094341

2002 Platinum-Group-Element Sampling of Ultramafic Rocks, FHA 1-4 Claim Group

Whitehorse Mining District, Yukon Territory, Canada
NTS 105C/5
Latitude 60° 27' 30" North, Longitude 134° 43' West

Prepared For: Gordon McLeod, Whitehorse, YT
Author: Mike Beauregard, Yellowknife, NT
Date: September 15, 2002

Frontispiece Photo
Looking north into the Michie Creek valley from the FHA claims.

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 $ 1200.00.

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

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Appendices

Summary

A nickel fusion analysis of 1740 ppb (total of six PGEs) was returned for a sample of ophiolitic chromite collected at the FHA 1-4 mineral claims near Squanga Lake. The metallurgical-grade chromite contains anomalous Ru-Os-Ir-Pt with a platinum to palladium ratio of 32:1. Further work upon the FHA claims is recommended due to this encouraging result from a limited amount of work. Exploration for platinum group elements of Alpine-type ultramafic rocks in south-central Yukon is promoted.

Introduction

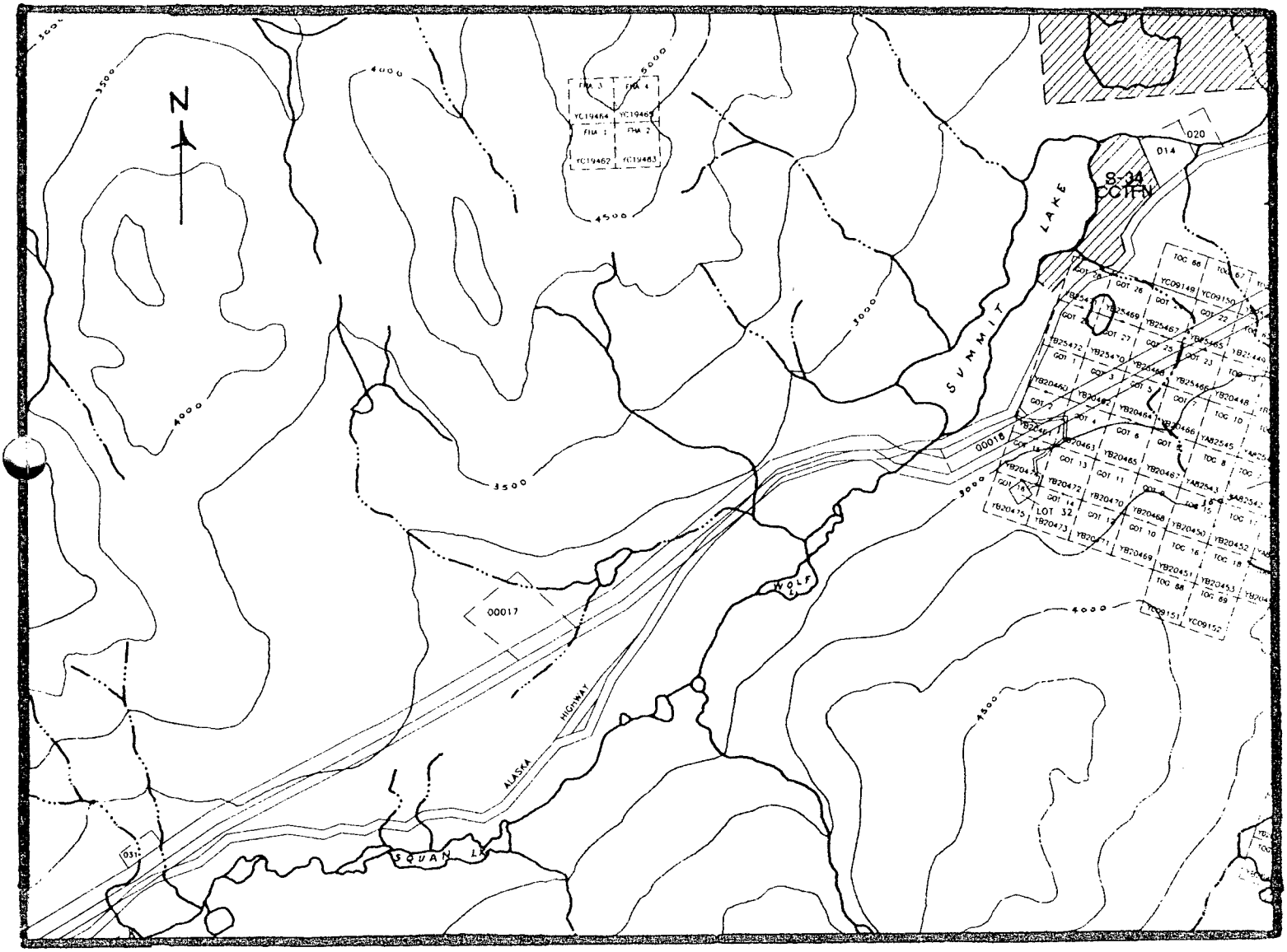
During June 2002, exploration for platinum group elements (PGEs) was performed on several properties staked upon ultramafic rocks in the southern Yukon. The properties are owned by Gordon McLeod of Whitehorse. This particular report details work done on the FHA 1-4 property for quartz mineral claim assessment accreditation.

Location and Access

The FHA property, consisting of four adjoining quartz mineral claims, is 100% owned by Mr. Gordon McLeod of Whitehorse. The property, 92.25 hectares (201.6 acres) in size, is five kilometres southwest of Squanga Lake. The mineral claim block is centred at 60° 27' 30" North latitude and 134° 43' West longitude on National Topographic System (NTS) mapsheet 105C/5. The expiry date for each claim is May 1, 2003. Claims and tag numbers are given below.

FHA 1	YC19462	FHA 3	YC19464
FHA 2	YC19463	FHA 4	YC19465

The property is 80 km (50 miles) southeast of the city of Whitehorse. It is accessible by helicopter or by foot. The claim group straddles the top of an unnamed mountain about four kilometres north of the Alaska Highway. A useful sawmill tote trail ends about two kilometres south of the claims. The last kilometre of the tote trail requires chainsawing of numerous deadfalls in order to be passable by ATV. The property is entirely above the tree line and within the mountain alpine ecozone. The summit of the unnamed mountain has a survey pin measured at 5292 feet (1613 metres) elevation. Vertical relief in the locale is on the order of 1000 metres.



Location Map
1 Inch = 1 Mile Scale

Previous Exploration

Moderate exploration for gold and minor exploration for chromite and asbestos has taken place in the Squanga Lake/Jakes Corner area.

The FHA claim group was staked to protect the mineral rights of a chromite occurrence with previously reported anomalous platinum values (Dodge, 1987). A one metre-wide chip sample within a steeply-dipping, tabular, 20 m by 4 m, chromite-bearing zone returned 33.5% chromium oxide, 145 ppb platinum and 2 ppb palladium. The chromite is of metallurgical grade with a Cr/Fe ratio > 2.8. The occurrence is listed as #105C-012 in the Yukon MINFILE.

The TOG gold vein occurs in ultramafic rocks across the valley seven kilometres to the south (Yukon MINFILE #105C-028), where prospector Gordon McLeod discovered both the first gold-in-listwaenite deposit and the first chromite occurrence in the Jakes Corner area.

Government products include reconnaissance-level stream sediment sampling (Friske et al, 1985). A detailed airborne magnetic and electromagnetic geophysical survey was performed in the Jakes Corner area. The airborne survey overflew the FHA property (Smith, 1994; Power, 1995 and Hunt et al, 1995).

Geology

Ultramafic rocks in the south-central Yukon are considered to be ophiolites in the Cache Creek Terrane. The Cache Creek Terrane rocks are Mississipian to lower Jurassic in age. A peridotite in the Teslin area has been dated at circa 245 Ma. Such Alpine-type ultramafic rocks are part of an oceanic succession of volcanic and sedimentary rocks within the northern Cordillera. The Cache Creek Terrane comprises small portions within a much larger package of intermontane supracrustal rocks that were accreted during the Mesozoic. This package, in turn, has been intruded by a number of younger plutonic suites (Gordey et al, 1998).

The geology of the ultramafic rocks on the property has been summarized by Dodge (1987) to be an ophiolitic sequence of basal harzburgites to the northwest, interlayered harzburgite and dunite to predominantly dunite in the vicinity of the chromite occurrence, and an uppermost gabbro-pyroxenite-andesite unit to the southeast. The chromite showing lies at the transition zone between harzburgite and dunite.

Quaternary Geology

The claim group comprises bedrock and talus covered by a veneer of till (Klassen, 1978). Prior work on a train of chromite-bearing float boulders suggested that glaciation last advanced up and over the mountain from the east with an ice-flow direction of 255° (Dodge, 1987).

Work Performed

One manday was spent examining the FHA claim group. The central and northern portions of the property were traversed. Grab sampling and geological observations were performed. All sites were measured to within five metres accuracy with a Garmin 12XL GPS instrument. The chromite showing was located; its UTM coordinates are 0569902 East and 6701751 North. Photos make up Appendix 1.

Grab Samples

A total of fourteen grab rock samples were collected. All rocks examined were first wetted by hydrochloric acid followed by liquid dimethyl-glyoxime (DMG), also known as nickel zap or nickel stain. A red to pink coloration indicated the presence of nickel. Details of grab sampling are tabulated in Appendix 2.

Rock samples were submitted to Northern Analytical Laboratories Ltd in Whitehorse. They were geochemically digested then analyzed by ICP for 30 elements. A split of the sample was fire assayed followed by AAS for gold, platinum and palladium. A replicate sample collected from the chromite occurrence was sent to ALS Chemex in North Vancouver for nickel fusion followed by ICP-MS analysis for six platinum group elements plus gold. All results are found in Appendix 3. The assay labs used HFA instead of FHA and CRD instead of CRO in their sample identifiers.

Results

Grab Samples

Twelve of the thirteen ultramafic grab samples responded positively to nickel staining. The ultramafic grab samples were collected from peridotite, dunite and, possibly, harzburgite. One grab (FHA-R5) was collected from layered magnetite-asbestos mineralization. One grab (CRO) was collected from the chromite occurrence. ICP-generated values ranged from 1474 to 2293 ppm Ni, 37 to 105 ppm Co and 27 to 953 ppm Cr. Nickel values are on par with the 2500 ppm Ni

average reported for alpine peridotite (Naldritt, 1981). The chromite occurrence returned an inexplicably low ICP value of 310 ppm Cr.

Alpine Peridotite Element Averages = 6% Fe, 2500 ppm Ni, 73 ppb Pt, 18 ppb Pd, 6 ppb Ir. (Aldritt, 1981)

Fire assaying followed by AAS of the ultramafic grab samples returned negligible values from <2 to 10 ppb Au, <5 to 10 ppb Pt and <15 ppb Pd. Grab sample FHA-R12 gave a weakly anomalous value of 23 ppb Au. Only the CRO grab showed anomalous palladium, returning 51 ppb Pd.

Nickel fusion followed by ICP-MS analysis of a replicate CRO grab sample returned anomalous PGE values: 683 ppb Ru, 417 ppb Ir, 406 ppb Os, 159 ppb Pt, 70 ppb Rh and 5 ppb Pd, for a total combined PGE value of 1740 ppb. The combined PGE assay is 39% ruthenium (a light PGE) and 56% osmium, iridium and platinum (heavy PGEs). The ratio of platinum to palladium is 32:1.

PROPERTY	Ru	Rh	Pd	Os	Ir	Pt	Au
Atomic #	44	45	46	76	77	78	79
Melting Pt (°C)	2334	1967	1555	3050	2454	1768	1064
Density	12.4	12.4	12.0	22.7	22.6	21.6	19.3
Hardness (Vickers#)	---	101	41	---	220	41	20

(Buchanan, 1988)

Lastly, the fourteenth sample taken from a rusty, micaceous granite dyke (FHA-R2) returned no anomalous values.

Property Geology

Ultramafic rocks, predominately serpentitized and foliated peridotite, occur throughout the unnamed mountain straddled, in part, by the FHA claims. Layered dunite and, possibly, harzburgite occur primarily within the claims. A pronounced north-trending foliation, parallel to layering, is interrupted in the vicinity of the chromite occurrence either by folding or by block rotation during faulting and/or emplacement.

The chromite occurrence is a tabular, steeply dipping zone (see Photo 1). Its foliation/layering is discordant to that of the surrounding rocks.

A zone of thin magnetite layers occurs 15 metres north of the chromite showing. This "layering", up to 5 m in width, may also be metamorphic-induced mineralization injected along seams parallel to foliation. While chromite has yet to be found elsewhere on the property, layered magnetite-bearing ultramafic outcroppings and float boulders were noted in several places (see Photo 2). The magnetite zone could be a marker horizon within this ultramafic rock package.

Conclusions

A combined PGE total of 1740 ppb, by nickel fusion analysis, was returned from a known chromite occurrence in Alpine-type ultramafic rocks near Squanga Lake. This anomalous initial result is most encouraging. Anomalous Ru-Ir-Os-Pt values are probably associated with chromite. This usually indicates a sulphur-poor magma. However, further work is needed.

The Alpine-type ultramafic bodies in the south-central Yukon are virtually untested for PGEs. The FHA chromite showing is said to occur at a transition zone, a typical scenario for an ophiolitic sequence. The FHA ultramafic body is only one of a number of ophiolite packages in the region. Significant stream sediment geochemical values correlate with various ultramafic bodies scattered across several mapsheets. The FHA example lends credibility to the potential for PGE-bearing chromite deposits in the Teslin area.

A more concentrated digestion is required prior to ICP analysis as the Northern Analytical Laboratory results appear to be deficient with respect to chromite and iron. Nickel fusion analysis seems to be, by far, the best laboratory technique available to pull out platinum group elements.

The property is readily accessible (see Photo 3) and available for option.

Recommendations

A thorough PGE exploration program is recommended for the FHA claims and should include detailed mapping for additional chromite zones and testing for and sampling of nickel sulphides. A rusty ridge containing layered ultramafic rocks that lies to the south of the chromite occurrence must be examined. Neither a basal harzburgite zone to the northwest nor an ultramafic-mafic unit to the southeast have been located or sampled.

Whether PGE values on the property are associated with nickel or chromium could be answered by additional nickel fusion analysis on chromium-poor ultramafics (grab samples FHA-R10 and -R13) versus chromium-rich ultramafic samples (grab samples FHA-R6 and -R7). Furthermore, whole rock analysis should be performed to determine the degree of sulphur saturation throughout the ophiolitic sequence at the FHA property.

A 1:50,000 scale compilation for ophiolite-associated platinum group elements in the Jakes Corner area should be undertaken combining data from government geological, geochemical and geophysical surveys.

Selected pulps from the regional stream sediment sampling programs covering the 105C and 105D mapsheets should be reanalyzed for chromite and PGEs.

Should one or more of the ultramafic bodies in the Teslin area prove to be sulphur-saturated, then the hunt is on for a PGE deposit. In the worst case, that all the ultramafic bodies are sulphur-poor, then PGE-bearing chromite deposits would be the goal.

For The Record

I, Mike Beauregard, a geologist residing in Yellowknife, wrote this report for mineral claim assessment accreditation per the Mining Act of Canada on behalf of Gordon McLeod of Whitehorse. I have no interest in, nor liens against, the FHA claim group, located on NTS mapsheet 105C/5, Yukon Territory, Canada. All work reported herein was performed under my supervision. G. McLeod provided the statement of expenditures.

A Mining Technologist Diploma was granted to me by Haileybury School of Mines in 1980. A Bachelor of Science Degree in Geological Engineering was granted to me by South Dakota School of Mines and Technology in 1985.

I have worked as a full-time employee of Canadian mining companies and consulting firms, or as a self-employed contractor, for exploration of mineral commodities throughout seven provinces and three territories since 1978. I am not registered as a Professional Geologist.

SIGNED: Mike Beauregard

Mike Beauregard
September 15, 2002
Yellowknife, NWT

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Appendix 1
Photographs

Photo 1
Chromite bands terminated against stepped fractures, FHA chromite occurrence, replicate grab sample site CRO, UTM coordinates 0569902 East, 6702751 North.

Photo 2
Magnetite-seamed float boulders (mineralization similar to grab sample FHA-R5 in outcrop), photo coordinates 0569952 East, 6701587 North.

Photo 3
Gordon McLeod pointing north to his FHA claims. The claim group straddles the top of the unnamed mountain across from the Northwestel microwave tower near Squanga Lake. The Alaska Highway runs through the valley below.

Appendix 2
Grab Sample Table

Identifier	UTM Easting	UTM Northing	Nickel Zap	Remarks
FHA-R1	570080	6700821		Rusty ultramafic boulder
FHA-R2	570037	6701194		Hematitized mica granite
FHA-R3	570106	6701248	Mod	Dunite
FHA-R4	569974	6701394	Mod	Ultramafic, heavy, dense
FHA-R5	569900	6701765	Mod	Asbestos-magnetite bearing ultramafic layer
FHA-R6	569893	6701838		Harzburgite(?)
FHA-R7	569919	6701953	Weak	Peridotite
FHA-R8	569769	6701856	Mod	Dunite, west contact of 5 m wide layer
FHA-R9	569769	6701856	Mod	Dunite, east contact of 5 m wide layer
FHA-R10	569892	6701913	Mod	Altered, rusty ultramafic boulder
FHA-R11	569942	670205	Weak	Brecciated, partially serpentitized peridotite
FHA-R12	569730	6702094	Mod	Talus boulder from outcrop uphill, partially serpentitized peridotite
FHA-R13	570083	6701289	Mod	Rusty-weathering peridotite
CRO	569902	6701751	Weak	Replicate sample from chromite occurrence

Appendix 3
Analytical Results

Northern Analytical Laboratories ltd.

9044 Quartz Road
Whitehorse, Yukon
Y1A 5L8
Ph: (867) 668-4968
Fax: (867) 668-4890
E-mail: nal@yknet.yk.ca

FFFA

07/09/2002

Certificate of Analysis

of pages (not including this page): 2

Gord McLeod

WO# 140602

Certified by
Justin Lemphers (Senior Assayer)

Date Received: 06/14/02

SAMPLE PREPARATION:

Code	# of Samples	Type	Preparation Description (All wet samples are dried first.)
r	40	rock	Crush to -10 mesh; riffle split 200g; pulverize to -100 mesh Duplicate split 200g and pulverize

ANALYTICAL METHODS SUMMARY:

Symbol	Units	Element	Method (A:assay) (G:geochem)	Fusion/Digestion	Lower Limit	Upper Limit
Au	ppb	Gold	Assay	30g FA/AAS	2	10000
Pd	ppb	Palladium	Assay	30g FA/AAS	5	10000
Pt	ppb	Platinum	Assay	30g FA/AAS	15	10000

1 oz/ton = 34.286 g/mt
1000ppb = 1ppm = 1g/mt = 0.0001% = 0.029166oz/ton

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Laboratories ltd.

9044 Quartz Road
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Fax: (867) 668-4890
E-mail: nal@yknet.yk.ca

07/09/2002 Certificate of Analysis

Gord McLeod WO# 140602

Certified by

Sample #	Au 30g ppb	Pt 30g ppb	Pd 30g ppb
r HFA - R 1	<2	<5	<15
r HFA - R 2	<2	<5	<15
r HFA - R 3	10	<5	<15
r HFA - R 4	10	<5	<15

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Gord McLeod

WO# 140602

Certified by

	Sample #	Au 30g ppb	Pt 30g ppb	Pd 30g ppb
r	HFA - R 5	<2	10	<15
r	HFA - R 6	<2	<5	<15
r	HFA - R 7	<2	<5	<15
r	HFA - R 8	<2	<5	<15
r	HFA - R 9	<2	<5	<15
r	HFA - R10	<2	<5	<15
r	HFA - R11	<2	<5	<15
r	HFA - R12	23	<5	<15
r	HFA - R13	<2	<5	<15
r	CRD	<2	<5	51

W O# 140602

Sample #	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Ti ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
HFA - R 1	<0 1	13	7	37	<5	5	<3	5	<10	<2	<0 1	87	1679	<2	<5	560	20	633	<2	<1	<1	7	<0.01	0.31	0.07	4 03	18.49	<0 01	0.02	<0.01
HFA - R 2	<0 1	63	5	52	<5	<5	<3	2	<10	<2	<0 1	9	48	97	<5	31	13	390	17	48	2	3	0.1	1 54	0.65	2 35	0 85	0.05	0.04	0.07
HFA - R 3	<0 1	8	7	21	<5	<5	<3	5	<10	<2	<0 1	105	2086	<2	<5	91	4	849	<2	1	1	5	<0 01	0 03	0 21	4 59	21 8	<0 01	0 02	<0 01
HFA - R 4	<0 1	4	6	17	<5	<5	<3	5	<10	<2	<0 1	99	2258	<2	5	53	2	659	<2	<1	<1	2	<0.01	0.01	0 08	3 6	17 66	<0 01	0 02	<0 01
HFA - R 5	<0 1	7	5	30	<5	5	<3	5	<10	<2	<0 1	75	1474	3	<5	545	18	636	<2	1	<1	7	<0 01	0 31	0 15	3 38	15 71	<0 01	0 02	<0 01
HFA - R 6	<0 1	15	9	26	<5	<5	<3	5	<10	<2	<0 1	98	1835	6	<5	650	24	824	<2	<1	1	5	<0 01	0 48	0 19	4 59	18 69	0 01	0 02	<0 01
HFA - R 7	<0 1	17	6	25	<5	8	<3	6	<10	<2	<0 1	86	1611	<2	<5	953	31	709	<2	<1	1	6	<0 01	0 51	0 1	4 13	17 14	<0 01	0 02	<0 01
HFA - R 8	<0 1	2	8	18	<5	<5	<3	4	<10	<2	<0 1	93	1878	<2	<5	27	2	622	<2	<1	<1	2	<0 01	0 01	0 16	3 23	17 3	<0 01	0 02	<0 01
HFA - R 9	<0 1	2	<2	21	<5	<5	<3	7	<10	<2	<0 1	97	2099	<2	<5	38	2	682	<2	1	1	2	<0 01	0 01	0 04	3 78	19 73	<0 01	0 02	<0 01
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Max Reported	99 9	20000	20000	20000	9999	9999	9999	9999	999	999	99 9	999	999	9999	999	9999	999	9999	9999	9999	999	99	1 00	9 99	9 99	9 99	9 99	9 99	5 00	5 00

-=No Test ins=Insufficient Sample m=Estimate/1000 %=Estimate Max=No Estimate

W O# 140602

Sample #	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
HFA - R10	<0 1	13	6	13	<5	<5	<3	3	<10	<2	<0 1	83	2293	3	<5	59	2	629	<2	1	1	1	<0 01	0 02	0 08	2 61	14 79	<0 01	0 02	<0 01
HFA - R11	<0 1	7	9	29	<5	<5	<3	5	<10	<2	<0 1	101	1979	3	<5	126	8	719	<2	1	1	2	<0 01	0 09	0 1	4 36	16 12	<0 01	0 02	<0 01
HFA - R12	<0 1	3	8	20	<5	<5	<3	5	<10	<2	<0 1	91	1970	<2	<5	90	4	576	<2	<1	1	2	<0 01	0 07	0 02	3 75	17 25	<0 01	0 02	<0 01
HFA - R13	<0 1	13	5	26	<5	5	<3	5	<10	<2	<0 1	84	1554	<2	<5	295	9	563	<2	<1	1	5	<0 01	0 19	0 04	3 86	15 58	<0 01	0 02	<0 01
CRD	<0 1	2	4	10	<5	<5	<3	5	<10	<2	<0 1	37	1637	<2	<5	310	2	211	<2	<1	<1	2	<0 01	0 06	0 01	1 6	10 9	<0 01	0 02	<0 01
Min Limit	0 1	1	2	1	5	5	3	1	10	2	0 1	1	1	2	5	1	2	1	2	1	1	1	0 01	0 01	0 01	0 01	0 01	0 01	0 01	0 01
Max Reported	99 9	20000	20000	20000	9999	9999	9999	9999	999	999	99 9	999	999	9999	999	9999	999	9999	9999	9999	999	99	1 00	9 99	9 99	9 99	9 99	9 99	5 00	5 00

--=No Test ins=Insufficient Sample m=Estimate/1000 %=Estimate Max=No Estimate

ALS Chemex

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

MCLEOD, GORD

204 - 207 ALEXANDER ST.
WHITEHORSE, YT
Y1A 2L3

Project :
Comments: ATTN: GORD MCLEOD

Page Number : 1
Total Pages : 1
Certificate Date: 26-AUG-2002
Invoice No. : I0221346
P.O. Number :
Account : UVG

CERTIFICATE OF ANALYSIS A0221346

SAMPLE	PREP CODE	Pt ppb ICP-MS	Pd ppb ICP-MS	Ir ppb ICP-MS	Os ppb ICP-MS	Rh ppb ICP-MS	Ru ppb ICP-MS	Au ppb ICP-MS
#1	9400 8257	10	7	4	3	2	5	< 5
CRD	9400 8257	159	5	417	406	70	683	< 5

YUKON ENERGY, MINES & RESOURCES LIBRARY
P.O. BOX 2703
WHITEHORSE, YUKON Y1A 2C6

CERTIFICATION: R Anderson

Statement of Expenditures
FHA 1-4 Claims, 2002 Exploration

Field Supplies, groceries	$53.90
Airphotos, maps, publications	$18.73
Satellite phone rental	$111.35
Gasoline	$52.00
Assays (14 Samples @ 35.00 each)	$490.00
Nickel fusion analysis (1 sample @ 100 each)	$100.00
Geologist (2 days @ 200/day)	$400.00
Report Preparation	$100.00
	$1325.98 (total)