Outokumpu Mines Ltd.

Diamond Drilling Report
On the
Bannockburn Twp. Property

By Paul Davis
April, 1999

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1.0 Introduction

Bradley Bros. Limited was contracted by Outokumpu Mines Ltd to drill diamond drill holes and extend a third diamond drill hole on the Bannockburn Township property located in Bannockburn and Montrose Townships, Larder Lake Mining Division, District of Timiskaming. The property is comprised of 30 contiguous unpatented mining claims totaling 143 units.

A total of 508 metres of NQ diamond drilling was completed in 3 diamond drill holes in January 1999. All drill core was logged by Outokumpu personnel at the Exploration Office in Timmins, Ontario. Copies of drill logs are attached in appendix 1 at the back of this report.

The objective of this program was to test the komatiitic stratigraphy on the property. The diamond drilling was concentrated on the komatiitic succession in the area. Coincident high magnetic and electromagnetic conductors were targeted in this drill program.

2.0 Location, Access, and Infrastructure

The Bannockburn property is approximately 100 kilometres southeast of the City of Timmins and is accessed by a network of gravel roads only driveable in the late spring, summer, and fall (figure 1). The property is approximately 27 kilometres west of the Town of Matachewan along Highway 566, a paved and gravel road maintained year round by the Ontario Government, and 5 kilometres south along a gravel bush road from the end of the highway (figure 2). The highway was originally constructed to access the Ashley Gold Mine and the Rahn Asbestos deposits located to the north and within our current property boundary, respectively. It is necessary to plow the final 5 kilometres of gravel road during the winter and early spring.

Power lines extend northwest of the Town of Matachewan along Highway 566 for approximately 7 kilometres to a barite processing mill. No other power lines extend close to the property.

3.0 Topography, Vegetation, and Water Availability

The area is well drained with moderate topographic relief. Large sand and outcrop ridges trend north-south across the property. Outcrop exposure is approximately 5% but is generally restricted to the calc-alkaline volcanic sequences. The komatiitic rocks tend to lie in topographic lows, covered by swamps and lakes due to glacial erosion, and outcrop only on the edge of large dacite ridges. Several lakes are located on the property and represent approximately 10% of the area. There are only a few minor beaver ponds and swampy areas located along the edge of lakes and small streams between the ridges. The forests are a combination of jack pine, aspen, birch, and alders with the occasional red pine and cedar trees. Many of the forests in this area have been designated for cutting or already cut by forestry companies. Water accessibility is excellent throughout the year.

4.0 Property

The property consists of 30 contiguous unpatented mining claims in Bannockburn and Montrose Townships (figure 3). The claims represent a total of 2288 hectares of land where Outokumpu Mines Limited holds a 100% interest in the property. The unpatented mining claims are as follows:

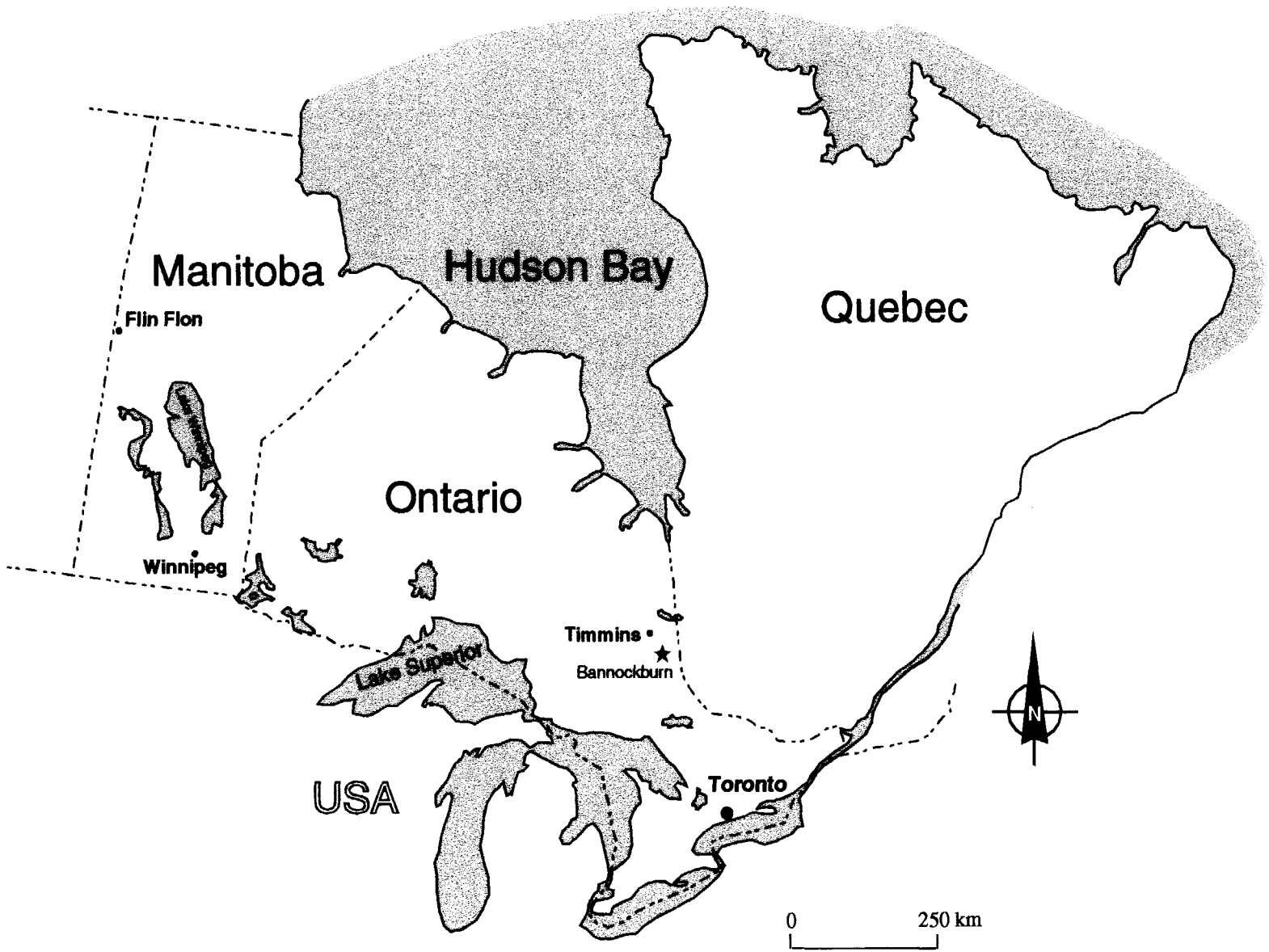


Figure 1: Location Map: Bannockburn Property

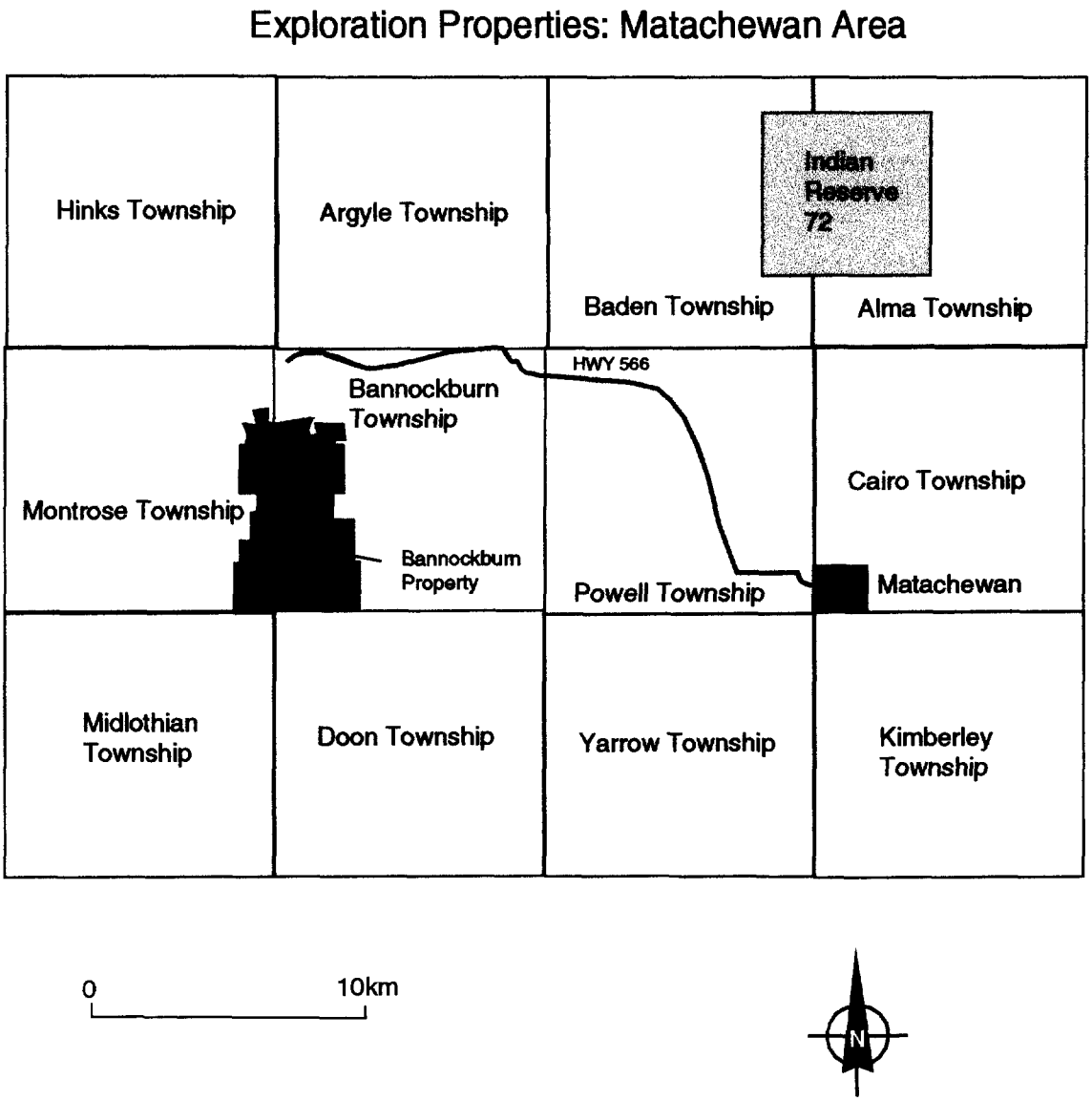


Figure 2: Property Location Map

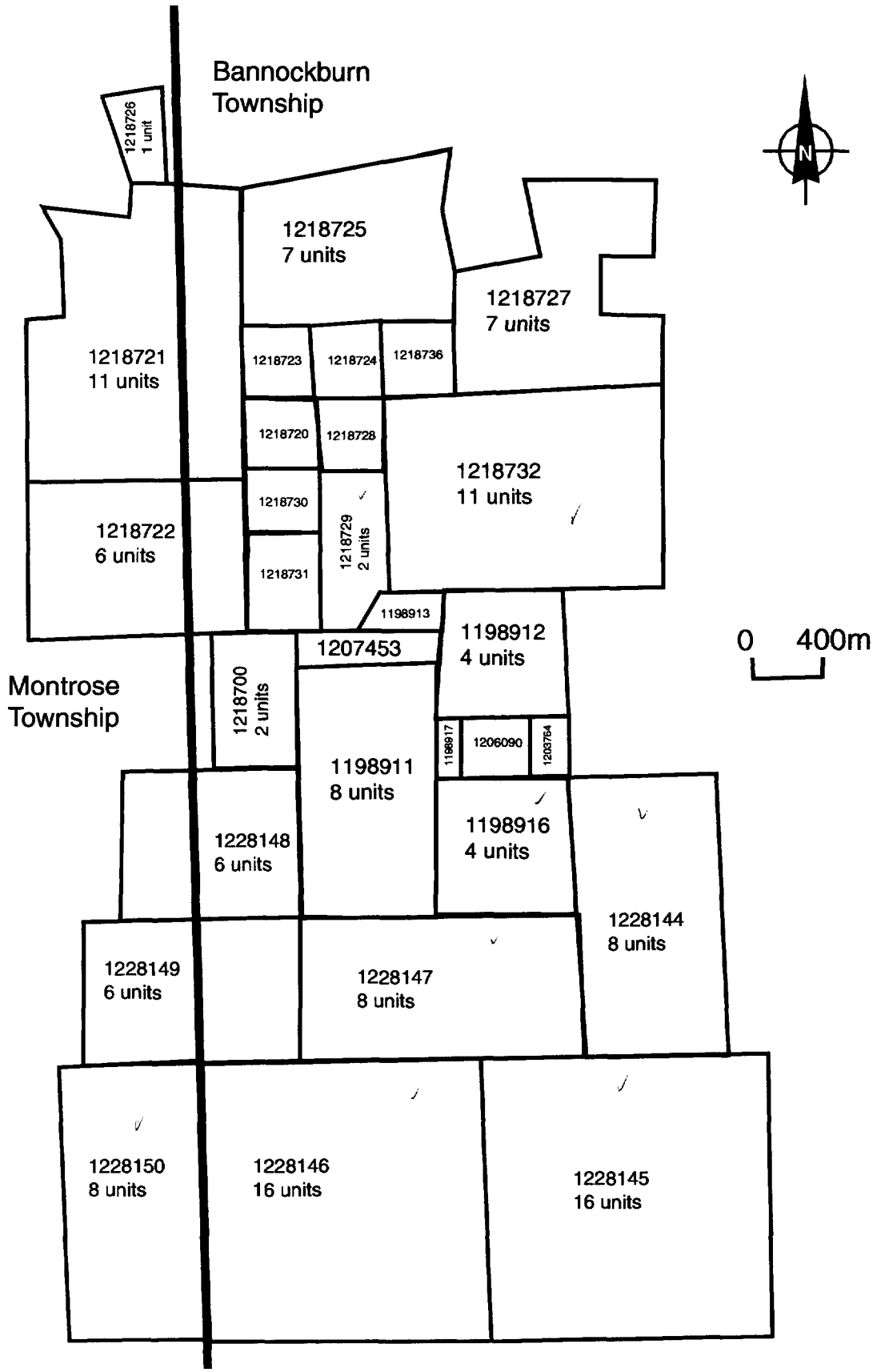


Figure 3: Property Position

Claim Number	Township	16 Hectare Units
L-1198911	Bannockburn	8
L-1198912	Bannockburn	4
L-1198913	Bannockburn	1
L-1198916	Bannockburn	4
L-1198917	Bannockburn	1
L-1203764	Bannockburn	1
L-1206090	Bannockburn	1
L-1207453	Bannockburn	1
L-1218700	Bannockburn	2
L-1218720	Bannockburn	1
L-1218723	Bannockburn	1
L-1218724	Bannockburn	1
L-1218725	Bannockburn	7
L-1218727	Bannockburn	7
L-1218728	Bannockburn	1
L-1218729	Bannockburn	2
L-1218730	Bannockburn	1
L-1218731	Bannockburn	1
L-1218732	Bannockburn	11
L-1218736	Bannockburn	1
L-1228144	Bannockburn	8
L-1228145	Bannockburn	16
L-1228146	Bannockburn	16
L-1228147	Bannockburn	8
L-1228148	Bannockburn	6
L-1228149	Bannockburn	6
L-1218721	Montrose	11
L-1218722	Montrose	6
L-1218726	Montrose	1
L-1228150	Montrose	8
	Total	**143 units**

5.0 Geology

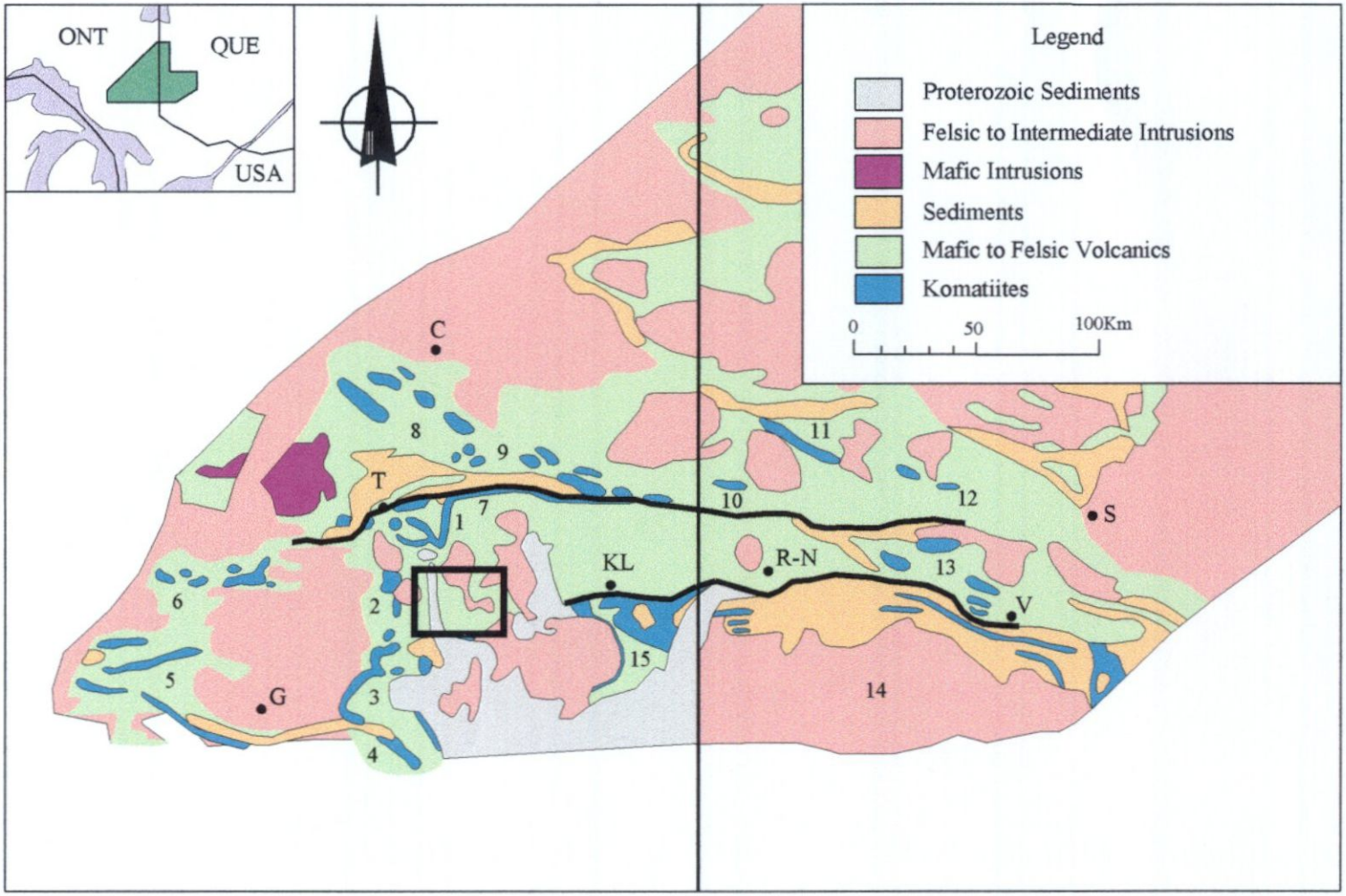
5.1 Regional Geology

The rocks in west central Bannockburn Township and eastern Montrose Township are interpreted to be within the eastern extension of the Halliday assemblage and the Midlothian assemblage (figure 4). The Paleoproterozoic Huronian Supergroup covers the southern portion of the property (Jackson and Fyon, 1991).

The Halliday assemblage consists of rhyolitic to dacitic flows, breccias, and tuffs, and andesitic to basaltic flows and pyroclastic rocks, with a much lesser proportion of gabbroic and peridotitic rocks. The Halliday assemblage is estimated at greater than 2700 million years in age.

The Midlothian assemblage is described as neoarchean metasedimentary rocks that consist of interbedded turbidites, arkose, conglomerate, sandstone, and lesser argillite. Jackson and Fyon (1991) interpret the Midlothian assemblage as the western extension of the Timiskaming assemblage. This would make the Midlothian assemblage between 2685 and 2675 million years old. The Midlothian assemblage is interpreted to diconformably overly the Halliday assemblage.

The Paleoproterozoic Huronian Supergroup consists of sedimentary cycles that range from conglomerate, mudstone, siltstone, and coarse arenite (Bennett, Dressler, and Robertson, 1991). The rocks are approximately 2500 to 2220 million years old. The rocks in southern Bannockburn Township belong to the Cobalt group which represents the upper most sedimentary cycle in the Huronian Supergroup. The Huronian Supergroup unconformably overlies the Halliday and Midlothian assemblages.



Ultramafic Rock Successions

1 Shaw Dome
2 Bartlett Dome
3 Halliday Dome
4 Shining Tree
5 Swayze North
6 Swayze South
7 Destor-Porcupine Fault Trend
8 Mann Trend
9 Kidd-Munro Trend
10 Roquemaure Trend
11 La Sarre Township
12 Dumont Area
13 La Motte Dome
14 Pontiac Belt
15 Round Lake Dome

DPFZ: Destor Porcupine Fault Zone
CKLFZ: Cadillac-Kirkland Lake Fault Zone

G: Gogama
T: Timmins
C: Cochrane
KL: Kirkland Lake
R-N: Rouyn-Noranda
V: Val D'or
S: Senneterre

Outline of Figure 2

Figure 4: Regional geological map showing the distribution of komatiitic successions in the Abitibi greenstone belt (modified from Goodwin and Ridler, 1970; MERQ-OGS, 1983; and Heather, 1993).

5.2 Local Geology

The property consists of a complex sequence of calc-alkaline intermediate to felsic volcanic rocks, mafic volcanic rocks, komatiitic basalts to dunites, silicate to sulphide iron formations, gabbro intrusions, and a series of diamictites, arkoses, and conglomerates (figure 5).

The intermediate to felsic volcanic rocks range in composition from rhyo-dacites to dacitic-andesites. The units range from hyaloclastic-fragmental flows to pillowed flows, and massive flows. Chlorite and quartz filled amygdules are found throughout the units in varying proportions from 1 to 10%. Weak chlorite alteration is pervasive with lesser amounts of epidote and hematite alteration. The pillow selvages and flow contacts tend to display stronger chlorite alteration. Pyrrhotite and pyrite mineralization occurs throughout the sequence, but tends to be concentrated, up to 10%, within the hyaloclastic and fragmental zones.

The komatiitic rocks appear to be extrusive in nature with flow top rubble zones and spinifex-textured zones, indicating tops are to the east. The komatiitic rocks range in composition from pyroxenitic cumulates (chlorite-tremolite rocks) to olivine adcumulates (serpentinite rocks). A preponderance of the komatiites are olivine orthocumulates to mesocumulates laterally away from an olivine adcumulate cores. The komatiitic sequence is only exposed in a few areas and determinations of its composition and laterally continuity cannot be made. The komatiitic rocks trend north-northwest to south-southeast for a strike length of at least 4 kilometres as discrete lenses and/or horizons. Based on the ground magnetic surveys there appears to be at least 3 or possibly 4 horizons of komatiitic rocks.

The sedimentary rocks appear to have a similar strike and dip as the komatiitic rocks over the northern and central portion of the property. The bed thickness appears to vary throughout the area and range from a few centimetres up to several metres. The conglomerates are dominated by granitic clasts and white quartz clasts with varying proportions of mafic to felsic volcanic clasts and plagioclase porphyry clasts. The conglomerates tend to be clast supported. The southern portion of the property is covered by Huronian conglomerates and arkoses.

6.0 Diamond Drilling

A total of 508 metres were drilled in two diamond drill holes and the extension of an existing hole on the Bannockburn Township property (table 1). Diamond drilling consists of NQ drill core. Please refer to Appendix 1 for detailed drill logs and header pages.

Hole #	Easting (UTM)	Northing (UTM)	Azimuth (degrees)	Dip (degrees)	Total Depth (m)	Total Drilling (m)
BN-17-97	507790	5311510	250	-58	620	93
BN-28-99	507150	5313115	250	-50	254	254
BN-29-99	507055	5313090	250	-50	161	161

Table 1: Diamond Drill Hole Summary Table.

7.0 Results and Conclusions

No economic or sub-economic Fe-Ni-Cu sulphides were intersected within the komatiitic rocks of this diamond drill program. Several thick sections of komatiitic peridotites and dunites were drilled, but lacked the sulphide component which hosts the nickel mineralization.

A thick diabase dike cuts the komatiite stratigraphy between holes BN-28-99 and BN-29-99. This dike appears to have altered the komatiitic rocks to the west into a series of chlorite-tremolite schists with short intervals of serpentine altered olivine orthocumulate. This indicates a decrease in the olivine component of the unit to the west and may be related to assimilation of a silica rich footwall unit.

BN-17-97 was extended to test a down-hole pulse EM anomaly identified in an earlier survey. The hole never intersected a conductive body and remained in the dacitic volcanics for the entire length of the extension. This indicates that the down-hole anomaly remains untested.

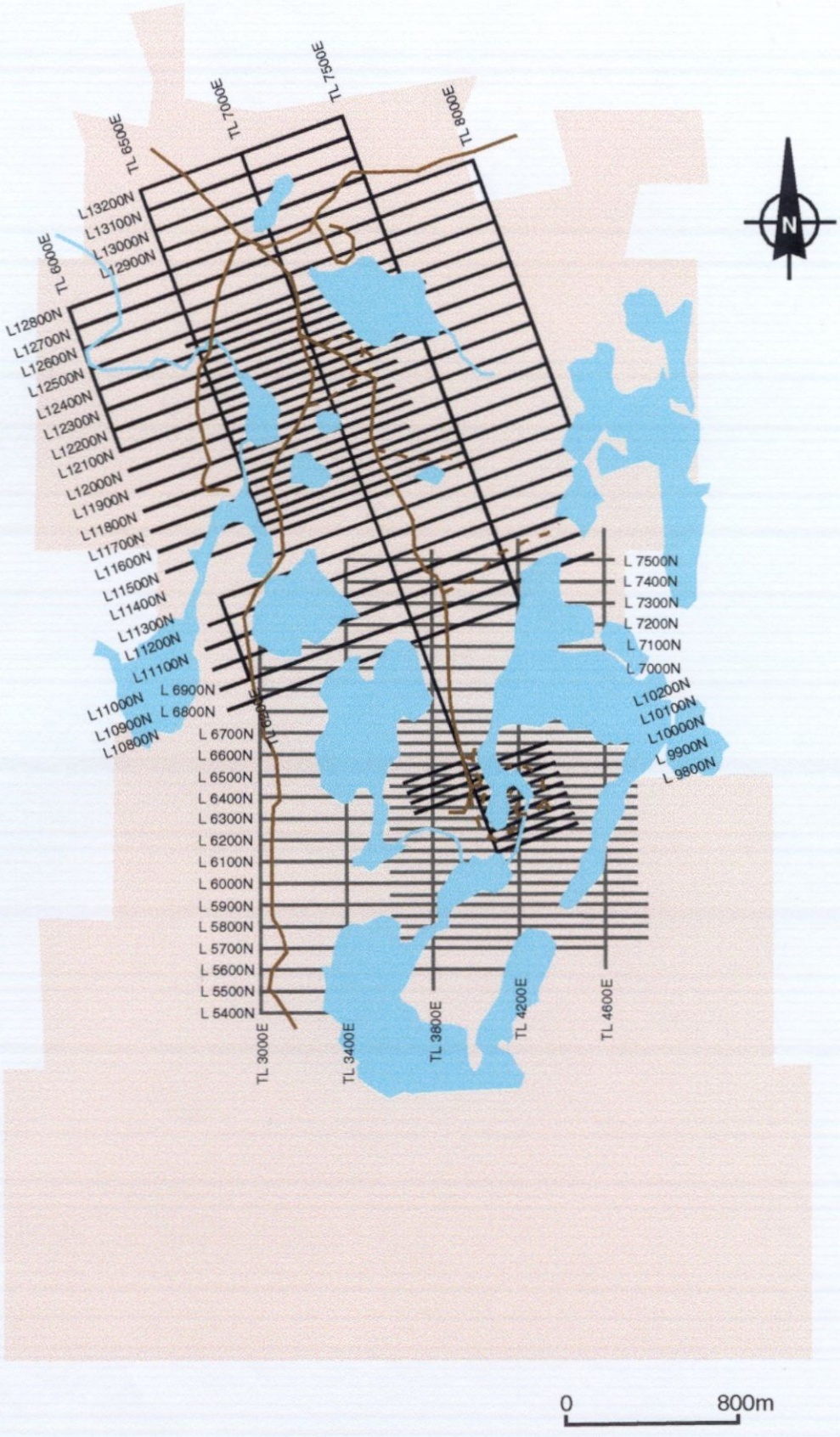


Figure 5: Bannockburn Property Grid Locations and Orientations

8.0 Recommendations

Additional diamond drilling is recommended for the Bannockburn Township property. This area has not been adequately explored in the past and the stratigraphic associations are not well described due to poor outcrop exposure. Further diamond drilling may follow a geochemical survey of the soils within the property boundaries.

References

Bajc, A.F, 1997, A Regional Evaluation of Gold Potential Along the Western Extension of the Larder Lake-Cadillac Break, Matachewan Area: Results of Regional Till Sampling; Ontario Geological Survey, Open File Report, 5957, 50p.

Bennett, G., Dressler, B.O., and Robertson, J.A., 1991, The Huronian Supergroup and Associated Intrusive Rocks; In Geology of Ontario, Special Volume 4, Part 1; Eds. Thurston, P.C., Williams, H.R., Sutcliffe, R.H., and Stott, G.M.; Ontario Geological Survey, pp. 549-591.

Jackson, S.L., and Fyon, J.A., 1991, The Western Abitibi Subprovince in Ontario; In Geology of Ontario, Special Volume 4, Part 1; Eds. Thurston, P.C., Williams, H.R., Sutcliffe, R.H., and Stott, G.M.; Ontario Geological Survey, pp. 405-482.

APPENDIX 1: DIAMOND DRILL HOLE LOGS, SECTIONS, AND PLANS

Outokumpu Mines Limited

Diamond Drill Hole Record

Area/Township	N.T.S.	Year	Project	Property	Claim Numbers
Bannockburn	41P/NE	1997	Exploration	Bannockburn	1206090/1198916

Hole Number	Survey Type	Dip (Deg.)	Azim Grid (Deg.)	Azim Astro. (Deg.)	Hole Length (m)	Core Size
BN-17-97	Physical Properties	-58	270	250	620	NQ

Northing (Grid m)	Easting (Grid m)	Northing (UTM)	Easting (UTM)	Northing (Lat.)	Easting (Long.)	Elevation (m)
9950	7300	5311510	507790			362

Logged By	Date Logged	Drilled By	Date Started	Date Finished	Core Storage
Paul Davis	23-Oct-97	Bradley Bros.	14-Oct-97	20-Oct-97	Alexo Property

Casing Depth (m)	Casing Pulled (Y/N)	Cemented (Y/N)	Geophysics (Y/N)	Down Hole Geophysics (Type and Contractor)
34	N	N	Y	TEM (525m), Physical Properties (503m); Quantec Geophysics

Assay Numbers	Assay Lab	Certificate #		Whole Rock Geochemistry
122861 to122870	Bondar-Clegg	T97-57906.0		

Comments: Hole lenghtened from 527m to 620m in January 1999

From (m)	To (m)	Rock Type	Legend	Description	Sulphides %	Sulphides % Frags	Sulphides Type	Sulphides Mode	Samples Type	Samples Tag #	Samples From (m)	Samples To (m)	Faults and Shears (1-10) Brittle	Faults and Shears (1-10) Ductile	Faults and Shears (1-10) From (m)	Faults and Shears (1-10) To (m)
0.00	34.00	Casing														
34.00	53.84	Dacite	Da	- medium to dark grey, aphanitic, coarse fragmental	tr		Py	d								
		Fragmental		- composed of large clasts in an aphanitic matrix												
				- clasts range from massive to quartz and chlorite filled												
				amygdales, 1 to 5% (<1 to 5mm)												
				- some sections are massive to pillow textured flows												
				- weak chlorite alteration												
				- quartz-chlorite veining												
				- some weak epidote associated with veining												
				- gradational lower contact marked by an increase of												
				spotted texture in matrix												
53.84	122.70	Dacite	Dabx	- medium to light grey, fine grained to aphanitic	tr		Po	d					4		75.50	77.00
		Fragmental		- matrix appears to be altered to saussuritised plagioclase									6		77.68	77.84
				- plagioclase content increases downhole from 5 to 70%												
				- possibly related to hydrothermal alteration												
				- plagioclase porphyroblasts upto 2mm												
				- some clasts appear to have alteration reaction rims												
				- clasts contain chlorite and quartz filled amydales												
				- weak chlorite alteration, minor epidote												
				- some short sections of moderate chlorite alteration												
				- quartz-chlorite-carbonate veining												
				- gradational lower contact												
122.70	151.10	Dacite	Dabx	- medium grey-green, aphanitic,fragmental	tr		Py	d								
		Fragmental		- differential alteration of matrix and fragments												
				- fragments contain quartz-chlorite filled amygdales												
				- weak chlorite alteration												
				- quartz-chlorite veining, some of which contain carbonate												
				- sharp lower contact marked by the disappearance of												
				fragments												
151.10	253.45	Dacite	Dapbx	- light to medium grey, aphanitic	tr		Po	d								
				- pillowed with fragmental selvages and flow contacts												
				- 1 to 3% quartz-chlorite filled amygdales (<1 to 3mm)												
				- weak chlorite alteration												
				- quartz-chlorite-carbonate veining												
				-trace disseminated pyrrhotite concentrated within												
				selvages and veins												
				- some amygdales filled with pyrrhotite												
				- some tension cracks filled with chlorite												
				- sharp lower contact marked by the development of												
				larger amygdales												

From (m)	To (m)	Rock Type	Legend	Description	Sulphides %	Sulphides % Frags	Sulphides Type	Sulphides Mode	Samples Type	Samples Tag #	Samples From (m)	Samples To (m)	Faults and Shears (1-10) Brittle	Faults and Shears (1-10) Ductile	Faults and Shears (1-10) From (m)	Faults and Shears (1-10) To (m)
253.45	278.92	Dacite	Da	- light to medium grey-green, aphanitic, pillowed	tr		Py,Po	d								
				- 5% quartz-chlorite filled amygdales (<1 to30mm)												
				- well developed pillow selvages												
				- weak chlorite alteration												
				- quartz-chlorite veining												
				- trace pyrrhotite and pyrite associated with veins												
				- sharp lower contact marked by quartz-chlorite vein												
278.92	293.47	Komatiitic	KPx	- medium grey-green, fine grained, massive	tr		Po	d								
		Pyroxenite		- composed of pyroxene altered to chlorite-tremolite												
				- some gabbroic textures												
				- upto 3% leucoxene												
				- non magnetic												
				- weak serpentine alteration												
				- chlorite-serpentine-carbonate veining												
				- unit maintains a consistent composition throughout												
				- sharp lower contact at 30CA												
293.47	302.96	Dacite	Da	- light to medium grey, aphanitic to fine grained	3		Py,Po	d,b	AS	122861	295.67	297.90				
				- non magnetic, massive												
				- weak chlorite alteration, stronger in lower half of unit												
				- chlorite-plagioclase-quartz veining												
				- pyrrhotite, pyrite, and trace chalcopyrite as alteration												
				products, developed as blebs, smears, and disseminations												
				- possible minor foliation												
				- unit possibly consists of two separate flows												
				- sharp lower contact at 75CA												
302.96	305.81	Komatiitic	Kpx	- medium to dark green, fine grained to aphanitic									4		304.85	305.03
		Pyroxenite		- composed of chlorite and tremolite												
				- possibly some minor pyroxene spinifex												
				- weak serpentinisation												
				- chlorite-serpentine veining												
				- upper contact looks rubbly												
				- lower contact could be an altered dacite but is very soft												
				- lower contact is hazy												
305.81	316.63	Dacite	Da	- medium grey, aphanitic, massive to pillowed												
				- 2 to 3% quartz filled amygdales (<1 to3mm)												
				- weak chlorite alteration												
				- quartz-plagioclase-chlorite veining												
				- lower contact has onion-skinned fragments												
				- sharp lower contact at 60CA												
316.63	320.70	Komatiitic	KPx/oc	- medium green, fine grained, non magnetic												
		Pyroxenite		- quenched upper and lower contacts												

From (m)	To (m)	Rock Type	Legend	Description	Sulphides %	Sulphides % Frags	Sulphides Type	Sulphides Mode	Samples Type	Samples Tag #	Samples From (m)	Samples To (m)	Faults and Shears (1-10) Brittle	Faults and Shears (1-10) Ductile	Faults and Shears (1-10) From (m)	Faults and Shears (1-10) To (m)
				- olivine orthocumulate												
				- chlorite-tremolite and serpentine altered												
				- *serpentine-chlorite veining*												
				- increase in olivine downhole												
				- sharp lower contact at 80CA												
320.70	355.05	Dacite	Da	- medium grey-green, aphanitic	tr		Po	d,v								
				- non magnetic												
				- 1 to 2% quartz-chlorite filled amygdales (<1 to 13mm)												
				- weak chlorite alteration												
				- quartz-chlorite veining												
				- trace disseminated and veined pyrrhotite and pyrite												
				- sharp lower contact marked by rubbly core												
355.05	356.35	Komatiitic	Koc	- dark grey, fine grained, massive												
		Pyroxenite/		- non magnetic												
		Peridotite		- equant and bladed olivine crystals												
				- chlorite-tremolite and serpentine altered												
				- serpentine-chlorite veining												
				- sharp lower contact at 35CA												
356.35	364.10	Dacite	Da	- medium grey, aphanitic, massive												
				- non magnetic												
				- 2% chlorite-quartz filled amygdales (<1 to 7mm)												
				- weak chlorite alteration												
				- quartz-chlorite veining												
				- strong chlorite alteration at lower contact												
				- sharp lower contact at 40CA												
364.10	368.30	Komatiitic	Koc	- black-green with light flecks, fine grained	tr		Py,Po	d,v								
		Peridotite/		- quenched upper and lower contacts												
		Pyroxenite		- non magnetic												
				- olivine orthocumulate												
				- carbonate development												
				- serpentine-carbonate-chlorite alteration												
				- serpentine-chlorite-carbonate veining												
				- trace pyrite and pyrrhotite associated with veining												
				- sharp lower contact masked by alteration												
368.30	372.20	Dacite	Da	- light to medium grey, aphanitic												
				- non magnetic, massive												
				- <1% chlorite filled amygdales (<1mm)												
				- weak chlorite alteration - quartz-chlorite-plagioclase veining												
				- sharp lower contact at 90CA												
				- thin peridotite dyklets												

From (m)	To (m)	Rock Type	Legend	Description	Sulphides %	Sulphides % Frags	Sulphides Type	Sulphides Mode	Samples Type	Samples Tag #	Samples From (m)	Samples To (m)	Faults and Shears (1-10) Brittle	Faults and Shears (1-10) Ductile	Faults and Shears (1-10) From (m)	Faults and Shears (1-10) To (m)
372.20	375.82	Komatiitic	Koc	- black-green, fine grained, massive, non magnetic												
		Peridotite/		- olivine orthocumulate												
		Pyroxenite		- upper contact appears to be contaminated												
				- serpentine-chlorite-tremolite altered												
				- serpentine-chlorite veining												
				- sharp lower contact at 30CA												
375.82	376.75	Dacite	Da	- medium grey, aphanitic, massive												
				- possible xenolith												
				- moderate chlorite alteration												
				- quartz-chlorite veining												
				- sharp lower contact at 40CA												
376.75	377.41	Komatiitic	Koc	- black-green, fine grained to aphanitic, massive												
		Pyroxenite/		- non magnetic												
		Peridotite		- chlorite-tremolite-serpentine alteration												
				- serpentine-chlorite veining												
				- sharp lower contact at 30CA												
377.41	381.64	Dacite	Da	- light grey, aphanitic, massive												
				- non magnetic												
				- 2% stretched, chlorite filled amygdales (<1 to 4mm)												
				- weak chlorite alteration, possibly silicified												
				- some mottled texture												
				- quartz-chlorite veining												
				- altered lower contact zone												
				- sharp lower contact at 70CA												
381.64	382.48	Komatiitic	KGb/Px	- dark grey, fine grained, massive												
		Gabbro/		- probably intrusive												
		Pyroxenite		- weak chlorite alteration												
				- lots of quartz-plagioclase veining												
				- sharp, undulating lower contact												
382.48	384.24	Dacite	Da	- medium grey, aphanitic, massive												
				- non magnetic												
				- weak chlorite alteration												
				- quartz-chlorite veining												
				- sharp, undulating lower contact												
384.24	394.90	Komatiitic	KPx	- medium grey-green, fine to medium grained												
		Pyroxenite		- massive, with some gabbroic textures												
				- contains upto 3% leucoxene or altered olivine with												
				hopper olivine crystals												
				- becomes more medium grained downhole												

From (m)	To (m)	Rock Type	Legend	Description	Sulphides %	Sulphides % Frags	Sulphides Type	Sulphides Mode	Samples Type	Samples Tag #	Samples From (m)	Samples To (m)	Faults and Shears (1-10) Brittle	Faults and Shears (1-10) Ductile	Faults and Shears (1-10) From (m)	Faults and Shears (1-10) To (m)
				- non magnetic												
				- gradational lower contact												
394.40	402.20	Komatiitic	Koc	- dark grey, fine grained, massive												
		Pyroxenite/		- weakly to moderately magnetic												
		Peridotite		- olivine orthocumulate with some pyroxene grains												
				- serpentine veining												
				- serpentine-chlorite veining												
				- gradational lower contact marked by an increase in												
				olivine content												
402.20	424.40	Komatiitic	Koc/mc	- black-green, fine grained, massive												
		Peridotite		- olivine meso to orthocumulate												
				- weakly to moderately magnetic												
				- strong serpentine alteration												
				- serpentine-carbonate veining												
				- weakly to moderately magnetic												
				- core has speckled texture												
				- gradational lower contact												
424.40	465.87	Komatiitic	Kmc/ac	- black-green, fine grained, massive	tr		Py	d					7		454.30	454.35
		Dunite/		- moderately magnetic												
		Peridotite		- olivine adcumulate to mesocumulate												
				- strong serpentine alteration												
				- serpentine-carbonate veining												
				- trace very fine grained disseminated pyrite throughout												
				- sharp lower contact extends into the dacite below, like												
				an injection												
465.87	469.13	Dacite/	Da/Koc	- light to dark grey, aphanitic to fine grained												
		Komatiitic		- non magnetic												
		Peridotite/		- komatiitic veins cross-cut unit												
		Pyroxenite		- bleached with weak chlorite alteration												
				- serpentine and chlorite altered komatiite												
				- quartz-chlorite veining												
				- sharp lower contact, probably a xenolith												
469.13	476.00	Komatiitic	Koc/mc	- black-green, fine grained, massive	tr		Po	d								
		Peridotite		- moderately to strongly magnetic	tr		Po	d	AS	122862	470.00	472.10				
				- strong serpentine alteration	2		Po	d,v	AS	122863	472.10	473.53				
				- unit contains varying proportions of sulphides from	3		Po	d,n,b	AS	122864	473.53	474.85				
				trace to 8%	tr		Po	d	AS	122865	474.85	476.00				
				- serpentine-carbonate veining												
				- gradational lower contact marked by a decrease in												
				olivine content												

From (m)	To (m)	Rock Type	Legend	Description	Sulphides %	Sulphides % Frags	Sulphides Type	Sulphides Mode	Samples Type	Samples Tag #	Samples From (m)	Samples To (m)	Faults and Shears (1-10) Brittle	Faults and Shears (1-10) Ductile	Faults and Shears (1-10) From (m)	Faults and Shears (1-10) To (m)
476.00	479.15	Komatiitic	Koc/Px	- black-green to dark grey, fine grained, massive	tr		Po	d	AS	122866	476.00	477.50				
		Pyroxenite		- weakly to non magnetic	tr		Po	d	AS	122867	477.50	479.00				
				- strong serpentine-chlorite-tremolite alteration												
				- serpentine-chlorite-carbonate veining												
				- some moderate shearing in veins												
				- trace disseminated pyrrhotite												
				- possible contaminated lower contact												
				- lower contact at 70CA												
479.15	483.52	Dacite	Da	- light to medium grey, aphanitic												
				- 2% chlorite filled amygdales (<1 to 3mm)												
				- upper contact possibly hornfelsed												
				- weak chlorite alteration												
				- quartz-chlorite veins												
				- some komatiitic veining close to lower contact												
				- sharp lower contact												
483.52	486.40	Komatiitic	KPx/oc	- black to dark grey, fine grained, massive												
		Pyroxenite		- non magnetic												
				- olivine orthocumulate with pyroxenite												
				- sharp upper and lower contacts												
				- chlorite-tremolite and serpentine altered												
				- chlorite-carbonate veining												
486.40	620.00	Dacite	Da	- light grey, aphanitic, massive	tr-3		Po,Py	v,d,b								
				- some alteration, causes brecciation	3		Po,Py	b,d	AS	122868	512.00	513.50				
				- 2% chlorite filled amygdales (<1 to 3mm)	3		Po	b	AS	122869	513.50	515.00				
				- weak chlorite alteration	3		Py,Po	v,b	AS	122870	515.00	516.50				
				- quartz-chlorite veining												
				- some zones of epidote alteration												
				- trace to 3% disseminated, veined, and blebby pyrrhotite												
				and pyrite												
620.00				END OF HOLE												

Outokumpu Mines Limited

Diamond Drill Hole Record

Area/Township	N.T.S.	Year	Project	Property	Claim Numbers
Bannockburn	41P/NE	1999	Exploration	Bannockburn	1218732, 1218729

Hole Number	Survey Type	Dip (Deg.)	Azim Grid (Deg.)	Azim Astro. (Deg.)	Hole Length (m)	Core Size
BN-28-99	Acid	-50	270	250	254	BQ

Northing (Grid m)	Easting (Grid m)	Northing (UTM)	Easting (UTM)	Northing (Lat.)	Easting (Long.)	Elevation (m)
11600	7220	5313115	507150			360

Logged By	Date Logged	Drilled By	Date Started	Date Finished	Core Storage
Paul Davis	1-Feb-99	Bradley Bros.	24-Jan-99	28-Jan-99	Alexo Property

Casing Depth (m)	Casing Pulled (Y/N)	Cemented (Y/N)	Geophysics (Y/N)	Down Hole Geophysics (Type and Contractor)
28	N	N	N	

Assay Numbers	Assay Lab	Certificate #		Whole Rock Geochemistry
842157 to 842187	Bondar-Clegg	T99-57034.0		

Comments:

From (m)	To (m)	Rock Type	Legend	Description	Sulphides %	Sulphides % Frags	Sulphides Type	Sulphides Mode	Samples Type	Samples Tag #	Samples From (m)	Samples To (m)	Faults and Shears (1-10) Brittle	Faults and Shears (1-10) Ductile	Faults and Shears (1-10) From (m)	Faults and Shears (1-10) To (m)
0.00	28.00	casing														
28.00	30.00	Conglomerate	Sc	-grey green silty matrix with dark green olivine cumulate												
				and pinkish granitic clasts up to 10cm in diameter												
				ultramafic clasts are moderately magnetic												
				-ultramafic clasts are angular to rounded,												
				where all granitic clasts are rounded												
				-approximately 50% ultramafic clasts and 5% granites												
				-sharp faulted lower contact at 45 degrees to core axis												
				-could be Huronian sediments as possibly had												
				some relation to glaciation												
30.00	110.10	Komatiitic	Kac/mc	-dark green to apple green	tr		Py	d					7		64.70	66.50
		Dunite		fine grained to medium grained, massive olivine	tr		Py,Mg	d,v	AS	842157	101.00	104.00				
		Perdotite		adcumulate to mesocumulate	tr		Py,Mg	d,v	AS	842158	104.00	107.00				
				-moderately to strongly magnetic												
				-strong serp alteration												
				-serp - magnetite veinning												
				-60 - 70% of serp veins are asbestos with cross fibre												
				between 1/16" and 1/2"												
				-drilling has broken core associated with asbestos veins												
				-close packed, equant olivine grains												
				-trace disseminated pyrite, occassional needle of pyrite												
				-every five metres or so												
				-some areas display a weak cleavage at 90 - 60 degrees												
				to core angle, and is a development of asbestos around												
				olivine grains in a preferred orientation												
				-gradual contact over a couple of meters												
				-101.0 - 107.0 : magnetite veinning with trace pyrite												
110.00	213.40	Komatiitic	Kac/mc	-green to dark green fine grained to medium grained	tr		Py,Mg	d	AS	842159	110.10	113.00	9		125.85	127.60
		Dunite/		massive to weakly developed cleavage	tr		Py,Mg	d	AS	842160	113.00	116.00	7		211.00	211.45
		Perdotite		-weakly to moderately magnetic	tr		Py,Mg	d	AS	842161	116.00	119.00				
				-strong serpentine alteration	tr		Py,Mg	d	AS	842162	119.00	120.00				
				-cleavage at 35 to 45 degrees to core angle as indicated	1		Py,Mg	b	AS	842163	120.00	120.53				
				by development of asbestos around grain boundaries	tr		Py,Mg	d	AS	842164	120.53	122.00				
				in a preferred orientation	tr		Py,Mg	d	AS	842165	122.00	125.00				
				-125.85 - 127.60m :extreme disting at spaces of between	tr		Mg	d,v	AS	842166	143.00	146.00				
				1cm to 1/2 cm, some fault gouge development	tr		Mg	d,v	AS	842167	146.00	149.00				
				-120.00 - 120.53 m : trace to 1% blebby pyrrhotite and	tr		Mg	d,v	AS	842168	149.00	152.00				
				dark grey mineral up to 2mm blebs	tr		Mg	d,v	AS	842169	152.00	155.00				
				-lots of magnetite veinning						842170	209.00	212.00				
				-cleavage varies from weak to moderate, but becomes						842171	212.00	213.40				
				strong from 196.0m to 213.20m												
				-cleavage gradationally disipates to lower contact area												
				213.20 - 213.40m												

From (m)	To (m)	Rock Type	Legend	Description	Sulphides %	Sulphides % Frags	Sulphides Type	Sulphides Mode	Samples Type	Samples Tag #	Samples From (m)	Samples To (m)	Faults and Shears (1-10) Brittle	Faults and Shears (1-10) Ductile	Faults and Shears (1-10) From (m)	Faults and Shears (1-10) To (m)
				-serpentine veining with asbestos development in most												
				veins												
213.40	235.00	komatitic	Kac/mc	-sea green, fine grained to medium grained,	2		Py	d	AS	842172	213.40	215.00	7		217.00	217.45
		Dunite/		massive with a minor cleavage development,	1		Py	d	AS	842173	215.00	218.00	6		223.71	233.90
		Perdotite		-moderately magntic	2		Py	d	AS	842174	218.00	221.00	5		232.20	232.50
				-intense serpentine veinning	2		Py	d	AS	842175	221.00	224.00	9		232.70	233.00
				-approxiametly 50% of serpentine veins have developed	1		Py	d	AS	842176	224.00	227.00				
				asbestos	1		Py	d	AS	842177	227.00	230.00				
				-weak cleavage developed at 35 degrees to core angle	tr		Py	d	AS	842178	230.00	233.00				
				-trace to 2% fine grained disseminated sulphide, bright	tr		Py	d	AS	842179	233.00	235.00				
				yellow colour possibly Pyrite or Pn												
				-sulphides occur extragranular to serpentine olivine												
				grains												
				-sulphides appear to decrease gradationally down hole												
				-gradational lower contact marked by change in colour from green to black												
235.00	250.00	komatitic	Kac/mc	-dark green - black, fine grained to medium grained	tr				AS	842180	235.00	236.00	4		236.40	238.00
		Dunite/		massive to shistose, olivine adcumulate to mesocumulate	tr				AS	842181	236.00	239.00	2		238.60	242.10
		Perdotite		-moderately to strongly magnetic	tr				AS	842183	239.00	242.00	2		243.70	246.80
				-strong serpentine alteration	tr		Po?	v,b	AS	842184	242.00	245.00	8		246.80	246.95
				-serpentine veins and magnetite veins	tr				AS	842185	245.00	248.00	2		248.40	249.80
				-lots of rubbly core	tr				AS	842186	248.00	250.00	9		249.80	250.00
				-some schistose areas appear to have cleavage												
				-no visible sulphides but may contain similar mineral												
				assemblages with Ni mineral -sharp lower contact marked by fault gouge												
250.00	254.00	komatiitic	Koc/	-dark grey green, fine grained, schistose, weakly to					AS	842186	250.00	251.00		6	250.00	252.50
		Dunite	mc	moderately magnetic					AS	842187	251.00	254.00	2	6	252.50	254.00
		Perdotite		-strong serpentine-talc alteration												
				-crenulation cleavages developed on schistosity												
				-serpentine veinning												
				-rubbly core												
				-no visible sulphides												
				-hole lost in fault at 254m												
254.00				End Of Hole												

Outokumpu Mines Limited

Diamond Drill Hole Record

Area/Township	N.T.S.	Year	Project	Property	Claim Numbers
Bannockburn	41P/NE	1999	Exploration	Bannockburn	1218729

Hole Number	Survey Type	Dip (Deg.)	Azim Grid (Deg.)	Azim Astro. (Deg.)	Hole Length (m)	Core Size
BN-29-99	Acid	-50	270	250	161	BQ

Northing (Grid m)	Easting (Grid m)	Northing (UTM)	Easting (UTM)	Northing (Lat.)	Easting (Long.)	Elevation (m)
11600	7100	5313090	507055			360

Logged By	Date Logged	Drilled By	Date Started	Date Finished	Core Storage
Paul Davis	1-Feb-99	Bradley Bros.	28-Jan-99	29-Jan-99	Alexo Property

Casing Depth (m)	Casing Pulled (Y/N)	Cemented (Y/N)	Geophysics (Y/N)	Down Hole Geophysics (Type and Contractor)
4	N	N	N	

Assay Numbers	Assay Lab	Certificate #		Whole Rock Geochemistry
842188 to 842200	Bondar-Clegg	T99-57035.0		842451 to 842462

Comments:

From (m)	To (m)	Rock Type	Legend	Description	Sulphides				Samples				Faults and Shears (1-10)			
					%	% Frags	Type	Mode	Type	Tag #	From (m)	To (m)	Brittle	Ductile	From (m)	To (m)
0.00	4.00	casing							WR	842451	14.00	17.00				
									WR	842452	59.00	62.00				
4.00	63.70	Diabase	Db	-salt and pepper, black and white												
				-fine grained with coarse grained megacrysts of												
				plagioclase												
				-weakly to moderatley magnetic												
				-looks like Matchewan Diabase												
				-composed of 30 - 40% plagioclase laths and needles												
				and chlorite-tremolite altered mafics												
				-weak chlorite altered with actinolite or tremolite veining												
				with alteration halos												
				-grain size decreases towards lower contact												
				-sharp lower contact at 90 deg. To CA marked by calcite												
				vein												
63.70	70.67	Komatiitic	Koc	-dark grey - black, fine grained, massive olivine					WR	842453	67.00	70.00	4		64.60	65.00
		Pyroxenite		orthocumulate									9		69.50	70.05
		Perdotite		-weakly to non - magnetic												
				-variable chlorite-tremolite-serpenite alteration has												
				destroyed some of the original textures												
				-some areas display well preserved olivine cumulate												
				textures with equant olivine grains												
				-portions contain white porphyrblasts of carbonate												
				or albite												
				-chlorite- tremolite veinning with associated carbonate												
				-sharp lower contact marked by change in colour grain												
				size, alteration, and mineral content												
70.67	86.00	Komatiitic	Koc?	-grey green with black dots												
		Pyroxenite		-aphanitic to fine grained, massive to schistose												
		Perdotite		-non - magnetic												
				-intense chlorite-tremolite alteration has destroyed most												
				primary features but zones of olivine orthocumulate are												
				still visible												
				-schistose zones have development of erenulation												
				cleavage												
				-chlorite-tremolite-carbonate veining												
				-possibly some relect serpentine alteration												
				-almost soapstone in nature												
				-zones of extreme chlorite-tremolite alteration appear												
				as aphanitic veinlets with sharp contacts												
				-lower contact marked by change in alteration												
				assemblages												
				-some zones of weak silicification												

From (m)	To (m)	Rock Type	Legend	Description	Sulphides				Samples				Faults and Shears (1-10)			
					%	% Frags	Type	Mode	Type	Tag #	From (m)	To (m)	Brittle	Ductile	From (m)	To (m)
86.00	110.65	Komatiitic	Koc	-grey and light grey-green, fine grained to aphanitic	tr-1		Cpy,py	d	AS	842188	89.00	92.00				
		Pyroxenite	Px?	-non - magnetic	tr-1		Cpy,py	d	AS	842189	92.00	95.00				
		Perdotite		-rock is highly altered and composed of a chlorite-	tr-1		Cpy,py	d	AS	842190	95.00	98.00				
				tremolite altered portion and either silicified or rodingite	tr-1		Cpy,py	d	AS	842191	98.00	101.00				
				altered zone					WR	842455	92.00	95.00				
				-sharp contact between the two units					WR	842456	101.00	104.00				
				-silicified zones do have portions of less altered chlorite-												
				tremolite												
				-silicified zones appear to have a foliation development												
				-chlorite-tremolite altered zones contain what appears												
				to be chromite grains as brown angular grains												
				-trace to 1% disseminated chalcopyrite and pyrite with												
				chlorite-tremolite zones												
				-chlorite-tremolite zone are soapstone like												
				-some sulphides are associated with chlorite-tremolite												
				veinning												
				-development of white carbonate veiining within chlorite-												
				tremolite from 105.0 m												
				-lower contact marked by brecciated silicified zone with												
				chlorite veinning, contact at 35 deg. To CA												
110.65	135.45	Komatiitic	Koc?	-grey and green, fine grained					AS	842192	134.00	135.45				
		Pyroxenite		-brecciated appearance because of carbonate					WR	842457	116.00	119.00				
		Perdotite		veinning					WR	842458	122.20	123.15				
				-non - magnetic												
				-intense chlorite-tremolite alteration												
				-between 10 - 40% carbonate albite veiining has												
				resulted in insita brecciation with angular clasts of host												
				rock												
				122.20 - 123.15m :123.45 to 124.50m : and 125.08 to												
				126.57 m : light brown, aphanitic, non - magnetic												
				either strong silification or dacite xenoliths with quartz-												
				carbonate veinning causing insitu brecciation												
				-sharp contacts with xenoliths												
				-no visible sulphides												
				-carbonate veinning decreases down hole and dies out												
				at basal contact												
				-chlorite slip surfaces												
135.45	145.85	Komatiitic	Koc/	-dark grey with dark green clasts, fine grained	tr		Py	d	As	842193	135.45	137.00	2		139.40	140.50
		Pyroxenite	mc?	massive to schistose	tr		Py,Po	d	AS	842194	137.00	140.00				
		Perdotite		-non - magnetic	tr		Py		AS	842195	140.00	143.00				
				-contains angular portions of serpentine altered olivine	tr		Py		AS	842196	143.00	145.85				
				mesocumulate					WR	842459	140.00	143.00				
				-intense chlorite-tremolite alteration												
				-some more pervassive carbonate development and												

From (m)	To (m)	Rock Type	Legend	Description	Sulphides %	Sulphides % Frags	Sulphides Type	Sulphides Mode	Samples Type	Samples Tag #	Samples From (m)	Samples To (m)	Faults and Shears (1-10) Brittle	Faults and Shears (1-10) Ductile	Faults and Shears (1-10) From (m)	Faults and Shears (1-10) To (m)
				veiining												
				-lots of chlorite-slips with trace to 1% disseminated												
				pyrite and pyrohitte												
				-olivine mesocumulate zones contain 1-2% fine grained												
				disseminated pyrite												
				-unit looks folded and deformed												
				-possibly a proportion of very fine grained pyrite												
				disseminated along old olivine contacts												
				-lower contact marked by change in alteration style												
145.85	152.80	Komatiitic	Koc/	-light grey-green, aphanitic to fine grained	1		Py	d	AS	842197	145.85	149.00				
		Pyroxenite	mc?	-intensely altered with ameboid shaped less altered	tr		Py	d	AS	842198	149.00	152.00				
		Perdotite		zones	tr		Py	d	AS	842199	152.00	152.80				
				-non - magnetic					WR	842460	149.00	152.00				
				-intense chlorite-tremolite alteration possibly silicified												
				or rodingitized												
				-harder then normal chlorite-tremolite altered unit												
				-relict clasts or windows have cumulate and possible												
				spinifex textures												
				-trace to 1% pyrite associated with relict clasts												
				-displays sort of a schistose fabric												
				-veins of chlorite and or serpentine												
				-sharp lower contact at 30 deg. To CA												
152.80	155.52	Komatiitic	Kpx?	-grey-green, fine grained, schistose to massive					AS	842200	152.80	155.52				
		Pyroxenite		-non - magnetic					WR	842461	152.80	155.52				
				-intense chlorite-trmolite-carbonate altered												
				-some relict pyroxenite, textures cen be observed												
				-looks like it could be a contact pyroxenite zone												
				-sharp well defined lower contact at 40 deg. To CA												
155.52	161.00	Dacite	Da	-grey-brown, aphanitic, lots of carbonate veiining					WR	842462	158.00	161.00				
				massive to brecciated												
				-non - magnetic												
				-lots of carbonate veiining causes insitu brecciation												
				-possibly weak carbonate altered causes softer core												
				then expected												
				-no visible sulphides												
				-if contained sulphides in veins would be an excellent												
				Au target												
161.00				-End Of Hole												

APPENDIX 2: ASSAYS

2.19422

Intertek Testing Services
Chimitec Bondar Clegg

Certificat D'Analyse
Assay Lab Report

REPORT: T99-57034.0 (COMPLETE) REFERENCE:

CLIENT: OUTOKUMPU MINES INC. SUBMITTED BY: P. DAVIS
PROJECT: NONE DATE RECEIVED: 04-FEB-99 DATE PRINTED: 18-FEB-99

DATE APPROVED	ORDER		ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
990211	1	Au	Gold - Fire Assay	31	1 PPB	FIRE ASSAY	FIRE ASSAY-DCP
990211	2	Pt	Platinum	31	5 PPB	FIRE ASSAY	FIRE ASSAY-DCP
990211	3	Pd	Palladium	31	1 PPB	FIRE ASSAY	FIRE ASSAY-DCP
990211	4	Cu	Copper	31	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
990211	5	Zn	Zinc	31	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
990211	6	Ni	Nickel	31	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
990211	7	Co	Cobalt	31	0.005 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
990211	8	Fe	Iron	31	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
990211	9	S Tot	Sulfur (Total)	31	0.02 PCT		LECO

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
DRILL CORE	31	-150	31	CRUSH, SPLIT	31
				PULVERIZATION	31
				OVERWEIGHT	90

REPORT COPIES TO: C/O MR. PAUL DAVIS INVOICE TO: C/O MR. PAUL DAVIS

ITS - Chimitec - Bondar Clegg
1322-B rue Harricana, Val d'Or, Québec, J9P 3X6
Tél: (819) 825-0178, Fax: (819) 825-0256

Intertek Testing Services
Chimitec Bondar Clegg

Certificat D'Analyse
Assay Lab Report

CLIENT: OUTOKUMPU MINES INC. PROJECT: NONE
REPORT: T99-57034.0 (COMPLETE) DATE RECEIVED: 04-FEB-99 DATE PRINTED: 18-FEB-99

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Pt PPB	Pd PPB	Cu PCT	Zn PCT	Ni PCT	Co PCT	Fe PCT	S Tot PCT
842157		7	<5	<1	<0.01	<0.01	0.28	0.009	4.13	0.03
842158		1	<5	<1	<0.01	<0.01	0.28	0.008	4.01	<0.02
842159		<1	<5	<1	<0.01	<0.01	0.29	0.008	3.83	<0.02
842160		<1	<5	<1	<0.01	<0.01	0.29	0.009	3.57	<0.02
842161		<1	<5	<1	<0.01	<0.01	0.26	0.008	3.33	<0.02
842162		1	<5	<1	<0.01	<0.01	0.29	0.011	4.42	<0.02
842163		<1	<5	<1	<0.01	<0.01	0.28	0.009	5.36	<0.02
842164		<1	<5	<1	<0.01	<0.01	0.29	0.009	3.76	<0.02
842165		<1	<5	<1	<0.01	<0.01	0.28	0.009	3.98	<0.02
842166		<1	<5	<1	<0.01	<0.01	0.29	0.009	3.60	<0.02
842167		1	<5	<1	<0.01	<0.01	0.28	0.011	3.91	0.02
842168		1	<5	<1	<0.01	<0.01	0.28	0.011	4.43	<0.02
842169		6	<5	<1	<0.01	<0.01	0.28	0.009	3.76	0.02
842170		<1	<5	<1	<0.01	<0.01	0.27	0.009	4.12	0.04
842171		<1	<5	2	<0.01	0.01	0.26	0.009	3.72	0.03
842172		<1	<5	2	<0.01	<0.01	0.28	0.008	3.72	0.04
842173		2	<5	<1	<0.01	<0.01	0.29	0.009	3.93	0.04
842174		2	<5	<1	<0.01	<0.01	0.28	0.008	4.00	0.05
842175		1	<5	2	<0.01	<0.01	0.29	0.011	4.21	0.05
842176		1	<5	<1	<0.01	<0.01	0.29	0.009	4.23	0.06
842177		1	<5	<1	<0.01	<0.01	0.30	0.009	4.38	0.06
842178		2	<5	4	<0.01	<0.01	0.31	0.008	4.57	0.07
842179		<1	<5	2	<0.01	<0.01	0.30	0.009	5.60	0.06
842180		<1	<5	4	<0.01	<0.01	0.24	0.011	5.98	0.05
842181		2	51	31	<0.01	<0.01	0.22	0.013	8.03	0.04
842182		6	7	42	<0.01	<0.01	0.22	0.013	7.46	0.04
842183		7	11	68	<0.01	<0.01	0.22	0.011	7.22	0.04
842184		1	<5	5	<0.01	<0.01	0.18	0.011	6.39	0.03
842185		3	19	29	<0.01	<0.01	0.18	0.012	7.70	0.03
842186		<1	<5	<1	<0.01	<0.01	0.27	0.009	5.33	0.06
842187		<1	6	2	<0.01	<0.01	0.23	0.011	6.09	0.05

ITS - Chimitec - Bondar Clegg
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Intertek Testing Services
Chimitec Bondar Clegg

Certificat D'Analyse
Assay Lab Report

CLIENT: OUTOKUMPU MINES INC. PROJECT: NONE
REPORT: T99-57034.0 (COMPLETE) DATE RECEIVED: 04-FEB-99 DATE PRINTED: 18-FEB-99

STANDARD NAME / ELEMENT UNITS	Au PPB	Pt PPB	Pd PPB	Cu PCT	Zn PCT	Ni PCT	Co PCT	Fe PCT	S Tot PCT
ANALYTICAL BLANK	<1	<5	<1	-	-	-	-	-	-
ANALYTICAL BLANK	<1	<5	-	-	-	-	-	-	-
Number of Analyses	2	2	1	-	-	-	-	-	-
Mean Value	0.5	2.5	0.5	-	-	-	-	-	-
Standard Deviation	0.00	0.00	-	-	-	-	-	-	-
Accepted Value	5	5	5	<0.01	<0.01	<0.01	<0.001	<0.01	<0.01
DCP STANDARD	89	86	90	-	-	-	-	-	-
Number of Analyses	1	1	1	-	-	-	-	-	-
Mean Value	89.0	86.0	90.0	-	-	-	-	-	-
Standard Deviation	-	-	-	-	-	-	-	-	-
Accepted Value	83	83	83	-	-	-	-	-	-
CANMET CERTIFIED STD	-	-	-	1.47	>15.00	<0.01	<0.005	6.15	-
CANMET CERTIFIED STD	-	-	-	1.44	>15.00	<0.01	<0.005	6.18	-
Number of Analyses	-	-	-	2	2	2	2	2	-
Mean Value	-	-	-	1.453	15.000	0.005	0.0025	6.165	-
Standard Deviation	-	-	-	0.0243	0.0000	0.0000	0.00000	0.0217	-
Accepted Value	-	-	-	1.44	-	-	-	6.20	12.70
CANMET Cert. Std.	-	-	-	0.95	0.03	1.24	0.041	19.82	-
Number of Analyses	-	-	-	1	1	1	1	1	-
Mean Value	-	-	-	0.950	0.033	1.240	0.0410	19.818	-
Standard Deviation	-	-	-	-	-	-	-	-	-
Accepted Value	-	-	-	0.97	-	1.23	0.041	20.00	10.00
CANMET MRG-1 REF STD	-	-	-	0.01	0.03	0.02	0.011	12.60	-
Number of Analyses	-	-	-	1	1	1	1	1	-
Mean Value	-	-	-	0.013	0.027	0.017	0.0110	12.600	-
Standard Deviation	-	-	-	-	-	-	-	-	-
Accepted Value	-	-	-	0.01	0.02	-	-	-	0.06
CANMET STD SY-3	-	-	-	-	-	-	-	-	0.06
Number of Analyses	-	-	-	-	-	-	-	-	1
Mean Value	-	-	-	-	-	-	-	-	0.060
Standard Deviation	-	-	-	-	-	-	-	-	-
Accepted Value	-	-	-	<0.01	0.02	-	-	-	0.05

ITS - Chimitec - Bondar Clegg
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Intertek Testing Services
Chimitec Bondar Clegg

Certificat D'Analyse
Assay Lab Report

CLIENT: OUTOKUMPU MINES INC. PROJECT: NONE
REPORT: T99-57034.0 (COMPLETE) DATE RECEIVED: 04-FEB-99 DATE PRINTED: 18-FEB-99

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Pt PPB	Pd PPB	Cu PCT	Zn PCT	Ni PCT	Co PCT	Fe PCT	S Tot PCT
842157		7	<5	<1	<0.01	<0.01	0.28	0.009	4.13	0.03
Duplicate										0.03
842161		<1	<5	<1	<0.01	<0.01	0.26	0.008	3.33	<0.02
Duplicate		1	<5	<1						
842164		<1	<5	<1	<0.01	<0.01	0.29	0.009	3.76	<0.02
Duplicate					<0.01	<0.01	0.29	0.009	3.65	
842166		<1	<5	<1	<0.01	<0.01	0.29	0.009	3.60	<0.02
Duplicate										<0.02
842171		<1	<5	2	<0.01	0.01	0.26	0.009	3.72	0.03
Duplicate					<0.01	<0.01	0.27	0.009	3.82	0.03
842176		1	<5	<1	<0.01	<0.01	0.29	0.009	4.23	0.06
Duplicate										0.06
842178		2	<5	4	<0.01	<0.01	0.31	0.008	4.57	0.07
Duplicate					<0.01	<0.01	0.28	0.008	4.50	
842181		2	51	31	<0.01	<0.01	0.22	0.013	8.03	0.04
Duplicate										0.04
842186		<1	<5	<1	<0.01	<0.01	0.27	0.009	5.33	0.06
Duplicate										0.07

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ITS Intertek Testing Services
Chimitec Bondar Clegg

Certificat D'Analyse
Assay Lab Report

REPORT: T99-57035.0 (COMPLETE) REFERENCE: -

CLIENT: OUTOKUMPU MINES INC. SUBMITTED BY: P. DAVIS
PROJECT: EXPLORATION DATE RECEIVED: 05-FEB-99 DATE PRINTED: 19-FEB-99

DATE APPROVED	ORDER		ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
990210	1	Au	Gold - Fire Assay	13	1 PPB	FIRE ASSAY	FIRE ASSAY-DCP
990210	2	Pt	Platinum	13	5 PPB	FIRE ASSAY	FIRE ASSAY-DCP
990210	3	Pd	Palladium	13	1 PPB	FIRE ASSAY	FIRE ASSAY-DCP
990210	4	Cu	Copper	13	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
990210	5	Zn	Zinc	13	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
990210	6	Ni	Nickel	13	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
990210	7	Co	Cobalt	13	0.005 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
990210	8	Fe	Iron	13	0.01 PCT	HF-HNO3-HCLO4-HCL	INDUC. COUP. PLASMA
990210	9	S Tot	Sulfur (Total)	13	0.02 PCT		LECO

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
DRILL CORE	13	-150	13	CRUSH, SPLIT	13
				OVERWEIGHT	58
				PULVERIZATION	58

REPORT COPIES TO: C/O MR. PAUL DAVIS INVOICE TO: C/O MR. PAUL DAVIS

ITS - Chimitec - Bondar Clegg
1322-B rue Harricana, Val d'Or, Québec, J9P 3X6
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Intertek Testing Services
Chimitec Bondar Clegg

Certificat D'Analyse
Assay Lab Report

CLIENT: OUTOKUMPU MINES INC. PROJECT: EXPLORATION
REPORT: T99-57035.0 (COMPLETE) DATE RECEIVED: 05-FEB-99 DATE PRINTED: 19-FEB-99 PAGE 1 DE 3

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Pt PPB	Pd PPB	Cu PCT	Zn PCT	Ni PCT	Co PCT	Fe PCT	S Tot PCT
842188		1	10	7	0.04	0.01	0.28	0.013	5.37	0.19
842189		<1	6	5	0.02	0.01	0.24	0.010	4.97	0.13
842190		1	14	6	<0.01	<0.01	0.18	0.006	5.28	0.09
842191		<1	9	4	<0.01	<0.01	0.15	0.007	5.19	0.07
842192		<1	<5	5	<0.01	0.01	0.08	0.009	6.85	<0.02
842193		<1	<5	3	0.02	<0.01	0.14	<0.005	5.35	0.09
842194		5	5	9	<0.01	<0.01	0.20	0.014	5.08	0.16
842195		3	13	8	<0.01	<0.01	0.13	0.006	5.94	0.09
842196		3	7	8	<0.01	<0.01	0.14	0.008	6.32	0.09
842197		1	12	7	<0.01	<0.01	0.14	0.011	6.32	0.08
842198		1	<5	4	<0.01	<0.01	0.11	0.007	6.06	0.05
842199		1	<5	5	<0.01	<0.01	0.09	<0.005	5.67	<0.02
842200		2	<5	4	<0.01	0.01	0.09	0.008	6.65	<0.02

2.19422

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Intertek Testing Services
Chimitec Bondar Clegg

Certificat D'Analyse
Assay Lab Report

CLIENT: OUTOKUMPU MINES INC. PROJECT: EXPLORATION
REPORT: T99-57035.0 (COMPLETE) DATE RECEIVED: 05-FEB-99 DATE PRINTED: 19-FEB-99

STANDARD NAME	ELEMENT UNITS	Au PPB	Pt PPB	Pd PPB	Cu PCT	Zn PCT	Ni PCT	Co PCT	Fe PCT	S Tot PCT
ANALYTICAL BLANK		<1	<5	<1	-	-	-	-	-	-
Number of Analyses		1	1	1	-	-	-	-	-	-
Mean Value		0.5	2.5	0.5	-	-	-	-	-	-
Standard Deviation		-	-	-	-	-	-	-	-	-
Accepted Value		5	5	5	<0.01	<0.01	<0.01	<0.001	<0.01	<0.01
DCP STANDARD		85	78	81	-	-	-	-	-	-
Number of Analyses		1	1	1	-	-	-	-	-	-
Mean Value		84.6	78.0	81.4	-	-	-	-	-	-
Standard Deviation		-	-	-	-	-	-	-	-	-
Accepted Value		83	83	83	-	-	-	-	-	-
CANMET Cert. Std.		-	-	-	0.94	0.02	1.24	0.038	19.64	-
Number of Analyses		-	-	-	1	1	1	1	1	-
Mean Value		-	-	-	0.941	0.021	1.236	0.0382	19.636	-
Standard Deviation		-	-	-	-	-	-	-	-	-
Accepted Value		-	-	-	0.97	-	1.23	0.041	20.00	10.00
BCC PULP STD.		-	-	-	4.81	2.81	<0.01	0.027	14.55	-
Number of Analyses		-	-	-	1	1	1	1	1	-
Mean Value		-	-	-	4.807	2.807	0.005	0.0266	14.550	-
Standard Deviation		-	-	-	-	-	-	-	-	-
Accepted Value		-	-	-	5.00	3.00	-	-	14.18	11.40
ME89-1		-	-	-	1.93	4.04	<0.01	<0.005	>20.00	-
Number of Analyses		-	-	-	1	1	1	1	1	-
Mean Value		-	-	-	1.933	4.038	0.005	0.0025	20.000	-
Standard Deviation		-	-	-	-	-	-	-	-	-
Accepted Value		-	-	-	1.96	4.10	-	-	-	-
UTS-2		-	-	-	-	-	-	-	-	3.34
Number of Analyses		-	-	-	-	-	-	-	-	1
Mean Value		-	-	-	-	-	-	-	-	3.340
Standard Deviation		-	-	-	-	-	-	-	-	-
Accepted Value		-	-	-	-	-	-	-	-	3.23

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Intertek Testing Services
Chimitec Bondar Clegg

Certificat D'Analyse
Assay Lab Report

CLIENT: OUTOKUMPU MINES INC. PROJECT: EXPLORATION
REPORT: T99-57035.0 (COMPLETE) DATE RECEIVED: 05-FEB-99 DATE PRINTED: 19-FEB-99 PAGE 3 DE 3

SAMPLE NUMBER	ELEMENT UNITS	Au PPB	Pt PPB	Pd PPB	Cu PCT	Zn PCT	Ni PCT	Co PCT	Fe PCT	S Tot PCT
842188		1	10	7	0.04	0.01	0.28	0.013	5.37	0.19
Duplicate										0.18
842193		<1	<5	3	0.02	<0.01	0.14	<0.005	5.35	0.09
Duplicate		1	<5	3						
842195		3	13	8	<0.01	<0.01	0.13	0.006	5.94	0.09
Duplicate					<0.01	<0.01	0.13	0.008	5.91	
842197		1	12	7	<0.01	<0.01	0.14	0.011	6.32	0.08
Duplicate										0.09

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Tél: (819) 825-0178, Fax: (819) 825-0256

Ontario Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use): W9980.00241
Assessment Files Research Imaging

41P15NW2009 2.19422 BANNOCKBURN 900

of subsections 65(2) and 66(3) of the Mining Act. Under section 8 of the
o review the assessment work and correspond with the mining land holder.
g Recorder, Ministry of Northern Development and Mines, 6th Floor,

Instructions: - For work performed on Crown Lands before **recording** a claim, use form 0240.
- Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)

Name	Client Number
Outokumpu Mines Inc.	304049
Address	**Telephone Number**
P.O. Box 1123	(705) 264-5024
Timmins, ON P4N 7H9	Fax Number (705) 264-5067
Name	**Client Number**
Address	**Telephone Number**
	Fax Number

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2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

☐ Geotechnical: prospecting, surveys, assays and work under section 18 (regs) ☒ Physical: drilling, stripping, trenching and associated assays ☐ Rehabilitation

Work Type: Diamond Drilling	Office Use
	Commodity
	Total $ Value of Work Claimed: 35,181
Dates Work Performed From: 21 Day / 01 Month / 1999 Year To: 29 Day / 01 Month / 1999 Year	NTS Reference
Global Positioning System Data (if available) — Township/Area: Bannockburn	Mining Division: Larder Lake
M or G-Plan Number: M-207	Resident Geologist District: Kirkland Lake

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name	Telephone Number
Paul Davis	(705) 264-5024
Address	**Fax Number**
P.O. Box 1123, Timmins, ON P4N 7H9	(705) 264-5067
Name	**Telephone Number**
Address	**Fax Number**
Name	**Telephone Number**
Address	**Fax Number**

2.19422

4. Certification by Recorded Holder or Agent

I, Paul Davis (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent		Date
Paul		March 31, 1999
Agent's Address	**Telephone Number**	**Fax Number**
P.O. Box 1123, Timmins, ON P4N 7H9	(705) 264-5024	(705) 264-5067

5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

	Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	**Number of Claim Units.** For other mining land, list hectares.	**Value of work performed** on this claim or other mining land.	**Value of work applied** to this claim.	**Value of work assigned** to other mining claims.	**Bank.** Value of work to be distributed at a future date.
eg	TB 7827	16 ha	$26, 825	N/A	$24,000	$2,825
eg	1234567	12	0	$24,000	0	0
eg	1234568	2	$ 8, 892	$ 4,000	0	$4,892
1	1198916	4	$8009	0	$8009	0
2	1218729	2	$22,118	0	$22,118	0
3	1218732	11	$5,054	0	$5,054	0
4	1228144	8	0	$3200	0	0
5	1228145	16	0	$12,800	0	0
6	1228146	16	0	$12,800	0	0
7	1228147	8	0	$3,200	0	0
8	1228150	8	0	$3181	0	0
9						
10						
11						
12						
13						
14						
15						
		Column Totals	$35,181	$35,181	$35,181	0

I, Paul Davis (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing	Date
Paul	March 31, 1999

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- ☒ 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- ☐ 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- ☐ 3. Credits are to be cut back equally over all claims listed in this declaration; or
- ☐ 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved
	Approved for Recording by Mining Recorder (Signature)	

Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use): W9980.00241

Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Work Type	Units of Work Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
Diamond Drilling	508 m	$62/m	$31,496.00
Associated Costs (e.g. supplies, mobilization and demobilization).			
Mobilization			$3000.00
Clearing Road of Snow			$685.00
Transportation Costs			
Food and Lodging Costs			
		Total Value of Assessment Work	$35,181.00

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Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK × 0.50 = Total $ value of worked claimed.

Note:
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

2.19422

Certification verifying costs:

I, Paul Davis (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as Project Geologist (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

Signature	Date
Paul	March 31, 1999

0212 (02/98)

Ministry of Northern Development and Mines

Ministère du Développement du Nord et des Mines

Ontario

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9846
Fax: (877) 670-1555

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

May 31, 1999

OUTOKUMPU MINES INC.
P.O. BOX 360
4650 - 1 FIRST CANADIAN PLACE
TORONTO, Ontario
M5X-1E1

Dear Sir or Madam:

Submission Number: 2.19422

Status

Subject: Transaction Number(s): W9980.00241 Deemed Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Bruce Gates by e-mail at bruce.gates@ndm.gov.on.ca or by telephone at (705) 670-5856.

Yours sincerely,

ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Correspondence ID: 13800
Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.19422

Date Correspondence Sent: May 31, 1999 **Assessor:** Bruce Gates

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9980.00241	1198916	BANNOCKBURN	Deemed Approval	May 31, 1999

Section:
16 Drilling PDRILL

Correspondence to:

Resident Geologist
Kirkland Lake, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):

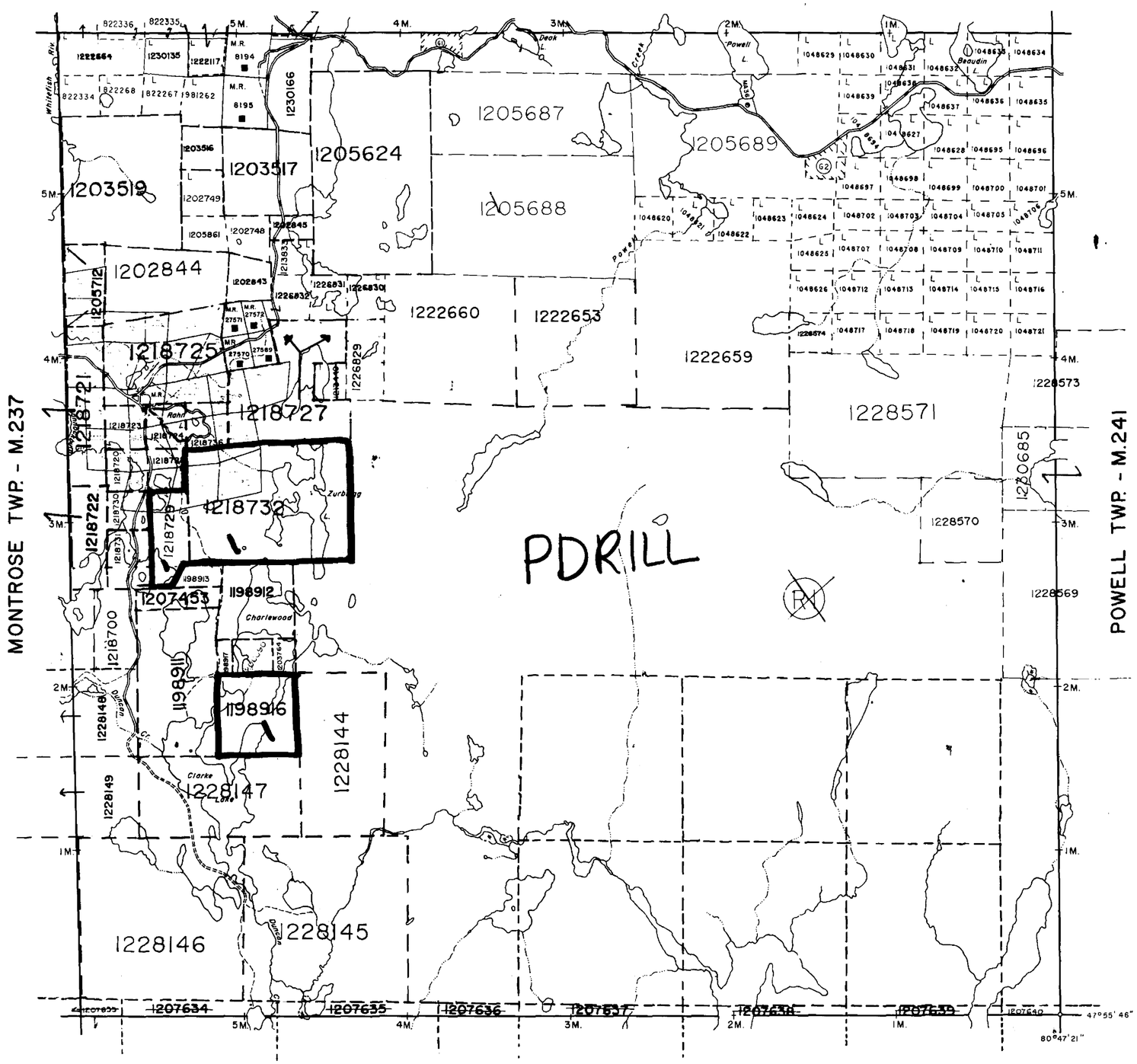
Paul Davis
TIMMINS, ONTARIO, CANADA

OUTOKUMPU MINES INC.
TORONTO, Ontario

Correspondence ID: 13800

TRIM LINE

ARGYLE TWP. - M.203



THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES. AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

THE TOWNSHIP OF

BANNOCKBURN

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

DISPOSITION OF CROWN LANDS

PATENT, SURFACE AND MINING RIGHTS
" , SURFACE RIGHTS ONLY
" , MINING RIGHTS ONLY
LEASE, SURFACE AND MINING RIGHTS
" , SURFACE RIGHTS ONLY
" , MINING RIGHTS ONLY
LICENCE OF OCCUPATION

ROADS
IMPROVED ROADS
KING'S HIGHWAYS
RAILWAYS
POWER LINES
MARSH OR MUSKEG
MINES
CANCELLED

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JUN 07 1999

THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

SAND AND GRAVEL

(G1) M.T.C. GRAVEL PIT 3F-25

(G2) M.T.C. GRAVEL PIT 1374

(R) ~~SURFACE AND MINING RIGHTS WITHDRAWN FROM STAKING, SECTION 36/80 ORDER NO. W 53/83~~

(R1) Mining & Surface Rights Reopened to prospecting, sale or lease. Order O-L-10/95, previously withdrawn under Order W-65/83

NOTICE OF FORESTRY ACTIVITY.

THIS TOWNSHIP / AREA FALLS WITHIN THE ELK LAKE MANAGEMENT UNIT

AND MAY BE SUBJECT TO FORESTRY OPERATIONS THE MNR UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT P.O. BOX 129
SWASTIKA, ONT.
P0K 1T0
705-642-3222

PLAN NO. M.207

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

ARCHIVED MARCH 24/98
CIRCULATED JANUARY 27, 1995

41P15NW2009 2.19422 BANNOCKBURN 200

BANNOCKBURN M.207

507000

507500

508000

5312000

5312000

1198917

1206090

1203764

5311500

BN-17-97

5311500

1198916
(4 units)

5311000

5311000

507000

507500

508000

41P15NW2009 2.19422 BANNOCKBURN 210

Scale	DATE	SHEET
1:5000	01/04/97	1 of 1
	REF No. 1 PL	FILE ANBN17.E

0 250m

Diamond Drill Hole

Plan Map BN-17-97

Outokumpu Mines Ltd

Bannockburn Property

506500 507000 507500

5313500 5313500

1218728

1218732
(11 units)

BN-29-99 BN-28-99

5313000 5313000

1218729
(2 units)

5312500 5312500

506500 507000 507500

N

41P15NW2009 2.19422 BANNOCKBURN 220

Scale	DATE	SHEET
1:5000	01/04/97	1 of 1
	REF No. 1	FILE PLAN116.P

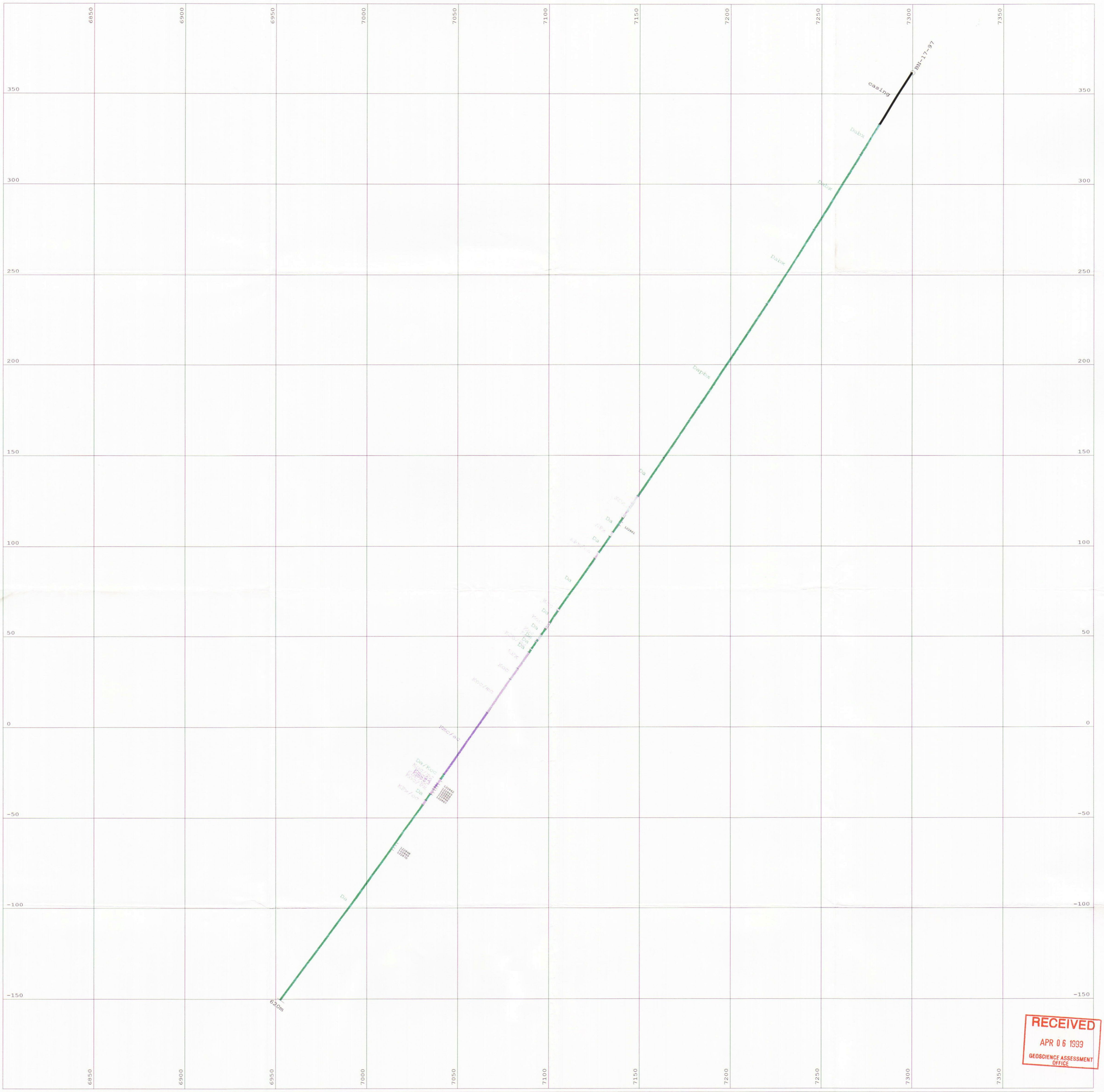
0 250m

Diamond Drill Hole

Plan Map

Outokumpu Mines Ltd

Bannockburn Property



Geological Legend

- casing
- IF Iron Formation
- S Sediments
- S Sulphide Mineralization
- Ad Andesite
- Da Dacite
- Rh Rhyolite
- Ba Basalt
- Kac Komatiitic Adcumulate
- Kmc Komatiitic Mesocumulate
- Koc Komatiitic Orthocumulate
- Krex Komatiitic Spinifex-Texture
- KPx Komatiitic Pyroxenite
- KGb Komatiitic Gabbro
- Id Intermediate Dike
- Md Mafic Dike
- Db Diabase
- Gb Gabbro

Scale	DATE	SHEET
1:1000	01/04/97	1 of 1
	REF No. 1	FILE BN17ASSES.PI

0 50m

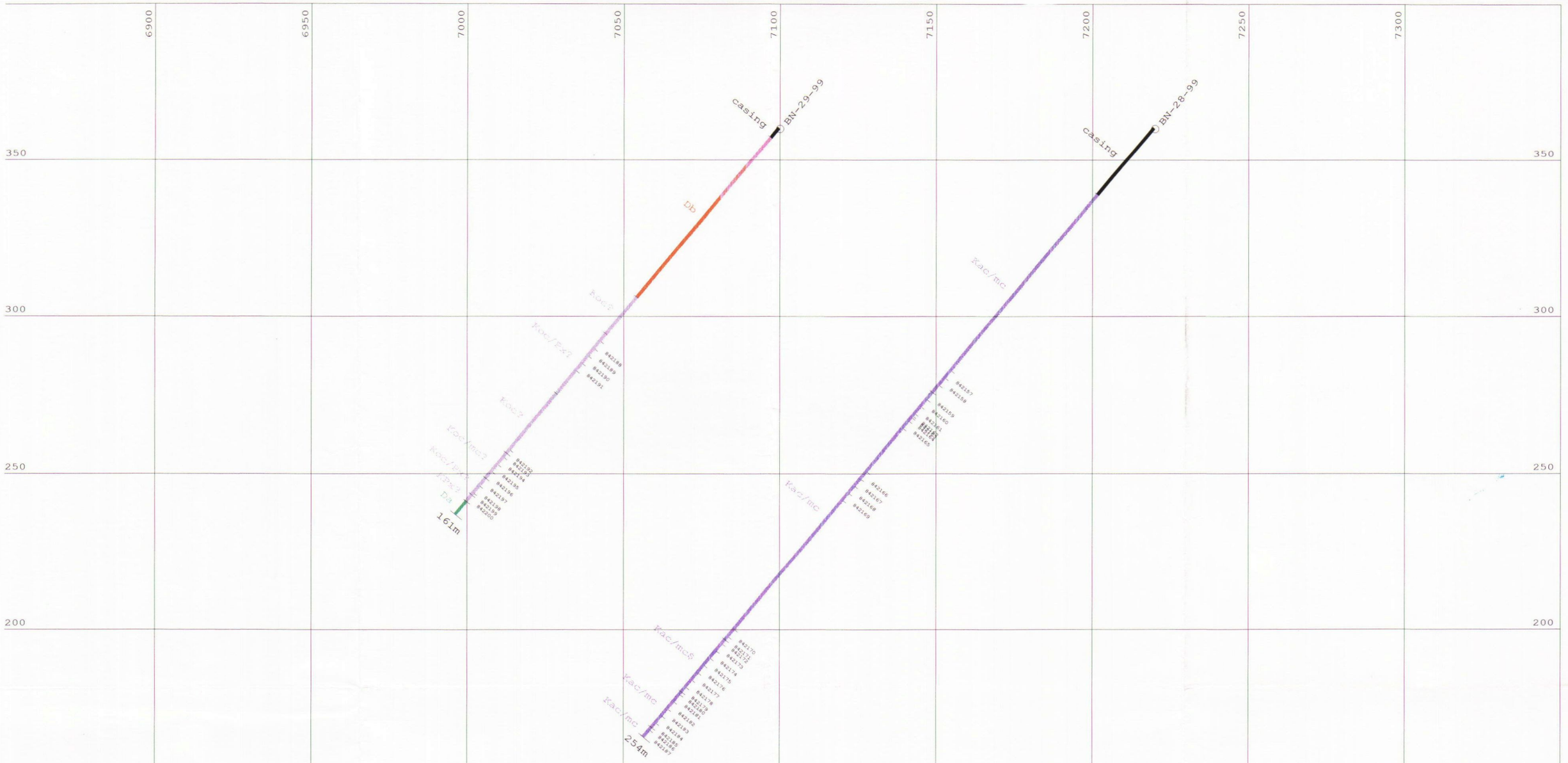
Diamond Drill Hole

Section 9950 N

2.19422

Outokumpu Mines Ltd

Bannockburn Property



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- Kmc Komatiitic Mesocumulate
- Koc Komatiitic Orthocumulate
- KTex Komatiitic Spinifix-Texture
- KPx Komatiitic Pyroxenite
- KGb Komatiitic Gabbro
- Id Intermediate Dike
- Md Mafic Dike
- Db Diabase
- Gb Gabbro

Scale	DATE	SHEET
1:1000	01/04/97	1 of 1
	REF No. 1	FILE 116ASSES.PI

0 50m

Diamond Drill Hole

Section 11600 N

Outokumpu Mines Ltd

Bannockburn Property