Kennecott Canada Exploration Inc.

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2002 Ground Geophysical and Property Preparation Assessment Report on the Bigwater West Property, Jessop Township Area

NTS: 042A-11
MNDM Plan G-3984

Porcupine Mining Division, Ontario

Prepared by:
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Author
Ian Graham

September 20th, 2002

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INTRODUCTION

Project Description

Kennecott Canada Exploration Inc. is actively exploring the Bigwater West property, in co-operation with Larry Gervais, Prospector, of Timmins Ontario.

The claims comprising Bigwater West were staked by Mr Gervais. Mr. Gervais commissioned an EM (MaxMin I) survey to confirm the presence of previously defined conductors (Appendix B). This work has been submitted for assessment credit at the Timmins office, MNDM, on September 20th, 2002, by Mr. Gervais.

Kennecott reviewed the property in the context of recent regional geophysical data. In addition to the E.M. work by Mr. Gervais, Kennecott has improved access to the property by brush- and deadfall- clearing on existing tracks, line-cutting on a local grid, and conducting a ground gravity survey over the property.

Further EM work and drillingon the property is planned (winter, 2003).

Location and Access

The Bigwater West property is located 7km north of the City of Timmins, approximately 5 km NE of the Timmins Airport (Figure 1). The property claims are located due west of Bigwater Lake, and are accessible via un-maintained tracks leading west off Highway 655 (Bigwater Lake occurs adjacent to, and east of, the Highway).

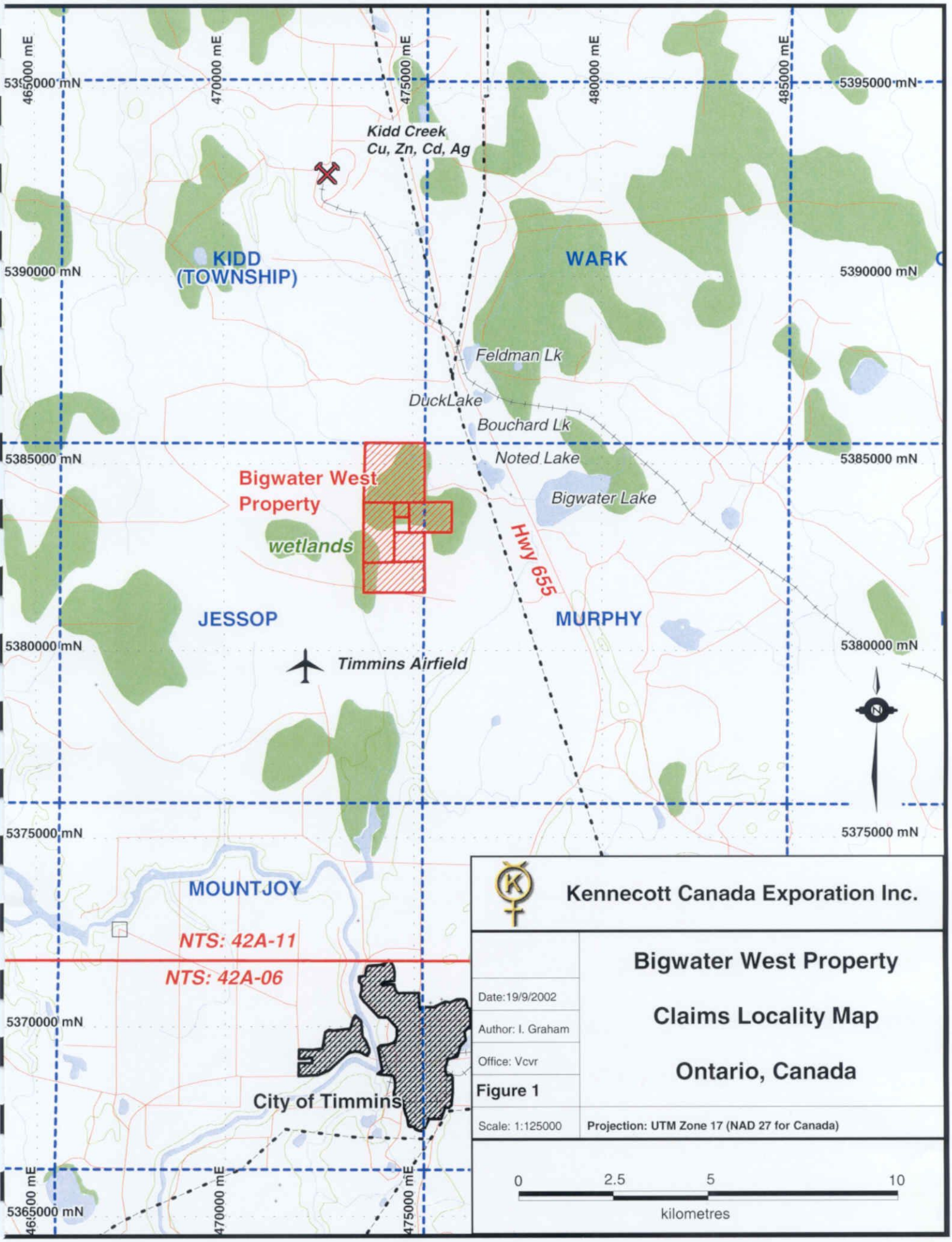
Most of the area is low-lying wetland, best accessed in winter. Local knolls, frequently associated with mapped outcrop, were noted during the winter field season.

The area was prepared for surveying by brush-clearing and deadfall removal along access tracks: survey grids were prepared by gravity survey quality line-cutting off the main access tracks. Access from the highway was afforded by snowmobile and sleds. Daily line-cutting, prospecting and gravity surveying on the grid was undertaken on foot using snowshoes.

Significant effort was expended to re-locate and repeat existing gravity data in the immediate survey area.

Claim Information

Table 1 lists the claims comprising the Bigwater West property. The property includes six contiguous claims comprised of 43 claim units.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5370000 mN
5365000 mN
Kidd Creek
Cu, Zn, Cd, Ag
KIDD
(TOWNSHIP)
WARK
Feldman Lk
DuckLake
Bouchard Lk
Noted Lake
Bigwater Lake
Bigwater West
Property
wetlands
Hwy 655
JESSOP
MURPHY
Timmins Airfield
MOUNTJOY
NTS: 42A-11
NTS: 42A-06
City of Timmins
N
Kennecott Canada Exporation Inc.
Bigwater West Property
Claims Locality Map
Ontario, Canada
Date:19/9/2002
Author: I. Graham
Office: Vcvr
Figure 1
Scale: 1:125000
Projection: UTM Zone 17 (NAD 27 for Canada)
0
2.5
5
10
kilometres

Table 1: Bigwater West Project Claims, Porcupine Mining Division

Mining Lands - Mining Claims Summary Porcupine - Division 60

Claim Number	Units	Township	Lot Description	Staker	Recorded Holder	Recorded	Due Date	Work	Claim Status
P 1240902	16	JESSOP (G-3984)	ALL OF LOT 1 & 2 CON V1	GAGNON, LUC PIERRE (M24198)	GERVAIS, LARRY NOEL (100.00 %)	2000-Sep-26	2000-Sep-26	$ 6,400	Active
P 1240903	8	JESSOP (G-3984)	ALL OF LOT 2 CON V	GAGNON, LUC PIERRE (M24198)	GERVAIS, LARRY NOEL (100.00 %)	2000-Sep-26	2000-Sep-26	$ 3,200	Active
P 1240904	4	JESSOP (G-3984)	S1/2 OF LOT 1 CON V	GAGNON, LUC PIERRE (M24198)	GERVAIS, LARRY NOEL (100.00 %)	2000-Sep-26	2000-Sep-26	$ 1,600	Active
P 1240905	1	JESSOP (G-3984)	N W 1/4 OF N 1/2 OF LOT 1 CON V	GAGNON, LUC PIERRE (M24198)	GERVAIS, LARRY NOEL (100.00 %)	2000-Sep-26	2000-Sep-26	$ 400	Active
P 1240906	6	JESSOP MURPHY	NE1/2 N1/2 OF LOT 1 CON 5 N1/2 LOT 12	GAGNON, LUC PIERRE (M24198)	GERVAIS, LARRY NOEL (100.00 %)	2000-Sep-26	2000-Sep-26	$ 2,400	Active
P 1238678	8	JESSOP (G-3984)	N1/2 LOT 1 AND LOT 2 CON IV	PILON, MARIO LUCIEN (M25246)	GERVAIS, LARRY NOEL (100.00 %)	2000-Nov-15	2002-Nov-15	$ 3,200	Active
							Total >>	$ 17,200	

Historic Work

Documented work and data employed for reference by Kennecott and Mr. Gervais for Bigwater West project work, are listed in brief below (Table 2). The EM survey work conducted by Mr. Gervais, and filed for current assessment requirement credit (Appendix B, this report), comprised important reference data.

Table 2: Reference materials used as a basis for Kennecott / Gervais work.

Year(s) [File ref.]	Reference	Summary
1935 [T-3586]	McIntosh, G, for owners Birce, S. and Heard, D.G.	Veins in carbonatized pillowed lavas, py & po association. Trenching and sampling, only limited assay values. This work checked and summarized by Ginn, 1963
1939	Berry, L.G. Geology of the Bigwater Lake Area. *Ontario Dept. Mines, 48th Annual Report*, v 48, Pt. 12	Describes carbonatized pillow lavas in pits in the northern part of the Bigwater West Claims, with veins carrying py, gal, cpy and some pyrrhotite (po) in shear zones (pg 7). Rhyolite o/c mapped WSW of project grid.
1966 [T-1027] 1965	Steers J.E. for Cincinnati-Porcupine Mines Ltd. (based on Rattew, 1965) Rattew, A.R. Report on Airborne Geophysical Survey...(Jessop Twp, Canadian Aero Proj. # 5044)	Airborne magnetic and EM surveys. Ground EM follow up recommended for an area coinciding with the southern extent of the Bigwater W project area.
1968 [T-1027]	Phelan, L.G. for Cincinnati-Porcupine Mines Ltd.	Dual frequency conductors on E-central Bigwater W project. Two major N-S conductors (2000', 3600'), with some coincident magnetics. Drilling recommended.
1969 [T-1027]	Phelan, L.G. for Cincinnati-Porcupine Mines Ltd.	Two holes (–50° to W) were drilled to test a northern feature, and a narrow conductive zone central to the main N-S (3600') conductor. The former intersected andesite then greywacke +/- graphitic sediments with 5-10 py+po. The southern hole intersected altered andesite / dacite with trace po, up to 7% py.
1971 [T-316]	Alexander, D.A., for Hollinger Mines Ltd. *EM-16 Electromagnetic Survey, Jessop #3 Group*	Negative results (no conductors). Ascribed to overburden depth, and non-ideal use of transmitter locations: check EM and magnetics surveys recommended
1996 OGS	Ontario Geological Survey, 1996, Timmins Area, Ontario airborne magnetic and electromagnetic surveys, processed data and derived products, Archean and Proterozoic "greenstone" belts; ERLIS Data set CD-ROM 1004, Ontario Geological Survey, Sudbury.	Compiled airborne mag and EM employed as a GIS reference basis for the project.
1998	Ayer, J.A.; Trowell, N.F.; Madon, Z.; Wilson, A; Messier, L. and McIlraith, S.J. 1998. Geological Compilation of the Timmins Area, Abitibi Greenstone Belt. Ontario Geological Survey, Miscellaneous Release - Data 36	Compiled geological data employed as a GIS reference basis for the project.

Year(s) [File ref.]	Reference	Summary
2001 OGS	Ground gravity survey data from the Timmins Collaborative Gravity Survey Porject, Timmins area; Ontario Geological Survey, Miscellaneous Release – Data 79.	Regional gravity data excluded direct survey of area of interest, however 2 marginal stations suggest subtle geology feature adjacent to Cincinnati conductors.

The following referenced material was not reviewed in detail (Table 3).

Table 3: Selected additional reference material.

Year(s) [File ref.]	Reference	Summary
1964	New North Mines Ltd.	Ground geophysics outline three north-easterly conductors. Five holes drilled, defining rhyolitic, andesitic flows, (graphitic) tuff. Up to 3% sulphides, py, po, cpy, sph. These holes have not been map or field located for this project.
1960	Ginn, R.M. Ontario Department of Mines Preliminary Map P158.	Map only reviewed. Structural trends noted.

EXPLORATION RESULTS

Mr. Gervais undertook a ground EM survey prior to work planning by Kennecott. This work outlined two possible conductive zones across the property (referred to as Zone A and Zone B). These data would broadly corroborate the detection of roughly N-S trending conductors by Cincinnati-Porcupine in 1968 (table 2).

Line-cutting and existing track rehabilitation preceded a gravity survey. The gravity survey specifications and equipment are included in appendix A. The gravity contractor was mobilized from B.C. under 'small contract' conditions (i.e. a fixed mobilization cost, high per station cost, no guaranteed minimum no. of stations). Review of results as generated resulted in 135 readings at 101 stations: this coverage exceeded initial scope since an encouraging gravity target was defined.

Final processed gravity data are illustrated in Figure 3. In brief, exploration results indicate:

- A local gravity high trending broadly N-S in the work area
- This gravity high confirms and intensifies a subtle gravity feature identified in regional work (refer Table 2, 2001 reference)
- The gravity feature correlates broadly with a magnetic response evident in regional magnetic data
- The gravity feature is broadly co-located with an historic N-S conductor identified by Cincinnati-Porcupine (1968). The 3600' Cincinnati-Porcupine conductive feature is thought to correlate with the Gervais 2000 conductive Zone A (refer Appendix B).

RECOMMENDATIONS

The gravity feature and its apparent close spatial relationship to known conductors and magnetic geophysical features are of exploration interest.

Historic drilling has intersected sulphide mineralization, and conductive materials ('carbonaceous', ostensibly graphitic) have previously been drilled: together these suggest the possibility of adjacent, possibly significant mineralization. Graphitic horizons (graphitic argillite) of broadly N-S orientation are known from the mined Kidd Creek deposit (10km NNW, refer figure 1), as are bounding felsic volcanics (also known from the Bigwater West area). However, komatiitic rocks or massive sulphide deposits have as yet not been identified at Bigwater West.

Future work should include:

- Ground EM (ProTEM fixed loop) to re-establish the location of the known conductors with reference to the existing gravity grid, and extend the recent data of Gervais
- Ground magnetic surveys over the area of the gravity grid
- Drilling to test gravity and re-established EM targets.

SUMMARY OF EXPENDITURES

Expenditures on the Biwater West claims have been made by Mr. Larry Gervais ($5,198.00, filed by Mr. Gervais, see Appendix B), and by Kennecott Exploration (this report). Kennecott Expenditures are broken out in table 4, below.

Table 4: Summary of Project Expenditures by Kennecott

Work Description	Cost / Unit	Total Item
Field Work		
Track clearing, deadfall removal: 2.8km (safe for snowmobile)	120 / km	336.00
Linecutting[1]: 22.175 km, Hussey Geophysical (gravity grade)	300/km	6,652.50
Gravity Survey: Mobilization (2 men, equip, DGPS, vehicle)	2000	2,000
Gravity Survey, 107 charged stations @ 35 US (54.25 Cdn)	54.25/stn	5,750.50
Field Equipment		
2 x Skidoo Tundra + Skidder rentals: 8 days	52+10/dy	992.00
Gasoline Purchases: 18 dys	12 / dy	216.00
Kennecott Supervision (Ian Graham)		
Travel to Timmins: Air / Hotel	987 air / 93.45	1,080.45
Vehicle: Frd Explorer, Rental + Insurance		1,665.12
Accommodation, Senator Hotel: 8th – 25th January (18 dys)	80.65 / dy	1,451.52
Meals, 18 days	30 / dy	540.00
		20,684.09

[1] Includes line-cutting for fixed loop EM survey, to be conducted in January 2003.

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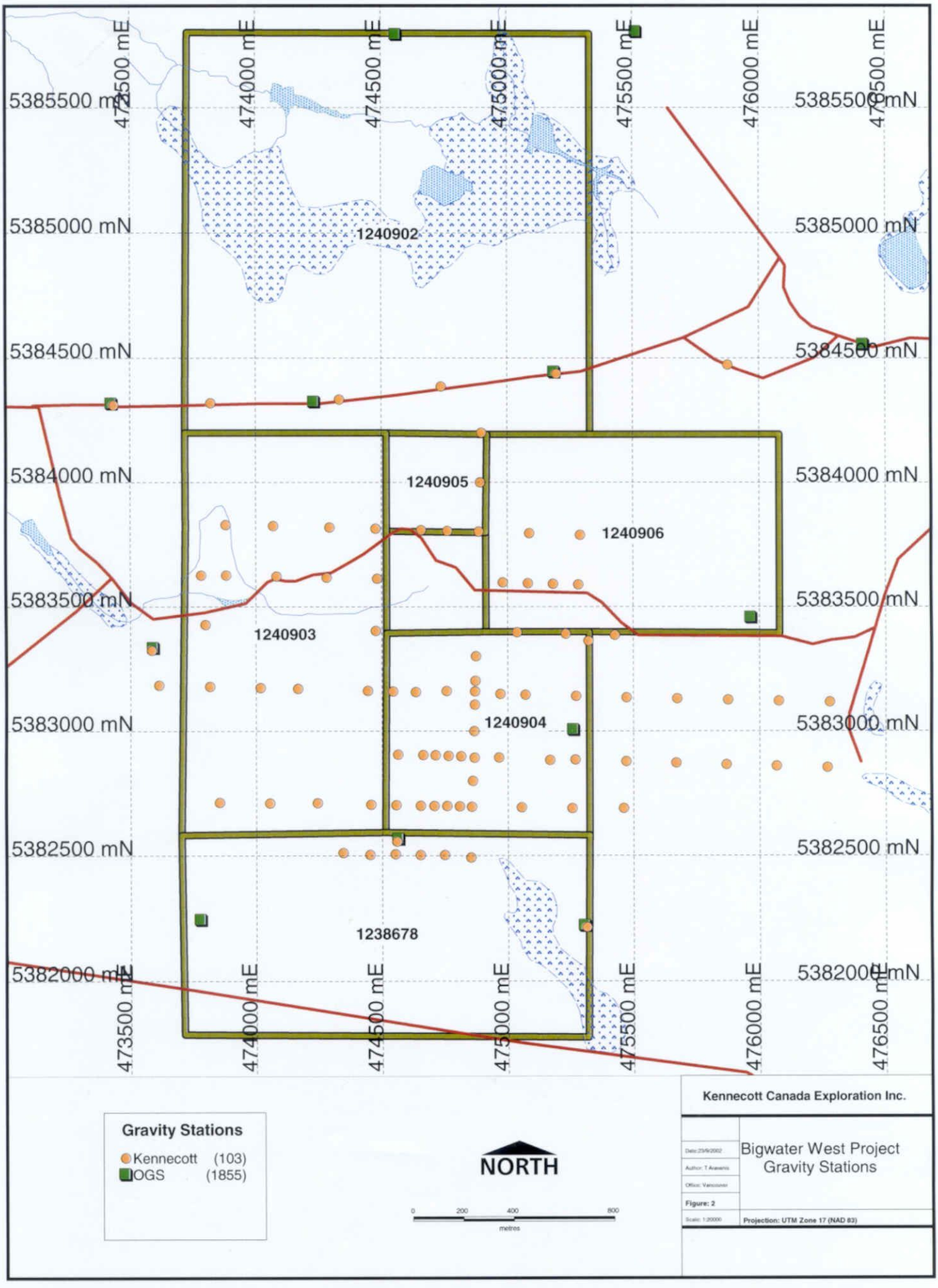
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5382500 mN
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1240902
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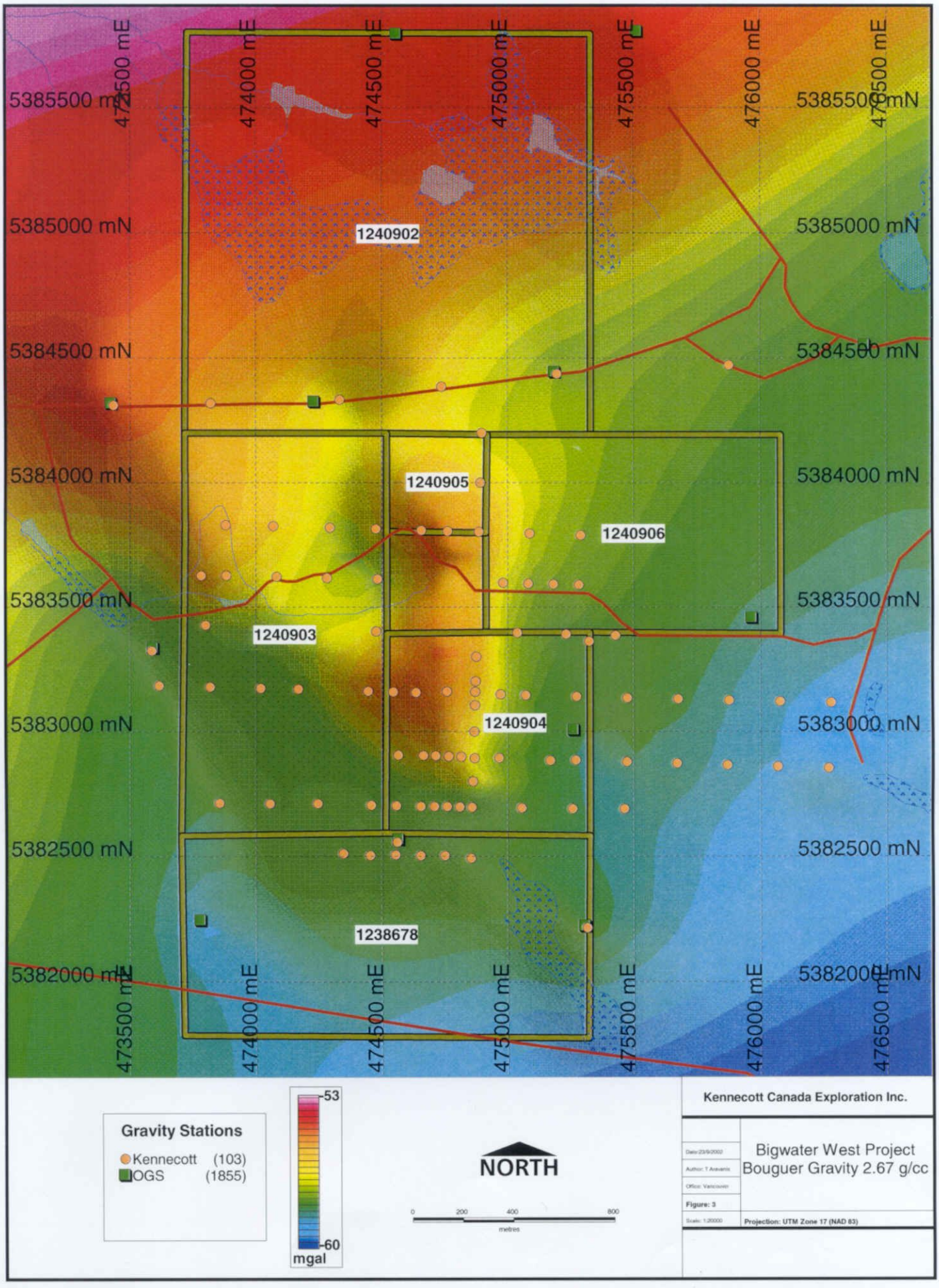
1240906
1240903
1240904
1238678
Gravity Stations
Kennecott (103)
OGS (1855)
NORTH
0 200 400 800
metres
Kennecott Canada Exploration Inc.
Bigwater West Project
Gravity Stations
Figure: 2
Projection: UTM Zone 17 (NAD 83)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5383500 mN
5383000 mN
5382500 mN
5382000 mN
1240902
1240905
1240906
1240903
1240904
1238678
Gravity Stations
Kennecott (103)
OGS (1855)
-53
-60
mgal
NORTH
0
200
400
800
metres
Kennecott Canada Exploration Inc.
Bigwater West Project
Bouguer Gravity 2.67 g/cc
Figure: 3
Projection: UTM Zone 17 (NAD 83)

STATEMENT OF QUALIFICATIONS

I, Ian Graham, of the District of North Vancouver, Province of British Columbia, do hereby certify that:

(i) I am a Project Geologist employed by Kennecott Canada Exploration Inc. with a business office at Suite 354 – 200 Granville Street, Vancouver, British Columbia, Canada, V6C 1S4.

(ii) I am a graduate in Geology with a Bachelor of Science degree from the University of Natal (Durban, South Africa: 1984) and a B.Sc. (Hons) from the University of Natal (Durban, South Africa: 1985).

(iii) I have practiced my profession as a geologist since obtaining my honours degree:

a. University of Regina, Graduate Assistant (1986 – 89)
b. Anglo American Diamond Division, Exploration and Research Geologist (1990 – 1994)
c. Kennecott Canada Exploration Inc./ Diavik Diamond Mines Inc., Diavik Resource Geologist (1994 –1997)
d. Kennecott Canada Exploration Inc., Principal and Project Geologist (1998 – present)

(iv) I supervised the 2002 Bigwater West line-cutting and gravity surveys and wrote this report to document the results of this work on the claims.

(v) I have the permission of Larry Gervais, registered holder of the Bigwater West claims, to file this assessment report on his behalf (refer Appendix C).

Ian Graham
Project Geologist

Dated: September 20, 2002

Appendix A

2002 Gravity Survey
Quadra Surveys

Gervais Project

2002 Gravity Survey

Timmins, Ontario
Canada

Field Logistics Report

For

Kennecott Canada Exploration Ltd.
Vancouver, British Columbia

February, 2002

Written By: Tam Mitchell, AScT of Quadra Surveys, Tel: (604) 214 7782
Box 94701, Richmond, British Columbia V6Y 2A6, Canada

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Kennecott Canada Exploration Ltd.

GERVAIS Project

2002 Gravity Survey
Timmins, Ontario, Canada

1. INTRODUCTION

During the period of January 18 to January 23, 2002, a gravity survey was conducted on 186 stations that were established as the survey progressed. The program was initiated by Kennecott Canada Exploration Ltd. as an aid to the interpretation of geologic structure in the area, in the search for zones of mineralization.

2. LOCATION and ACCESS

The site is situate near the town of Timmins approximately 5 km north of the Airport.

The crew stayed at the Senator Hotel in Timmins.

Access to the grid was by snowmobile. Some regional stations were accessible by snowmobile, most stations were accessed on foot. Snowshoes were necessary on the entire project area.

3. SURVEY DETAILS

3.1 GPS Survey

A Trimble 4400 Real Time Kinematic (RTK) GPS system was used to navigate to the approximate locations to be surveyed, and to acquire the precise station location information for all stations on the project. Instrument specifications for this unit are included in Appendix 2 of this report.

The GPS portion of the survey was initiated from a Survey Control Monument: 2002001 set on an area central to the grid (see Appendix 4). The coordinates were derived from ties to first order horizontal control and first order vertical control proximal to the survey area.

3.2 Gravity Survey

LaCoste & Romberg model G gravity meters (SN 353 & SN 324) were used to conduct the survey. Instrument specifications for these units are outlined in Appendix 2 of this report.

Repeat stations were conducted on 8 random stations to verify the overall accuracy of the survey. Station 2800N 4900E (not a repeat) had to be discarded due to poor GPS. Several other stations on this same loop appeared questionable, however no reason could be found in the data to remove them, so they remain in the dataset.

Gravity Base station 2002001 was occupied in the morning, midday and at the end of the survey day to monitor instrument drift. This base was rigorously tied to the National Gravity Net.

Temperatures varied during the survey from approximately 0° C to –25° C. The normal protocol used to prevent heat tares or temperature fluctuations in the instruments was to place the instruments outside, out of the case for a minimum period of 30 minutes prior to reading the base station in the morning.

Terrain corrections were conducted at stations located adjacent to significant topographical relief with a Suunto inclinometer to a distance of 53 meters using the Hammer/Bible rings for the inner B and C compartments. No gravity station was located on ice. The gravity readings were converted to milligals and corrected for: instrument height, tides, instrument drift and then adjusted to the assigned gravity base value. The observed gravity was corrected to Bouguer gravity at densities of 2.5, 2.6, 2.67, 2.73, 2.8 and 2.9 g/cm^3.

4. GPS Data Processing

The GPS data was processed using Trimble Geomatics Office V 1.50 (Build 52, Jan 18, 2001). The Real Time Kinematic process was used throughout the survey. Data was processed and presented in the following coordinate system:

- Datum: NAD83 (Canada)
- Datum Transformation: 3 Parameter (transformation from WGS 84 to local ellipsoid):
  - X: 0
  - Y: 0
  - Y: 0
- Spheroid: WGS 84
- Projection: UTM Zone17 N
  - Origin Latitude: 0°
  - Origin Longitude: 81° W
  - False Easting: 500,000 m
  - False Northing: 0.00 m
  - Scale: 0.9996
  - Flattening: 298.2572215381
  - Semi-Major Axis: 6,378,137
- Geoid Model: EGM96

5. Gravity Data Reduction

The data was reduced to partial Bouguer gravity anomaly values with the 1967 gravity formulae. GMT time was 5 hours difference from local time. Terrain corrections have been applied using the Hammer Graticule zones B and C (to 53 meters). A density of 2.5, 2.6, 2.67, 2.73, 2.8 and 2.9 g/cm^3 was used throughout the survey. The gravity data was processed in the following manner:

g_o **Observed Gravity-** Using Geosoft Inc.'s Gravred gravity processing software observations transcribed from field notebooks were corrected for earth tides, instrument height and residual instrument drift. These values were then tied to the local base station.

g_{fa} **Free Air Effect-** Correction for relative distances of observation points from the centre of mass (earth). This calculation moves all stations to a common elevation datum and corrects for relative distances in distance from the source mass. The elevation datum used was mean sea level. The formulae used was:

g_{fa}= -0.3086 mgal/m

g_{bs} **Bouger Slab Effect -** Correction for the relative differences in amounts of surface rock below gravity stations. This calculation requires that a mean density or rock type between the lowest and highest grid elevations be established. All stations are shifted to a common datum as in the free air effect except that the vertical change is through an assumed slab of the derived density. The elevation datum used was sea level.

g_{bs}= 2*PI*.00667*σ mgal/m

Where σ = slab density (gm/cc)

g_t **Theoretical Gravity -** Yields correction for change of observed gravity with change in latitude which is due primarily to the rotation of the earth and the difference in earth's radius between the poles and the equator.

$g_t = g_e(1 + \alpha\sin^2\theta + \beta\sin^2 2\theta)$

Where g_e = equatorial gravity = 978.031.85 mgal.

α = 0.005278895

β = -0.000023462

θ = Latitude

g_t **Terrain Correction-** corrections for variations caused by local terrain. The vertical component of the gravitational effect exerted by nearby hills, or not exerted by nearby valleys or gullies, will effect the net reading obtained on any one station. The overall effect on a given line profile or area will be a function of the station spacing relative to the frequency of terrain undulations. Areas were segmented using circular sectors in zones developed by Hammer (1939). Corrections were made for zones B & an extended C zone (covering an area to 70 meters from the station). g_t was calculated from the following expression:

$$g_t = \Sigma\Phi\tau\sigma[r_o - r_i + (r_i^2 + z^2)^{1/2} - (r_o^2 + z^2)^{1/2}]$$

Where Φ = Sector angle (B = 90°, C & D = 60 °)
τ = gravitational constant = 0.00667
σ = average density (gm/cc)
r_o = outer sector radius (B=16.6, C=53.3, D=170)
r_i = inner sector radius (B=2, C=16.6, D=53.3)
z = elevation difference between sector and station.

g_{faa} **Free Air Anomaly:** is derived from the following formulae:

$$g_{faa} = g_o - (g_l - 0.3086*E) = \text{Free Air Anomaly}$$

Where g_o = observed gravity
g_l = theoretical gravity
E = elevation

g_{ba} **Bouguer Anomaly:** was derived from the following formulae:

$$g_{ba} = g_b + g_{faa} + g_t = \text{Bouguer Gravity}$$

Where g_b = Bouguer gravity
g_{faa} = free air anomaly
g_t = terrain corrections

6. Previous Surveys

A regional gravity survey was conducted in the area in the winter of 2001. Three stations were reoccupied from the previous survey. The largest mismatch of the bouguer gravity values at 2.67 gm/cc discovered between the two surveys was 0.01 mGal. Elevations do not match the previous survey precisely as the stations are located on muskeg covered with a thick layer of moss. The ground was not frozen in most areas, so determining ground level was a very approximate operation at best. Two additional stations were occupied within less than 20 meters of the 2001 survey. Results from these ties are listed in Appendix VI.

A significant effort was undertaken to reach the southern extent of the survey area by snowmobile to tie regional data there. Unfortunately we were unable to access this part of the survey area despite making considerable effort on every available road. Given the superb correlation with the existing stations surveyed we feel that the dataset from the 2001 survey should be able to be integrated without modification.

7. Data Presentation

The gravity data is presented as a contoured plan map intended to show the extents of the survey for the purpose of giving an overview of the work conducted. See Appendix VII.

The reduced data is included in an Excel spreadsheet. The Gravred daily reduction files (*.raw) are also included.

8. Production

No major equipment or technical difficulties were encountered, however there was some difficulty with the short stumps of small trees cut on line. The stumps would lodge in the snowshoes when the gravity operator was negotiating the lines causing him to fall and was a source of larger drifts, and a tare encountered during the survey. A summary of daily production and hours worked is attached. See Appendix VII.

Client:	Kennecott Canada Exploration Ltd.	
Project Name:	GERVAIS	
Stations surveyed:	107 including 9 repeats	
Location:	Timmins, Ontario	
Survey Dates:	January 18 to January 23, 2002	
Accomodation:	Senator Hotel in Timmins, Ontario	
Transportation:	4WD drive vehicle, Snowmobile	
Survey Personnel:	Tam Mitchell	Gravity Operator, Data Processing
	Scott Smith	GPS Operator, Safety Officer

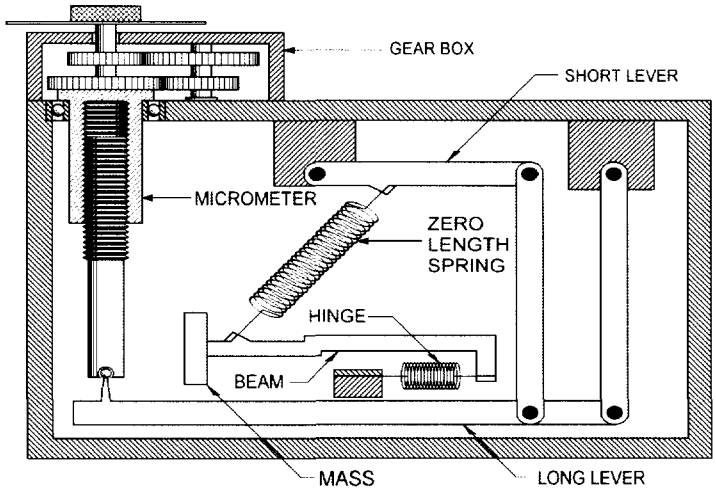
INSTRUMENT SPECIFICATIONS

GRAVITY

The gravity readings were taken with a **LaCoste & Romberg Model G** gravity meter (serial no. 353 & 324) manufactured in Austin Texas. The instrument has a world wide calibration range and a reading resolution of 0.01 mgal. The L & R gravity meter is made of metal parts. Since metal parts creep when thermally expanded or contracted the meter is accurately thermostated.

The design of the meter allows it to be very sensitive to small changes in gravity. The simplified diagram (figure 3) of the meter shows a mass at one end of a horizontal beam. At the other end of the beam are a pair of fine wires and springs that act as a frictionless hinge for the beam. One purpose of the hinge springs is to help eliminate damage to the meter from all but the most severe impact.

The beam is supported from a point just behind the mass by a "zero length" spring. The spring is at an angle of approximately 45 degrees from horizontal. The meter is read by nulling the mass position, that is, adding or subtracting a small amount of force to the mass to restore it to the same "reading" position. This is accomplished by lifting up on the top end of the zero length spring. This must be done with great accuracy and is accomplished with a series of levers. In turn, the levers are moved by a high-precision screw which in turn is rotated by a gear box with considerable reduction.



The lever system and screw are accurately calibrated over their entire range. Calibration factors depend only on the quality of the lever system and measuring screw, not upon a weak auxiliary nulling spring as are used in other meters. For this reason the calibration factors of the L & R meters do not change perceptibly with time.

SURVEYING

Station locations were surveyed using the **Trimble Site Surveyor 4400** system with a Pacific Crest radio link. The system used was capable of post-processing rapid static measurements with an accuracy of 5 mm +1ppm horizontal and 1 cm + 1ppm vertical or real time data acquisition with an accuracy rating of 1 cm +2ppm horizontal and 2 cm + 2ppm vertical.

The Site Surveyor 4400 is based on Trimble's fourth generation Real-Time Kinematic (RTK) survey technology. Incorporating the Trimble real-time GPS engine code and solution algorithms, the system provides very fast on-the-fly (OTF) initializations with the industry's most reliable position results. With advanced satellite signal acquisition and tracking, the ability to survey near obstructions is enhanced and downtime due to loss of signal minimized. This equipment allows for easy navigation in the field, permitting grids and lines to be laid out with accuracy and speed while acquiring position information with the required accuracy for a microgravity survey.

Quality Control

Gravity Loop Ties

Date	closure error:	drift (mgal/hr):	Hours	Total No. of Readings	Notes
18-Jan-02	-0.001	0.000	7.5	4	Gravity Base Loop G 353 Airport-Field-Airport
18-Jan-02	-0.022	-0.003	7.5	4	Gravity Base Loop G 324 Airport-Field-Airport
18-Jan-02	-0.011	-0.005	2.5	4	Gravity Base Loop G 353 Field-Airport-Field
18-Jan-02	-0.002	-0.001	2.6	4	Gravity Base Loop G 324 Field-Airport-Field
19-Jan-02	0.068	0.015	4.6	16	Field Loop - Possible thermal shock to meter caused unusual drift
19-Jan-02	-0.006	-0.002	3.0	13	Field Loop
20-Jan-02	0.018	0.003	6.5	14	Field Loop
21-Jan-02	0.017	0.003	7.0	15	Field Loop
22-Jan-02	0.024	0.012	2.0	16	Field Loop
22-Jan-02	0.005	0.002	2.5	17	Field Loop
23-Jan-02	0.0302	0.004	6.9	31	Field Loop .0.21 Tare removed

Gravity & Survey Ties

Stn/Grid Northing	Grid Easting	Ties AbsG	Northing	Easting	Elevation
2700	4900	-0.02	-0.021	0.002	-0.027
2900	4900	-0.02	Gravity Only		
2900	5500	0.00	Gravity Only		
3150	4900	0.00	0.028	-0.027	-0.05
3150	5100	0.01	-0.009	0.025	0.061
3150	5300	-0.04	-0.08	-0.022	-0.008
3200	4900	-0.05	-0.053	0.005	-0.105
3600	5300	0.00	-0.046	-0.005	0.092
2002001		0.00	Gravity Only		

GPS Control Stations Tied or Established during survey:

Vertical Control

Station Number	Datum	Accuracy	Method	Elevation	Established By:
81D8121	CGVD28	First Order	Differential	306.093	Ont. Ministry of Natural Resources
84D0057	CGVD28	First Order	Differential	306.853	Ont. Ministry of Natural Resources
2002001	CGVD28		Differential	290.369	Quadra Surveys
2002002	CGVD28		Differential	291.108	Quadra Surveys

Horizontal Control

Station Number	Datum	Accuracy	Method	UTM Z17 N	UTM Z17 E	Established by:
653050	NAD83	First Order	Differential	5379248.823	472635.356	Geodetic Survey Division - NRCAN
2002001	NAD83	Surveyed	Differential	5383361.800	475321.898	Quadra Surveys
2002002	NAD83	Surveyed	Differential	5383436.248	475324.779	Quadra Surveys

Survey Traverse Closure

Tie from:	**653050**		
Traverse Distance:	9.968 km		
Stations Included:	653050 - 2001001 - 2001002 - 653050		
Closure:	N	E	Elev
	0.029	-0.037	0.024

Gravity Base Stations - The following gravity bases were established, used or tied to during the course of the survey:

Gravity Base Stations

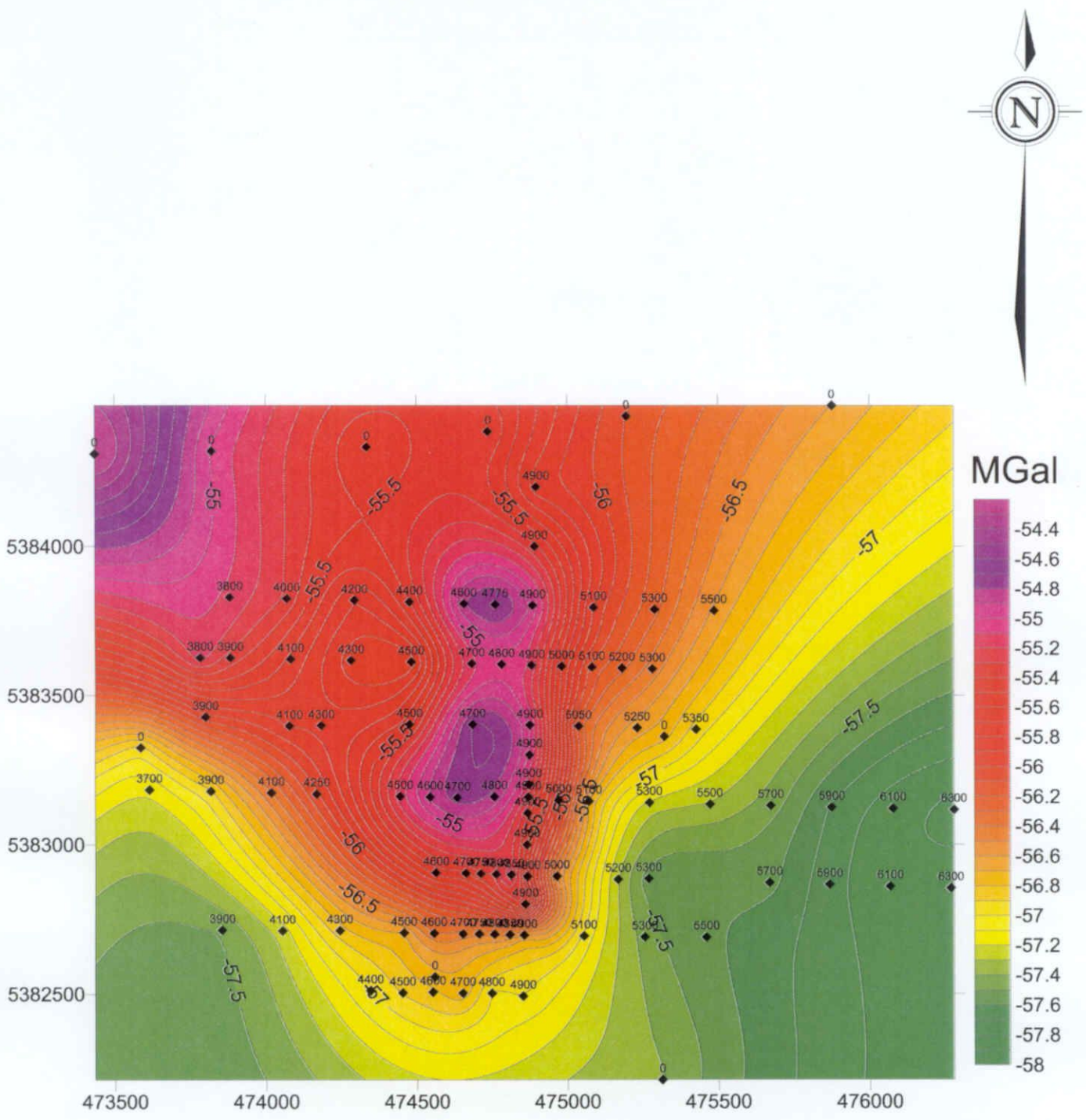
Name	NAD 83 Northing	NAD 83 Easting	NAD 83 Lat	NAD 83 Long	Elevation	Abs Grav
Timmins 9201-1975	5379334.499	472506.475	48.5665000	81.3726667	295.000	980827.71
2002001	5383361.800	475321.898	48.6028472	81.3347443	290.369	980830.50

Station	Description
Timmins 9201-1975	National Net Gravity base station location found in at Timmins Airport (marker missing).
2002001	Semi Permanent base set on grid with steel pin driven into 2.5' hub with wooden marker.

Gravity Base Station 2002001

Ties to Previous Surveys

Stn	NAD83 N	NAD83 E	Elev	Abs G	FA	Bouguer	Notes
6556	0.04	-0.10	0.16	-0.04	0.00	-0.01	
6558	0.02	-0.07	0.21	-0.06	0.00	-0.01	
6899	-2.84	-14.73	0.18	-0.09	-0.04	-0.04	Approximate Location
6902	-0.06	0.08	0.01	-0.02	-0.01	-0.01	
6904	-2.90	-14.63	0.28	-0.08	0.01	-0.01	Approximate Location



Bouguer Gravity at 2.67 gm/cc	DWG by: TLM
GERVAIS GRAVITY Timmins, Ontario	
Date: February 20, 2002	Scale 1: 20,000

Production Report

Date	Total Number of Readings	Approximate New Stations	Field Hours	Data Reduction Hours	Total Crew Hours	Total Man Hours
18-Jan	17	1	9	2.5	10.5	19.5
19-Jan	28	25	9.5	3	12	22
20-Jan	23	18	9	3	12.5	23
21-Jan	31	23	9	3	12	22
22-Jan	5	12	9	3	12	22
23-Jan	31	22	9.5	3	12.5	23
Totals	135	101	54	17.5	71.5	131.5

X83 m	Y83 m	Long84 deg	Lat84 deg	LE m	LN m	STNID	Elevation m	Gobs mgal	Water m	FreeAir mgal	BG267 mgal
476066.88	5382860.41	-81.3246103	48.5983656	6100	2900	G610290	289.957	980829.07	0	-26.30	-58.74
475460.29	5382690.02	-81.3328274	48.5968093	5500	2700	G550270	290.676	980829.08	0	-25.93	-58.45
475256.07	5382690.17	-81.3355972	48.5968026	5300	2700	G530270	291.166	980829.12	0	-25.74	-58.32
476267.58	5382854.32	-81.3218879	48.5983185	6300	2900	G630290	289.815	980829.12	0	-26.29	-58.72
475313.80	5382214.46	-81.3347859	48.5925253	0	6902	R8	289.423	980829.13	0	-25.88	-58.26
475867.33	5382866.65	-81.3273172	48.5984141	5900	2900	G590290	290.229	980829.13	0	-26.16	-58.64
476076.12	5383121.17	-81.3245000	48.6007118	6100	3150	G610315	290.549	980829.18	0	-26.22	-58.73
475669.07	5382872.76	-81.3300066	48.5984614	5700	2900	G570290	290.832	980829.21	0	-25.90	-58.44
475268.72	5382886.14	-81.3354373	48.5985661	5300	2900	G530290	290.693	980829.26	0	-25.90	-58.43
476278.09	5383116.66	-81.3217603	48.6006789	6300	3150	G630315	289.74	980829.26	0	-26.38	-58.80
475470.84	5382878.78	-81.3326955	48.5985078	5500	2900	G550290	290.628	980829.33	0	-25.84	-58.36
475470.84	5382878.78	-81.3326955	48.5985078	5500	2900	G550290a	290.628	980829.33	0	-25.84	-58.36
475874.51	5383124.95	-81.3272348	48.6007381	5900	3150	G590315	290.126	980829.41	0	-26.12	-58.58
474749.08	5382502.08	-81.3424618	48.5950903	4800	2500	G480250	290.912	980829.44	0	-25.34	-57.89
474852.88	5382492.55	-81.3410535	48.5950087	4900	2500	G490250	290.832	980829.47	0	-25.33	-57.87
475167.73	5382883.87	-81.3368069	48.5985416	5200	2900	G520290	290.838	980829.49	0	-25.62	-58.17
475054.51	5382693.54	-81.3383311	48.5968249	5100	2700	G510270	291.252	980829.52	0	-25.31	-57.90
473854.53	5382713.39	-81.3546071	48.5969545	3900	2700	G390270	288.256	980829.66	0	-26.11	-58.36
475673.25	5383130.42	-81.3299650	48.6007795	5700	3150	G570315	290.19	980829.66	0	-25.85	-58.33
474652.76	5382502.59	-81.3437682	48.5950910	4700	2500	G470250	290.629	980829.78	0	-25.09	-57.61
475472.68	5383134.61	-81.3326857	48.6008093	5500	3150	G550315	290.329	980829.78	0	-25.69	-58.18
474552.28	5382506.29	-81.3451311	48.5951202	4600	2500	G460250	290.079	980829.80	0	-25.24	-57.70
474452.01	5382503.46	-81.3464908	48.5950906	4500	2500	G450250	289.474	980829.85	0	-25.37	-57.76
475271.92	5383140.36	-81.3354090	48.6008532	5300	3150	G530315	290.254	980829.86	0	-25.64	-58.12
475271.92	5383140.36	-81.3354090	48.6008532	5300	3150	G530315a	290.254	980829.86	0	-25.64	-58.12
474559.08	5382557.01	-81.3450420	48.5955767	0	6899	R7	290.385	980829.87	0	-25.12	-57.61
474345.19	5382511.07	-81.3479400	48.5951547	4400	2500	G440250	288.787	980829.88	0	-25.56	-57.88
475271.95	5383140.44	-81.3354087	48.6008539	5300	3150	G530315b	290.262	980829.90	0	-25.60	-58.08
474856.48	5382696.25	-81.3410171	48.5968414	4900	2700	G490270	291.235	980829.90	0	-24.94	-57.53
474856.48	5382696.28	-81.3410171	48.5968416	4900	2700	G490270a	291.262	980829.92	0	-24.91	-57.50
474054.20	5382711.00	-81.3518989	48.5969413	4100	2700	G410270	287.99	980829.95	0	-25.90	-58.12
474707.31	5382700.03	-81.3430404	48.5968694	4750	2700	G475270	291.144	980830.07	0	-24.80	-57.38
474808.52	5382697.96	-81.3416676	48.5968548	4850	2700	G485270	290.839	980830.11	0	-24.85	-57.39
474758.11	5382699.26	-81.3423513	48.5968645	4800	2700	G480270	290.996	980830.13	0	-24.78	-57.34
474652.99	5382700.89	-81.3437771	48.5968749	4700	2700	G470270	291.009	980830.15	0	-24.76	-57.32
474563.57	5382906.27	-81.3450025	48.5987189	4600	2900	G460290	296.276	980830.17	0	-23.28	-56.43
474964.76	5382894.53	-81.3395604	48.5986295	5000	2900	G500290	291.16	980830.19	0	-24.83	-57.41
475070.91	5383145.26	-81.3381358	48.6008893	5100	3150	G510315a	290.501	980830.31	0	-25.12	-57.62
475070.94	5383145.25	-81.3381354	48.6008892	5100	3150	G510315	290.562	980830.32	0	-25.09	-57.60
474860.59	5382800.56	-81.3409676	48.5977799	4900	2800	G490280	296.071	980830.37	0	-23.06	-56.19
474556.38	5382702.71	-81.3450876	48.5968874	4600	2700	G460270	290.022	980830.39	0	-24.83	-57.28
474243.54	5382711.84	-81.3493311	48.5969567	4300	2700	G430270	287.732	980830.41	0	-25.52	-57.72
474456.62	5382704.29	-81.3464406	48.5968975	4500	2700	G450270	288.231	980830.44	0	-25.33	-57.58
475426.71	5383385.60	-81.3333241	48.6030655	5350	3400	G535340	289.838	980830.44	0	-25.39	-57.82
473614.49	5383183.67	-81.3578925	48.6011751	3700	3150	G370315	287.668	980830.47	0	-25.86	-58.05
475321.90	5383361.80	-81.3347443	48.6028472	0	2002001	R10	290.369	980830.50	0	-25.14	-57.64
473817.40	5383178.22	-81.3551400	48.6011346	3900	3150	G390315	287.918	980830.67	0	-25.58	-57.79
475231.27	5383390.67	-81.3359753	48.6031034	5250	3400	G525340	290.186	980830.67	0	-25.05	-57.52
473585.18	5383324.32	-81.3582991	48.6024392	0	6904	R9	286.969	980830.95	0	-25.71	-57.82

X83 m	Y83 m	Long84 deg	Lat84 deg	LE m	LN m	STNID	Elevation m	Gobs mgal	Water m	FreeAir mgal	BG267 mgal
474867.53	5382893.20	-81.3408791	48.5986136	4900	2900	G490290	290.138	980830.98	0	-24.36	-56.82
474867.68	5382893.58	-81.3408771	48.5986170	4900	2900	G490290a	290.737	980831.00	0	-24.15	-56.68
475037.64	5383396.44	-81.3386022	48.6031476	5050	3400	G505340	290.141	980831.07	0	-24.67	-57.14
475282.26	5383589.44	-81.3352955	48.6048935	5300	3600	G530360	290.024	980831.07	0	-24.86	-57.32
475282.27	5383589.48	-81.3352954	48.6048939	5300	3600	G530360a	289.932	980831.07	0	-24.89	-57.34
474813.83	5382899.38	-81.3416078	48.5986670	4850	2900	G485290	294.015	980831.12	0	-23.02	-55.92
475487.37	5383785.57	-81.3325249	48.6066660	5500	3800	G550380	289.64	980831.13	0	-25.08	-57.49
474663.22	5382904.39	-81.3436508	48.5987060	4700	2900	G470290	291.483	980831.14	0	-23.79	-56.40
474017.64	5383173.08	-81.3524237	48.6010967	4100	3150	G410315	288.108	980831.14	0	-25.05	-57.28
474971.08	5383148.63	-81.3394900	48.6009156	5000	3150	G500315	290.666	980831.18	0	-24.20	-56.72
475181.71	5383592.19	-81.3366596	48.6049143	5200	3600	G520360	290.16	980831.22	0	-24.67	-57.14
474866.50	5382999.94	-81.3408995	48.5995738	4900	3000	G490300	291.331	980831.27	0	-23.78	-56.38
474764.04	5382901.18	-81.3422832	48.5986812	4800	2900	G480290	291.321	980831.28	0	-23.70	-56.29
474712.86	5382903.25	-81.3429775	48.5986978	4750	2900	G475290	291.128	980831.33	0	-23.71	-56.28
475081.84	5383595.09	-81.3380145	48.6049364	5100	3600	G510360	290.081	980831.37	0	-24.55	-57.01
474868.76	5383105.61	-81.3408753	48.6005245	4900	3100	G490310	291.564	980831.44	0	-23.63	-56.25
475289.46	5383789.48	-81.3352098	48.6066934	5300	3800	G530380	289.812	980831.45	0	-24.71	-57.14
474166.75	5383169.65	-81.3504010	48.6010720	4250	3150	G425315	288.14	980831.52	0	-24.65	-56.89
474482.26	5383613.24	-81.3461488	48.6050755	4500	3600	G450360	289.621	980831.62	0	-24.46	-56.86
474869.96	5383159.34	-81.3408622	48.6010079	4900	3150	G490315	291.291	980831.71	0	-23.48	-56.08
474869.99	5383159.32	-81.3408618	48.6010077	4900	3150	G490315a	291.341	980831.71	0	-23.47	-56.07
474282.17	5383617.77	-81.3488632	48.6051081	4300	3600	G430360	289.214	980831.74	0	-24.46	-56.83
475876.29	5384473.20	-81.3272891	48.6128671	0	1	R1	289.285	980831.77	0	-25.11	-57.48
474981.97	5383598.22	-81.3393694	48.6049606	5000	3600	G500360	290.081	980831.81	0	-24.11	-56.57
474871.87	5383201.20	-81.3408389	48.6013846	4900	3200	G490320	291.237	980831.81	0	-23.44	-56.02
474544.06	5383159.26	-81.3452826	48.6009940	4600	3150	G460315	292.319	980831.82	0	-23.06	-55.77
475087.60	5383796.17	-81.3379484	48.6067456	5100	3800	G510380	289.726	980831.82	0	-24.37	-56.79
474634.82	5383156.92	-81.3440515	48.6009767	4700	3150	G470315	292.927	980831.83	0	-22.86	-55.63
474757.68	5383160.55	-81.3423852	48.6010143	4800	3150	G480315	292.537	980831.84	0	-22.97	-55.70
474443.95	5383161.77	-81.3466406	48.6010125	4500	3150	G450315	290.81	980831.86	0	-23.48	-56.02
474871.87	5383201.26	-81.3408389	48.6013851	4900	3200	G490320a	291.342	980831.86	0	-23.35	-55.95
474183.00	5383398.70	-81.3501948	48.6031333	4300	3400	G430340	288.441	980831.89	0	-24.38	-56.65
474476.45	5383403.04	-81.3462146	48.6031843	4500	3400	G450340	289.557	980831.90	0	-24.03	-56.43
474077.59	5383397.44	-81.3516246	48.6031176	4100	3400	G410340	287.892	980831.98	0	-24.45	-56.67
473799.79	5383427.26	-81.3553946	48.6033743	3800	3400	G380340	287.153	980832.00	0	-24.68	-56.82
473799.79	5383427.26	-81.3553946	48.6033743	3900	3400	G390340	287.153	980832.00	0	-24.68	-56.82
474293.33	5383819.90	-81.3487244	48.6069269	4200	3800	G420380	289.258	980832.05	0	-24.30	-56.67
474874.63	5383300.40	-81.3408074	48.6022771	4900	3300	G490330	290.852	980832.12	0	-23.32	-55.87
474082.57	5383622.50	-81.3515710	48.6051424	4100	3600	G410360	288.555	980832.20	0	-24.21	-56.50
474898.02	5384199.79	-81.3405446	48.6103690	4900	4200	G490420	289.686	980832.21	0	-24.32	-56.74
475196.74	5384437.15	-81.3365063	48.6125162	0	6556	R5	289.374	980832.22	0	-24.60	-56.98
474476.51	5383814.66	-81.3462391	48.6068873	4400	3800	G440380	289.247	980832.34	0	-24.01	-56.38
474892.66	5384000.29	-81.3406052	48.6085741	4900	4000	G490400	289.888	980832.50	0	-23.81	-56.24
473882.89	5383626.59	-81.3542799	48.6051709	3900	3600	G390360	288.307	980832.53	0	-23.96	-56.22
474069.46	5383825.78	-81.3517616	48.6069706	4000	3800	G400380	288.782	980832.63	0	-23.87	-56.19
474333.85	5384333.35	-81.3482064	48.6115476	0	3	R3	289.142	980832.67	0	-24.13	-56.49
473782.86	5383626.93	-81.3556369	48.6051698	3800	3600	G380360	288.205	980832.74	0	-23.78	-56.03
473880.45	5383830.22	-81.3543259	48.6070027	3800	3800	G380380	288.843	980832.80	0	-23.69	-56.01
474738.08	5384385.52	-81.3427257	48.6120334	0	2	R2	289.403	980832.88	0	-23.89	-56.27

X83 m	Y83 m	Long84 deg	Lat84 deg	LE m	LN m	STNID	Elevation m	Gobs mgal	Water m	FreeAir mgal	BG267 mgal
474658.01	5383808.88	-81.3437767	48.6068427	4600	3800	G460380	289.729	980832.94	0	-23.26	-55.68
474885.72	5383802.98	-81.3406874	48.6067988	4900	3800	G490380	289.132	980832.95	0	-23.43	-55.78
474761.87	5383805.89	-81.3423676	48.6068200	4775	3800	G477380	289.813	980833.04	0	-23.13	-55.56
473821.51	5384319.27	-81.3551562	48.6113997	0	4	R4	289.132	980833.25	0	-23.54	-55.90
473434.59	5384310.34	-81.3604048	48.6113031	0	6558	R6	289.388	980834.08	0	-22.63	-55.01

X83	NAD83 UTM zone 17 easting
Y83	NAD83 UTM zone 17 northing
Long84	WGS84 longitude
Lat84	WGS84 latitude
LE	Local grid easting
LN	Local grid northing
STNID	Station ID
Elevation	Elevation
Gobs	Observed gravity
Water	Water depth
FreeAir	Free Air gravity
BG267	2.67 g/cc Bouguer gravity

Appendix B

Geophysical Report & Assessment Filing
2000 EM work, Bigwater West

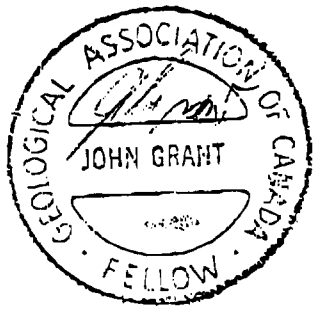
Filed by
Larry Gervais

and

Incorporated herewith for Reference.

(1)

GEOPHYSICAL REPORT
FOR
LARRY GERVAIS
ON THE
JESSOP PROPERTY
JESSOP AND MURPHY TOWNSHIPS
PORCUPINE MINING DIVISION
NORTHEASTERN, ONTARIO



Prepared by: J. C. Grant, CET, FGAC
SEPTEMBER 20, 2002

2.22254

INTRODUCTION:

The services of Exsics Exploration Limited were retained by Mr.L. GERVAIS, to complete a detailed ground geophysical report on a ground geophysical program that was carried out on Gervais's Jessop Grid , which is located in Lot 12 of Murphy Township and Lot 1 of Jessop Township, of the Porcupine Mining Division, Timmins Ontario.

The purpose of the ground program was to locate and outline a series of airborne, electromagnetic, conductors that were noted across several of their claim blocks within the project area. The ground program commenced in the middle of October, 2000 and was completed by the middle of January, 2000. During that period of time 3.25 kilometers of grid lines and surveys were completed.

This report will deal with the results of that program.

PROPERTY LOCATION AND ACCESS:

The Jessop grid is situated in Lot 12, Con. V of Murphy Township and Lot 1, Con. V of Jessop Township, just to the immediate west-southwest of Bigwater Lake. Figures 1 and 2. The entire grid is situated approximately 8 kilometers north-northeast of the City of Timmins.

Access to the property during the line cutting portion and prospecting portion of the program was with a helicopter based out of the Timmins Airport. The survey portion of the grid, completed during the winter months was completed by skidoo trails along a number of winter roads that run off of the airport road and provided access to the grid.

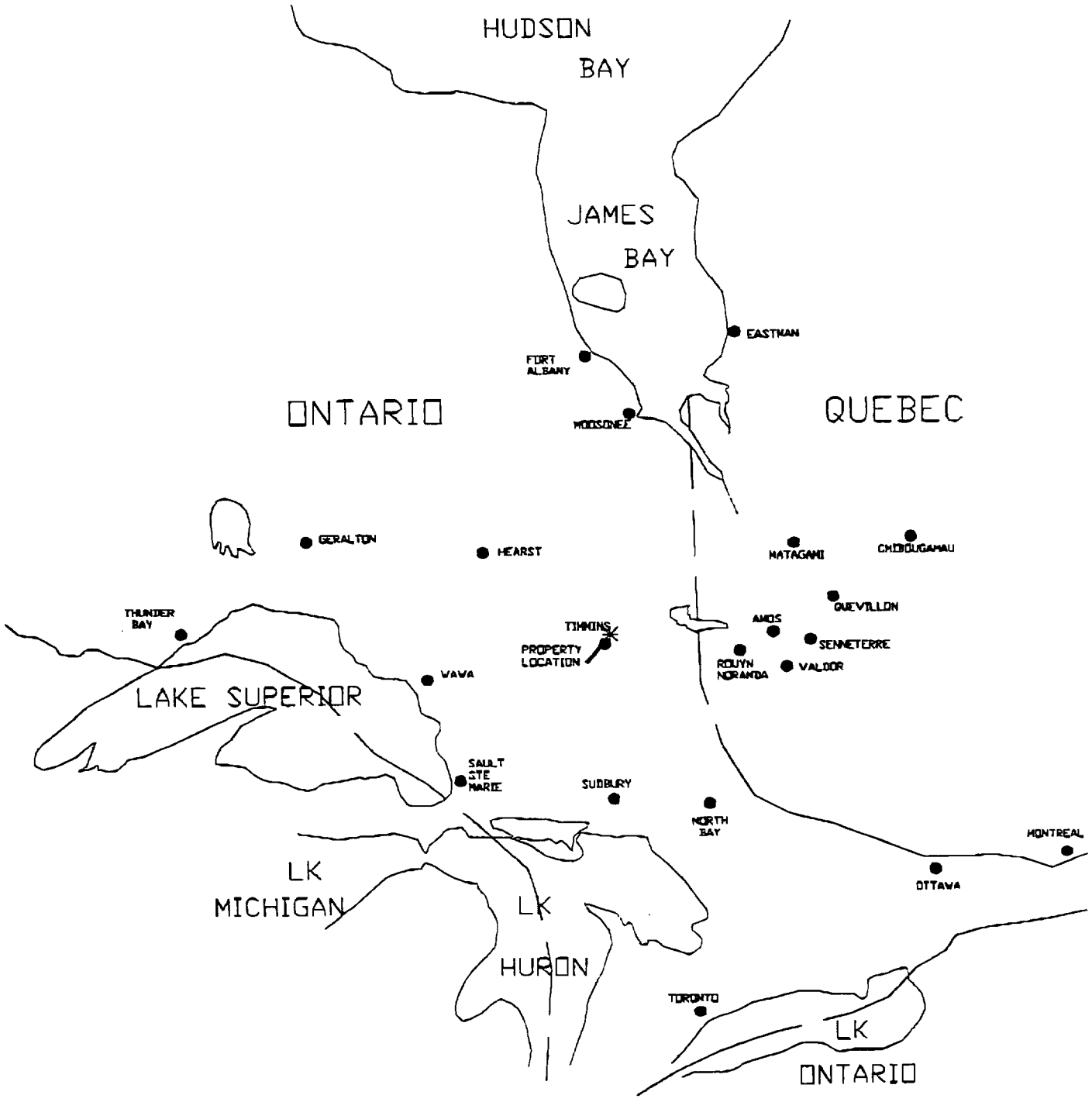
CLAIM BLOCK:

The claim numbers that make up the Jessop grid are as follows.

P-1240903 TO 1240906 inclusive.

Refer to Figure 3, which was copied from the MNDM Plan Maps for each of Jessop and Murphy Townships, for the positioning of the claims within the block.

4



EXSICS EXPLORATION LTD.
P.O. Box 1880, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151, 267-2424

CLIENT: L. GERVAIS

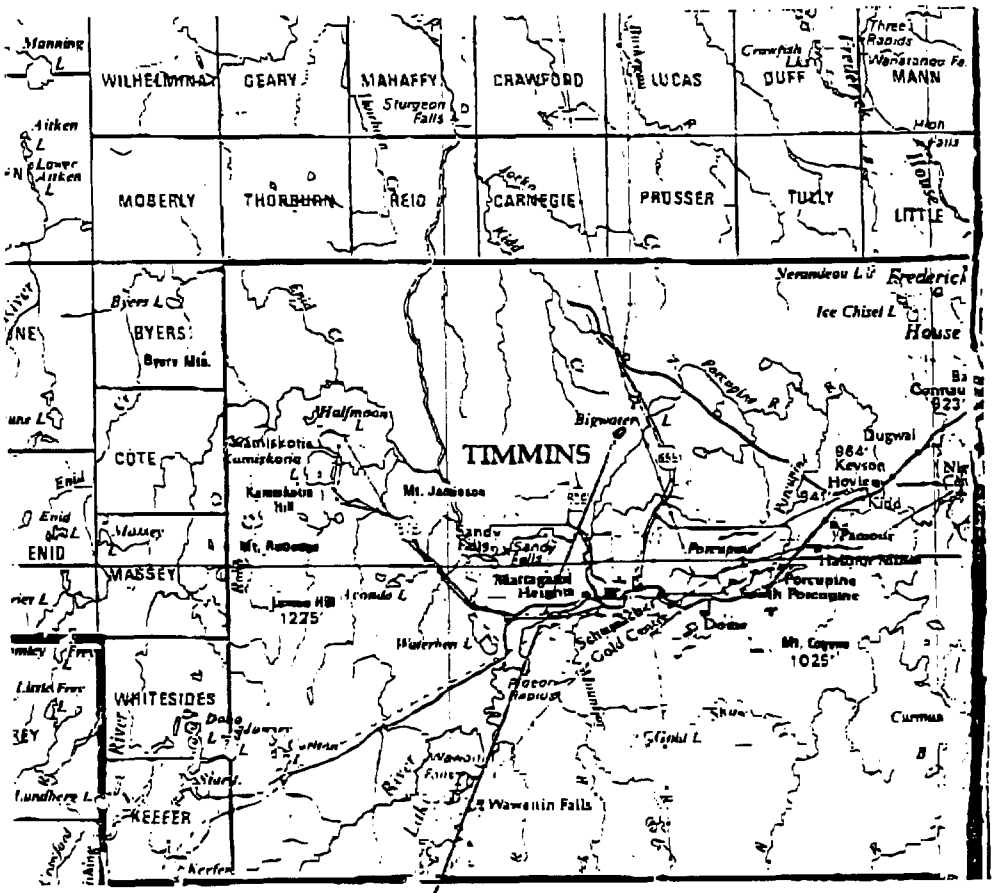
PROPERTY: JESSOP GRID

TITLE:

LOCATION MAP

Fig. 1

Date: JAN./00 | Scale:1"=125miles | NTS:



N

EXSICS EXPLORATION LTD.
P.O. Box 1880, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151, 267-2424

CLIENT: L. GERVAIS

PROPERTY: JESSOP GRID

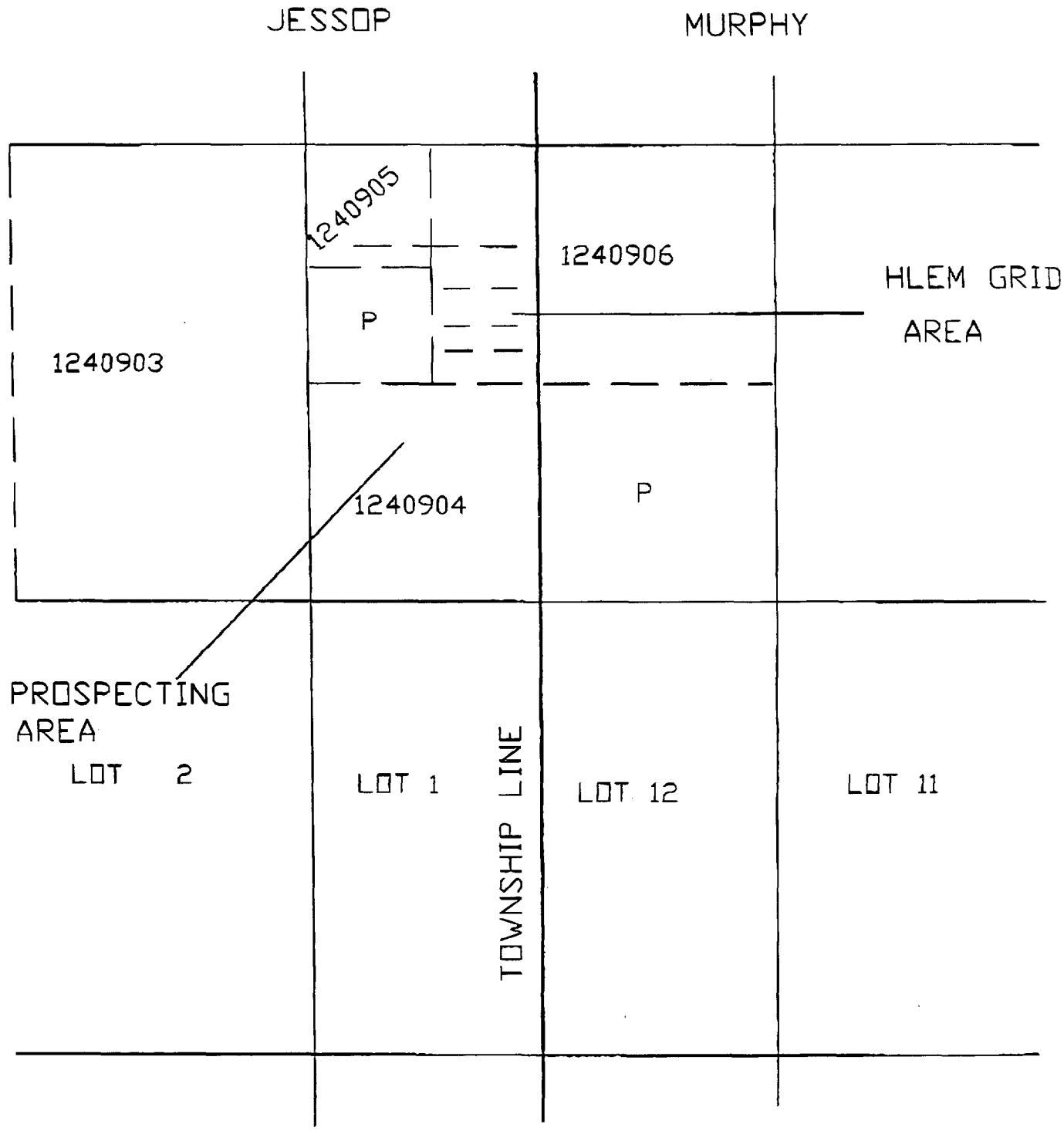
TITLE:

PROPERTY LOCATION MAP

Fig. 2

Date: JAN./00 | Scale:1: 60 000 | NTS:

6



N

EXSICS EXPLORATION LTD.
P.O. Box 1880, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151, 267-2424

CLIENT: L. GERVAIS

PROPERTY: JESSOP GRID

TITLE:

CLAIM SKETCH

Fig. 3

PERSONNEL:

The field crew directly responsible for the collection of the survey data were as follows;

J. Legault..... Timmins, Ontario

D. Clement.....Timmins, Ontario

The entire program was completed under the direct supervision of D. Clement and L. Gervais and all of the plotting and compilation was completed by M. Johnston and Exsics Exploration.

GROUND PROGRAM:

The ground program consisted of line cutting, HLEM surveys and some prospecting. A total of 3 cross lines and 1 base line was cut across the property. The base line was cut north-south along the township line between Murphy and Jessop and then cross lines were turned off of this base line at 200 meter intervals from 400MS to 800MS. All of the lines were then chained with 25 meter picket intervals. In all, a total of 3.2 kilometers of grid lines were cut and chained.

Once the cutting was completed, an HLEM survey was completed on all of the cross lines using the Apex PARAMETRICS MaxMin I system. Specifications for this system can be found as Appendix B of this report.

The following parameters were kept constant throughout the survey procedure.

Line spacing	200 meters
Station spacing	25 meters
Reading intervals	25 meters
Frequencies recorded	1760hz, 44Hz
Coil separations	200 meters
Parameters measured	In phase and quadrature components of the secondary fields

Upon the completion of the HLEM surveys, the collected data was then plotted directly onto base maps, one base map for each frequency recorded, and then profiled at either 1cm=+/-20%. A copy of each of these profiled base maps are included in the back pocket of this report.

Line 600 MS was also read with a 150 meter cable and it is plotted as a single line profile and is included in the back pocket of this report.

SURVEY RESULTS:

The HLEM survey was somewhat successful in locating and outlining two possible conductive zones across the property. The zones have been labelled A and B.

Zone A:

This zone was outlined on all three survey lines and appears to represent a weak to moderate conductive horizon situated at a depth to source of 40 to 44 meters and with a conductivity range of 3.5 to 5 mhos. The zone appears to be dipping slightly east to near vertical.

Zone B:

This zone was noted on line 400MS and appears to parallel Zone A. It represents a modest conductor situated at a depth to source of 30 meters with a modest conductivity of 3 mhos. This zone appears to be dipping near vertical.

CONCLUSIONS AND RECOMMENDATIONS:

Generally the HLEM survey was successful in locating and outlining at least two conductive zones across the cut grid. Certainly zone A is the better defined target as it was noted on all three lines and it appears to continue off of the grid in both directions.

Zone B is also of interest however, it will require further coverage in both directions to better define the source of the target.

I would suggest a follow up program of magnetics as well as an IP survey to better define the zones and to trace them to their extent.

Respectfully submitted

J.C.Grant
September, 2002.

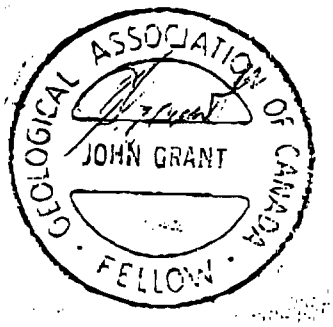


TABLE OF CONTENTS

2.24254

CERTIFICATION

I, John Charles Grant, of 108 Kay Crescent, in the City of Timmins, Province of Ontario, hereby certify that:

1). I am a graduate of Cambrian College of Applied Arts and Technology, 1975, Sudbury Ontario Campus, with an Honors Diploma in Geological and Geophysical Technology.

2). I have worked subsequently as an Exploration Geophysicist for Teck Exploration Limited, (5 years), and currently as Exploration Manager and Geophysicist for Exsics Exploration Limited, since 1980.

3). I am a member in good standing of the Certified Engineering Technologist Association, (CET), since 1984

4). I am a Fellow of the Geological Association of Canada, (FGAC), since 1986.

5). I have been actively engaged in my profession since the 15th of May of 1975, in all aspects of ground exploration programs, including the planning and execution of field programs, project supervision, data compilation, interpretations and reports.

6). I have no specific or special interest in the herein described property. I have been retained by the property holders and or their Agent as a Geophysical Consultant and Contract Manager.

GEOLOGICAL ASSOCIATION OF CANADA
JOHN GRANT
FELLOW

John Charles Grant, CET., FGAC.

10

APPENDIX A

APEX MAXMIN II

Five frequencies: 222, 444, 888, 1777 and 3555 Hz.

Maximum coupled (horizontal-loop) operation with reference cable.

Minimum coupled operation with reference cable.

Vertical-loop operation without reference cable.

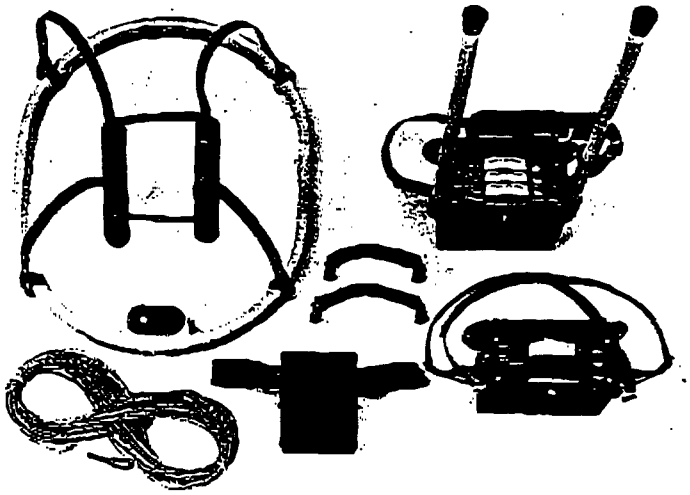
Coil separations: 25, 50, 100, 150, 200 and 250 m (with cable) or 100, 200, 300, 400, 600 and 800 ft.

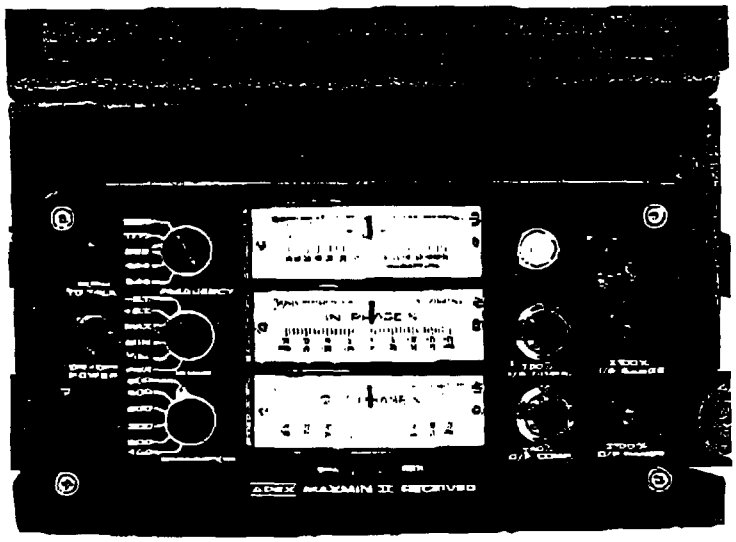
Reliable data from depths of up to 180 m (600 ft).

Built-in voice communication circuitry with cable.

Tilt meters to control coil orientation.

12





222, 444, 888, 1777 and 3555 Hz.

MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with refer. cable.

MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.

V.L. : Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

25, 50, 100, 150, 200 & 250m (MMII or 100, 200, 300, 400, 600 and 800 ft. (MMIIF).
Coil separations in V.L. mode not restricted to fixed values.

- In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
- Tilt-angle of the total field in V.L. mode.
- Automatic, direct readout on 90mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
- Tilt angle and null in 90mm edgewise meters in V.L. mode.

In-Phase:	±20%, ±100% by push-button switch.
Quadrature:	±20%, ±100% by push-button switch.
Tilt:	±75% slope.
Null (V.L):	Sensitivity adjustable by separation switch.

In-Phase and Quadrature: 0.25% to 0.5% ; Tilt: 1%.

±0.25% to ±1% normally, depending on conditions, frequencies and coil separation used.

- 222Hz : 220 Atm^2
- 444Hz : 200 Atm^2
- 888Hz : 120 Atm^2
- 1777Hz : 60 Atm^2
- 3555Hz : 30 Atm^2

9V trans. radio type batteries (4). Life: approx. 35hrs. continuous duty (alkaline, 0.5 Ah), less in cold weather.

12V 6Ah Gel-type rechargeable battery. (Charger supplied).

Light weight 2-conductor teflon cable for minimum friction. Unshielded. All reference cables optional at extra cost. Please specify.

Built-in intercom system for voice communication between receiver and transmitter operators in MAX and MIN modes, via reference cable.

Built-in signal and reference warning lights to indicate erroneous readings.

-40°C to +60°C (-40°F to +140°F).

6kg (13 lbs.)

13kg (29 lbs.)

Typically 60kg (135 lbs.), depending on quantities of reference cable and batteries included. Shipped in two field/shipping cases.

Specifications subject to change without notification

200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 495-1612 Cables: APEXPARA TORONTO Telex: 06-966773 NORDVIK TOR

Ontario Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(1), R.S.O. 1990

Transaction Number (office use)
14
Assessment Files Research Imaging

Personal information collected on this form is obtained under the authority of subsection 65(2) and 66(1) of the Mining Act. 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 6B6.

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

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

Name: L. GERVAIS.	Client Number 136071
Address P.O. BOX 143, TIMMINS ONT. P4N-7C5	Telephone Number 267-2325.
	Fax Number
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: LINE CUTTING, GEOM, PROSPECTING. MAPS & REPORTS.	Office Use
	Commodity
	Total $ Value of Work Claimed
Dates Work Performed: From 28 Day / 10 Month / 00 Year — To 03 Day / 04 Month / 02 Year	NTS Reference
Global Positioning System Data (if available) — Township/Area: JESSOP/MURPHY — M or G-Plan Number	Mining Division
	Resident Geologist District

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: JOHN C. GRANT.	Telephone Number 267-4151
Address BOX 1880, TIMMINS, ONT.	Fax Number 264-5790.
Name	Telephone Number
Address	Fax Number
Name	Telephone Number
Address	Fax Number

4. Certification by Recorded Holder or Agent

I, L. C. GRANT (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: J.C. Grant		Date: Sept 4/02
Agent's Address: BOX 1880, TIMMINS,	Telephone Number: 267-5790	Fax Number

0241 (03/97)

Ontario Ministry of Northern Development and Mines

Schedule for Declaration of Assessment Work on Mining Land

Transaction Number (office use) 15

	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.
1	1240904	4	$0.00	$1600.00		
2	1240905	1	$812.00	400.00		$412.00
3	1240906	6	$4386.00	$2400.00	$1600.00	$386.00
4	—					
		Column Totals	$5,198.00	$4400.00	$1600.00	$798.00

[illegible]

Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use): 16

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
LINE CUTTING	3.2 Km	375.00 /Km	$1200.00
HLCM	2.0 DAYS 3 MEN CREW	600/day.	$1200.00
PROSPECTING	2. DAYS 1 MAN	600/.	$600.00
Associated Costs (e.g. supplies, mobilization and demobilization).			
HELICOPTER.			1,458.00
PLOTS & CORRECTIONS.			300.00
REPORTS.			420.00
Transportation Costs			
Food and Lodging Costs			
		Total Value of Assessment Work	$5,178.00

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.

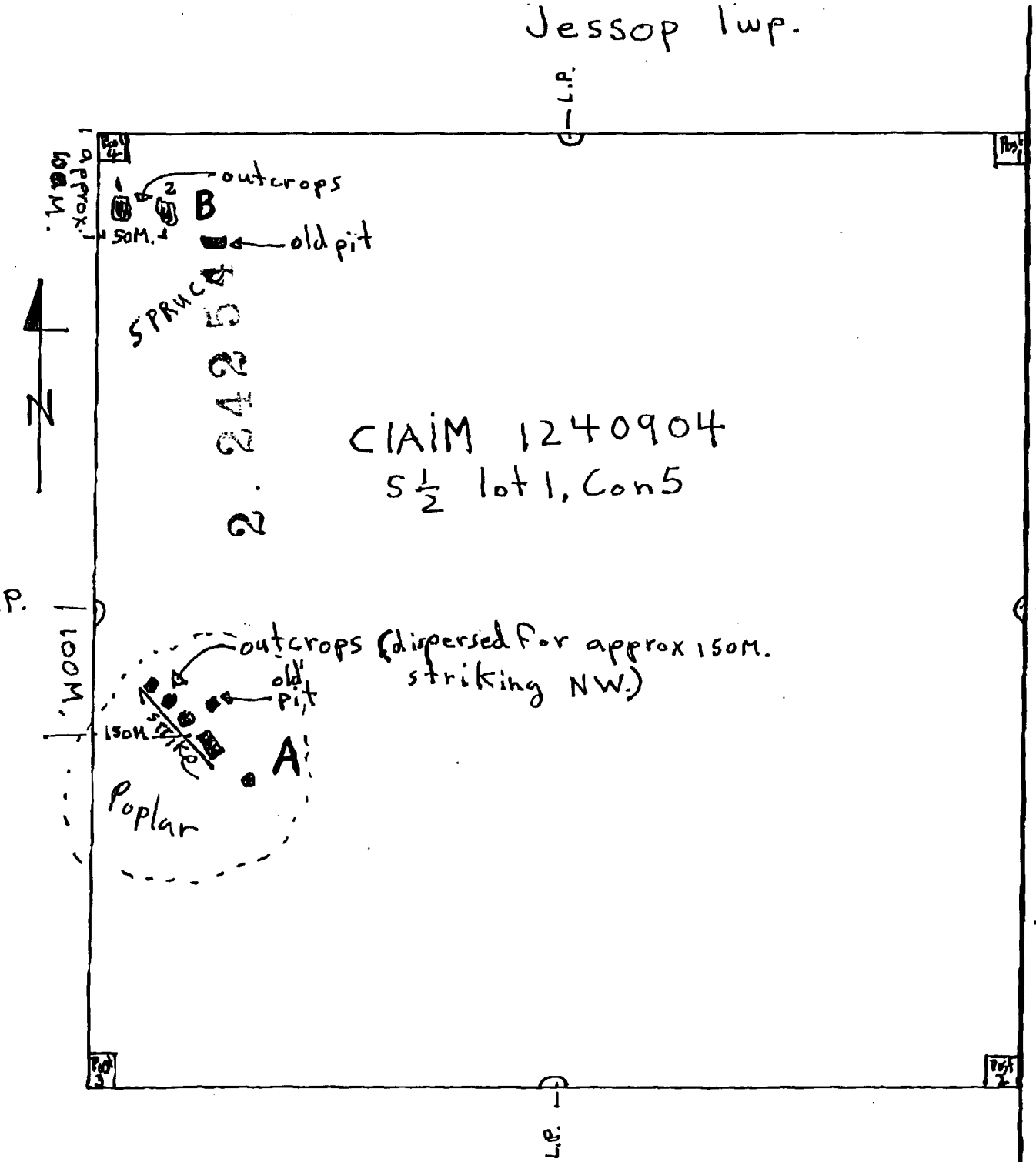
Certification verifying costs:

I, _____ (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 _____ (recorded holder, agent, or state company position with signing authority). I am authorized to make this certification.

Signature: _____ Date: SEPT 20/02

0212 (03/97)

17



Area A:

5 outcrops.
- andesites
- rusty quarts. vein (N.W
- very low % of sulphide mineralization (pyroti

Area B:

- exposed two small outcrops. approx. 4 meters by 4 meters each.

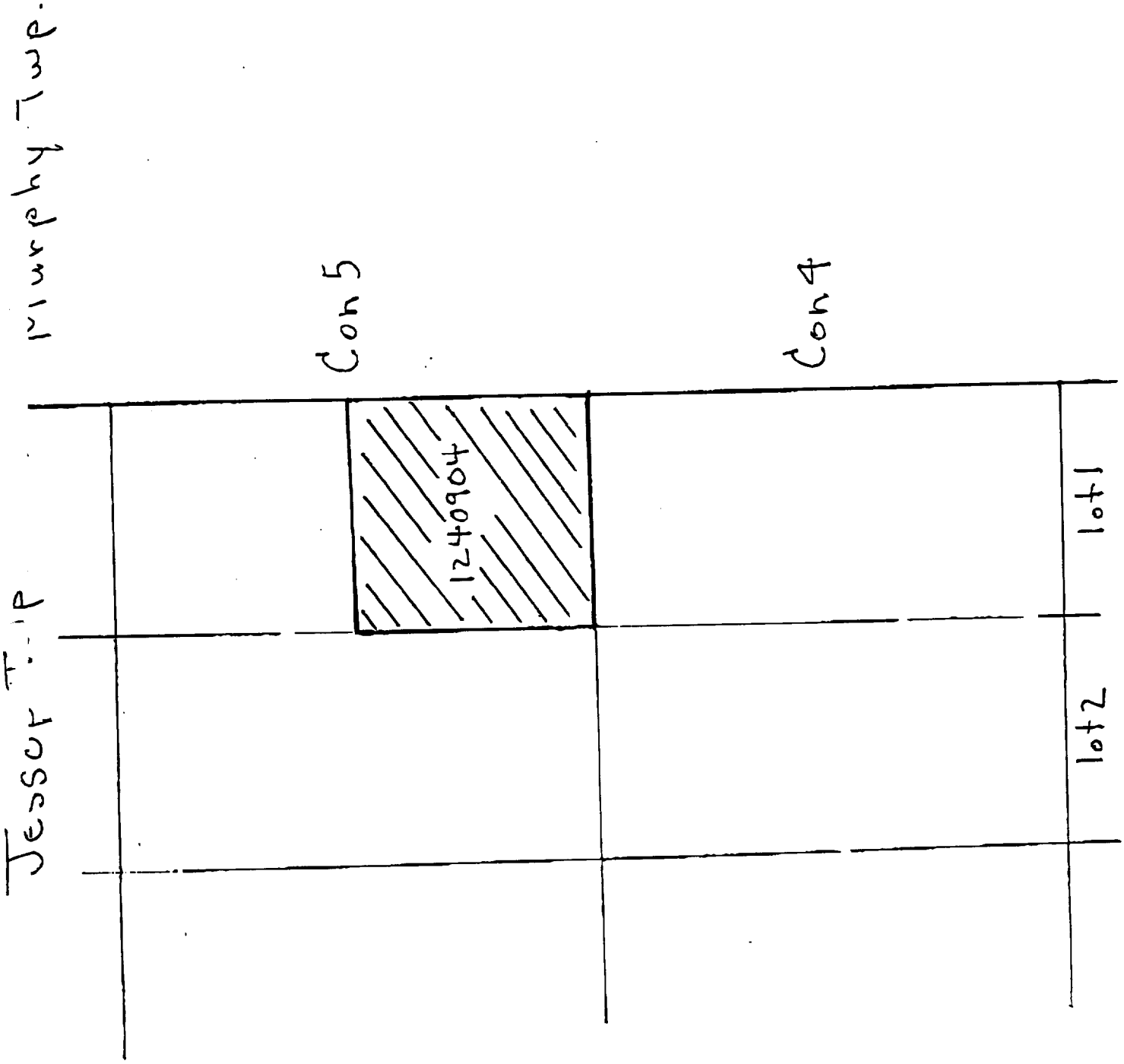
1 - pillowed lava.

2. - andesites
- quartz
- No sulphide min.

Work performed by:
Dave Clement Lic# M2586
on: October 21-22, 2000

Dave Clement

18



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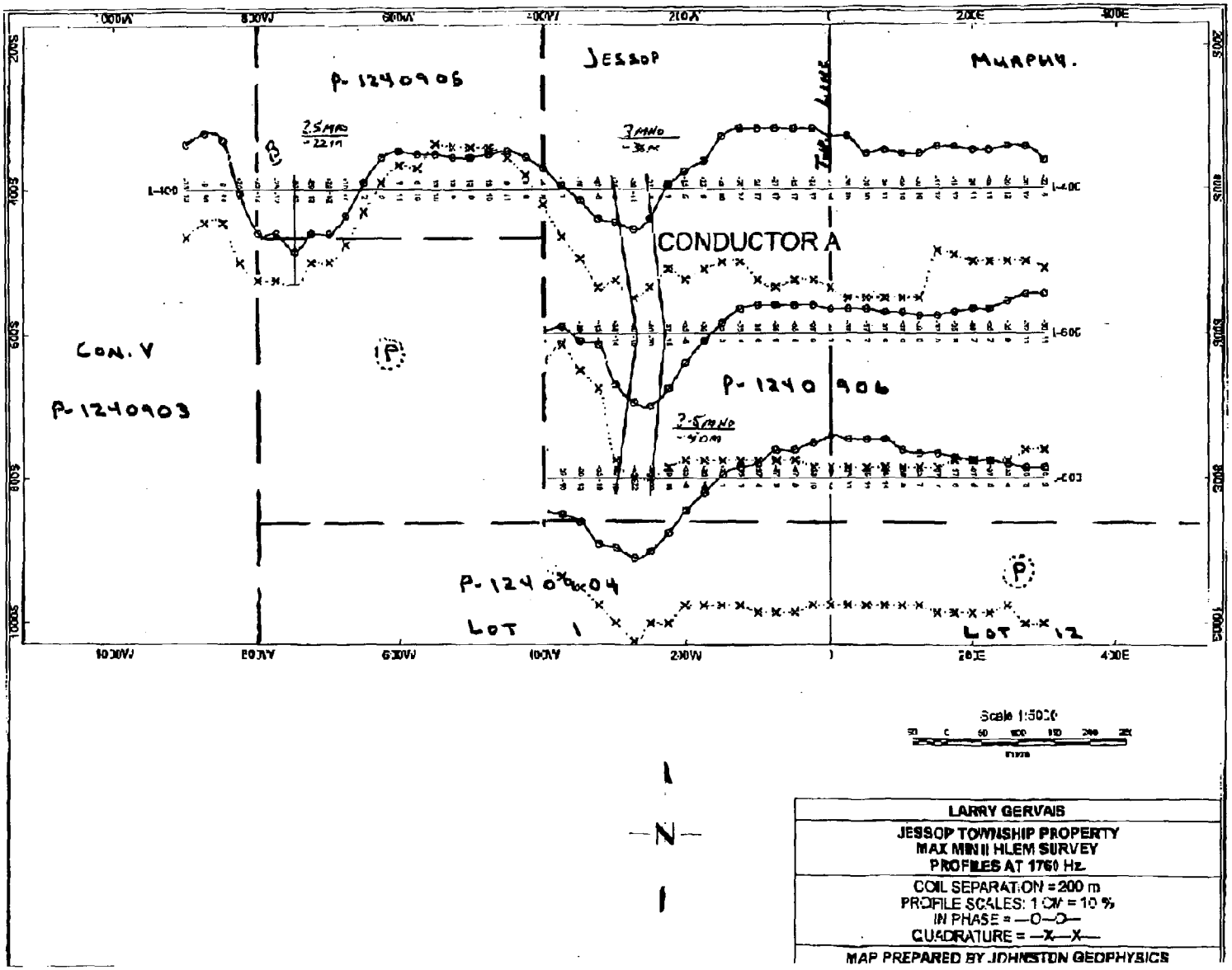
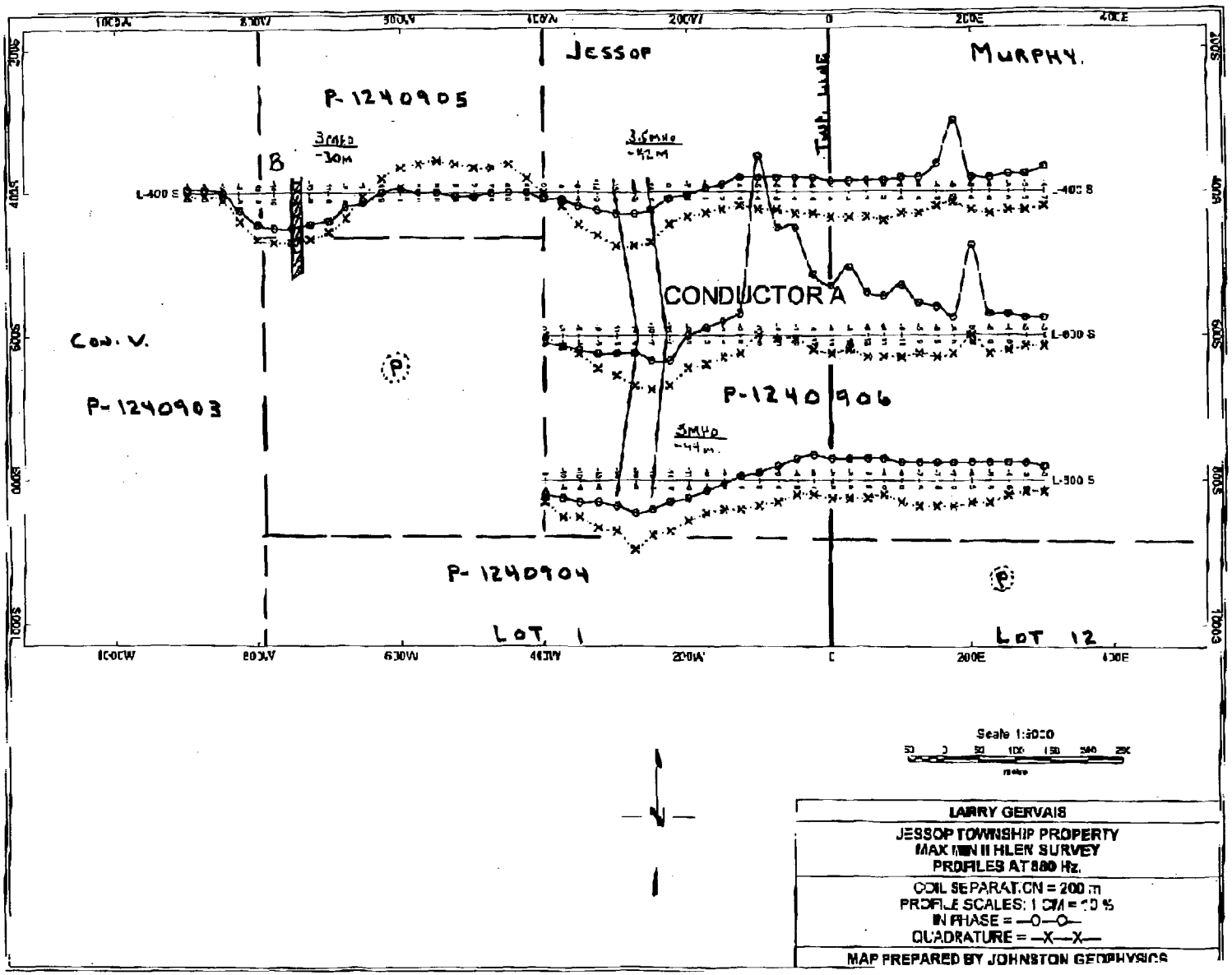
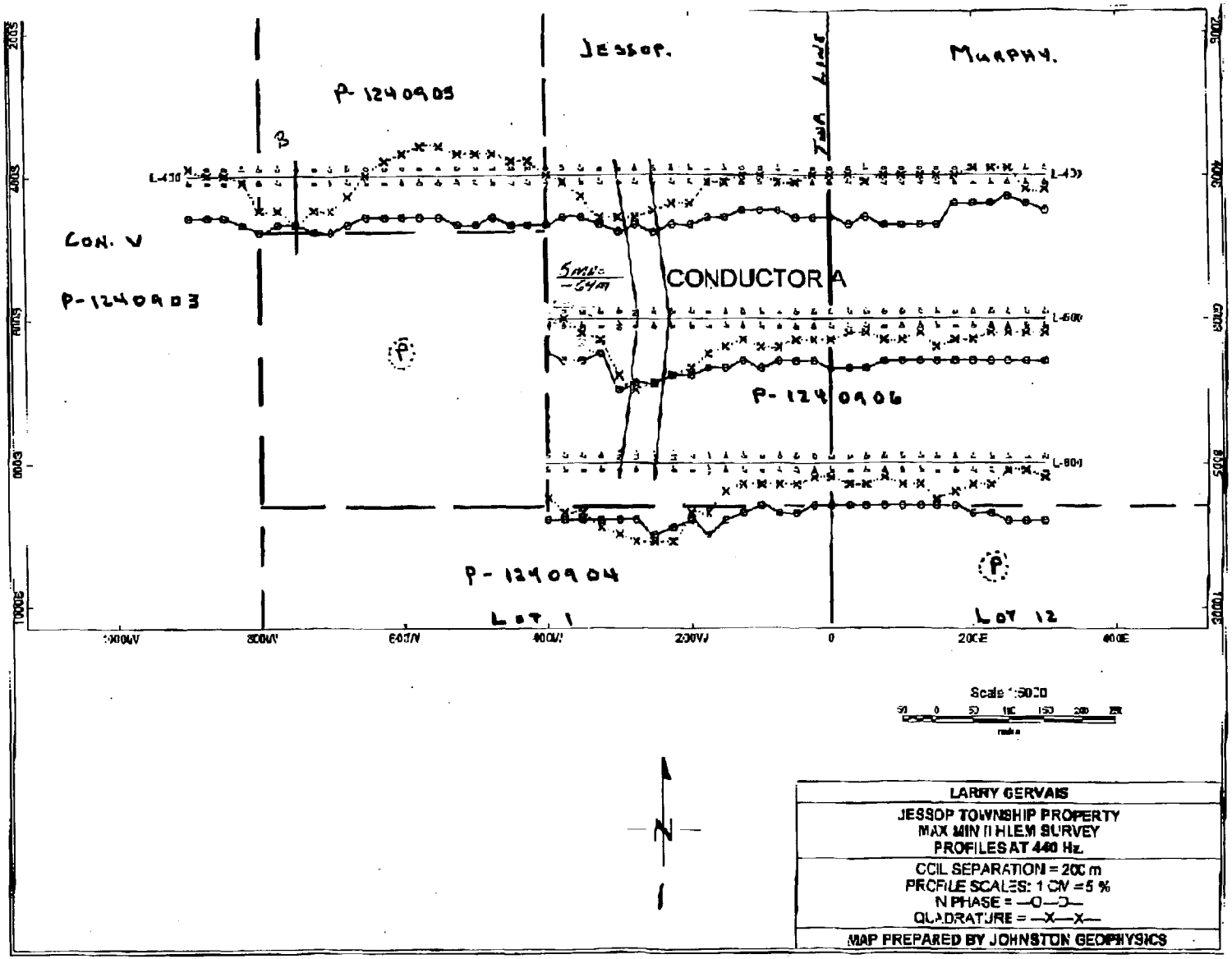
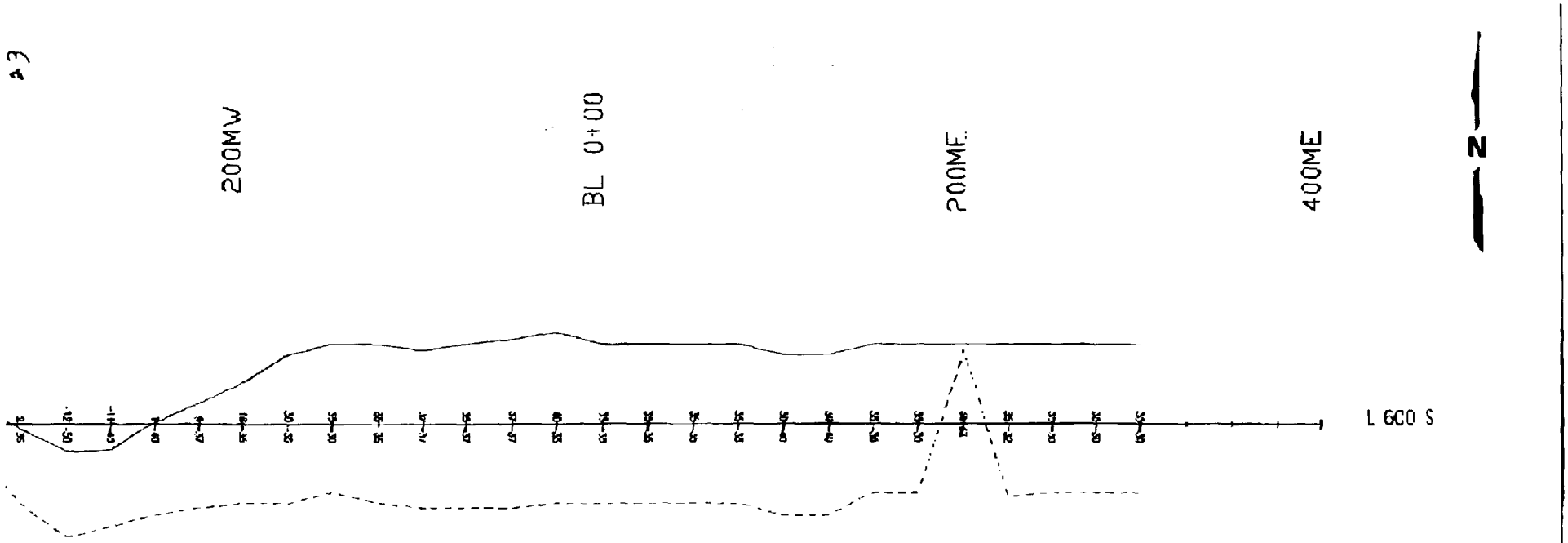


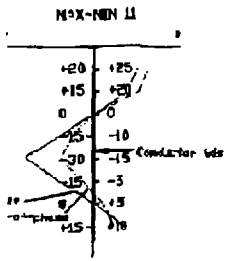
LARRY GERVAIS
JESSOP TOWNSHIP PROPERTY MAX MIN II HLEM SURVEY PROFILES AT 1760 Hz.
COIL SEPARATION = 200 m PROFILE SCALES: 1 CM = 10 % IN PHASE = —O—O— QUADRATURE = —X—X—
MAP PREPARED BY JOHNSTON GEOPHYSICS


JESSOP
MURPHY
P-1240905
P-1240903
P-1240906
P-1240904
CONDUCTOR A
Con. V.
B
L-400 S
L-300 S
L-500 S
LOT 1
LOT 12
Scale 1:5000
LARRY GERVAIS
JESSOP TOWNSHIP PROPERTY
MAX MIN II HLEM SURVEY
PROFILES AT 880 Hz.
COIL SEPARATION = 200 m
PROFILE SCALES: 1 CM = 10 %
IN PHASE = —O—O—
QUADRATURE = —X—X—
MAP PREPARED BY JOHNSTON GEOPHYSICS

21







0 50 100 150 200

SCALE (m)

EXSICS. EXPLORATION LTD.
P.O. Box 1880, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151, 267-2424

CLIENT: L. GERVAIS

PROPERTY: JESSOP GRID

TITLE:

HLEM 1760 HZ SURVEY

Date: JAN./ 00	Scale: 1:2500	NTS
Drawn:J.C.Grant	Interp: J.C.Grant	Job No.: E-

200MW

BL 0+00

200ME

400ME

N

L 600 S

0 50 100 150 200

SCALE (m)

EXSICS EXPLORATION LTD.
P.O. Box 1880, P4N-7X1
Suite 13, Hollinger Bldg, Timmins Ont.
Telephone: 705-267-4151, 267-2424

CLIENT: L. GERVAIS

PROPERTY: JESSOP GRID

TITLE:

HLEM 440 HZ SURVEY

Date: JAN/ 00	Scale: 1:2500	NTS:
Drawn:J.C.Grant	Interp: J.C.Grant	Job No.: E-

Appendix C

Letter of Permission to File Assessment Work

13

Sept. 20/2002

To whom it may concern:

I, Larry Gervais hereby authorize Kennecott Canada Exploration (Mr. Ian Graham to act as an Agent on my behalf to do the following:

1° Submit assessment work on my behalf

2° Write & draft reports and maps for technical submissions on my behalf

Larry Gervais

Larry Gervais
Box 43
Timmins, Ontario
P4N 7C5
cell 705-266-0184

Work Report Summary

Transaction No: W0260.01496 **Status:** APPROVED
Recording Date: 2002-SEP-24 **Work Done from:** 2002-JAN-07
Approval Date: 2002-DEC-09 **to:** 2002-JAN-31

Client(s):

136071 GERVAIS, LARRY NOEL

Survey Type(s):

GRAV LC

Work Report Details:

Claim#	Perform	Perform Approve	Applied	Applied Approve	Assign	Assign Approve	Reserve	Reserve Approve	Due Date
P 1238678	$3,848	$2,418	$3,200	$3,200	$648	0	$0	$210	2003-NOV-15
P 1240902	$7,697	$2,457	$6,400	$6,400	$0	0	$1,297	$2,403	2003-SEP-26
P 1240903	$3,848	$4,600	$3,200	$3,200	$0	0	$648	$1,400	2003-SEP-26
P 1240904	$1,924	$6,762	$1,600	$0	$0	6,346	$972	$416	2003-SEP-26
P 1240905	$481	$1,096	$400	$0	$0	992	$81	$104	2003-SEP-26
P 1240906	$2,886	$2,012	$2,400	$0	$0	0	$486	$2,012	2003-SEP-26
	$20,684	$19,345	$17,200	$12,800	$648	$7,338	$3,484	$6,545	

External Credits: $0

Reserve:

$6,545 Reserve of Work Report#: W0260.01496

$6,545 Total Remaining

Status of claim is based on information currently on record.

42A11SW2033 2.24254 MURPHY 900

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Ontario

Date: 2002-DEC-11

GEOSCIENCE ASSESSMENT OFFICE
933 RAMSEY LAKE ROAD, 6th FLOOR
SUDBURY, ONTARIO
P3E 6B5

Tel: (888) 415-9845
Fax:(877) 670-1555

LARRY NOEL GERVAIS
P.O. BOX 43
TIMMINS, ONTARIO
P4N 7C5 CANADA

Submission Number: 2.24254
Transaction Number(s): W0260.01496

Dear Sir or Madam

Subject: Approval of Assessment Work

We have approved your Assessment Work Submission with the above noted Transaction Number(s). The attached Work Report Summary indicates the results of the approval.

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.

The total value of work approved for this submission is $19,345.00.

If you have any question regarding this correspondence, please contact LUCILLE JEROME by email at lucille.jerome@ndm.gov.on.ca or by phone at (705) 670-5858.

Yours Sincerely,

Ron Gashinski
Senior Manager, Mining Lands Section

Cc: Resident Geologist

Larry Noel Gervais
(Claim Holder)

Ian Graham
(Agent)

Assessment File Library

Larry Noel Gervais
(Assessment Office)

MINISTRY OF NORTHERN DEVELOPMENT AND MINES
PROVINCIAL MINING RECORDER'S OFFICE

MINING LAND TENURE MAP

Date / Time of Issue Sep 24 2002 12:17h Eastern

TOWNSHIP / AREA: JESSOP
PLAN: G-3984

ADMINISTRATIVE DISTRICTS / DIVISIONS

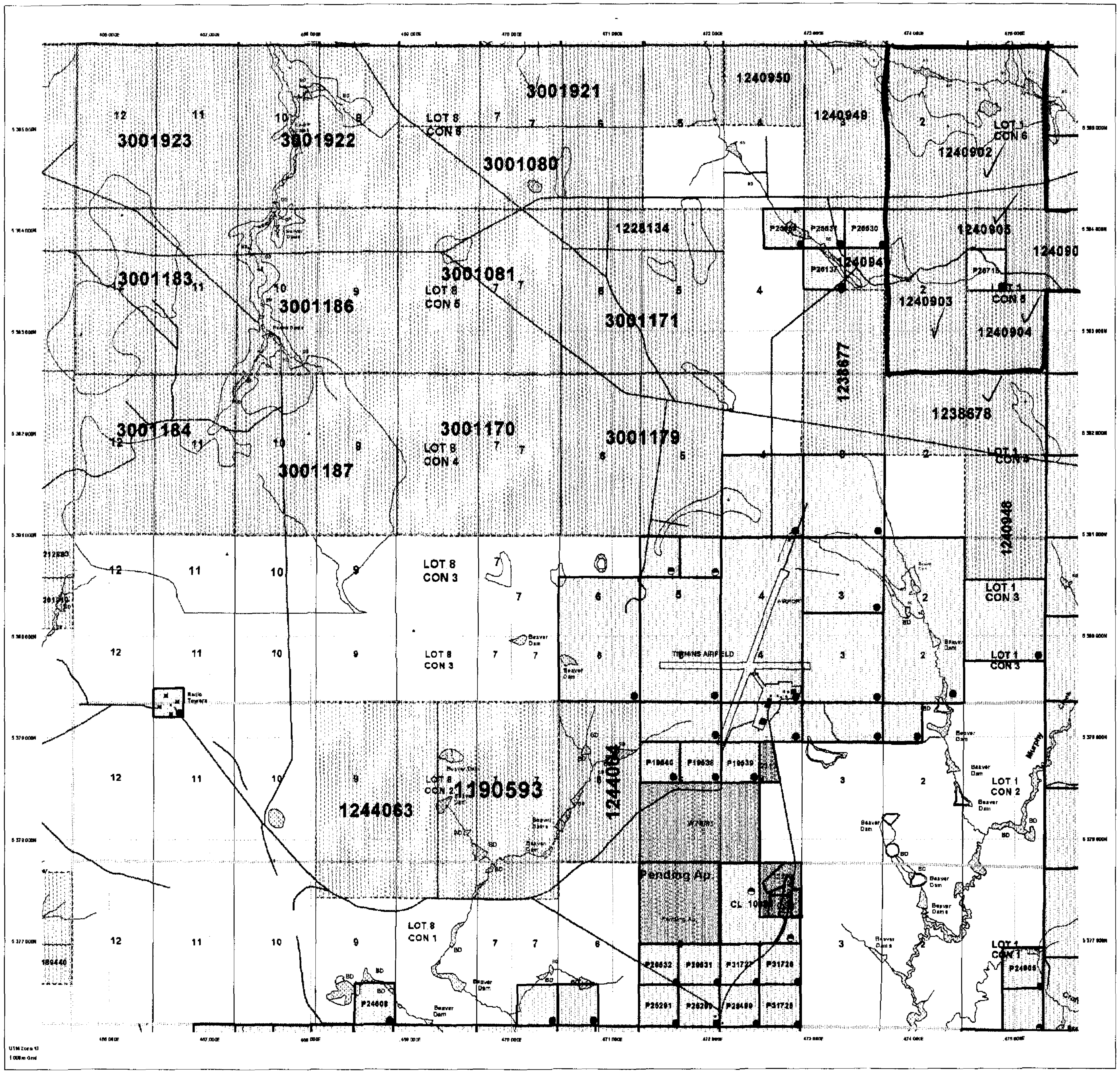
Mining Division	Porcupine
Land Titles/Registry Division	COCHRANE
Ministry of Natural Resources District	TIMMINS

TOPOGRAPHIC

LAND TENURE

LAND TENURE WITHDRAWALS

IMPORTANT NOTICES



LAND TENURE WITHDRAWAL DESCRIPTIONS

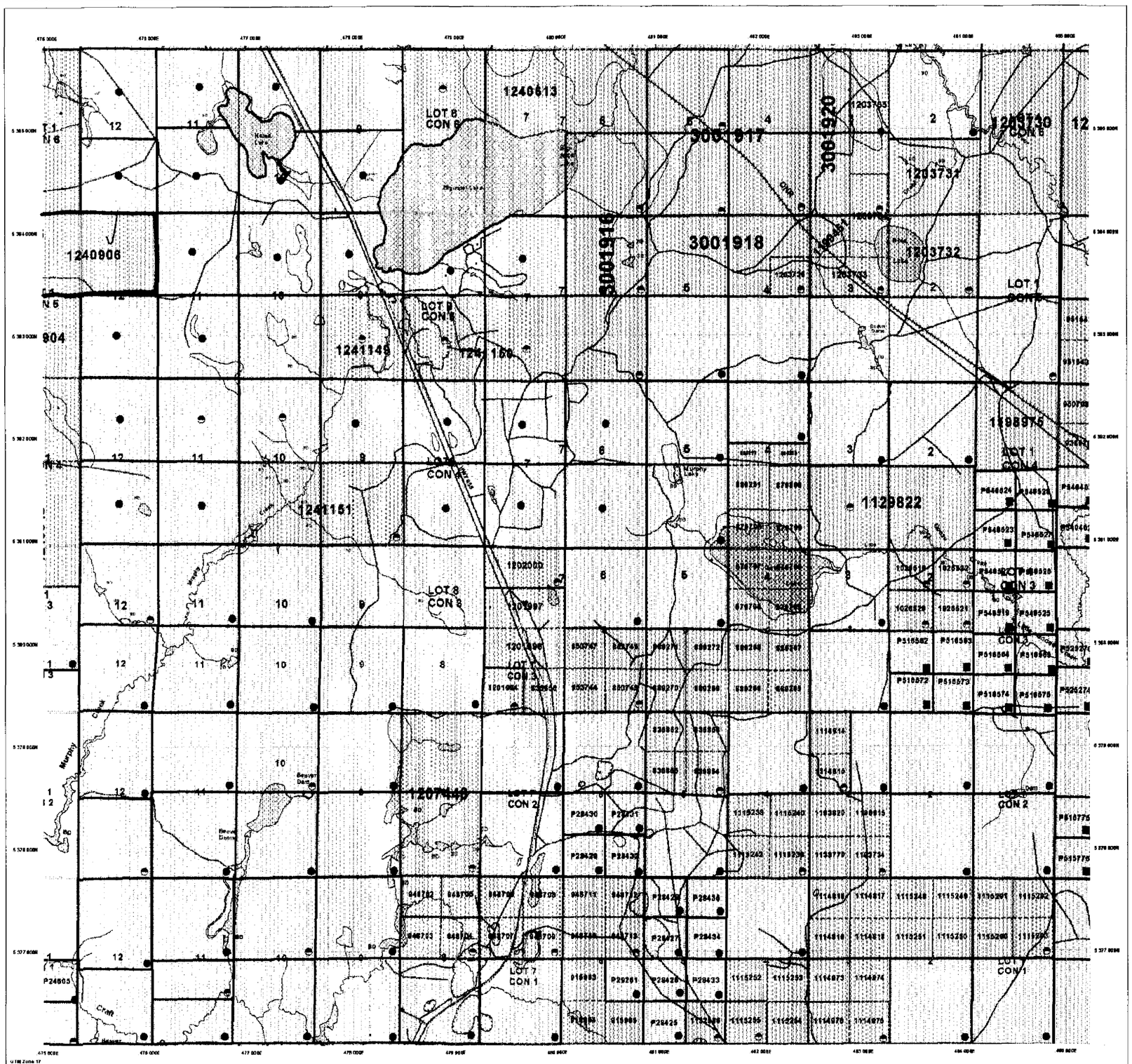
IMPORTANT NOTICES

General Information and Limitations

2.24254
GRAV.

200

42A11SW2033 2.24254 MURPHY



MINISTRY OF NORTHERN DEVELOPMENT AND MINES

PROVINCIAL MINING RECORDER'S OFFICE

MINING LAND TENURE MAP

Date / Time of Issue Sep 24 2002 12:23h Eastern

TOWNSHIP / AREA	PLAN
MURPHY	G-3980

ADMINISTRATIVE DISTRICTS / DIVISIONS

Mining Division	Porcupine
Land Titles/Registry Division	COCHRANE
Ministry of Natural Resources District	TIMMINS

TOPOGRAPHIC

- Administrative Boundaries
- Township
- Concession Lot
- Provincial Park
- Indian Reserve
- Cities, Towns and Villages
- Contour
- Contour - Approx. Auxiliary Equidistant
- Dam
- Mine Headframe
- Railway
- Road
- Trail
- Natural Gas Pipeline
- Hydro Line
- Communication Line
- Wooded Area
- Monument - Cenotaph, Historical Model, Cairn

LAND TENURE

Freehold Patent
- Surface And Mining Rights
- Surface Rights Only
- Mining Rights Only

Leasehold Patent
- Surface And Mining Rights
- Surface Rights Only
- Mining Rights Only

Licence of Occupation
- Quarry Permit
- Surface And Mining Rights
- Surface Rights Only
- Mining Rights Only

- Land Use Permit
- Order in Council
- Water Power Lease Agreement
- Mining Claims

LAND TENURE WITHDRAWALS

Order
- Areas Withdrawn from Disposition
- Mining Act withdrawal types
  - Wmsb — Surface and mining rights withdrawn
  - Ws — Surface Rights Only withdrawn
  - Wm — Mining Rights Only withdrawn
- Order in Council Withdrawal Types
  - Wsmo — Surface and Mining Rights withdrawn
  - Wso — Surface Rights Only withdrawn
  - Wmo — Mining Rights Only withdrawn

IMPORTANT NOTICES

0m 1000.0 m

LAND TENURE WITHDRAWAL DESCRIPTIONS

IMPORTANT NOTICES

Areas under which special regulations, limitations or conditions exist that affect normal prospecting, staking and mineral development activities.

2.24254
GRAV.

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Those wishing to make mining claims should consult with the Provincial Mining Recorders' Office or the Ministry of Northern Development and Mines for additional information on the status of the lands shown hereon. This map is not intended for navigational, survey, or land title determination purposes as the information shown on this map is compiled from various sources. Completeness and accuracy are not guaranteed. Additional information may also be obtained through the local Lands Titles or Registry Office, or the Ministry of Natural Resources.

The information shown is updated from digital data available in the Provincial Mining Recorders' Office at the time of downloading from the Ministry of Northern Development and Mines web site.

General Information and Limitations

Contact Information
Provincial Mining Recorders' Office — Toll Free
Willet Green Miller Centre — Tel: 1 (866) 415-9845
933 Ramsey Lake Road — Fax: 1 (877) 670-1444
Sudbury, ON P3E 6B9
Home Page: www.gov.on.ca/MNDM/MINES/LANDS/landsmapsadmin

Map Datum: NAD 83
Projection: UTM (6 degree)
Topographic Data Source: Land Information Ontario
Mining Land Tenure Source: Provincial Mining Recorders' Office

This map may not show all registered land tenure and interests in land including certain patents, leases, easements, right of ways, beaches rights, licenses, or other forms of disposition of rights and interest from the Crown. Also certain land tenure and land use that is not or prohibited may exist in some mining claims may not be illustrated.

UTM Zone 17
1000m Grid