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ABERFOYLE MANAGEMENT PTY. LTD.

# SUMMARY OF ACTIVITY

# ON THE

# CLEVELAND EXPLORATION LICENCE 1/63

# DURING THE

# PERIOD FEBRUARY 11TH-AUGUST 1ST, 1967



R. COX,

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Cleveland Tin N.L.

AUGUST 1ST, 1967.

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AMG REFERENCE POINTS ADDED

## CONTENTS

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## 1. INTRODUCTION

This report summarises the state of exploratory investigations within the Cleveland Exploration Licence 1/63 as at August 1st, 1967, and presents details of work undertaken during the period February 11th to August 1st, 1967.

The original proposals for the work carried out are embodied in the writer's earlier reports of October, 1966 (Reference 2) and February, 1967 (Reference 3).

The results of geological work accomplished in Area "A" (see attached drawing no. C-176-G) have been reviewed in the writer's reports of March, 1966 (Reference 1) and February, 1967 (Reference 3). The results of geophysical work accomplished in Area "A" have been reviewed in Falvey's report of January, 1967 (Reference 4).

## 2. OBJECTS

The Cleveland Exploration Licence 1/63 contains significant centres of mineralisation at the Godkin (Pb-Zn), Washington Hay (Pb-Zn), Cleveland (Sn-Cu) and Magnet (Pb-Ag-Zn) mines - see drawing no. C-176-G. The objects of geological investigations, supplemented by geophysical and geochemical methods where appropriate, are:-

1. To cover the whole Godkin-Cleveland-Magnet area to determine the stratigraphic and structural setting of the mineral deposits, in relation to the regional geology.

2. To analyse the stratigraphic and/or structural controls of mineralisation within the Godkin, Washington Hay, Cleveland and Magnet mines in order that future investigations and testing by diamond drilling might be based upon sound geological controls.

3. To locate additional, possibly sub-outcropping, centres of mineralisation.

## 3. RESULTS

In order to cover the whole Godkin-Cleveland-Magnet area with detailed geological/geophysical/geochemical investigations, a series of exploration programmes have been undertaken, the field work of which has now been completed. In view of the rugged, densely forested terrain and poor outcrop within E.L.1/63, it was decided that the objects of the programme could be obtained most economically and rapidly by:-

1. Running a series of baselines sub-parallel to the regional strike.

2. Cutting traverse lines at 500 ft. centres, perpendicular to a central reference line, throughout the entire area.

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3. Employing baselines and traverse lines for survey control, geological mapping, magnetometer traversing and, where applicable, S.P. traversing and geochemical soil sampling.

4. Cutting out all creeks, old tracks and trams, water races and crests of spurs and ridges likely to provide outcrop for detailed geological control.

5. Cutting short traverse lines at 100 ft. centres, perpendicular to a central reference line, along the strike extensions of the Cleveland (both S.W. and N.E.) and Magnet (S.W. only) ore bodies. These lines to be mapped and employed for more detailed geochemical/geophysical traversing.

All field work and geological/geophysical/geochemical fact plan draughting has now been completed for the whole Godkin-Cleveland-Magnet area. The results have been most rewarding. Geophysical interpretations (magnetometer and S.P.) have been completed for Area "A". The final geological interpretation for Areas "A" and "B" together with the magnetometer interpretation for Area "B" and geochemical interpretations for the S.W. extensions of the Magnet Mine are currently in progress. All field work has been draughted onto a series of thirty-five 1" = 100' scale plans. These are kept by the Resident Geologist at Cleveland Mine and are available for inspection. Upon completion of all interpretations of the field work recently completed, it is intended to have interpretation geological, geophysical and geochemical plans reduced to 1" = 1,000' scale.

Table I gives full details of all regional exploration investigations carried out during the period February 11th-August 1st, 1967, from which the broad spread of work can be appreciated. For the purpose of this report, investigations carried out on the Cleveland Mine leases are excluded.

In addition to the investigations summarised above, detailed mapping of all surface and underground exposures at the Magnet Mine constituted a fair proportion of the total work accomplished during this period. This work has to date been draughted onto 1" = 100' fact plans. Work is currently in progress on draughting a series of 1" = 40' scale geological fact plans for surface and underground exposures. In addition, all Magnet Mine underground plans obtained from the Mines Department, Hobart, have been photo-reduced to 1" = 40' scale in order to facilitate an analysis of the structural and/or stratigraphic controls of mineralisation. It is hoped that these analyses will aid the choosing of those sites most suitable for future diamond drilling investigations.

Details of work undertaken during the period February 11th-August 1st, 1967 are given below:-

(a) Line Cutting:
61,100 ft. of lines were cut in Area "B" during this period - full details of location are given in Table I and Drawing no. C-176-G. These lines form the basis for survey control and subsequent geological/geophysical/geochemical investigations.

(b) Surveying:
A total of 73,700 ft. of cut lines were surveyed using compass and tape. All lines were closed traverses and misclosures were adjusted. A total of 101,900 ft. of lines were draughted onto 1" = 100' scale fact plans. All traverse lines were pegged at 50 ft. intervals. Full details are given in Table I.

(c) Geological Mapping:
A total of 79,300 ft. of baselines, traverse lines, creeks, trams, tracks, etc., were mapped during this period. In addition, a total of 125,500 ft. of lines were draughted onto 1" = 100' geological fact plans.

In addition to the above, all accessible underground workings at the Magnet Mine were mapped during this period. These results are currently being draughted onto 1" = 40' scale fact plans.

(d) Geophysical Traversing:
All traverse lines G18-40 inclusive, totalling 85,300 ft., were traversed with a Sharpe model MF1 magnetometer, taking readings at 25 ft. intervals. Results have been draughted onto a set of fact plans (1" = 100' scale) and are currently being interpreted.

(e) Geochemical Soil Sampling:
The Magnet Mine ore body was investigated along strike for 2,500 ft. S.W. of the Magnet open cut by taking soil samples at 50 ft. intervals along lines (each 600 ft. in length) cut at 100 ft. centres along strike. A total of 277 samples were assayed for Pb, Zn, Ag, Cu, Sn, As and Mn. These results have been plotted on 1" = 100' scale fact plans and are currently being interpreted. A total of 12,600 ft. of lines were sampled.

4. PERSONNEL EMPLOYED

During this period, the following personnel were employed on regional exploration work in Area "B":-

(a) One geologist (R. Cox) on surveying and mapping.

(b) Four field assistants (G. Keygan, P. J. Kelly, D. Reeve and J. Dow) on line cutting, surveying, magnetometer traversing and soil sampling.

In addition, one four-wheel drive vehicle (Land Rover WZF-398) was engaged full-time on this work.

## 5. CONCLUSIONS

The period February 11th-August 1st, 1967 was one of almost continuous regional exploration within E.L.1/63 - Area "B". Very little work was undertaken on the Cleveland leases or Area "A".

It is particularly pleasing to report that the whole of the Godkin-Cleveland-Magnet area has now been covered in considerable detail, resulting in the production of 35 base plans at 1" = 100' scale. This area has been extensively covered with detailed mapping, magnetometer and S.P. traversing and soil sampling.

Future work will now be concentrated on completing -

(1) the interpretation geology/geophysics/ geochemistry plans,

(2) the structural/stratigraphic analysis of mineralisation controls at the Magnet Mine.

The results have been most rewarding from the point of view of understanding in detail the regional stratigraphy and structures, and the regional controls of mineralisation.

The next phase of exploration activity (excluding the Cleveland Mine leases) should be diamond drilling investigations of the S.W. extension along strike of the Magnet Mine ore body. In order to choose drill sites which will provide the maximum amount of geological information, the designing of the drilling programme must await completion of the detail analysis of old mine plans and surface geological/geochemical results currently being interpreted.

R. COX,

August 1st, 1967.

## 6. REFERENCES

1. Cox, R., March 2nd, 1966. Review of Activity on the Cleveland Exploration Licence 1/63. A.T.D.P. Report.

2. Cox, R., October 26th, 1966. Proposed Regional Exploration Programme, 1966-67. A.M.P.L. Report (C.T.N.L.)

3. Cox, R., February 10th, 1967. Regional Exploration Programme, E.L.1/63, Cleveland Mine, Tasmania. A.M.P.L. Report.

4. Falvey, D., January 12th, 1967. Report on Completion of Geophysical Survey, Cleveland Mine, Tasmania. A.T.D.P. Report.

TABLE I

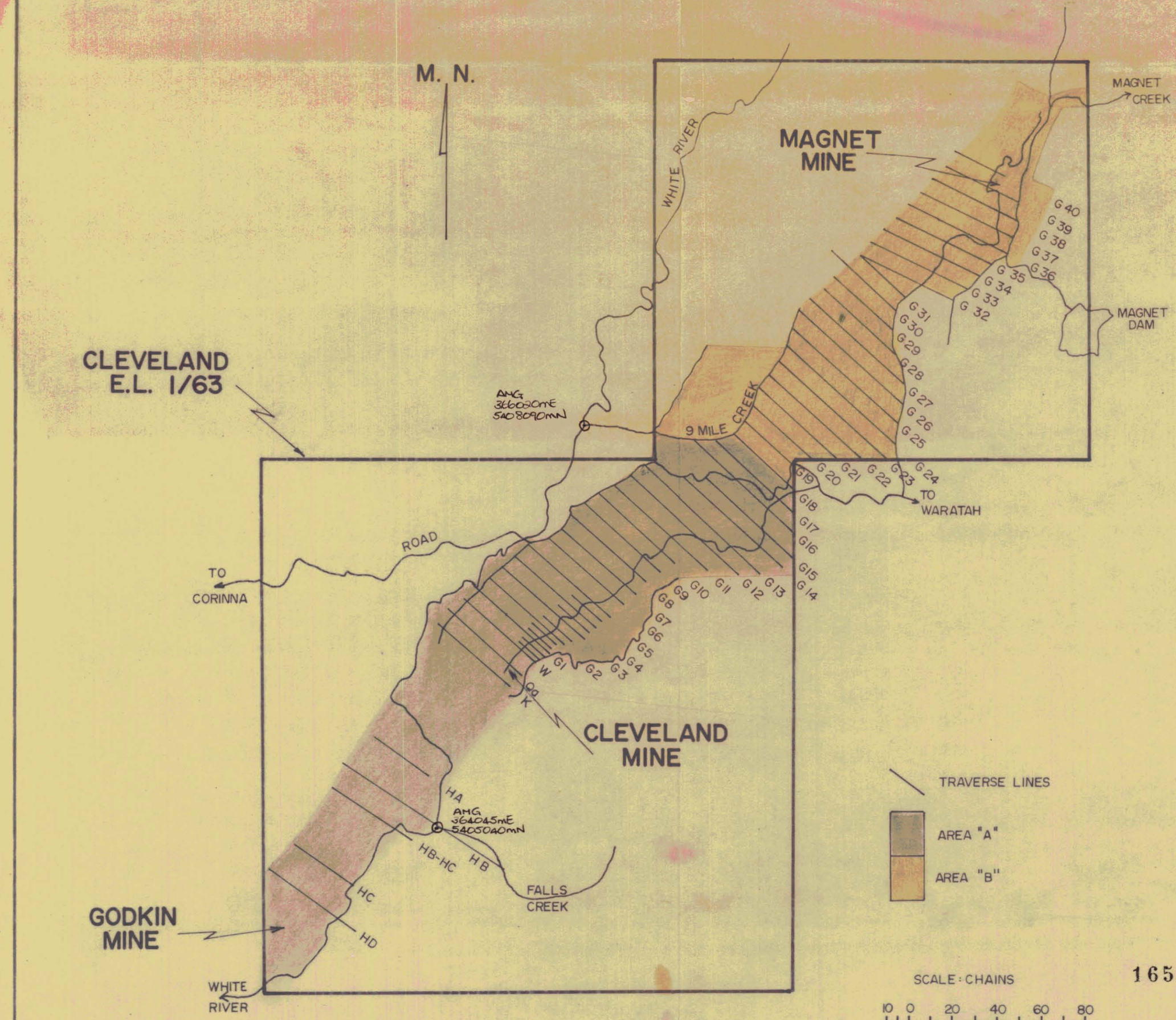
| Length Ft. | ITEM No. | Description | FIELD WORK Line Cutting | Survey | Geol-ogy | Magnet-ometer | Geo-chemical | DRAUGHTING Survey | Geol-ogy | Magnet-ometer | Geo-chemical |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5700 | 7 | Line G18 | | | | X | | | | X | |
| 6500 | 8 | " G19 | | | | X | | | | X | |
| 7000 | 9 | " G20 | | | | X | | | | X | |
| 7200 | 10 | " G21 | | | | X | | | | X | |
| 4600 | 11 | " G22 | | | | X | | | | X | |
| 5300 | 12 | " G23 | | | | X | | | | X | |
| 4400 | 13 | " G24 | | | | X | | | | X | |
| 3600 | 14 | " G25 | | | | X | | | | X | |
| 3600 | 15 | " G26 | | | | X | | | | X | |
| 3500 | 16 | " G27 | | | | X | | | | X | |
| 3800 | 17 | " G28 | | | | X | | | | X | |
| 2200 | 18 | " G29 | | | | X | | | X | X | |
| 3000 | 19 | " G30 | | | | X | | | | X | |
| 1800 | 20 | " G31 | | | | X | | | X | X | |
| 2000 | 21 | " G32 | X | X | X | X | | X | X | X | |
| 2100 | 22 | " G33 | X | X | X | X | | X | X | X | |
| 1300 | 23 | " G34 | X | X | X | X | | X | X | X | |
| 1600 | 24 | " G35 | | | X | X | | X | X | X | |
| 1600 | 25 | " G36 | | | X | X | | X | X | X | |
| 2400 | 26 | " G37 | | | X | X | | X | X | X | |
| 1900 | 27 | " G38 | | | | X | | X | X | X | |
| 2300 | 28 | " G39 | | | | X | | | X | X | |
| 1400 | 29 | " G40 | | | | X | | X | X | X | |
| 13000 | 30 | Magnet-Whyte Hill baseline | | | | | | | X | | |
| 4300 | 31 | N.W. Magnet baseline | | | | | | | X | | |
| 12300 | 32 | Magnet Creek baseline | | | | | | X | X | | |
| 4000 | 33 | No. 4 Adit - Lease Corner RC1583 baseline | | | | | | X | X | | |
| 10000 | 34 | Magnet Mine, detailed mapping | X | X | X | | | X | X | | |
| 1000 | 35 | Line to Anomaly 62 | | X | X | | | X | X | | |
| 11600 | 36 | PMG cable line, Whyte Hill | | X | X | | | X | X | | |
| 2000 | 37 | Magnet Geochem. baseline | X | X | X | | | X | X | | |

| Length Ft. | ITEM No. | Description | FIELD WORK Line Cutting | Survey | Geol-ogy | Magnet-ometer | Geo-chemical | DRAUGHTING Survey | Geol-ogy | Magnet-ometer | Geo-chemical |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 38 | Line G32 SE | X | X | X | X | | X | X | X | |
| 1100 | 39 | " G33 " | X | X | X | X | | X | X | X | |
| 1300 | 40 | " G34 " | X | X | X | X | | X | X | X | |
| 1400 | 41 | " G35 " | X | X | X | X | | X | X | X | |
| 1200 | 42 | " G36 " | X | X | X | X | | X | X | X | |
| 600 | 43 | Geochem Line G35A | X | X | X | | X | X | X | | X |
| 600 | 44 | " " G35B | X | X | X | | X | X | X | | X |
| 600 | 45 | " " G35C | X | X | X | | X | X | X | | X |
| 600 | 46 | " " G35D | X | X | X | | X | X | X | | X |
| 600 | 47 | " " G36A | X | X | X | | X | X | X | | X |
| 600 | 48 | " " G36B | X | X | X | | X | X | X | | X |
| 600 | 49 | " " G36C | X | X | X | | X | X | X | | X |
| 600 | 50 | " " G36D | X | X | X | | X | X | X | | X |
| 600 | 51 | " " G37A | X | X | X | | X | X | X | | X |
| 600 | 52 | " " G37B | X | X | X | | X | X | X | | X |
| 600 | 53 | " " G37C | X | X | X | | X | X | X | | X |
| 600 | 54 | " " G37D | X | X | X | | X | X | X | | X |
| 600 | 55 | " " G38A | X | X | X | | X | X | X | | X |
| 600 | 56 | " " G38B | X | X | X | | X | X | X | | X |
| 600 | 57 | " " G38C | X | X | X | | X | X | X | | X |
| 600 | 58 | " " G38D | X | X | X | | X | X | X | | X |
| 500 | 59 | Magnet Creek G32-G33 | X | X | X | | | X | X | | |
| 3500 | 60 | Track G21/92-G24/71 | X | X | X | | | X | X | | |
| 1300 | 61 | Creek G21/95-G23/46 | X | X | X | | | X | X | | |
| 1700 | 62 | " G22/75-G25/64 | X | X | X | | | X | X | | |
| 300 | 63 | " G23/78-G24/77 | X | X | X | | | X | X | | |
| 2000 | 64 | " G22/84-RC811 | X | X | X | | | X | X | | |
| 1200 | 65 | " G21/107-G23/59 | X | X | X | | | X | X | | |
| 1700 | 66 | " G23/2-G24/30 | X | X | X | | | X | X | | |

| Length Ft. | ITEM No. | Description | FIELD WORK Line Cutting | Survey | Geol-ogy | Magnet-ometer | Geo-chemical | DRAUGHTING Survey | Geol-ogy | Magnet-ometer | Geo-chemical |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1100 | 67 | Creek G25/1-G26/18 | X | X | X | | | X | X | | |
| 900 | 68 | Nine Mile Creek above RC1215 | X | X | X | | | X | X | | |
| 2000 | 69 | " " " below G16/148 | X | X | X | | | X | X | | |
| 2900 | 70 | Creek RC2592-2650 | X | X | X | | | X | X | | |
| 2200 | 71 | Tie in line RC2650-1200 | X | X | X | | | X | X | | |
| 600 | 72 | Geochem Line G35 | | | | | X | X | X | | X |
| 600 | 73 | " " G36 | | | | | X | X | X | | X |
| 600 | 74 | " " G37 | | | | | X | X | X | | X |
| 600 | 75 | " " G38 | | | | | X | X | X | | X |
| 600 | 76 | " " G39 | | | | | X | X | X | | X |
| 400 | 77 | Line G37 SE | X | X | X | | | X | X | | |
| 1600 | 78 | Creek G31/18 - NW Magnet baseline | X | X | X | | | X | X | | |
| 4300 | 79 | Track RC1749-RC870 | X | X | X | | | X | X | | |
| Total footages completed | | | 61,100 | 73,700 | 79,300 | 85,300 | 12,600 | 101,900 | 125,500 | 85,300 | 12,600 |

# CLEVELAND EXPLORATION LICENCE 1/63

## SHOWING AREAS COVERED BY DETAILED (1" = 100') GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL EXPLORATION PROGRAMMES AS AT AUGUST 1st. 1967




AMG REFERENCE POINTS ADDED

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Roy Cox, 1-8-1967

DRAWING No. C-176-G