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Ministry of Energy, Mines & Petroleum Resources
Mining & Minerals Division
BC Geological Survey

Assessment Report
Title Page and Summary

TYPE OF REPORT [type of survey(s)]: Geochemical Assessment

TOTAL COST: $9,000.00

AUTHOR(S): J. T. Shearer, M.Sc., P.Geo.

SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):

YEAR OF WORK: 2016

STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(S):

PROPERTY NAME: Barnes Lake

CLAIM NAME(S) (on which the work was done): 1020873

COMMODITIES SOUGHT: Phosphorite

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:

MINING DIVISION: Fort Steele Mining Division

NTS/BCGS: 82G/7E

LATITUDE: 49 ° 28 ' " **LONGITUDE:** 114 ° 42 ' " **(at centre of work)**

OWNER(S):

1) J. T. Shearer

2)

MAILING ADDRESS:

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OPERATOR(S) [who paid for the work]:

1) Same as above

2)

MAILING ADDRESS:

Same as above

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):

The target is a phosphatic horizon in the basal Jurassic Fernie Group

The zone is 1m to 2m thick grading around 33.5% P2O5

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:

Assessment Reports 6859,5556, 8989, 6365

Next Page

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for...)			
Soil	120 soils	1011399 + 1020873	9,000
Silt			
Rock			
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY / PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST:	$9,000.00

GEOCHEMICAL ASSESSMENT REPORT
ON THE
EAST BARNES LAKE PROPERTY

49°27’10”N LATITUDE/114°44’54”W LONGITUDE
NTS: 82G/7E (82G.047)
FORT STEELE MINING DIVISION
SOUTHEASTERN BRITISH COLUMBIA
Event # 5620114

For

FERTOZ INTERNATIONAL INC.
390 Bay Street, Suite 806
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By

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September 28, 2016

Fieldwork Completed Between September 12, 2016 and September 28, 2016

TABLE OF CONTENTS

LIST of FIGURES and ILLUSTRATIONS

page

LIST OF TABLES

page

SUMMARY

The Barnes Lake property consists of the Barnes Lake Claims. The claims are located in the Barnes Lake/Michel Creek area of the Rocky Mountains, Fort Steele Mining Division, southeastern British Columbia, approximately 40 kilometres by road south of the town of Sparwood and 27 kilometres due east of Fernie, B.C. The property is accessed via an extensive network of logging and exploration roads.

The Barnes Lake claim was staked as part of the Crowsnest Project, whose primary objective was to evaluate the grade and continuity of the basal Fernie phosphate horizon in terms of establishing its potential as a large tonnage P_2O_5 resource. Previously, in 1990 reconnaissance and detailed geologic mapping, hand trenching, sampling, backhoe trenching and assaying was completed on the Barnes Claim. In 1990, fifty-seven rock samples were collected from *2* hand trenches and 9 backhoe trenches. The samples were analyzed for P_2O_5 (by gravimetric assay), yttrium (by XRF) and gold plus 33 trace elements (by INAA).

The Barnes Lake property is predominantly underlain by a sequence of Late Paleozoic to Mesozoic strata (Permian to Jurassic) that were deposited in the Alberta Trough under marine conditions and Late Jurassic to Cretaceous fluvio-deltaeic sediments that were subsequently deformed during the Late Cretaceous. Phosphatic rocks occur in a number of stratigraphic intervals within this sequence; however, the thickest and most continuous phosphate horizon was developed at the base of the Jurassic Fernie Group and is the focus of this project. The basal Fernie phosphatic strata are generally one to two metres thick and also contain unusually high concentrations of yttrium.

Previous work on the Barnes Lake Property suggests average grades of the basal phosphorite horizon on the property are around 22.5 per cent P_2O_5 and 610 ppm Y across 1.4 metres. In one trench, an incomplete section was measured which ran 30.5 per cent P_2O_5 and 777 ppm yttrium across 0.98 metres.

The 2016program consisted of reconnaissance prospecting, rock sampling and establishing further access. Samples were collected and assayed as shown on Figure 13. Results are contained in Appendix III.

Figure 13 shows slightly anomalous soil samples approximately 150m to 200m east of the main road at an elevation of approximately 1725m to 1767m. Close spaced soil samples are recommended perpendicular to the road system (E-W) at 10m intervals. Hand trenching assisted by excavator trenching is recommended to follow up on the previous drilling and soil results.

Respectfully submitted,

J. T. Shearer, M.Sc., P.Geo. (BC & Ontario)

INTRODUCTION

Pell (1990) makes the following observations: Canada imported 2.39 million tonnes of phosphorite in 1986, approximately 80 per cent of which was used in the fertilizer industry. Other products which require the use of phosphorus include organic and inorganic chemicals, soaps and detergents, pesticides, insecticides, alloys, animal-food supplements, ceramics, beverages, catalysts, motor lubricants, dental and silicate cements (Barry, 1987). Approximately 55 million tonnes per annum are produced in the United States (Stowasser, 1989). Approximately 50 per cent of the phosphate rock imported into western Canada comes from Florida, the remainder being supplied from the Western U.S. (Barry, 1987). The majority of phosphate rock imported into eastern Canada is from Florida: minor amounts have also been imported from Togo, Tunisia and Morocco. Resources in Florida are rapidly being depleted (Stowasser, 1988): some experts feel that the western U.S. sources will not be able to meet the demand when Florida becomes exhausted, which suggests a possible niche for a new producer.

Phosphate rock produced in the U.S. is classified as acid or fertilizer grade, more than 31 per cent P_2O_5; furnace grade, 24 to 31 per cent P_2O_5; and beneficiation grade, 18 to 24 per cent P_2O_5. Acid grade rock is used directly in fertilizer plants, furnace grade rock is charged to electric furnaces and beneficiation grade rock is upgraded to acid or furnace feed (Stowasser, 1985).

Most commercial phosphate rock is used in fertilizer plants: feed for these plants must meet the following specifications:

P_2O_5 content: 27 to 42%
CaO/P_20_5 ratio:1.32 to 1.6
R_20_3/P_20_5:<0.1; $R_20_3=A1_20_3+Fe_20_3+MgO$
MgO content<l.O%

The phosphate rock mined in the western United States (Idaho, Montana, Wyoming, Utah) is from the Retort and Meade Peak members of the Permian Phosphoria Formation. The majority of mines are strip mining operations with ore zones ranging from 9 to 18 metres thick, with an average grade of 21.3 per cent P_2O_5. Overburden thickness is commonly 5 to 10 metres (Fantel et. al., 1984). Cominco American operated an underground phosphate mine in Montana. The phosphate horizon is 1 to 1.2 metres thick and has an average grade of >31 per cent P_2O_5. Most western U.S. phosphate ore is beneficiated by crushing, washing, classifying and drying (Stowasser, 1985). Phosphates mined in Florida and south Carolina are from the Miocene Hawthorne Formation and the younger, reworked deposits of the Bone Valley Formation. Ore thickness range from 3 to 8 metres, with overburden of 3 to 10 metres. Average grade is 7 per cent P_2O_5. Flotation processes are used to beneficiate the ores. Phosphates mined in Tennessee have a minimum cut-off grade of 16 to 17.2 per cent P_2O_5 and a minimum thickness of 0.6 to 1.2 metres (Fantel et. al., 1984). Currently, there is no by-product recovery of yttrium from any of the U. S. operations. Phosphoria formation phosphorites from the western phosphate field contain an average of 300 ppm Y; phosphorites from North Carolina and Florida contain an average of 235-300 ppm Y; and, phosphorites from Tennessee contain an average of 63 ppm Y (Altschuler, 1980). The worldwide average yttrium value in phosphorites is 260 ppm (Altschuler, 1980).

The phosphorite beds in the Jurassic Fernie Group are thin (usually 1 to 2 metres, Butrenchuk, 1987a) relative to most phosphorites mined in the United States. As with most of the phosphate ores mined in the United States, Fernie phosphorites would require beneficiation to produce an acid grade product. The Fernie phosphorites have anomalous yttrium concentrations with respect to most other sedimentary phosphate deposits. If it proves feasible to recover yttrium during the production of phosphoric acid, as has been suggested by some researchers (Altschuler, et. al:, 1967), the economics of exploiting the Fernie Group basal phosphorite horizon will become significantly more attractive.

However, the strategy employed by Fertoz in the present program is to investigate the direct application phosphate to organic market. Contacts have been made to farmers already producing organic products.

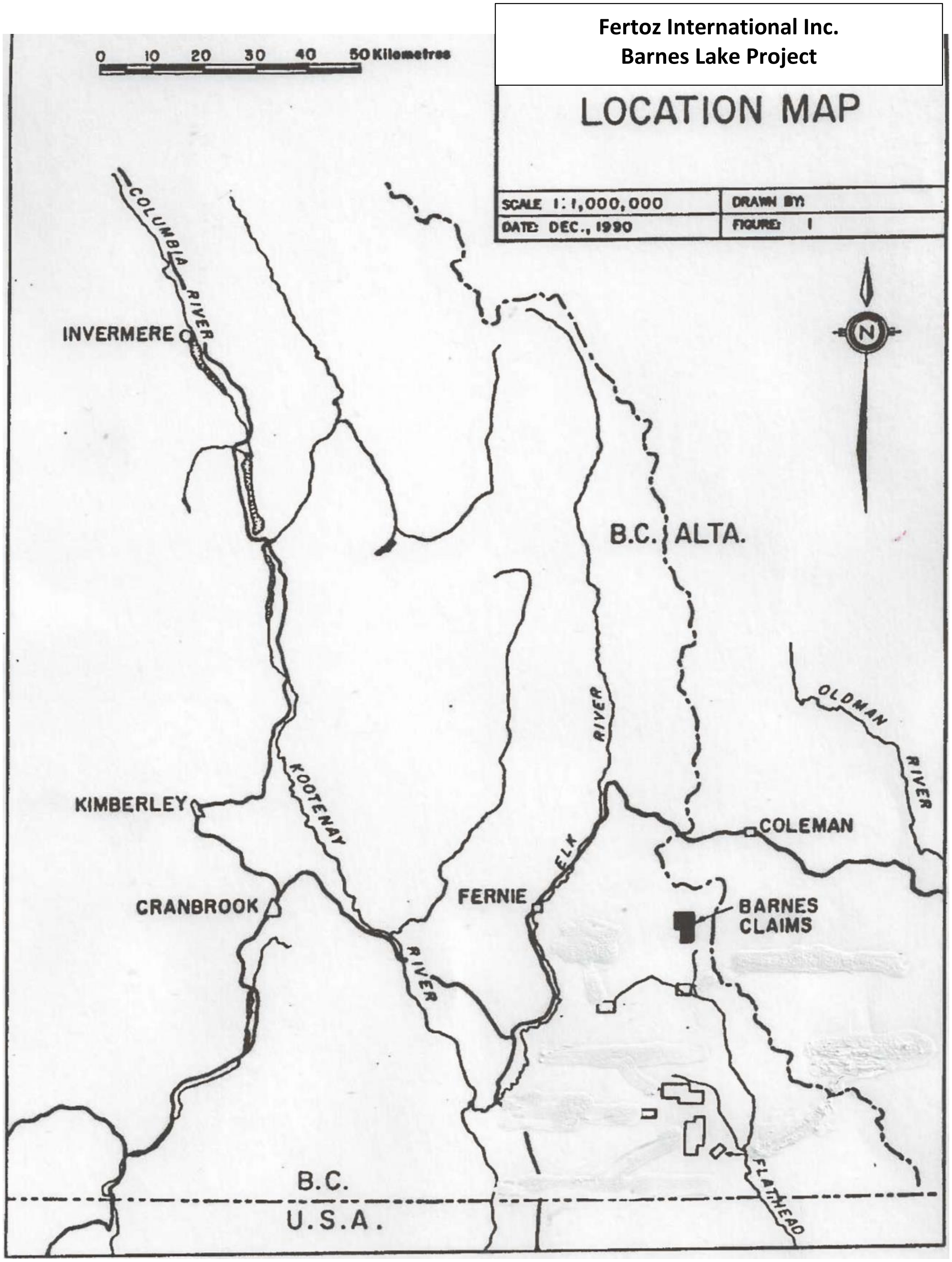


Figure 1 Location Map

PROPERTY DESCRIPTION and LOCATION

The Barnes Lake claims are located in the Barnes Lake - Michel Creek area, Flathead region, Fort Steele Mining Division, approximately 40 kilometres by road south of the town of Sparwood and 27 kilometres due east of Fernie (Figure 1). The eastern edge of the claims can be reached, by conventional vehicle, from Fernie and Sparwood by taking Highway 3 east for approximately 15 kilometres to Michel and then following the Corbin Mine road south for approximately 30 kilometres to the Corbin townsite and coal mine. From the Corbin townsite the Michel Creek/Flathead Main haul road is followed south for around four kilometres and then a small road taken to the west that crosses Michel Creek. A four-wheel drive or all-terrain vehicle is required to follow this road, an old exploration road, southwesterly for an additional 4.5 kilometres to the main showings. Drilling in the 1960's intersected phosphorite at shallow depths on the east side of Michel Creek which was the focus of 2014 exploration.

Elevations on the property range from 1585 metres (5200 feet) to 2255 metres (7400 feet). Stands of spruce and fir are present at lower elevations: the area of the main showings is in alpine and subalpine terrain, some large fir are present but most of the area is above tree line on the west side. The east side of the claims is at a much lower elevation.

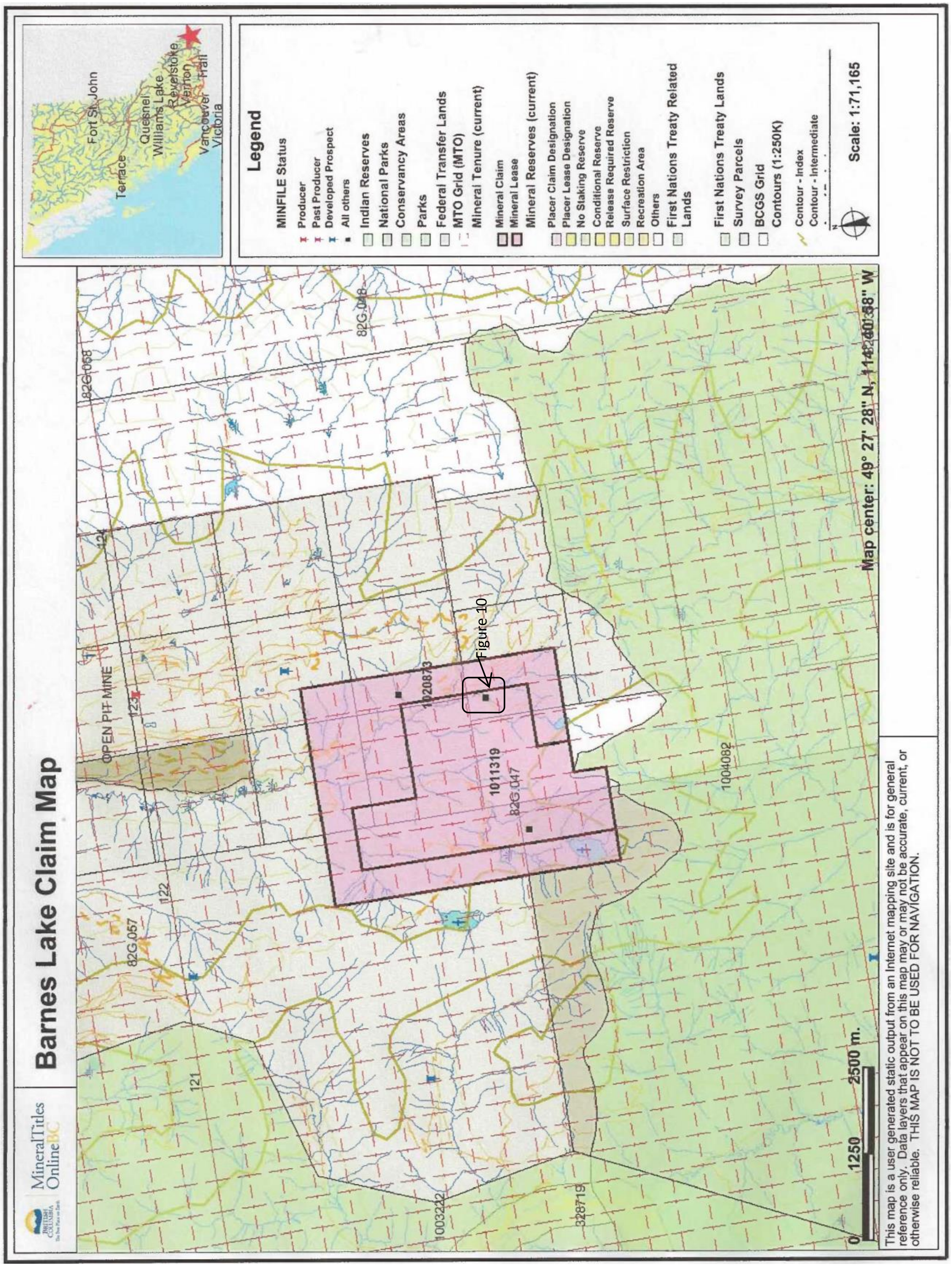


Figure 2 Claim Map

MINERAL TENURE

The Barnes Lake property, 2 claims encompassing 1,238.36 hectares was staked by Fertoz International Inc. in July 2012 and also 2013 as shown in Table 1 and Figure 2.

TABLE I

List of Claims

Name	Tenure #	Area (ha)	Current Expiry Date	Registered Owner
Barnes Lake	1011319	608.98	November 17, 2017	Fertoz International
Barnes 2	1020873	629.88	November 18, 2017	Fertoz International
Barns Lk 4	1046619	524.89	September 12, 2017	Fertoz International

Total 1,763.75 ha

Cash may be paid in lieu if no work is performed. Following revisions to the Mineral Tenures Act on July 1, 2012, claims bear the burden of $5 per hectare for the initial two years, $10 per hectare for year three and four, $15 per hectare for year five and six and $20 per hectare each year thereafter.

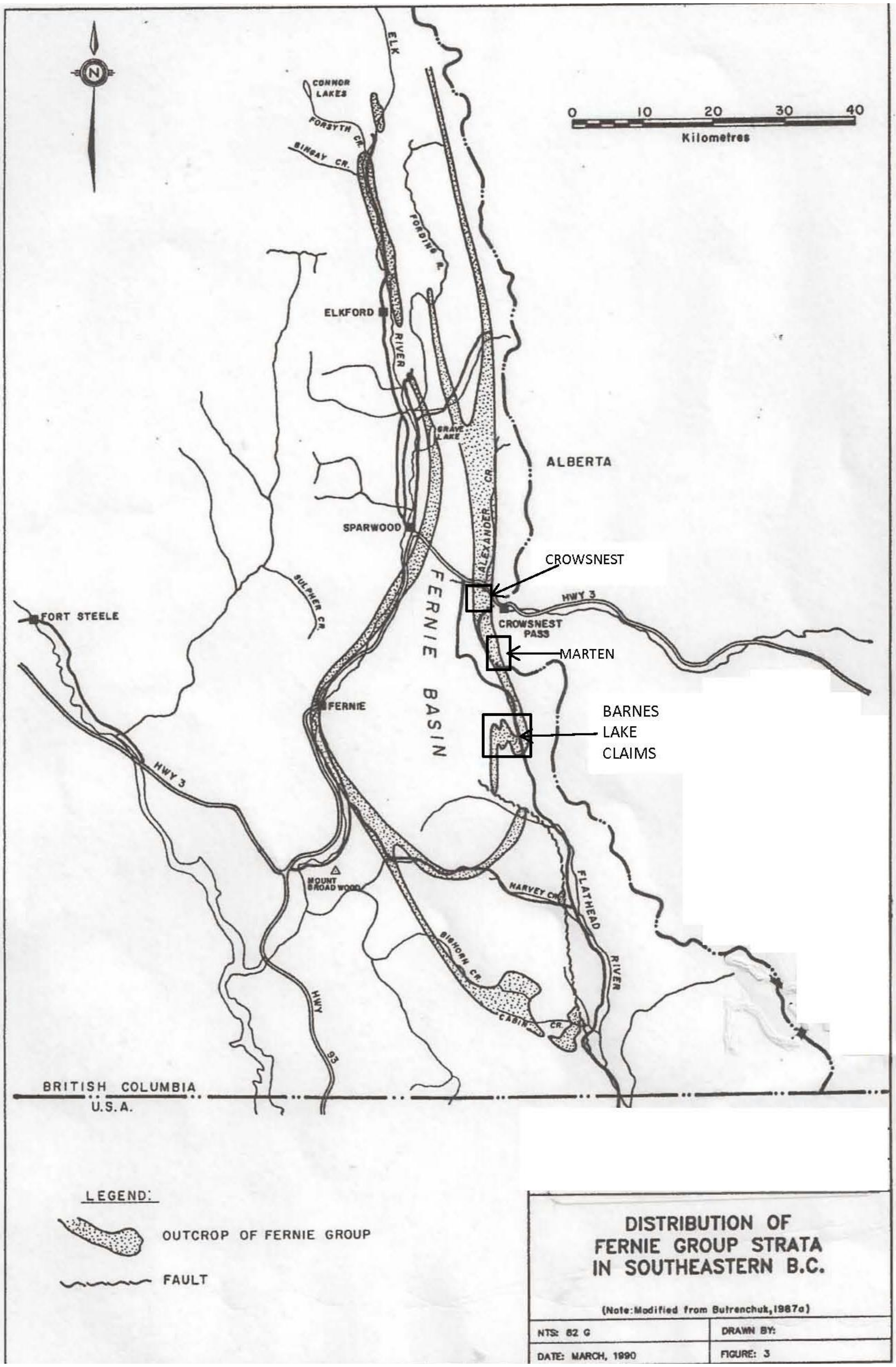


Figure 3 Distribution of Fernie Group Strata in Southern British Columbia

HISTORY

Phosphatic horizons at the base of the Jurassic Fernie Group in southeastern British Columbia were discovered in 1925 (Telfer, 1933) and have been the subject of periodic exploration by Cominco (Kenny, 1977) and others since that time. Phosphate strata in the Barnes Lake area were (in the mid and late 1970's) explored by Western Warner Oils Ltd. and Medesto Exploration Ltd. and 262,000 tonnes of phosphate to a depth of 18 metres were outlined (Dorian, 1975; Pelzer, 1977; Dales, 1978). The phosphate potential of the area was also addressed in a number of recent academic and government studies (Butrenchuk, 1987a; 198733; Macdonald, 1985; 1987).

Butrenchuk puts the potential on the east side of Michel Creek in the vicinity of the Barnes Lk Property at 4 million tonnes (Butrenchuk, 1991).

Previous Trenching (1990)

The Fernie Group rocks are generally poorly exposed; in order to measure sections through the basal phosphorite horizon it was necessary to dig trenches or pits to provide adequate sections. In the course of evaluating the economic potential of this horizon on the Barnes Lake claims, 57 samples were collected from 9 backhoe trenches and 2 hand trenches. The samples were analyzed for P_2O_5 using a gravimetric assay method, for yttrium using X-ray fluorescence (XRF) and for AU plus 33 trace elements, including some of the rare earths, using induced neutron activation analysis (INAA). As well, twenty-one samples were also analysed for major element oxide composition using the direct coupled plasma emission (DCP) method and for mercury using cold vapour atomic absorption (AA) analysis.

Nine trenches were dug using a John Deere 555 Backhoe. The trenches ranged from 3.2 to 29.6 metres in length, 1 to 4.3 metres in width and 0 to 3 metres in depth. The dimensions of individual trenches are summarized as follows:

Trench	Length (m)	Width (m)	Depth/Bank Height (m)	Material Moved (m^3)
BNT90-1	9.3	1-4.3	0-2.4	34.78
BNT90-2	12.3	1-1.5	1-2.6	26.03
BNT90-3	21.5	1	1-2.75	21.09
BNT90-4	3.3	1.3	1.8	7.72
BNT90-5	29.6	1	0-2.2	47.00
BNT90-6	13.3	1	0.4-2.8	8.86
BNT90-7	3.2	2.3	0-2.36	8.68
BNT90-8	5.35	1-3.2	2-3	28.93
BNT90-9	5.6	0.85-3.1	2-2	24.90
Total Volume of Material Moved				207.59m^3

Two hand trenches were also dug. These involved the removal of sloughed material from steeply dipping bank sections to clearly expose the phosphate strata.

Continuous samples across measured intervals were collected from all trenches. In the longer backhoe trenches, commonly more than one section was measured. Maximum depth attained by the backhoe was 3 metres: all samples collected may have been affected, to some degree, by surface weathering.

Phosphate and yttrium results, from measured sections on the Barnes Lake claims are summarized as follows:

Summary of Measured Sections, Barnes Lake Claims

		Weighted Averages*	
Section	Thickness+ (m)	P_2O_5 %	Y ppm
Hand Trenches			
BN90-23**	0.98	30.50	777
BN90-37**	0.65	27.29	658
Backhoe Trenches			
BNT90-1**	0.68	25.00	722
BNT90-2**	0.52	25.67	718
BNT90-3-1	1.11	23.16	629
BNT90-3-2	1.11	21.63	712
BNT90-4**	0.78	21.24	582
BNT90-5-1	1.24	23.73	643
BNT90-5-2**	0.75	25.14	758
BNT90-6**	0.87	24.89	712
BNT90-7	1.45	23.58	595
BNT90-8	1.62	20.94	493
BNT90-9	2.07	22.14	565

+ Thicknesses quoted are all true stratigraphic thicknesses, either measured as such or calculated

* Measured sections are generally composed of a number of smaller interval samples; weighted averages, based on proportional sample thicknesses, were calculated to represent the yttrium and phosphate content of the entire section

** Incomplete section due to erosion or faulting

On the Barnes Lake claims, the stratigraphically complete measured sections average 22.53 per cent P_2O_5 and 606 ppm yttrium across an average thickness of 1.43 metres (1.11 to 2.07). One incomplete section contained an average of 30.5% P_2O_5 and 777 ppm Y across 0.98 metres. The values ranged from 2.66 per cent P_2O_5 and 98 ppm yttrium in shale layers within the phosphorite section to 32.18 per cent P_2O_5 and 1065 ppm yttrium in true phosphorites (Appendix 1).

In most trenches in the Barnes Lake area, the phosphorite horizon overlies orange to yellow clays (weathered Triassic siltstones) or interbedded buff to brown Triassic shales and siltstones. The lowest units commonly contain angular orange weathering fragments, probably derived from the underlying Triassic beds, that diminish in abundance upsection. The phosphorites are generally shaley to pelletal in nature and exhibit an increase in grade upsection until a fairly pure phosphorite, containing between 28 and 32% P_2O_5 is developed. Commonly, this high-grade phosphorite is black, pelletal (gritty textured) and overlain by increasingly shaley phosphorite and shale. Locally, (see trenches BNT90-7 & 8) phosphate nodules hosted in a pelletal phosphate matrix are developed in these high-grade beds. Incomplete sections exhibit similar trends, but are often complicated through mixing and erosion of units. In trenches BNT90-1 & 2 the phosphorite bed and a veneer of Triassic siltstones have been thrust westerly over very disrupted black shales and incomplete sections preserved.

All trenches were in phosphatic strata distributed along the western limb of the easternmost anticline (Figure 5). Particularly in the vicinity of Trenches BNT90-3 to 6 the beds are dipping roughly parallel to slightly steeper than the hillside. This dip slope setting suggests that, in this area, it may be possible to define a fairly large deposit that is easily exploited and requires only minimal removal of overburden. Shallow drilling could be used in this area to outline reserves to an acceptable depth.

An attempt was made to access the phosphate horizon on the western limb of the syncline at the north end of the property. An old exploration road leads to the Triassic/Jurassic contact in that area.

A number of samples were analysed for their major element compositions in order to see how they compare to industry standard specifications for fertilizer plant feed. The results for samples containing greater than 20% P_2O_5 are summarized below:

Sample Number	P_2O_5%	CaO/ P_2O_5	R_2O_3*/ P_2O_5	MgO%
BNT90-1A	29.93	1.37	0.19	0.42
BNT90-1B	29.96	1.37	0.20	0.42
BNT90-1C	24.56	1.46	0.26	0.42
BNT90-2A	30.50	1.38	0.17	0.34
BNT90-2B	23.11	1.43	0.35	0.51
BNT90-3-1C	30.26	1.39	0.17	0.35
BNT90-3-1D	24.17	1.46	0.29	0.42
BNT90-3-2C	29.79	1.40	0.19	0.37
BNT90-3-2D	22.71	1.42	0.33	0.44
BNT90-23A	31.39	1.39	0.16	0.29
BNT90-23B	32.91	1.39	0.12	0.23
BNT90-9B	30.53	1.48	0.16	0.33

*$R_2O_3 = Al_2O_3 + Fe_2O_3 + MgO$

In all cases, the CaO/P_20_5 ratios and MgO contents of the raw samples meet industry standard fertilizer plant feed specifications. In many samples, the P_2O_5 grades of the individual samples are low and therefore some beneficiation would be necessary. The R_2O_3/ P_2O_5 ratios of the raw material exceed standard requirements, ranging from 0.12 to 0.35 where they need to be less than 0.1: the higher the phosphate content, however, the lower the ratio.

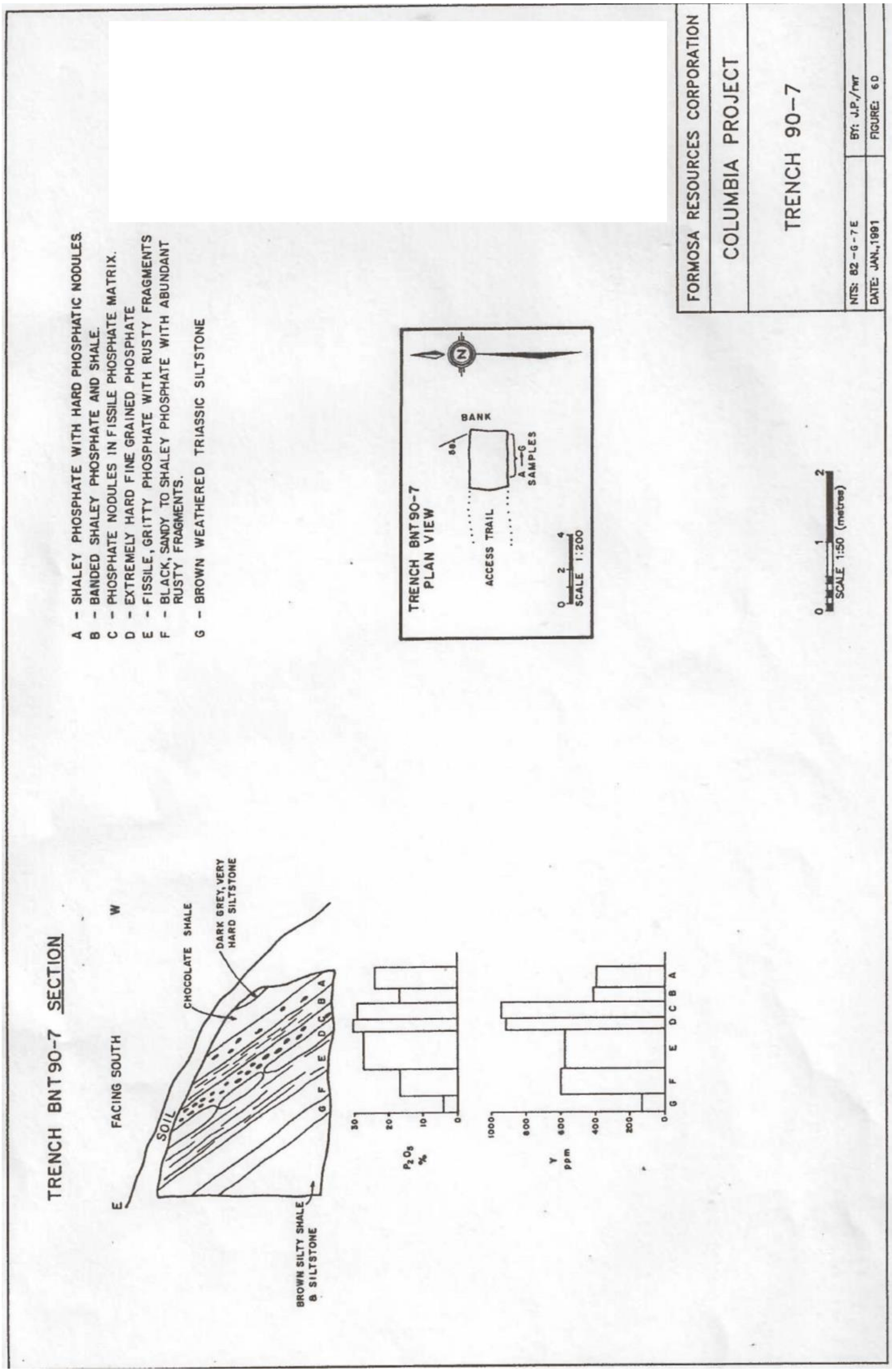


Figure 4 Previous Trench 90-7

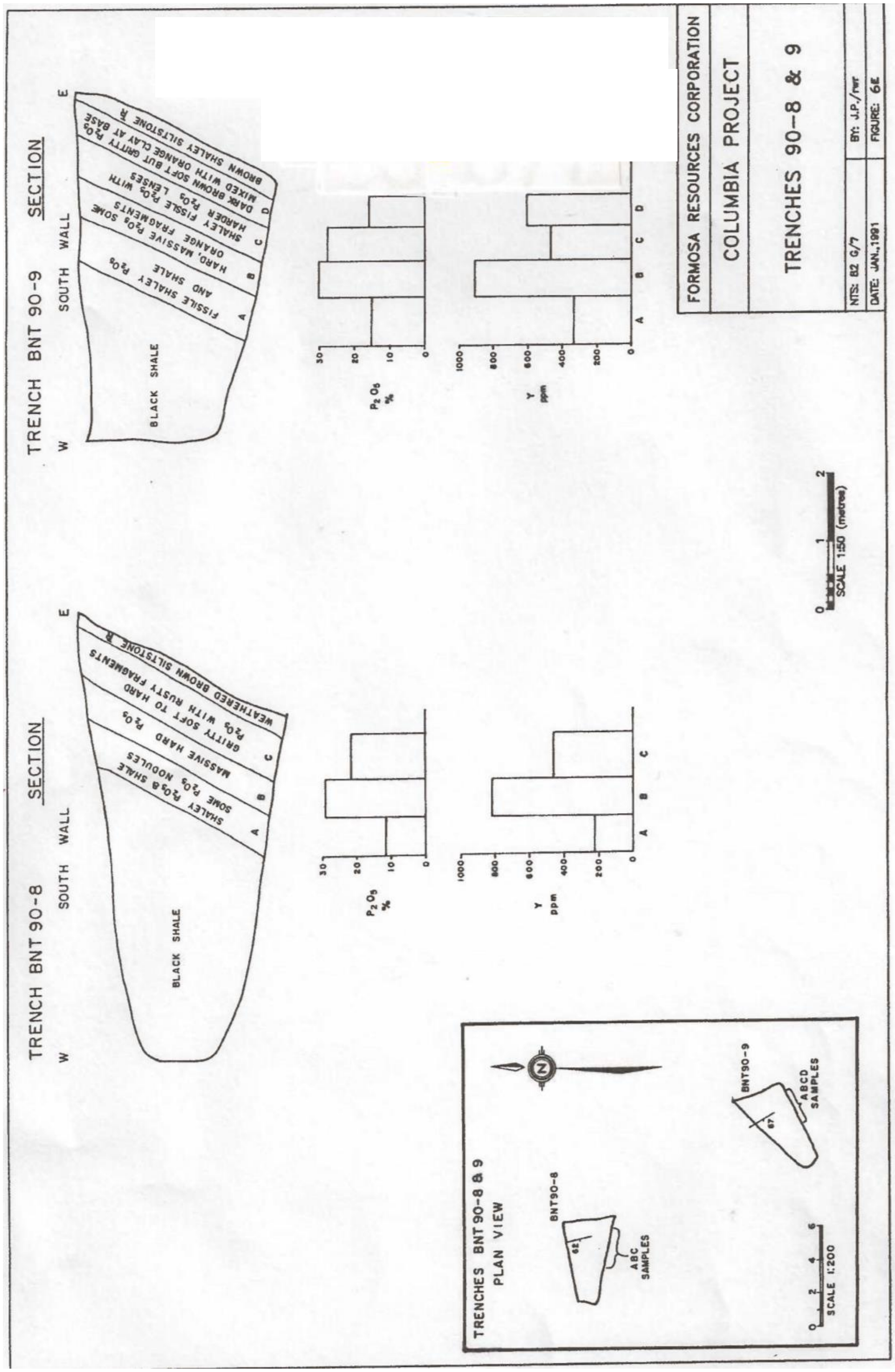


Figure 5 Trenches 90-8 & 9

Figure 6 General Google Image of Area

The 2013 program consisted of reconnaissance prospecting, rock sampling and establishing access. Thirteen samples were collected and assayed. Work in June 2013 was curtailed by unusually heavy rain which washed out the access road and the access was closed. Widespread flooding occurred in southeast BC and Alberta.

Results for 2013 sampling are generally low and sample location and P2O5 are plotted on Figures 5.

In 2014 the program consisted of prospecting the easternmost part of the claims. The area around the 1960's drill hole was examined and a suite of samples collected.

Results of the XRF assays are contained in Appendix III and sample descriptions are contained in Appendix IV.

Assays were conducted by using an XRF Unit factory calibrated (Cert No. 0154-0557-1) on October 30, 2013, Instrument #540557 Type Olympus DPO-2000 Delta Premium. The instrument was calibrated using Alloy Certified reference materials by ARM1 and NIS5 standards. Only certified operators were employed and that were experienced in XRF assay procedures. Read times were 120 seconds or greater.

Results of the 2014 samples show low P_2O_5.

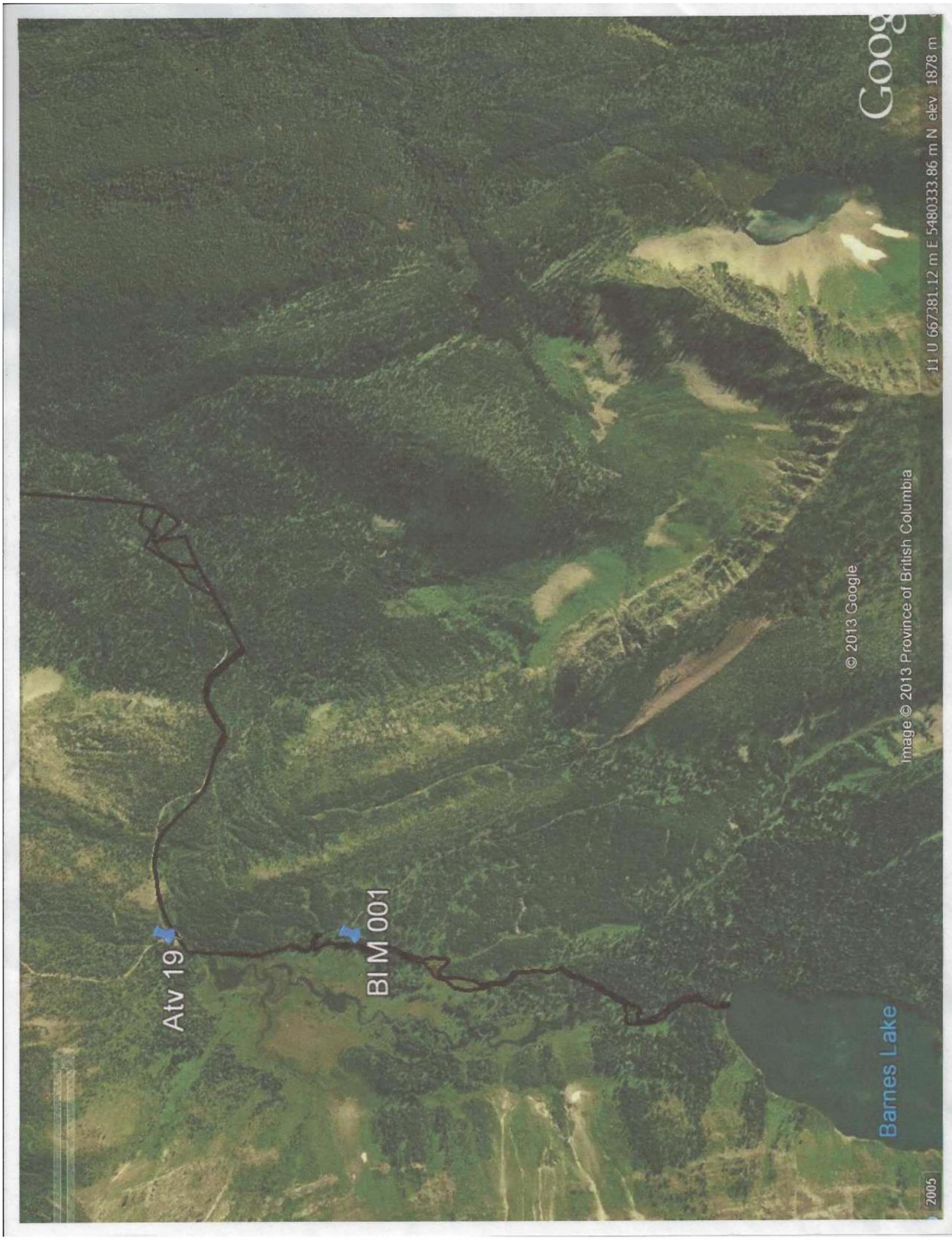


Figure 7 Garmin Map, General Location

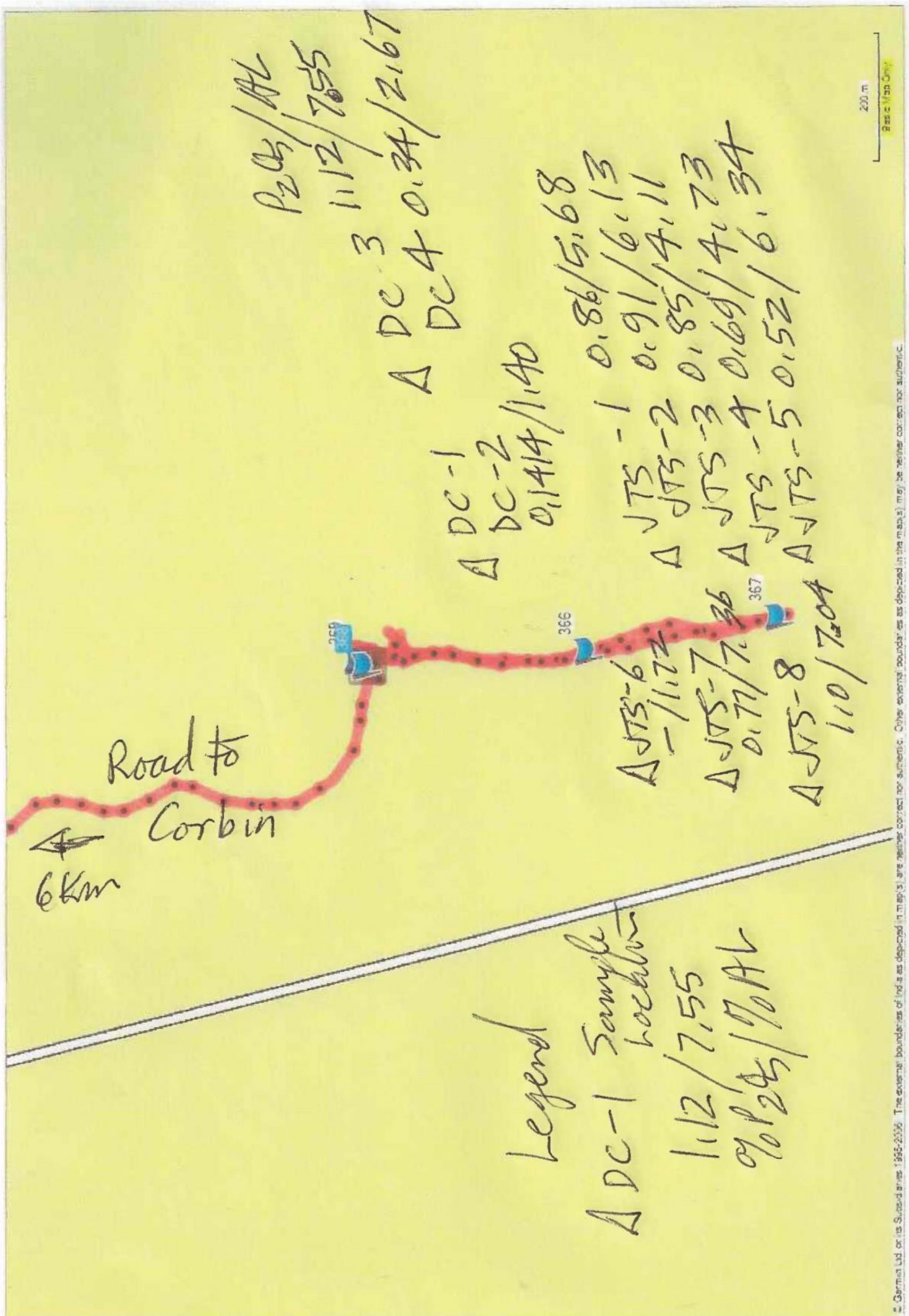


Figure 8 Results of Assays Plotted

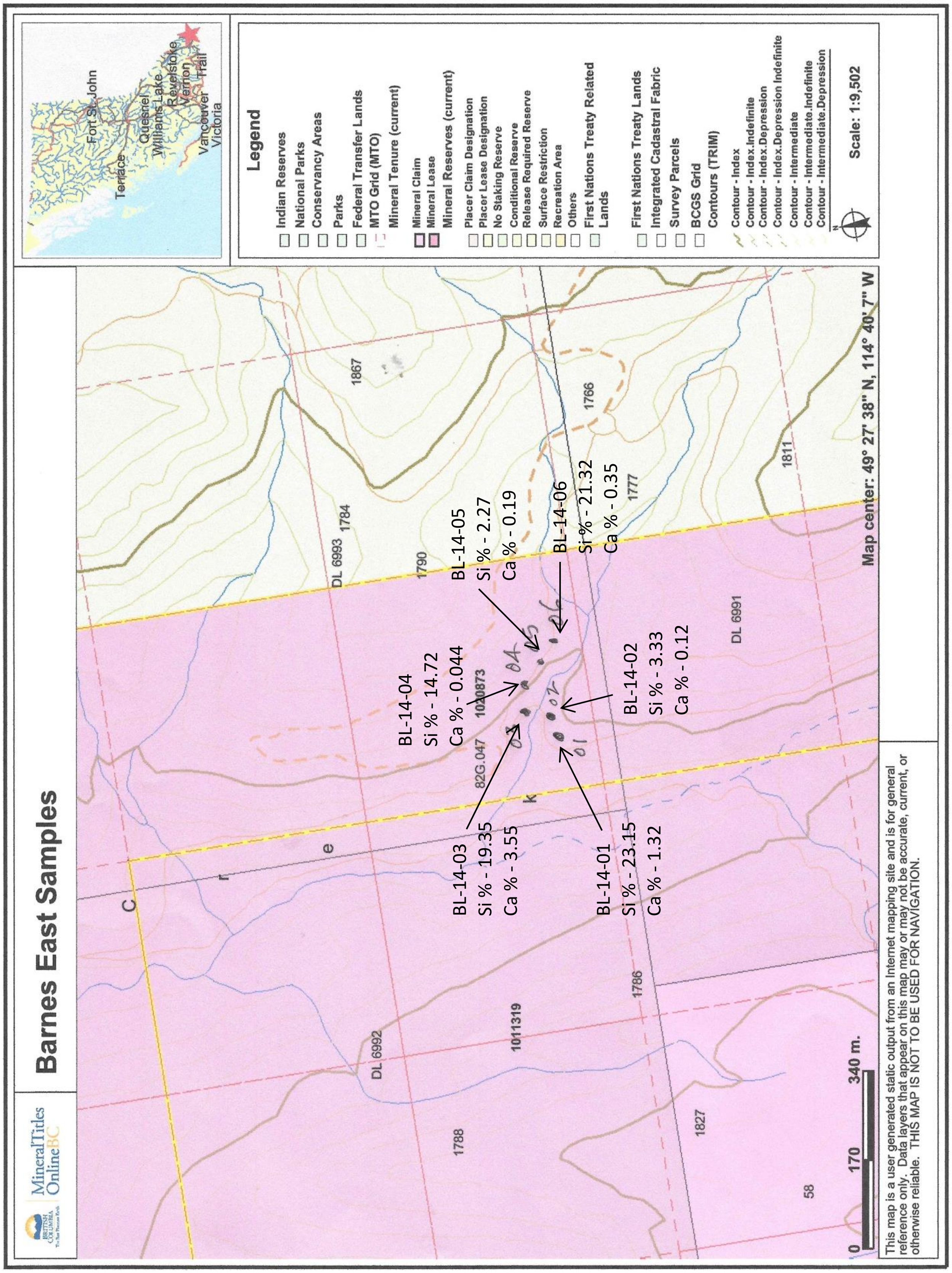


Figure 11 Sample Location and Results 2015

REGIONAL GEOLOGY

The Barnes Lake area is underlain by a series of predominantly marine strata which range in age from Devonian to Jurassic and non-marine fluvio-deltaic sediments of late Jurassic to Cretaceous age. Reconnaissance geological mapping in the region (Newmarch, 1953; Price,1965; 1964; 1962; 1961) has shown that these strata are now exposed in a broad, doubly plunging syncinorium, commonly referred to as the Fernie Basin. This synclinorium is broadly delineated by the distribution of the Jurassic Fernie Group in southeastern British Columbia (Figure 3): the structure is complicated by second order folds and later faults, both easterly directed thrusts and west-side down normal faults.

Phosphatic horizons (Figure 4) are known to occur at a number of intervals within the Paleozoic and Mesozoic stratigraphic section (Butrenchuk, 1987a; Kenny, 1977; Macdonald, 1987; Telfer, 1933). Phosphatic strata at the base of the Fernie Group are considered to have the best potential (Butrenchuk, 1987a; Macdonald, 1987).

Age	Group/Formation (Thickness,metres)	Lithology	Phosphatic Horizons	Thickness (metres)	Grade (% P_2O_5)
Cretaceous	Kootenay Fm.	-grey to black carbonaceous siltstone and sandstone; nonmarine;coal			
Jurassic	Fernie Gp. (+244)	-black shale,siltstone,limestone; marine to nonmarine at top -glauconitic shale in upper section -belemnites; common fossil	-approximately 60 metres above base low-grade phosphate bearing calcareous sandstone horizon or phosphatic shale -Bajocian -basal phosphate in Sinemurian strata; generally pelletal/oolitic; rarely nodular;1-2 metres thick; locally two phosphate horizons; top of phosphate may be marked by a yellowish-orange weathering marker bed.	1-2	11-30
		regional uncomformity			
Triassic	SPRAY RIVER GP.: Whitehorse Fm.	-dolomite,limestone,siltstone			
	SPRAY RIVER GP.: Sulphur Mntn. Fm. (100-496)	-grey to rusty brown weathering sequence of siltstone, calcareous siltstone and sandstone,shale, silty dolomite and limestone	-nonphosphatic in southeastern British Columbia		
		regional unconformity			
Permian	ROCKY MOUNTAIN SUPERGROUP: Ranger Canyon Fm. (1-60)	-sequence of chert,sandstone and siltstone;minor dolomite and gypsum;conglomerate at base -shallow marine deposition	-upper portion-brown,nodular phosphatic sandstone;also rare pelletal phosphatic sandstone (few centimetres to +4 metres) -basal conglomerate-chert with phosphate pebbles present (≤1 metre)	0.6 0.5-1.0	9.5 13-18
		unconformity			
	ROCKY MOUNTAIN SUPERGROUP, ISHBEL GROUP: Ross Creek Fm.(90-150)	-sequence of siltstone,shale chert,carbonate and phosphatic horizons areally restricted to Telford thrust sheet -west of Elk River,shallow marine deposition	-phosphate in a number of horizons as nodules and finely disseminated granules within the matrix -phosphatic coquinoid horizons present	0.4-1.0	1.7-6.0
	ROCKY MOUNTAIN SUPERGROUP, ISHBEL GROUP: Telford Fm. (210-225)	-sequence of sandy carbonate containing abundant brachiopod fauna;minor sandstone -shallow marine deposition	-rare,very thin beds or laminae of phosphate;rare phosphatized coquinoid horizon	0.3	11.4
	ROCKY MOUNTAIN SUPERGROUP: Johnson Canyon Fm. (1-60)	-thinly bedded,rhythmic sequence of siltstone,chert,shale, sandstone and minor carbonate; basal conglomerate -shallow marine deposition	-locally present as a black phosphatic siltstone or pelletal phosphate -phosphate generally present as black ovoid nodules in light coloured siltstone;phosphatic interval ranges in thickness from 1-22 metres -basal conglomerate (maximum 30 cm thick) contains chert and phosphate pebbles	0.2-0.3 1-22 1-2	3.0-4.0 0.1-11.0 14.2-21.2
		regional unconformity			
Pennsylvanian	SPRAY LAKES GP.: Kananaskis Fm. (±55)	-dolomite,silty,commonly contains chert nodules or beds	-locally,minor phosphatic siltstone in uppermost part of section		
	SPRAY LAKES GP.: Tunnel Mntn Fm. (±500)	-dolomitic sandstone and siltstone			
Mississippian	Rundle Gp. (±700)	-limestone,dolomite,minor shale, sandstone and cherty limestone			
	Banff Fm. (280-430)	-shale,dolomite,limestone			
Devonian-Mississippian	Exshaw Fm. (6-30)	-black shale,limestone -areally restricted in south-eastern British Columbia	-an upper nodular horizon -phosphatic shale and pelletal phosphate 2-3 metres above base -basal phosphate <1 metre thick		
Devonian	Palliser Fm.	-limestone			

FIGURE 4: STRATIGRAPHIC SUMMARY INCLUDING PHOSPHATE-BEARING HORIZONS IN SOUTHEASTERN BRITISH COLUMBIA (modified from Butrenchuk, 1987a). Thickness not to scale.

Figure 9 Stratigraphic Summary

REGIONAL STRATIGRAPHY

Upper Devonian strata exposed in the vicinity of the Fernie Basin consist of massive, grey, fine grained, cliff forming limestones of the Palliser Formation. These limestones are commonly mottled and locally interbedded with brown dolostones. They are overlain by the Devono-Mississippian Exshaw Formation, which predominantly consists of black, fissile shale, cherty shale, siltstone and minor limestone (Kenny, 1977). The Exshaw Formation is generally 6 to 30 metres in thickness (Figure 4). Four phosphatic horizons exist within the Exshaw Formation: the lowest is less than 50 cm thick and has grades of less than 9 per cent P_2O_5; the middle two horizons are both around one metre thick, have grades of up to 10 per cent P_2O_5 and are separated by approximately two metres of shale: and the uppermost phosphatic zone, which has very limited extent, contains grades which always exceed 15 per cent P_2O_5 and is always less than 15 cm thick (Macdonald, 1987).

The Mississippian Banff Formation has a gradational contact with the underlying Exshaw Formation. It is 280 to 430 metres thick and consists of dark grey, fissile shale and bands of argillaceous limestone that grade upwards into dark grey, massive, finely crystalline limestone and dolostone. The Rundle Group, which is also Mississippian in age, conformably overlies the Banff Formation and attains a thickness of approximately 700 metres. It consists of a series of resistant, thick-bedded crinoidal limestones, grey and black, finely crystalline limestones, dark, argillaceous limestones, dolostones and minor black and green shale (Butrenchuk, 1987a: Kenny, 1977).

Conformably overlying the Mississippian carbonates are Pennsylvanian strata of the Spray Lakes Group which consist of a lower unit, the Tunnel Mountain Formation and an upper unit, the Kananaskis Formation. The Tunnel Mountain Formation comprises a uniform, monotonous sequence of reddish-brown weathering dolomitic sandstone and siltstone that attains a maximum thickness of 500 metres at its western margin, near the Elk River. The Tunnel Mountain Formation is disconformably overlain by the Kananaskis Formation which consists of light grey, silty dolostones and dolomitic siltstones and is generally around 55 metres thick. Chert nodules and intraformational chert breccias are found in the upper part of the section. Slightly phosphatic horizons, containing up to 9 per cent P_2O_5, are reported as rare occurrences within the Kananaskis Formation (Macdonald, 1987).

The Kananaskis Formation of the Spray Lakes Group is unconformably overlain by Permian strata of the Ishbel Group. Together, the Spray Lake Group and the Ishbel Group comprise the Rocky Mountain Supergroup (Figure 4). The Ishbel Group, which has been correlated with the Phosphoria Formation in the western United States, consists of the Johnston Canyon, Telford, Ross Creek and Ranger Canyon formations, from oldest to youngest, respectively.

The Johnston Canyon Formation comprises a series of recessive weathering, thin to medium-bedded siltstones, silty carbonate rocks and sandstones, with minor shale and chert. It varies from 1 to 60 metres in thickness and commonly contains phosphatic rocks. Thin, intraformational, phosphate-pebble conglomerate beds are common throughout the formation and, locally, mark its base. Phosphate is present as black nodules in distinct horizons within the siltstones, locally cements siltstone beds and, locally occurs in pelletal siltstone or pelletal silty phosphorite beds which are slightly greater than 1 metre in thickness (Butrenchuk, 1987a; Macdonald, 1987). The pelletal phosphorites can contain up to 21 per cent P_2O_5, but are of limited distribution: the basal conglomerate is less than 50 centimetres thick and generally contains 3-4 per cent P_2O_5, only; the nodular and phosphate pebble-conglomerate beds can have cumulate thicknesses of up to 22 metres, but grades rarely exceed 10 per cent P_20_5 over a few 10s of centimetres.

The Telford and Ross Creek Formations, which attain thicknesses of 210-225 and 90-150 metres respectively, are of limited distribution, exposed only in the Telford Thrust, west of the Elk Valley in the Sparwood region. The Telford Formation consists of resistant-weathering, thick-bedded, sandy, oolitic and fossiliferous rocks. Rarely, slightly phosphatic horizons are present, with grades commonly around 11 per cent P_2O_5 across 30 centimetres. The Ross Creek Formation is composed of recessive, thin-bedded siltstone, argillaceous siltstone, minor carbonate and chert. Nodular phosphate horizons are present throughout this unit and are best developed in the upper portions. Locally, phosphatic coquinoid beds are also present. Reported phosphate grades are only 1.7 to 6 per cent P_2O_5 (Butrenchuk, 1987a; Macdonald, 1987).

The Ranger Canyon Formation, which can be up to 60 metres thick, paraconformably to disconformably overlies the Ross Creek Formation. It predominantly consists of resistant, cliff-forming, thick-bedded, blue-grey cherts, cherty sandstones, siltstones, fine sandstones and conglomerates. Minor gypsum and dolomite are also present. The base of the formation is marked by thin, phosphate-cemented, chert-pebble conglomerates that locally contain massive, phosphatic intraclasts. Phosphate also occurs as nodules in brownish weathering sandstone beds in the upper part of the formation. With the exception of phosphatic strata near the Fernie ski hill, most of the horizons are reportedly low grade: the highest values reported are 13.3 per cent P_2O_5 across 0.5 metres (Butrenchuk, 1987a; Macdonald, 1987).

Permian strata are unconformably overlain by the Triassic Sulphur Mountain Formation of the Spray River Group. The Sulphur Mountain Formation is between 100 and 496 metres thick and typically consists of rusty brown weathering, medium-bedded siltstones, calcareous and dolomitic siltstones, silty dolostones and limestones and minor shale. Locally, the Sulphur Mountain Formation is overlain by pale weathering, variegated dolostones, limestones, sandstones and intraformational breccias of the Whitehorse Formation. The Whitehorse Formation, which can be from 6 to 418 metres in thickness, is middle to upper Triassic in age and is the upper member of the Spray River Group. It is not present in most areas (Butrenchuk, 1987a).

The Jurassic Fernie Group unconformably overlies the Triassic strata. It consists of a lower zone of dark grey to black shales, dark brown shales, phosphates and minor limestones, siltstones and sandstones (the basal phosphate zone and equivalent Nordegg Member, Poker Chip Shales and the Rock Creek Member), a middle unit of light grey shale, calcareous sandstone and sandy limestone (the Grey Beds) and an upper unit of yellowish-grey to pale brown or dark grey weathering glauconitic sandstone and shale grading upwards into interbedded fine grained sandstone, siltstone and black shales (the Green and Passage beds). In southeastern British Columbia, the Fernie Group is 70 to 376 metres in thickness and generally thickens to the west (Freebold, 1957; Kenny, 1977; Macdonald, 1987; Price, 1965).

The base of the Fernie Group is marked by a persistent pelletal phosphorite horizon that is 1 to 2 metres in thickness and generally contains greater than 15 per cent P_2O_5; grades up to 30 per cent P_2O_5 have been found. It commonly consists of two pelletal phosphorite beds separated by a thin, chocolate brown to black phosphatic shale bed. The basal phosphorite rests either directly on Triassic strata or is separated from the underlying rocks by a thin phosphatic conglomerate. Phosphatic shales of variable thickness, generally less than 3 metres, overlie the phosphorites. The top of this sequence is locally marked by a yellow-orange bentonite bed. This part of the formation is Sinemurian in age and generally considered to be a lateral facies of the Nordegg Member and Nordegg equivalent beds. A second phosphatic horizon is present in the Bajocian Rock Creek Member, approximately 60 metres above the base of the Fernie Group. This zone is extremely low grade, generally containing less than one per cent

P_2O_5 and is often associated with belemnite-bearing calcareous sandstone beds (Butrenchuk, 1987a; Freebold, 1957; Macdonald, 1987).

The Kootenay Formation, of upper Jurassic to Cretaceous age, overlies rocks of the Fernie Group. It consists of dark grey carbonaceous sandstone, gritty to conglomeratic sandstone, siltstone, shale and coal and can be from 150 to 520 metres thick (Price, 1965).

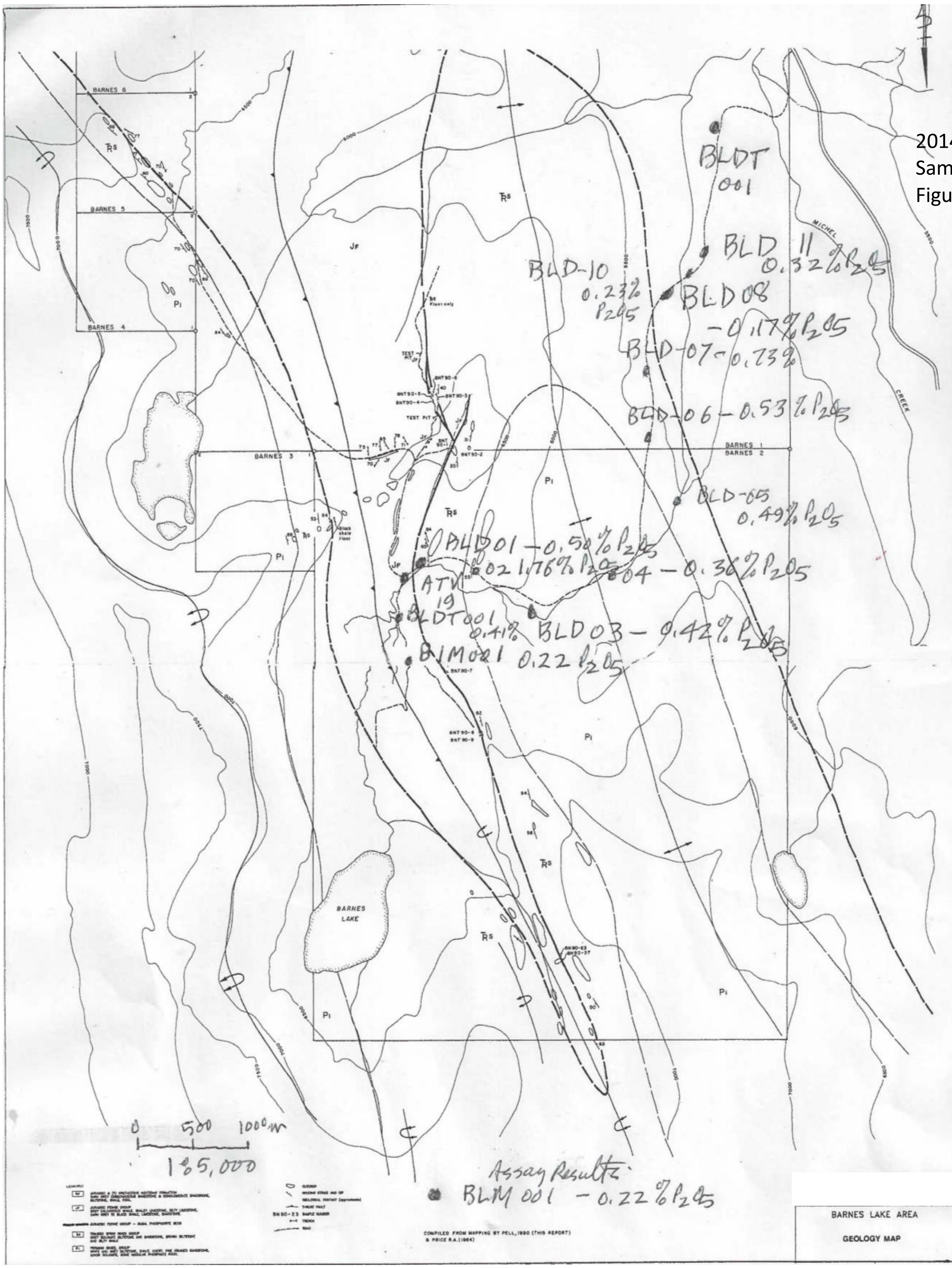


Figure 10 Detail Geology and Sample Location and Results 2013 Samples

PROPERTY GEOLOGY

The Barnes Lake area is underlain by a sequence of sedimentary rocks which range from Permian to Lower Cretaceous in age (Figure 5). Geological mapping (using topographic base map + altimeter control) at a scale of 1:5,000, concentrated on locating the basal Fernie Group phosphorite horizon, which marks the Triassic/Jurassic boundary in this region.

STRATIGRAPHY

The Barnes Lake claims are underlain by strata correlative with the Ranger Canyon Formation of the Permian Ishbel Group, the Sulphur Mountain Formation of the Triassic Spray River Group and the Jurassic Fernie Group (Figures 5). Ishbel Group strata older than the Ranger Canyon Formation may also be present on the property, but little attention was paid to this part of the stratigraphy. Late Jurassic to early Cretaceous sandstones, siltstones and coal beds of the Kootenay Formation are exposed on a ridge crests on the northwestern corner of the claims (Figure 5).

Rocks assigned to the Ranger Canyon Formation are predominantly medium to thick bedded, cream to buff to light grey weathering, fine grained sandstones, siltstones and dolomitic siltstones with white to light grey fresh surfaces. Locally, thin cherty and chert nodule rich layers are present within the siltstones. Thin grey limey beds may also be present, interlayered with the siltstones and are particularly common at the top of the section, immediately underlying Triassic siltstones. These limey beds are locally fossiliferous, containing rugosan corals and possible crinoid fragments. At one location, along the main access road, dark grey siltstones containing black phosphate nodules were present near the top of the Permian section and were overlain by grey calcareous beds.

Rocks correlative with the Triassic Sulphur Mountain Formation in the Barnes Lake area are predominantly buff, yellowish-brown and chocolate brown weathering, thin to medium bedded siltstones and shaley siltstone with a grey to buff fresh surface. Horizons consisting of dark brown shale with thin siltstone interlayers are common within this formation and, throughout much of the property, occur at the top of the formation.

Fernie Group rocks are recessive weathering and for the most part not well exposed. Where the base of the Fernie is exposed and the section complete, it is marked by a phosphorite horizon that is commonly 1.1 to 2.1 metres thick. In many areas the top of the section has been eroded and therefore thicknesses impossible to estimate; locally, backthrusting has placed Triassic and basal Jurassic strata over Jurassic Fernie shales, disrupting the sequence. The basal phosphorite horizon generally consists of poorly to well consolidated, gritty, pelletal phosphorite and shaley phosphorite capped by phosphatic shale. Trenches and hand pits at the southern part of the property revealed beds containing phosphate nodules within a pelletal phosphorite matrix. Brown and black shales commonly overlie the phosphorites; locally, extremely hard, dark grey nodular siltstone layers occur within the shales immediately overlying the phosphatic sequence.

The monotonous, fissile black shales which overlie the basal Fernie phosphorites give way, upsection to black, brown and dark grey shales with interbedded boudinaged buff to orange weathering dolostones, buff fossiliferous fine-grained sandstones and light grey limestone beds. Further upsection light grey to yellowish grey calcareous shales occur within the Fernie Group.

On the northwestern corner of the property, gritty grey sandstones, siltstones and thin coal beds of the late Jurassic to Cretaceous Kootenay Formation crop out, but were not examined in detail.

STRUCTURE

The structure of the Barnes Lake are is dominated by a pair of north-northwest trending, upright to overturned anticlines and the intervening overturned syncline which is cored, in the central and northern part of the property, by a thrust fault. At the south end of the property, parasitic folds on the limbs of these major structures affect outcrop patterns. Small backthrusts occur along the western limb of the easternmost anticline and locally disrupt phosphatic strata.

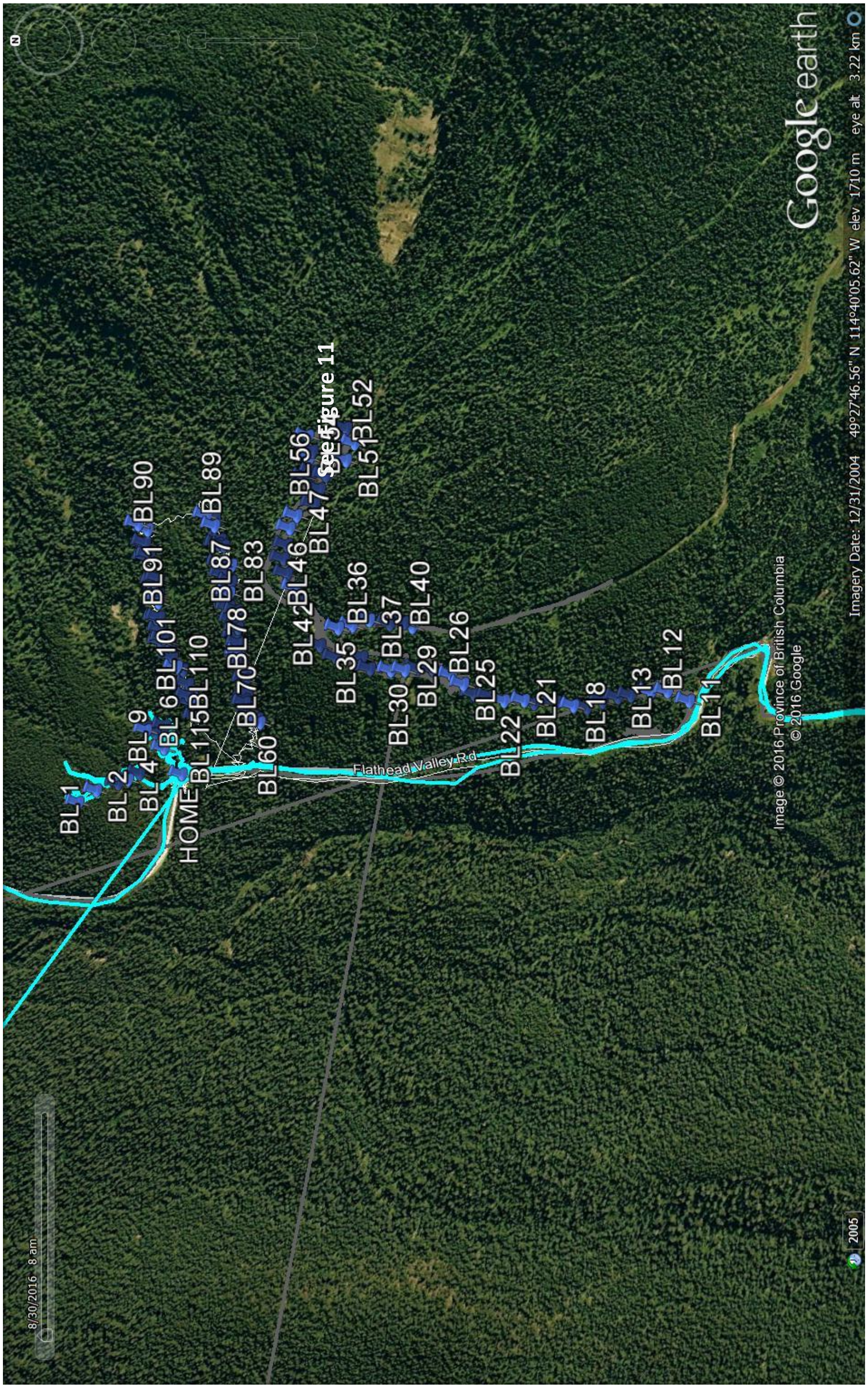


Figure 12 Google Image of Area

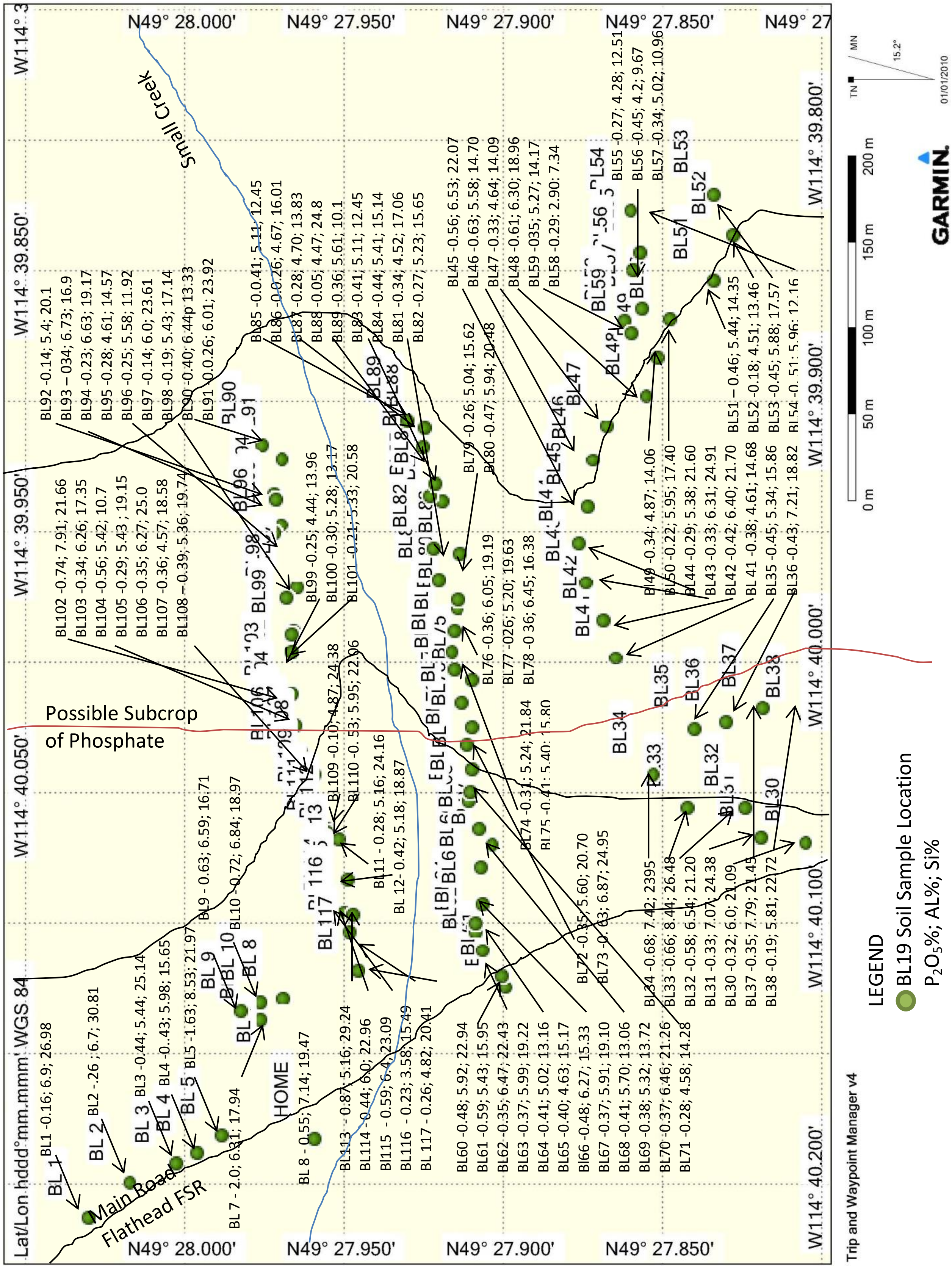


Figure 13 Sample Locations and Assay Results 2016

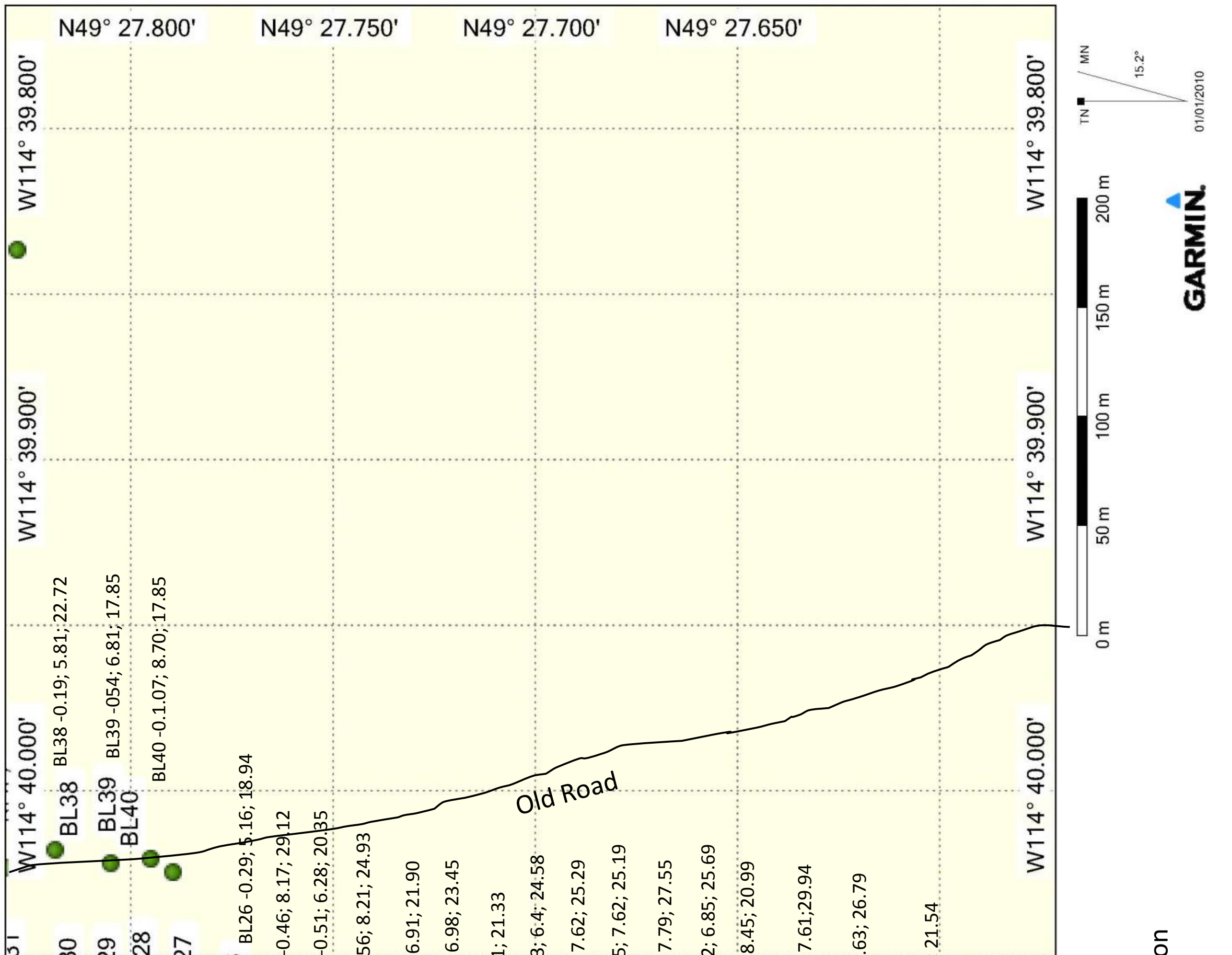


Figure 13 Sample Locations and Assay Results 2016

WORK PROGRAM 2016

The program consisted of continued reconnaissance prospecting, minor rock sampling and establishing access, soil samples were collected and assayed.

Results of the XRF assays are contained in Appendix III and sample descriptions are contained in Appendix IV. Soil samples were collected with a mattock at an average depth of 20cm from mainly a poorly developed "B" horizon.

Assays were conducted by using an XRF Unit factory calibrated (Cert No. 0154-0557-1) on October 30, 2013, Instrument #540557 Type Olympus DPO-2000 Delta Premium. The instrument was calibrated using Alloy Certified reference materials by ARM1 and NIS5 standards. Only certified operators were employed and that were experienced in XRF assay procedures. Read times were 120 seconds or greater.

Results of the 2016 samples show low P_2O_5 as plotted on Figure 13. With steeper dips of the beds than expected the results suggest that the sampling so far, is still too high in the sedimentary sequence.

Figure 13 shows slightly anomalous soil samples approximately 150m east of the main rock at an elevation of approximately 1725m to 1767m. Close spaced soil samples are recommended perpendicular to the road system (E-W) at 10m intervals. Hand trenching assisted by excavator trenching is recommended to follow up on the previous drilling and soil results.

The Barnes Lake property area is a forested area located between the south end of the Coal Mountain Mine and the upper reaches of Michel Creek. A small clearing was observed approximately 30 m to the south of a curve in the Flathead Valley Road and on the east side of the road. The small area was cleared by past operators for an historical drill site. It was also observed that a very low artesian flow of water was emanating from what is believed to be the collar of the historical drill hole. The flow is roughly estimated to be less than 0.25 litres per minute.

At the apex of the sharp curve in the Flathead Valley Road, a small creek was observed flowing over bedrock then through a culvert under the above noted road and then empties into Michel Creek.

The Barnes Lake property area is a forested area located between the south end of the Coal Mountain Mine and the upper reaches of Michel Creek. A small clearing was observed approximately 30 m to the south of a curve in the Flathead Valley Road and on the east side of the road. The small area was cleared by past operators for an historical drill site. It was also observed that a very low artesian flow of water was emanating from what is believed to be the collar of the historical drill hole. The flow is roughly estimated to be less than 0.25 litres per minute.

At the apex of the sharp curve in the Flathead Valley Road, a small creek was observed flowing over bedrock then through a culvert under the above noted road and then empties into Michel Creek.

Michel Creek is located up-gradient (upstream) of the Coal Mountain coal mine in the vicinity of the Barnes Lake property. There were no other drainages or seepages observed along the Flathead Valley Road where it traverses the Barnes Lake property.

2016 Surface Water Sampling

A total of three (3) surface water samples were collected from two creek drainages and an artesian water flow (previously described) from an historic drill hole. The three water samples were submitted to the ALS Environmental laboratory in Burnaby, BC for analysis of Total and Dissolved metals, Hardness, Alkalinity (5 types), Acidity, Fluoride, Dissolved Chloride and Sulphate, Nitrite (N), Nitrate (N), Nitrate plus Nitrite (N), Total and Dissolved Phosphorous and Orthophosphate and pH.

The samples were identified as BLSW 1 to BLSW 3. The analytical results are presented on attached Tables 1 to 4 and are briefly described as follows:

The sample locations are shown on attached Figure 14 and are briefly described as follows:

BLSW 1 – Sample was collected from a small puddle of water that has emanated from an historic drill hole on the property. The water is an artesian flow from what is assumed to be the collar of the old borehole. Old drill logs indicated that the borehole intersected a thin bed of phosphorite at a depth of 7.6 metre below grade. The water flow rate is very low and appears to be less than 0.25 litres per minute. The water had dampened the area for approximately 9 m^2 in the cleared area around the assumed collar of the historical drill hole. Sample BLSW 1 was located at UTM Coordinates 11U 668853 5481838.

BLSW 2 – Sample was collected from a small creek flowing over bedrock near the apex of a sharp curve in the Flathead Valley Road and approximately 25 north of sample BLSW 1. The sample was collected in the creek approximately 2 m east of the road before it entered a culvert. Sample BLSW 2 was located at UTM Coordinates 11U 668849 5481864.

BLSW 3 - Sample was collected from the Michel Creek approximately 1.3 km north-northwest of sample BLSW 2 west of the Flathead Valley Road and is downstream from samples BLSW 1 and BLSW 2. The sample location BLSW 3 on Michel Creek is upstream (up-gradient) of the Coal Mountain coal mine. This is in contrast to the Marten Landing sample MLSW 4 which is located on Michel Creek downstream (down gradient) of the Coal Mountain coal mine. Sample BLSW 3 is located at UTM Coordinates 11U 668182 5482837.

Analytical Results

From the dissolved and total metals analyses and the anion analyses, the hardness concentrations ($CaCO_3$) were slightly elevated and ranged from 107 to 171 mg/L in the three samples analyzed. The field pH levels were also found to be at 8.4 to 9.0 which are at or just below the BC Water Quality Guidelines (WQG) which has a range of >6.5 to <9. The hardness and pH levels are likely due to the natural underlying geological formations in the immediate area; however, more geological information is required. It has been reported that a phosphorite unit was intersected in the historic drill hole; however, more details are not available at this time. From the more alkaline pH level it is likely that carbonate is derived by nearby limestone formations as indicated by total and dissolved calcium concentrations.

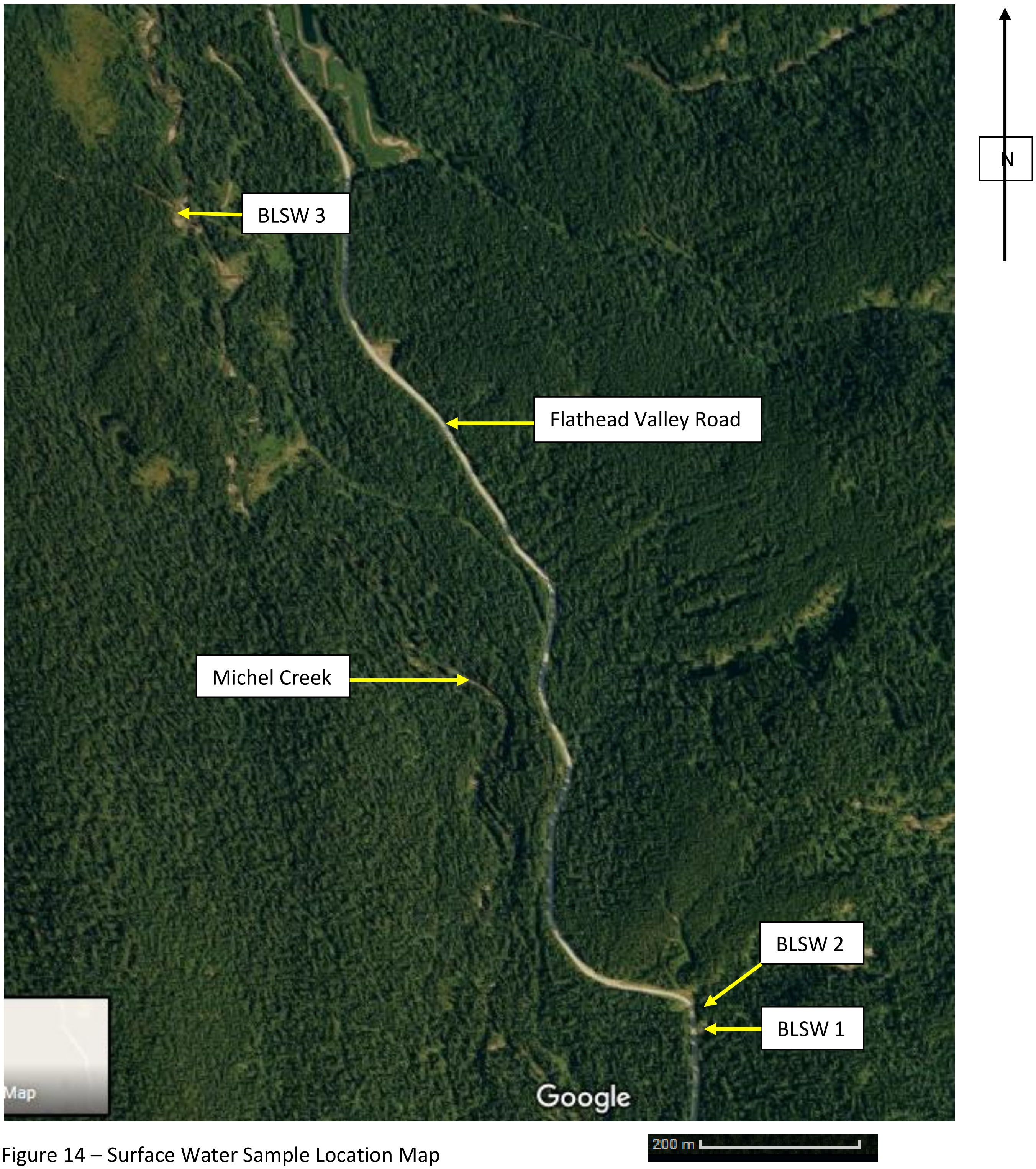


Figure 14 – Surface Water Sample Location Map

Total Metals

The total metals parameters presented on Table 1 have concentrations less than the applicable BC Approved and Working Water Quality Guidelines (WQG) for freshwater aquatic life (AW_{FW}) and

Contaminated Sites Regulation (CSR) drinking water (DW) standards with the exception of sodium which exceeds the CSR DW standard of 200,000ug/L with a concentration of 210,000 ug/L. The CSR standard for sodium only applies to esthetic values such as taste and colour and not to toxicity.

In general, WQG are applied to total metals and hardness concentrations are generally applied to individual metal parameter concentrations. pH is also applied but in a smaller number of metals. Dissolved metals concentrations are generally applied to CSR standards with adjustments also made for Hardness and pH.

For aluminum, the WQG applies to dissolved aluminum only. The results for Total Aluminum for the three water samples are elevated above the dissolved aluminum WQG of 50 ug/L; however, there are no guidelines for Total Aluminum. As observed on Table 1, CSR standards are presented for comparison only as they apply primarily to groundwater and not surface water. Standards for drinking water (DW) in Schedule 6 and Schedule 10 of the BC Contaminated Sites Regulation (CSR), which are typically 10 times higher than the BC WQG

Dissolved Metals

The dissolved metals parameters have concentrations less than the applicable WQG AW_{FW}, WQG_{DW} and CSR DW. For the most part, the concentrations of dissolved metals are similar to the total metals concentration. As with total metals concentrations, the application of hardness and pH to certain dissolved metal concentrations using the specified WQG equations has also increased the concentration limits before exceedances occur.

The concentrations of total and dissolved selenium and cadmium in the three Barnes Lake water samples (BLSW 1 to BLSW 3) were less than the reported laboratory detection limit which is also less than the WQG and CSR guidelines and standards.

Conventional Parameters

Total Alkalinity concentrations for samples BLSW 1 to BLSW 3 reflects the elevated hardness and calcium concentrations found in these three samples along with pH levels of 8.4 to 9.0 (towards the alkaline side of the neutral range of pH from 6.5 to 9). From Table 3 the total alkalinity of these three samples exceeds the WQG AW_{FW} range of 20 mg/L; however, in the natural environment of this area, it is likely that the area has low sensitivity to acid inputs. In low sensitivity environments, total alkalinity concentrations are permitted to exceed 20 mg/L. There are no guidelines under the WQG or CSR standards for PP Alkalinity ($CaCO_3$), Bicarbonate Alkalinity (HCO_3), Carbonate Alkalinity (CO_3) nor for Hydroxide Alkalinity (OH).

For Anions such as Fluoride (total) the range of concentrations to exceed the WQG is between 1.36 and 1.55 based on the application of hardness ranging from 107 to 171 mg/L for samples BLSW 1 to BLSW 3. The Fluoride concentration of these four samples is, therefore, less than the guidelines and CSR DW standard.

Dissolve Chloride ion (CL) and Dissolved Sulphate concentrations for the four samples previously noted are well below the WQG guidelines and CSR DW standard.

Concentrations of Nitrate (N), Nitrite (N) and Nitrate plus Nitrite (N) are also less than the applicable WQG guidelines and CSR DW standards.

As previously noted, pH levels were found to be between 8.4 and 9.0 for the three water samples are at or are just below the BC Water Quality Guidelines (WQG) which has a range of >6.5 to <9. The acidity concentration at was 3,3 mg/L at BLSW 1 and less than the reported laboratory detection limit at BLSW 2. Acidity at sample BLSW 3 was 1 mg/L which is at the laboratory detection limit. There are no guidelines under the WQG nor the CSR for acidity.

Conclusions

Elevated hardness and pH levels in the drainages at the Barnes Lake project site have a buffering or neutralizing effect on total and dissolved metals concentrations that may be exposed to the natural environment. The elevated hardness and pH levels also appear to be derived from the natural underlying geologic strata as it undergoes weathering and releases several species of alkalinity to the other strata and overlying soil. To date sulphides have been not observed in the field. The current surface water sample results for total and dissolved metals provide some support for these findings.

The surface water sampling program conducted in August indicated generally low concentrations of total metals and dissolved metals. This may indicate that there is low potential for metals to leach from the potential discovery and exposure phosphorite material at concentrations that could exceed water quality guidelines. This is particularly evident in sample BLSW 1 where phosphorite material was apparently intersected in the historical drill hole. Artesian water from the historical drill hole collected as sample BLSW 1 supports this low potential with total and dissolved metals concentrations less than the WQG. It is also noted that in the Barnes Lake property area that total and dissolved selenium concentrations in Michel Creek in sample BLSW 3 were less than the laboratory detection limits. As Michel Creek in the area of the Barnes Lake Property is located upstream (up-gradient) on the Coal Mountain coal mine confirms the influence of coal deposits on selenium levels in Michel Creek where concentrations of selenium exceed WQG downstream of the Coal Mountain mine at samples site MLSW 4 at the Marten Landing project site.

Additional water sampling at samples site BLSW 1 to BLSW 3 is recommended during periods of wet weather to observe and evaluate any changes in stream chemistry during high water flows. Surface water samples should be collected from any new small drainages that are encountered, if any, during wet weather periods.

Metals Notes Table
Marten Project

METALS NOTES: CSR AW$_{FW}$

Cd 0.1 @ H<30
0.3 @ H=30-<90
0.5 @ H=90-<150
0.6 @ H=150-<210
0.8 @ H=210-<270
0.9 @ H=270-<330
1.1 @ H=330-<390
1.2 @ H=390-<450
1.3 @ H=450-<500

Cu 20 @ H<50
30 @ H=50-<75
40 @ H=75-<100
50 @ H=100-<125
60 @ H=125-<150
70 @ H=150-<175
80 @ H=175-<200
90 @ H>=200

Zn 75@ H<90
150 @ H=90-<100
900 @ H=100-<200
1650 @ H=200-<300
2400 @ H=300-<400
3150@ H=400-<500

Ni 250 @ H<60
650 @ H=60-<120
1100 @ H=120-<180
1500 @ H>=180

Pb 40 @ H<50
50 @ H=50-<100
60 @ H=100-<200
110 @ H=200-<300
160 @ H>=300

Ag 0.5 @ H<=100
15 @ H>100

CONV. PARAMETER NOTES: CSR AW

N Nitrite
0.2 @ Cl<2 mg/L
0.4 @ Cl=2-<4
0.6 @ Cl=4-<6
0.8 @ Cl=6-<8
1 @ Cl=8-<10
2 @ Cl>=10

F 0.2 @ H<50
0.3 @ H>=50

Total Alkalinity
< 10 mg/L highly senstive to acidic inputs
10-20 mg/L moderately senstive
> 20 mg/L low sensitivity

CONV. PARAMETER NOTES: WQG AWFW

N Nitrite
0.06 @ Cl<2 mg/L
0.12 @ 2-4
0.18 @ 4-6
0.24 @ 6-8
0.30 @ 8-10
0.60 @ >10

METALS NOTES: WQG AW$_{FW}$

Al 100 @ pH>=6.5
7.4 @ pH=6.4
4.7 @ pH=6
2.3 @ pH=5
2.0 @ pH<=4

Cd 0.01 @ H=30
0.02 @ H=60
0.03 @ H=90
0.04 @ H=120
0.05 @ H=150
0.06 @ H=210
0.13 @ H=500
0.24 @ H=1000
0.44 @ H=2000
0.62 @ H=3000
0.79 @ H=4000
0.96 @ H=5000

Cu 2.9 @ H=10
6.7 @ H=50
11.4 @ H=100
49 @ H=500
96 @ H=1000
190 @ H=2000
378 @ H=4000
472 @ H=5000

Pb 3 @ H=< 8
4 @ H=10
34 @ H=50
82 @ H=100
633 @ H=500
1531 @ H=1000
3699 @ H=2000
8940 @ H=4000
11877 @ H=5000

Mn Acute
800 @ H=25
1100 @ H=50
1600 @ H=100
2200 @ H=150
3800 @ H=300

Mn Chronic
700 @ H=25
800 @ H=50
1000 @ H=100
1300 @ H=150
1900 @ H=300

Ni 25 @ H=0-60
65 @ H=60-120
110 @ H=120-180
150 @ H=>180

Ag 0.1 @ H=<100
3.0 @ H>100

Tl 6.3 ug/L human health, consumption of organism only
Ti 2000 ug/L mean threshold level Scenedesmus
4600 ug/L mean threshold level Daphnia
K 373,000-432,000 ug/L threshold for Daphnia immobilization

Zn Max
33 @ H=<90
40 @ H=100
115 @ H=200
190 @ H=300
265 @ H=400
341 @ H=500
716 @ H=1000
2966 @ H=4000
3716 @ H=5000

Zn 30 day average
7.5 @ H=<90
15 @ H=100
90 @ H=200
165 @ H=165
240 @ H=400
315 @ H=500

Ca <4000 highly sensitive to acid inputs
4000-8000 moderately sensitive
>8000 low sensitivity
the more restrictive of calcium or alkalinity applies

Alkalinity
<10000 highly sensitive to acid inputs
10000-20000 mod sensitive to acid inputs
>20000 low sensitivity

METALS NOTES: PL/RL (AW$_{FW}$)

Cd pH<7.0 = 2
pH 7.0-<7.5 = 2.5
pH 7.5-<8.0 = 25
pH≥ 8.0 = 35

Cu pH<5.0 = 90
pH 5.0-<5.5 = 100
pH≥5.5 = 150

Pb pH<5.5 = 150
pH 5.5-<6.0 = 250
pH≥6.0 = 500

Zn pH<6.0 = 150
pH 6.0-<6.5 = 300
pH≥6.5 = 450

METALS NOTES: PL/RL (DW)

Cd pH<6.5 = 1.5
pH 6.5-<7.0 = 3
pH 7.0-<7.5 = 15
pH≥7.5 = 35

Cu at any pH = 150

Pb pH<6.0 = 100
pH 6.0-<6.5 = 250
pH≥6.5 = 500

Zn pH<5.0 = 150
pH 5.0-<5.5 = 200
pH 5.5-<6.0 = 300
pH≥6.0 = 450

METALS NOTES: IL (AW$_{FW}$)

Cd pH<7.0 = 2
pH 7.0-<7.5 = 2.5
pH 7.5-<8.0 = 25
pH≥8.0 = 150

Cu pH<5.0 = 90
pH 5.0-<5.5 = 100
pH 5.5-<6.0 = 200
pH≥6.0 = 250

Pb pH<5.5 = 150
pH 5.5-<6.0 = 250
pH≥6.0 = 2000

Zn pH<6.0 = 150
pH 6.0-<6.5 = 300
pH≥6.5 = 600

METALS NOTES: IL (DW)

Cd pH<6.5 = 1.5
pH 6.5-<7.0 = 3
pH 7.0-<7.5 = 15
pH 7.5-<8.0 = 200
pH≥8.0 = 500

Cu at any pH = 250

Pb pH<6.0 = 100
pH 6.0-<6.5 = 250
pH≥6.5 = 2000

Zn pH<5.0 = 150
pH 5.0-<5.5 = 200
pH 5.5-<6.0 = 300
pH≥6.0 = 600

METALS NOTES: WQG AW$_{M}$

Mn 100 ug/L guideline to protect consumers of shellfish

CONCLUSIONS and RECOMMENDATIONS

The Barnes Lake claims, which can be reached by road from Sparwood, B.C., is underlain by a series of Upper Paleozoic and Mesozoic strata that were deposited off the western margin of North America between the Permian and late Jurassic. Considerable phosphatic strata occur at the base of the Jurassic Fernie Group, and in addition to P_2O_5, contain anomalous concentrations of yttrium. On the Barnes Lake claims, phosphorites (>12% P_2O_5) average around 660 ppm Y vs 260 ppm, which is the worldwide phosphorite average.

On the Barnes Lake claims, complete sections of the phosphatic strata are 1.11 to 2.1 metres in thickness and average 22.5 per cent P_2O_5 and 610 ppm yttrium. One incomplete section, where the upper beds were eroded away, was 0.98 metres in thickness and contained 30.5 per cent P_2O_5 and 777 ppm yttrium (Pell, 1990).

North of Barnes Lake, on the western limb of the easternmost anticline, an area was located where the phosphate horizon dips in a downslope direction at an angle approximately parallel to or slightly steeper than the slope: this scenario is favourable for exploiting the resource with minimal removal of overburden.

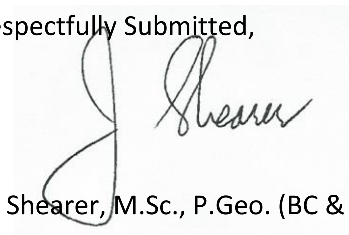
Beneficiation would be required to produce a product that would meet fertilizer plant feed specifications but the material appears suitable for the direct application, organic market without further upgrading.

The work done to date has been preliminary and has not addressed questions such as the effects of surface weathering and the potential of changes in grade with depth from surface. As well, it will be necessary to examine the reality of extracting yttrium during phosphoric acid process before a final assessment can be made.

The previous 2013 program consisted of reconnaissance prospecting, rock sampling and establishing access. Thirteen samples were collected and assayed. Work in June 2013 was curtailed by unusually heavy rain which washed out the access road and the access was closed. Widespread flooding occurred in southeast BC and Alberta.

Work in 2016, Figure 13, shows slightly anomalous soil samples approximately 150m to 200m east of the main rock at an elevation of approximately 1725m to 1767m. Close spaced soil samples are recommended perpendicular to the road system (E-W) at 10m intervals. Hand trenching assisted by excavator trenching is recommended to follow up on the previous drilling and soil results.

Respectfully Submitted,



J. T. Shearer, M.Sc., P.Geo. (BC & Ontario)

REFERENCES

Altschuler, Z.S. (1980):
The geochemistry of trace elements in marine phosphorites, part 1: Characteristic abundances and enrichment: Society of Economic Paleontologists and Mineralogists, Special Publication NO. 29, pp. 19-30.

Altschuler, Z.S., Berman, S. and Cuttitta, F. (1967):
Rare earths in phosphorites-Geochemistry and potential recovery: USGS Professional Paper 575B, pp. Bl-B9.

Barry, G.S. (1987):
Phosphate: in Canadian Minerals Yearbook, 1987 Edition, Energy, Mines and Resources Canada, pp. 49.1-49.7.

Butrenchuk, S.B. (1997):
Phosphate deposits in British Columbia; BC Ministry of Energy, Mines and Petroleum Resources, Bulletin 97.

(1987a):
Phosphates in southeastern British Columbia (82G and 82J); BC Ministry of Energy, Mines and Petroleum Resources, Open File 1987-16, 103p.

(1987b):
Phosphate Inventory (82G and J); in Geological Fieldwork, 1986, BC Ministry of Energy, Mines and Petroleum Resources Paper 1987-1, pp. 289-302.

Christie, R. L. (1978):
Sedimentary Phosphate Deposits, Geological Survey Paper 78-20.

(1979):
Phosphorites in Sedimentary Basins of Western Canada; in Current Research, Part B, Geological Survey of Canada, Paper 79-1B, pp. 253-258.

Dales, G. D. (1978):
Report on diamond Core Drilling – PH and WW Group Claims; BC Ministry of Energy, Mines and Petroleum Resources Assessment Report 6859.

Dorian, N. (1975):
Refraction seismic survey on the Flathead phosphate claims: BC Ministry of Energy, Mines and Petroleum Resources Assessment Report 5556.

Fantel, R.J., Anstett, T.F., Peterson, G.R., Porter, K.E. and Sullivan, D.E. (1984):
Phosphate rock availability-World; US Department of the Interior, Bureau of Mines Information Circular 8989, 65p.

Freebold, H. (1957):
The Jurassic Fernie Group in the Canadian Rocky Mountains and Foothills; Geological Survey of Canada, Memoir 287, 197p.

Hartley, G. S. (1981):
Physical Work and Investigation of Mineralization on the Zip 1 Claim, Assessment Report 9142

Heffernan, K.J. (1980):
Report on Geological Mapping, Sampling and Drilling Wapiti #1-25 Claims Liard Mining Division, Esso Resources Canada, Assessment Report 8407, Minerals Resources Branch, Dept. of Mining and Petroleum Resources of British Columbia.

Henneberry (1997):
Fernie Phosphate Project, 1996 Exploration Program, May 20, 1997 Assessment Report 25079

(1998):
Fernie Phosphate Project, 1998 Assessment Report, September 1, 1998, Assessment Report 25644

Kenny, R.L. (1977):
Exploration for phosphate in southeastern British Columbia by Cominco Ltd.; Paper presented at Canadian Institute of Mining and Metallurgy, Annual Meeting, Ottawa, Ontario.

Macdonald, D.E. (1987):
Geology and resource potential of phosphates in Alberta: Alberta Research Council, Earth Sciences Report 87-2, 65p.

(1985):
Geology and resource potential of phosphates in Alberta and portions of southeastern British Columbia: unpublished M.Sc. Thesis, University of Alberta, 238p.

Newmarch, C.B. (1953):
Geology of the Crowsnest Coal Basin with special reference to the Fernie area: BC Department of Mines, Bulletin No. 33, 107p.

Norman, G. & Renning, M. (2008A):
2008 Reconnaissance Exploration and Hand Trenching Assessment Report on the Wapiti Phosphate Prospect, for Pacific Ridge Exploration Ltd. and Lateegra Gold Corp. Submitted February, 2009.

(2008B):
2008 Reconnaissance Exploration and Hand Trenching Assessment Report on the Tumbler Ridge Phosphate Prospect, for Pacific Ridge Exploration Ltd. Submitted February, 2009.

Pell, J. (1990):
Geological, Lithogeochemical and Trenching Report on the Barnes #1-#6 Claims for Formosa Resources Corporation, December 15, 1990

Pelzer, M.A. (1977):
Geological and drilling report, 1977 field work, phosphate properties, Flathead area, British Columbia: BC Ministry of Energy, Mines and Petroleum Resources Assessment Report 6365.

Price, R.A. (1965):
Flathead map area, British Columbia and Alberta: Geological Survey of Canada Memoir 336.

(1964):
Flathead (Upper Flathead, east half), British Columbia-Alberta, Geological Survey of Canada Map 1154A (1:50,000).

(1962):
Fernie map area, east half, Alberta and British Columbia, 82G/E /2: Geological Survey of Canada, Paper 61-24.

(1961):
Fernie (East half) Geological Survey of Canada Map 35-1961 (1:126,720).

Shearer, J. T. (2012):
Geological and Airphoto Interpretation Assessment Report on the Wapiti Phosphorite Zones, for Fertoz International Inc., April 18, 2012

(2013)
Prospecting Assessment Report on the Barnes Lake Property, dated July 30, 2013 for Fertoz International Inc.

(2014)
Geological and Geochemical Assessment Report on the Barnes Lake Property, dated July 3, 2014 for Fertoz International Inc.

Stowasser, W.E. (1989):
Marketable phosphate rock - January 1989: US Bureau of Mines, Mineral Industry Surveys, Phosphate Rock Monthly, 8p.

(1988):
Phosphate rock; US Department of the Interior, Bureau of Mines Phosphate Rock Minerals Yearbook, 15p.

(1985):
Phosphate rock; in Mineral Facts and Problems, 1985 Edition, US Department of the Interior, Bureau of Mines Bulletin 675, pp. 579-594.

Telfer, L. (1933):
Phosphate in the Canadian Rockies: The Canadian Mining and Metallurgical Bulletin-1933, No. 260, pp. 566-605.

APPENDIX I

STATEMENT of QUALIFICATIONS

September 28, 2016

STATEMENT of QUALIFICATIONS

I, Johan T. Shearer of Unit 5 – 2330 Tyner Street, in the City of Port Coquitlam, in the Province of British Columbia, do hereby certify:

1. I graduated in Honours Geology (B.Sc., 1973) from the University of British Columbia and the University of London, Imperial College, (M.Sc. 1977).

2. I have practiced my profession as an Exploration Geologist continuously since graduation and have been employed by such mining companies as McIntyre Mines Ltd., J.C. Stephen Explorations Ltd., Carolin Mines Ltd. and TRM Engineering Ltd. I am presently employed by Homegold Resources Ltd.

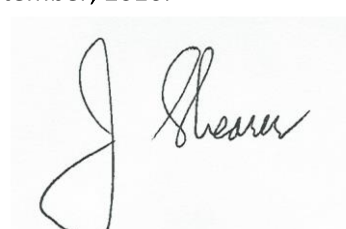
3. I am a fellow of the Geological Association of Canada (Fellow No. F439). I am also a member of the Canadian Institute of Mining and Metallurgy, the Geological Society of London and the Mineralogical Association of Canada. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (P.Geo., Member Number 19,279).

4. I am an independent consulting geologist employed since December 1986 by Homegold Resources Ltd. At Unit #5 2330 Tyner Street, Port Coquitlam, British Columbia.

5. I am the author of the report entitled "Geochemical Assessment Report on the Barnes Lake Property" dated September 28, 2016.

6. I have visited the property from September 12-16, 2016. I have carried out mapping and sample collection and am familiar with the regional geology and geology of nearby properties. I have become familiar with the previous work conducted on the Barnes Lake Project by examining in detail the available reports and maps and have discussed previous work with persons knowledgeable of the area.

Dated at Port Coquitlam, British Columbia, this 28th day of September, 2016.



J.T. Shearer, M.Sc., P. Geo. (BC & Ontario)

APPENDIX II

STATEMENT of COSTS

September 28, 2016

Appendix II

Barnes Lake Property
Statement of Costs 2016

		Total without GST
J. T. Shearer, M.Sc., P.Geo. (BC & Ontario), Project Supervisor		
3 days @ $700/day, September 12-16, 2016		$ 2,100.00
W. B. Lennan, B.Sc., P.Geo.		
3 days @ $600/day, September 12-16, 2016		$ 1,800.00
	Subtotal	$ 3,900.00
Transportation		
Truck 1, Fully Equipped 4x4, 4 days @ $120/day		480.00
Truck 2, Fully Equipped 4x4, 5 days @ $120/day		600.00
Fuel		658.00
Hotel, 17 man days @ $79 per night		1,343.00
E. N. MacKenzie, Fieldman, many years practical experience, Soil Sampling		1,600.00
5 days @ $320/day		
K. Hannan, Fieldman, many years experience, Soil Sampling		960.00
3 days @ $320/day		
XRF, rental		450.00
XRF, certified operator		700.00
Report Preparation & map preparation		1,400.00
Word Processing		350.00
	Subtotal	$ 8,541.00
	Total	**$ 12,441.00**

Event #	5620114
Date Filed	September 28, 2016
Amount	$ 9,000.00
PAC	$ 919.20
Total Filed	$ 9,919.20

APPENDIX III

ASSAY RESULTS

September 28, 2016

Barnes Lake xrf 2016-09-27

Date	Sample	Mode	Mg	Mg +/-	Al	Al +/-	Si	Si +/-	P	P +/-	S	S +/-	Cl	Cl +/-	K	K +/-	Ca	Ca +/-	Ti	Ti +/-	V	V +/-	Cr
27/09/2016	BL1	Geochem	ND		6.91	0.07	26.98	0.14	0.1625	0.0172	ND		ND		0.8608	0.0064	ND		0.4251	0.0198	0.0401	0.0076	ND
27/09/2016	BL2	Geochem	ND		6.7	0.07	30.81	0.15	0.2634	0.0181	ND		ND		0.689	0.0054	ND		0.3562	0.0186	ND		ND
27/09/2016	BL3	Geochem	ND		5.44	0.07	25.14	0.15	0.4353	0.0198	ND		ND		1.1334	0.008	0.3759	0.0054	0.3525	0.0191	ND		0.0118
27/09/2016	BL4	Geochem	ND		5.98	0.07	15.65	0.1	0.4294	0.0179	0.0666	0.0024	ND		1.1686	0.008	3.4769	0.0213	0.2591	0.0161	ND		ND
27/09/2016	BL5	Geochem	ND		8.53	0.07	21.97	0.12	1.6332	0.0254	ND		ND		0.9341	0.0064	0.668	0.006	0.4015	0.0179	ND		ND
27/09/2016	BL11	Geochem	ND		6.98	0.07	21.54	0.11	0.2887	0.0154	ND		ND		2.0576	0.0117	0.227	0.0046	0.4168	0.0182	0.0432	0.007	ND
27/09/2016	BL12	Geochem	ND		7.63	0.07	26.79	0.14	0.2445	0.0172	ND		ND		2.0103	0.0117	ND		0.4695	0.0202	0.0275	0.0073	0.0098
27/09/2016	BL13	Geochem	ND		7.61	0.07	29.94	0.15	0.2691	0.0186	ND		ND		2.7365	0.0149	ND		0.5599	0.0223	ND		ND
27/09/2016	BL14	Geochem	ND		8.45	0.09	20.99	0.13	0.4373	0.0196	0.0278	0.0028	ND		3.4298	0.0213	ND		0.5054	0.0222	0.0286	0.008	ND
27/09/2016	BL15	Geochem	ND		6.85	0.07	25.69	0.14	0.3334	0.0177	ND		ND		2.6314	0.0153	ND		0.4759	0.0206	0.0307	0.0075	ND
27/09/2016	BL16	Geochem	ND		7.79	0.08	27.55	0.15	0.4479	0.0196	ND		ND		2.7748	0.0157	ND		0.6174	0.0232	ND		ND
27/09/2016	BL17	Geochem	ND		7.62	0.07	25.19	0.13	0.646	0.02	ND		ND		2.1419	0.0125	0.0586	0.0049	0.5386	0.021	ND		ND
27/09/2016	BL18	Geochem	ND		7.62	0.07	25.29	0.14	0.5604	0.0194	ND		ND		1.7678	0.0107	ND		0.4877	0.0203	0.0286	0.0074	ND
27/09/2016	BL19	Geochem	ND		6.4	0.07	24.58	0.14	0.4291	0.019	ND		ND		2.0763	0.0127	0.2505	0.0053	0.4385	0.0201	ND		ND
27/09/2016	BL20	Geochem	ND		6.31	0.07	21.33	0.13	0.3982	0.0185	ND		ND		1.8487	0.0122	0.3494	0.0054	0.3528	0.0187	0.0331	0.0073	ND
27/09/2016	BL21	Geochem	ND		6.98	0.07	23.45	0.13	0.5261	0.0194	ND		ND		2.2814	0.0136	0.537	0.0062	0.3517	0.0186	ND		ND
27/09/2016	BL22	Geochem	ND		6.91	0.07	21.9	0.12	0.4425	0.019	ND		ND		1.9872	0.0121	2.4573	0.0151	0.3591	0.0186	0.0279	0.0071	0.0108
27/09/2016	BL23	Geochem	ND		8.21	0.08	24.93	0.14	0.557	0.0204	ND		ND		2.5452	0.0148	0.8605	0.0077	0.4081	0.0199	0.0381	0.0077	ND
27/09/2016	BL24	Geochem	ND		6.28	0.08	20.35	0.14	0.5084	0.0228	ND		ND		1.7109	0.0128	0.9827	0.0091	0.315	0.0205	ND		ND
27/09/2016	BL25	Geochem	ND		8.17	0.07	29.12	0.14	0.4631	0.0197	ND		ND		2.0472	0.0116	0.2484	0.0056	0.4094	0.0198	0.0256	0.0075	ND
27/09/2016	BL26	Geochem	1.43	0.26	5.16	0.07	18.94	0.13	0.2904	0.0243	ND		ND		1.2576	0.0096	13.05	0.09	0.3085	0.0215	ND		ND
27/09/2016	BL27	Geochem	ND		7.07	0.07	24.02	0.14	0.5101	0.0227	ND		ND		1.7831	0.0113	5.1618	0.0296	0.3858	0.021	ND		ND
27/09/2016	BL28	Geochem	ND		7.05	0.07	28.13	0.15	0.3378	0.0188	ND		ND		1.802	0.0108	0.2992	0.0056	0.3947	0.0196	ND		ND
27/09/2016	BL29	Geochem	ND		9.3	0.08	23.47	0.13	0.3413	0.0182	ND		ND		1.3808	0.0088	0.9093	0.0075	0.4647	0.02	0.0231	0.0072	ND
27/09/2016	BL30	Geochem	ND		6	0.07	21.09	0.13	0.3255	0.0187	ND		ND		1.5389	0.0106	0.7884	0.0073	0.38	0.0197	ND		ND
27/09/2016	BL31	Geochem	ND		7.07	0.08	24.38	0.14	0.3332	0.0191	ND		ND		1.7596	0.0113	0.6165	0.0066	0.3581	0.0194	0.0343	0.0076	ND
27/09/2016	BL32	Geochem	ND		6.54	0.07	21.2	0.13	0.5799	0.0196	ND		ND		2.2904	0.0144	0.5705	0.0063	0.5065	0.0211	0.028	0.0076	0.0106
27/09/2016	BL33	Geochem	ND		8.44	0.08	26.48	0.14	0.6586	0.0209	ND		ND		2.6508	0.0148	0.2168	0.0058	0.4369	0.0203	0.0319	0.0076	ND
27/09/2016	BL34	Geochem	ND		7.42	0.09	23.95	0.16	0.6844	0.0265	ND		ND		2.2346	0.0161	0.7155	0.0084	0.3226	0.0222	0.0364	0.0089	0.0151
27/09/2016	BL35	Geochem	ND		5.34	0.07	15.86	0.1	0.4529	0.0226	0.0171	0.0025	ND		1.3564	0.0097	9.85	0.06	0.2574	0.019	0.0361	0.0081	ND
27/09/2016	BL36	Geochem	ND		7.21	0.07	18.82	0.11	0.4313	0.0166	ND		ND		1.2781	0.0084	0.7712	0.0064	0.3527	0.0169	0.0276	0.0065	0.0117
27/09/2016	BL37	Geochem	ND		7.79	0.08	21.45	0.13	0.3506	0.019	ND		ND		1.7738	0.0119	0.3874	0.0058	0.5132	0.0221	0.0352	0.008	0.0126
27/09/2016	BL38	Geochem	ND		5.81	0.06	22.72	0.12	0.193	0.015	ND		ND		1.0703	0.0071	0.212	0.0043	0.3974	0.0179	0.0276	0.0067	ND
27/09/2016	BL39	Geochem	ND		6.81	0.07	17.85	0.1	0.5404	0.0179	0.0744	0.0024	ND		1.2778	0.0083	2.2506	0.0138	0.3039	0.0164	ND		0.0136
27/09/2016	BL40	Geochem	ND		8.7	0.07	23.66	0.12	1.0741	0.0217	ND		ND		1.3115	0.008	0.6111	0.006	0.3997	0.0179	ND		ND
27/09/2016	BL41	Geochem	ND		4.61	0.09	14.68	0.13	0.3838	0.0261	0.0694	0.0041	ND		1.382	0.0128	3.1871	0.0273	0.2335	0.0216	0.0329	0.0093	ND
27/09/2016	BL42	Geochem	ND		6.4	0.07	21.7	0.12	0.4212	0.0179	ND		ND		1.8652	0.0115	0.5554	0.0059	0.3294	0.0176	ND		ND
27/09/2016	BL43	Geochem	ND		6.31	0.07	24.91	0.14	0.3363	0.0181	ND		ND		1.289	0.0084	0.3359	0.0052	0.3235	0.0181	0.028	0.0071	ND
27/09/2016	BL44	Geochem	ND		5.38	0.08	21.6	0.15	0.29	0.0223	ND		ND		1.0926	0.0094	0.2197	0.0055	0.3199	0.0216	0.028	0.0086	ND
27/09/2016	BL45	Geochem	ND		6.53	0.07	22.07	0.12	0.5662	0.0187	0.0074	0.0023	ND		1.6617	0.0102	0.613	0.006	0.3488	0.0176	0.0227	0.0067	ND
27/09/2016	BL46	Geochem	ND		5.58	0.07	14.7	0.1	0.6282	0.019	0.0859	0.0026	ND		1.0578	0.0077	2.0165	0.0137	0.2993	0.0167	ND		ND
27/09/2016	BL47	Geochem	ND		4.64	0.07	14.09	0.11	0.3283	0.0193	0.0138	0.0028	ND		0.9929	0.0085	1.1436	0.0099	0.3401	0.0194	0.0297	0.0076	ND
27/09/2016	BL48	Geochem	ND		6.3	0.07	18.96	0.11	0.6106	0.0187	0.0485	0.0024	ND		1.099	0.0075	1.3074	0.0091	0.2916	0.0164	0.0263	0.0065	ND
27/09/2016	BL49	Geochem	ND		4.87	0.06	14.06	0.09	0.3421	0.0156	0.0297	0.0022	ND		0.7619	0.0058	1.3686	0.0095	0.264	0.0154	0.0237	0.0061	ND
27/09/2016	BL50	Geochem	ND		5.95	0.08	17.4	0.12	0.2253	0.0179	ND		ND		0.9383	0.0075	0.8594	0.0076	0.2609	0.0177	ND		ND

27/09/2016	BL51	Geochem	ND		5.44	0.07	14.35	0.09	0.4573	0.0174	0.0287	0.0023	ND		0.8942	0.0067	1.0455	0.0079	0.2536	0.0159	ND		ND
27/09/2016	BL52	Geochem	ND		4.51	0.07	13.46	0.11	0.1821	0.0187	ND		ND		0.9534	0.0084	1.482	0.0124	0.2797	0.0189	ND		ND
27/09/2016	BL53	Geochem	ND		5.88	0.08	17.57	0.12	0.4536	0.0206	0.0204	0.0028	ND		1.2619	0.0097	1.5198	0.0118	0.3389	0.0195	ND		ND
27/09/2016	BL54	Geochem	ND		5.96	0.07	12.16	0.07	0.5092	0.0155	0.0411	0.002	ND		0.6859	0.005	0.9378	0.0067	0.2106	0.0135	ND		ND
27/09/2016	BL55	Geochem	ND		4.28	0.06	12.51	0.08	0.2691	0.0137	0.02	0.0019	ND		0.7993	0.0056	1.1221	0.0076	0.1929	0.0135	ND		ND
27/09/2016	BL56	Geochem	ND		4.2	0.06	9.67	0.07	0.4544	0.0158	0.0425	0.0021	ND		0.7075	0.0054	1.899	0.0125	0.1783	0.0136	ND		ND
27/09/2016	BL57	Geochem	ND		5.02	0.06	10.96	0.07	0.3431	0.0147	0.0124	0.0019	ND		0.6799	0.0051	1.6017	0.0105	0.1722	0.0131	ND		ND
27/09/2016	BL58	Geochem	ND		2.8995	0.0442	7.3382	0.0451	0.2936	0.0111	0.0333	0.0015	ND		0.3658	0.0029	1.1261	0.0068	0.1109	0.0102	ND		ND
27/09/2016	BL59	Geochem	ND		5.27	0.07	14.17	0.09	0.3462	0.017	0.0181	0.0023	ND		0.8185	0.0063	1.4828	0.0104	0.1898	0.0151	ND		ND
27/09/2016	BL60	Geochem	ND		5.92	0.06	22.94	0.12	0.481	0.0178	ND		ND		1.001	0.0068	0.3823	0.0049	0.3154	0.017	ND		ND
27/09/2016	BL61	Geochem	ND		5.43	0.06	15.95	0.1	0.5924	0.018	0.0141	0.002	ND		1.138	0.0076	3.0858	0.0185	0.2975	0.0161	ND		ND
27/09/2016	BL62	Geochem	ND		6.47	0.07	22.43	0.13	0.3485	0.0178	ND		ND		1.1432	0.0079	0.1031	0.0044	0.2939	0.0174	0.0204	0.0067	0.0124
27/09/2016	BL63	Geochem	ND		5.99	0.07	19.22	0.12	0.3715	0.0186	0.0121	0.0025	ND		1.1864	0.0085	1.4963	0.0108	0.3219	0.0181	0.0281	0.0071	ND
27/09/2016	BL64	Geochem	ND		5.02	0.07	13.16	0.09	0.4171	0.0171	0.027	0.0023	ND		0.9707	0.0072	1.5568	0.0109	0.1759	0.0145	ND		ND
27/09/2016	BL65	Geochem	ND		4.63	0.06	15.17	0.1	0.4002	0.017	0.0154	0.0023	ND		0.6023	0.005	0.8679	0.0068	0.1987	0.0151	ND		ND

Barnes Lake xrf 2016-09-28

Date	Sample	Mode	Mg	Mg +/-	Al	Al +/-	Si	Si +/-	P	P +/-	S	S +/-	Cl	Cl +/-	K	K +/-	Ca	Ca +/-	Ti	Ti +/-	V	V +/-	Cr
28/09/2016	BL66	Geochem	ND		6.27	0.07	15.33	0.09	0.4858	0.0177	0.0346	0.0023	ND		0.8756	0.0063	2.3175	0.0145	0.2869	0.0159	ND		ND
28/09/2016	BL67	Geochem	ND		5.91	0.07	19.1	0.11	0.3695	0.0163	0.0086	0.0022	ND		0.8402	0.0059	0.6377	0.0056	0.2818	0.0157	0.022	0.0062	ND
28/09/2016	BL68	Geochem	ND		5.7	0.07	13.06	0.08	0.4139	0.0167	0.0376	0.0022	ND		0.755	0.0055	2.6145	0.0159	0.1727	0.0138	ND		ND
28/09/2016	BL69	Geochem	ND		5.32	0.07	13.72	0.08	0.3831	0.0156	0.0222	0.0021	ND		0.8304	0.0059	1.3391	0.009	0.2235	0.0143	ND		ND
28/09/2016	BL70	Geochem	ND		6.46	0.07	21.26	0.12	0.3684	0.0168	ND		ND		0.9694	0.0065	0.89	0.0068	0.2752	0.016	0.0223	0.0063	0.009
28/09/2016	BL71	Geochem	ND		4.58	0.06	14.28	0.09	0.2771	0.0135	ND		ND		0.6124	0.0046	0.6785	0.0053	0.3277	0.0152	0.0232	0.0057	ND
28/09/2016	BL72	Geochem	ND		5.6	0.06	20.7	0.11	0.3496	0.0154	ND		ND		0.7687	0.0054	0.2638	0.004	0.3081	0.0158	0.026	0.0061	ND
28/09/2016	BL73	Geochem	ND		6.87	0.07	24.95	0.14	0.6332	0.0205	ND		ND		1.2944	0.0084	0.3036	0.0052	0.3609	0.0187	0.0276	0.0072	ND
28/09/2016	BL74	Geochem	ND		5.24	0.06	21.84	0.12	0.3115	0.0172	ND		ND		0.7089	0.0055	0.5048	0.0053	0.3013	0.0172	ND		ND
28/09/2016	BL75	Geochem	ND		5.4	0.07	15.8	0.1	0.4102	0.016	ND		ND		0.9816	0.0068	1.0423	0.0076	0.2569	0.0152	0.0269	0.0061	ND
28/09/2016	BL76	Geochem	ND		6.05	0.07	19.19	0.11	0.3644	0.0164	0.0146	0.0022	ND		0.8783	0.006	1.5119	0.0096	0.2651	0.0155	ND		ND
28/09/2016	BL77	Geochem	ND		5.2	0.06	19.63	0.11	0.2573	0.0145	ND		ND		0.725	0.0051	0.5931	0.0051	0.2523	0.0149	ND		ND
28/09/2016	BL78	Geochem	ND		6.45	0.07	16.38	0.1	0.3621	0.0162	0.0106	0.0022	ND		0.9912	0.007	0.6178	0.0057	0.2314	0.0152	0.0256	0.0062	ND
28/09/2016	BL79	Geochem	ND		5.04	0.06	15.62	0.09	0.2632	0.0141	ND		ND		0.6875	0.0051	0.6196	0.0052	0.3328	0.0159	0.0321	0.0062	ND
28/09/2016	BL80	Geochem	ND		5.94	0.07	20.48	0.12	0.4717	0.0176	ND		ND		0.8494	0.0063	0.0374	0.0038	0.3564	0.0175	0.0265	0.0067	0.0101
28/09/2016	BL81	Geochem	ND		4.52	0.06	17.06	0.1	0.3434	0.015	0.0305	0.0021	ND		0.7259	0.0053	0.5019	0.0047	0.2313	0.0145	ND		ND
28/09/2016	BL82	Geochem	ND		5.23	0.06	15.65	0.09	0.2719	0.0147	0.0112	0.0021	ND		0.8803	0.0061	0.8251	0.0063	0.2019	0.0143	ND		ND
28/09/2016	BL83	Geochem	ND		6.78	0.07	19.36	0.11	0.4082	0.0166	0.0231	0.0023	ND		1.5933	0.01	0.5211	0.0055	0.3422	0.017	0.0243	0.0064	0.01
28/09/2016	BL84	Geochem	ND		5.41	0.06	15.14	0.09	0.4441	0.0155	0.0344	0.0021	ND		0.6319	0.0048	0.5578	0.0049	0.2516	0.0147	ND		ND
28/09/2016	BL85	Geochem	ND		5.11	0.07	12.45	0.08	0.4097	0.0174	0.0401	0.0024	ND		0.7273	0.0057	2.6507	0.0174	0.1893	0.0148	ND		ND
28/09/2016	BL86	Geochem	ND		4.67	0.06	16.01	0.1	0.2647	0.0162	ND		ND		0.5654	0.005	0.8455	0.0069	0.3146	0.0172	ND		ND
28/09/2016	BL87	Geochem	ND		4.7	0.07	13.83	0.1	0.2782	0.0165	0.0116	0.0024	ND		0.6874	0.0058	0.8969	0.0074	0.2777	0.0167	0.0252	0.0067	ND
28/09/2016	BL88	Geochem	ND		4.47	0.06	24.8	0.13	0.0489	0.014	ND		ND		0.6399	0.0049	0.0159	0.0036	0.3944	0.0181	ND		ND
28/09/2016	BL89	Geochem	ND		5.61	0.06	10.1	0.06	0.393	0.0136	0.0439	0.0018	ND		0.3966	0.0033	2.145	0.0125	0.2298	0.0129	ND		ND
28/09/2016	BL90	Geochem	ND		6.44	0.08	13.33	0.1	0.4019	0.0188	0.0094	0.0026	ND		0.9374	0.0078	0.9642	0.0084	0.2853	0.0176	0.0315	0.0071	0.0133
28/09/2016	BL91	Geochem	ND		6.01	0.07	23.92	0.14	0.257	0.0185	ND		ND		0.9346	0.0071	0.5824	0.0062	0.3653	0.0196	0.0238	0.0074	ND
28/09/2016	BL92	Geochem	ND		5.4	0.07	20.1	0.14	0.1399	0.0186	ND		ND		0.8144	0.007	0.7666	0.0074	0.329	0.0198	ND		ND
28/09/2016	BL93	Geochem	0.75	0.23	6.73	0.08	16.9	0.11	0.3408	0.018	0.013	0.0024	ND		1.1109	0.0083	1.8735	0.0133	0.2264	0.0164	0.0336	0.007	ND
28/09/2016	BL94	Geochem	ND		6.63	0.07	19.17	0.11	0.2265	0.0154	ND		ND		1.0746	0.0073	0.5179	0.0054	0.31	0.0168	0.0236	0.0065	ND

28/09/2016	BL95	Geochem	ND		4.61	0.09	14.57	0.13	0.2869	0.0251	0.0146	0.0041	ND		1.1619	0.0116	0.8172	0.0094	0.2933	0.0226	ND		ND	
28/09/2016	BL96	Geochem	ND		5.58	0.06	11.92	0.07	0.2551	0.0134	0.0193	0.0019	ND		1.0949	0.007	1.5973	0.01	0.1307	0.0122	ND		ND	
28/09/2016	BL97	Geochem	ND		6	0.07	23.61	0.13	0.139	0.016	ND		ND		0.6195	0.0052	0.3225	0.0048	0.3706	0.0185	0.0304	0.0071	ND	
28/09/2016	BL98	Geochem	ND		5.43	0.06	17.14	0.1	0.1992	0.0145	0.0077	0.002	ND		0.5844	0.0046	1.3049	0.0087	0.2612	0.0153	ND		ND	
28/09/2016	BL99	Geochem	0.73	0.24	4.44	0.06	13.96	0.09	0.2467	0.0149	0.0251	0.0022	ND		0.569	0.0049	0.9365	0.0074	0.2111	0.0147	0.023	0.0061	ND	
28/09/2016	BL100	Geochem	ND		5.28	0.07	13.17	0.1	0.3022	0.0179	ND		ND		0.8426	0.007	1.1603	0.0094	0.1918	0.016	0.0244	0.0068	ND	
28/09/2016	BL101	Geochem	ND		5.33	0.07	20.58	0.12	0.2067	0.0163	ND		ND		0.9042	0.0067	0.2784	0.0046	0.2753	0.017	ND		ND	
28/09/2016	BL102	Geochem	ND		7.91	0.07	21.66	0.12	0.7434	0.0192	0.0102	0.0022	ND		1.0194	0.0069	0.0413	0.0041	0.4241	0.0181	0.025	0.0066	ND	
28/09/2016	BL103	Geochem	1.36	0.34	6.26	0.09	17.35	0.15	0.3402	0.0227	ND		ND		0.8951	0.0089	0.5437	0.0072	0.3091	0.021	ND		ND	
28/09/2016	BL104	Geochem	ND		5.42	0.06	10.7	0.06	0.558	0.0139	0.0228	0.0017	ND		0.5929	0.0043	0.3662	0.0036	0.2143	0.0123	0.0195	0.0049	ND	
28/09/2016	BL105	Geochem	ND		5.43	0.06	19.15	0.11	0.2904	0.0144	0.0155	0.002	ND		0.5606	0.0044	0.1822	0.0036	0.2518	0.0148	ND		ND	
28/09/2016	BL106	Geochem	ND		6.27	0.07	25	0.13	0.3551	0.0171	ND		ND		0.7118	0.0055	ND		0.3112	0.0171	0.0226	0.0066	ND	
28/09/2016	BL107	Geochem	ND		4.57	0.06	18.58	0.1	0.359	0.0143	ND		ND		0.4717	0.0039	0.0216	0.003	0.2987	0.0153	ND		ND	
28/09/2016	BL108	Geochem	ND		5.36	0.06	19.74	0.11	0.3897	0.0167	ND		ND		0.6539	0.0052	0.3439	0.0045	0.2772	0.0162	ND		ND	
28/09/2016	BL109	Geochem	ND		4.87	0.06	24.38	0.13	0.1059	0.0153	ND		ND		0.5979	0.0049	0.2616	0.0044	0.3975	0.0188	ND		ND	
28/09/2016	BL110	Geochem	ND		5.95	0.07	22.06	0.13	0.5305	0.0195	ND		ND		0.6564	0.0056	0.1651	0.0044	0.4547	0.02	0.0233	0.0071	ND	
28/09/2016	BL111	Geochem	ND		5.16	0.06	24.16	0.13	0.2797	0.0156	ND		ND		0.6426	0.005	0.0466	0.0037	0.4024	0.0179	ND		ND	
28/09/2016	BL112	Geochem	ND		5.18	0.06	18.87	0.11	0.4186	0.0154	ND		ND		0.6334	0.0049	0.0634	0.0033	0.3591	0.0164	0.0212	0.0061	ND	
28/09/2016	BL113	Geochem	ND		5.16	0.06	29.24	0.15	0.0873	0.0169	ND		ND		0.7728	0.0058	0.4306	0.0055	0.3962	0.0199	0.0241	0.0076	ND	
28/09/2016	BL114	Geochem	ND		6	0.07	22.96	0.13	0.4433	0.0176	ND		ND		0.8335	0.0061	0.1941	0.0044	0.3735	0.0179	0.0204	0.0067	ND	
28/09/2016	BL115	Geochem	ND		6.4	0.07	23.09	0.13	0.5882	0.0188	ND		ND		0.7344	0.0056	0.2117	0.0044	0.3917	0.0184	ND		ND	
28/09/2016	BL116	Geochem	ND		3.58	0.05	15.49	0.09	0.2317	0.0129	ND		ND		0.5187	0.004	0.402	0.0039	0.1773	0.013	ND		ND	
28/09/2016	BL117	Geochem	ND		4.82	0.07	20.41	0.14	0.265	0.019	ND		ND		0.6445	0.006	0.0295	0.0041	0.3445	0.0199	ND		ND	
28/09/2016	BL7	Geochem	ND		6.31	0.07	17.94	0.11	2.0033	0.0329	1.6245	0.0115	ND		2.3318	0.015	12.58	0.07	0.317	0.0216	ND		ND	
28/09/2016	BL8	Geochem	ND		7.14	0.08	19.47	0.12	0.5501	0.0242	0.199	0.0036	ND		2.4893	0.0156	10.53	0.06	0.5679	0.0253	ND		ND	
28/09/2016	BL9	Geochem	ND		6.59	0.08	16.71	0.11	0.6281	0.0242	0.1422	0.0033	ND		2.4763	0.0161	11.09	0.07	0.4391	0.0231	0.0717	0.0098	ND	
28/09/2016	BL10	Geochem	ND		6.84	0.08	18.97	0.12	0.7215	0.0246	0.1114	0.0032	ND		2.498	0.0159	9.06	0.05	0.372	0.0216	ND			0.0136

Cr +/-	Mn	Mn +/-	Fe	Fe +/-	Co	Co +/-	Ni	Ni +/-	Cu	Cu +/-	Zn	Zn +/-	As	As +/-	Se	Se +/-	Rb	Rb +/-	Sr	Sr +/-	Y	Y +/-	Zr
	0.0195	0.0028	3.2371	0.0255	ND		0.0027	0.0008	ND		0.006	0.0005	ND		ND		0.0068	0.0002	0.0088	0.0002	0.0015	0.0002	0.0246
	0.0099	0.0025	2.7285	0.0217	ND		ND		ND		0.0037	0.0004	ND		ND		0.0058	0.0002	0.0074	0.0002	0.0008	0.0001	0.0206
0.0034	0.054	0.0037	3.2955	0.027	ND		0.0044	0.0009	0.0027	0.0007	0.0089	0.0006	0.001	0.0002	ND		0.0069	0.0002	0.0072	0.0002	0.0038	0.0002	0.0279
	0.0612	0.0036	3.2314	0.0261	ND		ND		0.0035	0.0006	0.0139	0.0007	0.0009	0.0002	ND		0.0087	0.0002	0.0129	0.0003	0.002	0.0002	0.0174
	0.0323	0.0029	3.7372	0.0268	ND		ND		0.0022	0.0006	0.0165	0.0007	ND		ND		0.0062	0.0002	0.0127	0.0002	0.0015	0.0002	0.0195
	0.0591	0.0035	3.0154	0.0231	ND		0.0034	0.0007	ND		0.0095	0.0006	ND		ND		0.0053	0.0002	0.0036	0.0001	ND		0.0095
0.0032	0.1192	0.0048	4.1643	0.03	ND		0.0026	0.0008	0.003	0.0007	0.0127	0.0007	0.0008	0.0002	ND		0.0107	0.0003	0.0089	0.0002	0.0027	0.0002	0.0252
	0.0818	0.0043	3.8963	0.0286	ND		0.003	0.0008	0.0025	0.0007	0.0087	0.0006	ND		ND		0.0104	0.0003	0.0085	0.0002	0.002	0.0002	0.026
	0.0855	0.0046	4.2913	0.0341	ND		0.0043	0.0009	ND		0.0043	0.0005	0.0011	0.0003	ND		0.0139	0.0003	0.0091	0.0002	0.0042	0.0002	0.0252
	0.0867	0.0043	4.2464	0.0313	ND		0.0044	0.0009	0.0043	0.0007	0.0108	0.0007	ND		ND		0.0105	0.0003	0.0071	0.0002	0.0025	0.0002	0.027
	0.1032	0.0048	4.2822	0.0315	ND		0.0027	0.0008	ND		0.0079	0.0006	ND		ND		0.0104	0.0003	0.008	0.0002	0.0019	0.0002	0.0278
	0.13	0.005	4.1061	0.03	ND		0.0035	0.0008	0.003	0.0007	0.0097	0.0006	ND		ND		0.009	0.0002	0.0086	0.0002	0.0018	0.0002	0.0247
	0.096	0.0044	3.803	0.0283	ND		0.003	0.0008	0.003	0.0007	0.0111	0.0006	ND		ND		0.0078	0.0002	0.0079	0.0002	0.0017	0.0002	0.0258
	0.0907	0.0044	3.8867	0.0298	ND		0.0033	0.0008	0.0023	0.0007	0.0109	0.0007	0.0014	0.0003	ND		0.0089	0.0002	0.0071	0.0002	0.0036	0.0002	0.022
	0.0889	0.0044	4.0966	0.0322	ND		0.0039	0.0009	0.004	0.0007	0.0143	0.0007	0.0012	0.0003	ND		0.0096	0.0003	0.0075	0.0002	0.0032	0.0002	0.0206
	0.1035	0.0046	3.2639	0.026	ND		0.0033	0.0008	ND		0.0091	0.0006	0.0008	0.0002	ND		0.0089	0.0002	0.007	0.0002	0.0028	0.0002	0.0211
0.0033	0.1102	0.0047	3.7482	0.0287	ND		0.0044	0.0008	0.0029	0.0007	0.0114	0.0006	0.0013	0.0002	ND		0.0087	0.0002	0.008	0.0002	0.0024	0.0002	0.0193
	0.1257	0.0051	4.1707	0.0311	ND		0.0064	0.0009	0.0042	0.0007	0.0123	0.0007	0.0014	0.0003	ND		0.011	0.0003	0.0069	0.0002	0.0034	0.0002	0.0218
	0.0649	0.0044	3.5042	0.0321	ND		0.0047	0.001	0.004	0.0008	0.0111	0.0007	0.0012	0.0003	ND		0.0077	0.0003	0.0067	0.0002	0.0034	0.0002	0.0203
	0.0807	0.0042	3.4804	0.0261	ND		0.005	0.0009	0.0056	0.0008	0.0099	0.0006	0.0013	0.0003	ND		0.0081	0.0002	0.0098	0.0002	0.0039	0.0002	0.0533
	0.0689	0.0047	2.9424	0.029	ND		0.0031	0.0009	0.003	0.0008	0.0137	0.0008	0.0016	0.0003	ND		0.0063	0.0002	0.0146	0.0003	0.0016	0.0002	0.0192
	0.1105	0.0051	2.9859	0.0258	ND		0.004	0.0009	0.0029	0.0007	0.0092	0.0006	0.0009	0.0002	ND		0.0077	0.0002	0.0116	0.0003	0.0023	0.0002	0.0216
	0.129	0.0051	3.4422	0.0265	ND		0.0028	0.0008	0.0026	0.0007	0.0105	0.0006	0.0011	0.0002	ND		0.0086	0.0002	0.0074	0.0002	0.003	0.0002	0.0278
	0.1299	0.005	3.9077	0.029	ND		0.0034	0.0008	ND		0.0125	0.0007	ND		ND		0.0081	0.0002	0.0099	0.0002	0.0024	0.0002	0.0272
	0.0874	0.0045	3.3541	0.0283	ND		0.0036	0.0008	0.0024	0.0007	0.0089	0.0006	0.0009	0.0003	ND		0.0082	0.0002	0.0074	0.0002	0.0025	0.0002	0.0266
	0.158	0.0057	3.5594	0.0287	ND		0.0031	0.0008	ND		0.0088	0.0006	ND		ND		0.0082	0.0002	0.008	0.0002	0.0029	0.0002	0.0268
0.0034	0.2822	0.0072	3.5454	0.0287	ND		0.0037	0.0008	0.0039	0.0007	0.0062	0.0005	0.0012	0.0002	ND		0.0096	0.0003	0.0071	0.0002	0.0034	0.0002	0.0348
	0.1311	0.0051	3.4294	0.0264	ND		0.0047	0.0009	0.0024	0.0007	0.0064	0.0005	0.0008	0.0002	ND		0.01	0.0003	0.0069	0.0002	0.0041	0.0002	0.0298
0.0042	0.1599	0.0067	3.3456	0.0319	ND		0.0053	0.0011	0.0027	0.0008	0.0094	0.0007	ND		ND		0.0075	0.0003	0.0061	0.0002	0.0028	0.0002	0.0191
	0.086	0.0047	2.5688	0.0249	ND		ND		ND		0.0079	0.0006	ND		ND		0.0048	0.0002	0.0104	0.0003	0.0015	0.0002	0.0149
0.003	0.1375	0.0048	4.26	0.031	ND		0.0056	0.0008	0.0042	0.0007	0.0158	0.0007	0.0014	0.0003	ND		0.0105	0.0002	0.0089	0.0002	0.0035	0.0002	0.0215
0.0035	0.0766	0.0043	3.5684	0.0296	ND		0.0029	0.0008	0.0037	0.0007	0.0086	0.0006	0.0011	0.0003	ND		0.0077	0.0002	0.0072	0.0002	0.0033	0.0002	0.0293
	0.0769	0.0038	3.273	0.0249	ND		0.0032	0.0007	0.0026	0.0006	0.0102	0.0006	0.0009	0.0002	ND		0.007	0.0002	0.0087	0.0002	0.0033	0.0002	0.0243
0.003	0.1596	0.0051	3.4537	0.0264	ND		0.004	0.0008	0.0025	0.0006	0.0131	0.0006	0.0007	0.0002	ND		0.0082	0.0002	0.0081	0.0002	0.0026	0.0002	0.0228
	0.1277	0.0046	3.5773	0.0256	ND		0.0038	0.0008	ND		0.0156	0.0007	0.0008	0.0002	ND		0.007	0.0002	0.0098	0.0002	0.0019	0.0002	0.0232
	0.0225	0.0038	2.6776	0.0312	ND		0.0043	0.0011	0.0028	0.0009	0.0092	0.0008	ND		ND		0.0073	0.0003	0.0069	0.0003	0.0027	0.0002	0.0164
	0.0417	0.0033	3.3175	0.026	ND		0.0034	0.0008	0.0024	0.0006	0.0085	0.0006	0.001	0.0002	ND		0.0089	0.0002	0.0066	0.0002	0.0026	0.0002	0.0152
	0.0504	0.0035	2.6158	0.022	ND		0.0023	0.0007	ND		0.0091	0.0006	ND		ND		0.0067	0.0002	0.0075	0.0002	0.0018	0.0002	0.0166
	0.0312	0.0037	2.9857	0.0298	ND		ND		ND		0.0087	0.0007	0.0013	0.0003	ND		0.0072	0.0003	0.0062	0.0002	0.0019	0.0002	0.0165
	0.0627	0.0037	3.3767	0.0259	ND		0.0027	0.0007	0.0035	0.0006	0.0107	0.0006	0.0008	0.0002	ND		0.0083	0.0002	0.0064	0.0002	0.0029	0.0002	0.0165
	0.0749	0.0039	3.6096	0.0292	ND		0.0037	0.0008	0.0033	0.0007	0.016	0.0007	0.0013	0.0002	ND		0.01	0.0002	0.0077	0.0002	0.003	0.0002	0.016
	0.05	0.0038	3.5863	0.0334	ND		0.0032	0.0009	ND		0.0136	0.0008	0.0012	0.0003	ND		0.0082	0.0003	0.0082	0.0002	0.0022	0.0002	0.0176
	0.0334	0.0029	3.3597	0.0262	ND		ND		0.0028	0.0006	0.0147	0.0007	0.0013	0.0002	ND		0.0089	0.0002	0.0072	0.0002	0.0019	0.0002	0.0164
	0.0565	0.0033	2.8691	0.0238	ND		0.0057	0.0008	0.002	0.0006	0.0134	0.0006	0.0013	0.0002	ND		0.0067	0.0002	0.0071	0.0002	0.0018	0.0002	0.0151
	0.0327	0.0032	2.9161	0.0264	ND		0.0025	0.0008	0.0024	0.0007	0.012	0.0007	0.001	0.0002	ND		0.0056	0.0002	0.0065	0.0002	0.0017	0.0002	0.0128

	0.0537	0.0034	2.5819	0.0226	ND		0.0022	0.0007	0.0021	0.0006	0.01	0.0006	ND		ND		0.0053	0.0002	0.0061	0.0002	0.0019	0.0002	0.0125
	0.0611	0.0042	3.2408	0.0316	ND		ND		ND		0.0104	0.0007	0.001	0.0003	ND		0.0078	0.0003	0.0075	0.0002	0.002	0.0002	0.0159
	0.0393	0.0036	3.873	0.0337	ND		0.0035	0.0009	0.0027	0.0007	0.0115	0.0007	0.0013	0.0003	ND		0.0087	0.0003	0.0086	0.0002	0.0021	0.0002	0.0171
	0.0116	0.0021	2.6973	0.0212	ND		ND		0.0017	0.0005	0.0144	0.0006	ND		ND		0.0055	0.0002	0.0082	0.0002	0.0015	0.0001	0.0117
	0.0189	0.0023	2.0585	0.0177	ND		ND		ND		0.0069	0.0004	ND		ND		0.0051	0.0002	0.0062	0.0002	0.0009	0.0001	0.0107
	0.0658	0.0034	2.0632	0.0186	ND		ND		ND		0.0096	0.0005	ND		ND		0.005	0.0002	0.0057	0.0002	0.0009	0.0001	0.0113
	0.0615	0.0032	2.3786	0.02	ND		ND		0.0025	0.0005	0.0137	0.0006	0.0006	0.0002	ND		0.0046	0.0002	0.0059	0.0002	0.0015	0.0001	0.0103
	0.0437	0.0024	1.5809	0.0131	ND		ND		0.0017	0.0004	0.0068	0.0004	ND		ND		0.0023	0.0001	0.0052	0.0001	0.001	0.0001	0.0071
	0.0378	0.003	2.1588	0.02	ND		ND		ND		0.0089	0.0005	ND		ND		0.005	0.0002	0.0059	0.0002	0.0012	0.0001	0.0107
	0.0742	0.0038	2.6677	0.0216	ND		ND		ND		0.0104	0.0006	ND		ND		0.0053	0.0002	0.0069	0.0002	0.0012	0.0001	0.0233
	0.1197	0.0045	3.2595	0.0255	ND		0.0031	0.0007	0.0027	0.0006	0.0125	0.0006	0.0009	0.0002	ND		0.007	0.0002	0.0062	0.0002	0.0033	0.0002	0.0183
0.0032	0.0287	0.003	3.25	0.0261	ND		0.0036	0.0008	0.0019	0.0006	0.0097	0.0006	0.0013	0.0002	ND		0.0063	0.0002	0.006	0.0002	0.0011	0.0002	0.0177
	0.0986	0.0045	3.6273	0.0297	ND		ND		0.0023	0.0007	0.0108	0.0007	0.0011	0.0003	ND		0.0078	0.0002	0.0069	0.0002	0.0016	0.0002	0.0161
	0.0863	0.004	2.4154	0.0217	ND		0.0035	0.0007	0.0045	0.0007	0.0106	0.0006	ND		ND		0.0064	0.0002	0.0058	0.0002	0.0022	0.0002	0.0115
	0.0491	0.0033	1.9001	0.0181	ND		ND		ND		0.009	0.0005	ND		ND		0.0041	0.0002	0.0054	0.0002	0.001	0.0001	0.0136

Cr +/-	Mn	Mn +/-	Fe	Fe +/-	Co	Co +/-	Ni	Ni +/-	Cu	Cu +/-	Zn	Zn +/-	As	As +/-	Se	Se +/-	Rb	Rb +/-	Sr	Sr +/-	Y	Y +/-	Zr
	0.1241	0.0046	3.3599	0.0263	ND		0.004	0.0008	0.0047	0.0007	0.0205	0.0008	ND		ND		0.0069	0.0002	0.0081	0.0002	0.0019	0.0002	0.0167
	0.0185	0.0025	2.894	0.0227	ND		0.0024	0.0007	ND		0.0137	0.0006	0.0007	0.0002	ND		0.0049	0.0002	0.0073	0.0002	0.0017	0.0001	0.0138
	0.0204	0.0025	2.1571	0.0188	ND		ND		0.002	0.0005	0.0102	0.0005	ND		ND		0.0044	0.0002	0.0055	0.0002	0.0017	0.0001	0.0105
	0.0741	0.0036	2.7608	0.0223	ND		ND		0.0019	0.0005	0.0139	0.0006	ND		ND		0.0063	0.0002	0.0064	0.0002	0.0016	0.0001	0.0136
0.0029	0.0412	0.0031	2.8408	0.0222	ND		ND		0.0025	0.0006	0.0114	0.0006	ND		ND		0.0062	0.0002	0.0071	0.0002	0.0015	0.0001	0.0151
	0.0476	0.003	3.0113	0.023	ND		0.0032	0.0007	0.0018	0.0005	0.0151	0.0006	0.001	0.0002	ND		0.0053	0.0002	0.0085	0.0002	0.0012	0.0001	0.0146
	0.0119	0.0023	2.8686	0.0219	ND		ND		0.0023	0.0006	0.0112	0.0006	0.0008	0.0002	ND		0.0059	0.0002	0.0086	0.0002	0.0008	0.0001	0.0152
	0.1762	0.0057	2.9517	0.0239	ND		ND		0.0027	0.0006	0.0066	0.0005	ND		ND		0.0077	0.0002	0.0061	0.0002	0.0018	0.0002	0.0325
	0.0633	0.0037	2.3534	0.0205	ND		ND		ND		0.0086	0.0005	0.0006	0.0002	ND		0.0052	0.0002	0.0076	0.0002	0.0006	0.0001	0.0184
	0.0983	0.0041	3.1012	0.0245	ND		ND		0.0029	0.0006	0.0107	0.0006	0.001	0.0002	ND		0.0074	0.0002	0.0066	0.0002	0.0018	0.0002	0.0171
	0.0668	0.0035	2.6466	0.0211	ND		ND		0.0023	0.0006	0.0096	0.0005	ND		ND		0.0064	0.0002	0.0072	0.0002	0.0015	0.0001	0.0155
	0.1404	0.0046	2.2145	0.0183	ND		ND		ND		0.0082	0.0005	ND		ND		0.0056	0.0002	0.0072	0.0002	0.0011	0.0001	0.0157
	0.1487	0.005	2.8686	0.0235	ND		0.003	0.0007	0.0024	0.0006	0.0168	0.0007	0.0007	0.0002	ND		0.0083	0.0002	0.0064	0.0002	0.0014	0.0002	0.0149
	0.053	0.0032	2.9342	0.023	ND		ND		0.0033	0.0006	0.013	0.0006	ND		ND		0.0061	0.0002	0.009	0.0002	0.0015	0.0001	0.0164
0.003	0.0206	0.0027	3.348	0.0262	ND		0.0027	0.0007	0.0032	0.0006	0.0117	0.0006	0.0009	0.0002	ND		0.0077	0.0002	0.0079	0.0002	0.0011	0.0002	0.0161
	0.0226	0.0025	2.481	0.0202	ND		ND		0.0019	0.0005	0.0089	0.0005	0.0007	0.0002	ND		0.0056	0.0002	0.006	0.0002	0.0014	0.0001	0.0147
	0.0348	0.0028	2.1371	0.0184	ND		ND		ND		0.0053	0.0004	ND		ND		0.0053	0.0002	0.0049	0.0001	0.0017	0.0001	0.0126
0.0029	0.0691	0.0037	4.1716	0.0306	ND		0.0037	0.0008	0.0042	0.0007	0.0143	0.0007	0.0012	0.0002	0.0003	0.0001	0.0111	0.0003	0.008	0.0002	0.0025	0.0002	0.0158
	0.0368	0.0028	2.491	0.0203	ND		ND		ND		0.0119	0.0006	ND		ND		0.005	0.0002	0.0062	0.0002	0.0007	0.0001	0.0119
	0.1288	0.0048	2.449	0.0219	ND		ND		ND		0.0119	0.0006	ND		ND		0.0063	0.0002	0.0062	0.0002	0.0016	0.0002	0.0121
	0.1034	0.0045	2.812	0.0245	ND		0.0029	0.0008	ND		0.0109	0.0006	ND		ND		0.0052	0.0002	0.0068	0.0002	0.0016	0.0002	0.0163
	0.1474	0.0052	2.7213	0.0245	ND		ND		ND		0.0198	0.0008	0.0009	0.0002	ND		0.0072	0.0002	0.0065	0.0002	0.0012	0.0002	0.0132
	0.0185	0.0025	1.5591	0.0148	ND		ND		0.0016	0.0005	0.0066	0.0005	ND		ND		0.0045	0.0002	0.0089	0.0002	0.0011	0.0001	0.0237
	0.0415	0.0026	2.6165	0.0197	ND		ND		0.0021	0.0005	0.0091	0.0005	0.0006	0.0002	ND		0.003	0.0001	0.0143	0.0002	0.0019	0.0001	0.0123
0.0034	0.1907	0.0062	3.6553	0.0324	ND		0.0046	0.0009	0.0045	0.0008	0.0198	0.0009	ND		ND		0.0096	0.0003	0.0076	0.0002	0.0022	0.0002	0.0121
	0.0539	0.0038	3.0656	0.0261	ND		0.004	0.0009	0.003	0.0007	0.0104	0.0006	ND		ND		0.0076	0.0002	0.0073	0.0002	0.0012	0.0002	0.0207
	0.0433	0.0037	2.9845	0.0277	ND		0.0026	0.0009	ND		0.0095	0.0007	0.0009	0.0002	ND		0.0069	0.0002	0.0064	0.0002	0.0014	0.0002	0.0165
	0.0824	0.0042	2.522	0.0232	ND		ND		0.0027	0.0006	0.0077	0.0005	ND		ND		0.0076	0.0002	0.0054	0.0002	0.0018	0.0002	0.0143
	0.0724	0.0038	2.6862	0.0222	ND		0.0025	0.0007	0.0022	0.0006	0.0076	0.0005	0.0006	0.0002	ND		0.0079	0.0002	0.0053	0.0002	0.0023	0.0002	0.0154

	0.0333	0.0042	3.1506	0.0359	ND	0.0049	0.0012	0.0053	0.001	0.0105	0.0008	0.001	0.0003	ND		0.0075	0.0003	0.0065	0.0003	0.0026	0.0002	0.0169
	0.1574	0.0046	2.131	0.0178	ND	0.0021	0.0006	0.0027	0.0005	0.0114	0.0005	ND		ND		0.009	0.0002	0.0038	0.0001	0.0008	0.0001	0.0055
	0.0109	0.0025	2.7241	0.0226	ND	ND		ND		0.0098	0.0006	0.0007	0.0002	ND		0.0044	0.0002	0.0095	0.0002	0.0011	0.0001	0.0184
	0.0458	0.0031	2.6425	0.0215	ND	ND		ND		0.0123	0.0006	ND		ND		0.005	0.0002	0.0083	0.0002	0.0011	0.0001	0.0133
	0.0406	0.003	2.4077	0.0217	ND	ND		0.0021	0.0006	0.0075	0.0005	0.0009	0.0002	ND		0.0059	0.0002	0.0057	0.0002	0.0013	0.0001	0.014
	0.1304	0.0052	2.5267	0.0243	ND	0.003	0.0008	ND		0.0079	0.0006	0.0009	0.0002	ND		0.0058	0.0002	0.0049	0.0002	0.0015	0.0002	0.0108
	0.0226	0.0028	2.6359	0.0228	ND	ND		0.0036	0.0007	0.0094	0.0006	ND		ND		0.0067	0.0002	0.0059	0.0002	0.0008	0.0001	0.0154
	0.0484	0.0033	4.0841	0.0292	ND	0.0023	0.0007	0.0035	0.0006	0.0131	0.0007	0.0009	0.0002	ND		0.0085	0.0002	0.0085	0.0002	0.0017	0.0002	0.0189
	0.1143	0.0057	3.6649	0.0379	ND	ND		ND		0.0099	0.0007	ND		ND		0.0065	0.0003	0.0068	0.0002	0.0016	0.0002	0.0135
	0.1979	0.0048	2.8724	0.0211	ND	0.0018	0.0006	0.0024	0.0005	0.0176	0.0006	0.0005	0.0002	ND		0.0046	0.0001	0.0048	0.0001	0.0013	0.0001	0.0113
	0.0249	0.0026	2.5224	0.02	ND	ND		0.0019	0.0005	0.0108	0.0005	ND		ND		0.0034	0.0001	0.007	0.0002	0.0018	0.0001	0.0175
	0.0119	0.0025	2.9911	0.0234	ND	ND		ND		0.0108	0.0006	ND		ND		0.0038	0.0002	0.007	0.0002	0.0012	0.0001	0.0217
	0.0264	0.0026	2.4722	0.0196	ND	ND		ND		0.0096	0.0005	ND		ND		0.0033	0.0001	0.0068	0.0002	0.0009	0.0001	0.0179
	0.0494	0.0033	2.3102	0.0199	ND	0.0022	0.0007	ND		0.0086	0.0005	ND		ND		0.0037	0.0002	0.0066	0.0002	0.001	0.0001	0.0158
	0.0276	0.0029	1.9346	0.0177	ND	ND		ND		0.0216	0.0008	ND		ND		0.0042	0.0002	0.0085	0.0002	0.0013	0.0001	0.0206
	0.0255	0.003	4.1816	0.0327	ND	ND		ND		0.0169	0.0008	0.0008	0.0002	ND		0.0058	0.0002	0.0096	0.0002	0.0013	0.0002	0.0183
	0.019	0.0026	3.168	0.0241	ND	ND		ND		0.0128	0.0006	0.0011	0.0002	ND		0.005	0.0002	0.0081	0.0002	0.0011	0.0001	0.0195
	0.0217	0.0025	3.423	0.0257	ND	ND		0.0018	0.0006	0.0136	0.0006	0.0014	0.0002	ND		0.0053	0.0002	0.0071	0.0002	0.0009	0.0001	0.0169
	0.0139	0.0026	1.1388	0.0131	ND	ND		0.0027	0.0006	0.0043	0.0004	ND		ND		0.0037	0.0002	0.0073	0.0002	0.0009	0.0001	0.0211
	0.0463	0.0033	3.648	0.0276	ND	0.003	0.0008	0.0021	0.0006	0.0117	0.0006	0.0015	0.0002	ND		0.0063	0.0002	0.007	0.0002	0.0021	0.0002	0.0223
	0.0328	0.003	2.6741	0.0219	ND	ND		ND		0.013	0.0006	ND		ND		0.0053	0.0002	0.0089	0.0002	0.0011	0.0001	0.021
	0.0637	0.0032	1.5995	0.0144	ND	ND		ND		0.0056	0.0004	ND		ND		0.0031	0.0001	0.0052	0.0001	0.0008	0.0001	0.0113
	0.0207	0.003	2.5838	0.0247	ND	ND		ND		0.0099	0.0006	0.001	0.0002	ND		0.0044	0.0002	0.0071	0.0002	0.001	0.0002	0.0198
	0.039	0.0041	3.8591	0.0333	ND	ND		ND		0.0047	0.0006	0.0009	0.0003	0.0004	0.0001	0.0107	0.0003	0.0353	0.0005	0.0098	0.0003	0.0104
	0.0351	0.0038	3.083	0.0279	ND	0.0036	0.0009	0.0026	0.0007	0.0046	0.0005	0.0008	0.0003	ND		0.0127	0.0003	0.0164	0.0003	0.003	0.0002	0.0155
	0.044	0.004	3.1151	0.0286	ND	0.003	0.0009	0.0033	0.0008	0.0048	0.0005	ND		ND		0.0119	0.0003	0.023	0.0004	0.0031	0.0002	0.0117
0.0039	0.0652	0.0045	3.4236	0.03	ND	0.0044	0.001	0.003	0.0008	0.0049	0.0006	ND		ND		0.0113	0.0003	0.0192	0.0004	0.0032	0.0002	0.0119

Zr +/-	Mo	Mo +/-	Ag	Ag +/-	Cd	Cd +/-	Sn	Sn +/-	Sb	Sb +/-	W	W +/-	Hg	Hg +/-	Pb	Pb +/-	Bi	Bi +/-	Th	Th +/-	U	U +/-	LE	LE +/-
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0019	0.0003	ND		ND		ND		61.31	0.2
0.0003	ND		ND		ND		ND		ND		ND		ND		0.002	0.0003	ND		ND		ND		58.4	0.2
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0017	0.0003	ND		ND		ND		63.69	0.21
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0012	0.0003	ND		ND		ND		69.62	0.18
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0025	0.0003	ND		ND		ND		62.04	0.19
0.0002	ND		ND		ND		ND		ND		ND		ND		0.001	0.0002	ND		ND		ND		65.34	0.18
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0019	0.0003	ND		ND		ND		58.46	0.21
0.0004	ND		ND		ND		ND		ND		ND		ND		0.002	0.0003	ND		ND		ND		54.84	0.22
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0022	0.0004	ND		0.0023	0.0006	ND		61.69	0.23
0.0004	ND		ND		ND		ND		ND		ND		ND		0.002	0.0003	ND		ND		ND		59.59	0.22
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0026	0.0003	ND		ND		ND		56.38	0.22
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0024	0.0003	ND		ND		ND		59.51	0.21
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0016	0.0003	ND		ND		ND		60.29	0.21
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0017	0.0003	ND		ND		ND		61.78	0.21
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0021	0.0003	ND		ND		ND		65.12	0.21
0.0003	ND		ND		ND		ND		ND		ND		ND		0.002	0.0003	ND		ND		ND		62.45	0.2
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0014	0.0003	ND		ND		ND		61.99	0.2
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0017	0.0003	ND		ND		ND		58.09	0.22
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0015	0.0003	ND		ND		ND		66.23	0.22
0.0005	ND		ND		ND		ND		ND		ND		ND		0.0021	0.0003	ND		ND		0.0011	0.0003	55.85	0.21
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0011	0.0003	ND		ND		ND		56.48	0.29
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0015	0.0003	ND		ND		ND		57.92	0.22
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0017	0.0003	ND		ND		ND		58.36	0.21
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0022	0.0003	ND		ND		ND		60.01	0.21
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0018	0.0003	ND		ND		ND		66.37	0.2
0.0004	ND		ND		ND		ND		ND		ND		ND		0.002	0.0003	ND		ND		ND		61.67	0.21
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0013	0.0003	ND		ND		ND		64.37	0.21
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0012	0.0003	ND		ND		ND		57.47	0.21
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0016	0.0004	ND		ND		ND		61.06	0.25
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0013	0.0003	ND		ND		ND		64.14	0.21
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0022	0.0003	ND		ND		ND		66.63	0.19
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0018	0.0003	ND		ND		ND		63.98	0.21
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0013	0.0003	ND		ND		ND		66.15	0.18
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0015	0.0003	ND		ND		ND		67.2	0.18
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0015	0.0003	ND		ND		ND		60.48	0.19
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0016	0.0004	ND		ND		ND		72.66	0.22
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0013	0.0003	ND		ND		ND		65.32	0.19
0.0003	ND		ND		ND		ND		ND		ND		ND		0.001	0.0003	ND		ND		ND		63.76	0.19
0.0004	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		68.01	0.22
0.0003	ND		ND		ND		ND		ND		ND		ND		0.001	0.0003	ND		ND		ND		64.69	0.19
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0015	0.0003	ND		ND		ND		71.89	0.17
0.0004	ND		ND		ND		ND		ND		ND		ND		0.0015	0.0003	ND		ND		ND		74.72	0.19
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0019	0.0003	ND		ND		ND		67.91	0.18
0.0003	ND		ND		ND		ND		ND		ND		ND		0.001	0.0002	ND		ND		ND		75.3	0.15
0.0003	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		71.38	0.19

0.0003	ND		ND		ND		ND		ND		ND		ND		0.0013	0.0003	ND		ND		ND		74.86	0.16
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0015	0.0003	ND		ND		ND		75.78	0.18
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0012	0.0003	ND		0.0024	0.0007	ND		68.98	0.21
0.0002	ND		ND		0.0028	0.0009	ND		ND		ND		ND		0.0016	0.0002	ND		ND		ND		76.74	0.14
0.0002	ND		ND		ND		ND		ND		ND		ND		0.0011	0.0002	ND		ND		ND		78.71	0.13
0.0002	ND		ND		ND		ND		ND		ND		ND		0.0009	0.0002	ND		ND		ND		80.68	0.12
0.0002	ND		ND		ND		ND		ND		ND		ND		0.0009	0.0002	ND		ND		ND		78.73	0.13
0.0002	ND		ND		ND		ND		ND		ND		ND		0.0015	0.0002	ND		ND		ND		86.18	0.08
0.0002	ND		ND		ND		ND		ND		ND		ND		0.0012	0.0003	ND		ND		ND		75.47	0.15
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0013	0.0003	ND		ND		ND		66.17	0.18
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0015	0.0003	ND		ND		ND		70.06	0.17
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0012	0.0003	ND		ND		ND		65.85	0.19
0.0003	ND		ND		ND		ND		ND		ND		ND		0.002	0.0003	ND		ND		ND		67.59	0.2
0.0002	ND		ND		ND		ND		ND		ND		ND		0.0009	0.0002	ND		ND		ND		76.12	0.15
0.0003	ND		ND		ND		ND		ND		ND		ND		0.001	0.0002	ND		ND		ND		76.13	0.15

Zr +/-	Mo	Mo +/-	Ag	Ag +/-	Cd	Cd +/-	Sn	Sn +/-	Sb	Sb +/-	W	W +/-	Hg	Hg +/-	Pb	Pb +/-	Bi	Bi +/-	Th	Th +/-	U	U +/-	LE	LE +/-
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0022	0.0003	ND		ND		ND		70.85	0.17
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0022	0.0003	ND		ND		ND		69.87	0.17
0.0002	ND		ND		ND		ND		ND		ND		ND		0.0009	0.0002	ND		ND		ND		75.03	0.15
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0023	0.0003	ND		ND		ND		75.28	0.15
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0017	0.0003	ND		ND		ND		66.82	0.18
0.0003	ND		ND		ND		ND		ND		ND		ND		0.001	0.0002	ND		ND		ND		76.12	0.14
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0012	0.0002	ND		ND		ND		69.06	0.17
0.0004	ND		ND		ND		ND		ND		ND		ND		0.002	0.0003	ND		ND		ND		62.37	0.2
0.0003	ND		ND		ND		ND		ND		ND		ND		0.001	0.0002	ND		ND		ND		68.63	0.18
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0013	0.0003	ND		ND		ND		72.83	0.16
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0017	0.0003	ND		ND		ND		68.96	0.17
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0015	0.0002	ND		ND		ND		70.95	0.16
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0012	0.0003	ND		ND		ND		71.86	0.17
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0014	0.0002	ND		ND		ND		74.37	0.15
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0018	0.0003	ND		ND		ND		68.41	0.18
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0013	0.0002	ND		ND		ND		74.04	0.15
0.0002	ND		ND		0.0034	0.001	ND		ND		ND		ND		0.0009	0.0002	ND		ND		ND		74.72	0.15
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0012	0.0003	ND		ND		ND		66.63	0.19
0.0002	ND		ND		ND		ND		ND		ND		ND		0.0016	0.0002	ND		ND		ND		74.97	0.15
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0013	0.0003	ND		ND		ND		75.8	0.15
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0015	0.0003	ND		ND		ND		74.36	0.16
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0013	0.0003	ND		ND		ND		76.37	0.16
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0013	0.0002	ND		ND		ND		68.01	0.17
0.0002	ND		ND		0.0036	0.0009	ND		ND		ND		ND		0.0012	0.0002	ND		ND		ND		78.37	0.12
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0016	0.0003	ND		ND		ND		73.68	0.19
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0015	0.0003	ND		ND		ND		64.73	0.2
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0012	0.0003	ND		ND		ND		69.38	0.2
0.0003	ND		ND		ND		ND		ND		ND		ND		0.001	0.0003	ND		ND		ND		69.38	0.24
0.0003	ND		ND		ND		ND		ND		ND		ND		0.0013	0.0003	ND		ND		ND		69.25	0.17

0.0004	0.0008	0.0002	ND	ND		ND	ND	ND	ND	0.0017	0.0004	ND	0.0033	0.0008	ND	75	0.22
0.0002	ND		ND	ND		ND	ND	ND	ND	0.001	0.0002	ND	ND		ND	77.08	0.13
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0012	0.0003	ND	ND		ND	66.13	0.19
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0025	0.0003	ND	ND		ND	72.34	0.16
0.0003	ND		ND	0.0039	0.001	ND	ND	ND	ND	0.0007	0.0002	ND	ND		ND	76.37	0.23
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0008	0.0003	ND	ND		ND	76.34	0.17
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0013	0.0003	ND	ND		ND	69.72	0.18
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0018	0.0003	ND	ND		ND	63.98	0.19
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0016	0.0004	ND	ND		ND	69.12	0.33
0.0002	ND		ND	ND		ND	ND	ND	ND	0.0011	0.0002	ND	ND		ND	78.99	0.12
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0024	0.0003	ND	ND		ND	71.54	0.16
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0015	0.0003	ND	ND		ND	64.29	0.19
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0014	0.0002	ND	ND		ND	73.16	0.15
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0014	0.0003	ND	ND		ND	70.84	0.17
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0015	0.0003	ND	ND		ND	67.36	0.18
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0017	0.0003	ND	ND		ND	65.9	0.2
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0012	0.0003	ND	ND		ND	66.08	0.18
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0014	0.0003	ND	ND		ND	70.96	0.17
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0016	0.0003	ND	ND		ND	62.69	0.19
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0018	0.0003	ND	ND		ND	65.43	0.19
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0017	0.0003	ND	ND		ND	65.83	0.18
0.0002	ND		ND	ND		ND	ND	ND	ND	0.0013	0.0002	ND	ND		ND	77.91	0.13
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0012	0.0003	ND	ND		ND	70.84	0.19
0.0003	ND		ND	ND		ND	ND	ND	ND	ND		ND	0.0025	0.0007	ND	52.93	0.25
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0012	0.0003	ND	0.002	0.0007	ND	55.87	0.24
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0012	0.0003	ND	ND		ND	58.63	0.23
0.0003	ND		ND	ND		ND	ND	ND	ND	0.0013	0.0003	ND	ND		ND	57.87	0.23

APPENDIX IV

SAMPLE DESCRIPTIONS

September 28, 2016

Barnes Lake Sample Descriptions

Sample #	XRF #	P_2O_5	± Error on P_2O_5 Reading	Depth	Remarks
BL1	#4	1625	171.76	15-20cm	Gray to black, clay rich
BL2	#5	2634	181.00		Gray to black, clay rich
BL3	#6	4353	197.96		Gray to black, clay rich
BL4	#7	4294	179.21		Gray to black, clay rich
BL5	#8	1.63%	.0254%		Gray to black, clay rich
BL6				At end of Soils	Gray to black, clay rich
BL7				BL6 is a silt	Gray to black, clay rich
BL8				BL7-10 are rock	Gray to black, clay rich
BL9					Gray to black, clay rich
BL10					Sandy
BL11	#9	2887	153.73		Sandy
BL12	#10	2445	172.17		Sandy
BL13	#11	2691	185.57		Sandy
BL14	#12	4373	195.79		Sandy
BL15	#13	3343	177.45		Sandy
BL16	#14	4479	195.59		Sandy
BL17	#15	6460	200.24		Sandy
BL18	#16	5604	193.70		Sandy
BL19	#17	4291	189.70		Sandy
BL20	#18	3982	185.18		Sandy
BL21	#19	5261	193.85		Sandy
BL22	#20	4425	189.88		Sandy
BL23	#21	5570	204.47		Sandy
BL24	#23	5084	227.95		Sandy
BL25	#24	4631	197.11		Sandy
BL26	#25	2904	242.53		Sandy
BL27	#26	5101	226.90		Sandy
BL28	#27	3378	188.46		Sandy
BL29	#28	3413	182.08		Sandy
BL30	#29	3255	187.10		Sandy
BL31	#30	3332	190.68		Sandy
BL32	#31	5799	195.83		Sandy
BL33	#32	6586			Sandy
BL34	#34	6844	265.33		Sandy
BL35	#35	4529	225.53		Sandy
BL36	#36	4313	166.09		Sandy
BL37	#37	3506	190.00		Sandy
BL38	#38	1930	150.29		Sandy
BL39	#39	5404	179.47		Sandy
BL40	#40	1.07%	.0217%		Sandy

BL41	#41	3838	260.98		Sandy
BL42	#42	4212	179.10		Sandy
BL43	#43	3363	180.66		Sandy
BL44	#44	2900	223.36		Sandy
BL45	#45	5662	178.04		Sandy
BL46	#46	6282	189.57		Sandy
BL47	#47	3283	192.58		Sandy
BL48	#48	6106	187.32		Sandy
BL49	#49	3421	156.12		Sandy
BL50	#50	2253	178.76		Sandy
BL51	#51	4573	173.92		Sandy
BL52	#52	1821	187.33		Sandy
BL53	#53	4536	205.93		Sandy
BL54	#54	5092	154.71		Sandy
BL55	#55	2691	137.06		Sandy
BL56	#56	4544	158.00		Sandy
BL57	#57	3431	146.69		Sandy
BL58	#58	2936	111.23		Sandy
BL59	#59	3462	169.80		Sandy
BL60	#60	4810	177.94		Sandy
BL61	#61	5924	180.11		Sandy
BL62	#62	3485	177.59		Sandy
BL63	#63	3715	185.74		Sandy
BL64	#64	4171	171.02		Sandy
BL65	#65	4002	169.67		Sandy
BL66	#3	4858	176.73		Sandy
BL67	#4	3695	163.36		Sandy
BL68	#5	4139	167.33		Sandy
BL69	#6	3831	156.18		Sandy
BL70	#7	3684	168.33		Sandy
BL71	#8	3771	135.14		Sandy
BL72	#9	3496	153.57		Sandy
BL73	#10	6332	205.46		Sandy
BL74	#11	3115	172.46		Sandy
BL75	#12	4102	160.38		Sandy
BL76	#13	3644	163.98		Sandy
BL77	#14	2573	145.38		Sandy
BL78	#15	3621	162.31		Sandy
BL79	#16	2362	140.68		Sandy
BL80	#17	4717	176.20		Sandy
BL81	#18	3434	150.22		Sandy
BL82	#19	2719	146.52		Sandy
BL83	#20	4082	165.75		Sandy
BL84	#21	4441	155.23		Sandy
BL85	#23	4097	173.87		Sandy
BL86	#24	2647	162.15		Sandy

BL87	#25	2782	165.03		Sandy
BL88	#27	489	139.55		Sandy
BL89	#28	3930	136.14		Sandy
BL90	#29	4019	187.92		Sandy
BL91	#30	2570	185.42		Sandy
BL92	#31	1399	185.67		Sandy
BL93	#32	3408	179.61		Sandy
BL94	#33	2265	153.82		Sandy
BL95	#34	2869	251.32		Sandy
BL96	#35	2551	133.82		Sandy
BL97	#36	1390	159.90		Sandy
BL98	#37	1992	145.28		Sandy
BL99	#38	2467	148.92		Sandy
BL100	#39	3022	178.69		Sandy
BL101	#40	2067	162.54		Sandy
BL102	#42	7434	191.73		Sandy
BL103	#43	3402	226.86		Sandy
BL104	#44	5580	139.23		Sandy
BL105	#46	2904	143.88		Sandy
BL106	#47	3551	171.34		Sandy
BL107	#48	3590	142.90		Sandy
BL108	#49	3897			Sandy
BL109	#50	1059			Sandy
BL110	#51	5305			Sandy
BL111	#52	2797			Sandy
BL112	#53	4186			Sandy
BL113	#54	873			Sandy
BL114	#55	4433			Sandy
BL115	#56	5882			Sandy
BL116	#57	2317			Sandy
BL117	#58	2650			Sandy
BL7	#59	2.00%	.0329%	Rock from drainage at rod crossing	Sandy
BL8	#60	5501		Rock from drainage at rod crossing	Sandy
BL9	#61	6281			Sandy
BL10	#62	7215			Sandy
BL6				No sample – slurry of silt and water	Sandy

APPENDIX V

WATER SAMPLES

September 28, 2016

Table 1
Surface Water Total Metals
Barnes Lake Project

Sample ID	RDL	BLSW-1 L1830381-4	BLSW-2 L1830381-5	BLSW-3 L1830381-6	bold WQG	underline WQG	italics CSR
Date Sampled		14-09-16	14-09-16	14-09-16	AW_{FW}	DW	DW
Aluminum	10	64	261	51	n/g	n/g	9500
Antimony	0.5	<	<	<	20	14	6
Arsenic	1	<	<	<	5	25	10
Barium	1	620	67	54	5000 (1000)c	n/g	1000
Beryllium	5	<	<	<	5.3	4	n/s
Boron	100	<	370	<	1200	5000	5000
Cadmium	0.05	<	<	<	0.01 - 0.96a	n/g	5
Chromium	0.5	<	<	<	1(VI), 8.9(III)	n/g	50
Cobalt	0.5	<	<	<	110 (4c	n/g	n/s
Copper	1	<	1.1	<	2-472 (0.04-2)c a	500	1000
Iron	30	72	233	47	n/g	n/g	6500
Lead	1	<	<	<	3-11,877a	50	10
Magnesium	50	14100	11400	11200	n/g	n/g	100000*
Manganese	10	81	<	<	700-1900/800-3800a	n/g	550
Mercury	0.2	<	<	<	0.1 (0.02)c	1	1
Molybdenum	1	<	3.2	<	1000a	250	250
Nickel	5	<	<	<	25-150a	n/g	n/s
Selenium	1	<	<	<	2	50*	10
Silver	0.05	<	<	<	0.1-3 (0.05-1.5)c a	n/g	n/s
Sodium	2000	*210000*	10200	3000	n/g	n/g	200000*
Strontium	-	-	-	-	n/g	n/g	22000
Thallium	0.2	<	<	<	6.3	2	n/s
Titanium	50	<	<	<	2000, 4600f	6.3	n/s
Uranium	0.2	<	0.32	0.24	300	n/g	20
Zinc	5	<	<	<	33-3716a	5000	5000
Bismuth	-	-	-	-	n/g	n/g	n/s
Calcium	50	21800	53800	45200	4000-8000f	n/g	n/s
Lithium	50	572	<	<	870	n/g	n/s
Potassium	2000	4300	<	<	373000	n/g	n/s
Silicon	-	-	-	-	n/g	n/g	n/s
Tin	-	-	-	-	n/g	n/g	n/s
Vanadium	30	<	<	<	6	n/g	n/s
Zirconium	-	-	-	-	n/g	n/g	n/s

Conventional Parameters	BLSW-1	BLSW-2	BLSW-3
Field pH (lab)	8.4 (8.18)	9 (8.29)	8.7 (8.23)
Hardness $CaCO_3$ mg/L	107	171	149
Conductivity u S	1092	360	288
Temperature °C	6.7	4.4	8.1

NOTES

All Concentrations in micrograms per litre (u g/L) except pH unitless and Hardness (mg/L)

RDL	Reported Detection Limit
CSR	Contaminated Sites Regulation (April 1, 1997)
WQG	BC Water Quality Guidelines, Approved and Working (August 2006)
AW	Aquatic Life, FW - Freshwater, M - Marine
a	Standard is Hardness Dependent - see notes in table
b	Standard is pH Dependent - see notes in table
c	Maximum 30 day average
d	Minimal Risk (Hazard)
e	1 hr average (4 day average)
f	Consult Metals Notes Tables for details
n/s	Standard not available for this constituent
n/g	Guideline not available for this constituent
*	Canadian Maximum allowable concentration
Bold	Exceeds WQG (AW) guideline for this sample
Underline	Exceeds WQG (DW) guideline for this sample
Italics	Exceeds CSR (DW) standard for this sample
*	Taste and Colour

Table 2
Surface Water Dissolved Metals
Barnes Lake Project

Sample ID	RDL	BLSW-1 L1830381-4	BLSW-2 L1830381-5	BLSW-3 L1830381-6	WQG (bold)	WQG (underline)	CSR (italics)
Date Sampled		14-09-16	14-09-16	14-09-16	AW_{FW}	DW	DW
Aluminum	10	<	<	<	50 pH>6.5	200	9500
Antimony	0.5	<	<	<	20	14	6
Arsenic	1	<	<	<	5	25	10
Barium	1	613	63	51	5000 (1000)c	n/g	1000
Beryllium	0.1	<	<	<	5.3	4	n/s
Boron	100	<	360	<	1200	5000	5000
Cadmium	0.05	<	<	<	0.01 - 0.96a	n/g	5
Chromium	0.5	<	<	<	1(VI), 8.9(III)	n/g	50
Cobalt	0.5	<	<	<	110 (4)c	n/g	n/s
Copper	1	<	<	<	2-472 (0.04-2)c a	500	1000
Iron	30	<	<	<	n/g	n/g	6500
Lead	1	<	<	<	3-11,877a	50	10
Magnesium	50	13500	10700	10500	n/g	n/g	100000*
Manganese	10	50	<	<	700-1900/800-3800a	n/g	550
Mercury	0.2	<	<	<	0.1 (0.02)c	1	1
Molybdenum	1	<	2.9	<	1000a	250	250
Nickel	5	<	<	<	25-150a	n/g	n/s
Selenium	1	<	<	<	2	10	10
Silver	0.05	<	<	<	0.1-3 (0.05-1.5)c a	n/g	n/s
Sodium	2000	196000	8500	<	n/g	n/g	200000*
Strontium	-	-	-	-	n/g	n/g	22000
Sulphur	-	-	-	-			
Thallium	0.2	<	<	<	6.3	2	n/s
Titanium	50	<	<	<	2000, 4600f	6.3	n/s
Uranium	0.2	<	0.29	0.22	300	n/g	20
Zinc	5	<	<	<	33-3716a	5000	5000
Bismuth	-	-	-	-	n/g	n/g	n/s
Calcium	50	20700	50800	42300	4000-8000f	n/g	n/s
Lithium	50	559	<	<	870	n/g	n/s
Potassium	2000	3600	<	<	373000	n/g	n/s
Silicon	-	-	-	-	n/g	n/g	n/s
Tin	-	-	-	-	n/g	n/g	n/s
Vanadium	30	<	<	<	6	n/g	n/s
Zirconium	-	-	-	-	n/g	n/g	n/s

Conventional Parameters	BLSW-1	BLSW-2	BLSW-3
Field pH (lab)	8.4 (8.18)	9 (8.29)	8.7 (8.23)
Hardness $CaCO_3$ mg/L	107	171	149
Conductivity u S	1092	360	288
Temperature °C	6.7	4.4	8.1

NOTES

All Concentrations in micrograms per litre (u g/L) except pH unitless and Hardness (mg/L)

RDL	Reported Detection Limit
CSR	Contaminated Sites Regulation (April 1, 1997)
WQG	BC Water Quality Guidelines, Approved and Working (August 2006)
AW	Aquatic Life, FW - Freshwater, M - Marine
a	Standard is Hardness Dependent - see notes in table
b	Standard is pH Dependent - see notes in table
c	Maximum 30 day average
d	Minimal Risk (Hazard)
e	1 hr average (4 day average)
f	Consult Metals Notes Tables for details
n/s	Standard not available for this constituent
n/g	Guideline not available for this constituent
Bold	Exceeds WQG (AW) guideline for this sample
Underline	Exceeds WQG (DW) guideline for this sample
Italics	Exceeds CSR (DW) standard for this sample
*	Taste and Colour

Table 3

Surface Water Analytical Results

Anions, Alkalinity, pH, Acidity, Nutrients,

Barnes Lake Project

					bold	<u>underline</u>	*italics*
Sample ID	RDL	BLSW-1	BLSW-2	BLSW-3	WQG	WQG	CSR
		L1830381-4	L1830381-5	L1830381-6			
Date Sampled		14-09-16	14-09-16	14-09-16	AW_{FW}	DW	DW
Total Ammonia (as N)	0.005	0.633	<	<	0.102-2.08 e,f	n/g	n/s
Dissolved Ammonia (as N)	0.005	0.641	<	<	0.102-2.08 e,f	n/g	n/s
Total Alkalinity ($CaCO_3$) mg/L	0.5	404	164	143	< 20000 d	n/g	n/s
PP Alkalinity (CaCO3)	0.5	-	-	-	n/g	n/g	n/s
Bicarbonate Alkalinity (HCO3)	0.5	-	-	-	n/g	n/g	n/s
Carbonate Alkalinity (CO3)	0.5	-	-	-	n/g	n/g	n/s
Hydroxide Alkalinity (OH)	0.5	-	-	-	n/g	n/g	n/s
Bromide (Br)	0.05	0.33	<	<	n/g	n/g	10
Fluoride (F)	0.01	0.67	0.142	0.075	0.2-0.3 a c	1.5	1.5
Dissolved Chloride (Cl)	0.5	116	0.9	<	600	250	250
Dissolved Sulphate (SO4)	1	21.7	31.8	13.4	128 - 429a	500	500
Nitrate (N)	0.005	<0.025	<	0.0217	31.3	n/g	10
Nitrate plus Nitrite (N)	0.02	0.025	<	0.112	n/g	10	10
Nitrite (N)	0.001	<	<	<	0.06-0.60b	1	3.2
Orthophosphate (P)	0.001	<	0.0011	<	n/g	n/g	n/s
Total Phosphorous (P) mg/L	0.002	0.0072	0.0102	0.0076	0.01	n/g	0.01
Dissolved Phosphorous (P) mg/L	0.002	0.0056	0.0056	0.0033	n/g	n/g	n/s
Field pH	-	8.4	9.0	8.7	>6.5 <9	>6.5 <8.5	n/s
Acidity (As $CaCO_3$)	0.5	3.3	<1	1	n/g	n/g	n/s

NOTES

All concentrations in milligrams per litre (mg/L)

RDL	Reported Detections Limit
CSR	Contaminated Sites Regulation, effective April 1, 1997
WQG	Water Quality Guidelines (BC Approved and Working)
AW_{FW}	Aquatic Life - Fresh water
DW	Drinking water
a	Standard is hardness dependent, (see Notes Table)
b	Standard is Chloride concentration dependent, see Notes Table
c	Guideline is for Total, used for comparison
d	See Notes Table
e	pH dependent
f	Temperature Dependent
n/s	No standard for this constituent
n/g	No guideline for this constituent
<	Less than reported detection limit
-	Not Analyzed
Bold	Exceeds WQG AW_{FW} Guideline for this sample
<u>Underline</u>	Exceeds WQG DW Guideline for this sample
Italics	Exceeds CSR DW Standard for this sample

APPENDIX VI

SAMPLE LOCATIONS

September 28, 2016

Barnes Lake 2016 Sample Location Waypoints

BL 1	N49 28.030 W114 40.213	1672 m	14/09/2016 10:53:42 AM
BL 10	N49 27.976 W114 40.130	1663 m	14/09/2016 1:30:15 PM
BL 2	N49 28.017 W114 40.199	1670 m	14/09/2016 10:56:45 AM
BL 3	N49 28.003 W114 40.192	1663 m	14/09/2016 11:08:41 AM
BL 4	N49 27.996 W114 40.188	1657 m	14/09/2016 11:16:20 AM
BL 5	N49 27.988 W114 40.181	1661 m	14/09/2016 11:22:49 AM
BL 6	N49 27.971 W114 40.154	1657 m	14/09/2016 12:37:29 PM
BL 7	N49 27.976 W114 40.137	1658 m	14/09/2016 12:58:08 PM
BL 8	N49 27.969 W114 40.129	1660 m	14/09/2016 1:10:41 PM
BL 9	N49 27.982 W114 40.133	1663 m	14/09/2016 1:29:20 PM
BL100	N49 27.966 W114 39.988	1706 m	19/09/2016 12:46:13 PM
BL101	N49 27.966 W114 39.996	1701 m	19/09/2016 12:52:03 PM
BL102	N49 27.966 W114 40.012	1700 m	19/09/2016 12:58:15 PM
BL103	N49 27.969 W114 40.013	1698 m	19/09/2016 1:04:49 PM
BL104	N49 27.965 W114 40.024	1698 m	19/09/2016 1:06:17 PM
BL105	N49 27.964 W114 40.034	1698 m	19/09/2016 1:17:32 PM
BL106	N49 27.966 W114 40.038	1697 m	19/09/2016 1:18:36 PM
BL107	N49 27.961 W114 40.038	1700 m	19/09/2016 1:26:07 PM
BL108	N49 27.959 W114 40.043	1704 m	19/09/2016 1:31:26 PM
BL109	N49 27.958 W114 40.054	1704 m	19/09/2016 1:36:48 PM
BL11	N49 27.602 W114 40.101	1703 m	17/09/2016 11:14:53 AM
BL110	N49 27.955 W114 40.064	1701 m	19/09/2016 1:40:43 PM
BL111	N49 27.955 W114 40.065	1697 m	19/09/2016 1:45:15 PM
BL112	N49 27.951 W114 40.068	1695 m	19/09/2016 1:56:06 PM
BL113	N49 27.949 W114 40.083	1691 m	19/09/2016 1:58:07 PM
BL114	N49 27.950 W114 40.096	1686 m	19/09/2016 2:03:17 PM
BL115	N49 27.947 W114 40.097	1682 m	19/09/2016 2:07:20 PM
BL116	N49 27.948 W114 40.103	1678 m	19/09/2016 2:11:07 PM
BL117	N49 27.945 W114 40.118	1674 m	19/09/2016 2:16:24 PM
BL12	N49 27.617 W114 40.091	1703 m	17/09/2016 11:20:11 AM
BL13	N49 27.629 W114 40.092	1706 m	17/09/2016 11:23:33 AM
BL14	N49 27.642 W114 40.095	1707 m	17/09/2016 11:29:13 AM
BL15	N49 27.651 W114 40.097	1706 m	17/09/2016 11:31:40 AM
BL17	N49 27.661 W114 40.102	1705 m	17/09/2016 11:35:43 AM
BL171	N49 27.672 W114 40.108	1705 m	17/09/2016 11:40:24 AM
BL18	N49 27.681 W114 40.106	1706 m	17/09/2016 11:42:51 AM
BL19	N49 27.693 W114 40.102	1707 m	17/09/2016 11:48:57 AM
BL20	N49 27.708 W114 40.104	1711 m	17/09/2016 11:53:16 AM
BL21	N49 27.715 W114 40.101	1712 m	17/09/2016 11:58:54 AM
BL22	N49 27.728 W114 40.101	1713 m	17/09/2016 12:02:26 PM
BL23	N49 27.738 W114 40.096	1714 m	17/09/2016 12:05:44 PM
BL24	N49 27.749 W114 40.094	1718 m	17/09/2016 12:10:30 PM
BL25	N49 27.756 W114 40.083	1720 m	17/09/2016 12:15:57 PM
BL26	N49 27.764 W114 40.074	1723 m	17/09/2016 12:21:34 PM

BL27	N49 27.777 W114 40.068	1722 m	17/09/2016 12:31:41 PM
BL28	N49 27.787 W114 40.067	1723 m	17/09/2016 12:36:46 PM
BL29	N49 27.795 W114 40.069	1725 m	17/09/2016 12:40:17 PM
BL30	N49 27.805 W114 40.069	1725 m	17/09/2016 12:54:17 PM
BL31	N49 27.819 W114 40.067	1728 m	17/09/2016 12:55:03 PM
BL32	N49 27.824 W114 40.056	1729 m	17/09/2016 1:00:09 PM
BL33	N49 27.842 W114 40.056	1731 m	17/09/2016 1:03:42 PM
BL34	N49 27.853 W114 40.043	1732 m	17/09/2016 1:10:37 PM
BL35	N49 27.840 W114 40.025	1739 m	17/09/2016 1:18:50 PM
BL36	N49 27.830 W114 40.023	1740 m	17/09/2016 1:22:45 PM
BL37	N49 27.819 W114 40.018	1741 m	17/09/2016 1:27:42 PM
BL38	N49 27.805 W114 40.022	1743 m	17/09/2016 1:31:20 PM
BL39	N49 27.795 W114 40.020	1744 m	17/09/2016 1:34:58 PM
BL40	N49 27.790 W114 40.025	1746 m	17/09/2016 1:41:25 PM
BL41	N49 27.865 W114 39.998	1735 m	18/09/2016 11:21:21 AM
BL42	N49 27.868 W114 39.984	1740 m	18/09/2016 11:25:21 AM
BL43	N49 27.874 W114 39.970	1741 m	18/09/2016 11:27:37 AM
BL44	N49 27.876 W114 39.954	1743 m	18/09/2016 11:32:49 AM
BL45	N49 27.874 W114 39.940	1742 m	18/09/2016 11:36:51 AM
BL46	N49 27.872 W114 39.923	1741 m	18/09/2016 11:42:09 AM
BL47	N49 27.867 W114 39.910	1742 m	18/09/2016 11:47:34 AM
BL48	N49 27.855 W114 39.898	1743 m	18/09/2016 11:52:32 AM
BL49	N49 27.851 W114 39.883	1743 m	18/09/2016 11:58:49 AM
BL50	N49 27.847 W114 39.869	1743 m	18/09/2016 12:05:14 PM
BL51	N49 27.834 W114 39.854	1748 m	18/09/2016 12:21:04 PM
BL52	N49 27.828 W114 39.837	1751 m	18/09/2016 12:26:26 PM
BL53	N49 27.834 W114 39.821	1752 m	18/09/2016 12:33:37 PM
BL54	N49 27.860 W114 39.827	1742 m	18/09/2016 12:54:28 PM
BL55	N49 27.857 W114 39.843	1741 m	18/09/2016 12:59:21 PM
BL56	N49 27.859 W114 39.850	1740 m	18/09/2016 1:04:58 PM
BL57	N49 27.856 W114 39.864	1743 m	18/09/2016 1:15:30 PM
BL58	N49 27.862 W114 39.869	1742 m	18/09/2016 1:23:45 PM
BL59	N49 27.860 W114 39.874	1745 m	18/09/2016 1:30:24 PM
BL60	N49 27.899 W114 40.125	1679 m	19/09/2016 8:34:35 AM
BL61	N49 27.901 W114 40.120	1681 m	19/09/2016 8:59:31 AM
BL62	N49 27.906 W114 40.110	1684 m	19/09/2016 9:03:44 AM
BL63	N49 27.909 W114 40.103	1687 m	19/09/2016 9:08:03 AM
BL64	N49 27.909 W114 40.100	1689 m	19/09/2016 9:11:19 AM
BL65	N49 27.907 W114 40.093	1694 m	19/09/2016 9:15:11 AM
BL66	N49 27.907 W114 40.079	1697 m	19/09/2016 9:19:32 AM
BL67	N49 27.903 W114 40.070	1700 m	19/09/2016 9:23:01 AM
BL68	N49 27.908 W114 40.064	1701 m	19/09/2016 9:27:24 AM
BL69	N49 27.911 W114 40.053	1705 m	19/09/2016 9:34:14 AM
BL70	N49 27.910 W114 40.050	1709 m	19/09/2016 9:40:15 AM
BL71	N49 27.909 W114 40.041	1713 m	19/09/2016 9:43:34 AM
BL72	N49 27.911 W114 40.032	1717 m	19/09/2016 9:47:09 AM

BL73	N49 27.910 W114 40.025	1718 m	19/09/2016 9:50:11 AM
BL74	N49 27.913 W114 40.016	1719 m	19/09/2016 9:58:21 AM
BL75	N49 27.910 W114 40.007	1724 m	19/09/2016 10:04:03 AM
BL76	N49 27.915 W114 40.003	1726 m	19/09/2016 10:09:11 AM
BL77	N49 27.916 W114 39.996	1726 m	19/09/2016 10:14:30 AM
BL78	N49 27.915 W114 39.988	1726 m	19/09/2016 10:19:54 AM
BL79	N49 27.914 W114 39.980	1725 m	19/09/2016 10:29:47 AM
BL80	N49 27.914 W114 39.976	1723 m	19/09/2016 10:34:45 AM
BL81	N49 27.920 W114 39.968	1721 m	19/09/2016 10:40:48 AM
BL82	N49 27.922 W114 39.956	1719 m	19/09/2016 10:48:37 AM
BL83	N49 27.914 W114 39.959	1715 m	19/09/2016 10:59:03 AM
BL84	N49 27.919 W114 39.938	1718 m	19/09/2016 11:06:07 AM
BL85	N49 27.923 W114 39.936	1720 m	19/09/2016 11:07:53 AM
BL86	N49 27.921 W114 39.932	1723 m	19/09/2016 11:13:36 AM
BL87	N49 27.925 W114 39.918	1724 m	19/09/2016 11:19:01 AM
BL88	N49 27.925 W114 39.910	1728 m	19/09/2016 11:24:32 AM
BL89	N49 27.930 W114 39.907	1730 m	19/09/2016 11:27:13 AM
BL90	N49 27.975 W114 39.917	1744 m	19/09/2016 11:51:03 AM
BL91	N49 27.969 W114 39.922	1739 m	19/09/2016 11:54:51 AM
BL93	N49 27.972 W114 39.936	1734 m	19/09/2016 11:57:39 AM
BL94	N49 27.971 W114 39.938	1731 m	19/09/2016 12:01:42 PM
BL95	N49 27.970 W114 39.947	1727 m	19/09/2016 12:05:02 PM
BL96	N49 27.972 W114 39.950	1725 m	19/09/2016 12:12:17 PM
BL97	N49 27.965 W114 39.972	1718 m	19/09/2016 12:22:11 PM
BL98	N49 27.968 W114 39.975	1716 m	19/09/2016 12:30:25 PM
BL99	N49 27.966 W114 39.989	1708 m	19/09/2016 12:42:14 PM
EOR QUAD AHEAD	N49 57.546 W114 50.986	1345 m	15/09/2016 9:44:47 AM
HOME	N49 27.959 W114 40.182	1651 m	14/09/2016 11:32:40 AM
RD INT 1	N50 01.491 W114 49.898	1506 m	15/09/2016 8:56:02 AM
RD SLUMP	N49 27.001 W114 39.929	1729 m	17/09/2016 9:43:33 AM