1999 DIAMOND DRILLING

THOMAS OGDEN GOLD ZONE
OGDEN TOWNSHIP PROJECT

ECHO BAY MINES LTD. / BERLAND RESOURCES
JOINT VENTURE

N.T.S. A/6

Paul Degagne
Project Geologist

September 30, 1999
Timmins, Ontario

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Section 89+35E	1: 1,000
Section 90+25+00E	1: 1,000
Section 91+00E	1: 1,000
Section 92+00E	1: 1,000

1.0 Summary

The Thomas Ogden Project is located in central Ogden Township, approximately 6 kilometers south of Timmins, Ontario. The main property block is comprised of 43 patented and unpatented mining claims including both the Thomas Ogden Gold Mines optioned claims and the Burt patents, which host the Thomas Ogden Gold Zone (TOGZ). The TOGZ underlies the Mountjoy River on claims P8384, ME47, PP21, and PP24. The zone was first drilled in 1939, where values of up to 5.66 gpt Au over 2.44 meters were intersected within a wide zone of lower grade gold mineralization (1.34 gpt Au over 31.1 meters). The gold mineralization is hosted within silicified, Temiskaming-type conglomerates and felsite that lie within a thick package of carbonatized, ultramafic and mafic flows of the Lower Tisdale Volcanic Group.

From May 29 to June 7, 1999, three holes totaling 815 meters were drilled on the TOGZ to test for gold mineralization in proximity to the original 1939 drilling. From July 26 to August 4, an additional two holes totaling 589 meters were drilled east of the initial three holes, to test the zone on the newly optioned Burt claims.

All five drill holes were successful in testing the zone. Holes OTP-5 and OTP-9 intersected up to 4.18 gpt Au / 1.2m within a wide zone of low grade gold mineralization (0.49 gpt Au / 28.2m and 0.43 gpt Au / 33.6m). Holes OTP-6, 7, and 8 intersected +1.0 gpt gold over widths of 4.8 to 7.4 meters, including individual samples of up to 9.59 gpt gold over 0.5 meters.

Drilling to date has outlined a wide zone of low grade (0.5 to 1.0 gpt) gold mineralization with a minimum strike length and dip extent of 300 meters. This zone occurs within the Lower Tisdale Volcanic Group and represents the western strike extension of the plus 15 million ounce Dome–Aunor gold trend. Additional drilling is required to test the zone for higher grade mineralized shoots within this lower grade gold system.

1.0 Introduction

The Ogden Township Project consists of 14 unpatented mining claims (23 units) and 34 patented claims located 6 kilometers south-southwest of the city of Timmins in Ogden and Deloro Townships. The claims straddle the Destor-Porcupine Fault Zone and are situated immediately south of the former Desantis mine and west of the Naybob mine. Together, these mines produced a total of 85,000 ounces of gold.

The project is a joint venture between Echo Bay Mines Ltd. and Berland Resources. Under the terms of the agreement, Berland can earn a 50% share of Echo Bay's interest in the property by making an initial $25,000 payment and funding exploration expenditures of $800,000 over three years.

This report describes the results of a diamond drill program completed in the summer of 1999. The purpose of the drilling was to test for economic gold mineraliztion on the Thomas Ogden Gold Zone, located on patented claims P8384, ME47, PP21, and PP24 of the Thomas Ogden Gold Mines and Burt options. The zone was first drilled in 1939 by Thomas Ogden Gold Mines Ltd. Six holes drilled on the zone intersected values of up to 5.66 gpt gold within a wide zone of lower grade gold mineralization (+1.0 gpt Au). The property remained dormant until 1981, when Kidd Creek Mines Ltd. drilled three holes on the west end of the zone. This drilling appears to have stopped short of the zone, testing the carbonatized ultramfic rocks to the south. The property again remained dormant until Echo Bay Mines Ltd. optioned the property in 1997.

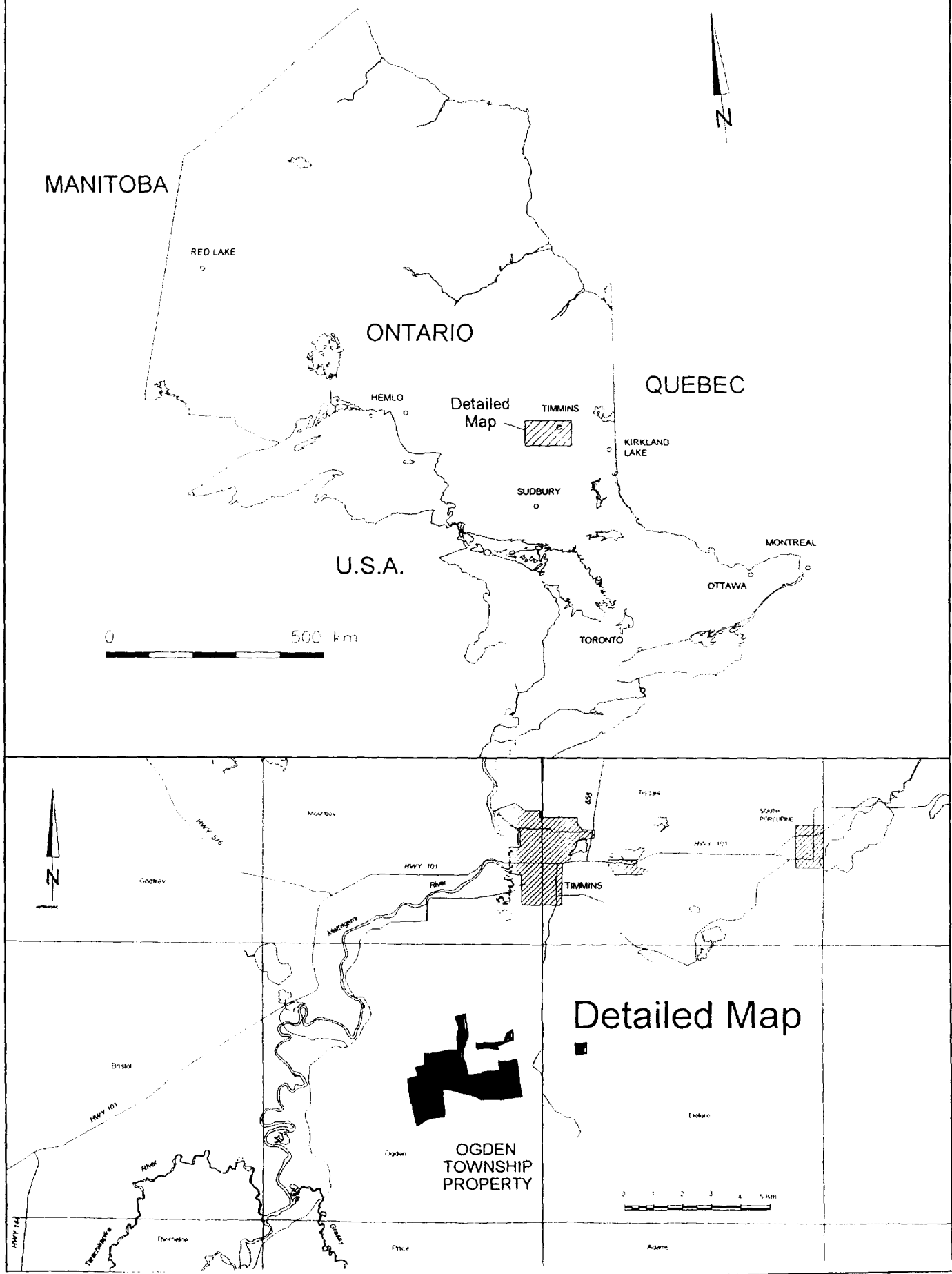
From May 29 to June 7, 1999, three holes totaling 815 meters were drilled on the Thomas Ogden Gold Mines patents in the immediate area of the 1939 drilling. Two additional holes totaling 589 meters were drilled during the period of July 26 to August 4 to test the zone east of the initial three hole program on the newly optioned Burt claims.

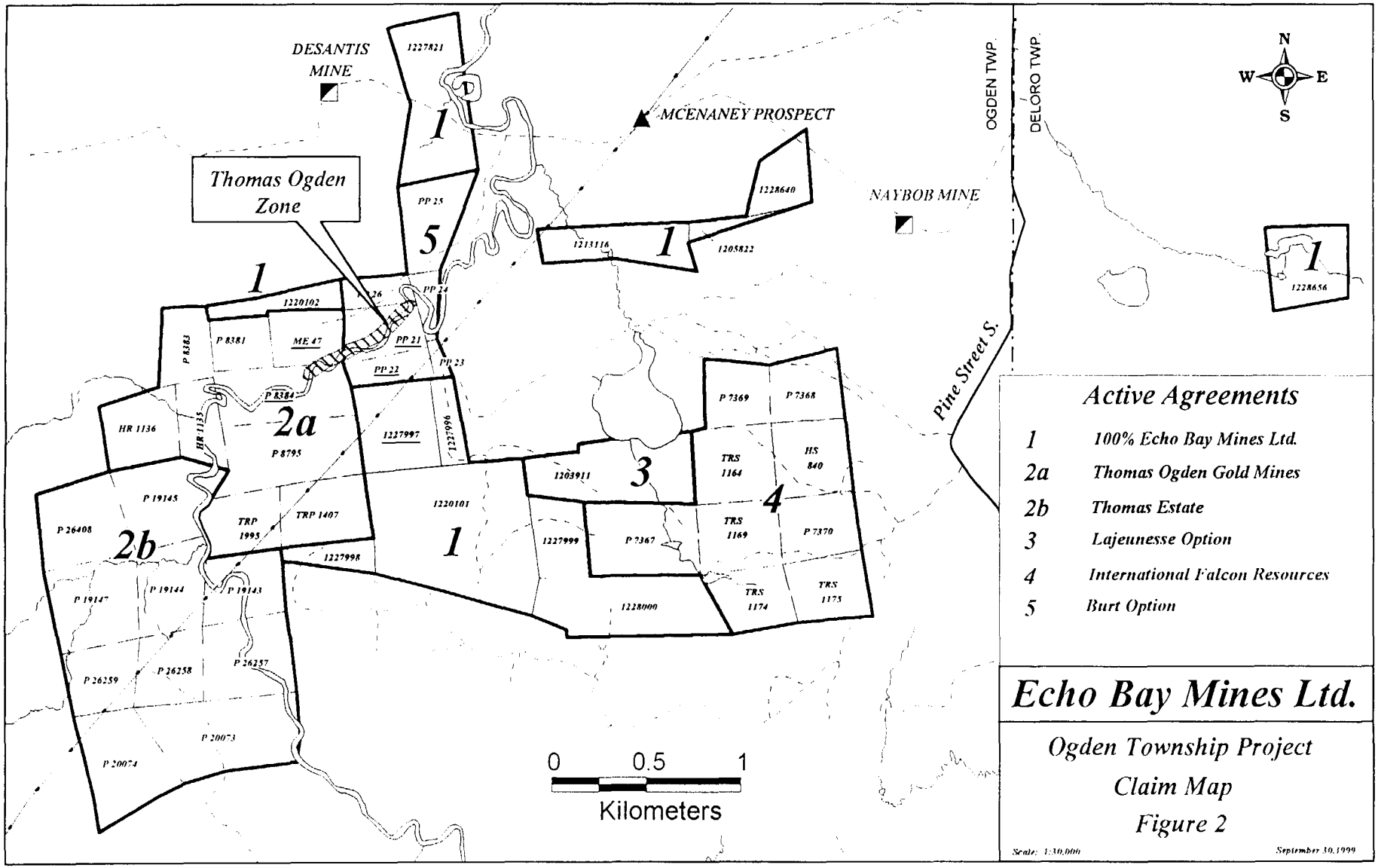
2.0 Location and Access (figures 1,2)

The Ogden Township Project is centered 6 km south-southwest of Timmins, Ontario in Ogden and Deloro Townships.

Access to the main portion of the property is via a bush road, which intersects Pine Street South approximately 6 km south of Timmins. The center of the property is located 5 km west along this road. An isolated claim located in Deloro Township can be accessed by a bush road that branches east off of Pine Street South, approximately 5 km south of Timmins. A small block of three claims located north of the main block can be accessed via the Kennilworth / Desantis access road.

Figure 1: Ogden Township Property Location Map





Active Agreements

1	100% Echo Bay Mines Ltd.
2a	Thomas Ogden Gold Mines
2b	Thomas Estate
3	Lajeunesse Option
4	International Falcon Resources
5	Burt Option

Echo Bay Mines Ltd.

Ogden Township Project

Claim Map

Figure 2

Scale: 1:30,000

September 30, 1999

3.0 Property Status

The project is comprised of 11 unpatented mining claims staked by Echo Bay Mines Ltd. between June 1997 and June 1998; 2 unpatented mining claims purchased from East-West Resources in September, 1998; a single unpatented mining claim (2 units) optioned from Mr. I. Lajeunesse of Timmins, Ontario; 9 patented claims optioned from International Falcon Resources Inc.; 19 patented claims under optioned from Thomas Ogden Gold Mines Ltd. and the Thomas Ogden Estate; and 6 patented claims optioned from Mr. David Burt.

Berland Resources Limited of Thunder Bay, Ontario optioned the property from Echo Bay Mines Ltd. on January 13, 1998. Under the option agreement, Berland Resources can earn a 50% working interest in the property by making a cash payment totaling $25,000 and incurring exploration costs totaling $800,000 over a three year period. Echo Bay Mines Ltd. remains operator.

All claims, which are listed below, are located in Ogden and Deloro Townships in the Porcupine Mining Division, District of Cochrane.

ECHO BAY MINES LTD.

Claim No.	Units	Township	Recording Date
1220101	4	Ogden	June 19, 1997
1220102	1	Ogden	June 26, 1997
1228656	1	Deloro	
1205822	1	Ogden	Sept. 16, 1996 (purchased from East-West Resources)
1213116	2	Ogden	Sept. 16, 1996 (purchased from East-West Resources)
1227821	2	Ogden	April 28, 1998
1228640	1	Ogden	March 5, 1998
1227996	1	Ogden	June 23, 1998
1227997	1	Ogden	June 23, 1998
1227998	1	Ogden	June 23, 1998
1227999	1	Ogden	June 23, 1998
1228000	3	Ogden	June 23, 1998

LAJEUNESSE OPTION (option date: Nov. 17, 1997)

Claim No.	Units	Township	Recording Date
1203911	2	Ogden	May 25, 1996

INTERNATIONAL FALCON OPTION (option date: Nov. 10, 1997)

Parcel No	Patent No.	Claim No.
2123 SEC	2344 Temiskaming	HS 840
1834 SND	760 Sudbury North Division	TRS 1164
1835 SND	761 Sudbury North Division	TRS 1169
1599 SEC	1512 Temiskaming	TRS 1174
1600 SEC	1514 Temiskaming	TRS 1175
2803 SEC	3798 Temiskaming	P 7367
259 SEC	6143 Temiskaming	P 7368
260 SEC	6144 Temiskaming	P 7369
261 SEC	6145 Temiskaming	P 7370

THOMAS OGDEN GOLD MINING PROPERTY OPTION (option date: Dec. 1, 1997)

Parcel No	Patent No.	Claim No.
5681 SEC	2289 Cochrane	HR 1135,36
4952 SEC	2012 Cochrane	P 8383
221 SEC	6059 Temiskaming	TRP 1995
4123 SEC	923 Cochrane	P 8795
222 SEC	6060 Temiskaming	TRP 1407
4953 SEC	2013 Cochrane	P 8384
6199 SEC	2011 Cochrane	P 8381
	2288 Cochrane	ME 47

THOMAS ESTATE (option date: Dec. 1, 1997)

Parcel No	Patent No.	Claim No.
9875 SEC	4742 Cochrane	P 26408
9878 SEC	4748 Cochrane	P 19145
9871 SEC	4738 Cochrane	P 19143
9872 SEC	4739 Cochrane	P 20073
9873 SEC	4740 Cochrane	P 26257
9874 SEC	4741 Cochrane	P 26258
9877 SEC	4747 Cochrane	P 19144
9879 SEC	4749 Cochrane	P 19147
9880 SEC	4750 Cochrane	P 20074
9881 SEC	4751 Cochrane	P 26259

BURT OPTION (option date: Feb.10, 1999)

Parcel No	Claim No.
5496	PP 21
5496	PP 22
5496	PP 23
5497	PP 24
5498	PP 25
5499	PP 26

4.0 PERSONNEL

The drilling contract was awarded to Norex Drilling of Timmins, Ontario. Paul Degagne of Echo Bay Mines Ltd. supervised the drilling program and logged all drill core. Wendy Reid of Timmins was contracted on a daily basis to cut core samples. All core samples were sent to Intertek Testing Services (Bondar Clegg) of Val d'Or, Quebec, and analyzed for gold.

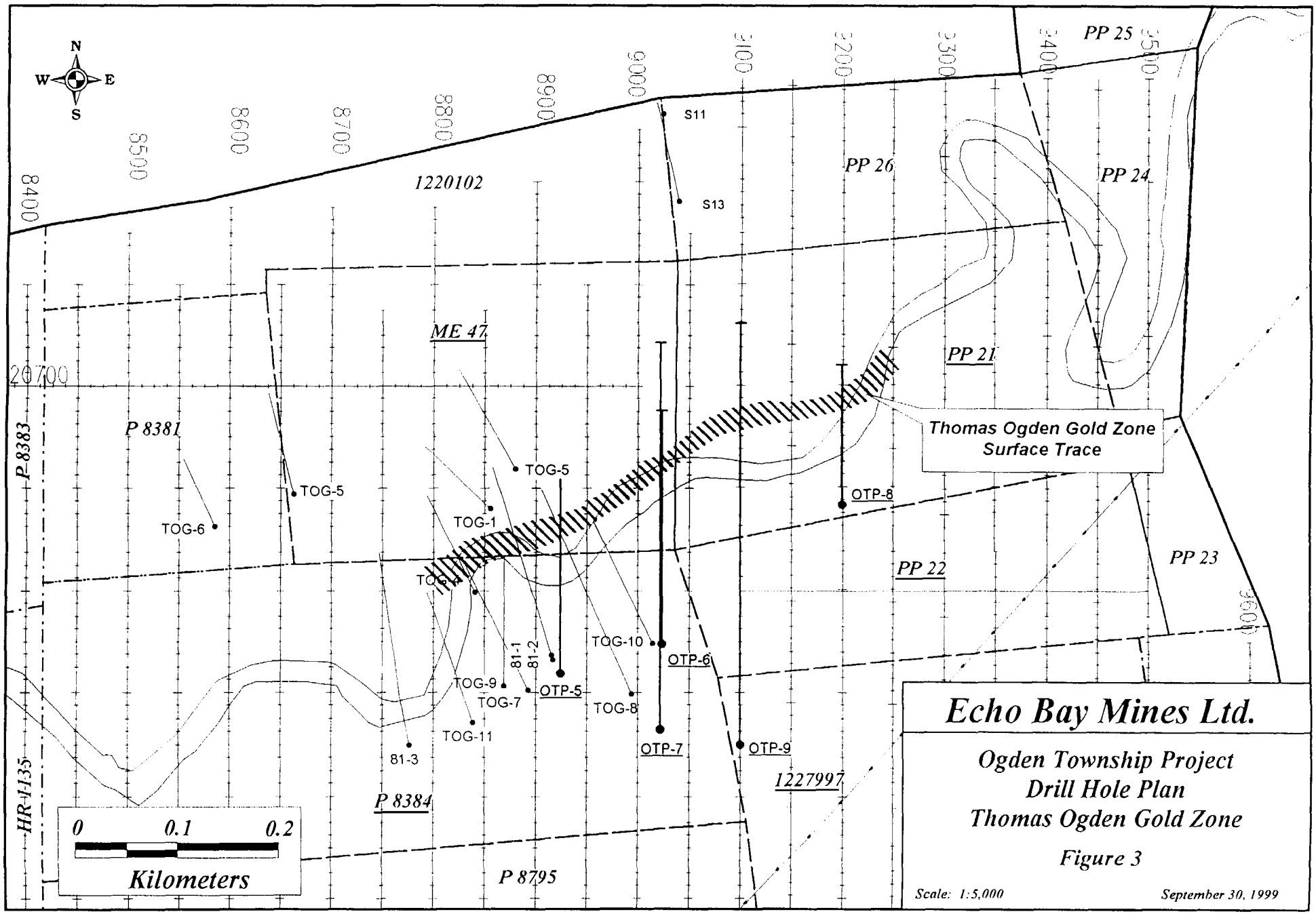
5.0 1999 DRILLING PROGRAM

Five holes totaling 1,404 meters were drilled in a period between May 29 to June 7, and July 26 to August 4, 1999. The initial three holes (OTP-5,6 and 7) were drilled on the Thomas Ogden Patents and tested the Thomas Ogden Gold Zone (TOGZ) in the proximity of 6 holes drilled by Thomas Ogden Gold Mines in 1939. Holes OTP-8 and OTP-9 were drilled on the newly acquired Burt claims and tested the eastern strike extension of the TOGZ.

Gold mineralization occurs within a thick package of silicified and sericitized "Timiskaming-style" conglomerates, siliceous argillite, and intruding sills of quartz porphyry and felsite. The conglomerates are composed primarily of rounded to partially flattened pebbles of quartz porphyry, with lesser amounts of quartz pebbles and flattened clasts mafic volcanic rocks. The conglomerate is matrix supported, the matrix primarily consisting of siliceous, quartz porphyritic material. Fine disseminated pyrite (3% to 5%) and fine arsenopyrite is generally associated with the gold mineralization. Visible gold was noted in three drill holes. Individual samples of core returned up to 9.59 gpt within a much wider zone of anomalous gold ranging from 0.5 to 1.0 gpt. The conglomerate/felsite package lies within a thick sequence of carbonatized komatiitic flows of the Lower Tisdale Group.

Figure 3 is a plan showing drill hole locations. Drill sections of individual drill holes and all assay certificates are appended.

All holes were drilled with NQ size core which is currently being stored at Echo Bay's Timmins exploration office.


N
W
E
S
8400
8500
8600
8700
8800
8900
9000
9100
9200
9300
9400
9500
PP 25
PP 26
PP 24
PP 21
PP 22
PP 23
1220102
1227997
ME 47
P 8381
P-8383
P 8384
P 8795
HR-1135
S11
S13
TOG-5
TOG-6
TOG-1
TOG-4
TOG-10
TOG-9
TOG-7
TOG-8
TOG-11
81-1
81-2
81-3
OTP-5
OTP-6
OTP-7
OTP-8
OTP-9
Thomas Ogden Gold Zone
Surface Trace
0
0.1
0.2
Kilometers
Echo Bay Mines Ltd.
Ogden Township Project
Drill Hole Plan
Thomas Ogden Gold Zone
Figure 3
Scale: 1:5,000
September 30, 1999

5.1 DRILL HOLE SUMMARY

DDH OTP-5

Grid East:	8935E	Azimuth:	360 degrees (grid north)
Grid North:	20420N	Dip:	-45 degrees
Claim:	P 8384	Length:	200.0 meters

Hole OTP-5 was drilled to test the Thomas Ogden Zone at a vertical depth of 100 meters, between the 1939 drill holes TOG-4 (3.86 gpt Au over 3.35 meters) and TOG-10 (1.01 gpt Au over 37.2 meters).

The hole collared in intermedite lapilli tuff of the Deloro Group at a depth of 27 meters and remained in the unit to a depth of 70.2 meters. Talc-chlorite altered ultramafic volcanics were intersected from 70.2 meters to 111.5 meters before intersecting a wide fault zone consisting of heavily oxidized volcanics and mud, to a depth of 130.8 meters.

The Thomas Ogden Gold Zone was intersected between 130.8 meters and 159.0 meters (28.2 meters). The zone consists of a mixed assemblage of silicified conglomerate and greywacke/argillite intruded by felsite and quartz porphyry. Fine disseminated pyrite (3%) and needles of arsenopyrite (1%) were noted throughout the intersection. Visible gold (2 spots) was noted at 143.5 meters. The entire 28.2 meter intersection returned 0.49 gpt gold, including a 3.5 meter intersection of 1.03 gpt, and a 1.2 meter section (single sample) returning an average grade of 4.18 gpt gold.

Footwall to the zone, unaltered, thinly bedded argillite was intersected from 159.0 meters to 171.0 meters. Talc-chlorite ultramafic volcanics were intersected from 171.0 meters to the end of the hole at a depth of 200.0 meters.

DDH OTP-6

Grid East:	9025E	Azimuth:	360 degrees (grid north)
Grid North:	20450N	Dip:	-45 degrees
Claim:	P 8384	Length:	235.0 meters

Hole OTP-6 tested the Thomas Ogden Zone at a vertical depth of 125 meters, along the east boundary of the Thomas Ogden claim block. The hole was collared 50 meters east of the 1939 drill hole, TOG-10.

The hole intersected the altered conglomerate/felsite package from 136.5 meters to 185.7 meters, after coring through similar hangingwall stratigraphy as in hole OTP-5. From 136.5 to 155.0, the zone was disrupted by several sections of fault gauge. Sporadic anomalous gold values of up to 809 ppb occur throughout the zone with the best mineralized intersection occurring between 165.65 meters to 170.45 meters. Original assays of this 4.8 meter interval returned 0.57 gpt Au. A re-assay of the rejects increased grade to 1.10 gpt. A single speck of visible gold was noted at 186.67 meters within the matrix of the conglomerate but returned only 621 ppb gold.

Footwall to the zone, the hole intersected tuffaceous sediment grading to unaltered thinly bedded argillite. The final depth of the hole was 235.0 meters.

DDH OTP-7

Grid East:	9025E	Azimuth:	360 degrees (grid north)
Grid North:	20365N	Dip:	-45 degrees
Claim:	P 8384, ME 47	Length:	380.0 meters

Hole OTP-7 was drilled approximately 80 meters below hole OTP-6 on the same section and was designed to test for the east plunge of the 1939 drill holes TOG-4, 9, and 10.

The hole collared into bedrock at a depth of 36.0 meters and intersected similar footwall stratigraphy as in holes OTP-5 and OTP-6. The mineralized zone, consisting of silicified quartz porphyry and conglomerate was intersected between 296.5 meters and 338.5 meters. A single speck of visible gold was identified at 311.6 meters in a thin quartz stringer. Gold mineralization was confined to the hangingwall portion of the altered conglomerate and porphyry, from 295.3 meters to 312.0 meters and returned 0.6 gpt gold (including 1.4 gpt gold over 4.65 meters from 306.45 meters to 312.1 meters).

Footwall to the zone, moderately altered argillite with up to 10% pyrite was intersected, returning amonalous gold values including 1.75 gpt gold over 0.7 meters. A gold-anomalous felsite sill (up to 209 ppb Au) was intersected from 346.2 meters to 348.3 meters. Talc-chlorite ultramafic volcanics were intersected from 348.3 meters to 380.0 meters, the final depth of the hole.

DDH OTP-8

Grid East:	9200E	Azimuth:	360 degrees
Grid North:	20590N	Dip:	-45 degrees
Claim:	PP 21	Length:	140.0 meters

Hole OTP-8 was targeted to test an I.P. anomaly on srtike and to the east of hole OTP-6.

The hole collared in talc-chlorite ultramafic volcanics at a depth of 15.0 meters. A thick package of mixed, variably altered sediments including pebble conglomerate, sericitized siltstone, arkose/greywacke and pyritic siltstone/iron formation was intersected from 38.0 meters to the end of the hole at 140.0 meters. Gold mineralization was confined to an interval of silicified conglomerate with up to 10% pyrite between 64.6 meters and 73.75 meters. The entire 9.15 meter interval returned 0.88 gpt Au, including 3.89 gpt Au over 1.4 meters from 64.6 meters to 66.0 meters, and 1.12 gpt Au over 2.0 meters from 68.5 meters to 70.5 meters. The highest individual sample within the zone returned 9.59 gpt Au over 0.5 meters.

DDH OTP-9

Grid East:	9100E	Azimuth:	360 degrees
Grid North:	20350N	Dip:	-51 degrees
Claim:	PP 21	Length:	449.0 meters

Hole OTP-9 tested the east plunge of the Thomas Ogden Zone at a vertical depth of 300 meters, 75 meters east of holes OTP-6 and OTP-7.

The hole collared in bedrock at a depth of 9.0 meters and remained in hangingwall stratigraphy (intermediate tuff, talc-chlorite ultramafic volcanics) to a depth of 399.5 meters. The Thomas Ogden Zone was intersected from 399.5 meters to 433.1 meters, returning an average grade of 0.43 gpt gold. Significant 0.5 meter samples within this interval include 4.07 gpt Au (sample 34376), 3.06 gpt Au (sample 34389) and 5.42 gpt Au (sample 34404).

The zone is composed of a thick sequence of silicified and pyritic (1% to 3%) conglomerates (399.5m to 416.6m grading 0.44 gpt gold) grading to fuchsite-altered arkose (416.6m to 419.8m grading 20 ppb Au) and pyritc argillite (419.8 to 425.0 grading 0.27 gpt gold). Albitized and pyritic variolitic mafic volcanics form the footwall portion of the zone (425.0m to 433.1m grading 0.65 gpt gold). This is the first occurrence variolitic mafic flows in the drilling and indicates a change in stratigraphy at depth and to the east.

Footwall to the zone, the hole intersected and remained in talc-chlorite to a final depth of 449 meters.

6.0 CONCLUSIONS AND RECOMMENDATIONS

During the 1999 drill program, five holes totaling 1,404 meters were completed and tested the Thomas Ogden Gold Zone (TOGZ) situated on the Thomas Ogden and Burt patents in Ogden Township. The TOGZ was first drilled in 1939 by Thomas Ogden Gold Mines Ltd. This drilling outlined a large zone of low grade gold mineralization, with drill intersections of up to 1.34 gpt Au over 31.1 meters including higher grade intersections of 5.66 gpt Au over 2.44 meters and 3.86 gpt Au over 3.35 meters. The zone is hosted by altered Temiskaming-type sediments (primarily pebble conglomerates) and felsic intrusive rocks (quartz porphyry, felsite) that occur within a thick package of carbonatized komatiitic flows of the Lower Tisdae Group. The komatiitic flows and gold-bearing conglomerates are situated on strike and within 10 kilometers of several plus-million ounce gold deposits situated along the Dome-Aunor gold trend.

The first phase of the 1999 program (holes OTP-5,6 and 7) was drilled in proximity to the original 1939 drilling and was designed to confirm the presence of, and get a better understanding of, the gold mineralization associated with the TOGZ. The second phase drill program tested the TOGZ on the newly acquired Burt patentsto the east.

All holes successfully intersected gold mineralization associated with the TOGZ. Thick, low grade intersections include 0.49 gpt gold over 28.2 meters (OTP-5) and 0.43 gpt gold over 33.6 meters (OTP-9). Intersections of greater than 1.0 gpt gold include1.01 gpt gold over 4.8 meters

(OTP-6), 1.53 gpt gold over 5.65 meters (OTP-7) and 1.09 gpt gold over 7.4 meters (OTP-8), with individual samples returning up to 9.54 gpt gold.

Drilling to date has defined a wide zone of low grade gold mineralization, with a minimum strike length and dip extent of three hundred meters. This zone remains open both along strike and at depth, and additional drilling will be required to identify shoots of higher grade gold mineralization. A minimum nine hole, 3,000 meter drill program is recommended. Six holes should be drilled east of the current drilling to test the near surface and deep potential of the zone to the east boundary of the Burt patents. In addition, approximately one kilometer of untested strike length lies west of hole TOG-4 to the west boundary of the Thomas Ogden patents. Three shallow holes should be drilled to test this stratigraphy.

Respectfully submitted,

Paul Degagne
Project Geologist – Echo Bay Mines Ltd.

Timmins, Ontario
September 30,1999

APPENDIX I

DIAMOND DRILL LOGS

ECHO BAY MINES LTD. - DIAMOND DRILL LOG

Drill Hole Number: OTP-05

							Tests	
Project Name:	Ogden Township Project	Grid Northing:	20420N	Measure:	Meters	Depth	Azi.	Dip
Project Number:	737	Grid Easting:	8935E	Drilled By:	Norex Drilling	62.0		-45
Claim Number:	P 8384 / ME 47	Elevation:	0	Start:	5/29/99	200.0		-45
Location:	Ogden Twp.	Azimuth:	360	Completed:	5/31/99			
		Dip:	-45	Core Size:	NQ			
		Length:	200m	Date(s) Logged:	May 30-June 2/99			
				Logged By:	Paul Degagne			

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check 1 (gpt)	Au check 2 (gpt)
0.00	27.00	Overburden							
			679857	54.50	55.95	1.45	10		
27.00	52.85	Intermediate to Mafic Lapilli Tuff	679858	55.95	57.00	1.05	<5		
		- well laminated (55 deg. T.C.A.), grey-green in colour, fine grained with lapilli clasts up to 6cm in	679859	57.00	58.00	1.00	<5		
		diameter. Clasts are yellowish-grey in colour (sericitized felsic-int volcanic)	679860	58.00	59.00	1.00	<5		
		- nil to trace pyrite	679861	59.00	60.00	1.00	<5		
			679862	60.00	61.00	1.00	6		
52.85	55.95	Arkose / Mafic Tuff?	679863	61.00	62.00	1.00	<5		
		- green to grey-green in colour, well laminated, mottled texture	679864	62.00	63.00	1.00	<5		
		- locally up to 5% fine disseminated pyrite in bands	679865	63.00	64.00	1.00	<5		
		- 5% quartz-carbonate stringers with variable core angles (from 0 deg. To 70 deg. T.C.A.)	679866	64.00	65.00	1.00	<5		
			679867	65.00	66.00	1.00	<5		
55.95	69.90	Chloritic Mafic Volcanic	679868	66.00	67.00	1.00	8		
		- well foliated, pale green fine grained to aphanitic with 15% quartz-carbonate stringers	679869	67.00	68.00	1.00	<5		
		- local hematized sections	679870	68.00	69.00	1.00	5		
		- up to 3% fine disseminated pyrite, primarily in quartz-carbonate stringers	679871	69.00	69.90	0.90	7		
			679872	69.90	70.20	0.30	32		
69.90	70.20	Felsite (felsic tuff?)	679873	70.20	71.20	1.00	<5		
		- grey, siliceous, aphanitic, with chloritic and sericitic bands and quartz-carbonate stringers	679874	71.20	72.20	1.00	<5		
		- 2% fine disseminated pyrite throughout	679875	72.20	73.20	1.00	<5		
		- upper contact sharp at 40 deg. T.C.A.	679876	73.20	73.90	0.70	24		
			679877	73.90	74.50	0.60	<5		
70.20	79.70	Talc-Chlorite Ultramafic Volcanic	679878	74.50	75.20	0.70	30		
		- typical dk black aphanitic to fine grained, massive to foliated sections with 30% quartz-carb	679879	75.20	75.80	0.60	<5		
		veinlets throughout	679880	75.80	76.00	0.20	<5		
		- foliation at 35 deg. T.C.A.	679881	76.00	77.00	1.00	<5		
		- felsite dykes (grey to salmon coloured, siliceous with 3% py) from:	679882	77.00	78.00	1.00	<5		
		73.2 - 73.9; 74.5 - 75.2; 75.8 - 76.0	679883	78.00	79.00	1.00	<5		
			679884	79.00	79.70	0.70	<5		
79.70	80.60	Brown Carb Altered Ultramafic Volcanic	679885	79.70	80.60	0.90	<5		
		- talc-chlorite zone as above but with pervasive brown to salmon coloured carb. Alteration	679886	80.60	82.00	1.40	10		
			679887	82.00	82.85	0.85	<5		
80.60	82.00	Chloritic Mafic Volcanic (tuff?)	679888	82.85	83.00	0.15	28		
		- well laminated, light green with 5% quartz-carbonate bands at 85 deg. T.C.A.							
		- 5% fine disseminated pyrite							

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check 1 (gpt)	Au check 2 (gpt)
82.00	111.50	**Talc-Chlorite Ultramafic Volcanic**							
		- typical with 15% quartz-carbonate stringers/veinlets	679889	116.00	119.00	3.00	8		
		- locally biotite altered, locally fragmental with 10% lapilli sized talc-chlorite clasts	679890	119.00	122.00	3.00	<5		
			679891	122.00	125.00	3.00	14		
111.50	130.00	**Fault Zone**	679892	125.00	128.00	3.00	<5		
		- brown mud and heavily weathered talc-chlorite	679893	128.00	130.00	2.00	17		
			679894	130.00	130.80	0.80	106		
130.00	130.80	**Green Carbonate Zone**	679895	130.80	131.80	1.00	262		
		- lime green, fuchsite-carbonate altered ultramafic volcanic, 5% grey quartz stringers and	679896	131.80	132.80	1.00	154		
		5% late quartz-carbonate stringers	679897	132.80	133.80	1.00	632		
		- trace to 1% fne disseminated pyrite	679898	133.80	134.80	1.00	442		
		- foliation @ 80 deg. T.C.A.	679899	134.80	135.80	1.00	174		
			679900	135.80	136.80	1.00	259		
		Mineralized Zone	801801	136.80	137.80	1.00	700		
			801802	137.80	138.80	1.00	303		
130.80	144.30	**Felsite / Quartz Porphyry**	801803	138.80	139.80	1.00	359		
		- very siliceous (silicified), aphanitic to quartz-porphyritc felsic intrusive?	801804	139.80	140.80	1.00	167		
		- 3% fine disseminated pyrite throughout, weak sericite/albite/chlorite alteration	801805	140.80	141.80	1.00	82		
		- 5% quartz-carbonate stringers at various core angles, V.G (2 spots) @ 143.6	801806	141.80	142.80	1.00	193		
			801807	142.80	143.80	1.00	1525	2.24	1.55
144.30	155.10	**Greywacke/Conglomerate (altered)**	801808	143.80	144.30	0.50	1181	0.97	0.99
		- well laminated, chlorite-sericite-fuchsite altered sediment with 5% rounded quartz porphyry	801809	144.30	145.30	1.00	116		
		and cherty pebbles	801810	145.30	146.30	1.00	1053	1.53	1.02
		- 5% disseminated pyrite throughout	801811	146.30	147.30	1.00	<5		
		- foliation @ 55 deg. T.C.A.	801812	147.30	148.30	1.00	54		
			801813	148.30	149.30	1.00	<5		
155.10	157.80	**Felsite**	801814	149.30	150.30	1.00	8		
		- massive, pervasive weak sericite (greyish-yellow in colour)	801815	150.30	151.30	1.00	<5		
		- 3% fine pyrite	801816	151.30	152.30	1.00	<5		
		- quartz vein from 155.55 to 155.8	801817	152.30	153.30	1.00	80		
			801818	153.30	154.30	1.00	364		
157.80	159.00	**Greywacke/Argillite (altered)**	801819	154.30	155.10	0.80	374		
		- well laminated with alternating grey and yellow(sericitic) bands at variable core angles	801820	155.10	156.10	1.00	452		
		- 3% fine pyrite throughout	801821	156.10	157.10	1.00	144		
		- possible altered felsite	801822	157.10	157.80	0.70	15		
			801823	157.80	159.00	1.20	2987	5.63	3.91
159.00	171.00	**Argillite**	801824	159.00	160.00	1.00	144		
		- thinly bedded, grey to black, fine grained with narrow coarser grained greywacke beds	801825	160.00	161.00	1.00	39		
		- core angles of bedding from 30 deg. To 90 deg. T.C.A.							
			801826	168.00	169.10	1.10	8		
171.00	200.00	**Talc-Chlorite Ultamafic Volcanic**	801827	169.10	170.15	1.05	149		
		- as above with "fragments" from 174.5 to 175.8	801828	170.15	171.00	0.85	35		
		- felsite dykes (3% pyrite) from 171.0 to 174.25 and from 175.8 to 180.35	801829	171.00	172.00	1.00	16		
			801830	172.00	173.00	1.00	7		
	200.00	**E.O.H.**	801831	173.00	174.25	1.25	37		
			801832	174.25	175.25	1.00	<5		
			801833	175.25	175.80	0.55	<5		
			801834	175.80	176.80	1.00	25		

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check 1 (gpt)	Au check 2 (gpt)
			801835	176.80	177.80	1.00	143		
			801836	177.80	178.80	1.00	338		
			801837	178.80	179.80	1.00	576		
			801838	179.80	180.35	0.55	615		
			801839	180.35	181.35	1.00	9		

ECHO BAY MINES LTD. - DIAMOND DRILL LOG

Drill Hole Number: OTP-06

							Tests	
Project Name:	Ogden Township Project	Grid Northing:	20450N	Measure:	Meters	Depth	Azi.	Dip
Project Number:	737	Grid Easting:	9025E	Drilled By:	Norex Drilling	62.0		-41
Claim Number:	P 8384 / ME 47	Elevation:	0	Start:	6/1/99	235.0		-44
Location:	Ogden Twp.	Azimuth:	360	Completed:	6/3/99			
		Dip:	-45	Core Size:	NQ			
		Length:	235m	Date(s) Logged:	June 2-June 4/99			
				Logged By:	Paul Degagne			

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check (ppb)
0.00	35.00	**Overburden**	801840	65.3	65.8	0.5	15	
			801841	65.80	66.8	1.0	9	
35.00	65.80	**Intermediate to Mafic Tuff**	801842	66.80	67.80	1.0	<5	
		- fine grained, green to grey-green unit with chloritic and sericitic bands at 60 deg. T.C.A.	801843	67.80	68.80	1.0	<5	
		- oxidized and K-altered lapilli clasts and bands from 51.4 to 52.4 and from 56.0 to 60.0	801844	68.80	69.80	1.0	11	
			801845	69.80	70.80	1.0	<5	
65.80	71.80	**Mafic Chloritic Tuff / Iron Formation**	801846	70.80	71.80	1.0	27	
		- well laminated, dark green unit with bands of quartz-carbonate and locally talc-chlorite	801847	71.80	72.40	0.6	9	
		- 5% disseminated Py throughout, strongly magnetic from 70.9 to 71.8	801848	72.40	73.40	1.0	9	
71.80	72.40	**Talc Schist**	801849	81.00	82.00	1.0	<5	
		- ligth grey-green talcose unit with 40% quartz-carbonate stringers	801851	82.00	83.00	1.0	<5	
		- nil visible sulphides	801852	83.00	84.00	1.0	10	
			801853	84.00	85.00	1.0	30	
72.40	85.00	**Chloritic Mafic Volcanic**						
		- lime green, fine grained, well developed foliation at 65 deg. To 85 deg. T.C.A.	801854	136.50	137.50	1.0	6	
		- 25% quartz-carbonate bands	801855	137.50	138.50	1.0	<5	
		- locally fine disseminated pyrite	801856	138.50	140.00	1.5	<5	
			801857	140.00	143.10	3.1	34	
85.00	123.50	**Talc-Chlorite to Chloritic Ultramafic Volcanic**	801858	143.10	144.00	0.9	125	
		- typical black fine grained, massive to foliated talc-chlorite with 25% quartz-carbonate stringers	801859	144.00	144.70	0.7	105	
		- several 1 to 2 meter thich interbeds of chloritic volcanics (mafic?)	801860	144.70	145.70	1.0	144	
		- oxidized, hematitic from 116.0 to 123.5	801861	145.70	146.70	1.0	<5	
			801862	146.70	147.70	1.0	633	
123.50	136.50	**Fault Zone (lost Core)**	801863	147.70	148.70	1.0	151	
		- gouge and blocky talcchlorite to quartz porphyry	801864	148.70	149.70	1.0	<5	
			801865	149.70	150.50	0.8	<5	
136.50	140.00	**Quartz Porphyritic Conglomerate**	801866	150.50	151.20	0.7	12	
		- grey to light grey, massive to weakly foliated, quartz porphyritic matrix hosting 5% felsic	801867	151.20	152.00	0.8	7	
		and quartz clasts up to 3cm long with lesser chloritic (mafic) clasts	801868	152.00	152.85	0.8	592	*403
		- nil to trace pyrite	801869	152.85	154.00	1.2	34	*51
		- foliation @ 75 deg. T.C.A.	801870	154.00	155.00	1.0	256	*230
		- numerous late quartz stringers	801871	155.00	156.00	1.0	16	*28
			801872	156.00	157.00	1.0	20	*19
			801873	157.00	158.00	1.0	600	*540

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check (ppb)
140.00	143.10	**Fault Zone**						
		- weathered and vuggy felsic unit, blocky, lost core	801874	158.00	159.00	1.0	15	
			801876	159.00	160.00	1.0	18	
143.10	144.00	**Quartz Porphyritic Conglomerate (Silicified)**	801877	160.00	161.00	1.0	11	
		- as above but "glassy" looking siliceous , buff to yellow coloured with 15% late quartz as stringers	801878	161.00	162.00	1.0	8	
		- 5% finre pyrite +/- arsenopyrite	801879	162.00	163.00	1.0	8	
			801880	163.00	164.10	1.1	10	
144.00	144.70	**Fault Zone**	801881	164.10	165.00	0.9	5	
		- blocky silicified quartz porphyritic conglomerate, lost core in section	801882	165.00	165.65	0.7	<5	
			801883	165.65	166.60	0.9	358	*525
144.70	151.00	**Quartz Porphyritic Conglomerate**	801884	166.60	167.60	1.0	697	*588
		- as above with 15% cobble and pebbles of rounded to sub-rounded quartz porphyritic clasts	801885	167.60	168.60	1.0	669	*2850
		and "whisps" of green mica	801886	168.60	169.60	1.0	339	*333
		- matrix is moderately sericitized with 3% fine pyrite and arsenopyrite	801887	169.60	170.45	0.8	809	*1130
		- minor quartz stringers from 0 deg. to 65 deg. T.C.A.	801888	170.45	171.50	1.1	61	
			801889	171.50	172.50	1.0	11	
151.00	152.85	**Intermediate Tuff**	801890	172.50	173.50	1.0	34	
		- grey to grey-green, fine grained, foliated @ 75 deg. T.C.A.	801891	173.50	174.50	1.0	<5	
		- relatively unaltered	801892	174.50	175.80	1.3	14	
			801893	175.80	176.80	1.0	124	
152.85	155.00	**Fault Zone**	801894	176.80	177.80	1.0	<5	
		- buff coloured quartz porphyritic conglomerate with 40% quartz vein	801895	177.80	178.55	0.8	76	
		- well weathered, blocky, trace pyrite	801896	178.55	179.50	0.9	63	
			801897	179.50	180.50	1.0	126	
155.00	164.10	**Quartz Porphyritic Conglomerate (weak to moderately altered)**	801898	180.50	181.50	1.0	14	
		- same as above with weak to moderate sericite - fuchsite alteration, weak silicification	801899	181.50	182.50	1.0	102	
		- 5% cobbles and pebbles of sub-rounded qp and quartz	679902	182.50	183.50	1.0	83	
		- foliation @ 70 deg. T.C.A.	679903	183.50	184.50	1.0	621	459
		- very fine disseminated pyrite and arsenopyrite throughout	679904	184.50	185.70	1.2	<5	
			679905	185.70	186.70	1.0	<5	
164.10	165.65	**Arkose**	679906	186.70	187.70	1.0	<5	
		- fine to medium grained feldspathic with pervasive fuchsite alteration						
		- no visible sulphides						
165.65	170.45	**Silicified Quartz Porphyry**		* - re-assay of rejects at XRAL Labs				
		- very siliceous, weak to moderately sericitic, massive quartz porphyritic unit (intrusive?)						
		- fine disseminated pyrite and arsenopyrite throughout with up to 10% pyrite						
		locally						
170.45	178.50	**Quartz Porphyry (moderate silicification)**						
		- massive quartz porphyritic unit (tuff? Or intrusive?), moderte silicification						
		and fuchsite whisps						
		- quartz stringers throughout						
		- fine disseminated pyrite and arsenopyrite throughout						
178.50	185.70	**Quartz Porphyritic Conglomerate**						
		- 40% elongated to sub-rounded pebbles of quartz, buff-coloured felsite, quartz porphyry						
		and chloritic mafic volcanics in weak to moderately sericitized quartz porphyritic matrix						

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check (ppb)
		- 10% fine pyrite +/- arsenopyrite - **V.G. @ 183.6**						
185.70	190.30	**Intermediate Tuff** - weakly foliated, fine to medium grained (fining downhole) with tr to 2% pyrite - numerous quartz-carbonate stringers						
190.30	235.00	**Argillite** - grey to black fine grained thinly bedded at 45 deg. T.C.A. - unaltered						
	235.00	E.O.H.						

ECHO BAY MINES LTD. - DIAMOND DRILL LOG

Drill Hole Number: OTP-07

							Tests	
Project Name:	Ogden Township Project	Grid Northing:	20365N	Measure:	Meters	Depth	Azi.	Dip
Project Number:	737	Grid Easting:	9025E	Drilled By:	Norex Drilling	48.0		-44
Claim Number:	P 8384 / ME 47	Elevation:	0	Start:	6/4/99	337.0		-37
Location:	Ogden Twp.	Azimuth:	360	Completed:	6/7/99			
		Dip:	-45	Core Size:	NQ			
		Length:	380m	Date(s) Logged:	June 5-June 9/99			
				Logged By:	Paul Degagne			

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check 1 (gpt)	Au check 2 (ppb)
0.00	36.00	**Overburden**							
			679907	138.60	139.4	0.80	<5		
36.00	136.70	**Intermediate Tuff / Tuffaceous Argillite**	679908	139.40	140.10	0.70	<5		
		- fine grained, grey-green, weakly foliated @ 55 deg. To 60 deg. T.C.A.	679909	140.10	141.10	1.00	20		
		- local conglomerate/lapiili sections	679910	141.10	142.10	1.00	11		
		- very blocky from 0.0 to 83.0 meters and from 86.0 to 96 meters	679911	142.10	142.85	0.75	14		
			679912	142.85	143.70	0.85	<5		
136.70	140.10	**Mafic Tuff**	679913	143.70	144.30	0.60	<5		
		- green, fine grained, well laminated with pinkish ("granitized") bands	679914	144.30	145.30	1.00	7		
		- transitional with lower unit	679915	145.30	146.20	0.90	<5		
			679916	146.20	146.40	0.20	<5		
140.10	142.85	**Mafic Tuff / Iron Formation**	679917	146.40	147.40	1.00	<5		
		- strongly magnetic, dark green to black, well laminated tuffaceous looking unit	679918	147.40	148.40	1.00	10		
		- foliation / laminations @ 55 deg. T.C.A.	679919	148.40	149.40	1.00	36		
		- 10% disseminated to banded pyrite and pyrrhotite	679920	149.40	150.40	1.00	7		
		- quartz-carbonate stringers throughout	679921	150.40	151.40	1.00	24		
			679922	151.40	152.40	1.00	<5		
142.85	144.30	**Mafic Tuff**	679923	152.40	153.40	1.00	<5		
		- green to dark green, fine grained, foliated, non-magnetic	679924	153.40	154.40	1.00	5		
		- no visible sulphides	679926	154.40	155.40	1.00	<5		
			679927	155.40	156.40	1.00	70		
144.30	145.30	**Mafic Tuff / Iron Formation**	679928	156.40	157.40	1.00	<5		
		- as above	679929	157.40	158.40	1.00	<5		
			679930	158.40	159.40	1.00	22		
145.30	146.20	**Altered Ultramafic Volcanic?**	679931	159.40	160.40	1.00	<5		
		- 70% quartz-carbonate stringers/vein with remnant talc-chlorite in matrix	679932	160.40	161.40	1.00	<5		
		- no visible sulphides	679933	161.40	162.40	1.00	<5		
			679934	162.40	163.40	1.00	<5		
146.20	166.30	**Green Carbonate - Fuchsite Altered Ultramafic Volcanic**	679935	163.40	164.40	1.00	6		
		- lime green aphanitic to fine grained volcanic with 30% quartz-carbonate stringers	679936	164.40	165.40	1.00	13		
		- alteration intensity variable throughout section from green carb + fuchsite to chlorite +/- fuchsite	679937	165.40	166.30	0.90	<5		
		- 2% fine disseminated pyrite throughout							
			679938	178.10	179.00	0.90	8		
166.30	178.10	**Talc-Chlorite Ultramafic Volcanic**	679939	179.00	180.00	1.00	<5		
		- aphanitic black, talc-rich rock with 50% quartz-carbonate stringers	679940	180.00	180.40	0.40	<5		

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check 1 (gpt)	Au check 2 (ppb)
		- buff-coloured felsite dykes from 176.6 to 176.8 and 177.65 to 177.9							
			679941	180.40	181.40	1.00	<5		
178.10	180.10	**Chloritic Mafic Volcanic**	679942	181.40	182.00	0.60	<5		
		- pale green, aphanitic well foliated/laminated @ 35 deg. T.C.A.	679943	182.00	183.00	1.00	10		
		- 40% quartz-carbonate veins	679944	183.00	184.00	1.00	<5		
		- 5% pyrite as disseminations and thin bands	679945	184.00	185.00	1.00	<5		
			679946	185.00	185.80	0.80	<5		
180.10	182.00	**Talc-Chlorite Ultramafic Volcanic**							
		- typical aphanitic black, talc-rich rock with 50% quartz-carbonate stringers	679947	221.00	222.00	1.00	<5		
			679948	222.00	223.00	1.00	11		
182.00	185.80	**Green Carbonate - Fuchsite Altered Ultramafic Volcanic**	679949	223.00	224.00	1.00	6		
		- 30% quartz-carbonate stringers	34155	224.00	225.00	1.00	<5		
		- 5% fine pyrite throughout	34156	225.00	226.00	1.00	<5		
			34157	226.00	227.00	1.00	7		
185.80	207.10	**Talc-Chlorite Ultramafic Volcanic**	34158	227.00	228.00	1.00	19		
		- typical aphanitic black, talc-rich rock with 50% quartz-carbonate stringers							
			34159	295.30	296.50	1.20	374		*386
207.10	228.00	**Green Carbonate - Fuchsite Altered Ultramafic Volcanic**	34160	296.50	297.50	1.00	906		*439
		- weakly altered chloritic volcanic to green carb-fuchsite altered mafic volcanic	34161	297.50	298.50	1.00	52		*53
		- no visible sulphides	34162	298.50	299.50	1.00	438		*376
			34163	299.50	300.50	1.00	80		*83
228.00	296.50	**Talc-Chlorite Ultramafic Volcanic**	34164	300.50	301.50	1.00	5		*13
		- typical with numerous mafic tuffaceous? Sections	34165	301.50	302.20	0.70	6		*35
		- core angles variable from 0 deg. To 25 deg. T.C.A.	34166	302.20	303.20	1.00	22		*18
		- 295.3 to 296.5: contact zone with lower qp unit, altered talc-chlorite or sed?, 5% pyrite	34167	303.20	304.20	1.00	170		*181
			34168	304.20	305.20	1.00	5		*11
296.50	302.20	**Silicified Quartz Porphyry**	34169	305.20	306.45	1.25	58		*60
		- siliceous, pale grey to yellowish grey, weakly sericitic with local fuchsite along foliation	34170	306.45	307.45	1.00	789		*883
		- foliation @ 45 deg. T.C.A.	34171	307.45	308.45	1.00	119		*165
		- 2% fine pyrite throughout, heavier py content in fuchsite zones	34172	308.45	309.45	1.00	566		*843
		- numerous late quartz-carb stringers throughout	34173	309.45	310.45	1.00	887		*6890
			34174	310.45	311.10	0.65	59		*60
302.20	306.45	**Conglomerate**	34175	311.10	312.10	1.00	5517	6.92	*2885
		- relatively unaltered, felsic and mafic (chloritic) elongated pebbles up to 4cm in diameter hosted	34176	312.10	313.10	1.00	6		
		in grey siliceous quartz porphyritic matrix	34177	313.10	314.10	1.00	26		
		- tr pyrite	34178	314.10	315.10	1.00	9		
		- foliation @ 35 deg. T.C.A.	34179	315.10	316.10	1.00	67		
			34180	316.10	317.00	0.90	34		
306.45	317.00	**Strongly Altered Sediment**	34181	317.00	318.00	1.00	28		
		- silicified, sericitic banded fine grained unit with fuchsite along foliation	34182	318.00	319.00	1.00	<5		
		-secondary quartz stringers throughout	34183	319.00	320.00	1.00	<5		
		- V.G. @ 311.6 in quartz	34184	320.00	321.00	1.00	223		
			34185	321.00	322.00	1.00	<5		
317.00	318.00	**Conglomerate**	34186	322.00	322.80	0.80	<5		
		- same as from 302.2 to 306.45	34187	322.80	323.80	1.00	21		
		- fine pyrite along pebble margins	34188	323.80	324.80	1.00	43		
		- foliation @ 65 deg. T.C.A.	34189	324.80	325.80	1.00	60		
			34190	325.80	326.80	1.00	<5		

DDH OTP-7

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check 1 (gpt)	Au check 2 (ppb)
318.00	322.80	**Arkose**	34191	326.80	327.15	0.35	<5		
		- fine grained, equigranular, grey in colour	34192	327.15	327.80	0.65	223		
			34193	327.80	329.20	1.40	<5		
322.80	338.50	**Conglomerate**	34194	329.20	330.20	1.00	<5		
		- same as 302.2 to 306.45	34195	330.20	331.20	1.00	13		
		- disseminated pyrite throughout, locally bands of pyrite up to 2cm thick	34196	331.20	332.20	1.00	12		
		- minor secondary quartz	34197	332.20	333.20	1.00	6		
		- beddoing/foliation @ 50 deg. T.C.A.	34198	333.20	334.20	1.00	32		
		- arkose bed from 327.8 to 329.2	34199	334.20	335.20	1.00	13		
			34201	335.20	336.20	1.00	6		
338.50	346.20	**Argillite**	34202	336.20	337.20	1.00	<5		
		- thinly bedded, black to dark grey, locally bleached with up to 10% pyriye in bleached sections	34203	337.20	338.20	1.00	<5		
		- pyrite cubes and disseminations (5%) throughout, tr cpy	34204	338.20	338.50	0.30	<5		
			34205	338.50	339.50	1.00	<5		
346.20	348.30	**Felsite**	34206	339.50	340.50	1.00	6		
		- siliceous, aphanitic, greyish-brown in colour	34207	340.50	341.50	1.00	11		
		- 10% disseminated pyrite throughout	34208	341.50	342.50	1.00	7		
		- thin secondary quartz stringers throughout	34209	342.50	343.50	1.00	11		
			34210	343.50	344.50	1.00	254		
348.30	380.00	**Talc-Chlorite Ultramafic Volcanic**	34211	344.50	345.50	1.00	384		
		- typical dark black, fine grained to aphanitic, massive to foliated with 25% quartz-carb stringers throughout	34212	345.50	346.20	0.70	1754	1.46	
			34213	346.20	347.20	1.00	209		
			34214	347.20	348.30	1.10	74		
	380.00	E.O.H.	34215	348.30	349.30	1.00	80		

* re-assay of rejects by XRAL Labs

ECHO BAY MINES LTD. - DIAMOND DRILL LOG

Drill Hole Number: OTP-08

						Tests	
					Depth	Azi.	Dip
Project Name:	Ogden Township Project	Grid Northing:	20590N	Measure:	Meters		
Project Number:	737	Grid Easting:	9200E	Drilled By:	Norex Drilling	32.0	-44
Claim Number:	PP 21	Elevation:	0	Start:	7/26/99	140.0	-42
Location:	Ogden Twp.	Azimuth:	360	Completed:	7/27/99		
		Dip:	-45	Core Size:	NQ		
		Length:	140m	Date(s) Logged:	July 27 - July 28, 1999		
				Logged By:	Paul Degagne		

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check 1 (gpt)	Au check 2 (gpt)
0.00	15.00	Overburden							
			34251	36.70	38.00	1.30	8		
15.00	17.00	Talc-Chlorite Ultramafic Volcanic	34252	38.00	38.50	0.50	96		
		- aphanitic, black, massive to weakly foliated	34253	38.50	39.90	1.40	<5		
		-mottled to banded with 10% quartz-carbonate stringers and patches	34254	39.90	41.00	1.10	<5		
			34255	41.00	42.00	1.00	<5		
17.00	22.00	Chloritic Mafic Sediment / Tuff	34256	42.00	42.55	0.55	<5		
		- lime green to greenish black in colour, very fine grained, well laminated/bedded @ 66 deg. T.C.A.	34257	42.55	43.50	0.95	<5		
		- minor quartz-calcite stringers throughout	34258	43.50	44.50	1.00	7		
		- locally 3% pyrite (cubes)	34259	44.50	45.50	1.00	<5		
			34260	45.50	46.30	0.80	26		
22.00	36.70	Talc-Chlorite Ultramafic Volcanic	34261	46.30	46.85	0.55	107		
		- typical aphanitic, black, massive with 15% quartz-carbonate stringers	34262	46.85	47.80	0.95	77		
		- blocky (fault zone) from 133.5 to 134.0	34263	47.80	48.80	1.00	109		
		- thin interbeds of mafic tuff (bedding @ 60 deg. T.C.A.)	34264	48.80	49.80	1.00	6		
			34265	49.80	50.80	1.00	<5		
36.70	38.00	"Transition Zone"	34266	50.80	51.80	1.00	8		
		- weak to moderately silicified talc-chlorite / mafic tuff with 15% secondary quartz-carbonate stringers	34267	51.80	52.80	1.00	<5		
			34268	52.80	53.80	1.00	<5		
		- trace to nil mineralization	34269	53.80	54.80	1.00	<5		
			34270	54.80	55.80	1.00	<5		
38.00	42.55	Silicified Sediment	34271	55.80	56.80	1.00	93		
		- strongly silicified greyish-white sediment with locally flattened mafic clasts (3cm x 2mm)	34272	56.80	57.50	0.70	<5		
		- quartz eyes throughout matrix	34273	57.50	58.50	1.00	<5		
		- trace pyrite as "spots"	34274	58.50	59.00	0.50	<5		
		- fault zone from 38.5m to 39.9m (lost core)	34275	59.00	59.65	0.65	<5		
			34276	59.65	60.65	1.00	<5		
42.55	46.85	Sericitic Siltstone	34277	60.65	61.40	0.75	8		
		- fine grained, thinly bedded (60 deg. T.C.A.), yellowish-grey sediment	34278	61.40	62.40	1.00	<5		
		- weakly prevasively silicified with 5% secondary quartz-carbonate stringers	34279	62.40	63.40	1.00	<5		
		- trace to nil pyrite	34280	63.40	64.60	1.20	<5		
			34281	64.60	65.00	0.40	442		
46.85	57.50	Pebble Conglomerate	34282	65.00	65.50	0.50	9593		
		- rounded to sub-rounded pebble sized clasts of felsite (felsic volcanic), quartz, and lesser mafic (to green carb.) volcanics in fine grained, quartz porphyritic, sericitic matrix	34283	65.50	66.00	0.50	933		
			34284	66.00	66.50	0.50	54		

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From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check 1 (gpt)	Au check 2 (gpt)
		- sericite alteration decreases downhole and disappears at approximately 55.8m							
		- locally trace pyrite	34285	66.50	67.00	0.50	<5		
		- foliation @ 60 deg. T.C.A.	34286	67.00	67.50	0.50	14		
			34287	67.50	68.00	0.50	44		
57.50	64.60	**Arkose / Greywacke**	34288	68.00	68.50	0.50	38		
		- relatively unaltered greenish grey, fine grained thinly bedded to massive sediment	34289	68.50	69.00	0.50	471		
		- bedding @ 60 deg. T.C.A.	34290	69.00	69.50	0.50	1204		
		- quartz pebble conglomerate bed from 59.65 to 61.4	34291	69.50	70.00	0.50	918		
		- tr to 1% pyrite throughout	34292	70.00	70.50	0.50	1884		
			34293	70.50	71.00	0.50	26		
64.60	73.75	**Silicified Conglomerate (Thomas Ogden Zone)**	34294	71.00	71.50	0.50	161		
		- moderate to strongly silicified, moderately sericitic grey to yellowish grey quartz porphyritic	34295	71.50	72.00	0.50	463		
		matrix with 15% quartz and felsic volcanic clasts	34296	72.00	72.50	0.50	7		
		- tr to 1% pyrite with up to 10% pyrite locally	34297	72.50	73.00	0.50	<5		
		- fuchsitic "spots" throughout	34298	73.00	73.75	0.75	<5		
			34299	73.75	74.75	1.00	29		
73.75	96.00	**Pebble Conglomerate**	34300	74.75	75.75	1.00	<5		
		same as from 46.85 to 57.5, relatively unaltered	34301	75.75	76.75	1.00	<5		
			34302	76.75	77.75	1.00	<5		
96.00	107.10	**Arkose / Greywacke**	34303	77.75	78.75	1.00	<5		
		- relatively unaltered greenish grey, fine grained thinly bedded to massive sediment with quartz	34304	78.75	79.75	1.00	14		
		eyes and feldpsar phenocryst	34305	79.75	80.75	1.00	<5		
			34306	80.75	81.75	1.00	<5		
107.10	115.30	**Brecciated cherty Sediment / Iron formation**	34307	81.75	82.75	1.00	<5		
		- brecciated cherty beds in a well laminated greyish green to greenish black sediment	34308	82.75	83.75	1.00	<5		
		- 5% pyrite as cubes and bands - I.P. conductor	34309	83.75	84.75	1.00	<5		
			34310	84.75	85.75	1.00	<5		
115.30	135.50	**Greywacke / Arkose**	34311	85.75	86.75	1.00	<5		
		- fine to medium grained, thickly bedded to massive grey sediment	34312	86.75	87.75	1.00	73		
		- unaltered	34313	87.75	88.75	1.00	<5		
			34314	88.75	89.75	1.00	<5		
135.00	140.00	**Argillite**	34315	89.75	90.75	1.00	<5		
		- thinly bedded black to dark grey, very fine grained sediment	34316	90.75	91.75	1.00	<5		
			34317	91.75	92.75	1.00	<5		
	140.00	**End Of Hole**	34318	92.75	93.75	1.00	<5		
			34319	93.75	94.75	1.00	<5		
			34320	94.75	96.00	1.25	<5		
			34321	107.10	108.10	1.00	<5		
			34322	108.10	109.10	1.00	23		
			34323	109.10	110.10	1.00	5		
			34324	110.10	111.10	1.00	5		
			34325	111.10	112.10	1.00	35		
			34326	112.10	113.10	1.00	5		
			34327	113.10	114.30	1.20	<5		

ECHO BAY MINES LTD. - DIAMOND DRILL LOG

Drill Hole Number: OTP-09

							Tests	
Project Name:	Ogden Township Project	Grid Northing:	20350N	Measure:	Meters	Depth	Azi.	Dip
Project Number:	737	Grid Easting:	9100E	Drilled By:	Norex Drilling	12.0		-50
Claim Number:	PP 21, PP 22, 1227997	Elevation:	0	Start:	7/28/99	200.0		-50
Location:	Ogden Twp.	Azimuth:	360	Completed:	8/4/99	420.0		-50
		Dip:	-51	Core Size:	NQ	449.0	304	-50
		Length:	449m	Date(s) Logged:	July 29 -August 6, 1999			
				Logged By:	Paul Degagne			

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check 1 (gpt)	Au check 2 (gpt)
0.00	9.00	**Overburden**							
			34343	241.00	242.00	1.00	<5		
9.00	242.40	**Intermediate Volcanic (tuff, lapilli tuff, tuffaceous sediment)**	34344	242.00	243.00	1.00	<5		
		- grey to greyish green, fine grained with sections of conglomerate / lapilli clasts (felsic to inter-	34345	243.00	244.00	1.00	<5		
		mediate in composition)	34346	244.00	245.00	1.00	<5		
		- foliation / bedding @ 60 deg. T.C.A. (90m), 48 deg T.C.A. (150m)	34328	245.00	246.00	1.00	<5		
		- very blocky ground from 57.0 to 72.0	34329	246.00	247.00	1.00	<5		
		- oxidized fault zone from 88.4 to 88.7	34330	247.00	248.00	1.00	<5		
		- transitional to lower unit	34331	248.00	249.00	1.00	<5		
			34332	249.00	250.00	1.00	<5		
242.40	260.00	**Chloritic Mafic Tuff**	34333	250.00	251.00	1.00	29		
		- lime green, fine grained, fuchsite-chlorite beds intercalated with beds/bands of grey to white	34334	251.00	252.00	1.00	<5		
		quartz-carbonate	34335	252.00	253.00	1.00	19		
		- bedding varies from 40 deg. To 50 deg. T.C.A.	34336	253.00	254.00	1.00	7		
		- no visible sulphides	34337	254.00	255.00	1.00	<5		
			34338	255.00	256.00	1.00	8		
260.00	262.00	**Intermediate Tuff**	34339	256.00	257.00	1.00	<5		
		- grey, medium grained	34340	257.00	258.00	1.00	<5		
			34341	258.00	259.00	1.00	<5		
262.00	263.40	**Chloritic Mafic Tuff**	34342	259.00	260.00	1.00	<5		
		- lime green, fine grained, fuchsite-chlorite beds intercalated with beds/bands of grey to white	34347	390.50	391.50	1.00	38		
		quartz-carbonate	34348	391.50	392.50	1.00	19		
		- strongly silicified greyish-white sediment with locally flattened mafic clasts (3cm x 2mm)	34349	392.50	393.50	1.00	178		
			34350	393.50	394.50	1.00	53		
263.40	272.00	**Intermediate Tuff**	34351	394.50	395.50	1.00	27		
		- grey, medium grained	34352	395.50	396.50	1.00	5		
			34353	396.50	397.50	1.00	130		
272.00	275.70	**Mafic Sill?**	34354	397.50	398.50	1.00	<5		
		- fine to medium grained, massive, black with 15% saussuritized feldspar phenocrysts	34355	398.50	399.50	1.00	11		
			34356	399.50	400.00	0.50	15		
275.70	281.40	**Quartz Porphyritic Felsic to intermediate Tuff**	34357	400.00	400.50	0.50	5		
		- siliceous, grey, fine grained with 5% quartz eyes	34358	400.50	401.00	0.50	95		
			34359	401.00	401.50	0.50	46		
281.40	381.50	**Talc-Chlorite Ultramafic Volcanic**	34360	401.50	402.00	0.50	23		
		- typical black, aphanitic, massive, with 40% quartz-carbonate stringers/blebs	34361	402.00	402.50	0.50	233		

DDH OTP-9

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check 1 (gpt)	Au check 2 (gpt)
		- interbeds of more chloritic mafic tuff from 295.0 - 296.9 and from 303.3 - 323.0							
		- foliation of chloritic tuff beds: 50 deg T.C.A @ 295m, 45 to 20 deg T.C.A. from 303.3 to 323	34362	402.50	403.00	0.50	139		
		- core angles of quartz stringers in talc-chlorite 20 deg to 0 deg from 365m to 359m	34363	403.00	403.50	0.50	27		
			34364	403.50	404.00	0.50	72		
381.50	399.50	**Altered Talc-Chlorite Ultramafic Volvanic**	34365	404.00	404.50	0.50	106		
		- same unit as above but strong pervasive brown carbonate alteration	34366	404.50	405.00	0.50	8		
		- quartz-carbonate stringers/patches throughout	34367	405.00	405.50	0.50	28		
			34368	405.50	406.00	0.50	30		
		Thomas Ogden Zone	34369	406.00	406.50	0.50	207		
			34370	406.50	407.00	0.50	130		
399.50	403.80	**Silicified Heterolithic Conglomerate**	34371	407.00	407.50	0.50	96		
		- alternating bands of bleached siliceous beds and black chlorite +/- fuchsite beds hosting 10% clasts of mafic and felsic volcanic material	34372	407.50	408.00	0.50	157		
			34373	408.00	408.50	0.50	395		
		- numerous secondary quartz+/-carbonate stringers,	34374	408.50	409.00	0.50	1168		
		- tr to 1% pyrite	34375	409.00	409.50	0.50	1542		
			34376	409.50	410.00	0.50	4069		
403.80	405.40	**Sericitic Conglomerate**	34377	410.00	410.60	0.60	510		
		- well foliated pervasive sericitic fine grained sediment hosting 25% cream coloured felsic volcanic fragments / clasts	34378	410.60	411.10	0.50	127		
			34379	411.10	411.60	0.50	433		
		- trace pyrite throughout	34380	411.60	412.10	0.50	74		
		- foliation @ 60 deg. T.C.A.	34381	412.10	412.60	0.50	171		
			34382	412.60	413.10	0.50	506		
405.40	407.40	**Silicified Heterolithic Conglomerate**	34383	413.10	413.60	0.50	162		
		- same as from 399.5 to 403.8	34384	413.60	414.10	0.50	463		
		- trace to 1% fine disseminated pyrite	34385	414.10	414.60	0.50	65		
			34386	414.60	415.10	0.50	30		
407.40	410.60	**Silicified Zone**	34387	415.10	415.60	0.50	697		
		- strongly silicified (80% quartz) replacing fine grained sediment	34388	415.60	416.10	0.50	89		
		- 3% pyrite as fine disseminations and fracture fillings	34389	416.10	416.60	0.50	3059		
			34390	416.60	417.10	0.50	12		
410.60	416.30	**Felsic Conglomerate**	34391	417.10	417.60	0.50	16		
		- dark grey to buff coloured, thinly bedded greywacke with 10% felsic to quartz rich clasts	34392	417.60	418.10	0.50	10		
		- generally weakly altered with minor sericite and fuchsite bands	34393	418.10	418.80	0.70	21		
		- trace disseminated pyrite	34394	418.80	419.80	1.00	30		
		- bedding @ 80 deg T.C.A.	34395	419.80	420.80	1.00	317		
			34396	420.80	421.80	1.00	39		
416.30	419.00	**Arkose**	34397	421.80	422.80	1.00	7		
		- generally fine to medium grained, yellowish grey sediment with 1% rounded siliceous pebbles	34398	422.80	423.80	1.00	64		
		- minor sericite and fuchsite alteration	34399	423.80	424.30	0.50	945		
			34400	424.30	425.00	0.70	712		
419.00	425.00	Argillite	34401	425.00	425.50	0.50	69		
		- thinly bedded black to dark grey, very fine grained	34402	425.50	426.00	0.50	79		
		- 2% pyrite throughout	34403	426.00	426.50	0.50	188		
		- bedding @ 80 deg T,.C.A.	34404	426.50	427.00	0.50	5419		
			34405	427.00	427.50	0.50	182		
425.00	433.10	**Albitized Variolitic Mafic Flow**	34406	427.50	428.00	0.50	509		
		- variolitic, bleached, ligth greyish, pervasvie albite alteration	34407	428.00	428.50	0.50	393		
		- 3% pyrite throughout	34408	428.50	429.00	0.50	528		

DDH OTP-9

From (m)	To (m)	Geology	Sample	From (m)	To (m)	Length (m)	Au (ppb)	Au check 1 (gpt)	Au check 2 (gpt)
433.10	449.00	**Talc-Chlorite Ultramafic Volcanics**	34409	429.00	429.50	0.50	433		
		- typical aphanitic, black with 30% quartz-carbonate stringers	34410	429.50	430.00	0.50	315		
			34411	430.00	430.50	0.50	408		
	449.00	**End Of Hole**	34412	430.50	431.00	0.50	260		
			34413	431.00	431.50	0.50	316		
			34414	431.50	432.00	0.50	619		
			34415	432.00	432.50	0.50	428		
			34416	432.50	433.10	0.60	357		
			34417	433.10	434.00	0.90	164		

APPENDIX II

ASSAY CERTIFICATES

ITS Intertek Testing Services
Chimitec Bondar Clegg

Certificat D'Analyse
Assay Lab Report

CLIENT: ECHO BAY MINES
PROJECT: 737
REPORT: T99-57279.0 (COMPLETE)
DATE RECEIVED: 00-???-00
DATE PRINTED: 4-JUN-99

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB
679857		10
679858		<5
679859		<5
679860		<5
679861		<5
679862		6
679863		<5
679864		<5
679865		<5
679866		<5
679867		<5
679868		8
679869		<5
679870		5
679871		7
679872		32
679873		<5
679874		<5
679875		<5
679876		24
679877		<5
679878		30
679879		<5
679880		<5
679881		<5
679882		<5
679883		<5
679884		<5
679885		9
679886		10
679887		<5
679888		28
679889		8
679890		<5
679891		14
679892		<5
679893		17
679894		106
679895		262

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: ECHO BAY MINES
PROJECT: 737
REPORT: T99-57284.0 (COMPLETE)
DATE RECEIVED: 09-JUN-99
DATE PRINTED: 10-JUN-99

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB
801830		7
801831		37
801832		<5
801833		<5
801834		25
801835		143
801836		338
801837		576
801838		615
801839		9
801840		15
801841		9
801842		<5
801843		<5
801844		11
801845		<5
801846		27
801847		9
801848		9
801849		<5
801850		<5
801851		<5
801852		10
801853		30
801854		6
801855		<5
801856		<5
801857		34
801858		125
801859		105
801860		144
801861		<5
801862		633
801863		151
801864		<5
801865		<5
801866		12
801867		7
801868		592
801869		34
801870		256
801871		16
801872		20
801873		600
801874		15
801875		<5
801876		18
801877		11
801878		8
801879		8
801880		10
801881		5
801882		<5
801883		358
801884		697
801885		669
801886		339
801887		809
801888		61
801889		11

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

ITS Intertek Testing Services
Chimitec Bondar Clegg

Certificat D'Analyse
Assay Lab Report

CLIENT: ECHO BAY MINES
PROJECT: 737
REPORT: T99-57286.0 (COMPLETE)
DATE RECEIVED: 11-JUN-99
DATE PRINTED: 14-JUN-99

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB
679902		83	679942		<5
679903		621	679943		10
679904		<5	679944		<5
679905		<5	679945		<5
679906		<5	679946		<5
679907		<5	679947		<5
679908		<5	679948		11
679909		20	679949		6
679910		11	679950		<5
679911		14	801890		34
679912		<5	801891		<5
679913		<5	801892		14
679914		7	801893		124
679915		<5	801894		<5
679916		<5	801895		76
679917		<5	801896		63
679918		10	801897		126
679919		36	801898		14
679920		7	801899		102
679921		24	801900		<5
679922		<5			
679923		<5			
679924		5			
679925		6			
679926		<5			
679927		70			
679928		<5			
679929		<5			
679930		22			
679931		<5			
679932		<5			
679933		<5			
679934		<5			
679935		6			
679936		13			
679937		<5			
679938		8			
679939		<5			
679940		<5			
679941		<5			

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: ECHO BAY MINES
PROJECT: 737
REPORT: T99-57288.0 (COMPLETE)
DATE RECEIVED: 16-JUN-99
DATE PRINTED: 17-JUN-99

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	Aupulp G/T	SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	Aupulp G/T
34155		<5		34195		13	
34156		<5		34196		12	
34157		7		34197		6	
34158		19		34198		32	
34159		374		34199		13	
34160		906		34200		6	
34161		52		34201		6	
34162		438		34202		<5	
34163		80		34203		<5	
34164		<5		34204		<5	
34165		6		34205		<5	
34166		22		34206		6	
34167		170		34207		11	
34168		<5		34208		7	
34169		58		34209		11	
34170		789		34210		254	
34171		119		34211		384	
34172		566		34212		1754	1.46
34173		887		34213		209	
34174		59		34214		74	
34175		5517	6.92	34215		80	
34176		6					
34177		26					
34178		9					
34179		67					
34180		34					
34181		28					
34182		<5					
34183		<5					
34184		361					
34185		<5					
34186		<5					
34187		21					
34188		43					
34189		60					
34190		<5					
34191		<5					
34192		223					
34193		<5					
34194		<5					

ITS - Chimitec - Bondar Clegg
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Tél: (819) 825-0178, Fax: (819) 825-0256

Intertek Testing Services
Chimitec Bondar Clegg

Certificat D'Analyse
Assay Lab Report

CLIENT: ECHO BAY MINES
PROJECT: 737
REPORT: T99-57282.0 (COMPLETE)
DATE RECEIVED: 06-JUL-99
DATE PRINTED: 10-JUN-99

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	Aupulp G/T	AuRew G/T
D2 679896		154		
D2 679897		632		
D2 679898		442		
D2 679899		174		
D2 679900		259		
D2 679901		9		
D2 801801		700		
D2 801802		303		
D2 801803		359		
D2 801804		167		
D2 801805		82		
D2 801806		193		
D2 801807		1525	2.24	1.55
D2 801808		1181	0.97	0.99
D2 801809		116		
D2 801810		1053	1.53	1.02
D2 801811		<5		
D2 801812		54		
D2 801813		<5		
D2 801814		8		
D2 801815		<5		
D2 801816		<5		
D2 801817		80		
D2 801818		364		
D2 801819		374		
D2 801820		452		
D2 801821		144		
D2 801822		15		
D2 801823		2987	5.63	3.91
D2 801824		144		
D2 801825		39		
D2 801826		8		
D2 801827		149		
D2 801828		35		
D2 801829		16		

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

ITS Intertek Testing Services
Chimitec Bondar Clegg

Certificat D'Analyse
Assay Lab Report

CLIENT: ECHO BAY MINES
PROJECT: 737
REPORT: T99-57324.0 (COMPLETE)
DATE RECEIVED: 05-AUG-99
DATE PRINTED: 9-AUG-99

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB
34251		8	34291		918
34252		96	34292		1884
34253		<5	34293		26
34254		<5	34294		161
34255		<5	34295		463
34256		<5	34296		7
34257		<5	34297		<5
34258		7	34298		<5
34259		<5	34299		29
34260		26	34300		<5
34261		107	34301		<5
34262		77	34302		<5
34263		109	34303		<5
34264		6	34304		14
34265		<5	34305		<5
34266		8	34306		<5
34267		<5	34307		<5
34268		<5	34308		<5
34269		<5	34309		<5
34270		<5	34310		<5
34271		93	34311		<5
34272		<5	34312		73
34273		<5	34313		<5
34274		<5	34314		<5
34275		<5	34315		<5
34276		<5	34316		<5
34277		8	34317		<5
34278		<5	34318		<5
34279		<5	34319		<5
34280		<5	34320		<5
34281		442	34321		<5
34282		9593	34322		23
34283		933	34323		5
34284		54	34324		5
34285		<5	34325		35
34286		14	34326		5
34287		44	34327		<5
34288		38	34328		<5
34289		471	34329		<5
34290		1204	34330		<5

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: ECHO BAY MINES
PROJECT: 737
REPORT: T99-57324.0 (COMPLETE)
DATE RECEIVED: 05-AUG-99
DATE PRINTED: 9-AUG-99

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB
34331		<5			
34332		<5			
34333		29			
34334		<5			
34335		19			
34336		7			
34337		<5			
34338		8			
34339		<5			
34340		<5			
34341		<5			
34342		<5			
34343		<5			
34344		<5			
34345		<5			
34346		<5			

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: ECHO BAY MINES
PROJECT: 737
REPORT: T99-57325.0 (COMPLETE)
DATE RECEIVED: 07-AUG-99
DATE PRINTED: 11-AUG-99

SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB
34347		38	34387		697
34348		19	34388		89
34349		178	34389		3059
34350		53	34390		12
34351		27	34391		16
34352		5	34392		10
34353		130	34393		21
34354		<5	34394		30
34355		11	34395		317
34356		15	34396		39
34357		5	34397		7
34358		95	34398		64
34359		46	34399		945
34360		23	34400		712
34361		233	34401		69
34362		139	34402		79
34363		27	34403		188
34364		72	34404		5419
34365		106	34405		182
34366		8	34406		509
34367		28	34407		393
34368		30	34408		528
34369		207	34409		433
34370		130	34410		315
34371		96	34411		408
34372		157	34412		260
34373		395	34413		316
34374		1168	34414		619
34375		1542	34415		428
34376		4069	34416		357
34377		510	34417		164
34378		127			
34379		433			
34380		74			
34381		171			
34382		506			
34383		162			
34384		463			
34385		65			
34386		30			

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

XRAL

LES LABORATOIRES XRAL LABORATORIES
UNE DIVISION DE / A DIVISION OF SGS CANADA INC.
129 AVE. MARCEL BARIL • ROUYN-NORANDA • QUÉBEC J9X 7B9
TÉL.: (819) 764-9108 FAX: (819) 764-4673

CERTIFICAT D'ANALYSE/CERTIFICATE OF ANALYSIS

R16277

Nom de la Compagnie/Company: Echo Bay Mines Ltd.
Bon de Commande No/ P.O. No:
Projet/ Project No : 737
Date Soumis/ Submitted : Jul 07, 1999 Jul 13, 1999
Attention : Paul DeGagne

No. D'Echantillon Sample No.	AU PPB	AU CHK PPB	AU CHK G/T	AU CHK G/T	AU CHK G/T	AU CHK G/T	AU CHK G/T
34163	83						
34164	13						
34165	35						
34166	18						
34167	181						
34168	11						
34169	60						
34170	883						
34171	165						
34172	843						
34173	>1000		6.89	1.58	3.98	3.19	5.55
34174	60						
34175	>1000		2.85	2.88			
679903	459						
801883	525						
801884	588						
801885	>1000		2.85	2.88			
801886	333						
801887	>1000		1.13	1.20			
801868	403	386					
801869	51						
801870	230						
801871	28						
801872	19						
801873	540	525					
34159	386						
34160	439						
34161	53						
34162	376						

Certifie par / Certified by :

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)
W9960.00382
Assessment Files Research Imaging

42A06NW2017 2.19756 OGDEN 900

subsections 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, this sment work and correspond with the mining land holder. Questions about this collection opment and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

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

2.19756

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

Name	Client Number
ECHO BAY MINES Ltd.	128711
Address: P.O. Box 551, Timmins, Ont. P4N-7E7	Telephone Number: 705-363-2366
	Fax Number: 705-363-2222
Name	Client Number
Address	Telephone Number
	Fax Number

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	Office Use
Diamond Drilling	Commodity
	Total $ Value of Work Claimed: $62,110
Dates Work Performed From: 27 (Day) 5 (Month) 99 (Year) To: 7 (Day) 6 (Month) 99 (Year) and	NTS Reference
Global Positioning System Data (if available) — Township/Area: Ogden	Mining Division: Porcupine
M or G-Plan Number: G-3979	Resident Geologist District: Timmins

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 DEGAGNE - Echo Bay Mines Ltd.	705-363-2366
Address: Box 551, Timmins, Ont. P4N-7E7	Fax Number: 705-363-2222
Name	Telephone Number
Address	Fax Number
Name	Telephone Number
Address	Fax Number

4. Certification by Recorded Holder or Agent

I, Paul DeGagne (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: Oct. 4/99
Agent's Address: Box 551 Timmins, Ont. P4N-7E7	Telephone Number: 705-363-2366	Fax Number: 705-363-2222

0241 (03/97)

RECEIVED
OCT 07 1999
GEOSCIENCE ASSESSMENT OFFICE

Deemed Jan 5/99

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.

W9960 00382

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	ME 47	10.9 ha	14,025.75	0		14,025.75
2	P 8384	19.9 ha	21,061.50	0	5,600	15,461.50
3	PP 21	10.5 ha	13,009.25	0		13,009.25
4	PP 22	6.2 ha	9,505.50	0		9,505.50
5	1220101	4 units		1,600		
6	1227821	2 units		4,000		
7	1227997	2 units	4,507.50	1,600		2,907.50
8						
9						
10						
11						
12						
13						
14						
15						
	Column Totals		62,109.50	7,200	5,600	54,909.50

I, PAUL DEGAGNE (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
	OCT. 4/99

2.19756

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)	

0241 (03/97)

RECEIVED
OCT 7 1999
GEOSCIENCE ASSESSMENT OFFICE

Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use): W9960.00382

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, this 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 a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd 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	1,404 metres	36.75 /meter	51,597.00
core assays	415 samples	9.50 /sample	3,942.50
Core splitting	6 days	95.00 / day	570.00
core logging / report writting	20 days	300.00 / day	6,000.00
Associated Costs (e.g. supplies, mobilization and demobilization).			
Transportation Costs			
Food and Lodging Costs			
		Total Value of Assessment Work	62,109.50

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 x 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.

Certification verifying costs:

I, PAUL DEGAGNÉ (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 Paul Degagne - Project Geologist (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

Signature: [signature] Date: OCT. 4/99

0212 (03/97)

RECEIVED
0 [illegible] 99
GEOSCIENCE ASSESSMENT OFFICE

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) 415-9845
Fax: (877) 670-1555

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

October 20, 1999

ECHO BAY MINES LTD.
310-17TH STREET
SUITE 4050
DENVER, COLORADO
802-02 USA

Dear Sir or Madam:

Submission Number: 2.19756

Subject: Transaction Number(s):		**Status**
	W9960.00382	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: 14246
Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.19756

Date Correspondence Sent: October 20, 1999 **Assessor:** Bruce Gates

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9960.00382	ME47	OGDEN	Deemed Approval	October 19, 1999

Section:
16 Drilling PDRILL

Correspondence to:

Resident Geologist
South Porcupine, ON

Assessment Files Library
Sudbury, ON

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

Paul DeGagne
TIMMINS, ON, CAN

ECHO BAY MINES LTD.
DENVER, COLORADO

ECHO BAY ONTARIO LTD.
DENVER, COLORADO

Correspondence ID: 14246

MOUNTJOY TWP.

MAP SYMBOLOGY

- Aerial Cableway
- Boundary
- International
- Interprovincial
- District, Township, Indian Reserve
- Approximate
- Lot, Concession
- Abandoned
- Area Boundary
- Bridge
- Road, Railroad
- Building
- Chimney
- Cliff, Pit, Pile
- Contours
- Interpolated
- Approximate
- Depression
- Control Points
  - Horizontal
  - Vertical
- Culvert
- Falls
- Double line river
- Fence, Hedge, Wall
- Feature Outline (Construction features, etc.)
- Flooded Land
- Lock
- Marsh or Swamp
- Mast
- Mine Head Frame
- Outcrop
- Pipeline (above ground)
- Railroad
  - Single Track
  - Double Track
  - Abandoned
  - Turntable
- Road
  - Highway, County, Township
  - All-weather (road of doubtful maintenance or significant driveway)
  - Trail, Base Road (portage only)
- Rapids
  - Unable line river with multiple rapids
  - Double line river with multiple rapids
- Reservoir
- River, Stream, Canal
  - Approximate seasonal, direction of flow
- Rock
  - significant
  - shoal
- Spot Elevation (True elevations)
- Tower
- Transmission Line
  - Poles
  - Pylons
- Tunnel
- Utility Poles
- Wharf, Dock, Pier
- Wooded Area

REFERENCES

L.O. 6613 "BOOMING GROUNDS" COVERS THE WESTERLY HALF OF THE BED OF THE MATTAGAMI RIVER FLOWING THROUGH THE TOWNSHIP FILE 73543

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M.+S. – MINING AND SURFACE RIGHTS

Disposition	Order No.	Date	Disposition	File

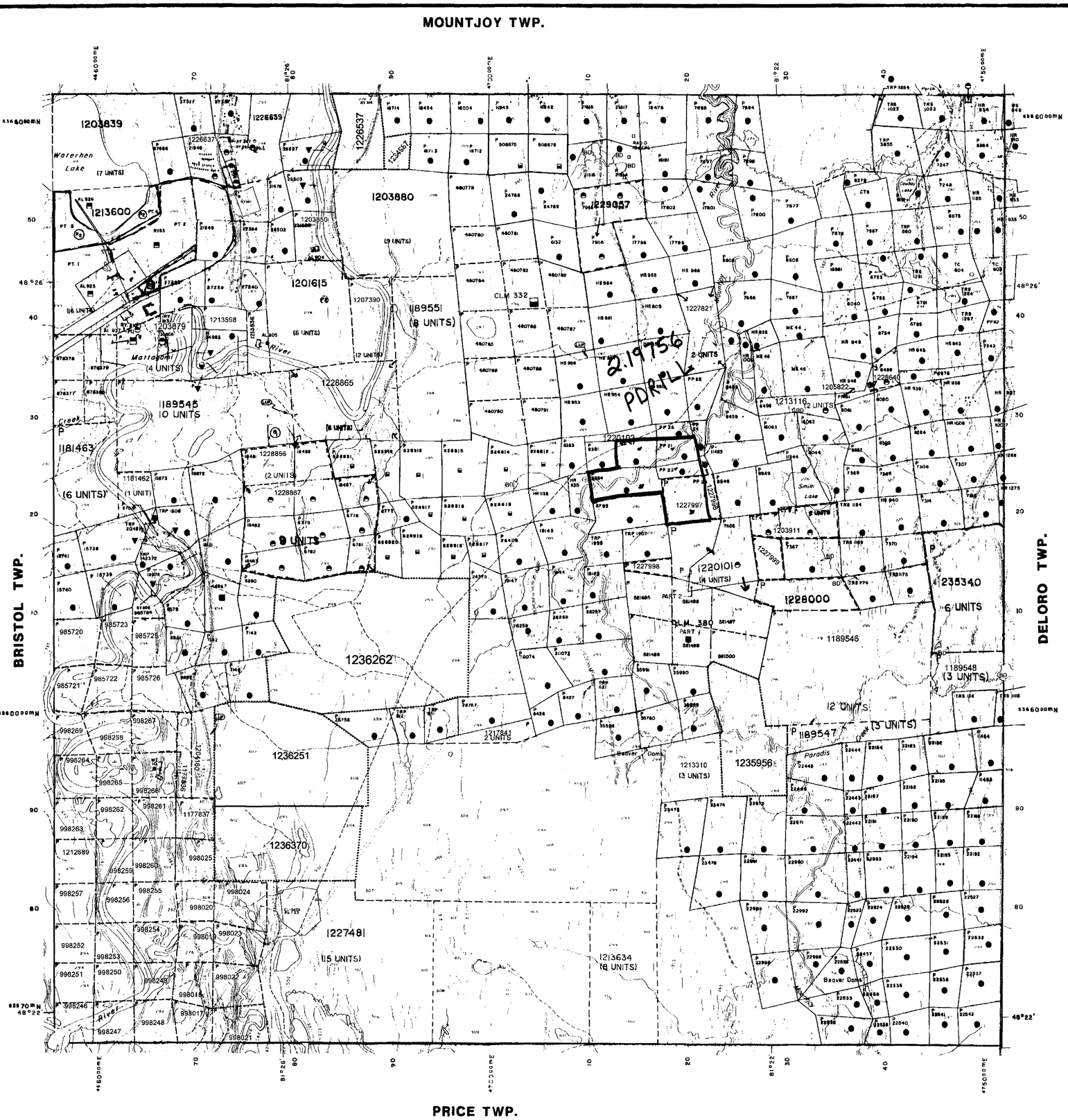
(NW) NRW 51/79, 2/11/79 S.R.O.

(AP) APPLICATION PENDING UNDER PUBLIC LANDS ACT NOTICE RECEIVED 83-MAR-30 (SNOWMOBILE TRAIL)

(Q) AGGREGATE PERMIT

(RE) APPLICATION PENDING UNDER PUBLIC LANDS ACT SEP.09/95

42A06NW2017 2.19756 OGDEN 200



LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" , SURFACE RIGHTS ONLY	◒
" , MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	■
" , MINING RIGHTS ONLY	■
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	(R)
CANCELLED	(C)
SAND & GRAVEL	(S)

NOTE MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1910, CHAP. 380, SEC. 65, SUBSEC. 1

Scale bars: 500 0 1000 Metres; 10 0 10 20 30 40 50 60 70 Chains; 500 0 1000 2000 3000 4000 5000 Feet

SCALE 1:20 000
GRID ZONE : 17

NOTES

TOWNSHIP

OGDEN

M N R ADMINISTRATIVE DISTRICT

TIMMINS

MINING DIVISION

PORCUPINE

LAND TITLES / REGISTRY DIVISION

COCHRANE

Ontario Ministry of Natural Resources — Land Management Branch

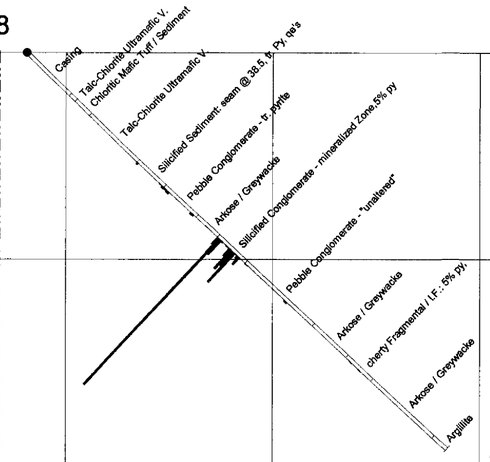
ORIGINAL COMPILATION	JULY 1984	Number
ACTIVATED JULY 8, 1992 BY D.C. REVISED		G-3979
CHECKED BY G.W.		

SECTION 9200E

20250N | 20300N | 20350N | 20400N | 20450N | 20500N | 20550N | 20600N | 20650N | 20700N | 20750N

OTP-8

Azimuth: 360 deg.
Dip: -45



-50 | -100 | -150 | -200 | -250 | -300 | -350

Claim PP 22

Claim PP 21

0 20 40
Meters

Bar Scale: 1cm = 1.5 gpt Au

210

42A06NW2017 2.19756 OGDEN

ECHO BAY MINES LTD.

Ogden Township Project
Thomas Ogden Zone
Section 92+00E

Scale: 1cm = 10 meters

Sept. 30, 1999

SECTION 9100E

20250N 20300N 20350N 20400N 20450N 20500N 20550N 20600N 20650N 20700N 20750N

OTP-9

Azimuth: 360 deg.
Dip: -51 deg.

-50 -100 -150 -200 -250 -300 -350

Claim 1227997

Claim PP 22

Claim PP 21

Casing

Int. volcaniclastic / sediment

Mafic Chloritic Tuff / green carb

Mafic Sill?

Quartz Porphyritic Felsic Tuff

Talc - Chlorite Ultramafic Volcanic

Chloritic Mafic Tuff

Talc-Chlorite

Chloritic Mafic Tuff

Talc - Chlorite Ultramafic Volcanic

Weak-moderate carbonate and biotite altered Ultramafic Volcanic

Strongly altered brown carb (with qtz-carb) U/M

Silicified conglomerate, 1% py

Silicified conglomerate, 1% py

Silicified (strong) zone, 3% py

weakly altered arkose/greywacke, locally fuchsitic

Arkose - fine grained, sericite-fuchsite

Argillite

Siliceous Sediment - 3% pyrite

Albitized Mafic Volcanic - 3% pyrite

Talc-Chlorite Ultramafic Volcanic

449.00 m.

OTP-9

0 20 40
Meters

Bar Scale: 1cm = 1.5 gpt Au

2.19756

ECHO BAY MINES LTD.

Ogden Township Project
Thomas Ogden Zone
Section 91+00E

Scale: 1cm = 10 meters *Sept. 30, 1999*

SECTION 9025E

20250N 20300N 20350N 20400N 20450N 20500N 20550N 20600N 20650N 20700N 20750N

OTP-7 Azimuth: 360 deg. Dip: -45 deg.

OTP-6 Azimuth: 360 deg. Dip: -45 deg.

-50 -100 -150 -200 -250 -300 -350

Overburden
Intermediate Tuff
Mafic Tuff
Iron Formation / Mafic Tuff
Talc-Chlorite Ultramafic V.
Green Carb / Chloritic Mafic
Talc-Chlorite Ultramafic V.
Green Carb Zone
Talc-Chlorite Ultramafic V.
Green Carb Zone

Overburden
Intermediate Tuff
Iron Formation / Mafic Tuff
Talc-Chlorite Ultramafic V.
Chloritic Mafic Tuff
Talc-Chlorite Ultramafic V.
Fault Zone
QP Conglomerate
Fault Zone
Silicified QP
QP Conglomerate
Intermediate Tuff
Fault Zone - weathered QP conglomerate and quartz
QP Conglomerate
Arkose
Silicified QP
QP
QP Conglomerate -sericitized, V.G. @ 183.6
Intermediate Tuff
Argillite
OTP-6
235.00 m.
Talc-Chlorite Ultramafic V.
Silicified Quartz Porphyry
Conglomerate
Altered Tuff / Sediment, V.G. @ 311.6
Conglomerate
Arkose
Conglomerate
Argillite
Felsite
Talc-Chlorite Ultramafic V.
OTP-7
380.00 m.

Claim P 8384 | Claim ME 47

0 20 40
Meters

Bar Scale: 1cm = 1.5 gpt Au

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2.19756

ECHO BAY MINES LTD.

Ogden Township Project
Thomas Ogden Zone
Section 90+25E

Scale: 1cm = 10 meters *Sept. 30, 1999*

SECTION 8935E

20250N 20300N 20350N 20400N 20450N 20500N 20550N 20600N 20650N 20700N 20750N

OTP-5

Azimuth: 360 deg.
Dip: -45 deg.

Overburden
Intermediate Tuff
Arkose / Mafic Tuff
Chloritic Mafic Tuff
Felsite
Talc-Chlorite Ultramafic
Brown Carb Altered UM
Chloritic Mafic Volcanic (tuff)
Talc-Chlorite Ultramafic volcanic
Fault Zone
Green Carb Zone
Felsite / QP - silicified
Altered Greywacke/Cong.
Felsite - 3% pyrite
Greywacke/Argillite
Argillite
Talc-Chlorite UM

OTP-5
200.00 m.

-50
-100
-150
-200
-250
-300
-350

Claim P 8384 | Claim ME 47

0 20 40
Meters

Bar Scale: 1cm = 1.5 gpt Au

2.19756

ECHO BAY MINES LTD.

Ogden Township Project
Thomas Ogden Zone
Section 89+35E

Scale: 1cm = 10 meters *Sept. 30, 1999*