GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORTS

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ASSESSMENT REPORT

ON THE

BT 1-11 CLAIMS

CARIBOO

~~PRINCE GEORGE~~ MINING DIVISION BRITISH COLUMBIA

LAT 54° 03′ N LONG 121° 36′ W

N.T.S. 93 I 4

FOR

26BT RESOURCE DEVELOPMENT CO. LTD.

BY

S. JAIN, P. GEOPH (ALBERTA), P. GEO. (B.C.)

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September 25, 1995 **Calgary, Alberta**

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SUDHIR JAIN received M.Tech. in Exploration Geophysics from Indian Institute of Technology and Ph.D. in Geophysics from University of Liverpool. After working for twelve years for Mobil and sundry service companies in U.K., Libya, U.S.A., and Canada, Dr. Jain set up Commonwealth Geophysical, a service company for oil and mineral exploration in 1976. He developed innovative interpretation techniques for geophysical data which quickly became industry standards. He published over 40 papers and was honoured by European and Canadian professional societies.

During the last 22 years, Dr. Jain has explored for numerous companies in Canada and overseas as well as in Madagascar and Southeastern Alberta on his own account. He is also associated with ore exploration in British Columbia and diamond exploration in Saskatchewan. He is a registered Geoscientist in British Columbia and a member of Association of Professional Engineers, Geologists and Geophysicists of Alberta, Society of Exploration Geophysicists (USA), Canadian Society of Exploration Geophysicists, Canadian Society of Petroleum Geologists and European Association of Geoscientists and Engineers.

LORNE KELSCH graduated with B.Sc. from University of Manitoba in 1952 after working on seismic data acquisitions, processing and interpretation for 22 years with Petty Ray Geophysical. Me. Kelsch moved to PanCanadian where he work in various capacities including Chief Geophysicist till 1995.

Mr. Kelsch is a professional member of Association of Professional Engineers, Geologists and Geophysicists of Alberta, Canadian Society of Exploration Geophysicists and Canadian Society of Petroleum Geologists.

CONTENTS

INTRODUCTION

Claim Data

The B.T. Properties are presently held in the name of 26BT Resource Development Co. Ltd. They were originally staked by Brendan A. Gordon on behalf of Malcolm T. MacDonald, one of the principals of the Company.

Claim Name	Tenure Number	Anniversary Date
B.T. 1-4	313837-313840	October 8, 1993
B.T. 5,6	313845-313846	October 8, 1993

These were then sold to the company.

B.T. 7, 8, 9, 10 and 11 were acquired on behalf of the company in 1993. Details are as follows:

B.T. 8-10	323096-323098	December 21, 1994
B.T. 7,11	323202-323203	December 29, 1994

The total area of claim is approximately 51 sq. km.

Location & Access

The property lies north of the Fraser River and south of the West Torphy River. The centre of the claims is about 6 kilometres N.N.E. of Sinclair Mills (Figure 1). Access to the claims is by old logging roads. The claims lie between the elevation of 700 meters and 1690 meters in generally rugged terrain. Devil's club and windfall trees make the claims difficult to traverse.

History

Two of the principals of the company entered the area north and east of MacGregor in 1989. This was based on projections of the trends seen in the configuration of the North American Continental mass as demonstrated by Government gravity and magnetic maps. Later, while studying reports and maps in the Provincial offices in Prince George, the magnetic feature shown on Aeromagnetic Map 1536 G of the Geophysics Division of Mines and Technical Surveys (Figure 2) was noted. Subsequent sampling along Creeks Crossing the old logging road north of Sinclair Mills yielded unusually high amounts of magnetite. The decision to stake the area at the north west end of Bearpaw Ridge was then made and carried out in 1992. An aeromagnetic survey was flown, processed and interpreted in 1993. As a result of this survey, additional areas surrounding the claims were staked. 9 holes were drilled to the depth of 100′ on the claims in October 1994. The chemical analysis from the cores showed that Fe_20_3 content averaged between 10 - 20% in the holes and reached up to 35% in some zones. The magnetic separation in 20 samples from two of the holes showed that in samples with high Fe_2O_3 content (greater than 10%), magnetite is more than 75% of total Fe_2O_3 percentage.

Three holes were drilled to the depths of 300′ in June 1995. Two of the holes confirmed the presence of magnetite in a variable amount to at least 300′. The third hole was mislocated and missed the anomaly. This hole does not appear to have any commercial significance.

Geology

Following summary of known geology of Bearpaw ridge closely follows the report by Pell (1994). The area is mapped as Silurian volcaniclastics, felsic and intermediate tuffs, agglomerates of Nonda formation over the ridge, foliated hornblende gneiss on the western slope and coarse grained massive pink syenites in the southwest (Figure 3). Pell notes sodalite syenite outcrop and two flanking syenite sills in southeast portion of the claim area which intrude the volcaniclastics whose southeastern extent is not defined. These volcaniclastics "largely comprise clinopyroxene crystal tuffs, calcareous tuffs and minor basaltic flows. Flow rocks contain clinopyroxene phenocrysts and altered phenocrysts (now chlorite) in a ground mass of opaque oxides, plagioclase and clinopyroxene microphenocrysts and chlorite". These may be classified as alkali basalts. Folded and foliated dioritic orthogneiss vary from a banded gneiss containing 5 - 10% magnetite-ilmenite to a mafic gneiss with 15 - 20% magnetite-ilmenite. Chemical analyses indicates Fe_2O_3 content of 6.9 and 14.5% in two volcanic samples and 1.5, 7 and 11.2% in three samples from mafic gneiss. Corresponding TiO_2 content is .59 and 2.06% in volcanics and .27, .80 and 2.01% in mafic gneisses.

Kelsch in an appendix to Kelsch and Jain (1994) reported that the accessible part of the terrain is generally covered by a thin layer of soil. The vegetation is thick. Devil's club and mosquitoes are plentiful and they make the work quite difficult. In spite of these problems, he obtained several surface samples. The majority of these samples were from glacial erratics which had not moved very far from their original location. The magnetic susceptibility of these samples ranged from .001 to .250 emu. Two of the samples were analyzed chemically by Terramin Research Labs Ltd (Table 1). The analysis showed 22 and 25% Iron Oxide and 4.34 and 5% Titanium Oxide in these samples. These figures support more work on the prospect to define concentrations of magnetite and ilmenite which may have economic interest.

The magnetic data acquired by 26BT strongly suggest a magnetite rich intrusive of elliptical shape on the ridge. This is confirmed by the mineralogical analysis of samples from two holes drilled in October, 1994 which consist of highly mafic Diorite containing minerals indicative of contact zones. Pell (1994) does not mention this intrusive. Incidentally, the sodalite body mapped by Pell was not encountered in hole 95-3.

Geophysics

26BT engaged Geonex Aerodat to conduct an aeromagnetic and electromagnetic survey over a 12 km X 13 km area including the company's claims. The data were acquired in February, 1993 by a helicopter with mean terrain clearance of 100 m for helicopter and 70 m for sensing equipment. The survey comprises 321 line kilometres, with east-west traverse lines spaced 500 m apart and two north-south tie lines. In addition to the total field map with variable contour interval, Geonex also supplied maps for vertical gradient of the magnetic field and VLF-EM total field. The VLF-EM map is relatively quiet and indicates general absence of sulphide ores in the area. The vertical gradient measurements did not provide meaningful data probably because magnetic anomalies were very strong and very sharp. Therefore, the interpretation reported here is based mainly on magnetic total field. The details of acquisition and preliminary processing are contained in the report submitted by Geonex and included in Kelsch, and Jain (1993).

Geonex had difficulties in positioning of the data. Final data was received in November 1993. Jeff Thurston, M.Sc., of Commonwealth Geophysical Development Company, Ltd. did the processing and interpretation in late November, 1993.

Processing

The interpretation processing included the following steps:

1. Plot all flight lines on the map to check data tape, and for a base for profile interpretation (Figure 4).

2. Source inversion for all profiles using a Werner-deconvolution-based program **MAGDEP**. To estimate sources at various depth levels, data were interpreted with window length 135, 225, 435, 675, 1170, 2325, 3465, and 5985 m. Sources located within 100 m intervals were grouped together. Werner deconvolution and **MAGDEP** are described in detail by Jain (1976).

3. Grid and plot the total-magnetic field at a fixed contour interval of 100 NT. The map shows a major high (magnitude up to 4500 NT) accompanied by a major low of 1500 NT to the north (Figure 5).

4. Plot the total-magnetic field reduced to the pole (RTP) to minimize the bipolarity of the magnetic field and to locate the anomalies vertically above their sources. This was done after removal of the International Geomagnetic Reference field (IGRF) model (Figure 6).

5. Plot radar altimeter map to show deviation from desired terrain clearance and to estimate the probable effect of these deviations on the total field. The map shows significant deviations in terrain clearance but they do not correspond to any magnetic anomalies. In any event, the most serious deviations are noted in quiet magnetic areas (Figure 7).

6. Plot ground elevation map computed by subtracting radar elevation from barometric elevation, to check for location errors. Final map shows no measurable location errors (Figure 8).

The tie lines are not properly levelled. Therefore, the magnetic data is based on traverse lines alone. The data are dominated by wavelengths shorter than the spacing between flight lines, and a meaningful second derivative map could not be obtained.

Interpretation

The total-magnetic field map is dominated by an elliptical high oriented in the NW - SE direction and its companion low to the north. The total magnitude of the anomaly from peak to trough is 5,700 NT. There are local anomalies with relative amplitudes of 1000 NT , and less than 500 m in aerial extent.

The total magnetic field has an inclination of 72 degrees and declination of 20 degrees east. For these parameters, the observed total field is bipolar and each source is represented by a high along the southern edge and a low along the northern edge. The reduction of magnetic field to the north pole (Figure 6) locates the anomaly vertically above the sources. The positive anomaly in Figure 6 is displaced to the north of its location in total field (Figure 5) and the negative rim is substantially reduced. The negative rim around strong anomalies after reduction to the pole suggest relatively thin sources and sharpness of anomalies indicate them to be close to the surface. **MAGDEP** (Jain, 1976) profiles identify the lateral and vertical location of the sources as well as the susceptibility contrast. As indicated earlier, the profiles show positive anomalies as high as 1,000 NT with wavelength of the order of 250 - 500 m. These anomalies are from highly susceptible sources (susceptibility contrast up to 1 emu) and located on or very close to the ground surface. The depth estimates range from 0 - 300 m below the surface. However, the depth estimates are not entirely accurate because no allowance has been made for the flight level not being horizontal and of the sources finite thickness of the sources.

MAGDEP2D is the modification of **MAGDEP** for the gridded data and works on interpolated profiles in the same way as described in the paper on **MAGDEP** referenced above. The profiles are interpolated for each major anomaly in a direction perpendicular to the strike and interpreted. The source bodies are outlined quite well by the horizontal gradient (Figure 9). The depth estimates range from 200 m - 300 m below the surface and may be inaccurate for the same reasons as the depths estimated in **MAGDEP.** Note that there is a probable extension of the magnetic body to the southwest but the susceptibility is less than the main anomaly. A close examination of the maps and the profiles shows four major bodies which are on or very close to the surface and are very highly magnetic. The interpretation overlay (Figure 10) shows the location of these bodies and identifies places where samples must be collected to establish the source of magnetism. Two of the marked places are identified for deep test because magnetic field is low at these points. It is of some importance to know if the low is due to lower susceptibility or thicker overburden.

Drilling subsequent to the interpretation has established that local variations in magnetite concentration are the main source of local magnetic anomalies.

Modelling

The anomalies were computed for numerous hypothetical two and three dimensional sources. The best fit with the major anomaly was obtained by a trapezoidal rectangular prism oriented in NW - SE direction, 5 km X 3.5 km at the bottom (140 m below surface) and 2 km X 2 km at the top (surface). Susceptibility contrast of this prism from surrounding medium is .05 emu. On the other hand, a prism of the same lateral size but only 45 m thick will cause the same anomaly if susceptibility increases progressively from .025 emu on the edge to 0.175 emu in the centre. In addition, either body needs small sources of high susceptibility contrast to explain high frequency anomalies superimposed on the main anomaly.

An anomaly of 1,000 NT over 500 m (as observed on many profiles) can be caused by a 250 X 250 m ore body located with its top surface 200 m below the flight plane and thickness of 3 m to 30 m for susceptibility range of .5 to .05 emu. To obtain a crude reserve estimate, consider that an ore body with 10 percent magnetite content (density of 5 gms/cc), with an area of one square kilometre and an average thickness of one meter contains .5 million tons of magnetite. Four main ore bodies on this prospect have an area of 19, 3, 3 and 1 sq kms, and probably contain 13 million tons per meter thickness. For a susceptibility of .2 emu, the ore bodies are at least 30 m thick and contain probable reserve of 390 million tons.

Correlation of Geology and Geophysics

As discussed earlier, Pell (1994) has noted varying amount of magnetite-ilmenite in hornblende gneiss in the west as well as volcaniclastics on top of the ridge. A comparison of magnetic anomaly map with geology shown in Figure 3 establishes that western anomaly is due to magnetite ilmenite concentration in altered mafic gneiss although the concentration is likely to be greater than that suggested by Pell. The main magnetic anomaly is due to an elliptic intrusive oriented in NW - SE direction with magnetite concentration near the surface. High-frequency anomalies are caused by variations in magnetite concentrations. Higher magnitude of the anomalies strongly suggests that the concentration of magnetite is greater than elsewhere in the area. Two smaller anomalies in the south may be due to either the magnetite-ilmenite concentrations in volcaniclastics or small offshoots of the main intrusive body with lesser magnetite concentration.

DRILLING

9 holes were drilled to a depth of 30.46 m (100 ft) in October 1994 and 3 holes to the depth of 91.38 m (300 ft) in June 1995. All holes were cored in hard rock. Location of the holes is shown in Figure 11. Core diameter was 43 mm (1 ¾"). Hole 7 did not hit the hard rock till it reached the bottom. Susceptibility was measured at 1 ft intervals on the cores and analyzed for the magnetite content. Two boulder specimens were also collected and later analyzed. The holes were drilled to determine the source of magnetic anomaly and not for details of local geology. Core logs are included with this report. No obvious metals have been noted in the cores. Appendix 1 gives details of the drilling logistics.

CHEMICAL AND MINERALOGICAL ANALYSIS OF CORES

114 samples were selected from eleven cores to include a wide variety of susceptibility and core type (grain-size, colour, rock type) and two from boulders picked up on the site. Magnetic susceptibility of the samples was measured several times and the average recorded.

The samples were chemically analyzed by Terramin Research Labs of Calgary in December, 1994 and August, 1995. The results of their analyses are reported in Table 2 which also lists measured susceptibility. The sample number identifies the hole and depth of sample in feet.

Chemical analysis shows consistent level of 40 - 50% silica, 12 - 20% Al_2O_3, 10 - 12% CaO, 3 - 6% MgO, 2% Na_2O, 0.2 - 0.5% K_2O and 0.1 - 0.3% MnO. Two samples analyzed for Vanadium gave values of 430 and 450 ppm. Fe_2O_3 content varied from 5% to 36% and TiO_2 content from 1% to 7%. Two of the three low susceptibility samples from deep holes showed zinc content of approximately .01% and one of the samples showed Barium of .12% (Appendix 5). In future analyses, these elements will be analyzed in low-susceptibility zones. So far, the analyses shows that Iron and Titanium are main metals of economic interest in the area represented by the cores. Therefore, the following analysis was restricted to these two metals.

MINERALOGICAL ANALYSIS

20 samples from holes BT 4 and BT 5 were analyzed for mineral content by Pilsum Master, P.Geol. (Appendix 2). He identified the rocks tentatively as Diorites (more than 50% mafic) from the contact zone. The minerals are sodic feldspar and plagioclase, diopsidic pyroxene and wollastonite. A major component is magnetite and sufficient titanium is present to indicate the presence of ilmenite. The presence of contact zone minerals is noted. Since both holes are located on slope of the magnetic anomaly, this analysis is consistent with a Diorite or Syenite intrusive being the source of this anomaly. We are not aware of any mention of this intrusive in published literature.

Norm calculations by CIPW method conducted by Master Mineral Resource Services Ltd. for five samples (Appendix 2) shows approximately equal weight distribution in Rutile and Ilmenite in samples with high magnetite concentration. Ilmenite norm is calculated as 4.6% by weight.

Iron minerals are magnetite and Diopside. The norm in magnetite samples varies from 27 - 38% for Diopside and 18 - 38% for magnetite. Magnetite content is only slightly smaller than Fe_2O_3 in chemical analysis.

The magnetic separation of 10 gm samples from holes 94-4 and 94-5 by handheld magnet yielded approximately half of that expected from CIPW norms (Appendix 3). This is not unusual since the norms are useful in a relative sense only. The separates confirm approximately even distribution of Titanium in Rutile and Ilmenite indicated by CIPW norms (Table 3). This table shows that upto 10% Fe is present in Magnetite form. Ore grade magnetite can be recovered by first separating magnetic material from plagioclase and Diopsides and then separating ilmenite and magnetite in the magnetic separates.

The magnetic separation in 46 samples from deep holes was done after placing the ground sample in water. The analysis (Appendix 4) shows Iron content of upto 65% (Magnetite 91%) in magnetic separates and 20% (28% magnetite) in core sample. The magnetic iron content is about 50 - 70% of total iron in samples, rest probably in Pyroxenes. Probably, a better Ti magnetite separation method will yield higher magnetite content. Titanium content of magnetic separate ranges from 3.2 - 7% which is equivalent to TiO_2 being 0.2 - 2.8% of the sample. This shows that non magnetic TiO_2 (Rutile?) is two to five times of magnetic TiO_2 (Ilmenite). Small TiO_2 in magnetic separates indicates that most iron in separates is magnetite with very small amount of Ilmenite.

Magnetic Susceptibility Analysis of the Cores

Magnetic susceptibility was measured at one foot interval for the cores and two boulders found near one of the holes. The magnetic susceptibility logs are plotted in Figure 12. The susceptibility was measured by a susceptibility meter purchased by 26BT for this purpose. The meter, model KT-9 is manufactured by Exploranium Radiation Systems.

We are aware of two studies relating magnetic susceptibility to magnetite content. Note that the susceptibility studies do not include all iron ore since Hematite is only weakly magnetic and hematite rich ores have low susceptibility. Gaucher (1965) presented the equation between maximum magnetite content (by volume, computed from density) V and susceptibility K as follows:

$$K = (0.3 + V) * V.$$

This equation was derived empirically for magnetite ores in northern Quebec. Bath (1962) similarly computed the relationship for Biwabik Iron formation in Minnesota. The relationship derived for Biwabik iron ores is:

$$K=0.00116V^{1.39}.$$

The volume was computed by magnetic separation. We used both equations to plot magnetite content for the holes. The equation given by Gaucher (1965) had to be modified to avoid negative volume content. The magnetite content logs are given in Figures 13 and 14. Both equations show several sections on many of the holes where magnetite content is more than 20%. In some holes, there is indication of better magnetite content near the bottom. Table 3 gives the average susceptibility and average magnetite content for the holes with both equations.

The equation for Biwabik ores provides smaller magnetite content than the one for northern Quebec. However, both equations suggest presence of mine grade ore in many holes. These results are most encouraging particularly considering that the hole locations in 1994 were governed by accessibility and were not optimal from the magnetic anomaly. There are many stronger anomalies on the map which need to be tested.

The susceptibility of the samples measured in the laboratory was quite different from that recorded in field at the corresponding depth in the hole (Figure 12). Figure 15 shows a plot of susceptibility measured in laboratory (sample value; y -axis) vs that measured in the field (log value; x-axis). The plot symbol indicates the depth of the sample in units of 10 feet (3.282 m). The slope of fitted line indicates that on average the sample value is 77% log value. There is no apparent depth deviation in this relationship. The cause of this reduction is not known and was not investigated.

As indicated above, Terramin Research Laboratories of Calgary, Alberta separated the magnetic component in powdered core sample and calculated Iron and Titanium content for 46 samples (Appendix 4). The amount of iron in the separate was converted into percent content in the sample and plotted vs the susceptibility of the sample (Figure 16). This plot shows a reasonable correlation and following equivalent relationships were deduced from the plot

IRON = .07538 * Susceptibility of sample
IRON = .05804 * Susceptibility in log
MAGNETITE = .08126 * Susceptibility in log

Based on the last relationship, magnetite content from twelve holes was estimated and is shown in Figure 15. The figure shows considerable variation among hole and even with the sample hole. Holes 95-1, 95-2, 94-3, 94-1 and 94-4 show thick zones where magnetite concentration is of commercial interest. Note that the magnetite content is significantly less than anticipated in Figures 13 and 14. Whether this is due to poor magnetic separation method has not been established. Also note that the magnetite content is still significant at the bottom of most holes.

The plot of TiO2 content from chemical analysis vs susceptibility (Figure 18) is quite random indicating that the susceptibility is not influenced by TiO_2 content.

<u>Reserve Estimates</u>

Magnetite:

Table 5 shows residual magnetic total field reduced to the pole, average recoverable magnetite percentage of rock and average susceptibility for the length of the core estimated from Figure 17. Figure 19 shows that plot of percent magnetite content vs magnetic field. Though there is a wide scatter in the points, a mean straight line can be drawn to crudely correlate the magnetite content with the total field. The equation of this line when total field is between 800 nT and 3200 nT is:

Magnetite content = 0.0013142 * Total Filed + 0.4487

None of the holes is located at strongest of the anomaly and the equation may not be valid for them. However in order to obtain crude estimates, this equation was used to convert the residual magnetic field in Figure 6 to average magnetite content. This map is shown in Figure 20. On this map 5% and 4% contours include areas of 1.25 sq km and 6.25 sq km respectively. If the average is applicable to the depth of 300 ft, as indicated by holes 95-1 and 95-2, there is 32 million tons of recoverable magnetite in 5% zone and 100 million tons in 4% zone. It should be pointed out that the cores indicated considerable range of magnetite concentration. The actual reserves are likely to be significantly higher because smaller average content areas include zones of rich magnetite which have not been included. Moreover, both 95-1 and 95-2 suggest the possibility of magnetite rich zones continuing to greater depths.

Titanium:

As indicated above, chemical analysis shows that magnetic titanium (ilmenite) is present in quantities which range from 10 - 20% of recoverable magnetite and that two to five times the amount of non magnetic titanium (Rutile) is present. Therefore, assuming recoverable magnetite reserve of 130 m tons, there is a strong indication of 13 - 25 m tons of Ilmenite and 25 - 100 m tons of Rutile.

While smaller than indicated by magnetic modelling, the estimated reserves are capable of commercial production for more than a hundred years. It should be noted that the overburden has been neglected in calculations even though the surface samples picked up on various occasions indicate high magnetite concentration.

CONCLUSIONS AND FUTURE WORK

Geological analysis of available report, geophysical work, drilling of twelve holes and core analysis from the holes indicate the probability of a large reserve of magnetite, ilmenite and rutile in the prospect area. The investigation so far has concentrated on hard rock under the impression that most of the magnetic anomaly is caused by magnetite rich rock. Next stage of exploration will investigate the concentration of iron and Titanium minerals in overburden. This work will be carried out in 1996. There is considerable work to be done by more detailed drilling.

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HOLE 94-1 DESCRIPTION

43 mm Diamond Core. Hole Inclined 090 degrees (vertical). Drilled to ~ 33 m (100'). Approx. collar elevation is 3620'. Near full recovery of 32.1 m in 6 boxes.
Casing at 15' (4.57 m). Minor core rubble at the top.

Depth (m)	Interval	Thickness Interval	Letter Designation	Description

Start 15' (4.57 m)
0.55 m=17' 1.75 m=21' 3.07=27' 5.47=30' (9.14 m)
4.57 - 12.44 7.87 m DG Biotite Syenite. Mesocratic, coarse crystalline, well foliated. Not porphyritic. Rare healed epidote fractures. Anhedral very coarse crystalline biotite. Very rusty, very common limonitized fractures causing much rubble in the interval.

0.66=38' (11.58 m)
7.87 - 11.58 2.02 m DH As Unit DG Biotite Syenite but with more mafics; meso - melanocratic. Minor fracturing, very minor rubble in the interval.

11.58 - 12.28 0.70 m DI Magnetic Melanocratic Bi Syenite. Medium crystalline. Common very fine crystalline *pyrrhotite* (reacts with dilute HCl) as a late stage interstitial sulphide. Contributes to susceptibility measurement BT 1-45.

1.73=48' 5.25=58' (17.68 m)
12.28 - 20.58 8.30 m DJ As Unit DG Biotite Syenite. Melanocratic to mesocratic, equigranular, coarse crystalline. Faint igneous foliation. Competent. Approx. 10 - 15 % magnetic opaques.

0.34=68' (20.73 m)
20.58 - 21.58 1.00 m DK Leucocratic Syenite. Dark grey speckled off white. Diffuse feldspar rich bands are intermixed with minor amounts of the above Biotite Syenite. Megacrystic, little opaques.

2.82=78' 6.30=88' (26.83 m)
21.58 - 29.01 7.43 m DL Melanocratic Biotite Syenite. Diffuse off white coarse crystalline leucocratic feldspar layers are intermixed with very common schlieren bands. Minor epidote occurs in very common healed, epidotized fractures.

29.01 - 29.40 0.39 m DM Pelitic Xenolith. A dark grey fine crystalline pelitic inclusion. Possibly the original lithology was a shale or mudstone (argillite).

1.54=98' (incorrect marker)
29.40 - 32.10 2.70 m DN. As Unit DJ Melanocratic Biotite Syenite. Same texture, with a faint igneous foliation. Same magnetic susceptibility 43 e.m.u.

End Core 94-1

HOLE 94-2 DESCRIPTION

43 mm Diamond Core. Hole Inclined 090 degrees (vertical). Drilled to 30.48 m (100'). Approx. collar elevation 3700'. Casing at 10' (3.05 m). Near complete recovery of 30.48 m in 6 boxes. Some core rubble at the top.

Depth (m) Interval	Thickness Interval	Letter Designation	Description

Start 10' (3.05 m)
3.05 - 3.36 0.31 m DO Glacial erratic of melanocratic, well foliated Hornblende Syenite. Coarse crystalline, not porphyritic. Mostly rubble.

3.36 - 3.75 0.39 m DP Hornblende Syenite. Mesocratic, coarse crystalline, mafics ~ 25%, equigranular, very well foliated. The foliation is *a metamorphic* feature *(*not an igneous crystal cumulate layering texture). A single high angle fault in the midsection of the interval. Opaques ~ < 5%.

2.35=18' (5.49 m)
3.75 - 6.45 2.70 m DQ as Unit DO but more mafic ~ 35%. Two epidote healed fractures with open mm sized vugs occur.

6.45 - 8.18 1.73 m DR Mesocratic Hornblende Syenite as Unit DP. Off white, with common epidote veinlets and diffuse epidote rich schlieren. Competent. Approx. 10 - 15 % magnetic opaques.

1.33=28' (8.54 m)
8.18 - 9.51 1.33 m DS Mesocratic Hornblende Syenite. Grading from the above with v common epidote - potassium feldspar schlieren: diffuse light green - off white bands from the high temperature reaction of (possibly carbonate rich) inclusions.

9.51 - 11.91 2.40 m DT Mesocratic Hornblende Syenite as Unit DR. With a very common light green disseminated mafic mineral, possibly actinolite - tremolite. Uncommon epidote stringers.

11.91 - 12.52 0.61 m DU Alkalic Syenite. Very fine - very coarse crystalline. *Not foliated*. Green actinolite and black aegerine (sodium pyroxene) needles in an inequigranular potassium feldspar rich, felted matrix. Possibly from the complete absorption of an inclusion at very high temperatures. Texture is typical of alkalic rocks.

12.52 - 13.99 1.47 m DV As Unit DT with the bottom part of interval rusty and fractured. Very common disseminated actinolite - tremolite?. Uncommon schlieren as Unit DS.

2.00=48' (14.63 m)
13.99 - 16.97 2.98 m DW As Unit DV but more mafic; 40- 50 % mafics mostly amphibole. Fractured and rusty in midsection.

16.97 - 17.60 0.63 m DX Melanocratic Hornblende Syenite with three cm sized bands of epidote - potassium feldspar schlieren.

1.63=58' (17.68 m)
17.60 - 21.98 4.38 m DY As Unit DV Leucocratic - Mesocratic Hornblende Syenite. Coarse - very coarse crystalline, very well foliated, actinolite to ~25 % and black hornblende to ~ 30%.

3.40=78' (23.78 m)
21.98 - 27.32 5.34 m DZ Mesocratic Hornblende - Actinolite Syenite. Well foliated, mineralogical banding on a 10 cm - sized scale. Rare epidote veinlets infilling fractures. Similar to Unit DY.

1.14=88' (26.83 m)
25.39 - 28.15 2.76 m EA Mesocratic Hornblende - Actinolite Syenite. As above Unit DZ but partly with more mafics; one 5 cm sized band of calc-silicates.

1.60=98' (29.88 m)
28.15 - 29.51 1.36 m EB Leucocratic Actiolite - Hornblende Syenite. Actinolite ~ 25 % with < 10 % black hornblende. Typical metamorphic foliation at moderate angles to the core.

0.97=100' (30.48 m)
29.51 - 30.48 0.97 m EC As Unit EA Mesocratic Hornblende - Actinolite Syenite.

End Core 94-2

HOLE 94-3 DESCRIPTION

43 mm Diamond Core. Hole Inclined 090 degrees (vertical). Drilled to ~ 33.0 m (108.3'). Casing at 1' (0.30 m). Approx. Collar elevation 4080'. Full recovery of 33 m in 6 boxes. Some core rubble in the upper intervals.

Depth (m) Interval	Thickness Interval	Letter Designation	Description

Start 1' (0.30 m) 2.71=13' (3.96 m)
0.30 - 6.14 5.84 m ED Mesocratic biotite - hornblende Anorthositic Syenite. Unfoliated and massive; partly with a faint igneous flow ? foliation. Medium to coarse crystalline, not porphyritic, mafics ~ 45 %. Very competent. Faint blue - grey larvikitic alteration of the plagioclase. Disseminated opaques to ~ 20 %; very uncommon one - cm sized magnetitite laminations in midsection, esp. at 1.85 - 2.10 m. Also in midsection a 35 cm sized rusty fault gouge; at 3.64 m depth is another rusty fault gouge. No pyrrhotite observed. Gradational to

1.66m=28' (8.53 m)
6.14 - 9.67 2.40 m (poor recovery) EE Foliated Hornblende Syenite. Mesocratic, very coarse crystalline, mafics ~ 25%, very well foliated - *a metamorphic foliation (*not an igneous crystal cumulate layering texture). Incompetent, much rubble and poor recovery. Opaques ~ < 5%.

2.11=38' (11.58 m)
9.67 - 14.15 4.48 m EF as Unit EE Foliated Hornblende Syenite but more competent; with common chlorite and epidote healed shear planes especially at the base .

0.19=48' (14.63 m)
14.15 - 14.63 0.48 m EG as Unit EF with a prominent high angle chloritized slickenplane with slickenlines - a fault surface.

14.63 - 17.59 2.96 m EH as Unit EE Foliated Hornblende Syenite.

0.36=58' (17.68 m)
14.63 - 17.68 1.54 m (poor recovery) EI as Unit EE Foliated Hornblende Syenite. An incompetent well fractured interval.
< 15 % opaques.

17.68 - 20.90 3.22 m EJ as Unit EI Foliated Hornblende Syenite. Common actinolite veining along healed fractures; also three 35 - 40 cm bands of off white (albitic plagioclase) to pale green (actinolite - tremolite) speckled black (mafics) absorbed inclusions. A slight foliation of the inclusions is evidence of a *post-intrusive* metamorphic foliation. Competent, coarse crystalline, a rather uniform unit. No epidote.

20.90 - 22.30 1.40 m EK Argillic altered Hornblende Syenite. Intensely to slightly altered. Soft, off white, friable and incompetent, mostly rubble.

22.30 - 23.43 1.13 m EL Inclusion - rich Hornblende Syenite. Coarse crystalline to megacrystic. As Unit EJ with very abundant inclusions. Fractured and incompetent.

0.82=78' (23.78 m)
23.43 - 25.38 1.95 m EM As Unit EK Argillic altered Hornblende Syenite with slight to moderate alteration. Incompetent, mostly rubble .

25.38 - 27.88 2.50 m EN Melanocratic Hornblende Syenite. Well foliated, more mafics than the above Units. Well fractured.

27.88 - 30.57 2.69 m EO Melanocratic Magnetite Anorthosite. Very dark bluish grey, very fine - medium crystalline, with disseminated opaques to ~ 20%. Massive and competent. Very common wispy schlieren of the well foliated Melanocratic Hornblende Syenite - thus this Anorthosite Unit and Unit ED are *separate phases of the Hornblende Syenite intrusion - later differentiates*.

30.57 - 31.60 1.03 m EP as Unit EL Inclusion - rich Hornblende Syenite. Megacrystic, well foliated, fractured.

EQ 0.50=98'
31.60 - 33.03 (108.3') 1.43 m (to 100' mark) Undefined Ultramafic Rock: possibly Hornblende Lamprophyre. Abundant fine to very coarse crystalline hornblende phenocrysts. Very dark brown black, foliated with some slickenplanes or shears. Soft, dark olive green alteration on the many fracture surfaces. Very incompetent - mostly rubble. A thin section is needed to accurately describe the lithology.

End Core 94-3

HOLE 94-4 DESCRIPTION

43 mm Diamond Core. Hole Inclined 090 degrees (vertical). Drilled to ~ 34 m (112'). Approx. collar elevation 3990'. Casing at 5' (1.52 m). Near complete recovery of 34.19 m (112.1') in 6 boxes. Some rubble at the top.

<u>Depth (m) Interval Thickness Letter Description</u>
<u>Interval Designation</u>

Start 5' (1.52 m)
1.15=9' 3.51=15' 5.28=23' 8.47=28' (8.53 m)
1.52 - 12.89 11.37 m ER Mesocratic Biotite - Hornblende Syenite. Well foliated, very coarse crystalline, marginally porphyritic plagioclase, mafics ~ 65%. Partly fractured with black chloritic alteration; generally competent. Disseminated opaques < ~ 15 %

0.78=38' (inaccurate mark) (11.58 m)
12.89 - 14.61 1.72 m ES as Unit ER Mesocratic Biotite - Hornblende Syenite but with slightly less mafic mineral content ~ 55%. Well foliated, porphyritic with very coarse crystalline feldspar phenocrysts.

0.36=42' 2.49=48' (14.63 m)
14.61 - 17.84 3.23 m ET as Unit ER Mesocratic Biotite - Hornblende Syenite with more opaques - interstitial magnetite to 25%. Very coarse crystalline to megacrystic. Rare megacrysts of anhedral poikilitic biotite. A band of black chloritic fault gouge occurs at the top for 0.36 m.

17.84 - 19.69 1.85 m EU Magnetite Shonkinite. Fine to coarse crystalline with massive appearance. Evenly disseminated opaques (BTS 52 100 e.m.u.). Includes a cm sized bleb of Unit ET *(thus the Magnetite Shonkinite is a late igneous differentiate)*.

0.78m=58' 4.01=68' 7.20=78' (23.78 m)
19.69 - 28.09 8.40 m EV Melanocratic Shonkinite Porphyry. Uncommon plagioclase phenocrysts in a fine to medium crystalline matrix. Faint metamorphic foliation, indistinct igneous foliation, rare anhedral cm sized poikilitic biotite megacrysts. Disseminated opaques ~ 20 - 25 % as magnetite and ilmenite (BT4-71 83.8 e.m.u.). Very competent.

28.09 - 28.44 0.35 m EW as Unit EU Magnetite Shonkinite. Fine to medium crystalline, massive appearance with mm sized laminations. Rare anhedral cm sized poikilitic biotite megacrysts. Very competent ~ < 35 % opaques. Smaller amount of plagioclase phenocrysts than Unit EV.

1.63=88' 4.72=98' (29.88 m)
28.44 - 34.19 (112.1') 5.75 m EX as Unit EV Magnetite Shonkinite but with characteristic, more abundant (though uncommon) anhedral cm sized biotite poikilitic megacrysts, approx. 2% of the unit.

End Core 94-4

HOLE 94-5 DESCRIPTION

43 mm Diamond Core. Hole Inclined 090 degrees (vertical). Approx. collar elevation is 3630'. Casing at 10' (3.04 m). Drilled to ~ 34.5 m (113'). Full recovery of 34.45 m (= 113') in 6 boxes. Some core rubble increase the core length.

<u>Depth (m) Interval Thickness Letter Description</u>
<u>Interval Designation</u>

Start 10' (3.04 m)
3.04- 3.94 0.90 m EY Mesocratic Syenite. Unfoliated, variably coarse crystalline to megacrystic with euhedral alkalic amphibole megacrysts. 'Felted' igneous texture with euhedral undetermined mafic minerals. Mafics ~ 75 %. Incompetent; much rubble in the interval.

3.94 - 5.28 1.34 m EZ 'Alaskite'. A leucocratic 'flow press' differentiate with *no mafic minerals*. Composed of flesh pink medium - coarse crystalline potassium feldspar crystals with uncommon very coarse sized very light grey albite phenocrysts. Some core rubble. No opaques present.

0.92=18' 4.58=28' (8.53 m)
5.28 - 12.94 7.66 m FA as Unit EY Mesocratic Syenite. Generally megacrystic with cm - sized euhedral mafics. Uncommon pistachio - green epidote segregations in the matrix. Rare miarolitic vugs in mid section. Opaques < 5%.

0.38=38' (inaccurate mark) (11.58 m)
12.94 - 15.12 2.18 m FB Mesocratic Syenite. Like EY above but fine to coarse crystalline with rare mm sized white felsic (potassium feldspar?) veins. Rare mm sized miarolitic cavities.

1.44=48' (inaccurate mark) (14.63 m)
15.12 - 16.56 1.44 m FC as Unit FA Megacrystic Mesocratic Syenite .

3.53=58' (17.68 m)
16.56 - 21.85 5.29 m FD like Unit FB Mesocratic Syenite. Fine to coarse crystalline. Similar in mineralogy to the megacrystic Mesocratic Syenite but with finer crystal size. No miarolitic cavities. The lower part of the interval is completely gradational to the megacrystic Mesocratic Syenite Unit.

1.54=68' (inaccurate mark) (20.73 m)
21.85 - 23.60 1.75 m FE Intermixed fine crystalline and megacrystic Mesocratic Syenite. The megacrystic unit intrudes bands of the fine crystalline Unit; *so it is younger*. Competent and uniform except for this remarkable grain size variation.

2.97=78' (23.78 m)
23.60 - 29.73 6.13 m FF Mesocratic Syenite. An igneous cooling unit with abundant miarolitic vugs for 6 cm at the top of the Unit. The unit grades from coarse crystalline at the top to very fine crystalline at the base. The lower part of the interval has three megacrystic mesocratic 'xenoliths' incorporated in the Mesocratic Syenite. Unaltered (as is the rest of this hole). Very competent.

0.54=88' (inaccurate mark) (26.83 m)
29.73 - 32.07 2.34 m FG Mesocratic Syenite. Megacrystic at the top grading to coarse crystalline at the base. Rare cm sized poikilitic texture of the anhedral mafic minerals. No inclusions; a very competent unit.

2.22=100' (but actually 34.45 m = 113')
32.07 - 34.45 2.38 m FH Mesocratic Syenite. Megacrystic. Rare thin epidote veining.

End Core 94-5

HOLE 94-6 DESCRIPTION

43 mm Diamond Core. Hole Inclined 090 degrees (vertical). Approx. collar elevation is 3880'. Casing at 5' (1.52 m). Drilled to ~ 30.48 m plus (over 100'). Recovery of 36.37 m (abundant core rubble) in 7 boxes.

Depth (m) Interval Thickness Interval Letter Designation Description

Start 5' (1.52 m)
1.52 - 2.44 0.92 m FI Hornblende (?) Ultramafitite. Very dark grey green, with hairline chlorite along fractures forming a network 'lace' texture. No feldspar phenocrysts. Medium to coarse crystalline. Mafics ~ 97 %. Incompetent; all rubble.

2.44 - 3.73 1.29 m FJ 'Alaskite'. A leucocratic 'flow press' differentiate with *no mafic minerals.* Dominately flesh pink coarse crystalline potassium feldspar with common hairline chlorite- epidote fractures. Slight argillic alteration gives the Unit a crumbly aspect. All core rubble, *no opaques.*

0.21=8' (2.44 m) (interval thickness is too long due to rubble)
2.44 - 5.00 2.56 m FK Ultramafitite as Unit FI. Rare coarse sized feldspar phenocrysts. Generally broken core rubble. Magnetite would be completely altered; Opaques < 5%.

5.00 - 5.98 0.98 m FL 'Alaskite' as Unit FJ.

5.98 - 6.61 0.63 m FM Hornblende (?) Ultramafitite as Unit FI with common very coarse sized feldspar phenocrysts.

0.48=18' (5.48 m)
6.61 - 7.67 1.06 m FN 'Alaskite' as Units FL and FJ. Toward the base is a 25 cm sized inclusion of Ultramafitite. At the base the Alaskite is vuggy with common miarolitic cavities.

3.20=28' (8.53 m)
7.67 - 11.92 4.25 m FO Melanocratic Hornblendite. Approx. 15% coarse sized feldspar phenocrysts. Distinct hi angle metamorphic foliation. Common thin chlorite- epidote veins.

11.92 - 13.07 1.15 m FP 'Alaskite' as Unit FN laced with sub mm sized epidote - chlorite veinlets. V competent, unaltered.

1.09=38' 4.52=48' 2.59=57' 2.95=58' (17.68 m)
13.07 - 21.56 8.49 m FQ Melanocratic Hornblendite as Unit FO. Moderate to high angle foliation. Uncommon mm sized chlorite-epidote veins infill healed fractures. Toward the base in box 3 is a 25 cm sized chloritic band (possibly from an incorporated inclusion).

21.56 - 22.27 0.71 m FR Melanocratic Hornblendite as Unit FO. Medium grey, more altered with a pervasive soft off white talc ? alteration.

6.26=78' (23.78 m)
22.27 - 28.49 6.22 m FS Melanocratic Hornblendite as Unit FR above; less off white alteration. Uncommon medium crystalline cm sized bands with no feldspar phenocrysts. Very rare epidote - chlorite veining. Uncommon 2 mm sized vertical calcite veinlets.

28.49 - 29.37 0.88 m FT Melanocratic Hornblendite. Dark grey brown to dark grey green, medium crystalline with no feldspar phenocrysts. Very common mm sized chlorite- epidote veins infill healed fractures.

2.30=88' 5.49=96' 7.00=100' (30.48 m) (interval thickness too long due to rubble)
29.37 - 36.37 7.00 m FU Melanocratic Hornblendite. Same lithology and texture as Unit FQ.

End Core 94-6

HOLE 94-7 DESCRIPTION

43 mm Diamond Core. Hole Inclined 090 degrees (vertical). Drilled to ~ 33 m (100'). Approx. collar elevation is 2810'. Casing @ 5'

No bedrock was recovered; very poor recovery of loose and very friable light brown glacial till. Composed of varied unsorted cobbles of varicolored alkalic rocks in a sandy and clayey matrix. 2 boxes.

HOLE 94-8 DESCRIPTION

43 mm Diamond Core. Hole Inclined 090 degrees (vertical).
Approx. collar elevation 2695'. Casing at 5' (1.52 m).
Drilled to 100'.
Full recovery of 30.97 m (101.58') in 6 boxes.

Depth (m)	Interval	Thickness Interval	Letter Designation	Description

Start 5' (1.52 m). 1.43 m of drift from 1.52 - 2.95 m.

0.47=13'
2.95 - 3.42 0.47 m FV Actinolitic Hornblende - Biotite Syenite. Mesocratic, well foliated: striped off white, black, and very dark grey green. Common interstitial pistachio green epidote. Coarse crystalline. Mafics ~ 55 %. Competent; good core recovery. Opaques < 10%.

0.68=18' 2.80=24' 5.52=32' (9.75 m)
3.42 - 9.46 6.04 m FW Actinolitic Hornblende - Biotite Syenite. As above Unit FV but the upper half of this interval is well fractured with intense argillic alteration: a fault is present. *No opaques.*

0.92=37' 3.70=44' (13.41 m)
9.46 - 14.38 4.92 m FX as Unit FV Actinolitic Hornblende - Biotite Syenite. Little epidote is visible. At the base the Unit is increasingly mafic to ~ 75 % dark minerals with a massive appearance; upper half has cm sized xenolith inclusions. Opaques < 15%.

0.19=49' (?) (14.94 m)
14.38 - 17.82 3.44 m FY as Unit FV Actinolitic Hornblende - Biotite Syenite but with less mafics approx. 40 %; well foliated with common epidote. A clot of Unit FX at the top and a 47 cm sized band in midsection is evidence that this Unit is a younger, more felsic differentiate.

17.82 - 17.97 0.15 m FZ as Unit FV Actinolitic Hornblende - Biotite Syenite with less black amphibole; slightly altered.

17.97 - 19.09 1.12 m GA Meso Actinolitic Amphibole - Biotite Syenite. Coarse crystalline with a discernible moderate angle metamorphic foliation. Complex mineralogy.

19.09 - 19.50 0.41 m GB Pink Leucosyenite. Megacrystic with abundant cm sized miarolitic cavities- *vugs*. Approx. ~ 10 % amphibole as coarse sized euhedral black phenocrysts. Possibly an incorporated xenolith.

19.50 - 22.81 3.31 m GC Actinolitic Amphibole - Biotite Syenite. Leucocratic and megacrystic at the top; overall meso- to melanocratic and very coarse crystalline. Discernible foliation. Cm sized mafic clots of poikilitic anhedral biotite. Very competent and unaltered.

22.81 - 25.08 2.27 m GD Leucocratic Syenite like the top part of Unit GC. Very coarse crystalline, a faint but discernible foliation present. Complex mineralogy; < 5 % opaques. Rare mm sized chlorite- epidote veins infill healed fractures. Very competent and unaltered. Completely gradational to

25.08 - 26.40 1.32 m GE Melanocratic Syenite (or Shonkinite). The upper part is mesocratic; very coarse crystalline with common cm sized mafic clots of anhedral poikilitic biotite. A sharp igneous intrusive contact with

26.40 - 28.97 2.57 m GF Leucocratic Syenite (upper sixth) completely gradational to Mesocratic Shonkinite (five sixths or most of he Unit). Very coarse crystalline, with a low angle foliation. Disseminated opaques mostly magnetite to ~ 18% in cm sized bands. No pyrrhotite observed. *Crystal settling has increased the mafic and opaque mineral content toward the base. The Leucocratic Syenite is a felsic differentiate cogenetic with the Melanocratic Syenite (Shonkinite)- both derived by settling of mafic crystals from the parental Actinolitic Hornblende - Biotite Syenite.*

28.97 - 30.97 (101.58') 2.00 m GG Leucocratic Syenite. Same texture and mineralogy as Unit GD. Very competent.

End Core 94-8

HOLE 94-9 DESCRIPTION

43 mm Diamond Core. Hole Inclined 090 degrees (vertical). Casing at 5' (= 1.52 m). Approx. collar elevation is 2490'. Drilled to ~ 30.48 m (100').
Complete recovery of 30.48 m in 6 boxes.

Depth (m) Interval | Thickness Interval | Letter Designation | Description

Start 5'. 1.52 m
1.52 - 2.95 1.43 m of cobbles including a quartzite boulder in a lacustrine (glacial lake) silty clay matrix. Poor recovery.

0.47=13' (start 3.96 m)
3.96 - 4.43 0.47 m GH Mesocratic Syenite, no foliation evident. Very coarse crystalline, not porphyritic. General pale green weak chloritic alteration of the mafics. Trace epidote veinlets. Mafics ~ 65 %. Competent; good recovery. Opaques < 10%.

0.68=18' 2.80=24' 5.52=32' (9.75 m)
4.43 - 10.47 6.04 m GI Mesocratic Syenite as Unit GH with more common opaques ~ 18%. (BT-9-67 75.4 e.m.u).

0.92=37' 3.70=44' (13.41 m)
10.47 - 15.39 4.92 m GJ as Unit GH but moderately to intensely altered. Uncommon mm sized maroon coloured hematite veinlets and rare sub cm sized coxscomb carbonate veins infilling fractures. Opaques < 3%, destroyed by hydrothermal alteration.

0.19=49' (?)
15.39 - 25.41 3.44 m (missing core) GK As GH, Mesocratic Syenite with intense chloritic alteration grading to moderate argillic alteration at the base. Subhorizontal 3 - 5 cm sized banding with abundant one cm sized coxscomb carbonate veins. Carbonate is also in the matrix. No magnetite present; it would have been completely destroyed by alteration.

25.41 - 25.49 0.08 m GL. Fine crystalline Pyrite in an intensely clay (argillic) altered breccia. A possible original lithology is the Mesocratic Syenite.

2.11=92' (28.05 m)
25.49 - 28.19 2.70 m GM. Mesocratic Syenite (?) with Intense light grey green argillic (clay) alteration. Brecciated at the top of the interval. Common carbonate in the matrix and very abundant cm sized carbonate veins. A 10 cm hematitic band associated with breccia in the lower part of interval.

1.72= 98' (29.88 m)
28.19 - 29.91 1.72 m GN Mesocratic Syenite. Grey green due to intense chloritic alteration. Abundant cm sized carbonate veins. Competent, good recovery.

0.57=100' (30.48 m)
29.91 - 30.48 0.57 m GO Mesocratic Syenite with slight chloritic alteration. Poor recovery, mostly rubble. Little opaques.

End Core 94-9

HOLE 95-1 DESCRIPTION

43 mm Diamond Core. Hole Inclined 090 degrees (vertical). Approx. collar elevation 2400'. Casing at 16' (4.88 m). Drilled to 91.46 m (300'). Full recovery of 96.91 m (317.86') (some core rubble gives extra recovery) in 16 boxes.

<u>Depth (m) Interval Thickness Letter Description</u>
<u>Interval Designation</u>

Start 16' (4.88 m)
0.34 m=20' 0.65=24' 1.52m=28' 2.06m=30' 3.10=34' (10.36 m)
4.88 - 10.36 3.10 m CH Mafic Syenite. Very incompetent - common core rubble. Mesocratic, very coarse crystalline, indeterminate mafic mineral - pyroxene ?. A different intrusion than 95-2 or 95-3 drill holes. Moderate angle igneous flow lamination. Uniform, but some of the interval is calc-silicate (developed from xenoliths?).

1.91=37' 5.01=47' (14.33 m)
10.36 - 16.06 5.70 m CI Pyroxene Syenite. Melanocratic, very coarse crystalline, uniform, competent, equicrystalline, magnetite (opaques) content < 10% .

2.22=57' (17.37 m)
16.06 - 19.16 3.10 m CJ Leucocratic Biotite - Amphibole Syenite. Coarse - very coarse crystalline with moderate angle igneous flow banding and common mm sized epidotized healed fractures.

19.16 - 19.65 0.49 m CK Mesocratic Syenite.
A calc-silicate altered very fine crystalline dark green 0.16 m band at the top of the interval, probably a xenolith incorporated in the Leuco - Syenite of Unit CJ.

1.87 =67' (20.4 m)
19.65 - 23.60 3.95 m CL Mesocratic Syenite like Unit CJ but with more mafics ~ 30%. Uniform, with a characteristic igneous flow lamination at moderate angles to the core, common epidotized healed fractures, mm sized.

1.21=77' (23.47 m) 3.10=87' 6.14=97' (29.57)
23.60 - 29.57 7.35 m (some extra rubble) CM Variably Leuco - Mesocratic Syenite Similar to CL. Moderate angle igneous foliation. One high angle fault in box 4. Common 1 - 5 mm sized epidote seams. *No* traces of Quartz noted. A uniform and very competent lithology.

29.57 - 30.59 1.02 m CN As Unit CM but with very common cm sized seams of epidote and pink garnet from incorporated xenoliths. Very competent.

30.59 - 31.75 1.16 m CO as CM with criss crossing mm sized healed epidotized fractures. Little magnetite or opaque content.

1.20=107' (32.62 m)
31.75 - 32.95 1.20 m CP As Unit CN with abundant epidote inclusions and veining. Incompetent.

32.95 - 33.39 0.44 m CQ A green to pink calc-silicate inclusion (xenolith) incorporated in the Syenite.

3.20m=117' (35.67 m)
33.39 - 37.66 4.27 m CR Leuco - Mesocratic Syenite As Unit CO.

37.66 - 38.01 0.35 m CS An inclusion of dark purple brown silicic hornfels.

1.62m=127' (38.72 m)
38.01 - 40.68 2.67 m CT Leuco - Mesocratic Syenite as CR, texturally identical.

40.68 - 41.11 0.43 m (to end of box 6) CU Calc-silicate inclusion very similar to CQ.

2.04=137' (41.77 m)
41.11 - 43.32 2.21 m CV Meso- partly Melanocratic Epidote Syenite. Medium grey, ~ 30 % mafics: biotite and pyroxene ? with very little magnetite. At the 135' marker (sample 95-1-135) is disseminated very fine crystalline pyrrhotite. The syenite is unaltered, very competent, and has incorporated more country rock material than usual to give more abundant epidote in his interval.

1.72=143' 2.92=147' 6.03=156' 6.79=158' (48.17 m)
43.32 - 50.42 7.10 m CW Mesocratic Syenite. With a strong igneous flow foliation and abundant epitotized fractures, some with pink calc-silicates (garnet). Mottled dark grey (mafics) and off white (feldspar). Very coarse crystalline.

50.42 - 51.03 0.61 m CX As Unit CW but mostly consisting of two epidote and garnet bearing calcsilicate inclusions as xenoliths.

2.00=167' (50.91 m)
51.03 - 53.60 2.57 m CY Mesocratic Syenite as Unit CW distinctly foliated.

2.68=177' (53.96 m)
53.60 - 56.56 2.96 m CZ Mesocratic Syenite as Unit CW with two 10 cm sized bands of calc-silicates formed from incorporation of xenoliths. Little opaque content.

0.26=179' 1.32m=182' (55.49 m)
56.56 - 58.20 1.64 m DA A xenolith rich interval with minor intersections of the Mesocratic Syenite. The top has much rubble and has poor core recovery.

0.06m=184' 2.77m=192' 4.327=197' 7.34=207' (63.11 m)
58.20 - 68.01 9.81 m DB Mesocratic Syenite as Unit CY, with the same texture and mineralogy. Most of the interval has less epidote veining.

1.81=217' (66.16 m)
68.01 - 70.42 2.41 m DC Melanocratic Syenite. Very coarse crystalline, porphyritic texture with very fine crystalline pyrrhotite to ~ 30 % in the very mafic midsection (sample 95-1 213).

1.28m=222' (67.68 m)
70.42 - 72.12 1.70 m DD Mesocratic Syenite as Unit DB with common cm sized epidote and grey- pink garnet veining. Magnetite and ilmenite opaques < 5%.

2.33m=230' 3.96=235' (71.46 m)
72.12 - 76.14 4.02 m DE Pelitic Hornfels coloured medium red-purple. Very fine crystalline, possibly a thick xenolith or argillaceous inclusion.

0.63=238' 0.71 m to end of box 12. 2.61=247' (75.30 m)
76.14 - 81.45 5.31 m DF As Unit DD Melanocratic to mesocratic Syenite. Well foliated with the usual epidote veins along fractures; uncommon calcite - healed high angle fault planes in the lower part of the interval.

81.45 - 82.38 0.93 m DE Epidote - Calcite xenolithic Mesocratic Syenite.

0.13=255' 0.85m=257' 3.91m=267' 7.13=277' 10.25=287'
13.41=297' 14.53=300' (91.46 m)

82.38 - 96.91 (317.86') 14.53 m DF Melanocratic to mesocratic Syenite as Unit DF; same lithology and texture. Uncommon calcite healed fractures. Igneous flow foliation at a moderate angle to the core.

End Core 95-1

HOLE 95-2 DESCRIPTION

43 mm Diamond Core. Hole inclined 090 degrees (vertical). Approx. collar elevation 4575'. Casing at 10' (3.05 m) Drilled to 298' (90.85 m). Full recovery of 93.60 m (107') in 16 boxes. Very minor core rubble.

Depth (m) Interval	Thickness Interval	Letter Designation	Description

1.60m=16' 2.15m=18' (5.48 m)
3.05 - 5.48 2.26 m BF Biotite Syenite. Mesocratic, very coarse crystalline, with ~ 30 % anhedral 'ragged' biotite. Uniform. Competent.

0.70=22' (6.71 m)
5.42 - 6.84 1.42 m BG Biotite Syenite as Unit BF but with altered dark brown biotite, well fractured and possibly a faulted zone.

0.61=28' 3.80=38' 5.45=42' (12.80 m)
6.84 - 12.52 5.68 m BH As Unit BF Biotite Syenite with a distinctive and common (faint) grey blue larvikitic alteration of the plagioclase.

0.67=48' 2.31=53' 3.93=58' 5.15=61' 7.26=68' 2.97=78' 6.10=88' (26.83 m)
12.52 - 26.33 13.81 m BI Larvikitic Biotite Syenite. Intense alteration of the calcic plagioclase has resulted in the uniform blue grey colour characteristic of larvikitic alteration. Megacrystic, generally competent. Some fracturing and hydrothermal alteration at biotite rich selvages has caused bleaching and destruction of the larvikitic alteration.

26.33 - 26.81 0.48 m BJ Anorthosite. Leucocratic, pale grey - blue due to weak larvikitic alteration. Inequicrystalline fine to very coarse sized crystals with < 5 % biotite; a reaction or contact zone with ~ 15 % fine grained interstitial euhedral glomeroporphyritic opaques - magnetite and ilmenite - developed.

2.45=98' 5.50=108' (32.92 m)
26.81 - 35.16 8.35 m BK Magnetitite. Equicrystalline, medium to coarse sized, dark grey, melanocratic and anorthositic with 15 - 25 % medium crystalline euhedral opaques. Variably strongly magnetic. Only very rare traces of carbonate noted.
0.56=118' 1.00=127' (38.72 m)

35.16 - 39.07 3.91 m BL Magnetitite as BK, medium to dark grey, possibly more calcium content in the plagioclase. Common fractures.

39.07 - 39.38 0.31 m BM Syenite. Very coarse crystalline to megacrystic. Dark green amphibole - actinolite ? and black equant hornblende developed. No reaction with dilute HCl acid. Little magnetite content.

1.33=132' (40.24 m)
39.38 - 41.66 2.28 m BN Melanocratic Anorthosite. Medium - coarse crystalline, generally equicrystalline. Common yellow - brown limonite alteration is partially destructive of the ~ 10 % magnetite present. Competent.

0.75=138' (42.07 m)
41.66 - 43.37 1.71 m BO Magnetitite. Melanocratic, anorthositic, with common pyroxene (?). Very competent, uncommon coarse sized anhedral biotite phenocrysts, coarse - very coarse crystalline, unaltered.

2.25m=148' 3.69=155' 5.43=158' (48.17 m)
43.37 - 50.21 6.84 m BP Anorthosite, megacrystic, no larvikitic alteration, common dark green hornblende (actinolite?) and < 10 % opaques.

50.21 - 51.07 0.86 m BQ Biotite Anorthosite as Unit BP but well fractured. The biotite is partially altered to limonite. Mostly rubble.

0.98=168' 4.11=178' (54.27 m)
51.07 - 55.25 4.18 m BR Biotite Anorthosite as Unit BP but with a very coarse to pegmatitic grain size. The magnetite is concentrated in unevenly distributed clots; generally 5 - to exceptionally 30%.

2.50= 188' (57.32 m)
55.25 - 58.61 3.36 m BS Anorthosite. Pegmatoid texture for 0.60 meters in box 9. In box 10 the Anorthosite is very coarse crystalline to megacrystic, mesocratic. Clotted opaques mostly magnetite varying greatly in concentration.

58.61 - 59.16 0.55 m BT Leucocratic Anorthosite. Off white, < 5 % mafics, biotite is mostly anhedral. Very little magnetite.

1.95=198' (60.36 m)
59.16 - 62.13 2.97 m BU Mesocratic Anorthosite. Strongly foliated with common healed and limonitized fractures,; some are vuggy with sub cm sized cavities. Very coarse poikilitic phenocrysts of anhedral biotite.

62.13 - 63.20 1.07m BV Melanocratic Anorthosite. Very coarse - megacrystic, faintly but discernibly foliated.
0.29 m BW Anorthosite Meso - Leucocratic. With a very distinct moderate angle foliation.

0.78=208' (63.41 m)
63.20 - 66.91 3.71m BX Magnetitic Anorthosite. Very dark grey green, inequicrystalline generally very coarse sized. Melanocratic with abundant actinolite? and calcic hornblende at 215'. 10 % pyrrhotite as late disseminations is intergrown with the magnetite. Opaques 20 to 30 %.

0.23=218' (66.46 m)
66.91 - 72.60 5.69 m BY Biotite - Hornblende Anorthosite. Minor actinolite. Pegmatitic, unaltered, massive. Same lithology as Unit BP.

0.58=238' (72.56 m)
72.60 - 73.70 1.10 m BZ Leucocratic Anorthosite. Megacrystic, off white mottled black. Two hi angle faults present, one with a polished slickenplane (toward the end of box 12). Unaltered.

2.88=248' (75.61 m)
73.70 - 76.78 3.08 m CA Meso to Melanocratic Biotite Anorthosite. Megacrystic as BZ. Trace of interstitial (late) pyrrhotite.

76.78 - 77.43 0.65 m CB Pyrrhotite Anorthosite. Melanocratic, silicates are generally coarse crystalline. Fine to medium crystalline pyrrhotite is ~ 25 % of the interval. Magnetite and ilmenite opaques are < 10%.

2.38m = 258' (78.65 m)
77.43 - 80.53 3.10 m CC Mostly Mesocratic Biotite Anorthosite with cm sized leucocratic bands like Unit CA. Coarse - very coarse crystalline; mafics are anhedral. Maximum 15 % to < 5 % accessory interstitial pyrrhotite. Opaques (mag and ilmenite) approx. 10 - 15 %.

80.53 - 81.47 0.94 m CD Pyrrhotite Anorthosite. Melanocratic like Unit CB but with more pyrrhotite. Disseminated very fine - fine crystalline (grey brown with a metallic lustre) pyrrhotite to 35%, always interstitial to the silicates. Uncommon Leucocratic Anorthosite bands outline a cm sized horizontal igneous layering.

1.62=268' (81.70 m)
81.47 - 86.10 4.63 m CE Biotite Anorthosite. Mesocratic, megacrystic, colour is mottled very pale grey green (plagioclase) and black (mafics). Variable trace interstitial pyrrhotite in the lower part of the interval increases to a maximum of 20 - 30%. Very competent. No alteration.

0.15=278' (84.75 m)
86.10 - 88.62 2.52 m CF Biotite Anorthosite as Unit CE but with more plagioclase and only trace pyrrhotite. Some high angle healed fractures.

0.92 m = 288' 4.14 m = 298' (90.85 m)
88.62 - 93.60 (307.01') 4.98 m CG Biotite Anorthosite. Meso to leucocratic, megacrystic. Generally < 5% interstitial pyrrhotite concentrated in cm sized bands.

End Core 95-2

HOLE 95-3 DESCRIPTION

43 mm Diamond Core. Hole inclined 090 degrees (vertical). Approx. collar elevation 5320'. Casing at 7' (2.13 m). Drilled to 91 m (299'). Full recovery of 91.18 m (299.07') (some core rubble throughout) in 15 boxes.

Depth (m) Interval	Thickness Interval	Letter Designation	Description

3.14=28' (8.53)
2.13 - 8.53 3.14 m (minimal recovery) AA Melanocratic Diorite. No quartz, coarse crystalline. In midsection is a 20 cm silicified orange chert inclusion. Common rubble.

8.53 - 9.27 0.74 m AB Melanocratic Diorite. as AA, fractured.

9.27 - 10.67 1.40 m AC Mesocratic Syenite. A very coarse crystalline strongly altered rock composed of light green propylitically altered plagioclase and pale pink potassium feldspar. A skarn with calcite present (reacts with dilute HCl acid). Uncommon medium grey blue sodalite. Mostly rubble.

2.5=38' (11.58 m)
10.67 - 13.43 2.76 m AD Mesocratic Syenite. Very coarse crystalline, no calc-silicate. intense pink potassic alteration.

1.7=58' (17.68 m)
13.43 - 17.68 (minimal recovery) 1.70 m AE As AD but with strong argillic alteration and light brown Fe staining. Friable; an incompetent lithology. All rubble.

17.68 - 18.54 0.86 m AF Melanocratic Syenite as AC. Very coarse crystalline, very common cm sized lath shaped megacrystic amphiboles. Full recovery.

18.54 - (approx.) 20.98 2.44 m AG Mesocratic Syenite. Common coarse crystalline potassium feldspar phenocrysts. Thin high angle mylonitic fractures with epidote. Full recovery

starts 0.27 m above 68' (20.73 m)
20.46 - 20.53 0.07 m AH Mesocratic Syenite. Exactly as AD with the same texture. Very coarse crystalline, no calc-silicate. Intense pink potassic alteration.

1.46=78' Start box 4: 1.03=88' 4.0=98' 4.30 m in box 4.
20.53 - 27.83 7.3 m AI Mesocratic Syenite. Very pale pink to off white, medium to coarse crystalline with intense sodic alteration - albite has formed. At the top is a fault plane with chloritized slickenlines. Fractured in mid section. Full recovery.

27.83 - 28.23 0.40 m AJ Mesocratic Syenite. Medium to coarse crystalline with typical flesh pink intense potassic alteration.

end is 107' (32.62 m)
28.23 - 30.81 2.58 m AK Mesocratic Syenite. As Unit AI, uniform; no faulting observed.

32.62 - 33.03 0.41 m AL Melanocratic Syenite. Fractured, poor recovery with common rubble.

0.6=110' 1.51=118' (35.97 m)
35.85 - 35.97 0.12 m AM Mesocratic Syenite As Unit AI. In midsection at 1.15 m is an igneous intrusive contact between medium and coarse crystalline phases of the same syenite lithology.

1.15=128' 4.70=138' (42.07 m)
35.97 - 43.92 7.95 m AN Mesocratic Syenite. Coarse crystalline. Potassium feldspar alteration with very thin (hairline) epidotized fractures.

3.14=148' (45.12 m)
43.92 - 47.56 3.64 m AO As AN Mesocratic Syenite but with slight to intense Fe-stained limonitized breccia fractures esp. in the midsection. A zone of cataclasis with very common healed fractures.

47.56 - 49.08 1.52 m AP Upper part is Mesocratic Syenite like AN; the lower part has healed limonitic fractures like AO.

49.08 - 49.63 0.55 m AQ Melanocratic Syenite. Two prominent cataclastic 'crush breccia' fault zones occur at high angles to the core.

0.60=158' (48.17 m)
49.63 - 51.95 2.32 m AR Leucosyenite Syenite. Relatively fresh, pale pink, coarse crystalline with euhedral mafic very coarse crystalline amphibole. Very common felsic bands with little mafic minerals. A high temperature zone.

51.95 - 52.33 0.38 m AS Leucosyenite Syenite. As AR starting with a cm sized mylonitic hi-angle epidotized fault plane.

1.25=168' 4.03=178' 4.95 m to end of box 8. 2.72=188' 5.93= 198' 9.33=208' (63.41 m)
52.33 - 63.74 11.41 m AT Mesocratic Syenite. Generally very coarse, minor part is fine crystalline. Massive, uniform with little foliation developed.

63.74 - 64.59 0.85 m AU Mesocratic Syenite. Grading to off white with slight to common argillic alteration. Fractured at the base.

64.59 - 66.85 2.26 m AV Mesocratic Syenite. Medium - coarse crystalline with a uniform crystal size.

66.85 - 67.05 0.20 m AW A thin very melanocratic Cataclastic Fault Zone with very common opaques present.

1.06=228' 3.25=234' End of box is 3.45 m. 0.83=238' (72.56 m)
67.05 - 72.56 (missing core) 2.62 m AX Mesocratic Syenite like Unit AT. At 0.85 m is a 5 cm thick calcsilicate band with epidote. Fresh, off white, coarse crystalline. Euhedral variably sized mafic amphibole crystals. With uncommon healed fractures and traces of green calc-silicates.

1.51m=248' (75.61 m)
72.56 - 75.24 2.68 m AY Leuco - Mesocratic Syenite. Very coarse crystalline. Characteristic pink potassium feldspar alteration. Common felsic (leucosome) bands.

75.24 - 78.81 3.57 m AZ Mesocratic Syenite. Pale grey green and pink, medium - very coarse crystalline. Moderate hydrothermal alteration. No fractures. Two mafic minerals are present; one is equant and coarse - medium crystalline: possibly amphibole; the other is very fine - fine crystalline euhedral acicular lath shaped grains - a mafic calc-silicate?

1.90=268' (81.70 m)
78.81 - 81.87 3.06 m BA Leuco - Mesocratic Syenite. Very coarse crystalline. No or very rare lath shaped mineral present.

81.87 - 82.27 0.40 m BB Mesocratic Syenite. Fine crystalline, slightly altered.

82.27 - 83.07 0.80 m BC Mesocratic Syenite. Very fine crystalline as Unit BB. Common limonite stained fractures, calc silicate alteration, brecciated with xenolith-like blebs.

0.28=278' 4.31=288' (87.80 m)
83.07 - 88.47 5.40 m BD Mesocratic Syenite. Very mafic (last box), generally coarse crystalline with v common epidotized mylonitic fractures.

88.47 - 91.18 2.71 m BE Mesocratic Syenite. Pale pink, very coarse crystalline. A few epidotized fracture or fault planes are present.

End Core 94-1 at 91.18 m (299.07')

Table 1:

Chemical analysis of two boulder samples collected in May, 1994.

Sample Number	SiO_2 %	Al_2O_3 %	CaO %	MgO %	Na_2O %	K_2O %	Fe_2O_3 %	MnO %	TiO_2 %	LOI %	Total %
93-2	37.9	10.0	13.850	9.882	0.949	0.151	22.45	0.182	4.34		99.67
93-3	34.7	8.7	8.982	13.513	0.325	0.245	27.60	0.219	5.00		99.23

Table 2:

Chemical analysis and magnetite susceptibility for core samples.

Sample Number	SiO_2 %	Al_2O_3 %	CaO %	MgO %	Na_2O %	K_2O %	Fe_2O_3 %	MnO %	TiO_2 %	LOI %	Total %	Susc. emu * 10^3	Rock Types
BT 1 33	40.0	13.0	11.640	07.809	2.426	0.307	19.02	0.247	3.84	1.6	99.92	054.10	BS
BT 1 39	43.6	15.1	11.752	06.947	2.548	0.334	14.59	0.181	2.59	1.6	99.28	040.20	BS
BT 1 45	40.2	14.2	10.604	06.748	2.629	0.921	18.02	0.245	3.75	2.0	99.30	054.60	BS
BT 1 56	43.4	16.1	12.479	06.516	2.480	0.305	13.93	0.176	3.09	0.8	99.25	033.10	BS
BT 1 63	40.9	15.9	12.227	07.030	2.399	0.302	15.02	0.176	3.04	3.6	99.87	043.40	BS
BT 1 73	52.6	16.8	08.786	03.731	7.360	0.476	06.45	0.089	0.92	2.8	99.83	001.19	BS
BT 1 78	41.3	15.3	10.702	05.902	3.154	0.307	13.27	0.182	3.12	5.8	99.02	009.27	BS
BT 1 94	42.4	15.5	11.598	06.466	2.656	0.693	13.77	0.181	2.80	2.4	98.41	033.00	BS
BT 1 97	42.1	16.4	13.095	06.831	2.507	0.233	14.03	0.158	3.07	0.0	98.49	040.10	BS
BT 2 23	45.8	20.0	11.822	03.747	3.100	0.348	10.73	0.116	3.19	0.6	99.44	023.70	HS
BT 2 30	46.0	19.5	11.724	03.747	2.925	0.281	10.32	0.127	2.97	1.0	98.54	007.33	HS
BT 2 49	43.4	18.1	11.724	04.858	2.629	0.322	13.57	0.139	4.00	0.8	99.60	033.60	HS
BT 2 68	46.2	20.4	11.933	03.631	3.208	0.443	09.75	0.112	2.65	0.6	98.94	015.00	HS
BT 2 72	46.0	20.0	12.045	03.581	3.168	0.364	10.15	0.112	2.95	0.2	98.59	022.60	HS
BT 2 93	46.6	21.0	12.087	03.117	3.397	0.354	08.69	0.105	2.42	1.0	98.77	003.38	HS
BT 2 99	42.8	18.1	12.171	04.991	2.588	0.249	14.73	0.134	2.79	1.4	99.96	018.70	HS
BT 3 12	43.0	17.9	12.297	04.891	2.467	0.222	14.59	0.134	2.67	0.0	98.21	054.80	HS
BT 3 19	45.1	19.6	11.864	03.847	3.127	0.323	10.40	0.117	2.94	1.2	98.59	042.90	HS
BT 3 26	42.8	17.8	09.821	04.991	2.332	1.374	14.30	0.133	2.62	3.8	99.91	044.20	HS
BT 3 31	41.9	17.6	11.430	04.808	2.561	0.395	14.03	0.133	2.69	3.4	98.93	047.40	HS
BT 3 49	44.5	17.4	11.514	04.941	2.494	0.233	14.30	0.132	2.75	1.2	99.43	041.40	HS
BT 3 53	43.0	18.1	11.822	04.957	2.534	0.248	14.44	0.134	2.80	1.6	99.67	036.70	HS
BT 3 60	44.3	21.5	11.598	03.664	3.222	0.189	10.68	0.096	1.88	2.2	99.35	028.60	HS
BT 3 68	45.3	21.7	11.192	03.482	3.316	0.296	09.87	0.096	1.47	1.8	98.59	024.60	HS
BT 3 75	44.3	21.0	12.479	03.349	2.844	0.292	08.82	0.068	1.42	5.2	99.72	005.02	HS
BT 3 83	44.5	18.7	11.430	04.294	2.548	0.219	13.44	0.112	2.50	1.6	99.34	032.80	HS
BT 3 88	42.8	17.0	12.325	05.239	2.346	0.171	13.77	0.132	4.34	0.8	98.90	028.20	MA
BT 3 97	42.6	17.4	12.227	04.974	2.588	0.239	12.30	0.179	3.84	2.6	98.89	000.49	HL
BT 4 07	36.4	10.0	11.654	06.632	2.035	0.198	22.17	0.336	5.84	1.0	96.23	074.00	BHS
BT 4 20	38.7	12.3	10.632	05.438	3.033	0.371	16.59	0.253	4.17	0.2	91.68	042.90	BHS
BT 4 25	39.1	13.0	10.562	05.355	2.831	0.298	16.73	0.258	4.50	0.2	92.92	043.90	BHS
BT 4 31	39.1	12.7	10.255	04.974	2.912	0.351	16.30	0.247	4.17	0.0	91.01	048.60	BHS
BT 4 40	35.3	09.8	10.590	06.334	2.116	0.318	20.45	0.312	5.17	0.4	90.81	034.30	BHS
BT 4 43	34.7	09.8	10.660	06.748	1.982	0.227	21.02	0.328	5.50	0.4	91.34	055.70	BHS
BT 4 52	26.1	02.6	10.982	11.125	0.406	0.076	34.75	0.554	8.17	-2.2	92.61	100.00	BHS
BT 4 57	41.5	13.4	10.674	05.455	2.939	0.358	16.30	0.267	4.17	0.6	95.67	029.90	MS
BT 4 65	40.2	12.3	10.548	05.770	2.642	0.383	18.02	0.287	4.67	0.6	95.41	042.20	SP
BT 4 71	33.4	07.0	11.290	08.622	1.415	0.190	27.74	0.436	7.01	-1.0	96.06	083.80	SP
BT 4 78	32.5	07.2	11.444	09.517	1.725	0.186	27.89	0.442	6.84	-0.6	97.13	086.00	SP
BT 4 85	35.5	09.1	10.423	07.444	2.035	0.251	24.02	0.413	6.00	-1.2	93.97	059.00	SP
BT 4 95	39.4	11.1	10.367	06.300	2.656	0.311	20.45	0.343	3.84	-0.6	94.16	047.10	MS

Sample Number	SiO_2 %	Al_2O_3 %	CaO %	MgO %	Na_2O %	K_2O %	Fe_2O_3 %	MnO %	TiO_2 %	LOI %	Total %	Susc. emu * 10^3	Rock Types
BT 5 24	42.6	17.8	06.589	03.018	3.707	1.434	11.57	0.146	2.10	02.4	91.29	011.80	Mess
BT 5 35	38.1	12.1	09.191	05.820	2.035	0.866	19.02	0.261	5.67	01.8	94.83	015.70	Mess
BT 5 46	38.7	13.6	10.409	06.980	1.806	0.878	19.45	0.205	6.00	01.8	99.85	027.30	Mess
BT 5 60	37.2	13.2	10.898	06.864	1.806	0.686	16.45	0.198	5.00	02.4	94.74	008.43	Mess
BT 5 74	38.5	11.7	11.752	06.980	1.415	0.465	18.88	0.209	6.34	02.0	98.25	003.44	Mess
BT 5 88	39.6	12.3	11.626	06.914	1.928	0.606	16.02	0.205	5.84	02.0	96.98	003.40	Mess
BT 5 99	40.2	13.6	11.024	07.063	1.860	0.624	14.87	0.159	4.17	03.0	96.59	006.44	Mess
BT 6 22	33.2	12.3	05.414	08.273	1.112	0.472	28.60	0.280	5.67	03.2	98.46	045.00	MelH
BT 6 34	69.5	15.7	00.755	00.635	7.967	0.125	02.97	0.015	0.17	01.0	98.84	000.07	MelH
BT 6 43	40.9	13.0	12.227	06.400	1.550	0.313	18.16	0.181	4.17	02.6	99.49	010.70	MelH
BT 6 53	40.0	11.3	11.290	07.643	1.442	0.395	20.31	0.226	4.67	02.0	99.31	029.20	MelH
BT 6 62	38.3	10.8	11.108	08.025	1.219	0.480	22.02	0.222	4.84	02.6	99.57	042.60	MelH
BT 6 65	38.7	11.1	11.947	07.279	1.039	0.370	18.88	0.198	4.84	02.8	97.21	025.60	MelH
BT 6 75	37.9	12.1	11.108	06.350	1.361	0.383	17.59	0.173	3.34	03.0	93.25	007.48	MelH
BT 6 93	36.6	10.4	10.870	07.494	1.132	0.289	20.74	0.201	4.50	02.0	94.19	053.50	MelH
BT 6 97	37.2	10.4	11.402	07.527	1.321	0.349	20.45	0.205	5.00	01.6	95.47	039.50	MelH
BT 8 31	48.8	19.1	06.925	01.658	4.475	1.386	06.42	0.089	1.18	02.8	92.79	05.660	BHS
BT 8 42	37.4	10.0	09.681	07.279	1.847	0.769	19.59	0.298	5.17	01.4	93.48	033.60	BHS
BT 8 73	41.1	14.0	09.261	04.891	3.249	0.653	13.41	0.227	2.90	02.6	92.24	010.90	LS
BT 8 86	35.9	09.3	09.163	07.527	1.914	1.195	20.02	0.323	5.34	01.6	92.27	064.80	LS
BT 8 96	49.2	19.3	09.331	02.852	4.489	1.374	09.28	0.133	1.95	01.8	99.68	020.30	LS
BT 9 38	98.0	00.2	00.238	00.036	0.046	0.057	00.46	0.006	0.03	00.2	99.23	000.00	Mess
BT 9 56	36.8	17.6	09.583	04.145	1.318	1.131	12.36	0.121	1.92	03.8	88.73	048.90	Mess
BT 9 66	36.6	20.2	11.500	02.437	1.591	2.133	07.72	0.079	1.25	05.2	88.70	008.08	Mess
BT 9 67	34.0	13.4	11.514	05.389	1.302	1.142	17.30	0.185	2.92	03.8	90.98	075.30	Mess
BT 9 78	38.7	21.2	09.471	02.172	2.211	1.735	08.21	0.070	1.22	05.6	90.56	011.30	Mess
BT 9 96	37.9	20.2	11.724	01.152	2.130	2.639	10.47	0.120	2.34	11.2	99.84	000.25	Mess
GE-1	38.1	13.2	14.550	06.649	1.320	0.713	20.02	0.190	3.52	01.6	99.86	166.00	
GE-2	38.3	12.5	14.410	07.643	0.895	1.165	20.16	0.194	3.19	01.4	99.81	121.00	
95-1 39	40.6	07.9	15.300	13.380	0.890	0.584	14.87	0.223	2.65	9.9	99.99	059.80	PS
95-1 46	40.4	07.6	14.425	14.410	0.777	0.528	17.16	0.227	2.74	1.6	99.88	078.60	PS
95-1 73	37.7	06.6	17.070	11.656	0.767	0.236	19.73	0.241	5.17	0.6	99.99	101.00	Mess
95-1 75	42.6	25.3	14.555	02.437	2.238	1.670	06.33	0.083	1.28	3.4	99.99	015.90	Mess
95-1 90	40.4	23.6	16.090	03.084	2.035	0.880	08.57	0.103	1.63	3.4	99.99	022.50	Mess
95-1 112	42.2	23.4	14.690	03.034	1.779	1.789	08.37	0.107	1.57	2.8	99.90	031.30	Mess
95-1 135	38.3	11.5	16.090	09.119	1.096	0.715	17.16	0.210	4.34	1.4	99.94	085.80	Mess
95-1 162	41.3	22.9	14.690	03.349	1.712	1.892	09.27	0.112	1.65	3.0	99.81	028.10	Mess
95-1 175	35.9	08.7	16.510	10.164	0.666	0.378	20.88	0.285	5.17	1.2	99.87	121.00	Mess
95-1 189	40.4	23.6	15.530	03.316	1.645	1.888	09.09	0.103	1.62	2.6	99.62	032.70	Mess
95-1 213	35.3	09.4	14.830	09.401	0.960	0.606	22.02	0.239	5.50	1.6	99.90	138.00	Mess
95-1 229	58.6	16.6	08.117	00.204	9.234	0.106	04.60	0.063	0.45	1.2	99.26	000.30	MelS
95-1 237	41.3	21.2	13.500	04.311	1.806	1.747	11.10	0.121	2.17	2.8	99.96	045.50	Ho
95-1 248	40.0	21.3	15.670	03.996	1.604	1.458	11.21	0.124	2.15	2.4	99.96	052.20	MelS

Sample Number	SiO_2 %	Al_2O_3 %	CaO %	MgO %	Na_2O %	K_2O %	Fe_2O_3 %	MnO %	TiO_2 %	L0I %	Total %	Susc. emu * 10^3	Rock Types
95-1 256	38.1	20.8	17.770	02.964	1.901	1.001	08.77	0.099	1.53	7.0	99.91	020.00	Mess
95-1 270	38.1	16.1	14.970	06.731	1.456	0.636	16.02	0.187	3.67	2.0	99.80	095.90	Mess
95-1 290	42.6	21.5	15.530	03.333	2.143	0.699	09.87	0.102	1.67	2.0	99.66	035.00	Mess
95-2 10	49.9	17.0	13.800	6.633	1.941	0.158	15.59	0.155	5.34	0.2	99.98	053.10	BS
95-2 40	18.1	16.1	05.300	2.750	5.325	2.880	07.09	0.124	2.04	0.6	99.67	006.10	BS
95-2 61	51.1	17.2	06.800	3.465	4.866	2.506	10.52	0.167	2.60	0.4	99.67	024.70	BS
95-2 86	49.2	15.5	08.800	3.813	4.246	1.723	12.17	0.218	3.37	0.2	99.60	027.10	BA
95-2 95	45.3	13.0	11.800	5.405	3.330	0.847	15.59	0.296	3.44	0.2	99.29	061.80	M
95-2 102	44.7	13.8	11.400	5.272	3.491	0.894	15.87	0.288	4.00	0.2	99.92	063.50	M
95-2 114	44.9	12.8	11.400	5.272	3.494	0.927	16.30	0.298	4.00	0.2	99.72	073.50	M
95-2 135	45.3	13.2	10.600	5.256	3.896	1.326	15.59	0.342	3.24	1.0	99.90	123.00	M
95-2 140	38.3	11.1	10.200	5.654	2.790	1.253	23.74	0.412	5.84	0.6	99.88	026.50	M
95-2 148	44.5	14.0	11.400	5.554	3.869	1.204	15.16	0.315	3.22	0.6	99.80	050.70	A
95-2 159	49.8	17.9	08.600	3.067	5.513	1.675	10.73	0.165	2.09	0.4	99.80	025.60	A
95-2 172	47.3	12.3	04.700	1.708	4.934	2.976	21.59	0.473	3.70	0.0	99.64	133.00	BA
95-2 185	42.6	13.0	09.500	4.100	4.000	1.500	19.31	0.350	4.84	0.0	99.11	100.00	A
95-2 200	54.8	19.6	03.100	0.450	6.200	2.500	08.54	0.140	1.55	2.4	99.20	016.90	MesA
95-2 208	34.2	05.1	09.890	3.000	2.300	1.000	35.89	0.790	6.84	0.0	99.03	265.00	M
95-2 211	36.4	03.8	13.100	4.100	1.900	0.800	33.32	0.840	5.67	0.0	99.61	201.00	A
95-2 215	36.4	02.8	15.100	4.200	1.700	0.500	32.75	0.820	5.17	0.0	99.46	184.00	A
95-2 225	43.4	15.5	09.890	4.600	4.000	1.000	15.02	0.260	5.00	1.2	99.90	053.60	BHA
95-2 235	60.5	20.0	04.160	0.800	7.200	2.700	02.65	0.070	0.35	0.6	99.93	008.30	BHA
95-2 250	40.2	13.8	11.860	6.200	3.100	0.500	17.59	0.300	6.17	0.2	99.82	055.90	BHA
95-2 266	45.1	14.5	10.380	5.100	3.900	0.900	15.44	0.290	3.97	0.2	99.82	055.90	PA
95-2 279	46.2	16.4	09.990	4.400	4.200	1.200	13.28	0.220	3.09	0.4	99.41	050.70	BA
95-2 292	51.5	18.1	07.200	3.000	5.300	1.700	09.95	0.150	1.70	0.6	99.22	034.50	BA
95-2 297	40.6	14.0	13.260	7.200	2.700	0.290	16.59	0.210	4.50	0.2	99.47	057.60	BA
95-3 147	57.6	17.9	01.450	0.530	4.900	5.900	07.21	0.200	0.37	3.6	99.88	005.40	Mess
95-3 206	61.6	19.1	00.860	0.120	6.600	6.200	04.19	0.100	0.12	1.2	100.00	031.70	Mess
95-3 219	59.9	19.1	01.670	0.210	6.500	6.300	04.92	0.150	0.15	1.0	99.87	006.50	Mess
95-3 227	60.3	18.5	01.890	0.200	6.300	6.000	04.93	0.120	0.18	1.4	99.86	009.30	Mess
95-3 238	57.8	18.1	02.530	0.390	6.200	6.200	07.26	0.220	0.32	1.0	99.97	009.50	Mess

INDEX FOR ROCK TYPES

BS Biotite Syenite
HS Hornblende Syenite
MA Magnetite Anorthosite
HL Hornblende Lamprophyre
BHS Biotite-Hornblende Syenite
MS Magnetite Shonkinite
SP Shonkinite Porphyry
Mess Mescratic Syenite
MelS Melanocratic Syenite
MelH Melanocratic Hornblendite

PS Pyroxene Syenite
HO Hornfels
A Anorthosite
M Magnetite
BA Biotite Anorthosite
MesA Mesocratic Anorthosite
MagA Magnetitic Anorthosite
BHA Biotite-HornblendeAnorthosite
PA Pyrrhotite Anorthosite
LS Leucocratic Syenite

Table 3:

Average susceptibility and estimated magnetite content for twelve holes and the boulder.

Hole No.	Susceptibility emu	Magnetite Content (volume) Gaucher (maximum)	Magnetite Content (volume) Bath
94-1	.045	21	14
94-2	.020	15	8
94-3	.041	20	13
94-4	.066	25	18
94-5	.012	14	5
94-6	.029	18	10
94-7 Bottom only	.023	16	8
94-8	.018	15	7
94-9	.012	13	5
95-1	.412		
95-2	.569		
95-3	.068		
boulder	.215	44	43

TABLE 4

Distribution of Fe and Ti after magnetic separation

SAMPLE						MAGNETIC SEPARATE					SAMPLE	
Number	Susceptibility emu	Fe_2O_3 %	Fe %	TiO_2 %	Ti %	Total Recovery %	Fe %	Ti %	Other	Fe in MAGNETITE *	Fe **	Ti
BT 4-52	100	34.75	24.3	8.17	4.90	22.1	55	11.9	6	43	9.5	2.6
BT 4-71	83	27.74	19.4	7.01	4.21	21.7	51	11.4	10	38	8.2	2.5
BT 4-93	47	20.45	14.3	3.84	2.30	10.8	54	10.9	8	41	4.4	1.2
BT 5-35	16	19.02	13.3	5.67	3.40	13.1	29	7.0	49	21	2.8	0.9
BT 5-99	0.25	14.87	10.4	4.17	2.50	6.1	38	16.3	22	19	1.1	1.0
BT 6-22	45	28.60	20.0	5.67	3.40	20.7	45	8.7	21	35	7.0	1.8

* Assumes that Titanium in magnetic separate is in the form of Ilmenite $FeTiO_3$.

** This is Fe in magnetite form in the magnetic separate.

Table 5:

Total magnetic field, average susceptibility and Magnetite content in the holes (weight).

Hole Number	Susceptibility (emu * 10^3)	Magnetite	Total Field (IGRF removed NT)
94-1	45.3	3.68	2550
94-2	19.6	1.59	2500
94-3	41.1	3.34	2650
94-4	66.5	5.40	2800
94-5	12.0	0.98	2600
94-6	28.8	2.34	2000
94-7	22.9	1.86	1500
94-8	18.0	1.47	1500
94-9	12.1	0.98	2200
95-1	41.2	3.35	1775
95-2	56.9	4.63	3200
95-3	6.83	0.55	1150

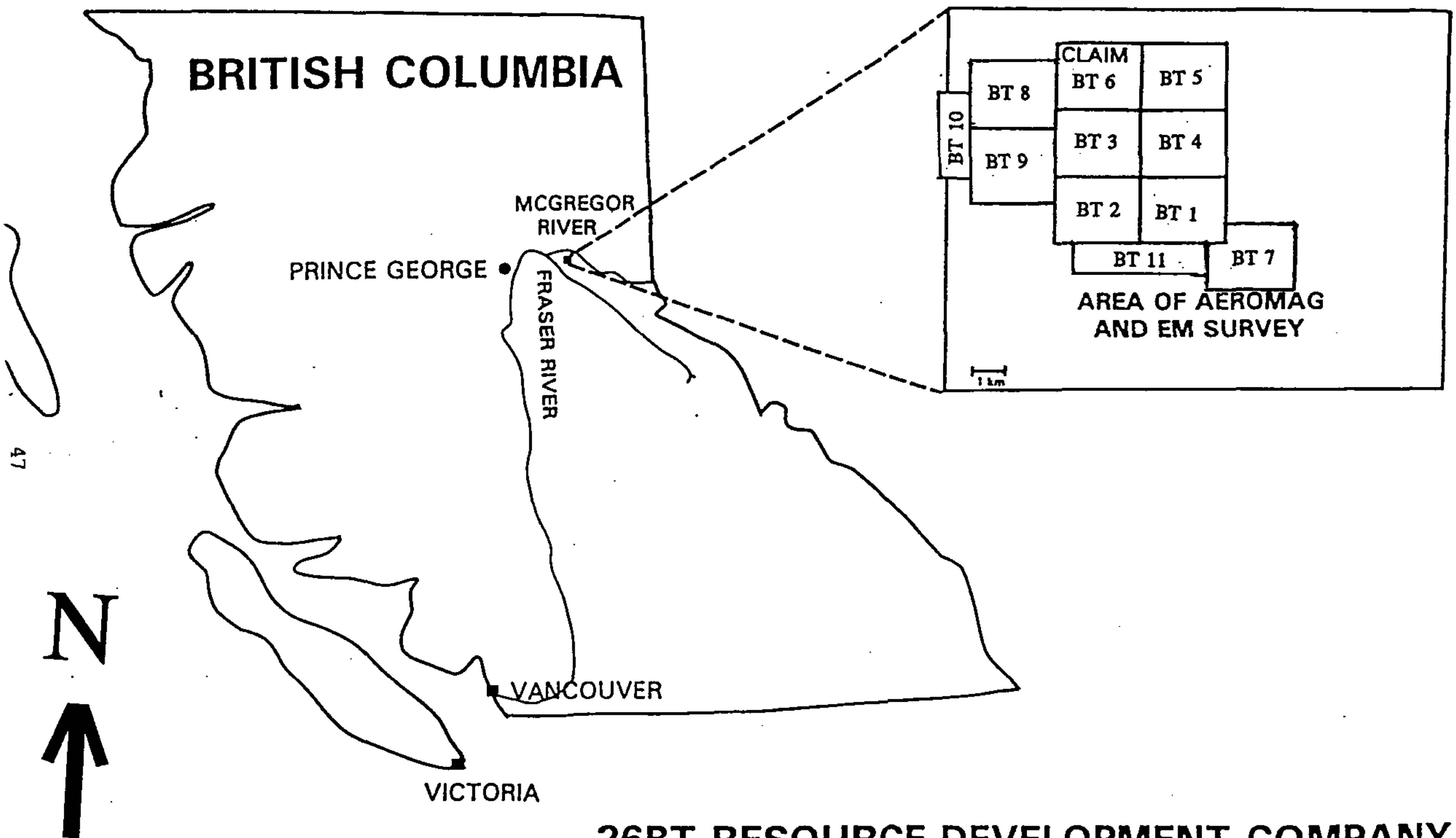

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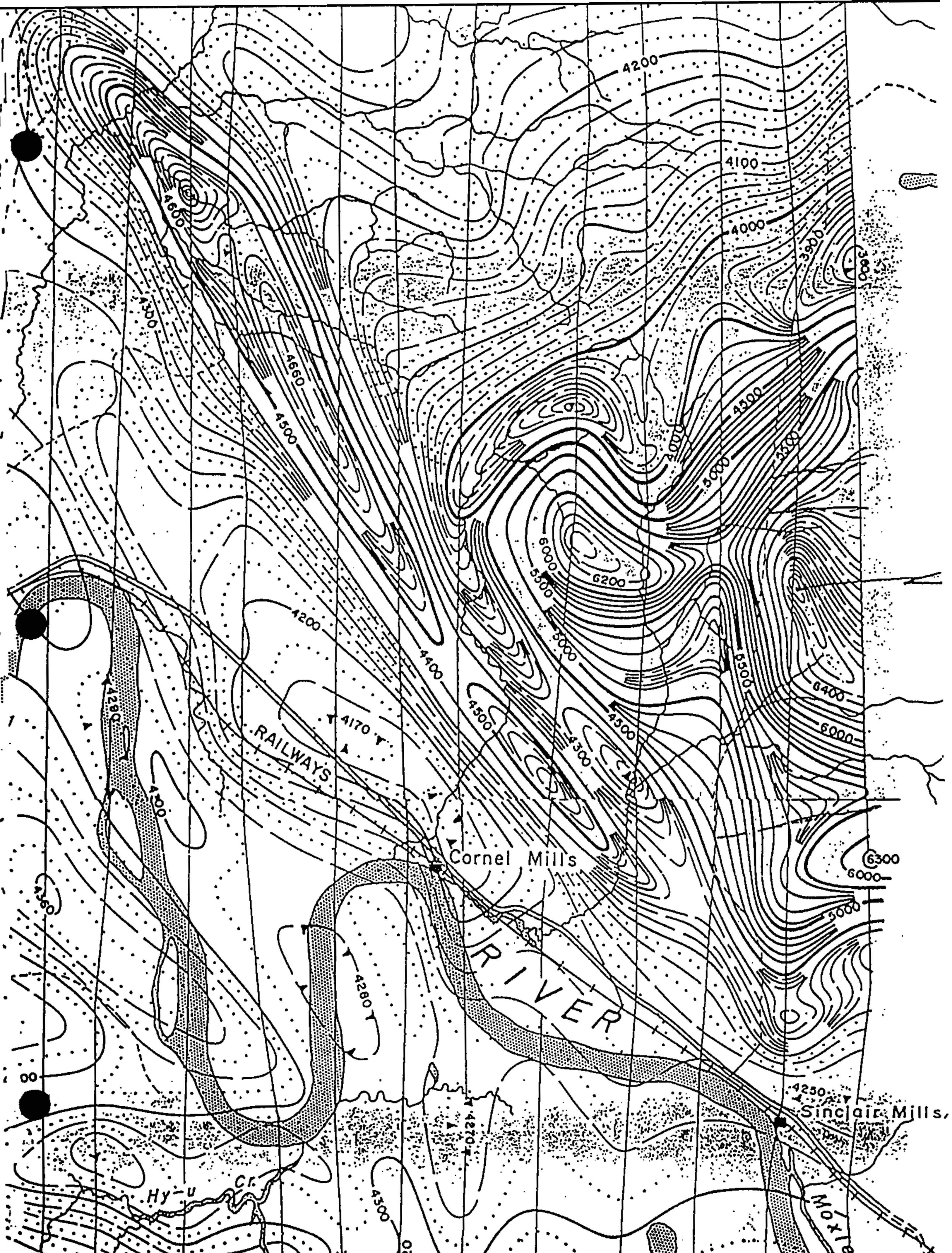
FIGURE 1
AREA OF AEROMAG AND EM SURVEY

CALGARY ALBERTA



Joins Map 1535 G, "Hutton"

40'

MAP 1536G

FIGURE 2
AEROMAGNETIC MAP 1536G

June - Sept 1961

SINCLAIR MILLS

BRITISH COLUMBIA

Magnetic surv·
Geophysics Division,

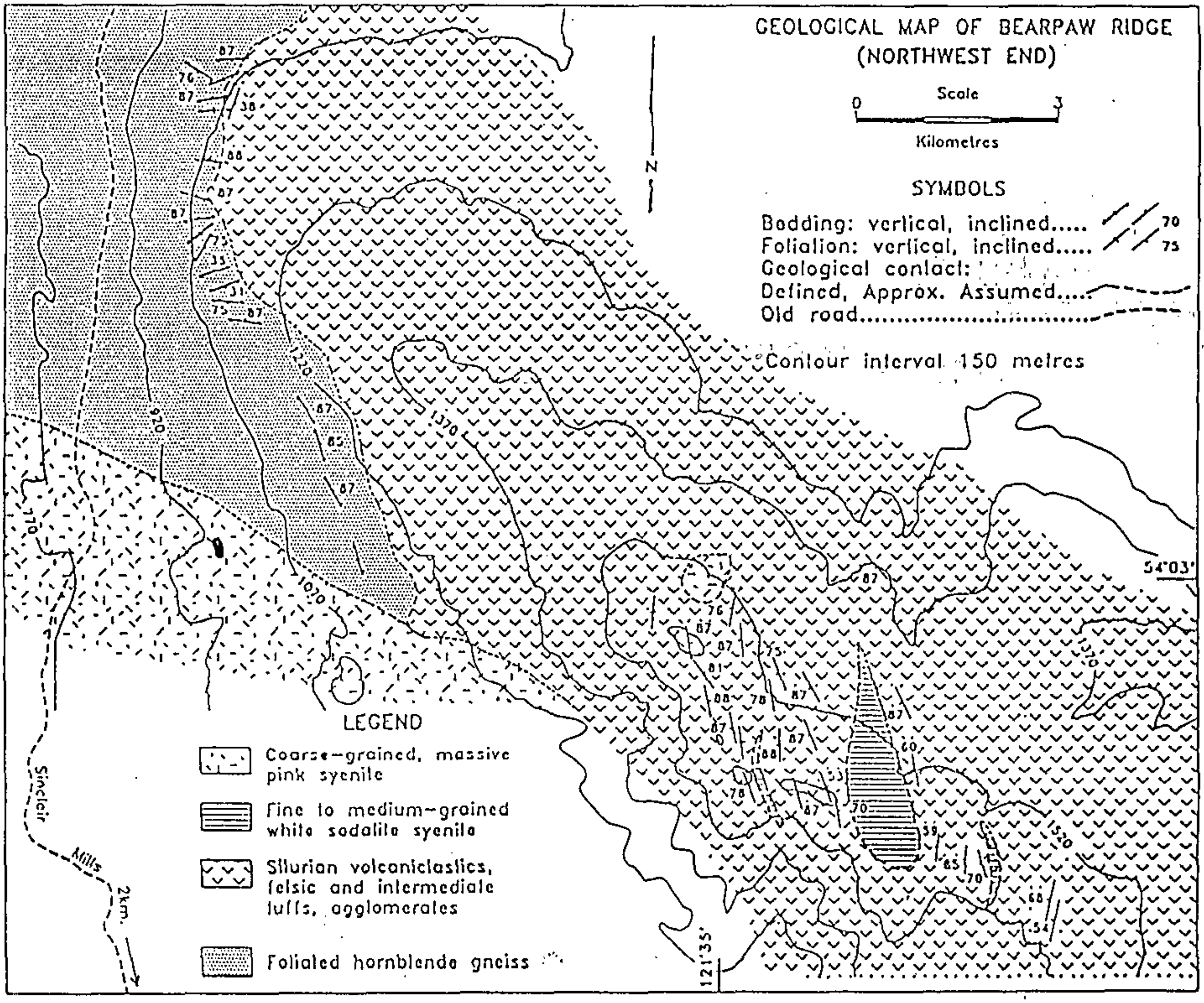


FIGURE 3
GEOLOGICAL MAP OF BEARPAW RIDGE

APPENDIX 1

Drill hole and core information

Hole diameter	1 ¾" 43 mm
Inclination	90°
Azimuth	n.a.
Minerals noted	no obvious metals noted, detailed analysis planned.
Number of holes	12
Total hole depth	1800′ 548.2 m
Total length of core	1578′ 480.6 m
Location of cores	7203 Keewatin Street S.W., Calgary, AB, T2V 2M6
Collar elevation of holes (estimated from topo map)	94-1 3620′
	94-2 3700′
	94-3 4080′
	94-4 3990′
	94-5 3630′
	94-6 3880′
	94-7 2810′
	94-8 2695′
	94-9 2490′
	95-1 2400′
	95-2 4575′
	95-3 5320′22

MASTER MINERAL RESOURCE SERVICES LTD.

Pilsum Master, M.Sc., P.Geol

Industrial Minerals - Market Development, Technical Advice, Evaluation

AutoCAD, Computer Imaging, Mineralogy (Diamond Indicator Minerals)

APPENDIX 2

To: **Lorne Kelsch**
BT Resource Development
c/o TerraMin Research Labs Ltd.
Calgary, Alberta

From: Pilsum Master, P.Geol.
Master Mineral Resource Services Ltd.

Date: January 19, 1995.

Re.: Petrology of BT 4- and BT 5 - samples

To determine the petrology and identification of rock samples, thin section petrography is normally completed, supplemented by major element chemical analysis.

The major element chemical analysis was completed for the suite of samples, and was made available for interpretation. Also, the rejects from each sample were preserved and submitted for examination under a petrographic binocular microscope with a magnification between 10X and 40X. The petrological descriptions and the mineralogy determined are preliminary, and can only be confirmed by detailed mineralogical examination, e.g. thin sections.

NORM MINERALOGICAL ANALYSIS BY CALCULATION FROM CHEMICAL ANALYSIS:

It was felt that the results of the preliminary petrological examination could be supplemented by the data from the chemical analysis. The technique described below is used for igneous rocks, and calculates the theoretical mineral composition or *norm (normalisation of chemical composition for comparison).* Although the petrological examination revealed that the rocks are probably from a contact zone of an igneous body, the NORM CALCULATIONS are useful to compare the samples, and determine their unique characters.

It is emphasised that the mineralogical composition of an igneous rock, expressed as weight or volume percentages of microscopically identified minerals, i.e. the *mode* (modal composition) of the rock is not determined here. In the norm calculations the various oxide components as determined by chemical analysis are combined in a series of steps to form a series of normative mineral components.

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The complete calculations require completion of a number of sequence of oxide combinations so that eventually the calculated normative minerals correspond broadly with those present modally in any igneous rock which crystallised slowly at low pressure. Thus insufficient silica to form quartz or to be applied to other rock forming minerals like pyroxene, suggests that the rock is undersaturated in silica, and normative olivine (instead of hypersthene), normative nepheline and/or leucite instead of feldspars are recalculated. In this exercise, calculations were only taken to the point where deficiency in silica -- no free quartz -- is indicated. A more complete calculation is warranted if selected members of the rock suite are subjected to modal analysis (thin section) and the data used to calculate the norms for the rest of the samples.

The *norms* of samples BT4-52, BT4-85, BT 4-93, BT5-24, BT5-46 were completed to the determination of quartz, and are enclosed. The calculations indicate that a substantial portion of the Fe occurs as magnetite, there is no free quartz, and very little potassic feldspar. The silicate minerals are mainly sodic feldspar and plagioclase, although feldspathoid minerals can be present. The ferro magnesian minerals are mainly diopsidic pyroxene, with a strong indication of enstatic (Mg) component. Presence of Ca-silicates is likely due to the high proportion of wollastonite (skarn?). Complex hydrous modal minerals like amphibole and mica cannot be calculated by these methods directly.

None of the five samples match the norms of common igneous rock types.

The rocks are tentatively identified as diorite (>50% mafic) from the contact zone (probably a skarn) with undetermined country rock. A major component is magnetite, and sufficient titanium is present to indicate the existence of ilmenite.

PETROGRAPHIC EXAMINATION:

Laboratory rejects of thirteen samples of the BT 4- series and 7 samples of the BT 5-series were examined under hand lens and a 10-40X binocular microscope. In addition, the samples were tested for carbonate by 10% HCl acid at room temperature, and for magnetism by a hand-held magnetic stud finder. The terms used to describe the carbonate content and magnetic properties are subjective, e.g. weak, strong.

BT 4 -20:
Dioritic,≳50% mafic
Mafics, lath shaped diopsidic pyroxene and/or hornblende, biotite, magnetite.
Felsic, lath shaped opaque, white, prismatic cleavage -- feldspar (?)
Slight effervescence with 10% HCl
Strong magnetic.

BT 4 - 25:
same as BT4-20, less green more dark mafic component.

BT 4- 7:
same as BT 4- 20, slightly finer grained

BT 4- 31, - 40, -43:
same as BT 4-20

BT 4- 52:
same as BT 4- 20, except less (< 50%) light coloured component, and more magnetic.

BT 4 - 57:
same as BT 4 -20

BT 4 - 65:
same as BT 4-20, except stronger response to 10% HCl -- more CO_3, calcite grains recognisable, some H_2S smell with acid --- sulphide in matrix (?).

BT 4 - 71:
same as BT 4- 65

BT 4 - 78:
same as BT 4 - 65.

BT 4- 85:
same as BT 4 -65, except weakly magnetic

BT 4 - 93:
same as BT 4 - 65.

BT 5 - 24:
Dioritic, 50% mafics.
Mafics mainly diopsidic pyroxene and/or hornblende.
Light coloured minerals: opaque dull lustre (not like feldspar), hardness > 5, not possible to id..
Some effervescence with 10% HCl
Weakly magnetic.

BT 5 - 35:
More like BT4-20 than BT 5-24 with less of the sheet like mafic minerals present. Light coloured mineral laths look like feldspar phenocrysts.
Little or no reaction to 10% HCl
Weakly magnetic.

BT 5- 46:
same as BT 5 - 35, except some effervescence with 10% HCl.

BT Resource Development/ TerraMin/MMRS

BT 5- 60:
same as BT 5 - 46.

BT 5 - 74:
Dioritic, light coloured feldspar (?) laths not all lath shaped, smaller more irregular in form, some with ochre colour.
No magnetic reaction
Medium effervescence with 10% HCl

BT 5 - 88:
same as BT 5- 74, except green "albitic" phenocrysts.

BT 5 - 99:
same as BT 5 - 88, except weakly magnetic and a slight response to 10% HCl.

CONCLUSIONS AND RECOMMENDATIONS:

The samples represent a contact zone of a dioritic intrusion. The mode of origin of the magnetite is not possible to determine. Presence of Ca-silicate minerals is suspected but cannot be confirmed, nor can the presence of skarn type of mineralisation be determined. Modal mineralogical determinations using thin section petrography of atleast three representative samples of each of the series is recommended. The modal compositions can then be used to compare the remainder of the sample suite using their major element chemical analysis. For this normative calculations can be used with more confidence.

January 19, 1995

Pilsum P. Master, P.Geol.

DETERMINATIVE PETROLOGY. SAMPLE: BT 4 – 52 PROJECT: 26 BT RESOURCE DEVELOPMENT

NORM CALCULATIONS BY CIPW METHOD. MASTER MINERAL RESOURCE SERVICES LTD.

Reported Fe_2O_3: 34.75 All Fe recalculated and assigned to FeO

CONSTITUENTS		SiO_2	Al_2O_3	FeO (calc.)	Fe_2O_3(calc)	MgO	CaO	Na_2O	K_2O	TiO_2	MnO	LOI	TOTAL	MOLECULAR PROPORTIONS	MOLECULAR WEIGHTS	NORM % WEIGHT MINERAL		
WEIGHT %,CHEM.ANAL.		26.10	2.60	31.35	0.00	11.13	10.96	0.41	0.06	8.17	0.55	−2.20	89.16					
MOLECULAR WTS.		60.00	102.00	160.00	72.00	40.00	56.00	62.00	94.00	80.00	71.00							
MOLECULAR PROP.		435.00	25.49	195.62	0.00	278.13	196.11	6.55	0.81	102.13	7.80							
ADJUSTED MOL.PROP.				203.73														
ILMENITE				30.29						30.29				0.05	152.00	4.60	ILMENITE	
SPHENE(TITANITE)																	SPHENE(TITANITE)	
RUTILE										71.84				0.07	80.00	5.75	RUTILE	
ORTHOCLASE		4.85	0.81						0.81					0.00	556.00	0.45	ORTHOCLASE	
ALBITE		39.29	6.55					6.55						0.01	524.00	3.43	ALBITE	
ANORTHITE		36.27	18.13				18.13							0.02	278.00	5.04	ANORTHITE	
MAGNETITE				165.63	0.00									0.17	232.00	33.43	MAGNETITE	
HEMATITE					0.00									0.00	160.00	0.00	HEMATITE	
	Fe			4.66										0.00	132.00	0.64		ferrosilite
DIOPSIDE	Mg	374.08				173.12								0.37	100.00	37.41	DIOPSIDE	enstatite
	Ca						196.11							0.20	116.00	22.75		wollastonite
OLIVINE		0.95		−0.02										−0.00	132.00	−0.00	OLIVINE	fayalite
	Mg					0.97								0.00	100.00	0.10		forsterite
QUARTZ		−20.44												−0.02	60.00	−1.23	QUARTZ	
CORUNDUM			0.00											0.00	102.00	0.00	CORUNDUM	
																117.37	Total	

DETERMINATIVE PETROLOGY. SAMPLE: BT 5 – 46 PROJECT: 26 BT RESOURCE DEVELOPMENT

NORM CALCULATIONS BY CIPW METHOD. MASTER MINERAL RESOURCE SERVICES LTD.

Reported Fe_2O_3: 19.45 All Fe recalculated and assigned to FeO

CONSTITUENTS		SiO2	Al2O3	FeO (calc.)	Fe2O3(calc)	MgO	CaO	Na2O	K2O	TiO2	MnO	LOI	TOTAL	MOLECULAR PROPORTIONS	MOLECULAR WEIGHTS	NORM % WEIGHT MINERAL		
WEIGHT %,CHEM.ANAL.		56.70	13.60	17.55	0.00	6.98	10.41	1.81	0.88	6.00	0.21	1.60	97.92					
MOLECULAR WTS.		60.00	102.00	160.00	72.00	40.00	56.00	62.00	94.00	80.00	71.00							
MOLECULAR PROP.		645.00	133.33	109.68	0.00	174.50	185.83	29.13	9.34	75.00	2.89							
ADJUSTED MOL.PROP.				112.55														
ILMENITE				30.29						30.29				0.03	152.00	4.60	ILMENITE	
SPHENE(TITANITE)																	SPHENE(TITANITE)	
RUTILE										44.71				0.04	80.00	3.58	RUTILE	
ORTHOCLASE		56.04	9.34						9.34					0.01	558.00	5.19	ORTHOCLASE	
ALBITE		174.77	29.13					29.13						0.03	524.00	15.26	ALBITE	
ANORTHITE		189.73	94.66				94.66							0.09	278.00	26.37	ANORTHITE	
MAGNETITE				79.37	0.00									0.08	232.00	18.41	MAGNETITE	
HEMATITE					0.00									0.00	160.00	0.00	HEMATITE	
	Fe			1.46										0.00	132.00	0.20		ferrosilite
DIOPSIDE	Mg	276.69				69.53								0.28	100.00	27.69	DIOPSIDE	enstatite
	Ca						185.68							0.19	116.00	21.56		wollastonite
OLIVINE		0.97		−0.02										−0.00	132.00	−0.00	OLIVINE	fayalite
	Mg					0.96								0.00	100.00	0.10		forsterite
QUARTZ		−53.40												−0.05	60.00	−3.20	QUARTZ	
CORUNDUM			0.00											0.00	102.00	0.00	CORUNDUM	
																119.76	Total	

DETERMINATIVE PETROLOGY. SAMPLE: BT 4 – 65 PROJECT: 26 BT RESOURCE DEVELOPMENT
NORM CALCULATIONS BY CIPW METHOD. MASTER MINERAL RESOURCE SERVICES LTD.

Reported Fe2O3: 24.02 All Fe recalculated and assigned to FeO

CONSTITUENTS		SiO2	Al2O3	FeO (calc.)	Fe2O3(calc)	MgO	CaO	Na2O	K2O	TiO2	MnO	LOI	TOTAL	MOLECULAR PROPORTIONS	MOLECULAR WEIGHTS	NORM % WEIGHT MINERAL		
WEIGHT %,CHEM.ANAL.		35.50	9.10	21.67	0.00	7.44	10.42	2.04	0.25	6.00	0.41	-1.20	91.63					
MOLECULAR WTS.		60.00	102.00	160.00	72.00	40.00	56.00	62.00	94.00	80.00	71.00							
MOLECULAR PROP.		591.67	89.22	135.43	0.00	186.10	186.13	32.82	2.67	75.00	5.82							
ADJUSTED MOL.PROP.				141.24														
ILMENITE				30.29						30.29				0.03	152.00	4.60	ILMENITE	
SPHENE(TITANITE)																	SPHENE(TITANITE)	
RUTILE										44.71				0.04	80.00	3.58	RUTILE	
ORTHOCLASE		16.02	2.67						2.67					0.00	556.00	1.48	ORTHOCLASE	
ALBITE		196.94	32.82					32.82						0.03	524.00	17.20	ALBITE	
ANORTHITE		107.45	53.72				53.72							0.05	278.00	14.93	ANORTHITE	
MAGNETITE				105.14	0.00									0.11	232.00	24.39	MAGNETITE	
HEMATITE					0.00									0.00	160.00	0.00	HEMATITE	
	Fe			4.01										0.00	132.00	.53		ferrosilite
DIOPSIDE	Mg	318.53				128.39								0.32	100.00	31.85	DIOPSIDE	enstatite
	Ca						186.13							0.19	116.00	21.59		wollastonite
OLIVINE		0.84		-0.02										-0.00	132.00	-0.00	OLIVINE	fayalite
	Mg					0.87								0.00	100.00	0.10		forsterite
QUARTZ		-48.21												-0.05	60.00	-2.89	QUARTZ	
CORUNDUM			0.00											0.00	102.00	0.00	CORUNDUM	
																117.37	Total	

DETERMINATIVE PETROLOGY. SAMPLE: BT 5 – 24 PROJECT: 26 BT RESOURCE DEVELOPMENT

NORM CALCULATIONS BY CIPW METHOD. MASTER MINERAL RESOURCE SERVICES LTD.

Reported Fe2O3: 11.57 All Fe recalculated and assigned to FeO

CONSTITUENTS		SiO2	Al2O3	FeO (calc.)	Fe2O3(calc)	MgO	CaO	Na2O	K2O	TiO2	MnO	LOI	TOTAL
WEIGHT %,CHEM.ANAL.		42.60	17.60	10.44	0.00	3.02	8.59	3.71	1.43	2.10	0.15	2.40	90.23
MOLECULAR WTS.		60.00	102.00	160.00	72.00	40.00	56.00	62.00	94.00	80.00	71.00		
MOLECULAR PROP.		710.00	174.51	65.23	0.00	75.45	117.66	59.79	15.28	26.25	2.08		
ADJUSTED MOL.PROP.				67.29									
ILMENITE				30.29						30.29			
SPHENE(TITANITE)													
RUTILE										−4.04			
ORTHOCLASE		91.53	15.28						15.28				
ALBITE		358.74	59.79					59.79					
ANORTHITE		196.93	93.46				93.46						
MAGNETITE				34.94	0.00								
HEMATITE					0.00								
	Fe			0.46									
DIOPSIDE	Mg	135.66				17.71							
	Ca						117.66						
OLIVINE		0.93		−0.04									
	Mg					0.97							
QUARTZ		−75.93											
CORUNDUM			0.00										

MOLECULAR PROPORTIONS	MOLECULAR WEIGHTS	NORM % WEIGHT MINERAL		
0.03	152.00	4.60	ILMENITE	
			SPHENE(TITANITE)	
−0.00	80.00	−0.32	RUTILE	
0.02	556.00	8.48	ORTHOCLASE	
0.06	524.00	31.33	ALBITE	
0.10	278.00	27.85	ANORTHITE	
0.03	232.00	8.11	MAGNETITE	
0.00	160.00	0.00	HEMATITE	
0.00	132.00	0.06		ferrosilite
0.14	100.00	13.59	DIOPSIDE	enstatite
0.12	116.00	13.65		wollastorite
−0.00	132.00	−0.01	OLIVINE	fayalite
0.00	100.00	0.10		forsterite
−0.08	60.00	−4.56	QUARTZ	
0.00	102.00	0.00	CORUNDUM	
		102.66	Total	

DETERMINATIVE PETROLOGY. SAMPLE: BT 4 – 93 PROJECT: 26 BT RESOURCE DEVELOPMENT

NORM CALCULATIONS BY CIPW METHOD. MASTER MINERAL RESOURCE SERVICES LTD.

Reported Fe_2O_3: 20.45 All Fe recalculated and assigned to FeO

CONSTITUENTS		SiO_2	Al_2O_3	FeO (calc.)	Fe_2O_3(calc)	MgO	CaO	Na_2O	K_2O	TiO_2	MnO	LOI	TOTAL	MOLECULAR PROPORTIONS	MOLECULAR WEIGHTS	NORM % WEIGHT MINERAL		
WEIGHT %,CHEM.ANAL.		39.40	11.10	18.45	0.00	6.30	10.37	2.66	0.31	3.84	0.34	−0.60	92.16					
MOLECULAR WTS.		60.00	102.00	160.00	72.00	40.00	56.00	62.00	94.00	80.00	71.00							
MOLECULAR PROP.		656.67	108.82	115.30	0.00	157.50	185.13	42.84	3.31	48.00	4.83							
ADJUSTED MOL.PROP.				120.13														
ILMENITE				30.29						30.29				0.03	152.00	4.60	ILMENITE	
SPHENE(TITANITE)																	SPHENE(TITANITE)	
RUTILE										17.71				0.02	80.00	1.42	RUTILE	
ORTHOCLASE		19.85	3.31						3.31					0.00	556.00	1.84	ORTHOCLASE	
ALBITE		257.03	42.84					42.84						0.04	524.00	22.45	ALBITE	
ANORTHITE		125.35	62.66				62.66							0.06	278.00	17.42	ANORTHITE	
MAGNETITE				65.01	0.00									0.08	232.00	18.72	MAGNETITE	
HEMATITE					0.00									0.00	160.00	0.00	HEMATITE	
	Fe			3.64										0.00	132.00	0.48		ferrosilite
DIOPSIDE	Mg	307.57				113.80								0.31	100.00	30.76	DIOPSIDE	enstatite
	Ca						185.13							0.19	116.00	21.47		wollastonite
OLIVINE		0.95		−0.02										−0.00	132.00	−0.00	OLIVINE	fayalite
	Mg					0.87								0.00	100.00	0.10		forsterite
QUARTZ		−54.09												−0.05	60.00	−3.25	QUARTZ	
CORUNDUM			0.00											0.00	102.00	0.00	CORUNDUM	
																117.02	Total	

TERRAMIN RESEARCH LABS LTD.

APPENDIX 3

ANALYTICAL REPORT

26 BT Resource Dev't.

Lorne Kelsch

Date: January 27, 1995

Job No: 95-014

Project:

P.O. No:

20 Core

Signed: ________________

14-2235 30th Avenue N.E., Calgary, Alberta, T2E 7C7
Phone (403) 250-9460 Fax (403) 291-7064

TERRAMIN RESEARCH LABS Ltd.

Job No: 95-014

Client: 26 BT Resource Development

Project:

Sample Number		Magnetite %
BT-4	7	14.6
BT-4	20	9.5
BT-4	25	9.6
BT-4	31	9.6
BT-4	40	12.5
BT-4	43	14.1
BT-4	52	22.1
BT-4	57	8.0
BT-4	65	8.5
BT-4	71	21.7
BT-4	78	21.9
BT-4	85	14.3
BT-4	93	10.8
BT-5	24	4.1
BT-5	35	13.1
BT-5	46	10.2
BT-5	60	5.5
BT-5	74	6.2
BT-5	88	4.3
BT-5	99	6.1

APPENDIX 4

TERRAMIN RESEARCH LABS LTD.

ANALYTICAL REPORT

26 BT Resource Development
7203 Keewatin St. S.W.
Calgary, Alberta
T2V 2M6

Lorne Kelsch

Date: Sept. 1, 1995

Job No: 95-102

Project:

46 Samples

Signed: ymH.

14, 2235 30th Avenue N.E., Calgary, AB, T2E 7C7
Phone: (403)250-9460 Fax: (403)291-7064

TERRAMIN RESEARCH LABS Ltd.

Job No: 95-102

Client: 26 BT Resources
Project:

ANALYSIS OF MAGNETIC FRACTION

Sample Number	Magnetics %	Fe %	Ti %
95-1 39	11.4	40.3	3.56
95-1 46	19.0	38.4	2.80
95-1 73	16.1	49.5	4.51
95-1 75	2.4	41.5	5.00
95-1 90	8.4	44.4	4.94
95-1 112	2.9	45.6	3.23
95-1 135	12.2	51.2	4.57
95-1 162	3.6	47.3	5.34
95-1 175	17.4	48.9	4.76
95-1 189	5.9	46.8	3.90
95-1 213	17.3	52.5	5.48
95-1 229	0.0	0.0	0.00
95-1 237	6.5	50.1	4.82
95-1 248	7.7	47.5	4.57
95-1 256	3.2	45.5	4.62
95-1 270	11.7	55.8	4.59
95-1 290	4.0	50.0	3.50
95-2 10	9.0	58.2	5.21
95-2 40	1.2	60.5	2.45
95-2 61	5.2	55.3	5.89
95-2 86	6.4	56.0	6.02
95-2 95	11.7	55.4	6.40
95-2 102	12.7	51.2	6.98
95-2 114	13.1	56.0	6.08
95-2 135	10.6	51.9	6.98
95-2 140	19.6	59.7	6.60
95-2 148	10.2	54.1	6.50
95-2 159	5.4	59.4	5.42
95-2 172	18.4	65.8	4.92
95-2 185	16.5	59.4	6.42
95-2 200	4.8	53.6	4.87
95-2 208	31.7	63.0	5.45
95-2 211	25.9	59.6	5.42
95-2 215	23.4	61.1	5.21
95-2 225	8.8	56.1	6.39
95-2 235	0.7	60.7	3.75
95-2 250	8.9	56.8	6.05
95-2 268	10.9	56.8	6.43
95-2 279	9.4	55.8	6.77
95-2 292	12.4	54.8	6.16

95-2 297	4.5	57.6	5.55
95-3 147	0.7	49.0	3.85
95-3 206	1.9	56.6	1.37
95-3 219	0.8	52.3	1.07
95-3 227	1.0	55.0	2.40
95-3 238	0.5	49.5	3.05

APPENDIX 5

TERRAMIN RESEARCH LABS Ltd.

Job No: 95-102

Client: 26 BT Resources
Project:

Sample Number	Ba ppm	Be ppm	Cr ppm	Li ppm	Rb ppm	Sr ppm	V ppm
95-1-229	10	2.9	52	3	4	227	30
95-2-200	1260	1.6	45	7	33	538	90
95-3-147	370	3.6	20	14	61	155	30

Sample Number	Ag ppm	Cd ppm	Co ppm	Cu ppm	Mo ppm	Ni ppm	Pb ppm	Zn ppm
95-1-229	<.1	0.2	2	5	4	3	1	7
95-2-200	<.1	0.1	7	6	3	1	4	65
95-3-147	<.1	0.3	2	16	2	1	6	108

STATEMENT OF COSTS
(October 3, 1994 to September 25, 1995)
BT 2, 3, 7 and 11

A. EXPLORATION COSTS

- Drilling (Falcon Drilling)	$12,560.99
	20,666.67
	210.48
- Shipping of Core	182.68
- Geological Field Trips	
(Oct 15 & 23/94) 2 days X 200.00/day = 400 ÷ 3 locations	133.33
(Oct 17 (½ day), 18 and 19/94) = 2.5 days X 200.00/day	500.00
(June 20 and 21/95) 2 days X 200.00/day X 2 people	800.00
(October 1 and 3/95) 2 days X 200.00/day X 2 people	1200.00
- 20% of 1433.33 for Transportation Expenses	286.67

B. SAMPLE ANALYSIS

- Terramin Research Labs Ltd.	24.00
	543.70
	140.00
	849.47
	21.00

TOTAL EXPENSES	**$36,918.99**

STATEMENT OF COSTS
(October 3, 1994 to September 25, 1995)
BT 1, 4, 5 and 6

A. EXPLORATION COSTS

- Drilling (Falcon Drilling)	$14,200.00
	20,666.67
	210.48
- Shipping of Core	182.69
- Geological Field Trips	
(Oct 15 & 23/94) 2 days X 200.00/day = 400 ÷ 3 locations	133.34
(Oct 17 (½ day), 18 and 19/94) = 2.5 days X 200.00/day	500.00
(June 20 and 21/95) 2 days X 200.00/day X 2 people	800.00
- 20% of 1433.34 for Transportation Expenses	286.67

B. SAMPLE ANALYSIS

- Terramin Research Labs Ltd.	44.00
	543.70
	140.00
	849.47
	21.00

TOTAL EXPENSES	**$36,578.02**

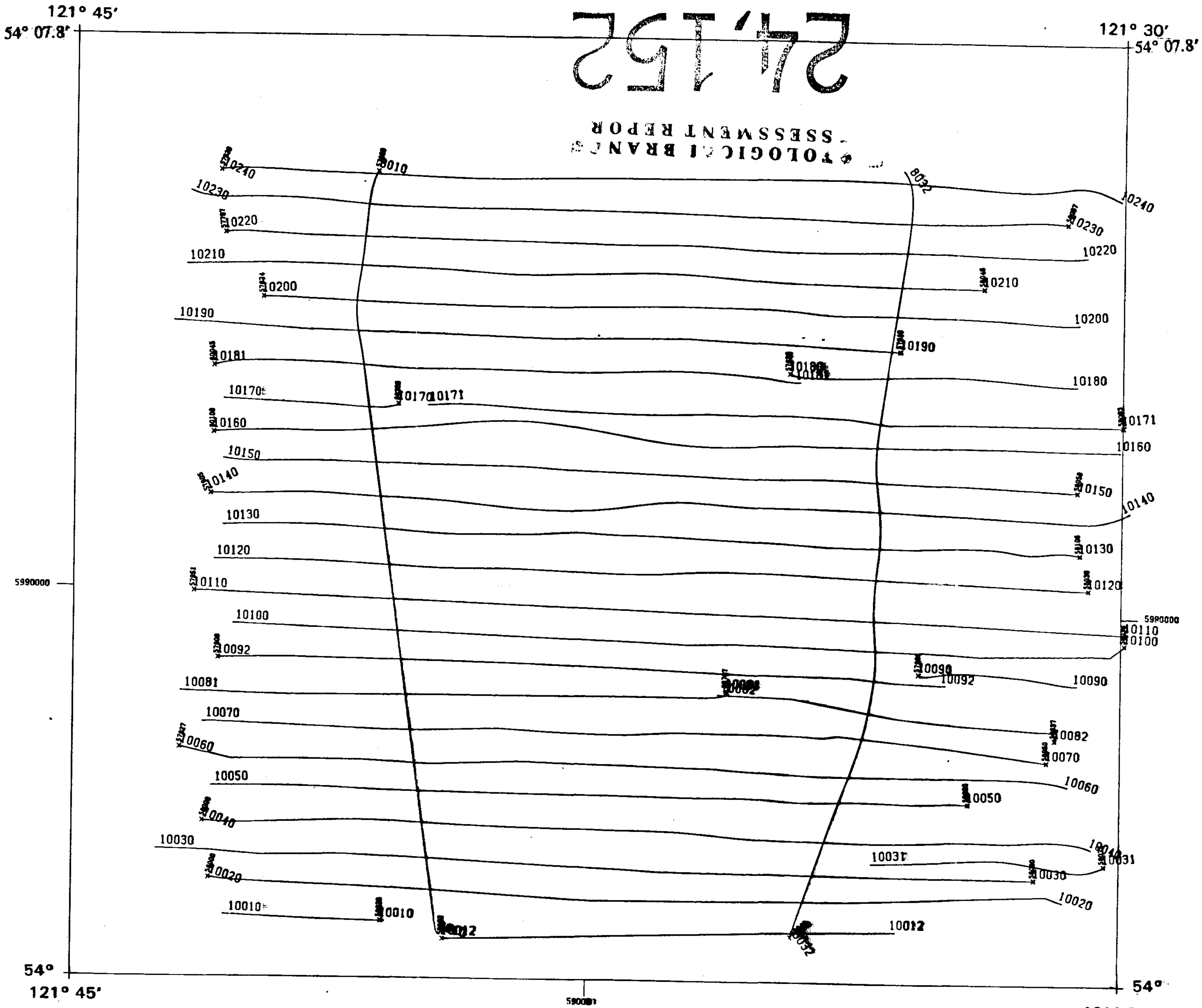


FIGURE 4
FLIGHT LINE LOCATION MAP

KM 1.5 1.0 0.5 0.0 -0.5

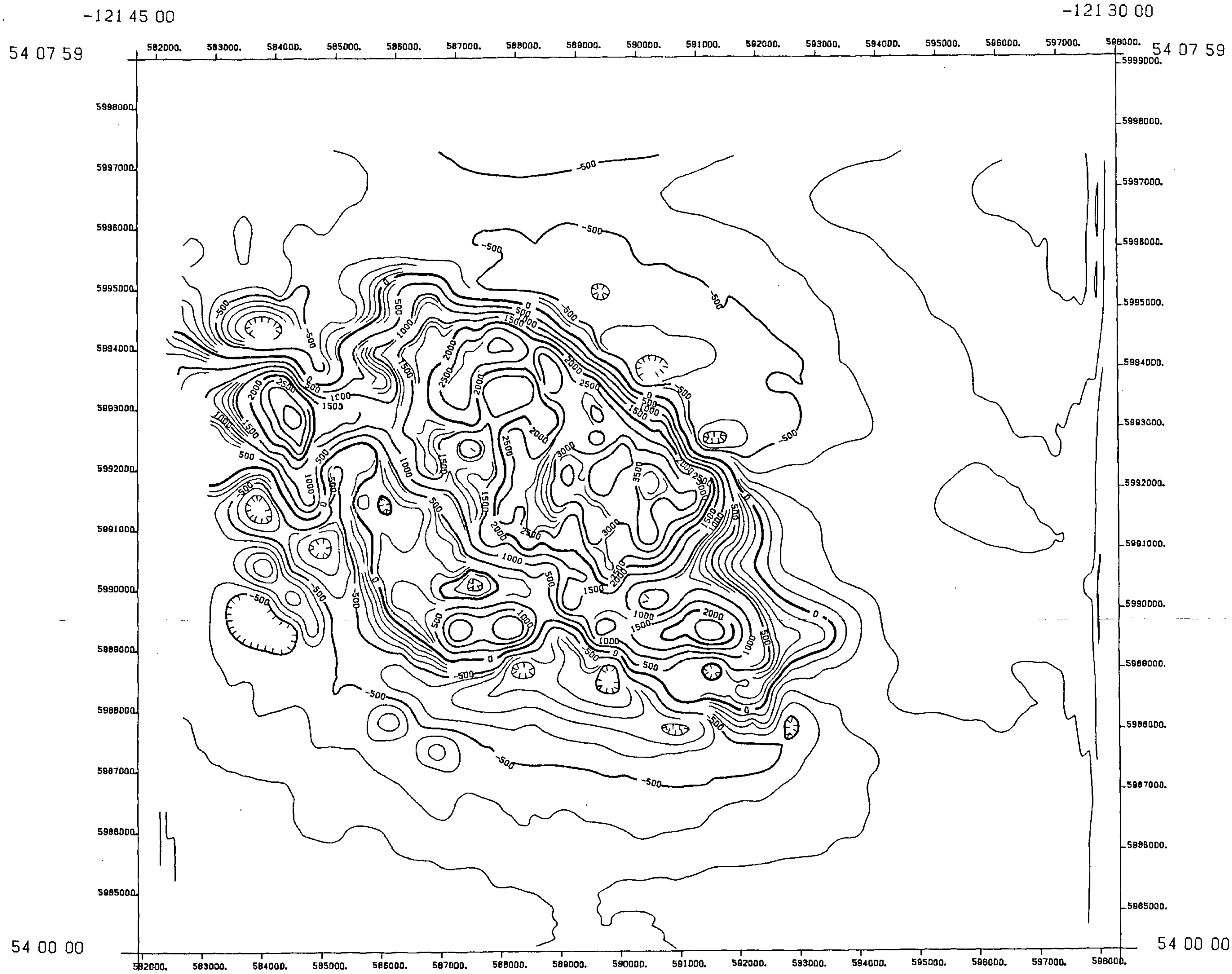
MILES 1.0 0.5 0.0 -0.5

Prince George

Profile Locations

SCALE 1 TO 50000

(1)



Commonwealth Geophysical

Explanation

2000 nT
500 nT
100 nT
Field Low

SONISEIS house
6620 Crowchild Trail SW
Calgary, Alberta, Canada, T3E 5R8
PH(403)246-9190, FAX(403)242-9670

-0.5 0.0 0.5 1.0 1.5 KM

-0.5 0.0 0.5 1.0 MILES

SCALE 1 TO50000
CONTOUR INT. 100.00

26BT Resource Ltd., Total Field (IGRF removed)

FIGURE 5

TOTAL MAGNETIC FIELD MAP - CONSTANT CONTOUR INTERVAL, 100 nT

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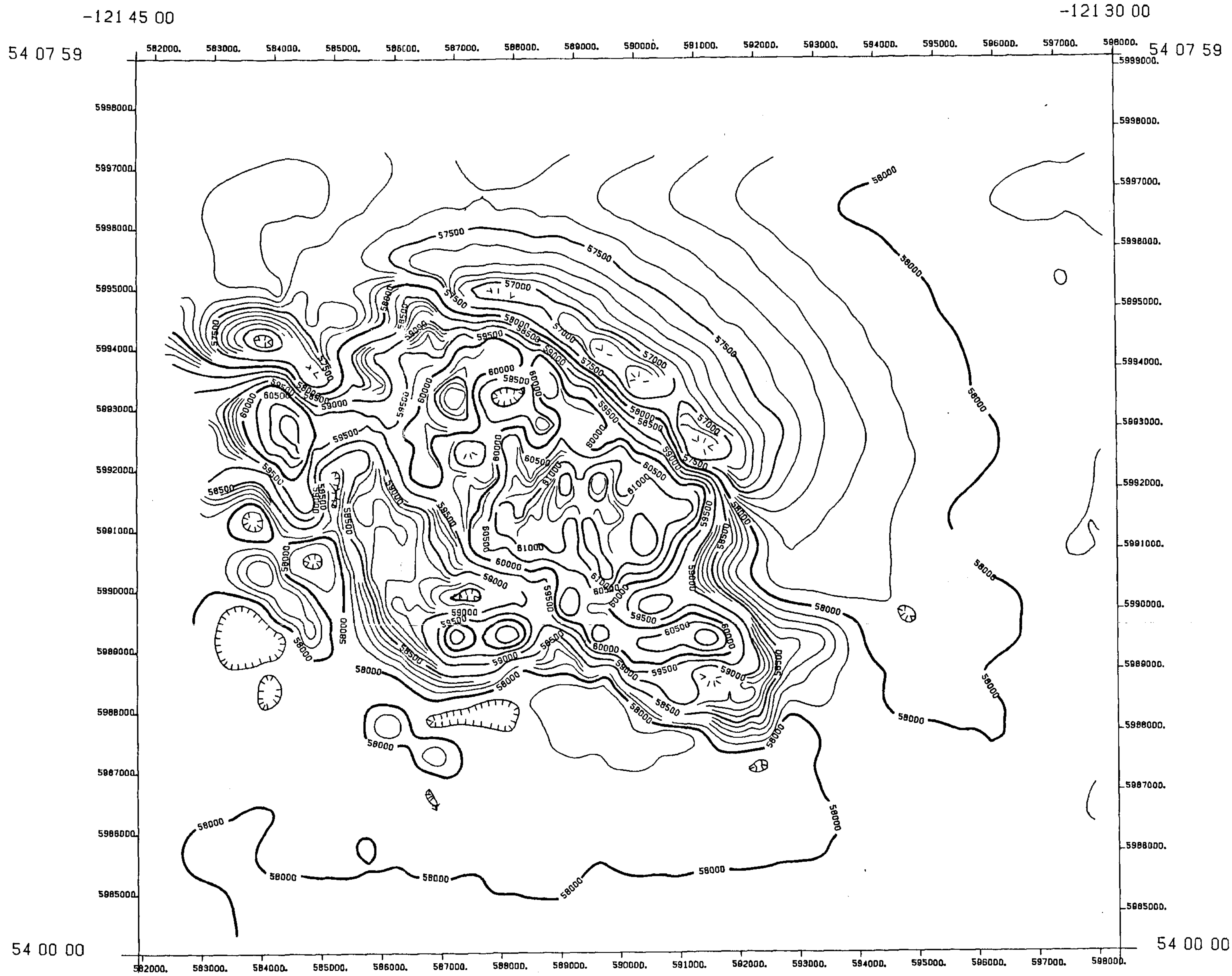
ASSESSMENT REPORT

24,152 ②



Commonwealth Geophysical

Explanation

2000 nT
500 nT
100 nT
Field Low

SCHISEIS house
6620 Crowchild Trail SW
Calgary, Alberta, Canada, T3E 5R8
Ph(403)246-9190, FAX(403)242-9670

-0.5 0.0 0.5 1.0 1.5 KM

-0.5 0.0 0.5 1.0 MILES

SCALE 1 TO50000
CONTOUR INT. 100.00

26BT Resource Ltd., Total Field

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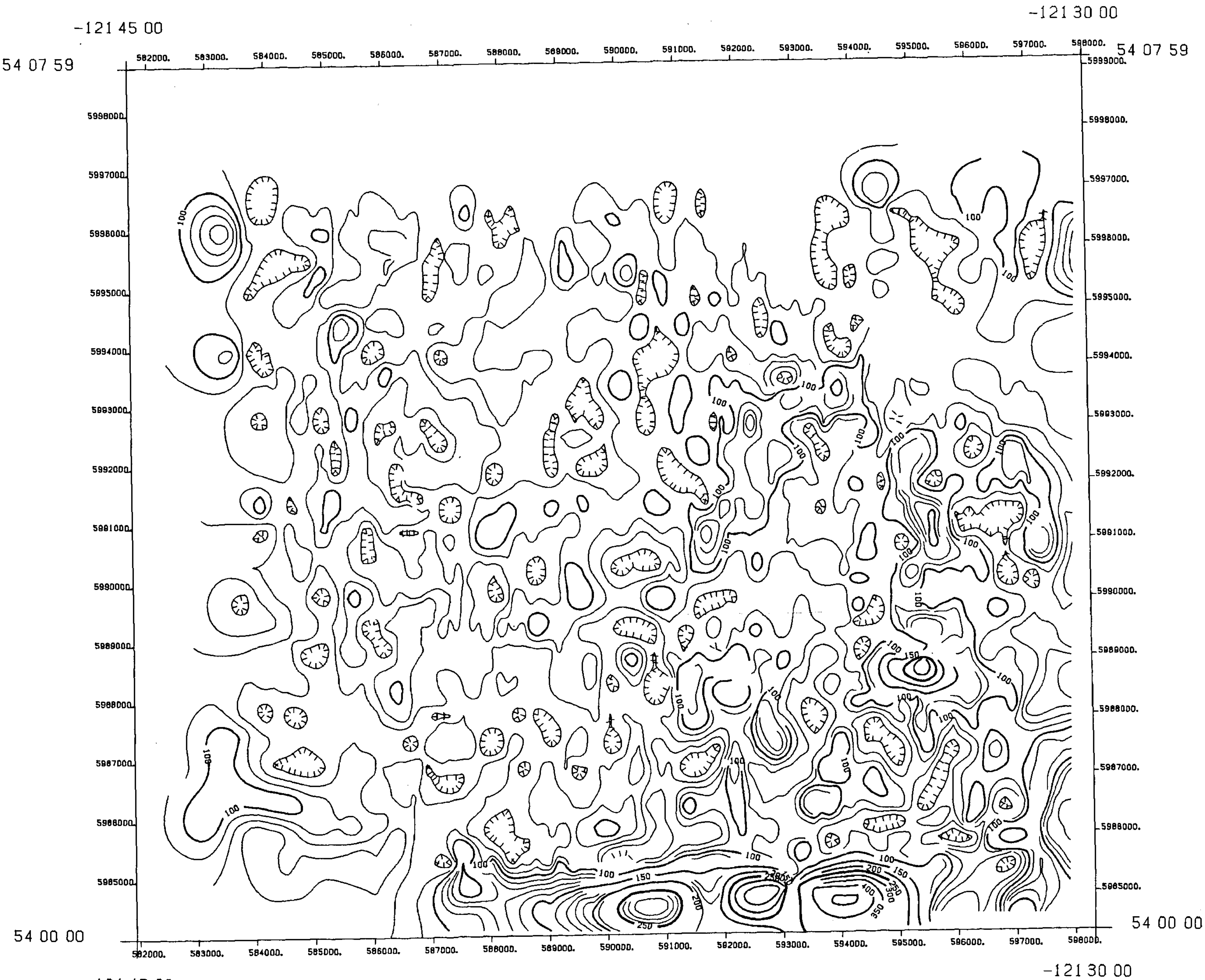
FIGURE 6

TOTAL MAGNETIC FIELD REDUCED TO THE POLE - CONSTANT CONTOUR INTERVAL

24,152 ③



Commonwealth Geophysical

Explanation

250 m
50 m
10 m
Elevation Low

SONISEIS house
6620 Crowchild Trail SW
Calgary, Alberta, Canada, T3E 5R8
Ph:(403)246-9190, FAX:(403)242-5670

-0.5 0.0 0.5 1.0 1.5 KM

-0.5 0.0 0.5 1.0 MILES

SCALE 1 TO50000
CONTOUR INT. 10.00

26BT Resource Ltd., Radar Altimeter

FIGURE 7

MAP OF RADAR ALTIMETER DATA - CONSTANT CONTOUR INTERVAL

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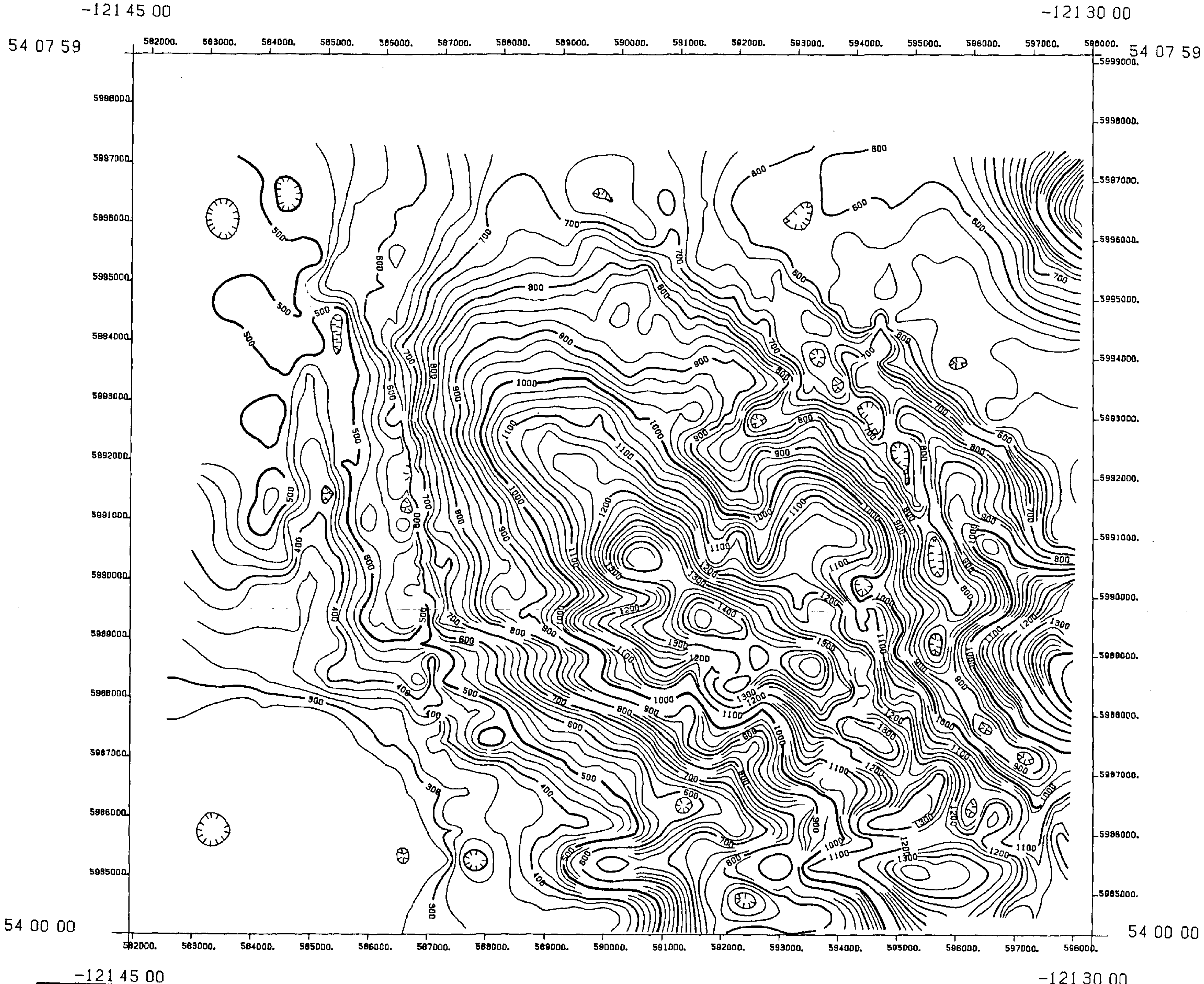
24,152 (4)



Commonwealth Geophysical

Explanation

1000 m
100 m
25 m
Elevation Low

SONISEIS house
6620 Crowchild Trail SW
Calgary, Alberta, Canada T3E 5R8
Ph(403)246-9190, FAX(403)242-9670

-0.5 0.0 0.5 1.0 1.5 KM
-0.5 0.0 0.5 1.0 MILES

SCALE 1 TO50000
CONTOUR INT 25.00

26BT Resource Ltd., Ground Elevation

FIGURE 8
MAP OF GROUND ELEVATION DATA - CONSTANT CONTOUR INTERVAL

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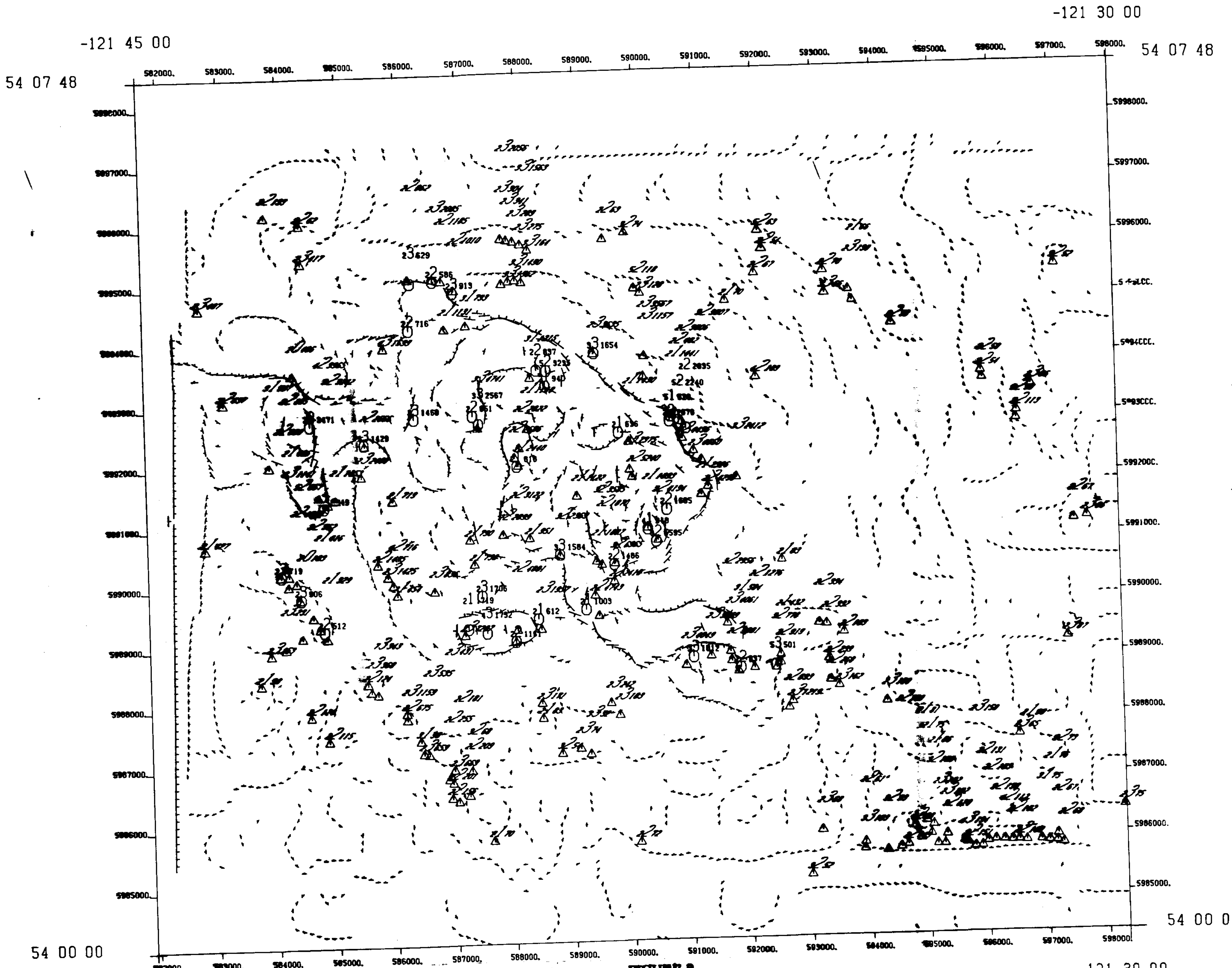
24,152 (5)



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24,152

-121 45 00

FIGURE 9
MAP OF SOURCE EDGES, AND DEPTHS FROM TWO-DIMENSIONAL WERNER DECONVOLUTION (MAGDEF2D)

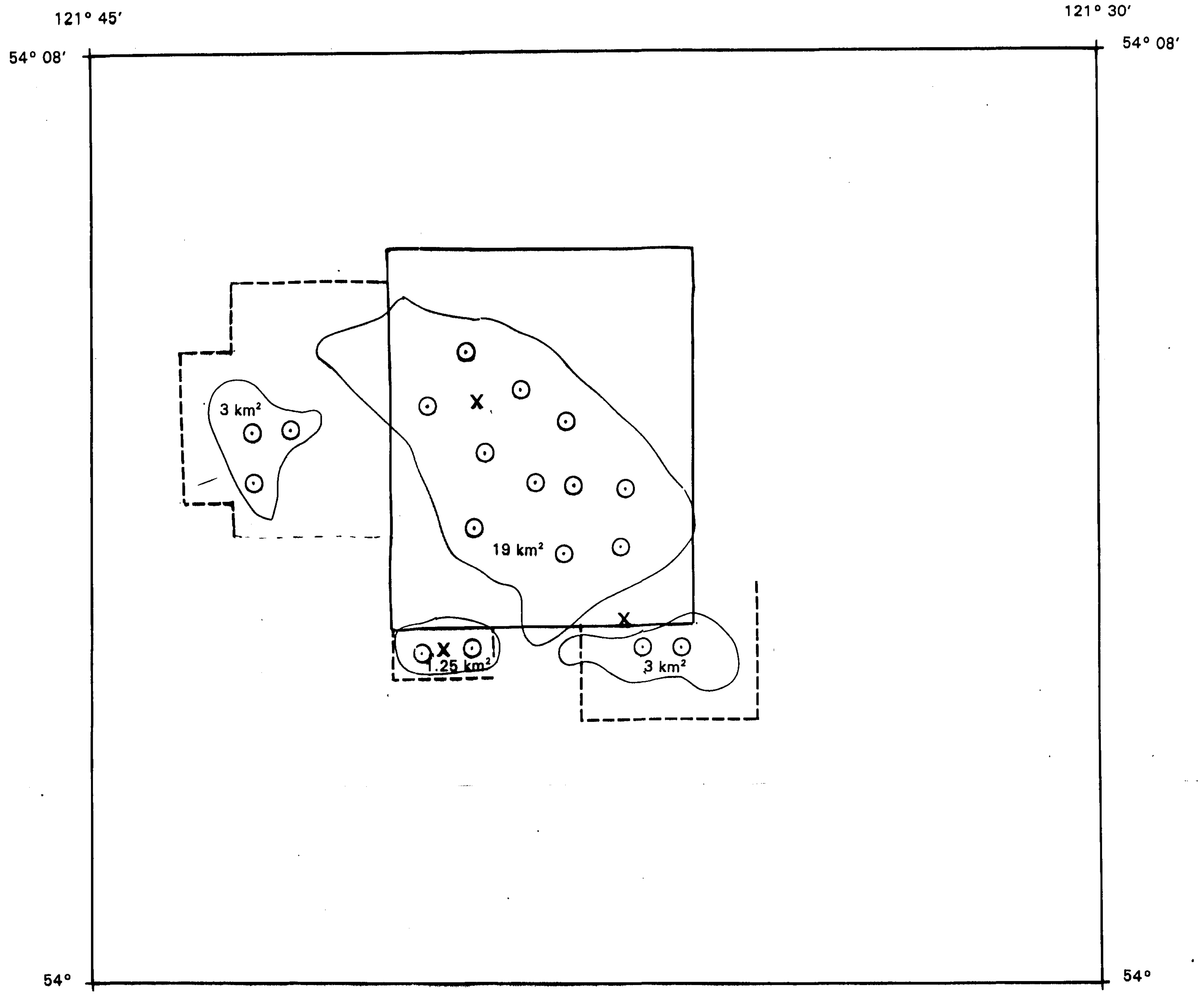
-0.5 0.0 0.5 1.0 1.5 KM

-0.5 0.0 0.5 1.0 MILES

SCALE 1 TO 50000

PRINCE GEORGE

(6)



PRINCE GEORGE

INTERPRETATION OVERLAY

FIGURE 10

COMPILATION/INTERPRETATION OF RESULTS OF AEROMAGNETIC SURVEY

STAKED AREA
AREA TO BE STAKED
⊙ SHALLOW SAMPLE SITE (18)
X DEEP SAMPLE SITE (3)

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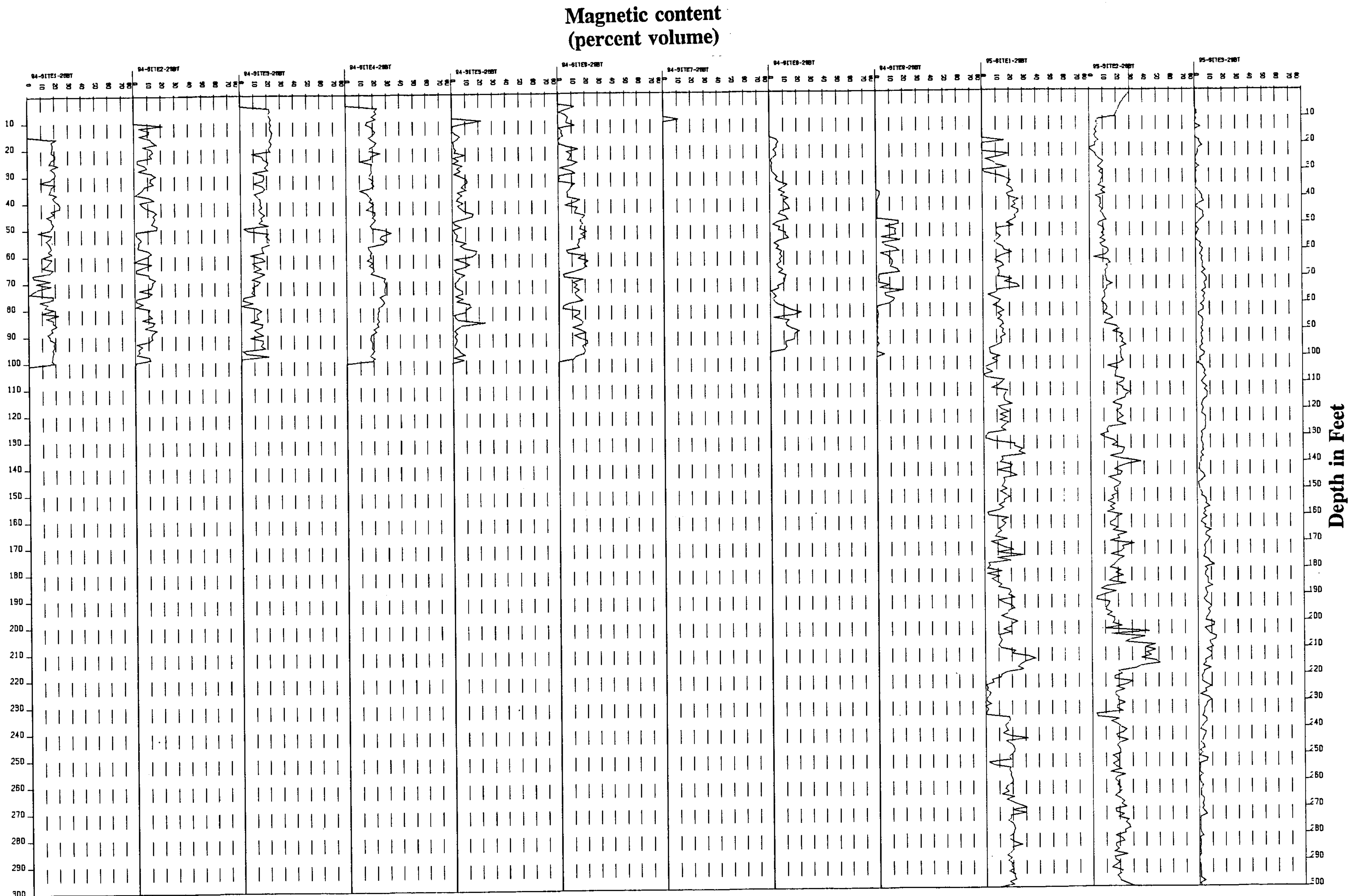
24,152

(7)



26BT RESOURCE DEVELOPMENT CO. LTD.
Map sq(10ms+22.5)-5

GAUCHER, N. QUEBEC

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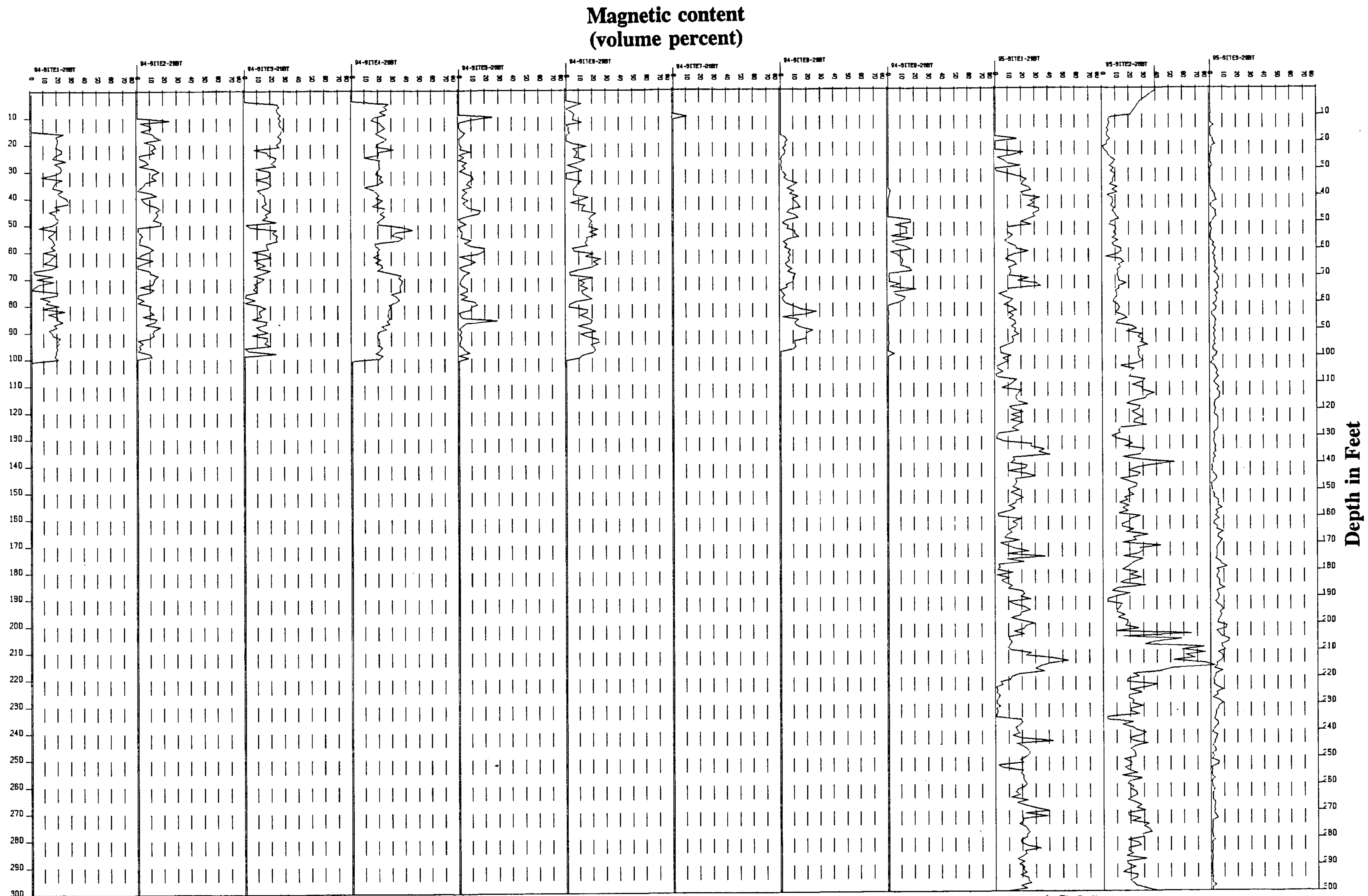
24,152 (8)

FIGURE 13
MAGNETITE CONTENT (VOLUME) GAUCHER, N. QUEBEC
Magnetic content in percent by volume (top)
vs depth in feet for twelve holes, as computed
from the relationship established in N. Quebec.



26BT RESOURCE DEVELOPMENT CO. LTD.

Mag. (s/1.16) ** 7314

BATH, MINNESOTA

FIGURE 14

MAGNETITE CONTENT (VOLUME) BATH, MINNESOTA

Magnetite content is percent by volume (top) vs depth in feet for twelve holes and two boulders calculated from the relationship established in Minnesota.

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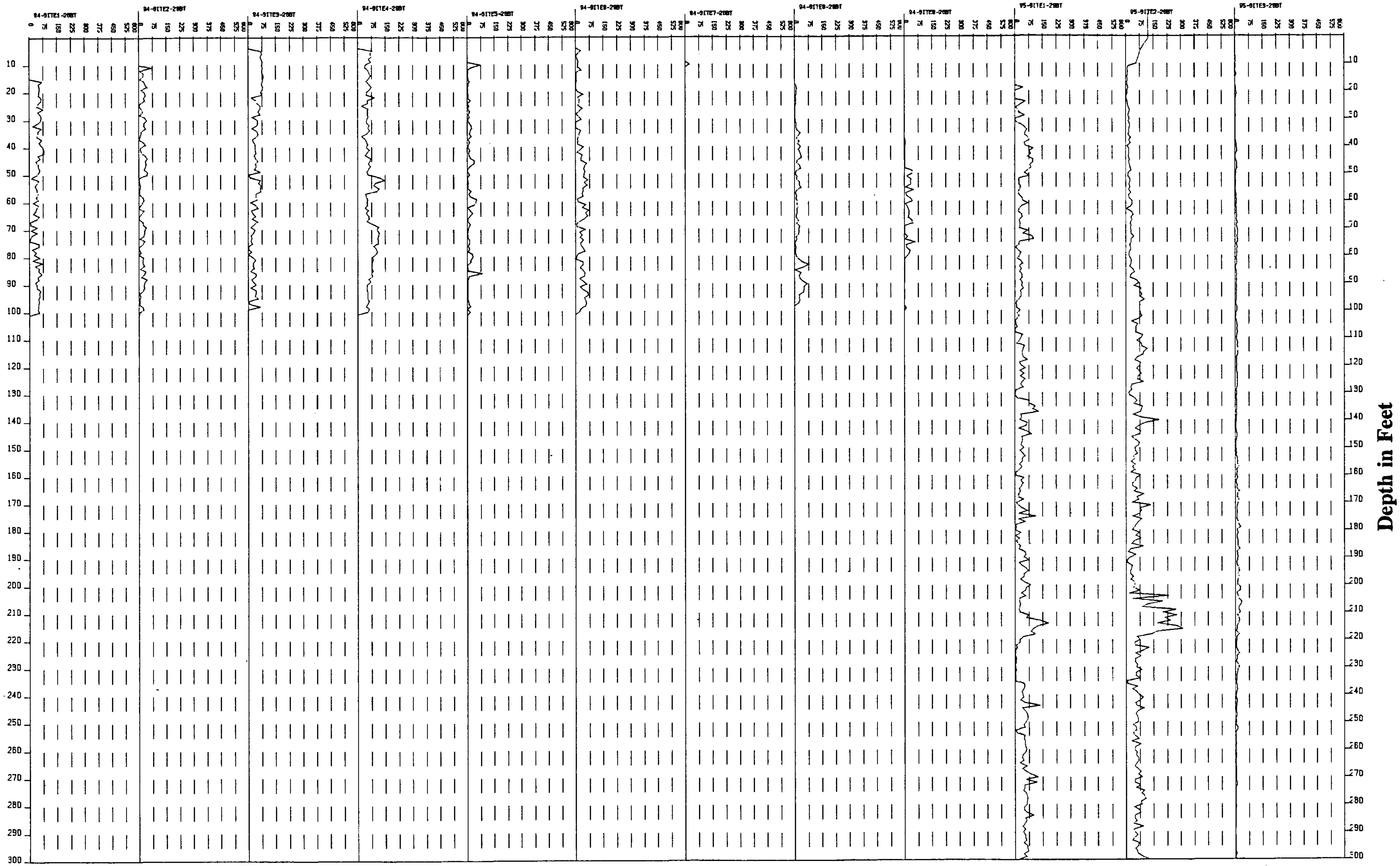
24,152

(9)

Susceptibility
in emu * 10^3



26BT RESOURCE DEVELOPMENT CO. LTC.
SUSCEPTIBILITY PLOT, 1995

FIGURE 12
SUSCEPTIBILITY PLOT
Susceptibility in emu X 10^3 (top) vs depth in feet for twelve drill holes and two boulders.

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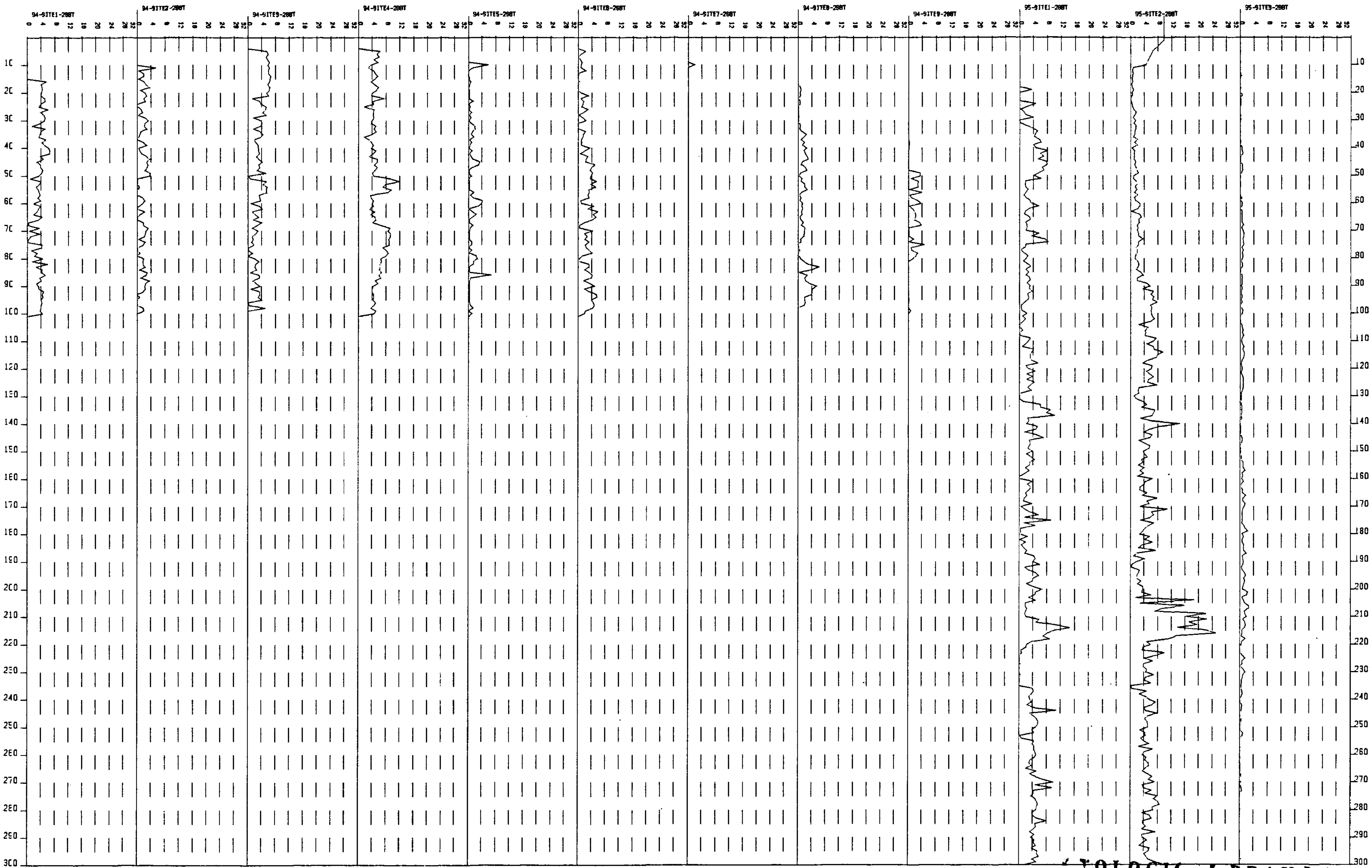
ASSESSMENT REPORT

24,152



26BT RESOURCE DEVELOPMENT CO. LTD.
% Mag. = 0.08126 x S_log

FIGURE 17
MAGNETITE CONTENT ESTIMATED FROM SUSCEPTIBILITY USING EQUATION DERIVED FROM CORE SAMPLE ANALYSIS

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24,152

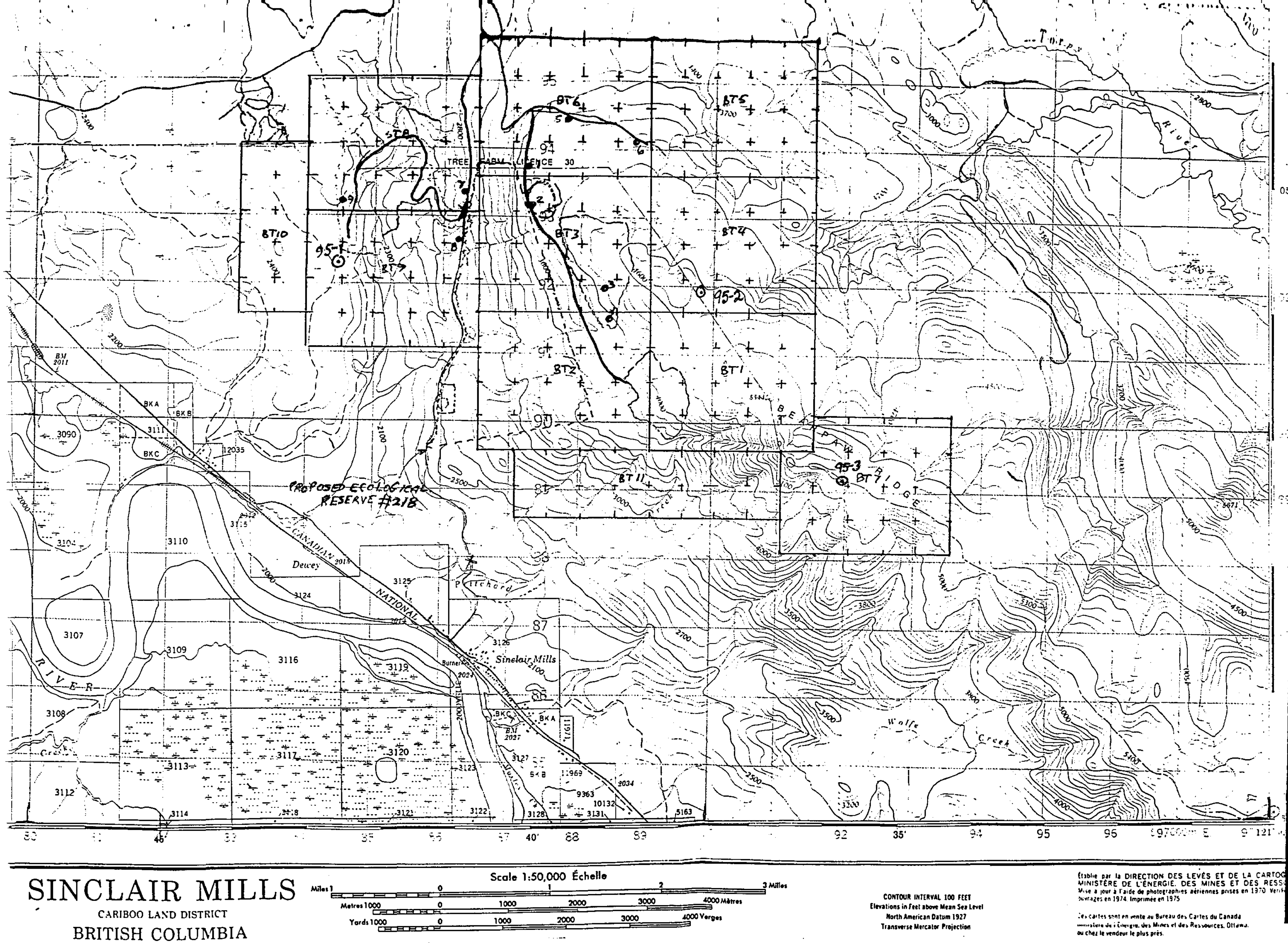
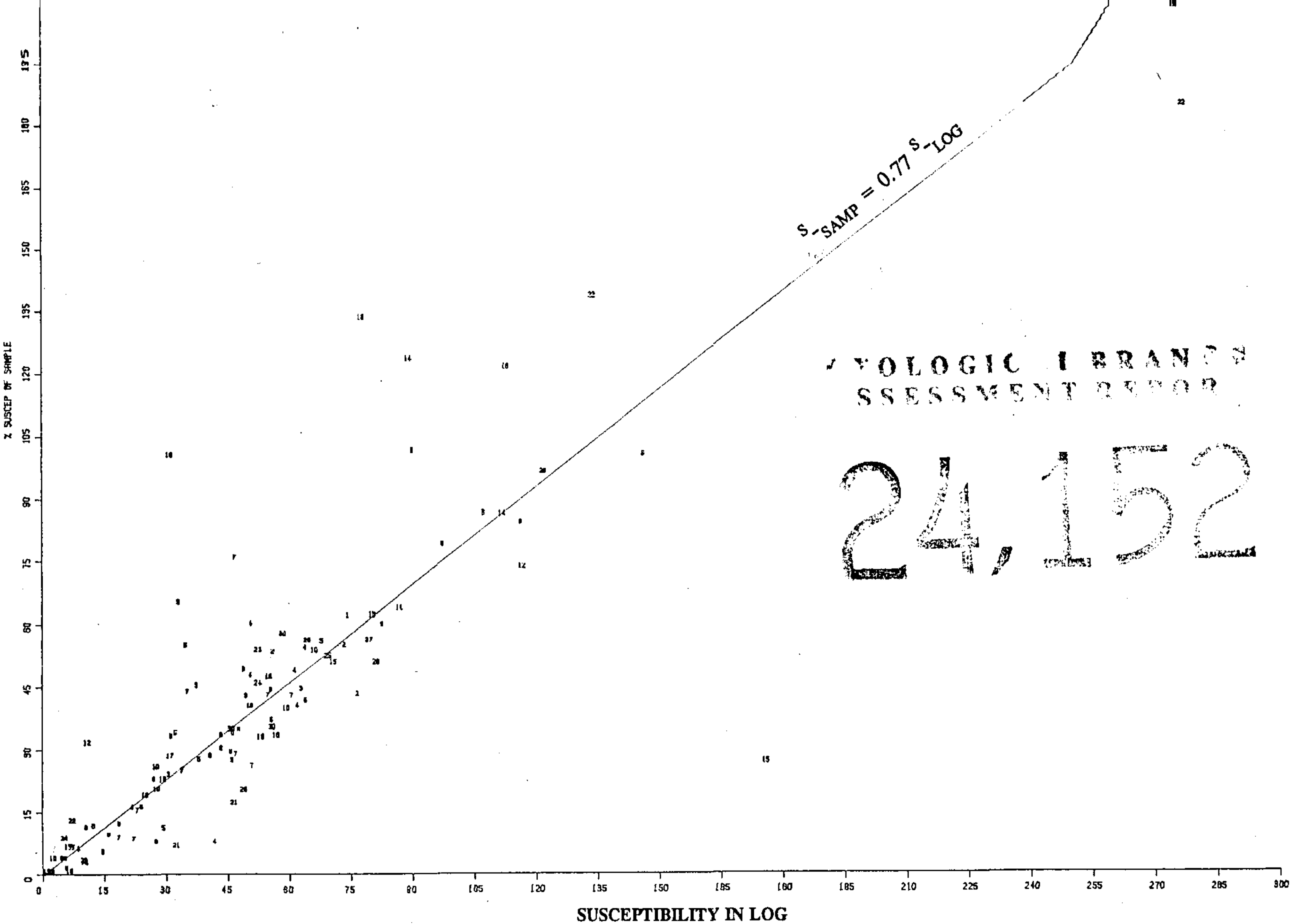


FIGURE 11
LOCATION OF HOLES DRILLED

24,152



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24,152

FIGURE 15

SAMPLE SUSCEPTIBILITY VS LOG SUSCEPTIBILITY

Plot of sample value (measured in lab) vs log (measured in field) for susceptibility of core sample.

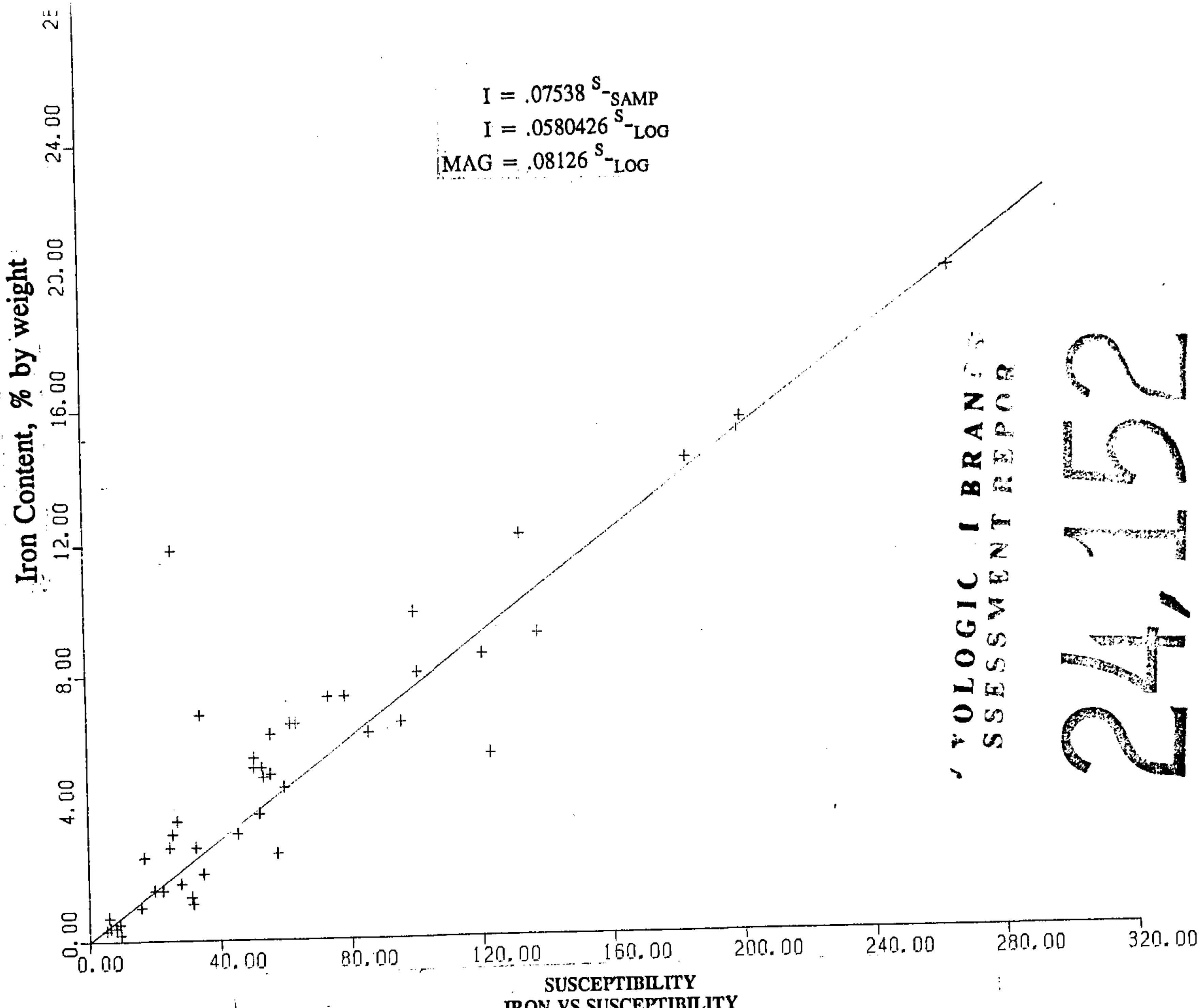

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FIGURE 16

IRON CONTENT BY WEIGHT VS SAMPLE SUSCEPTIBILITY

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24,152

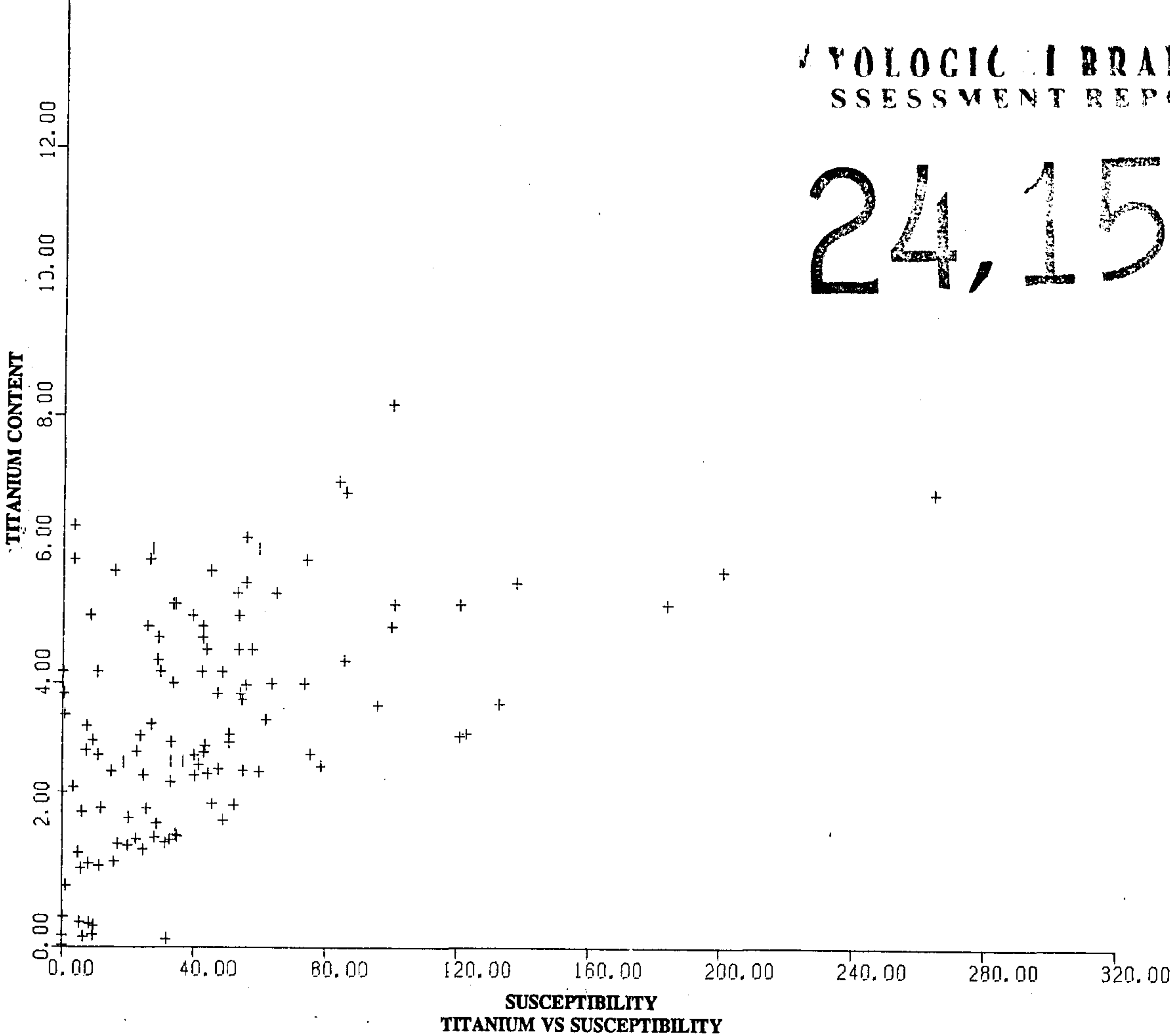
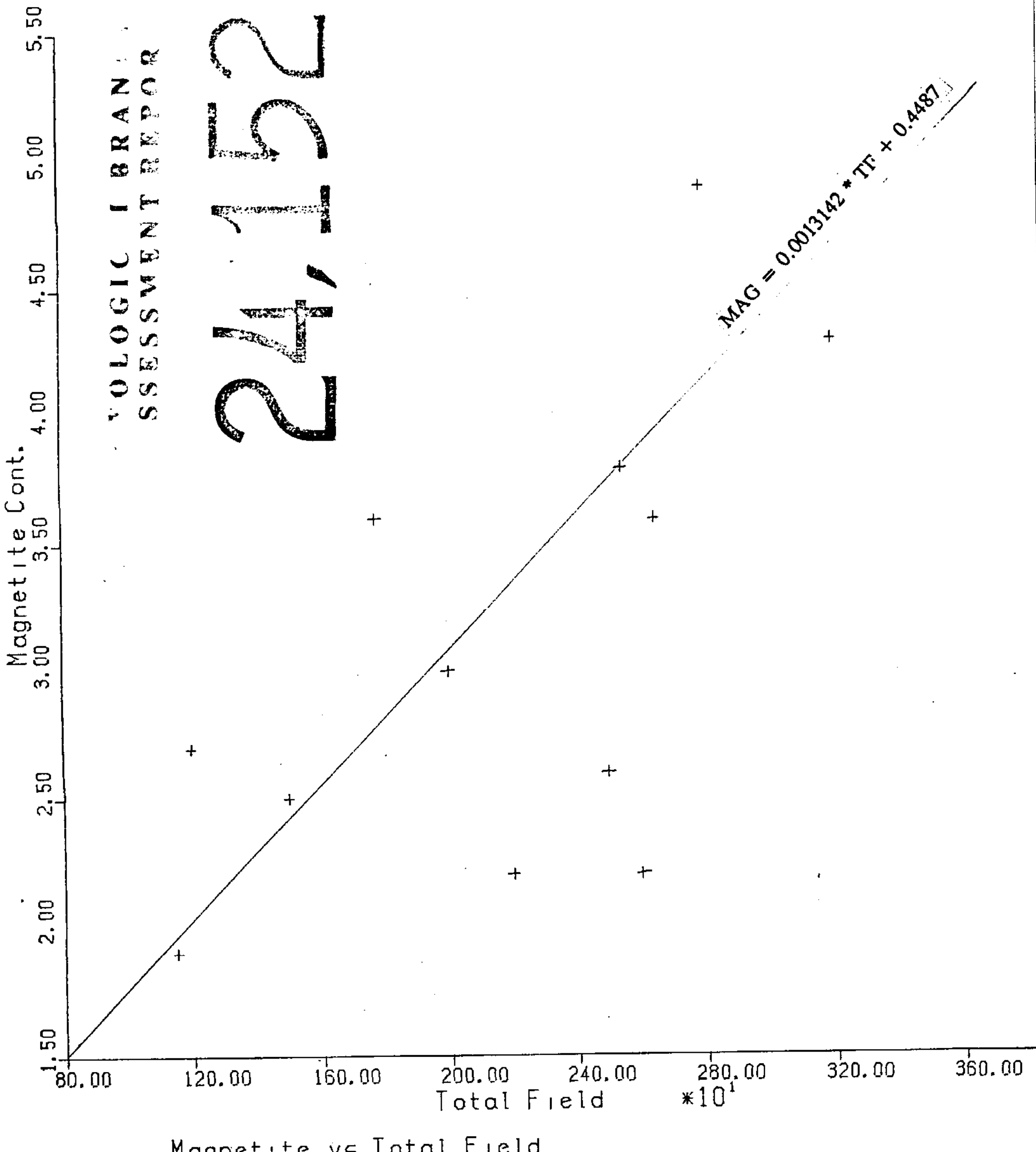


FIGURE 18
TITANIUM OXIDE CONTENT BY WEIGHT VS SAMPLE SUSCEPTIBILITY



OLOGIC I BRAN
SSESSMENT REPOR
24,152

FIGURE 19
MAGNETITE CONTENT VS TOTAL FIELD FOR TWELVE HOLES. NOTE TWO POINTS LOCATED ON TOTAL FIELD AXIS.

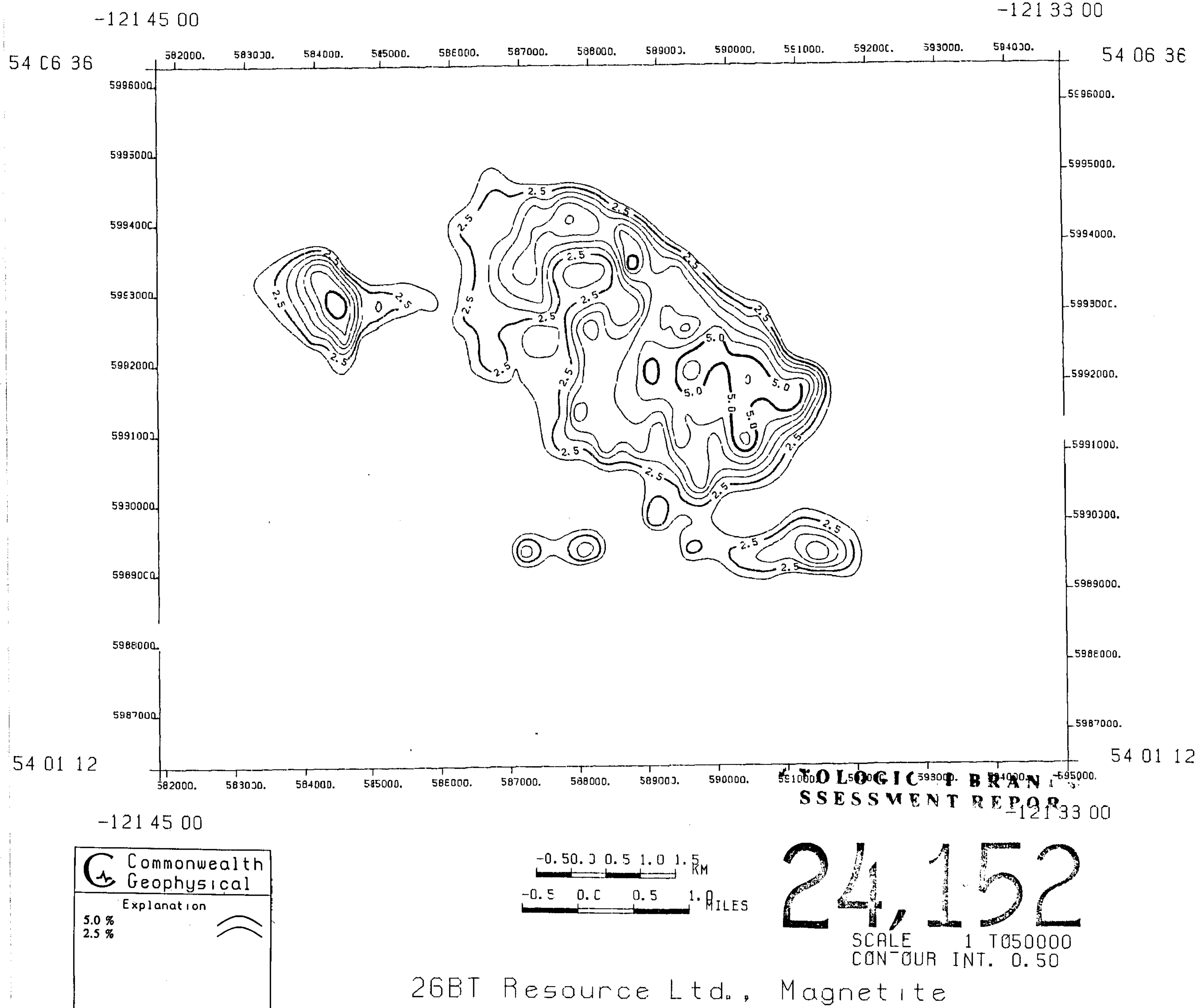


FIGURE 20
ESTIMATED AVERAGE MAGNETITE CONTENT COMPUTED FROM THE MAGNETIC FIELD

GEOLOGICAL BRANCH
ASSESSMENT REPORT
24,152

(17)