TECK EXPLORATIONS LIMITED

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MINING LANDS SEL.ION

NORTH BAY, ONTARIO

2A05NW0118 2.4494 WHITESIDES

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SULPHIDE SYNDICATE

REPORT ON THE INVESTIGATION

OF THE

SMITH-MORRISON CLAIMS

WHITESIDES TOWNSHIP, ONTARIO

by

K. Thorsen

N.T.S. 42A/5

REPORT NO 777NB

1981-12-7



42A05NW0118 2.4494 WHITESIDES

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"Excerpt from Geological Report, Smith-Morrison	

Property, Whitesides Township, Porcupine Mining

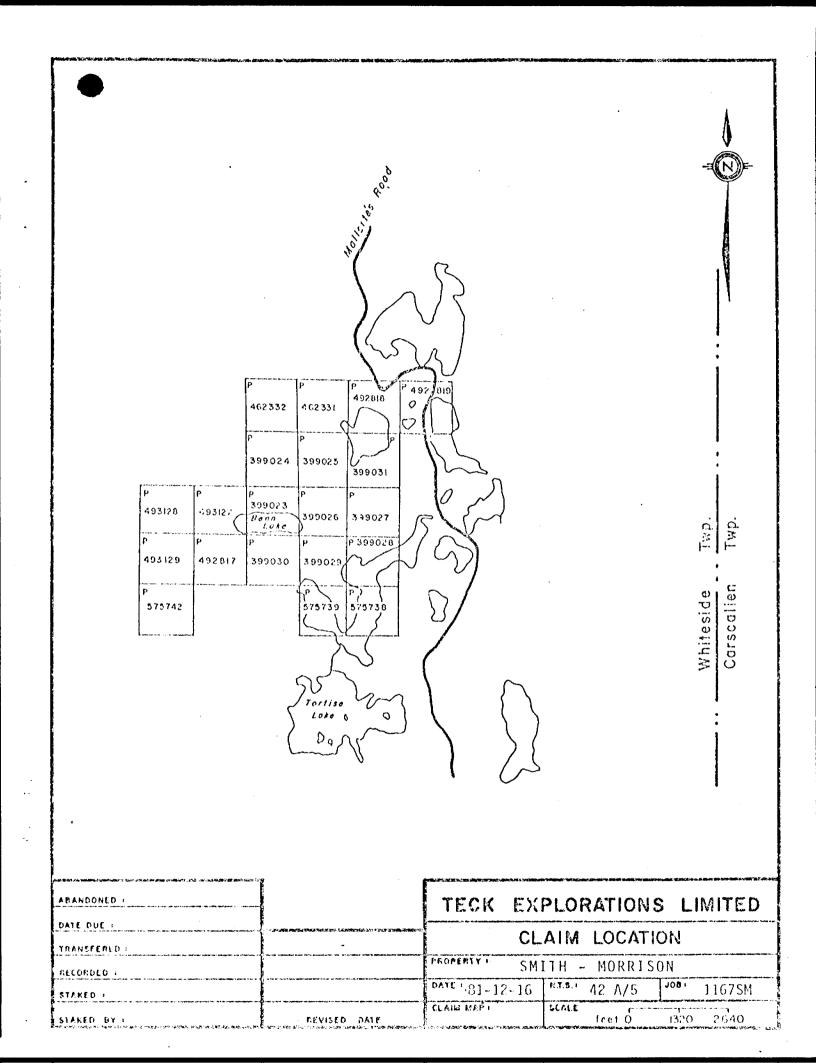
Division, Ontario" by Peter T. George, August 1978 APPENDIX II

Result of Assays and Spectrographic Analyses
APPENDIX III

Instrument Specifications

MAPS (in back pocket)

DWG. 50	500 ELECTRO	MAGNETIC SURVEY	1" =	100'	1981-9-2
DWG. 50	601 MAGNET	DMETER SURVEY	1" =	100'	1981-9-2
DWG. 5	604 GEOLOGY	MAP	1" =	400'	1981-12-14



INTRODUCTION

The Smith-Morrison property is situated in central Whitesides Township approximately twenty miles west of Timmins, Ontario and is comprised of twenty contiguous claims numbered as follows:

> P399023 to P399031 inclusive P462331 to P462332 P492817 to P492819 inclusive P493127 to P493129 inclusive P575738 to P575739

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P575742

Access is available via a Malette lumber road originating from Highway 101 West in Denton Township. Geophysical surveys and geological reconnaissance were conducted in the period from September 1, 1981 to October 24, 1981. Drafting and report writing were done during the period from October 1 to December 7, 1981. The linecutting and geophysical surveys were done by Exsics Exploration Limited personnel under the supervision of K. Thorsen of Teck Explorations Limited. Geological reconnaissance, drafting and report writing were done by Teck Explorations Limited personnel.

PREVIOUS WORK

a) Geophysical Surveys

In 1959, Broulan Reef Mines conducted a McPhar 1000/5000 vertical loop EM survey on north-south lines spaced at 400 foot intervals in the area of the property west and south of Bean Lake. One conductive zone was outlined during the survey.

In 1964 Lucky Strike Explorations Limited completed magnetometer and broadside vertical loop EM surveys on lines at 400 foot intervals in an area east of Bean Lake. One conductor was located during the survey.

In 1968 Claw Lake Molybdenum Mines carried out an IP survey on north-south lines in the northwest quarter of the property. Although the data was not filed for assessment purposes, the survey is reported to have outlined a 1600 foot anomalous zone.

In 1978 Geoex conducted MaxMin II horizontal loop EM, Mc-Phar SS15 vertical loop EM and magnetometer surveys and geologically mapped claim P399023.

In 1979 Teck Explorations Limited carried out vertical loop, shootback, pulse EM and magnetometer surveys on lines at 200 feet or 400 feet intervals. Several questions in the southeast portion of the group remained unanswered after the results of these surveys were studied in detail.

b) Drilling

In 1955-56 Hollinger Mines completed 2000 feet of drilling in the immediate area of the sulphide showing located east of Bean Lake. One packsack hole intersected 40 feet of massive pyrrhotite and pyrite immediately east of the Lucky Strike Mines electromagnetic anomaly. None of the other holes in this area intersected the massive sulphides and in four holes drilled south-west of Bean Lake no significant mineralization was encountered. Broulan Reef Mines drilled four holes (W-1 to W-4) in 1956 in the vicinity of the sulphide showing and electromagnetic anomaly west and south of Bean Lake. Minor disseminated sulphides were encountered.

In 1964 Rowan Consolidated Mines drilled thirteen holes, all collared on or south of claim P493129 for a total of 4700 feet. Results of this drilling are not known but it is expected that encouragment was negligible.

Claw Lake Molybdenum Mines drilled one hole in the area of their IP anomaly. Results are not known.

GEOLOGY

The geology and mineralization of the property has been aptly described by Peter T. George in his 1978 report entitled "Geological Report, Smith-Morrison Property, Whitesides Township, Porcupine Mining Division, Ontario" and is included as Appendix I in this report.

Further detailed examination of the gabbroic intrusive revealed it to be a layered sill with a sulphide accumulation at the bottom of the sill. This is evident when reviewing the geophysical results in conjunction with the geology maps as both magnetic highs and filtered VLF highs are coincident with the gabbro-volcanic contact.

TECK EXPLORATIONS LIMITED 1981 PROGRAM

Linecutting

A .90° base line (0+00) was cut, chained and picketed.

From this, north-south lines were cut at 200 feet intervals, chained and picketed at 100 feet intervals. East-west lines were also established at 200 feet intervals and were compassed, paced and flagged using the north-south lines for control.

The total amount of line established is as follows:

Base Line	1,000 feet
Picketed Cross Lines	8,400 feet
Flagged Cross Lines	7,200 feet
Total	16,800 feet or 3.18 miles

GEOPHYSICAL SURVEYS

a) VLF Survey

North-south lines were read at 25 foot intervals using the Annapolis, Maryland transmiter. East-west lines were read at 25 foot intervals using the Culter, Maine transmitter. All readings were reduced using the Frazer filter method, plotted and contoured.

b) Magnetometer Survey

Readings were taken at 25 foot intervals on the northsouth and east-west lines. Also the grid established in the western part of the claims in 1979 was read at 50 foot intervals. All readings were tied to common base stations, corrected for diurnal change, plotted and contoured.

GEOLOGICAL SURVEY

Outcrop previously mapped by Peter George in the south-

east portion of the block were checked and the area of the Claw Lake IP anomaly was prospected. Twenty samples were assayed for gold, silver, platinum, palladium, cobalt, nickel and copper. A thirty element spectographic analyses was done on three of these samples.

RESULTS

The geophysical survey results indicate that a magnetic conductive horizon is coincident with the mafic intrusive-mafic volcanic contact in the southern portion of the property. Mapping and sampling of this horizon in the past and in the present program revealed that it is sulphide rich although Teck's results failed to reveal economic amounts of copper or nicke'.

Six samples taken in the vicinity of the shaft on the western grid (line 0+00, 0+50S) failed to duplicate previously reported high gold values. The highest assay of the five samples was 50ppb gold.

Four samples from an old trench on the Claw Lake IP anomaly returned maximum values of 0.15% Ni and 0.15% Cu. Stripping east of the Claw Lake drill hole failed to reveal sulphide mineralization in the vicinity of the IP anomaly.

Spectrographic analyses do not indicate anomalous values in the thirty elements tested for.

CONCLUSIONS AND RECOMMENDATIONS

The mafic intrusive on the property is a layered body with

APPENDIX I

EXCERPT FROM

GEOLOGICAL REPORT

SMITH-MORRISON PROPERTY

WHITESIDES TOWNSHIP

PORCUPINE MINING DIVISION

ONTARIO

BY

PETER T. GEORGE

AUGUST 1978

PROPERTY GEOLOGY

The property is underlain by Archean volcanic rocks that have been intruded by Archean gabbro. A series of north-westerly trending diabase dikes of probably Proterozoic age intrude the volcanic rocks and gabbro.

LITHOLOGIES

Mafic Volcanic Rocks

Mafic volcanic rocks underlie the south and east portion of the property. Three mafic volcanic rock types were recognized on the property. Dark green, fine to very fine grained, massive to weakly schistose rocks present on the property are probably mafic volcanic flows. No pillow structures were observed in the field however spherultic pillow selvages were reported in drill holes on the property.

Mafic volcanic tuff consisting of thin bedded, fine grained chloritic pyroclastic material are common on the property. The tuffaceous rocks generally carry disseminated pyrite and pyrrhotite. Localy a few occurrences of thin chert bands with associated pyrite, pyrrhotite and magnetite were observed.

One outcrop of mafic volcanic breccia was located on the main road just north of Lucquer Lake. The rock consists of angular to subrounded elongate fragments (5 to 10 cm by 2 to 4 cm) of mafic volcanic rock in a fine grained chloritic matrix. Many of the fragments display chilled margins.

-1-

Iron Formation

Iron formation is not well developed on the property, however a few occurrences of mafic volcanic tuff carry sufficient banded chert, pyrite, pyrrhotite, and magnetite to warrant being designated as iron formation. The iron formation is well exposed in trenches 3 and 4 near the volcanic rock-gabbro contact.

Gabbro

The gabbroic rocks on the property are massive, fine to coarse grained and equigranular. The rocks consist of approximately 50% light grey plagioclase and 50% pyroxene. The sulphide content varies from nil to 50% with pyrrhotite the dominant sulphide mineral. Chalcopyrite is present in most samples containing obvious amounts of sulphide mineralization.

The gabbro-volcanic rock contact appears to be conformable south of Bean Lake and north of Persson Lake which indicates that the gabbro occurs as a sill.

On the basis of the regional geology the stratigraphic tops of the volcanic strata are to the north. The gabbro contact that crosses the property is the basal contact of the sill. Diabase

A northwest trending swarm of diabase dikes crosses the property. The diabase is fine to medium grained, equigranular, dark grey, massive, and fresh in appearance.

STRUCTURAL GEOLOGY

The major structural feature on the property is the

-2-

contact between the gabbroic and volcanic rocks. The contact has an east-west strike direction in the northeast and southwest sectors of the property. The contact is conformable and on the basis of regional geological data volcanic tops are to the north. The contact marks the base of a large gabbro sill. In the central sector of the property the contact has a north-south strike direction. In this area of the property the contact could be either a fault or a conformable intrusive contact. Two Hollinger drill holes intersected the north-south contact east of Bean Lake and no evidence of a fault zone was reported in the drill logs.

The author would interpret the contact zone as a conformable intrusive contact that has been drag folded on a regional scale.

All of the bedding attitudes observed by the author indicate near vertical dips throughout the property.

MINERALIZATION

Two types of sulphide showings occur on the property. Massive to disseminated pyrite with minor pyrrhotite occurs in association with iron formation within the mafic volcanic rocks. Massive to disseminated pyrrhotite occurs within the gabbroic rocks on the property.

The sulphide mineralization within the gabroic rocks is of economic interest because of the potential for copper-nickel mineralization in this geological environment. All of the known sulphide showings in gabbro on the property occur near the base of the gabbro sill.

A number of massive sulphide zones have been intersected in drilling. No assay data is available. Hollinger Mines intersected in excess of 43 feet (the packsack hole stopped in massive sulphides) of massive sulphides east of Bean Lake. Subsequent drill holes in the area failed to locate further massive sulphides.

F KT-1 Dec. 9/81

a sulphide accumulation at the base as shown by geophysical and geological surveys. Sampling of this horizon, of the area around the shaft where high gold values were previously reported and in the vicinity of the Claw Lake IP anomaly failed to reveal concentrations of economic sulphides or precious metals suitable to offer further encouragment. On these grounds no further work is recommended by Teck Explorations Limited.



APPENDIX II

RESULTS OF ASSAYS AND SPECTROGRAPHIC ANALYSES

X-RAY ASSAY LABORATORIES LIMITED

OCT 13 1981

1885 LESLIE STREET, DON MILLS, DNTARID M3B 3J4

PHONE 416-445-5755 TELEX 06-986947

CERTIFICATE OF ANALYSIS

TO: TECK EXPLORATIONS LIMITED ATTN: J.S. FDX SUITE 7000+ P.O. BOX 170+ IST CANADIAN PLACE. TORONTO, DNT. M5X 169

CUSTOMER NO. 700

DATE SUBMITTED 10-SEP-81

REPORT 12880

;

REF. FILE 8660-G1

LIMIT

50 ROCKS

WERE ANALYSED AS FOLLOWS:

UNITS	METHOD	DETECTION L
ррв	FADCP	2.000
%	XEF	0.010
РРМ	DC.P	0.500
РРМ	DCP	0.500
РРМ	DCP	0.500
PPB	F4.DC P	10.000
PPM	DCP	0.500
ррв	FADCP	2.000
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X-RAY ASSAY LABORATORIES LIMITED CERTIFIED BY

DATE 06-001-81

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X-RAY ASSAY LABORATORIES 06-0CT-31

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X-RAY ASSAY LABORATORIES LIMITED

1885 LESLIE STREET. DON MILLS. ONTARIO M3B 3J4

PHONE 416-445-5755 TELEX 06-986947

CERTIFICATE OF ANALYSIS

REPORT 12880

REF. FILE 8660-G1

06-0CT-81

DATE SUBMITTED

***SENSITIVITY**

10-SEP-81

CUSTOME

TO: TECK EXPLORATIONS LIMITED ATTN: J.S. FDX SUITE 7000, P.O. BOX 170, IST CANADIAN PLACE, TORONTO, UNT. M5X 1G9 50 ROCKS

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COPPER	(1)	Т	T	TUNGSTEN	(4)	ND	ND
GALLIUM	(2)	FT	FT	URANIUM	(3)	ND	ND
GERMANIUM	(1)	FT	FT	VANADIUM	(2)	FT	FT
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LEAD	(2)	FT	FT	ZINC	(4)	Т	Т
LITHIUM	(4)	ND	ND	ZIRCONIUM	(4)	ND	ND

LEGEND

KEY TO SYMBOLS

		(LIMIT OF DETECTION)
H - 10% PLUS	L = 0.1 - 12	1 - 0.0005 - 0.001%
MH - 5-15%	TL - 0.05-0.5%	2 - 0.001-0.005%
M - 1-10%	T - 0.01-0.1%	3 - 0.005 - 0.01%
LM - 0.5-5%	FT - 0.01% OR LESS	4 - 0.01-0.05%
	ND - NOT DETECTED	5 - 0.05 - 0.1%

NDTE: BETTER SENSITIVITIES CAN BE OBTAINED WITH SPECIAL TECHNIQUES. IF AND WHEN REQUIRED.

X-RAY ASSAY LABORATORIES LIMITED

1885 LESLIE STREET, DON MILLS, ONTARIO M38 3J4

PHONE 416-445-5755 TELEX 06-986947

CERTIFICATE OF ANALYSIS

REPORT 12880 REF. FILE 8660-G1

TO: TECK EXPLORATIONS LIMITED ATTN: J.S. FDX SUITE 7000+ P.D. BOX 170+ IST CANADIAN PLACE. TDRONTO, DNT. M5X 1G9 50 ROCKS

CUSTOME

06-0CT-81

DATE SUBMITTED 10-SEP-81

**SENSITIVITY*

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ARSENIC	(4)	ND	MERCURY	(4)	ND
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CADMIUM	(4)	ND	SILVER	(1)	ND
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NIDBIUM	(4)	ND	THORIUM	(3)	ND
CHRONIUM	(4)	ND	TIN	(2)	FT
COBALT	(3)	FT	TITANIUM	(2)	T
COPPER	(1)	Т	TUNGSTEN	(4)	ND
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GERMANIUM	(1)	FT	VANADIUM	(2)	FT
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LEAD	(2)	FT	ZINC	(4)	Т
LITHIUM	{4}	ND	ZIRCONIUM	(4)	ND

LEGEND

KEY TO SYMBOLS

		(LIMIT OF DETECTION)
H - 10% PLUS	L = 0.1 - 1%	1 - 0.0005 - 0.001%
MH - 5-15%	TL - 0.05-0.5%	2 - 0.001 - 0.005%
M - 1-10%	T = 0.01 - 0.1%	3 - 0.005 - 0.01%
LM - 0.5-5%	FT - 0.01% DR LESS	4 - 0.01-0.05%
	ND - NOT DETECTED	5 - 0.05 - 0.1%

NOTE: BETTER SENSITIVITIES CAN BE OBTAINED WITH SPECIAL TECHNIQUES. IF AND WHEN REQUIRED.

-

APPENDIX III

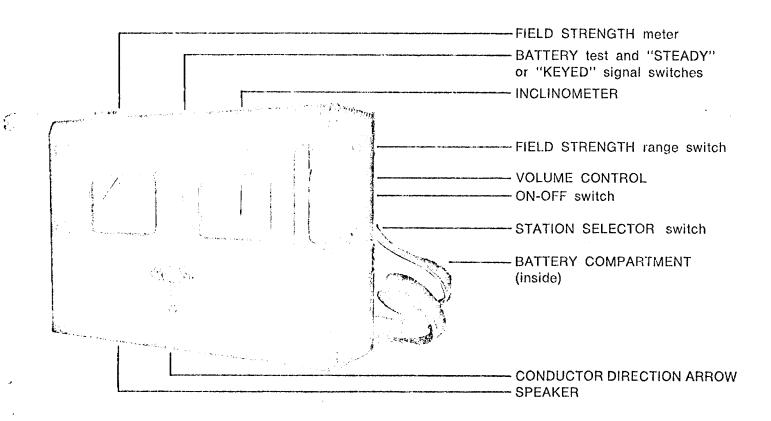
INSTRUMENT SPECIFICATIONS

CRONE GEOPHYSICS LIMITED

3607 WOLFEDALE ROAD, MISSISSAUGA, ONTARIO, CANADA.

Phone: (416) 270-0096

AN EM RECEIVER MEASURING THE FIELD STRENGTH, DIP ANGLE AND QUADRATURE COMPONENTS OF THE VLF COMMUNICATION STATIONS



This is a rugged, simple to operate, ONE MAN EM unit. It can be used without line cutting and is thus ideally suited for GROUND LOCATION OF AIRBORNE CONDUCTORS and the CHECKING OUT OF MINERAL SHOWINGS. This instrument utilizes higher than normal EM frequencies and is capable of detecting DISSEMINATED SULPHIDE DEPOSITS and SMALL SULPHIDE BODIES. It accurately isolates BANDED CONDUCTORS and operates through areas of HIGH HYDRO NOISE. The method is capable of deep penetration but due to the high frequency used its penetration is limited in areas of clay and conductive overburden.

The DIP ANGLE measurement detects a conductor from a considerable distance and is used primarily for locating conductors. The FIELD STRENGTH measurement is used to define the shape and attitude of the conductor.

SPECIFICATIONS

Source of Primary Field:	VLF Communication Stations 12 to 24 KHz

Number of Stations: 7 switch selectable

Stations Available: The seven standard stations are Cutler, Maine, 17.8; Seattle, Washington, 18.6; Collins, Colorado, 20.0; Annapolis, Md., 21.4; Panama, 24.0; Hawaii, 23.4; England, 16.0. Alternative stations which may be substituted are: Gorki, Russia, 17.1; Japan, 17.4; England, 19.6; Australia, NWC, 22.3 KHz.

Check that Station is Transmitting: Audible signal from speaker.

Parameters Measured and Means:

(1) DIP ANGLE in degrees, from the horizontal of the magnetic component of the VLF field. Detected by minimum on the field strength meter and read from an inclinometer with a range of $\pm 80^{\circ}$ and an accuracy of $\pm \frac{1}{2}^{\circ}$.

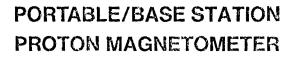
(2) Field Strength (total or horizontal component) of the magnetic component of the VLF field. Measured as a per cent of normal field strength established at a base station. Accuracy $\pm 2\%$ dependent on signal. Meter has two ranges: 0 -- 300% and 0 -- 600%. Switch for "keyed" or "F.S." (steady) signal.

(3) Out of Phase component of the magnetic field, perpendicular in direction to the resultant field, measured without sign, as a per cent of normal field strength. This is the minimum reading of the Field Strength meter obtained when measuring the dip angle. Accuracy $\pm 2\%$.

Operating Temperature Range:	-20° to $+110^{\circ}$ F.
Dimensions and Weight:	$3.5'' \times 7.5'' \times 10.5'' - 6$ lb.
Shipping:	Foam lined wooden case — shipping wt. — 15 lb.
Batteries:	2 of 9 volt: Evercady 216, Burgess 2U6, Mallory M-1604
	Average life expectancy -3 weeks to 3 months dependent on amount of usage.

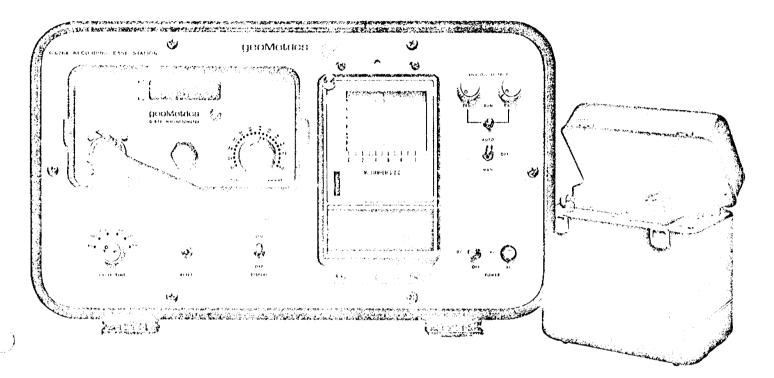
Units Available on a Rental or Purchase Basis. Contract Services Available for Field Surveys.





MODEL G-826A

Data Sheet January 1976



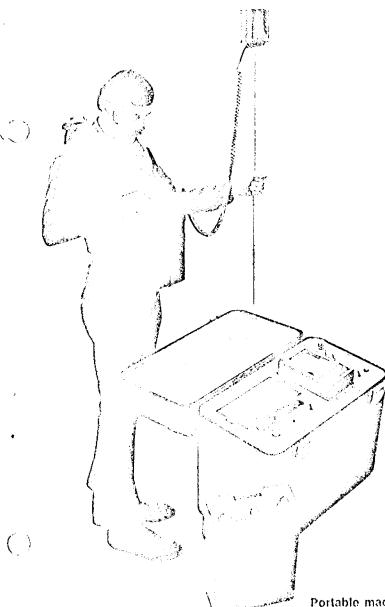
- Unique Versatility—Both a recording base station and a field portable proton magnetometer system.
- Base Station System—Rugged, self-contained for remote, unattended monitoring from external AC or DC power.
- Timed automatic measurements with switch selectable range from 4 seconds to 5 minutes — pushbutton measurements for field portable operation.
- 1 gamma resolution and repeatability with visual, analog and digital outputs directly in gammas.
- Field Portable System Removable magnetometer console with complete accessories for man-carry surveys – operation from replaceable "D" cell flashlight batteries.
- Precise total field measurements—no orientation, no calibration, no leveling, no temperature compensation required--world-wide operation.

()

Characterized by unique versatility, the Model G-826A is a high-sensitivity recording base station proton magnetometer system, and a complete man-carry field portable magnetometer for ground exploration. The base station configuration incorporates a Portable Field Magnetometer that measures the earth's total magnetic field including time variations and magnetic storms, and a special Converter/Timer console to record this data in analog or digital form at selectable timed sampling periods. A 5.1 cm (2 in.) galvanometric analog strip chart recorder is normally supplied as an integral part of the system; however, a variety of external analog recorders may also be utilized. For man-carry field surveys, the portable magnetometer can be easily removed from the Converter/Timer console for total field geologic mapping, archaeological exploration, fault analysis, search requirements, and follow-up to larger airborne reconnaissance surveys. As a proton system, the G-826A provides absolute drift-free measurements of the earth's total field directly in gammas with complete freedom from temperature drift, leveling and orientation adjustments. Operation is world-wide, controls are simplified and no previous operator experience or training is necessary. The G-826A is a complete ground magnetics system for all your monitoring and survey requirements.

PORTABLE FIELD PROTON MAGNETOMETER

le, field magnetometer system is also part of the G-8267 Base Station. The lightweight, portable G-826 magnetometer console simply lifts out from a special pocket in the Converter/Timer console for all man-carry field survey applications. The G-826 portable magnetometer is an accurate yet simple-to-operate instrument that features an outstanding combination of 1.0 gamma sensitivity and repeatability (0.25 gamma optionally available), pushbutton measurements, compact size, and operation from replaceable "D" cell flashlight batteries. The G-826 is ideally suited for mineral and petroleum field surveys, geo ogic mapping, archaeological exploration, search requirements, and for detailed follow-up to larger airborne reconnaissance surveys. All measurements of the earth's total field are disr layed on an unambiguous 5-digit illuminated display directly in gammas. There is no temperature drift, no time-consuming set-up or leveling required, and no adjustment for orientation, field polarity, or arbitrary reference levels. Only 5 seconds are required to obtain a measurement that is always correct to one gamma, regardless of operator experience. A separate portable sensor is provided (the base station sensor remains undisturbed) for use with either the 2.5 m (8 ft.) collapsible staff or in the pack-pouch that is attached to the padded shoulder harness. Spare "D" cell batteries, signal cables, instruction manuals and a field storage case complete the portable accessories supplied with the G-826 magnetometer.



APPLICATION NOTES

A diurnal station monitor, or recording base station magnetoneter, is the most ideal system and certainly the most accurate method for removing time variations. Base stations are used principally in conjunction with airborne reconnaissance surveys where the objective is a good magnetic contour map expressive of deep-seated anomalous sources. Also, if the survey is performed in the high magnetic latitudes of the auroral zone where typical micropulsations are 10 to 100 gammas, correction for such variations is absolutely necessary. Correction for time variations is also required when the anomalies of interest are broad (thousands of feet) and typically change less than 20 to 50 gammas, or if the profile lines are very long and considerable time is required to complete each traverse.

Typically, the base station site is established no further than 161 km (100 miles) from the area of the survey, and the magnetometer sensor is secured to a non-ferrous stand (wood post) that is at least 61 m (200 ft.) away from sources of man-made magnetic disturbance, i.e., automobile traffic, buildings, power lines, etc. A long signal cable of at least 46 m (150 ft.) is routed from the sensor to the electronics console, which is usually situated within a prefabricated structure (tent, awning, camper, etc.). Environmental protection is especially important when the base station magnetometer is used with a separate recorder, or when system operation is from external 24V DC power (typically two 12V automotive batteries wired in series).

The operation of a remote base station, such as the Model G-826A, is simple and uncomplicated. The operator selects a measurement sampling time that is compatible with the criteria of the survey, then tunes the magnetometer to the earth's local field intensity (the G-826A includes a world-wide intensity map for quick reference), calibrates the recorder, and initiates operation from a single pushbutton. The magnetic field will automatically be measured at the pre-selected sampling rate, and the data preserved on the analog record for examination and later comparison with field survey data. If left to continue recording during each evening, for example, the base station record can be studied for magnetic storms in progress prior to the start of a new survey day to determine if any useful measurements can be made under such conditions.

The G-826A is also useful as a coastal monitor of time variations for those marine surveys that are relatively close to shore and there is general similarity between the continental and oceanic geology. It should be noted, however, that any shorebased monitor has limited usefulness as marine surveys are generally performed in isolated locations several hundred miles from shore and under difficult weather conditions which prohibit the establishment of a controlled survey grid and accurate navigational techniques. Such adverse conditions prohibit a valid time comparison of records for accurate removal of time variations. Another restriction is that time variations observed on land often vary significantly from corresponding observations at sea due to differences in electrical conductivity between the continental and oceanic crusts (some consider these differences to be caused by the mass of sea water).

Another unique feature of the G-826A Base Station is its quick convertibility to a portable field magnetometer for man-carry ground surveys. The base station can be used to monitor stable or "quiet" periods in the day at which time the magnetometer portion can be removed and used in the field without disturbing the base station configuration. At the end of the survey day, the portable magnetometer can be returned to the G-826A Converter/Timer console and base station operation can continue again. Many survey contractors profit by this flexibility as they are able to respond to their clients needs immediately whether it be for station monitoring or field survey applications.

The G-826A normally includes a watertight container, but a standard 48.3 cm (19 in.) rack mounted front panel is optionally available for interface to existing instrumentation commonly used in laboratory and observatory applications. A vehicle-compatible G-826A is also offered upon special order; details are available upon request.

Portable magnetometer is easily removed from Converter/Timer console for field survey application. Portable accessories included.

COMPLETE PORTABLE/BASE STATION SYSTEM

G-826A system includes complete instrumentation The Mo and related accessories for remote base station monitoring and portable field applications:

Converter/Timer Console: Complete signal processing and timing circuitry housed within an aluminum watertight cabinet. Includes "pocket" for the G-826 Portable Magnetometer and recessed mounting of the Rustrak recorder.

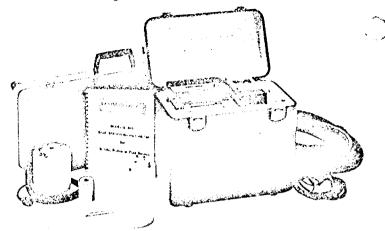
- Portable Magnetometer Console: Compact instrument slides into "pocket" in Converter/Timer. Includes field accessories: shoulder harness, portable sensor, staff, 2 sets of batteries, signal cables for pouch and staff, and storage container.
- Analog Recorder: Rustrak, Model 2146, installed in recessed panel mount in Converter/Timer console. Includes 1 roll chart paper. Recessed panel mount not provided when a different recorder is selected.

Base Station Sensor: Noise cancelling, high-signal sensor for use with long signal cables. Includes mounting stud.

Base Station Cables: Shielded 46 m (150 ft.) sensor cable with connectors attached (92 m, or 300 ft., cable optionally

available), AC and DC input power cables, and external recorder connector.

Manuals: Operation manual, and 64-page "Applications Manual for Portable Magnetometers".



SPECIFICATIONS

RESOLUTION

± 1 gamma throughout tuning range.

TUNING RANGE

20,000 to 100,000 gammas (world-wide).

TUNING MECHANISM

Multi-position relary switch with two-ty-five overlapping positions. Peak signal ampli-tude indicator light on readout display.

GRADIENT TOLERANCE

Exceeds 800 gammas/foot (portable applications).

SAMPLING RATE

Base Station Mode:

Six-position rotary switch for automatic sampling every 4, 10, 30 seconds or 1, 2, or 5 min. (time Lase oscillator stable within 10 seconds/week from 0° to 50° C.). Portable Mode:

Manual pushbutton; new reading every 5 seconds.

DATA OUTPUTS

Visual (Base Station and Portable):

5-digit illuminated incandescent display directly in gammas -- visible even in bright sunlight. Analog (Base Station)

Potentionetric: Calibrated for 100 mv full-scale, maximum load is 20K9, Galyagometric: Calibrated for 1 ma full-scale into 15009.

Upital (Base Station): 5-BCD characters, 1-2-4-8 code (4 line output). "0" state - 0 to + 0.5V. "1" state - + 2.5 to + 5V.

EVENT MARKER

Automatic, every 30 minutes (Analog Recorder only).

POWER REQUIREMENTS

Base Station Mode:

External 24V DC or 115/220V, 50/60 Hz AC power (maximum current drain per measurement is 2.18 amps with Rustrak recorder and display on).

R

Portable Mode: Internal "D" cell (12 each) universally available flashlight batteries. Charge state or replacement signified by flashing indicator light.

attery Type	No. of Readings
Ikaline	over 10,000
reminim carbon zinc	over 4.000

Standard carbon zinc over 1,500 NOTE: Battery life decreases with low temperature operation.

TEMPERATURE RANGE

Consoles and Sensors - 40 ° C. to + 85 ° C. Analog Recorder (Rustrak) - 0 ° C. to + 50 ° C.

NOTE: For portable operation at temperatures below 0° C., on optional battery belt is recommended.

ACCURACY (TOTAL FIELD)

± 1 gamma throughout 0 - to ∃ 50 ° C. (± 3 gamma from - 40 ° C. to ∃ 85 ° C.).

SENSORS: **Base Station:**

High signal, AC noise cancelling for use with long signal cables. Includes threaded aluminum mounting stud

Portable: High signal, omnidirectional for use with collepsible staff or in "back pouch" attached to shoulder hattess.

GALVANOMETRIC ANALOG RECORDER

Rustrak, Model 2146. Includes 5.1 cm (2 inch) chart width with fixed chart speed of 10.2 cm (4 inch) or 15.2 cm (6 inch) per hour (select), event marker, and inkless writing. Style "N" chart paper (50 divisions f/s), 6.4 cm x 19.2 m (2.5 inch wide x 63 feet long).

SIZE AND WEIGHT

	Size	Kgs.	Lbs.	
Converter/Timer Console: (w/o magnetometer or recorder)	23.5 x 41.3 x 40 cm (9¼″ x 16¼″ x 15¾″)	9.5	21.0	
Portable Magnetometer: (with batteries)	9.5 x 18 x 27 cm (3¾" x 7" x 10½")	2.5	5.5	
Portable Accessories*	2.5 cm dia. x 2.4 m (1" x 8 ft.)	2.8	6.0	
Sensors:				
Base Station:	11.4 cm dia. x 17.8 cm (4½" x 7")	2.8	6.0	-
Portable:	8.9 cm dia. x 12.7 cm (3½" x 5")	1.2	2.5	· · ·
Sensor Cable:	46 m length (150 ft.)	4.6	10.0	
Rustrak Recorder:	13.9 x 8.9 x 11.4 cm (5½" x 3½" x 4½")	1.6	3.5	

Portable Accessories: Includes shoulder harness, batteries, sensor cables, and staff. Only the staff dimensions are shown. Weight shown is for all accessories.

OPTIONS

INCREASED RESOLUTION

Provisions for either 1.0 gamma or 0.25 gamma resolution. Includes internal switch in magnetometer console.

EXTENDED SENSOR CABLE

Special 92 m (300 ft.) shielded sensor signal cable for use with Base Station Sensor. POTENTIOMETRIC ANALOG RECORDER

Hewlett-Packard, Model 71558. Includes 12.7 cm (5 inch) chart width, event marker, multiple chart speeds, operation on 24V DC or 115/220V 50/60 Hz AC power.

- Metric (English optional) 30.5 x 19.7 x 42 cm (12" x 7¾" x 16½") Calibration:
- Size:
- Weight: 13.6 kg (30 lbs.) Temp. Range: -28° to $\pm 65^{\circ}$ C.

MULTIPLE EVENT MARKS AND ANALOG RESOLUTIONS

Recorder event marks every 0.5 hour, 1 hour and 24 hours (separately coded). Analog outputs (switch selectable) to provide 10, 100 and 1,000 gammas full scale.

BATTERY BELT

Specially designed canvas belt with pockets for 12 "D" cell batteries and appropriate power cables for use with the portable magnetometer in very cold weather (0 $^\circ$ to -15° C.).

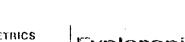
RACK MOUNTING

Special 48.3 x 26.7 cm (19" x 101/2") flush-mount aluminum panel, complete with captive hardware.

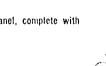
RECORDING SUPPLIES

Available upon request for the recorder selected.

GEOMETRICS 395 JAVA DRIVE SHIRNYVALE, CA 94086 U.S.A (406) 734-4616 CARLE "GLOMETRICS" SUNNYVALE TELEX NO 357-435 436 LIMESTONE CRESCENT, DOWNSVIEW (TORONTO), ONTARIO, CANADA TELEPHONE: (416) 661-1968 geoMetrics Exploranium **INTERNATIONAL CORP** 80 ALFRED ST., MILSON'S POINT SYDNEY NSW 2061 PHONE: 929-9942 661-1968 ENCIRCINITY GOOMODICD STRUCTURE CANADALTER TELLX NO. 06-22694







Resources (Geo	Whiteside port of Work Jup ophysical, Geological, chemical and Expendi		#1					ATT 7 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
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Special Provisions Credits R	equested		Mining Cla	ims Traversed (I	List in nume	erical sequence)	
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For first survey:	- Electromagnetic	20	P	399023	4	FIGUX	Number	
Enter 40 days. (This includes line cutting)	- Magnetometer	20		300026	14			
For each additional survey:	- Radiometric			399027	4	18-1 2		
using the same grid: Enter 20 days (for each)	- Other			399 028				
	Geological			399029	4			
	Geochemical			399030	14			
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Complete reverse side and enter total(s) here	- Electromagnetic		-					
	- Magnetometer							
	- Radiometric							
	- Other		1997 - 1997 - 1992 - 1997 - 1973 - 1975 -					
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	Radiometric						·	
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Type of Work Performed								
Performed on Claim(s) NOV 3.5 1.10				RECOF	RDEC	团建罐—		
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Calculation of Expenditure Day	s Credits			NOV 25	1981			
Total Expenditures		Total s Credits		Receipt No				
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Instructions Total Days Credits may be a choice. Enter number of day				or Office Use C	Dnly	Total number claims covered report of wor	d by this	6
in columns at right.			Total Days Recorded	Cr. Date Recorded	<101 1	Mining Record		
	corded Holder or Agent (200	Date Approved		Régfonal/Bran		<u></u>
Nor 25/81 Certification Verifying Repo	U. T. Morrie 120 prt of Work	1	L'ACC					
I hereby certify that I have a or witnessed same during and	personal and intimate k				of Work anne	exed hereto, havi	ng performed	the work
Name and Postal Address of Per	son Certifying							<u>,</u>
w7 monents	(10)~)		<u> </u>	Date, Certified		Certified by (Signature)	
2219 Kennedy	Rood Hegine	vert	Ont.	1225	181	Certified by (more	sou



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Technical Assessment Work Credits

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File

Recorded Holder W.F. MORRISON	
Township or Area WHITESIDES	
Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic days	
Magnetometer 13 days	P 399023 399026 to 30 inclusive
Radiometric days	
Induced polarization days	
Section 86 (18) days	
Geological days	· ·
Geochemical days	
Man days 🗌 🛛 🛛 Alrborne 🗔	
Special provision 🖄 Ground 🖄	
Credits have been reduced because of partial coverage of claims.	
Credits have been reduced because of corrections to work dates and figures of applicant.	
pecial credits under section 86 (15a) for the following r	mining claims
o credits have been allowed for the following mining cl	aims
not sufficiently covered by the survey	Insufficient technical data filed
he Mining Recorder may reduce the above credits if nece	ssary in order that the total number of approved assessment days recorded on



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Township or Area WHITESIDES	
Type of survey and number of Assessment days credit per claim Mining Claims Assessed	
Geophysical Electromagnetic <u>13</u> P 399026 to 29 inclusive	
Magnetometer days	
Radiometric days	
Induced polarization days	
Section 86 (18) days	
Geological days	
Geochemical days	
Man days 🗋 Airborne 🗆	
Special provision 🖾 Ground 🖾	
Credits have been reduced because of partial coverage of claims.	
Credits have been reduced because of corrections to work dates and figures of applicant.	
Special credits under section 86 (15a) for the following mining claims	
No credits have been allowed for the following mining claims	
not sufficiently covered by the survey	
P 399023 399030	
	-

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical --- 80; Geological --- 40; Geochemical --- 40; Section 86(18)-60:

2.4494

1983 01 24

2.4494

Mining Recorder Ministry of Natural Resources 60 Wilson Avenue Timmins, Ontario P4N 2S7

Dear Sir:

RE: Geophysical (Electromagnetic & Magnetometer) Survey on Mining Claims P 399023 et al in the Township of Whitesides.

The Geophysical (Electromagnetic & Magnetometer) Survey assessment work credits as listed with my Notice of Intent dated November 26, 1982 have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours very truly,

E.F. Anderson Director Land Management Branch

Whitney Block, Room 6450 Queen's Park Toronto, Ontario M7A 1W3 Phone: 416/965-1380

A. Barr:sc

cc: Teck Explorations Limited North Bay, Ontario

cc: Mr. W.F. Morrison Agincourt, Ontario

cc: Resident Geologist Timmins, Ontario



JEC 15 982

Your file:

Our file: 2.4494

1982 11 26

Mining Recorder Ministry of Natural Resources 60 Wilson Avenue Timmins, Ontario P4N 2S7

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

Yours very truly,

For further information, if required, please contact Mr. F.W. Matthews at 416/965-1380.

E.F. Anderson Director Lands Administration Branch

Whitney Block, Room 6450 Queen's Park Toronto, Ontario M7A 1W3 Phone: 416/965-1316

A. Barr:sc

cc: Mr. W.F. Morrison Agincourt, Ontario

cc: Mr. G.H. Ferguson Mining & Lands Commissioner Toronto, Ontario



Ministry of Natural Resources Notice of Intent for Technical Reports

> 1982 11 26 2.4494

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Lands Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.

Natural	Geotechnical Report		2,4494
Resources	Approval		
Mining Lands C	comments August 11.2	marra antill	accepta la
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To: Geophysics			•
Comments			
Approved	Wish to see again with corrections	Del 30/82	gre Pel
To: Geology - E	xpenditures		/
Comments			
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TECK EXPLORATIONS LIMITED

2189 Algonquin Avenue North Bay, Ontario Telephone 705-474-5500 Postal Code P1B 4Z3

March 17, 1982.

RECEIVED

MAR 1 8 1982

F.W. Matthews, Land Management Branch, Whitney Block - Room 6450, Queen's Park, Toronto, Ontario.

MINING LANDS SECTION

Dear Mr. Matthews,

Please accept the enclosed maps and documents as per your request of March 3rd, 1982.

Yours truly,

11 Those

K. Thorsen, Manager.

KT/eg

March 3, 1982

Teck Explorations Limited Attn: Mr. K. Thorsen P.O. Box 170 Suite 7000 - 1 First Canadian Place Toronto, Ontari D M5X 169

Dear Sir:

Re: Geophysical (Electromagnetic and Magnetometer) Survey submitted on Mining Claims P. 399023 et al in the Township of Whitesides

Enclosed are the maps and final page of the report (in duplicate). In order to complete your submission we require:

- a) all maps and both copies of Page 6 to be signed;
- b) V.L.F. maps must show the raw data.

On receipt of this information, a statement of Assessment Work Credits will be issued.

For further information, please contact: Mr. F.W. Matthews at 965-1380.

Yours very truly,

E.F. Anderson Director Land Management Branch

Whitney Block, Room 6450 Queen's Park Toronto, Onterio M7A 1W3 Phone: 416/965-1316

A. Barr/amc

Encl.

- cc: Mining Recorder Timmins, Ontario
- cc: Mr. W.F. Morrison Agincourt, Ontario

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2.4494

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WILLIAM F. MORRISON

CONSULTING GEOLOGIST

2219 KENNEDY ROAD AGINCOURT, ONTARIO

(416) 293-4329

Jam 20 1981.

Mindatay of Mataral Resources Protince of Ontario Lando administrations Branch mining hands dection

RECEIVED

FEB 2 1982

MINING LANDS SECTION

[loan times :

I have - have advised by The FW Matthews to notify the recipient of the enclosed report that it pertains to a group of mining. chains in White aides Tawnship which are al privation on calegory of Aprial status. Con- squantly it is imperative that thes report the guin prosity for immediate approvided for is cost ment work qualification.

Claup Ving truly

107 Tropresery

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