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REPORT ON THE

AIRBORNE GEOPHYSICAL SURVEY

MAGNETOMETER - ELECTROMAGNETIC

PERMIT NO. 6945 E $\frac{1}{2}$ 64°10'N 124°00'W

PERMIT NO. 6978 W $\frac{1}{2}$ 64°10'N 126°00'W

PERMIT NO. 6979 S $\frac{1}{2}$ 64°20'N 126°00'W

MACKENZIE RIVER AREA, NORTHWEST TERRITORIES

JANUARY 15, 1973

PROJECT NO. 531-7-4-72-2

GLENDALE DEVELOPMENT CORP. LTD.

A. B. BRENNER, OPERATOR

HARVEY H. COHEN ENGINEERING LTD.
VANCOUVER, B. C.



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AIRBORNE GEOPHYSICAL SURVEY

MAGNETOMETER - ELECTROMAGNETIC

PERMIT NO. 6945 E $\frac{1}{2}$ 64° 10' N 124° 00' W

PERMIT NO. 6978 W $\frac{1}{2}$ 64° 10' N 126° 00' W

PERMIT NO. 6979 S $\frac{1}{2}$ 64° 20' N 126° 00' W

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NORTHWEST TERRITORIES

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Mackenzie River Area, NWT. |

AIRBORNE GEOPHYSICAL SURVEY

MAGNETOMETER - ELECTROMAGNETIC

PERMIT NO. 6945 E $\frac{1}{2}$ 64 $^{\circ}$ 10'N 124 $^{\circ}$ 00'W

PERMIT NO. 6978 W $\frac{1}{2}$ 64 $^{\circ}$ 10'N 126 $^{\circ}$ 00'W

PERMIT NO. 6979 S $\frac{1}{2}$ 64 $^{\circ}$ 20'N 126 $^{\circ}$ 00'W

MACKENZIE RIVER AREA, NORTHWEST TERRITORIES

INTRODUCTION

SCHEDULE OF PROPERTIES:

PERMIT NO. 6945, consisting of 28,000 acres is designated by map coordinates E $\frac{1}{2}$ of 64 $^{\circ}$ 10' North Latitude by 124 $^{\circ}$ 00' West Longitude. This Permit was issued on January 16, 1970 to Glendale Development Corp. Ltd., and for the purpose of this survey, the operator is A. B. Brenner. The subject permit area is shown on Map No. 96C "Fort Norman" Sheet of the National Topographic System on a scale of 1:250,000.

PERMIT NO. 6978, consisting of 28,000 acres is designated by map coordinates $W\frac{1}{2}$ of $64^{\circ}10'$ North Latitude by $126^{\circ}00'$ West Longitude. This Permit was issued on January 22, 1970 to Glendale Development Corp. Ltd., and for the purpose of this survey the operator is A. B. Brenner. The subject Permit area is shown on Map 96D "Carcajou Canyon" Sheet of the National Topographic System on a scale of 1:250,000.

PERMIT NO. 6979 adjoins No. 6978 to the north, consists of 27,875 acres, and is designated by map coordinates $S\frac{1}{2}$ of $64^{\circ}20'$ North Latitude by $126^{\circ}00'$ West Longitude. This permit was issued on January 22, 1970 to Glendale Development Corp. Ltd., and for the purpose of this survey the operator is A. B. Brenner. The Permit area is shown on Map 96D, "Carcajou Canyon" Sheet of the National Topographic System on a scale of 1:250,000.

DESCRIPTION OF PROPERTIES:

Permit No. 6945 occupies an area just east of the Mackenzie River known as the Mackenzie Plain. Part of the Permit area covers the western slopes of the

3.

Franklin Mountains. Permit Nos. 6978 and 6979 lie within the Mackenzie Mountain system just to the west of the Mackenzie River and Mackenzie Plain. The Yukon-British Columbia border lies approximately 270 miles to the south of these permits.

Drainage of the region is to the north via the Mackenzie River system, flowing northwesterly and entering the Beaufort Sea (at Mackenzie Bay) a distance of approximately 500 miles north of the permit areas.

The area in general is underlain by a series of limestones, slates, dolomites, and shales with the younger rocks outcropping to the north and east. The surface averages 3500 to 4000 feet in elevation on Permit Nos. 6978-6979 while on Permit No. 6945, the average elevation is approximately 1500 feet above sea level.

The most convenient point for service to the area was Norman Wells.

GEOPHYSICAL INVESTIGATIONS:MAGNETOMETER SURVEY:

The purpose of the Magnetometer Survey was to determine the presence or absence of any magnetic or non - magnetic anomalies on the property, these anomalies being caused by the presence or absence of magnetic accessory minerals in the underlying rock formations in detectable quantity. The magnetic field measurements would differentiate between sediments, volcanics, intrusives, and indicate any changes in the basement rock structures. The factors, applicable to this survey, which produce variations in the magnetic field are:-

1. A variation in amount of accessory mineral magnetite in granitic or sedimentary bedrock.
2. A variation in amount of magnetics distributed through or connected with the overburden.
3. A variation in depth of non magnetic overburden on caprock over bedrock having a constant vertical magnetic intensity.

5.

4. Variations in amount of magnetics in adjacent bands of sedimentary or volcanic rocks. These variations are not expected to be great, and they produce elongated 'highs' and 'lows' parallel to the strike of the formation.
5. Any combination between variations in magnetic minerals in the rock and variations in the thickness of the overlying magnetic or non - magnetic overburden or caprock.

It will be seen from the above factors that the geophysical survey employing magnetometer produces information that would assist in providing a structural picture of the subsurface geology.

ELECTROMAGNETIC SURVEY:

The Electromagnetic Survey measures the change in mutual impedance between a pair of coils as the impedance is affected by nearby conductors of electricity. The equipment and instrumentation employed transmits a field through a 65 foot coil that is mounted beneath the aircraft. The transmitted field is preset to a frequency of 1,000 cycles per second.

The Receiving coil is housed in a "bird" that is drawn by the aircraft in a manner to produce a 90° configuration between the coils, and this "bird" is held in position by the slipstream of the aircraft during flight. The system records any electrical fields induced by the transmitted field.

During the flight instrumentation is continuous, and the data appearing on the instrument panel is recorded on film by taking one frame per three second time interval (at a speed of 113.7 mph) in order to produce a record of all readings at an interval of distance of 500 feet. The data recorded includes readings of magnetometer, electromagnetic, time, direction of flight, flight line and run no., reading no. (grid north), elevation. Radioactivity was also measured during this survey by employing a DR-229 Nuc-leometer specifically designed for airborne work. The results showed little significance to warrant plotting, and was conducted only for the sake of completion.

Data recovery and subsequent processing is described under the subsequent heading.

PROCEDURE:

Permit 6945 area was marked out on topographical sheet 96C "Fort Norman" sheet on a scale of 1:250,000. A total of 14 flight lines were marked out at a spacing of 2000 feet, these lines extrapolated south to the Blackwater River and north to a line east of Birch Island in the Mackenzie River. The heading for the flight lines was true north and south. Flight line control during the survey was accomplished by visual reference to prominent landmarks over the grid area and navigational aids. The aircraft, a twin engine Comanche was prepared at Vancouver and equipped with the instrumentation and extra fuel tanks. The base for operations and refueling was Norman Wells.

Permit 6978 and 6979 areas were outlined on topographical sheet No. 96D Carcajou Canyon, on a scale of 1:250,000. The two permit areas, being contiguous, were flown in conjunction with one another, and a series of 25 flight lines were plotted to adequately cover the ground. Again, the spacing was 2000 feet, and the lines extrapolated to cut the Keele River to the north.

The familiarization flights over the areas and orientation were followed by the survey on days of extreme calm weather to avoid unnecessary turbulence. All lines were flown at a near altitude of 500 feet above

ground and a constant speed of 113.7 miles per hour. The heading of true north and south was maintained constant by gyro control after reorientation of each flight line. Visual reference to prominent landmarks and features assisted in setting the base line and the maintaining of points along the grid. No.1 flight line commenced at the grid boundary (after two preliminary lines to the west of the boundary) and flown for a distance of 61,000 feet over Permit 6945, and for a distance of 92,000 feet and 31,000 feet over Permit 6978 and 6979. In addition to this distance, over runs, turning and reorienting distance would add approximately one third to the length of the grid. The flight time per line was 366 seconds, 472 seconds and 180 seconds respectively for the various grid lengths plus turning etc.

Instrumentation functioned continuously and could be observed during flight. The data recording system employed a sequence of photos of the instrument panel, these photos being taken automatically at a rate of one frame per three second time interval to provide a record of readings at ground intervals of 500 feet along the flight line.

Data recovery included the editing of the film record, tabulating the magnetic and electromagnetic series of readings and their respective coordinates, introducing the data to card punch for transmission from Vancouver to the facilities of Computer Sciences at

Calgary, Alberta. The data, together with the program is treated at this location by a Univac 1108, the resulting tapes being introduced and processed by the CalComp Plotter. A statistical analysis was made to predetermine the contour interval, value frequencies, for guidance in plotting. The enclosed maps are the results of this procedure.

On Permit 6945, 14 flight lines were flown, 10 directly over the permit and four outside the east and west boundaries to make approximately 168 line miles which, including periodic rechecks, over runs, turning, recalibrating over constants would amount to a total line mile survey of 525.

Permit No. 6978 and 6979 would qualify to similar mileages, and would approximate 1050 line miles of grid to adequately cover the two permits.

DISCUSSION OF RESULTS:

PERMIT NO. 6945:

The field strength in gammas of dolomite is approximately twice that of shale, and in field measurements would contour the srystalline basement as well as intrusive bodies.

The mean value of the vertical component of the magnetic field over the permit area was found to be 9.53 with a standard deviation of 2.49 (100 gamma units). The instrument was preset at a background of 10 to avoid negative values.

Intrusive masses in the area would be indicated by readings of +6 (600) gammas above background. The results show that less than 2 % of the readings were above +5. The field strength measured indicates the underlying rocks to be composed of dolomitic limestone to the north part of the property, and limestone and shale to the south part. The contact trace can be observed to pass in a U-shaped arc that extends from Flight Line 1 North 50000 in a southeasterly direction with an apex at Flight Line 6 North 40000, then northeasterly to Flight Line 10 North 50000. The rocks north of this line would be the younger dolomites and limestone, while to the south of this line, the magnetic response is less and indicative of shale and limestone. Further to the southwest, the extreme corner of the permit area reveals a lower than average magnetic field, and there would appear to be a second contact extending from Flight Line 1 North 25000 to Flight Line 6 North 0.

A prominent trace of an anticlinal structure could be observed passing from Flight Line 5 North 0 in a northeasterly direction to Flight Line 10 North 40000. This structure is apparant on the EM plot as well.

The average electromagnetic response was found to be 3.52 (factor 0.1 microamps) with a mean deviation of 2.10 (0.21 microamps). The values range to a high of +8 and a low of 0 after having eliminated by smoothing process the inconsistent values. Most of the high values are coincident with surface representations of shear zones or deep incised valleys particularly to the eastern part of the property.

Other magnetic highs and lows outlined on the map plots are due to surface features and proximity of certain peaks and general relief.

PERMIT NO. 6978:

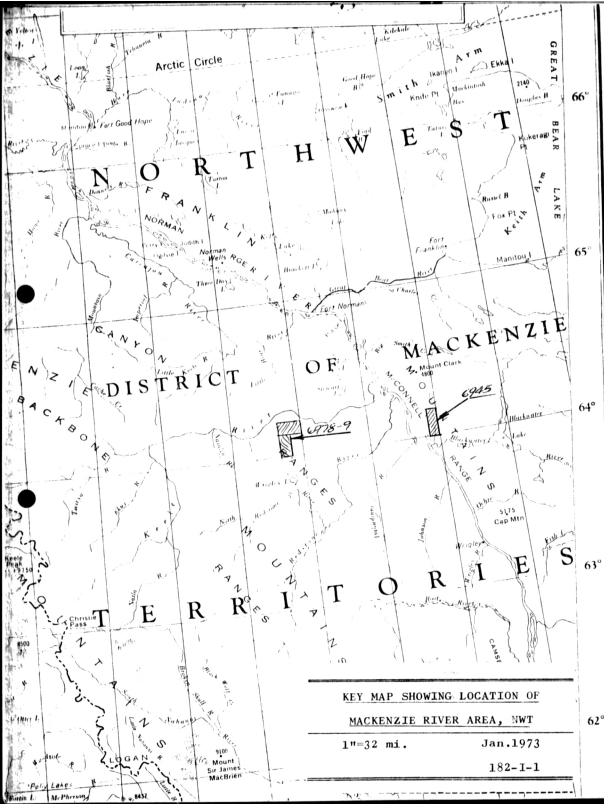
The mean value of the magnetic response measured over the subject permit area was found to be 10.09 (factor 100 gammas) with an standard deviation of 3.31. The rock type indicated has the characteristics of limestone and dolomite to the northeast and to the southwest with a band of shale or siltstone through the centre part of the grid area. The contact trace follows a zone from Flight Line 1 North 61000 in a southeasterly direction to Flight Line 10 North 0. The trace is shown outlined on the EM map, while on the magnetometer plot, the differential is shown as a broad band of greater than normal magnetic influence. The surface features of the ground conform to the underlying structures interrupted by an easterly flowing creek which appears to be a structural break, this is at N30000.

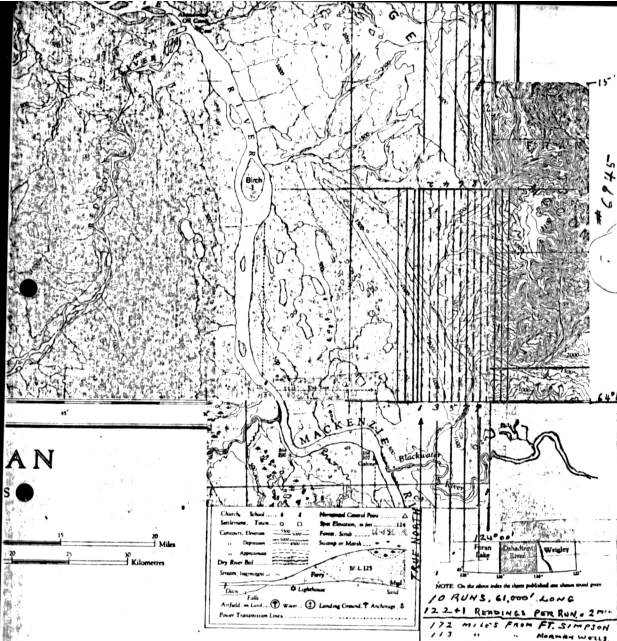
The values obtained during the EM survey range from a low of 0 to a high of 8 (factor 0.1 microamps) with a standard deviation of 2.12 from a mean of 4.22. There appears a distinct arch which represents an anticlinal structure which passes from Flight Line 2 North 41000 to Flight Line 10 North 57000. The distortion is moderate with minor flexing of the subsurface rocks. No major disturbances are noted along this axis.

PERMIT NO. 6979:

This property lies adjacent to No. 6978 and to the north of it. The descriptions follow through as to rock type, and the magnetic response which averages 11.18 (factor 100 gammas) shows a standard deviation of 3.03. The electromagnetic response shows an standard deviation of 1.95 (0.195 microamps) over a mean value of 3.76 (0.376 microamps).

A contact passing through from Flight Line 3 North 31000 southeasterly to Flight Line 18 North 0 indicates a zone of limestone and dolomite to the west and shale or siltstone to the east of this contact. The anticlinal structure described above passes within the south boundary of this permit area. For the most part, the underlying structures have not been subject to major disturbances.





ADD
DISE.

AIRBORNE GEOPHYSICAL SURVEY

FLIGHT LINE & GRID PATTERN

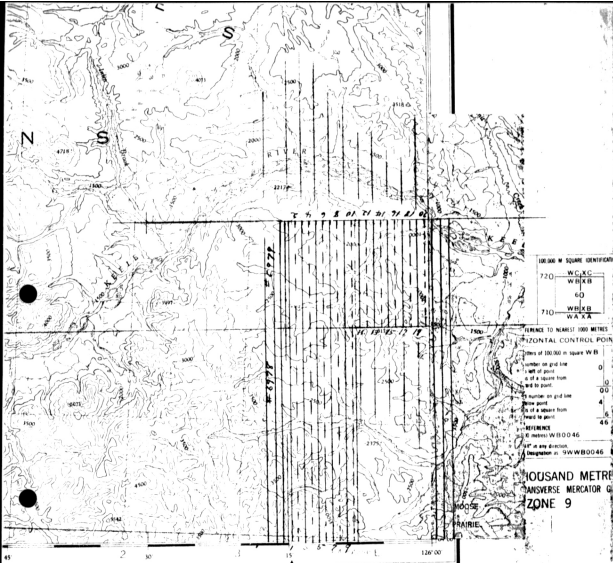
PERMIT No. 6945

MACKENZIE RIVER AREA, NWT.

1:250000

Jan. 1973

182-I-3



Préparée par le SERVICE TOPIC (G.R.C.) 1959-61. Photographie
Ces cartes sont en vente au Bureau municipal des Mines et des Revenus

10. RUNS. 92,000' LONG
184+1 READING PER RUN = 7 min. 52 sec
10. RUNS. 31,000' LONG
62+1 READING PER RUN = 1 min. 6 sec.

20 Miles
30 Kilomètres

206 MILES FROM FT. SIMPSON
93 MILES FROM NORMAN WELLS

AIRBORNE GEOPHYSICAL SURVEY

FLIGHT LINE & GRID PATTERN

PERMIT NOS. 6978 & 6979

MACKENZIE RIVER AREA, NWT

106 H 96 E 96 F
SANDS SAULT RAPIDS NORMAN WELLS MAHONY LAKE
NORTHWEST TERRITORIES
106 A 96 D 96 C
MOUNT EDUINI CARCAJOU CANYON FORT NORMAN
105 P 95 M 95 N
SENNI MOUNTAIN WINKLEY LAKE DAKADIRINI RIVER

Building Bureau de poste
Post office Bureau de poste
Church Église
School École
Astronomical monument Repère astronomique
RCMP Detachment Poste de la G.R.C.
Horizontal control point Point géodésique
Landing ground Poste d'atterrissage

1:250000

Jan. 1973

182-I-4

Legend

Icefield or Glacier: Champ de glace ou glacier

Polygon: Polygone

Pond: Étang

airborne sheets of the National Topographic System
Tableau d'assemblage du Système National de Référence Cartographique

CARCAJOU CANYON
96 D
EDITION 2

for info 1927
eds
ygen de la mer

ADD 6 RUNS E

NUMBER OF OBSERVATIONS = 1240

MINIMUM VALUE = .00

MAXIMUM VALUE = 15.00

MEAN = 9.55

STANDARD DEVIATION = 2.49

Z-VALUE FREQUENCIES

INTERVAL	NUMBER	%	CUM. %
=====	=====	=====	=====
-1.00 10	.99	.08	.08
1.00 10	1.99	.16	.24
2.00 10	2.99	.32	.56
3.00 10	3.99	.56	1.13
4.00 10	4.99	2.18	3.31
5.00 10	5.99	2.62	6.13
6.00 10	6.99	6.69	12.82
7.00 10	7.99	9.52	22.34
8.00 10	8.99	8.31	30.65
9.00 10	9.99	13.31	43.95
10.00 10	10.99	18.55	62.50
11.00 10	11.99	15.16	77.66
12.00 10	12.99	13.47	91.13
13.00 10	13.99	5.32	96.45
14.00 10	14.99	2.10	98.55
15.00 10	15.99	1.45	100.00

ELECTROMAGNETIC PERMIT NO. 6945

NUMBER OF OBSERVATIONS = 1240

MINIMUM VALUE = .00

MAXIMUM VALUE = 12.00

MEAN = 4.03

STANDARD DEVIATION = 2.55

Z-VALUE FREQUENCIES

INTERVAL	NUMBER	%	CUM. %
-.00 TO .49	75	6.05	6.05
.50 TO .99	0	.00	6.05
1.00 TO 1.49	172	13.87	19.92
1.50 TO 1.99	0	.00	19.92
2.00 TO 2.49	154	12.42	32.34
2.50 TO 2.99	0	.00	32.34
3.00 TO 3.49	161	14.60	46.94
3.50 TO 3.99	0	.00	46.94
4.00 TO 4.49	106	8.55	55.48
4.50 TO 4.99	0	.00	55.48
5.00 TO 5.49	193	15.56	71.05
5.50 TO 5.99	0	.00	71.05
6.00 TO 6.49	144	11.61	82.66
6.50 TO 6.99	0	.00	82.66
7.00 TO 7.49	96	7.74	90.40
7.50 TO 7.99	0	.00	90.40
8.00 TO 8.49	59	4.76	95.16
8.50 TO 8.99	0	.00	95.16
9.00 TO 9.49	29	2.34	97.50
9.50 TO 9.99	0	.00	97.50
10.00 TO 10.49	25	2.02	99.52
10.50 TO 10.99	0	.00	99.52
11.00 TO 11.49	4	.32	99.84
11.50 TO 11.99	0	.00	99.84
12.00 TO 12.49	2	.16	100.00

ELECTROMAGNETIC PERMIT NO. 6945

NUMBER OF OBSERVATIONS = 1121

MINIMUM VALUE = .00

MAXIMUM VALUE = 7.00

MEAN = 3.52

STANDARD DEVIATION = 2.10

Z-VALUE FREQUENCIES

INTERVAL	NUMBER	%	CULM.%
=====	=====	=====	=====
-.00 TO	.49	75	6.69
.50 TO	.99	0	.00
1.00 TO	1.49	172	15.34
1.50 TO	1.99	0	.00
2.00 TO	2.49	154	13.74
2.50 TO	2.99	0	.00
3.00 TO	3.49	181	16.15
3.50 TO	3.99	0	.00
4.00 TO	4.49	106	9.46
4.50 TO	4.99	0	.00
5.00 TO	5.49	193	17.22
5.50 TO	5.99	0	.00
6.00 TO	6.49	144	12.85
6.50 TO	6.99	0	.00
7.00 TO	7.49	96	8.56

NUMBER OF OBSERVATIONS = 1240

MINIMUM VALUE = .00

MAXIMUM VALUE = 17.00

MEAN = 10.09

STANDARD DEVIATION = 3.31

Z-VALUE FREQUENCIES

INTERVAL	NUMBER	%	CULM.%
=====	=====	=====	=====
-1.00 TO .99	4	.32	.32
1.00 TO 1.99	8	.65	.97
2.00 TO 2.99	4	.32	1.29
3.00 TO 3.99	27	2.18	3.47
4.00 TO 4.99	19	1.53	5.00
5.00 TO 5.99	55	4.44	9.44
6.00 TO 6.99	81	6.53	15.97
7.00 TO 7.99	85	6.85	22.82
8.00 TO 8.99	81	6.53	29.35
9.00 TO 9.99	115	9.27	38.63
10.00 TO 10.99	194	15.65	54.27
11.00 TO 11.99	109	8.79	63.06
12.00 TO 12.99	156	12.58	75.65
13.00 TO 13.99	108	8.71	84.35
14.00 TO 14.99	86	6.94	91.29
15.00 TO 15.99	67	5.40	96.69
16.00 TO 16.99	26	2.10	98.79
17.00 TO 17.99	15	1.21	100.00

NUMBER OF OBSERVATIONS = 1132

MINIMUM VALUE = .00

MAXIMUM VALUE = 14.00

MEAN = 9.57

STANDARD DEVIATION = 2.98

Z-VALUE FREQUENCIES

INTERVAL	NUMBER	%	CUM.%
-.00 TO .49	4	.35	.35
.50 TO 1.49	0	.00	.35
1.50 TO 1.49	8	.71	1.06
1.50 TO 1.49	0	.00	1.06
2.00 TO 2.49	4	.35	1.41
2.50 TO 2.99	0	.00	1.41
3.00 TO 3.49	27	2.39	3.80
3.50 TO 3.99	0	.00	3.80
4.00 TO 4.49	19	1.68	5.48
4.50 TO 4.99	0	.00	5.48
5.00 TO 5.49	55	4.86	10.34
5.50 TO 5.99	0	.00	10.34
6.00 TO 6.49	81	7.16	17.49
6.50 TO 6.99	0	.00	17.49
7.00 TO 7.49	85	7.51	25.00
7.50 TO 7.99	0	.00	25.00
8.00 TO 8.49	81	7.16	32.16
8.50 TO 8.99	0	.00	32.16
9.00 TO 9.49	115	10.16	42.31
9.50 TO 9.99	0	.00	42.31
10.00 TO 10.49	194	17.14	59.45
10.50 TO 10.99	0	.00	59.45
11.00 TO 11.49	109	9.63	69.08
11.50 TO 11.99	0	.00	69.08
12.00 TO 12.49	156	13.78	82.86
12.50 TO 12.99	0	.00	82.86
13.00 TO 13.49	108	9.54	92.40
13.50 TO 13.99	0	.00	92.40
14.00 TO 14.49	86	7.60	100.00

NUMBER OF OBSERVATIONS = 1240
 MINIMUM VALUE = .00
 MAXIMUM VALUE = 11.00
 MEAN = 4.47
 STANDARD DEVIATION = 2.35

Z-VALUE FREQUENCIES

INTERVAL	NUMBER	%	CUM.%
-.00 TO .49	43	3.47	3.47
.50 TO .99	0	.00	3.47
1.00 TO 1.49	90	7.26	10.73
1.50 TO 1.99	0	.00	10.73
2.00 TO 2.49	152	12.26	22.98
2.50 TO 2.99	0	.00	22.98
3.00 TO 3.49	173	13.95	36.94
3.50 TO 3.99	0	.00	36.94
4.00 TO 4.49	160	12.90	49.84
4.50 TO 4.99	0	.00	49.84
5.00 TO 5.49	208	16.77	66.61
5.50 TO 5.99	0	.00	66.61
6.00 TO 6.49	160	12.90	79.52
6.50 TO 6.99	0	.00	79.52
7.00 TO 7.49	127	10.24	89.76
7.50 TO 7.99	0	.00	89.76
8.00 TO 8.49	66	5.32	95.08
8.50 TO 8.99	0	.00	95.08
9.00 TO 9.49	40	3.23	98.31
9.50 TO 9.99	0	.00	98.31
10.00 TO 10.49	20	1.61	99.92
10.50 TO 10.99	0	.00	99.92
11.00 TO 11.49	1	.08	100.00

ELECTROMAGNETIC PERMIT 0970

NUMBER OF OBSERVATIONS = 1179

MINIMUM VALUE = .00

MAXIMUM VALUE = 8.00

MEAN = 4.22

STANDARD DEVIATION = 2.12

Z-VALUE FREQUENCIES

INTERVAL	NUMBER	%	CULM.%
-.00 TO .49	43	3.65	3.65
.50 TO .99	0	.00	3.65
1.00 TO 1.49	90	7.63	11.28
1.50 TO 1.99	0	.00	11.28
2.00 TO 2.49	152	12.89	24.17
2.50 TO 2.99	0	.00	24.17
3.00 TO 3.49	173	14.67	38.85
3.50 TO 3.99	0	.00	38.85
4.00 TO 4.49	160	13.57	52.42
4.50 TO 4.99	0	.00	52.42
5.00 TO 5.49	208	17.64	70.06
5.50 TO 5.99	0	.00	70.06
6.00 TO 6.49	160	13.57	83.63
6.50 TO 6.99	0	.00	83.63
7.00 TO 7.49	127	10.77	94.40
7.50 TO 7.99	0	.00	94.40
8.00 TO 8.49	66	5.60	100.00

MAGNETOMETER PERMAL NO. 0979

NUMBER OF OBSERVATIONS = 1200
 MINIMUM VALUE = 2.00
 MAXIMUM VALUE = 22.00
 MEAN = 11.18
 STANDARD DEVIATION = 3.03

Z-VALUE FREQUENCIES

INTERVAL	NUMBER	%	CUM.%
2.00 TO 2.99	1	.08	.08
3.00 TO 3.99	5	.40	.48
4.00 TO 4.99	12	.95	1.43
5.00 TO 5.99	38	3.02	4.44
6.00 TO 6.99	32	2.54	6.98
7.00 TO 7.99	49	3.89	10.87
8.00 TO 8.99	87	6.90	17.78
9.00 TO 9.99	60	4.70	22.54
10.00 TO 10.99	225	17.86	40.40
11.00 TO 11.99	173	13.73	54.13
12.00 TO 12.99	192	15.24	69.37
13.00 TO 13.99	147	11.67	81.03
14.00 TO 14.99	85	6.75	87.78
15.00 TO 15.99	80	6.35	94.13
16.00 TO 16.99	29	2.30	96.43
17.00 TO 17.99	14	1.11	97.54
18.00 TO 18.99	10	.79	98.33
19.00 TO 19.99	4	.32	98.65
20.00 TO 20.99	8	.63	99.29
21.00 TO 21.99	7	.56	99.84
22.00 TO 22.99	2	.16	100.00

NUMBER OF OBSERVATIONS = 1186

MINIMUM VALUE = 2.00

MAXIMUM VALUE = 15.00

MEAN = 10.76

STANDARD DEVIATION = 2.59

Z-VALUE FREQUENCIES

INTERVAL	NUMBER	%	CUM.%
2.00 TO 2.49	1	.08	.08
2.50 TO 2.99	0	.00	.08
3.00 TO 3.49	5	.42	.51
3.50 TO 3.99	0	.00	.51
4.00 TO 4.49	12	1.01	1.52
4.50 TO 4.99	0	.00	1.52
5.00 TO 5.49	38	3.20	4.72
5.50 TO 5.99	0	.00	4.72
6.00 TO 6.49	32	2.70	7.42
6.50 TO 6.99	0	.00	7.42
7.00 TO 7.49	49	4.13	11.55
7.50 TO 7.99	0	.00	11.55
8.00 TO 8.49	87	7.34	18.89
8.50 TO 8.99	0	.00	18.89
9.00 TO 9.49	60	5.06	23.95
9.50 TO 9.99	0	.00	23.95
10.00 TO 10.49	225	18.97	42.92
10.50 TO 10.99	0	.00	42.92
11.00 TO 11.49	173	14.59	57.50
11.50 TO 11.99	0	.00	57.50
12.00 TO 12.49	192	16.19	73.69
12.50 TO 12.99	0	.00	73.69
13.00 TO 13.49	147	12.39	86.09
13.50 TO 13.99	0	.00	86.09
14.00 TO 14.49	85	7.17	93.25
14.50 TO 14.99	0	.00	93.25
15.00 TO 15.49	60	6.75	100.00

NUMBER OF OBSERVATIONS = 1200

MINIMUM VALUE = .00

MAXIMUM VALUE = 15.00

MEAN = 4.20

STANDARD DEVIATION = 2.39

Z-VALUE FREQUENCIES

INTERVAL	NUMBER	%	CUM. %
-.00 TO .49	35	2.78	2.78
.50 TO 1.00	0	.00	2.78
1.00 TO 1.49	164	13.62	15.79
1.50 TO 1.99	0	.00	15.79
2.00 TO 2.49	129	10.24	26.03
2.50 TO 2.99	0	.00	26.03
3.00 TO 3.49	180	14.76	40.79
3.50 TO 4.00	0	.00	40.79
4.00 TO 4.49	160	14.76	55.56
4.50 TO 4.99	0	.00	55.56
5.00 TO 5.49	217	17.22	72.78
5.50 TO 5.99	0	.00	72.78
6.00 TO 6.49	131	10.40	83.17
6.50 TO 6.99	0	.00	83.17
7.00 TO 7.49	108	8.57	91.75
7.50 TO 7.99	0	.00	91.75
8.00 TO 8.49	39	3.10	94.84
8.50 TO 8.99	0	.00	94.84
9.00 TO 9.49	35	2.78	97.62
9.50 TO 9.99	0	.00	97.62
10.00 TO 10.49	21	1.67	99.29
10.50 TO 10.99	0	.00	99.29
11.00 TO 11.49	3	.24	99.52
11.50 TO 11.99	0	.00	99.52
12.00 TO 12.49	5	.40	99.92
12.50 TO 12.99	0	.00	99.92
13.00 TO 13.49	1	.08	100.00

ELECTROMAGNETIC PERMIT NO. 0979

NUMBER OF OBSERVATIONS = 1100

MAXIMUM VALUE = .00

MINIMUM VALUE = 7.00

MEAN = 3.70

STANDARD DEVIATION = 1.33

Z-VALUE FREQUENCIES

INTERVAL	NUMBER	X	CUM. %
-.00 10	.44	3.03	3.03
.00 10	.33	.00	3.03
1.00 10	1.44	14.19	17.21
1.50 10	1.39	.00	17.21
2.00 10	2.44	11.10	28.37
2.50 10	2.44	.00	28.37
3.00 10	3.44	10.09	44.46
3.50 10	3.39	.00	44.46
4.00 10	4.44	10.09	60.55
4.50 10	4.39	.00	60.55
5.00 10	5.44	10.77	79.33
5.50 10	5.39	.00	79.33
6.00 10	6.44	11.33	90.66
6.50 10	6.39	.00	90.66
7.00 10	7.44	10.0	100.00