	12.3	0.62	606	0.47	0.03
M 25 (-)	20.7	2.63	4.95	0.11	0.07	0.02	0.014	0.06	8.2	10.8	0.42	415	0.35	0.03
M 26 (-)	25.3	2.75	5.39	0.11	0.07	0.01	0.016	0.07	7.7	11.5	0.44	453	0.45	0.03
M 27 (-)	25.3	3.06	6.43	0.12	0.25	0.03	0.021	0.11	10.0	11.8	0.48	553	0.34	0.04
M 28 (-)	64.9	3.26	7.21	0.13	0.13	0.03	0.029	0.16	10.9	18.4	0.65	890	1.73	0.05
M 29 (-)	34.4	3.29	5.99	0.13	0.07	0.03	0.019	0.10	10.3	27.8	0.48	506	1.43	0.04
M 30 (-)	24.7	3.31	7.78	0.12	<0.02	0.07	0.018	0.07	4.2	14.8	0.26	559	2.24	0.02
M 31 (-)	64.5	3.09	5.88	0.10	0.06	0.03	0.021	0.09	8.0	21.3	0.47	464	1.32	0.05
M 32 (-)	30.9	3.57	4.77	0.10	0.09	0.02	0.017	0.08	7.5	11.4	0.46	505	0.84	0.06

Certified By:

Milithya O. Silva



AGAT WORK ORDER: 10V443043

PROJECT NO:

5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.aqatlabs.com

#### CLIENT NAME: FJORDLAND EXPLORATIONS

#### ATTENTION TO: John Peters; Vic Tanaka

		A	Aqua Reg	gia Diges	t - Metals	s Packag	e, ICP/IC	P-MS fini	ish (2010	74)					
DATE SAMPLED: Oct 13, 2	010		DATE	RECEIVED	): Oct 13, 20	10	DA	DATE REPORTED: Oct 15, 2010				SAMPLE TYPE: Soil			
Analyte:	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Мо	Na	
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	
Sample Description RDL:	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05	0.01	
M 33 (-)	45.5	3.47	5.97	0.09	0.10	0.02	0.021	0.14	9.6	8.5	0.63	634	0.58	0.07	
M 34 (-)	84.3	3.81	7.28	0.11	0.15	0.04	0.028	0.20	12.2	12.0	0.77	807	0.64	0.07	
M 35 (-)	33.0	3.20	7.82	0.10	<0.02	0.05	0.023	0.08	5.6	10.4	0.34	643	1.21	0.03	
M 36 (-)	17.0	2.82	5.74	0.10	0.05	0.04	0.018	0.08	5.4	8.1	0.34	503	1.06	0.04	
M 37 (-)	18.7	2.80	5.85	0.09	0.03	0.04	0.018	0.07	5.7	8.4	0.30	387	0.66	0.04	
M 38 (-)	24.6	3.34	5.08	0.10	0.05	0.03	0.016	0.09	6.3	7.2	0.39	477	0.70	0.04	
M 39 (-)	53.5	3.68	6.18	0.11	0.12	0.03	0.022	0.17	10.9	9.7	0.64	701	0.58	0.07	
M 40 (-)	22.1	2.92	5.96	0.10	0.06	0.02	0.019	0.08	6.0	8.5	0.36	422	1.39	0.04	
M 41 (-)	86.2	3.86	7.82	0.09	0.05	0.03	0.021	0.10	7.4	26.5	0.74	421	1.01	0.03	
M 42 (-)	13.6	3.42	5.04	0.08	0.04	0.03	0.013	0.05	4.8	6.7	0.22	383	0.78	0.02	
M 43 (-)	25.1	2.51	5.46	0.10	0.06	0.03	0.017	0.08	7.2	8.8	0.39	596	0.75	0.04	
M 44 (-)	35.5	3.35	5.60	0.10	0.11	0.02	0.021	0.13	9.3	8.0	0.58	633	0.53	0.06	
M 45 (-)	26.5	2.55	5.11	0.08	0.06	0.02	0.015	0.08	7.0	7.5	0.39	525	0.53	0.04	
M 46 (-)	23.9	3.16	4.99	0.09	0.07	0.02	0.015	0.08	6.0	6.6	0.39	425	0.54	0.04	
M 47 (-)	32.6	2.75	6.34	0.09	<0.02	0.02	0.019	0.09	5.3	9.8	0.35	455	0.79	0.03	

Certified By:

Milithya Q. Silva



AGAT WORK ORDER: 10V443043

PROJECT NO:

5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.aqatlabs.com

#### CLIENT NAME: FJORDLAND EXPLORATIONS

#### ATTENTION TO: John Peters; Vic Tanaka

			Aqua Re	egia Dige	st - Meta	ls Packa	ge, ICP/IC	P-MS fin	ish (2010	74)				
DATE SAMPLED: Oct	13, 2010		DAT	E RECEIVE	D: Oct 13, 2	010	DA	TE REPOR	TED: Oct 15	, 2010	SAMPLE TYPE: Soil			
Analyt	e: N	b Ni	Р	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Та	Te
Un		n ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RD	L: 0.0	5 0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01	0.01
M 1 (-)	0.3	8 18.2	568	9.7	11.0	<0.001	0.010	0.77	5.5	<0.2	4.9	52.0	<0.01	0.02
M 2 (-)	0.9		651	6.3	12.0	<0.001	0.007	0.85	5.6	<0.2	0.9	50.3	<0.01	0.02
M 3 (-)	1.6		673	5.7	11.3	<0.001	0.015	0.65	5.7	<0.2	0.9	52.8	<0.01	0.02
M 4 (-)	<0.0		<10	<0.1	<0.1	<0.001	0.016	<0.05	<0.1	<0.2	<0.2	<0.2	<0.01	<0.01
M 5 (-)	2.2		548	4.9	9.9	<0.001	0.015	0.46	4.0	<0.2	1.0	48.0	<0.01	0.01
M 6 (-)	1.1		687	5.6	10.4	<0.001	0.009	0.80	5.8	0.2	0.8	46.4	<0.01	0.01
M 7 (-)	1.2		862	5.7	11.4	<0.001	0.010	0.66	6.1	<0.2	0.9	55.5	<0.01	0.02
M 8 (-)	1.7	3 18.1	682	4.4	8.3	<0.001	0.013	0.47	4.3	<0.2	0.6	38.5	<0.01	0.01
M 9 (-)	1.9		696	5.8	8.0	<0.001	0.015	0.43	3.8	<0.2	1.1	40.4	<0.01	0.01
M 10 (-)	1.9		844	5.6	8.7	<0.001	0.014	0.49	4.8	<0.2	1.1	42.6	<0.01	0.01
M 11 (-)	2.0	5 20.3	748	6.0	7.5	<0.001	0.015	0.46	4.5	<0.2	1.6	42.0	<0.01	0.01
M 12 (-)	2.0	8 18.0	648	4.7	8.4	<0.001	0.013	0.40	4.2	<0.2	0.8	47.3	<0.01	<0.01
M 13 (-)	1.6	1 17.2	634	4.6	7.5	<0.001	0.011	0.32	3.3	<0.2	0.9	37.0	<0.01	<0.01
M 14 (-)	1.5		646	6.4	9.3	<0.001	0.006	0.46	5.0	<0.2	1.8	44.3	<0.01	<0.01
M 15 (-)	1.0	4 16.1	547	5.8	10.9	<0.001	<0.005	0.64	5.8	<0.2	1.9	46.5	<0.01	0.01
M 16 (-)	0.9	3 18.4	674	6.9	11.4	<0.001	0.009	0.72	6.4	<0.2	1.8	46.8	<0.01	0.01
M 17 (-)	1.2	8 12.8	534	6.2	7.9	<0.001	0.007	0.52	4.6	<0.2	2.0	43.5	<0.01	<0.01
M 18 (-)	1.8	2 14.2	664	6.5	9.2	<0.001	0.010	0.51	5.1	<0.2	1.8	47.1	<0.01	<0.01
M 19 (-)	0.6	9 17.6	915	5.5	11.2	0.001	0.007	0.74	7.0	0.2	1.3	54.0	<0.01	0.01
M 20 (-)	0.8	0 22.4	806	5.9	7.3	<0.001	0.008	0.37	6.8	<0.2	2.7	55.3	<0.01	0.02
M 21 (-)	2.2	2 23.7	601	7.1	27.6	<0.001	0.013	0.50	5.2	0.2	1.9	49.1	<0.01	0.04
M 22 (-)	1.6	8 18.8	978	5.8	13.7	<0.001	0.010	0.50	4.6	<0.2	1.1	39.8	<0.01	0.04
M 23 (-)	1.6	2 20.8	644	3.7	10.0	<0.001	0.008	0.40	4.4	<0.2	0.8	46.9	<0.01	0.02
M 24 (-)	0.5	4 22.9	715	4.8	12.9	<0.001	0.006	0.61	6.9	<0.2	0.7	51.5	<0.01	0.01
M 25 (-)	1.1	0 17.9	638	3.6	8.9	<0.001	< 0.005	0.35	4.7	<0.2	0.9	45.6	<0.01	0.01
M 26 (-)	1.3	6 19.2	661	6.2	9.4	<0.001	0.007	0.36	4.4	<0.2	3.0	45.1	<0.01	0.01
M 27 (-)	0.6	9 21.3	721	5.7	9.7	<0.001	0.006	0.35	6.7	<0.2	1.9	56.7	<0.01	0.02
M 28 (-)	1.1	1 27.4	638	17.6	16.5	<0.001	0.010	0.67	9.2	0.4	10.5	61.5	<0.01	0.02
M 29 (-)	1.9	4 20.4	287	16.1	12.4	<0.001	0.017	0.36	4.7	<0.2	10.4	49.5	<0.01	<0.01
M 30 (-)	1.0	1 15.3	1700	20.1	10.2	<0.001	0.030	0.22	2.5	<0.2	9.9	31.3	<0.01	0.02
M 31 (-)	0.8	6 26.1	283	9.9	12.1	<0.001	0.018	0.29	3.7	0.2	8.7	46.2	<0.01	0.02
M 32 (-)	0.7	4 15.4	197	4.3	12.7	<0.001	0.008	0.38	4.3	<0.2	2.2	50.5	<0.01	0.01

Certified By:

Milithya O. Silva



AGAT WORK ORDER: 10V443043

PROJECT NO:

5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.aqatlabs.com

#### CLIENT NAME: FJORDLAND EXPLORATIONS

#### ATTENTION TO: John Peters; Vic Tanaka

		/	Aqua Reg	gia Diges	t - Metal	s Packa	ge, ICP/IC	P-MS fini	ish (2010	74)				
DATE SAMPLED: Oct 13, 20	010		DATE	RECEIVED	: Oct 13, 2	010	DA	TE REPORT	FED: Oct 15	2010	SA		E: Soil	
Analyte:	Nb	Ni	Р	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Та	Te
Unit:	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.05	0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01	0.01
M 33 (-)	0.75	20.0	511	2.8	11.0	<0.001	0.008	0.55	5.3	0.2	1.4	55.8	<0.01	0.02
M 34 (-)	0.71	24.6	601	5.3	16.2	<0.001	<0.005	0.76	8.0	<0.2	5.7	67.9	<0.01	0.02
M 35 (-)	0.30	16.2	1080	3.2	8.9	<0.001	0.019	0.19	3.1	<0.2	3.5	29.2	<0.01	0.02
M 36 (-)	1.18	18.3	607	4.2	9.3	<0.001	0.012	0.26	3.1	<0.2	2.5	33.2	<0.01	0.01
M 37 (-)	0.60	16.8	628	1.4	8.8	<0.001	0.009	0.21	3.4	<0.2	1.4	38.8	<0.01	0.01
M 38 (-)	1.41	18.9	618	3.0	9.0	<0.001	0.013	0.29	3.5	<0.2	1.3	46.2	<0.01	0.01
M 39 (-)	1.07	23.7	576	2.0	12.7	<0.001	0.009	0.55	6.3	<0.2	1.9	57.5	<0.01	0.02
M 40 (-)	1.91	16.7	488	1.5	8.0	<0.001	0.015	0.32	3.7	0.2	0.8	43.0	<0.01	<0.01
M 41 (-)	1.06	43.1	715	0.1	10.4	<0.001	0.009	0.28	3.6	0.2	2.7	45.3	<0.01	0.02
M 42 (-)	1.45	17.4	967	3.0	7.5	<0.001	0.014	0.19	2.0	<0.2	1.1	29.8	<0.01	0.01
M 43 (-)	2.02	16.4	566	1.8	11.0	<0.001	0.015	0.33	3.8	<0.2	0.7	43.8	<0.01	0.01
M 44 (-)	1.14	18.4	529	1.4	10.4	<0.001	<0.005	0.49	5.1	0.2	0.6	57.2	<0.01	0.01
M 45 (-)	1.23	18.9	556	1.1	8.3	<0.001	0.008	0.32	3.6	<0.2	0.8	44.5	<0.01	0.01
M 46 (-)	1.32	18.5	488	1.3	7.4	<0.001	0.006	0.29	3.5	<0.2	0.6	39.0	<0.01	0.01
M 47 (-)	0.20	21.8	469	0.5	8.4	<0.001	0.012	0.20	3.1	<0.2	1.5	34.9	<0.01	0.01

Certified By:

Milithya Q. Silva



CLIENT NAME: FJORDLAND EXPLORATIONS

# Certificate of Analysis

AGAT WORK ORDER: 10V443043

PROJECT NO:

5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.agatlabs.com

#### ATTENTION TO: John Peters; Vic Tanaka

			1	Aqua Reg	jia Diges	t - Metals	s Packag	e, ICP/IC	P-MS fini	sh (201074)	
DATE SAMPLED: Oct	13, 2010	)		DATE	RECEIVED	: Oct 13, 20	10	DA	TE REPORT	ED: Oct 15, 2010	SAMPLE TYPE: Soil
Analy		Th	Ti	TI	U	V	W	Y	Zn	Zr	
Un		ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Sample Description RD	DL:	0.1	0.005	0.02	0.05	0.5	0.05	0.05	0.5	0.5	
M 1 (-)		3.0	0.143	0.07	0.83	104	0.12	6.61	53.8	3.3	
M 2 (-)		2.9	0.221	0.08	0.88	101	0.28	6.90	42.7	7.8	
M 3 (-)		2.6	0.218	0.06	1.88	88.6	0.29	9.21	37.9	3.1	
M 4 (-)		<0.1	0.224	<0.02	<0.05	86.6	<0.05	<0.05	<0.5	<0.5	
M 5 (-)		1.9	0.192	0.04	0.82	86.1	0.59	6.40	35.6	2.2	
M 6 (-)		2.7	0.223	0.06	1.01	106	0.32	7.40	44.8	3.2	
M 7 (-)		2.6	0.197	0.06	1.15	93.4	0.25	8.37	46.2	3.1	
M 8 (-)		1.8	0.189	0.05	0.74	91.2	0.22	6.96	46.4	1.7	
M 9 (-)		1.7	0.193	0.04	0.63	92.2	0.21	5.55	40.0	1.6	
M 10 (-)		2.0	0.199	0.05	0.73	99.0	0.24	6.28	40.4	1.6	
M 11 (-)		2.2	0.194	0.05	0.74	89.3	0.25	6.08	35.2	2.3	
M 12 (-)		2.1	0.187	0.04	0.71	82.6	0.18	6.14	31.8	2.1	
M 13 (-)		1.8	0.152	0.04	0.58	78.3	0.20	4.88	30.7	2.2	
M 14 (-)		2.5	0.203	0.06	0.86	81.7	0.21	6.54	36.7	2.5	
M 15 (-)		2.4	0.222	0.06	0.75	83.3	0.20	6.82	40.4	5.2	
M 16 (-)		2.6	0.217	0.06	0.82	103	0.21	7.22	40.8	3.7	
M 17 (-)		1.7	0.209	0.04	0.72	81.3	0.17	6.84	32.6	1.8	
M 18 (-)		1.9	0.204	0.05	0.82	74.2	0.20	7.30	40.0	2.0	
M 19 (-)		2.9	0.216	0.07	1.08	96.4	0.24	8.38	41.3	7.6	
M 20 (-)		3.8	0.184	0.06	1.56	94.7	0.19	7.62	35.9	12.3	
M 21 (-)		3.3	0.201	0.11	3.05	98.4	0.26	8.37	52.3	2.2	
M 22 (-)		2.0	0.186	0.06	0.69	108	0.23	5.62	40.2	2.2	
M 23 (-)		2.4	0.194	0.04	0.77	103	0.19	5.85	43.5	4.5	
M 24 (-)		2.8	0.194	0.07	0.76	112	0.21	7.36	42.0	6.5	
M 25 (-)		2.4	0.166	0.04	0.71	90.8	0.17	6.08	29.5	4.2	
M 26 (-)		2.2	0.171	0.04	0.66	93.2	0.17	5.91	34.4	3.8	
M 27 (-)		3.7	0.178	0.06	1.05	96.0	0.20	6.21	32.8	12.0	
M 28 (-)		3.2	0.222	0.09	1.96	113	0.25	11.4	53.1	7.8	
M 29 (-)		1.7	0.207	0.07	1.51	117	0.75	8.87	51.3	2.6	
M 30 (-)		1.5	0.079	0.05	0.41	105	0.12	2.43	71.0	0.7	
M 31 (-)		1.8	0.172	0.05	0.92	109	0.15	7.22	53.1	3.1	
M 32 (-)		2.0	0.202	0.05	0.96	135	0.19	7.36	31.6	4.4	

Certified By:

Milithza Q. Silva



AGAT WORK ORDER: 10V443043

PROJECT NO:

5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.aqatlabs.com

#### CLIENT NAME: FJORDLAND EXPLORATIONS

#### ATTENTION TO: John Peters; Vic Tanaka

			A	Aqua Reg	jia Diges	t - Metals	s Packag	e, ICP/IC	P-MS fini	sh (201074)	
DATE SAMPLED: O	Oct 13, 20	010		DATE	RECEIVED	: Oct 13, 20	)10	DA	TE REPORT	ED: Oct 15, 2010	SAMPLE TYPE: Soil
Ana	alyte:	Th	Ti	TI	U	V	W	Y	Zn	Zr	
	Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Sample Description	RDL:	0.1	0.005	0.02	0.05	0.5	0.05	0.05	0.5	0.5	
M 33 (-)		2.7	0.209	0.06	0.75	121	0.19	7.58	38.3	6.3	
M 34 (-)		3.3	0.226	0.08	0.93	125	0.24	9.67	51.2	8.4	
M 35 (-)		1.5	0.044	0.05	0.52	93.1	< 0.05	3.91	66.5	0.9	
M 36 (-)		1.7	0.139	0.05	0.46	93.8	0.17	4.10	48.0	2.6	
M 37 (-)		1.5	0.107	0.04	0.46	93.4	0.08	4.71	42.1	1.4	
M 38 (-)		1.6	0.152	0.04	0.55	118	0.14	4.83	44.3	2.3	
M 39 (-)		2.8	0.209	0.06	0.82	121	0.20	8.65	42.7	7.0	
M 40 (-)		1.6	0.186	0.04	0.55	102	0.17	5.28	39.5	2.7	
M 41 (-)		2.0	0.148	0.05	0.96	113	0.19	5.80	58.0	3.5	
M 42 (-)		1.6	0.119	0.04	0.43	122	0.18	2.86	41.3	2.0	
M 43 (-)		1.7	0.177	0.04	0.61	90.9	0.16	6.05	49.3	2.6	
M 44 (-)		2.6	0.236	0.05	0.86	118	0.23	7.82	35.1	5.4	
M 45 (-)		1.9	0.159	0.04	0.62	92.0	0.27	5.62	42.0	2.9	
M 46 (-)		1.7	0.178	0.03	0.60	110	0.17	5.28	37.4	3.2	
M 47 (-)		1.5	0.044	0.04	0.50	85.6	<0.05	4.01	52.7	0.7	

Comments: RDL - Reported Detection Limit

Certified By:

Milithya O. Silva



AGAT WORK ORDER: 10V443043 PROJECT NO: 5623 MCADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.agatlabs.com

### CLIENT NAME: FJORDLAND EXPLORATIONS

ATTENTION TO: John Peters; Vic Tanaka

			Fire Assay - Trace Au, ICF	P-OES finish (201052)	
DATE SAMPLED: C	Oct 13, 2010		DATE RECEIVED: Oct 13, 2010	DATE REPORTED: Oct 15, 2010	SAMPLE TYPE: Soil
Ana	alyte: Sample Login Weight	Au			
	Unit: kg	ppm			
Sample Description	RDL: 0.01	0.001			
M 1 (-)	0.36	0.008			
M 2 (-)	0.25	0.012			
M 3 (-)	0.28	0.009			
M 4 (-)	0.42	0.010			
M 5 (-)	0.30	0.019			
M 6 (-)	0.46	0.005			
M 7 (-)	0.43	0.008			
M 8 (-)	0.45	0.004			
M 9 (-)	0.38	0.010			
M 10 (-)	0.47	0.002			
M 11 (-)	0.53	0.003			
M 12 (-)	0.39	0.004			
M 13 (-)	0.48	0.020			
M 14 (-)	0.47	0.006			
M 15 (-)	0.40	0.005			
M 16 (-)	0.41	0.004			
M 17 (-)	0.43	0.004			
M 18 (-)	0.41	0.006			
M 19 (-)	0.41	0.004			
M 20 (-)	0.44	0.003			
M 21 (-)	0.39	0.002			
M 22 (-)	0.31	0.003			
M 23 (-)	0.43	0.006			
M 24 (-)	0.46	0.004			
M 25 (-)	0.38	0.003			
M 26 (-)	0.41	0.002			
M 27 (-)	0.42	0.003			
M 28 (-)	0.29	0.005			
M 29 (-)	0.31	0.014			
M 30 (-)	0.42	0.007			
M 31 (-)	0.39	0.003			
M 32 (-)	0.47	0.005			

Certified By:

Milithya O. Silva



AGAT WORK ORDER: 10V443043 PROJECT NO: 5623 MCADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.agatlabs.com

### CLIENT NAME: FJORDLAND EXPLORATIONS

ATTENTION TO: John Peters; Vic Tanaka

				Fire Assay - Trace Au, ICF	P-OES finish (201052)	
DATE SAMPLED: 0	Oct 13, 201	0		DATE RECEIVED: Oct 13, 2010	DATE REPORTED: Oct 15, 2010	SAMPLE TYPE: Soil
An	nalyte: Login	Sample Weight	Au			
	Unit:	kg	ppm			
Sample Description	RDL:	0.01	0.001			
M 33 (-)		0.38	0.004			
M 34 (-)		0.41	0.028			
M 35 (-)		0.31	0.003			
M 36 (-)		0.36	0.002			
M 37 (-)		0.32	0.001			
M 38 (-)		0.33	0.009			
M 39 (-)		0.47	<0.001			
M 40 (-)		0.42	0.003			
M 41 (-)		0.41	0.003			
M 42 (-)		0.35	0.002			
M 43 (-)		0.30	<0.001			
M 44 (-)		0.40	0.002			
M 45 (-)		0.32	0.005			
M 46 (-)		0.43	0.002			
M 47 (-)		0.32	0.002			
Commonto: DDI	Departed					

Comments: RDL - Reported Detection Limit

Certified By:

Milithza Q. Silva



# **Quality Assurance**

### CLIENT NAME: FJORDLAND EXPLORATIONS

PROJECT NO:

AGAT WORK ORDER: 10V443043

### ATTENTION TO: John Peters; Vic Tanaka

			Solic	d Anal	ysis						
RPT Date: Oct 15, 2010			REPLIC	CATE				REFER	RENCE MATE	RIAL	
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result	Expect	Recovery	Accepta	ble Limi
			0				Value	Value		Lower	Uppe
Aqua Regia Digest - Metals Packag			,							300/	1000
Ng	1	2052608	< 0.01	0.09	1.00/	0.04				70%	130%
Al .	1	2052654	2.03	2.12	4.3%	< 0.01		4.30		70%	130%
ns Nu	1	2052608	6.2	7.1	13.5%	0.4		2.49		70%	130%
iu i	1 1	2052608 2052608	< 0.01 < 5	< 0.01 < 5	0.0% 0.0%	< 0.01 < 5		0.2		80% 70%	120% 130%
a	1	2052608	148	146	1.4%	< 1		350		70%	130%
e Se	1	2052608	0.38	0.39	2.6%	< 0.05		0.4		70%	130%
li	1	2052608	0.07	0.07	0.0%	< 0.03		2.73		70%	130%
Ca	1	2052654	0.498	0.537	0.0 <i>%</i> 7.5%	< 0.01		2.21		70%	130%
Cd	1	2052608	0.05	0.05	0.0%	< 0.01		3		70%	130%
Če	1	2052608	15.8	16.4	3.7%	0.11		35		70%	130%
co	1	2052608	9.7	10.0	3.0%	1.4		672		70%	1309
Cr	1	2052654	25.4	25.7	1.2%	< 0.5		320		70%	130%
S S	1	2052608	1.31	1.41	7.4%	< 0.05		0.3		70%	130%
Cu	1	2052608	60.4	59.3	1.8%	13.7		11850		70%	130%
e	1	2052654	2.75	2.82	2.5%	< 0.01		25.54		70%	1309
a a	1	2052608	6.69	6.88	2.8%	< 0.05		10		70%	1309
ie	1	2052608	0.13	0.13	0.0%	0.10				70%	1309
lf	1	2052608	0.04	0.09		< 0.02				70%	1309
lg	1	2052608	0.04	0.03	28.6%	< 0.01				70%	130%
ı	1	2052608	0.0203	0.0228	11.6%	< 0.005				70%	130%
	1	2052654	0.09	0.09	0.0%	< 0.01		0.6		70%	1309
а	1	2052608	7.73	7.92	2.4%	< 0.1		17		70%	130%
i	1	2052608	13.7	14.6	6.4%	< 0.1				70%	130%
ſg	1	2052654	0.353	0.375	6.0%	< 0.01		1.790		70%	130%
1n	1	2052654	455	468	2.8%	< 1		703		70%	1309
10	1	2052608	0.67	0.65	3.0%	0.06		4		70%	130%
la	1	2052654	0.030	0.036	18.2%	< 0.01		1.6		70%	130%
lb	1	2052608	0.38	0.72		< 0.05		3		70%	130%
li	1	2052608	18.2	18.3	0.5%	57.8		19530		70%	130%
	1	2052608	568	742	26.6%	< 10	746	600	124%	70%	1309
b	1	2052608	9.66	9.48	1.9%	< 0.1	44	58	76%	70%	130%
Rb	1	2052608	11.0	11.4	3.6%	< 0.1	11	13	84%	80%	120%
Re	1	2052608	< 0.001	< 0.001	0.0%	< 0.001				70%	130%
5	1	2052654	0.0117	0.0126	7.4%	< 0.005		14.14		70%	130%
b	1	2052608	0.771	0.925	18.2%	< 0.05		0.2		70%	1309
Sc	1	2052608	5.54	6.01	8.1%	< 0.1		9		70%	130%
Se	1	2052608	< 0.2	< 0.2	0.0%	< 0.2		20.7		70%	130%
Sn	1	2052608	4.9	5.2	5.9%	< 0.2				70%	130%
Gr	1	2052608	52.0	54.6	4.9%	0.4		280		70%	1309
a	1	2052608	< 0.01	< 0.01	0.0%	< 0.01				70%	1309
e	1	2052608	0.02	0.02	0.0%	< 0.01				70%	1309
ĥ	1	2052608	2.97	2.95	0.7%	< 0.1				70%	130%
ï	1	2052608	0.143	0.194		< 0.005				70%	130%



# **Quality Assurance**

#### CLIENT NAME: FJORDLAND EXPLORATIONS

PROJECT NO:

AGAT WORK ORDER: 10V443043

ATTENTION TO: John Peters; Vic Tanaka

		20110	I Analy	y 515 (C	Jonn	nucuj					
RPT Date: Oct 15, 2010			REPLIC	CATE				REFEF	RENCE MATE	RIAL	
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result Value	Expect Value	Recovery		ble Limits
ΤΙ	1	2052608	0.07	0.07	0.0%	< 0.02		0.3		Lower 70%	Upper 130%
U	1	2052608	0.83	0.88	5.8%	< 0.05		0.2		70%	130%
V	1	2052654	85.6	86.1	0.6%	< 0.5		82.5		70%	130%
W	1	2052608	0.725	0.664	8.8%	< 0.05				70%	130%
Y	1	2052608	6.61	6.99	5.6%	< 0.05		7		70%	130%
Zn	1	2052608	53.8	54.1	0.6%	0.7		235		70%	130%
Zr	1	2052608	3.8	5.4		< 0.5				70%	130%
Aqua Regia Digest - Metals Package	, ICP/ICP-MS	finish (2010	74)								
Ag	1	2052629	0.047	0.044	6.6%	< 0.01				70%	130%
AI	1	2052629	2.23	2.24	0.4%	< 0.01		4.30		70%	130%
As	1	2052629	4.0	4.0	0.0%	< 0.1		2.49		70%	130%
Au	1	2052629	< 0.01	< 0.01	0.0%	< 0.01		0.2		80%	120%
В	1	2052629	< 5	< 5	0.0%	< 5				70%	130%
Ва	1	2052629	110	111	0.9%	< 1		350		70%	130%
Ве	1	2052629	0.468	0.435	7.3%	< 0.05		0.4		70%	130%
Ві	1	2052629	0.120	0.126	4.9%	< 0.01		2.73		70%	130%
Са	1	2052629	0.53	0.53	0.0%	< 0.01		2.21		70%	130%
Cd	1	2052629	0.045	0.041	9.3%	< 0.01		3		70%	130%
Ce	1	2052629	15.3	15.1	1.3%	< 0.01		35		70%	130%
Co	1	2052629	10.4	10.5	1.0%	< 0.1		672		70%	130%
Cr	1	2052629	30.5	31.4	2.9%	< 0.5		320		70%	130%
Cs	1	2052629	1.03	1.01	2.0%	< 0.05		0.3		70%	130%
Cu	1	2052629	32.9	33.2	0.9%	< 0.1		11850		70%	130%
Fe	1	2052629	3.16	3.20	1.3%	< 0.01		25.54		70%	130%
Ga	1	2052629	7.05	7.10	0.7%	< 0.05		10		70%	130%
Ge	1	2052629	0.11	0.12	8.7%	< 0.05				70%	130%
Hf	1	2052629	0.044	0.047	6.6%	< 0.02				70%	130%
Hg	1	2052629	0.03	0.03	0.0%	< 0.01				70%	130%
In	1	2052629	0.021	0.021	0.0%	< 0.005				70%	130%
K	1	2052629	0.08	0.08	0.0%	< 0.01		0.6		70%	130%
La	1	2052629	6.5	6.5	0.0%	< 0.1		17		70%	130%
Li	1	2052629	12.1	12.3	1.6%	< 0.1				70%	130%
Mg	1	2052629	0.44	0.44	0.0%	< 0.01		1.790		70%	130%
Mn	1	2052629	559	561	0.4%	< 1		703		70%	130%
Мо	1	2052629	0.82	0.82	0.0%	< 0.05		4		70%	130%
Na	1	2052629	0.02	0.02	0.0%	< 0.01		1.6		70%	130%
Nb	1	2052629	1.68	1.65	1.8%	< 0.05		3		70%	130%
Ni	1	2052629	18.8	19.4	3.1%	< 0.2		19530		70%	130%
Р	1	2052629	978	1010	3.2%	< 10		600		70%	130%
Pb	1	2052629	5.8	5.7	1.7%	< 0.1	45	58	78%	70%	130%
Rb	1	2052629	13.7	13.4	2.2%	< 0.1		13		70%	130%
Re	1	2052629	< 0.001	< 0.001	0.0%	< 0.001				70%	130%
S	1	2052629	0.0105	0.0126	18.2%	< 0.005		14.14		70%	130%



# **Quality Assurance**

#### CLIENT NAME: FJORDLAND EXPLORATIONS

PROJECT NO:

AGAT WORK ORDER: 10V443043

ATTENTION TO: John Peters; Vic Tanaka

		Solic	Anal	ysis (C	Conti	nued)					
RPT Date: Oct 15, 2010			REPLIC	CATE				REFEF	RENCE MATE	RIAL	
			<u></u>			Method Blank	Result	Expect		Accepta	ble Limits
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Value	Value	Recovery	Lower	Upper
Sb	1	2052629	0.499	0.492	1.4%	< 0.05		0.2		70%	130%
Sc	1	2052629	4.6	4.6	0.0%	< 0.1		9		70%	130%
Se	1	2052629	< 0.2	< 0.2	0.0%	< 0.2		20.7		70%	130%
Sn	1	2052629	1.07	1.01	5.8%	< 0.2				70%	130%
Sr	1	2052629	39.8	40.0	0.5%	< 0.2		280		70%	130%
Та	1	2052629	< 0.01	< 0.01	0.0%	< 0.01				70%	130%
Те	1	2052629	0.04	0.04	0.0%	< 0.01				70%	130%
Th	1	2052629	2.0	2.0	0.0%	< 0.1				70%	130%
Ті	1	2052629	0.186	0.184	1.1%	< 0.005				70%	130%
ті	1	2052629	0.06	0.06	0.0%	< 0.02		0.3		70%	130%
U	1	2052629	0.687	0.669	2.7%	< 0.05		0.2		70%	130%
V	1	2052629	108	107	0.9%	< 0.5		82.5		70%	130%
W	1	2052629	0.23	0.22	4.4%	< 0.05				70%	130%
Y	1	2052629	5.62	5.64	0.4%	< 0.05		7		70%	130%
Zn	1	2052629	40.2	41.2	2.5%	< 0.5		235		70%	130%
Zr	1	2052629	2.2	2.3	4.4%	< 0.5				70%	130%
Fire Assay - Trace Au, ICP-OES finish	(201052)										
Au	1	2052625	0.006	0.001		< 0.001	0.193	0.205	94%	90%	110%
Fire Assay - Trace Au, ICP-OES finish	(201052)										
Au	1	2052632	0.003	0.003	0.0%	< 0.001	0.589	0.615	96%	90%	110%
Fire Assay - Trace Au, ICP-OES finish	(201052)										
Au	1	2052644	0.001	0.002		< 0.001		0.031		70%	130%
Fire Assay - Trace Au, ICP-OES finish	(201052)										
Au	1	2052654	0.002	0.003		< 0.001		0.031		70%	130%

Certified By:

Milithya O. Silva



# Method Summary

### CLIENT NAME: FJORDLAND EXPLORATIONS

AGAT WORK ORDER: 10V443043

PROJECT NO:		ATTENTION TO: John Peters; Vic Tanaka					
PARAMETER	AGAT S.O.P		ANALYTICAL TECHNIQUE				
Solid Analysis	AGA1 0.0.1		ANAETHOAETEOHNIQUE				
-	MIN-200-12017		ICP-MS				
Ag Al	MIN-200-12017		ICP/OES				
As	MIN-200-12017 MIN-200-12017		ICP-MS				
Au	MIN-200-12017 MIN-200-12017		ICP-MS				
B	MIN-200-12017 MIN-200-12017		ICP/OES				
Ba	MIN-200-12017 MIN-200-12017		ICP-MS				
Be	MIN-200-12017		ICP-MS				
Bi	MIN-200-12017		ICP-MS				
Ca	MIN-200-12017		ICP/OES				
Cd	MIN-200-12017		ICP-MS				
Ce	MIN-200-12017		ICP-MS				
Co	MIN-200-12017		ICP-MS				
Cr	MIN-200-12017 MIN-200-12017		ICP/OES				
Cs	MIN-200-12017 MIN-200-12017		ICP-MS				
Cu	MIN-200-12017 MIN-200-12017		ICP-MS				
Fe	MIN-200-12017		ICP/OES				
Ga	MIN-200-12017 MIN-200-12017		ICP-MS				
Ge	MIN-200-12017		ICP-MS				
Hf	MIN-200-12017		ICP-MS				
Hg	MIN-200-12017 MIN-200-12017		ICP-MS				
In	MIN-200-12017		ICP-MS				
K	MIN-200-12017		ICP/OES				
	MIN-200-12017		ICP-MS				
La Li	MIN-200-12017 MIN-200-12017		ICP-MS				
Mg	MIN-200-12017 MIN-200-12017		ICP/OES				
Mn	MIN-200-12017 MIN-200-12017		ICP/OES				
Mo	MIN-200-12017 MIN-200-12017		ICP-MS				
Na	MIN-200-12017		ICP/OES				
Nb	MIN-200-12017		ICP-MS				
Ni	MIN-200-12017		ICP-MS				
P	MIN-200-12017 MIN-200-12017		ICP/OES				
Pb	MIN-200-12017		ICP-MS				
Rb	MIN-200-12017		ICP-MS				
Re	MIN-200-12017 MIN-200-12017		ICP-MS				
S	MIN-200-12017		ICP/OES				
Sb	MIN-200-12017		ICP-MS				
Sc	MIN-200-12017		ICP-MS				
Se	MIN-200-12017		ICP-MS				
Sn	MIN-200-12017		ICP-MS				
Sr	MIN-200-12017		ICP-MS				
Ta	MIN-200-12017 MIN-200-12017		ICP-MS				
Те	MIN-200-12017 MIN-200-12017		ICP-MS				
Th	MIN-200-12017 MIN-200-12017		ICP-MS				
Ti	MIN-200-12017 MIN-200-12017		ICP/OES				
TI	MIN-200-12017 MIN-200-12017		ICP/0ES ICP-MS				
U	MIN-200-12017 MIN-200-12017		ICP-MS				
V	MIN-200-12017		ICP/OES				
W	MIN-200-12017 MIN-200-12017		ICP-MS				
Ŷ	MIN-200-12017		ICP-MS				



# Method Summary

#### CLIENT NAME: FJORDLAND EXPLORATIONS AGAT WORK ORDER: 10V443043 PROJECT NO: ATTENTION TO: John Peters; Vic Tanaka PARAMETER AGAT S.O.P LITERATURE REFERENCE ANALYTICAL TECHNIQUE Zn MIN-200-12017 **ICP-MS** Zr MIN-200-12017 **ICP-MS** Sample Login Weight BALANCE BUGBEE, E: A Textbook of Fire Au MIN-200-12006 **ICP-OES** Assaying



#### CLIENT NAME: FJORDLAND EXPLORATIONS 11TH FLOOR-1111 MELVILLE ST VANCOUVER, BC V6E3V6

ATTENTION TO: VICTOR TANAKA

PROJECT NO:

AGAT WORK ORDER: 10V453259

SOLID ANALYSIS REVIEWED BY: Ron Cardinall, General Manager

DATE REPORTED: Nov 18, 2010

PAGES (INCLUDING COVER): 8

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998, or at 1-800-856-6261

\*NOTES

All samples are stored at no charge for 90 days. Please contact the lab if you require additional sample storage time.



AGAT WORK ORDER: 10V453259 PROJECT NO: 5623 MCADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.agatlabs.com

#### CLIENT NAME: FJORDLAND EXPLORATIONS

#### ATTENTION TO: VICTOR TANAKA

		1	Aqua Reg	gia Diges	t - Meta	ls Packag	je, ICP/IC	P-MS fini	sh (2010	74)				
DATE SAMPLED: Nov 17, 2	010		DATE	RECEIVED	: Nov 17, 2	010	DA	TE REPORT	ED: Nov 18	, 2010	SA	MPLE TYPE	: Rock	
Analyte:	Ag	AI	As	Au	В	Ва	Be	Bi	Са	Cd	Ce	Со	Cr	Cs
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.01	0.01	0.1	0.01	5	1	0.05	0.01	0.01	0.01	0.01	0.1	0.5	0.05
MR-10-05	6.94	0.87	4.3	0.29	<5	299	0.11	0.88	0.28	0.16	8.40	20.5	36.2	0.89
MR-10-05A	0.16	1.17	0.8	0.01	<5	255	0.14	0.04	0.48	0.06	13.1	16.8	56.0	4.37
MR-10-08	0.33	1.27	1.0	0.01	<5	243	0.13	0.10	0.42	0.12	29.5	23.9	60.4	4.06
MR-10-08A	0.21	0.61	1.6	0.01	<5	105	0.21	0.05	0.33	0.10	9.15	7.6	94.6	0.51
MR-10-08B	0.70	0.50	1.6	0.05	<5	369	0.17	0.09	0.41	0.09	8.31	7.1	82.8	0.14
Analyte:	Cu	Fe	Ga	Ge	Hf	Hg	In	к	La	Li	Mg	Mn	Мо	Na
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
Sample Description RDL:	0.1	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.1	0.1	0.01	1	0.05	0.01
MR-10-05	3630	4.20	4.04	0.16	0.13	0.12	0.305	0.20	4.5	6.0	0.43	190	11.0	0.04
MR-10-05A	509	2.85	5.77	0.15	0.13	0.02	0.021	0.69	7.2	10.3	0.81	414	1.51	0.11
MR-10-08	1960	3.23	7.43	0.20	0.16	0.02	0.045	0.70	15.1	11.3	0.89	410	2.40	0.09
MR-10-08A	2910	1.84	3.33	0.13	0.16	0.02	0.010	0.13	5.1	5.5	0.38	400	2.18	0.09
MR-10-08B	896	1.82	2.87	0.14	0.14	0.01	0.013	0.22	4.1	2.2	0.27	280	52.1	0.08
Analyte:	Nb	Ni	Р	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Та	Те
Unit:	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sample Description RDL:	0.05	0.2	10	0.1	0.1	0.001	0.005	0.05	0.1	0.2	0.2	0.2	0.01	0.01
MR-10-05	0.26	8.0	959	1.5	12.9	0.002	0.283	1.41	3.4	1.1	0.3	26.5	<0.01	0.43
MR-10-05A	0.21	3.7	984	0.6	73.4	0.001	0.008	0.27	3.7	<0.2	0.3	33.8	<0.01	0.03
MR-10-08	0.15	5.0	1030	1.0	69.9	0.001	0.044	0.36	6.1	0.3	0.3	33.4	<0.01	0.03
MR-10-08A	0.31	3.4	682	1.3	5.9	<0.001	0.009	0.25	1.8	<0.2	0.3	22.1	<0.01	0.02
MR-10-08B	0.37	5.5	625	1.4	7.7	0.020	0.079	0.18	1.3	<0.2	0.6	29.8	<0.01	0.04
Analyte:	Th	Ti	ТІ	U	V	W	Y	Zn	Zr					
Unit:	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm					
Sample Description RDL:	0.1	0.005	0.02	0.05	0.5	0.05	0.05	0.5	0.5					
MR-10-05	1.5	0.057	0.07	1.88	66.8	0.24	4.78	48.7	2.3					
MR-10-05A	1.5	0.146	0.37	0.93	66.4	0.19	7.55	22.5	1.7					
MR-10-08	2.0	0.113	0.39	2.50	83.0	0.17	11.8	31.9	2.7					
MR-10-08A	2.5	0.078	0.03	1.01	47.7	0.40	5.00	20.2	2.2					
MR-10-08B	1.8	0.087	0.03	0.95	40.9	2.79	5.47	12.9	1.6					

Certified By:

Roy Cardinall

<b>AGAT</b> L	aboratories	Certificate o AGAT WORK ORDEF PROJECT NO:		5623 McADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.agatlabs.com
CLIENT NAME: FJORDLAND EXPLORATION	S		ATTENTION TO: VICTOR TANA	
	Aqua Regia Digest -	Metals Package, ICF	P/ICP-MS finish (201074)	
DATE SAMPLED: Nov 17, 2010	DATE RECEIVED: No	ov 17, 2010	DATE REPORTED: Nov 18, 2010	SAMPLE TYPE: Rock

Comments: RDL - Reported Detection Limit

Certified By:



AGAT WORK ORDER: 10V453259 PROJECT NO: 5623 MCADAM ROAD MISSISSAUGA, ONTARIO CANADA L4Z 1N9 TEL (905)501-9998 FAX (905)501-0589 http://www.agatlabs.com

### CLIENT NAME: FJORDLAND EXPLORATIONS

ATTENTION TO: VICTOR TANAKA

# Fire Assay - Trace Au, ICP-OES finish (202052)

DATE SAMPLED	Nov 17,	2010		DATE RECEIVED: Nov 17, 2010	DATE REPORTED: Nov 18, 2010	SAMPLE TYPE: Rock
ļ	Analyte: Lo	Sample ogin Weight	Au			
	Unit:	kg	ppm			
Sample Description	RDL:	0.01	0.001			
MR-10-05		0.38	0.294			
MR-10-05A		0.46	0.012			
MR-10-08		0.48	0.014			
MR-10-08A		0.54	0.012			
MR-10-08B		0.20	0.049			

Comments: RDL - Reported Detection Limit

Certified By:

Roy Cardinall



# **Quality Assurance**

#### CLIENT NAME: FJORDLAND EXPLORATIONS

PROJECT NO:

ſ

# AGAT WORK ORDER: 10V453259

#### ATTENTION TO: VICTOR TANAKA

			Solic	d Anal	ysis						
RPT Date: Nov 18, 2010		REPLICATE					REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result Value	Expect Value	Recovery	Accepta Lower	ble Limits Upper
Aqua Regia Digest - Metals Package	, ICP/ICP-MS	finish (2010	74)	1	1						
Ag	1	2138915	0.21	0.21	0.0%	< 0.01	9	7	127%	70%	130%
AI	1	2138915	0.611	0.641	4.8%	< 0.01		4.30		70%	130%
As	1	2138915	1.6	1.6	0.0%	0.3		2.49		70%	130%
Au	1	2138915	0.01	0.03		< 0.01	0.277	0.321	86%	80%	120%
В	1	2138915	< 5	< 5	0.0%	< 5				70%	130%
Ва	1	2138915	105	107	1.9%	< 1		350		70%	130%
Ве	1	2138915	0.213	0.233	9.0%	< 0.05		0.4		70%	130%
Bi	1	2138915	0.05	0.05	0.0%	< 0.01		2.73		70%	130%
Са	1	2138915	0.33	0.35	5.9%	< 0.01	0.63	0.55	114%	80%	120%
Cd	1	2138915	0.100	0.106	5.8%	< 0.01		3		70%	130%
Ce	1	2138915	9.15	10.2	10.9%	< 0.01		35		70%	130%
Co	1	2138915	7.64	7.65	0.1%	< 0.1	5.4	5.0	109%	90%	110%
Cr	1	2138915	94.6	95.2	0.6%	< 0.5		320		70%	130%
Cs	1	2138915	0.511	0.518	1.4%	< 0.05		0.3		70%	130%
Cu	1	2138915	2910	2890	0.7%	< 0.1	4882	4700	104%	90%	110%
Fe	1	2138915	1.84	1.87	1.6%	< 0.01	1.28	1.55	82%	80%	120%
Ga	1	2138915	3.33	3.46	3.8%	< 0.05	1.20	10	0270	70%	130%
Ge	1	2138915	0.132	0.138	4.4%	0.07				70%	130%
Hf	1	2138915	0.162	0.179	10.0%	< 0.02				70%	130%
Hg	1	2138915	0.02	< 0.01		< 0.01				70%	130%
In	1	2138915	0.010	0.010	0.0%	< 0.005				70%	130%
ĸ	1	2138915	0.133	0.140	5.1%	< 0.01		0.6		70%	130%
La	1	2138915	5.14	5.38	4.6%	< 0.1		17		70%	130%
Li	1	2138915	5.5	5.8	5.3%	< 0.1				70%	130%
Mg	1	2138915	0.384	0.399	3.8%	< 0.01		1.790		70%	130%
Mn	1	2138915	400	404	1.0%	< 1		703		70%	130%
Мо	1	2138915	2.18	2.59	17.2%	< 0.05	321	280	115%	80%	120%
Na	1	2138915	0.093	0.098	5.2%	< 0.01		1.6		70%	130%
Nb	1	2138915	0.313	0.368	16.2%	< 0.05		3		70%	130%
Ni	1	2138915	3.43	3.14	8.8%	< 0.2	6	7	93%	90%	110%
P	1	2138915	682	673	1.3%	< 10		600		70%	130%
Pb	1	2138915	1.31	1.41	7.4%	< 0.1	36	30	121%	70%	130%
Rb	1	2138915	5.9	5.7	3.4%	< 0.1		13		70%	130%
Re	1	2138915	< 0.001	< 0.001	0.0%	0.002				70%	130%
S	1	2138915	0.009	0.011	20.0%	< 0.005		14.14		70%	130%
Sb	1	2138915	0.25	0.25	0.0%	< 0.05		0.2		70%	130%
Sc	1	2138915	1.80	1.86	3.3%	< 0.03		9		70%	130%
Se	1	2138915	< 0.2	< 0.2	0.0%	< 0.2		20.7		70%	130%
Sn	1	2138915	0.3	0.3	0.0%	0.3				70%	130%
Sr	1	2138915	22.1	23.0	4.0%	< 0.2		280		70%	130%
Та	1	2138915	< 0.01	< 0.01	0.0%	< 0.01				70%	130%
Те	1	2136915	< 0.01 0.02	< 0.01 0.02	0.0%	< 0.01 < 0.01				70% 70%	130%
Th	1	2138915	2.51	2.60	3.5%	< 0.01				70%	130%
Ti	1	2138915	0.078	0.087	10.9%	< 0.005				70%	130%
			0.070	0.001							ge 5 of 8



# **Quality Assurance**

#### CLIENT NAME: FJORDLAND EXPLORATIONS

PROJECT NO:

## AGAT WORK ORDER: 10V453259

#### ATTENTION TO: VICTOR TANAKA

Solid Analysis (Continued)											
RPT Date: Nov 18, 2010	REPLICATE				REFERENCE MATERIAL						
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD	Method Blank	Result Value	Expect Value	Recovery	Acceptable Limits	
	Batch									Lower	Upper
ТІ	1	2138915	0.026	0.024	8.0%	< 0.02		0.3		70%	130%
U	1	2138915	1.01	1.10	8.5%	< 0.05		0.2		70%	130%
V	1	2138915	47.7	46.7	2.1%	< 0.5		82.5		70%	130%
W	1	2138915	0.400	0.416	3.9%	< 0.05				70%	130%
Y	1	2138915	5.00	5.33	6.4%	< 0.05		7		70%	130%
Zn	1	2138915	20.2	20.7	2.4%	< 0.5		235		70%	130%
Zr	1	2138915	2.16	2.35	8.4%	< 0.5				70%	130%
Fire Assay - Trace Au, ICP-OES finish (202052)											
Au	1	2138915	0.021	0.017	21.1%	< 0.001	0.277	0.321	86%	80%	120%

Certified By:

Ron Cardinall



# Method Summary

### CLIENT NAME: FJORDLAND EXPLORATIONS

AGAT WORK ORDER: 10V453259 ATTENTION TO: VICTOR TANAKA

PROJECT NO:		ATTENTION TO: VICTOR TANAKA					
PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE				
Solid Analysis	AGA1 0.0.1						
	MIN-200-12017		ICP-MS				
Ag Al	MIN-200-12017		ICP/OES				
As	MIN-200-12017		ICP-MS				
Au	MIN-200-12017 MIN-200-12017		ICP-MS				
B	MIN-200-12017 MIN-200-12017		ICP/OES				
Ba	MIN-200-12017 MIN-200-12017		ICP-MS				
Be	MIN-200-12017		ICP-MS				
Bi	MIN-200-12017 MIN-200-12017		ICP-MS				
Ca	MIN-200-12017 MIN-200-12017		ICP/OES				
Cd	MIN-200-12017 MIN-200-12017		ICP-MS				
Ce	MIN-200-12017		ICP-MS				
Co	MIN-200-12017						
Cr	MIN-200-12017		ICP/OES				
Cs	MIN-200-12017		ICP-MS				
Cu	MIN-200-12017		ICP-MS				
Fe	MIN-200-12017		ICP/OES				
Ga	MIN-200-12017		ICP-MS				
Ge	MIN-200-12017		ICP-MS				
Hf	MIN-200-12017		ICP-MS				
Hg	MIN-200-12017		ICP-MS				
In	MIN-200-12017		ICP-MS				
К	MIN-200-12017		ICP/OES				
La	MIN-200-12017		ICP-MS				
Li	MIN-200-12017		ICP-MS				
Mg	MIN-200-12017		ICP/OES				
Mn	MIN-200-12017		ICP/OES				
Мо	MIN-200-12017		ICP-MS				
Na	MIN-200-12017		ICP/OES				
Nb	MIN-200-12017		ICP-MS				
Ni	MIN-200-12017		ICP-MS				
P	MIN-200-12017		ICP/OES				
Pb	MIN-200-12017		ICP-MS				
Rb	MIN-200-12017		ICP-MS				
Re	MIN-200-12017		ICP-MS				
S	MIN-200-12017		ICP/OES				
Sb	MIN-200-12017		ICP-MS				
Sc	MIN-200-12017		ICP-MS				
Se	MIN-200-12017		ICP-MS				
Sn	MIN-200-12017		ICP-MS				
Sr	MIN-200-12017		ICP-MS				
Та	MIN-200-12017		ICP-MS				
Те	MIN-200-12017		ICP-MS				
Th	MIN-200-12017		ICP-MS				
Ti	MIN-200-12017		ICP/OES				
ТІ	MIN-200-12017		ICP-MS				
U	MIN-200-12017		ICP-MS				
V	MIN-200-12017		ICP/OES				
W	MIN-200-12017		ICP-MS				
Y	MIN-200-12017		ICP-MS				



Au

**ICP-OES** 

# Method Summary

Assaying

#### CLIENT NAME: FJORDLAND EXPLORATIONS AGAT WORK ORDER: 10V453259 PROJECT NO: ATTENTION TO: VICTOR TANAKA PARAMETER AGAT S.O.P LITERATURE REFERENCE ANALYTICAL TECHNIQUE Zn MIN-200-12017 **ICP-MS** Zr MIN-200-12017 **ICP-MS** Sample Login Weight BALANCE BUGBEE, E: A Textbook of Fire

MIN-200-12006

Appendix C: Laboratory Procedures





# Fjordland TAK Soils Project Sample Preparation Methodology Summary

# DRYING OF MINERAL TESTING SAMPLES – MINING BRANCH OFFICES OVERVIEW: MIN-200-12008

# **INTRODUCTION AND SCOPE**

This procedure describes the process for drying samples that will undergo analysis in the Mining Geochemistry Assay Division. Most samples contain certain amount of water as a hydrate or as occluded or surface absorbed water. There are several factors affecting moisture content including atmospheric humidity and particle size. Drying is the first step for sample preparation and is required to ensure that a homogeneous sample can be obtained. This will reduce error and bias in the analyses. Upon arrival the samples may appear dry, wet or excessively wet, however most samples require drying, as a pretreatment for the assigned tests such as sieving, fusions, digestions, etc. The types of samples include rocks, core and other drill samples, minerals, concentrates, tills, sands, soils, stream sediments, and dump and grab samples.

## PRINCIPLE OF THE METHOD

The purpose of drying is usually to make the sample anhydrous or to remove absorbed moisture but retain chemically combined water. Drying temperatures above 100°C result in the loss of the water of hydration of some minerals, which affects the mass balance of whole rock analysis. It is preferred to dry samples at lower temperatures for extended periods of time (12 - 24 hours). Once the samples are received, they are placed into trays that will go in the oven at  $60 \pm 10^{\circ}$ C for a period of time depending on the sample. Afterwards, the samples will be ready for the next step of analysis.

## SAMPLE REQUIREMENTS

The whole amount of sample received should be dried. The temperature of the drying oven should be set at  $60 \pm 10^{\circ}$ C.





# SCREEN ANALYSIS AND PARTICLE SIZE DISTRIBUTION OF MINERALOGICAL SAMPLES OVERVIEW: MIN-200-12007

# **INTRODUCTION AND SCOPE**

Many natural and manufactured materials occur in a disperse form, which means that they consist of differently shaped and sized particles. Sieving is used to isolate a particular particle size or to determinate the particle size distribution of the samples (i.e. the number of particles of different sizes), which can be related to important physical and chemical properties of solids, such as mechanical bulk behavior, surface reaction, miscibility, filtration properties, conductivity, etc. The types of samples include rocks, core and other drill samples, minerals, concentrates, tills, sands, soils, stream sediments, and dump and grab samples.

This overview focuses on one of two types of sieve analyses described in this procedure: Screen Analysis, where the sample is passed through a single sieve.

# PRINCIPLE OF THE METHOD

Screen Analysis is used to determine the retained and passing fraction through a specific sieve. For the majority of client soils projects 80 mesh (180  $\mu$ m) sieves are used. The retained portion is also referred as plus (+) portion and the passing is called minus (-) portion. The results are reported as percentage of the passing fraction relative to the total mass of sample.

During sieving the sample is subjected to horizontal and vertical movement. This causes a relative movement between the particles and the sieve; depending on their size the individual particles either pass through the sieve mesh or are retained on the sieve surface. The likelihood of a particle passing through the sieve mesh is determined by the ratio of the particle size to the sieve openings, the orientation of the particle and the number of encounters between the particle and the mesh openings.

### SAMPLE REQUIREMENTS

The samples received may need preparation, or may be prepared by the customer (ready as received), or prepared by a different company. Thus, unless the sample is specifically defined as dry, the sample needs to be dried at  $60 + 10^{\circ}$ C as described in the SOP for drying. For samples with high clay content (particles under 75µm are classified as clay particles) some clumping could be present. In this case the clumps must be broken up with (gloved) fingers or mortar and pestle, and returned to the oven for further drying. The minimum amount of sample required is 100g.







## DETERMINATION OF GOLD, PLATINUM AND PALLADIUM IN GEOLOGICAL SAMPLES BY LEAD FUSION FIRE ASSAY WITH INDUCTIVELY COUPLED PLASMA – OPTICAL EMISSION SPECTROSCOPY (ICP-OES) FINISH OVERVIEW: MIN-200-12006

### **INTRODUCTION AND SCOPE**

This method determines the concentration of gold, platinum and palladium in many types of solid matrices by Inductively Coupled Plasma - Optical Emission Spectroscopy (ICP-OES) following fire assay and aqua regia digestion of the raw material. The types of samples include rocks, core and other drill samples, minerals, concentrates, tills, sands, soils, stream sediments, slurries, and dump and grab samples.

### **PRINCIPLE OF THE METHOD**

Once the samples have undergone Fire Assay treatment, the resultant doré bead is attacked by wet chemical digestion (aqua regia) and then the instrumental finish is carried out using ICP-OES.

Inductively Coupled Plasma – Optical Emission Spectroscopy is an analytical technique used for the detection of trace metals. It is a type of emission spectroscopy that uses the inductively coupled plasma to produce excited atoms and ions that emit electromagnetic radiation at wavelengths characteristic of a particular element. The intensity of this emission is indicative of the concentration of the element within the sample.

### SAMPLE REQUIREMENTS

The samples received may need preparation, or may be prepared by the client (ready as received), or prepared by a different company. Thus, unless the sample is specifically defined as dry, the sample needs to be dried at 60°C. Some samples may also require crushing, splitting and/or milling depending on the package selected by the client and the type of material to be analyzed. The samples are treated to fire assay and then the bead doré is submitted to digestion.

### **Quality Control**

Reagent Blank: is run every 20 samples or once per fire assay set.

QC Solutions: are run at the beginning and end of the instrument data acquisition and also run every 20 samples for Calibration Verification.





Certified Reference Materials (CRM): a reference materials is used to verify calibration and fire assay conditions. A certified reference material must be weighed at least every 20 samples or once per fire assay set.

Replicates: every 20 samples or once per fire assay set a sample is chosen at random and weighed and fused in replicate.

Method Blank: every 40 samples or once per fire assay set a blank is fused (containing no sample).







## DETERMINATION OF METALS IN GEOLOGICAL SAMPLES USING AN AQUA REGIA (NITRIC AND HYDROCHLORIC ACID) DIGESTION AND A COMBINATION OF INDUCTIVELY COUPLED PLASMA – OPTICAL EMISSION SPECTROSCOPY (ICP-OES) AND INDUCTIVELY COUPLED PLASMA MASS SPECTROSCOPY (ICP-MS) OVERVIEW: MIN-200-12018

### **INTRODUCTION AND SCOPE**

This method describes the digestion with four acids in many types of solid matrices prior to instrumental determination by Inductively Coupled Plasma - Optical Emission Spectroscopy (ICP-OES) and Inductively Coupled Plasma – Mass Spectrometry (ICP-MS). The types of samples include metal bearing ores and related materials, rocks, core and other drill samples, minerals, concentrates, tills, sands, soils, stream sediments, and dump and grab samples.

### **PRINCIPLE OF THE METHOD**

Aqua Regia digestions are used in the digestion of certain geological samples and are effective for most base metal sulphates, sulphides, oxides and carbonates. It is noted that aqua regia only provides a partial digestion for most rock forming elements and elements of a refractory nature. Each sample of  $\sim 1.0$  g is digested with a 3:1 hot mixture of hydrochloric and nitric acids for one hour. The resultant product is dissolved and diluted to 50 mL with deionized water. An aliquot is measured by a suitable spectrometry instrument.

### SAMPLE REQUIREMENTS

The samples received may need preparation, or may be prepared by the client (ready as received), or prepared by a different company. Thus, unless the sample is specifically defined as dry, the sample needs to be dried at 60°C. Some samples may also require crushing, splitting and/or milling depending on the package selected by the client and the type of material to be analyzed.

There are no holding times; however there is the possibility of sulfide oxidation (sample has been received already prepared but the sample is hard). The minimum amount of sample required is 0.5g.

### **QUALITY CONTROL**

Reagent Blank: is run randomly once in every group of up to 30 samples.

QC Solutions: are run at the beginning and end of the instrument data acquisition and also run every 20 samples for Calibration Verification.







Certified Reference Materials (CRM): a reference materials is used to verify digestion conditions. A certified reference material must be weighed at least every 20 samples or once per digestion set.

Replicates: every 20 samples or once per digestion set a sample is chosen at random and weighed and digested in replicate.

## REPORTING

The analyst reviews the results ensuring the blanks, certified reference materials, QC and replicates satisfy acceptance criteria. Data is transferred into the LIMS system by the analyst and the Lab Supervisor or General Manager authorizes the release to the customer. The results are reported in either weight % or mg/L, with a maximum of six significant figures (3 or 4 decimal places depending on the element). All data is kept with each file folder containing the COC and all relevant documentation.

### **51 Elements**

Ag	Ni
Al	Р
As	Pb
Au*	Rb
В	Re
Ba	S
Be	Sb
Bi	Sc
Са	Se
Cd	Sn
Ce	Sr
Со	Та
Cr	Те







Th
Ti
Tl
U
V
W
Y
Zn
Zr

\* Please note Gold detection is only suitable for exploration purposes