Report of Work
Geology of Claims 1205822, 1213116 and 1228640
Ogden Township Project

Echo Bay Mines Ltd.

Timmins, Ontario
August 14, 2000

Paul Degagne
Project Geologist

Summary

Two days were spent mapping and sampling claims 1213116, 1205822, and 1228640, located in the northeast section of Ogden Township. An additional half day was spent collecting additional samples of an auriferous quartz-feldspar porphyry located on the east end of claim 1205822.

The three contiguous claims are situated approximately 600 meters north of Echo Bay's Ogden Township Property and lie immediately west of the Kennilworth Mine, a past producer of 50,000 ounces of gold.

Outcrop on the property is limited to a small hill of carbonated and fractured feldspar +/- quartz porphyry located on claim 1205822. Nine grab samples were collected from the outcrop, returning up to 1.0 gpt Au. An additional 15 sample were collected systematically across the porphyry, and although slightly anomalous, failed to return values greater than 1000 ppb Au. The porphyry appears to be one of several porphyritic bodies that have intruded into a mixed package of mafic and ultramafic volcanic rocks deposited immediately north of the Porcupine – Destor fault in Ogden Township. These porphyries are spatially associated with significant gold mineralization at the Kennilworth mine to the east, and at the Thomas Ogden Gold Mines showing to the west.

The claims have been drilled in the past with a minimum of seven drill holes. These holes generally tested the volcanic stratigraphy but failed to adequately test the volcanic–porphyry contact.

Future exploration should be focussed along this contact to test for economic gold mineralization.

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Introduction

On June 14 and 15, 2000, claims 1213116, 1205822, and 1228640 located in the northeast section of Ogden Township were mapped and sampled at a scale of 1:5,000. After an initial 9 samples of a quartz porphyry located on claim 1205822 returned significantly anomalous gold values, an additional half day (July 15th) was spent collecting 15 additional samples across the outcrop.

The porphyry appears to be one of several auriferous quartz porphyry units that have intruded into a mixed package of mafic and ultramafic volcanic rocks deposited immediately north of the Porcupine – Destor fault in Ogden Township. These porphyries are spatially associated with significant gold mineralization at the Kennilworth mine to the east, and at the Thomas Ogden Gold Mines showing to the west.

Results of the survey are reported herein.

Property Description

The property consists of three contiguous un-patented mining claims (4 units) numbered 1213116, 1205822, and 1228640.

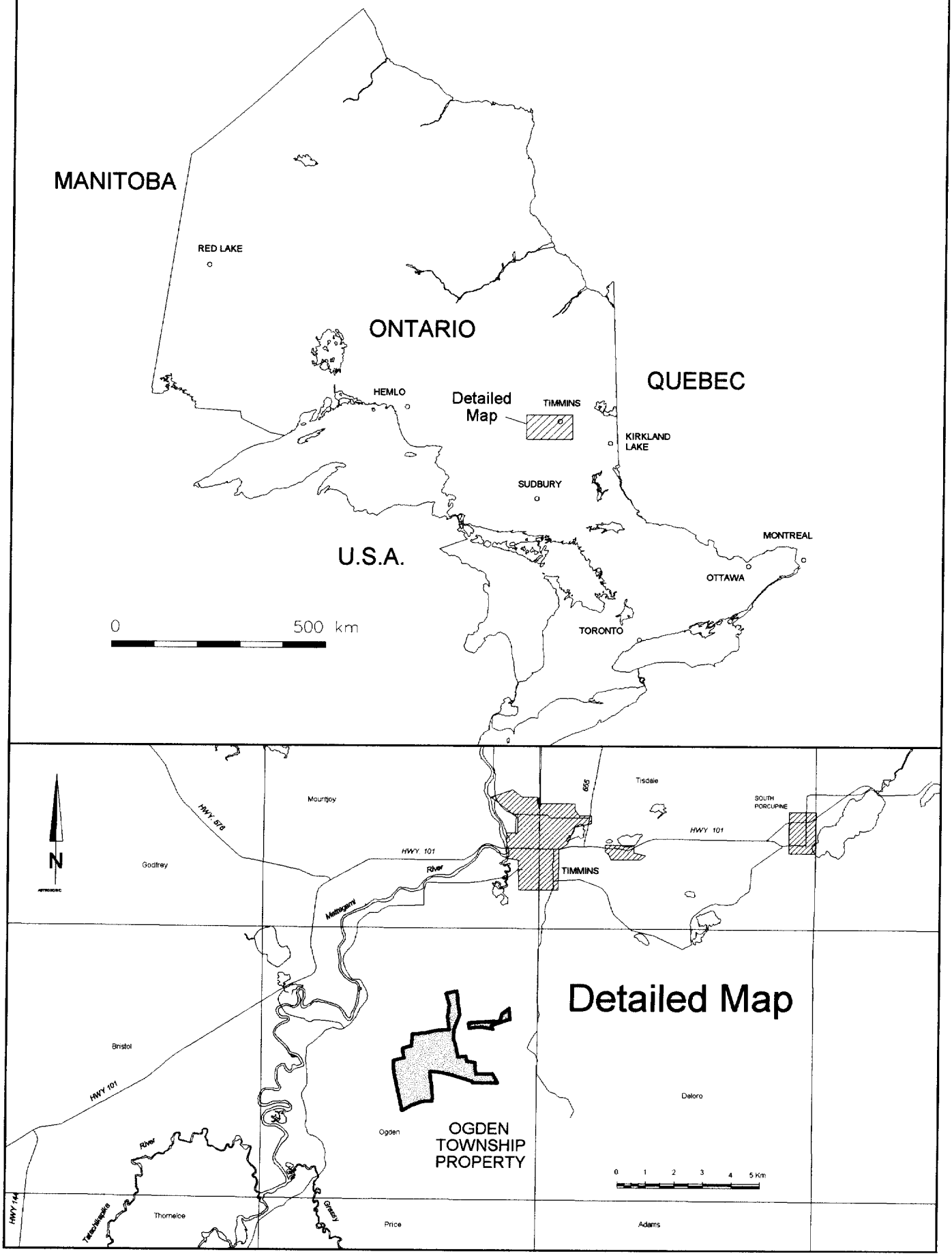
All claims are currently registered to Echo Bay Mines Ltd. of Timmins, Ontario.

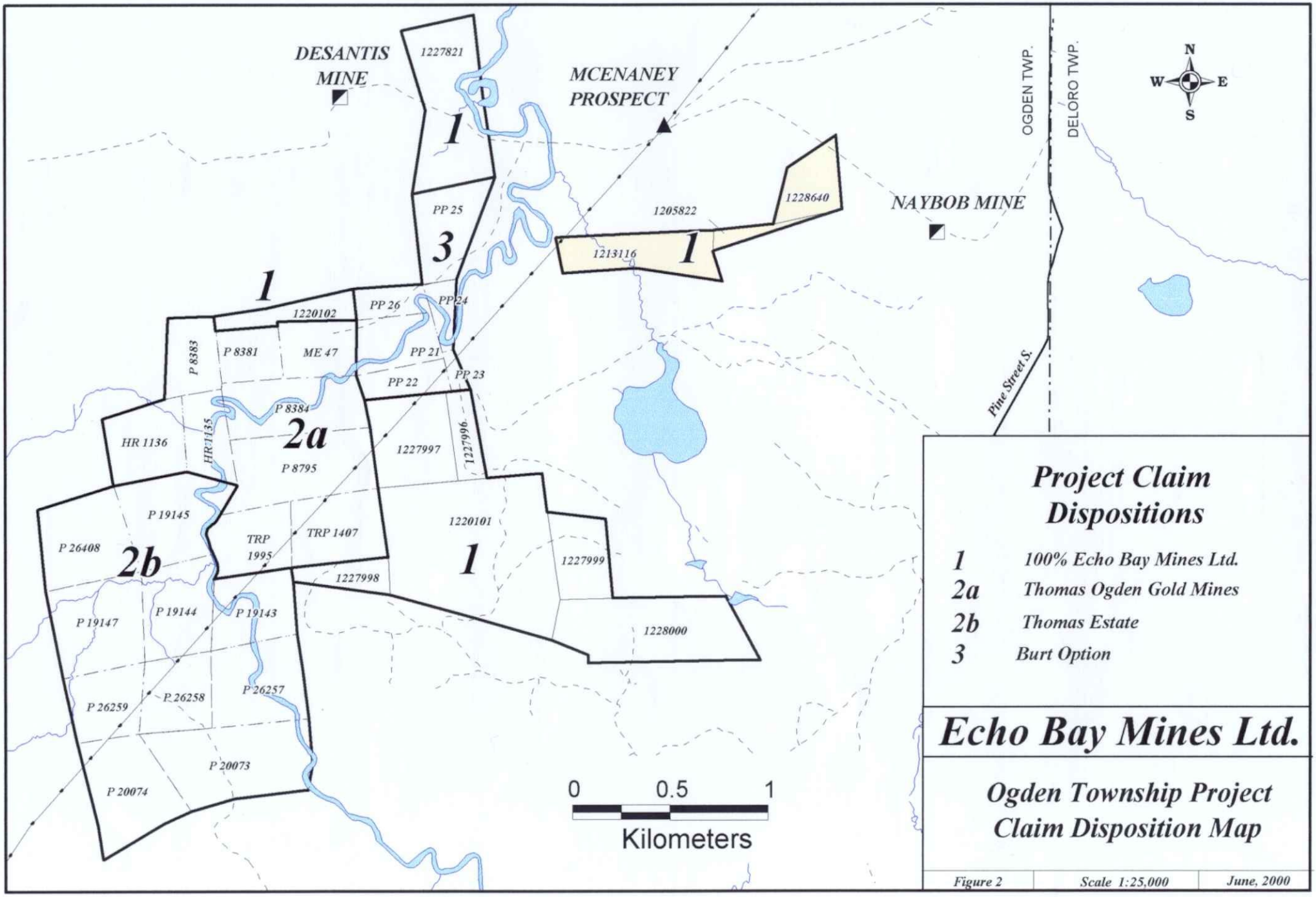
Location and Access

The claims are located in the northeast quadrant of Ogden Township, approximately 6 kilometers south of the city of Timmins, Ontario.

Access to the property is via a gravel road, which intersects Pine Street South approximately 6 kilometers south of Timmins. This gravel road crosses the northeast corner of claim 1228640. To the west, the same road intersects a hydroelectric transmission line, which crosses the northwest tip of claim 1213116, 700 meters to the southwest.

Figure 1: Ogden Township Property Location Map





Project Claim Dispositions

1	100% Echo Bay Mines Ltd.
2a	Thomas Ogden Gold Mines
2b	Thomas Estate
3	Burt Option

Echo Bay Mines Ltd.

Ogden Township Project Claim Disposition Map

Figure 2	Scale 1:25,000	June, 2000

Personnel

Paul Degagne completed the fieldwork, report writing and the drafting of the maps for the report. Dean Humphry of Timmins assisted the author by spending one day refurbishing the grid, prospecting and locating / attempting to locate claim posts.

Previous Work

Ogden Township was first staked and prospected shortly after the discovery of gold in the Timmins area in 1909. Significant gold production from nearby mines dates to the 1930's when the Buffalo-Ankerite and Delnite mines were brought into production.

The first detailed government geology map was produced by Hurst (1938). Previous to this, area mapping and showing examinations had been performed by Burrows (1912) and Hawley (1926). Open file Report 5012 by Carlson (1967) gives a detailed description of the geology and various mining properties in Ogden, Deloro and Shaw Townships.

Within one kilometer of Echo Bay's Ogden claim blocks, three properties (Naybob, DeSantis and McEnaney) have had underground development and two of these (Naybob and Desantis) have had a limited production of gold.

The following lists previous work performed on the three claims covered in this report, as documented in the MNDM's assessment office in Timmins:

1939:
Assessment File T-327

McEnaney Gold Mines Ltd. drilled 5 holes on the present claims. Two holes were collared on claim 1228640 and intersected mafic and ultramafic flows and minor tuff and sediments. Three holes were collared to the north of claim 1205822 and drilled to the south, transecting the claim. All three holes intersected talc-rich volcanic rocks.

1984:
Assessment File T-2768

L. Bonney drilled two holes totalling 202 feet on what is now claim 1205822. The holes were drilled to test a large outcrop of quartz-feldspar porphyry. Both holes intersected porphyry with abundant quartz veining and minor sulphides. No sample results were included with the drill logs.

1984
Assessment File T-2977

In 1984, Noranda Exploration drilled hole MJ-84-05 on what is now claim 1213116. The hole, which intersected talc-chlorite schist, was drilled at an azimuth of 235 degrees to a depth of 264 meters.

In 1988, Noranda completed a magnetometer and VLF-EM survey on what is now claim 1228640. Mapping was completed on this claim in 1989.

Assessment File T-4060

A grid was cut and a magnetometer survey completed over the claims by Echo Bay Mines Limited in 1998.

Regional Geology

The property and surrounding area forms part of the southern portion of the Abitibi Greenstone Belt of the Superior Geological Province. In the southern Abitibi, metavolcanic and associated metasedimentary rocks and synvolcanic peridotitic to granodioritic bodies have been intruded by large volumes of younger aged tonalitic-granodiorite batholiths and later by granite, feldspar +/- quartz porphyry and syenite intrusives. During and after this period of magmatism, alluvial-fluvial clastic metasedimentary rocks and alkalic metavolcanic rocks were formed and now are spatially associated with regional, steeply dipping shear zones such as the Porcupine-Destor Fault Zone. The metamorphic grade of the supracrustal rocks is generally sub-greenschist to greenschist facies but reach amphibolite facies near the margins of the larger intrusions.

The volcanic rocks in the Timmins area have been subdivided into two groups; the older Deloro Group and the Tisdale Group, which by definition are separated by the 070° trending Destor-Porcupine Fault. The third major group of rocks in the Timmins area is the Porcupine Group, which is composed of clastic sediments. The Porcupine Group is thought to have formed during a period that overlaps with the formation of both the Deloro and Tisdale Groups.

The Deloro Group is made up primarily of mafic, intermediate and felsic metavolcanics. Narrow but lateraly continuous units of iron formation are hosted within the intermediate to felsic metavolcanics proximal to the Tisdale Group contact. The Tisdale Group is composed primarily of ultramafic to mafic metavolcanics with only a minor felsic component. Compositionally, the Deloro Group is calc-alkaline in nature whereas the Tisdale Group is tholeiitic to ultramafic.

Within the property area, small felsic intrusions, usually quartz-feldspar porphyries or very fine grained felsite intrude the above rocks. Proterozoic aged diabase dykes cut all rock types in the area.

Property Geology

Mapping of the claims were performed on June 14 and 15, 2000 on a previously established grid consisting of 100 meter spaced wing lines with 25 meter picketed stations on each line.

The only outcrop on the property is located on TL 100N between lines 11E and 12E. This outcrop consists of a large hill of variably altered feldspar +/- quartz porphyry intruded by numerous quartz and carbonate stringers and veins. The porphyry exhibits weak to moderate pervasive sericite and carbonate alteration with generally trace to nil disseminated to cubic pyrite. Alteration of the porphyry is most intense on the east half, where fracturing, quartz veining and brecciation are common. A pit measuring 3 x 3 meters was located at 95N / 1205E on the east end of the outcrop.

Claim 1228640 is underlain by thick sand with mature jackpine growth. Mixed alder poplar and spruce underlie much of the remaining claims with the exception of a large area of wet grass and open water centered on claim 1213116.

Based on previous drilling, claim 1213116 and most of 1205822 are underlain by ultramafic flows (talc-chlorite schist), while claim 1228640 is underlain by ultramafic flows in the south, giving way to argillaceous sediments and mafic flows / tuff to the north.

An initial nine grab samples of quartz-feldspar porphyry were collected from the outcrop area including two from the pit. All samples were analyzed by Bondar Clegg Laboratories for gold, 35 element I.C.P., and wholerock analysis. Results are appended.

Several samples returned anomalous gold values greater than 100 ppb, including sample 34526, which returned 1.0 gpt. The higher gold values generally correspond to the more intensely altered samples (carbonate and sericite) with quartz stringers. Sample 34526 contained approximately 30% quartz.

After the initial results were received, an additional fifteen samples were collected systematically across the porphyry outcrop in a north-south direction. Sporadic anomalous gold values of up to 211 ppb were returned from the sampling.

Geochemical analysis shows locally elevated potassium and / or sodium values indicating alkali metasomatism of the porphyry body.

Conclusions

A mapping program of the three claim property identified a single outcrop consisting of altered quartz-feldspar porphyry. Grab samples from this porphyry unit returned anomalous gold values of up to 1.0 gpt Au. An assessment file search of old drill holes suggests that the remainder of the claims are underlain by talc-chlorite schist in the south and mafic flows and tuff to the north. These two units are separated by a thin package of graphitic argillite which trends approximately east-west through the lower part of claim 1228640.

The altered porphyry is one of several porphyry bodies associated with significant gold mineralization in the Kennilworth mine area. Although the claims have been drilled by a minimum of seven holes, the porphyry–volcanic contact has not been adequately tested. Future work on the claims should consist of drill testing this contact for economic gold mineralization.

Respectfully submitted,

Paul Degagne
Project Geologist – Echo Bay Mines Ltd.

Timmins, Ontario
August 14, 2000

Appendix I

Assay / Geochemical Certificates

CHIMITEC
BONDAR CLEGG

Rapport Lab Geochimie
Geochemical Lab Report

REPORT: T00-57217.0 (COMPLETE)

REFERENCE:

CLIENT: ECHO BAY MINES

SUBMITTED BY: P.DESGAGNE

PROJECT: 737

DATE RECEIVED: 19-JUN-00 DATE PRINTED: 25-JUI-00

DATE APPROVED	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION	EXTRACTION	METHOD
000621	1 Au30	Gold	9	5 PPB	Fire Assay of 30g	30g Fire Assay - AA
000621	2 Ag	Silver	9	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
000621	3 Cu	Copper	9	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
000621	4 Pb	Lead	9	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
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SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
ROCK	9	-150	9	CRUSH, SPLIT	9
				PULVERIZATION	9

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Rapport Lab Geochimie
Geochemical Lab Report

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SAMPLE NUMBER	ELEMENT UNITS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM	S PCT
34523		219	<.2	3	4	66	2	20	10	0.6	<5	33	<5	2.41	32	<10	39	49	40	<20	<20	74	1.61	1.89	0.46	.23	.14	137	9	4	16	2	<5	<10	.011	24	0.12
34524		17	<.2	3	5	13	2	9	4	0.4	<5	<5	<5	0.54	55	<10	97	116	20	<20	<20	62	0.63	0.28	0.06	.15	.30	17	1	<2	4	1	<5	<10	<.01	60	0.04
34525		74	<.2	8	6	30	1	10	6	<.2	<5	20	<5	0.91	22	<10	91	107	12	<20	<20	68	0.63	0.38	0.38	.07	.21	57	4	<2	3	<1	<5	<10	<.01	16	0.02
34526		1004	<.2	8	4	13	2	5	4	0.4	<5	17	<5	0.49	20	<10	69	122	6	<20	<20	43	0.31	0.02	0.11	.12	.25	25	2	<2	1	<1	<5	<10	<.01	32	0.01
34527		44	<.2	4	4	12	2	8	2	0.3	<5	9	<5	0.66	23	<10	52	157	9	<20	<20	34	0.37	0.12	0.10	.10	.17	27	1	<2	2	<1	<5	<10	<.01	23	0.01
34528		130	<.2	3	5	6	1	6	3	0.4	<5	16	<5	0.72	18	<10	106	98	12	<20	<20	54	0.53	0.08	0.11	.19	.35	42	3	2	2	<1	<5	<10	.015	42	0.01
34529		18	<.2	4	8	128	1	55	21	0.5	<5	<5	<5	3.00	86	<10	8	150	74	<20	<20	158	2.41	3.42	<.01	.01	.04	7	3	7	28	3	<5	<10	.019	109	<.01
34530		143	<.2	3	6	19	2	18	8	0.4	<5	12	<5	1.14	19	<10	81	46	18	<20	<20	55	0.83	0.37	0.18	.22	.34	61	3	2	5	<1	<5	<10	<.01	37	0.06
34531		63	<.2	9	5	6	2	9	5	0.3	<5	8	<5	0.57	25	<10	23	224	10	<20	<20	29	0.21	0.06	0.01	.09	.06	7	<1	<2	1	<1	<5	<10	<.01	17	<.01

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

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BONDAR CLEGG

Rapport Lab Geochimie
Geochemical Lab Report

REPORT: T00-57254.0 (COMPLETE)

REFERENCE:

CLIENT: ECHO BAY MINES

SUBMITTED BY: P.DESGAGNE

PROJECT: 737

DATE RECEIVED: 06-JUL-00 DATE PRINTED: 21-JUL-00

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				PULVERIZATION	15

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34532		7	<.2	<1	<2	298	<1	139	40	0.5	<5	<5	<5	6.14	100	<10	11	177	101	<20	<20	77	4.52	6.15	<.01	<.01	.05	3	1	9	34	4	<5	<10	<.01	30	<.01
34533		53	<.2	1	<2	33	<1	32	8	0.2	<5	<5	<5	1.05	188	<10	37	86	12	<20	<20	106	0.59	0.66	0.26	0.10	.08	43	5	<2	4	<1	<5	<10	<.01	95	0.04
34534		5	<.2	2	5	63	1	36	12	0.3	<5	<5	<5	4.42	1280	<10	26	72	13	<20	<20	104	0.46	4.87	9.04	<.01	.13	1282	6	<2	3	<1	<5	<10	<.01	41	0.10
34535		5	<.2	2	2	35	<1	31	7	<.2	<5	<5	<5	1.10	182	<10	38	97	12	<20	<20	100	0.59	0.60	0.27	0.09	.07	40	4	<2	4	<1	<5	<10	<.01	77	0.05
34536		174	<.2	2	4	27	5	14	6	0.3	<5	25	<5	1.42	19	<10	175	49	14	<20	<20	91	0.62	0.20	0.16	0.04	.36	57	3	2	3	<1	<5	<10	<.01	7	0.06
34537		153	<.2	3	8	18	<1	8	5	0.3	<5	61	<5	0.97	18	<10	181	78	14	<20	<20	89	0.81	0.38	0.21	0.05	.37	54	4	2	4	<1	<5	<10	<.01	6	0.02
34538		39	<.2	9	3	14	<1	5	5	<.2	<5	9	<5	0.91	200	<10	123	68	5	<20	<20	65	0.42	0.09	0.26	0.05	.30	54	3	<2	1	<1	<5	<10	<.01	8	0.16
34539		98	<.2	16	3	11	1	5	4	<.2	<5	5	<5	0.90	131	<10	344	62	5	<20	<20	60	0.41	0.07	0.26	0.06	.30	65	3	<2	<1	<1	<5	<10	<.01	12	0.15
34540		33	<.2	50	2	18	1	6	4	<.2	<5	<5	<5	0.77	270	<10	270	75	6	<20	<20	62	0.42	0.15	0.35	0.06	.29	68	3	<2	1	<1	<5	<10	<.01	12	0.11
34541		68	<.2	17	4	7	<1	5	3	0.2	<5	36	<5	1.04	57	<10	101	64	5	<20	<20	69	0.37	0.05	0.15	0.06	.29	56	2	<2	<1	<1	<5	<10	<.01	12	0.10
34542		<5	<.2	7	<2	20	<1	8	5	0.2	<5	<5	<5	1.05	239	<10	462	95	9	<20	<20	43	0.48	0.34	0.48	0.06	.24	77	3	<2	2	<1	<5	<10	<.01	15	0.22
34543		211	<.2	3	5	7	1	4	3	0.3	<5	96	<5	1.07	45	<10	296	74	7	<20	<20	72	0.47	0.06	0.20	0.03	.39	75	3	<2	1	<1	<5	<10	<.01	11	0.10
34546		<5	<.2	1	<2	21	<1	15	7	<.2	<5	<5	<5	1.03	269	<10	29	54	10	<20	<20	58	0.55	0.77	0.80	0.09	.08	51	1	<2	4	<1	<5	<10	<.01	32	<.01
34547		85	<.2	5	6	15	<1	6	5	0.2	<5	16	<5	1.24	192	<10	396	74	5	<20	<20	47	0.40	0.16	0.52	0.06	.27	101	3	<2	<1	<1	<5	<10	<.01	8	0.42
34548		7	<.2	2	<2	9	<1	6	3	<.2	<5	11	<5	0.51	16	<10	68	79	6	<20	<20	89	0.44	0.20	0.07	0.07	.18	21	2	<2	2	<1	<5	<10	<.01	22	<.01

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BONDAR CLEGG

ISO 9002 REGISTERED KPMG VANCOUVER BRANCH

Rapport Lab Geochimie
Geochemical Lab Report

REPORT: TOO-57217.1 (COMPLETE)

REFERENCE:

CLIENT: ECHO BAY MINES

PROJECT: 737

SUBMITTED BY: P.DESGAGNE

DATE RECEIVED: 19-JUN-00 DATE PRINTED: 14-AUO-00

DATE APPROVED	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION	EXTRACTION	METHOD
000725	1 SiO2	Silica (SiO2)	9	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000725	2 TiO2	Titanium (TiO2)	9	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000725	3 Al2O3	Alumina (Al2O3)	9	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000725	4 Fe2O3	Total Iron (Fe2O3)	9	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000725	5 MnO	Manganese (MnO)	9	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000725	6 MgO	Magnesium (MgO)	9	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000725	7 CaO	Calcium (CaO)	9	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000725	8 Na2O	Sodium (Na2O)	9	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000725	9 K2O	Potassium (K2O)	9	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000725	10 P2O5	Phosphorous (P2O5)	9	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000725	11 LOI	Loss on Ignition	9	0.01 PCT	Ignition 1000 Deg.	GRAVIMETRIC
000725	12 Total	Whole Rock Total	9	0.01 PCT		
000725	13 Cr2O3	Chromium Oxide	9	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000725	14 Zr	Zirconium	9	1 PPM	Pressed Pellet	XRAY FLUORESCENCE
000725	15 Y	Yttrium	9	1 PPM	Pressed Pellet	XRAY FLUORESCENCE
000725	16 Rb	Rubidium	9	2 PPM	Pressed Pellet	XRAY FLUORESCENCE
000725	17 Sr	Strontium	9	1 PPM	Pressed Pellet	XRAY FLUORESCENCE
000725	18 Nb	Niobium	9	2 PPM	Pressed Pellet	XRAY FLUORESCENCE
000725	19 Ba	Barium	9	10 PPM	Pressed Pellet	XRAY FLUORESCENCE

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
ROCK	9	-150	9	AS RECEIVED	9

REPORT COPIES TO: MR PAUL DEGAGNE

INVOICE TO: MR PAUL DEGAGNE

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BONDAR CLEGG

ISO 9002 REGISTERED KPMG VANCOUVER BRANCH

Rapport Lab Geochimie
Geochemical Lab Report

CLIENT: ECHO BAY MINES
PROJECT: 737
REPORT: T00-57217.1 (COMPLETE)
DATE RECEIVED: 19-JUN-00 DATE PRINTED: 14-AUG-00 PAGE 1 OF 1

SAMPLE NUMBER	ELEMENT UNITS	SiO2 PCT	TiO2 PCT	Al2O3 PCT	Fe2O3 PCT	MnO PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	P2O5 PCT	LOI PCT	Total PCT	Cr2O3 PCT	Zr PPM	Y PPM	Rb PPM	Sr PPM	Nb PPM	Ba PPM
34523		57.32	0.77	17.39	5.27	<.01	4.46	1.05	6.80	1.61	0.84	3.49	99.01	0.01	313	13	20	417	8	442
34524		72.93	0.39	14.71	1.61	<.01	1.06	0.20	4.79	2.58	0.06	1.51	99.90	0.06	295	3	55	149	6	1014
34525		71.03	0.50	14.94	1.84	<.01	0.84	0.58	4.90	4.04	0.41	1.21	100.30	0.02	209	7	57	445	6	1601
34526		81.13	0.28	9.71	1.13	<.01	0.15	0.19	2.99	3.59	0.16	0.76	100.10	0.03	117	3	40	181	3	1036
34527		85.46	0.24	7.16	1.50	<.01	0.39	0.18	2.53	1.33	0.15	0.94	99.91	0.03	99	2	29	169	2	542
34528		76.04	0.42	11.73	2.34	<.01	0.53	0.25	3.62	2.27	0.22	1.42	98.86	0.03	178	4	56	206	4	968
34529		68.44	1.17	7.40	6.86	0.02	8.42	1.05	0.07	0.35	0.44	4.25	98.51	0.04	805	9	13	11	15	84
34530		60.09	0.65	20.39	3.19	<.01	1.30	0.37	7.67	2.93	0.30	2.19	99.09	0.01	249	6	74	381	7	740
34531		91.36	0.11	3.64	1.09	<.01	0.17	0.03	1.54	0.53	0.03	0.58	99.14	0.05	58	<1	10	50	<2	136

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

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ISO 9002 REGISTERED KPMG VANCOUVER BRANCH

Rapport Lab Geochimie
Geochemical Lab Report

REPORT: T00-57254.1 (COMPLETE)

REFERENCE:

CLIENT: ECHO BAY MINES

SUBMITTED BY: P.DESGAGNE

PROJECT: 737

DATE RECEIVED: 06-JUL-00 DATE PRINTED: 15-AUO-00

DATE APPROVED	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION	EXTRACTION	METHOD
000000	1 SiO2	Silica (SiO2)	15	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000000	2 TiO2	Titanium (TiO2)	15	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000000	3 Al2O3	Alumina (Al2O3)	15	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000000	4 Fe2O3	Total Iron (Fe2O3)	15	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000000	5 MnO	Manganese (MnO)	15	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000000	6 MgO	Magnesium (MgO)	15	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000000	7 CaO	Calcium (CaO)	15	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000000	8 Na2O	Sodium (Na2O)	15	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000000	9 K2O	Potassium (K2O)	15	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000000	10 P2O5	Phosphorous (P2O5)	15	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000000	11 LOI	Loss on Ignition	15	0.01 PCT	Ignition 1000 Deg.	GRAVIMETRIC
000000	12 Total	Whole Rock Total	15	0.01 PCT		
000000	13 Cr2O3	Chromium Oxide	15	0.01 PCT	BORATE FUSION	XRAY FLUORESCENCE
000000	14 Zr	Zirconium	15	1 PPM	Pressed Pellet	XRAY FLUORESCENCE
000000	15 Y	Yttrium	15	1 PPM	Pressed Pellet	XRAY FLUORESCENCE
000000	16 Rb	Rubidium	15	2 PPM	Pressed Pellet	XRAY FLUORESCENCE
000000	17 Sr	Strontium	15	1 PPM	Pressed Pellet	XRAY FLUORESCENCE
000000	18 Nb	Niobium	15	2 PPM	Pressed Pellet	XRAY FLUORESCENCE
000000	19 Ba	Barium	15	10 PPM	Pressed Pellet	XRAY FLUORESCENCE

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
ROCK	15	-150	15	AS RECEIVED	15
				AS RECEIVED	15

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ISO 9002 REGISTERED KEMA VANCOUVER BRANCH

Rapport Lab Geochimie
Geochemical Lab Report

CLIENT: ECHO BAY MINES PROJECT: 737

REPORT: T00-57254.1 (COMPLETE) DATE RECEIVED: 06-JUL-00 DATE PRINTED: 15-AUG-00 PAGE 1 OF 1

SAMPLE NUMBER	ELEMENT UNITS	SiO2 PCT	TiO2 PCT	Al2O3 PCT	Fe2O3 PCT	MnO PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	P2O5 PCT	LOI PCT	Total PCT	Cr2O3 PCT	Zr PPM	Y PPM	Rb PPM	Sr PPM	Nb PPM	Ba PPM
34532		58.28	0.71	11.21	11.02	0.02	12.56	0.06	0.09	0.55	0.04	6.11	100.70	0.05	358	2	18	9	6	801
34533		63.60	1.22	18.69	1.77	0.03	1.25	0.47	9.46	1.16	0.05	1.66	99.38	0.03	658	15	20	259	17	298
34534		37.11	1.00	6.62	5.94	0.15	7.88	14.20	0.12	4.83	0.04	21.78	99.69	0.01	575	15	61	1265	11	533
34535		68.27	0.42	17.48	1.07	<.01	0.75	0.05	8.90	0.98	0.03	0.80	98.77	0.02	284	2	26	240	6	176
34536		61.20	0.76	20.51	3.26	<.01	1.07	0.30	5.85	4.20	0.27	2.50	99.95	0.01	306	7	95	308	9	1425
34537		70.64	0.57	15.08	2.63	<.01	1.29	0.37	3.55	3.30	0.30	2.06	99.80	0.02	235	6	81	216	5	1526
34538		68.59	0.53	16.07	2.49	0.03	0.62	0.45	5.16	3.78	0.26	1.68	99.67	0.02	218	5	80	417	6	1486
34539		68.36	0.52	16.20	2.45	0.02	0.53	0.56	5.39	3.82	0.30	2.28	100.46	0.01	217	7	73	435	6	1769
34540		69.22	0.50	15.73	2.15	0.04	0.67	0.60	5.03	4.13	0.26	1.57	99.93	0.02	212	6	74	425	5	1957
34541		70.25	0.54	15.68	2.54	<.01	0.54	0.28	5.41	3.30	0.22	1.49	100.26	0.02	214	5	73	348	7	1165
34542		70.41	0.45	14.17	2.14	0.03	0.82	0.78	4.22	4.64	0.25	2.22	100.22	0.09	185	6	74	497	5	2241
34543		69.76	0.55	15.44	2.88	<.01	0.86	0.36	2.79	4.52	0.27	2.30	99.74	0.02	221	6	106	256	7	2077
34546		64.39	0.34	17.91	1.71	0.04	1.41	1.36	8.39	2.07	0.03	2.48	100.14	0.01	231	2	29	396	4	361
34547		69.76	0.50	14.98	2.60	0.03	0.67	0.93	5.26	2.55	0.33	2.16	99.80	0.02	199	6	60	343	6	1499
34548		72.67	0.53	15.09	1.37	<.01	0.65	0.19	6.38	1.69	0.12	1.10	99.79	0.02	223	5	42	419	7	597

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)
W0060.00336
Assessment Files Research Imaging

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

42A06NW2025 2.20504 OGDEN 900

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) 2.20504

Name	Client Number
ECHO BAY MINES Ltd.	128711
Address: P.O. Box 551 Timmins, On. 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
mapping / geochemical	Commodity
	Total $ Value of Work Claimed: # 2,580
Dates Work Performed From: 14 (Day) 6 (Month) 2000 (Year) To: 15 (Day) 6 (Month) 2000 (Year)	NTS Reference
Global Positioning System Data (if available) — Township/Area: Ogden	Mining Division: Pascupine
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: P.O. Box 551 TIMMINS, ON 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: Aug. 21/2000
Agent's Address: Po. Box 551 Timmins, ON P4N-7E7	Telephone Number: 705-363-2366	Fax Number: 705-363-2222

0241 (03/97)

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AUG 22 2000
1:10pm
GEOSCIENCE ASSESSMENT OFFICE

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.

2.20060. 00336

	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	1205822	1	$ 785	890	0	0
2	1213116	2	$ 1000	1690	0	0
3	1228640	1	$ 795	0	795	0
4						
5						
6						
7			2.20504			
8						
9						
10						
11						
12						
13						
14						
15						
	Column Totals	4	2580	2580	795	0

I, Paul Degagné (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
	Aug. 21/2000

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):

~~- credits to be cut from~~

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)

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AUG 22 2000
1:10pm
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Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use)
W0000.00336

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
mapping/sampling	2.5 days	$ 300	$ 750
prospecting/grid refurbishing	1 day	$ 150	$ 150
report writting	1.5 days	$ 300	$ 150
drafting	1.5 days	$ 300	$ 150
Whole Rock Analyses	24	$ 19.50	$ 468
Au + 34 ICP Analyses	24	$ 13.00	$ 312
Associated Costs (e.g. supplies, mobilization and demobilization).			
2.20504			
Transportation Costs			
Food and Lodging Costs			
		Total Value of Assessment Work	2,580

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 Project Geologist-Echo Bay Mines (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

Signature: [signature] Date: Aug. 21/2000

RECEIVED
AUG 29 2000
1:10 pm
GEOSCIENCE ASSESSMENT OFFICE

0212 (03/97)

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 6, 2000

Paul DeGagne
ECHO BAY MINES LTD.
P.O. BOX 551
TIMMINS, ONTARIO
P4N-7E7

Dear Sir or Madam:

Submission Number: 2.20504

Subject: Transaction Number(s):	W0060.00336	**Status** 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 LUCILLE JEROME by e-mail at lucille.jerome@ndm.gov.on.ca or by telephone at (705) 670-5858.

Yours sincerely,

Steven B. Beneteau

ORIGINAL SIGNED BY
Steve B. Beneteau
Acting Supervisor, Geoscience Assessment Office
Mining Lands Section

Correspondence ID: 15308
Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.20504

Date Correspondence Sent: October 06, 2000 **Assessor:** LUCILLE JEROME

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W0060.00336	1205822	OGDEN	Approval	October 06, 2000

Section:
12 Geological GEOL
17 Assays ASSAY

At the discretion of the Ministry, the assessment work performed on the mining lands noted in this work report may be subject to inspection and/or investigation at any time.

Correspondence to:

Resident Geologist
South Porcupine, ON

Assessment Files Library
Sudbury, ON

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

Paul DeGagne
ECHO BAY MINES LTD.
TIMMINS, ONTARIO

Correspondence ID: 15308

MAP SYMBOLOGY

Aerial Cableway
Boundary
International
Interprovincial
District, Township Indian Reserve
Concession
Lot, Concession
Approximate
Park 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 (Constructed as 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
Access (road of doubtful maintenance or superficial driveway)
Trail, Bush Road (portage only)
Rapids
Double line river with multiple rapids
Double line river with multiple rapids
Reservoir
River, Stream, Canal
Approximate seasonal direction of flow
Rock
Exposed
Shoal
Spot Elevation (Trans 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

Description	Order No.	Date	Disposition	File

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

(JP) APPLICATION PENDING UNDER PUBLIC LANDS ACT NOTICE RECEIVED 85-MAR-30 (SNOWMOBILE TRAIL)

(S) AGGREGATE PERMIT

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

42A06NW2025 2.20506 OGDEN 200

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

MOUNTJOY TWP.

BRISTOL TWP.

DELORO TWP.

PRICE TWP.

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	
CANCELLED	
SAND & GRAVEL	

NOTE MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP 380, SEC 63, SUBSEC 1

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

SCALE 1:20 000
GRID ZONE : 17

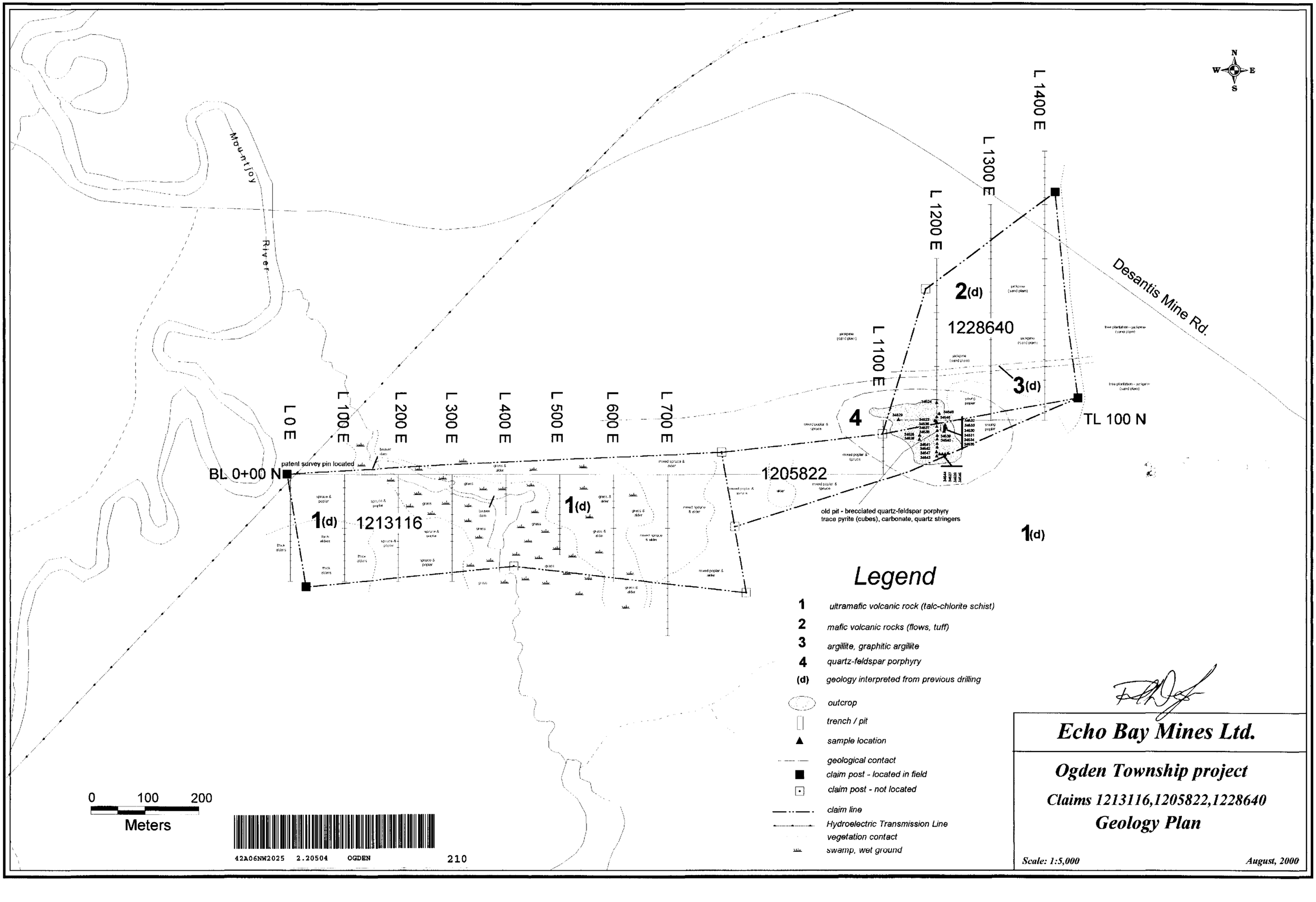
NOTES

TOWNSHIP
OGDEN
M N R ADMINISTRATIVE DISTRICT
TIMMINS
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
COCHRANE

Ministry of Natural Resources — Land Management Branch — Ontario

ORIGINAL COMPILATION JULY 1984
ACTIVATED JULY 3, 1992 BY D.C.
REVISED
CHECKED BY G.W.

Number G-3979



Legend

- **1** *ultramafic volcanic rock (talc-chlorite schist)*
- **2** *mafic volcanic rocks (flows, tuff)*
- **3** *argillite, graphitic argillite*
- **4** *quartz-feldspar porphyry*
- **(d)** *geology interpreted from previous drilling*
- *outcrop*
- *trench / pit*
- *sample location*
- *geological contact*
- *claim post - located in field*
- *claim post - not located*
- *claim line*
- *Hydroelectric Transmission Line*
- *vegetation contact*
- *swamp, wet ground*

Echo Bay Mines Ltd.

Ogden Township project

Claims 1213116,1205822,1228640

Geology Plan

Scale: 1:5,000 *August, 2000*