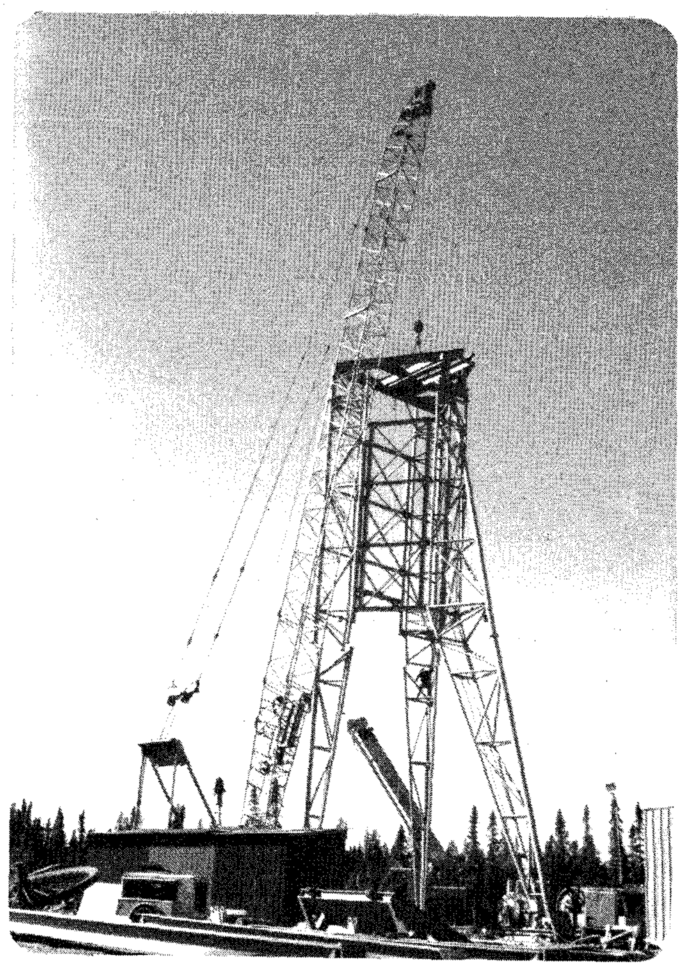
1986-1987 GEODRILLING REPORT

Minnesota Department of Natural Resources
Division of Minerals



Headframe Construction, Minnamax Project, Circa July 1976

Report 251

Hibbing, Minnesota
1987

ERRATA SHEET

1986-1987 Geodrilling Report - Report 251

Page No.	Sample No.	Footage	Element/ Compound	Corrected Value
29	CA-18912	1164-1166	CO_2	17.0
31	CA-19052	2133-2149	Au	1*
37	CA-19052	2133-2149	Be	5
83	CSL-17445	360.3-362.0	CO_2	20.9
83	CSL-17447	456.1-457.5	CO_2	25.6
86	CSL-17366	163-165	Se	5*
86	CSL-17335	226-240	Se	8*
87	CSL-17343	242-256	Ce	67
88	CSL-14081	169.3-179	Nd	5*
136	CSL-19300	Assayed footage interval doesn't include 412.5-415.7		
148	CSL-19531	Assayed footage interval doesn't include 41.1-61.5		
167	CSL-16027	242-254	Pt	10
167	CSL-16034	289-301	Pt	10*
167	CSL-16041	315-321	Pt	10*

Note: Samples CSL-14081 and CSL-14061 of Table 5 (Analytical Results of Drill Hole TS-2) on pages 82-88 were pulps from Drill Hole FHL-1 that were reanalyzed as check samples.

The same holds true for sample CSL-14026 of Table 11 (Analytical Results of Drill Hole NE-1) on pages 172-178.

For comparative results of the earlier analyses, see 1984-1985 Geodrilling Report, Report 242.

1986-1987 GEODRILLING REPORT

Minnesota Department of Natural Resources
Division of Minerals

Report 251

Hibbing, Minnesota
1987

1986-1987 GEODRILLING REPORT

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TABLE OF CONTENTS

	Page
INTRODUCTION	
Preface	1
Geophysics	2
Sample Collection	3
Drill Hole Logging	4
Drill Core Sampling Procedures	4
Analytical Results	5
Data Reporting	9
RESULTS OF 1986-1987 GEODRILLING PROGRAM	
Drill Hole A-6	10
Aitkin Area	10
Log of Drill Hole A-6	19
Analytical Results of DDH A-6	27
Drill Hole CW-1	41
Larson Lake Area	41
Log of Drill Hole CW-1	44
Analytical Results of DDH CW-1	57
Drill Hole TS-2	71
Twig Area	71
Log of Drill Hole TS-2	78
Analytical Results of DDH TS-2	82
Drill Hole FHL-2	89
Fredenberg Area	89
Log of Drill Hole FHL-2	99
Analytical Results of DDH FHL-2	102
Drill Hole SL-4	123
Railroad Troctolite Area	123
Log of Drill Hole SL-4	128
Analytical Results of DDH SL-4	134
Drill Hole SL-1	141
Linwood Lake Area	141
Log of Drill Hole SL-1	142
Analytical Results of DDH SL-1	148
Drill Hole SE-2	155
SE-2 Area	155
Log of Drill Hole SE-2	156
Analytical Results of DDH SE-2	157
1984-1985 GEODRILLING REPORT SUPPLEMENT	164
Analytical Results of DDH SE-3	165
Analytical Results of DDH NE-1	172
REFERENCES	179

LIST OF FIGURES

		Page
Figure 1:	Plan View Glen Township Formation	11
Figure 2:	Geologic and Geophysical Profiles Line 30W Section 28 T46N-R25W.	12
Figure 3:	Stacked HLEM Profiles Sections 21 and 28 T46N-R25W . . .	13
Figure 4:	Geophysical Responses From Structural Features at Bedrock Line 1W Sections 19 & 30 T46N-R25W	15
Figure 5:	Plan View T46N-R25W With Structure and Drill Holes . . .	16
Figure 6:	CSAMT Pseudosection Apparent Resistivity	17
Figure 7:	Lithologies and Preliminary Assays Hole A-6 (GSI Lab) . .	18
Figure 8:	Larson Lake Area Location Map With Hole CW-1	42
Figure 9:	Plan View Geophysics Larson Lake Area	43
Figure 10:	Larson Lake HLEM Profiles 1777HZ	45
Figure 11:	Magnetic Susceptibility and Refraction Seismic Profiles Hole CW-1	46
Figure 12:	Location Map Twig Area Grid	72
Figure 13:	Twig VLEM Profiles	73
Figure 14:	Twig Magnetic Profiles	74
Figure 15:	Twig Gravity Profiles	76
Figure 16:	Twig Area Geologic Interpretation	77
Figure 17:	Magnetic Susceptibility Shaded Relief Map	90
Figure 18:	Location Map Fredenberg Area	91
Figure 19:	Gravity Profile SW¼ Section 10 T52N-R15W	92
Figure 20:	Fredenberg Gravity Profiles	94
Figure 21:	Fredenberg Magnetic Profiles	95
Figure 22:	Fredenberg HLEM Profiles	96
Figure 23:	Fredenberg VLEM Profiles	97
Figure 24:	Fredenberg Hole FHL-2	98
Figure 25:	Railraod Troctolite Hole SL-4	124
Figure 26:	Location Map Railraod Troctolite Area	125
Figure 27:	Railroad Troctolite Hole SL-4 VLF-EM Profiles	126
Figure 28:	Railroad Troctolite Hole SL-4 Magnetic Profiles	127

LIST OF TABLES

		Page
Table 1:	X-Ray Lab Analytical Methods	6
Table 2:	Bondar-Clegg Analytical Methods	7
Table 3:	Analytical Results of Drill Hole A-6 (X-Ray Laboratories).	27
Table 4:	Analytical Results of Drill Hole CW-1	57
Table 5:	Analytical Results of Drill Hole TS-2	82
Table 6:	Analytical Results of Drill Hole FHL-2	102
Table 7:	Analytical Results of Drill Hole SL-4	134
Table 8:	Analytical Results of Drill Hole SL-1	148
Table 9:	Analytical Results of Drill Hole SE-2	157
Table 10:	Analytical Results of Drill Hole SE-3	165
Table 11:	Analytical Results of Drill Hole NE-1	172

GEODRILLING REPORT INTRODUCTION

PREFACE

The Division of Minerals is responsible for managing state and local government mineral interests on more than 10,000,000 acres of land. The geologic drilling program is one of a number of projects carried out to improve the mineral potential data base to aid in managing these interests, particularly in those areas where greater mineral potential is suspected but data is lacking and there is no industry leasing of state mineral ownership. The current program is a continuation of one begun in 1980 as a result of funding by the Legislative Commission on Minnesota Resources. The information gained serves to aid managers in making land use decisions, establishing mineral leasing priorities, and encouraging mineral diversification activities in Minnesota.

A variety of factors are taken into account when choosing or determining regions worthy of further investigation. These include the character of the geology of the regions, the type of mineralization that might be expected, the commodity(s) of greatest current economic interest as well as those having potential future interest, the mode of occurrence of potential mineralization, and the current level of knowledge with respect to these regions. As part of this process, a variety of data sources are used including available geologic maps and literature, Minnesota Geological Survey aeromagnetic and gravity data, existing geochemical information, and discussions with people from industry and academia. The Minnesota Geological Survey personnel were particularly helpful, expecially Dr. D. Southwick, Dr. G. Morey, and Dr. V. Chandler. Geological, geochemical, and geophysical investigations were also used, when applicable, to further evaluate areas of interest. The DNR Division of Waters contributed both personnel and equipment for the conduct of refraction seismic surveys. Pat Bloomgren, Andrew Streitz and Joe Julik were particularly helpful. Finally, a diamond drill hole might be cored to determine whether or not the lithologic, structural, or economic indicators suggested by this investigation are indeed present.

Lithologic units covered in this report are all Proterozoic in age and include the Thompson Formation in St. Louis County, the Glen Township Formation in Aitkin County, the Larson Lake area in Crow Wing County, and several locations within the Duluth Complex in St. Louis and Lake counties. Each location is treated separately in the report as a self-contained section consisting of all information derived for that location. This includes the geophysical data, geologic log and analytical data for the drill hole.

GEOPHYSICS

The methods used for mineral potential evaluations described in this report were: 1. Magnetic susceptibility profiles; 2. Very low frequency electromagnetic surveys, (VLF-EM); 3. Horizontal loop electromagnetic surveys, (HLEM); 4. Vertical loop electromagnetic surveys, (VLEM); 5. A controlled source audio frequency magnetotelluric, (CSAMT) survey; 6. Refraction seismic profiles; and. 7. Gravity profiles. The different instruments and survey parameters used are listed here and where there are variations they are described in the body of the report.

Three instruments were used for magnetometer surveys. Most of the work was done with a GeoMetrics model G-836 proton magnetometer. The Twig survey was run with a Scintrex MF-2 fluxgate magnetometer. In the Railroad Troctolite Area (T59N, R12W), a Scintrex IGS-2 system was used. Reconnaissance lines were put in along roads or other available access. Observation intervals were usually fifty feet with the stations flagged at 500 foot intervals. Where grids were surveyed observation intervals remained at fifty feet but stations were flagged at 100 foot intervals.

VLF-EM surveys used two instruments, a Ronka EM-16 and the Scintrex IGS-2 system. Usually a 100 foot observation interval was used which was reduced to fifty feet with the IGS-2 system. VLF-EM, HLEM, VLEM and gravity surveys all used the same grid layout as the magnetometer surveys.

The VLEM survey in the Twig Area used a Crone instrument transmitting frequencies of 1830 and 390 hertz at 13 amps on high power. The Fredenberg grid used a Crone CEM instrument in the broadside mode of operation, transmitting at 390, 1830 and 5010 hertz. Observations were made at 100 foot intervals for both surveys.

Horizontal loop electromagnetic surveys utilized an Apex Parametrics Ltd. Max-Min II instrument. Observations were made at 100 foot intervals. Frequencies of 444 and 1777 hertz were used at various Tx-Rx coil separations up to 200 meters. Readings are plotted at a point midway between the coils.

Gravity surveys used a Lacoste and Romberg, Inc., Model G. gravity meter, number 320 belonging to the Minnesota Geological Survey. A 100 foot observation interval was used and relative station elevations were surveyed with a transit. For the Twig Area survey on the lake, 4 or 5 observations were made and averaged with the highest and lowest readings discarded.

The refraction seismic work was done with a Bison GeoPro, model 8012A, twelve channel instrument. Forty hertz marsh case geophones or eight hertz surface geophones were spaced at ten meters. Relative station elevations were surveyed with a rod and hand level. A twelve gauge pipe gun, Bison "Whammer", one third pound charge of Kinepak binary explosive or fist sized ball of primer cord was used as an energy source. Zero delay electric blasting caps detonated the binary explosive or primer cord. Most often five shots were used, one at the center of the spread, and others ten feet and 100 feet from both ends. A time distance plot was constructed in the field and shot patterns varied to fit local conditions. Velocities were calculated in the field from first arrivals. These were also used to calculate interface depths below each geophone using a time delay method.

The controlled source audio frequency magnetotelluric (CSAMT) survey was done under contract by ElectroMagnetic Surveys, Inc. of Berkeley, California. The work was done along twelve miles of state highway 47 from Malmo to the north line of Township 46 North. A few stations were also tested along highway 169 in Townships 45 and 46 North. They used a 20 KVA Zonge GGT-20 transmitter with an EMS transmitter controller and Zonge ZMG-25 motor generator. The receiver used four EMS MFD-3 induction coil magnetometers, two electric field sensors with self potential buckout, and EMS signal reducer, an EMS 60 hertz notch filter, an EMS variable width bandpass filter, an EMS DSP-2 six channel receiver and an EMS data acquisition system. A quarter mile station spacing was maintained where possible, although wider spacings were used along highway 169.

In this report geophysical data is presented on page size figures. Detailed plans and sections at larger scales are available from the Hibbing office of the Minnesota Department of Natural Resources, Division of Minerals.

SAMPLE COLLECTION

Drilling for this biennium was performed under contract with Longyear Company, Minneapolis, Minnesota, using skid mounted drill rigs, exclusively.

Typical drill hole construction consisted of the following steps:

1. drilling through unconsolidated overburden using bentonite drilling fluid and a rock bit, and casing the hole into sound bedrock;
2. diamond core drilling within this casing, using water as a drilling fluid; and
3. drill hole abandonment consisting of casing removal (if possible) and cementing the drill hole in accordance with Minnesota Statutes Chapter 156A.

NQ (1.875") size wireline core was taken where possible, however, BQ (1.432") core was drilled when it was necessary to reduce hole diameter due to problems caused by broken rock or serpentinization. Note that approximately 100' of overburden was cored in drill hole CW-1 because the drillers believed that they had reached bedrock at that point. When the overburden is well compacted and coherent, overburden core recovery is possible.

Not all of the drill holes had a vertical orientation. Angled drill holes were necessary in order to drill across features that were interpreted as not being close to horizontal, such as inclined layering and/or structures. Potential variations in drill hole inclination with depth were determined with acid tests in order to delineate vertical changes in drilling direction (compass direction at depth cannot be determined with these tests).

All materials collected during drilling were transported to, and are stored at, the DNR Minerals office in Hibbing.

DRILL HOLE LOGGING

The logging of all drill holes was carried out at the DNR Minerals office in Hibbing. The core from drill holes CW-1, TS-2, FHL-2, and SL-4 were also photographed prior to splitting so that a visual record of the core is preserved.

Rock names of mafic igneous rocks described in this report are based on the classification of Phinney (1972). The grain size conventions used for igneous and metamorphic rock descriptions are:

very fine-grained less than .5 mm
fine-grained .5 to 1 mm
medium-grained 1 to 5 mm
coarse-grained 5 to 10 mm
very coarse-grained greater than 10 mm

Where the original rock type is identifiable in a metamorphic rock, the prefix "meta-" is used in front of that rock name. Where the original rock type is in doubt, a metamorphic rock name is used (e.g. schist).

Thin and/or polished thin sections were not available at the time the drill logs were compiled. Consequently, mineral identifications and textures may need revision based on subsequent microscopic examination, and this should be kept in mind when interpreting the lithologic logs.

DRILL CORE SAMPLING PROCEDURES

Sampling and numbering of all samples were performed in accordance with established DNR procedures. Samples were taken for the following reasons:

chemical analyses
thin sections
polished thin sections
X-ray diffraction mineral identification

Analytical samples consisted of a 1/2 portion of core samples that were either sawed or split. All intervals were selected by the respective geologist logging the core, including the intervals from drill hole A-6 which were analyzed through the Minnesota Geologic Survey. These sample splits were submitted intact, the sample preparation work being done by the analytical company.

Sampling was intended to directly test for the presence of base and precious metals in sulfide, oxide, alteration and/or structural zones. Zones devoid of the above features were also analyzed for comparative purposes and whole rock analytical information. All of the analytical work was carried out by commercial laboratories, and this will be discussed in the next section.

Many of the larger intervals sampled were composites composed of smaller subsamples contained within the main interval. Equal weights of the subsample pulps were combined to form the analytical composite. In the event of an anomalous composite analysis, the subsamples could be individually analyzed to more closely identify the source of mineralization. It was felt that this method has the advantage of testing larger core footages for mineralization (which might otherwise escape detection) at a lower total analytical cost. A potential disadvantage lay in the possibility for averaging the chemistry of chemically distinct lithologies that occur within composites or even within the subsamples. Therefore, future lithogeochemical work performed with this sample data should be done with caution and only after the lithologies within the samples are identified.

Samples collected for thin sections and polished thin sections required that a 27 x 46 mm rock heel be sawed for each section of drill core. The heels with their respective sections make it is possible to relate macroscopic and microscopic observations of textures and mineral identifications.

ANALYTICAL RESULTS

Private analytical companies performed all the analytical work, including the sample preparation of the submitted rock (core) samples. Preparation work included crushing and pulverizing of the core into pulps, combining equal weights of subsample pulps to form the composite sample, sample dissolution where appropriate and neutron activation encapsulation.

Analyses were performed by Bondar-Clegg, North Vancouver, B.C.; Geochemical Services Inc., Torrance, California; and X-Ray Assay Laboratories, Don Mills, Ontario. Drill holes SL-1 and SL-4 were analyzed by Bondar-Clegg, Inc., while drill hole A-6 had samples analyzed by both Geochemical Services Inc. and X-Ray Assay Laboratories. X-Ray Labs analyzed all of the samples from drill holes TS-2, CW-1, FHL-2, and SE-2. Drill holes SE-3 and NE-1, which are included in the 1984-1985 Geodrilling Report Supplement of this report, were also analyzed by X-Ray Laboratories, Inc. Pulps from previously analyzed samples were also submitted for analysis as check samples.

Analytical techniques and detection limits for X-Ray Assay Lab analyses are given in Table 1 and those for Bondar-Clegg in Table 2 below.

TABLE 1
X-RAY LAB ANALYTICAL METHODS

Element	Method	Lower Detection Limit
AU	NA	5.000 PPB
BE	DCP	1.000 PPM
B	DCP	10.000 PPM
CO2	WET	0.010 %
F	WET	20.000 PPM
NA	NA	0.050 %
WRMAJ	WR	0.010 %
S	XRF	0.010 %
CL	XRF	50.000 PPM
IR	NA	100.000 PPB
SC	NA	0.500 PPM
V	DCP	1.000 PPM
CR	NA	50.000 PPM
FE	NA	0.500 %
CO	NA	10.000 PPM
NI	NA	50.000 PPM
CU	DCP	1.000 PPM
ZN	NA	200.000 PPM
CE	DCP	10.000 PPM
AS	NA	1.000 PPM
SE	NA	10.000 PPM
BR	NA	5.000 PPM
RB	XRF	2.000 PPM
SR	XRF	2.000 PPM
Y	XRF	2.000 PPM
ZR	XRF	2.000 PPM
NB	XRF	2.000 PPM
MO	NA	2.000 PPM
PD	FADCP	2.000 PPB
AG	NA	5.000 PPM
SN	ICPMS	10.000 PPM
SB	NA	0.200 PPM
TE	ICPMS	10.000 PPM
CS	NA	2.000 PPM
BA	XRF	10.000 PPM
LA	NA	5.000 PPM
CE	NA	5.000 PPM
ND	NA	10.000 PPM
SM	NA	0.500 PPM
EU	NA	0.500 PPM
YB	NA	0.500 PPM
LU	NA	0.200 PPM
HF	NA	2.000 PPM
TA	NA	1.000 PPM
W	NA	2.000 PPM
PT	FADCP	10.000 PPB
PB	ICPMS	5.000 PPM
BI	ICPMS	2.000 PPM
TH	NA	0.500 PPM
U	NA	0.500 PPM

NA = nuetron activation
DCP = D.C. plasma
WET = wet chemical specific methods
WR = whole rock
XRF = x-ray fluorescence
FADCP = fire assay/D.C. plasma finish
ICPMS = inductively compiled plasma mass spectrometry

TABLE 2
BONDAR-CLEGG ANALYTICAL METHODS

Element		Lower Detection Limit	Extraction	Method
Au	Gold	5 PPB	NOT APPLICABLE	IND. NEUTRON ACTIV.
Sb	Antimony	0.2 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
As	Arsenic	1 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Br	Bromine	1 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Cd	Cadmium	10 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Ce	Cerium	10 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Cs	Cesium	1 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Cr	Chromium	50 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Co	Cobalt	10 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Eu	Europium	2 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Hf	Hafnium	2 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Ir	Iridium	100 PPB	NOT APPLICABLE	IND. NEUTRON ACTIV.
Fe	Iron	0.5 PCT	NOT APPLICABLE	IND. NEUTRON ACTIV.
La	Lanthanum	5 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Lu	Lutetium	0.5 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Mo	Molybdenum	2 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Ni	Nickel	50 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Sm	Samarium	0.1 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Sc	Scandium	0.5 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Se	Selenium	10 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Ag	Silver	5 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Na	Sodium	0.05 PCT	NOT APPLICABLE	IND. NEUTRON ACTIV.
Ta	Tantalum	1 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Tb	Terbium	1 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Th	Thorium	0.5 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
W	Tungsten	2 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
U	Uranium	0.5 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Yb	Ytterbium	5 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Zn	Zinc	200 PPM	NOT APPLICABLE	IND. NEUTRON ACTIV.
Al203	Alumina	0.01 PCT	BORATE FUSION	PLASMA EMISSION SPEC
CaO	Calcium	0.01 PCT	BORATE FUSION	PLASMA EMISSION SPEC
Fe203	Total Iron	0.01 PCT	BORATE FUSION	PLASMA EMISSION SPEC
K20	Potassium	0.10 PCT	BORATE FUSION	PLASMA EMISSION SPEC
LOI	Loss On Ignition	0.01 PCT		Gravimetric
MgO	Magnesium	0.01 PCT	BORATE FUSION	PLASMA EMISSION SPEC
MnO	Manganese	0.01 PCT	BORATE FUSION	PLASMA EMISSION SPEC
Na20	Sodium	0.01 PCT	BORATE FUSION	PLASMA EMISSION SPEC
P205	Phosphorous	0.01 PCT	BORATE FUSION	PLASMA EMISSION SPEC
SiO2	Silica	0.01 PCT	BORATE FUSION	PLASMA EMISSION SPEC

Table 2 (continued)

Element		Lower Detection Limit	Extraction	Method
TiO2	Titanium	0.01 PCT	BORATE FUSION	PLASMA EMISSION SPEC
Total	Whole Rock Totals	0.01 PCT		
S	Sulphur	0.01 PCT		Leco
CO2	Carbon Dioxide	0.01 PCT		Leco
Cl	Chloride	50 PPM	HNO3	Turbidimetric
Bi	Bismuth	2 PPM	MULT ACID TOT DIG	D.C. PLASMA
Cu	Copper	1 PPM	MULT ACID TOT DIG	D.C. PLASMA
Pb	Lead	5 PPM	MULT ACID TOT DIG	D.C. PLASMA
Sn	Tin	10 PPM	MULT ACID TOT DIG	D.C. PLASMA
Te	Tellurium	10 PPM	MULT ACID TOT DIG	D.C. PLASMA
V	Vanadium	1 PPM	MULT ACID TOT DIG	D.C. PLASMA
Ba	Barium	20 PPM		X-RAY Fluorescence
Nb	Niobium	5 PPM		X-RAY Fluorescence
Rb	Rubidium	5 PPM		X-RAY Fluorescence
Sr	Strontium	5 PPM		X-RAY Fluorescence
Y	Yttrium	5 PPM		X-RAY Fluorescence
Zr	Zirconium	5 PPM		X-RAY Fluorescence
F	Fluorine	20 PPM	POT HYDROXIDE FUSION	Specific Ion
Pd	Palladium	2 PPB	FIRE-ASSAY	
Pt	Platinum	15 PPB	FIRE-ASSAY	

PPM = Parts per million
PPB = Parts per billion
PCT = Percent

The A-6 drill hole samples that were analyzed for the Minnesota Geological Survey by Geochemical Services, Inc. were performed using inductively coupled plasma/atomic emission spectrometry having an analytical precision of 5% (Geochemical Services, Inc., personal communication). The elements analyzed for included Ag, As, Au, Cu, Hg, Mo, Pb, Sb, Tl, and Zn.

Detailed analytical information regarding the work performed by Bondar-Clegg, X-Ray Assay Laboratories, and Geochemical Services, Inc. is on file at the DNR Minerals Division office in Hibbing.

Although the precious and base metals were of prime concern, it was decided that a large number of additional elements would also be analyzed since whole rock and trace element analyses would provide lithogeochemical data for delineating mineralization in spatially related rocks, and analyzing for a broad spectrum of elements would provide geochemical information on metals and commodities having possible future economic implications.

Laboratory turn around times for analytical results from X-Ray Laboratories varied from 8 to 13 weeks. Analytical results for the single shipments to Bondar-Clegg and Geochemical Services, Inc. were received 5 weeks from the date of shipment.

Mineral identifications by x-ray diffraction (powder) were carried out at the Hanna Research Center in Nashwauk, Minnesota.

DATA REPORTING

The body of this report is composed of individual sections, each of which consists of four subsections pertaining to a drilling area.

The first subsection contains information relating to a particular drill hole and includes location information, orientation information, coring information, and a listing of materials that are available for examination.

The next subsection includes work done prior to drilling (including geophysics) and the rationale for drilling the hole.

The third subsection contains a log for the respective drill hole.

The final subsection is a table of analytical results. Appropriate references are made to previously submitted samples that were reanalyzed as check samples.

RESULTS OF 1986-1987 GEODRILLING PROGRAM

DRILL HOLE: A-6

COUNTY: Aitkin

LOCATION: T46N-R25W, Sec. 20, SE¼-SE¼-SE¼

QUADRANGLE: Glen 7½'

SURFACE ELEVATION: 1302' (topographic quad)

DEPTH TO BEDROCK: 40' TOTAL DEPTH: 3104'

DRILL HOLE INCLINATION: 70° DRILL HOLE AZIMUTH: 180°

ACID TESTS:

Depth Footage	Corrected Angle
1300'	72°
2524'	70°
3100'	64°

CORE SIZES AND FOOTAGE INTERVALS:

NQ (1.875" diameter) 40'-3104'

ADDITIONAL MATERIALS AVAILABLE FOR EXAMINATION:

Drill core, thin sections, and polished thin sections.

AITKIN AREA

Complex folding of the Glen Township Formation was mapped by an airborne magnetic and electromagnetic survey donated to the DNR by private industry. Figure 1 shows part of the formation in Township 46 North, Range 25 West as interpreted from this data. The figure also shows DNR geophysical grid lines which were put in on state ownership to define faulting suggested by the fold structures. Horizontal loop electromagnetic (HLEM) and magnetometer surveys as described in Report 242 and presented here in figure 2, map the near surface areal distribution of the formation. Near the footwall, profile 2C, the formation displays a positive magnetic anomaly of about 2,000 gammas, which is also very conductive. North of the magnetically susceptible member, the formation is still very conductive as shown on profile 2B. Figure 3 shows stacked profiles of HLEM with very low frequency electromagnetic (VLF-EM) crossovers in the southeast part of Section 21 and the northeast part of Section 28. Where the Glen Township

FIGURE 1

PLAN VIEW GLEN TOWNSHIP FORMATION

T. 46 N. – R. 25 W.

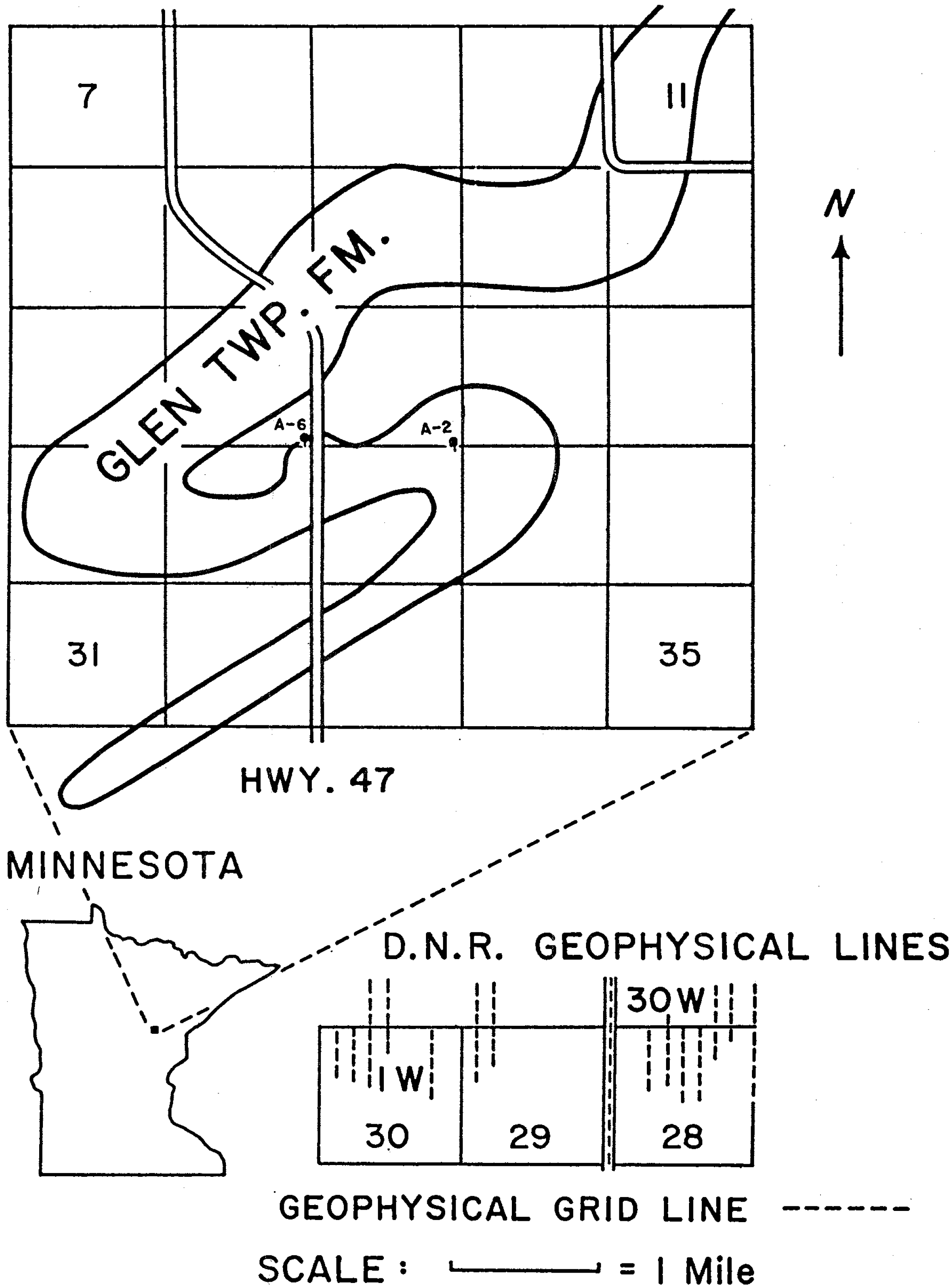


FIGURE 2 GEOLOGIC AND GEOPHYSICAL PROFILES
LINE 30W SECTION 28 T46N-R25W

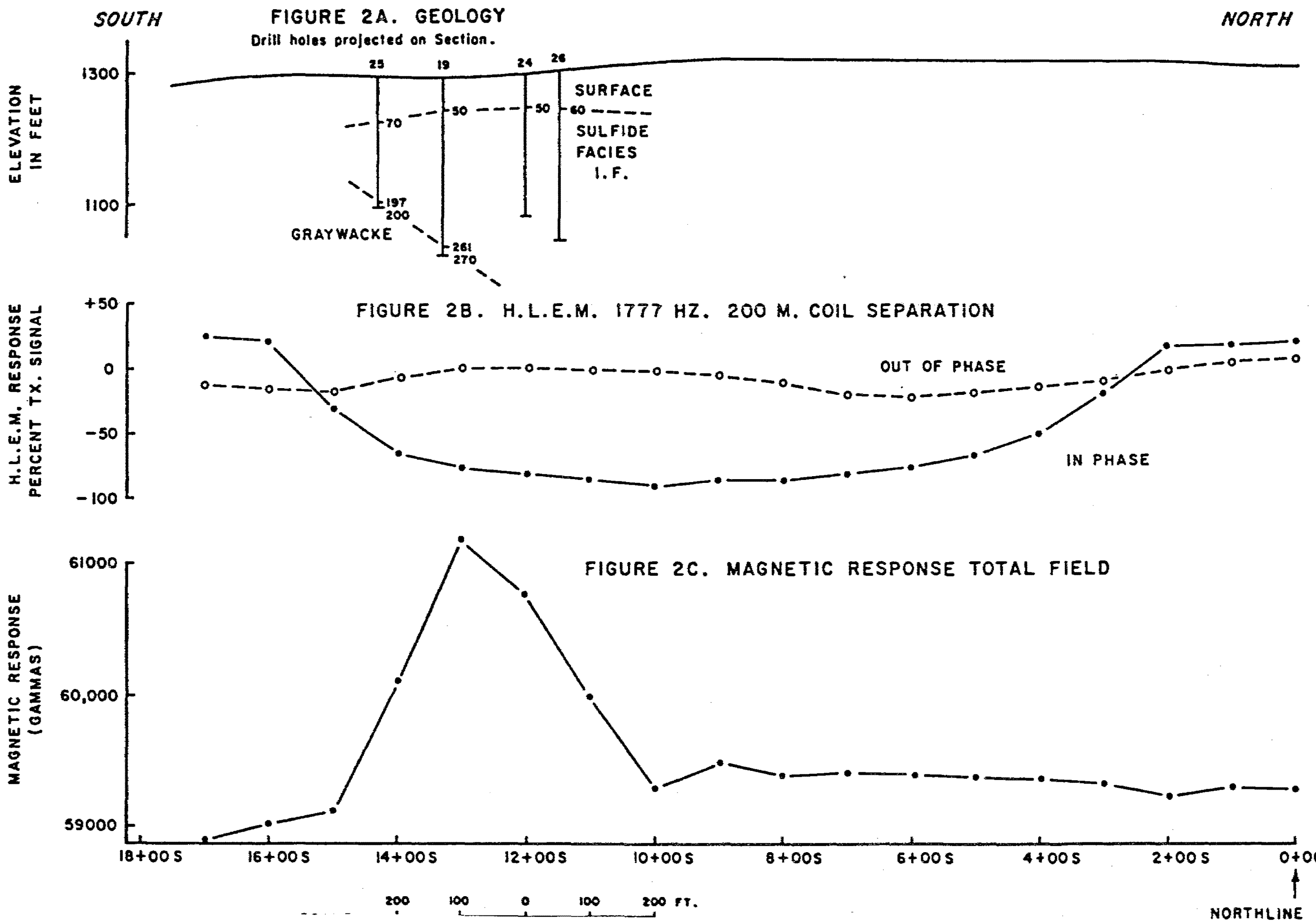
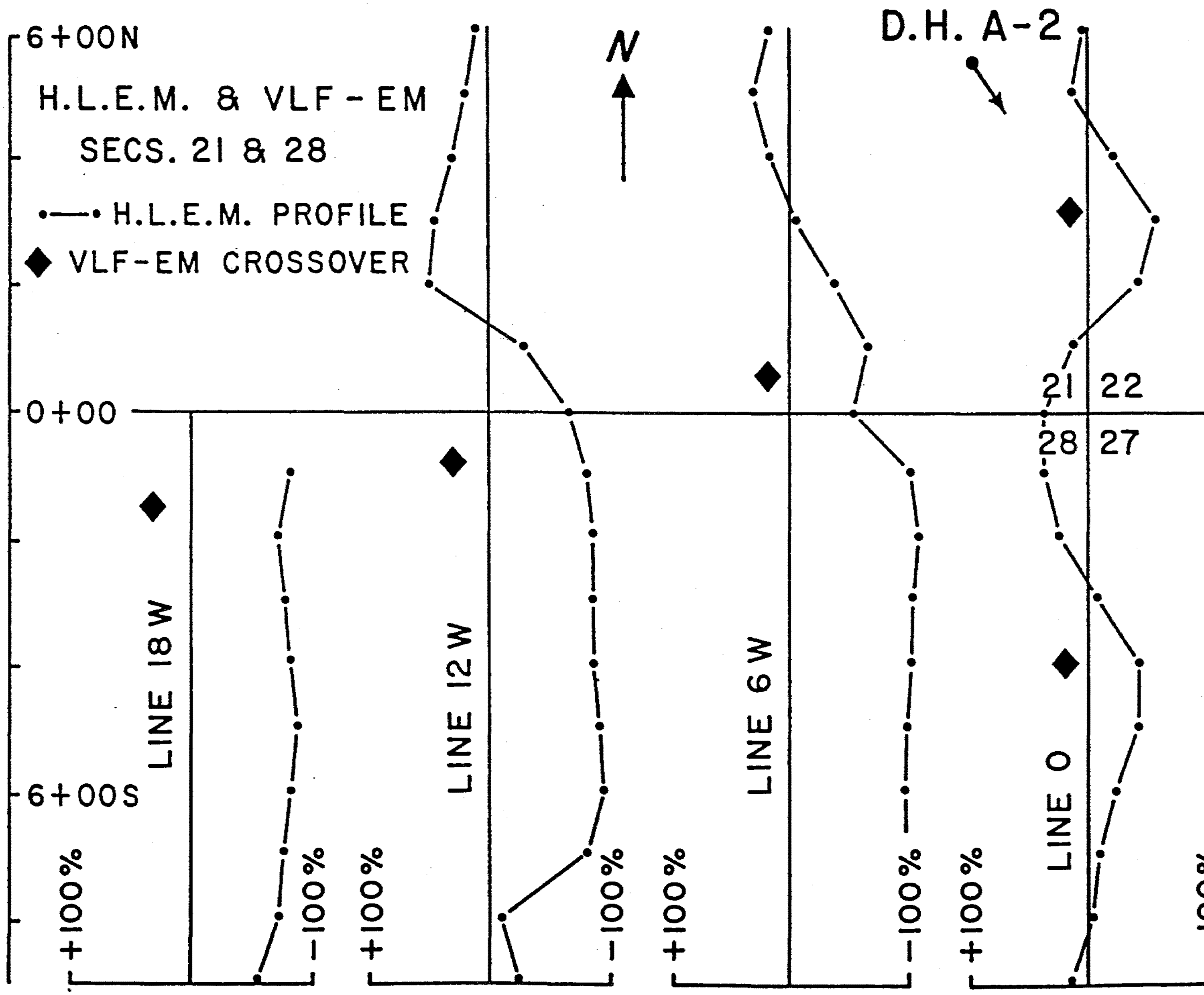


FIGURE 3 STACKED HLEM PROFILES
SECTIONS 21 AND 28 T46N-R25W



Formation is horizontal, the VLF-EM preferentially maps the vertical sheet configuration of the fault zone. On line 0 at the east end of the grid, the formation is entering the fold and the VLF-EM preferentially maps the more conductive vertical configuration of the formation. The fault on line 0 is shown by a break in HLEM conductivity. On line 0 the zone was further evaluated by seismic profiles then tested by drill hole A-2, (Report 242).

Further west in Sections 19 and 30 there is deeper glacial drift, and VLF-EM recorded weak and therefore questionable responses to the fault zone as shown on figure 4B. However, the magnetic response, figure 4A, displays a profile suggestive of oxidation in a fault zone between stations 13+00N and 16+00N. Also, the north flank of the anomaly is steep for a normal sedimentary contact. A refraction seismic profile, figure 4C, clearly defines the fault zone with a depressed second-third layer interface and reduced third layer velocities. D.H. 18131, drilled by United States Steel Corporation in the SE1/4 of the SW1/4 of Section 19, Township 46 North, Range 25 West as shown on figure 5, had the highest gold content for a five foot interval assayed by Eldougdoug, 1.41 ppm. This hole is a short distance west of the profile and projects to the center of the fault zone. Figure 5 shows the folded Glen Township Formation with the fault zone defined by DNR geophysical surveys. Some of the holes assayed by Eldougdoug with the highest gold content assay for the hole are also shown. Those holes with the highest values are found within or near the fault zone or in the noses of the fold structures.

Report 242 described a controlled source audio frequency magneto-telluric (CSAMT) survey, which is open-filed at the Hibbing office of the Department of Natural Resources. This survey, along state highway 47, clearly mapped the strong conductivity contrast between the Glen Township Formation and the volcanic units hosting the formation. This contrast is shown on an apparent resistivity pseudosection, part of which is reproduced as figure 6. The DNR fault zone displayed on figures 5 and 6 is the south fault of a graben where the Glen Township has been downthrown about 1,000 meters. Note: the figure does not have a linear vertical scale. The small remnant of the formation south of the fault and near surface is the unit traced by conventional methods. Hole A-6, shown on figures 5 and 6, was drilled to test the geophysical responses. It intersected the Glen Township at 625 feet, exactly where the CSAMT survey indicated, and also intersected 39 feet (1180 ft.-1219 ft.) of silicified breccia, also as indicated by the CSAMT survey and geophysical methods mapping the near surface expression of the fault. Mineral assemblages and grain size seem to indicate hydrothermal solution movement in the fault.

A number of short core intervals from hole A-6 were analyzed through Dr. Southwick of the Minnesota Geological Survey. Assays of these samples, along with lithologic unit, sample number and sample interval are shown on figure 7. High silver contents bracket the structure. The highest arsenic values are within the fault zone and just below it with one more moderate value 270 feet above it. Copper, lead and zinc bracket the fault with the highest values close to the structure. Gold values also bracket the structure with the highest value some distance below it. The presence of silver, arsenic, copper, and zinc near or within the fault zone and gold further away suggests there may be some zonation following a pattern reported by Beus and Grigorian, (1977) on table 30. More assay data will have to be studied before this can be more than a speculative statement.

FIGURE 4 GEOPHYSICAL RESPONSES FROM STRUCTURAL FEATURES AT BEDROCK LINE 1W SECTIONS 19 & 30 T46N-R25W

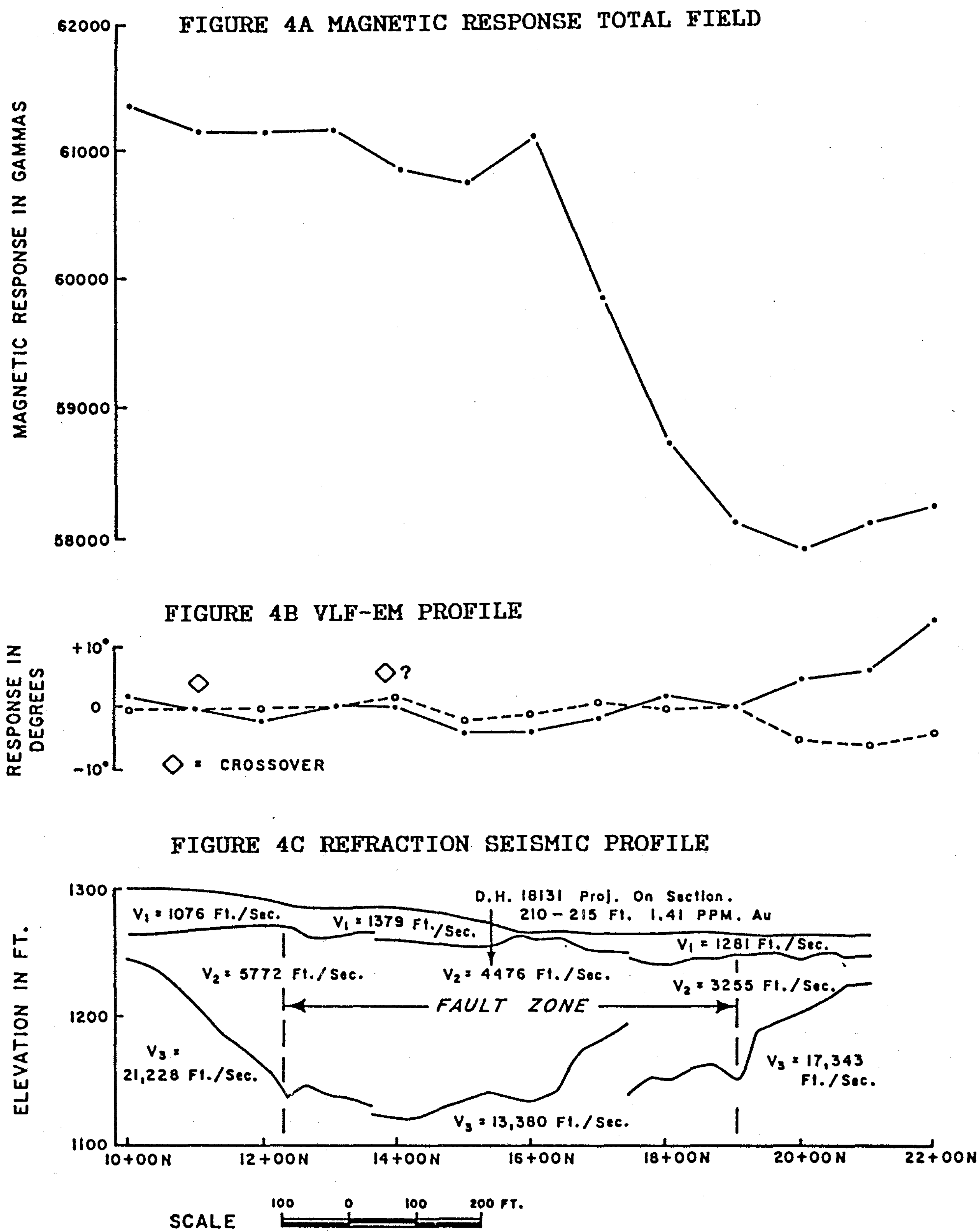
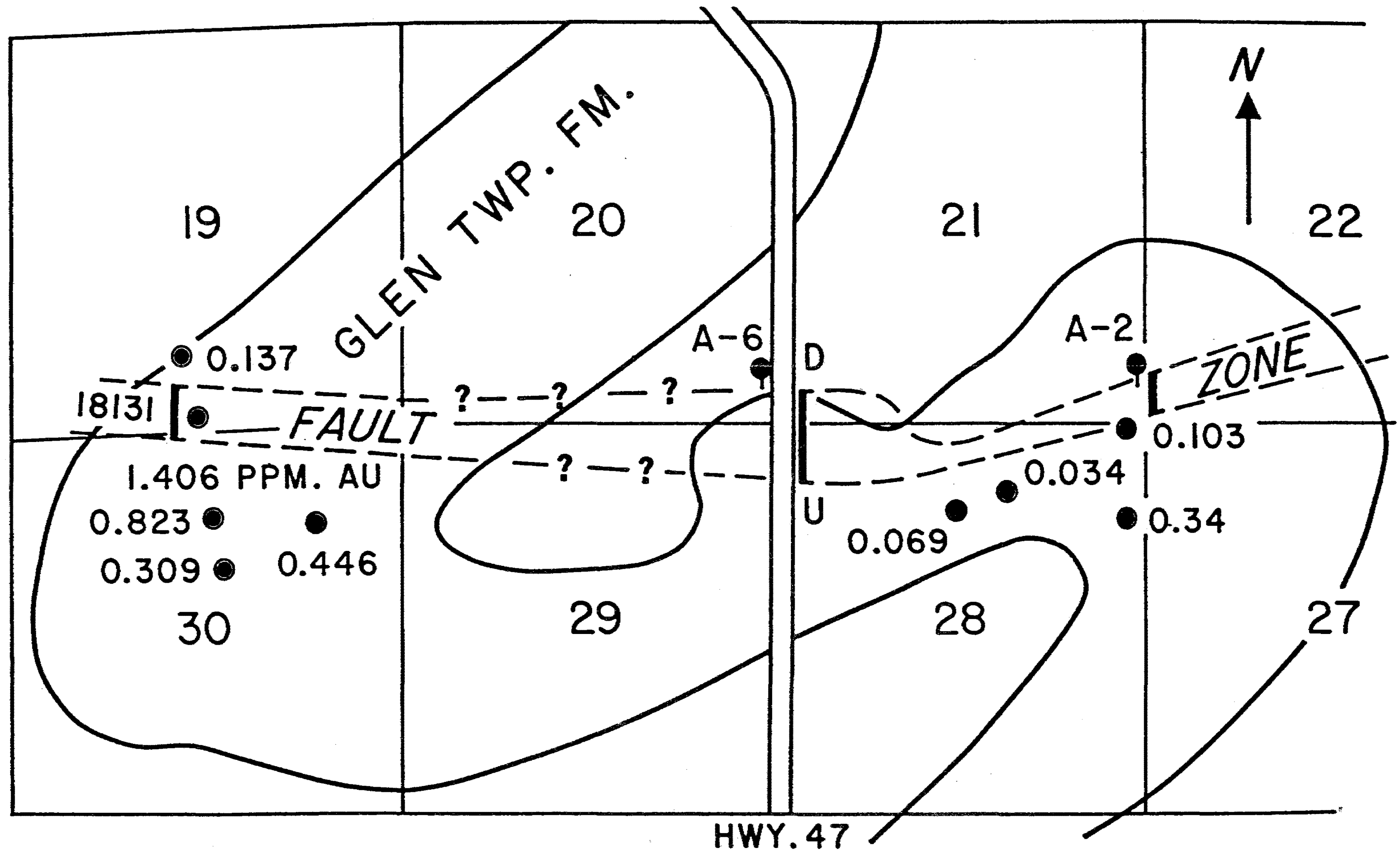


FIGURE 5 PLAN VIEW T46N-R25W WITH STRUCTURE AND DRILL HOLES



0.823 ● DRILL HOLE SAMPLED BY ELDOUGDOUG HIGHEST GOLD CONTENT FOR A FIVE FOOT INTERVAL SHOWN IN PPM

FIGURE 6 CSAMT PSEUDOSECTION APPARENT RESISTIVITY

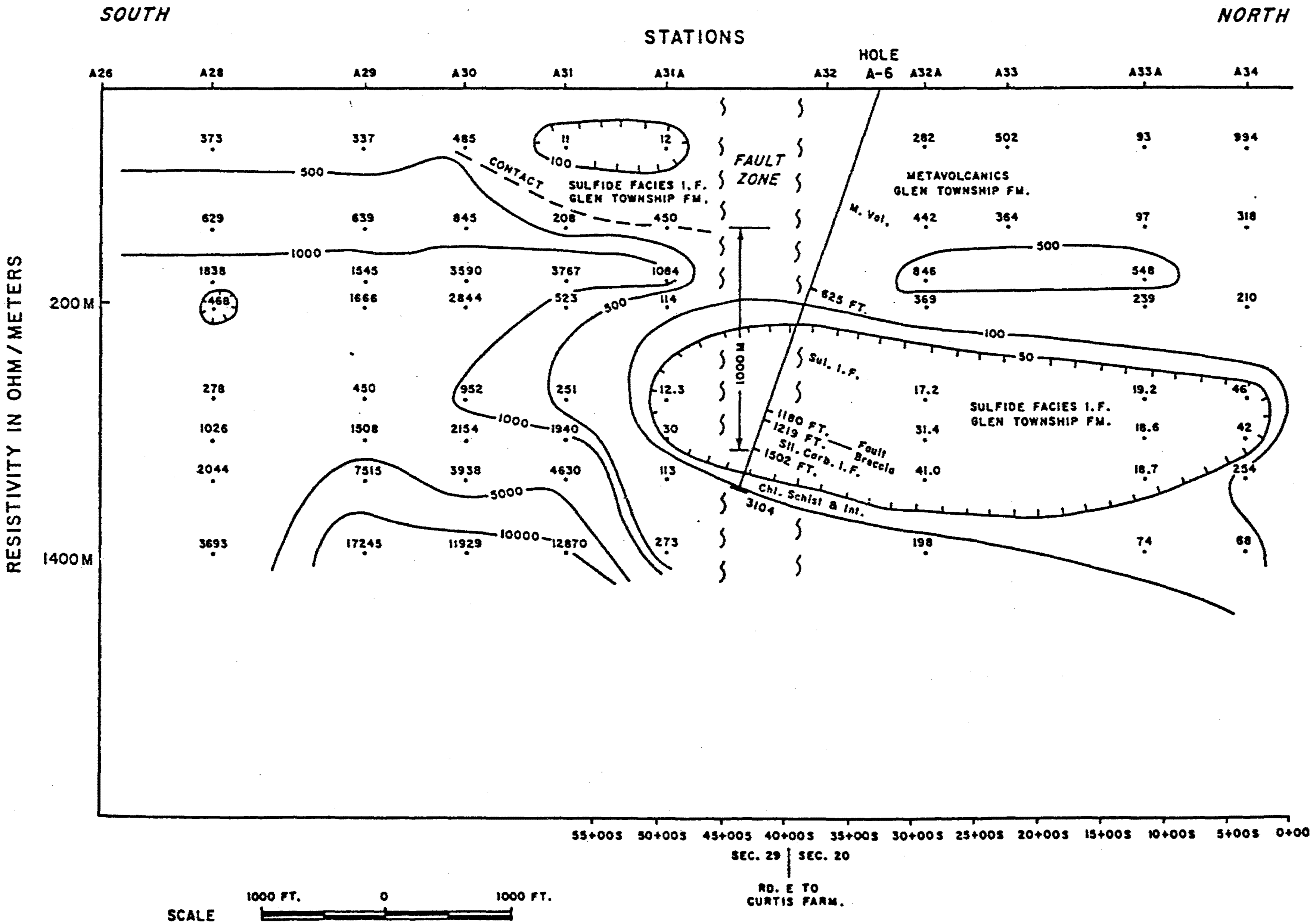


FIGURE 7 LITHOLOGIES AND PRELIMINARY ASSAYS HOLE A-6

LITH.	SAMPLE ID	DEPTH FEET	Ag PPM	As PPM	Au PPM	Cu PPM	Hg PPM	Mo PPM	Pb PPM	Sb PPM	Ti PPM	Zn PPM
META. VOL.	C-A-16101	58-58.6	<.044	<.896	.0012	141.4	<.448	.8172	2.782	<.896	<.896	119.1
	C-A-16102	169.5-170	<.043	<.862	<.001	16.88	<.431	<.431	1.995	<.862	<.862	166.9
	C-A-16103	229.5-230	<.048	3.795	<.001	7.872	<.480	4.380	3.603	<.961	<.961	17.57
	C-A-16104	483-483.5	<.046	3.371	<.001	6.702	<.464	<.464	5.795	<.929	<.929	177.6
SULFIDE I.F.	C-A-16105	623-623.5	<.046	<.922	<.001	44.53	<.461	<.461	2.144	<.922	<.922	87.03
	C-A-16106	627.5-628	.1428	2.964	.0036	194.2	.4908	13.61	12.73	<.862	<.862	37.64
META. VOL.	C-A-16107	676.5-677	.1052	<.929	<.001	55.77	<.464	2.714	9.689	<.929	<.929	150.4
SULFIDE I.F.	C-A-16108	707-707.5	.2981	3.212	<.001	150.7	.8548	7.141	10.00	<.957	<.957	170.6
	C-A-16109	745-745.5	.6280	<.922	.0027	227.0	.5930	12.33	23.72	<.922	<.922	67.36
	C-A-16110	750-750.5	.1925	1.555	<.001	97.38	.5131	1.641	28.63	<.865	<.865	136.3
TUFF?	C-A-16111	763-763.5	.2367	3.185	<.001	195.8	.8278	3.469	12.98	<.859	<.859	86.24
SULFIDE I.F.	C-A-16112	780-780.5	.0913	<.943	.0016	79.05	.9212	5.014	7.834	<.943	<.943	111.6
	C-A-16113	783-783.5	.1688	3.338	.0031	92.92	.4812	8.687	8.050	<.874	<.874	202.9
	C-A-16114	792-792.5	.1774	<.984	.0015	306.9	2.039	1.318	4.414	<.984	<.984	63.33
	C-A-16115	926-926.7	.3032	42.06	<.001	97.61	1.845	6.378	5.368	1.401	<.976	573.2
	C-A-16116	929.8-930.3	.4231	3.909	<.001	174.5	3.507	7.421	9.682	1.726	<.943	317.3
	C-A-16117	938.1-938.7	.3218	6.702	<.001	152.2	1.317	1.319	10.92	1.602	<.868	599.8
	C-A-16118	943-944.4	.2683	23.85	.0044	69.19	<.438	1.847	16.23	2.163	<.877	475.5
	C-A-16119	950-950.5	.1453	31.07	.0012	58.10	<.473	2.264	11.72	<.946	<.946	799.9
	C-A-16120	957.2-958	.2376	12.30	.0016	142.4	1.361	1.555	10.48	<.868	<.868	567.3
	C-A-16121	961.8-962.4	.2146	4.269	<.001	163.9	1.711	1.203	5.693	1.125	<.922	31.10
	C-A-16122	967.8-968.4	.1749	19.04	<.001	129.6	.5803	1.906	5.960	<.909	<.909	245.7
	C-A-16123	986.2-986.4	.3825	<.976	<.001	159.5	2.669	1.449	16.22	<.976	<.976	802.4
	C-A-16124	1019-1019.5	.7368	2.019	.0029	165.6	1.694	1.551	12.59	<.954	<.954	89.45
	C-A-16125	1060-1060.6	.7447	10.59	.0038	219.0	1.122	2.593	11.57	<.968	<.968	887.8
	C-A-16126	1086.9-1087.5	.6496	5.069	.0169	160.9	1.474	1.599	4.165	<.912	<.912	58.72
	C-A-16127	1118-1119	2.367	4.636	.0080	687.7	6.452	4.216	40.11	<.899	<.899	2620.
	C-A-16128	1169.3-1170.0	.8106	9.762	.0219	428.0	.7872	8.034	12.96	<.925	<.925	429.0
FAULT BRECCIA	C-A-16129	1197.4-1198.0	.0675	19.93	.0025	15.46	.5527	1.671	6.366	<.922	<.922	32.13
	C-A-16130	1216-1216.6	<.046	319.9	.0076	28.09	<.466	1.902	6.734	<.932	<.932	41.16
CARBONATE OXIDE I.F.	C-A-16131	1218-1218.8	.3087	111.5	.0143	190.3	1.595	3.690	14.74	<.909	<.909	335.1
	C-A-16132	1306-1306.6	.1854	<.932	.0028	43.87	2.470	1.261	29.88	<.932	1.363	23.58
	C-A-16133	1364.1-1364.6	1.273	66.92	.0136	2417.	2.401	.9043	28.69	<.919	<.919	25.72
	C-A-16134	1495.3-1495.8	.1570	<.968	.0041	491.9	2.381	.7300	1.719	<.968	<.968	228.7
CHLORITE SERICITE SCHIST	C-A-16135	1503-1503.5	.1096	<.869	.0322	369.6	.9243	2.133	12.62	<.896	<.896	41.10
	C-A-16136	1506-1506.6	.1479	.2004	.2309	46.43	.2156	.1738	15.77	<.110	.2264	12.89
	C-A-16137	1510.7-1511.5	.0501	<.943	.0169	35.68	.8295	1.448	22.78	<.943	1.828	93.80
DIA. DIKE	C-A-16138	1705.2-1705.8	.1041	3.253	.0031	71.78	.4603	1.150	5.203	<.915	3.957	86.04
META. VOL.	C-A-16139	1783.8-1784.4	.0954	<.943	.0026	46.21	1.249	1.961	12.43	<.943	3.798	50.72
	C-A-16140	1791.7-1792.3	<.045	<.919	.0019	23.03	<.459	1.136	5.485	<.919	1.620	55.38
	C-A-16141	1823.7-1824.4	.2255	1.748	.0024	40.74	<.444	1.307	6.748	<.889	1.512	51.67
	C-A-16142	1836.5-1837	.0723	1.408	.0039	77.67	2.570	2.318	7.571	<.957	<.957	95.67
	C-A-16143	1854-1855	.1654	<.939	.0078	167.5	.9748	2.037	13.63	<.939	<.939	96.03
	C-A-16144	1646.9-1647.7	.1608	<.984	.0022	123.7	1.338	1.035	4.545	<.984	<.984	164.4
	C-A-16145	1703-1703.6	.1066	<.986	.0016	90.71	<.484	1.251	2.182	<.968	<.968	46.75
	C-A-16146	1708.8-1709.3	.0943	2.783	.0014	84.78	.8895	.7645	6.504	<.902	<.902	86.55
	C-A-16147	1857.8-1858.3	.0575	<.899	.0028	188.4	1.149	2.274	5.637	<.899	<.899	45.67
	C-A-16148	1873-1873.5	.0830	2.174	<.001	34.47	.6916	1.625	3.334	<.972	1.985	39.37
	C-A-16149	1884.5-1884.9	.3683	2.629	.0209	131.6	1.237	2.261	23.12	<.943	<.943	79.83
	C-A-16150	1906.4-1906.9	<.047	1.458	.0020	28.13	<.478	.8670	3.457	<.957	<.957	90.80

[box] Ag>1.0 As>40 Au>0.01 Cu>300 Hg>2.0 Mo>8.0 Pb>25 Sb>1 Ti>1 Zn>450 PPM

~ FAULT ZONE [box] GLEN TOWNSHIP FM.

LOG OF DRILL HOLE A-6
by B. Frey

0'-40' OVERBURDEN - no samples.

40'-482.8' DARK GREEN GREY CHLORITIC, VERY FINE TO FINE-GRAINED METATUFFS AND PILLOWED METABASALTS.

Tuffs are basaltic-andesitic with local dacite tuffs containing 1-2 mm quartz eyes. Tuffs are fairly calcareous. Pillows are essentially aphanitic and have relatively carbonate free centers, but some have calcareous rims, especially those with altered amygdales. Interpillow material is often white, calcareous, with biotite-chlorite rimming the pillows; and may be with or without flattened fragmental material to 2 cm.

Approximate Modes(?):

	Pillows	Tuffs	Interpillow Material
Chlorite	40%	30-55%	0-30%
Hornblende-Actinolite(?)	30%	10-30%	?
Carbonate	(some to 5%)	10-35%	40-90%
Biotite		5-20%	10-30%
Quartz		0-20% (80% in cherty tuffs)	
Plagioclase?	30%	?	?
Pyrite-Pyrrhotite?		1-5%	1-3%

Bedding-schistosity generally angles 55-65° to core axis. Rock is relatively massive, although there is some flattening and a weakly to moderately developed foliation. Some basalt "pillows" may be folds, but unlikely. Minor, generally hairline fractures are ubiquitous, with calcite, quartz, chlorite, pyrite-pyrrhotite, and local dolomite fillings (some forming local pseudobreccias).

The interval 188'-193' contains a 2 cm dolomite-calcite-pyrite-quartz-chlorite segregation, filled shear-vein that runs subparallel to the core axis. A few scattered quartz-calcite-dolomite veins to .5' also occur and are typically at a high angle to the core axis. Some are brecciated internally, along with some of the interpillow material which could also be coarse fragmental volcanics. Local silicification selvages also occur adjacent to some veins. Tuff beds-laminae are locally very cherty-siliceous, especially within 40-76' and 154-285'. Local, minor, shiny crystalline graphite increases toward the base. Pyrite-pyrrhotite occurs as small amounts (increasing slightly downward) within veinlets, and as grains and disseminations within tuffs (especially more biotitic areas) and interpillow material, along with a trace of chalco-pyrite.

Core is locally broken, especially near the top.

482.8'-550.7' INTERBEDDED DARK GREEN GREY METATUFFS, METABASALTS AND DARK BROWN, GREEN AND LIGHT-MEDIUM GREY MOTTLED BIOTITIC-CALCAREOUS METAMORPHOSED, LAPILLI TUFF-AGGLOMERATE(?)-BRECCIA.

Breccia-agglomeratic intervals are 483'-491.6', 505.2'-530', and 543'-550.7'. Tuffs are similar to previous unit, and are chloritic and locally calcareous with local white, calcite blebs to 5 mm (amygdales?) and biotitic fragments. Some intervals may be flow basalts. Agglomerate-breccia is recrystallized, somewhat flattened with fragments to .3', but generally smaller. Units are typically more siliceous-biotitic than finer tuffs which are chloritic. Fragments are typically basalt-andesite-dacite with local cherty-siliceous masses. A few thin cherty laminae, and intervals contain flattened to wispy siliceous fragments (former glass shards?). Some fragments have thin, white, siliceous alteration(?) rinds.

Rock has local circular-oblate structures (less than 1 cm) with thin veinlets reminiscent of perlitic cracking.

Rock ranges from relatively massive in metabasalt flows to schistose in agglomerate-breccia.

550.7'-610.3' GREEN GREY, VERY FINE TO MEDIUM-GRAINED, METABASALT-ANDESITE TUFF AND METADIABASE(?).

Rock is chloritic, massive to semischistose, with local post-deformational chlorite porphyroblasts (some hornblende?). It is also locally calcareous (to 30%), especially 566'-588'. Local calcite masses to 2 cm with minor chlorite occur within 596'-603'. Local cherty-siliceous sediment intervals (with laminations) occur at 563.8'-564.2', 564.5'-564.8', 566.7'-566.9', and 595.1'-595.5'. These contain elongate tourmaline needles, minor pyrrhotite with local bornite colors, and/or ½ mm porphyroblastic hornblende or chlorite. Several 2-6 cm calcite, quartz, chlorite, biotite, pyrrhotite veins-segregations occur within 572'-588'. These often have minor slickensides.

610.3'-624.9' PALE GREY, VERY FINE TO MEDIUM GREY, MODERATELY-POORLY SORTED TUFFACEOUS METAGREYWACKE.

Rock is calcareous, biotitic, siliceous, with minor dark grey siltstone and pyrrhotite-rich segments (to 40% with rock average 5%). Rock is massive to locally schistose. Core is somewhat magnetic. Somewhat carbonaceous toward contacts.

624.9'-631.5' LAMINATED PYRRHOTITE, BLACK SILICEOUS SILTSTONE AND LIGHT COLORED CARBONATE.

Pyrrhotite/siltstone/carbonate RATIOS = 1/3/2. Carbonate laminae are often micaceous-chloritic. Bedding is locally disrupted and veined (quartz, calcite, pink dolomite, pyrrhotite). Siltstone coloration probably due to graphite, but little rubs off on hands. Rock is fairly magnetic.

631.5'-667.0' GREEN GREY, FINE-GRAINED, CALCAREOUS, CHLORITIC SCHIST-ANDESITE METATUFF.
Unit contains local plagioclase phenocrysts. Biotite increases toward base (average less than 2%). Unit contains 5% pyrrhotite at top and decreases with depth. Original fragments to 1 cm(?).

667.0'-674.7' GREEN-TAN GREY, FINE-GRAINED, CALCAREOUS, CHLORITIC, BIOTITIC, METATUFF SCHIST.
Unit becomes more biotitic, crenulated and pyrrhotitic with depth. Unit also contains a trace of chalcopyrite. A medium-grained white marble vein-layer occurs in 667.2'-668.0'

674.7'-792.9' INTERLAMINATED-THINLY INTERBEDDED DARK GREY GRAPHITIC SILTSTONE-PHYLLITE, POORLY SORTED GREYWACKE, WHITE RECRYSTALLIZED CHERT, PYRRHOTITIC IRON FORMATION, WHITE CALCAREOUS SCHIST, AND TAN GREY CALCAREOUS PYRRHOTITIC METATUFF SCHIST (ratios of 8/1/2/3/4/4).
Rock varies from schistose to phyllitic to massive. Unit contains local fold closures and crenulations. Chert "clasts" up to 5 cm may result from boudinage of beds. Largest metatuff bed occurs at 749.9'-757.7' and contains 2-5% pyrrhotite. More pyrrhotite (and graphite-rich) siltstone-phyllite intervals (sulfide iron-formation) are 702'-708.5' (10-15% pyrrhotite), 740.0'-749.9'(7-15%), 757.7'-765' (10-20%), and 784'-792.9' (5-70%). Pyrrhotite from 791.0'-792.6' is locally massive. Largest chert beds occur from 788.6'-789.3' and 792.6'-792.9'. Unit is moderately magnetic and is locally a good conductor, and locally contains a few scattered calcite and dolomite veins.

792.9'-907.6' GREEN GREY, FINE TO COARSE-GRAINED, ANDESITIC TO LATITIC(?) METATUFF AND FINE TO VERY COARSE-GRAINED METAGABBRO.
Rock is generally massive, recrystallized to semischistose; and is predominantly chlorite, biotite, hornblende(?), calcite, plagioclase, quartz(?) with 1-3% pyrrhotite and trace chalcopyrite. Unit contains local minor calcite veins with biotite and fine-grained black tourmaline, especially within 810'-822'. Tourmaline is also scattered in trace amounts, although 842.3'-842.7' contain 3-10%. Metagabbro occurs as irregular, thin dikes-veins and is locally very coarse and ophitic (860'-861.5').

907.6'-1188.6' INTERLAMINATED-THINLY INTERBEDDED METAMORPHOSED BLACK GRAPHITIC SILTSTONE, SULFIDES, PALE GREY RECRYSTALLIZED CHERT AND TAN, VARIABLY SILICEOUS SIDERITE (ratios of 3/1/1/1).
Rock is phyllitic to massive-recrystallized with local fold closures, brecciation, boudinage, and graphitic slip surfaces. Sulfides are largely non-magnetic pyrrhotite and minor recrystallized pyrite with 1% chalcopyrite (oxidized with bornite colors). Graphitic siltstone has local

melanterite effluorescence. Relatively siliceous-free siderite may be medium-grained recrystallized. All lithologies-compositions show various amounts of admixture. Cherts are recrystallized with the layers variable deformed-boudinaged which, in general, increases with depth and grades into brecciation and includes much pressure solution along stylolitic surfaces. Difficult to tell if all fragmentation resulted from deformation and/or if some resulted from sedimentation-diagenesis. Unit becomes more chloritic (tuffaceous?) with depth and local post-deformational blastic growth of chlorite. Bedding (S_0-S_1) is predominantly 45-65° to core axis.

1188.6'-1218.5' GREY TO GREEN, FINE-GRAINED, CRENULATED TO MASSIVE CHLORITIC-GRAPHITIC VARIABLY SILICEOUS SCHIST (META-TUFFACEOUS SILTSTONE) AND WHITE-CREAM COLORED CHERT BRECCIA-CONGLOMERATE.
Larger chert fragments (to 15 cm) grade into disrupted beds. The matrix is chloritic graphitic schist and it also makes up 20% of the fragments. Most fragments are less than 3 cm and vary from angular to subrounded. Some appear sericitic. Thin interbeds lacking chert fragments may indicate a sedimentary origin for these breccias. Foliation is moderately developed at best and appears to post date brecciation. Recrystallization obscures this somewhat. Local chlorite and amphibole is porphyroblastic. Chloritic intervals contain pyrrhotite as blebs, fragments, and laminae and may be moderately magnetic. Bedding (S_0-S_1) is predominantly 50-60° to core axis.

1218.5'-1493.7' METAMORPHOSED, LAMINATED OXIDE AND SILICATE IRON-FORMATION WITH CHERT AND LESSER SULFIDIC-GRAPHITIC LAMINAE.
Much of the "silicate iron formation" is somewhat sideritic, amphibolitic, and probably tuffaceous. These layers get up to 3 cm, while most laminae are less than 5 mm.
The black sulfide-graphite-(manganiferous?) laminae comprise less than 5% of the unit and maintains minor melanterite effluorescence. Sulfide is usually too fine to be seen. Grey magnetite-rich laminae comprise 20-35% of the rock, with chert comprising 10-15%. The rest is silicates (chlorites, amphiboles). Amphiboles appear more actinolitic than gruneritic(?). The rock has been recrystallized, with coarser porphyroblastic growth of amphiboles and magnetite. This has also obliterated any bedding parallel schistosity. Prominent bedding occurs in general 25-70° to core axis with angle decreasing downward. Minor shears, veins, and strain slip cleavage occurs locally and generally cuts across (55-65° to core axis) bedding. These veins range from quartz to siderite-dolomite and often have minor remobilized pyrrhotite, pyrite, and chalcopyrite.
Interval from 1360'-1400' contains slightly more chalcopyrite (stratiform or stratiform replacement) with the sulfides more readily associated with specific oxide-silicate laminae. Chalcopyrite often has iron sulfide

rims within these magnetite rich laminae. Chalcopyrite amounts still are less than 1% except in veins where it has been concentrated. Intervals 1218.5'-1236' and 1492.8'-1493.7' do not contain any magnetite laminae, with the latter interval containing increasing chlorite, pyrite-pyrrhotite and chalcopyrite (3-5% total sulfides).

1493.7'-1501.9' SOMEWHAT CALCAREOUS, FINE-GRAINED, GREEN CHLORITE-BIOTITE-AMPHIBOLE SCHIST.
Rock is laminated except in 1493.1'-1497.1" where fragments are coarser, representing a recrystallized volcanic-sedimentary or tectonic breccia(?). This interval is also more sulfide-rich with up to 5% irregular pyrite-pyrrhotite-chalcopyrite blebs. Laminated interval appears tuffaceous, is locally graphitic and contains local quartz tension veins. These quartz veins are up to 3 mm thick and are roughly perpendicular to a poorly to moderately developed strain slip cleavage. Bedding runs about 35° to core axis with strain slip cleavage about 10° to core axis.

1501.9'-1640.0' LIGHT TO MEDIUM GREY, VERY FINE-GRAINED, LAMINATED-SILICEOUS, SLIGHTLY CALCAREOUS, GRAPHITIC SERICITIC PHYLLITE (ORIGINALLY SILTSTONES?).
The upper 6' is the most siliceous, is the site of a fold closure, minor brecciation and is cut by quartz veins with lesser carbonate, biotite, pyrrhotite and later chlorite. The most graphitic interval is 1506'-1514' with graphite, in general, decreasing downward. Crenulations-strain slip cleavage development decreases downward. Minor hairline gash veins and tension voids with quartz and pyrite crystals have formed associated with this. Bedding is 55-65° to core axis with crenulation cleavage running across bedding at 45° to the core axis.

1640.0'-1722.6' MEDIUM GREEN GREY, VERY FINE- TO MEDIUM-GRAINED, CALCAR-EOUS, METAGABBRO DIKE OR SILL.
Unit is coarsest in center with grain size decreasing towards contacts. Mode include 40-50% plagioclase (now calcite and saussurite), 50-55% pyroxene (now uralite), 5-10% biotite, and ½% combined chalcopyrite and pyrrhotite. Unit contains local veins (quartz, carbonate and chlorite) and shears (associated with most veins). Sheared areas tend to be more chloritic, with a more schistose fabric. Rock is otherwise massive. Quartz-pyrrhotite vein (1 cm) from 1696.3'-1697.4' is a simple tension vein.
Shear foliation measures 55° to core axis.

1722.6'-2002.2' LIGHT TO MEDIUM-GREY LAMINATED SERICITIC PHYLLITE WITH LESSER LIGHT GREY GREEN BEDS AND LAMINATED INTERVALS OF ANDESITIC(?) METATUFF PHYLLITE TO SEMISCHIST.
Slightly graphitic in places. Tuff intervals-laminae are more chloritic, and less sericitic than the grey laminae. Lighter grey laminae are siliceous-dolomitic-calcareous. Minor sedimentary sulfides occur in hairline laminae with

very minor and local remobilization. Laminated tuffs within 1722.6'-1730' and 2000'-2002.2' are more felsic-siliceous than the more massive calcareous tuff intervals such as 1750'-1762.3'. Tuffs are plagioclase (altered to calcite) phyric, and are calcareous in general. Strain slip cleavage is moderately to strongly developed in phyllites, especially in 1763'-1786', 1853'-1861', 1895'-1998' (scattered) which have multiple fold closures, disharmonic contortions, and quartz veins; with well developed strain slip cleavage below 1840'. Other intervals have closures and lesser developed cleavage. Scattered quartz, pyrrhotite, calcite veins also occur. Bedding occurs at all angles but is typically 60-75° to core axis. Cleavage appears folded and varies from 20° to about 60° to core axis (both dip across bedding).

2002.2'-2062.4' GREEN GREY, LOCALLY SHEARED, CALCAREOUS, METAGABBRO DIKE OR SILL.

Similar to 1640'-1722.6' except that a more pronounced chloritic schistose fabric is locally developed with shearing (not just near the finer grained contact). Quartz-calcite-biotite-chlorite veins-masses are also sheared. Shear fabric measures 40-80° to core axis. Some of the rocks near the contacts may be volcaniclastic. Unit is coarser away from the contacts, but it is asymmetric toward the base (deformation modified?).

2062.4'-2673.8' LIGHT TO MEDIUM GREY LAMINATED SERICITIC PHYLLITE WITH LOCAL PALE GREEN GREY METATUFF SCHIST.

Darker grey intervals are slightly more graphitic (nonconductive). Local laminae and thin beds of quartz-arenite are present. Strain slip cleavage is moderately-well developed with small fold closures (S and Z folds), and local quartz, calcite, pyrite, chlorite masses-veins. Folding is complex with 2 lineations (3 planar fabrics) locally. Bedding-first cleavage is found at all angles. Strain slip cleavage is typically 30-45° to core axis and is refracted across some beds, although this may also be folded locally.

Unit may contain some local, flattened, coarse, siliceous, volcaniclastic fragments (2086.5'-2089 and 2201.7'-2205') with 2-5% pyrrhotite-pyrite. The latter interval is definitely a sedimentary bed that is folded, while the former may be the same, only with more movement along cleavage planes.

Sulfides (pyrrhotite-pyrite with lesser chalcopyrite) generally are 1-2% with other local intervals (2137'-2159', 2233'-2245', 2326'-2338') with 3-4%. Sulfides are sedimentary with minor remobilization. Unit contains scattered quartz (both clear and milky), sericite, calcite veins-masses with local porphyroblastic pale chlorite, very minor pyrrhotite-pyrite and chalcopyrite; notably within 2246'-2261', 2393'-2407' and 2465'-2468'. The interval 2655.5'-

2673.8' is laminated pale grey tuffaceous sericitic chloritic phyllite without graphite. This contains slightly more disseminated sulfides (2-3%) and perhaps a higher proportion of chalcopyrite.

2673.8'-2749.5' LIGHT GREEN GREY, FINE TO MEDIUM-GRAINED, CALCAREOUS MUSCOVITIC, CHLORITIC, LOCALLY SCHISTOSE METATUFF WITH MAGNETITE.
Mode is 25% chlorite; 15% pale green muscovite?; 20% calcite; 15% dolomite; 5-10% quartz, plagioclase; 2-7% magnetite and 1-2% chalcopyrite and pyrrhotite. Rock appears fragmental, at least in part, although metamorphism obscures original textures. Rock could be tuffs or flows. Apparent grain size (2-3 mm) may indicate protolith was porphyritic if not equigranular coarse-grained (metagabbro?). Rock is massive except where it is schistose where sheared. Unit contains scattered veins-segregations to 2 cm; with schistosity of contacts measuring 35-45° to core axis. These are either quartz with or without calcite and/or minor tourmaline (2689.1'); or very coarse-grained calcite, chlorite, and muscovite with lesser quartz and local very coarse dolomite (vein centers 2720.5'-2737.5'). Veins typically are not folded, but oriented sheet silicates cut across the veins and country rock contacts. Veins are oriented 0-30° to core axis with shear foliation measuring 25-38° to core axis. Basal six feet with foliation grades into and may be sheared intrusive contact with metagabbro below. Some bedding-first cleavage laminae are slightly talcy.

2749.5'-2775.9' GREEN GREY MEDIUM TO FINE-GRAINED METAGABBRO DIKE OR SILL.
Similar to previous metagabbros with carbonate decreasing to less than 5% below 2758'. Upper contact was picked according to appearance of plagioclase porphyroblasts in schistose rocks of previous unit. These increase in size and number with depth and grades into a medium-grained gabbroic texture. The basal 6' has decreasing grain size and grades into a fine-grained chlorite semischist. Unit contains 1-2% pyrrhotite-chalcopyrite and scattered quartz veins with calcite that are less than 1 cm wide.

2775.9'-2934.0' INTERLAMINATED-INTERBEDDED, LIGHT TO DARK GREY, SERICITIC PHYLLITE; GREEN CHLORITIC, CALCAREOUS METATUFF PHYLLITE AND MINOR PALE GREY SILICEOUS METASILTSTONE.
Largest chloritic intervals are 2775.9'-2799' and 2808.4'-2812.5'. Core is talcy in places. Laminations are common throughout. Bedding-first schistosity typically measures 60-75° to core axis, although local fold closures occur with all other angles present. Crenulations and strain slip cleavage is moderately developed only locally. Unit contains few scattered quartz veins with minor calcite, chlorite, and pyrrhotite. The sulfide total (pyrrhotite-pyrite-chalcopyrite) is generally 1-4%.

2934.0'-3104.0' INTERBEDDED-LAMINATED LIGHT TO DARK GREY SERICITIC PHYLLITE WITH GRAPHITE; PALE GREY, VERY FINE-GRAINED DOLOMITIC MARBLE; PALE GREY, VERY FINE-GRAINED QUARTZITE; and laminae-beds with various proportions of these.
Most of the lighter colored quartz and carbonate sedimentation falls within 2942'-3008'. Some quartzite intervals may(?) be recrystallized cherts. Some are relatively dark-graphitic. Scattered minor sulfide (pyrrhotite-pyrite) laminae masses occur locally, otherwise it is disseminated 1-4%. Scattered, early quartz veins occur locally with minor calcite, chlorite, pyrrhotite, and muscovite. Local sections of core contain minor, brittle (late) tension veins, mainly 2939.5'-2966' and 3001.0'-3001.5'. The first interval contains locally numerous hairline calcite veins and voids with the core locally broken, especially 2958'-2964'. The second interval is a brittley, boudinaged quartz vein and tan phyllite tectonic sliver, with minor calcite, coarse muscovite, fine biotite and scattered dark garnets and infilling quartz. The interval 2997'-3001' is a light to medium brown biotitic, tuffaceous(?) phyllite with 3-5% pyrrhotite-pyrite. Bedding, first cleavage runs, in general, 70-90° to core axis, although a few minor fold closures exist (with bedding at other angles to core axis). Strain slip cleavage is only locally and moderately developed and runs about 40° to core axis. Drill hole gets darker, more graphitic toward base, but is still not particularly conductive. Slip surfaces can be slightly talcy.

3104' TOTAL DEPTH

Analytical results of drill hole A-6 are shown in Table 3 and Figure 7.

Table 3

Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CA 16045	A-6	60-72	48.80	12.70	13.40		4.27	10.00	2.77		0.93	2.02
CA 16052	A-6	74-82	48.00	11.00	14.00		3.58	11.00	1.71		1.10	2.67
CA 16057	A-6	144-150	48.80	12.70	13.90		3.79	8.98	2.06		1.16	2.55
CA 16061	A-6	186-194	39.90	14.10	13.60		7.25	7.03	3.19		0.49	2.09
CA 16066	A-6	392-400	49.40	13.00	13.30		3.62	8.87	2.89		0.98	2.63
CA 18343	A-6	486-496	52.40	12.60	13.40		3.23	6.52	2.38		2.03	2.38
CA 18349	A-6	544-554	53.20	13.20	13.20		3.54	5.64	2.26		3.09	2.34
CA 18355	A-6	562-574	45.10	14.30	13.10		5.42	8.85	2.69		1.03	1.92
CA 18362	A-6	576-579	42.20	14.30	13.00		6.50	9.85	2.74		0.69	1.76
CA 18364	A-6	595-597	45.00	14.30	14.10		6.60	8.85	2.26		0.42	1.66
CA 18365	A-6	610-618	49.20	16.90	9.89		3.65	5.71	4.07		2.43	1.47
CA 18370	A-6	628-634	40.50	14.30	16.30		5.01	7.73	1.75		1.06	1.56
CA 18373	A-6	694-706	45.70	8.60	21.90		4.20	6.47	0.79		0.96	1.39
CA 18380	A-6	783.5-791	39.10	5.40	33.70		2.49	4.25	0.07		1.10	0.65
CA 18385	A-6	791.5-794	43.50	8.14	29.30		4.07	2.96	0.89		1.09	0.92
CA 18390	A-6	810-822	42.20	13.60	11.00		5.66	12.20	2.45		0.40	1.26
CA 18397	A-6	834-846	45.40	13.40	11.40		6.56	11.40	2.45		0.47	1.32
CA 18905	A-6	1075-1086.9	48.00	2.80	31.00		2.33	3.47	0.08		0.66	0.13
CA 18912	A-6	1164-1166	49.80	1.04	27.70		2.73	3.32	0.01*		0.18	0.07
CA 18913	A-6	1182-1194	41.00	3.52	32.90		2.84	3.35	0.20		0.36	0.16
CA 18920	A-6	1224-1238	33.40	1.45	44.80		2.91	3.22	0.15		0.53	0.09
CA 18928	A-6	1254-1266.1	38.40	2.06	44.70		2.74	1.88	0.28		0.66	0.11
CA 18935	A-6	1390-1404	35.60	1.94	43.80		2.57	2.17	0.21		0.65	0.10
CA 18943	A-6	1474-1476	33.80	1.48	43.50		2.11	2.47	0.17		0.52	0.08
CA 18944	A-6	1495.8-1503	49.00	11.80	26.30		3.39	1.44	0.84		0.21	0.44
CA 18949	A-6	1503.5-1506	68.40	15.30	4.96		1.07	0.58	4.39		2.38	0.47
CA 18950	A-6	1506.6-1509.1	78.10	9.10	4.39		0.96	0.45	2.92		0.98	0.29
CA 18951	A-6	1513.9-1530	62.10	19.30	6.08		1.64	0.14	1.15		4.73	0.66
CA 18960	A-6	1574-1580	64.70	18.40	5.57		1.34	0.31	1.37		4.26	0.61
CA 18961	A-6	1640-1654	46.30	12.40	14.80		4.28	8.52	2.10		1.23	2.02
CA 18969	A-6	1672-1674	47.60	14.60	13.60		5.18	10.70	2.53		0.42	1.67
CA 18970	A-6	1694-1702	47.00	14.50	11.60		5.88	11.50	2.27		0.39	1.32
CA 18975	A-6	1722-1734	60.10	19.20	6.10		1.90	1.22	2.31		3.79	0.74
CA 18982	A-6	1750-1754	46.70	14.30	10.60		5.44	8.40	2.06		0.86	1.44
CA 18983	A-6	1762-1776	59.90	20.20	5.84		1.76	0.73	1.05		4.79	0.68
CA 18991	A-6	1817.2-1820	53.90	18.40	8.55		2.79	3.67	1.27		3.65	1.01
CA 18992	A-6	1820-1836	55.90	20.50	8.62		2.30	0.77	1.35		4.41	0.81
CA 18997	A-6	1855-1857.8	62.60	16.70	7.64		2.11	1.47	0.95		3.57	0.64
CA 18998	A-6	1858.3-1860.4	56.80	21.10	8.03		2.25	0.31	1.41		4.57	0.75
CA 18999	A-6	1928-1940	59.70	19.70	7.70		2.17	0.16	1.07		3.99	0.74
CA 19047	A-6	1940-1942	58.40	19.60	9.37		2.61	0.13	1.37		3.44	0.71
CA 19006	A-6	1944-1956	59.30	19.30	8.54		2.32	0.21	1.32		3.61	0.72
CA 19013	A-6	1994-2010	52.40	17.20	9.53		4.20	5.61	1.55		2.07	1.00
CA 19022	A-6	2032-2048	47.60	14.90	11.00		6.12	11.40	2.02		0.17	1.20
CA 19031	A-6	2054-2066	51.40	15.60	11.20		4.53	7.50	2.39		0.96	1.33
CA 19038	A-6	2066-2080	60.60	18.80	7.90		2.37	0.57	1.24		3.33	0.70
CA 19046	A-6	2086.5-2090.5	65.40	14.20	8.58		2.22	2.19	1.84		1.59	0.47
CA 19052	A-6	2133-2149	60.20	19.30	8.42		2.33	0.31	1.45		3.29	0.71
CA 19061	A-6	2177.5-2180.2	59.20	19.60	8.87		2.37	0.67	1.42		3.30	0.71
CA 19062	A-6	2246-2262	58.40	19.80	8.64		2.46	0.91	1.90		3.19	0.71
CA 19071	A-6	2321.8-2338	60.30	19.50	8.32		2.11	0.31	1.33		3.47	0.70

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CA 19080	A-6	2352-2352.5	62.30	19.00	6.78		2.00	0.18	1.09		3.52	0.69
CA 19081	A-6	2393-2407	62.60	17.70	7.36		2.11	0.73	1.49		2.86	0.65
CA 19089	A-6	2415.9-2416.3	89.90	4.21	1.44		0.31	0.38	0.75		0.53	0.16
CA 19096	A-6	2465.8-2467	63.70	17.50	7.13		1.96	0.89	2.61		2.20	0.61
CA 19097	A-6	2654.5-2656	57.90	20.00	8.94		2.42	0.25	0.88		3.75	0.78
CA 19098	A-6	2668-2684	49.60	15.60	10.70		4.45	6.28	2.12		1.43	1.20
CA 19129	A-6	2684-2700	43.60	13.90	11.30		6.09	10.70	2.30		0.09	1.26
CA 19138	A-6	2700-2716	43.60	14.20	10.30		6.33	11.70	2.17		0.18	1.13
CA 19147	A-6	2716-2732	38.40	14.60	10.40		6.87	12.30	1.75		0.81	1.07
CA 19156	A-6	2732-2740	41.00	14.10	9.96		6.54	12.00	1.94		0.54	1.13
CA 19165	A-6	2740-2758	44.90	14.30	10.70		6.98	12.00	1.66		0.32	1.17
CA 19171	A-6	2759-2760.3	47.60	14.80	11.50		7.27	12.50	1.55		0.26	1.27
CA 19172	A-6	2762-2778	45.80	14.00	12.20		6.55	11.20	1.77		0.28	1.44
CA 19180	A-6	2800.2-2800.7	64.80	17.30	6.86		1.83	0.77	1.63		3.07	0.66
CA 19183	A-6	2810-2826	63.30	17.60	7.58		1.95	0.53	1.31		3.23	0.67
CA 19189	A-6	2932.5-2933.2	59.70	17.70	8.82		3.10	0.35	0.16		5.13	0.72
CA 19194	A-6	2939.0-2950.2	14.00	2.47	1.25		18.60	25.20	0.03		0.69	0.11
CA 19200	A-6	2958-2966	6.48	0.86	0.64		20.30	28.80	0.01		0.24	0.05
CA 19205	A-6	2998-3001	59.20	19.80	5.39		2.96	0.45	0.16		6.77	0.65
CA 19206	A-6	3001-3001.6	11.50	2.19	2.98		17.00	26.50	0.01*		0.74	0.20
CA 19207	A-6	3004-3008	50.40	9.71	11.30		6.69	8.94	0.23		1.31	0.39

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	P2O5 %	MNO %	CO2 %	LOI %	S %	CL PPM	F PPM	CU PPM	NI PPM	CR PPM
CA 16045	A-6	60-72	0.34	0.20	3.76	3.77	0.20	50	810	96	190*	70
CA 16052	A-6	74-82	0.50	0.23	4.44	4.70	0.23	100	950	170	170*	90
CA 16057	A-6	144-150	0.49	0.22	3.34	3.62	0.11	50	1000	38	180*	70
CA 16061	A-6	186-194	0.53	0.22	7.66	9.85	0.03	550	740	9	210	40
CA 16066	A-6	392-400	0.53	0.20	2.87	3.39	0.03	150	960	36	190*	70
CA 18343	A-6	486-496	0.64	0.21	2.26	2.16	0.14	100	1200	22	170*	60
CA 18349	A-6	544-554	0.69	0.20	1.14	1.47	0.16	200	1200	30	180*	90
CA 18355	A-6	562-574	0.41	0.19	4.49	5.46	0.34	100	970	85	180*	110
CA 18362	A-6	576-579	0.48	0.18	5.74	6.47	0.65	50	820	77	180*	120
CA 18364	A-6	595-597	0.33	0.18	3.04	4.46	0.65	50	790	420	160*	110
CA 18365	A-6	610-618	0.33	0.13	3.47	3.93	0.89	100	920	83	180*	90
CA 18370	A-6	628-634	0.29	0.14	5.07	6.00	2.98	50*	820	100	160*	90
CA 18373	A-6	694-706	0.50	0.36	6.19	7.16	3.28	450	850	91	150*	150
CA 18380	A-6	783.5-791	0.25	0.65	5.11	10.80	9.49	50	700	150	150*	100
CA 18385	A-6	791.5-794	0.26	0.34	2.45	6.47	6.23	100	540	160	150*	120
CA 18390	A-6	810-822	0.23	0.22	7.82	9.93	0.10	50*	340	220	160*	100
CA 18397	A-6	834-846	0.21	0.22	4.30	5.54	NIL	50	350	78	170*	140
CA 18905	A-6	1075-1086.9	0.42	0.08	11.10	11.20	3.78	50	590	62	120*	90
CA 18912	A-6	1164-1166	0.32	0.13	17.10	14.00	0.71	50	280	45	100*	70
CA 18913	A-6	1182-1194	1.81	0.99	12.50	13.20	0.66	450	1300	59	130*	80
CA 18920	A-6	1224-1238	0.56	1.99	11.80	10.30	NIL	750	230	21	140*	40
CA 18928	A-6	1254-1266.1	0.68	1.60	5.88	6.62	0.10	450	330	76	150*	60
CA 18935	A-6	1390-1404	0.67	2.14	9.85	10.20	NIL	500	290	41	140*	50
CA 18943	A-6	1474-1476	0.79	2.22	13.80	13.20	0.03	550	420	21	130*	50
CA 18944	A-6	1495.8-1503	0.28	0.30	1.60	4.93	0.62	550	260	270	140*	120
CA 18949	A-6	1503.5-1506	0.05	0.06	0.55	2.00	0.14	250	320	100	150*	210
CA 18950	A-6	1506.6-1509.1	0.03	0.05	0.47	1.62	NIL	250	190	5	110*	230
CA 18951	A-6	1513.9-1530	0.08	0.03	0.03	3.23	0.02	50*	550	30	150	140
CA 18960	A-6	1574-1580	0.09	0.04	0.11	3.00	NIL	50	520	30	120*	120
CA 18961	A-6	1640-1654	0.37	0.24	5.09	6.23	0.03	250	760	56	160*	50
CA 18969	A-6	1672-1674	0.26	0.21	0.52	1.62	0.05	250	600	65	150*	40
CA 18970	A-6	1694-1702	0.21	0.19	2.63	3.62	0.07	200	400	73	150*	70
CA 18975	A-6	1722-1734	0.07	0.05	0.73	3.39	NIL	50*	380	15	150	120
CA 18982	A-6	1750-1754	0.22	0.15	6.52	8.47	NIL	50*	520	71	170*	90
CA 18983	A-6	1762-1776	0.07	0.04	0.47	3.47	0.06	150	630	30	150*	180
CA 18991	A-6	1817.2-1820	0.12	0.10	2.86	5.31	0.05	50*	530	25	290	130
CA 18992	A-6	1828-1836	0.09	0.08	0.49	4.08	0.28	100	720	86	160*	160
CA 18997	A-6	1855-1857.8	0.39	0.07	0.71	3.62	0.50	150	550	65	140*	180
CA 18998	A-6	1858.3-1860.4	0.06	0.06	0.14	4.00	0.31	50*	360	70	160*	170
CA 18999	A-6	1928-1940	0.04	0.05	0.06	3.70	0.08	50	540	31	160*	170
CA 19047	A-6	1940-1942	0.05	0.06	0.01	3.93	0.10	50	630	26	20*	140
CA 19006	A-6	1944-1956	0.07	0.05	0.04	3.93	0.19	100	380	57	160*	180
CA 19013	A-6	1994-2010	0.12	0.11	3.35	5.85	0.07	50	340	47	170*	150
CA 19022	A-6	2032-2048	0.19	0.18	3.62	5.54	0.01	100	520	110	170*	110
CA 19031	A-6	2054-2066	0.19	0.16	2.54	4.62	0.17	100	330	95	170*	100
CA 19038	A-6	2066-2080	0.07	0.05	0.26	3.54	0.20	50*	520	48	20*	150
CA 19046	A-6	2086.5-2090.5	0.07	0.07	1.32	3.00	0.29	150	330	44	100*	130
CA 19052	A-6	2133-2149	0.05	0.04	0.07	3.93	0.59	50*	610	69	170*	170
CA 19061	A-6	2177.5-2180.2	0.05	0.05	0.26	3.85	0.39	50	520	57	160*	160
CA 19062	A-6	2246-2262	0.06	0.05	0.45	4.00	0.36	100	520	63	170*	170
CA 19071	A-6	2321.8-2338	0.07	0.04	0.02	3.85	0.39	50	730	91	160*	150

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	P2O5 %	MNO %	CO2 %	LOI %	S %	CL PPM	F PPM	CU PPM	NI PPM	CR PPM
CA 19080	A-6	2352-2352.5	0.05	0.04	0.01*	3.54	0.04	50*	340	37	210	150
CA 19081	A-6	2393-2407	0.09	0.06	0.23	3.16	0.07	50	360	47	170*	170
CA 19089	A-6	2415.9-2416.3	0.07	0.02	0.08	0.77	NIL	50	150	30	90	180
CA 19096	A-6	2465.8-2467	0.10	0.06	0.14	2.62	0.08	50	290	47	100*	140
CA 19097	A-6	2654.5-2656	0.06	0.06	0.07	3.85	0.18	100	550	50	180*	160
CA 19098	A-6	2668-2684	0.17	0.14	4.56	7.39	0.04	50	340	83	190*	90
CA 19129	A-6	2684-2700	0.20	0.18	7.07	10.20	0.04	50*	290	110	200*	80
CA 19138	A-6	2700-2716	0.18	0.17	7.42	10.40	0.04	50	360	110	200*	100
CA 19147	A-6	2716-2732	0.17	0.20	9.48	12.70	NIL	200	350	68	220	110
CA 19156	A-6	2732-2748	0.17	0.18	8.73	11.90	NIL	50	280	65	200*	140
CA 19165	A-6	2748-2758	0.18	0.17	4.14	6.62	0.04	100	320	68	180*	170
CA 19171	A-6	2759-2760.3	0.20	0.18	0.32	1.93	0.02	50	350	100	230	180
CA 19172	A-6	2762-2778	0.23	0.19	2.83	5.16	0.11	100	650	120	210*	110
CA 19188	A-6	2808.2-2808.7	0.05	0.06	0.38	2.93	0.19	50*	500	27	210	190
CA 19183	A-6	2818-2826	0.07	0.07	0.23	3.23	0.04	100	540	36	170*	170
CA 19189	A-6	2932.5-2933.2	0.05	0.02	0.29	4.08	1.16	300	1800	92	180*	180
CA 19194	A-6	2939.8-2950.2	0.04	0.03	38.60	37.70	0.11	100	610	3	70*	40
CA 19200	A-6	2958-2966	0.03	0.05	43.50	42.80	0.03	150	400	1*	60*	20
CA 19205	A-6	2998-3001	0.05	0.01	0.42	3.00	0.17	150	2600	34	160*	110
CA 19206	A-6	3001-3001.6	0.03	0.07	39.90	39.20	NIL	50*	340	1*	70*	30
CA 19207	A-6	3084-3088	0.07	0.09	7.78	9.08	0.83	200	1500	79	150*	100

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	PB PPM	MO PPM	PT PPB	PD PPB	IR PPB	AU PPB	AG PPM
CA 16045	A-6	60-72	40	420	200	13	1*	10*	2*	50*	4	2*
CA 16052	A-6	74-82	34	430	200	12	4	10*	2*	50*	1*	2*
CA 16057	A-6	144-150	36	440	200	10	3	10*	2*	50*	1*	2*
CA 16061	A-6	186-194	29	420	200	7	3	10*	2*	50*	1*	2*
CA 16066	A-6	392-400	36	450	200	12	1*	10*	2*	50*	2	2*
CA 18343	A-6	486-496	26	270	200	13	2	10*	2*	50*	1*	2*
CA 18349	A-6	544-554	27	260	200	16	2*	10*	2*	50*	1*	2*
CA 18355	A-6	562-574	42	300	200	7	2*	10*	2*	50*	1*	2*
CA 18362	A-6	576-579	47	320	100	9	2*	10*	2*	50*	1*	2*
CA 18364	A-6	595-597	41	320	200	10	6	10	2*	50*	1*	2*
CA 18365	A-6	610-618	30	220	100	10	1*	10*	2*	50*	1*	2*
CA 18370	A-6	628-634	35	320	200	13	4	10*	2	50*	2	2*
CA 18373	A-6	694-706	30	290	200	13	5	10*	5	50*	1*	2*
CA 18380	A-6	783.5-791	21	290	300	24	14	10*	5	50*	9	2*
CA 18385	A-6	791.5-794	29	250	200	5*	3	10*	12	50*	12	2*
CA 18390	A-6	810-822	36	310	200	5*	2*	10*	3	50*	2	2*
CA 18397	A-6	834-846	38	340	100	5*	1*	10	4	50*	7	2*
CA 18905	A-6	1075-1086.9	5	170	500	11	6	20	4	50*	9	2*
CA 18912	A-6	1164-1166	5*	58	200	6	1*	10	2*	50*	1*	2*
CA 18913	A-6	1182-1194	8	160	400	11	1*	10	6	50*	3	2*
CA 18920	A-6	1224-1238	16	21	100*	7	1*	10*	2*	50*	1*	2*
CA 18928	A-6	1254-1266.1	12	37	100	10	1*	10*	2*	50*	24	2*
CA 18935	A-6	1390-1404	24	24	100*	11	1*	10*	2*	50*	1*	2*
CA 18943	A-6	1474-1476	17	21	100*	5*	1*	10	2	50*	3	2*
CA 18944	A-6	1495.8-1503	18	63	200	22	1	10*	2*	50*	200	2*
CA 18949	A-6	1503.5-1506	9	61	100	10	1*	10	2*	50*	17	2*
CA 18950	A-6	1506.6-1509.1	5	47	100	9	2	10*	2*	50*	240	2*
CA 18951	A-6	1513.9-1530	11	82	100	14	3	10	2*	50*	10	2*
CA 18960	A-6	1574-1580	11	77	100	17	1*	10	2*	50*	1*	2*
CA 18961	A-6	1640-1654	38	350	200	15	1*	10	2*	50*	1*	2*
CA 18969	A-6	1672-1674	41	380	200	11	1*	10*	2*	50*	3	2*
CA 18970	A-6	1694-1702	38	330	100*	11	1*	10	2*	50*	1*	2*
CA 18975	A-6	1722-1734	14	110	100*	14	2*	10*	2*	50*	1*	2*
CA 18982	A-6	1750-1754	38	300	300	18	1*	10*	2*	50*	1*	2*
CA 18983	A-6	1762-1776	12	93	100	19	1*	10*	2*	50*	1*	2*
CA 18991	A-6	1817.2-1820	25	190	200	39	1*	10*	2	50*	1*	2*
CA 18992	A-6	1828-1836	31	160	100	17	1	10*	4	50*	1*	2*
CA 18997	A-6	1855-1857.8	22	130	100	20	1*	10	3	50*	3	2*
CA 18998	A-6	1858.3-1860.4	25	120	100	22	1*	20	3	50*	2	2*
CA 18999	A-6	1928-1940	20	130	100	22	4	10*	2*	50*	1*	2*
CA 19047	A-6	1940-1942	13	130	200	21	2*	10*	2*	50*	1*	2*
CA 19006	A-6	1944-1956	23	130	100	21	2	10*	2*	50*	1*	2*
CA 19013	A-6	1994-2010	32	210	100	14	1*	10*	2*	50*	1*	2*
CA 19022	A-6	2032-2048	39	290	200	14	3	10*	2*	50*	1*	2*
CA 19031	A-6	2054-2066	36	280	200	14	2	10*	3	50*	1*	2*
CA 19038	A-6	2066-2080	20	150	100	20	1*	10	3	50*	1*	2*
CA 19046	A-6	2086.5-2090.5	16	91	100	18	5*	10*	2*	50*	1*	2*
CA 19052	A-6	2133-2149	21	140	100	20	1	10*	2	50*		2*
CA 19061	A-6	2177.5-2180.2	22	130	100	22	1*	10*	2*	50*	1*	2*
CA 19062	A-6	2246-2262	21	140	100	24	1*	10*	2	50*	1*	2*
CA 19071	A-6	2321.8-2338	25	160	100	24	1*	10*	3	50*	4	2*

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	PB PPM	MO PPM	PT PPB	PD PPB	IR PPB	AU PPB	AG PPM
CA 19080	A-6	2352-2352.5	14	130	100	19	1*	10*	2*	50*	1*	2*
CA 19081	A-6	2393-2407	20	120	200	23	1	10*	2	50*	1*	2*
CA 19089	A-6	2415.9-2416.3	6	23	100*	10	1*	10*	2*	50*	1*	2*
CA 19096	A-6	2465.8-2467	20	87	100	20	2*	10*	2*	50*	1*	2*
CA 19097	A-6	2654.5-2656	24	130	100	16	1*	10*	2*	50*	4	2*
CA 19098	A-6	2668-2684	34	300	200	12	1*	10*	2*	50*	1*	2*
CA 19129	A-6	2684-2700	40	310	100	10	5	10*	2*	50*	1*	2*
CA 19138	A-6	2700-2716	40	280	100	11	2*	10*	2*	50*	2	2*
CA 19147	A-6	2716-2732	40	300	200	12	1*	10*	2*	50*	1*	2*
CA 19156	A-6	2732-2748	53	310	100*	15	2	10*	2*	50*	1*	5*
CA 19165	A-6	2748-2758	41	320	100	13	1*	10*	2*	50*	1*	2*
CA 19171	A-6	2759-2760.3	45	350	200	15	1*	10*	2*	50*	1*	2*
CA 19172	A-6	2762-2778	43	370	200	15	1*	10*	2*	50*	1*	2*
CA 19188	A-6	2808.2-2808.7	24	120	100	14	2*	10*	2*	50*	1*	2*
CA 19183	A-6	2818-2826	21	130	100*	18	2*	10*	2*	50*	1*	2*
CA 19189	A-6	2932.5-2933.2	24	140	100	14	1	10*	2	50*	3	2*
CA 19194	A-6	2939.8-2950.2	5*	24	100	27	1*	10*	2*	50*	1*	2*
CA 19200	A-6	2958-2966	5*	23	100*	5*	2	10*	2*	50*	1*	2*
CA 19205	A-6	2998-3001	9	93	100	9	1*	10*	2*	50*	1*	2*
CA 19206	A-6	3001-3001.6	5*	18	100*	10	1*	10*	2*	50*	1*	2*
CA 19207	A-6	3084-3088	8	140	100	17	3	10*	2*	50*	1*	2*

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	BA PPM	SC PPM	Y PPM	LA PPM	ZR PPM	HF PPM	NB PPM
CA 16045	A-6	60-72	26	1.70	416	535	32.90	28	34	134	3	30
CA 16052	A-6	74-82	37	1.10	425	451	28.90	41	47	169	4	35
CA 16057	A-6	144-150	31	0.90*	527	584	31.00	35	45	167	4	32
CA 16061	A-6	186-194	16	0.90*	317	254	34.30	61	43	211	5	35
CA 16066	A-6	392-400	26	1.90	527	701	31.10	39	50	176	4	33
CA 18343	A-6	486-496	47	2.00	352	1720	24.80	43	62	224	5	38
CA 18349	A-6	544-554	56	1.40	351	2690	24.90	45	70	252	5	41
CA 18355	A-6	562-574	23	1.90	561	517	28.00	31	39	122	3	32
CA 18362	A-6	576-579	18	0.80*	601	311	28.70	24	32	87	2	25
CA 18364	A-6	595-597	15	1.10	658	271	26.00	24	34	99	2	27
CA 18365	A-6	610-618	58	0.90*	678	1200	19.40	29	52	174	4	41
CA 18370	A-6	628-634	32	0.80*	446	1600	26.30	29	51	163	4	37
CA 18373	A-6	694-706	35	1.60	134	170	13.40	30	43	156	3	40
CA 18380	A-6	783.5-791	34	2.60	147	122	9.10	25	32	115	2	34
CA 18385	A-6	791.5-794	24	1.10	80	439	21.20	21	22	98	2	26
CA 18390	A-6	810-822	19	0.80*	274	140	33.20	21	16	77	1	21
CA 18397	A-6	834-846	21	0.90*	344	138	39.00	27	15	64	1	22
CA 18905	A-6	1075-1086.9	29	3.20	103	59	3.60	17	9	29	1*	11
CA 18912	A-6	1164-1166	16	1.00	84	10*	1.40	13	6	19	1*	10
CA 18913	A-6	1182-1194	18	5.70	120	10*	3.70	30	14	39	1*	11
CA 18920	A-6	1224-1238	20	9.10	115	63	1.50	22	11	30	1*	11
CA 18928	A-6	1254-1266.1	23	11.00	75	43	2.20	17	11	31	1*	11
CA 18935	A-6	1390-1404	23	10.80	87	36	2.10	28	14	29	1*	11
CA 18943	A-6	1474-1476	20	7.90	85	64	1.60	18	11	27	1*	11
CA 18944	A-6	1495.8-1503	12	1.90	100	10*	8.20	9	21	116	2	15
CA 18949	A-6	1503.5-1506	124	3.60	245	369	10.60	9	26	155	4	12
CA 18950	A-6	1506.6-1509.1	58	1.30	153	167	6.50	4	13	90	1	12
CA 18951	A-6	1513.9-1530	168	2.80	100	492	13.50	13	36	189	4	19
CA 18960	A-6	1574-1580	171	1.00	101	434	11.90	7	30	197	3	15
CA 18961	A-6	1640-1654	66	14.50	376	864	29.40	34	33	142	3	24
CA 18969	A-6	1672-1674	17	2.30	649	386	33.40	26	23	80	2	20
CA 18970	A-6	1694-1702	18	1.20	521	398	31.90	23	21	87	2	16
CA 18975	A-6	1722-1734	138	2.30	146	718	14.50	12	32	187	3	16
CA 18982	A-6	1750-1754	37	0.80*	299	167	31.10	20	24	103	2	20
CA 18983	A-6	1762-1776	192	3.40	145	517	15.80	8	38	186	5	17
CA 18991	A-6	1817.2-1820	133	2.10	192	416	24.70	14	36	125	3	19
CA 18992	A-6	1828-1836	159	3.00	136	374	24.10	18	44	145	3	18
CA 18997	A-6	1855-1857.8	142	3.00	124	330	19.90	13	31	122	3	13
CA 18998	A-6	1858.3-1860.4	165	3.60	137	405	20.80	14	42	147	4	17
CA 18999	A-6	1928-1940	182	3.90	110	368	22.40	15	43	131	2	17
CA 19047	A-6	1940-1942	153	3.00	114	400	18.70	11	43	123	2	16
CA 19006	A-6	1944-1956	162	3.40	117	348	21.50	20	42	129	3	15
CA 19013	A-6	1994-2010	83	1.70	279	436	29.60	17	33	103	3	17
CA 19022	A-6	2032-2048	21	1.10	549	257	34.50	16	18	64	1	18
CA 19031	A-6	2054-2066	47	2.80	397	460	30.80	19	27	103	2	18
CA 19038	A-6	2066-2080	154	3.60	124	416	19.30	16	38	137	3	18
CA 19046	A-6	2086.5-2090.5	81	1.70	162	183	11.70	14	26	122	2	13
CA 19052	A-6	2133-2149	167	4.10	152	346	18.90	16	37	139	2	18
CA 19061	A-6	2177.5-2180.2	160	4.10	167	395	19.30	18	40	122	2	14
CA 19062	A-6	2246-2262	153	3.50	161	322	18.70	19	38	138	3	13
CA 19071	A-6	2321.8-2338	170	4.10	151	316	19.10	14	40	130	2	17

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	BA PPM	SC PPM	Y PPM	LA PPM	ZR PPM	HF PPM	NB PPM
CA 19080	A-6	2352-2352.5	170	3.80	135	377	19.30	13	37	119	2	16
CA 19081	A-6	2393-2407	142	2.90	157	298	16.70	17	36	140	3	15
CA 19089	A-6	2415.9-2416.3	43	1.00	66	59	2.90	2*	8	45	1*	10
CA 19096	A-6	2465.8-2467	113	2.50	197	250	12.70	15	34	176	3	13
CA 19097	A-6	2654.5-2656	165	3.00	98	366	21.90	20	46	142	3	19
CA 19098	A-6	2668-2684	53	0.90*	299	469	28.80	20	29	101	2	19
CA 19129	A-6	2684-2700	9	1.00*	498	113	35.30	20	19	64	1	16
CA 19138	A-6	2700-2716	12	1.50	526	243	35.40	17	16	56	1	16
CA 19147	A-6	2716-2732	29	0.90*	399	582	36.30	12	16	57	1	15
CA 19156	A-6	2732-2748	24	1.00*	400	401	36.10	14	16	56	1	13
CA 19165	A-6	2748-2758	25	2.30	564	236	37.60	17	17	52	2	16
CA 19171	A-6	2759-2760.3	16	1.50	660	225	39.30	15	18	46	2	17
CA 19172	A-6	2762-2778	17	1.50	554	212	39.20	22	22	71	2	18
CA 19188	A-6	2808.2-2808.7	149	2.30	100	598	18.00	14	36	129	3	19
CA 19183	A-6	2818-2826	160	3.50	139	359	17.40	13	36	132	3	17
CA 19189	A-6	2932.5-2933.2	201	6.70	59	413	21.60	19	40	124	4	17
CA 19194	A-6	2939.8-2950.2	33	1.30	89	53	2.40	4	13	23	1*	10
CA 19200	A-6	2958-2966	17	0.50*	42	10*	1.00	5	9	17	1*	8
CA 19205	A-6	2998-3001	263	16.60	42	293	15.60	13	52	144	3	21
CA 19206	A-6	3001-3001.6	31	1.30	162	22	1.90	3	9	11	1*	8
CA 19207	A-6	3084-3088	79	5.00	101	127	10.60	20	31	79	1	14

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	TA PPM	W PPM	SN PPM	AS PPM	SB PPM	BI PPM	SE PPM	TE PPM	BR PPM	CE PPM
CA 16045	A-6	60-72	1.80	3*	10*	1.10*	0.30	2*	6*	10*	1	56
CA 16052	A-6	74-82	1.50	2*	10*	1.00*	0.70	2*	8	10*	1*	81
CA 16057	A-6	144-150	1.80	3*	10*	1.10*	0.20	2*	5*	10*	2	77
CA 16061	A-6	186-194	2.20	3*	10*	1.20*	0.30	2*	5*	10*	6	78
CA 16066	A-6	392-400	2.30	3*	10*	1.30	0.30	2*	5*	10*	1*	84
CA 18343	A-6	486-496	1.60	2*	10*	1.00*	0.10*	2*	5*	10*	1*	104
CA 18349	A-6	544-554	2.10	2*	10*	1.60	0.30	2*	5*	10*	2*	111
CA 18355	A-6	562-574	1.00*	3*	10*	2.10	0.30	2*	5*	10*	1*	63
CA 18362	A-6	576-579	1.40	4	10*	1.10*	0.10	2*	5*	10*	1*	58
CA 18364	A-6	595-597	0.90*	2*	10*	6.10	0.90	2*	5*	10*	1*	56
CA 18365	A-6	610-618	2.80	3*	10*	1.70	0.10*	2*	5*	10*	1*	81
CA 18370	A-6	628-634	2.20	4	10*	4.30	0.80	2*	5*	10*	1*	72
CA 18373	A-6	694-706	2.00	2*	10*	13.00	0.40	2*	5	10*	4	67
CA 18380	A-6	783.5-791	0.70	2*	10*	3.30	1.10	2*	6	10*	1*	47
CA 18385	A-6	791.5-794	1.20	2*	10*	1.00*	0.20	2*	5*	10*	1*	35
CA 18390	A-6	810-822	0.90*	3*	10*	13.00	0.20	2*	5*	10*	1*	
CA 18397	A-6	834-846	1.00	3*	10*	13.00	0.20	2*	5*	10*	1*	33
CA 18905	A-6	1075-1086.9	0.50*	2	10*	22.00	1.00	2*	5*	10*	1*	12
CA 18912	A-6	1164-1166	0.50*	1*	10*	1.10	0.20	2*	5*	10*	1	6
CA 18913	A-6	1182-1194	0.50*	1*	10*	18.00	0.70	2*	5*	10*	1*	23
CA 18920	A-6	1224-1238	0.50*	1*	10*	14.00	0.70	2*	5*	10*	1*	17
CA 18928	A-6	1254-1266.1	0.50*	2*	10*	3.50	0.50	2*	5*	10*	1*	16
CA 18935	A-6	1390-1404	0.50*	2*	10*	16.00	0.60	2*	5*	10*	1*	24
CA 18943	A-6	1474-1476	0.50*	2	10*	10.00	0.20	2*	5*	10*	1	16
CA 18944	A-6	1495.8-1503	0.60*	2*	10*	1.80	0.20	14	5*	10*	1	33
CA 18949	A-6	1503.5-1506	1.00*	2*	10*	0.90	0.10*	2*	5*	10*	2	40
CA 18950	A-6	1506.6-1509.1	1.10	2*	10*	1.30	0.10	4	5*	10*	4	22
CA 18951	A-6	1513.9-1530	0.90	4	10*	3.10	0.10	2*	5*	10*	1*	53
CA 18960	A-6	1574-1580	0.70*	3	10*	4.90	0.10	2*	5*	10*	1*	44
CA 18961	A-6	1640-1654	0.80*	3*	10*	4.50	0.50	2*	6	10*	2	59
CA 18969	A-6	1672-1674	0.80*	3*	10*	3.90	0.40	2*	5*	10*	2	41
CA 18970	A-6	1694-1702	1.50	4	10*	2.60	0.30	2*	5*	10*	1*	38
CA 18975	A-6	1722-1734	1.30	2*	10*	3.40	0.10*	2*	5*	10*	1*	43
CA 18982	A-6	1750-1754	0.90*	3*	10*	17.00	0.10*	2*	6	10*	1*	37
CA 18983	A-6	1762-1776	0.90*	2*	10*	1.00*	0.10*	2*	5*	10*	1*	61
CA 18991	A-6	1817.2-1820	0.80*	3*	10*	11.00	1.70	2*	5*	10*	1	61
CA 18992	A-6	1828-1836	0.90*	3*	10*	3.40	0.10*	2*	5*	10*	1*	74
CA 18997	A-6	1855-1857.8	0.90	3	10*	1.00*	0.10*	2*	5*	10*	1	52
CA 18998	A-6	1858.3-1860.4	0.90*	3*	10*	1.10*	0.20	2*	5*	10*	1*	69
CA 18999	A-6	1928-1940	0.80*	3*	10*	1.20*	0.10	2*	5*	10*	1*	73
CA 19047	A-6	1940-1942	1.10*	1*	10*	0.60*	0.10*	2*	6*	10*	1*	72
CA 19006	A-6	1944-1956	0.90*	3*	10*	1.20*	0.10*	2*	5*	10*	1*	62
CA 19013	A-6	1994-2010	1.00	5	10*	5.10	0.20	2*	5*	10*	1*	48
CA 19022	A-6	2032-2048	0.80*	3*	10*	1.20*	0.40	2*	5*	10*	1*	36
CA 19031	A-6	2054-2066	1.00	3*	10*	1.30*	0.20	2*	5*	10*	1*	49
CA 19038	A-6	2066-2080	1.70	1*	10*	0.70	0.10*	2*	5*	10*	1*	60
CA 19046	A-6	2086.5-2090.5	0.50*	8	10*	0.50*	0.10*	2*	5*	10*	1*	43
CA 19052	A-6	2133-2149	1.00*	2	10*	0.60*	0.30	2*	5*	10*	1*	62
CA 19061	A-6	2177.5-2180.2	1.00*	2	10*	0.80	0.10	2*	5*	10*	1*	61
CA 19062	A-6	2246-2262	1.10*	3	10*	0.70*	0.70	2*	12*	10*	1*	56
CA 19071	A-6	2321.8-2338	1.00*	3	10*	0.80	0.40	2*	7*	10*	1*	60

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	TA PPM	W PPM	SN PPM	AS PPM	SB PPM	BI PPM	SE PPM	TE PPM	BR PPM	CE PPM
CA 19080	A-6	2352-2352.5	1.00*	1*	10*	1.30	0.20	2*	5*	10*	1*	55
CA 19081	A-6	2393-2407	1.10*	1*	10*	0.80	0.20	2*	5*	10*	1*	59
CA 19089	A-6	2415.9-2416.3	0.80	1*	10*	0.80	0.10	2*	5*	10*	1	10
CA 19096	A-6	2465.8-2467	0.50	1*	10*	0.70*	0.10*	2*	5*	10*	1*	57
CA 19097	A-6	2654.5-2656	1.10*	2*	10*	0.80*	0.10	2*	5*	10*	1*	76
CA 19098	A-6	2668-2684	1.20*	2*	10*	1.20	0.10*	2*	6*	10*	1*	47
CA 19129	A-6	2684-2700	1.20*	2*	10*	1.70	1.00	2*	5*	10*	1	40
CA 19138	A-6	2700-2716	1.20*	2	10*	0.90*	0.20	2*	5*	10*	1*	32
CA 19147	A-6	2716-2732	1.00*	2*	10*	0.80*	0.20	2*	5*	10*	1*	28
CA 19156	A-6	2732-2748	1.10*	2	10*	29.00	0.30	2*	5*	10*	1*	35
CA 19165	A-6	2748-2758	1.00*	2*	10*	0.80*	0.30	2*	5*	10*	1*	36
CA 19171	A-6	2759-2760.3	1.50	2*	10*	1.40	0.40	2*	5*	10*	1*	35
CA 19172	A-6	2762-2778	1.10*	2*	10*	0.90*	0.30	2*	5*	10*	1	39
CA 19188	A-6	2808.2-2808.7	1.20*	2	10*	0.80*	0.10	2*	5*	10*	1*	55
CA 19183	A-6	2818-2826	1.10*	2	10*	1.80	0.20	2*	5*	10*	1*	54
CA 19189	A-6	2932.5-2933.2	0.90*	2*	10*	0.80*	0.10*	2*	6*	10*	2	55
CA 19194	A-6	2939.8-2950.2	0.50*	1	10*	4.20	0.20	2*	5*	10*	1	11
CA 19200	A-6	2958-2966	0.50*	1*	10*	3.30	0.70	2*	5*	10*	2	9
CA 19205	A-6	2998-3001	2.30	3	10*	1.50	0.30	2*	5*	10*	1*	61
CA 19206	A-6	3001-3001.6	0.50*	1*	10*	1.70	0.10	2*	5*	10*	1	8
CA 19207	A-6	3084-3088	0.80*	2	10*	0.60*	0.10	2*	5*	10*	1*	49

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	ND PPM	SM PPM	EU PPM	YB PPM	LU PPM	TH PPM	U PPM	CD PPM	TB PPM	BE PPM
CA 16045	A-6	60-72	22	6.60	2.40	2.30	0.35	3.90	1.40			6
CA 16052	A-6	74-82	37	9.20	2.60	3.00	0.52	5.00	1.30			6
CA 16057	A-6	144-150	36	8.60	3.30	2.90	0.42	4.40	1.10			6
CA 16061	A-6	186-194	31	9.10	3.00	3.50	0.45	5.70	1.40			6
CA 16066	A-6	392-400	28	9.30	2.60	3.00	0.42	4.80	1.80			5
CA 18343	A-6	486-496	47	10.80	3.70	3.30	0.49	8.20	1.80			6
CA 18349	A-6	544-554	39	11.60	3.40	3.40	0.51	8.40	2.10			6
CA 18355	A-6	562-574	29	6.90	2.10	2.00	0.29	3.30	1.80			5
CA 18362	A-6	576-579	23	5.80	1.80	1.50	0.23	2.40	0.80*			6
CA 18364	A-6	595-597	40	5.80	1.50	1.60	0.31	2.50	2.60			6
CA 18365	A-6	610-618	23	7.60	2.00	2.00	0.34	5.40	3.40			5
CA 18370	A-6	628-634	24	7.80	1.70	2.20	0.43	6.10	9.20			7
CA 18373	A-6	694-706	19	6.90	2.30	1.80	0.30	5.40	4.50			7
CA 18380	A-6	783.5-791	17	4.70	1.70	2.00	0.45	3.80	8.30			10
CA 18385	A-6	791.5-794	15	4.10	1.40	1.60	0.23	2.30	2.60			10
CA 18390	A-6	810-822	12	4.90	1.90	1.80	0.29	1.30	0.60*			5
CA 18397	A-6	834-846	10	4.60	1.60	1.60	0.22	1.20	1.10			4
CA 18905	A-6	1075-1086.9	6	1.50	0.30	1.20	0.21	1.20	2.90			7
CA 18912	A-6	1164-1166	5*	1.00	0.20	0.90	0.17	0.40	0.50			7
CA 18913	A-6	1182-1194	5	2.20	0.20*	1.40	0.25	2.00	1.40			9
CA 18920	A-6	1224-1238	5*	1.70	0.40	1.20	0.19	1.00	0.50*			9
CA 18928	A-6	1254-1266.1	5*	1.80	0.60	1.00	0.19	0.90	0.70			9
CA 18935	A-6	1390-1404	6	2.20	0.60	1.20	0.21	1.20	0.50*			9
CA 18943	A-6	1474-1476	5*	1.80	0.60	1.00	0.17	0.90	0.50*			9
CA 18944	A-6	1495.8-1503	7	2.60	0.60	1.00	0.16	6.50	1.40			7
CA 18949	A-6	1503.5-1506	9	3.30	0.80	1.10	0.21	8.70	1.60			5
CA 18950	A-6	1506.6-1509.1	5*	1.70	0.60	0.60	0.10	4.80	1.20			4
CA 18951	A-6	1513.9-1530	12	4.20	1.20	1.10	0.19	11.00	2.10			5
CA 18960	A-6	1574-1580	12	3.90	0.50	1.00	0.18	9.60	2.00			5
CA 18961	A-6	1640-1654	28	7.00	2.40	2.60	0.34	2.20	0.70*			6
CA 18969	A-6	1672-1674	17	5.10	2.10	2.10	0.31	1.30	1.40			5
CA 18970	A-6	1694-1702	16	4.40	1.50	1.80	0.22	1.00	1.20			5
CA 18975	A-6	1722-1734	10	4.00	1.20	1.20	0.17	10.00	2.30			5
CA 18982	A-6	1750-1754	25	4.90	1.90	1.80	0.24	4.00	1.20			5
CA 18983	A-6	1762-1776	13	4.70	1.10	1.20	0.20	13.00	2.70			6
CA 18991	A-6	1817.2-1820	17	5.60	1.50	1.60	0.23	9.20	2.20			4
CA 18992	A-6	1828-1836	19	6.10	1.50	1.90	0.26	12.00	2.40			5
CA 18997	A-6	1855-1857.8	10	4.00	1.30	1.60	0.24	9.40	3.40			4
CA 18998	A-6	1858.3-1860.4	17	5.40	1.10	1.40	0.20	12.00	2.80			5
CA 18999	A-6	1928-1940	18	5.50	1.40	1.60	0.21	11.00	2.30			4
CA 19047	A-6	1940-1942	20	5.30	1.20	1.30	0.19	10.00	2.30			5
CA 19006	A-6	1944-1956	18	5.60	1.60	1.60	0.24	11.00	1.80			5
CA 19013	A-6	1994-2010	17	5.20	1.30	1.50	0.27	7.00	1.80			5
CA 19022	A-6	2032-2048	14	4.20	1.20	1.50	0.20	1.20	0.70*			4
CA 19031	A-6	2054-2066	21	5.10	1.70	1.90	0.26	5.40	0.90			4
CA 19038	A-6	2066-2080	18	5.10	1.00	1.40	0.22	10.00	2.40			5
CA 19046	A-6	2086.5-2090.5	12	3.80	0.90	1.30	0.15	7.60	2.60			5
CA 19052	A-6	2133-2149	21	5.10	1.50	1.40	0.25	11.00	2.00			
CA 19061	A-6	2177.5-2180.2	17	5.10	1.40	1.30	0.21	10.00	2.20			7
CA 19062	A-6	2246-2262	16	5.30	1.30	1.60	0.24	10.00	2.10			6
CA 19071	A-6	2321.8-2338	18	5.40	1.20	1.60	0.24	11.00	3.00			5

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	ND PPM	SM PPM	EU PPM	YB PPM	LU PPM	TH PPM	U PPM	CD PPM	TB PPM	BE PPM
CA 19080	A-6	2352-2352.5	15	4.80	1.20	1.20	0.23	10.00	2.10			6
CA 19081	A-6	2393-2407	16	5.00	1.90	1.40	0.24	9.70	2.10			6
CA 19089	A-6	2415.9-2416.3	5*	1.00	0.40	0.50	0.05	2.10	0.50			3
CA 19096	A-6	2465.8-2467	17	5.20	1.10	1.10	0.27	8.90	1.70			6
CA 19097	A-6	2654.5-2656	13	6.10	1.10	1.80	0.35	12.00	2.40			5
CA 19098	A-6	2668-2684	15	5.10	1.10	1.60	0.26	4.90	1.40			5
CA 19129	A-6	2684-2700	15	4.20	1.30	1.40	0.26	0.70	0.80			4
CA 19138	A-6	2700-2716	15	3.90	1.60	1.30	0.22	0.90	0.70*			3
CA 19147	A-6	2716-2732	15	3.60	1.30	1.50	0.20	0.90	0.70			4
CA 19156	A-6	2732-2748	12	3.80	1.00	1.20	0.19	0.50	0.80			4
CA 19165	A-6	2748-2758	13	4.00	1.70	1.60	0.23	0.90	0.70*			5
CA 19171	A-6	2759-2760.3	13	4.20	1.50	1.50	0.23	0.80	0.60*			5
CA 19172	A-6	2762-2778	16	5.00	1.80	1.80	0.27	1.00	1.30			5
CA 19180	A-6	2800.2-2800.7	8	4.70	1.40	1.30	0.25	9.90	2.00			5
CA 19183	A-6	2818-2826	14	5.00	1.30	1.40	0.23	11.00	1.80			5
CA 19189	A-6	2932.5-2933.2	12	4.80	0.80	1.60	0.28	12.00	2.80			6
CA 19194	A-6	2939.8-2950.2	5	1.50	0.40	0.60	0.11	2.20	1.70			2
CA 19200	A-6	2958-2966	7	1.00	0.20*	0.40	0.07	0.80	2.20			1*
CA 19205	A-6	2998-3001	21	4.80	0.70	1.50	0.25	17.00	2.50			5
CA 19206	A-6	3001-3001.6	5*	0.90	0.30	0.50	0.10	1.70	1.10			1*
CA 19207	A-6	3084-3088	15	4.50	1.40	1.50	0.27	8.50	2.70			4

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	B PPM	GE PPM	P PPM
CA 16045	A-6	60-72	10*		
CA 16052	A-6	74-82	10		
CA 16057	A-6	144-150	10		
CA 16061	A-6	186-194	10*		
CA 16066	A-6	392-400	10*		
CA 18343	A-6	486-496	10*		
CA 18349	A-6	544-554	20		
CA 18355	A-6	562-574	40		
CA 18362	A-6	576-579	10*		
CA 18364	A-6	595-597	390		
CA 18365	A-6	610-618	30		
CA 18370	A-6	628-634	50		
CA 18373	A-6	694-706	10*		
CA 18380	A-6	783.5-791	10		
CA 18385	A-6	791.5-794	60		
CA 18390	A-6	810-822	260		
CA 18397	A-6	834-846	30		
CA 18905	A-6	1075-1086.9	10*		
CA 18912	A-6	1164-1166	10*		
CA 18913	A-6	1182-1194	10*		
CA 18920	A-6	1224-1238	10*		
CA 18928	A-6	1254-1266.1	10*		
CA 18935	A-6	1390-1404	10*		
CA 18943	A-6	1474-1476	10*		
CA 18944	A-6	1495.8-1503	10*		
CA 18949	A-6	1503.5-1506	40		
CA 18950	A-6	1506.6-1509.1	50		
CA 18951	A-6	1513.9-1530	200		
CA 18960	A-6	1574-1580	130		
CA 18961	A-6	1640-1654	10*		
CA 18969	A-6	1672-1674	10*		
CA 18970	A-6	1694-1702	10*		
CA 18975	A-6	1722-1734	80		
CA 18982	A-6	1750-1754	10*		
CA 18983	A-6	1762-1776	120		
CA 18991	A-6	1817.2-1820	50		
CA 18992	A-6	1828-1836	80		
CA 18997	A-6	1855-1857.8	70		
CA 18998	A-6	1858.3-1860.4	90		
CA 18999	A-6	1928-1940	100		
CA 19047	A-6	1940-1942	100		
CA 19006	A-6	1944-1956	100		
CA 19013	A-6	1994-2010	50		
CA 19022	A-6	2032-2048	10		
CA 19031	A-6	2054-2066	20		
CA 19038	A-6	2066-2080	90		
CA 19046	A-6	2086.5-2090.5	60		
CA 19052	A-6	2133-2149	120		
CA 19061	A-6	2177.5-2180.2	110		
CA 19062	A-6	2246-2262	120		
CA 19071	A-6	2321.8-2338	130		

* denotes the figure is less than the detection limit

Table 3
Analytical Results of Drill Hole A-6

Sample #	Drill Hole#	Depth	B PPM	GE PPM	P PPM
CA 19080	A-6	2352-2352.5	120		
CA 19081	A-6	2393-2407	110		
CA 19089	A-6	2415.9-2416.3	60		
CA 19096	A-6	2465.8-2467	120		
CA 19097	A-6	2654.5-2656	110		
CA 19098	A-6	2668-2684	40		
CA 19129	A-6	2684-2700	10*		
CA 19138	A-6	2700-2716	20		
CA 19147	A-6	2716-2732	30		
CA 19156	A-6	2732-2748	10		
CA 19165	A-6	2748-2758	20		
CA 19171	A-6	2759-2760.3	30		
CA 19172	A-6	2762-2778	20		
CA 19180	A-6	2808.2-2808.7	80		
CA 19183	A-6	2818-2826	120		
CA 19189	A-6	2932.5-2933.2	130		
CA 19194	A-6	2939.8-2950.2	30		
CA 19200	A-6	2958-2966	30		
CA 19205	A-6	2998-3001	100		
CA 19206	A-6	3001-3001.6	10*		
CA 19207	A-6	3084-3088	50		

* denotes the figure is less than the detection limit

DRILL HOLE: CW-1

COUNTY: Crow Wing

LOCATION: T46N, R28W, Sec 10, SW¼-SE¼-NW¼

GRID LOCATION: 33+00W, 1+30S

QUADRANGLE: Bay Lake 7½'

SURFACE ELEVATION: 1285' (topographic quad)

DEPTH TO BEDROCK: 351' TOTAL DEPTH: 1282'

DRILL HOLE INCLINATION: 45° DRILL AZIMUTH: 180°

ACID TESTS:

Depth	Corrected Angle
400'	48°
800'	48°
1277'	53°

CORE SIZES AND FOOTAGE INTERVALS:

NQ (1.875" diameter)	251'-579'
BQ (1.432" diameter)	579'-1282'

ADDITIONAL MATERIALS AVAILABLE FOR EXAMINATION:

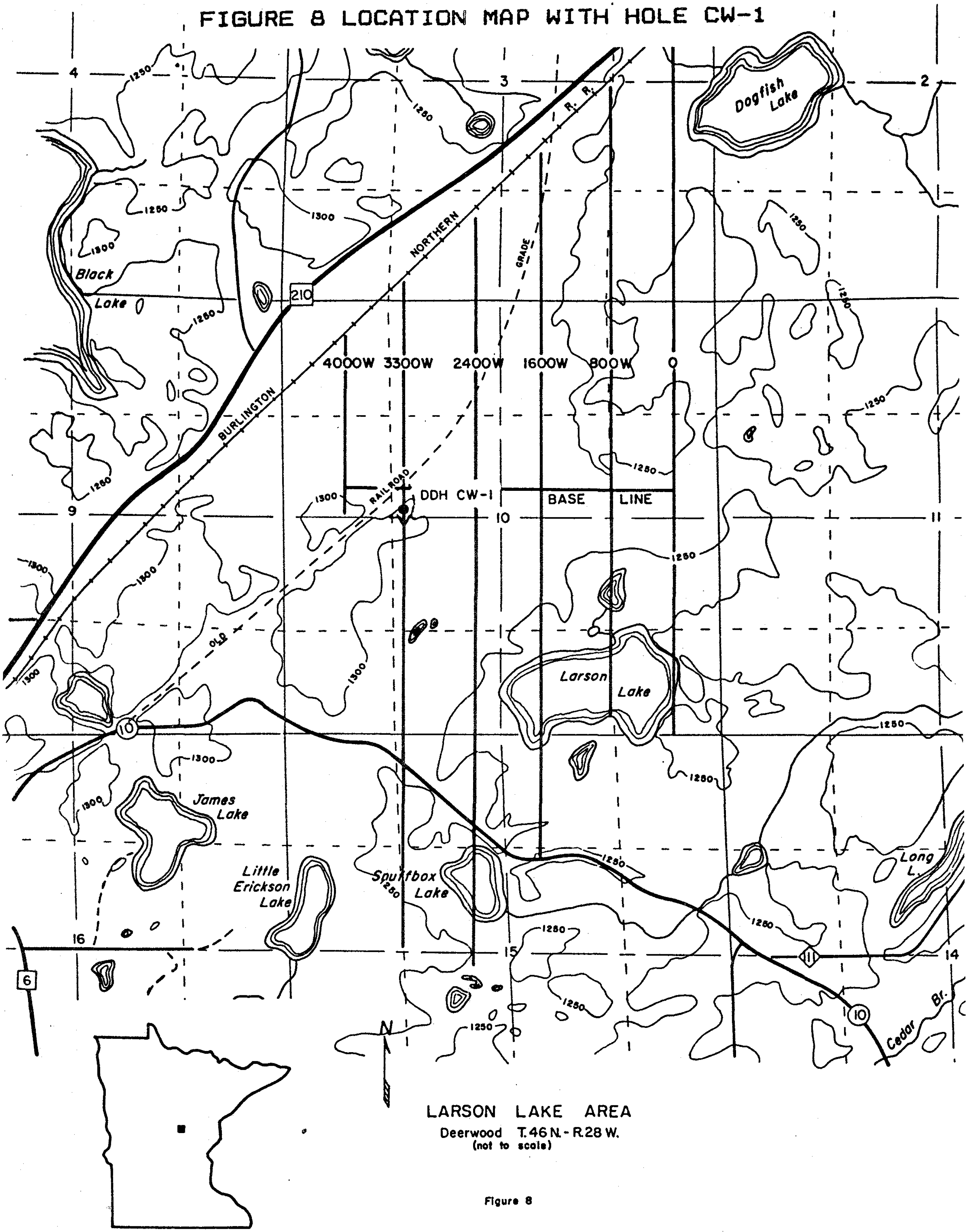
Drill core, thin sections, polished thin sections, and photographs of core before sampling.

LARSON LAKE AREA

In sections 3, 10 and 15 of Township 46 North, Range 28 West, a geophysical grid was brushed as shown in figure 8. Line 0 runs north-south from the east shore of Larson Lake past the west shore of Dogfish Lake to the Burlington Northern-Soo Line railroad. An east-west baseline was put in north of the center of Section 10 and north-south grid lines were brushed at 800 foot intervals along the baseline. Stations were flagged at 100 foot intervals. A total of seven and three-tenths miles of grid lines were constructed.

Detailed magnetic, very low frequency electromagnetic (VLF-EM) and horizontal loop electromagnetic, (HLEM), profiles were completed on the grid. Magnetite rich sediments are indicated by anomalies in excess of 7,000 gammas. The magnetic contour map, figure 9, shows the formation trending northeast-southwest across the north half of the map. This is repeated in the south half of the map across an east-west fault zone just

FIGURE 8 LOCATION MAP WITH HOLE CW-1



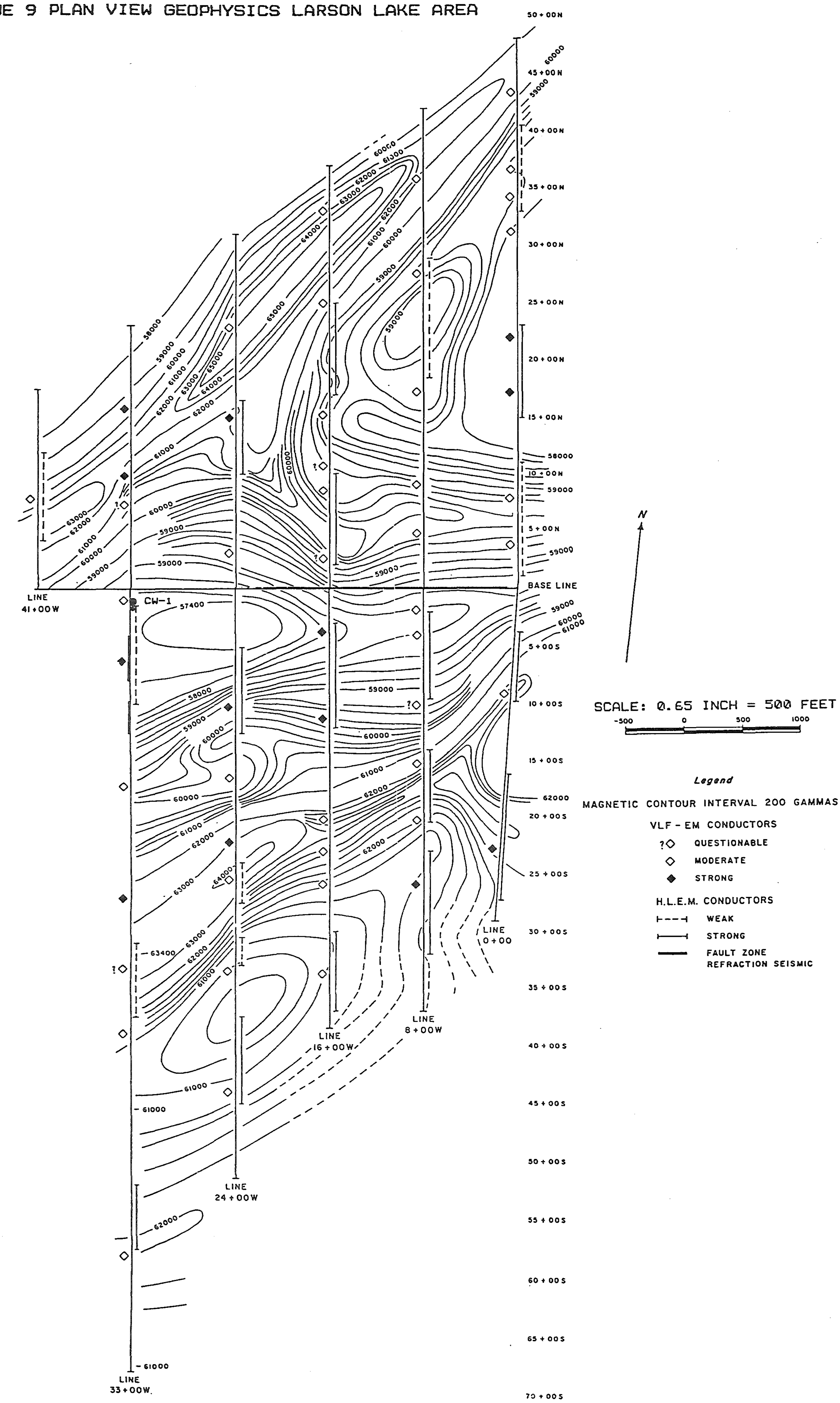
LARSON LAKE AREA

Deerwood T.46 N. - R.28 W.

(not to scale)

Figure 8

FIGUE 9 PLAN VIEW GEOPHYSICS LARSON LAKE AREA



south of the baseline. The magnetic map also suggests drag folding along the fault zone with left lateral movement.

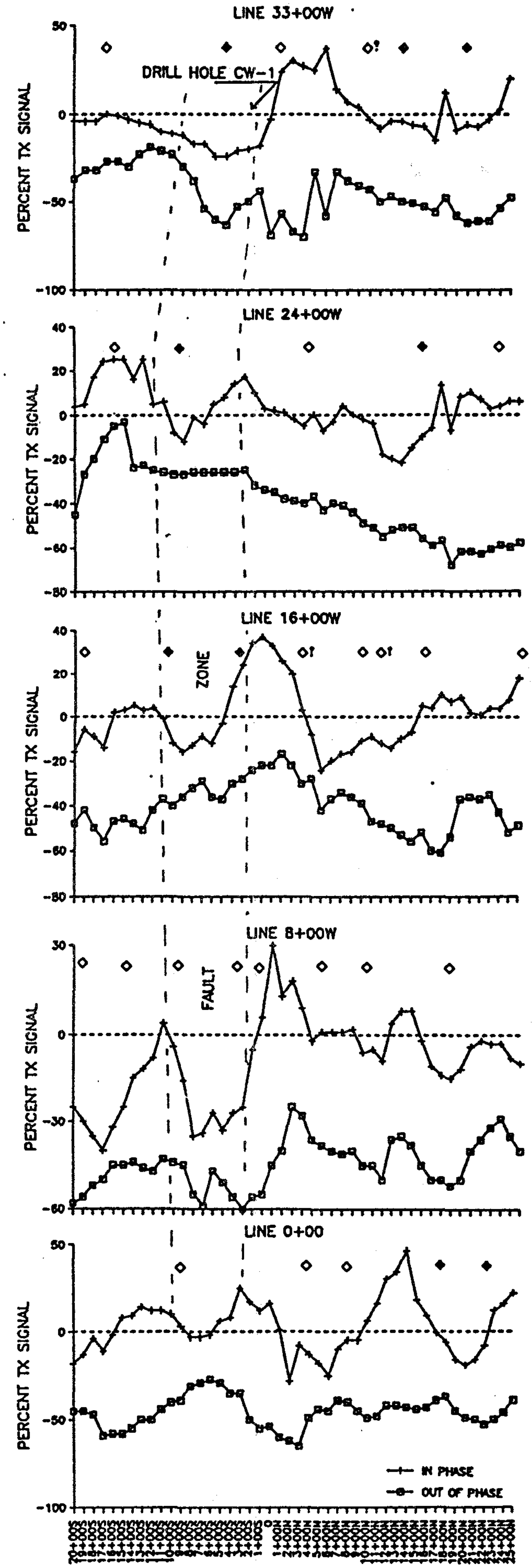
HLEM readings were taken at 100 foot intervals with a 200 meter coil separation using frequencies of 444 and 1777 hertz. The 1777 hertz responded with stronger anomalies than the 444 hertz. As shown on figure 10 the HLEM profiles map the linear nature of the fault when they are stacked. This interpretation is stronger when the VLF-EM crossovers are put on the profiles. The strongest crossovers follow the fault zone and on lines 8+00W and 16+00W bracket the more conductive zone. The Ronka EM-16 was used for this survey with the Cutler, Maine transmitter for most of the lines. On line 16+00W Annapolis, Maryland, was substituted because Cutler was off the air. For these profiles VLF-EM observations were taken at fifty foot intervals.

Magnetic, VLF-EM and HLEM surveys provide reasonable definition of the fault zone and the high iron content of the lithologic units deformed by the fault (figures 9 and 10). On the magnetic profile of line 33+00W, a 5,000 gamma magnetic anomaly is interrupted by the fault zone between stations 0+00 and 15+00 south. Figure 11 displays the magnetic profile and the fault zone defined by a refraction seismic profile. Hole CW-1 was drilled to test this fault zone. Usually a diamond core drill hole through sediments or shearing will bend to follow a course perpendicular to the plane of foliation, depending somewhat on the angle of intersection. If they are vertical, the course of the hole will trend toward horizontal. Had that happened the hole would have been continued through the second or south fault zone. Hole CW-1 took a course trending toward vertical and was terminated at 1277 feet. A geologic log is included but as a general observation the core is very sheared, altered, and contained considerable secondary sulfides.

LOG OF DRILL HOLE CW-1
by B. Frey, K. Malmquist

0'-251'	OVERBURDEN, no recovery.
251'-329'	SAND, fine to very fine-grained. Composition is mainly quartz (80%+) grains and are angular to well rounded. Well sorted. Occasional dark minerals present. Sand is slightly to highly calcareous. Color of this unit is pale yellowish brown and consistent throughout.
329'-338.5'	GLACIAL TILL composed of angular pieces of chloritic schist. Non calcareous and light olive grey in color. Several cobbles of this schist are located throughout the unit. Minor iron staining occurs on a schist cobble at 330'. A transitional zone occurs at 337'-338.5'.
338.5'-351'	GLACIAL TILL; pale yellowish brown, composed of very fine to fine sand and occasional pebbles and cobbles. Cobble content increased with depth. These cobbles are of granophyre, altered granite and a green chloritic schist. The schists contain slickensides.

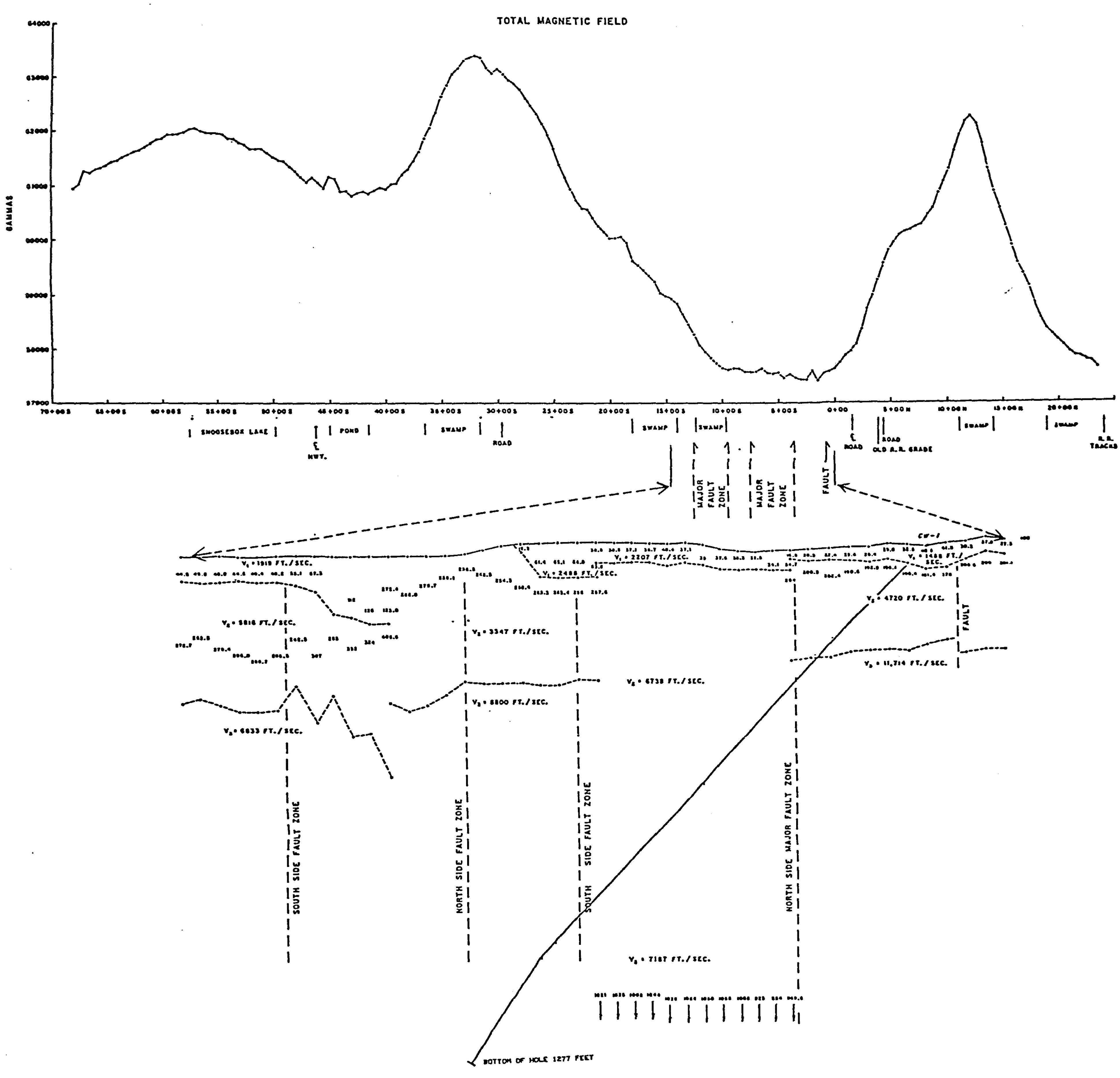
FIG. 10 LARSON LAKE HLEM PROFILES 1777HZ



STATION INTERVAL 100 FT.

VLF-EM CROSSOVER ◆ STRONG ◇ WEAK ◇? QUESTIONABLE

FIGURE 11 MAGNETIC SUSCEPTIBILITY AND REFRACTION SEISMIC PROFILES HOLE CW-1



Remarks: Samples start at 251'. Fine sand samples between 251' & 329' are evidently partial samples (core loss).

Overburden Interpretation - Fine sand within 251'-329' is probably fine outwash with a brown till source. Green till - Till source is sheared, weathered bedrock as found in the drill core below the overburden. Source of carbonate? Unknown? Carbonate added to brown till during or after glaciation.

351' LEDGE(?)

351'-392.2' ALTERED METAGABBRO.
Rock is medium-grained, dark greenish grey (wet). Rock is cut by local fractures-shears(?) which are characterized by intense brown clay and local red-orange iron oxide alteration and weathering products (gouge?). Upper ones are probable bedrock cracks (Cretaceous weathering products(?)) while lower ones show evidence of shearing. Plagioclase and pyroxene largely altered to hydrous phases and local 2-3% carbonate. Oxides are altered to leucoxene.

Original mode:

45%	Plagioclase.
50%	Pyroxene.
5%	Oxides.

Grain size originally 1-2 mm. Small 2 cm granitic dike occurs at 376.6'. More highly altered, clayey intervals are 351'-364.4' (scattered small intervals); 364.4'-365.5'; 373.0'-373.5'; 376.6'-376.9';376.9'-392.2' (scattered intervals except basal 2' which shows increased alteration associated with shearing). Rock is locally brecciated with grey clay gouge interstitial material (especially 390.5'-391'). Quartz vein fragment at 362.1'. Recovery is less than 60% in some of the softer intervals. Core is fairly broken.

392.2'-499.7' ALTERED SCHISTOSE SHEAR ZONE.
Most of interval has a planar fabric oriented 77-85° to core axis (angle increasing(?) with depth). Linear fabric is developed locally. Alteration is slight to pervasive, with alteration products including hematite, limonite, talc, and clays. Most alteration is probably fault related, although some of the more intensely altered areas may be prefaulting (these are indicated below with an *).

392.2'-399' - Dark yellowish brown to pale brown, increasingly sheared and altered metagabbro schist. Much sheet silicates, ferruginous.

399'-403'* - Moderate yellowish brown to pale yellowish brown to pale olive brown talcy ferruginous schist.

403'-407'* - Pale yellowish brown to yellowish orange to grayish orange pink ferruginous, clayey schist with minor chert.

407'-420' - Dark yellowish brown to light brown to greyish red to medium and very light grey hematite-chert banded iron formation with minor magnetite, local limonite, and iridescent goethite(?) coatings. Chert is folded to brecciated.

420'-422.3' - Dark green grey, very fine grained talc-minnesotaite schist with moderate yellowish brown, more ferruginous intervals at top.

422.3'-428' - Interbedded, very fine grained, sheared, light brown to greyish red chert and limonitic, talcy, mylonitic schist with much flattening.

428'-434.5'* - Altered greyish red to dark yellowish brown ferruginous, clayey schist which becomes less altered or ferruginous with depth. Contains minor vugs.

434.5'-444.3' - Pale red to pale brown to olive grey siliceous, biotitic, talcy, very fine-grained mylonitic schist and local flattened intervals of chert and/or siliceous tuffs. Unit becomes less ferruginous with depth. Some recrystallized flattened quartz grains in schistose intervals may have been phenocrysts within volcaniclasts. Contains 2-3% pyrite and pyrrhotite.

444.3'-458.0'* - Altered greyish olive to dark yellow orange to pale brown ferruginous, talcy, clayey mylonitic schist.

458.0'-472.0' - Slight to moderately altered, light olive grey to medium grey to light brownish grey, siliceous, biotitic, sericitic, talcy, mylonitic schist with minor chlorite in fractures and vugs. Rock is folded to fragmental (well cemented). At least part of protolith was felsic volcanics and chert(?). Fragments were largely primary(?). Rock is locally silicified(?). A more linear fabric is locally developed. Porphyroblastic biotite occurs locally to 1 mm.

472.0'-496.0'* - Altered moderate yellow brown to greyish red to pale red to light brown ferruginous, talcy, sericitic, siliceous to clayey mylonitic schist. Alteration decreases below 492'. Remnants of original fragmental textures locally common.

496.0'-499.7' - Very fine-fine-grained brownish grey to medium grey biotite, sericite, plagioclase, siliceous schist. Schistose fabric, plagioclase alteration, and minor iron staining decreases with depth. Unit contains minimal carbonate, but calcite does increase downward to about 15%. Parent rock was probably fine-grained extrusive or volcaniclastic.

499.7'-621.9' METABASALT-ANDESITE.
Rock is fine-grained, olive grey, with scattered calcite, quartz, epidote, chlorite veins. Probably flows or dikes, but may be volcaniclastic in places.

Mode:

Original plagioclase; 50-60% now partially altered.
Original clinopyroxene; 40-50% now half of this is fibrous amphibole.
Original oxides; 2-7% now leucoxene.
Other alteration or metamorphic minerals are

0-15%	Calcite.
10-15%	Chlorite in veins and matrix.
10-15%	Epidote.
1-2%	Quartz in veins.
1%	Pyrite in veins.
2-3%	Epidote in veins.
0-3%	Biotite in veins.

Almost all minerals show wavy extinctions in thin section. Calcite has deformation lamellae. Veins are of two types: 1) slip veins with chlorite, calcite, pyrite, epidote, quartz, slickensides, and 2) tension-gash veins (perpendicular to slip veins) with chlorite and lesser calcite. Calcite is limited to veined areas except in 499.7'-505.0' where it is more pervasive. Schistose fabric is only weakly developed.

621.9'-639.6' CALCAREOUS MYLONITIC CHLORITE SCHIST.
Rock is very fine-grained, medium greenish grey.

Mode:

40-60%	Chlorite, minnesotaite, and stilpnomelane.
20-30%	Calcite.
0-5%	Quartz.
2-7%	Leucoxene.
0-5%(?)	Plagioclase.
0-5%	Biotite (with some veins).

Rock is sheared to mylonitic with probable parental rock being a mafic-intermediate volcaniclastic, although deformation makes identity uncertain. Basal contact with medium-grained metagabbro is gradational due to deformation and recrystallization.

639.6'-818.2' METAGABBRO-METADIORITE.
Rock is fine to medium-grained greenish grey to medium grey to light olive grey. Fabric ranges from massive slightly schistose to veined to sheared. Both contacts are finer grained, more schistose, more calcareous, and more apparently porphyritic (plagioclase). Whether the finer groundmass surrounding the plagioclase is original or is due to increased shear is unknown. Unit was probably a dike.

Mode:

40-60%	Plagioclase, 1-4 mm, somewhat saussuritized.
20-40%	Chlorite (after hornblende or pyroxene).
2-10%	Calcite.
2-3%	Epidote.
2-5%	Opaques and leucoxene.
2-5%	Biotite.
trace	Pyrite, chalcopyrite, pyrrhotite(?)

Veins are typically segregations in shears with chlorite, calcite, quartz, local epidote, brecciation, slickensides. Calcite near contacts also occurs in irregular tension veins and is a more pervasive alteration product.

818.2'-840.6' CALCAREOUS CHLORITE SCHIST.
Rock is fine to very fine-grained, light greenish grey, locally mylonitic. Becomes more flattened-mylonitic with depth in general. Original rock was fine- medium-grained andesite tuff(?). Unit is slightly graphitic locally, with minor small chert fragments. Schistosity measures 50-53° to core axis.
Mode:

40-50%	Chlorite (and stilpnomelane, minnesotaite).
30-50%	Calcite.
0-5%	Quartz (chert).
0-5%(?)	Graphite.
trace to ½%	Chalcopyrite.

May be somewhat sericitic(??).

840.6'-841.3' SHEARED QUARTZITE-METACHERT SCHIST.
Rock is very fine-grained white to grey to black, calcareous, and graphitic. Rock is recrystallized to sheared with much flattening and some brecciation. Schistosity and compositional banding measures 45-58° to core axis.
Mode:

35-45%	Quartz.
45-55%	Calcite.
10%	Graphite.
0-5%	Pyrrhotite-pyrite.

841.3'-887.6' METAVOLCANIC BRECCIA SCHIST.
Rock is fine to coarse-grained, dark green grey chloritic-graphitic, with chert fragments (accidentals?) and scattered interbeds of black graphitic schist and light to medium grey folded-brecciated chert beds. Breccia fragments range up to 2 cm, but are typically 1-3 mm. They are largely chlorite with about 5% chert fragments. Chlorite fragments are very fine-grained and schistose. Matrix is fine-grained, schistose, chloritic-graphitic, with calcite locally in basal 6 feet. Scattered calcite tension fractures occur locally, especially the basal 2 feet. Matrix contains up to 5% pyrite and chalcopyrite, which is often found as pressure

shadows surrounding chert fragments and is more common in the upper 17' of unit. Matrix/fragment ratio varies from .75 to 2. Graphitic-chloritic schist interbeds are 842.0'-844.2', 852.9'-853.7' scattered, 855.2'-856.2'. This rock is schistose-recrystallized with 60%(?) chlorite and 5-10% pyrrhotite-pyrite. Units are relatively conductive.
Folded chert interbeds are 853.7'-854.4', 856.2'-856.9', and 853.7'-854.4'. Chert appears recrystallized and is locally brecciated with minor vugs.
Sulfides within 852'-854' show local efflorescence to melanterite in the boxes.
Unit represents a shear zone(?) or volcanic breccia.
Schistosity measures 65-68° to core axis.

887.6'-894.7' CALCAREOUS-CHLORITIC STILPNOMELANE AMPHIBOLE SCHIST.
Unit is laminated-banded medium grey to pale red to light greenish grey, very fine to fine-grained, with minor meta-chert, veining, folding, and brecciation. Goethitic, sideritic locally. Darker laminations probably contain minor graphite, magnetite, increased stilpnomelane, manganese(?) oxides. Local chloritic breccia at 888.7'-889.3'. Veins are largely calcite with local goethite.

Mode:	Avg.
0-60%	30% Calcite.
0-80%	20% Chlorite - stilpnomelane-minnesotaite.
0-80%	30% Amphibole, pale green (actinolite?, grunerite?).
0-80%	10% Recrystallized chert.
0-20%	4% Red, altered, amphibole-goethitic.
0-5%	3% Magnetite.
0-5%	2% Graphite.
0-5%	1% Goethite.

Bedding measures 0-50° to core axis.

894.7'-974.0' LAMINATED-BANDED BROWNISH BLACK MAGNETITE AND LIGHT GREENISH GREY CALCAREOUS AMPHIBOLITE (ACTINOLITE-GRUNERITE?).
Rock is fine to very fine-grained, with scattered talcose mylonitic shears, breccia zones, veining, and folding. Black layers increase from 5-10% at top to 90% at 941' to 30% at 958', although amphibolitic layers typically are darker colored below 916'. Magnetite is locally porphyroblastic. Darker layers also appear to contain very fine graphite, possible Mn oxides, chlorite (stilpnomelane?), more quartz(?) and local sulfides which causes the core to form a white melanterite efflorescence after exposure to air for several days (patterns in general cut across bedding so most sulfides are probably secondary). The fine-grained graphite, chlorite-stilpnomelane(?), and sulfides increase with depth, so the darker material becomes less magnetic with depth. Amphibole is locally altered to a reddish to yellowish mixture of goethite, hematite or limonite and talc(?). This usually occurs along veins or shears, but

also has affected amphiboles that have undergone minor porphyroblastic growth within actinolitic-gruneritic layers, particularly down to 911', or in areas with higher calcite contents. This zone appears to be centered around a large quartz-calcite (minor) vein with breccia fragments (quartz cemented breccia) which is located from 901.0' to 904.1'. Another 1 cm quartz vein with minor calcite occurs from 918'-919.5'. Scattered veins with amphibole alteration often have hairline sulfide selvages, especially toward the base of the unit. Talcose shears are generally thin, often cross cut, and sometimes have local asbestiform fibers. The thickest talcose shear is from 938.1'-939.0'. Oxide cemented shears are notable at 918.8'-919.1' and 952.4'-955'. Folding is disharmonic with various orientations. Bedding is oriented 0-58° to core axis, with schistosity best developed where bedding coincides with it (45-58°).

Approximate Mode:

5-40%	Magnetite (increase toward center).
5-15%	Graphite (increase downward).
2-5%(?)	Pyrite-pyrrhotite-chalcopyrite (increase? downward).
5-65%	Actinolite-grunerite (decrease downward).
0-20%	Altered actinolite-grunerite (scattered).
0-25%	Calcite (decrease downward).
0-20%	Chlorite-stilpnomelane-minnesotaite (increasing downward).
10-30%(?)	Quartz.

Beside being magnetic, unit is locally conductive.

974.0'-983.0' CHLORITIC SCHISTOSE CATACLASTIC-MYLONITIC VOLCANIC BRECCIA. Rock is very fine-grained, black greenish grey to dark greenish grey. Chloritic fragments are to 2 cm, but are usually 1-3 mm. Matrix is very fine-grained chloritic, mylonitic with oxides. Unit is slightly magnetic. Some portions have hairline carbonate rims around fragments, while basal portion has irregular white melanterite efflorescence (from sulfides). Massive, black, somewhat siliceous, interval from 974.5'-975.2' contains minor hairlike veins and fracture fillings of pyrrhotite, chalcopyrite, bornite(?) and sphalerite(?).

Mode:

70-85%	Chlorite, minnesotaite, stilpnomelane.
2-5%	Magnetite.
0-5%	Graphite.
1/2-5%	Sulfide.
0-5%	Carbonate.
0-20%?	Quartz.

Schistosity measures 55-70° to core axis and is only moderately developed.

983.0'-986.1' LAMINATED, BROWNISH BLACK MAGNETITE AND LIGHT GREENISH GREY AMPHIBOLITE.

Unit is very fine-grained, with quartz, calcite, siderite veining containing minor chlorite and sulfides. Upper .7' of unit is a siderite-quartz vein with chlorite. Other veins are usually 1-2 mm and are relatively ubiquitous. Minor amounts of pyrrhotite, pyrite, and chalcopyrite are found in the more sideritic veins. The smaller veins make up 5-10% of the rock.

Mode (outside of large quartz-carbonate vein):

20-25%	Magnetite.
70-75%	Actinolite-grunerite.
1-3%	Calcite (veins).
2-4%	Siderite (veins).
1-3%	Quartz (veins).
½-2%	Sulfide.

Bedding measures 55-60° to core axis. Unit probably was a tectonic sliver within the chloritic breccia of adjacent units.

986.1'-989.9' CHLORITIC SCHISTOSE CATACLASTIC-MYLONITIC VOLCANIC BRECCIA.

Unit is very fine-grained, greenish grey to dark greenish grey. Similar to 974.0'-983.0'. Unit has increased sulfides and white efflorescence near contacts. Unit has a few 1 cm chert(?) fragments.

989.9'-998.2' GREENISH BLACK GRAPHITIC, SILICEOUS, CHLORITIC SCHIST.

Rock is very fine-grained with local white efflorescence. Unit contains scattered recrystallized chert fragments and laminae. Sulfides are present as hairline veins, envelopes surrounding quartz, and probably as fine disseminations. Sulfides are very golden in color, probably due to oxidation. Schistosity measures about 70° to core axis.

Mode:

40-50%	Quartz.
30-40%	Chlorite, stilpnomelane, minnesotaite.
10-20%	Graphite.
2-10%	Sulfides-pyrrhotite, pyrite, chalcopyrite.
0-5%	Magnetite(?).

998.2'-1066.0' DARK GREEN GREY CHLORITIC SCHISTOSE VOLCANIC BRECCIA GRADING INTO A CHLORITIC, DACITIC, LAPILLI ASH METATUFF SCHIST.

Rock is fine to coarse-grained (very fine-grained mineralogically), with chert fragments-beds, laminated siliceous siltstone beds, black graphitic siliceous schist beds and sulfides. Some non-chloritic lithologies are probably tectonic slivers. Most fragments probably represent intermediate-mafic lapilli and accidental fragments. Volcaniclast size decreases downhole and schistosity becomes better developed where rock appears to grade into a porphyritic dacite (chloritic). Unit is similar to 841.2'-887.6' in most aspects. Highest sulfides (5-10%?) and white efflorescence is found within 1026.5'-1050.0' and 1057.5'-1059.4'. Unit is locally calcareous within 1008'-1022'. Unit contains scattered, irregular, tan vugs (interfragmental) below 1012' containing magnetite, siderite, pyrite, and quartz (x-ray diffraction) crystals. Bedding of siltstone is 65° to core axis. Schistosity in finer tuff measures 67° to core axis.

1066.0'-1079.1' BRECCIATED-DEFORMED LIGHT GREY CHERT and DARK GREENISH GREY TO OLIVE BLACK GRAPHITE CHLORITIC SILICEOUS SCHIST. Rock is 25% chert and 5-10% sulfides and was probably largely intraformational originally and only tectonically modified, with sulfides (pyrite) in vuggy strain shadows. Minor discontinuous tension fractures contain siderite, chalcopyrite, and a trace of bornite and magnetite. Minor melanterite efflorescence occurs locally. Bedding and schistosity measure 75-80° to core axis.

1079.1'-1153.2' INTERLAMINATED-INTERBEDDED LIGHT GREENISH GREY AMPHIBOLITE (ACTINOLITE-GRUNERITE), BROWNISH BLACK MAGNETITE AND DARK GREENISH GREY GRAPHITIC, SILICEOUS, MANGANIFEROUS(?), CHLORITIC SCHIST.
Rock is generally fine to very fine-grained, but is locally medium-grained with porphyroblastic magnetite and amphibole. Unit has enough magnetite to be magnetic from 1080.4'-1103.4', 1120.0'-1137.8', and 1145.3'-1150.6'. These intervals are more laminated than other sections which contain the graphitic, siliceous, chlorite schist, intervals of which appear manganiferous, especially 1103.8'-approximately 1115' (containing psilomelane?). These schist intervals also show some melanterite efflorescence, mainly from 1112'-1114.5'. Local medium-grained amphiboles are altered red, with some control contributed by stratigraphic layers and cross-cutting veins. Same for minor amounts of pyrite-pyrrhotite. Veins are scattered, but ubiquitous, with altered amphibole, goethite, minor quartz, pyrite-pyrrhotite, carbonate, chlorite, and oxides. Brecciation and folding is minor. Some layers have been boundinaged. Bedding measures 85-45° to 25° (at base) to core axis.

Mode:

5-60%	Actinolite-grunerite.
0-30%	Altered amphibole (goethitic).
5-50%	Magnetite.
10-50%	Quartz.
0-5%	Graphite.
0-30%	Chlorite (also stilpnomelane and minnesotaite).
0-10%?	Mn oxides?.
1-5%	Sulfides.

1153.2'-1268.4' INTERBEDDED FINE TO COARSE-GRAINED, DARK GREEN GREY CHLORITIC SCHISTOSE METAVOLCANIC BRECCIA; VERY FINE TO MEDIUM-GRAINED PORPHYRITIC, DARK GREEN GREY SCHISTOSE, METABASALT (flows and porphyritic equivalent of first); and BANDED GREY TO DARK GREY CHERT, SILICATE (ACTINOLITE-MINNESOTAITE-GRUNERITE), OXIDE IRON-FORMATION.
Chloritic units also typically contain stilpnomelane and minnesotaite.
Subunits as follows:

1153.2'-1165.1'	Metavolcanic breccia.
1165.1'-1166.3'	Laminated chert, siltstone, chloritic-minnesotaite schist.
1166.3'-1180.1'	Metavolcanic breccia.
1180.1'-1186.1'	Porphyritic(?) metabasalt.
1186.1'-1186.7'	Laminated black chert-siltstone and chloritic-minnesotaite schist.
1186.7'-1189.5'	Metavolcanic breccia.
1189.5'-1193.2'	Laminated siltstone, actinolite-grunerite and chlorite-minnesotaite schist (contorted).
1193.2'-1201.6'	Metavolcanic breccia.
1201.6'-1206.1'	Porphyritic(?) metabasalt.
1206.1'-1215.4'	Metavolcanic breccia and porphyritic metavolcanic breccia with minor contorted quartz-amphibole-chlorite-minnesotaite schist.
1215.4'-1228.8'	Laminated magnetite, chloritic-minnesotaite schist, actinolite-grunerite, chert, with minor siderite-calcite layers-veins and reddish amphibole alteration.
1228.8'-1236.4'	Metavolcanic breccia.
1236.4'-1247.0'	Banded-laminated magnetite and actinolite-minnesotaite-grunerite with some folding and alteration of amphiboles.
1247.0'-1248.3'	Metavolcanic breccia.
1248.3'-1252.2'	Massive fine-grained oxide and uniform chlorite schist (metabasalt?) with a deformed interior with up to 50% calcite-siderite-dolomite(?).
1252.2'-1257.9'	Metavolcanic breccia,
1257.9'-1258.8'	Uniform fine-grained chlorite schist.
1258.8'-1261.1'	Laminated chert, magnetite, and actinolite-minnesotaite-grunerite.
1261.1'-1268.4'	Metavolcanic breccia grading into porphyritic metabasalt into uniform chlorite schist with schistosity increasing downward.

Most of porphyritic (plagioclase phyric(?)) metabasalt does have a fragmental texture. Irregular plagioclase phenocrysts are ½ to 2 mm but they do get up to 4 mm. All have been at least partially altered to calcite. Some calcite rhombs(?) also occur. Local alteration of iron silicates (reddish goethite-hematite) occur in the interval between 1219' and 1259'. Veining is relatively minor and predominantly affects the iron formation. A 1 mm chlorite vein and associated hairline pyrite-chalcopyrite vein runs discontinuously from 1186'-1188.6'. Trace amounts of pyrite are scattered. Trace amounts of disseminated chalcopyrite occur within 1203'-1206' along with a lesser amount of bornite (purple-gold reflections). Bedding in laminated rock varies from 50-75°. Schistosity towards base measures 70°. Minor melanterite efflorescence occurs locally.

1268.4'-1282' GREENISH GREY, SLIGHTLY CALCAREOUS, SILICEOUS, MYLONITIC, CHLORITE SCHIST.
Rock is very fine to fine-grained. Schistosity is well developed. Probably an andesitic-dacitic metatuff with plagioclase (now calcite) and quartz relict phenocrysts.

Mode:

60-90%	Chlorite, stilpnomelane, minnesotaite.
0-5%	Quartz phenocrysts.
0-20%	Plagioclase phenocrysts (now calcite).
10-30%	Intermediate-felsic volcaniclasts (now quartz, carbonate, muscovite?).
trace	Pyrite-pyrrhotite.

Basal two feet returns to a uniform chlorite schist without phenocrysts and a schistosity that is less well developed. Schistosity measures 75° to core axis.

1282' TOTAL DEPTH

Analytical results of drill hole CW-1 follow in Table 4.

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CCW 17470	CW-1	329-337	47.40	14.90	16.10		4.95	3.40	2.72		1.92	2.24
CCW 17473	CW-1	337-338.5	54.30	11.40	14.00		3.36	4.00	1.82		2.43	2.06
CCW 17474	CW-1	338.5-344.5	60.60	9.99	10.90		2.49	4.11	1.30		2.01	1.49
CCW 17475	CW-1	344.5-351	58.20	12.30	10.20		2.82	5.23	1.99		1.98	1.29
CCW 17476	CW-1	351-364.4	49.10	14.40	14.90		5.24	5.52	2.87		1.45	2.11
CCW 17481	CW-1	364.4-365.5	41.30	11.80	15.50		4.46	9.75	2.12		0.52	1.73
CCW 17482	CW-1	365.5-378.5	48.70	14.50	15.40		5.30	5.31	3.41		1.00	2.11
CCW 17488	CW-1	380.2-392.2	48.60	13.80	15.60		6.81	1.79	1.87		1.93	2.07
CCW 17497	CW-1	392.2-399	48.20	14.00	16.10		6.47	0.85	0.69		2.96	2.05
CCW 17819	CW-1	399-407	51.70	14.80	17.80		1.68	0.75	0.03		1.28	2.30
CCW 17824	CW-1	407-420	49.60	7.47	33.20		0.57	0.57	0.01		0.30	0.78
CCW 17828	CW-1	420-424	37.00	15.50	23.90		10.20	0.39	0.03		0.64	1.40
CCW 17831	CW-1	424-434.5	52.30	14.30	17.80		3.01	0.40	0.05		2.69	1.49
CCW 17837	CW-1	434.5-444.3	50.20	14.00	14.90		8.67	0.51	0.06		2.19	1.63
CCW 17843	CW-1	444.3-458	46.00	16.80	18.30		4.58	0.44	0.12		3.25	1.95
CCW 17851	CW-1	458-472	49.00	15.20	14.30		7.04	0.65	1.03		2.10	1.70
CCW 17859	CW-1	472-484	47.00	16.80	18.80		4.01	0.41	0.09		2.43	1.99
CCW 17866	CW-1	484-496	46.60	18.00	20.40		1.16	0.22	0.06		0.87	2.07
CCW 17873	CW-1	496-512	50.50	13.80	12.30		5.91	5.50	3.81		1.70	1.43
CCW 17882	CW-1	518-534	49.60	13.30	12.00		5.67	7.76	4.04		1.24	1.37
CCW 17891	CW-1	562.0-565.5	50.70	12.60	11.20		5.60	8.54	4.07		1.01	1.27
CCW 17892	CW-1	572-577	48.90	13.50	12.10		5.63	8.58	3.66		1.51	1.38
CCW 17893	CW-1	588-600	50.30	13.50	12.00		5.85	7.60	4.08		1.24	1.41
CCW 17900	CW-1	600-616	49.50	13.50	11.80		5.67	7.47	4.20		1.20	1.41
CCW 17909	CW-1	616-632	46.50	13.00	11.90		6.15	7.44	2.72		1.26	1.35
CCW 17918	CW-1	634-646	43.70	17.10	10.00		6.36	7.10	2.75		1.60	0.98
CCW 17925	CW-1	646-662	46.40	17.90	9.54		5.62	8.23	3.97		0.70	1.07
CCW 17934	CW-1	686-698	44.80	16.90	10.90		5.76	9.42	3.66		0.45	1.02
CCW 17941	CW-1	698-700.5	22.00	8.06	17.30		4.28	24.70	0.24		0.93	0.32
CCW 17942	CW-1	700.5-712	44.70	16.60	12.10		5.79	8.36	3.51		0.93	1.19
CCW 17949	CW-1	714-726	44.70	16.60	10.70		5.69	12.10	2.74		0.84	0.98
CCW 17956	CW-1	738-740	47.50	16.50	10.50		5.76	9.90	3.53		0.66	1.05
CCW 17957	CW-1	754-768	44.00	16.90	11.70		8.14	6.22	3.17		0.84	1.13
CCW 17965	CW-1	768-782	42.00	15.20	11.10		7.52	9.27	2.62		0.93	1.03
CCW 17973	CW-1	810-824	44.50	15.90	10.70		5.90	8.08	3.10		1.03	1.12
CCW 17990	CW-1	830-842	42.80	15.70	10.90		7.52	7.30	1.11		2.14	0.91
CCW 17997	CW-1	842-858	46.10	10.70	23.70		8.26	1.16	0.12		0.24	0.93
CCW 18006	CW-1	868-882	39.20	11.80	27.00		10.40	0.60	0.28		0.60	1.00
CCW 18040	CW-1	884-887.6	32.80	10.80	30.10		10.40	2.54	0.37		0.83	0.91
CCW 18043	CW-1	887.6-894.7	59.80	0.73	14.10		1.59	11.80	0.07		0.31	0.06
CCW 18047	CW-1	894.7-911	42.80	0.64	38.50		2.25	5.50	0.01*		0.36	0.05
CCW 18056	CW-1	912-926	37.80	0.95	45.90		2.58	2.90	0.03		0.56	0.10
CCW 18064	CW-1	926-942	33.30	1.23	48.30		2.58	3.42	0.11		0.63	0.09
CCW 18073	CW-1	944-960	31.10	2.27	46.30		2.98	1.90	0.31		1.05	0.13
CCW 18082	CW-1	966-982	33.80	6.19	38.70		5.10	1.92	0.40		1.10	0.46
CCW 18091	CW-1	982-998	40.60	7.01	33.70		5.73	1.49	0.34		0.93	0.63
CCW 18201	CW-1	998-1016	39.50	11.30	30.40		8.90	0.36	0.33		0.78	0.97
CCW 18211	CW-1	1024-1038	37.50	9.84	34.00		6.81	0.47	0.40		1.02	0.87
CCW 18219	CW-1	1038-1052	39.50	10.10	31.30		7.40	0.81	0.29		0.70	0.83
CCW 18226	CW-1	1058-1074	50.00	9.53	22.50		6.97	0.79	0.01*		0.11	0.79
CCW 18235	CW-1	1074-1090	43.40	2.27	38.10		3.33	2.15	0.26		0.96	0.11

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CCW 18244	CW-1	1092-1106	34.20	1.61	44.40		2.90	1.96	0.16		0.80	0.10
CCW 18252	CW-1	1106-1120	34.10	3.47	38.10		3.80	1.74	0.51		1.53	0.21
CCW 18260	CW-1	1120-1134	36.90	0.74	50.00		2.57	2.10	0.01*		0.48	0.05
CCW 18268	CW-1	1134-1150	40.20	1.89	39.90		3.56	2.78	0.18		0.99	0.11
CCW 18277	CW-1	1150-1166.6	38.00	6.60	34.00		6.37	2.96	0.43		1.23	0.55
CCW 18286	CW-1	1180-1194	41.50	8.19	27.70		8.56	2.93	0.28		0.80	0.67
CCW 18294	CW-1	1194-1210	32.90	11.40	31.80		10.70	1.33	0.28		0.84	0.97
CCW 18303	CW-1	1214-1230	40.10	2.33	40.40		3.09	4.42	0.14		0.64	0.17
CCW 18312	CW-1	1234-1248	40.00	3.28	41.10		3.66	3.33	0.13		0.85	0.25
CCW 18320	CW-1	1248-1262	41.30	6.27	33.00		5.85	3.17	0.40		1.16	0.52
CCW 18328	CW-1	1272-1282	36.20	15.10	23.90		13.70	0.29	0.01*		0.08	1.35

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	P205 %	MNO %	CO2 %	LOI %	S %	CL PPM	F PPM	CU PPM	NI PPM	CR PPM
CCW 17470	CW-1	329-337		0.20	0.14	5.54	NIL	150	1300	83	360*	40
CCW 17473	CW-1	337-338.5		0.18	0.59	5.39	0.05	50*	1200	96	290*	90
CCW 17474	CW-1	338.5-344.5		0.16	1.24	5.70	NIL	50*	850	98	240*	110
CCW 17475	CW-1	344.5-351		0.18	1.08	4.47	0.04	250	530	87	120*	90
CCW 17476	CW-1	351-364.4		0.22	0.05	3.38	NIL	50*	1100	79	320*	40
CCW 17481	CW-1	364.4-365.5		0.21	0.48	7.62	NIL	100	5600	140	450	40
CCW 17482	CW-1	365.5-378.5		0.27	0.15	3.54	NIL	50*	1100	120	350*	40
CCW 17488	CW-1	380.2-392.2		0.28	0.01	5.85	NIL	50*	1000	260	330*	50
CCW 17497	CW-1	392.2-399		0.33	0.01*	8.00	NIL	250	990	260	370	40
CCW 17819	CW-1	399-407		0.39	0.11	8.39	NIL	50*	690	280	310*	40
CCW 17824	CW-1	407-420		0.57	0.29	6.62	NIL	750	200	320	250*	90
CCW 17828	CW-1	420-424		0.33	0.01	8.70	0.11	50*	520	320	310*	80
CCW 17831	CW-1	424-434.5		0.17	0.02	7.16	NIL	50*	300	130	280*	80
CCW 17837	CW-1	434.5-444.3		0.15	0.01*	5.70	NIL	50*	680	130	320*	40
CCW 17843	CW-1	444.3-458		0.28	0.01	8.23	NIL	50*	660	180	630	40
CCW 17851	CW-1	458-472		0.11	0.01*	5.77	NIL	50*	740	160	420	40
CCW 17859	CW-1	472-484		0.18	0.01	8.47	NIL	50*	540	230	310*	40
CCW 17866	CW-1	484-496		0.31	0.01*	9.85	NIL	100	200	210	330*	40
CCW 17873	CW-1	496-512		0.17	1.39	3.85	NIL	50*	540	150	160*	70
CCW 17882	CW-1	518-534		0.18	1.24	3.00	0.02	50*	600	150	350*	70
CCW 17891	CW-1	562.8-565.5		0.18	1.73	3.23	NIL	50*	660	110	150*	80
CCW 17892	CW-1	572-577		0.19	1.15	2.47	0.02	50*	490	160	390	60
CCW 17893	CW-1	588-600		0.19	0.69	2.16	NIL	50*	560	150	350*	80
CCW 17900	CW-1	600-616		0.19	1.39	2.93	0.03	350	610	140	160*	60
CCW 17909	CW-1	616-632		0.21	4.66	7.85	NIL	50*	550	180	320*	60
CCW 17918	CW-1	634-646		0.17	4.68	8.54	NIL	150	280	130	310*	80
CCW 17925	CW-1	646-662		0.15	2.21	5.08	NIL	150	270	130	320*	80
CCW 17934	CW-1	686-698		0.19	2.69	5.31	NIL	50*	290	120	320*	80
CCW 17941	CW-1	698-700.5		0.42	19.30	20.20	0.59	50*	200	520	200*	40
CCW 17942	CW-1	700.5-712		0.20	2.36	5.08	NIL	50*	270	57	150*	100
CCW 17949	CW-1	714-726		0.18	2.10	4.23	NIL	50*	240	120	290*	110
CCW 17956	CW-1	738-740		0.16	0.83	3.16	NIL	50*	260	120	150*	100
CCW 17957	CW-1	754-768		0.19	1.81	6.16	NIL	100	230	140	270*	100
CCW 17965	CW-1	768-782		0.20	4.59	8.70	NIL	50	250	140	290	100
CCW 17973	CW-1	810-824		0.17	4.99	8.23	NIL	150	270	120	280*	90
CCW 17990	CW-1	830-842		0.21	5.47	9.77	0.02	50*	320	110	240*	80
CCW 17997	CW-1	842-858		0.26	1.24	6.77	0.20	50*	280	150	230*	90
CCW 18006	CW-1	868-882		0.23	0.13	7.16	NIL	50*	510	16	230*	70
CCW 18040	CW-1	884-887.6		0.30	3.66	10.50	NIL	50*	240	16	250*	60
CCW 18043	CW-1	887.6-894.7		0.86	9.94	10.60	NIL	50*	240	12	120*	70
CCW 18047	CW-1	894.7-911		1.61	6.88	7.31	0.08	50	360	48	170*	60
CCW 18056	CW-1	912-926		2.02	5.54	6.31	0.01	200	340	14	120*	30
CCW 18064	CW-1	926-942		2.36	6.85	7.54	0.07	50	500	9	190*	50
CCW 18073	CW-1	944-960		2.58	8.03	10.80	NIL	100	320	18	200*	40
CCW 18082	CW-1	966-982		1.52	5.12	9.93	0.14	200	260	34	210*	50
CCW 18091	CW-1	982-998		0.54	0.17	8.70	0.46	150	460	130	210*	60
CCW 18201	CW-1	998-1016		0.20	0.20	7.16	NIL	150	340	18	250*	80
CCW 18211	CW-1	1024-1038		0.25	0.09	8.00	0.81	250	500	83	140*	60
CCW 18219	CW-1	1038-1052		0.26	0.07	8.54	1.45	200	700	170	140*	70
CCW 18226	CW-1	1058-1074		0.18	0.39	7.23	1.47	150	560	80	190*	80
CCW 18235	CW-1	1074-1090		0.96	4.00	7.70	0.75	50*	630	72	250	50

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	P205 %	MNO %	CO2 %	LOI %	S %	CL PPM	F PPM	CU PPM	NI PPM	CR PPM
CCW 18244	CW-1	1092-1106		2.57	8.89	10.80	0.24	200	530	44	200*	50
CCW 18252	CW-1	1106-1120		3.33	9.24	13.00	NIL	100	510	3	210*	40
CCW 18260	CW-1	1120-1134		1.52	4.13	5.23	0.20	50	610	76	180*	30
CCW 18268	CW-1	1134-1150		1.46	4.55	7.47	0.08	50	580	57	200*	30
CCW 18277	CW-1	1150-1166.6		0.57	3.75	9.00	NIL	450	330	19	280	50
CCW 18286	CW-1	1180-1194		0.35	3.24	8.62	NIL	150	580	57	210*	50
CCW 18294	CW-1	1194-1210		0.20	1.68	8.47	NIL	150	190	73	250*	50
CCW 18303	CW-1	1214-1230		1.14	4.67	6.08	0.12	100	440	75	120*	50
CCW 18312	CW-1	1234-1248		1.02	3.36	5.85	0.23	50	320	130	260	30
CCW 18320	CW-1	1248-1262		0.40	2.60	7.47	NIL	100	460	15	220*	40
CCW 18328	CW-1	1272-1282		0.25	0.06	7.77	NIL	50*	300	45	350	80

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	PB PPM	MO PPM	PT PPB	PD PPB	IR PPB	AU PPB	AG PPM
CCW 17470	CW-1	329-337	50	360	200	7	3*	10	9	100*	9*	2*
CCW 17473	CW-1	337-338.5	34	290	200	8	3*	10	6	100*	7*	2*
CCW 17474	CW-1	338.5-344.5	25	220	100	10	1	10	5	100*	6*	2*
CCW 17475	CW-1	344.5-351	22	220	200	10	2	10*	5	100*	7*	2*
CCW 17476	CW-1	351-364.4	41	360	100*	7	7	10	10	100*	8*	2*
CCW 17481	CW-1	364.4-365.5	39	210	100*	8	4*	10	51	100*	8*	2*
CCW 17482	CW-1	365.5-378.5	42	330	100*	7	4*	10	10	100*	9*	2*
CCW 17488	CW-1	380.2-392.2	49	330	200	6	1*	10	9	100*	8*	2*
CCW 17497	CW-1	392.2-399	73	350	200	9	3*	10*	3	100*	9*	2*
CCW 17819	CW-1	399-407	39	340	200	6	3*	10*	5	100*	8*	2*
CCW 17824	CW-1	407-420	52	280	100	10	1*	10*	4	100*	6*	6*
CCW 17828	CW-1	420-424	130	310	700	17	3*	10*	2*	100*	8*	9*
CCW 17831	CW-1	424-434.5	48	370	200	7	3*	10*	2	100*	7*	2*
CCW 17837	CW-1	434.5-444.3	47	350	100	7	3*	10*	3	100*	8*	2*
CCW 17843	CW-1	444.3-458	38	400	300	9	3*	10*	2*	100*	8*	2*
CCW 17851	CW-1	458-472	58	450	200	8	5	10*	2*	100*	9*	2*
CCW 17859	CW-1	472-484	46	470	300	15	1*	10*	2	100*	8*	2*
CCW 17866	CW-1	484-496	28	420	300	10	3*	10*	2*	100*	9*	2*
CCW 17873	CW-1	496-512	43	330	100*	6	3*	10	3	100*	7*	2*
CCW 17882	CW-1	518-534	39	320	100*	7	3*	10*	2*	100*	9*	2*
CCW 17891	CW-1	562.8-565.5	37	300	100*	5	6	10*	2	100*	9*	2*
CCW 17892	CW-1	572-577	37	330	100*	8	2	10*	3	100*	8*	2*
CCW 17893	CW-1	588-600	39	310	100*	6	2*	10*	3	100*	9*	2*
CCW 17900	CW-1	600-616	40	340	100*	8	3*	10*	5	100*	9*	2*
CCW 17909	CW-1	616-632	38	340	200	5	3*	10	5	100*	8*	2*
CCW 17918	CW-1	634-646	32	260	100	5	3	10*	7	100*	8*	2*
CCW 17925	CW-1	646-662	30	260	100*	6	1*	10	8	100*	6*	2*
CCW 17934	CW-1	686-698	31	300	100*	5*	3*	10	8	100*	8*	2*
CCW 17941	CW-1	698-700.5	21	150	100	5*	1*	10*	7	100*	5*	2*
CCW 17942	CW-1	700.5-712	34	330	100	5*	4	10*	7	100*	8*	2*
CCW 17949	CW-1	714-726	37	300	200	7	3	10	7	100*	7*	2*
CCW 17956	CW-1	738-740	35	280	100*	7	4	10*	7	100*	8*	2*
CCW 17957	CW-1	754-768	38	260	100*	7	2*	10	8	100*	7*	2*
CCW 17965	CW-1	768-782	36	270	200	5	2*	10	7	100*	7*	2*
CCW 17973	CW-1	810-824	34	280	100	5*	1	10*	8	100*	7*	7*
CCW 17990	CW-1	830-842	32	210	100*	6	2*	10	6	100*	6*	6*
CCW 17997	CW-1	842-858	27	250	100	5	8	10*	2*	100*	6*	7*
CCW 18006	CW-1	868-882	33	250	100	5*	1*	10*	2*	100*	6*	5*
CCW 18040	CW-1	884-887.6	28	240	100	5	3	10	2	100*	6*	2*
CCW 18043	CW-1	887.6-894.7	6	25	100*	5	1*	10*	2*	100*	5	2*
CCW 18047	CW-1	894.7-911	6	28	100*	5*	1*	10*	2*	100*	4*	2*
CCW 18056	CW-1	912-926	22	21	100*	5*	1*	10*	2*	100*	4*	3*
CCW 18064	CW-1	926-942	35	28	100*	5*	4	10*	2*	100*	4*	4*
CCW 18073	CW-1	944-960	14	36	100*	5*	1*	10*	2*	100*	5*	4*
CCW 18082	CW-1	966-982	25	120	100	6	3	10*	2*	100*	5*	4*
CCW 18091	CW-1	982-998	19	200	100	5	11	10	3	100*	5*	2*
CCW 18201	CW-1	998-1016	29	240	200	5	2*	10*	2*	100*	6*	6*
CCW 18211	CW-1	1024-1038	27	260	100	8	3	10*	2	100*	6*	5*
CCW 18219	CW-1	1038-1052	36	220	100	7	2	10*	3	100*	6*	6*
CCW 18226	CW-1	1058-1074	23	290	100	21	5	10*	3	100*	5*	5*
CCW 18235	CW-1	1074-1090	6	79	100*	11	1*	10*	3	100*	5*	4*

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	PB PPM	MO PPM	PT PPB	PD PPB	IR PPB	AU PPB	AG PPM
CCW 18244	CW-1	1092-1106	8	44	100*	6	1*	10*	2	100*	5*	2*
CCW 18252	CW-1	1106-1120	16	48	100*	5*	1*	10*	2*	100*	5*	2*
CCW 18260	CW-1	1120-1134	7	30	100*	5*	1*	10*	2*	100*	4*	2*
CCW 18268	CW-1	1134-1150	21	47	100*	5*	1*	10	2	100*	5*	4*
CCW 18277	CW-1	1150-1166.6	24	140	100	5*	2	10*	2*	100*	6*	6*
CCW 18286	CW-1	1180-1194	23	200	100	5*	1*	10*	2*	100*	5*	2*
CCW 18294	CW-1	1194-1210	27	260	100	8	2	10*	2*	100*	6*	2*
CCW 18303	CW-1	1214-1230	10	82	100*	5	1*	10*	2*	100*	4*	2*
CCW 18312	CW-1	1234-1248	22	77	100*	6	1*	10*	2*	100*	5*	2*
CCW 18320	CW-1	1248-1262	22	140	100	5*	1*	10*	2	100*	5*	2*
CCW 18328	CW-1	1272-1282	37	350	200	5*	3*	10	3	100*	7*	2*

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	BA PPM	SC PPM	Y PPM	LA PPM	ZR PPM	HF PPM	NB PPM
CCW 17470	CW-1	329-337	54	1.70*	380	500	32.00	36	39	160	4	38
CCW 17473	CW-1	337-338.5	70	3.20	320	490	24.60	32	36	180	4	32
CCW 17474	CW-1	338.5-344.5	58	2.20	270	510	18.00	30	29	190	4	22
CCW 17475	CW-1	344.5-351	58	1.20*	240	510	17.90	38	29	220	5	22
CCW 17476	CW-1	351-364.4	40	1.60*	510	760	33.00	30	33	140	4	32
CCW 17481	CW-1	364.4-365.5	16	2.00	360	240	27.50	32	44	120	3	30
CCW 17482	CW-1	365.5-378.5	28	2.00*	480	410	31.00	34	36	140	4	36
CCW 17488	CW-1	380.2-392.2	62	2.30	180	550	32.00	32	35	140	3	36
CCW 17497	CW-1	392.2-399	74	2.40	94	540	31.00	44	35	140	3	36
CCW 17819	CW-1	399-407	46	2.80	40	210	35.00	88	43	150	4	40
CCW 17824	CW-1	407-420	12	2.60	28	90	14.70	36	18	58	1	16
CCW 17828	CW-1	420-424	16	1.50*	24	70	32.00	30	22	98	1	20
CCW 17831	CW-1	424-434.5	50	2.70	38	350	32.00	26	19	100	2	22
CCW 17837	CW-1	434.5-444.3	46	3.50	52	330	35.00	24	19	130	3	24
CCW 17843	CW-1	444.3-458	62	3.20	48	400	43.00	34	24	130	3	26
CCW 17851	CW-1	458-472	40	1.60*	150	380	37.00	34	24	140	2	26
CCW 17859	CW-1	472-484	82	3.20	48	300	42.00	50	40	140	4	28
CCW 17866	CW-1	484-496	36	3.30	42	180	46.00	28	23	140	3	28
CCW 17873	CW-1	496-512	32	3.90	450	540	33.00	24	24	120	3	22
CCW 17882	CW-1	518-534	20	1.70*	510	550	32.80	22	24	120	2	20
CCW 17891	CW-1	562.8-565.5	14	1.70*	330	470	30.00	20	22	110	2	18
CCW 17892	CW-1	572-577	20	2.10	500	620	33.00	22	25	110	2	20
CCW 17893	CW-1	588-600	18	1.60*	370	440	33.00	22	25	110	3	22
CCW 17900	CW-1	600-616	20	1.70*	380	630	33.00	22	24	110	3	22
CCW 17909	CW-1	616-632	30	1.60*	230	330	31.00	22	26	110	2	20
CCW 17918	CW-1	634-646	28	1.50*	450	1100	26.00	14	10	66	2	12
CCW 17925	CW-1	646-662	18	2.30	750	420	27.00	18	7	72	1	14
CCW 17934	CW-1	686-698	14	1.60*	520	210	27.00	16	10	66	1*	14
CCW 17941	CW-1	698-700.5	22	1.80	330	170	10.50	2	8	26	1*	6
CCW 17942	CW-1	700.5-712	20	1.30*	530	330	32.00	18	10	70	1	14
CCW 17949	CW-1	714-726	18	1.40*	700	320	27.00	14	10	60	2	12
CCW 17956	CW-1	738-740	18	1.50*	780	180	29.00	14	10	66	1	12
CCW 17957	CW-1	754-768	16	1.30*	500	220	32.00	18	10	70	1	14
CCW 17965	CW-1	768-782	18	1.70	490	340	28.00	14	10	64	2	12
CCW 17973	CW-1	810-824	24	1.40*	570	470	31.00	18	11	70	1	14
CCW 17990	CW-1	830-842	40	1.20*	150	730	27.00	14	9	58	1	12
CCW 17997	CW-1	842-858	10	2.20	12	50	24.00	14	11	66	2	14
CCW 18006	CW-1	868-882	16	6.00	16	90	27.00	18	11	62	1	16
CCW 18040	CW-1	884-887.6	20	8.80	46	50	24.00	14	10	54	1	14
CCW 18043	CW-1	887.6-894.7	10	1.90	150	50	1.20	8	6	18	1*	6
CCW 18047	CW-1	894.7-911	8	1.50	72	30	0.70	4	9	18	1*	10
CCW 18056	CW-1	912-926	8	1.80	40	20	1.00	4	11	20	1*	12
CCW 18064	CW-1	926-942	12	4.00	44	20	1.50	6	13	18	1*	10
CCW 18073	CW-1	944-960	22	9.90	28	70	2.10	8	16	26	1*	12
CCW 18082	CW-1	966-982	26	13.80	30	110	11.10	8	13	40	1	16
CCW 18091	CW-1	982-998	22	8.90	22	120	12.90	22	18	78	2	20
CCW 18201	CW-1	998-1016	20	8.00	10	70	24.50	14	10	60	1	16
CCW 18211	CW-1	1024-1038	24	10.50	12	60	20.80	12	13	70	2	18
CCW 18219	CW-1	1038-1052	18	6.30	18	50	20.10	26	15	68	2	14
CCW 18226	CW-1	1058-1074	6	1.10	18	60	16.40	28	16	66	1	14
CCW 18235	CW-1	1074-1090	18	5.70	32	60	2.00	20	12	28	1*	10

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	BA PPM	SC PPM	Y PPM	LA PPM	ZR PPM	HF PPM	NB PPM
CCW 18244	CW-1	1092-1106	14	4.50	28	40	1.70	8	11	24	1*	12
CCW 18252	CW-1	1106-1120	26	11.90	24	50	4.00	10	18	34	1*	12
CCW 18260	CW-1	1120-1134	6	0.50*	30	30	0.70	10	11	18	1*	12
CCW 18268	CW-1	1134-1150	14	6.10	40	30	2.30	14	15	22	1*	10
CCW 18277	CW-1	1150-1166.6	22	8.90	48	50	13.80	10	12	38	1	14
CCW 18286	CW-1	1180-1194	16	5.30	38	50	17.40	20	12	44	1	12
CCW 18294	CW-1	1194-1210	18	6.30	28	50	26.00	8	8	56	1	16
CCW 18303	CW-1	1214-1230	12	4.00	50	30	4.30	10	12	24	1*	12
CCW 18312	CW-1	1234-1248	14	4.20	48	40	6.10	6	13	26	1	10
CCW 18320	CW-1	1248-1262	22	10.30	52	40	13.30	16	11	38	1	12
CCW 18328	CW-1	1272-1282	6	1.30*	8	50	35.00	26	12	74	1	18

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	TA PPM	W PPM	SN PPM	AS PPM	SB PPM	BI PPM	SE PPM	TE PPM	BR PPM	CE PPM
CCW 17470	CW-1	329-337	2.30*	3*	10*	1.40	0.20*	2*	5*	10*	1*	76
CCW 17473	CW-1	337-338.5	1.80*	2*	10*	3.30	0.20	2*	5*	10*	1*	75
CCW 17474	CW-1	338.5-344.5	1.50*	2*	10*	5.40	0.20	2*	5*	10*	1*	58
CCW 17475	CW-1	344.5-351	1.70*	2*	10*	6.50	0.10*	2*	7	10*	1*	54
CCW 17476	CW-1	351-364.4	2.10*	3*	10*	1.20*	0.20*	2*	9*	10*	1*	67
CCW 17481	CW-1	364.4-365.5	2.00*	2*	10*	2.70	0.20*	2*	5*	10*	1*	76
CCW 17482	CW-1	365.5-378.5	2.30*	3*	10*	3.10	0.20*	2*	5*	10*	1*	64
CCW 17488	CW-1	380.2-392.2	2.00*	3*	10*	1.30*	0.20*	2*	5*	10*	1*	72
CCW 17497	CW-1	392.2-399	1.50*	3*	10*	1.40	0.30	2*	5*	10*	1*	65
CCW 17819	CW-1	399-407	1.90	3*	10*	13.00	0.20*	2*	6*	10*	1*	74
CCW 17824	CW-1	407-420	0.90*	2*	10*	24.00	0.40	2*	5*	10*	1	34
CCW 17828	CW-1	420-424	1.10*	3*	10*	64.00	0.20*	2*	5*	10*	1*	37
CCW 17831	CW-1	424-434.5	1.20	3*	10*	14.00	0.20	2*	5*	10*	1*	33
CCW 17837	CW-1	434.5-444.3	1.50*	3*	10*	3.00	0.20*	2*	9*	10*	1*	44
CCW 17843	CW-1	444.3-458	1.60	3*	10*	5.50	0.20*	2*	9*	10*	1*	44
CCW 17851	CW-1	458-472	0.50*	3*	10*	9.40	0.20*	2*	5*	10*	1*	43
CCW 17859	CW-1	472-484	1.80	3*	10*	7.90	0.20*	2*	5*	10*	1*	62
CCW 17866	CW-1	484-496	1.10*	3*	10*	7.70	0.20*	2*	5*	10*	1*	49
CCW 17873	CW-1	496-512	0.50*	3*	10*	2.40	0.20	2*	5*	10*	1*	47
CCW 17882	CW-1	518-534	3.50	3*	10*	2.90	0.20*	2*	5*	10*	1*	48
CCW 17891	CW-1	562.8-565.5	0.50*	3*	10*	6.90	0.20	2*	5*	10*	1*	42
CCW 17892	CW-1	572-577	2.10*	3*	10*	1.90	0.20*	2*	9*	10*	1*	50
CCW 17893	CW-1	588-600	2.30*	3*	10*	2.70	0.20*	2*	5*	10*	1*	49
CCW 17900	CW-1	600-616	0.50*	3*	10*	6.60	0.20*	2*	5*	10*	1*	51
CCW 17909	CW-1	616-632	2.00*	3*	10*	18.00	0.20*	2*	5*	10*	1*	54
CCW 17918	CW-1	634-646	2.00*	3*	10*	20.00	0.10*	2*	9*	10*	1*	23
CCW 17925	CW-1	646-662	2.10*	1*	10*	7.40	0.10*	2*	5*	10*	1*	22
CCW 17934	CW-1	686-698	2.10*	3*	10*	11.00	0.20*	2*	5*	10*	1*	27
CCW 17941	CW-1	698-700.5	0.80*	2*	10*	0.80	0.10*	2*	5*	10*	1*	16
CCW 17942	CW-1	700.5-712	2.00*	3*	10*	14.00	0.20*	2*	5*	10*	1*	24
CCW 17949	CW-1	714-726	1.80*	3*	10*	12.00	0.30	2*	5*	10*	1*	18
CCW 17956	CW-1	738-740	0.50*	3*	10*	17.00	0.30	2*	5*	10*	1*	26
CCW 17957	CW-1	754-768	1.80*	2*	10*	18.00	0.20*	2*	5*	10*	1*	21
CCW 17965	CW-1	768-782	1.60*	2*	10*	18.00	0.10*	2*	7*	10*	2	27
CCW 17973	CW-1	810-824	1.80*	3*	10*	27.00	0.20*	2*	5*	10*	1*	26
CCW 17990	CW-1	830-842	1.40*	2*	10*	28.00	0.10*	2*	5*	10*	1*	22
CCW 17997	CW-1	842-858	0.70*	2*	10*	47.00	0.10*	2*	6*	10*	1*	24
CCW 18006	CW-1	868-882	0.80*	2*	10*	18.00	0.10*	2*	5*	10*	1*	23
CCW 18040	CW-1	884-887.6	1.10	2*	10*	12.00	0.10*	2*	5*	10*	1*	23
CCW 18043	CW-1	887.6-894.7	0.50*	1*	10*	12.00	0.10	2*	5*	10*	1*	10
CCW 18047	CW-1	894.7-911	0.50*	1*	10*	2.10	0.20	2*	5*	10*	1*	11
CCW 18056	CW-1	912-926	0.50*	1*	10*	17.00	0.50	2*	5*	10*	1*	19
CCW 18064	CW-1	926-942	0.70*	1*	10*	33.00	0.30	2*	5*	10*	1*	26
CCW 18073	CW-1	944-960	0.80*	1*	10*	14.00	0.80	2*	5*	10*	1*	28
CCW 18082	CW-1	966-982	0.90*	2*	10*	20.00	0.40	2*	5*	10*	1*	26
CCW 18091	CW-1	982-998	0.80*	2*	10*	12.00	0.40	2*	9	10*	1*	36
CCW 18201	CW-1	998-1016	0.90*	2*	10*	27.00	0.10*	2*	5*	10*	1*	21
CCW 18211	CW-1	1024-1038	0.50*	2*	10*	23.00	0.20	2*	5*	10*	1*	23
CCW 18219	CW-1	1038-1052	0.80*	2*	10*	46.00	0.20*	2*	5*	10*	1*	28
CCW 18226	CW-1	1058-1074	0.70*	2*	10*	34.00	0.10*	2*	6*	10*	1*	27
CCW 18235	CW-1	1074-1090	0.70*	1*	10*	15.00	0.40	2*	5*	10*	1*	21

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	TA PPM	W PPM	SN PPM	AS PPM	SB PPM	BI PPM	SE PPM	TE PPM	BR PPM	CE PPM
CCW 18244	CW-1	1092-1106	0.70*	1*	10*	2.30	0.40	2*	5*	10*	1*	17
CCW 18252	CW-1	1106-1120	0.90*	2*	10*	8.90	0.40	2*	5*	10*	1*	29
CCW 18260	CW-1	1120-1134	0.50*	1*	10*	3.00	0.40	2*	5*	10*	1*	17
CCW 18268	CW-1	1134-1150	0.50*	1*	10*	28.00	0.80	2*	5*	10*	1*	23
CCW 18277	CW-1	1150-1166.6	0.90*	2*	10*	39.00	0.40	2*	5*	10*	1*	20
CCW 18286	CW-1	1180-1194	0.70*	2*	10*	14.00	0.20	2*	5*	10*	1	19
CCW 18294	CW-1	1194-1210	0.80*	2*	10*	9.80	0.10*	2*	5*	10*	1	20
CCW 18303	CW-1	1214-1230	0.70*	1*	10*	6.20	0.40	2*	5*	10*	1*	15
CCW 18312	CW-1	1234-1248	0.70*	2*	10*	14.00	0.70	2*	5*	10*	1*	21
CCW 18320	CW-1	1248-1262	0.90*	2*	10*	13.00	0.20	2*	5*	10*	1*	22
CCW 18328	CW-1	1272-1282	0.70*	3*	10*	10.00	0.20*	2*	5*	10*	1*	24

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	ND PPM	SM PPM	EU PPM	YB PPM	LU PPM	TH PPM	U PPM	CD PPM	TB PPM	BE PPM
CCW 17470	CW-1	329-337	33	8.70	2.00	2.50	0.36	3.60	1.70			6
CCW 17473	CW-1	337-338.5	28	7.50	1.20	2.50	0.46	4.10	1.10			5
CCW 17474	CW-1	338.5-344.5	24	6.20	1.50	2.10	0.38	4.50	1.60			4
CCW 17475	CW-1	344.5-351	27	6.60	1.40	2.50	0.39	4.10	1.70			4
CCW 17476	CW-1	351-364.4	19	7.50	2.80	2.20	0.34	2.70	1.00*			5
CCW 17481	CW-1	364.4-365.5	35	8.20	2.10	2.00	0.31	3.20	2.20			5
CCW 17482	CW-1	365.5-378.5	25	7.60	1.90	1.90	0.30	2.80	1.10*			5
CCW 17488	CW-1	380.2-392.2	16	7.70	1.20	1.80	0.28	3.40	1.00*			5
CCW 17497	CW-1	392.2-399	21	7.60	1.80	2.20	0.35	3.30	1.40			5
CCW 17819	CW-1	399-407	25	9.20	2.60	3.30	0.63	2.60	1.10*			6
CCW 17824	CW-1	407-420	13	4.50	1.70	2.40	0.36	1.10	1.20			9
CCW 17828	CW-1	420-424	22	5.40	0.70	1.60	0.25	1.70	1.30			5
CCW 17831	CW-1	424-434.5	19	5.00	1.80	1.80	0.31	2.50	1.40			5
CCW 17837	CW-1	434.5-444.3	20	5.80	1.30	2.20	0.33	3.60	1.60			4
CCW 17843	CW-1	444.3-458	19	7.60	2.00	2.40	0.32	3.50	1.30			6
CCW 17851	CW-1	458-472	17	6.80	2.30	2.40	0.41	0.50*	0.90*			4
CCW 17859	CW-1	472-484	32	12.70	3.70	3.70	0.54	4.70	1.10			6
CCW 17866	CW-1	484-496	20	6.40	1.70	2.40	0.32	2.70	1.20*			7
CCW 17873	CW-1	496-512	21	6.20	1.80	1.80	0.32	3.70	2.00			4
CCW 17882	CW-1	518-534	25	6.30	3.00	2.10	0.35	4.10	1.00*			4
CCW 17891	CW-1	562.8-565.5	22	5.60	0.80*	2.00	0.30	2.90	1.20			4
CCW 17892	CW-1	572-577	13	6.20	1.90	2.20	0.27	3.00	1.70			4
CCW 17893	CW-1	588-600	18	6.20	1.50	1.70	0.33	3.90	1.10*			4
CCW 17900	CW-1	600-616	12	6.20	2.00	1.80	0.39	3.50	0.80*			5
CCW 17909	CW-1	616-632	21	6.00	1.70	1.70	0.30	2.40	1.00*			4
CCW 17918	CW-1	634-646	14	3.50	1.50	1.30	0.18	1.50	1.40			3
CCW 17925	CW-1	646-662	9	2.50	1.00	1.10	0.20	0.70	1.00			3
CCW 17934	CW-1	686-698	12	3.50	1.50	1.00	0.17	1.30	1.30			3
CCW 17941	CW-1	698-700.5	5	1.90	0.70	1.00	0.17	0.60	0.60*			4
CCW 17942	CW-1	700.5-712	7	3.70	0.90	1.50	0.22	1.50	0.70*			3
CCW 17949	CW-1	714-726	12	3.40	1.70	1.00	0.17	0.60*	0.90			4
CCW 17956	CW-1	738-740	11	3.60	1.00	1.30	0.24	0.70	0.90*			3
CCW 17957	CW-1	754-768	8	3.50	1.10	1.20	0.22	0.80	0.80*			3
CCW 17965	CW-1	768-782	14	3.50	1.10	0.90	0.17	1.00	0.80*			3
CCW 17973	CW-1	810-824	11	4.00	1.20	1.40	0.24	1.50	1.20			3
CCW 17990	CW-1	830-842	7	3.30	1.10	1.00	0.21	1.00	0.80*			4
CCW 17997	CW-1	842-858	10	2.90	0.70	1.30	0.23	2.10	1.60			6
CCW 18006	CW-1	868-882	8	3.60	1.00	1.40	0.21	1.50	1.40			7
CCW 18040	CW-1	884-887.6	5	3.30	100.00	1.40	0.25	0.80	0.70*			8
CCW 18043	CW-1	887.6-894.7	5*	1.00	0.40	0.70	0.14	0.20*	0.30*			3
CCW 18047	CW-1	894.7-911	5	1.60	0.70	0.90	0.18	0.50	0.90			8
CCW 18056	CW-1	912-926	5	1.80	0.50	1.00	0.15	0.30*	0.50*			9
CCW 18064	CW-1	926-942	6	2.00	0.60	1.20	0.20	0.80	0.50*			10
CCW 18073	CW-1	944-960	8	2.30	0.80	1.20	0.18	1.60	1.10			10
CCW 18082	CW-1	966-982	10	2.80	0.40	1.10	0.18	2.50	1.00			9
CCW 18091	CW-1	982-998	12	3.60	1.20	2.00	0.34	3.30	4.30			8
CCW 18201	CW-1	998-1016	8	3.00	0.60	1.60	0.23	1.40	1.00			7
CCW 18211	CW-1	1024-1038	11	3.50	1.10	1.30	0.22	2.30	2.40			9
CCW 18219	CW-1	1038-1052	14	4.40	0.70	1.70	0.28	2.10	1.70			8
CCW 18226	CW-1	1058-1074	14	3.70	1.10	1.70	0.25	1.70	2.10			6
CCW 18235	CW-1	1074-1090	6	2.30	1.20	1.40	0.19	1.20	1.60			8

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	ND PPM	SM PPM	EU PPM	YB PPM	LU PPM	TH PPM	U PPM	CD PPM	TB PPM	BE PPM
CCW 18244	CW-1	1092-1106	5*	1.80	0.50	1.00	0.16	0.50	0.60			10
CCW 18252	CW-1	1106-1120	8	2.70	0.50	1.20	0.19	1.50	1.20			9
CCW 18260	CW-1	1120-1134	5*	2.00	0.80	1.20	0.19	0.30*	0.60*			9
CCW 18268	CW-1	1134-1150	5*	2.50	0.80	1.30	0.21	1.10	0.60			9
CCW 18277	CW-1	1150-1166.6	13	2.80	0.90	1.30	0.21	0.70	0.90			7
CCW 18286	CW-1	1180-1194	7	3.50	1.20	1.30	0.16	0.90	0.60*			7
CCW 18294	CW-1	1194-1210	7	3.10	0.50	1.10	0.16	1.10	0.80*			8
CCW 18303	CW-1	1214-1230	5	2.30	0.90	1.20	0.20	0.80	0.60*			9
CCW 18312	CW-1	1234-1248	6	2.30	1.00	1.10	0.21	0.50	0.60*			9
CCW 18320	CW-1	1248-1262	14	3.00	0.60	1.10	0.23	0.80	0.70*			7
CCW 18328	CW-1	1272-1282	12	4.10	0.90	1.60	0.23	1.70	0.80*			6

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	B PPM	GE PPM	P PPM
CCW 17470	CW-1	329-337	10*	10*	2700
CCW 17473	CW-1	337-338.5	10	10*	2600
CCW 17474	CW-1	338.5-344.5	30	10*	2100
CCW 17475	CW-1	344.5-351	30	10*	1200
CCW 17476	CW-1	351-364.4	10*	10*	2400
CCW 17481	CW-1	364.4-365.5	10*	10*	19000
CCW 17482	CW-1	365.5-378.5	10*	10*	2300
CCW 17488	CW-1	380.2-392.2	10*	10*	2300
CCW 17497	CW-1	392.2-399	10*	10	2200
CCW 17819	CW-1	399-407	20	10	3000
CCW 17824	CW-1	407-420	20	10*	2800
CCW 17828	CW-1	420-424	10	10	1600
CCW 17831	CW-1	424-434.5	30	20	1600
CCW 17837	CW-1	434.5-444.3	10*	10*	1400
CCW 17843	CW-1	444.3-458	20	10*	1700
CCW 17851	CW-1	458-472	10	10*	1700
CCW 17859	CW-1	472-484	10	10*	1700
CCW 17866	CW-1	484-496	30	10*	1500
CCW 17873	CW-1	496-512	10*	10*	1300
CCW 17882	CW-1	518-534	10*	10*	1300
CCW 17891	CW-1	562.8-565.5	10*	10*	1200
CCW 17892	CW-1	572-577	10*	10*	1400
CCW 17893	CW-1	588-600	10*	10	1400
CCW 17900	CW-1	600-616	10*	10*	1400
CCW 17909	CW-1	616-632	10*	10*	1300
CCW 17918	CW-1	634-646	10	10*	840
CCW 17925	CW-1	646-662	10*	10*	880
CCW 17934	CW-1	686-698	10*	10*	880
CCW 17941	CW-1	698-700.5	10*	10*	1200
CCW 17942	CW-1	700.5-712	10*	10*	940
CCW 17949	CW-1	714-726	10	10*	800
CCW 17956	CW-1	738-740	20	10*	850
CCW 17957	CW-1	754-768	10	10*	850
CCW 17965	CW-1	768-782	10*	10*	840
CCW 17973	CW-1	810-824	10*	10*	850
CCW 17990	CW-1	830-842	20	10	930
CCW 17997	CW-1	842-858	10*	10*	1200
CCW 18006	CW-1	868-882	10*	10*	2000
CCW 18040	CW-1	884-887.6	10*	10	990
CCW 18043	CW-1	887.6-894.7	10*	10*	1400
CCW 18047	CW-1	894.7-911	10*	10*	3000
CCW 18056	CW-1	912-926	10*	10*	3100
CCW 18064	CW-1	926-942	10*	10*	4000
CCW 18073	CW-1	944-960	10*	10*	3200
CCW 18082	CW-1	966-982	10*	10*	2300
CCW 18091	CW-1	982-998	10*	10	2500
CCW 18201	CW-1	998-1016	10*	10*	1300
CCW 18211	CW-1	1024-1038	10*	10*	1900
CCW 18219	CW-1	1038-1052	10*	10*	3100
CCW 18226	CW-1	1058-1074	10*	10*	2900
CCW 18235	CW-1	1074-1090	10*	10*	4500

* denotes the figure is less than the detection limit

Table 4
Analytical Results of Drill Hole CW-1

Sample #	Drill Hole#	Depth	B PPM	GE PPM	P PPM
CCW 18244	CW-1	1092-1106	10*	10*	3800
CCW 18252	CW-1	1106-1120	10*	10*	3400
CCW 18260	CW-1	1120-1134	10*	10*	4700
CCW 18268	CW-1	1134-1150	10*	10*	4800
CCW 18277	CW-1	1150-1166.6	10*	10*	2600
CCW 18286	CW-1	1180-1194	10*	10*	3400
CCW 18294	CW-1	1194-1210	10*	10*	1200
CCW 18303	CW-1	1214-1230	10*	10*	3700
CCW 18312	CW-1	1234-1248	10*	10*	3000
CCW 18320	CW-1	1248-1262	10*	10*	3500
CCW 18328	CW-1	1272-1282	10*	10	970

* denotes the figure is less than the detection limit

DRILL HOLE: TS-2

COUNTY: St. Louis

LOCATION: T52N-R15W, Sec. 31, SW¼-SE¼-SE¼,

QUADRANGLE: Twig 7½'

SURFACE ELEVATION: 1350' (topographic quad)

DEPTH TO BEDROCK: 137' TOTAL DEPTH: 779'

DRILL HOLE INCLINATION: 65° DRILL HOLE AZIMUTH: 180°

ACID TESTS:

Depth Footage	Corrected Angle
140'	58°
340'	65°
519'	60°
640'	59°
778'	55°

CORE SIZE AND FOOTAGES:

NQWL (1.875" diameter) 138'-503'

BQWL (1.432" diameter) 503'-779'

ADDITIONAL MATERIALS AVAILABLE FOR EXAMINATION:

Drill core, thin sections, polished thin sections, and photographs of core before sampling.

TWIG AREA

As shown on figure 12 the largest part of this area is in sections 31 and 32, Township 52 North, Range 15 West and extends to the south into sections 5 and 6, Township 51 North, Range 15 West. The original 1984-1985 grid described in Report 242, was resurveyed in December of 1985 and subsequently extended 800 feet to the east in January of 1986, figure 12. Vertical loop electromagnetic profiles, shown on figure 13, map the conductor as a single, near vertical sheet striking east-west with deeper burial to the east. On lines 28+00E and 32+00E, it is much weaker, offset to the south, and possibly dipping to the south. The strongest part of the conductor is 3600 feet in length. On lines 0+00 and 4+00E it coincides with weak, positive magnetic anomalies, figure 14. On line 16+00E. the magnetic anomaly is stronger, about 1400 gammas, and has a half width of

FIGURE 12 LOCATION MAP TWIG AREA GRID

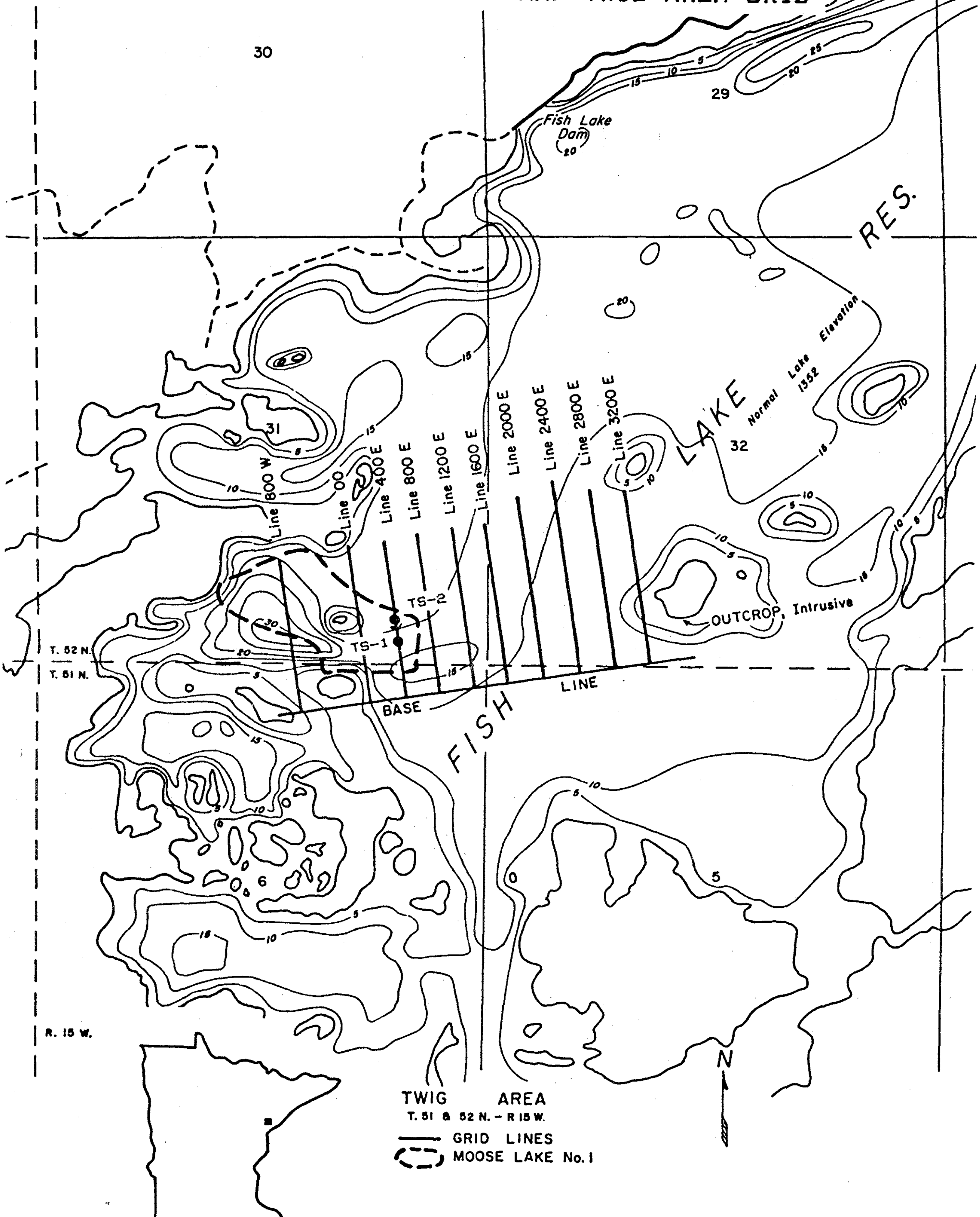


FIGURE 13 TWIG VLEM PROFILES

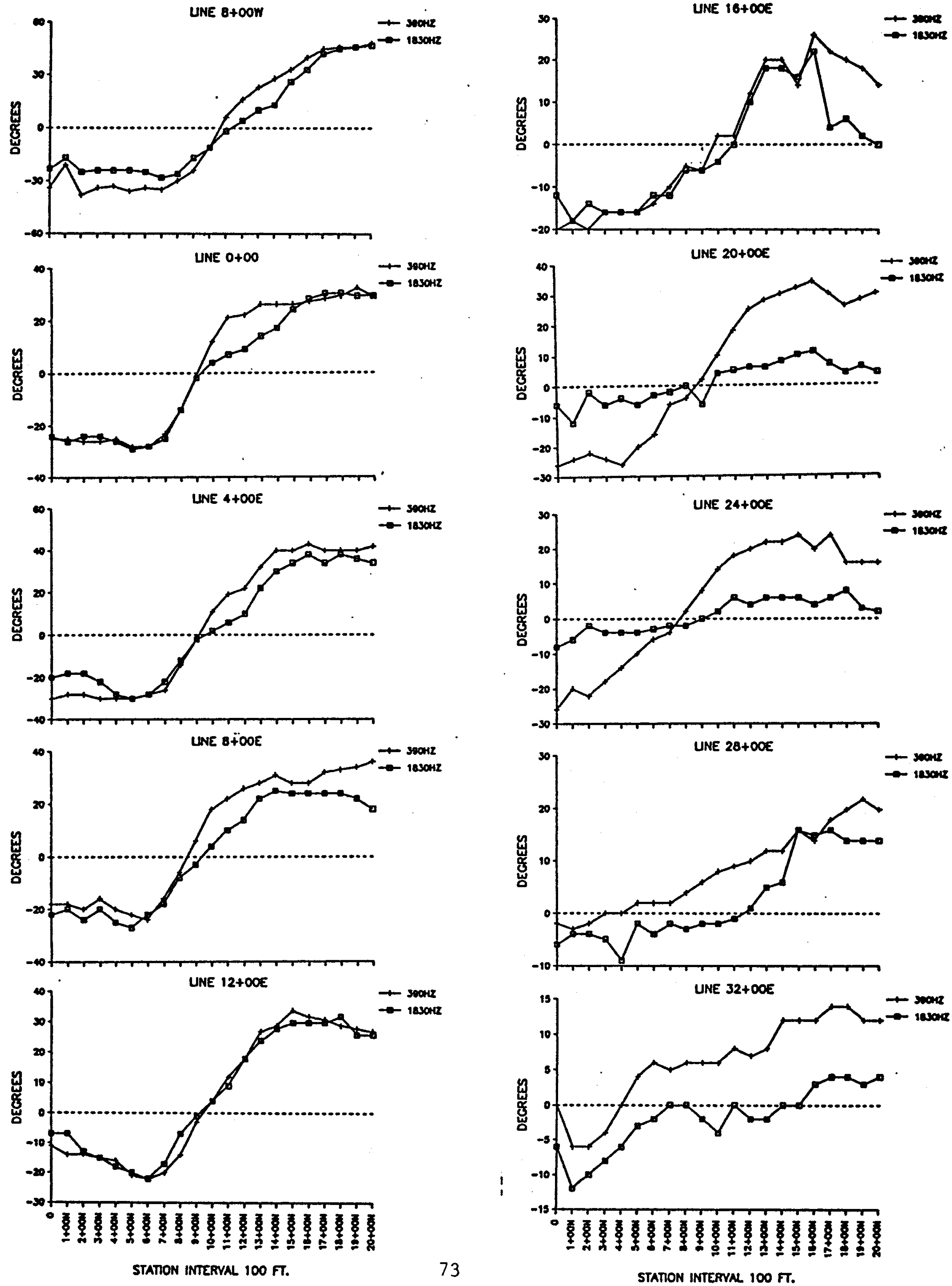
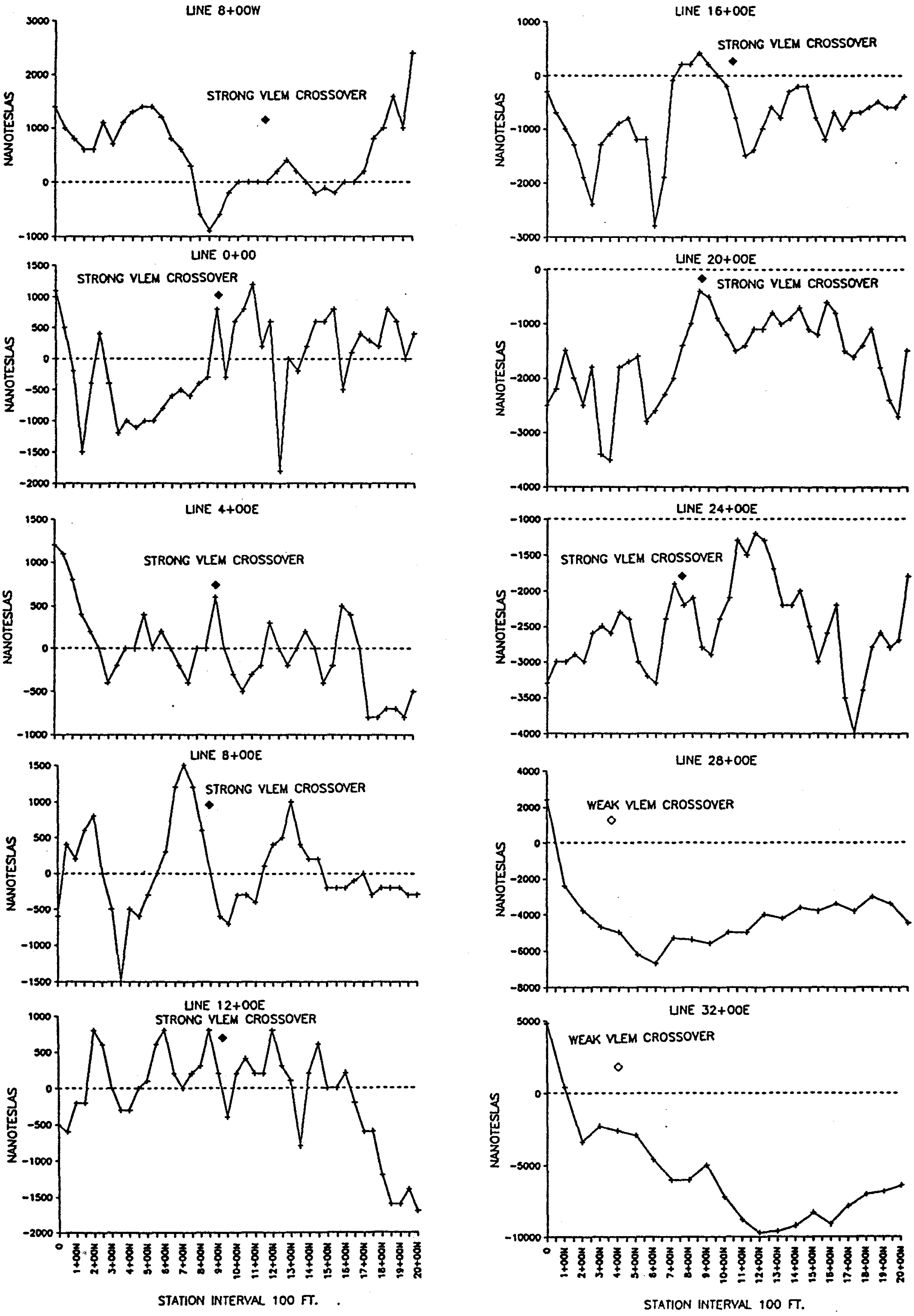


FIGURE 14 TWIG MAGNETIC PROFILES



300 feet, with the conductor on the north flank. Anomaly strength then decreases to the east which would be expected if the source is deeper. On lines 20+00E and 24+00E the conductor directly coincides with the magnetic anomaly.

Three gravity profiles were completed with difficulty on lines 0+00, 4+00E and 16+00E, figure 15. Gravity observations had to be made when there was no wind blowing since even moderate wind caused ice movement and meter drift. The south ends of all three lines and the north end of line 0+00 show increased gravity. This suggests a glacial sediment filled bedrock valley following the trend of the conductor. On line 0+00 and 4+00E, there are positive gravity features associated with the conductor. Line 16+00E does not exhibit a positive gravity feature coincident with the conductor.

Just east of line 32+00E (220 feet east of station 7+00N) is an island with an outcrop of Duluth Complex intrusive rock on the south shore. Likely, line 16+00E is over the Duluth Complex rather than the Virginia Formation and the conductor is not only deeper, but is hosted by a rock unit with greater density and, therefore, has less density contrast than the lines to the west.

Hole TS-1 is a vertical hole that was drilled on the conductor as defined by a horizontal loop electromagnetic survey. With the added information of the VLEM survey, it appears hole TS-1 might have actually been south of the conductor. Possible drill sites were restricted to the area of Moose Lake Number 1, figure 12, which was considered original lake bed before the area was flooded. Therefore, the DNR was restricted and was not able to test the stronger magnetic response and the conductor on line 16+00E. Hole TS-2 was located north of the conductor and angled south to drill through it and the positive gravity feature. Because of deep overburden (99 feet in hole TS-1), a 65 degree hole was chosen over a 45 to 55 degree hole which would have been preferred. Hole TS-2 intersected surface from 0 to 137 feet (122 feet vertical depth), then four feet of somewhat broken intrusive. At 141 feet, the hole cut Virginia Formation which continued to 779 feet where the hole was terminated. In places, the Virginia Formation was very broken and/or brecciated. The hole contained bedded and massive graphite which if in the form of a vertical sheet, as it might be in a fault zone, would certainly account for the observed conductor, but not the gravity or magnetic responses. The deeper surface in hole TS-2 appears to confirm the concept of a sediment filled valley trending along the conductor axis.

Figure 16 shows a simplified presentation of the geology as interpreted from drilling and geophysical surveys. The Duluth Complex overlies the Virginia Formation with the footwall dipping to the east. The Virginia Formation is faulted with a near vertical fault trending east-west. Graphite and sulfides, interpreted from the geophysics, in the fault zone form a strong conductor pinching out updip to the west and becoming too deep to be detected by the methods used to the east. The down dip extension of the fault east of line 24+00E becomes very weak and is offset to the south. This feature is not shown on the drawing because we are not certain of the interpretation. Holes TS-1 and TS-2 are near the contact of the Duluth Complex, with TS-2 intersecting a few feet before going into the slate. Gravity readings and deeper glacial sediments in hole TS-2

FIGURE 15 TWIG GRAVITY PROFILES

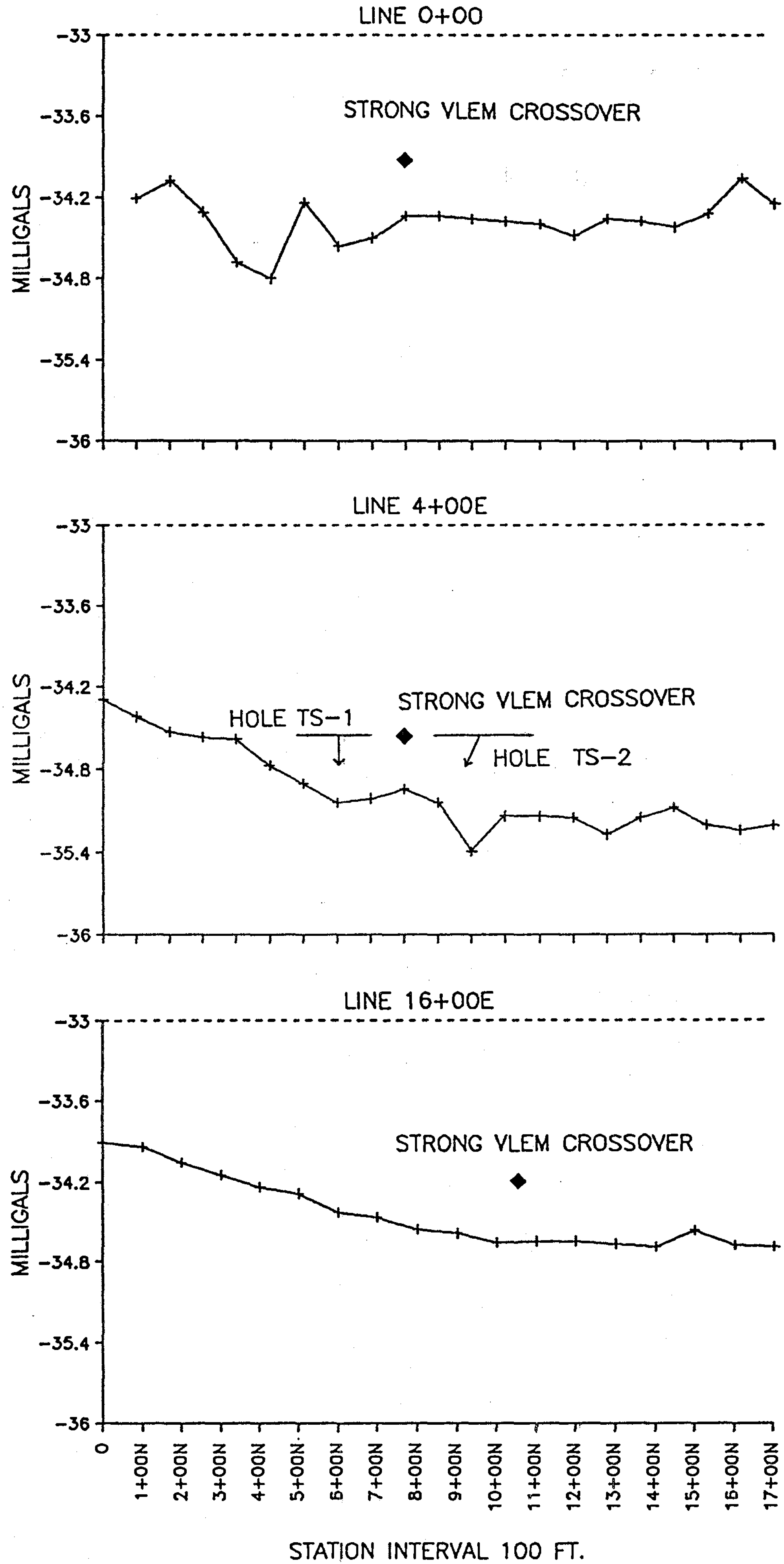
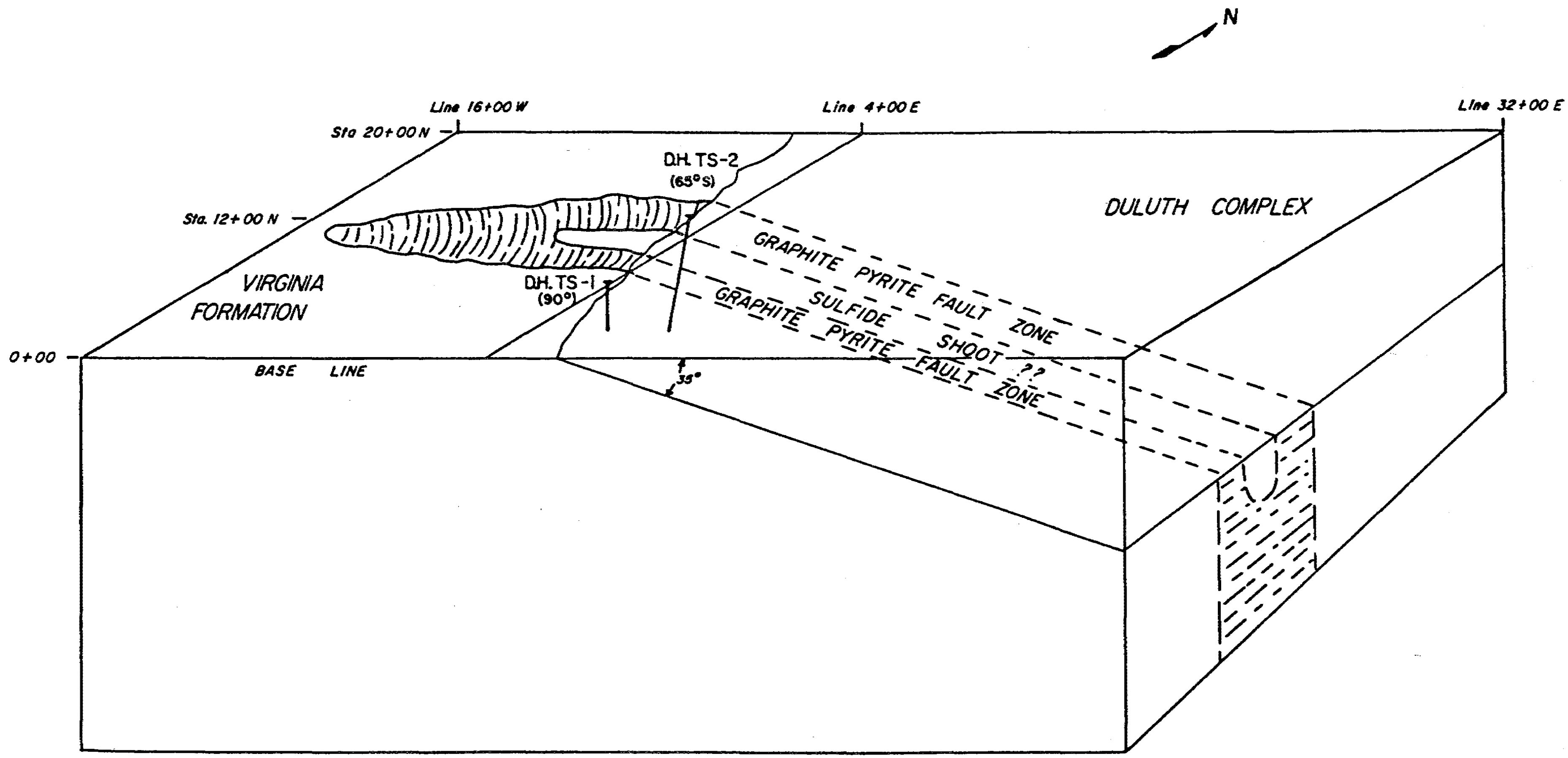


FIGURE 16 TWIG AREA GEOLOGIC INTERPRETATION
(not to scale)



indicated the sediment filled valley. The weaker magnetic anomaly on line 4+00E as compared with lines to the east indicate the wedge of sulfides is also pinching out. It is likely that hole TS-2 penetrated below the sulfide shoot if one exists. A hole testing the conductor on line 16+00E where the magnetic anomaly is the strongest would be most interesting, however the state has no mineral ownership in that area. As yet the potential of this area has not been fully tested.

LOG OF DRILL HOLE TS-2
by B. Frey

0'-4'	ICE
4'-10'	WATER
10'-19'	GYTTJA - no samples
19'-137'	OVERBURDEN - no samples
137'-140'	OVERBURDEN, cobbles and minor gravel recovered. Most cobbles are Duluth Complex coarse and medium-grained troctolite with 3-8% oxides (moderately magnetic). Sizes range to 36 cm. The few pebbles of other rock types include microgabbro, granophyre, reddish basalt, medium-grained granodiorite, and Virginia Formation.
140'-779'	VIRGINIA or THOMPSON FORMATION
140'-525'	LOCALLY SPOTTED (PORPHYROBLASTIC), INTERLAMINATED-INTERBEDDED GREYISH BLACK TO MEDIUM GREY (DRY COLORS), HORNFELSED, GRAPHITIC, SULFIDE-BEARING SILICEOUS META-SILTSTONE with local light yellow brown sideritic and dark grey calcareous intervals. Unit also contains locally developed foliation, brecciation, gouge, fold closures, cone-in-cone structure, and fracturing-veins with minor calcite, chlorite, quartz, serpentine(?) sulfides. Foliation is poorly developed, but a good flattening (foliation) is associated with breccias, and measures approximately 35° to core axis. Bedding is variable, measuring 0-70° to core axis, but is typically 20-35°. Core badly broken, to brecciated, with local gouge. Gouge and breccia intervals are located approximately 143'-144', 147.5'-148', 152.8'-153', 171.5'-171.6', 201.8'-201.9', 205.9'-206.0, 210'-211, 248'-248.5', 254.5'-254.6', and 280'-282'. Some may be partially from glacial movement(?). Healed breccia (and brecciated fold) intervals are 212.5'-214', 235'-236', 237.1'-237.4', 241.5'-243.5', 244.5'-246', 266'-268', 275'-286', 495.7'-495.9'. Some of this healed breccia is associated with shears while others appear to be related to disrupted fold closures or more brittle layers associated with flowage along bedding planes. More highly broken-fractured areas typically surround the

breccia and gouge zones. Broken intervals include 140'-158', highly broken; 158'-172', scattered; 172'-196', locally moderately broken; 196'-220.5', locally highly broken; 220.5'-238'; 238'-247.8', moderately broken; 247.8'-250'; 253.5'-255', highly broken; 255'-273.5', locally moderately broken; 273.5'-288', highly broken; 288'-480', locally moderately broken with less fractures with depth in general; 480'-495', moderately broken; 495'-499', highly broken; 499'-525', locally moderately broken.

Fracture surfaces may have one or more of the following minerals forming hairline veins: pale green pyrophyllite-talc-clay minerals-serpentine(?), pyrite, marcasite(?), pyrrhotite, pale carbonates (calcite, dolomite?, siderite), quartz.

Sulfides also occur as fine, stratiform disseminations and scattered, usually hairline, laminae. The sulfide appears to be a mixture of marcasite-pyrite with pyrrhotite, with marcasite-pyrite decreasing and pyrrhotite increasing with depth. Thicker laminated marcasite-pyrite knots occur at 163.9'-164.1' and 185.7'-185.9' (both are about 1 cm and may be the same bed). The last domain of the pyrite with depth appears to be within the hairline fractures. Below about 480', pyrrhotite is largely the sulfide in these.

The core appears to be slightly magnetic throughout, probably due to very fine disseminated pyrrhotite which is more common in the darker layers. Very fine fragments of (especially the darker) core layers are very magnetic, and as a rule, the darkness (and magnetism?) of these layers increases with depth; however, the % of darker sediment decreases with depth from 70% in upper part of interval to 20% near base. Rock shows local fine-grained, spotted, porphyroblastic growth (carbonate??, chlorite??).

Several dark grey, calcareous (marble) intervals occur at 332.3'-337.8', 360'-362', 389.6'-391.1', 456.1'-457.6', and 523'-523.7'. These have been thoroughly recrystallized and typically cross-cut bedding with local segregation-porphyroblastic growth of calcite to several mm. Cone-in-cone structure tends to be developed toward margins of these intervals. Some material may be igneous(?).

Adjacent to or between the calcareous marble units, the rock is more sideritic.

More sideritic(?), light-medium, yellow brown intervals (beds) are scattered and include 316'-317'; 331'-332'; 354.5'-365' scattered; 473'-480'; and 493'-499'. Sideritic "influxes" appear relatively gradational. These units appear to be slightly more brittle and fractured than adjacent materials. There appears to be minor silicification also associated with this.

525'-708.7' MEDIUM GREY HORNFELSED SILICEOUS SPOTTED METASILTSTONE WITH PYRRHOTITE-GRAPHITE and minor darker grey laminae (less than 5%); medium-dark grey cross-cutting recrystallized marble layers and light yellow brown sideritic intervals.

Core not as conductive as first unit. Some dark grey laminae are conductive but make up little of the rock. Unit contains less graphite, silica. Brownish sideritic intervals are typically found near contacts or between calcareous intervals. Calcareous intervals cut across bedding. Cone-in-cone weakly developed, but other pressure solution occurs in these intervals. Some cross-cutting, septarian type veining to 6-7 mm also occurs.
The interval 625.5'-626.5' contains scattered pseudo-nodules(?). The rock is locally somewhat fractured with minor serpentine(?)-talc-chlorite.
The interval 704.0'-706.3' is 2 cm thick shear with quartz, chlorite, pyrrhotite. Porphyroblasts are generally less than 1 mm, black to light colored (chlorite? graphite? carbonate?), and occasionally occur in calcareous layers (such as 694.5'-695.0'). Chloritic ones reach up to 4 mm and also form branching, dendritic-hourglass shaped crystals to 1 cm.
Rock contains little graphite that rubs off on hands. Part of dark color may be due to finely disseminated sulfides. Foliation is poorly developed. Bedding measures 0-27° to core axis, but typically is 5-10°. Scattered hairline fractures-veins with minor chlorite, pyrrhotite, talc, prehnite(?), serpentine, carbonate, quartz, K-feldspar and/or hornblende.
Rock is slightly magnetic.
Calcareous intervals are 587.9'-589.3', 590.1'-591.1', 644.0'-645.0', 673.1'-673.7', 675.5'-676.2', 688.1'-690.3', 692.0'-692.4', 694.1'-695', 696.5'-697.4'.
Unit is sideritic especially on the margins of calcareous intervals, namely, 586.6'-587.9', 589.3'-590.1', 591.1'-591.4', 674.8'-675.5', 676.2'-681',686.5'-688.1', 690.3'-692.0', 692.4'-694.1', 695'-696.5', 697.4'-697.5', 703'-707'.

708.7'-732.0' SPOTTED, DARK GREY SILICEOUS METASILTSTONE WITH PYRRHOTITE, GRAPHITE.
Unit relatively massive with few laminations. Unit is nonconductive but slightly magnetic. Rock contains 4-10% pyrrhotite, disseminated, and occasionally in hairline laminae. Scattered, few fractures contain chlorite, K-feldspar talc.
Bedding measures 3°-7° to core axis.
The interval 728'-730' contains a 2-3 mm shear fracture with gouge, quartz, and pyrrhotite, trace chalcopyrite and bornite.
Unit gradually becomes lighter colored with depth.

732.0'-779.0' SPOTTED, MEDIUM GREY METASILTSTONE WITH MINOR DARK AND LIGHT GREY LAMINAE.
Foliation typically poorly developed, with strain slip cleavage moderately formed at 751'-752', and minor crinkles. Minor flowage-disruption along bedding planes. Some irregularities of bedding may be soft sediment.

Schistosity measures 30°-33° and cuts across bedding typically.
Pyrrhotite is disseminated and also occurs in a few laminae with quartz (sedimentary with late recrystallization flowage).
Unit contains a few hairline fractures with locally minor irridescent blue (Mn-Fe oxides?) coating.

779' TOTAL DEPTH

Analytical results of drill hole TS-2 follow in Table 5.

Table 5
Analytical Results of Drill Hole TS-2

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CSL 17311(COMP.13-17	TS-2	141-153.0	63.10	16.60	6.07	--	2.94	0.24	1.34	--	3.60	0.84
CSL 17366	TS-2	163-165.0	61.90	17.50	5.91	--	2.72	0.34	1.34	--	4.09	0.87
CSL 17318(COMP.19-26	TS-2	171-187.0	62.20	17.00	6.51	--	2.94	0.32	1.26	--	3.82	0.86
CSL 17327(COMP.28-34	TS-2	200-214.0	61.40	17.10	6.71	--	3.09	0.42	1.33	--	3.77	0.83
CSL 17335(COMP.36-42	TS-2	226-240.0	61.00	17.00	7.06	--	3.19	0.72	1.77	--	3.88	0.81
CSL 17449	TS-2	240-242.0	63.40	16.40	6.05	--	2.95	0.75	2.12	--	3.50	0.78
CSL 17343(COMP.44-50	TS-2	242-256.0	61.40	17.40	6.50	--	3.10	0.55	1.52	--	3.89	0.82
CSL 17351(COMP.52-57	TS-2	262-274.0	59.90	17.60	7.57	--	3.34	0.58	1.46	--	3.98	0.83
CSL 17358(COMP.59-65	TS-2	274-288.0	59.30	17.40	7.79	--	3.38	0.73	1.45	--	3.87	0.81
CSL 17367(COMP.68-74	TS-2	304-318.0	59.90	17.50	7.97	--	3.35	0.81	1.79	--	3.84	0.82
CSL 17375(COMP.76-82	TS-2	328-342.0	55.90	16.10	8.09	--	3.25	5.40	1.78	--	3.36	0.74
CSL 17445	TS-2	360.3-362.0	27.70	7.74	8.50	--	4.28	27.40	0.38	--	0.88	0.34
CSL 17446	TS-2	373-375.0	60.20	17.20	7.92	--	3.40	1.05	2.25	--	3.53	0.82
CSL 17383(COMP.84-88	TS-2	387-397.0	55.60	15.20	7.60	--	3.29	6.70	1.78	--	3.07	0.71
CSL 17447	TS-2	456.1-457.5	23.10	6.48	6.69	--	11.40	21.50	0.12	--	2.21	0.30
CSL 17389(COMP.90-94	TS-2	493-503.0	60.00	17.40	8.04	--	3.54	1.05	1.94	--	3.90	0.80
CSL 17448	TS-2	523-524.0	33.80	8.48	7.27	--	2.85	26.20	0.12	--	0.61	0.33
CSL 17440	TS-2	559-561.0	60.10	17.60	8.32	--	3.62	1.33	2.60	--	3.49	0.83
CSL 17402(COMP.03-07	TS-2	586.7-592.2	45.40	13.70	7.51	--	3.37	14.70	1.42	--	2.45	0.61
CSL 17441	TS-2	625-627.0	58.50	18.70	8.94	--	3.88	0.39	1.97	--	4.02	0.83
CSL 17408(COMP.09-13	TS-2	642-647.0	51.70	15.40	8.43	--	3.61	8.04	1.55	--	3.20	0.68
CSL 17414(COMP.15-19	TS-2	672-677.5	50.90	14.00	7.46	--	3.26	11.20	1.44	--	2.64	0.65
CSL 17442	TS-2	680-681.0	49.60	16.50	12.20	--	6.45	6.69	1.55	--	2.15	1.60
CSL 17420(COMP.21-24	TS-2	686.5-694.0	51.60	14.60	7.16	--	3.31	10.40	1.49	--	2.86	0.65
CSL 17425(COMP.26-29	TS-2	694-698.9	43.10	14.40	7.67	--	3.73	15.10	1.63	--	2.30	0.63
CSL 17443	TS-2	704-706.3	62.00	15.50	8.41	--	3.24	2.55	2.16	--	2.75	0.70
CSL 17430(COMP.31-33	TS-2	711-717.0	57.60	18.40	8.70	--	4.03	0.41	1.62	--	4.52	0.86
CSL 17444	TS-2	728-730.0	63.40	15.20	7.92	--	3.37	0.46	1.76	--	3.77	0.70
CSL 17434(COMP.35-39	TS-2	760-770.0	59.50	18.00	8.67	--	3.60	0.51	2.12	--	3.78	0.84
CSL 14081	TS/FHL-1	169.3-179	45.80	19.70	11.10	--	10.10	9.30	2.11	--	0.38	0.42
CSL 14061	TS/FHL-1	415-425	55.20	14.10	14.20	--	5.70	4.96	1.47	--	0.61	1.88

* denotes the figure is less than the detection limit

Table 5
Analytical Results of Drill Hole TS-2

Sample #	Drill Hole#	Depth	P205 %	MNO %	CO2 %	LOI %	S %	CL PPM	F PPM	CU PPM	NI PPM	CR PPM
CSL 17311(COMP.13-17	TS-2	141-153.0		0.03	0.01	5.47	0.36	100*	890	150	440	180
CSL 17366	TS-2	163-165.0		0.02	0.05*	5.23	0.47	100*	1100	210	280*	160
CSL 17318(COMP.19-26	TS-2	171-187.0		0.03	0.01	5.16	0.38	100*	1100	150	350	170
CSL 17327(COMP.28-34	TS-2	200-214.0		0.03	0.01	5.23	0.42	100*	1100	160	260*	180
CSL 17335(COMP.36-42	TS-2	226-240.0		0.04	0.05*	4.47	0.37	100*	1000	140	280*	170
CSL 17449	TS-2	240-242.0		0.03	0.07	4.23	0.31	100*	1100	100	280*	150
CSL 17343(COMP.44-50	TS-2	242-256.0		0.03	0.02	4.93	0.36	100*	1000	130	280*	180
CSL 17351(COMP.52-57	TS-2	262-274.0		0.04	0.01	4.70	0.40	100*	1100	120	280*	180
CSL 17358(COMP.59-65	TS-2	274-288.0		0.04	0.02	5.08	0.40	100*	980	99	260*	180
CSL 17367(COMP.68-74	TS-2	304-318.0		0.04	0.04	3.85	0.76	100*	1100	94	280*	190
CSL 17375(COMP.76-82	TS-2	328-342.0		0.07	3.21	4.39	0.80	100*	1000	85	330	170
CSL 17445	TS-2	360.3-362.0		0.28	21.00	21.00	1.40	300	680	59	200*	80
CSL 17446	TS-2	373-375.0		0.04	0.11	3.47	0.57	100*	1200	68	260*	150
CSL 17383(COMP.84-88	TS-2	387-397.0		0.07	4.53	5.85	0.65	100*	870	80	260*	170
CSL 17447	TS-2	456.1-457.5		0.36	25.70	28.00	0.55	850	520	31	200	60
CSL 17389(COMP.90-94	TS-2	493-503.0		0.04	0.02	3.39	0.66	100*	1000	99	310	180
CSL 17448	TS-2	523-524.0		0.20	17.60	19.80	0.64	300	590	21	170*	70
CSL 17440	TS-2	559-561.0		0.06	0.01	2.23	0.41	100*	1100	67	260*	160
CSL 17402(COMP.03-07	TS-2	586.7-592.2		0.15	9.28	10.50	0.41	100*	880	42	280*	160
CSL 17441	TS-2	625-627.0		0.05	0.05*	2.62	0.37	100*	1100	62	330	150
CSL 17408(COMP.09-13	TS-2	642-647.0		0.11	5.95	6.77	0.58	100*	960	63	280*	170
CSL 17414(COMP.15-19	TS-2	672-677.5		0.11	7.21	8.39	0.37	100*	990	56	280*	170
CSL 17442	TS-2	680-681.0		0.15	0.11	2.77	0.43	100*	1300	140	310	230
CSL 17420(COMP.21-24	TS-2	686.5-694.0		0.16	6.85	7.77	0.23	100*	1000	40	260*	170
CSL 17425(COMP.26-29	TS-2	694-698.9		0.19	9.78	11.00	0.41	100	980	74	310	140
CSL 17443	TS-2	704-706.3		0.07	0.05*	2.39	0.71	100*	940	170	240*	140
CSL 17430(COMP.31-33	TS-2	711-717.0		0.04	0.01	3.93	0.35	100*	1200	61	260*	180
CSL 17444	TS-2	728-730.0		0.03	0.05*	3.31	0.67	100*	1000	110	240*	130
CSL 17434(COMP.35-39	TS-2	760-770.0		0.05	0.01	2.93	0.57	100*	1100	75	280*	200
CSL 14081	TS/FHL-1	169.3-179		0.12	0.11	1.31	0.05	100*	20*	160	280	290
CSL 14061	TS/FHL-1	415-425		0.12	0.01	1.85	2.35	100*	450	3500	1000	280

* denotes the figure is less than the detection limit

Table 5
Analytical Results of Drill Hole TS-2

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	MO PPM	BA PPM	PD PPB	IR PPB	AU PPB	AG PPM	LA PPM
CSL 17311(COMP.13-17	TS-2	141-153.0	17	230	300	23	770	3	50*	2*	2*	31
CSL 17366	TS-2	163-165.0	17	230	200	31	880	4	50*	8	2*	36
CSL 17318(COMP.19-26	TS-2	171-187.0	16	220	200	16	770	3	50*	7	4	40
CSL 17327(COMP.28-34	TS-2	200-214.0	20	230	300	21	810	3	50*	7*	2*	33
CSL 17335(COMP.36-42	TS-2	226-240.0	17	210	300	21	810	3	50*	6	2*	35
CSL 17449	TS-2	240-242.0	19	140	200	27	750	4	50*	8*	2*	35
CSL 17343(COMP.44-50	TS-2	242-256.0	19	220	200	20	840	4	50*	8*	2*	34
CSL 17351(COMP.52-57	TS-2	262-274.0	19	200	100	19	810	2	50*	10	2*	37
CSL 17358(COMP.59-65	TS-2	274-288.0	20	210	100	15	760	3	50*	7*	2*	34
CSL 17367(COMP.68-74	TS-2	304-318.0	22	200	300	14	840	3	50*	8*	2*	39
CSL 17375(COMP.76-82	TS-2	328-342.0	20	170	200	12	670	4	50*	16	2*	33
CSL 17445	TS-2	360.3-362.0	11	74	500	2*	180	2*	50*	6*	2*	33
CSL 17446	TS-2	373-375.0	19	150	100	17	750	3	50*	2*	2*	40
CSL 17383(COMP.84-88	TS-2	387-397.0	18	160	100	12	610	4	50*	7*	3	30
CSL 17447	TS-2	456.1-457.5	5*	53	200	6	180	2*	50*	5*	2*	28
CSL 17389(COMP.90-94	TS-2	493-503.0	21	180	200	11	800	3	50*	8*	2*	34
CSL 17448	TS-2	523-524.0	11	51	100	9	70	2*	50*	5*	4*	28
CSL 17440	TS-2	559-561.0	20	180	100	8	770	3	50*	7*	10	34
CSL 17402(COMP.03-07	TS-2	586.7-592.2	18	130	100*	13	540	2*	50*	11	2*	30
CSL 17441	TS-2	625-627.0	23	200	200	8	830	2*	50*	8*	2*	34
CSL 17408(COMP.09-13	TS-2	642-647.0	19	140	100*	13	610	2*	50*	7*	2*	31
CSL 17414(COMP.15-19	TS-2	672-677.5	19	140	100	8	460	2	50*	7*	2*	32
CSL 17442	TS-2	680-681.0	37	270	200	3*	500	3	50*	13	2	27
CSL 17420(COMP.21-24	TS-2	686.5-694.0	15	130	100	8	520	2*	50*	8*	2*	29
CSL 17425(COMP.26-29	TS-2	694-698.9	19	150	100	13	410	2	50*	8*	2*	33
CSL 17443	TS-2	704-706.3	37	170	100	5	530	2	50*	2	2*	27
CSL 17430(COMP.31-33	TS-2	711-717.0	18	190	200	13	890	2*	50*	12	2*	34
CSL 17444	TS-2	728-730.0	24	180	100	11	530	2	50*	6	2*	35
CSL 17434(COMP.35-39	TS-2	760-770.0	22	190	100	13	820	2	50*	8*	2*	36
CSL 14081	TS/FHL-1	169.3-179	54	56	100*	2*	310	12	50*	8	2*	5
CSL 14061	TS/FHL-1	415-425	95	350	200	6	170	80	50*	35	2	13

* denotes the figure is less than the detection limit

Table 5
Analytical Results of Drill Hole TS-2

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	EU PPM	SC PPM	Y PPM	YB PPM	ZR PPM	BI PPM	NB PPM
CSL 17311(COMP.13-17	TS-2	141-153.0	130	4.00	40	1.50	20.10	32	2.70	190	2*	16
CSL 17366	TS-2	163-165.0	150	6.40	36	1.10	21.60	34	3.00	190	2*	16
CSL 17318(COMP.19-26	TS-2	171-187.0	140	6.60	30	1.20	21.00	34	2.70	190	2*	16
CSL 17327(COMP.28-34	TS-2	200-214.0	140	5.60	40	0.80	20.70	32	2.70	170	2*	16
CSL 17335(COMP.36-42	TS-2	226-240.0	140	5.70	98	1.50	20.90	34	3.10	180	2*	16
CSL 17449	TS-2	240-242.0	130	5.40	96	1.30	19.90	26	2.60	170	2*	14
CSL 17343(COMP.44-50	TS-2	242-256.0	140	5.80	64	1.10	21.40	32	2.50	180	2*	16
CSL 17351(COMP.52-57	TS-2	262-274.0	140	6.30	64	0.80	21.80	26	2.40	170	2*	16
CSL 17358(COMP.59-65	TS-2	274-288.0	140	5.80	80	0.90	21.20	34	2.30	170	2*	16
CSL 17367(COMP.68-74	TS-2	304-318.0	140	6.70	110	1.00	23.60	32	2.70	160	2*	16
CSL 17375(COMP.76-82	TS-2	328-342.0	120	4.70	240	0.90	20.80	30	2.00	140	2*	16
CSL 17445	TS-2	360.3-362.0	18	1.20	370	1.10	10.20	36	2.30	64	2*	8
CSL 17446	TS-2	373-375.0	130	5.50	150	2.20	22.10	34	2.90	160	2*	16
CSL 17383(COMP.84-88	TS-2	387-397.0	110	5.10	230	0.80	18.90	26	2.50	130	2*	14
CSL 17447	TS-2	456.1-457.5	22	0.80*	76	0.40	9.00	28	2.20	56	2*	8
CSL 17389(COMP.90-94	TS-2	493-503.0	140	6.00	210	0.70*	22.50	30	2.80	160	2*	16
CSL 17448	TS-2	523-524.0	12	0.90	310	1.20	10.00	26	1.90	60	2*	8
CSL 17440	TS-2	559-561.0	140	7.20	180	0.70*	22.30	32	2.50	160	2*	16
CSL 17402(COMP.03-07	TS-2	586.7-592.2	82	4.30	340	1.10	18.60	32	3.30	110	2*	12
CSL 17441	TS-2	625-627.0	150	5.50	110	1.20	23.50	28	2.70	160	2*	16
CSL 17408(COMP.09-13	TS-2	642-647.0	110	5.60	200	1.50	20.50	26	2.60	120	2*	12
CSL 17414(COMP.15-19	TS-2	672-677.5	92	3.40	300	1.60	18.70	32	2.90	120	2*	12
CSL 17442	TS-2	680-681.0	72	4.80	340	1.80	26.70	32	2.40	170	2*	16
CSL 17420(COMP.21-24	TS-2	686.5-694.0	96	4.00	230	1.40	19.60	24	2.60	120	2*	12
CSL 17425(COMP.26-29	TS-2	694-698.9	76	3.20	380	2.10	19.00	36	3.00	110	2*	12
CSL 17443	TS-2	704-706.3	110	4.50	670	2.10	20.50	32	2.60	140	2*	14
CSL 17430(COMP.31-33	TS-2	711-717.0	160	6.70	90	1.10	24.50	24	2.50	160	2*	16
CSL 17444	TS-2	728-730.0	120	5.50	96	1.80	18.60	38	2.30	140	2*	14
CSL 17434(COMP.35-39	TS-2	760-770.0	140	5.50	130	1.40	23.40	32	2.70	160	2*	16
CSL 14081	TS/FHL-1	169.3-179	12	1.10*	270	1.00	4.80	4	0.40	44	2*	6
CSL 14061	TS/FHL-1	415-425	20	1.30*	270	1.30	19.00	12	1.40	82	9	10

* denotes the figure is less than the detection limit

Table 5
Analytical Results of Drill Hole TS-2

Sample #	Drill Hole#	Depth	TH PPM	U PPM	SN PPM	AS PPM	SB PPM	SE PPM	TE PPM	BR PPM	LU PPM	HF PPM
CSL 17311(COMP.13-17	TS-2	141-153.0	10.00	10.30	10*	18.00	2.00	8*	10*	1*	0.63	3
CSL 17366	TS-2	163-165.0	9.90	10.10	10*	13.00	2.10		10*	1*	0.63	4
CSL 17318(COMP.19-26	TS-2	171-187.0	9.90	8.60	10*	18.00	2.10	5*	10*	1*	0.58	3
CSL 17327(COMP.28-34	TS-2	200-214.0	11.00	10.80	10*	17.00	2.00	5*	10*	1	0.57	3
CSL 17335(COMP.36-42	TS-2	226-240.0	11.00	9.40	10*	19.00	1.80		10*	1*	0.62	4
CSL 17449	TS-2	240-242.0	11.00	9.90	10*	23.00	1.60	5*	10*	1*	0.60	4
CSL 17343(COMP.44-50	TS-2	242-256.0	10.00	8.90	10*	19.00	2.00	5*	10*	1*	0.58	4
CSL 17351(COMP.52-57	TS-2	262-274.0	9.90	8.20	10*	7.80	1.50	5*	10*	1*	0.47	4
CSL 17358(COMP.59-65	TS-2	274-288.0	10.00	8.30	10*	18.00	2.10	7*	10*	1*	0.41	4
CSL 17367(COMP.68-74	TS-2	304-318.0	11.00	6.80	10*	16.00	2.20	5*	10*	1*	0.51	4
CSL 17375(COMP.76-82	TS-2	328-342.0	9.90	5.30	10*	11.00	2.20	5*	10*	1*	0.43	3
CSL 17445	TS-2	360.3-362.0	4.40	1.40	10*	15.00	2.60	5*	10*	3	0.37	1
CSL 17446	TS-2	373-375.0	10.00	5.80	10*	5.00	1.90	5*	10*	1*	0.43	3
CSL 17383(COMP.84-88	TS-2	387-397.0	9.30	5.90	10*	17.00	1.90	5*	10*	1*	0.41	3
CSL 17447	TS-2	456.1-457.5	3.30	2.20	10*	25.00	1.40	5*	10*	10	0.36	1
CSL 17389(COMP.90-94	TS-2	493-503.0	10.00	6.40	10*	3.70	1.70	5*	10*	1*	0.50	3
CSL 17448	TS-2	523-524.0	3.50	1.90	10*	22.00	1.70	5*	10*	2	0.25	1
CSL 17440	TS-2	559-561.0	10.00	4.20	10*	10.00	1.10	5*	10*	1*	0.43	4
CSL 17402(COMP.03-07	TS-2	586.7-592.2	7.70	4.30	10*	24.00	2.50	5*	10*	1*	0.47	2
CSL 17441	TS-2	625-627.0	9.70	4.80	10*	21.00	1.30	5*	10*	1*	0.42	2
CSL 17408(COMP.09-13	TS-2	642-647.0	8.30	4.00	10*	11.00	1.60	5*	10*	2	0.42	2
CSL 17414(COMP.15-19	TS-2	672-677.5	8.20	2.80	10*	21.00	1.70	5*	10*	1*	0.50	2
CSL 17442	TS-2	680-681.0	4.50	2.00	10*	20.00	2.50	7*	10*	1*	0.40	4
CSL 17420(COMP.21-24	TS-2	686.5-694.0	7.70	2.60	10*	17.00	1.70	5*	10*	1*	0.47	2
CSL 17425(COMP.26-29	TS-2	694-698.9	7.10	3.80	10*	16.00	2.00	5*	10*	1*	0.41	2
CSL 17443	TS-2	704-706.3	8.00	3.20	10*	11.00	1.50	5*	10*	1	0.43	2
CSL 17430(COMP.31-33	TS-2	711-717.0	11.00	5.50	10*	14.00	1.50	8*	10*	1*	0.49	4
CSL 17444	TS-2	728-730.0	8.00	5.10	10*	24.00	1.60	5*	10*	1*	0.50	3
CSL 17434(COMP.35-39	TS-2	760-770.0	9.90	4.70	10*	11.00	1.40	5*	10*	1*	0.41	4
CSL 14081	TS/FHL-1	169.3-179	0.60	0.40*	10*	0.50*	0.20	5*	10*	1*	0.09	1*
CSL 14061	TS/FHL-1	415-425	1.70	1.30	10*	47.00	3.00	7*	10*	1*	0.25	2

* denotes the figure is less than the detection limit

Table 5
Analytical Results of Drill Hole TS-2

Sample #	Drill Hole#	Depth	TA PPM	W PPM	PT PPB	PB PPM	CE PPM	CD PPM	U PPM	BE PPM	B PPM	GE PPM
CSL 17311(COMP.13-17	TS-2	141-153.0	2.00*	2*	10*	45	56	2	10.30	3	50	10*
CSL 17366	TS-2	163-165.0	2.00*	2*	10*	38	89	2	10.10	3	50	10*
CSL 17318(COMP.19-26	TS-2	171-187.0	2.00*	2*	10*	26	66	2	8.60	4	40	10*
CSL 17327(COMP.28-34	TS-2	200-214.0	1.70*	2*	10	23	58	1	10.80	4	50	10*
CSL 17335(COMP.36-42	TS-2	226-240.0	2.00*	2*	10	26	66	1	9.40	4	40	10*
CSL 17449	TS-2	240-242.0	2.00*	1*	10*	30	76	2	9.90	3	40	10
CSL 17343(COMP.44-50	TS-2	242-256.0	2.00*	2*	10*	26	58	1	8.90	4	50	10*
CSL 17351(COMP.52-57	TS-2	262-274.0	1.70*	2*	10	25	70	1*	8.20	3	50	10
CSL 17358(COMP.59-65	TS-2	274-288.0	1.70*	2*	10*	28	63	1*	8.30	4	40	10*
CSL 17367(COMP.68-74	TS-2	304-318.0	2.00*	3	10*	20	67	1*	6.80	4	70	10
CSL 17375(COMP.76-82	TS-2	328-342.0	2.20*	4	10*	20	69	1*	5.30	4	40	10*
CSL 17445	TS-2	360.3-362.0	1.10*	2*	10	150	62	1*	1.40	2	30	10*
CSL 17446	TS-2	373-375.0	1.70*	2*	10	20	81	1*	5.80	3	60	10*
CSL 17383(COMP.84-88	TS-2	387-397.0	1.70*	4	10*	25	55	1*	5.90	4	40	10*
CSL 17447	TS-2	456.1-457.5	0.90*	4	10	19	63	5	2.20	2	80	10*
CSL 17389(COMP.90-94	TS-2	493-503.0	1.70*	2*	10*	13	62	1*	6.40	3	80	10*
CSL 17448	TS-2	523-524.0	0.90*	2*	10	19	60	1*	1.90	2	10*	10*
CSL 17440	TS-2	559-561.0	2.00*	3	10*	26	69	1*	4.20	4	30	10*
CSL 17402(COMP.03-07	TS-2	586.7-592.2	2.00*	2*	10*	19	71	1*	4.30	3	10	10*
CSL 17441	TS-2	625-627.0	1.70*	2*	10*	18	69	1*	4.80	5	60	10*
CSL 17408(COMP.09-13	TS-2	642-647.0	1.70*	2*	10*	28	66	1*	4.00	3	40	10
CSL 17414(COMP.15-19	TS-2	672-677.5	1.70*	2*	10*	20	72	1*	2.80	3	30	10*
CSL 17442	TS-2	680-681.0	1.70*	2*	10*	22	54	1*	2.00	4	20	10*
CSL 17420(COMP.21-24	TS-2	686.5-694.0	1.70*	5	10*	47	57	1*	2.60	3	30	10*
CSL 17425(COMP.26-29	TS-2	694-698.9	2.00*	6	10*	28	76	1*	3.80	3	40	10*
CSL 17443	TS-2	704-706.3	1.50*	2*	10*	25	58	1*	3.20	3	30	10*
CSL 17430(COMP.31-33	TS-2	711-717.0	1.70*	2*	10*	16	75	1*	5.50	4	100	10*
CSL 17444	TS-2	728-730.0	1.70*	2*	10*	17	58	1	5.10	3	80	10*
CSL 17434(COMP.35-39	TS-2	760-770.0	2.00*	3	10*	25	75	1*	4.70	4	60	10
CSL 14081	TS/FHL-1	169.3-179	1.50*	2*	10	5*	13	1*	0.40*	3	10*	10*
CSL 14061	TS/FHL-1	415-425	1.50*	2*	40	25	29	1	1.30	4	10*	10

* denotes the figure is less than the detection limit

Table 5
Analytical Results of Drill Hole TS-2

Sample #	Drill Hole#	Depth	P PPM	ND PPM	SM PPM
CSL 17311(COMP.13-17	TS-2	141-153.0	360	26	7.5
CSL 17366	TS-2	163-165.0	790	23	8.5
CSL 17318(COMP.19-26	TS-2	171-187.0	640	19	8.6
CSL 17327(COMP.28-34	TS-2	200-214.0	800	19	7.7
CSL 17335(COMP.36-42	TS-2	226-240.0	810	36	8.2
CSL 17449	TS-2	240-242.0	600	24	7.6
CSL 17343(COMP.44-50	TS-2	242-256.0	760	21	7.7
CSL 17351(COMP.52-57	TS-2	262-274.0	790	30	7.7
CSL 17358(COMP.59-65	TS-2	274-288.0	900	18	7.5
CSL 17367(COMP.68-74	TS-2	304-318.0	820	18	8.4
CSL 17375(COMP.76-82	TS-2	328-342.0	660	20	7.3
CSL 17445	TS-2	360.3-362.0	520	24	8.0
CSL 17446	TS-2	373-375.0	640	27	8.6
CSL 17383(COMP.84-88	TS-2	387-397.0	630	24	6.6
CSL 17447	TS-2	456.1-457.5	380	23	6.2
CSL 17389(COMP.90-94	TS-2	493-503.0	720	14	7.6
CSL 17448	TS-2	523-524.0	360	29	6.9
CSL 17440	TS-2	559-561.0	740	19	7.5
CSL 17402(COMP.03-07	TS-2	586.7-592.2	570	23	7.1
CSL 17441	TS-2	625-627.0	640	20	7.1
CSL 17408(COMP.09-13	TS-2	642-647.0	660	17	7.6
CSL 17414(COMP.15-19	TS-2	672-677.5	670	24	7.9
CSL 17442	TS-2	680-681.0	1300	16	7.9
CSL 17420(COMP.21-24	TS-2	686.5-694.0	650	15	6.5
CSL 17425(COMP.26-29	TS-2	694-698.9	650	20	8.5
CSL 17443	TS-2	704-706.3	640	22	6.0
CSL 17430(COMP.31-33	TS-2	711-717.0	750	21	7.2
CSL 17444	TS-2	728-730.0	610	20	7.6
CSL 17434(COMP.35-39	TS-2	760-770.0	730	28	7.9
CSL 14081	TS/FHL-1	169.3-179	340	<5	1.2
CSL 14061	TS/FHL-1	415-425	370	8	2.8

* denotes the figure is less than the detection limit

DRILL HOLE: FHL-2

COUNTY: ST. LOUIS

LOCATION: T52N, R15W, Sec. 10, NE¼-SE¼-SW¼

QUADRANGLE: Fredenberg 7½'

SURFACE ELEVATION: 1370' (topographic quad)

DEPTH TO BEDROCK: 121' TOTAL DEPTH: 1315'

DRILL HOLE INCLINATION: 90° DRILL HOLE AZIMUTH: ---

ACID TESTS:

Depth	Corrected Angle
1300'	80°

CORE SIZES AND FOOTAGE INTERVALS:

NQ (1.875" diameter) 121'-1315'

MATERIALS AVAILABLE FOR EXAMINATION:

Drill core, thin sections, polished thin sections, core photographs before sampling, and detailed graphic log.

FREDENBERG AREA

As shown on figure 18 this area is in Section 10, Township 52 North, Range 15 West. Dr. V. W. Chandler's, Shaded Relief Aeromagnetic Map of Northeastern and East Central Minnesota, (1984), figure 17, clearly defines a structure deforming the slates and trending into the Duluth Complex in this area. The work described in Report 242 which resulted in drilling hole FHL-1, was following the concept of a mineralized zone parallel to the footwall contact. This structure could result in mineralization perpendicular to the footwall contact. A reconnaissance gravity traverse (figure 19) was run along the trail to the south line of Section 10 and north along the road past FHL-1 to the road junction in the NE of the SW of Section 10. The profile displays the same features seen in the Twig area: (1) A rather broad gravity low interpreted as a bedrock valley filled with glacial deposits mostly sand or gravel. This could result from erosion of less resistant rock in a fault zone. (2) A sharp positive feature within the low suggesting a dense vertical dike like feature trending perpendicular to the traverse. In this case, the feature has width and amplitude consistent with that expected from massive sulfides. However, it would have to be much shallower than the 410 foot vertical depth of the Duluth Complex footwall intersected in FHL-1. Mineralized areas drilled to date have the highest sulfide content near the footwall contact.

FIGURE 17 MAGNETIC SUSCEPTIBILITY SHADED RELIEF MAP

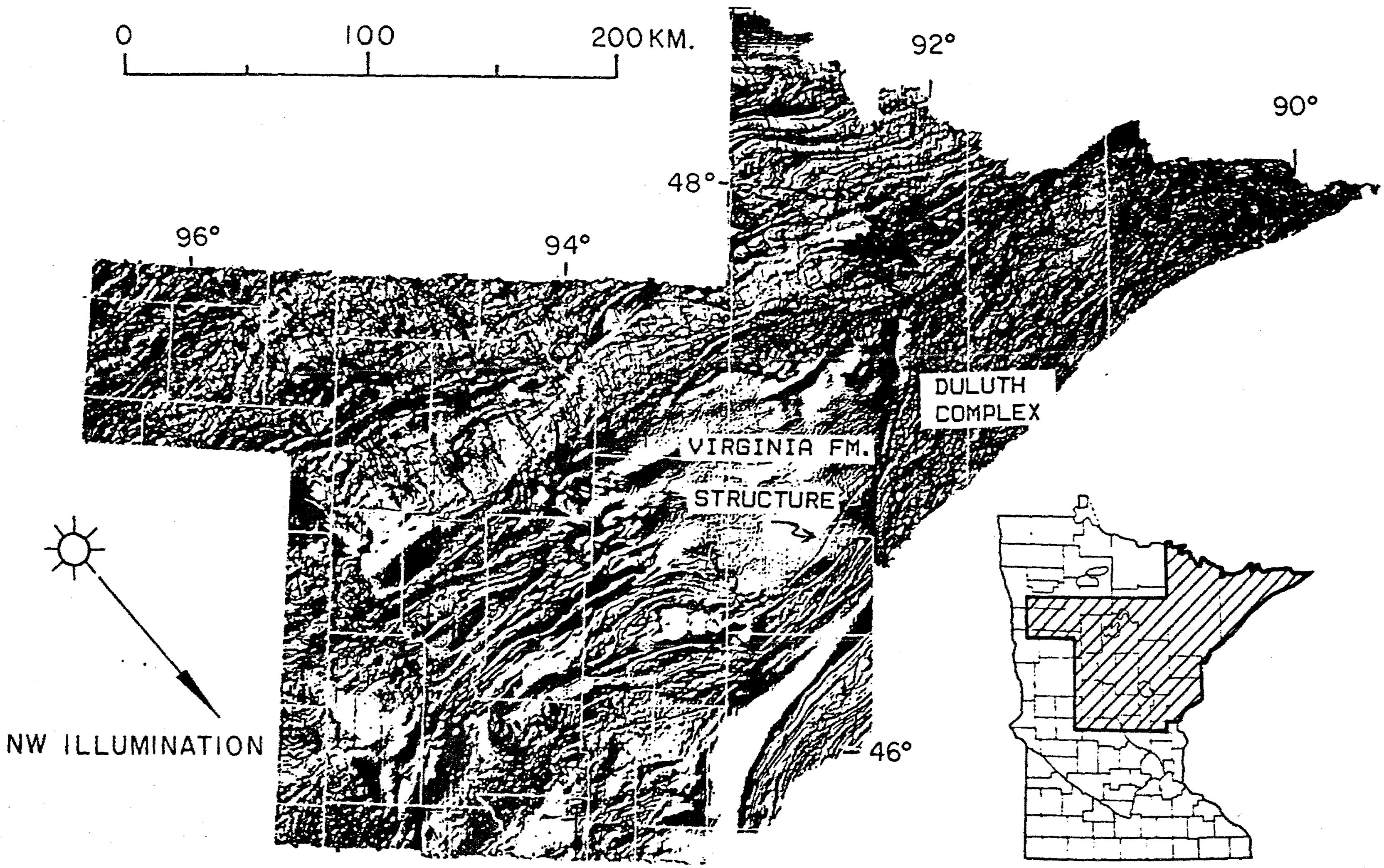


FIGURE 18 LOCATION MAP FREDENBERG AREA

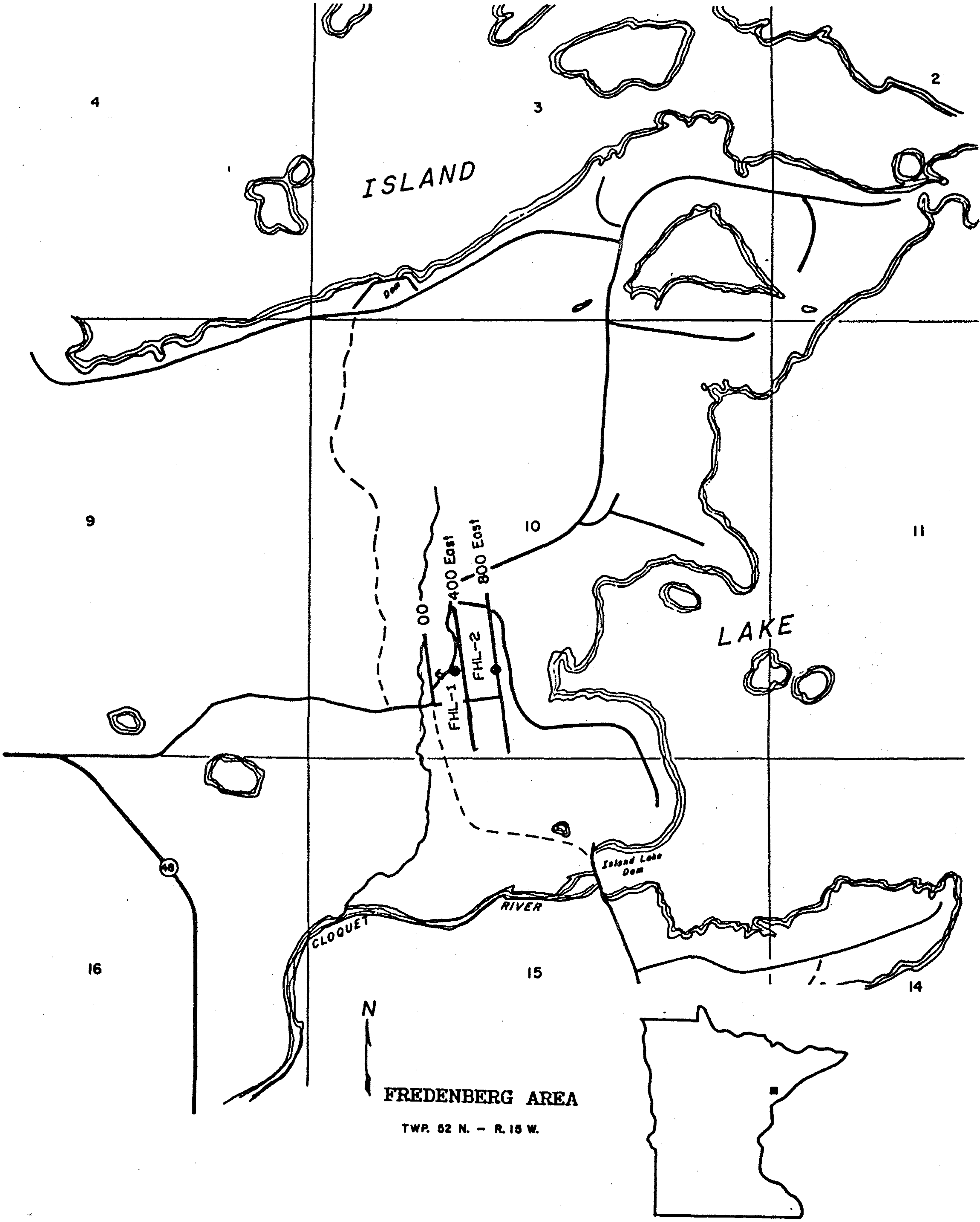
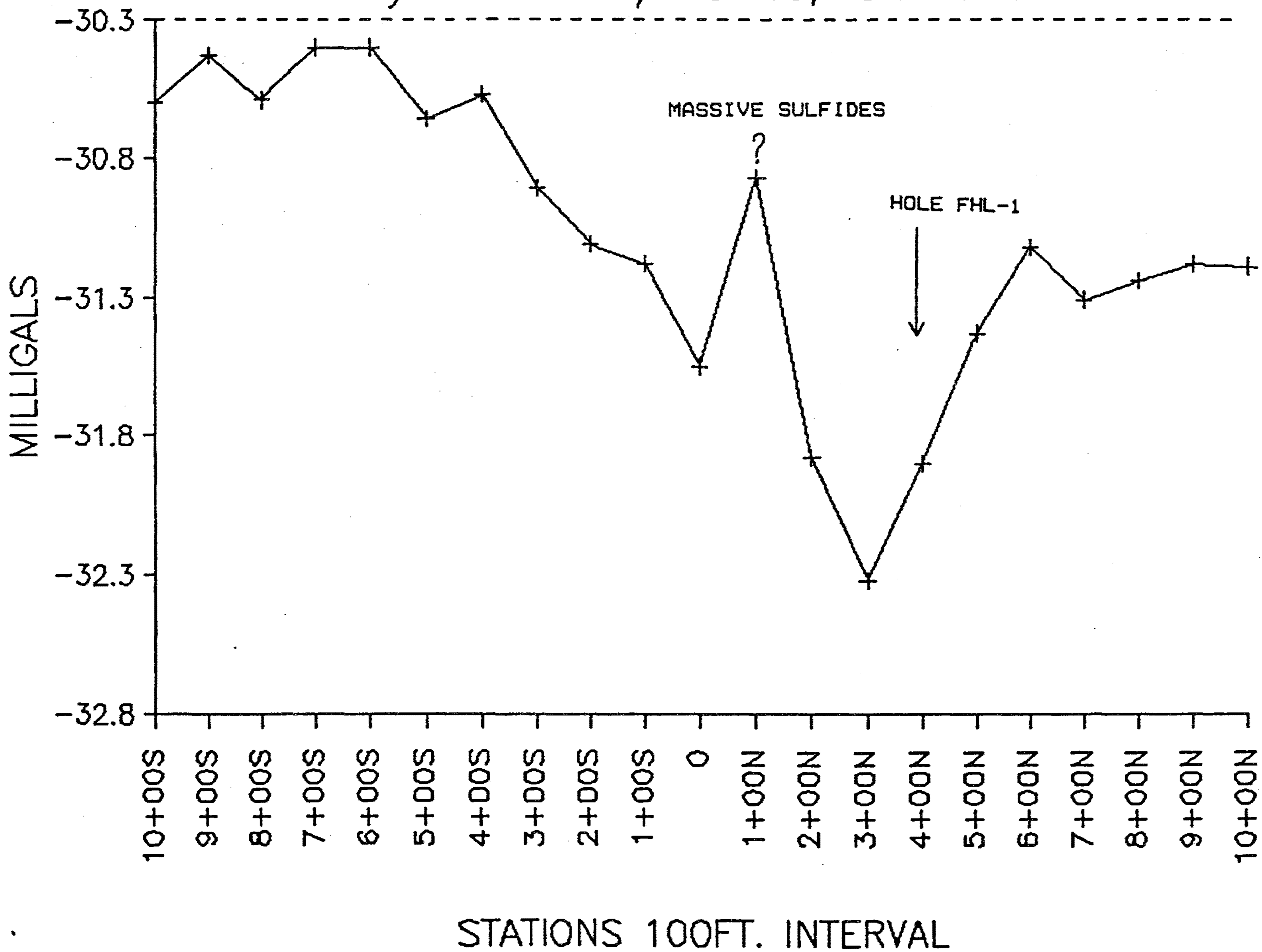


FIGURE 19

Gravity Profile SW1/4 S. 10, T52N-R15W



A grid was brushed with a baseline directed north 80° east. The junction of the road and trail south of FHL-1 was 0+00, the same as it was for the reconnaissance traverse. Lines were then brushed north 10° west at 400 foot intervals with the 0+00 line through station 0+00. Gravity, magnetic, HLEM, and VLEM surveys were run on the grid. The gravity on 100 foot station intervals. The magnetic susceptibility survey used the geoMetrics, uniMag model G-836 magnetometer. The HLEM survey was done with the Max-Min system using a 200 meter coil separation. The VLEM survey was done with the Crone CEM unit in the broadside configuration. Lines 0+00 and 8+00E used a 800 foot Tx-Rx separation, line 4+00E was done with a 400 foot separation. There was interference from both a power line on the east side of state ownership and radar pulses from the Duluth Airport. The interference was particularly onerous on low frequencies which would have provided deepest penetration. Other survey parameters were carried out as described in the introduction.

Figure 20 shows stacked gravity profiles. Only the south limb of the broad valley is observed on these profiles with the north limb becoming flat. The direction of the grid lines, compared to the reconnaissance line, changed from north 10° east to north 10° west. On the reconnaissance line, the wedge of mafic igneous rock may well become thicker to the north, whereas, on the grid lines it is becoming thinner, offsetting an increase in thickness because of the valley slope. The valley shape on the reconnaissance line would also be exaggerated by the "dog leg" from the trail to the road at station 0+00. On the grid, the positive gravity feature is broader and less intense than on the reconnaissance line. On line 0+00 it seems to have shifted to the north, but careful examination shows that at station 1+00N the north inflection of the line goes from negative to horizontal, whereas, on the reconnaissance line it goes from negative to positive. The feature is there but not as pronounced. The gravity low at station 3+00N on the reconnaissance line might be from a lot of contaminant rock in the fault zone exaggerated by thinning Duluth Complex. Because hole FHL-1 was inclined to the west, it would have tested the positive gravity feature near line 0+00 about station 3+70N. The positive gravity feature from 1+50N to 5+50N, line 8+00E, is the most pronounced gravity feature on the grid and most likely to contain massive sulfides or very basic igneous rock.

Figure 21 shows stacked magnetic susceptibility responses. None of the profiles have distinctive features that can be construed to relate to either a structure or massive sulfides. There is a nebulous east-west trending magnetic high near 2+00S and a broader high between 2+00N and 8+00N. From the magnetics or magnetics and gravity these would be interpreted as bedrock topographic features, oxide mineralization, and weak suggestions of faulting.

To measure the conductivity both HLEM and VLEM surveys were done. Noise interfered with the 444 hertz response for the HLEM. The 1777 hertz profiles are shown on figure 22. Ownership at the south end of the grid and a big beaver pond at the north end of line 0+00 restricted line length. With incomplete profiles a conductor is observed on line 0+00 centered at 2+00N. FHL-1 probably tested the north edge of this conductor. The conductor on line 4+00E is no doubt surficial as it coincides with the swamp. On line 8+00E the conductor is present but is weak and shifted to

FIGURE 20 FREDENBERG GRAVITY PROFILES

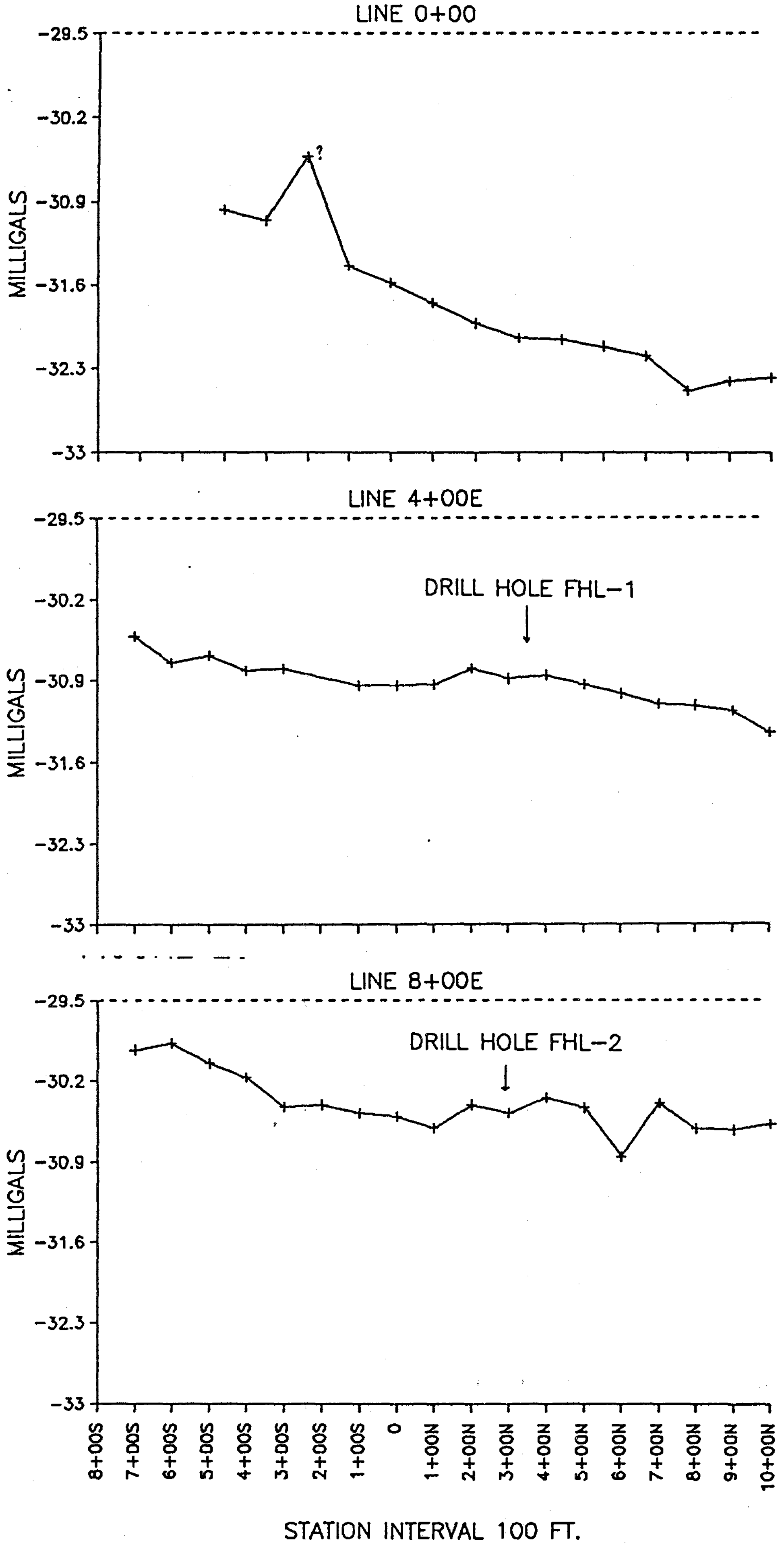


FIGURE 21 FREDENBERG MAGNETIC PROFILES

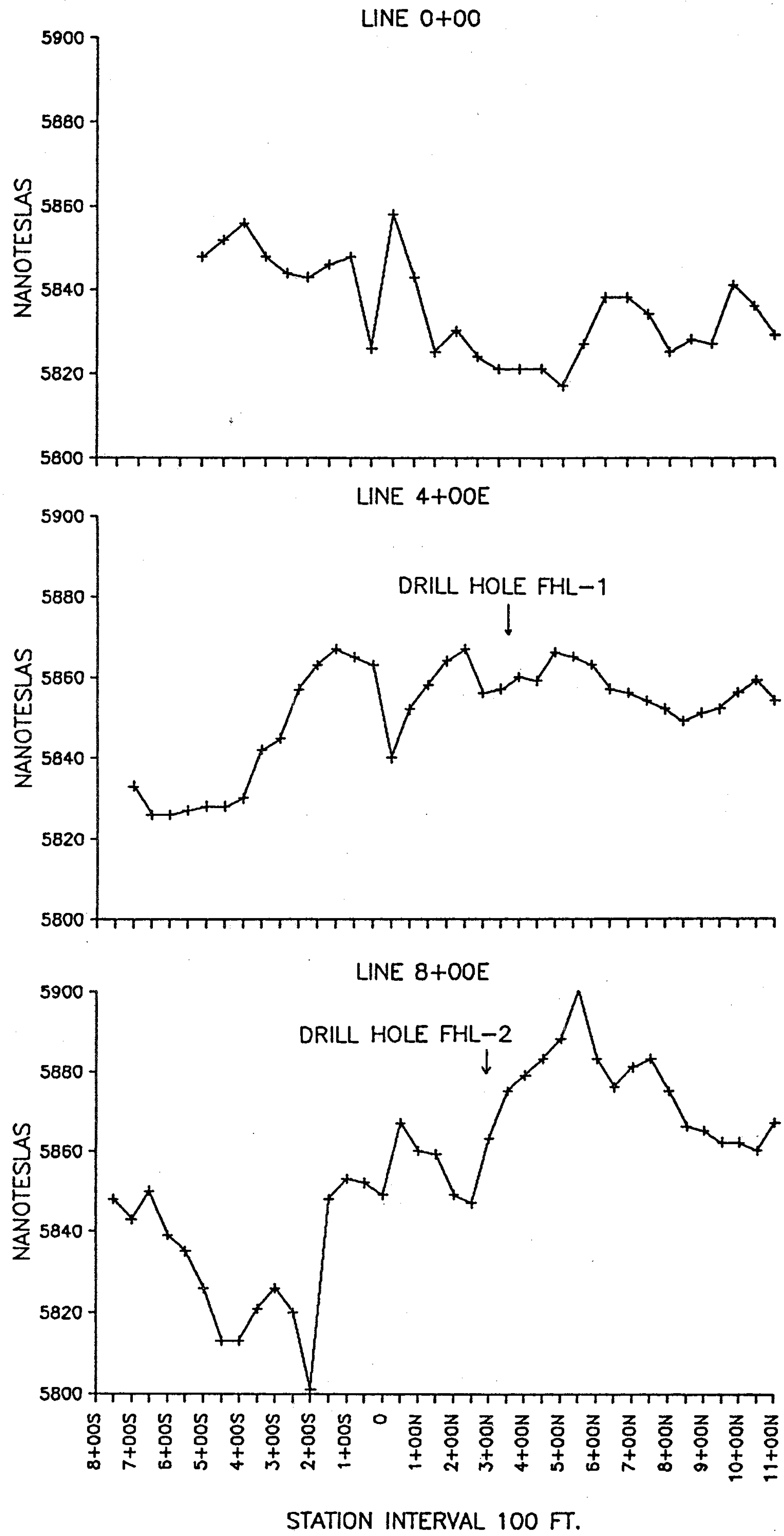


FIGURE 22 FREDENBERG HLEM PROFILES

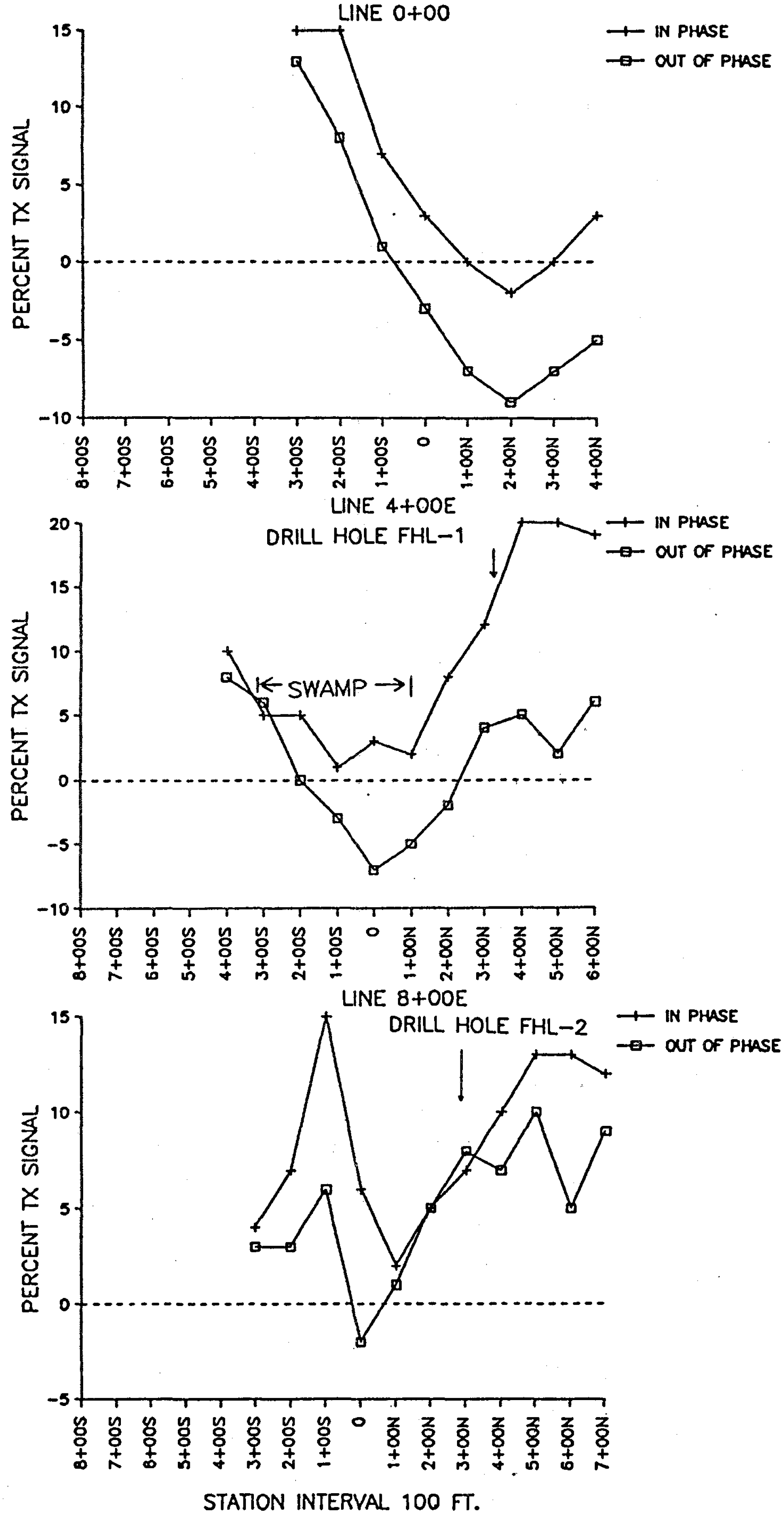
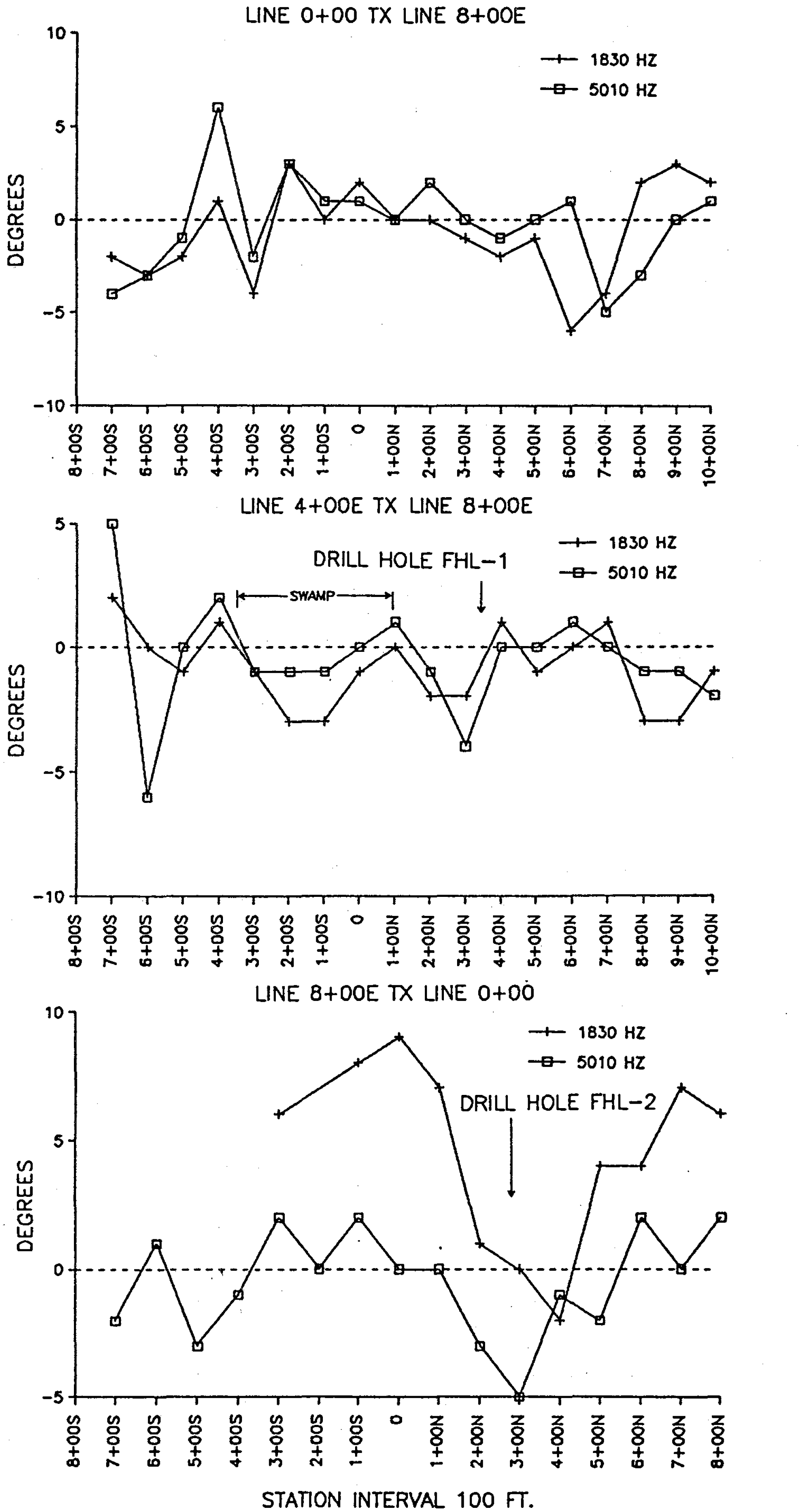
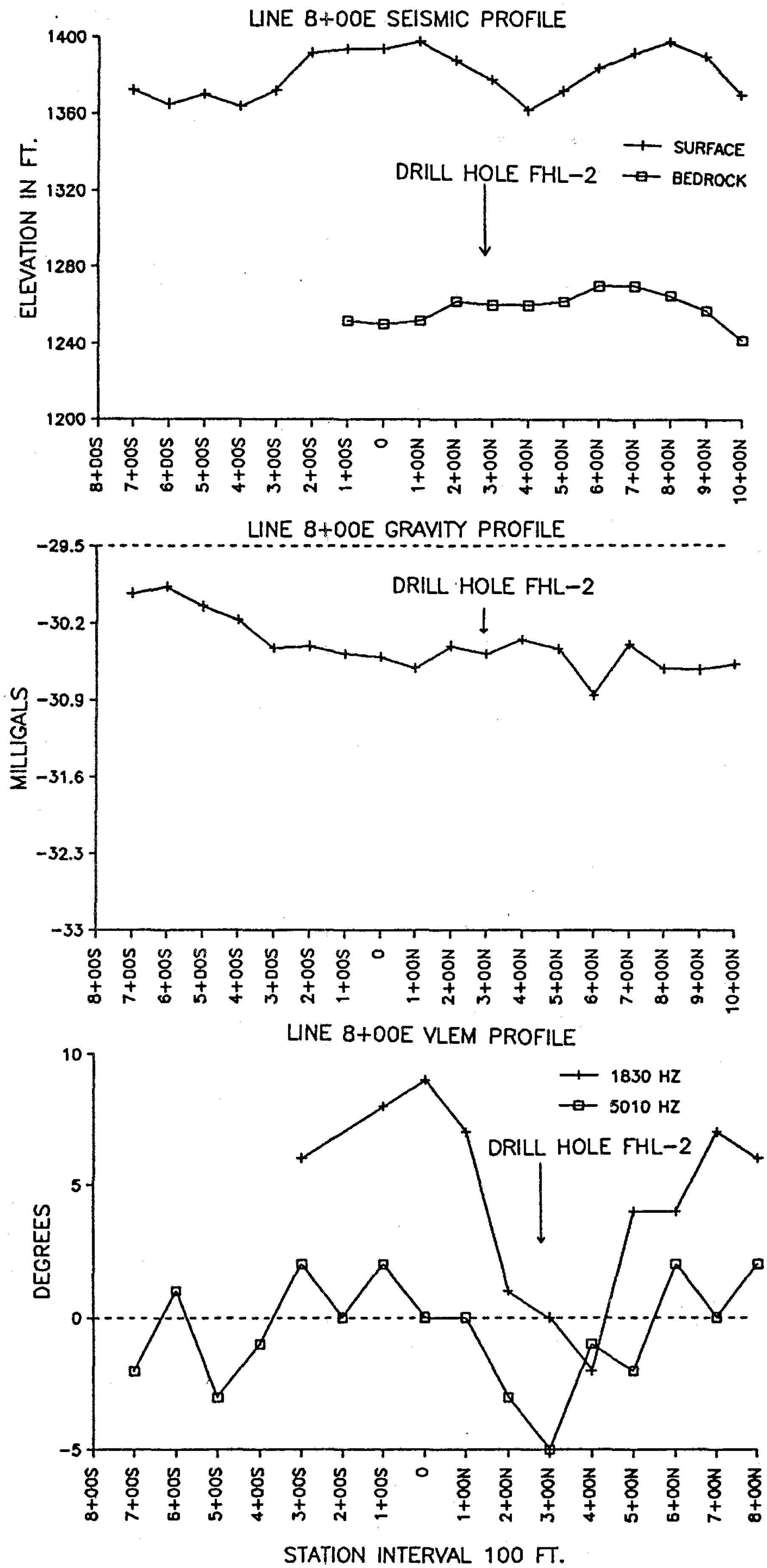


FIGURE 23 FREDENBERG VLEM PROFILES



STATION INTERVAL 100 FT.

FIGURE 24 FREDENBERG HOLE FHL-2



the south from the position indicated by the VLEM survey shown on figure 23.

On line 0+00 the VLEM survey indicates a weak conductor in the area from 0+40N to 5+00N and on line 8+00E a conductor is observed in the area from 0+00 to 3+20N. On line 8+00E there is a high frequency shift of the crossover to the south suggesting the conductor dips to the north, but the shape of the curve on the medium (1830 hertz) frequency indicates the conductor dips to the south. The refraction seismic profile, figure 24, shows a bedrock valley and a deeper section of glacial drift in the area of the high frequency crossover (station 0+00) suggesting the high frequency is probably responding to surficial clays rather than the bedrock conductor. The true dip of the conductor is probably to the south. As shown on figure 24, drill hole FHL-2 was put in a few feet south of where the 1830 hertz crossover places the conductor which is in the southern part of the gravity and magnetic highs. If the dip is steep to the south, the hole should have intersected the geologic features causing the observed anomaly in the geophysical surveys.

SUMMARY LOG OF DRILL HOLE FHL-2
by E. Dahlberg, D. Sassani

0'-121'	Overburden, no samples.
121'-182.3'	Anorthositic troctolite with intercalations of pegmatitic olivine-bearing gabbro, locally ilmenite-rich (up to 10%). Also biotite-bearing. Occasionally occurrence of traces of chalcopyrite, pyrrhotite, and bornite.
182.3'-252.1'	Rather homogeneous quartzitic hornfels with metasediment, inclusions including calc-silicate. Occasionally occurrence of pyrite cubes. Chalcopyrite concentrations are observed in lower portion.
252.1'-261'	Hornfelsic(?) fine-grained troctolite and picrite, slightly serpentinized.
261'-275.4'	Mixed zone of contaminated mafic rock, hornfels, medium-grained troctolite and pegmatite. Traces and up to 10% of chalcopyrite and pyrrhotite clots occur.
275.4'-319.4'	Rather homogeneous, partly serpentinized troctolite grading into picrite. Lower 13' are oxide-rich.
319.4'-325.4'	Oxide (olivine) cumulate with trace to 5% chalcopyrite. Bornite occurs along lower-most contact.
325.4'-388.7'	Gabbroic rocks with contaminated aspects. Upper 15' occasionally mineralized. Remaining part consistently mineralized with 3 to over 10% chalcopyrite and pyrrhotite clots.

388.7'-441.2'	Mixture of fine-grained troctolite and purplish biotite-bearing hornfels with metasedimentary inclusions. Inhomogeneously mineralized with traces to 5% chalcopyrite and pyrrhotite.
441.2'-543.9'	Mainly hornfelsic troctolite with intercalations of contaminant rock and serpentinized picrite. Sections with milky-white anorthositic spots and veins. Frequently occurrence of granite veins. Inhomogeneously mineralized, with traces and up to 10% chalcopyrite and pyrrhotite.
543.9'-628.3'	Alternating(?) medium-grained to coarse-grained pegmatitic gabbro, locally with contaminant aspects and (pyroxene) troctolite. Also mixed zones of the former and hornfels are found. Rather consistently mineralized with traces to 10% chalcopyrite and pyrrhotite as clots and blebs.
628.3'-726.8'	Hornfelsic microgabbroic and fine-grained troctolite, with intercalations of coarse-grained gabbro. Occasionally traces of chalcopyrite and pyrrhotite are observed.
726.8'-828.2'	Mixture of partly hornfelsic olivine-bearing microgabbro and medium-grained to coarse-grained troctolite with locally picritic compositions. Traces of chalcopyrite and pyrrhotite are observed.
828.2'-838'	Hornfelsic fine-grained to medium-grained olivine gabbro with increase of hornfelsic sediment inclusions down hole. Occasionally traces of chalcopyrite and bornite are observed.
838'- 841.6'	Migmatitic hornfels with hornfelsic metasediment inclusions. Occasionally 3-5% chalcopyrite and pyrrhotite-bearing.
841.6'	FOOTWALL
841.6'-865'	Migmatized(?) quartzitic hornfels with 1-2% chalcopyrite and pyrrhotite.
865'-941'	Quartzitic hornfels with increase of foliation and laminated layering down hole. 1-2% pyrrhotite, occasionally chalcopyrite.
941'-1039'	Plastically deformed layered pelitic gneiss with calc-silicate intercalations. 1-2% pyrrhotite in the upper 24'. Occasionally occurrence of traces of chalcopyrite, pyrrhotite, and pyrite in remaining part.
1039'-1152'	Homogeneous pelitic gneiss.
1152'-1195.5'	Fine-grained biotite gneiss with partial anatexis. Calc-silicate intercalations. Locally traces of chalcopyrite, pyrrhotite, and pyrite.

1195.5'-1315'	Hornfelsic schist with calc silicate intercalations. Locally traces of pyrrhotite.
1315'	TOTAL DEPTH
	From 914' downwards in the footwall segregations occur of tourmaline-bearing albite-quartz-muscovite patches. From 1023.5' metacherty and altered metavolcanic intercalations up to about 1' thick are observed.

Analytical results of drill hole FHL-2 follow in Table 6.

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CSL 17718	FHL-2	121-131	46.90	21.30	10.40	6.70	4.19	10.20	2.78	2.00	0.84	2.13
CSL 17719	FHL-2	131-138.1	47.60	22.00	9.14	5.70	3.14	10.50	3.00	2.10	0.91	2.17
CSL 17720	FHL-2	138.1-148	46.00	19.60	12.60	7.60	5.68	9.55	2.68	1.90	0.68	2.30
CSL 17721	FHL-2	148-158.5	46.20	19.60	12.40	8.80	5.31	9.51	2.67	2.20	0.82	2.25
CSL 17722	FHL-2	158.5-161.7	45.60	18.60	13.10	9.30	5.54	9.00	2.63	2.20	0.89	3.02
CSL 17723	FHL-2	161.7-162.4	51.80	28.40	1.38	1.10	0.83	12.40	3.81	2.90	0.65	0.18
CSL 17724	FHL-2	162.4-170	44.10	17.20	16.10	11.10	7.09	8.34	2.42	1.90	0.71	2.88
CSL 17725	FHL-2	170-176.4	44.30	17.40	15.90	11.20	7.44	8.25	2.30	1.90	0.71	2.50
CSL 17726	FHL-2	176.4-178.6	40.70	13.50	18.90	12.40	9.88	4.54	1.37	1.10	1.47	2.48
CSL 17727	FHL-2	178.6-182.3	43.00	15.00	18.30	12.90	9.45	7.23	1.95	1.60	0.68	2.63
CSL 17728	FHL-2	182.3-190	59.00	17.20	8.64	6.10	4.14	1.60	2.10	1.60	3.42	0.91
CSL 17729	FHL-2	190-200	59.90	16.10	7.01	5.00	4.07	3.03	2.08	1.50	3.64	0.75
CSL 17730	FHL-2	200-210	57.80	16.60	7.59	5.20	4.50	3.14	1.90	1.40	3.60	0.85
CSL 17731	FHL-2	210-220	57.60	15.60	7.40	5.00	4.81	4.46	2.02	1.50	2.75	0.76
CSL 17732	FHL-2	220-230	59.10	16.70	7.37	6.80	3.78	2.79	2.20	2.20	3.39	0.81
CSL 17733	FHL-2	230-240	58.60	16.60	7.68	7.30	3.93	3.11	2.12	2.10	3.13	0.82
CSL 17734	FHL-2	240-246.2	53.60	16.60	8.87	8.20	5.62	5.18	1.85	1.90	2.45	0.88
CSL 17735	FHL-2	246.2-248.5	42.60	14.80	18.50	15.90	11.20	6.62	1.66	1.70	0.54	2.03
CSL 17736	FHL-2	248.5-251.4	54.20	17.10	11.10	10.20	5.82	1.81	2.29	2.20	3.41	1.17
CSL 17737	FHL-2	251.4-261	39.00	10.50	24.70	20.50	15.10	4.53	1.14	1.00	0.47	2.46
CSL 17738	FHL-2	261-264.6	46.90	12.70	17.00	12.20	8.47	4.60	1.87	1.80	1.51	2.40
CSL 17739	FHL-2	264.6-267.8	53.30	15.70	11.10	10.00	5.82	2.17	2.73	2.60	4.46	1.28
CSL 17740	FHL-2	267.8-269.2	45.10	10.00	22.40	17.00	10.50	4.85	1.56	1.70	0.96	2.41
CSL 17741	FHL-2	269.2-271.3	43.30	15.30	18.40	15.70	8.29	7.24	2.09	2.10	0.69	2.64
CSL 17742	FHL-2	271.3-275.4	45.40	16.00	14.90	12.60	7.63	7.35	2.28	2.20	1.06	2.55
CSL 17743	FHL-2	275.4-285	39.80	11.80	23.60	13.70	13.00	5.16	1.38	1.10	0.54	3.40
CSL 17744	FHL-2	285-295	40.90	9.80	21.30	13.80	17.00	5.21	1.24	1.00	0.41	1.48
CSL 17745	FHL-2	295-305	41.00	10.90	19.00	12.70	17.70	5.21	1.19	0.97	0.28	0.98
CSL 17746	FHL-2	305-314.4	40.30	10.20	19.50	13.30	18.60	4.98	1.08	0.90	0.33	1.02
CSL 17747	FHL-2	314.4-319.4	38.50	8.11	21.20	13.00	20.00	4.10	0.88	0.69	0.21	1.13
CSL 17748	FHL-2	319.4-324.3	27.70	12.50	29.60	18.80	11.70	3.51	0.69	0.62	0.27	6.08
CSL 17749	FHL-2	324.8-325.4	18.70	15.30	33.70	24.00	7.81	2.74	0.32	0.40	0.24	8.87
CSL 17750	FHL-2	325.4-327	43.40	19.80	12.00	7.70	11.20	8.57	1.42	1.10	0.67	0.73
CSL 17751	FHL-2	327-330.6	43.90	20.20	10.20	7.30	11.00	9.38	1.56	1.30	0.48	0.37
CSL 17752	FHL-2	330.6-333.2	45.20	17.40	11.70	7.50	11.70	7.60	1.55	1.20	1.13	0.56
CSL 17753	FHL-2	333.2-337	44.40	19.70	10.30	6.90	10.10	8.65	1.71	1.30	0.74	0.67
CSL 17754	FHL-2	337-340	44.40	18.30	12.00	9.50	9.84	7.63	1.74	1.60	0.78	1.04
CSL 17755	FHL-2	340-344.6	44.00	19.80	11.00	8.80	9.09	8.40	1.76	1.70	0.94	0.69
CSL 17756	FHL-2	344.6-346.9	45.30	20.00	11.00	8.20	10.20	8.99	1.93	1.70	0.54	0.35
CSL 17757	FHL-2	346.9-357	43.20	13.60	17.50	13.30	13.40	5.52	1.23	1.10	0.70	0.59
CSL 17758	FHL-2	357-367	42.00	12.70	19.40	14.80	13.80	5.13	1.07	1.00	0.71	0.48
CSL 17759	FHL-2	367-377	43.40	8.94	22.20	16.00	15.20	3.58	0.77	0.71	0.73	0.91
CSL 17760	FHL-2	377-381.2	44.10	13.60	18.30	14.80	12.20	5.77	1.23	1.20	0.80	0.66
CSL 17761	FHL-2	381.2-385	48.80	15.00	13.40	10.40	8.71	5.81	2.07	1.70	1.26	1.78
CSL 17762	FHL-2	385-388.7	43.80	10.80	20.90	15.20	13.10	4.63	1.10	0.97	0.65	1.04
CSL 17763	FHL-2	388.7-393	45.60	15.50	14.90	11.60	12.00	8.56	1.54	1.40	0.34	0.32
CSL 17764	FHL-2	393-402.5	48.20	17.10	10.10	7.10	9.20	11.10	1.82	1.50	0.49	0.39
CSL 17765	FHL-2	402.5-412	55.20	17.60	8.88	5.90	5.27	4.22	2.34	1.70	2.46	0.85
CSL 17766	FHL-2	412-422.3	56.50	17.50	8.48	5.70	4.32	4.30	2.41	1.70	2.80	0.91
CSL 17767	FHL-2	422.3-427.3	50.90	15.50	9.08	6.00	8.04	10.10	2.04	1.50	1.36	0.49
CSL 17768	FHL-2	427.3-433	57.40	17.80	9.30	6.50	4.21	2.18	2.54	1.80	2.84	1.02

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CSL 17769	FHL-2	433-441.2	56.70	17.40	9.00	6.30	4.41	2.53	2.44	1.90	2.78	0.90
CSL 17770	FHL-2	441.2-447.6	48.80	15.20	9.57	6.80	9.00	12.50	1.96	1.60	0.33	0.48
CSL 17771	FHL-2	447.6-453.7	48.80	16.70	11.10	8.10	8.79	9.07	2.08	1.70	0.94	0.55
CSL 17772	FHL-2	453.7-460	55.20	16.30	8.10	5.70	6.15	5.69	2.48	1.80	2.30	0.45
CSL 17773	FHL-2	460-470	49.00	16.40	12.00	8.10	9.31	7.97	1.90	1.40	0.91	0.56
CSL 17774	FHL-2	470-479	50.20	16.90	10.20	6.80	8.02	8.65	1.87	1.40	1.11	0.73
CSL 17775	FHL-2	479-483.8	46.90	16.30	13.80	9.50	8.68	7.99	1.83	1.30	0.65	1.20
CSL 17776	FHL-2	483.8-489.4	48.00	16.50	11.40	7.90	9.51	10.50	1.87	1.50	0.50	0.76
CSL 17777	FHL-2	489.4-499.3	48.00	17.00	10.00	7.20	8.15	9.14	2.03	1.60	1.28	0.75
CSL 17778	FHL-2	499.3-509	47.70	17.10	11.60	8.50	9.37	10.10	2.07	1.70	0.57	0.88
CSL 17779	FHL-2	509-513	46.60	16.60	11.40	7.70	9.35	11.00	1.80	1.40	0.33	0.87
CSL 17780	FHL-2	513-515	48.70	17.40	13.10	8.60	8.45	7.99	1.72	1.30	0.61	0.96
CSL 17781	FHL-2	515-525	46.60	18.10	12.60	9.00	8.81	9.10	2.16	1.70	0.49	0.94
CSL 17782	FHL-2	525-535	48.30	17.30	11.30	8.30	8.28	9.94	2.11	1.80	0.57	0.86
CSL 17783	FHL-2	535-543.9	49.70	16.30	11.90	8.90	7.73	8.68	1.96	1.60	1.06	1.12
CSL 17784	FHL-2	543.9-553	48.60	17.20	13.90	9.60	5.53	7.97	2.43	1.90	0.63	1.85
CSL 17785	FHL-2	553-558	47.20	16.50	15.00	10.50	6.92	7.82	2.28	1.80	0.58	1.97
CSL 17786	FHL-2	558-567	45.20	16.40	14.40	10.00	8.95	9.11	2.17	1.70	0.35	1.26
CSL 17787	FHL-2	567-573	48.60	16.30	14.50	10.40	6.18	6.20	2.32	1.80	0.82	2.00
CSL 17788	FHL-2	573-575	56.80	17.70	10.60	7.50	5.12	3.87	1.81	1.40	0.63	0.93
CSL 17789	FHL-2	575-581	46.50	17.20	13.70	9.80	8.11	8.99	1.84	1.50	0.30	1.65
CSL 17790	FHL-2	581-584.2	44.10	19.50	17.60	13.10	6.24	3.58	1.88	1.60	0.72	1.23
CSL 17791	FHL-2	584.2-584.9	47.60	16.40	15.90	11.60	7.41	7.14	1.79	1.50	0.36	1.52
CSL 17792	FHL-2	584.9-590	47.70	17.80	13.80	10.30	5.00	8.79	2.50	2.10	0.55	2.44
CSL 17793	FHL-2	590-594.6	45.70	15.50	16.20	12.00	7.73	8.52	2.33	2.00	0.50	2.40
CSL 17794	FHL-2	594.6-605	45.40	16.90	15.40	11.10	5.60	8.94	2.53	2.00	0.72	2.61
CSL 17795	FHL-2	605-610.5	44.40	16.80	16.30	10.60	5.58	8.69	2.40	1.80	0.77	3.03
CSL 17796	FHL-2	610.5-617.2	44.90	16.80	15.70	10.40	6.38	8.37	2.57	1.90	0.73	2.80
CSL 17797	FHL-2	617.2-622.5	45.10	15.40	15.40	10.40	5.82	7.98	2.52	1.90	0.99	2.79
CSL 17798	FHL-2	622.5-628.3	45.60	16.40	15.20	11.60	6.41	8.26	2.42	2.10	0.77	2.61
CSL 17799	FHL-2	628.3-639	46.80	16.40	13.40	9.60	8.73	9.16	2.00	1.70	0.66	1.56
CSL 18401	FHL-2	639-649.5	47.20	17.10	12.50	8.70	7.64	9.63	2.43	2.00	0.60	1.70
CSL 18402	FHL-2	649.5-658.1	46.60	16.80	13.20	9.80	8.13	8.83	2.26	1.90	0.70	1.56
CSL 18403	FHL-2	658.1-660.7	47.20	16.50	12.10	8.40	6.96	9.29	2.44	1.90	0.85	2.09
CSL 18404	FHL-2	660.7-666.1	45.60	16.50	14.00	9.80	8.75	9.34	2.12	1.70	0.41	1.73
CSL 18405	FHL-2	678-683.1	47.20	17.90	12.30	8.60	6.49	9.31	2.63	2.10	0.78	1.94
CSL 18406	FHL-2	683.1-687.9	47.50	15.40	11.40	8.20	8.82	11.60	2.09	1.70	0.45	1.26
CSL 18407	FHL-2	705-709	46.50	16.10	9.95	7.10	10.20	11.10	1.74	1.40	0.60	1.14
CSL 18408	FHL-2	723.3-726.8	46.80	17.10	12.60	9.10	7.22	9.21	2.42	1.90	0.68	1.90
CSL 18409	FHL-2	726.8-729.3	46.10	17.00	13.20	8.90	9.04	9.67	2.17	1.70	0.50	1.52
CSL 18410	FHL-2	756.2-759	47.20	16.80	13.20	9.30	7.01	8.84	2.55	2.00	0.73	1.97
CSL 18411	FHL-2	759.8-760.4	57.30	15.60	9.64	6.50	4.48	1.22	3.63	2.70	4.88	0.96
CSL 18412	FHL-2	781.6-785	46.60	15.50	13.80	9.60	7.82	9.18	2.30	1.80	0.80	2.03
CSL 18413	FHL-2	791.4-796.9	43.00	8.18	16.50	11.60	13.50	8.73	0.78	0.69	0.47	1.81
CSL 18414	FHL-2	813.2-816.1	47.60	15.00	12.90	8.90	8.45	10.50	1.83	1.50	0.33	1.48
CSL 18415	FHL-2	824.4-828.2	47.10	16.40	12.70	9.00	7.60	8.78	1.99	1.70	0.42	2.04
CSL 18416	FHL-2	828.2-834.4	48.10	15.40	13.10	9.30	7.37	8.33	1.98	1.60	0.63	1.97
CSL 18417	FHL-2	834.4-838	63.60	13.30	8.46	5.80	3.46	2.15	2.22	1.70	1.92	1.61
CSL 18418	FHL-2	838-841.6	64.30	13.90	8.37	5.80	2.94	0.95	1.44	1.10	2.72	1.24
CSL 18419	FHL-2	841.6-845.4	56.00	16.40	11.80	8.10	4.10	0.25	0.89	0.72	3.33	0.80
CSL 18420	FHL-2	845.4-855.4	58.60	16.20	9.94	6.80	2.98	0.32	1.69	1.30	4.35	0.75

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CSL 18421	FHL-2	855.4-865	58.20	16.40	9.93	6.60	2.97	0.32	1.59	1.20	4.20	0.75
CSL 18435	FHL-2	865-875	58.60	16.20	9.65	6.30	2.97	0.27	1.60	1.10	4.22	0.74
CSL 18422	FHL-2	921-931	62.40	15.40	5.77	3.70	2.88	0.56	1.72	1.20	4.37	0.64
CSL 18423	FHL-2	990-1000	63.50	15.80	6.90	4.60	3.09	1.00	2.57	1.80	3.32	0.75
CSL 18424	FHL-2	1070-1080	62.30	16.80	7.71	5.20	3.35	0.76	2.60	1.80	3.43	0.80
CSL 18425	FHL-2	1155.3-1165.3	59.30	16.10	7.18	4.70	3.25	2.10	2.53	1.70	3.49	0.77
CSL 18426	FHL-2	1240-1250	63.10	16.70	7.41	4.90	3.23	0.77	2.63	1.80	3.42	0.81
CSL 18427	FHL-2	1310-1315	62.30	16.70	7.33	4.80	3.13	0.94	2.70	1.90	3.32	0.80

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	P2O5 %	MNO %	CO2 %	LOI %	S %	CL PPM	F PPM	CU PPM	NI PPM	CR PPM
CSL 17718	FHL-2	121-131	0.24	0.12	0.04	0.62	NIL	50*	340	140	150*	190
CSL 17719	FHL-2	131-138.1	0.27	0.10	0.01	0.39	NIL	150	480	150	150*	140
CSL 17720	FHL-2	138.1-148	0.22	0.14	0.01	0.30*	NIL	50*	410	140	140*	210
CSL 17721	FHL-2	148-158.5	0.25	0.14	0.03	0.00	NIL	50*	400	130	210*	200
CSL 17722	FHL-2	158.5-161.7	0.28	0.15	0.01*	0.08	NIL	50*	480	160	220*	200
CSL 17723	FHL-2	161.7-162.4	0.04	0.02	0.01*	0.93	NIL	50*	60	45	190*	80
CSL 17724	FHL-2	162.4-170	0.25	0.17	0.01*	0.46*	NIL	50*	400	180	200*	260
CSL 17725	FHL-2	170-176.4	0.22	0.17	0.01*	0.53*	NIL	50*	370	220	210*	330
CSL 17726	FHL-2	176.4-178.6	0.26	0.26	0.51	6.31	NIL	50*	1100	220	160*	410
CSL 17727	FHL-2	178.6-182.3	0.22	0.19	0.01	0.23	NIL	50*	600	200	210*	550
CSL 17728	FHL-2	182.3-190	0.17	0.07	0.02	2.85	0.06	50*	760	66	360	220
CSL 17729	FHL-2	190-200	0.17	0.08	0.01*	2.70	0.04	50*	950	54	200*	190
CSL 17730	FHL-2	200-210	0.17	0.09	0.06	3.54	0.03	50*	950	51	200*	200
CSL 17731	FHL-2	210-220	0.16	0.11	0.43	3.39	0.03	50*	960	47	190*	190
CSL 17732	FHL-2	220-230	0.16	0.09	0.02	2.39	0.04	50*	680	42	350	260
CSL 17733	FHL-2	230-240	0.16	0.09	0.01	2.70	0.05	50*	800	57	270*	260
CSL 17734	FHL-2	240-246.2	0.15	0.15	0.15	3.00	0.05	50*	1200	150	270*	290
CSL 17735	FHL-2	246.2-248.5	0.16	0.19	0.02	0.23	0.08	50*	900	1100	490	1100
CSL 17736	FHL-2	248.5-251.4	0.11	0.09	0.01*	2.31	0.06	50*	540	150	300*	470
CSL 17737	FHL-2	251.4-261	0.10	0.24	0.05	0.23	NIL	50	370	290	180	2100
CSL 17738	FHL-2	261-264.6	0.79	0.18	0.01*	2.31	0.24	50*	920	270	170*	890
CSL 17739	FHL-2	264.6-267.8	0.35	0.10	0.01*	1.70	0.03	50*	1100	150	300*	570
CSL 17740	FHL-2	267.8-269.2	0.56	0.24	0.01*	0.00	0.66	200	1200	1400	300*	390
CSL 17741	FHL-2	269.2-271.3	0.27	0.18	0.01*	0.15*	0.71	50*	520	1500	310	880
CSL 17742	FHL-2	271.3-275.4	0.36	0.16	0.01*	1.47	0.05	50*	660	400	260*	560
CSL 17743	FHL-2	275.4-285	0.19	0.24	0.01*	0.16	NIL	50*	370	240	220*	1800
CSL 17744	FHL-2	285-295	0.17	0.24	0.01*	1.39	NIL	450	230	140	380	310
CSL 17745	FHL-2	295-305	0.10	0.20	0.01	2.39	NIL	100	150	93	500	340
CSL 17746	FHL-2	305-314.4	0.10	0.22	0.02	3.08	NIL	700	180	100	430	560
CSL 17747	FHL-2	314.4-319.4	0.10	0.23	0.01	4.31	NIL	750	140	120	530	540
CSL 17748	FHL-2	319.4-324.3	0.06	0.23	0.02	0.85	0.07	100	200	260	410	27000
CSL 17749	FHL-2	324.8-325.4	0.07	0.23	0.03	0.23	0.02	50*	170	160	420	48000
CSL 17750	FHL-2	325.4-327	0.08	0.12	0.01	1.93	0.04	50*	100	630	400	2100
CSL 17751	FHL-2	327-330.6	0.05	0.11	0.03	1.54	NIL	50*	100	55	250	300
CSL 17752	FHL-2	330.6-333.2	0.10	0.13	0.02	2.70	NIL	50*	120	120	200	110
CSL 17753	FHL-2	333.2-337	0.10	0.11	0.06	2.62	NIL	50*	120	250	240	200
CSL 17754	FHL-2	337-340	0.13	0.12	0.02	3.08	0.26	50*	200	1500	390	330
CSL 17755	FHL-2	340-344.6	0.08	0.11	0.05	2.47	0.31	100	120	1800	520	180
CSL 17756	FHL-2	344.6-346.9	0.04	0.11	0.04	1.00	NIL	50	100	130	180*	120
CSL 17757	FHL-2	346.9-357	0.10	0.16	0.03	2.77	0.89	50*	140	2900	720	140
CSL 17758	FHL-2	357-367	0.07	0.16	0.06	2.85	1.36	50*	180	3000	790	180
CSL 17759	FHL-2	367-377	0.08	0.19	0.01*	2.39	1.63	50*	220	3100	1000	300
CSL 17760	FHL-2	377-381.2	0.09	0.16	0.02	2.00	1.26	50	220	2600	600	200
CSL 17761	FHL-2	381.2-385	0.21	0.14	0.01	1.85	0.86	50*	180	2200	390	360
CSL 17762	FHL-2	385-388.7	0.11	0.18	0.02	2.16	2.15	50*	210	3100	750	370
CSL 17763	FHL-2	388.7-393	0.03	0.16	0.02	0.70	0.50	50*	90	680	200*	270
CSL 17764	FHL-2	393-402.5	0.04	0.13	0.03	1.08	0.17	50*	150	230	190*	260
CSL 17765	FHL-2	402.5-412	0.15	0.12	0.14	2.47	0.10	50*	750	110	200*	200
CSL 17766	FHL-2	412-422.3	0.17	0.14	0.07	2.31	0.03	50*	940	48	230	190
CSL 17767	FHL-2	422.3-427.3	0.06	0.13	0.06	1.39	0.07	50*	480	140	270	250
CSL 17768	FHL-2	427.3-433	0.17	0.08	0.08	1.85	0.10	50*	800	87	210*	230

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	P2O5 %	MNO %	CO2 %	LOI %	S %	CL PPM	F PPM	CU PPM	NI PPM	CR PPM
CSL 17769	FHL-2	433-441.2	0.16	0.08	0.08	2.31	0.08	50*	800	90	210*	220
CSL 17770	FHL-2	441.2-447.6	0.02	0.15	0.05	0.85	0.01	50*	160	93	200*	310
CSL 17771	FHL-2	447.6-453.7	0.04	0.14	0.03	0.70	0.21	50*	390	220	280	230
CSL 17772	FHL-2	453.7-460	0.09	0.09	0.25	2.47	0.10	50*	610	280	180*	240
CSL 17773	FHL-2	460-470	0.04	0.13	0.02	0.85	0.23	50*	250	260	190	240
CSL 17774	FHL-2	470-479	0.06	0.12	0.05	1.77	0.09	50*	480	170	170*	300
CSL 17775	FHL-2	479-483.8	0.05	0.14	0.02	1.08	1.03	50*	90	840	390	250
CSL 17776	FHL-2	483.8-489.4	0.03	0.14	0.02	0.23	NIL	50*	90	50	220	360
CSL 17777	FHL-2	489.4-499.3	0.08	0.12	0.07	2.54	0.08	50*	360	280	190*	300
CSL 17778	FHL-2	499.3-509	0.06	0.15	0.03	0.07*	NIL	50*	130	120	330	330
CSL 17779	FHL-2	509-513	0.06	0.14	0.02	0.16	0.25	50*	60	390	190	370
CSL 17780	FHL-2	513-515	0.06	0.14	0.02	0.16	0.49	50*	150	910	170*	250
CSL 17781	FHL-2	515-525	0.08	0.15	0.02	0.30	0.05	50*	250	270	170*	300
CSL 17782	FHL-2	525-535	0.07	0.14	0.02	0.08	0.13	50*	200	560	190*	350
CSL 17783	FHL-2	535-543.9	0.14	0.14	0.02	0.31	0.17	50*	470	510	180*	330
CSL 17784	FHL-2	543.9-553	0.12	0.13	0.01	0.70	1.15	50*	230	2200	330	250
CSL 17785	FHL-2	553-558	0.15	0.16	0.02	0.39	0.68	50*	380	1900	490	220
CSL 17786	FHL-2	558-567	0.12	0.17	0.09	0.39	0.23	50*	210	970	190*	290
CSL 17787	FHL-2	567-573	0.14	0.14	0.05	1.31	0.93	50*	220	1300	410	250
CSL 17788	FHL-2	573-575	0.05	0.08	0.01	1.70	1.39	50*	160	770	420	410
CSL 17789	FHL-2	575-581	0.22	0.16	0.03	0.00	0.03	50*	240	200	210*	260
CSL 17790	FHL-2	581-584.2	0.08	0.09	0.01*	3.16	3.44	50*	180	2900	630	390
CSL 17791	FHL-2	584.2-584.9	0.16	0.15	0.01*	0.39	1.24	50*	520	660	460	330
CSL 17792	FHL-2	584.9-590	0.26	0.14	0.01*	0.08	0.78	50*	540	2700	280	190
CSL 17793	FHL-2	590-594.6	0.28	0.19	0.04	0.30*	0.07	50*	580	590	320	170
CSL 17794	FHL-2	594.6-605	0.29	0.16	0.01*	0.07*	0.63	50*	550	2000	260	410
CSL 17795	FHL-2	605-610.5	0.29	0.16	0.01*	0.16	0.67	50*	560	2600	430	530
CSL 17796	FHL-2	610.5-617.2	0.27	0.18	0.01	0.23*	NIL	50*	560	150	210*	570
CSL 17797	FHL-2	617.2-622.5	0.30	0.17	0.01	0.31	0.60	100	590	1500	230*	220
CSL 17798	FHL-2	622.5-628.3	0.27	0.17	0.01	0.31	0.50	50*	540	3800	380	190
CSL 17799	FHL-2	628.3-639	0.23	0.16	0.01*	0.23*	0.07	50*	500	600	190*	270
CSL 18401	FHL-2	639-649.5	0.24	0.15	0.03	0.31	NIL	50*	410	97	190*	280
CSL 18402	FHL-2	649.5-658.1	0.20	0.16	0.07	0.16	NIL	50*	470	130	180*	260
CSL 18403	FHL-2	658.1-660.7	0.27	0.16	0.08	1.54	NIL	50*	390	260	180*	240
CSL 18404	FHL-2	660.7-666.1	0.19	0.17	0.02	0.00	NIL	50*	380	160	180*	290
CSL 18405	FHL-2	678-683.1	0.23	0.15	0.01*	0.23	NIL	50*	460	150	180*	260
CSL 18406	FHL-2	683.1-687.9	0.15	0.16	0.02	0.16	NIL	50*	200	98	180*	330
CSL 18407	FHL-2	705-709	0.13	0.15	0.03	2.70	NIL	50*	250	63	170*	370
CSL 18408	FHL-2	723.3-726.8	0.23	0.16	0.01	0.77	NIL	50*	440	140	190*	300
CSL 18409	FHL-2	726.8-729.3	0.20	0.17	0.01*	0.15*	NIL	50*	380	150	170*	210
CSL 18410	FHL-2	756.2-759	0.29	0.16	0.03	0.47	0.04	50*	420	290	200*	190
CSL 18411	FHL-2	759.8-760.4	0.11	0.06	0.10	1.85	0.66	50	520	1000	230*	300
CSL 18412	FHL-2	781.6-785	0.27	0.17	0.02	0.47	0.04	50*	500	590	190*	260
CSL 18413	FHL-2	791.4-796.9	0.20	0.19	0.09	5.77	0.01	50*	430	150	320	1000
CSL 18414	FHL-2	813.2-816.1	0.15	0.17	0.03	0.31	0.02	50*	200	560	220	220
CSL 18415	FHL-2	824.4-828.2	0.29	0.15	0.01	1.16	0.07	100	490	180	230	230
CSL 18416	FHL-2	828.2-834.4	0.23	0.15	0.02	1.62	0.24	50*	470	320	240	290
CSL 18417	FHL-2	834.4-838	0.19	0.08	0.01	3.00	0.24	50*	620	100	180*	230
CSL 18418	FHL-2	838-841.6	0.15	0.07	0.01*	3.93	0.37	50*	900	63	180*	210
CSL 18419	FHL-2	841.6-845.4	0.11	0.06	0.01*	6.62	1.99	100	570	450	170*	190
CSL 18420	FHL-2	845.4-855.4	0.13	0.05	0.01*	4.70	3.06	50*	760	150	310	190

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	P2O5 %	MNO %	CO2 %	LOI %	S %	CL PPM	F PPM	CU PPM	NI PPM	CR PPM
CSL 18421	FHL-2	855.4-865	0.13	0.04	0.01*	5.23	3.49	50*	1000	150	100*	180
CSL 18435	FHL-2	865-875	0.13	0.04	0.01*	5.08	3.09	50*	1000	140	340	170
CSL 18422	FHL-2	921-931	0.14	0.04	0.01*	5.70	1.67	50*	800	160	240	120
CSL 18423	FHL-2	990-1000	0.17	0.05	0.04	1.93	0.05	50*	910	55	100*	180
CSL 18424	FHL-2	1070-1080	0.17	0.06	0.01*	1.70	NIL	50*	960	40	190*	180
CSL 18425	FHL-2	1155.3-1165.3	0.17	0.07	0.04	1.70	NIL	50*	990	34	230	170
CSL 18426	FHL-2	1240-1250	0.18	0.05	0.01*	1.70	NIL	50*	1000	46	100*	180
CSL 18427	FHL-2	1310-1315	0.18	0.05	0.01*	1.77	0.03	50*	1000	42	190*	190

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	PB PPM	MO PPM	PT PPB	PD PPB	IR PPB	AU PPB	AG PPM
CSL 17718	FHL-2	121-131	30	190	200*	5	24*	10	7	100*	5*	5*
CSL 17719	FHL-2	131-138.1	20	170	200*	5	2*	10*	7	100*	5*	5*
CSL 17720	FHL-2	138.1-148	40	200	200*	7	2*	10	8	100*	5*	5*
CSL 17721	FHL-2	148-158.5	50	220	200*	7	2*	10*	6	100*	6*	5*
CSL 17722	FHL-2	158.5-161.7	50	260	200*	6	2*	10	18	100*	6*	5*
CSL 17723	FHL-2	161.7-162.4	10*	26	200*	5*	2*	10	90	100*	5*	5*
CSL 17724	FHL-2	162.4-170	60	380	200*	5	5	10	13	100*	5*	5*
CSL 17725	FHL-2	170-176.4	70	400	200*	6	5	10*	4	100*	6*	5*
CSL 17726	FHL-2	176.4-178.6	60	470	200	9	2	10*	3	100*	6*	5*
CSL 17727	FHL-2	178.6-182.3	80	400	200	7	2*	10*	3	100*	6*	5*
CSL 17728	FHL-2	182.3-190	20	210	200	13	3	10*	2*	100*	6*	5*
CSL 17729	FHL-2	190-200	20	160	200	12	3	10*	2*	100*	6*	5*
CSL 17730	FHL-2	200-210	20	180	200	13	2*	10*	2*	100*	6*	21
CSL 17731	FHL-2	210-220	20	170	300	15	2	10	2*	100*	6*	5*
CSL 17732	FHL-2	220-230	30	170	300	12	2*	10	3	100*	9*	5*
CSL 17733	FHL-2	230-240	20	180	200	12	3	10*	2*	100*	8*	5*
CSL 17734	FHL-2	240-246.2	30	180	300	13	5	10*	6	100*	9*	5*
CSL 17735	FHL-2	246.2-248.5	110	360	200	8	2	80	60	100*	40	5*
CSL 17736	FHL-2	248.5-251.4	40	240	300	16	5	10*	2	100*	9*	5*
CSL 17737	FHL-2	251.4-261	130	500	200	6	3*	10*	5	100*	5*	5*
CSL 17738	FHL-2	261-264.6	70	280	200	11	2*	10*	6	100*	8*	5*
CSL 17739	FHL-2	264.6-267.8	40	260	300	14	4*	10	3	100*	9*	5*
CSL 17740	FHL-2	267.8-269.2	120	250	300	18	2	20	48	100*	17	5*
CSL 17741	FHL-2	269.2-271.3	120	330	200	12	3	20	39	100*	27	5*
CSL 17742	FHL-2	271.3-275.4	60	250	200	7	3*	10	5	100*	8*	5*
CSL 17743	FHL-2	275.4-285	100	550	200	5	4*	10	8	100*	6*	5*
CSL 17744	FHL-2	285-295	110	140	200*	5*	2*	10	9	100*	6*	5*
CSL 17745	FHL-2	295-305	110	110	200	5*	2*	10*	3	100*	5*	5*
CSL 17746	FHL-2	305-314.4	120	120	200	5*	4	10	8	100*	5*	5*
CSL 17747	FHL-2	314.4-319.4	120	130	200*	5*	2*	10	6	100*	5*	5*
CSL 17748	FHL-2	319.4-324.3	130	1400	300	5*	2*	10	61	100*	5*	5*
CSL 17749	FHL-2	324.8-325.4	150	2400	500	5*	2*	20	20	100*	8*	5*
CSL 17750	FHL-2	325.4-327	70	150	200*	7	3*	120	410	100*	35	5*
CSL 17751	FHL-2	327-330.6	70	40	200*	5*	2*	10	12	100*	5*	5*
CSL 17752	FHL-2	330.6-333.2	70	47	200*	7	2	50	57	100*	5*	5*
CSL 17753	FHL-2	333.2-337	70	54	200*	6	2	110	170	100*	23	5*
CSL 17754	FHL-2	337-340	80	77	200*	8	2*	30	61	100*	26	5*
CSL 17755	FHL-2	340-344.6	90	59	200*	10	2*	50	81	100*	30	5*
CSL 17756	FHL-2	344.6-346.9	80	40	200*	5	2*	10	8	100*	5*	5*
CSL 17757	FHL-2	346.9-357	140	80	200	13	2*	50	82	100*	36	5*
CSL 17758	FHL-2	357-367	190	100	200*	16	4	50	73	100*	35	5*
CSL 17759	FHL-2	367-377	200	210	200	14	3	30	62	100*	25	6*
CSL 17760	FHL-2	377-381.2	170	120	200*	10	2*	30	60	100*	24	5*
CSL 17761	FHL-2	381.2-385	100	260	200*	18	6	70	56	100*	19	5*
CSL 17762	FHL-2	385-388.7	200	260	200	16	2*	210	100	100*	43	5*
CSL 17763	FHL-2	388.7-393	110	170	200*	7	2*	20	21	100*	5*	5*
CSL 17764	FHL-2	393-402.5	60	230	200*	5	2*	10	12	100*	5*	5*
CSL 17765	FHL-2	402.5-412	30	170	200	12	2*	10	3	100*	6*	5*
CSL 17766	FHL-2	412-422.3	20	160	200	13	2*	10	2*	100*	6*	5*
CSL 17767	FHL-2	422.3-427.3	50	290	200*	7	2*	10	11	100*	6*	5*
CSL 17768	FHL-2	427.3-433	30	180	200	5*	2*	10*	2	100*	6*	5*

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	PB PPM	MO PPM	PT PPB	PD PPB	IR PPB	AU PPB	AG PPM
CSL 17769	FHL-2	433-441.2	20	190	200	5*	2*	10*	2*	100*	6*	5*
CSL 17770	FHL-2	441.2-447.6	50	370	200*	5*	2*	10	8	100*	6*	5*
CSL 17771	FHL-2	447.6-453.7	80	170	200*	9	2	30	14	100*	5*	5*
CSL 17772	FHL-2	453.7-460	50	160	200*	13	2*	20	14	100*	5*	5*
CSL 17773	FHL-2	460-470	80	140	200*	9	3	10	11	100*	5*	5
CSL 17774	FHL-2	470-479	50	190	200*	7	2*	10	10	100*	5*	5*
CSL 17775	FHL-2	479-483.8	100	230	200	8	2*	10	21	100*	5*	5*
CSL 17776	FHL-2	483.8-489.4	60	200	200*	6	2	10	6	100*	5*	5*
CSL 17777	FHL-2	489.4-499.3	60	160	200*	9	2*	10	10	100*	5*	5*
CSL 17778	FHL-2	499.3-509	60	190	200	6	4	10	7	100*	8	5*
CSL 17779	FHL-2	509-513	70	260	200*	7	2*	40	63	100*	5*	5*
CSL 17780	FHL-2	513-515	70	220	200*	11	4	30	22	100*	9	5*
CSL 17781	FHL-2	515-525	70	180	200*	8	2*	10	10	100*	5*	5*
CSL 17782	FHL-2	525-535	60	200	200*	15	2*	10	10	100*	5*	5*
CSL 17783	FHL-2	535-543.9	60	210	200	10	2	10	21	100*	6	5*
CSL 17784	FHL-2	543.9-553	100	250	200	15	2*	30	71	100*	17	5*
CSL 17785	FHL-2	553-558	90	230	200	14	3	20	59	100*	16	5*
CSL 17786	FHL-2	558-567	70	210	200*	8	2*	20	24	100*	8	5*
CSL 17787	FHL-2	567-573	90	230	200	23	2*	10	35	100*	9	5*
CSL 17788	FHL-2	573-575	60	280	400	5*	5	10*	13	100*	7*	5*
CSL 17789	FHL-2	575-581	60	160	200*	5*	2*	10	14	100*	6*	5*
CSL 17790	FHL-2	581-584.2	160	330	300	12	9	10	34	100*	7*	6*
CSL 17791	FHL-2	584.2-584.9	110	240	300	6	3	10	18	100*	7*	5*
CSL 17792	FHL-2	584.9-590	80	210	200*	15	5	50	98	100*	30	5*
CSL 17793	FHL-2	590-594.6	70	200	200	8	2*	20	22	100*	7*	5*
CSL 17794	FHL-2	594.6-605	70	330	200	16	2*	20	76	100*	23	5*
CSL 17795	FHL-2	605-610.5	70	390	200	18	2*	100	92	100*	16	5*
CSL 17796	FHL-2	610.5-617.2	60	340	200*	5	3*	10*	3	100*	6*	5*
CSL 17797	FHL-2	617.2-622.5	70	240	200*	14	2	10	24	100*	7*	5*
CSL 17798	FHL-2	622.5-628.3	70	180	200	8	2	20	38	100*	18	5*
CSL 17799	FHL-2	628.3-639	60	170	200*	7	2	10	9	100*	5*	5*
CSL 18401	FHL-2	639-649.5	50	180	200*	5*	2*	10	3	100*	5*	5*
CSL 18402	FHL-2	649.5-658.1	60	200	200*	5	2*	20	7	100*	5*	5*
CSL 18403	FHL-2	658.1-660.7	50	190	200*	8	3	20	11	100*	5*	5*
CSL 18404	FHL-2	660.7-666.1	60	210	200	5*	2	10	7	100*	5*	5*
CSL 18405	FHL-2	678-683.1	50	220	200*	6	2*	10	18	100*	5*	5*
CSL 18406	FHL-2	683.1-687.9	50	240	200	5*	2*	10	5	100*	5*	5*
CSL 18407	FHL-2	705-709	50	240	200*	5*	2*	10	4	100*	5*	5*
CSL 18408	FHL-2	723.3-726.8	50	240	200	5*	2*	10	2	100*	5*	5*
CSL 18409	FHL-2	726.8-729.3	60	190	200*	5*	2*	20	3	100*	5*	5*
CSL 18410	FHL-2	756.2-759	50	190	200*	7	3	10	6	100*	6*	5*
CSL 18411	FHL-2	759.8-760.4	30	220	200*	22	2*	10	3	100*	7*	5*
CSL 18412	FHL-2	781.6-785	60	200	200*	6	4	20	14	100*	8	5*
CSL 18413	FHL-2	791.4-796.9	80	370	200	5*	3	60	16	100*	10	5*
CSL 18414	FHL-2	813.2-816.1	60	290	200*	5*	3	10	14	100*	9	5*
CSL 18415	FHL-2	824.4-828.2	60	200	200*	7	2	20	9	100*	7	5*
CSL 18416	FHL-2	828.2-834.4	60	260	300	8	3*	10	17	100*	6*	5*
CSL 18417	FHL-2	834.4-838	30	190	200	15	2*	10*	2	100*	6*	5*
CSL 18418	FHL-2	838-841.6	20	210	300	13	8	10*	3	100*	6*	5*
CSL 18419	FHL-2	841.6-845.4	30	280	600	21	23	10*	3	100*	5*	5*
CSL 18420	FHL-2	845.4-855.4	20	250	600	36	17	10*	4	100*	7	5*

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	PB PPM	MO PPM	PT PPB	PD PPB	IR PPB	AU PPB	AG PPM
CSL 18A21	FHL-2	855.4-865	20	250	600	43	16	10*	3	100*	6*	6*
CSL 18A35	FHL-2	865-875	20	260	600	93	8	10*	4	100*	6*	5*
CSL 18A22	FHL-2	921-931	10	320	800	59	22	10*	4	100*	6*	6*
CSL 18A23	FHL-2	990-1000	10	120	200*	9	2*	10*	2*	100*	6*	5*
CSL 18A24	FHL-2	1070-1080	20	130	200*	11	2	10*	2*	100*	9	5*
CSL 18A25	FHL-2	1155.3-1165.3	20	130	200*	13	2*	10*	2*	100*	6*	5
CSL 18A26	FHL-2	1240-1250	20	140	200*	9	5	10*	2*	100*	6*	5*
CSL 18A27	FHL-2	1310-1315	20	130	200*	11	4	10*	2*	100*	6*	5*

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	BA PPM	SC PPM	Y PPM	LA PPM	ZR PPM	HF PPM	NB PPM
CSL 17718	FHL-2	121-131	50	2*	320	230	13.50	18	16	140	3	12
CSL 17719	FHL-2	131-138.1	26	2*	340	220	12.60	22	17	150	3	12
CSL 17720	FHL-2	138.1-140	20	2*	280	190	13.20	14	14	120	2	12
CSL 17721	FHL-2	140-158.5	24	2*	280	210	15.10	14	18	120	3	12
CSL 17722	FHL-2	158.5-161.7	24	2*	270	230	18.10	18	20	150	4	14
CSL 17723	FHL-2	161.7-162.4	14	2*	530	80	2.20	2	5*	34	2*	2
CSL 17724	FHL-2	162.4-170	28	2*	240	210	15.90	12	16	120	3	14
CSL 17725	FHL-2	170-176.4	28	2*	230	210	15.20	12	15	120	3	10
CSL 17726	FHL-2	176.4-178.6	26	2*	170	240	13.10	16	14	110	2	10
CSL 17727	FHL-2	178.6-182.3	20	2*	210	210	17.50	12	15	110	2	12
CSL 17728	FHL-2	182.3-190	120	2	250	680	25.60	26	46	170	3	16
CSL 17729	FHL-2	190-200	96	2*	310	450	20.00	28	42	160	4	14
CSL 17730	FHL-2	200-210	100	2	270	590	20.90	24	42	160	4	16
CSL 17731	FHL-2	210-220	86	2	300	520	20.00	26	41	160	3	12
CSL 17732	FHL-2	220-230	100	4	310	640	28.50	28	58	170	5	14
CSL 17733	FHL-2	230-240	98	3	290	580	29.60	28	60	170	5	16
CSL 17734	FHL-2	240-246.2	80	3	280	660	31.70	30	67	160	4	16
CSL 17735	FHL-2	246.2-248.5	16	2*	210	170	15.70	8	15	90	2	12
CSL 17736	FHL-2	248.5-251.4	86	3	240	1100	35.10	18	61	160	4	16
CSL 17737	FHL-2	251.4-261	20	2*	150	120	14.80	2	7	52	2*	8
CSL 17738	FHL-2	261-264.6	36	2	190	520	22.10	36	47	250	8	22
CSL 17739	FHL-2	264.6-267.8	92	5	230	920	35.00	28	45	270	7	16
CSL 17740	FHL-2	267.8-269.2	34	3	160	310	33.10	30	50	250	9	24
CSL 17741	FHL-2	269.2-271.3	18	3	220	230	20.40	14	20	140	4	16
CSL 17742	FHL-2	271.3-275.4	28	2*	230	320	25.90	22	29	140	4	14
CSL 17743	FHL-2	275.4-285	16	2*	160	150	15.00	6	11	100	2	12
CSL 17744	FHL-2	285-295	14	2*	150	140	14.50	8	10	80	2*	10
CSL 17745	FHL-2	295-305	8	2*	160	100	11.50	8	6	62	2*	6
CSL 17746	FHL-2	305-314.4	10	2*	150	90	11.00	6	7	58	2*	6
CSL 17747	FHL-2	314.4-319.4	8	2*	130	80	10.70	4	5	54	2*	6
CSL 17748	FHL-2	319.4-324.3	8	2*	110	60	12.90	2*	5*	46	2*	6
CSL 17749	FHL-2	324.8-325.4	6	2*	80	30	13.90	2*	5	50	2*	10
CSL 17750	FHL-2	325.4-327	20	2*	280	100	6.10	4	6	46	2*	8
CSL 17751	FHL-2	327-330.6	12	2*	290	70	4.90	4	5*	38	2*	4
CSL 17752	FHL-2	330.6-333.2	26	2*	300	150	5.90	8	8	72	2*	6
CSL 17753	FHL-2	333.2-337	16	2	310	130	6.70	4	6	56	2*	6
CSL 17754	FHL-2	337-340	18	2*	280	170	11.90	12	12	90	2	8
CSL 17755	FHL-2	340-344.6	22	2*	320	170	9.20	4	8	56	2*	6
CSL 17756	FHL-2	344.6-346.9	8	2*	310	110	5.40	4	5*	36	2*	2
CSL 17757	FHL-2	346.9-357	16	2*	220	140	11.00	6	8	52	2*	6
CSL 17758	FHL-2	357-367	20	2	210	130	11.40	2	7	52	2*	2
CSL 17759	FHL-2	367-377	20	2	140	100	20.80	6	7	56	2*	6
CSL 17760	FHL-2	377-381.2	20	2*	220	120	14.10	4	9	52	2*	8
CSL 17761	FHL-2	381.2-385	30	2	270	180	23.20	16	19	120	3	14
CSL 17762	FHL-2	385-388.7	16	2*	190	130	21.80	6	9	62	2	8
CSL 17763	FHL-2	388.7-393	8	2*	240	80	19.90	2	5*	34	2*	2
CSL 17764	FHL-2	393-402.5	12	2*	280	90	25.20	6	5*	34	2*	2
CSL 17765	FHL-2	402.5-412	72	2*	280	560	23.40	26	45	160	3	14
CSL 17766	FHL-2	412-422.3	90	3	330	540	23.30	20	48	180	3	14
CSL 17767	FHL-2	422.3-427.3	28	2*	270	200	32.20	10	11	60	2*	4
CSL 17768	FHL-2	427.3-433	86	2	300	750	26.80	26	51	180	4	16

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	BA PPM	SC PPM	Y PPM	LA PPM	ZR PPM	HF PPM	NB PPM
CSL 17769	FHL-2	433-441.2	78	2	280	670	26.80	26	49	170	4	16
CSL 17770	FHL-2	441.2-447.6	10	2*	270	70	38.20	4	5*	30	2*	2*
CSL 17771	FHL-2	447.6-453.7	28	2	270	130	20.80	4	9	56	2*	6
CSL 17772	FHL-2	453.7-460	24	4	260	170	16.10	16	17	110	2	8
CSL 17773	FHL-2	460-470	26	2	260	120	15.30	6	5	46	2*	4
CSL 17774	FHL-2	470-479	36	2	270	130	20.70	8	6	54	2*	2
CSL 17775	FHL-2	479-483.8	16	2*	280	110	19.60	6	5*	40	2*	4
CSL 17776	FHL-2	483.8-489.4	16	2*	260	90	24.80	10	5*	40	2*	2
CSL 17777	FHL-2	489.4-499.3	32	2*	260	120	20.30	8	6	52	2*	6
CSL 17778	FHL-2	499.3-509	18	2*	270	100	21.80	6	5	42	2*	4
CSL 17779	FHL-2	509-513	10	2*	280	100	27.30	8	5	42	2*	4
CSL 17780	FHL-2	513-515	22	2*	320	140	17.60	6	6	50	2*	4
CSL 17781	FHL-2	515-525	16	2	280	110	12.90	6	5	36	2*	4
CSL 17782	FHL-2	525-535	18	2*	310	90	20.70	4	5	44	2*	6
CSL 17783	FHL-2	535-543.9	32	2*	270	150	22.60	10	10	72	2*	8
CSL 17784	FHL-2	543.9-553	22	2	290	190	17.60	6	10	62	2*	10
CSL 17785	FHL-2	553-558	16	2	280	170	17.40	12	11	76	2*	8
CSL 17786	FHL-2	558-567	10	2*	300	130	19.20	8	7	52	2*	6
CSL 17787	FHL-2	567-573	28	3	280	160	19.40	6	13	86	2	12
CSL 17788	FHL-2	573-575	22	2	350	120	26.70	10	22	110	3	10
CSL 17789	FHL-2	575-581	12	2*	270	140	17.60	10	12	72	2*	10
CSL 17790	FHL-2	581-584.2	24	3	300	170	32.30	6	24	92	2	10
CSL 17791	FHL-2	584.2-584.9	12	2	270	180	22.70	12	16	110	2	8
CSL 17792	FHL-2	584.9-590	14	2	290	200	20.00	12	15	90	2	10
CSL 17793	FHL-2	590-594.6	12	2*	240	220	23.60	20	18	120	3	12
CSL 17794	FHL-2	594.6-605	22	2*	260	210	21.80	16	22	120	3	12
CSL 17795	FHL-2	605-610.5	22	2*	250	210	20.60	20	19	140	3	14
CSL 17796	FHL-2	610.5-617.2	22	2*	280	190	17.70	16	18	150	3	14
CSL 17797	FHL-2	617.2-622.5	30	2*	260	240	23.70	20	21	160	4	14
CSL 17798	FHL-2	622.5-628.3	22	2*	260	200	21.30	18	21	150	4	14
CSL 17799	FHL-2	628.3-639	20	2	280	170	22.40	16	15	110	3	10
CSL 18401	FHL-2	639-649.5	20	2	300	200	21.90	16	16	100	3	10
CSL 18402	FHL-2	649.5-658.1	20	2*	290	170	18.30	16	15	100	2	10
CSL 18403	FHL-2	658.1-660.7	26	2*	300	210	23.40	18	18	140	3	14
CSL 18404	FHL-2	660.7-666.1	12	2*	280	180	22.10	14	13	90	2	10
CSL 18405	FHL-2	678-683.1	22	2*	330	240	18.30	16	17	150	3	10
CSL 18406	FHL-2	683.1-687.9	14	2*	300	150	30.50	12	10	82	2	6
CSL 18407	FHL-2	705-709	18	2*	300	130	25.70	8	7	54	2*	6
CSL 18408	FHL-2	723.3-726.8	20	2*	300	190	20.90	18	16	130	3	10
CSL 18409	FHL-2	726.8-729.3	16	2*	300	190	19.70	12	12	88	2	8
CSL 18410	FHL-2	756.2-759	22	2*	270	240	21.00	22	21	160	4	14
CSL 18411	FHL-2	759.8-760.4	40	2	190	680	28.30	16	29	140	3	12
CSL 18412	FHL-2	781.6-785	20	2*	250	250	25.10	22	21	150	4	14
CSL 18413	FHL-2	791.4-796.9	16	2*	100	140	39.20	14	16	110	3	10
CSL 18414	FHL-2	813.2-816.1	12	2*	380	230	28.30	12	13	78	2	10
CSL 18415	FHL-2	824.4-828.2	18	2	290	250	22.90	20	22	160	3	16
CSL 18416	FHL-2	828.2-834.4	22	2*	290	290	27.80	18	22	140	3	16
CSL 18417	FHL-2	834.4-838	52	2	260	460	18.50	18	34	220	5	12
CSL 18418	FHL-2	838-841.6	90	4	160	500	28.80	28	45	230	5	12
CSL 18419	FHL-2	841.6-845.4	96	4	70	520	18.00	26	33	190	5	14
CSL 18420	FHL-2	845.4-855.4	130	6	130	550	22.50	26	40	190	5	10

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	BA PPM	SC PPM	Y PPM	LA PPM	ZR PPM	HF PPM	NB PPM
CSL 18421	FHL-2	855.4-865	140	6	98	530	20.00	24	35	180	4	12
CSL 18435	FHL-2	865-875	140	5	76	500	21.40	26	32	180	4	12
CSL 18422	FHL-2	921-931	160	4	110	420	15.80	40	45	220	4	16
CSL 18423	FHL-2	990-1000	130	5	170	570	18.20	24	38	170	3	14
CSL 18424	FHL-2	1070-1080	130	4	160	590	20.60	24	38	170	5	14
CSL 18425	FHL-2	1155.3-1165.3	120	4	220	440	19.40	26	36	170	3	16
CSL 18426	FHL-2	1240-1250	130	4	150	520	19.70	26	40	170	3	18
CSL 18427	FHL-2	1310-1315	130	5	170	530	19.50	28	38	170	3	16

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	TA PPM	W PPM	SN PPM	AS PPM	SB PPM	BI PPM	SE PPM	TE PPM	BR PPM	CE PPM
CSL 17718	FHL-2	121-131	1*	2*	10*	1	0.20*	2*	10*	10*	5*	29
CSL 17719	FHL-2	131-138.1	1*	2*	10*	1	0.20*	2*	10*	10*	5*	32
CSL 17720	FHL-2	138.1-148	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	24
CSL 17721	FHL-2	148-158.5	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	33
CSL 17722	FHL-2	158.5-161.7	2	2*	10*	2	0.20	2*	10*	10*	5*	44
CSL 17723	FHL-2	161.7-162.4	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	5
CSL 17724	FHL-2	162.4-170	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	35
CSL 17725	FHL-2	170-176.4	1*	2*	10*	1	0.20*	2*	10*	10*	5*	29
CSL 17726	FHL-2	176.4-178.6	1*	2*	10*	1	0.20	2*	10*	10*	5*	29
CSL 17727	FHL-2	178.6-182.3	1*	2*	10*	1*	0.20	2*	10*	10*	5*	27
CSL 17728	FHL-2	182.3-190	1*	2*	10*	7	0.60	2*	10*	10*	5*	74
CSL 17729	FHL-2	190-200	1*	2	10*	9	1.10	2*	10*	10*	5*	68
CSL 17730	FHL-2	200-210	1*	2*	10*	7	0.80	2*	10*	10*	5*	67
CSL 17731	FHL-2	210-220	1*	3	10*	7	0.60	2*	10*	10*	5*	73
CSL 17732	FHL-2	220-230	2*	2*	10*	9	1.10	2*	10*	10*	5*	105
CSL 17733	FHL-2	230-240	2*	2*	10*	8	1.00	2*	10*	10*	5*	98
CSL 17734	FHL-2	240-246.2	2*	10	10*	7	1.20	2*	10*	10*	5*	106
CSL 17735	FHL-2	246.2-248.5	1*	2*	10*	1	0.20*	2*	10*	10*	5*	27
CSL 17736	FHL-2	248.5-251.4	2*	3*	10*	2	0.70	2*	10	10*	5*	105
CSL 17737	FHL-2	251.4-261	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	14
CSL 17738	FHL-2	261-264.6	2*	3	10*	6	1.80	2*	10*	10*	5*	96
CSL 17739	FHL-2	264.6-267.8	2*	3*	10*	3	0.40	2*	10*	10*	5*	79
CSL 17740	FHL-2	267.8-269.2	2*	3*	10*	10	0.70	2*	10*	10*	5*	93
CSL 17741	FHL-2	269.2-271.3	2	2*	10*	3	0.30	2*	10*	10*	5*	41
CSL 17742	FHL-2	271.3-275.4	1*	2*	10*	2	0.20	2*	10*	10*	5*	54
CSL 17743	FHL-2	275.4-285	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	25
CSL 17744	FHL-2	285-295	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	23
CSL 17745	FHL-2	295-305	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	11
CSL 17746	FHL-2	305-314.4	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	15
CSL 17747	FHL-2	314.4-319.4	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10
CSL 17748	FHL-2	319.4-324.3	1	2*	10*	1	1.10	2*	10*	10*	5*	5*
CSL 17749	FHL-2	324.8-325.4	1*	2*	10*	1*	0.30	2*	20	10*	5*	5*
CSL 17750	FHL-2	325.4-327	1*	2*	10*	1*	0.70	2*	10*	10*	5*	17
CSL 17751	FHL-2	327-330.6	1*	2*	10*	1*	0.20	2*	10*	10*	5*	8
CSL 17752	FHL-2	330.6-333.2	1*	2*	10*	5	5.00	2*	10*	10*	5*	15
CSL 17753	FHL-2	333.2-337	1*	2*	10*	1	0.40	2*	10*	10*	5*	13
CSL 17754	FHL-2	337-340	1*	2*	10*	1	0.40	2*	10*	10*	5*	27
CSL 17755	FHL-2	340-344.6	1*	2*	10*	2	0.30	2*	10*	10*	5*	19
CSL 17756	FHL-2	344.6-346.9	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	8
CSL 17757	FHL-2	346.9-357	1*	2*	10*	5	0.90	2*	10*	10*	5*	13
CSL 17758	FHL-2	357-367	1*	2*	10*	12	1.40	2*	10*	10*	5*	15
CSL 17759	FHL-2	367-377	1*	2*	10*	38	3.80	2*	10*	10*	5*	12
CSL 17760	FHL-2	377-381.2	1*	2*	10*	26	2.60	2*	10*	10*	5*	14
CSL 17761	FHL-2	381.2-385	1	2*	10*	36	3.90	2*	10*	10*	5*	40
CSL 17762	FHL-2	385-388.7	1*	2*	10*	24	0.80	2*	10*	10*	5*	16
CSL 17763	FHL-2	388.7-393	1*	2*	10*	5	0.30	2*	10*	10*	5*	7
CSL 17764	FHL-2	393-402.5	1*	2*	10*	4	0.40	2*	10*	10*	5*	5
CSL 17765	FHL-2	402.5-412	1*	2*	10*	5	0.30	2*	10*	10*	5*	71
CSL 17766	FHL-2	412-422.3	1	2*	10*	3	0.20	2*	10*	10*	5*	75
CSL 17767	FHL-2	422.3-427.3	1*	2*	10*	1	0.20*	2*	10*	10*	5*	21
CSL 17768	FHL-2	427.3-433	1*	2*	10*	4	0.20	2*	10*	10*	5*	83

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	TA PPM	W PPM	SN PPM	AS PPM	SB PPM	BI PPM	SE PPM	TE PPM	BR PPM	CE PPM
CSL 17769	FHL-2	433-441.2	2	2*	10*	3	0.30	2*	10*	10*	5*	83
CSL 17770	FHL-2	441.2-447.6	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	9
CSL 17771	FHL-2	447.6-453.7	1*	2*	10*	2	0.50	2*	10*	10*	5*	19
CSL 17772	FHL-2	453.7-460	2	2*	10*	12	2.60	2*	10*	10*	5*	28
CSL 17773	FHL-2	460-470	1*	2*	10*	3	0.60	2*	10*	10*	5*	11
CSL 17774	FHL-2	470-479	1*	2*	10*	6	1.80	2*	10*	10*	5*	14
CSL 17775	FHL-2	479-483.8	1*	2*	10*	10	0.40	2*	10*	10*	5*	5*
CSL 17776	FHL-2	483.8-489.4	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10
CSL 17777	FHL-2	489.4-499.3	1*	2*	10*	3	0.40	2*	10*	10*	5*	9
CSL 17778	FHL-2	499.3-509	1*	2*	10*	1*	0.20	2*	10*	10*	5*	9
CSL 17779	FHL-2	509-513	1*	2*	10*	4	0.20	2*	10*	10*	5*	12
CSL 17780	FHL-2	513-515	1*	2*	10*	5	0.20	2*	10*	10*	5*	14
CSL 17781	FHL-2	515-525	1*	2*	10*	1	0.20	2*	10*	10*	5*	9
CSL 17782	FHL-2	525-535	1*	2*	10*	1*	0.30	2*	10*	10*	5*	10
CSL 17783	FHL-2	535-543.9	1*	2*	10*	1	0.40	2*	10*	10*	5*	23
CSL 17784	FHL-2	543.9-553	2	2*	10*	2	0.40	2*	10*	10*	5*	19
CSL 17785	FHL-2	553-558	1*	2*	10*	4	1.10	2*	10*	10*	5*	20
CSL 17786	FHL-2	558-567	1*	2*	10*	3	0.40	2*	10*	10*	5*	15
CSL 17787	FHL-2	567-573	1*	3	10*	25	4.60	2*	10*	10*	5*	29
CSL 17788	FHL-2	573-575	1*	2*	10*	30	0.80	2*	10*	10*	5*	35
CSL 17789	FHL-2	575-581	1*	2*	10*	5	0.80	2*	10*	10*	5*	22
CSL 17790	FHL-2	581-584.2	1*	2*	10*	26	3.40	2*	10*	10*	5*	39
CSL 17791	FHL-2	584.2-584.9	1*	2*	10*	8	1.30	2*	10*	10*	5*	34
CSL 17792	FHL-2	584.9-590	1*	3	10*	5	0.50	2*	10*	10*	5*	34
CSL 17793	FHL-2	590-594.6	1*	2*	10*	1	0.20*	2*	10*	10*	5*	36
CSL 17794	FHL-2	594.6-605	1*	2*	10*	6	0.40	2*	10*	10*	5*	42
CSL 17795	FHL-2	605-610.5	1*	2*	10*	3	0.40	2*	10*	10*	5*	40
CSL 17796	FHL-2	610.5-617.2	1*	2*	10*	1	0.20*	2*	10*	10*	5*	37
CSL 17797	FHL-2	617.2-622.5	1*	2*	10*	1	0.20*	2*	10*	10*	5*	40
CSL 17798	FHL-2	622.5-628.3	1*	2*	10*	21	3.80	2*	10*	10*	5*	43
CSL 17799	FHL-2	628.3-639	1*	2	10*	1	0.20	2*	10*	10*	5*	32
CSL 18401	FHL-2	639-649.5	1*	2*	10*	1	0.20	2*	10*	10*	5*	29
CSL 18402	FHL-2	649.5-658.1	1*	2*	10*	1	0.20	2*	10*	10*	5*	33
CSL 18403	FHL-2	658.1-660.7	1*	2*	10*	1	0.20	2*	10*	10*	5*	34
CSL 18404	FHL-2	660.7-666.1	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	28
CSL 18405	FHL-2	678-683.1	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	32
CSL 18406	FHL-2	683.1-687.9	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	25
CSL 18407	FHL-2	705-709	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	15
CSL 18408	FHL-2	723.3-726.8	1*	2*	10*	1	0.30	2*	10*	10*	5*	29
CSL 18409	FHL-2	726.8-729.3	1*	2*	10*	1	0.20*	2*	10*	10*	5*	20
CSL 18410	FHL-2	756.2-759	1*	3	10*	1*	0.20	2*	10*	10*	5*	41
CSL 18411	FHL-2	759.8-760.4	1*	3	10*	5	0.20	2*	10*	10*	5*	47
CSL 18412	FHL-2	781.6-785	1*	3	10*	2	0.80	2*	10*	10*	5*	44
CSL 18413	FHL-2	791.4-796.9	1*	2*	10*	1	0.20	2*	10*	10*	5*	32
CSL 18414	FHL-2	813.2-816.1	1*	2*	10*	2	0.40	2*	10*	10*	5*	27
CSL 18415	FHL-2	824.4-828.2	1*	2*	10*	19	2.50	2*	10*	10*	130*	42
CSL 18416	FHL-2	828.2-834.4	1*	2*	10*	7	0.40	2*	10*	10*	5*	43
CSL 18417	FHL-2	834.4-838	1*	3	10*	7	0.60	2*	10*	10*	5*	58
CSL 18418	FHL-2	838-841.6	1*	2*	10*	18	2.20	2*	10*	10*	5*	70
CSL 18419	FHL-2	841.6-845.4	1*	4	10*	42	3.60	2*	10*	10*	5*	61
CSL 18420	FHL-2	845.4-855.4	1*	2*	10*	47	2.70	2*	10*	10*	5*	64

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	TA PPM	W PPM	SN PPM	AS PPM	SB PPM	BI PPM	SE PPM	TE PPM	BR PPM	CE PPM
CSL 18421	FHL-2	855.4-865	1*	5	10*	65	2.10	2*	10*	10*	5*	56
CSL 18435	FHL-2	865-875	1*	3	10*	58	3.60	2*	10*	10*	5*	52
CSL 18422	FHL-2	921-931	1*	5	10*	100	5.20	2*	10*	10*	5*	66
CSL 18423	FHL-2	990-1000	1*	2*	10*	4	0.90	2*	10*	10*	5*	62
CSL 18424	FHL-2	1070-1080	1*	2*	10*	3	0.80	2*	10*	10*	5*	64
CSL 18425	FHL-2	1155.3-1165.3	2	2	10*	6	0.70	2*	10*	10*	5*	62
CSL 18426	FHL-2	1240-1250	1*	2	10*	4	0.70	2*	10*	10*	5*	71
CSL 18427	FHL-2	1310-1315	1*	2*	10*	6	0.60	2*	10*	10*	5*	66

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	ND PPM	SM PPM	EU PPM	YB PPM	LU PPM	TH PPM	U PPM	CD PPM	TB PPM	BE PPM
CSL 17718	FHL-2	121-131	10	4.10	1.50	2.00	0.30	2.20	0.60			4
CSL 17719	FHL-2	131-138.1	10	4.30	1.80	2.10	0.30	2.40	0.60			4
CSL 17720	FHL-2	138.1-148	10	3.40	1.60	1.50	0.20	1.50	0.50			4
CSL 17721	FHL-2	148-158.5	10	4.40	1.40	2.00	0.30	2.10	1.20			4
CSL 17722	FHL-2	158.5-161.7	10	5.00	1.50	2.20	0.30	2.10	0.80*			5
CSL 17723	FHL-2	161.7-162.4	10*	0.50	0.90	0.50*	0.20*	0.70	0.60*			1
CSL 17724	FHL-2	162.4-170	10	4.00	1.90	2.00	0.30	1.80	0.60*			5
CSL 17725	FHL-2	170-176.4	10	3.70	1.90	1.80	0.30	1.40	0.60*			5
CSL 17726	FHL-2	176.4-178.6	10	4.00	1.30	1.60	0.20	1.70	0.80			6
CSL 17727	FHL-2	178.6-182.3	10	3.80	1.20	1.80	0.30	1.90	0.70			5
CSL 17728	FHL-2	182.3-190	20	7.10	2.10	2.80	0.40	11.00	3.90			5
CSL 17729	FHL-2	190-200	20	6.50	2.10	2.90	0.40	11.00	3.70			4
CSL 17730	FHL-2	200-210	20	6.60	1.40	2.60	0.40	10.00	3.80			5
CSL 17731	FHL-2	210-220	20	6.60	1.80	3.00	0.50	10.00	2.90			4
CSL 17732	FHL-2	220-230	40	9.20	1.80	3.60	0.60	15.00	4.30			5
CSL 17733	FHL-2	230-240	30	9.10	2.20	3.70	0.60	14.00	4.00			5
CSL 17734	FHL-2	240-246.2	20	9.60	2.30	3.70	0.60	14.00	3.50			6
CSL 17735	FHL-2	246.2-248.5	10	3.30	1.80	1.60	0.20	1.70	1.30			5
CSL 17736	FHL-2	248.5-251.4	20	8.20	2.40	2.70	0.50	13.00	2.00			6
CSL 17737	FHL-2	251.4-261	10*	1.60	0.50*	0.70	0.20*	0.50	1.00			6
CSL 17738	FHL-2	261-264.6	30	12.40	2.70	4.90	0.70	3.70	3.60			6
CSL 17739	FHL-2	264.6-267.8	20	8.20	2.50	4.40	0.60	6.60	2.40			5
CSL 17740	FHL-2	267.8-269.2	40	12.90	3.10	5.80	0.90	6.40	2.50			7
CSL 17741	FHL-2	269.2-271.3	10	4.90	2.30	2.70	0.40	2.10	1.30			6
CSL 17742	FHL-2	271.3-275.4	20	7.00	2.60	2.70	0.40	3.20	1.80			5
CSL 17743	FHL-2	275.4-285	10*	2.60	1.50	1.30	0.20	0.80	0.70			7
CSL 17744	FHL-2	285-295	10	2.50	0.90	1.30	0.20	1.20	0.60*			6
CSL 17745	FHL-2	295-305	10*	1.60	1.10	0.70	0.20*	0.50*	0.70*			5
CSL 17746	FHL-2	305-314.4	10*	1.50	0.80	0.80	0.20*	0.70	0.60*			5
CSL 17747	FHL-2	314.4-319.4	10*	1.30	0.60	0.70	0.20*	0.50*	0.50*			6
CSL 17748	FHL-2	319.4-324.3	10	0.70	0.60	0.50*	0.20*	0.90*	1.10*			7
CSL 17749	FHL-2	324.8-325.4	10*	1.00	0.50	0.80	0.20*	6.10	2.50			8
CSL 17750	FHL-2	325.4-327	10*	1.30	0.70	0.60	0.20*	0.90	0.70*			3
CSL 17751	FHL-2	327-330.6	10*	0.70	0.90	0.50*	0.20*	0.50	0.60*			3
CSL 17752	FHL-2	330.6-333.2	10*	1.70	0.80	0.90	0.20*	1.50	0.90			3
CSL 17753	FHL-2	333.2-337	10*	1.40	1.20	0.70	0.20*	0.70	0.70			3
CSL 17754	FHL-2	337-340	10*	2.70	1.50	1.20	0.20	1.80	0.60*			4
CSL 17755	FHL-2	340-344.6	10*	1.80	1.50	0.80	0.20*	1.00	0.80			3
CSL 17756	FHL-2	344.6-346.9	10*	0.60	1.50	0.50*	0.20*	0.50*	0.50*			3
CSL 17757	FHL-2	346.9-357	10*	1.70	1.20	0.80	0.20*	1.10	0.50*			5
CSL 17758	FHL-2	357-367	10*	1.40	2.00	0.80	0.20*	1.20	0.70*			5
CSL 17759	FHL-2	367-377	10*	1.50	1.10	1.00	0.20	1.30	0.70*			5
CSL 17760	FHL-2	377-381.2	10*	1.70	1.70	0.80	0.20	1.40	1.30			4
CSL 17761	FHL-2	381.2-385	10	4.30	2.60	2.30	0.40	3.00	1.10			4
CSL 17762	FHL-2	385-388.7	10*	2.00	1.80	1.20	0.20	0.90	1.20			5
CSL 17763	FHL-2	388.7-393	10*	0.70	1.00	0.50	0.20*	0.50*	0.50*			4
CSL 17764	FHL-2	393-402.5	10*	1.00	0.70	0.80	0.20*	0.50*	0.60*			3
CSL 17765	FHL-2	402.5-412	20	7.00	2.00	2.50	0.40	10.00	1.60			5
CSL 17766	FHL-2	412-422.3	20	7.40	2.30	3.10	0.50	10.00	2.10			5
CSL 17767	FHL-2	422.3-427.3	10	2.50	0.80	1.10	0.20	2.00	0.60*			2
CSL 17768	FHL-2	427.3-433	30	7.60	1.90	2.60	0.50	11.00	1.70			5

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	ND PPM	SM PPM	EU PPM	YB PPM	LU PPM	TH PPM	U PPM	CD PPM	TB PPM	BE PPM
CSL 17769	FHL-2	433-441.2	20	7.50	1.40	2.80	0.40	11.00	2.10			5
CSL 17770	FHL-2	441.2-447.6	10*	1.20	1.10	0.70	0.20*	0.50*	0.60*			3
CSL 17771	FHL-2	447.6-453.7	10*	1.90	0.50	0.80	0.20*	2.60	1.40			3
CSL 17772	FHL-2	453.7-460	10	2.90	1.10	1.30	0.20	4.70	2.90			3
CSL 17773	FHL-2	460-470	10*	1.10	0.60	0.50	0.20*	1.10	0.50*			2
CSL 17774	FHL-2	470-479	10*	1.80	0.60	1.00	0.20*	2.10	1.00			2
CSL 17775	FHL-2	479-483.8	10*	0.90	1.30	0.60	0.20*	0.50*	0.50*			3
CSL 17776	FHL-2	483.8-489.4	10*	1.40	0.90	0.90	0.20*	0.50	0.80			2
CSL 17777	FHL-2	489.4-499.3	10*	1.70	0.80	0.80	0.20*	1.30	1.00			2
CSL 17778	FHL-2	499.3-509	10*	1.60	1.00	0.80	0.20*	0.50	0.90			2
CSL 17779	FHL-2	509-513	10*	1.70	1.50	0.80	0.20*	0.50*	0.70*			2
CSL 17780	FHL-2	513-515	10*	1.00	1.30	0.60	0.20*	0.80	0.80			3
CSL 17781	FHL-2	515-525	10*	1.30	1.00	0.50	0.20*	0.50*	0.70			3
CSL 17782	FHL-2	525-535	10*	1.60	1.00	0.90	0.20*	0.70	0.60*			3
CSL 17783	FHL-2	535-543.9	10	2.80	1.40	1.50	0.20	2.00	1.40			3
CSL 17784	FHL-2	543.9-553	10	1.90	1.70	1.00	0.20	0.80	0.90			3
CSL 17785	FHL-2	553-558	10	2.40	1.40	1.00	0.20	1.20	1.20			3
CSL 17786	FHL-2	558-567	10	1.90	1.10	1.20	0.20*	0.50*	0.50*			3
CSL 17787	FHL-2	567-573	10*	2.40	2.20	1.30	0.30	1.70	1.20			3
CSL 17788	FHL-2	573-575	10	2.40	2.30	1.20	0.20	2.00	0.80			4
CSL 17789	FHL-2	575-581	10	3.30	1.50	1.30	0.20	0.50*	0.60*			4
CSL 17790	FHL-2	581-584.2	10	2.80	2.30	1.80	0.30	2.70	1.80			6
CSL 17791	FHL-2	584.2-584.9	10	3.50	1.30	1.90	0.30	1.40	0.80			5
CSL 17792	FHL-2	584.9-590	10	4.10	2.00	1.90	0.20	1.60	0.80*			4
CSL 17793	FHL-2	590-594.6	10	5.20	2.30	2.30	0.40	2.10	0.70*			4
CSL 17794	FHL-2	594.6-605	10	5.60	2.00	2.60	0.40	2.80	0.70			4
CSL 17795	FHL-2	605-610.5	10	5.10	1.40	2.50	0.40	1.90	1.10			4
CSL 17796	FHL-2	610.5-617.2	10	4.70	1.60	2.20	0.30	2.20	0.80			4
CSL 17797	FHL-2	617.2-622.5	10	5.40	1.80	2.60	0.30	2.00	1.50			5
CSL 17798	FHL-2	622.5-628.3	10	5.50	2.10	2.40	0.40	2.10	1.00			4
CSL 17799	FHL-2	628.3-639	10	4.10	0.50*	2.00	0.30	1.50	1.40			4
CSL 18401	FHL-2	639-649.5	10	4.20	1.40	2.00	0.30	1.20	1.10			3
CSL 18402	FHL-2	649.5-658.1	10	3.90	1.60	1.70	0.30	1.90	1.50			3
CSL 18403	FHL-2	658.1-660.7	10	4.90	1.50	2.20	0.30	2.40	0.70*			4
CSL 18404	FHL-2	660.7-666.1	10	3.50	1.30	1.60	0.20	0.70	1.00			4
CSL 18405	FHL-2	678-683.1	10	4.30	1.70	2.10	0.30	2.00	0.70			3
CSL 18406	FHL-2	683.1-687.9	10	3.20	1.60	1.80	0.20*	0.50*	0.80			3
CSL 18407	FHL-2	705-709	10*	2.40	1.40	1.20	0.20*	0.50*	0.50*			3
CSL 18408	FHL-2	723.3-726.8	10	4.40	1.50	1.90	0.30	2.20	0.60			4
CSL 18409	FHL-2	726.8-729.3	10	3.30	1.80	1.60	0.20	0.90	0.50*			4
CSL 18410	FHL-2	756.2-759	10	5.50	2.50	2.50	0.40	2.70	0.70			4
CSL 18411	FHL-2	759.8-760.4	10	4.10	2.00	2.20	0.40	5.30	2.20			4
CSL 18412	FHL-2	781.6-785	20	5.50	2.00	2.20	0.40	2.70	0.80			5
CSL 18413	FHL-2	791.4-796.9	10	4.60	1.60	2.00	0.30	1.40	0.70*			4
CSL 18414	FHL-2	813.2-816.1	10	3.60	1.40	1.10	0.20	1.00	0.50*			3
CSL 18415	FHL-2	824.4-828.2	10	5.60	1.90	2.70	0.30	2.50	0.90			5
CSL 18416	FHL-2	828.2-834.4	10	5.30	2.10	2.10	0.40	2.50	1.00			4
CSL 18417	FHL-2	834.4-838	20	6.20	2.20	1.90	0.30	5.00	2.00			4
CSL 18418	FHL-2	838-841.6	20	7.50	1.80	2.60	0.40	7.00	4.10			4
CSL 18419	FHL-2	841.6-845.4	10	5.80	1.40	3.40	0.70	10.00	8.90			5
CSL 18420	FHL-2	845.4-855.4	20	6.70	1.50	3.20	0.70	10.00	7.30			4

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	ND PPM	SM PPM	EU PPM	YB PPM	LU PPM	TH PPM	U PPM	CD PPM	TB PPM	BE PPM
CSL 18421	FHL-2	855.4-865	10	6.10	1.40	3.20	0.60	9.40	9.00			4
CSL 18435	FHL-2	865-875	10	5.80	2.00	3.20	0.60	9.70	9.60			4
CSL 18422	FHL-2	921-931	20	7.30	1.30	4.00	0.80	13.00	16.40			5
CSL 18423	FHL-2	990-1000	10	5.80	1.30	2.40	0.40	10.00	2.90			4
CSL 18424	FHL-2	1070-1080	10	6.10	1.10	2.40	0.40	9.10	2.80			4
CSL 18425	FHL-2	1155.3-1165.3	20	5.80	1.50	2.50	0.40	10.00	4.00			4
CSL 18426	FHL-2	1240-1250	20	6.40	1.40	2.30	0.40	10.00	2.60			4
CSL 18427	FHL-2	1310-1315	10	6.00	1.50	2.30	0.40	9.40	3.20			3

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	B PPM	GE PPM	P PPM
CSL 17718	FHL-2	121-131	30	10*	
CSL 17719	FHL-2	131-138.1	20	10	
CSL 17720	FHL-2	138.1-148	10*	10*	
CSL 17721	FHL-2	148-158.5	10	10	
CSL 17722	FHL-2	158.5-161.7	30	10*	
CSL 17723	FHL-2	161.7-162.4	30	10	
CSL 17724	FHL-2	162.4-170	10*	10	
CSL 17725	FHL-2	170-176.4	10	10*	
CSL 17726	FHL-2	176.4-178.6	50	10*	
CSL 17727	FHL-2	178.6-182.3	40	10*	
CSL 17728	FHL-2	182.3-190	70	10*	
CSL 17729	FHL-2	190-200	150	10*	
CSL 17730	FHL-2	200-210	90	10*	
CSL 17731	FHL-2	210-220	90	10*	
CSL 17732	FHL-2	220-230	80	10	
CSL 17733	FHL-2	230-240	70	20	
CSL 17734	FHL-2	240-246.2	50	10*	
CSL 17735	FHL-2	246.2-248.5	40	10*	
CSL 17736	FHL-2	248.5-251.4	50	10*	
CSL 17737	FHL-2	251.4-261	100	10	
CSL 17738	FHL-2	261-264.6	60	10*	
CSL 17739	FHL-2	264.6-267.8	70	10*	
CSL 17740	FHL-2	267.8-269.2	50	10*	
CSL 17741	FHL-2	269.2-271.3	20	10*	
CSL 17742	FHL-2	271.3-275.4	30	10*	
CSL 17743	FHL-2	275.4-285	60	10*	
CSL 17744	FHL-2	285-295	130	10*	
CSL 17745	FHL-2	295-305	160	10*	
CSL 17746	FHL-2	305-314.4	100	10*	
CSL 17747	FHL-2	314.4-319.4	150	10*	
CSL 17748	FHL-2	319.4-324.3	80	10	
CSL 17749	FHL-2	324.8-325.4	60	10*	
CSL 17750	FHL-2	325.4-327	120	10*	
CSL 17751	FHL-2	327-330.6	90	10	
CSL 17752	FHL-2	330.6-333.2	180	10*	
CSL 17753	FHL-2	333.2-337	240	10	
CSL 17754	FHL-2	337-340	160	10*	
CSL 17755	FHL-2	340-344.6	180	10	
CSL 17756	FHL-2	344.6-346.9	100	10	
CSL 17757	FHL-2	346.9-357	90	10*	
CSL 17758	FHL-2	357-367	70	10*	
CSL 17759	FHL-2	367-377	50	10*	
CSL 17760	FHL-2	377-381.2	30	10*	
CSL 17761	FHL-2	381.2-385	40	10	
CSL 17762	FHL-2	385-388.7	30	10*	
CSL 17763	FHL-2	388.7-393	20	10	
CSL 17764	FHL-2	393-402.5	20	10	
CSL 17765	FHL-2	402.5-412	60	10*	
CSL 17766	FHL-2	412-422.3	60	10*	
CSL 17767	FHL-2	422.3-427.3	10	10	
CSL 17768	FHL-2	427.3-433	10	10*	

* denotes the figure is less than the detection limit

Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	B PPM	GE PPM	P PPM
CSL 17769	FHL-2	433-441.2	20	10*	
CSL 17770	FHL-2	441.2-447.6	10*	10*	
CSL 17771	FHL-2	447.6-453.7	10	10	
CSL 17772	FHL-2	453.7-460	30	10*	
CSL 17773	FHL-2	460-470	20	10*	
CSL 17774	FHL-2	470-479	20	10*	
CSL 17775	FHL-2	479-483.8	10*	10*	
CSL 17776	FHL-2	483.8-489.4	10*	10*	
CSL 17777	FHL-2	489.4-499.3	10*	10*	
CSL 17778	FHL-2	499.3-509	10*	10*	
CSL 17779	FHL-2	509-513	10*	10*	
CSL 17780	FHL-2	513-515	10*	10*	
CSL 17781	FHL-2	515-525	10*	10*	
CSL 17782	FHL-2	525-535	10	10*	
CSL 17783	FHL-2	535-543.9	10	10*	
CSL 17784	FHL-2	543.9-553	10*	10*	
CSL 17785	FHL-2	553-558	10*	10*	
CSL 17786	FHL-2	558-567	10*	10*	
CSL 17787	FHL-2	567-573	10*	10*	
CSL 17788	FHL-2	573-575	10	10*	
CSL 17789	FHL-2	575-581	10*	10*	
CSL 17790	FHL-2	581-584.2	20	10*	
CSL 17791	FHL-2	584.2-584.9	10	10*	
CSL 17792	FHL-2	584.9-590	10*	10*	
CSL 17793	FHL-2	590-594.6	10*	10*	
CSL 17794	FHL-2	594.6-605	10*	10*	
CSL 17795	FHL-2	605-610.5	10*	10*	
CSL 17796	FHL-2	610.5-617.2	10*	10*	
CSL 17797	FHL-2	617.2-622.5	10*	10*	
CSL 17798	FHL-2	622.5-628.3	10*	10*	
CSL 17799	FHL-2	628.3-639	10*	10*	
CSL 18401	FHL-2	639-649.5	10*	10*	
CSL 18402	FHL-2	649.5-658.1	10*	10*	
CSL 18403	FHL-2	658.1-660.7	10	10*	
CSL 18404	FHL-2	660.7-666.1	10*	10*	
CSL 18405	FHL-2	678-683.1	10*	10*	
CSL 18406	FHL-2	683.1-687.9	10*	10*	
CSL 18407	FHL-2	705-709	10	10*	
CSL 18408	FHL-2	723.3-726.8	10*	10*	
CSL 18409	FHL-2	726.8-729.3	10*	10*	
CSL 18410	FHL-2	756.2-759	30	10*	
CSL 18411	FHL-2	759.8-760.4	30	10*	
CSL 18412	FHL-2	781.6-785	20	10*	
CSL 18413	FHL-2	791.4-796.9	20	10*	
CSL 18414	FHL-2	813.2-816.1	10	10*	
CSL 18415	FHL-2	824.4-828.2	10	10*	
CSL 18416	FHL-2	828.2-834.4	10	10*	
CSL 18417	FHL-2	834.4-838	40	10*	
CSL 18418	FHL-2	838-841.6	70	10*	
CSL 18419	FHL-2	841.6-845.4	40	10*	
CSL 18420	FHL-2	845.4-855.4	60	10*	

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Table 6
Analytical Results of Drill Hole FHL-2

Sample #	Drill Hole#	Depth	B PPM	GE PPM	P PPM
CSL 18421	FHL-2	855.4-865	50	10*	
CSL 18435	FHL-2	865-875	70	10*	
CSL 18422	FHL-2	921-931	70	10*	
CSL 18423	FHL-2	990-1000	60	10*	
CSL 18424	FHL-2	1070-1080	50	10*	
CSL 18425	FHL-2	1155.3-1165.3	30	10*	
CSL 18426	FHL-2	1240-1250	50	10*	
CSL 18427	FHL-2	1310-1315	80	10*	

* denotes the figure is less than the detection limit

DRILL HOLE: SL-4

COUNTY: St. Louis

LOCATION: T59N-R12W, Section 10, SW¼-NE¼-SE¼

QUADRANGLE: Babbitt SE 7½'

SURFACE ELEVATION: 1640'

DEPTH TO BEDROCK: 81.3' TOTAL DEPTH: 791'

DRILL HOLE INCLINATION: 46° DRILL HOLE AZIMUTH: 270°

ACID TESTS:

Depth	Corrected Angle
200	46°
500	49°
790	43°

CORE SIZES AND FOOTAGE INTERVALS:

NQ (1.875" diameter) 20'-791'

ADDITIONAL MATERIALS AVAILABLE FOR EXAMINATION:

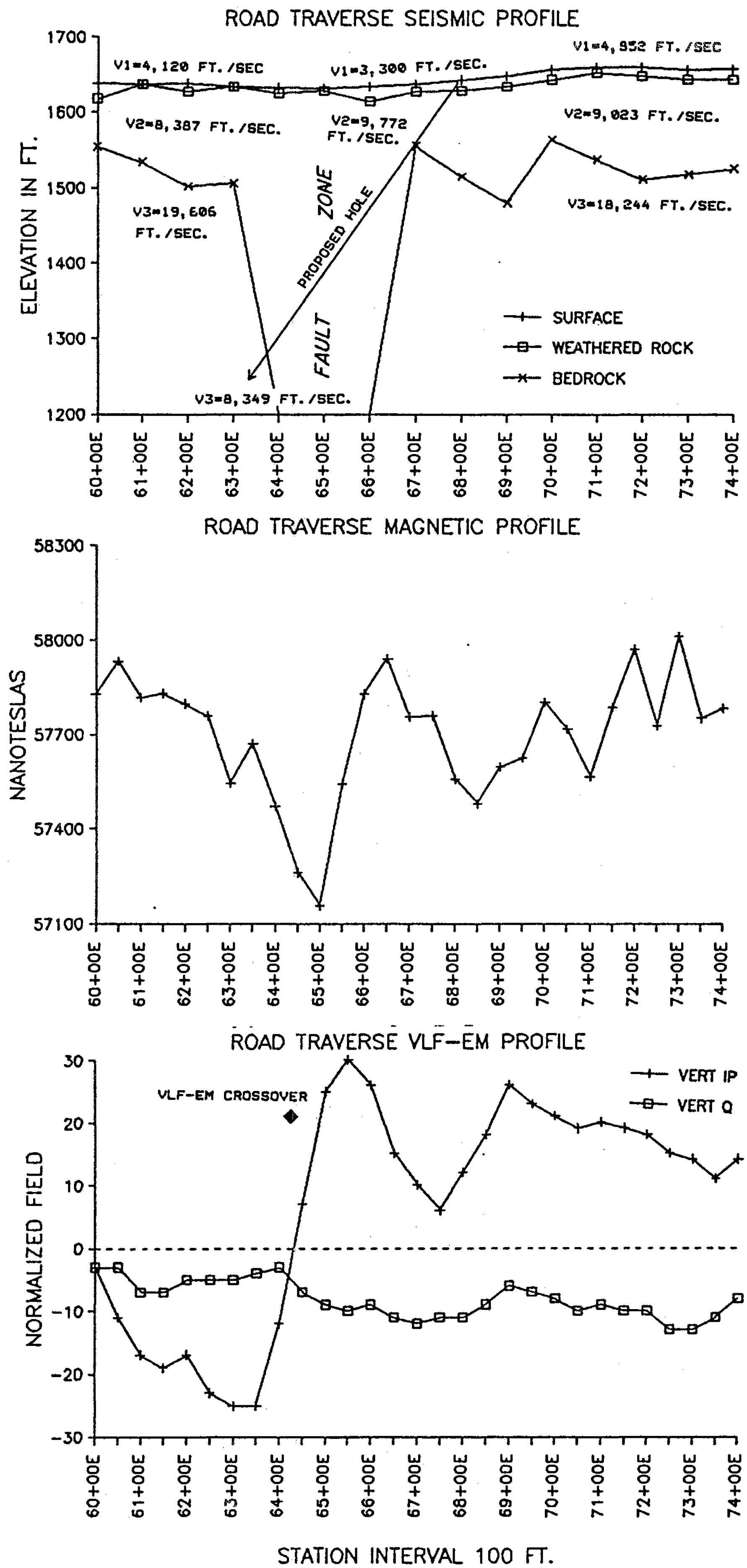
Drill core, thin sections, polished thin sections, and core photographs before sampling.

RAILROAD TROCTOLITE AREA

A reconnaissance profile using VLF-EM, magnetic and refraction seismic methods was run across state ownership in Sections 10 and 16, Township 59 North, Range 12 West. This survey was on Forest Service roads 116 and 114, starting just east of the railroad crossing near the west line of Section 16. Between stations 62+00E and 67+00E, figure 25, there is a strong indication of a fault zone. A magnetic low indicates oxidation of magnetically susceptible minerals and the moderate VLF-EM response is typical of a fault zone. The seismic profile displays very deep depression of the second/third layer velocity interface with reduced velocities in the third layer which confirms the zone. The geophysical profiles are shown on figure 25. They coincide with a swampy valley trending north-south through the area, which may also be an indication of a fault. A proposed drill hole to test the feature is also shown of figure 25.

Hole SL-4 was drilled west from station 1+50W on line 0 of the grid shown on figure 26. The hole was at a 45° angle as shown on figures 27 and 28. Because of inconclusive results with hole SL-4 the other lines of the grid were put in after the hole was completed. VLF-EM and magnetic

FIG. 25 RAILROAD TROCTOLITE HOLE SL-4



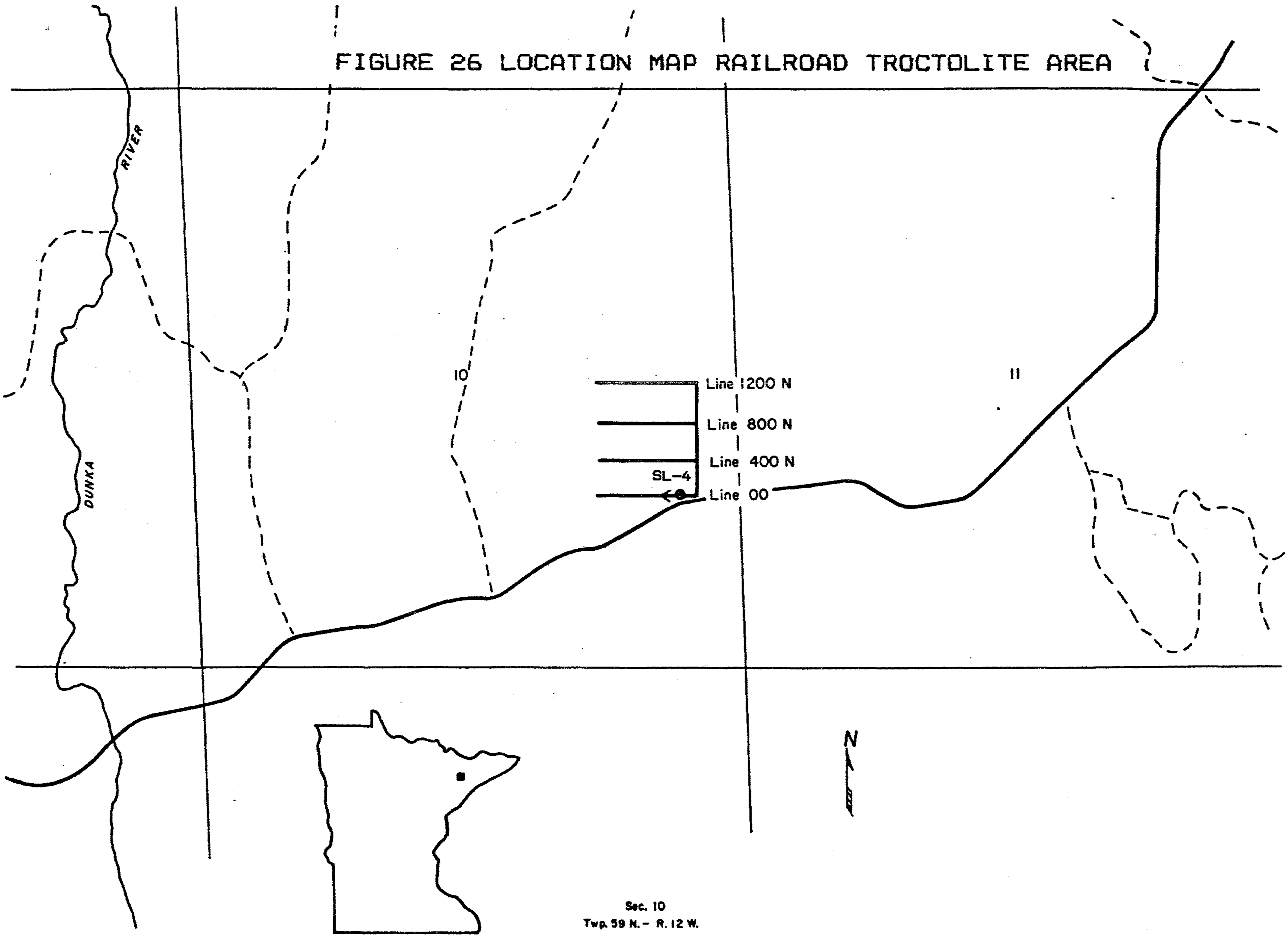


FIGURE 26 LOCATION MAP RAILROAD TROCTOLITE AREA

FIG. 27 RAILROAD TROCTOLITE HOLE SL-4

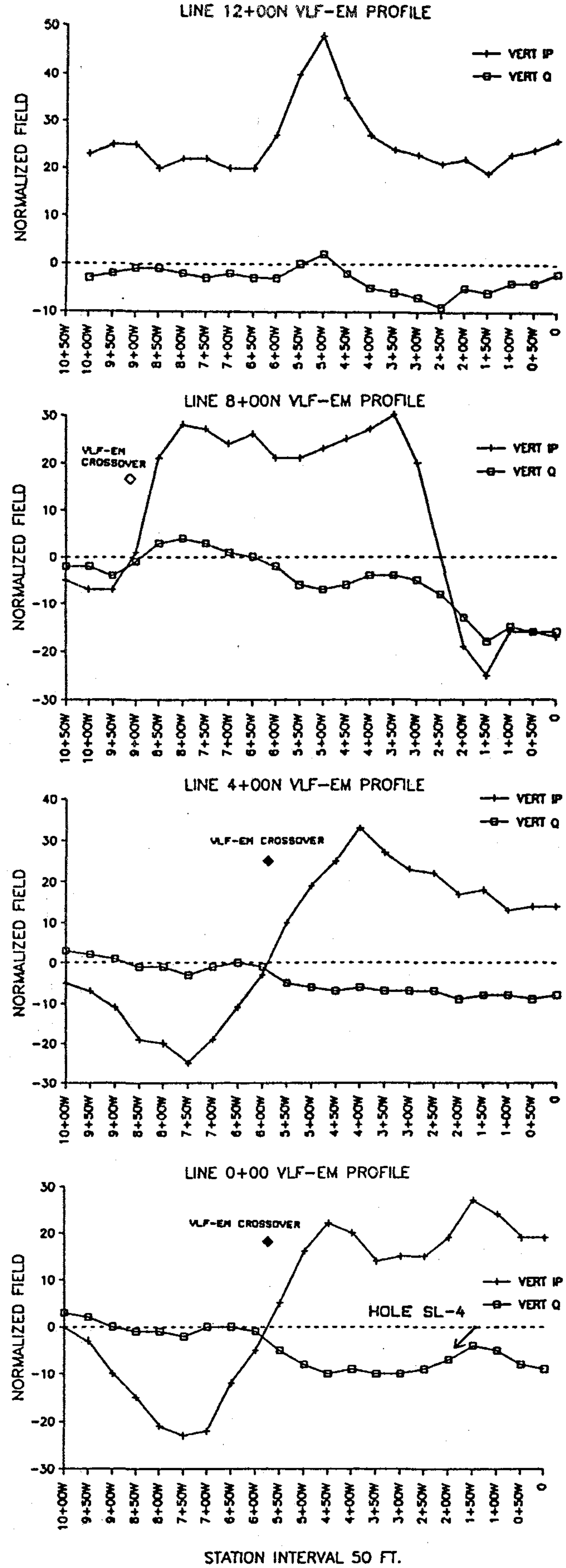
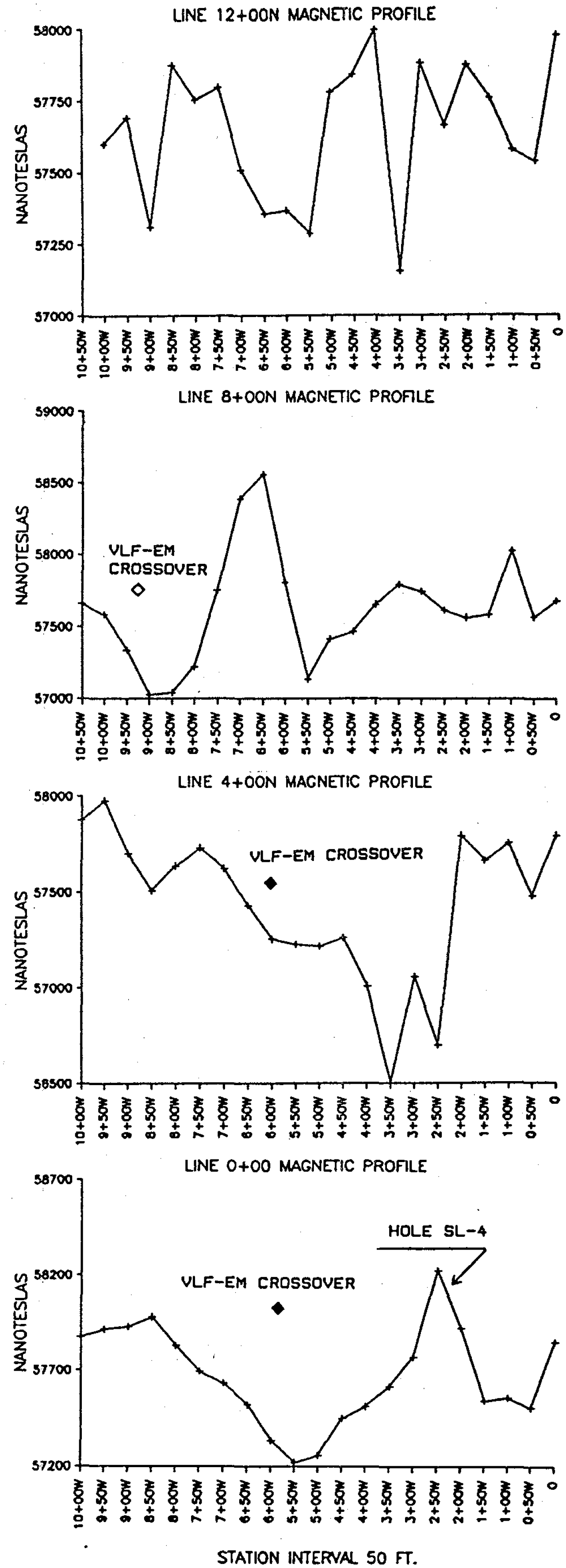


FIG. 28 RAILROAD TROCTOLITE HOLE SL-4



susceptibility surveys were run using the Scintrex IGS-2 system. A fifty foot observation interval was used and for the magnetic survey a base station was set up with readings at two minute intervals, field stations were then diurnally corrected with these base station readings. Other survey parameters were described in the introduction.

Figure 27 shows stacked profiles for the VLF-EM survey and figure 28 stacked profiles for the magnetic susceptibility survey. On line 4+00N as compared with line 0+00 there is a stronger VLF-EM crossover with an increased negative amplitude magnetic low. On line 8+00N this feature is weaker and shifts to the west. It is not observed on line 12+00N.

LOG OF DRILL HOLE SL-4
by B. Frey

0-20' OVERBURDEN; no samples.

20'-61.7' OVERBURDEN BOULDERS OF MEDIUM-COARSE-GRAINED TROCTOLITE, MINOR ANORTHOSITE AND GABBROIC TROCTOLITE, WITH LOCAL MIXED GRAVEL-COBBLES.
Mode is 65-95%, 5-20 mm plagioclase laths; 5-40%, 2-5 mm olivine; 0-10% clinopyroxene; 2-7% oxides; 0-5% biotite; and a trace chalcopyrite. Ferromagnesian minerals are interstitial to plagioclase. This represents all the major boulders in this interval with the following intervals probably representing discreet, separate boulders: 20'-21.5', 22.5'-57.8', and 61'-61.7'. Boulders are separated by gravel and cobbles of basalt and coarse-grained mafic rocks and also by limonitic-weathered surfaces (especially olivines). Interval 22.5'-57.8' contains fracture surfaces with limonite, so this may be several boulders. Boulders probably were not transported far. More anorthositic, lighter colored intervals (namely 38.4'-40.5' and 47.3'-49.5') tend to be fractured and lighter colored albitized(?) with texture ranging from breccia to pseudobreccia. These intervals also contain troctolite-gabbroic knots to 3 cm (with interstitial olivine) which do not have the fracturing and albitization. Fracturing and albitization probably occurred when anorthosite was in a crystal mush stage with solidified inclusions(?) of gabbroic knots. Above 38.4' rock is largely troctolitic, while below 40.5' rock is more gabbroic and troctolitic. Interval 41'-42.3' contains uralitzed-serpentinized ferromagnesian minerals and is probably fracture controlled.

61.7'-81.0' OVERBURDEN BOULDER OF MEDIUM GREY, FINE-GRAINED, ALTERED BASALT.
Unit is very broken throughout with limonite along fractures in upper foot. Unit contains scattered 1-2 mm amygdales (calcite filled with red veins) and irregular vesicles to 1 cm (but usually spherical 1-2 mm) which are more prevalent toward the base. Unit is slightly calcareous in places and appears to have originally contained 50-60% plagioclase with

the remaining percent ferromagnesians (now chlorite, serpentine, and amphiboles). Rock is not as hard as fresh basalt. Breakage of core caused a number of 2-3' core runs. Broken core may be due to primary volcanic fragments, glacial brecciation, or tectonic brecciation (or a combination), although it has the least appearance of tectonic brecciation. Minor chlorite(?)-serpentine occurs along some fragment surfaces, but no slickensides are evident. Boulder probably was not transported far.

81.0'-81.3' OVERBURDEN COBBLE OF MEDIUM TO COARSE-GRAINED TROCTOLITE. Similar to uppermost unit. Probably was not transported far.

81.3 LEDGE(?)

81.3'-103.8' MEDIUM GREY GRADING INTO RED, FINE-GRAINED, ALTERED BASALT. Similar to boulder at 61.7'-81.0'. Contains scattered 1-4 mm calcite amygdales with red (hematite? heulandite? chabazite?) rims.
Color change is noticeable over about 6', with most abrupt change occurring at 87'. Reddish color is due to hematite, with oxidation possibly but not necessarily related to oxidation along fractures or faulting associated with basal contact. Basalt in general is soft with alteration to sheet silicates and amphibole(?). Basalt is largely broken-fragmental(?) throughout, for the same reasons as the basalt boulder, although towards the base the core is probably more sheared and tectonicly broken. Chlorite-serpentine is formed along some fragment contacts in the upper part with hematitic concentrations or gouge similarly found in the red basalt, with weakly developed slickensides toward the base. Locally very poor recovery (especially 97'-103.8') and shorter than normal core runs.

103.8'-136.9' BRECCIATED RED AND GREY ALTERED BASALT WITH SCATTERED INTRUSIVE(?) AND/OR TECTONIC SLIVERS OF COARSE-GRAINED REDDISH AND GREEN ALTERED ANORTHOSITE-TROCTOLITE(?) AND GABBRO(?).
Most coarser intrusive fragments occur within 103.8'-111.4'. Basalt within 103.8'-131.3' is largely red and hematitic. Basalt from 131.3'-136.9' is largely grey. Material between fragments ranges from hematite to sheet silicates and gouge locally (such as 111.4'-111.7') as in other broken basalt. There is more voids and open space than other basalt intervals, perhaps indicating rather dry brecciation. Some fragmentation of basalt may have been primary, not tectonic. Broken rock produced local short runs and poor recovery (especially 116'-121'). Basal contact is tectonic.

136.9'-385.5' VERY COARSE-GRAINED TO MEDIUM-GRAINED ANORTHOSITIC GABBRO AND ANORTHOSITE WITH SCATTERED SHEARS AND ASSOCIATED ALTERATION.

Unaltered mode:

60-95% (75% avg) plagioclase, largely as laths to 2 cm (higher % away from augite oikocrysts).
3-25% (15% avg) augite, oikocrysts to 3 cm.
1-7% (4% avg) oxides, magnetite and ilmenite, largely interstitial.
0-5% (4% avg) biotite, interstitial, sometimes mantles oxides.
0-25% (3% avg) olivine, found with oxides, pyroxene.
trace-½%(?) chalcopyrite, disseminated.

The plagioclase forms the framework of the rock with everything else usually interstitial. Laths show locally developed preferred orientation (60° to core axis at 198.5'); usually are an opalescent, medium dark grey; and are translucent at best. Laths are locally bent. Interstitial plagioclase may be more clear, transparent. Plagioclase in general becomes finer-grained, more anhedral, more transparent with depth. Interstitial augite occurs as oikocrysts, at least some of which are elongate. Olivine and/or oxides are sometimes intergranular or occur as chadacrysts in plagioclase and may increase slightly downward along with chalcopyrite. Distribution is otherwise somewhat spotty. Rock is slightly-somewhat magnetic with some decrease with severe alteration. Grain size in general decreases downhole. Shears are typically mylonitic and less than 2 cm wide, with light colored sheet silicates, zeolites, chlorite, calcite, K-feldspar, quartz, and local voids. Sometimes they are composed of thinner coalescing shear laminae.
Alteration of the surrounding rocks is of several types. Immediately adjacent to and within several cm of many mylonitic shears, the plagioclase is pink from partial alteration to K-feldspar. Within a few tens of cms, the augite is altered to a dark green-black chlorite-serpentine and/or uralite, with local iron oxides. Olivine may have minor serpentinization along fractures, but in general appears to be less affected by alteration than the pyroxene. Locally, on a cm scale where shears cross elongate augite oikocrysts, the alteration runs deeper into the country rock here than in adjoining augite-free anorthositic rock. Within several feet of the upper contact, ferromagnesians have also been hematitically altered. Hairline fractures with chlorite, calcite, slickensides, and very minor alteration are scattered, especially where larger shears are missing. The plagioclase shows another type of alteration which may have a less direct association with the shears. Locally, the plagioclase is cracked with white to pale green alteration between and variably through the crystals, producing a pseudobreccia and breccia type fabric. Resulting grain size here may be finer than normal. Texture is somewhat more granular locally. This alteration type may be carbonitization or albitization. It does have a tendency to be more pronounced in more anorthositic areas (areas with

interstitial plagioclase) away from adjacent rock with interstitial ferromagnesian silicates and oxides. This may reflect late stage fluids after the augite oikocrysts (but pre-interstitial plagioclase) had formed; or that the anorthosite was a more brittle deforming rock compared with less anorthositic areas.
Oxides show local alteration to hematite or leucoxene.
The more major mylonitic shears with associated alteration foci are centered at 137.0', 137.8', 145.2', 153.0', 153.6', 163.6', 171.8', 176.5', 177.5', 181.0', 181.4', 199.7', 202.5', 204.0', 232.5', 234.0', 236.1', 237.1', 242.3', 258.6', 278.7' (without pink feldspar and only minor augite alteration), 296.5', 318.9', and 373.3'.
The light colored plagioclase alteration and brecciation is notable within 199.5'-205.5' locally-moderately developed; 220'-255.6' locally developed but increasing downward; 255.6'-282.1' locally intensely altered and brecciated; 282.1'-301' very spotty minor alteration; 339'-367' moderately developed spottily.
Local intervals are more olivine-rich than average, especially 330-336', and may also contain slightly more chalcopyrite than normal.

385.5'-453.3' REDDISH GREY TO LIGHT GREEN GREY ALTERED COARSE-GRAINED ANORTHOSITIC GABBRO AND ANORTHOSITE WITH SCATTERED MYLONITIC SHEARS.
Parent rock believed to be same as in previous unit, with the same alteration types represented. Entire unit contains alteration of one type or another, with ferromagnesians showing alteration ubiquitously. Coarsest-grained material is anorthositic gabbro scattered within 441'-451'.
Mylonitic shears (with K-feldspar, zeolites, calcite, quartz, chlorite, and zeolites are located at 387.3' (3 cm shear), 388.9', 390.0' (1-4 cm shear with acicular natrolite crystals in vug), 397'-399' (1 cm shear), 401.7' 2 cm shear, 403.0', 415.0', 425.7', 426.5', 426.5', 427.6, 427.8, 434.1 (1 cm shear with calcite and zeolites), 434.6', 436.5, 437.3' (½ cm shear with calcite and zeolites), 438.3', 446.0'-447.3' (1-2 cm shear with breccia fragments), 449.2' (1 cm shear), 451.4'-451.9' (coalescing shears-veins with much calcite, voids). These shears vary from 5-50° to core axis with most about 30-35°. Plagioclase alteration associated with brecciation and pseudobrecciation and resulting finer grain size is scattered within 394.3'-399.1' and 428'-433.8'; and is locally very intense within 408.9'-412.5' and 415.7'-423.7'. Ferromagnesians in these intervals, besides being altered, are also rimmed with a paler green alteration product.
Between these areas, the core is altered reddish grey. This hematite replaces the ferromagnesians, rims the plagioclase, partially replaces the oxides, and is found along slip-fractures in the rock (more oxidizing solutions compared with light-pale green grey plagioclase brecciation-alteration areas?). Locally this is sporadic. Magnetism in

unit is slight and even less in these oxidized portions. The interval 441'-442.5' contains very dark grey opalescent plagioclase and appears relatively unaltered except for minor ferromagnesians. Unit is essentially free of sulfides.

453.3'-576.5' MEDIUM-COARSE-GRAINED OLIVINE-BEARING ANORTHOSITIC GABBRO AND MINOR ANORTHOSITE WITH LOCAL SHEARS AND ALTERATION.

Unaltered Mode:

60-95% (70% avg) Plagioclase; laths 2-10 mm, with occasional larger ones. Plagioclase euhedralism is variable but is in general less than previous units, along with preferred orientation.

3-25% (15% avg) Augite; interstitial forming oikocrysts to 2 cm locally.

0-20% (8% avg) Olivine; chadacrysts and intergranular often with oxides, pyroxene.

2-7% (5% avg) Oxides; intergranular.

0-5% (2% avg) Biotite; interstitial.

¼-½%(?) Chalcopyrite; very finely disseminated.

Unit is similar to previous units except plagioclase % is smaller on the average, with smaller and fewer anorthositic intervals. Olivine (and augite(?) and oxides) amount increasing downward on the average. Chalcopyrite amount is slightly elevated(?) compared with previous units, with the amount increasing downward. It occurs as disseminations sometimes associated with hairline fractures. Texture changes also downhole, with rock becoming more allotriomorphic in general. Lower contact is a .6' thick coarser (than average) grained interval that is bounded by a 2 cm thick plagioclase alteration breccia. Minor shears with associated alteration (as in previous unit) occur at 457.9', 463.3', 472.2', and 487.9'. Chlorite-hornblende-serpentine alteration of pyroxene is scattered. Serpentinization of the olivine is minor. Smaller hairline shears with chlorite, calcite, and slickensides also occur. Oxides sometimes have leucoxene rims. Plagioclase alteration associated with brecciation is weakly developed compared with previous units, probably reflecting lesser amounts of the more anorthositic intervals. These altered intervals are 472.7'-472.9'; 484.2'-488.5' with locally intense alteration that is at least partly related to the shear at 487.9' along with minor hematitic alteration; 504.5'-504.6' (directly above a short pegmatoidal interval); 571.8'-571.9' and at the basal contact. Unit is locally pegmatoidal (plagioclase, augite to 2 cm) gabbro at 504.6'-505.1' which also contains a trace of pyrrhotite with the chalcopyrite.

576.5'-791' T.D. MEDIUM TO VERY COARSE-GRAINED (COARSE-GRAINED AVERAGE) TROCTOLITIC ANORTHOSITE WTIH LOCAL ANORTHOSITE AND ALTERATION.

Unaltered mode:

70-97% (85% avg) Plagioclase; laths to 15 mm, with good preferred orientation locally, especially near top of unit. It is broken, finer grained in altered breccia areas.

0-15% (5% avg) Olivine; in general increases with depth.

0-10% (4% avg) Augite; forming spottily distributed oikocrysts to 2 cm and in general increases downward.

1-4% (3% avg) Biotite; interstitial, perhaps increasing slightly downward.

2-5% (3% avg) Oxides, at least partially intergranular with scattered(?) subhedral grains.

$\frac{1}{4}$-$\frac{1}{2}$% Chalcopyrite, disseminated, perhaps increasing downward(?). Overall amount is perhaps greater than previous units.

Plagioclase oriented fabric is not as prominent in higher mafic areas and tends to be destroyed with progressive brecciation (resulting plagioclase lath fragments produce a finer grained texture).

Alteration is similar in type to the previous units. The pyroxene oikocryst alteration continues to be spottily ubiquitous. Shears and the associated K-feldspar alteration are not as numerous or prominent as in previous units. They are typically thinner, more chloritic, quartzose, and zeolitic, especially within 709'-722'. The thicker, more K-feldspar bearing ones are at 644.6', 654.9'-657' (2 cm wide with voids and zeolites), 674'-675' 1-2 cm wide, 739.7'-740.2' (1 cm wide) and 742.7'-743.2' (1 cm wide). They are oriented 5-30° to the core axis.

Plagioclase alteration associated with brecciation-pseudobrecciation is spotty and affects perhaps 25% of the core and still tends to favor plagioclase and plagioclase-richer areas. Other minerals present are also affected where it is more intense, such as 597'-611' and 618.7'-621.6'. These intervals have slightly better developed fractures-shears than previous alteration of this type. Where oxides have alteration rims, the product appears to be leucoxene. Olivine has scattered serpentine alteration along fractures within grains. The interval 757.5'-758.5' contains several 1-2 cm dikes-veins of biotitic quartz diorite (oriented 5 and 15° to core axis) which locally have more of an igneous texture than metasomatic, as with other veins or shears.

791' TOTAL DEPTH

Note: Drill hole was logged without benefit of thin sections, but ferromagnesians identification is believed to be correct.

Analytical results of drill hole SL-4 follow in Table 7.

Table 7
Analytical Results of Drill Hole SL-4

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CSL 19213	SL-4	33-35	48.60	22.80	8.66	4.90	5.66	10.10	3.24	1.80	0.40	0.59
CSL 19214	SL-4	38.5-40.4	51.20	27.50	1.88	1.10	0.79	11.80	4.08	2.50	1.12	0.30
CSL 19215	SL-4	42.7-44.7	48.90	22.90	8.12	5.60	5.04	9.60	3.28	2.30	0.67	0.77
CSL 19216	SL-4	81.3-87.0	48.20	15.40	13.90	9.30	6.30	3.42	5.33	3.50	0.30	2.51
CSL 19220	SL-4	87-97	48.50	15.20	14.40	11.00	4.99	2.94	5.90	4.10	0.60	2.51
CSL 19226	SL-4	97-103.8	48.90	15.90	12.40	8.70	5.47	2.90	5.21	3.80	1.50	2.40
CSL 19227	SL-4	103.8-121	49.20	18.70	11.50	9.10	4.40	2.76	5.17	3.80	1.40	1.68
CSL 19234	SL-4	121-131.3	49.60	16.40	13.50	10.00	3.96	2.71	5.71	3.90	1.10	2.33
CSL 19240	SL-4	131.3-137	46.70	18.50	15.00	11.00	4.38	2.67	4.99	3.70	1.00	2.27
CSL 19250	SL-4	137-147	50.00	24.40	5.55	4.10	2.90	9.74	3.51	2.30	0.90	0.66
CSL 19256	SL-4	163-179	49.50	24.10	5.65	4.40	3.01	10.10	3.52	2.50	0.80	0.71
CSL 19265	SL-4	180.5-181.7	52.00	21.30	5.37	3.90	3.56	6.81	4.24	3.00	2.40	0.73
CSL 19266	SL-4	191-193	50.10	24.80	5.58	4.00	3.10	11.10	3.54	2.50	0.40	0.65
CSL 19267	SL-4	199-207	50.10	23.80	5.28	3.80	2.94	9.43	3.68	2.50	1.00	0.78
CSL 19272	SL-4	231-243	50.00	24.70	4.87	3.40	2.41	10.30	3.86	2.70	0.80	0.68
CSL 19279	SL-4	271-283	49.40	25.20	4.56	3.00	2.52	10.60	3.61	2.60	0.76	0.59
CSL 19286	SL-4	295-298	46.00	21.40	9.15	6.60	4.94	8.98	3.05	2.30	0.60	1.17
CSL 19287	SL-4	323-327	49.10	23.50	7.41	5.40	3.88	10.30	3.48	2.40	0.50	0.86
CSL 19289	SL-4	385-399.1	49.90	25.60	4.40	2.50	2.24	10.50	3.98	2.30	0.80	0.74
CSL 19297	SL-4	399.1-408.9	50.80	25.70	3.55	2.40	2.02	9.61	4.47	2.60	0.80	0.56
CSL 19300	SL-4	408.9-423.7	49.40	26.60	2.58	1.80	1.24	10.80	4.04	2.70	0.90	0.39
CSL 19304	SL-4	433.8-453	49.70	24.40	4.27	3.20	2.18	9.71	4.34	3.00	0.70	0.80
CSL 19316	SL-4	453-467	50.30	23.70	6.40	5.00	3.06	10.40	3.79	2.70	0.40	0.96
CSL 19324	SL-4	483-491	50.00	24.50	4.68	4.10	1.79	9.67	4.24	2.90	0.80	0.89
CSL 19329	SL-4	503-517	47.30	20.90	10.00	7.50	6.03	9.28	3.20	2.30	0.20	0.78
CSL 19337	SL-4	569-581	48.60	23.20	8.03	6.00	4.12	10.10	3.55	2.40	0.30	1.66
CSL 19345	SL-4	597-611	50.60	26.30	3.06	2.40	1.36	11.00	4.21	2.90	0.50	0.74
CSL 19353	SL-4	611-623	50.50	24.90	4.61	3.60	2.31	11.10	3.91	2.80	0.30	0.98
CSL 19360	SL-4	649-661	49.50	23.80	4.95	3.50	2.37	10.40	3.84	2.70	0.60	1.24
CSL 19367	SL-4	673-687	50.60	24.60	5.49	4.50	2.42	10.80	3.82	2.60	0.40	1.40
CSL 19375	SL-4	691-703	50.10	23.90	6.27	4.60	2.79	10.60	3.69	2.60	0.50	1.62
CSL 19515	SL-4	720-721	47.40	23.10	7.04	4.80	3.42	9.83	3.66	2.50	0.40	1.81
CSL 19506	SL-4	739-751	50.50	25.20	4.52	3.70	1.95	11.10	3.82	2.60	0.40	1.12
CSL 19513	SL-4	757-759	52.10	24.30	4.48	2.90	1.96	10.60	3.97	2.60	0.50	1.17
CSL 19514	SL-4	787-791	48.90	24.40	5.89	4.20	2.62	10.80	3.67	2.70	0.40	1.62

* denotes the figure is less than the detection limit

Table 7
Analytical Results of Drill Hole SL-4

Sample #	Drill Hole#	Depth	P205 %	MNO %	CO2 %	LOI %	S %	CL PPM	TA PPM	CU PPM	NI PPM	CR PPM
CSL 19213	SL-4	33-35	0.26	0.10	0.11	0.01*	0.02	50	8	99	140	76
CSL 19214	SL-4	38.5-40.4	0.40	0.02	0.07	0.50	0.01*	60	10	72	50*	74
CSL 19215	SL-4	42.7-44.7	0.24	0.10	0.07	0.10	0.02	50*	3*	87	120	83
CSL 19216	SL-4	81.3-87.0	0.59	0.11	0.21	5.00	0.04	50*	3	127	58	50*
CSL 19220	SL-4	87-97	0.64	0.08	0.08	3.40	0.01	50	6	17	54	50*
CSL 19226	SL-4	97-103.8	0.54	0.11	0.02	3.70	0.01*	50	4	29	50*	50*
CSL 19227	SL-4	103.8-121	0.40	0.10	0.01*	3.70	0.01	50*	3*	19	50*	50*
CSL 19234	SL-4	121-131.3	0.59	0.10	0.04	3.20	0.01*	50*	10	22	50*	50*
CSL 19240	SL-4	131.3-137	0.60	0.08	0.01*	3.80	0.01*	50*	11	17	73	50*
CSL 19250	SL-4	137-147	0.24	0.06	0.19	1.60	0.01	50	3*	68	87	130
CSL 19256	SL-4	163-179	0.24	0.06	0.13	1.50	0.01	50*	4	71	97	170
CSL 19265	SL-4	180.5-181.7	0.23	0.07	0.11	3.70	0.02	80	5	72	100	140
CSL 19266	SL-4	191-193	0.27	0.07	0.12	0.20	0.01	50*	5	69	130	170
CSL 19267	SL-4	199-207	0.31	0.06	0.11	1.80	0.02	60	11	63	79	160
CSL 19272	SL-4	231-243	0.25	0.06	0.23	1.60	0.02	60	7	59	81	170
CSL 19279	SL-4	271-283	0.17	0.05	0.35	1.80	0.02	80	3*	53	60	200
CSL 19286	SL-4	295-298	0.25	0.10	0.08	2.80	0.02	50*	13	92	160	270
CSL 19287	SL-4	323-327	0.21	0.08	0.01*	0.20	0.02	50*	4	96	120	220
CSL 19289	SL-4	385-399.1	0.21	0.05	0.22	2.10	0.01	60	5	62	57	130
CSL 19297	SL-4	399.1-408.9	0.41	0.06	0.34	2.00	0.01*	80	3	25	62	79
CSL 19300	SL-4	408.9-423.7	0.36	0.04	0.46	1.80	0.01*	80	9	28	50*	63
CSL 19304	SL-4	433.8-453	0.41	0.07	0.12	2.20	0.01*	80	7	54	50*	98
CSL 19316	SL-4	453-467	0.43	0.09	0.09	0.40	0.01	50*	3*	73	130	210
CSL 19324	SL-4	483-491	0.52	0.07	0.11	1.00	0.01	60	13	52	76	210
CSL 19329	SL-4	503-517	0.39	0.15	0.15	0.20	0.01*	50*	6	69	230	200
CSL 19337	SL-4	569-581	0.36	0.12	0.16	0.20	0.01*	50*	3	62	90	140
CSL 19345	SL-4	597-611	0.37	0.04	1.06	1.50	0.01*	90	13	37	50*	56
CSL 19353	SL-4	611-623	0.28	0.05	0.17	0.80	0.01*	80	3	45	90	79
CSL 19360	SL-4	649-661	0.29	0.06	0.18	1.20	0.01	50*	19	50	51	66
CSL 19367	SL-4	673-687	0.31	0.06	0.06	0.60	0.02	50*	17	52	63	100
CSL 19375	SL-4	691-703	0.28	0.07	0.07	0.30	0.02	60	15	118	72	120
CSL 19515	SL-4	720-721	0.25	0.08	0.12	2.90	0.01*	50*	15	77	89	110
CSL 19506	SL-4	739-751	0.27	0.05	0.14	0.60	0.01*	50*	8	49	77	93
CSL 19513	SL-4	757-759	0.26	0.06	0.18	0.50	0.01*	70	7	57	50*	96
CSL 19514	SL-4	787-791	0.29	0.07	0.09	1.20	0.01	60	3	58	66	83

* denotes the figure is less than the detection limit

Table 7
Analytical Results of Drill Hole SL-4

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	PB PPM	MO PPM	PT PPB	PD PPB	IR PPB	AU PPB	AG PPM
CSL 19213	SL-4	33-35	50	51	200*	5*	2*	15*	2*	100*	5*	5*
CSL 19214	SL-4	38.5-40.4	10*	18	200*	5*	2*	15*	2*	100*	5*	5*
CSL 19215	SL-4	42.7-44.7	47	46	200*	5	2*	15*	2*	100*	5*	5*
CSL 19216	SL-4	81.3-87.0	43	356	200*	6	2*	15*	2*	100*	5*	5*
CSL 19220	SL-4	87-97	44	438	200*	9	2*	15*	4	100*	5*	5*
CSL 19226	SL-4	97-103.8	37	270	260	6	2*	15*	2	100*	5*	5*
CSL 19227	SL-4	103.8-121	38	200	200*	5*	2*	15*	2	100*	5*	5*
CSL 19234	SL-4	121-131.3	34	270	240	8	2*	15*	2*	100*	5*	5*
CSL 19240	SL-4	131.3-137	51	329	240	5	2*	15*	2	100*	5*	5*
CSL 19250	SL-4	137-147	32	74	200*	6	2*	15*	2	100*	5*	6
CSL 19256	SL-4	163-179	29	84	200*	6	2*	15*	2*	100*	5*	8
CSL 19265	SL-4	180.5-181.7	19	86	200*	7	2*	15*	2*	100*	5*	5*
CSL 19266	SL-4	191-193	29	77	200*	5*	2*	15*	2*	100*	5*	5
CSL 19267	SL-4	199-207	31	79	200*	5	2*	15*	2	100*	5*	6
CSL 19272	SL-4	231-243	17	82	200*	5*	2*	15*	2*	100*	5*	5*
CSL 19279	SL-4	271-283	18	77	200*	8	2*	15*	2	100*	5*	5*
CSL 19286	SL-4	295-298	59	150	200*	11	2*	15*	2	100*	5*	5*
CSL 19287	SL-4	323-327	39	146	200*	5*	2*	15*	2	100*	5*	5*
CSL 19289	SL-4	385-399.1	21	105	200*	5*	2*	15*	6	100*	5*	5*
CSL 19297	SL-4	399.1-408.9	17	59	200*	5*	2*	15*	10	100*	6	5*
CSL 19300	SL-4	408.9-423.7	13	47	200*	5*	2*	15*	4	100*	5*	5*
CSL 19304	SL-4	433.8-453	24	86	200*	5*	2*	15*	2	100*	5	5*
CSL 19316	SL-4	453-467	34	130	200*	5*	2*	15*	15	100*	6	5*
CSL 19324	SL-4	483-491	19	157	200*	5	2*	15*	10	100*	5*	5*
CSL 19329	SL-4	503-517	65	134	200*	5*	2*	15*	4	100*	5*	5*
CSL 19337	SL-4	569-581	43	137	200*	5*	2*	15*	4	100*	5*	5*
CSL 19345	SL-4	597-611	10*	46	200*	5*	2*	15*	40	100*	5*	5*
CSL 19353	SL-4	611-623	22	66	200*	5*	2*	15*	6	100*	5*	5*
CSL 19360	SL-4	649-661	22	79	200*	5	2*	15	4	100*	5*	5*
CSL 19367	SL-4	673-687	30	86	200*	5*	2*	15*	6	100*	5*	5*
CSL 19375	SL-4	691-703	34	98	200*	5*	2*	15*	6	100*	5*	5*
CSL 19515	SL-4	720-721	33	97	200*	5*	2*	15*	4	100*	5*	5*
CSL 19506	SL-4	739-751	22	70	200*	5*	2*	15*	2*	100*	5*	5*
CSL 19513	SL-4	757-759	23	64	200*	8	2*	15*	2	100*	5*	5*
CSL 19514	SL-4	787-791	31	83	200*	5	2*	15*	4	100*	5*	5*

* denotes the figure is less than the detection limit

Table 7
Analytical Results of Drill Hole SL-4

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	BA PPM	SC PPM	Y PPM	LA PPM	ZR PPM	HF PPM	NB PPM
CSL 19213	SL-4	33-35	6	1*	295	60	4.90	5*	5*	46	2*	9
CSL 19214	SL-4	38.5-40.4	9	1*	385	110	3.00	5*	6	48	2*	8
CSL 19215	SL-4	42.7-44.7	20	1	320	120	5.90	5*	5	49	2*	7
CSL 19216	SL-4	81.3-87.0	5*	1*	105	20*	30.00	20	40	270	8	13
CSL 19220	SL-4	87-97	5*	1*	77	20*	29.00	24	44	300	10	18
CSL 19226	SL-4	97-103.8	33	1*	175	100	27.00	25	44	265	9	17
CSL 19227	SL-4	103.8-121	37	3	235	90	21.00	5*	35	175	6	12
CSL 19234	SL-4	121-131.3	21	1*	68	20*	28.00	19	46	277	8	18
CSL 19240	SL-4	131.3-137	30	1*	85	70	28.00	23	41	265	7	12
CSL 19250	SL-4	137-147	8	1*	335	230	6.50	5*	5*	41	2*	8
CSL 19256	SL-4	163-179	12	1	340	190	6.50	5*	5*	42	2*	8
CSL 19265	SL-4	180.5-181.7	56	4	475	720	6.10	5*	5*	30	2	5*
CSL 19266	SL-4	191-193	5*	1*	335	70	6.20	5*	5*	35	2*	9
CSL 19267	SL-4	199-207	7	1	410	410	7.20	5*	5*	33	2*	11
CSL 19272	SL-4	231-243	12	2	410	1500	5.80	5*	5*	26	2*	9
CSL 19279	SL-4	271-283	21	1*	400	240	5.00	5*	5*	31	2*	6
CSL 19286	SL-4	295-298	15	2	315	180	8.60	5*	6	53	2	7
CSL 19287	SL-4	323-327	5*	1*	305	60	8.40	5*	6	46	2*	5*
CSL 19289	SL-4	385-399.1	10	5	415	220	5.30	5*	5*	28	2*	6
CSL 19297	SL-4	399.1-408.9	20	4	455	220	3.10	5*	5*	23	2*	7
CSL 19300	SL-4	408.9-423.7	30	4	500	160	2.40	5*	5*	22	2*	8
CSL 19304	SL-4	433.8-453	31	3	410	170	5.40	5*	5	37	2*	9
CSL 19316	SL-4	453-467	6	1*	325	110	7.50	5*	5*	42	2*	7
CSL 19324	SL-4	483-491	19	4	435	120	4.90	5*	7	49	2*	10
CSL 19329	SL-4	503-517	5*	1*	285	70	8.00	5*	5*	40	2*	6
CSL 19337	SL-4	569-581	5*	1	295	50	9.50	5*	5*	43	2	14
CSL 19345	SL-4	597-611	7	3	385	60	3.90	5*	5*	35	2*	5
CSL 19353	SL-4	611-623	5*	1	340	70	6.80	5*	5*	39	2*	6
CSL 19360	SL-4	649-661	10	1	370	130	7.20	5*	5*	42	2*	6
CSL 19367	SL-4	673-687	15	1*	335	20*	7.60	5*	5	43	2*	8
CSL 19375	SL-4	691-703	15	1	315	20*	9.30	5*	5*	55	2*	12
CSL 19515	SL-4	720-721	5*	1	420	50	8.70	5*	5*	41	2*	8
CSL 19506	SL-4	739-751	5*	1	340	90	6.50	5*	5*	47	2*	7
CSL 19513	SL-4	757-759	15	3	310	110	6.40	5*	5*	49	2*	15
CSL 19514	SL-4	787-791	5*	1*	315	70	9.10	5*	5*	50	2*	10

* denotes the figure is less than the detection limit

Table 7
Analytical Results of Drill Hole SL-4

Sample #	Drill Hole#	Depth	TA PPM	W PPM	SN PPM	AS PPM	SB PPM	BI PPM	SE PPM	TE PPM	BR PPM	CE PPM
CSL 19213	SL-4	33-35	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19214	SL-4	38.5-40.4	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19215	SL-4	42.7-44.7	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19216	SL-4	81.3-87.0	1*	2*	10*	1*	0.20*	2*	10*	13	5*	110
CSL 19220	SL-4	87-97	1	2*	10*	2	0.30	2*	10*	10*	5*	110
CSL 19226	SL-4	97-103.8	1*	2*	10*	2	0.20*	2*	10*	10*	5*	110
CSL 19227	SL-4	103.8-121	1*	2*	10*	2	0.20	4	10*	11	5*	95
CSL 19234	SL-4	121-131.3	1*	2*	10*	1*	0.40	2*	10*	10*	5*	120
CSL 19240	SL-4	131.3-137	1	2*	10*	1*	0.20*	2*	10*	15	5*	100
CSL 19250	SL-4	137-147	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19256	SL-4	163-179	1*	2*	10*	1*	0.20*	8	10*	10*	5*	10*
CSL 19265	SL-4	180.5-181.7	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	11
CSL 19266	SL-4	191-193	1*	2*	10*	1*	0.20*	5	10*	10*	5*	10*
CSL 19267	SL-4	199-207	1*	2*	10*	1*	0.20*	10	10*	10*	5*	11
CSL 19272	SL-4	231-243	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19279	SL-4	271-283	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19286	SL-4	295-298	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19287	SL-4	323-327	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	13
CSL 19289	SL-4	385-399.1	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	12
CSL 19297	SL-4	399.1-408.9	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19300	SL-4	408.9-423.7	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19304	SL-4	433.8-453	1*	2*	10*	1*	1.60	2*	10*	10*	5*	10*
CSL 19316	SL-4	453-467	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19324	SL-4	483-491	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19329	SL-4	503-517	1*	2*	10*	1*	0.20*	2	10*	10*	5*	10*
CSL 19337	SL-4	569-581	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19345	SL-4	597-611	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19353	SL-4	611-623	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19360	SL-4	649-661	1*	2*	10*	1*	1.30	2*	10*	10*	5*	10*
CSL 19367	SL-4	673-687	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19375	SL-4	691-703	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	11
CSL 19515	SL-4	720-721	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19506	SL-4	739-751	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	11
CSL 19513	SL-4	757-759	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10*
CSL 19514	SL-4	787-791	1*	2*	10*	1*	0.20*	8	10*	10*	5*	10*

* denotes the figure is less than the detection limit

Table 7
Analytical Results of Drill Hole SL-4

Sample #	Drill Hole#	Depth	ND PPM	SM PPM	EU PPM	YB PPM	LU PPM	TH PPM	U PPM	CD PPM	TB PPM	BE PPM
CSL 19213	SL-4	33-35		1.10	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19214	SL-4	38.5-40.4		1.50	2*	5*	0.50*	0.60	0.50*	10*	1*	
CSL 19215	SL-4	42.7-44.7		1.30	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19216	SL-4	81.3-87.0		10.00	3	5	0.50	5.30	0.80	10*	1	
CSL 19220	SL-4	87-97		10.00	2	5*	0.50*	6.30	1.60	10*	2	
CSL 19226	SL-4	97-103.8		10.00	2*	5*	0.50*	5.60	1.10	10*	1	
CSL 19227	SL-4	103.8-121		7.50	2	5*	0.50*	3.70	0.60	10*	1*	
CSL 19234	SL-4	121-131.3		10.00	2*	5*	0.50	5.60	1.10	10*	1	
CSL 19240	SL-4	131.3-137		10.00	3	5*	0.60	5.50	1.20	10*	2	
CSL 19250	SL-4	137-147		1.00	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19256	SL-4	163-179		1.00	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19265	SL-4	180.5-181.7		1.20	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19266	SL-4	191-193		1.10	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19267	SL-4	199-207		1.10	2	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19272	SL-4	231-243		1.00	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19279	SL-4	271-283		0.90	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19286	SL-4	295-298		1.30	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19287	SL-4	323-327		1.30	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19289	SL-4	385-399.1		0.80	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19297	SL-4	399.1-408.9		0.60	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19300	SL-4	408.9-423.7		0.60	2*	5*	0.50*	0.60	0.50*	10*	1*	
CSL 19304	SL-4	433.8-453		1.20	2*	5*	0.50*	0.60	0.50*	10*	1*	
CSL 19316	SL-4	453-467		1.20	2*	5*	0.50*	0.90	0.50*	10*	1*	
CSL 19324	SL-4	483-491		1.90	2*	5*	0.50*	0.90	0.50*	10*	1*	
CSL 19329	SL-4	503-517		1.10	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19337	SL-4	569-581		0.80	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19345	SL-4	597-611		0.70	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19353	SL-4	611-623		1.10	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19360	SL-4	649-661		1.10	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19367	SL-4	673-687		1.30	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19375	SL-4	691-703		1.40	2*	5*	0.50*	0.90	0.50*	10*	1*	
CSL 19515	SL-4	720-721		1.00	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19506	SL-4	739-751		1.20	2*	5*	0.50*	0.50*	0.50*	10*	1*	
CSL 19513	SL-4	757-759		1.20	2*	5*	0.50*	1.20	0.60	10*	1*	
CSL 19514	SL-4	787-791		1.20	2*	5*	0.50*	0.50	0.50*	10*	1*	

* denotes the figure is less than the detection limit

Table 7
Analytical Results of Drill Hole SL-4

Sample #	Drill Hole#	Depth	B PPM	GE PPM	F PPM
CSL 19213	SL-4	33-35			80
CSL 19214	SL-4	38.5-40.4			60
CSL 19215	SL-4	42.7-44.7			90
CSL 19216	SL-4	81.3-87.0			700
CSL 19220	SL-4	87-97			800
CSL 19226	SL-4	97-103.8			850
CSL 19227	SL-4	103.8-121			575
CSL 19234	SL-4	121-131.3			750
CSL 19240	SL-4	131.3-137			975
CSL 19250	SL-4	137-147			100
CSL 19256	SL-4	163-179			70
CSL 19265	SL-4	180.5-181.7			120
CSL 19266	SL-4	191-193			70
CSL 19267	SL-4	199-207			75
CSL 19272	SL-4	231-243			65
CSL 19279	SL-4	271-283			55
CSL 19286	SL-4	295-298			85
CSL 19287	SL-4	323-327			80
CSL 19289	SL-4	385-399.1			55
CSL 19297	SL-4	399.1-408.9			45
CSL 19300	SL-4	408.9-423.7			65
CSL 19304	SL-4	433.8-453			65
CSL 19316	SL-4	453-467			70
CSL 19324	SL-4	483-491			120
CSL 19329	SL-4	503-517			65
CSL 19337	SL-4	569-581			55
CSL 19345	SL-4	597-611			50
CSL 19353	SL-4	611-623			60
CSL 19360	SL-4	649-661			75
CSL 19367	SL-4	673-687			85
CSL 19375	SL-4	691-703			80
CSL 19515	SL-4	720-721			85
CSL 19506	SL-4	739-751			65
CSL 19513	SL-4	757-759			110
CSL 19514	SL-4	787-791			70

* denotes the figure is less than the detection limit

DRILL HOLE: SL-1

COUNTY: St. Louis

LOCATION: T56N, R14W, Sec. 22, NE¼-NW¼-SE¼,

QUADRANGLE: Harris Lake 7½'

SURFACE ELEVATION: 1493' (topographic quad)

DEPTH TO BEDROCK: 18' TOTAL DEPTH: 1008'

DRILL HOLE INCLINATION: 90° DRILL AZIMUTH:---

ACID TESTS:

Depth	Corrected Angle
300'	89°
600'	89°
1000'	85°

CORE SIZES AND FOOTAGE INTERVALS:

NQ (1.875" diameter)	18-192	(SL-1A)
NQ (1.875" diameter)	18-1008	(SL-1B)

ADDITIONAL MATERIALS AVAILABLE FOR EXAMINATION:

Drill core, thin sections, and polished thin sections.

SL-1
Linwood Lake Area

Private company mineral exploration and previous drilling in the Duluth Complex has been largely focused along the basal contact and generally has coincided with geophysical anomalies creating an irregular spatial distribution of drill hole data.

One such gap in previous work is the Linwood Lake area in central St. Louis County. Here, there is a small area of poorly exposed outcrop consisting of hornfels and contaminated igneous rock about .5 miles to the west. The nearest existing drill holes are located approximately 3 miles to the north and south.

Val Chandler in Holst et al. (1985) has shown on a map of the "Second Vertical Derivative (SVD) of Total Intensity Magnetic Anomaly Data Over the Central Duluth Complex", that the complex is made up of areas with distinctive SVD fabrics. Within rocks that are interpreted as troctolites of the basal contact, there are some even more subtle variations. One such area encompasses the Linwood Lake area and much of the area within the Harris Lake 7½' Quadrangle. This area is also interesting in that the contact is believed to be steeper here than in the areas to the north (Chandler, personal communications). The presence of a minor east-west magnetic break as well as a minor northeast trending lineament (apparent on the previously discussed SVD map) cuts the area just to the north of the drill hole.

LOG OF DRILL HOLE SL-1
by B. Frey

In drilling hole SL-1, broken core and serpentinized fractures were encountered in several places. After 192' of drilling, the core barrel became stuck in the hole which required that the hole had to be cemented, moved, and redrilled. Consequently, the core from the original 192' hole is designated SL-1A (with description footages in parentheses) while the redrill is designated SL-1B (description footages not in parentheses). Below 192', all core belongs to SL-1B, but will simply be designated SL-1.

0-18' OVERBURDEN; no sample.

18'-76.1' (75.4') FINE TO MEDIUM-GRAINED, OXIDE AND BIOTITE-BEARING NORITIC TROCTOLITE AND TROCTOLITIC NORITE WITH LOCAL FINE-GRAINED HORNFELS XENOLITHS AND FINE TO COARSE-GRAINED CONTAMINATED ROCK HYBRIDS.

Fine-grained hornfels xenoliths are siliceous (bluish) with biotite, cordierite(?), minor sulfides(?), orthopyroxene and fayalitic olivine. These are located at 41.8' (39.5') to 43.0' (41.2') and 62.9' (61.4') to 64.2' (63.1').

Contaminated hybrids have similar mineralogy except for less (if any) quartz and more plagioclase (relatively sodic). These grade into the relatively uncontaminated(?) troctolites and norite and are perhaps coarser grained. These intervals include 20' to 24' and 43' (46') to 51' (52'). Locally, biotitic quartz diorites have intruded such as at (20.9') and 64.2' to 64.5'.

Remaining rocks are mostly fine-grained igneous with variable contamination.

TROCTOLITE-NORITE Mode:

10-30%	Olivine; yellow green, fayalitic.
40-60%	Plagioclase; clear-white, intermediate-sodic.
10-30%	Orthopyroxene.
5 -20%	Biotite; nontitaniferous.
2 -10%	Oxides.
0 - 5%	Hornblende; some primary(?), some replacement.
0 - 2%	Sulfide; largely pyrrhotite, minor chalcopyrite.

Unit contains a few, scattered, near vertical hairline fractures with serpentine and chlorite.

76.1' (75.4')-174.3' (171.7') MEDIUM-GRAINED, OXIDE AND BIOTITE-BEARING NORITIC TROCTOLITE; WITH LOCAL SERPENTINIZED SHEARS AND FINER AND COARSER-GRAINED INTERVALS.

Mineralogy is similar to previous unit except that oxides average slightly higher and the rock is slightly more magnetic. Coarser intervals typically have sodic and/or diseased plagioclase, uralitized pyroxene, more abundant biotite, and slightly elevated amounts of chalcopyrite. Some of these intervals are 86.5'-87.5', 90.6'-94.8', 140'-147' spottily, (84'-95' spottily), (119'-120'), and (141'-144' spottily).

Most fractures with serpentine are oriented 0-35° to core axis. Individual fractures are scattered and have less than 2 mm of serpentine, although olivines (and pyroxenes somewhat) are serpentinized within several cm of these shears. Several more intensely serpentinized intervals are centered around 1 cm thick serpentine shears at 154'-157.5' and/or deformed calcite veins to 2 cm at 161'-163' (159'-160') and/or intervals with broken core, multiple, thinner shears, especially 122'-125' (120'-122'), 127'-130' (124'-134' scattered), and 163'-173' (163'-169').

The intervals with greater serpentinization either have been somewhat more mafic to start with, or more likely, have undergone some Fe-Mg metasomatism with the shearing.

174.3'(171.7')-305.5' (SL-1A stopped at 192') FINE-GRAINED, OXIDE-BEARING BIOTITIC, NORITIC TROCTOLITE WITH ADMIXED MEDIUM-GRAINED BIOTITIC NORITE AND BIOTITIC TROCTOLITIC NORITE AND LESSER SILICEOUS HORNFELS XENOLITHS AND CONTAMINANT ROCK.

TROCTOLITE Mode (about 60-70% of unit):

40-65%	Plagioclase.
15-25%	Fayalitic olivine.
10-20%	Orthopyroxene (some clinopyroxene?).
5-20%	Biotite.
3-15%	Oxides.
Trace	Sulfides.

NORITE Mode:

50-60%	Plagioclase (more sodic(?) than in troctolite).
15-35%	Orthopyroxene.
0-15%	Fayalitic olivine.
5-25%	Biotite.
0- 2%	Oxides.
Trace	Sulfides(?).

The troctolite may be locally contaminated and siliceous. Locally it has 1-2 mm biotite xenocrysts. In general, it appears to be intruded by the coarser norite. The coarser norites may also be locally contaminated and somewhat siliceous. The norite locally forms distinct layers (70-80° to core axis) and irregular veins that intrude the troctolite. In other places the troctolite is pseudobrecciated and contains blebs of the norite. The

troctolite is somewhat magnetic. Unit also contains scattered amphibolitic to biotitic quartz diorite veins and blebs, some of which are cut by shears (reactivation of shear along which the vein originally formed?). Some contain chloritized biotite books to 6 cm, and euhedral quartz (246.7'-247').
Very siliceous (70% quartz) granitic veins occur at 272.8' (1 cm) and 274.3' to 274.8' (30 and 70° to core axis, respectively).
Serpentinized shears are generally steep, hairline, and scattered with very few between 209' and 254'. DDH SL-1A contains many intersecting serpentinized slips between (188') and (191') and this is probably the interval which caused the original hole to be abandoned. More major serpentinized-sheared intervals are 188.5'-189.2' (diorite vein w/chalcopyrite); 189.6'-189.9' and 191'-191.4'.
The upper contact is somewhat obscure but appears gradational and less fault controlled in DDH SL-1B. Basal contact is sharp and shows the fine-grained troctolite intruding the unit below. A hornfels inclusion occurs at 296.9' to 298.4'. This is biotitic, very siliceous, with much cordierite at the contacts. Smaller xenoliths also occur within 302.4' to 303.3'. Hybrid contaminant rocks occur in small intervals at 278', 288', and 302.5'. At 303.3' there is a 1-2 cm chlorite-serpentine calcite shear vein.

305.5'-576.9' VARIABLY ALTERED AND SHEARED COARSE-GRAINED BIOTITE AND OXIDE-BEARING GABBRO AND TROCTOLITE; WITH LOCAL BIOTITIC QUARTZ DIORITE INTRUSIONS, BRECCIATION, CONTAMINATED INTERVALS, AND LESSER ROCK TYPES.
Biotitization, serpentinization, chloritization, and slickensides are associated with shears. The most intense shears and directly associated alteration are 485'-492.5', 553'-555.5' and 557'-558'.

Mode: approximate unaltered GABBRO and TROCTOLITE follows:

0-40%	Hornblende-pargasite (primary? or alteration?).
40-65%	Plagioclase.
0-40%	Olivine-largely(?) fayalitic.
10-40%	Titanaugite.
2-10%	Biotite.
2-10%	Oxides.
0-10%	Orthopyroxene.
½- 1%	Sulfides.

Sulfides (chalcopyrite, pyrrhotite) are a higher % than in previous units. Core is somewhat magnetic at best. Alteration includes diseased plagioclase and hornblende-pargasite which may be altered pyroxene (or may be primary?). Quartz diorite veins often with symplectic-graphic textures of quartz and sodic plagioclase (may be white K-feldspar), especially 422'-481'.

Unit subdivisions are as follows:

305.5'-329.8' Coarse-grained biotite-oxide-bearing, locally gabbroic troctolite with local serpentine shears and biotitic quartz diorite veins.

329.8'-336.5' Coarse-grained biotite-oxide-bearing gabbroic troctolite with plagioclase, olivine and pyroxene alteration increasing downward.

336.5'-338.2' Medium-coarse-grained contaminated quartz diorite and diorite; locally very siliceous(?).

338.2'-349.3' Coarse-grained biotite-oxide bearing troctolite.

349.3'-380.5' Idem, variably altered with local quartz diorite veins, shears and contamination.

380.5'-383.1' Glomeroporphyritic troctolite; coarser plagioclase laths (to 30%) in a fine-grained noritic troctolite to picritic(?) groundmass with minor siliceous hornfels fragments.

383.1'-418.4' Coarse-grained oxide-biotite bearing troctolitic gabbro with local alteration, brecciation, variable contamination, scattered shears, and injection by biotitic diorite and biotitic quartz diorite. Basal 8' has decreasing general alteration, brecciation, and intrusion.

418.4'-462.0' Coarse grained oxide-biotite bearing gabbroic troctolite with biotitic-amphibolitic quartz diorite intrusions, often with symplectic-graphic intergrowths. Unit contains minor hairline shears with serpentine-chlorite.

462.0'-503.9' Idem, with shears and associated alteration increasing downward, with the most intense shear and biotitization, serpentinization, and chloritization within 485'-492.5' (also contains local coarse crystalline calcite).

503.9'-521.1' Idem, but with decreasing shear and alteration.

521.1'-537.3' Glomeroporphyritic troctolite with 0-60% coarse-grained plagioclase phenocrysts and lesser titanaugite in a matrix of fine-grained oxide-biotite bearing troctolite-picrite. Base of unit intrusive, with biotite and fine-grained oxide (to 1 cm) selvage at contact. Slightly elevated sulfides.

537.3'-546.5' Fine to medium-grained with lesser coarse-grained biotitic, contaminated diorite, gabbro and norite with local shears, including chlorite-biotite-quartz-calcite veins.

546.5'-553.3' Coarse-grained to very coarse-grained biotite-oxide bearing gabbro with minor local melagabbro.

553.3'-567.6' Biotite-serpentine shears and fine-grained contaminated biotitic noritic troctolite with minor hornfels.

567.6'-576.9' Coarse to very coarse-grained altered oxide-biotite bearing gabbro with diseased plagioclase and uralitized pyroxene. Shears and fractures are usually less than 30° to core axis. Diorite-quartz diorite veins-dikes are typically 50-60° to core axis.

576.9'-871.0'	VARIABLY GLOMEROPORPHYRITIC, BIOTITE-OXIDE-CLINOPYROXENE BEARING TROCTOLITE WITH LOCALLY DEVELOPED SERPENTINE AND SERPENTINE SLIP LAMINAE AND MINOR OTHER LITHOLOGIES. Glomeroporphyritic troctolite is composed of 30-70% clots of medium to coarse-grained plagioclase with minor interstitial biotite, olivine, and sometimes clinopyroxene. These are set in a matrix of variably serpentinized fine-grained(?) oxide, olivine (Fo 64, x-ray diffraction) and lesser plagioclase. In places the serpentine takes the form of wispy, slip(?) laminae (resulting from gravity driven creep?) giving the rock an augen type texture where glomeroporphyritic plagioclase clots exist. These laminae run 35-60° to core axis. Without thin sections, grain size of olivine is impossible to tell. Unit contains both ilmenite and magnetite (X-Ray) and is generally somewhat magnetic. Unit contains a trace-½% of disseminated chalcopyrite. The interval 774'-809' is not glomeroporphyritic and is largely medium-grained troctolite, with brownish plagioclase (notably 786'-804.7') and coarse to very coarse-grained oxide and biotite bearing troctolitic gabbro (notably 804.7'-809'). Unit also contains scattered serpentine-chlorite shears (at 0-40° to core axis). Alteration may extend several cms into the surroundings. Shears locally contain magnetite and some cut across or may be contemporaneous with quartz diorite intrusions. More major ones are centered at 586.5', 587.7', 590', 593', 613.3'-620' (roughly parallel to core axis), 625.1', 637.8', 642.3', 653.1', 664.1', 665.3', 680', 684', 792.1', 793.7, 816.5', 831.8', 839.6', 845.6', 854.8' and 860'-866' (roughly parallel to core axis, with well developed slickensides slightly oblique to core axis. Quartz diorite veins-dikes contain variable biotite, amphiboles, and symplectic-graphic quartz-Na plagioclase intergrowths. These intrusions comprise about 5% of unit at most. Those in the upper part of the hole are disturbed more by the shearing. They generally occur at 30-60° to core axis. The larger plagioclase clots are essentially absent in the basal 14' but does contain fine-grained plagioclase locally in several contaminated intervals with additional biotite. Basal contact is sharp.
871.0'-1008' TD	MIXED FINE TO MEDIUM-GRAINED FAYALITIC, BIOTITIC, CONTAMINATED NORITE AND SILICEOUS HORNFELS: MEDIUM TO VERY COARSE GRAINED, VARIABLY ALTERED OXIDE-BIOTITE BEARING TROCTOLITIC GABBRO; AND BIOTITIC-AMPHIBOLITIC QUARTZ DIORITE. The fine-grained contaminated norite and hornfels is found within 871.0'-899.0', 908.6'-911.7' (hornfels), 938'-940.5', 945.2'-948.2', 950'-1008' (with recognizable hornfels at 967.2'-967.7', 973.7'-978.1'). Rock contains up to 15% biotite, 3% oxides (slightly magnetic), 30% fayalite and orthopyroxene; with the remaining plagioclase, quartz, and

cordierite(?). Unit contains trace-½% disseminated chalcopyrite. All of this rock type is probably contaminated hornfels and not contaminated igneous melt.
The altered troctolitic gabbro is found within 899.0'-908.6', 911.7'-938', 940.5'-945.2' and 948.2'-950.0'. Alteration includes olivine to serpentine, pyroxene to actinolite-hornblende, and plagioclase to saussurite and calcite. Clinopyroxene and oxide appear to be the most resistant to alteration. Very coarse-grained portions are typically much less altered than adjacent medium to coarse-grained portions. Very coarse-grained intervals are 914.2'-915.2', 915.2'-927' scattered, 934'-937' scattered. Most intense alteration is within 899'-908.6' and 911.7'-926' which also contains a few 1 mm chlorite-quartz-carbonate veins. The altered troctolitic gabbro contains a trace to ½% chalcopyrite. The quartz diorite occurs as irregular veins and dikes with these scattered primarily in the following intervals: 871.0'-888.0', 895'-901.5' and 926'-950'. More of these veins intersect each other at angles (isolating fragments of country rock) than in the previous units. Some veins within altered gabbro are largely hornblende with minor plagioclase at the margins. Vein at 884'-884.9' is two-thirds quartz diorite with the upper third pure quartz. This unit contains relatively few thin hairline shears-fractures with serpentine-chlorite with most of these below 936'. The most pronounced one is centered at 997.4'.

The drill hole is believed to have ended relatively close to (if not in) the Virginia Formation footwall.

1008' TOTAL DEPTH

Analytical results of drill hole SL-1 follow in Table 8.

Table 8
Analytical Results of Drill Hole SL-1

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CSL 19525	SL-1	24-34	41.70	11.50	23.80	18.00	4.27	9.31	1.96	1.40	0.40	4.18
CSL 19531	SL-1	39.5-63.4	46.00	22.60	16.20	12.00	7.42	1.13	0.77	0.69	1.10	1.73
CSL 19549	SL-1	74-76	38.90	11.50	26.40	19.00	4.31	9.28	1.99	1.40	0.20	4.10
CSL 19534	SL-1	84-88	43.50	11.00	21.40	15.00	4.54	9.40	2.21	1.40	0.60	4.75
CSL 19535	SL-1	116-124	44.10	12.70	18.80	12.00	4.27	9.40	2.54	1.50	0.70	4.57
CSL 19540	SL-1	152-168	39.70	11.50	22.60	17.00	5.12	9.26	2.08	1.40	0.50	4.50
CSL 19557	SL-1	184-196	40.40	12.20	22.00	17.00	4.66	9.55	2.26	1.60	0.40	4.29
CSL 19564	SL-1	200-214	40.90	13.70	22.90	18.00	5.25	8.67	2.19	1.70	0.50	4.33
CSL 19572	SL-1	246.5-247.5	39.80	11.20	20.90	17.00	4.83	8.49	1.82	1.40	1.00	3.51
CSL 19573	SL-1	264-266	41.80	11.80	24.40	19.00	3.80	10.00	2.47	1.80	0.30	3.95
CSL 19574	SL-1	272-275	47.90	15.00	16.10	12.00	3.52	6.78	3.32	2.40	1.20	2.80
CSL 19575	SL-1	282-294	44.40	13.60	21.80	16.00	3.83	8.22	2.65	1.90	0.50	3.36
CSL 19582	SL-1	294-304	44.40	15.20	20.00	16.00	4.33	7.49	2.40	1.80	0.60	3.32
CSL 19593	SL-1	304-308	45.30	16.60	16.30	11.00	5.30	9.34	2.45	1.70	0.50	2.19
CSL 19594	SL-1	331.9-337	44.00	17.50	14.80	11.00	5.37	6.13	2.49	2.00	1.60	1.16
CSL 19595	SL-1	380.1-386	45.60	16.00	17.00	13.00	7.49	5.97	2.15	1.70	0.80	1.68
CSL 19596	SL-1	404-410	50.00	14.10	14.50	11.00	4.14	6.74	2.82	2.00	1.70	2.58
CSL 19597	SL-1	484.8-492.5	43.00	15.70	13.10	10.00	5.14	12.70	2.14	1.60	0.60	1.38
CSL 19598	SL-1	533-538	42.70	10.60	24.40	18.00	10.10	6.25	1.60	1.30	0.50	2.10
CSL 19599	SL-1	546.7-550	46.10	11.80	17.50	14.00	5.96	9.61	1.98	1.50	1.00	5.17
CSL 19600	SL-1	553-558	46.80	20.20	15.00	10.00	6.56	2.14	1.91	1.40	2.60	1.41
CSL 19601	SL-1	571-577.1	42.70	10.40	20.20	13.00	6.25	9.40	1.66	1.20	0.80	5.70
CSL 19602	SL-1	577.1-582.2	43.40	11.90	20.20	16.00	13.80	5.82	1.71	1.50	0.60	1.15
CSL 19606	SL-1	622-628	42.00	11.30	19.40	16.00	13.80	5.86	1.54	1.40	0.56	1.08
CSL 19607	SL-1	679-685.5	41.90	11.80	18.70	15.00	13.80	5.98	1.50	1.30	0.40	0.91
CSL 19608	SL-1	734-740	39.90	6.10	25.30	20.00	21.40	3.40	0.97	1.00	0.40	0.70
CSL 19609	SL-1	789-795	46.80	16.00	14.90	11.00	10.30	7.40	2.33	1.80	0.90	0.79
CSL 19610	SL-1	812-818	48.30	11.70	17.20	13.00	12.50	4.88	2.27	1.80	1.20	0.95
CSL 19611	SL-1	860-866	44.50	7.21	18.80	15.00	17.80	2.36	1.27	1.20	1.60	0.39
CSL 19612	SL-1	867.7-874	45.90	13.10	15.80	12.00	14.20	5.82	1.83	1.60	0.80	0.39
CSL 19613	SL-1	904-910	48.40	19.80	12.60	9.20	6.66	7.78	2.49	1.90	0.70	1.21
CSL 19614	SL-1	914-920	45.40	15.40	14.90	12.00	9.61	8.10	2.08	1.70	0.90	1.42
CSL 19615	SL-1	930-936	47.20	17.70	12.00	10.00	7.30	7.84	2.54	1.90	1.20	0.77
CSL 19616	SL-1	994-1000	47.70	18.70	12.00	9.00	8.32	8.98	2.63	2.10	0.40	0.68

* denotes the figure is less than the detection limit

Table 8
Analytical Results of Drill Hole SL-1

Sample #	Drill Hole#	Depth	P2O5 %	MNO %	CO2 %	LOI %	S %	CL PPM	TA PPM	CU PPM	NI PPM	CR PPM
CSL 19525	SL-1	24-34	1.03	0.30	0.11	0.01*	0.30	50*	3*	213	50*	71
CSL 19531	SL-1	39.5-63.4	0.23	0.10	0.15	1.50	0.96	50*	3*	192	230	530
CSL 19549	SL-1	74-76	1.93	0.34	0.05	0.01*	0.45	50*	10	246	70	120
CSL 19534	SL-1	84-88	1.06	0.27	0.09	0.80	0.14	60	14	241	50*	65
CSL 19535	SL-1	116-124	1.06	0.23	0.11	0.30	0.12	50*	4	238	50	50*
CSL 19540	SL-1	152-168	2.00	0.26	0.11	2.30	0.26	50*	13	189	50*	77
CSL 19557	SL-1	184-196	1.76	0.27	1.28	1.60	0.28	50*	7	199	50*	80
CSL 19564	SL-1	200-214	2.14	0.26	0.11	0.01*	0.29	60	6	192	76	76
CSL 19572	SL-1	246.5-247.5	0.84	0.22	4.14	5.70	0.09	70	8	111	52	89
CSL 19573	SL-1	264-266	1.69	0.32	0.07	0.01*	0.23	50*	16	195	56	56
CSL 19574	SL-1	272-275	1.33	0.20	0.35	0.50	0.10	50*	3*	156	50*	54
CSL 19575	SL-1	282-294	1.50	0.28	0.18	0.01*	0.25	50*	5	168	78	89
CSL 19582	SL-1	294-304	1.33	0.24	0.17	0.60	0.31	50*	8	182	77	130
CSL 19593	SL-1	304-308	0.70	0.20	0.09	0.90	0.08	50*	3*	178	83	130
CSL 19594	SL-1	331.9-337	0.28	0.14	1.39	4.70	0.03	60	3*	61	180	120
CSL 19595	SL-1	380.1-386	0.30	0.18	0.09	0.90	0.18	50*	3*	241	240	160
CSL 19596	SL-1	404-410	0.93	0.18	0.15	2.00	0.05	70	9	273	70	62
CSL 19597	SL-1	484.8-492.5	0.35	0.14	1.75	5.90	0.05	60	3*	172	170	50*
CSL 19598	SL-1	533-538	0.50	0.28	0.09	0.20	0.17	50*	8	501	360	78
CSL 19599	SL-1	546.7-550	0.44	0.23	0.18	0.70	0.12	50*	10	517	78	68
CSL 19600	SL-1	553-558	0.24	0.09	0.10	3.10	0.69	60	10	362	210	410
CSL 19601	SL-1	571-577.1	0.48	0.28	0.40	1.10	0.10	60	9	461	86	92
CSL 19602	SL-1	577.1-582.2	0.40	0.23	0.02	0.01*	0.05	50*	16	156	610	110
CSL 19606	SL-1	622-628	0.36	0.23	0.11	2.50	0.03	50*	6	129	620	89
CSL 19607	SL-1	679-685.5	0.36	0.20	0.09	4.20	0.04	50*	13	129	550	120
CSL 19608	SL-1	734-740	0.28	0.28	0.08	1.80	0.02	220	5	107	1000	140
CSL 19609	SL-1	789-795	0.29	0.17	0.05	0.30	0.03	60	3*	134	470	83
CSL 19610	SL-1	812-818	0.45	0.19	0.07	0.80	0.04	70	5	111	590	100
CSL 19611	SL-1	860-866	0.29	0.22	0.20	4.10	0.02	110	3*	55	750	91
CSL 19612	SL-1	867.7-874	0.22	0.16	0.29	1.50	0.02	150	3	70	640	93
CSL 19613	SL-1	904-910	0.46	0.15	0.09	1.10	0.15	60	3*	111	220	150
CSL 19614	SL-1	914-920	0.34	0.18	0.08	0.90	0.03	50*	3*	138	410	110
CSL 19615	SL-1	930-936	0.35	0.16	0.05	2.60	0.01	70	3*	82	300	81
CSL 19616	SL-1	994-1000	0.32	0.16	0.01	0.40	0.01	50*	8	94	300	120

* denotes the figure is less than the detection limit

Table 8
Analytical Results of Drill Hole SL-1

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	PB PPM	MO PPM	PT PPB	PD PPB	IR PPB	AU PPB	AG PPM
CSL 19525	SL-1	24-34	59	271	260	5*	2*	15*	2*	100*	5*	5*
CSL 19531	SL-1	39.5-63.4	77	446	310	8	7	15*	2	100*	6	5*
CSL 19549	SL-1	74-76	61	201	280	5*	2*	15*	2	100*	5*	5*
CSL 19534	SL-1	84-88	63	337	210	7	2*	15*	4	100*	5*	5*
CSL 19535	SL-1	116-124	45	368	200*	9	2*	15*	2*	100*	5*	5*
CSL 19540	SL-1	152-168	69	610	240	5*	2*	15*	2	100*	5*	5*
CSL 19557	SL-1	184-196	70	321	220	5	2*	15*	2	100*	5*	8
CSL 19564	SL-1	200-214	61	312	200*	5*	2*	15*	2*	100*	5*	6
CSL 19572	SL-1	246.5-247.5	63	262	250	7	2*	15*	2	100*	5*	5*
CSL 19573	SL-1	264-266	49	235	280	7	2*	15*	2	100*	5*	5*
CSL 19574	SL-1	272-275	37	209	200*	9	2*	15*	2*	100*	5*	5*
CSL 19575	SL-1	282-294	58	228	330	6	2*	15*	2*	100*	5*	5*
CSL 19582	SL-1	294-304	60	244	280	11	2*	15*	2*	100*	5*	5*
CSL 19593	SL-1	304-308	64	204	200*	5*	2*	15*	2*	100*	5*	5*
CSL 19594	SL-1	331.9-337	60	183	200*	12	2*	15*	2*	100*	5*	5*
CSL 19595	SL-1	380.1-386	81	196	200*	8	2*	15*	2	100*	5*	5*
CSL 19596	SL-1	404-410	54	250	230	11	2*	15*	2	100*	9	5*
CSL 19597	SL-1	484.8-492.5	60	159	200*	6	2*	15*	2	100*	5	5*
CSL 19598	SL-1	533-538	120	162	270	8	2*	25	2	100*	5*	5*
CSL 19599	SL-1	546.7-550	73	455	260	7	2*	15*	2	100*	7	11
CSL 19600	SL-1	553-558	59	371	250	12	6	15*	2	100*	5*	5*
CSL 19601	SL-1	571-577.1	73	448	200*	6	2*	15*	2*	100*	5*	5*
CSL 19602	SL-1	577.1-582.2	140	116	220	7	2*	15*	2	100*	5*	5*
CSL 19606	SL-1	622-628	150	117	200*	5	2*	15*	2*	100*	5*	5*
CSL 19607	SL-1	679-685.5	130	97	200*	5*	2*	15*	2	100*	8	5*
CSL 19608	SL-1	734-740	210	80	200*	6	2*	15*	2	100*	5*	5*
CSL 19609	SL-1	789-795	100	83	200*	7	2*	15*	2	100*	5*	5*
CSL 19610	SL-1	812-818	120	92	200*	9	2*	15*	2*	100*	5*	5*
CSL 19611	SL-1	860-866	160	47	200*	12	2*	15*	2*	100*	12	5*
CSL 19612	SL-1	867.7-874	130	52	200*	15	2*	15*	2*	100*	5*	5*
CSL 19613	SL-1	904-910	57	145	200*	10	2*	15*	4	100*	6	5*
CSL 19614	SL-1	914-920	92	159	200*	13	2*	15*	2*	100*	5*	5*
CSL 19615	SL-1	930-936	78	83	200*	15	2*	15*	2*	100*	5*	5*
CSL 19616	SL-1	994-1000	79	88	200*	5	2*	15*	4	100*	5*	5*

* denotes the figure is less than the detection limit

Table 8
Analytical Results of Drill Hole SL-1

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	BA PPM	SC PPM	Y PPM	LA PPM	ZR PPM	HF PPM	NB PPM
CSL 19525	SL-1	24-34	12	2	190	130	60.60	41	37	125	3	28
CSL 19531	SL-1	39.5-63.4	65	7	61	130	50.10	5*	10	130	3	17
CSL 19549	SL-1	74-76	5*	1*	210	90	47.00	44	31	69	2*	17
CSL 19534	SL-1	84-88	7	1*	185	170	55.20	30	19	160	4	26
CSL 19535	SL-1	116-124	17	1	200	220	41.00	31	28	215	7	19
CSL 19540	SL-1	152-168	7	2	175	160	43.00	36	33	150	5	9
CSL 19557	SL-1	184-196	13	3	180	160	52.50	38	35	150	7	26
CSL 19564	SL-1	200-214	24	4	210	180	31.00	44	37	115	3	18
CSL 19572	SL-1	246.5-247.5	46	8	115	130	44.00	36	34	105	2*	22
CSL 19573	SL-1	264-266	5*	2	225	240	55.40	68	54	400	17	35
CSL 19574	SL-1	272-275	52	7	205	390	37.00	46	48	155	4	23
CSL 19575	SL-1	282-294	26	3	215	330	48.00	67	56	370	13	34
CSL 19582	SL-1	294-304	25	7	210	270	50.00	50	48	355	11	30
CSL 19593	SL-1	304-308	17	4	215	140	28.00	11	21	175	5	19
CSL 19594	SL-1	331.9-337	54	2	235	190	15.00	5*	12	78	2	5*
CSL 19595	SL-1	380.1-386	25	5	210	120	28.00	5*	11	93	2*	12
CSL 19596	SL-1	404-410	74	7	220	330	33.00	23	26	115	5	14
CSL 19597	SL-1	484.8-492.5	10	1	160	60	19.00	5*	13	100	3	8
CSL 19598	SL-1	533-538	9	4	160	40	30.00	5*	10	87	2*	7
CSL 19599	SL-1	546.7-550	24	2	245	170	62.70	7	12	115	5	18
CSL 19600	SL-1	553-558	100	13	145	400	41.00	5*	18	195	4	19
CSL 19601	SL-1	571-577.1	24	2	205	160	56.10	9	11	125	7	19
CSL 19602	SL-1	577.1-582.2	18	3	155	60	18.00	5*	10	95	2	8
CSL 19606	SL-1	622-628	5*	5	125	20	18.00	5*	9	100	3	8
CSL 19607	SL-1	679-685.5	5*	3	140	30	15.00	5*	9	91	2*	7
CSL 19608	SL-1	734-740	5*	1	67	20*	16.00	5*	5	76	2*	5*
CSL 19609	SL-1	789-795	23	4	195	110	13.00	5*	9	84	2*	5*
CSL 19610	SL-1	812-818	54	4	150	150	16.00	5*	15	395	13	9
CSL 19611	SL-1	860-866	55	11	46	60	10.00	5*	12	82	2*	5*
CSL 19612	SL-1	867.7-874	38	4	135	30	11.00	5*	10	70	3	5*
CSL 19613	SL-1	904-910	26	4	235	90	22.00	5*	18	110	5	12
CSL 19614	SL-1	914-920	31	3	210	60	21.00	5*	12	105	3	14
CSL 19615	SL-1	930-936	37	4	215	140	12.00	5*	15	83	3	7
CSL 19616	SL-1	994-1000	16	1	200	40	12.00	5*	7	72	2*	12

* denotes the figure is less than the detection limit

Table 8
Analytical Results of Drill Hole SL-1

Sample #	Drill Hole#	Depth	TA PPM	W PPM	SN PPM	AS PPM	SB PPM	BI PPM	SE PPM	TE PPM	BR PPM	CE PPM
CSL 19525	SL-1	24-34	2	2*	11	1*	0.20*	2*	10*	19	5*	110
CSL 19531	SL-1	39.5-63.4	2	2*	10*	13	0.20*	2*	10*	10*	5*	10*
CSL 19549	SL-1	74-76	3	2*	16	1*	0.20*	2*	10*	10*	5*	93
CSL 19534	SL-1	84-88	3	2*	16	1*	0.20*	2*	10*	10*	5*	43
CSL 19535	SL-1	116-124	2	2	10*	1*	0.20	2*	10*	10*	5*	77
CSL 19540	SL-1	152-168	2	2*	10*	1*	0.20	2*	10*	10*	5*	120
CSL 19557	SL-1	184-196	2	2*	10*	1*	0,20*	2*	10*	10*	5*	120
CSL 19564	SL-1	200-214	2	2*	19	2	0.60	2*	10*	10*	5*	110
CSL 19572	SL-1	246.5-247.5	2	2	10*	6	0.80	2*	10*	10*	5*	98
CSL 19573	SL-1	264-266	4	2*	10*	1*	0.20*	2*	10*	10*	5*	140
CSL 19574	SL-1	272-275	2	2*	10*	1*	1.10	2*	10*	10*	5*	150
CSL 19575	SL-1	282-294	3	2*	11	1*	0.20	2*	10*	10*	5*	180
CSL 19582	SL-1	294-304	2	2*	10*	2	0.60	2*	10*	10*	5*	140
CSL 19593	SL-1	304-308	1*	2*	10*	2	0.30	2*	10*	10*	5*	66
CSL 19594	SL-1	331.9-337	1*	2*	10*	14	0.90	2*	10*	10*	5*	25
CSL 19595	SL-1	380.1-386	1*	2*	10*	3	0.40	2*	10*	10*	5*	17
CSL 19596	SL-1	404-410	2	2*	10*	2	1.20	2*	10*	10*	5*	84
CSL 19597	SL-1	484.8-492.5	1*	2*	10*	6	3.80	2*	10*	10*	5*	34
CSL 19598	SL-1	533-538	1	2*	18	2	0.50	2*	10*	10*	5*	18
CSL 19599	SL-1	546.7-550	2	2*	10*	6	1.80	2*	10*	10*	5*	38
CSL 19600	SL-1	553-558	1*	2*	10*	6	0.30	2*	10*	10*	5*	36
CSL 19601	SL-1	571-577.1	2	2*	10*	3	2.10	2*	10*	10*	5*	35
CSL 19602	SL-1	577.1-582.2	1*	2*	10*	1*	0.40	5	10*	10*	5*	17
CSL 19606	SL-1	622-628	1*	2*	10*	1*	0.20*	2*	10*	19	5*	10*
CSL 19607	SL-1	679-685.5	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	19
CSL 19608	SL-1	734-740	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	12
CSL 19609	SL-1	789-795	1*	2*	10*	5	0.50	9	10*	10*	5*	10*
CSL 19610	SL-1	812-818	1*	2*	10*	2	1.20	2*	10*	10*	5*	35
CSL 19611	SL-1	860-866	1*	2*	10*	72	7.20	3	10*	10*	5*	29
CSL 19612	SL-1	867.7-874	1*	2*	10*	18	2.30	2*	10*	10*	5*	21
CSL 19613	SL-1	904-910	1*	2*	10*	26	2.90	2*	10*	10*	5*	33
CSL 19614	SL-1	914-920	1*	2*	10*	34	2.40	2*	10*	10*	5*	25
CSL 19615	SL-1	930-936	1*	2*	10*	54	3.10	2*	10*	10*	5*	23
CSL 19616	SL-1	994-1000	1*	2*	10*	1*	0.40	2*	10*	10*	5*	12

* denotes the figure is less than the detection limit

Table 8
Analytical Results of Drill Hole SL-1

Sample #	Drill Hole#	Depth	ND PPM	SM PPM	EU PPM	YB PPM	LU PPM	TH PPM	U PPM	CD PPM	TB PPM	BE PPM
CSL 19525	SL-1	24-34		16.00	3	5*	0.70	1.40	0.80	10*	2	
CSL 19531	SL-1	39.5-63.4		2.60	2*	5*	0.50*	3.10	0.80	10*	1*	
CSL 19549	SL-1	74-76		14.00	2*	5	0.60	0.70	0.60	10*	2	
CSL 19534	SL-1	84-88		10.00	2	5*	0.50*	1.90	0.90	10*	2	
CSL 19535	SL-1	116-124		12.00	2*	5*	0.50*	2.80	1.20	10*	2	
CSL 19540	SL-1	152-168		14.00	3	5*	0.60	1.90	0.70	10*	2	
CSL 19557	SL-1	184-196		15.00	3	6	0.50*	3.40	0.90	10*	3	
CSL 19564	SL-1	200-214		15.00	3	6	0.80	2.20	0.80	10*	3	
CSL 19572	SL-1	246.5-247.5		12.00	2*	6	0.80	8.20	2.20	10*	3	
CSL 19573	SL-1	264-266		23.00	2*	9	1.20	1.30	0.70	10*	3	
CSL 19574	SL-1	272-275		16.00	2*	6	0.80	7.40	3.50	10*	2	
CSL 19575	SL-1	282-294		20.00	2	5	1.00	2.30	0.90	10*	4	
CSL 19582	SL-1	294-304		17.00	4	5	0.90	1.80	1.10	10*	3	
CSL 19593	SL-1	304-308		7.60	2*	5*	0.50*	1.40	0.50*	10*	1*	
CSL 19594	SL-1	331.9-337		2.90	2*	5*	0.50*	2.60	1.40	10*	1*	
CSL 19595	SL-1	380.1-386		2.60	2*	5*	0.50*	1.20	0.60	10*	1*	
CSL 19596	SL-1	404-410		9.20	2*	5*	0.50*	4.60	2.40	10*	2	
CSL 19597	SL-1	484.8-492.5		4.00	2*	5*	0.50*	1.60	0.50*	10*	1*	
CSL 19598	SL-1	533-538		4.00	2*	5*	0.50*	0.60	0.60	10*	1*	
CSL 19599	SL-1	546.7-550		5.20	2*	5*	0.50*	2.00	0.50*	10*	1	
CSL 19600	SL-1	553-558		2.70	2*	5*	0.50*	3.90	0.90	10*	1*	
CSL 19601	SL-1	571-577.1		5.60	2*	5*	0.50*	2.30	0.90	10*	1*	
CSL 19602	SL-1	577.1-582.2		3.20	2*	5*	0.50*	1.40	0.50*	10*	1*	
CSL 19606	SL-1	622-628		3.10	2*	5*	0.50*	1.20	0.50*	10*	1*	
CSL 19607	SL-1	679-685.5		2.50	2*	5*	0.50*	0.70	0.50*	10*	1*	
CSL 19608	SL-1	734-740		2.30	2*	5*	0.50*	0.50	0.50*	10*	1*	
CSL 19609	SL-1	789-795		2.60	2*	5*	0.50*	1.80	0.50	10*	1*	
CSL 19610	SL-1	812-818		3.60	2*	5*	0.50*	4.50	2.10	10*	1*	
CSL 19611	SL-1	860-866		2.90	2*	5*	0.50*	5.90	2.50	10*	1*	
CSL 19612	SL-1	867.7-874		2.20	2*	5*	0.50*	4.10	1.70	10*	1*	
CSL 19613	SL-1	904-910		4.50	2*	5*	0.50*	2.10	0.80	10*	1*	
CSL 19614	SL-1	914-920		4.10	2*	5*	0.50*	1.50	0.50*	10*	1*	
CSL 19615	SL-1	930-936		3.40	2*	5*	0.50*	4.10	1.30	10*	1*	
CSL 19616	SL-1	994-1000		2.00	2*	5*	0.50*	1.50	0.60	10*	1*	

* denotes the figure is less than the detection limit

Table 8
Analytical Results of Drill Hole SL-1

Sample #	Drill Hole#	Depth	B PPM	BE PPM	F PPM
CSL 19525	SL-1	24-34			1250
CSL 19531	SL-1	39.5-63.4			260
CSL 19549	SL-1	74-76			1250
CSL 19534	SL-1	84-88			620
CSL 19535	SL-1	116-124			840
CSL 19540	SL-1	152-160			1300
CSL 19557	SL-1	184-196			1100
CSL 19564	SL-1	208-214			1250
CSL 19572	SL-1	246.5-247.5			600
CSL 19573	SL-1	264-266			1050
CSL 19574	SL-1	272-275			840
CSL 19575	SL-1	282-294			900
CSL 19582	SL-1	294-304			680
CSL 19593	SL-1	304-308			430
CSL 19594	SL-1	331.9-337			230
CSL 19595	SL-1	380.1-386			230
CSL 19596	SL-1	404-410			840
CSL 19597	SL-1	484.8-492.5			360
CSL 19598	SL-1	533-538			270
CSL 19599	SL-1	546.7-550			300
CSL 19600	SL-1	553-558			800
CSL 19601	SL-1	571-577.1			210
CSL 19602	SL-1	577.1-582.2			180
CSL 19606	SL-1	622-628			160
CSL 19607	SL-1	679-685.5			125
CSL 19608	SL-1	734-740			95
CSL 19609	SL-1	789-795			230
CSL 19610	SL-1	812-818			270
CSL 19611	SL-1	860-866			360
CSL 19612	SL-1	867.7-874			200
CSL 19613	SL-1	904-910			280
CSL 19614	SL-1	914-920			310
CSL 19615	SL-1	930-936			280
CSL 19616	SL-1	994-1000			160

* denotes the figure is less than the detection limit

DRILL HOLE: SE-2

COUNTY: St. Louis

LOCATION: T57N, R12W, Sec. 33, NW¼-NE¼-NE¼

QUADRANGLE: Toimi 7½'

SURFACE ELEVATION: 1697' (topographic quad)

DEPTH TO BEDROCK: 99'

TOTAL DEPTH: 554'

DRILL HOLE INCLINATION: 67°

DRILL HOLE AZIMUTH: 90°

ACID TESTS:

Depth	Corrected Angle
99'	69°
545'	67°

CORE SIZES AND FOOTAGE INTERVALS:

NQ (1.875" diameter) 99'-554'

ADDITIONAL MATERIALS AVAILABLE FOR EXAMINATION:

Drill core, 11 overburden samples, thin sections, polished thin sections, and detailed graphic log.

SE-2 Area

During the previous biennium, the overburden was drilled, sampled, and cased for drill hole SE-2. The bedrock core drilling of this hole was completed in the current biennium.

The 1984-1985 Geodrilling Report (Sellner, et al. 1985) described the geophysical work preceeding the selection of this drill site. Drill holes SE-1, SE-2, and SE-3 were drilled along geophysical traverses adjacent to St. Louis County Highway 16 and Lake County Highway 15. These ground traverses included magnetics, very low frequency electromagnetics, horizontal loop electromagnetics, and Crone horizontal shootback electromagnetics. The groundwork was preceeded by second derivative enhancement of airborne magnetic surveys.

The drill sites, including SE-2, were selected to test indications of structures along these profiles as well as to provide lithologic samples. Geophysical data for this location is given in the 1984-1985 Geodrilling Report (Sellner, et al., 1985).

SUMMARY LOG OF DRILL HOLE SE-2
by E. Dahlberg

Note: Overburden was drilled and sampled in 1985. When core drilling was started in March 1986, hole was found to be blocked, so that hole had to be cemented, moved slightly and redrilled.

0'-99'	Overburden; 11 samples were collected to 115'.
99'-189.7'	Fine-grained spotted magnetite and olivine-bearing anorthosite grading into troctolitic anorthosite with magnetite aggregates or oikocrysts, grading locally up to 30% forming stringers. Plagioclase xenocrysts are dispersed. Intercalation of coarse-grained to pegmatoidal gabbroic and anorthositic patches with traces of chalcopyrite.
189.7'-241.5'	Fine-grained to medium-grained oxide-bearing olivine gabbro and troctolite with pegmatoidal and picritic intercalations.
241.5'-270'	Fine-grained spotted magnetite-bearing troctolite and olivine-bearing gabbro with anorthositic patches and pegmatoidal gabbroic intercalations with traces of chalcopyrite and bornite.
270'-328'	Fine-grained olivine-bearing gabbro with magnetite oikocrysts and pegmatoidal intercalations of gabbroic and anorthositic compositions. Lower 10' mainly pegmatoidal gabbro to anorthosite with fine-grained oxide-rich gabbro and troctolitic anorthosite intercalations.
328'-391.3'	Layered(?) fine-grained to medium-grained gabbro, troctolite and anorthosite with pyroxenite lenses. Zones with traces of chalcopyrite, pyrrhotite and pyrite and sections with alteration of Fe-Mg silicates and hematite staining.
391.3'-422'	Coarse-grained to pegmatoidal gabbro and anorthosite with picritic portions and traces of chalcopyrite, pyrrhotite and bornite.
422'-471'	Alternating medium-grained anorthosite, locally with picritic portions, gabbro to melagabbro, olivine-bearing gabbro and olivine gabbro. Intercalations of pegmatoidal anorthosite.
471'-554'	Medium-grained anorthosite and olivine gabbro with coarse-grained to pegmatoidal anorthosite intercalations shot(?) with partly serpentinized picrite. Locally traces of chalcopyrite, pyrrhotite and pyrite.
554'	Total Depth

Analytical results of drill hole SE-2 follow in Table 9.

Table 9
Analytical Results of Drill Hole SE-2

Sample #	Drill Hole#	Depth	B PPM	SE PPM	P PPM
CSL 17686	SE-2	120-125	10*	10	
CSL 17700	SE-2	169.7-170.3	10*	10*	
CSL 17687	SE-2	201-206	10*	10	
CSL 17688	SE-2	218-227	10*	10*	
CSL 17692	SE-2	327-332	10*	10*	
CSL 17693	SE-2	391.3-396.3	10*	10*	
CSL 17696	SE-2	460-470	10*	10*	
CSL 17697	SE-2	509.7-513.6	10*	10*	

* denotes the figure is less than the detection limit

Table 9
Analytical Results of Drill Hole SE-2

Sample #	Drill Hole#	Depth	ND PPM	SM PPM	EU PPM	YB PPM	LU PPM	TH PPM	U PPM	CD PPM	TB PPM	BE PPM
CSL 17686	SE-2	120-125	10*	0.80	0.80	0.50	0.20*	0.50*	0.60*			3
CSL 17700	SE-2	169.7-170.3	10*	0.80	0.70	0.50	0.20*	0.50*	0.50*			4
CSL 17687	SE-2	201-206	10*	1.00	0.60	0.60	0.20*	0.50*	0.50*			4
CSL 17688	SE-2	218-227	10*	0.90	0.70	0.60	0.20*	0.50*	0.50*			5
CSL 17692	SE-2	327-332	10*	1.00	0.70	0.90	0.20*	0.50*	0.50*			4
CSL 17693	SE-2	391.3-396.3	10	3.70	1.80	1.60	0.30	1.50	0.50*			4
CSL 17696	SE-2	460-470	10*	0.60	0.90	0.50	0.20*	0.50*	0.60			3
CSL 17697	SE-2	509.7-513.6	10*	1.30	0.80	0.70	0.20*	0.50*	0.50*			3

* denotes the figure is less than the detection limit

Table 9
Analytical Results of Drill Hole SE-2

Sample #	Drill Hole#	Depth	TA PPM	W PPM	SN PPM	AS PPM	SB PPM	BI PPM	SE PPM	TE PPM	BR PPM	CE PPM
CSL 17686	SE-2	120-125	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	5*
CSL 17700	SE-2	169.7-170.3	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	5*
CSL 17687	SE-2	201-206	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	5*
CSL 17688	SE-2	210-227	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	7
CSL 17692	SE-2	327-332	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	6
CSL 17693	SE-2	391.3-396.3	1*	2*	10*	1	0.20*	2*	10*	10*	5*	27
CSL 17696	SE-2	460-470	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	6
CSL 17697	SE-2	509.7-513.6	1*	2*	10*	1*	0.20*	2*	10*	10*	5*	10

* denotes the figure is less than the detection limit

Table 9
Analytical Results of Drill Hole SE-2

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	BA PPM	SC PPM	Y PPM	LA PPM	ZR PPM	HF PPM	NB PPM
CSL 17686	SE-2	120-125	6	2*	270	90	16.40	6	5*	34	2*	2
CSL 17700	SE-2	169.7-170.3	6	2*	200	80	22.20	6	5*	34	2*	4
CSL 17687	SE-2	201-206	4	2*	190	60	41.60	6	5*	32	2*	2
CSL 17688	SE-2	218-227	8	2*	190	50	25.70	4	5*	38	2*	4
CSL 17692	SE-2	327-332	6	2*	210	50	31.80	4	5*	32	2*	2
CSL 17693	SE-2	391.3-396.3	12	2*	160	70	12.20	8	15	40	3	2
CSL 17696	SE-2	460-470	6	2*	220	80	15.60	2	5*	34	2*	2
CSL 17697	SE-2	509.7-513.6	12	2*	280	100	8.90	10	5	60	2*	4

* denotes the figure is less than the detection limit

Table 9
Analytical Results of Drill Hole SE-2

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	PB PPM	MO PPM	PT PPB	PD PPB	IR PPB	AU PPB	AG PPM
CSL 17686	SE-2	120-125	30	210	200*	8	2*	10*	4	100*	5*	5*
CSL 17700	SE-2	169.7-170.3	50	240	200	5*	2*	40	17	100*	12	5*
CSL 17687	SE-2	201-206	50	440	200	7	2*	10	15	100*	5*	5*
CSL 17688	SE-2	218-227	80	300	200*	7	2*	10*	18	100*	5*	5*
CSL 17692	SE-2	327-332	50	460	200	7	2*	10	8	100*	5	5*
CSL 17693	SE-2	391.3-396.3	30	210	200*	10	2*	10*	6	100*	5*	5*
CSL 17696	SE-2	460-470	60	120	200*	5*	2*	10	7	100*	5*	5*
CSL 17697	SE-2	509.7-513.6	30	93	200*	5*	2*	10	4	100*	5*	5*

* denotes the figure is less than the detection limit

Table 9
Analytical Results of Drill Hole SE-2

Sample #	Drill Hole#	Depth	P2O5 %	MNO %	CO2 %	LOI %	S %	CL PPM	F PPM	CU PPM	NI PPM	CR PPM
CSL 17686	SE-2	120-125	0.03	0.08	0.16	0.16	NIL	50*	30	270	170*	230
CSL 17700	SE-2	169.7-170.3	0.04	0.16	0.11	0.00	0.24	50*	10	2800	140*	270
CSL 17687	SE-2	201-206	0.02	0.16	0.15	0.00	NIL	50*	50	180	160*	360
CSL 17688	SE-2	218-227	0.04	0.22	0.13	0.38*	NIL	50*	40	130	150*	290
CSL 17692	SE-2	327-332	0.03	0.15	0.18	0.08	NIL	50*	50	100	120*	280
CSL 17693	SE-2	391.3-396.3	0.04	0.21	0.04	1.08	NIL	300	60	160	140*	180
CSL 17696	SE-2	460-470	0.03	0.15	0.01*	0.00	NIL	50*	40	120	140*	280
CSL 17697	SE-2	509.7-513.6	0.06	0.09	0.05	0.23	NIL	50*	50	120	150*	100

* denotes the figure is less than the detection limit

Table 9
Analytical Results of Drill Hole SE-2

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CSL 17686	SE-2	120-125	47.20	23.10	8.44	6.20	3.46	11.90	2.93	2.40	0.32	1.39
CSL 17700	SE-2	169.7-170.3	44.80	16.90	14.30	8.60	8.68	9.99	2.07	1.50	0.22	1.43
CSL 17687	SE-2	201-206	47.50	15.40	12.30	7.60	7.96	12.30	2.22	1.50	0.17	1.16
CSL 17688	SE-2	218-227	45.40	14.00	17.20	11.10	11.60	9.02	1.94	1.50	0.17	0.96
CSL 17692	SE-2	327-332	45.40	16.30	13.90	9.00	6.70	12.30	2.12	1.60	0.18	1.74
CSL 17693	SE-2	391.3-396.3	45.40	13.00	15.70	6.20	12.20	9.32	1.63	1.90	0.30	0.80
CSL 17696	SE-2	460-470	46.70	18.40	11.90	7.40	9.22	10.10	2.33	1.70	0.19	0.46
CSL 17697	SE-2	509.7-513.6	49.40	23.40	7.09	4.40	4.33	11.30	3.11	2.10	0.35	0.61

* denotes the figure is less than the detection limit

1984-1985 GEODRILLING REPORT SUPPLEMENT

During the 1984-1985 biennium, two drill holes (SE-3 and NE-1) were not analyzed. They were, however, analyzed this biennium and the results are listed in Tables 10 and 11, respectively. SE-3 is located at T57N, R11W, Sec. 25, SE¼-SW¼; and NE-1 is located at T60N, R11W, Sec. 18, NE¼-NE¼.

Table 10
Analytical Results of Drill Hole SE-3

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CL 16027 (COMP.28-33	SE-3	242-254.0	47.50	16.70	13.90	--	5.61	9.01	2.72	--	0.89	2.47
CL 16034 (COMP.35-40	SE-3	289-301.0	46.40	17.80	13.60	--	4.96	9.55	2.72	--	0.93	2.54
CL 16041 (COMP.42-44	SE-3	315-321.0	46.40	17.20	14.60	--	4.91	9.44	2.73	--	0.96	2.93

* denotes the figure is less than the detection limit

Table 10
Analytical Results of Drill Hole SE-3

Sample #	Drill Hole#	Depth	P205 %	MNO %	CO2 %	LOI %	S %	CL PPM	F PPM	CU PPM	NI PPM	CR PPM
CL 16027 (COMP.28-33	SE-3	242-254.0		0.17	0.03	0.70	0.04	100	400	220	310*	160
CL 16034 (COMP.35-40	SE-3	289-301.0		0.16	0.01	1.16	0.05	150	600	310	310*	150
CL 16041 (COMP.42-44	SE-3	315-321.0		0.17	0.01	0.70	0.05	200	550	260	330*	150

* denotes the figure is less than the detection limit

Table 10
Analytical Results of Drill Hole SE-3

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	PB PPM	MO PPM	PT PPB	PD PPB	IR PPB	AU PPB	AG PPM
CL 16027 (COMP.28-33	SE-3	242-254.0	47	300	100*	6	6	6	4	50*	8	2*
CL 16034 (COMP.35-40	SE-3	289-301.0	39	270	200	5*	34	5*	2*	50*	8*	2*
CL 16041 (COMP.42-44	SE-3	315-321.0	41	310	100	5*	5	5*	2*	50*	6	2*

* denotes the figure is less than the detection limit

Table 10
Analytical Results of Drill Hole SE-3

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	BA PPM	SC PPM	Y PPM	LA PPM	ZR PPM	HF PPM	NB PPM
CL 16027 (COMP.28-33	SE-3	242-254.0	30	2.00	220	360	21.80	36	20	170	4	16
CL 16034 (COMP.35-40	SE-3	289-301.0	34	1.50*	250	350	19.00	36	22	180	4	18
CL 16041 (COMP.42-44	SE-3	315-321.0	30	2.00	230	370	21.70	38	23	190	4	18

* denotes the figure is less than the detection limit

Table 10

Analytical Results of Drill Hole SE-3

Sample #	Drill Hole#	Depth	TA PPM	W PPM	SN PPM	AS PPM	SB PPM	BI PPM	SE PPM	TE PPM	BR PPM	CE PPM
CL 16027 (COMP.28-33	SE-3	242-254.0	.5*	2*	10*	1.40	0.30	2*	5*	10*	1*	47
CL 16034 (COMP.35-40	SE-3	289-301.0	2.2*	2*	10*	2.40	0.30	2*	5*	10*	1*	58
CL 16041 (COMP.42-44	SE-3	315-321.0	2.2*	2*	10*	1.00	0.20*	2*	5*	10*	1*	53

* denotes the figure is less than the detection limit

Table 10
Analytical Results of Drill Hole SE-3

Sample #	Drill Hole#	Depth	ND PPM	SM PPM	EU PPM	YB PPM	LU PPM	TH PPM	U PPM	CO PPM	TB PPM	BE PPM
CL 16027 (COMP.28-33	SE-3	242-254.0	19	6.8	1.5	2.7	.43	2.8	0.70*	1*		3
CL 16034 (COMP.35-40	SE-3	289-301.0	23	7.3	1.5	2.9	.48	3.9	1.50	1*		3
CL 16041 (COMP.42-44	SE-3	315-321.0	28	8.1	1.6	3.2	.50	3.9	1.40	1*		4

* denotes the figure is less than the detection limit

Table 10
Analytical Results of Drill Hole SE-3

Sample #	Drill Hole#	Depth	B PPM	GE PPM	P PPM
CL 16027 (COMP.28-33	SE-3	242-254.0	10*	10	1400
CL 16034 (COMP.35-40	SE-3	289-301.0	10*	10*	1700
CL 16041 (COMP.42-44	SE-3	315-321.0	10*	10*	1800

* denotes the figure is less than the detection limit

Table 11

Analytical Results of Drill Hole NE-1

Sample #	Drill Hole#	Depth	SIO2 %	AL2O3 %	FE2O3 %	FE %	MGO %	CAO %	NA2O %	NA %	K2O %	TIO2 %
CL 14161	NE-1	59.7-62.7	47.90	22.70	9.14	--	5.65	9.65	3.28	--	0.29	0.82
CL 14162	NE-1	188.9-191.9	48.60	23.30	8.44	--	5.27	9.93	3.40	--	0.29	0.72
CL 14163	NE-1	207.6-210.6	51.50	27.20	3.39	--	1.02	11.50	4.13	--	0.40	0.68
CL 14164	NE-1	257.5-260.7	48.30	22.80	9.01	--	5.63	9.72	3.38	--	0.28	0.77
CL 14165	NE-1	312-315.0	48.50	23.10	8.60	--	5.55	9.87	3.41	--	0.30	0.65
CL 14166	NE-1	327.8-330.8	51.80	27.60	2.47	1.70	1.22	11.80	4.11	2.90	0.37	0.35
CSL 14026	NE/FHL-1	345-355	41.70	17.40	17.10	--	7.59	7.29	2.30	--	0.51	5.16

* denotes the figure is less than the detection limit

Table 11
Analytical Results of Drill Hole NE-1

Sample #	Drill Hole#	Depth	P2O5 %	MNO %	CO2 %	LOI %	S %	CL PPM	F PPM	CU PPM	NI PPM	CR PPM
CL 14161	NE-1	59.7-62.7		0.08	0.13	0.31	NIL	100*	50	15	260*	210
CL 14162	NE-1	188.9-191.9		0.08	0.08	0.23	NIL	100*	20	15	260*	270
CL 14163	NE-1	207.6-210.6		0.04	0.05	0.39	NIL	100*	20*	36	260*	110
CL 14164	NE-1	257.5-260.7		0.09	0.07	0.31	NIL	100*	20*	16	240*	230
CL 14165	NE-1	312-315.0		0.08	0.10	0.00	NIL	100*	40	15	260*	240
CL 14166	NE-1	327.8-330.8		0.03	0.03	0.31	NIL	100*	20	18	260*	60
CSL 14026	NE/FHL-1	345-355		0.14	0.03	0.16	0.67	100*	70	1500	370	120

* denotes the figure is less than the detection limit

Table 11
Analytical Results of Drill Hole NE-1

Sample #	Drill Hole#	Depth	CO PPM	V PPM	ZN PPM	MO PPM	LA PPM	Pd PPB	IR PPB	AU PPB	AG PPB	BA PPM
CL 14161	NE-1	59.7-62.7	49	310	100*	2*	2	2*	50*	2*	2*	130
CL 14162	NE-1	188.9-191.9	39	320	100*	1*	2	3	50*	6*	2*	130
CL 14163	NE-1	207.6-210.6	11	170	100*	2*	4	2	50*	6*	2*	150
CL 14164	NE-1	257.5-260.7	38	310	100*	3*	2	2	50*	6*	2*	160
CL 14165	NE-1	312-315.0	36	210	100*	2*	2	2	50*	6*	2*	150
CL 14166	NE-1	327.8-330.8	9	57	100*	2*	2	2	50*	6*	2*	110
CSL 14026	NE/FHL-1	345-355	96	430	100	2*	7	16	50*	10	2*	350

* denotes the figure is less than the detection limit

Table 11
Analytical Results of Drill Hole NE-1

Sample #	Drill Hole#	Depth	RB PPM	CS PPM	SR PPM	EU PPM	SC PPM	Y PPM	YB PPM	ZR PPM	BI PPM	NB PPM
CL 14161	NE-1	59.7-62.7	8	1.20*	340	0.80	3.00	2*	0.20*	22	2*	4
CL 14162	NE-1	188.9-191.9	8	1.20*	360	0.60*	2.70	2*	0.20*	24	2*	4
CL 14163	NE-1	207.6-210.6	10	1.20*	450	0.70*	2.80	4	0.40	40	2*	6
CL 14164	NE-1	257.5-260.7	8	1.20*	350	0.90	2.80	2*	0.20	22	2*	4
CL 14165	NE-1	312-315.0	8	1.20*	360	0.70*	2.80	2*	0.20*	24	2*	4
CL 14166	NE-1	327.8-330.8	8	1.20*	460	1.00	1.60	2	0.20*	26	2*	4
CSL 14026	NE/FHL-1	345-355	14	1.30*	230	1.00	12.50	4	0.90	74	2*	12

* denotes the figure is less than the detection limit

Table 11
Analytical Results of Drill Hole NE-1

Sample #	Drill Hole#	Depth	TH PPM	CE PPM	SN PPM	AS PPM	SB PPM	SE PPM	TE PPM	BR PPM	LU PPM	HF PPM
CL 14161	NE-1	59.7-62.7	0.40*	3*	10*	0.60*	0.10*	5*	10*	1*	0.05*	1*
CL 14162	NE-1	188.9-191.9	0.40*	3	10*	0.50*	0.10*	5*	10*	1*	0.05*	1*
CL 14163	NE-1	207.6-210.6	0.40*	8	10*	1.00	0.10	5*	10*	1*	0.05*	1
CL 14164	NE-1	257.5-260.7	0.40*	4	10*	0.50*	0.10*	5*	10*	1*	0.05*	1*
CL 14165	NE-1	312-315.0	0.40*	5	10*	0.60*	0.10*	5*	10*	1*	0.05*	1*
CL 14166	NE-1	327.8-330.8	0.40*	3*	10*	0.60*	0.10	5*	10*	1*	0.05*	1*
CSL 14026	NE/FHL-1	345-355	0.70	16	10*	1.40	0.10*	5*	10*	1*	0.14	1

* denotes the figure is less than the detection limit

Table 11
Analytical Results of Drill Hole NE-1

Sample #	Drill Hole#	Depth	TA PPM	W PPM	PT PPM	PB PPM	ND PPM	CD PPM	U PPM	BE PPM	B PPM	SM PPM
CL 14161	NE-1	59.7-62.7	2.00*	2*	10*	5*	5*	1*	0.50*	2	10*	0.3
CL 14162	NE-1	188.9-191.9	0.50*	2*	10	5*	5*	1*	0.50*	2	10*	0.3
CL 14163	NE-1	207.6-210.6	2.20*	2*	10*	5*	5*	1*	0.70*	1*	10*	1.0
CL 14164	NE-1	257.5-260.7	2.00*	2*	10	5*	5*	1*	0.50*	2	10*	0.3
CL 14165	NE-1	312-315.0	2.00*	2*	10	5*	5*	1*	0.70*	4	10*	0.3
CL 14166	NE-1	327.8-330.8	2.20*	2*	10	5*	5*	1*	0.70*	1*	10*	0.5
CSL 14026	NE/FHL-1	345-355	1.70*	2*	10*	8	5*	1*	0.50*	3	10*	1.9

* denotes the figure is less than the detection limit

Table 11
Analytical Results of Drill Hole NE-1

Sample #	Drill Hole#	Depth	P PPM	GE PPM
CL 14161	NE-1	59.7-62.7	150	10
CL 14162	NE-1	188.9-191.9	170	10*
CL 14163	NE-1	207.6-210.6	290	10
CL 14164	NE-1	257.5-260.7	160	10*
CL 14165	NE-1	312-315.0	150	10
CL 14166	NE-1	327.8-330.8	150	10*
CSL 14026	NE/FHL-1	345-355	520	10*

* denotes the figure is less than the detection limit

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