MAR 19990014: WAUGH LAKE

Received date: May 17, 1999

Public release date: May 18, 2000

ESMERALDA
Exploration International Inc.

May 14, 1999

Alberta Energy
Mineral Operations
Mineral Tenure
9th Floor, North Tower
Petroleum Plaza
9945 - 108 Street
Edmonton, Alberta
T5K 2G6

Attention: Mr. Brian Hudson
Manager, Mineral Agreements

Dear Mr. Hudson:

Re: Metallic and Industrial Minerals Permit 9396110055

Kindly find enclosed a copy of a report prepared by Mr. Bruno Wiskel with respect to exploration work conducted on the captioned property, together with a statement of expenses connected with this work. Also enclosed is a copy of a map of the area provided by your department, indicating the acreage which Esmeralda has elected to drop at this time. Based on our findings and the expenditures to date, we have elected to retain ten sections of the captioned claim.

We note that this report is a preliminary one, as Mr. Wiskel has not yet had an opportunity to examine the results of sample analyses in detail.

We trust you will find this in order. Should you have any questions or require additional information, please contact the writer at your convenience.

Yours truly,

[redacted]

RON STEWART
President

RJS/em

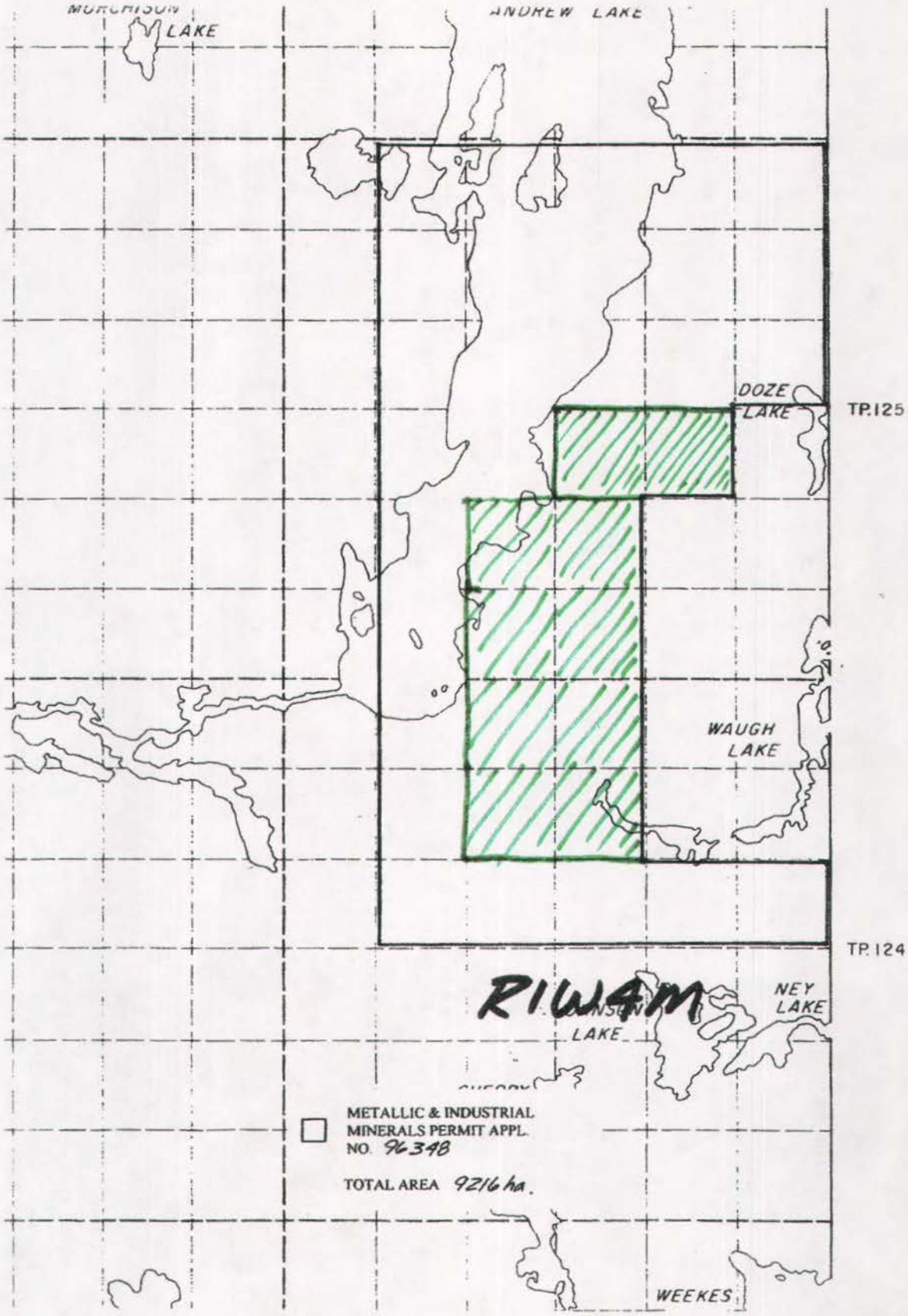
Encls.

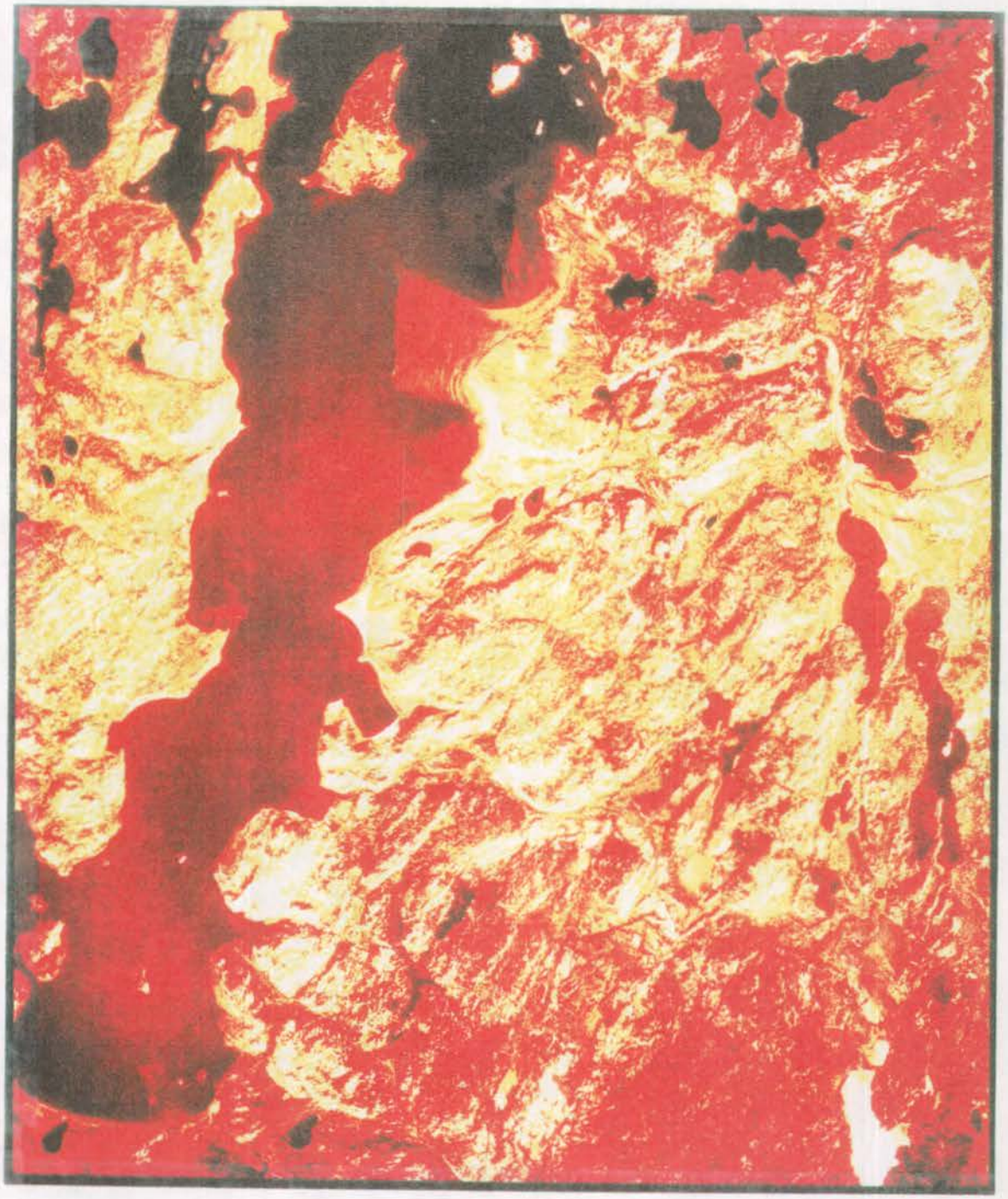
Suite 1592 #194, 3803 Calgary Trail South, Edmonton, Alberta T6J 5M8 • Tel.: (403) 413-4250 • Fax: (403) 438-3579

STATEMENT OF EXPENDITURES
WAUGH LAKE CLAIMS
ALBERTA ENERGY PERMIT NO. 9396110055
1998

Field Expenses		
Bruno Wiskel, BSc., P.Geol. (Consultant)	7 days @ [redacted]	[redacted]
Ron Stewart	7 days @ [redacted]	
Accommodations		
Wiskel/Stewart, Andrew Lake Lodge		1,500.00
Misc. Field Expenses (Food, Equipment, Supplies, Etc.)		1,400.00
Transportation		
Flights in and out of Andrew Lake		2,500.00
Float Plane Support during Exploration of Waugh Lake Properties		
Ground Transportation		500.00
Canoe Rental		250.00
Sample Analysis		
Loring Laboratories		500.00
Sample Preparation, Shipping Expenses		200.00
Report Preparation		
Bruno Wiskel, BSc., P.Geol.		[redacted]
Research Support		750.00
Secretarial Services, Cartography		550.00
TOTAL		13,700.00

The areas marked in green on the following map indicate acreage that Esmeralda Exploration International, Inc. intends to retain under Permit No. 9396110055. All acreage not so marked should be dropped from this permit.





PRELIMINARY GEOLOGICAL ASSESSMENT
OF THE
WAUGH LAKE MINERAL PROPERTY

For

ESMERALDA EXPLORATION INTERNATIONAL, INC.

By

BRUNO WISKEL Bsc. P.Geol
EVERGREEN ENVIRONMENTAL CORPORATION LTD.

Table of Contents

Introduction

Evergreen Environmental Company Ltd. (EEC) was contacted to complete a preliminary geological assessment of Esmeralda Exploration International Inc. (Esmeralda) Waugh Lake property in the extreme north east corner of Alberta. The preliminary field investigation of Esmeralda's Waugh Lake Property commenced on August 31, 1998 following an extensive review of publications documenting prior exploration in the area. The field investigation included regional and detailed mapping, rock and sediment sampling and locating anomalous gold showings from previous exploration.

Geographical Location

The Esmeralda property consists of 92.16 Ha in the Andrew Lake region of north eastern Alberta (see map 1 & 2). Accommodation was provided by the Andrew Lake Lodge, a hunting and fishing lodge on the western shores of Andrew Lake. Both the lodge and the Waugh lake properties are not accessible by road and provisions and supplies must either be flown in from Smith or from Edmonton.

The Andrew Lake / Waugh Lake area consists of rugged, glacially scoured hills (figure 1) covered by dense stands of spruce, tamarack and poplar (figure 2). Maximum relief in the area is approximately

Transportation from the lodge to the Esmeralda property consisted of float plane, motor boat and canoe after which exploration continued on foot (figures 3-6).

Scope of the Geological Assessment

Bruno Wiskel Bsc. P.Geol, and President Of EEC was responsible for the geological evaluation of Esmeralda's Waugh Lake property. The field assessment, which took one week to complete, was divided into five separate areas of investigations listed on the following page. Results to be compiled into a summary report.

1. Review of geological maps and publications of the Waugh lake area.
2. Location and geological evaluation of the significant gold in previous exploration.
3. Geological evaluation of the Esmeralda property.
4. Regional geological evaluation
5. Geochem analysis and interpretation of rock and mineral samples collected.

History of Mineral Exploration in the Waugh Lake Area

Geological exploration in this area has been ongoing for over 100 years. The first canoe traverse along the north shore of Lake Athabasca was completed by James Tyrell in 1892 and again in 1896 followed by Alcock in 1915 and 1917 and Cameron and Hicks in 1929 and 1930.

Alcock returned in 1936 to map the area in the extreme northwest corner of Saskatchewan after gold was discovered at Goldfields. This regional reconnaissance was completed by Wilson in 1941.

In 1954, uranium exploration lead by Collins of the Alberta Research Council (ARC) located several low grade uranium prospects and in 1959, Riley of the Geological Survey of Canada (GSC) carried out regional reconnaissance of precambrian rocks north of Lake Athabasca. This work was followed by John Godfrey, who completed a paper on the "Geology of the Andrew Lake, North District" in 1961.

Hudson Bay Oil and Gas Ltd. flew a magnetic, electromagnetic and radiometric survey in 1969 which recorded 3 conductors at the north end of Waugh Lake. Trenching was completed at 4 separate locations with a significant gold showing in trench #1 along the channel connecting Waugh Lake with North Waugh Lake.

Successive research was complete by the Alberta Geological Survey (AGS) in 1993, with the report on "Evaluation of the Economic Mineral Potential in the Andrew Lake - Charles Lake Area of North East Alberta" in 1994 with "Geology and Mineral Occurrences of the Aphebian Waugh Lake Group, Northeastern Alberta." and in 1995 with Stratigraphy, Structure and Mineral occurrences in the Waugh Lake Group, North Eastern Alberta.

Regional Geology

The Waugh Lake area represents both a sedimentary and a structural basin as is composed of sheared and faulted precambrian igneous, metamorphic and sedimentary rocks which have been collectively called the Waugh Lake Group (see map 3). Contained in the Waugh Lake group are intrusions of the Colin Lake Granites

The Waugh Lake Group has an estimated thickness of over 11 kilometers and consists of two megacycles of metasedimentary rocks grading into metavocanics. These two sequences are subsequently divided into five rock units as outline (see table 1, from Iannelli et. al. 1995).

The basal assemblage of the lower megacycle is referred to as the Martyn Lake formation and is comprised of bedded turbidites, overlain by the Doze Lake sedimentary / volcanic assemblage containing conglomerates, sandstones intermixed with mafic tuffs and flows.

The Martyn Lake Formation hosts a shear zone which synchronous with a 6 km electromagnetic anomaly (see map 4). Trenches cut in the shear zone indicate the presence of sulfide mineralization with gold assays of 340 ppb (see map 5)

The basal volcanic - sedimentary sequence of the upper megacycle is the Senderholm Lake formation which contains amphibole bearing arkoses, subarkoses and sublitharenites with lenses of intermediate tuff and fine crystalline mafic flows.

Conformably overlaying the Senderholm Lake formation is the Johnson Lake formation which represents a sedimentary dominated assemblage with minor volcaniclastic sequences.

The Niggli Lake formation is a series of mafic volcanics which caps the Waugh lake group. These cliff forming volcanics outcrop on the north shore at the extreme western end of Waugh Lake (see figure 6)

Table 1: Waugh Lake Group Table of Formations From Iannelli *et. al.* 1995

Table 1: Table of formations, Waugh Lake Group.

Waugh Lake Group (thk = 1120m+)

Niggli Lake Fm (thk + 128+): Mafic to intermediate flows, tuffs and pyroclastic breccia (includes mainly basalt and andesite); minor interlayers of reworked tuff and medium-grained to pebbly sublitharenite.

Conformable ?

Upper

Johnson Lake Formation (thk = 238m to 452m)

JL.U Member (thk = 46m to 268m): Interlayered felsic, less commonly intermediate, tuffs, flows, and lapilli tuffs with minor horizons (up to 30m thick) of medium-grained to pebbly subarkose to sublitharenite and polymictic pebble conglomerate.

Conformable/Gradational

Lower

JL.L Member (thk = 184m to 343m): Planar-bedded to trough-crossbedded medium-grained to pebbly sublitharenite to subarkose, with variably interlayered polymictic pebble conglomerate horizons; locally with minor felsic tuff and reworked tuff horizons; thins to the north and northeast.

Conformable/Gradational

Sederholm Lake Formation (thk = 7m to 91m): Actinolite- and biotite-bearing, planar-bedded to trough-crossbedded, fine-grained to pebbly subarkosic-wacke to sublitharenite with minor interlayers of polymictic orthoconglomerate and mafic to intermediate tuff.

Conformable

Upper

Doze Lake Formation (thk = 200m to 330 m)

DL.U Member (thk = 102m to 118m): Felsic, less commonly intermediate, flows and tuffs with minor interlayered horizons of reworked felsic to intermediate tuffs; includes rhyolitic to dacitic flows and tuffs.

Conformable

Lower

DL.L $_{SW}$ Member (thk = 95m to 220m): Medium-grained to pebbly subarkose to sublitharenite with minor interbeds of polymictic conglomerate; planar-bedded to through-crossbedded.

DL.L $_{NE}$ Member (thk = 27m to 119m): Massive pebble to boulder polymictic orthoconglomerate; spheroidal to discoidal quartzite, quartz, granite, and sandstone clasts in a sublitharenite matrix.

Gradational

DL.TR Member (thk = 4m to 11m): Interlayered quartzarenite lenses, phyllite - siltstone - sandstone and pebbly subarkose.

Conformable

DL.B Member (thk = 29m+): Mafic to intermediate flows and pyroclastic breccia.

Conformable/Gradational

Martyn Lake Formation (thk = 200m+): Interlayered thin- to medium-bedded, fine- to coarse-grained quartzarenite to subarkose and rhythmically bedded mudstone (includes phyllite and biotite-sericite schist) - siltstone - fine grained quartzarenite; strata contain turbidites and graded bedding.

Basement Unknown

The Colin Lake granite is composed of very coarse to pegmatitic leucogranite which outcrops extensively on the western fringes of the Waugh Lake group (see figure 7). Inclusions of the granite are common but decrease to the east away from the main stock.

The Colin Lake granite contains frequent quartz - tourmaline veining systems (see figure 8). The veins are frequently host to rare elements such as tungsten, gold and silver.

Exploration Methodology

Day 1 was spent in verification of assay results of previous exploration programs beginning with trench #1 (see map 6) which show a gold assay of 340 ppb.

The trench was located along the east shore of Waugh Lake. The trench was both sampled and mapped in detail from the west to east (moving up in the section). The trench was sampled in one foot sampling units (SU) which were bagged and assayed.

The description of the trench is listed below.

Length (in inches)	**Description**
0 - 4	Argillaceous shale
4 -13	Graphic schist strike 350° dip 80° west
13 - 24	quartz vein
24 - 36	Graphitic schist, quartz inclusions
36 - 44	Graphitic schist, minor quartz veining, vein of arsenopyrite 44 inches
44 - 65	Graphitic schist, elongated quartz cobbles. Strike 15°, dip 80° west.
65 - 72	Graphitic schist, contorted, minor elongated quartz pebbles, minor quartz veining.

72 - 80 Graphic schist, dark, contorted

80 - 96 massive, arenaceous

96 - 120 Covered interval no photo no sample

120 - 132 Phyllite, silky sheen on cleavage surfaces, quartz veining

132 - 144 Phyllite, iron staining, quartz veining

144 - 158 Massive quartzite, minor pyrite flecks. End of section.

Geological Interpretation of Trench Section

The graphitic schists and phyllites represent the metamorphic phase of sediments that probably originated as mudstones. The quartzite is likely representative of a sandstone unit and the stretched pebbles and cobble bands were originally a conglomerate.

The large discrepancy in grain size between the bedded mudstone, sandstone and conglomerate units occurring in this section indicate a turbidite sequence in a mid to outer submarine fan and basin plain environments.

The contorted graphitic schist and the presence of stretched pebbles indicate shearing occurred synchronous with the regional low grade metamorphism. The shear zone has a surface expression as a low trench trending in a north / south direction

The quartz veining and deposition of sulphide mineralization occurred as a result of hydrothermal fluids discharged during the intrusion of the Colin Lake granites.

The trench assay results are listed in table #2

Day 2 was spent gathering rock stream and sediment samples around Andrew Lake to confirm regional geology. (Location of rock and sediment samples are located on map 8)

SAMPLE	ROCK DESCRIPTION
AL 301	Nondescript pink granite gneiss
AL 302	Pink granite gneiss, quartz pods
AL 303	Mica - hornblende Granite (Colin Lake granite)
AL 304	Sediment Sample, unnamed creek
AL 305	Sediment Sample, Senderholm Lake Creek
AL 306	Sediment Sample unnamed creek
AL 307	Massive granite gneiss, orange/pink minor biotite, hornblende
AL 308	Biotite - hornblende granite

Day 3 was spent gathering rock stream and sediment samples around Waugh Lake to confirm regional geology. (Location of rock and sediment samples are located on map 9)

SAMPLE	ROCK DESCRIPTION
WL 401	Soil Sample
WL 402a	Black fine grained, iron stained, Metavolcanics
WL 402b	As above
WL 403	Graphitic schist, dark gray, shiny cleavage planes
WL 404a	Granitic gneiss, 25 cm granite zenoliths
WL 404b	Sediment Sample, Stream flowing on fault line
WL 405	Quartz - tourmaline vein see figure 8
WL 406	Quartz - tourmaline vein
WL 407	As above
WL 408	As above
WL 409	As above
WL 410	As above

Table 2. Rock, Soil and Sediment Sample Assay Results

NOTE: These results were not available as of the date of this report, and will be appended at a later date.

Conclusions

The Esmeralda Waugh Lake Properties have a number of attributes that make it an exceptionally good exploration prospect.

1. The properties lie in an area where there are a number of good gold showings and sulphide mineralization.

2. The quartz-tourmaline vein systems found at Esmeralda's Waugh Lake properties is similar to ores mined at the gold mines in Yellowknife.

3. A number of large electromagnetic anomalies lie on or adjacent to the Esmeralda Waugh Lake Properties.

4. This preliminary study of Esmeralda's Waugh Lake properties is insufficient to determine gold grade and ore volume estimates.

Recommendations

It is my opinion that Esmeralda's Waugh Lake properties represent an excellent exploration target and that further exploration is necessary to delineate ore bodies. An exploration plan is listed below

1) Using explosives to elongate and deepen Trench #1 to determine if sulfide mineralization is continuous laterally and at depth. Map and sample.

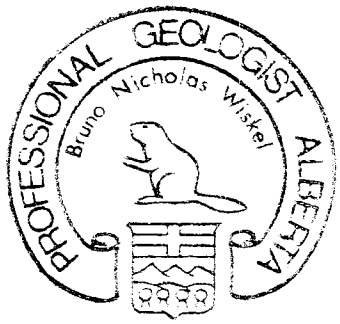
2) Blast two similar trenches 100 meters north and south of trench #1 along strike of the shear zone. Map and sample.

3) Map and sample the quartz - tourmaline vein systems on and around the Esmeralda properties.

4) Conduct regional reconnaissance from the air to determine lateral extent of quartz tourmaline vein and other geological anomalies followed by ground reconnaissance.

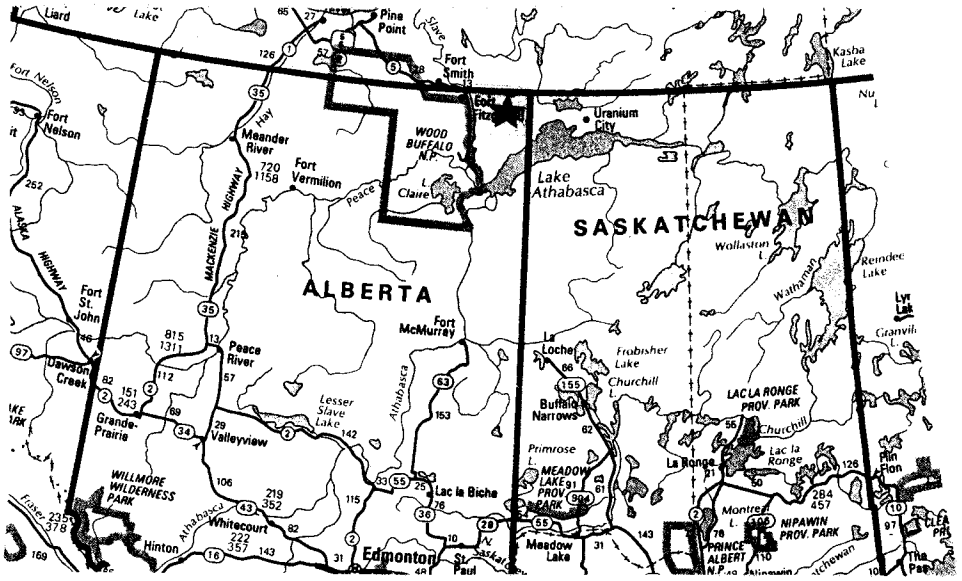
Sincerely,

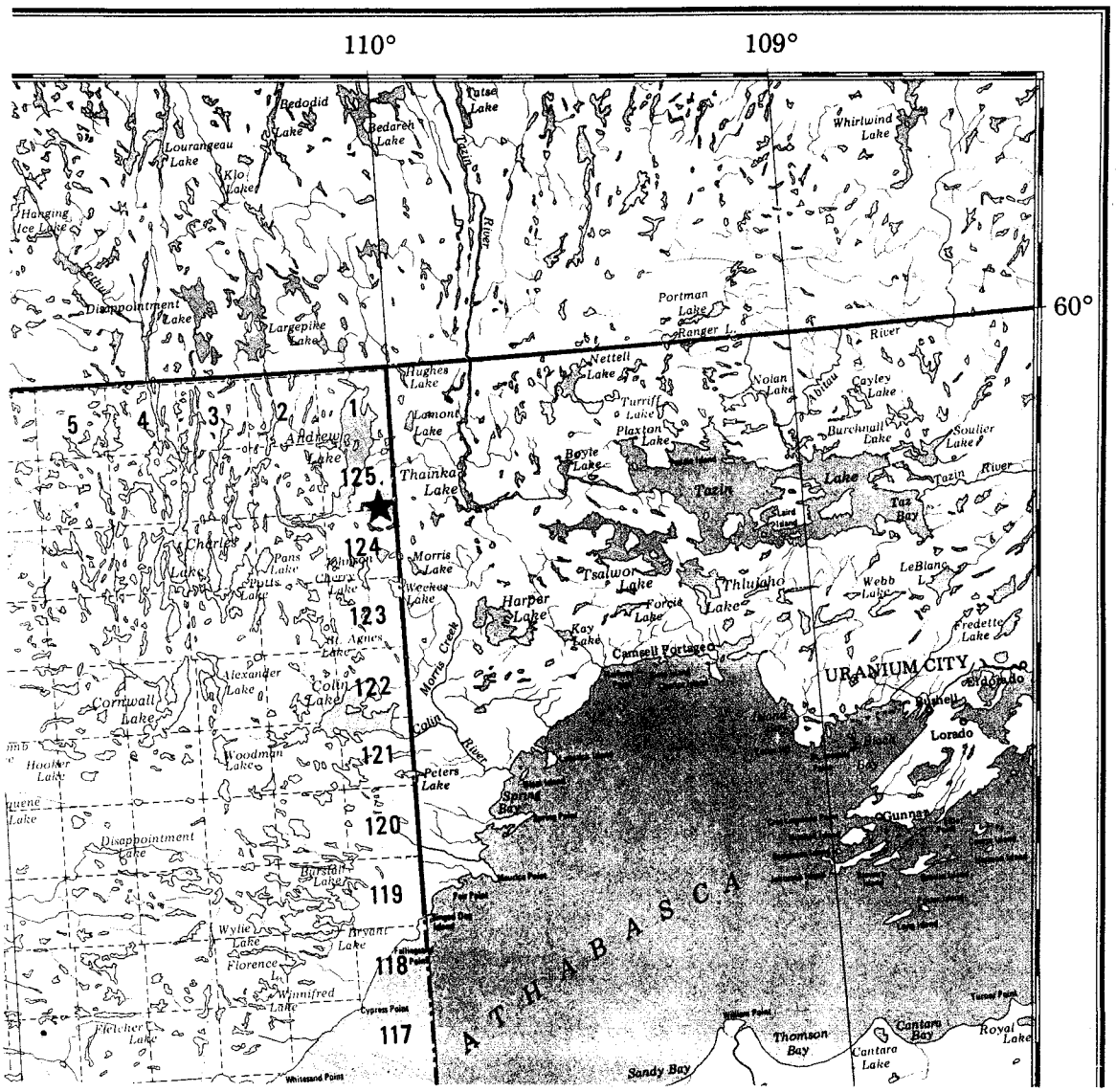
Bruno Wiskel BSc. P.Geol.



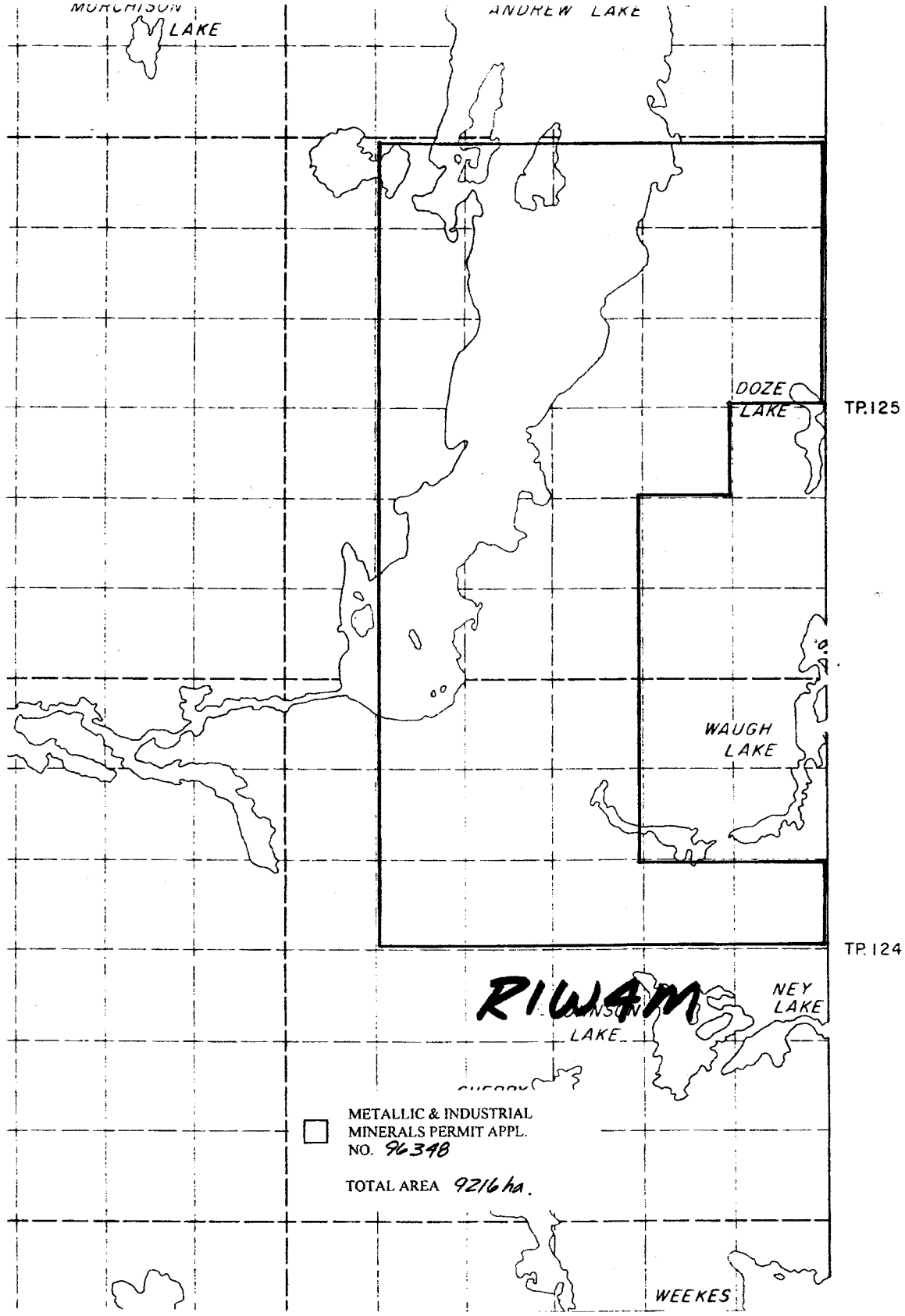
APPENDIX

MAP 1 - REGIONAL LOCATION OF ESMERALDA'S WAUGH LAKE PROPERTY

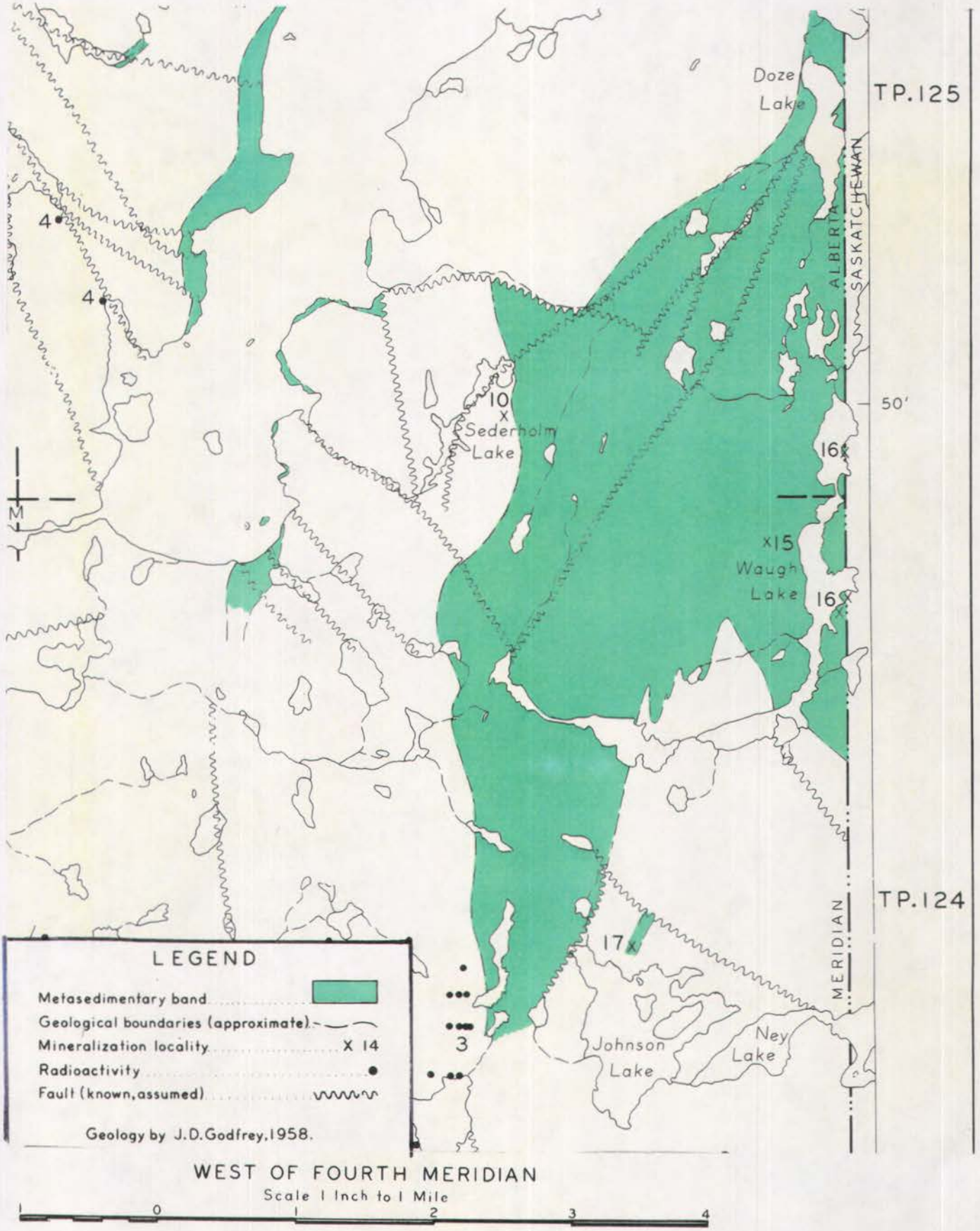




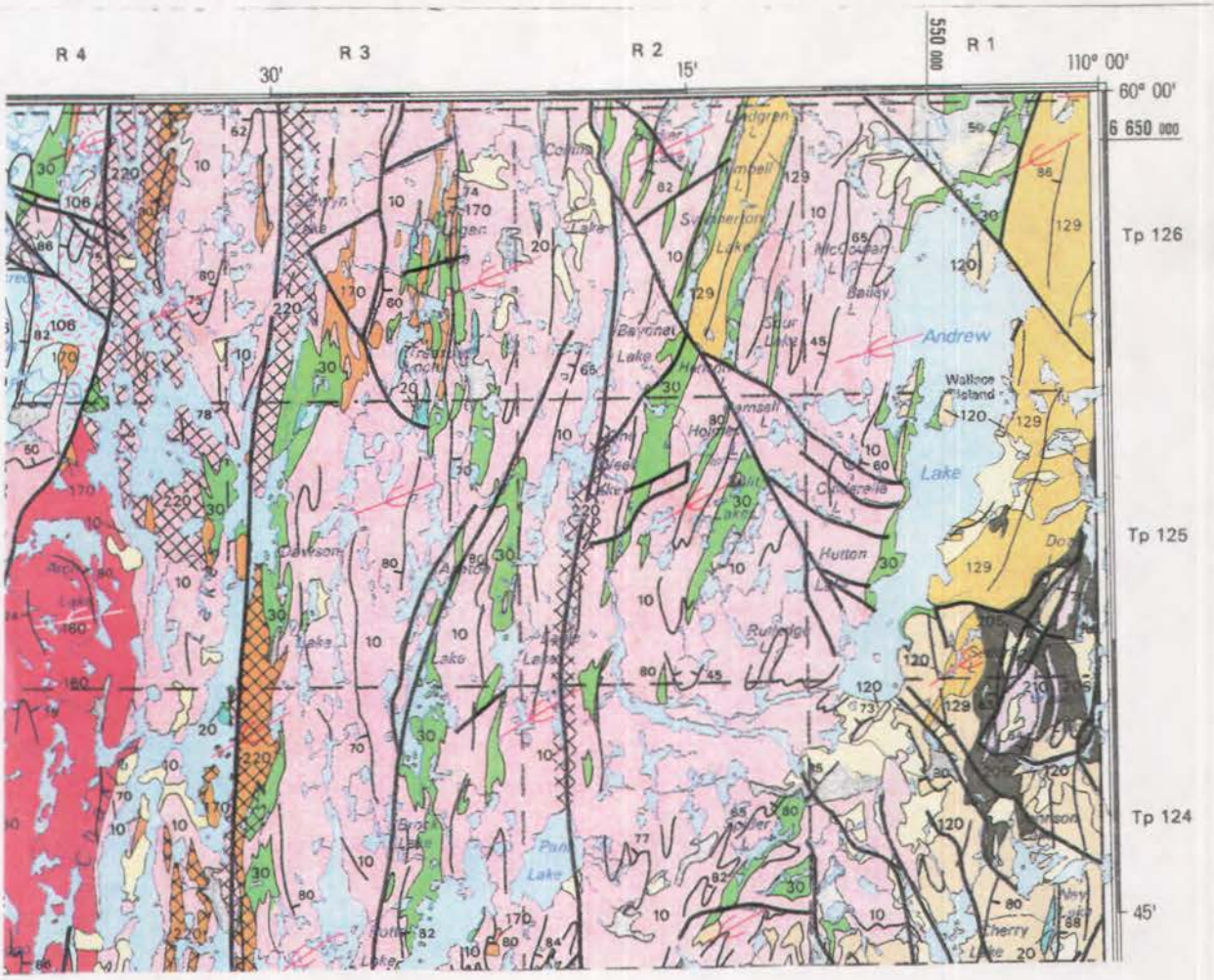
MAP 2 - CLAIM MAP OF ESMERALDA'S WAUGH LAKE PROPERTY



MAP 3 - METASEDIMENTARY BANDS IN THE WAUGH LAKE AREA



MAP 4 - GEOLOGICAL MAP OF WAUGH LAKE AREA



HELIKIAN

LEGEND

240 — ATHABASCA GROUP: hematite-stained, flaggy to rubbly bedded wacke with pebble bands. Locally includes rubble. South of Lake Athabasca, well indurated, medium-grained sublitharenite, locally pebbly, planar crossbedded and quartz overgrowth cemented.

APHEBIAN

210 — WAUGH LAKE GROUP (low-grade metavolcanic rocks): greenstone and amphibolite derived from basalt, gabbro and possibly tuff.

205 — WAUGH LAKE GROUP (low-grade metasedimentary rocks): quartzite with subordinate biotite chlorite schist, phyllite, phyllonite; locally ferruginous, garnetiferous, graphitic, with quartz-tourmaline veins.

120 — COLIN LAKE GRANITOIDS: lithologies in this group range from granite to quartz diorite and are gradational in character. Feldspar megacryst (ranging from 3 to 10 to 15 to 40 mm long) are in a biotite-rich, well-foliated, quartz-feldspar matrix. Minor aplo-pegmatite masses accompany all of the lithologies.

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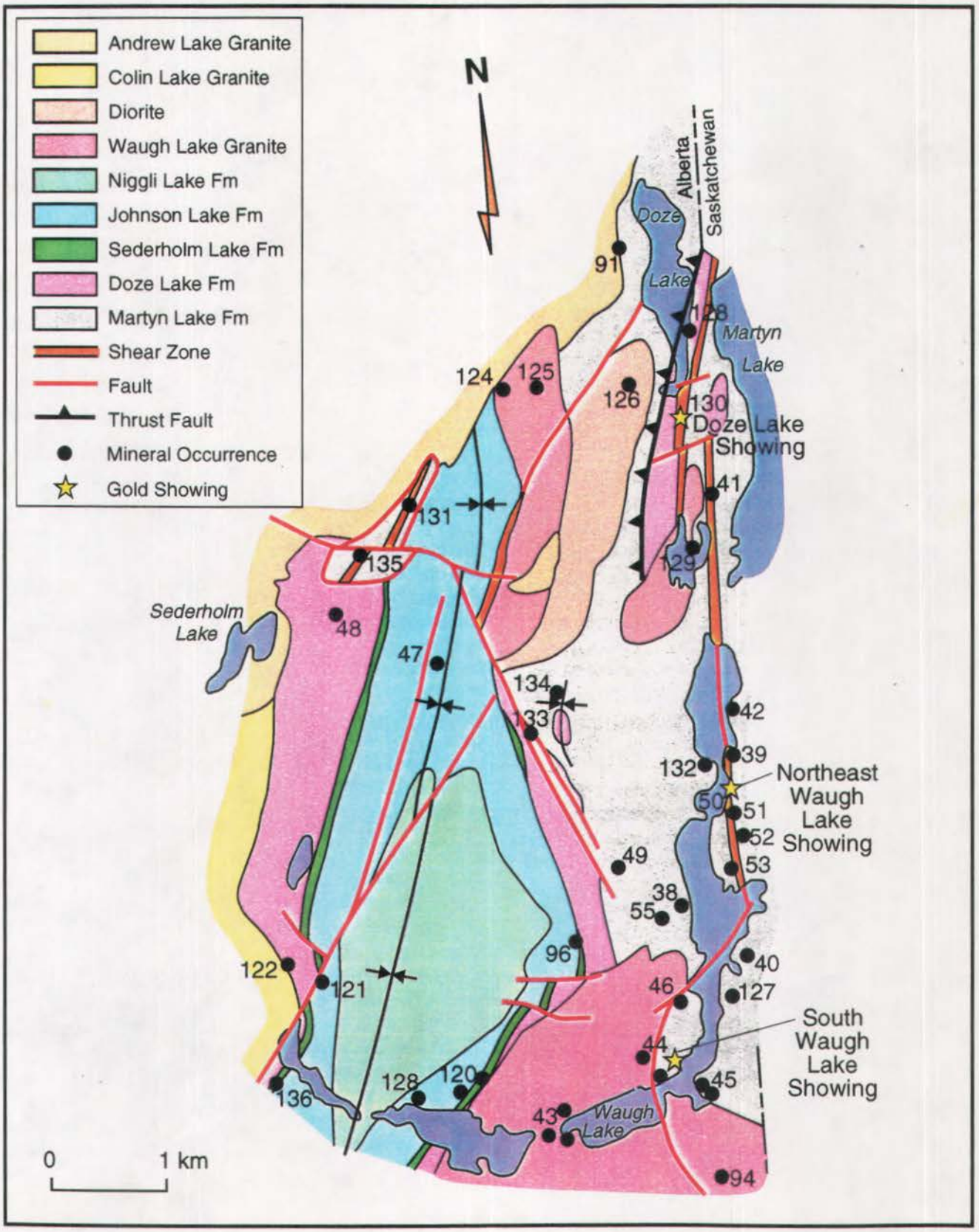
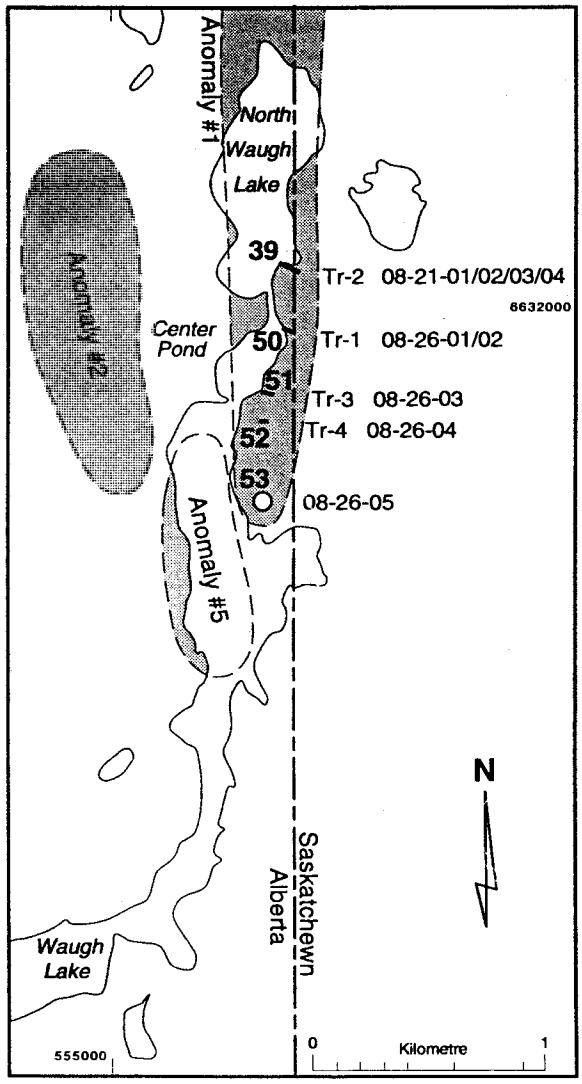
MAP 5 - DETAILED GEOLOGICAL MAP OF THE WAUGH LAKE AREA

(From Iannellie *et. al.*)



MAP 6 - GEOPHYSICAL MAP OF THE WAUGH LAKE GOLD SHOWING



08-15-06 ○ 1992 Sample Site

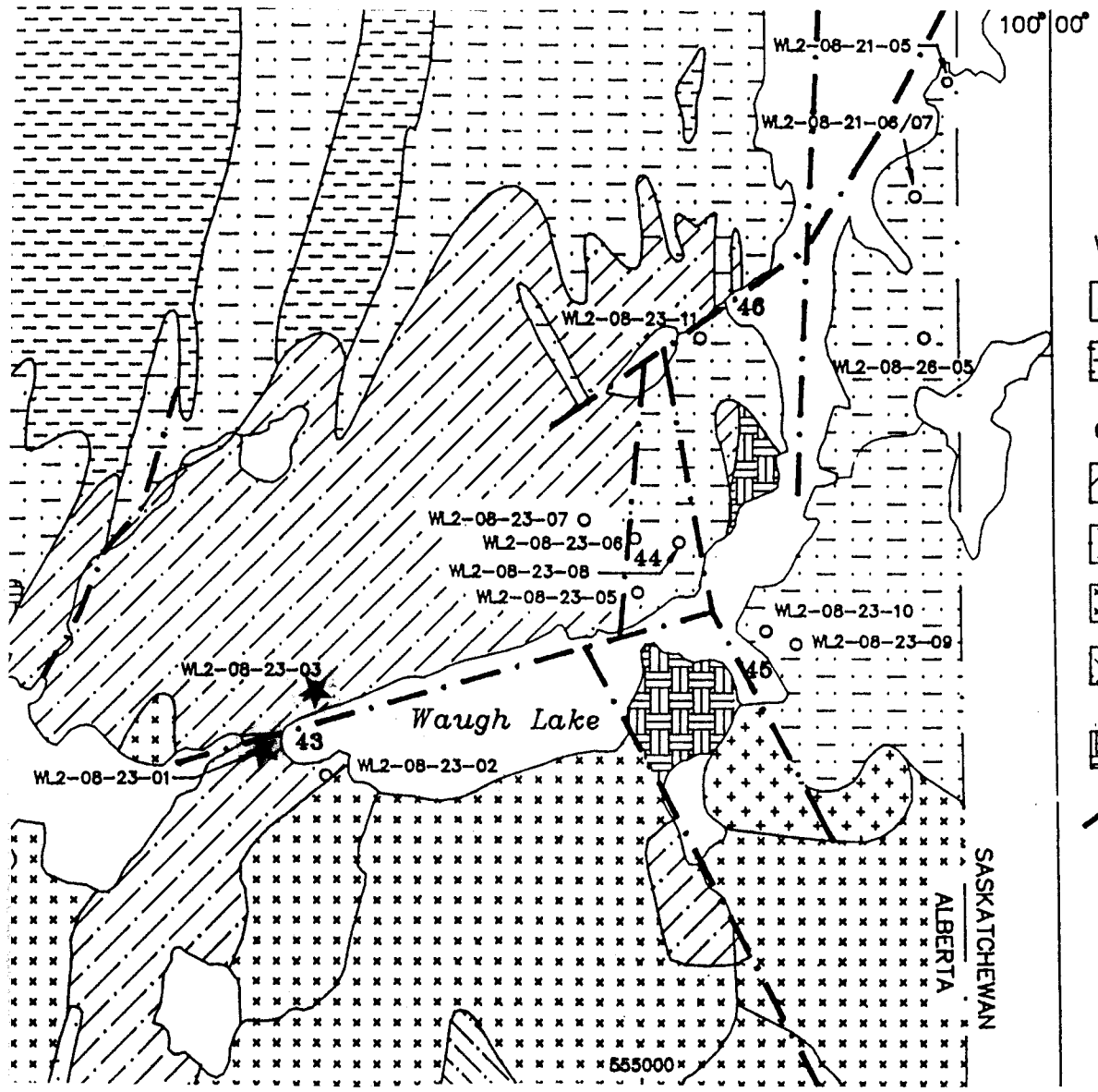
08-15-01 Tr-2 Trench with 1992 sample

27 Mineral Occurrence Number

Airborne Electromagnetic Anomaly

Sample no. (M.O. no.)	Location	Cu %	Ni %	Au g/T	Ag g/T
1516 (8) (**50**)	Trench no. 1	0.004	n.a.	n.d.	n.d.
1517 (9) (**50**)	Trench no. 1	0.002	0.017	0.34	20.4
1518 (10) (**50**)	Trench no. 1	0.005	n.a.	n.d.	n.d.
1521 (composite) (**39**)	Trench no. 2	0.010	0.010	n.d.	n.d.
1520 (6) (**52**)	Trench no. 4	0.004	n.a.	n.a.	n.a.

n.a. = not analysed for.
n.d. = not detected.



WAUGH LAKE GROUP

- Metasedimentary Rocks
- Basic Rocks

COLIN LAKE GRANITOIDS

- Biotite microgranite
- Biotite Granite C
- Biotite Granite –Feldspar Megacrystic
- Sheared Leucocratic Granite
- Amphibolite
- Fault
- T Tourmaline occurrence examined but not sampled

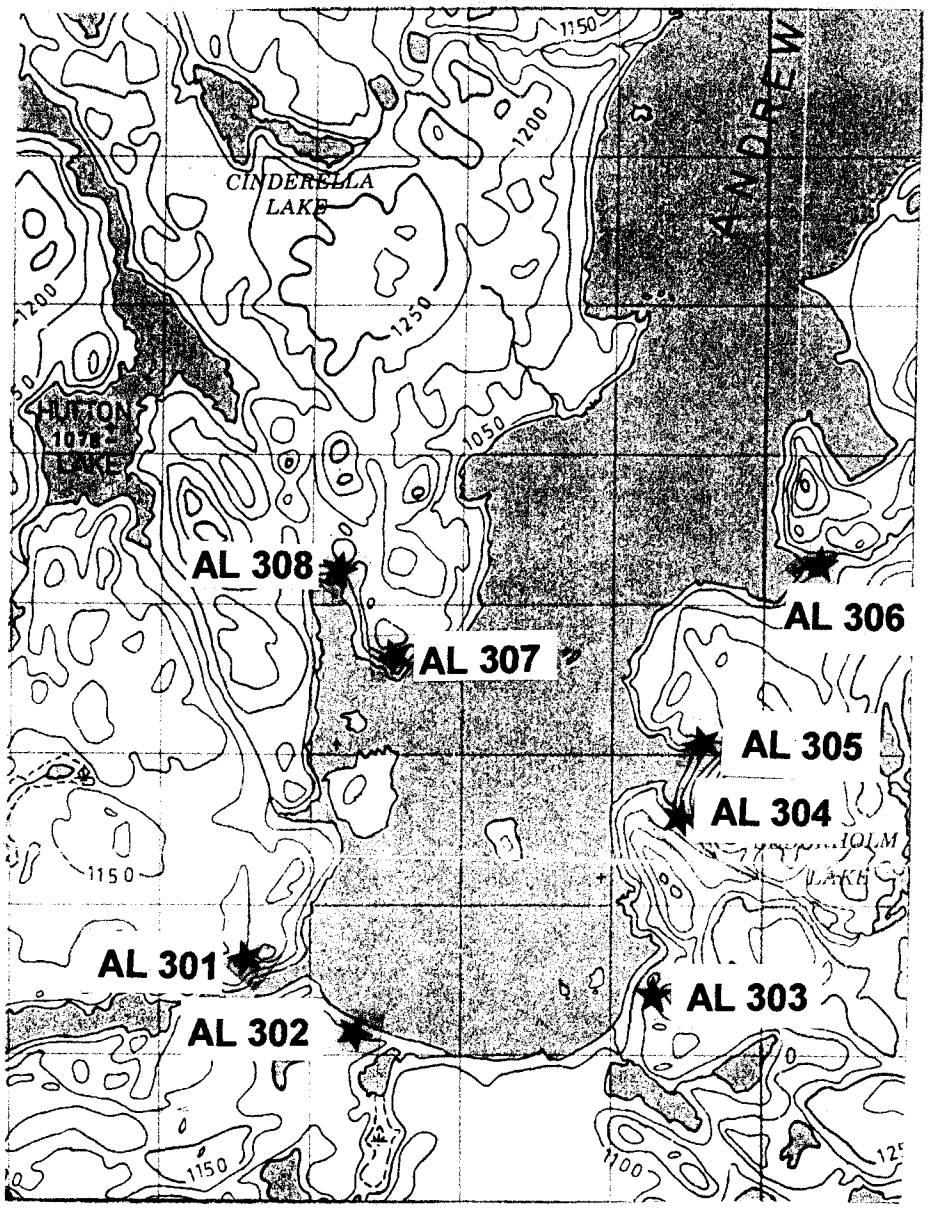
0 500
Metres

(Geology after Godfrey, 1961)

MAP 7 - DETAILED GEOLOGY OF THE SOUTH WAUGH LAKE AREA

★ Denotes location of quartz - tourmaline veining

MAP 8 - LOCATION OF ROCK AND SEDIMENT SAMPLES AROUND ANDREW LAKE



MAP 9 - LOCATIONS OF ROCK AND SEDIMENT SAMPLES AROUND WAUGH LAKE

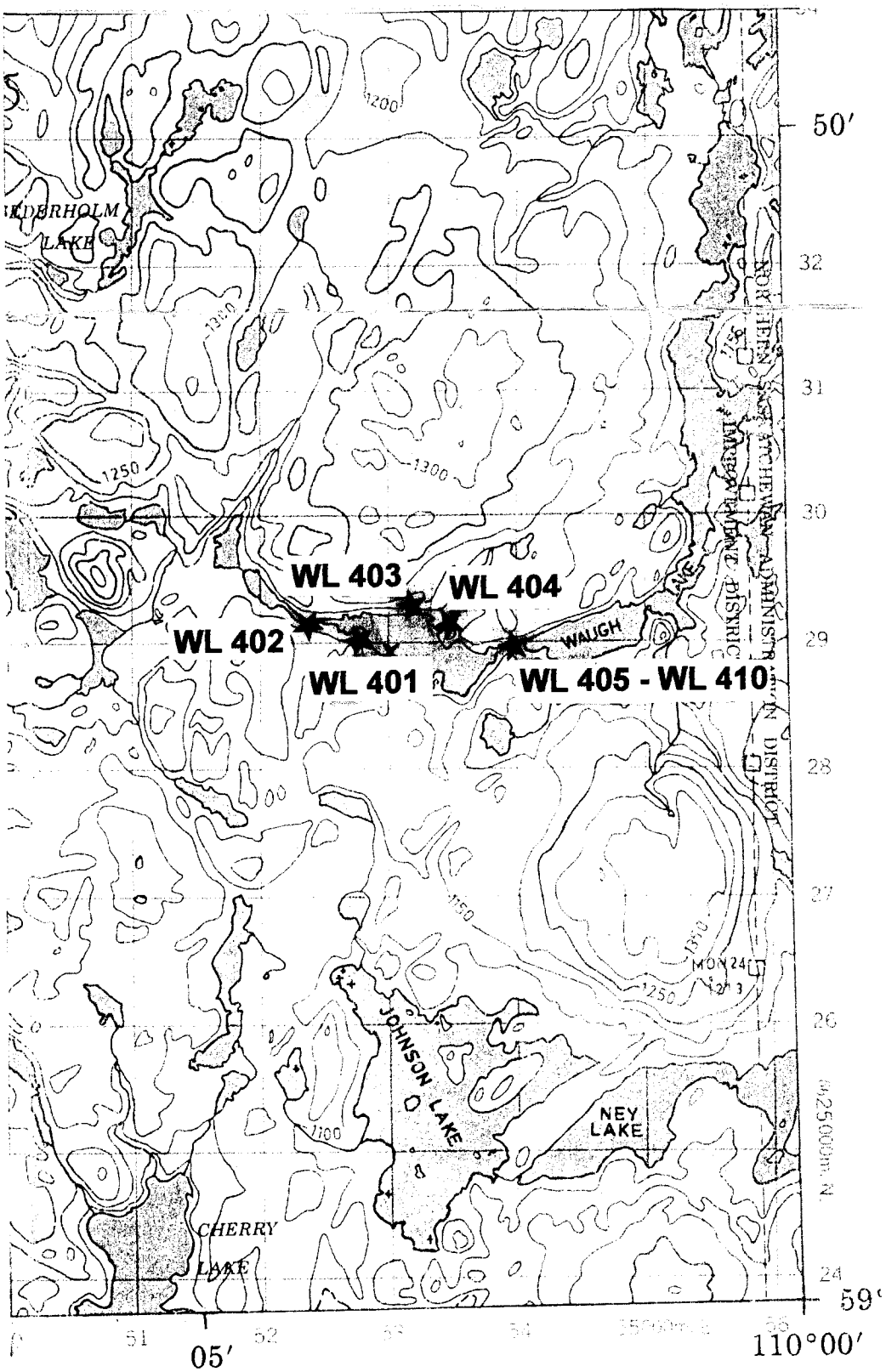


FIGURE 1 - TOPOGRAPHY
OF THE WAUGH LAKE AREA

FIGURE 2 - VEGETATION
OF THE WAUGH LAKE AREA

FIGURES 3 & 4 - TRANSPORTATION

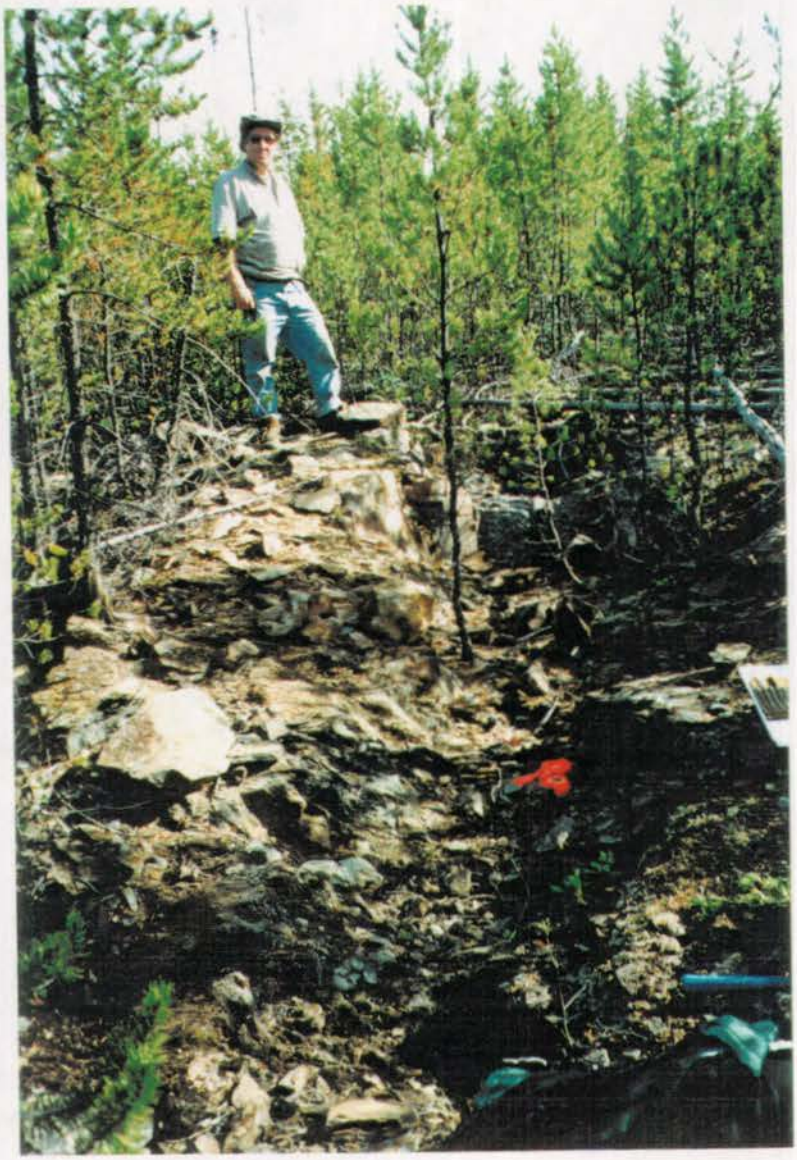
FIGURE 5 - DIFFICULT TRAVEL

FIGURE 6 - BASIC ROCKS OF THE NIGGLI LAKE FORMATION

FIGURE 7 - COLIN LAKE GRANITE

FIGURE 8 - QUARTZ - TOURMALINE VEINING
IN COLIN LAKE GRANITE

FIGURE 9 - TRENCH #1 (MAP 6)



FIGURES 10 - 21 SAMPLE UNITS OF TRENCH #1 (MAP 6)

FIGURE 10 SAMPLE UNIT (SU) #1

FIGURE 11 SU #2

FIGURE 12 SU #3

FIGURE 13 SU #4

FIGURE 14 SU #5

FIGURE 15 SU #6

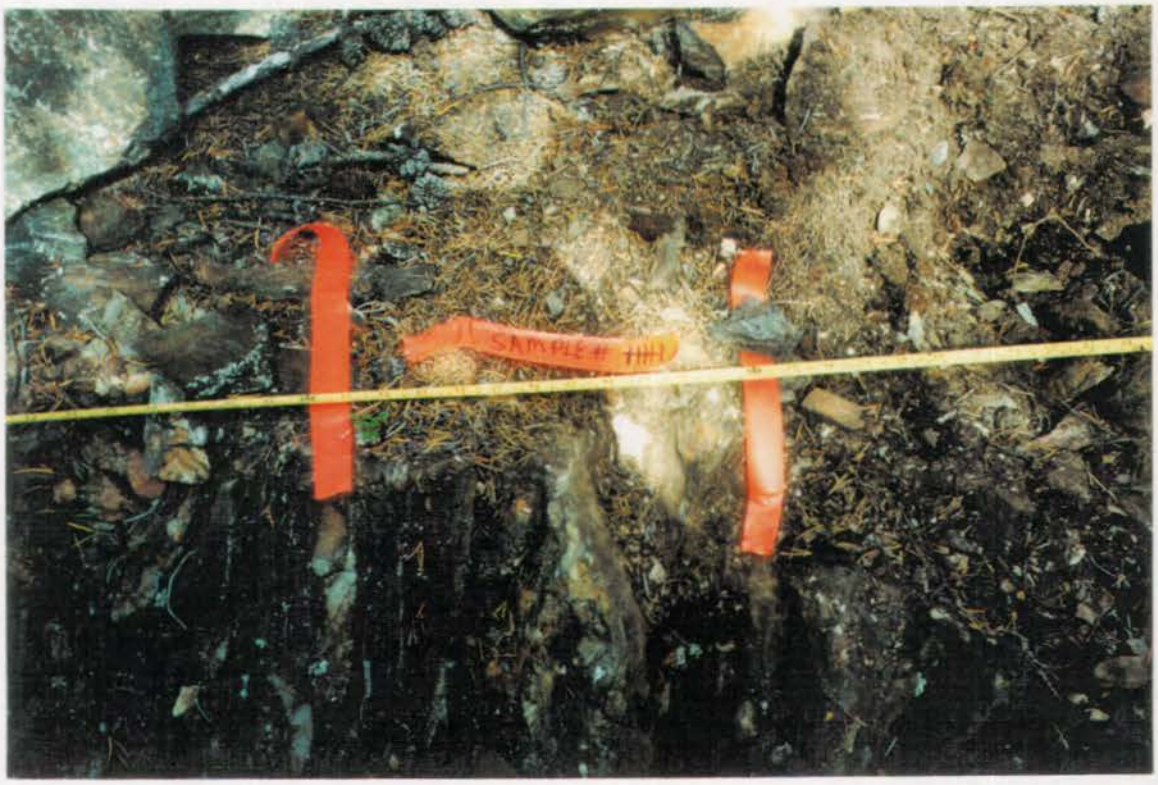


FIGURE 16 SU #7

FIGURE 17 SU #8

FIGURE 18 SU #9

FIGURE 19 SU #10

FIGURE 20 SU #11

PHOTO UNAVAILABLE

FIGURE 21 SU #12

FIGURE 22 SU #13