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REPORT ON SOIL SAMPLING SURVEY - SEA CLAIM GROUP

INTRODUCTION

General

From June to September 1964 Dynasty Explorations Limited carried out an extensive soil sampling survey over a large portion of its SEA claim group in the Swim Lakes area of the Whitehorse Mining District. The area covered by the survey is outlined on the enclosed claim map (key map). The purpose of the survey was to collect soil samples that were then analyzed for copper and zinc content and to use these results as a guide to possible base metal deposits in the area. Access was by float plane from Whitehorse to Swim Lakes.

Topography and Vegetation

The claims lie in rolling glaciated terrain on the northeast side of the Pelly River Valley which occupies the Tintina Trench. A number of lakes, up to 4 miles long, occupy glacial depressions in the general area of the claim group. Elevations vary from 3100 to 3600 feet above sea level. Slopes are generally from 5 to 15 degrees, seldom over 20 degrees. Lakes and ridges are usually elongate east-west reflecting the trench of glaciation. The larger streams in the area cut across the glacial trend flowing to the Pelly River 5 miles southwest of the claim group at an elevation of 2400 feet. Local drainage is often poorly defined and commonly consists of swampy depressions.

The area is heavily forested except for burned over areas such as on the southeast part of the Sea group. Spruce is by far the dominant species with birch occurring on the south-facing slopes and occasional pine on well drained ridge tops. Willow and buck brush are widespread particularly in poorly drained or swampy areas. Slide alder is common on north-facing slopes.

Geology

Outcrops are very scarce making up only a fraction of one percent of the claim group area which is generally covered by a mantle of glacial till varying in depth from a few feet to one hundred feet or more. The glacial trend is from east to west. Most outcrops are sericite to chlorite schist, isoclinally folded, with the foliation dipping gently to the north. Several outcrops of subporphrytic quartz diorite occur on the southeastern part of the Sea group. Outcrops of skarn containing pyrite, pyrrhotite, chalcopyrite, galena and sphalerite are found at 3 localities near the north boundary of Sea 69, on Sea 1 Fraction and in the southwestern corner of Sea 40 mineral claims. Lenses of flat-lying sulphide mineralization primarily pyrrhotite lie on or near the bedrock surface for at least 2000 feet to the east of these mineralized skarn outcrops. See Geological Report.

Overburden Conditions Within the Survey Area

The glacial fill consists mostly of clay to coarse sand sized material containing frequent rounded pebble to boulder sized granitic erratics and platly fragments of schist. In a typical section a few inches of volcanic ash are found immediately overlying the till beneath a few inches of humus.

Although not always present, a layer of rusty oxidized till, rarely more than a few inches thick occurs below the volcanic ash. No well defined soil horizon development is present within the till, the matrix of which varies from brown to grey in colour. In areas of shallow overburden near the mineralized zones referred to above test pits and bulldozer trenches have revealed rusty and limonite cemented till to a thickness of a few feet overlying the bedrock. Within these "gossan" zones there is sometimes developed a layer of black manganese stained material. A gentle east-west trending ridge occurs along the southern boundary of the B.S. Group of Kerr-Addison Mines with the Sea Group. On the southeastern part of this ridge on claims Sea 67 and 69 overburden deepens are often only a few feet. Further west the overburden deepens and on claims Sea 50 and 52 may be up to 100 feet or more thick.

Permafrost is irregularly distributed over the survey area. On the south facing slope and burned over sections to the south and southeast of the boundary with the B.S. Group permafrost is generally absent except perhaps in sheltered depressions. On the west and northwest facing slopes on Claims Sea 50, 52, 54 and 56 stunted timber and limited information from bulldozer trenches indicate a widespread distribution of permafrost.

Method of Survey

The soil sampling survey was carried out in conjunction with a magnetometer survey. Two soil samplers were used, one to dig the samples, the other to bag and label the samples. The samplers worked with the magnetometer operator who ran the pace and compass lines between established base lines. In general sampling was done along north-south pace and compass lines between established east-west chained picket lines.

Over some of the area picketed cross lines were cut at 400 foot intervals. The orientation of the sample lines was such as to cross at right angles the dominant east-west formational trend of the schist. This was felt to be the best method for detecting zinc and copper in the soil that may be related to conformable replacement-type spacing was 200 feet with 100 foot sample intervals over the central portion of the survey area and 400 feet with 200 foot sample intervals over the outer parts of the area. The closer sample spacing was along the trend of a zone of magnetic anomalies.

The samples were dug with a light mattock-pick and were generally taken from a depth of from 6 inches to 1 foot below the surface. This depth was necessary in order to get beneath the humus, volcanic ash, and oxidized layer in the till. The general absence of well defined horizons below the oxidized layer made sampling of a specific soil horizon impossible. From 50 to 100 grams of preferably fine-grained material was placed in a polyethylene sample bag and the bag labelled to correspond with the sample location. In swampy areas it was not always possible to obtain a suitable sample.

Thirteen feet pits were dug by hand and sampled either on the basis of the nature of the material encountered, or at regular intervals. Test pits were located on magnetic peaks, areas of probable shallow overburden near magnetic peaks or on geochemical anomalies outlined by the soil sampling survey.

Method of Analysis

All samples were tested for copper and zinc by the geochemical laboratory at the Department of Geology, University of British Columbia.

Copper and zinc ions were extracted from the soil by hot sulphuric acid. The hot sulphuric acid extracts all copper and zinc present except for that held in silicate structures. Copper was extracted from the acid solution by biquinoline in amyl alcohol, zinc by ditizone in carbon tetrachloride. All results were presented in parts per million of the total weighf of the portion of the sample analyzed. A detailed description of the analytical procedure used is given in Appendix 1.

RESULTS:

Presentation:

The results from the laboratory are plotted ; showing the location of sample sites and the values in parts per million for zinc and copper content in the sample. (Map 1C). The zinc and copper values are contoured separately to better outline anomalous areas and to compare the distribution for zinc and copper contents (Maps 1D and 1C). Zinc content is contoured using a 200 parts per million contour interval up to 1000 parts per million with peak values shown. The 100 parts per million contour for zinc is also given. Copper content is contoured using a 20 parts per million contour interval with peak values shown. The outline of the magnetic anomaly is plotted.

Distribution of Anomalies and Interpretation

Zinc - on examination of the laboratory results 200 parts per million is selected as a "threshold" value below which values are considered to be normal or "background" and above which values are considered "anomalous". In the vicinity of, and downslope from the eastern end of the magnetic anomaly where sulphide mineralization containing lead, zinc and copper occurs on the bedrock surface there is an irregular distribution of anomalous zinc content in the soil.

Seven samples carried over 1000 per million, three of which were 2000 parts per million or more. All the highly anomalous samples that occur beyond the actual area of mineralization lie downslope from it generally along gentle drainage depressions. The three highest samples are 4000 feet away from any known mineralization and may possibly represent a separate sulphide occurrence, otherwise all anomalous values in this area can be accounted for by known areas of mineralization or possible projections of known mineralization. Further west along the magnetic anomaly several samples show anomalous zinc content. Considering that overburden depths are greater to the west and also that permafrost is distributed in this area to a considerable extent these samples may indicate zinc sulphides in the bedrock along most of the magnetic anomaly. An alternative exploration for these high values is that they are due to zinc mineralization in the float train caused by glacial movement from east to west from the known mineralized localities. A few anomalous values are found beyond the paths of downslope migration from known sulphide occurrences and magnetic anomalies. These "erratic" highs are probably due to small concentrations of zinc in the bedrock. The 100 parts per million contour was added to determine if there was a significant distribution of low and high background values. There is no apparent significant distribution of high and low values within the background range.

Copper - Anomalous copper content is considered as samples over 20 parts per million. In general copper contents vary in the same manner as zinc giving a similar distribution of anomalous values. This can be expected as the two metals are closely associated in the known mineralized occurrences and both copper and zinc have similar geochemical mobility in soil.

million.)

Test pits: Application to [illegible] the soil profile and copper grain ~~contents~~ and copper content at various depths of thirteen test pits. These pits are all along the trace of the zone of [illegible] mineralization and magnetic anomalies. All ~~test~~ pits [illegible] and 12 ~~[illegible]~~ yielded samples anomalously in either [illegible] or copper. In most cases [illegible] and copper content [illegible] directly with each other

Results

Presentation, [illegible] plotted [illegible] maps
pit sections

Interpretation of Results
Location on map

$\frac{1}{20} \times 4.6 = .23$ 2.66 + .23 = (2.89)

~~$\frac{19}{20} \times 2.8$~~ .14

$\frac{1}{2} \times 4.6$ 2.3

$\frac{1}{2} \times 2.8$ 1.4

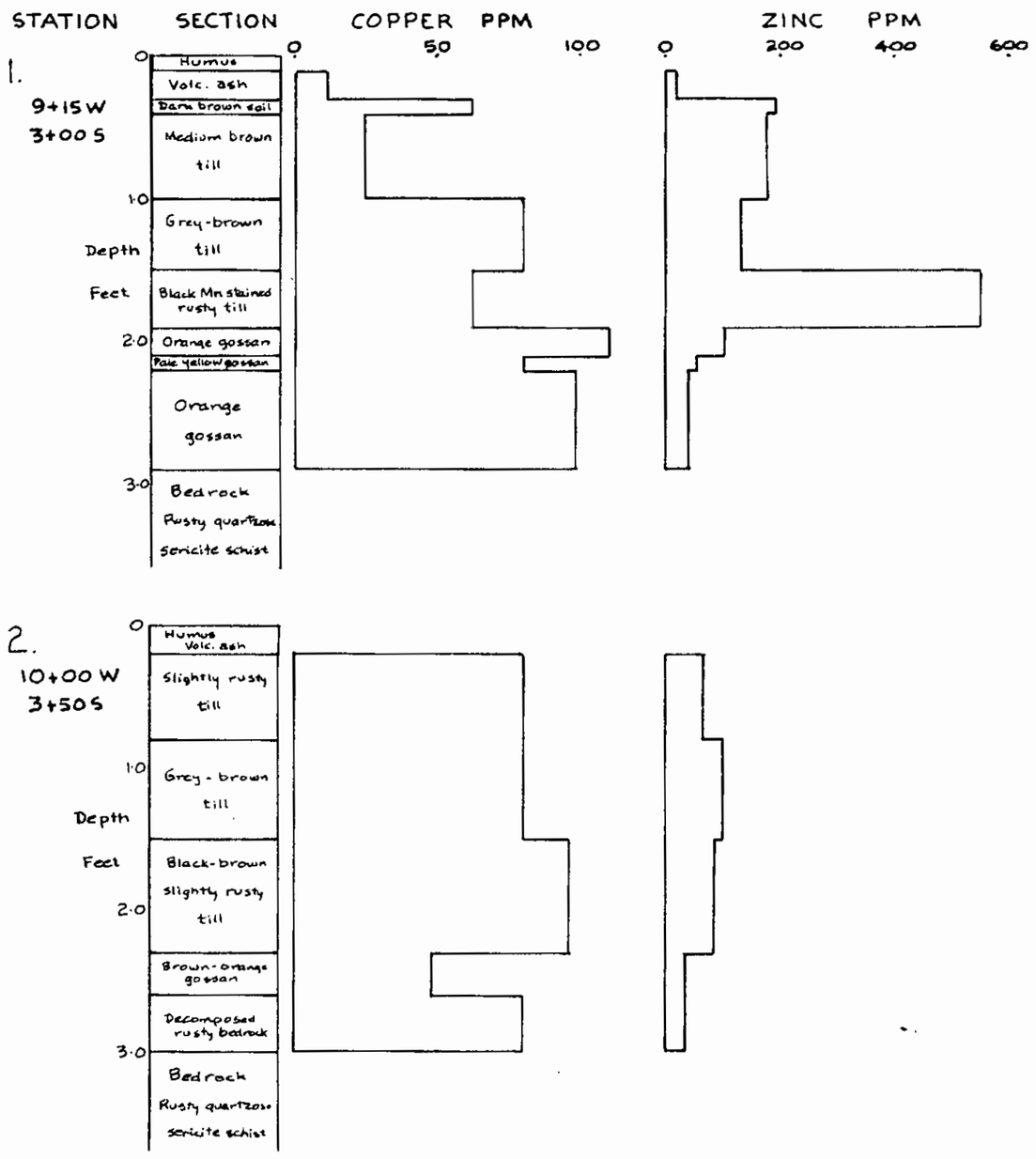
(3.7) (.9)

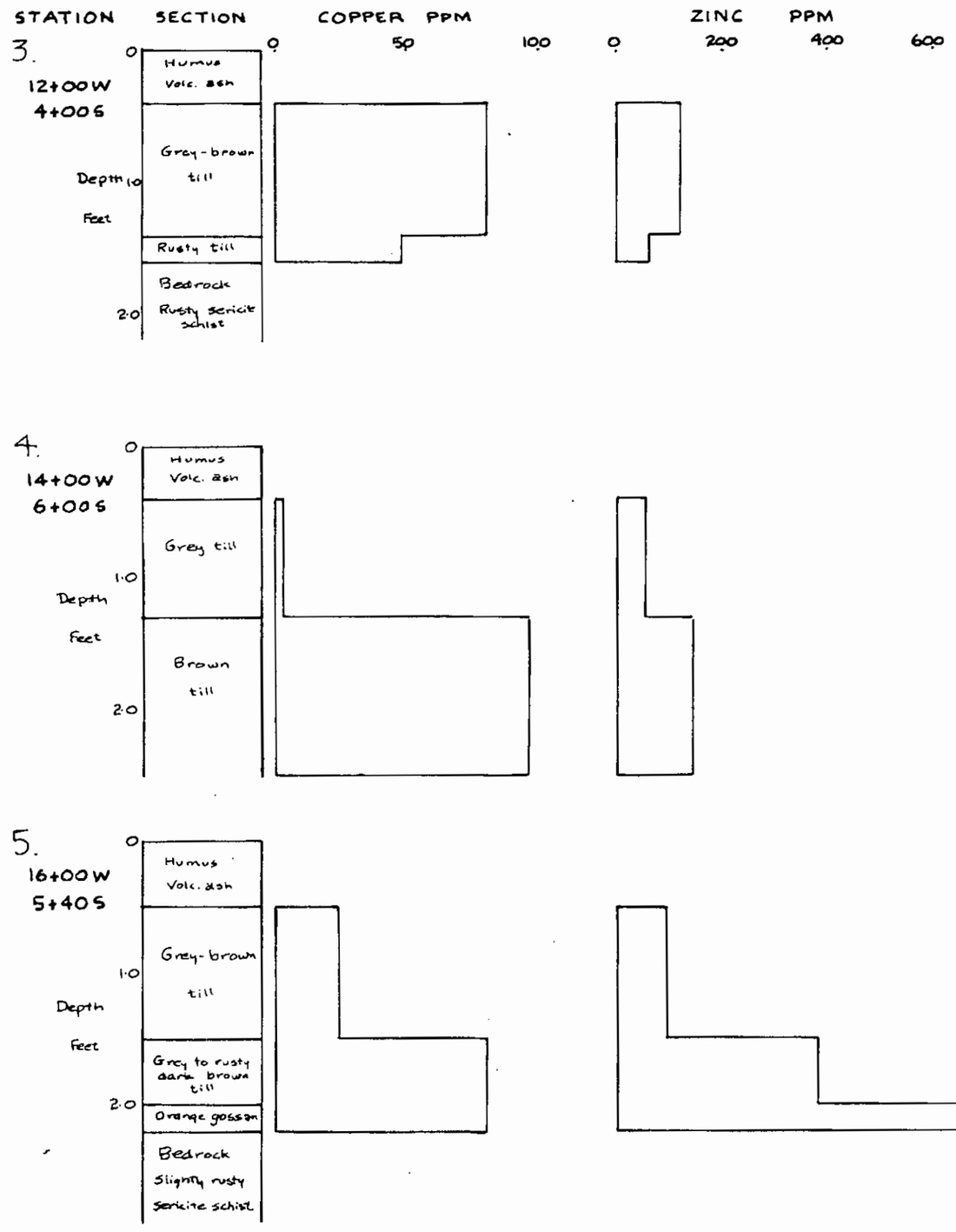
~~14~~ 319 × .14 = 76

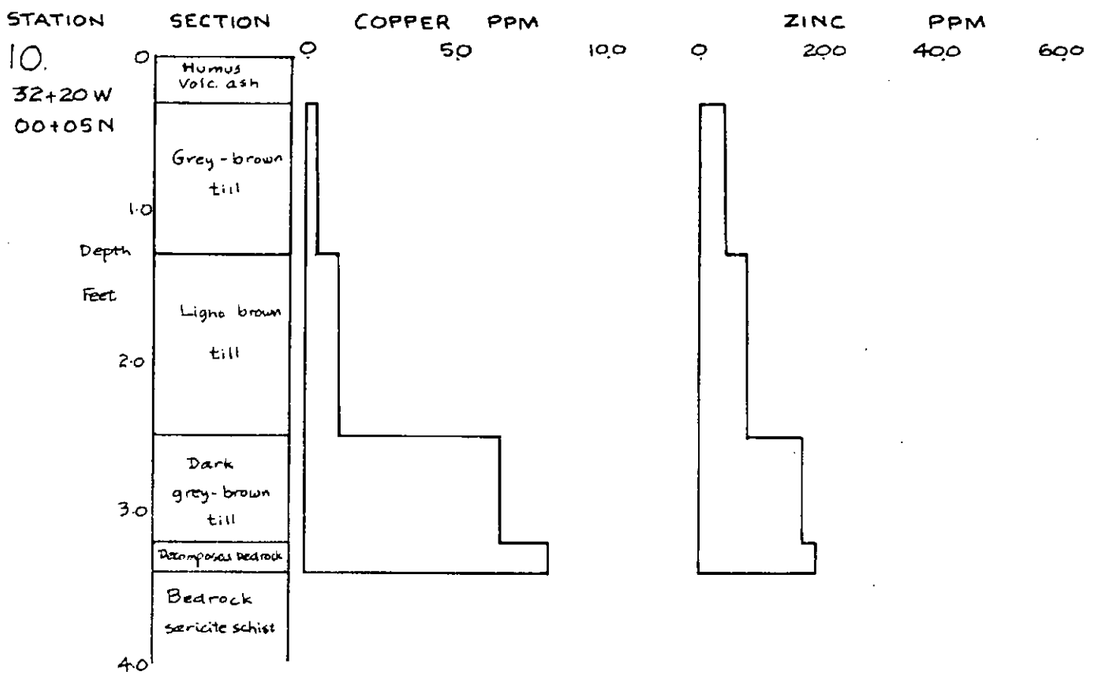
.19

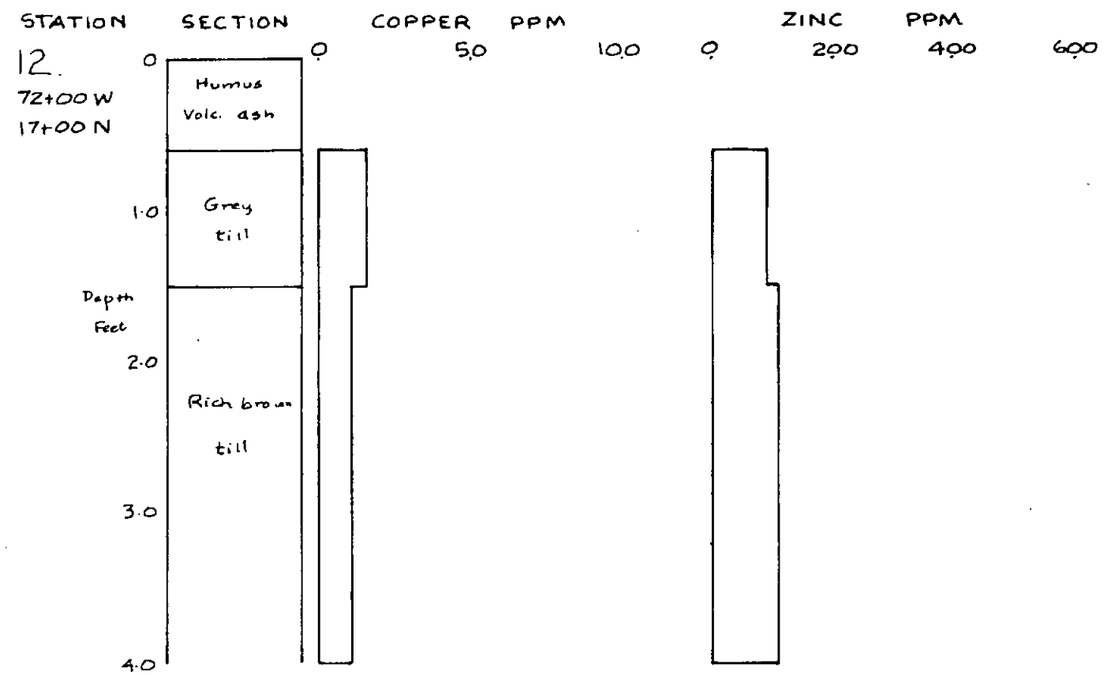
266

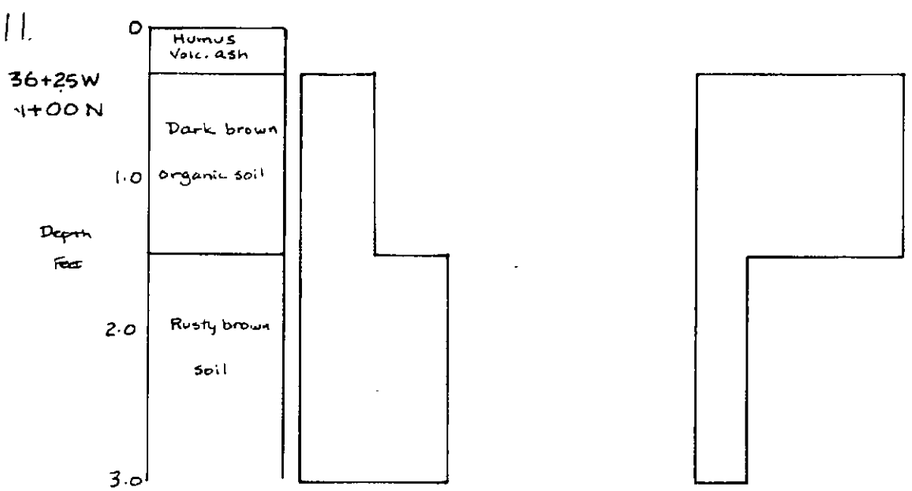
SEA CLAIM GROUP - TEST PITS - GEOCHEMISTRY

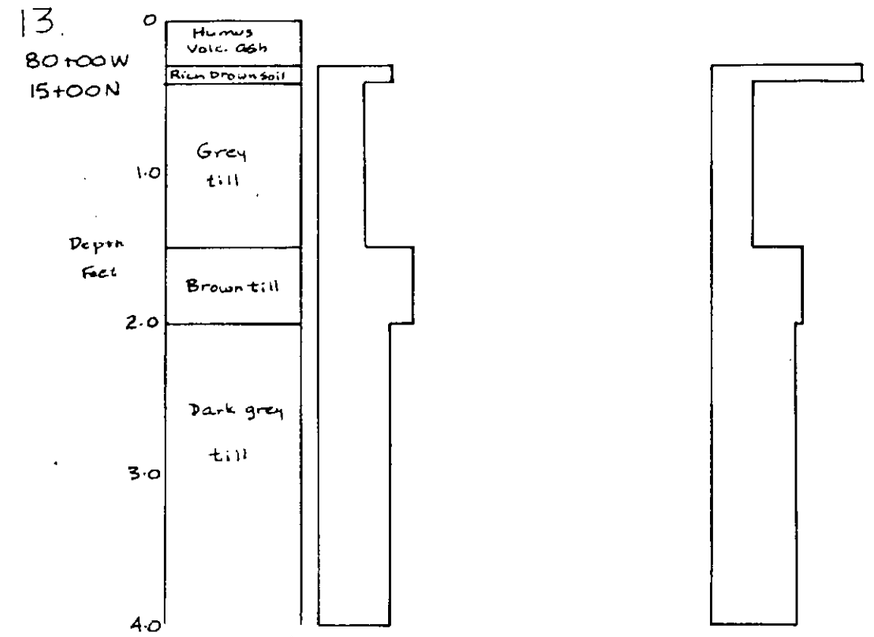


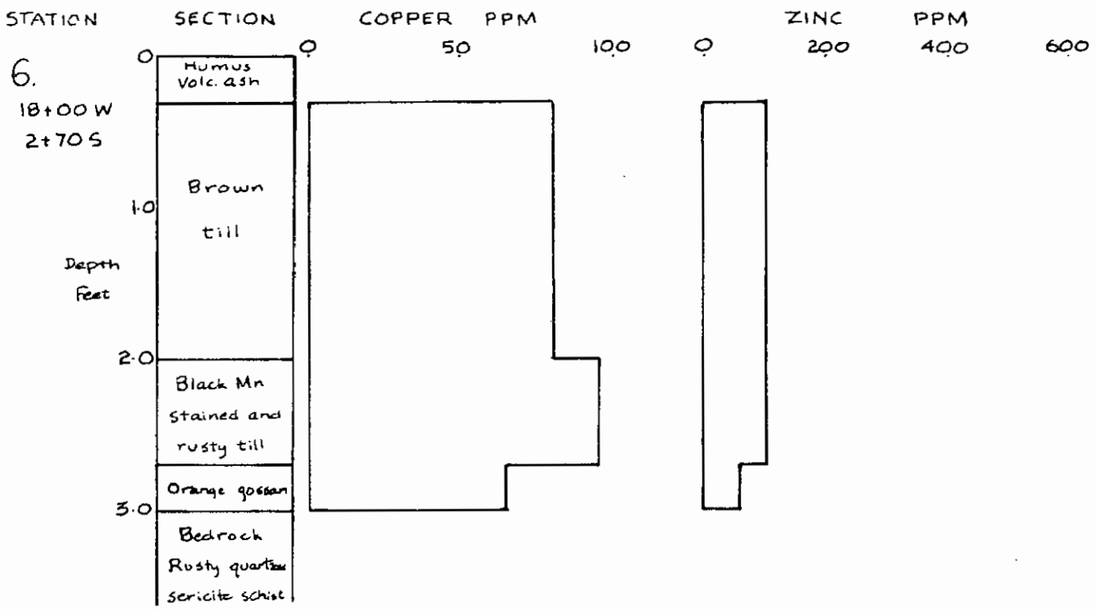


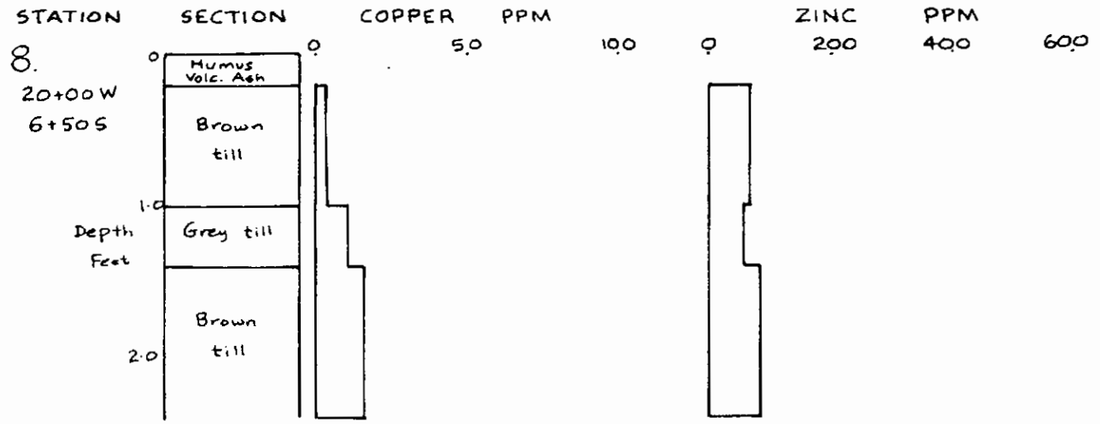

STATION
10.
32+20 W
00+05 N
SECTION
COPPER PPM
ZINC PPM
0
5.0
10.0
20.0
40.0
60.0
Humus
Volc. ash
Grey - brown
till
Depth
Feet
Light brown
till
Dark
grey - brown
till
Decomposed bedrock
Bedrock
sericite schist
1.0
2.0
3.0
4.0

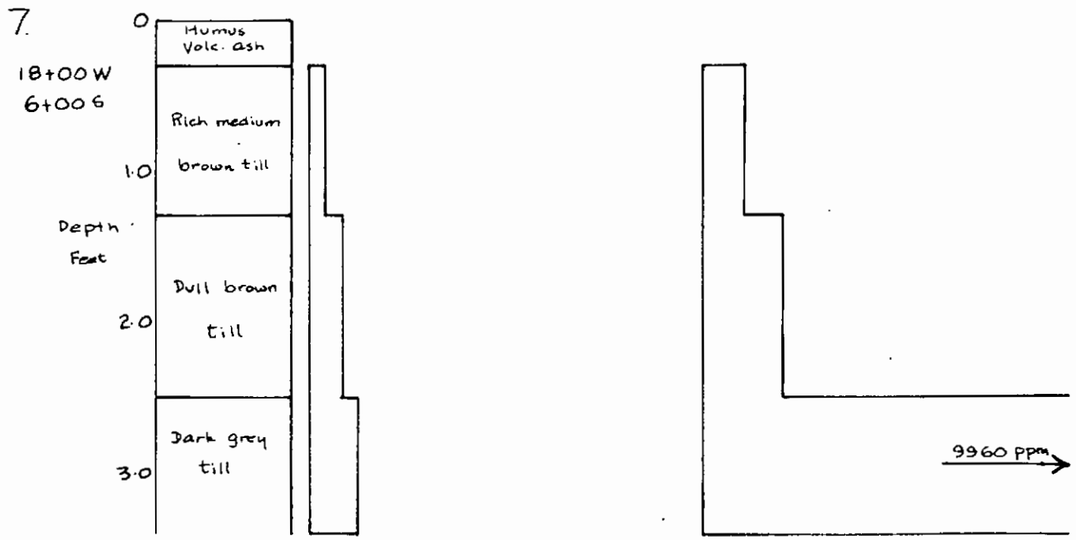

STATION
12.
72+00 W
17+00 N
SECTION
COPPER PPM
ZINC PPM
0
5.0
10.0
20.0
40.0
60.0
Humus
Volc. ash
Grey
till
Depth
Feet
Rich brown
till
1.0
2.0
3.0
4.0


11.
36+25 W
1+00 N
0
Humus
Volc. ash
Dark brown
organic soil
Depth
Feet
Rusty brown
soil
1.0
2.0
3.0

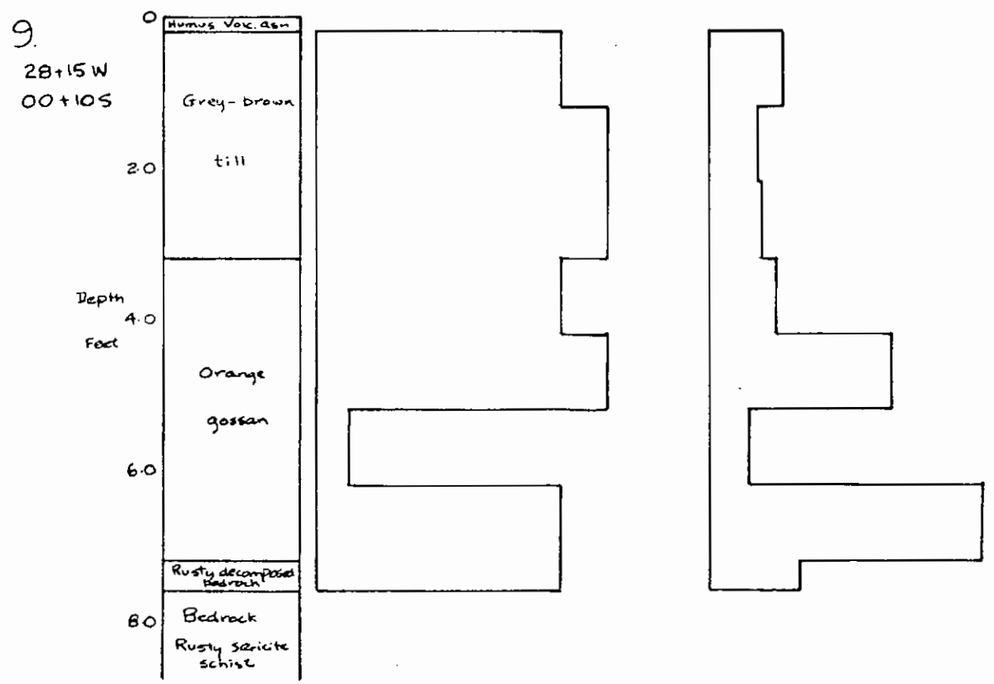

13.
80+00 W
15+00 N
0
Humus
Volc. ash
Rich Brown soil
Grey
till
Depth
Feet
Brown till
Dark grey
till
1.0
2.0
3.0
4.0


STATION
SECTION
COPPER PPM
0
50
100
ZINC PPM
0
200
400
600
6.
18+00 W
2+70 S
Humus
Volc. ash
Brown
till
Depth
Feet
1.0
2.0
Black Mn
Stained and
rusty till
Orange gossan
3.0
Bedrock
Rusty quartzite
sericite schist


STATION
SECTION
COPPER PPM
0
5.0
10.0
ZINC PPM
0
200
400
600
8.
20+00 W
6+50 S
Humus
Volc. Ash
Brown
till
1.0
Depth
Feet
Grey till
Brown
till
2.0


7.
18+00 W
6+00 S
0
Humus
Volc. ash
Rich medium
brown till
1.0
Depth
Feet
Dull brown
till
2.0
Dark grey
till
3.0

9960 ppm


9.
28+15 W
00+10 S
0
Humus Volc. ash
Grey-brown
till
2.0
Depth
Feet
4.0
Orange
gossan
6.0
Rusty decomposed bedrock
8.0
Bedrock
Rusty sericite
schist