

52J04SE0004 2.11871 ZARN LAKE

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REPORT

Сn

THE GEOPHYSICS

of

GRID "A"

CREAM SILVER MINES LTD.

SPLIT LAKE PROJECT

- 1988

BY: D. Saunders this file P. Simoneau C. Larouche 2.10965

SWEANY MINING SERVICES OVALBAY GEOLOGICAL SERVICES INC. NOVEMBER, 1988



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INTRODUCTION

During the summer of 1988, CREAM SILVER MINES LTD. contracted Sweany Mining Services to establish a cut grid and conduct geophysical and geological surveys over a portion of their Split Lake Project property. Ovalbay Geological Services Inc. was subcontracted to interpret available data and provide reports.

The total property consists of 326 contiguous unpatented mining claims. The claims are recorded in the Patricia Mining division located at Sioux Lookout, Ontario.

The survey described in this report is from a portion of the project known as "Grid A." A total of approximately 39 claims are covered by Grid A. These claims are listed in Appendix 3 with a claim map (Fig. 2).

An Imperial System grid was established over Grid A between May and August 1988. Magnetometer and VLF Surveys were completed in early September 1988. An EDA Dmni IV-Plus instrument was used for both surveys.

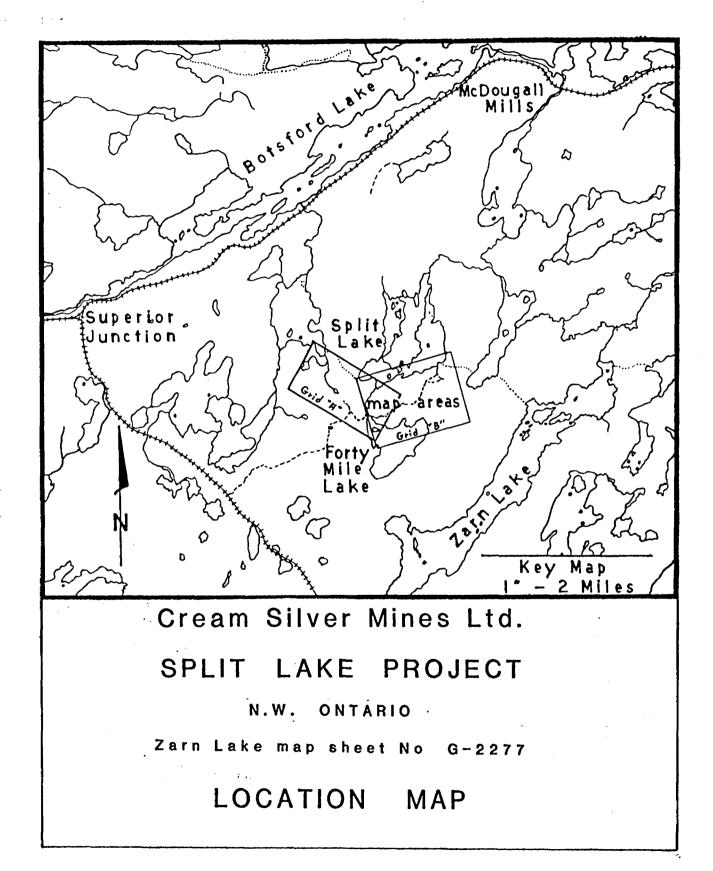
LOCATION, ACCESS AND INFRASTRUCTURE

The Split Lake property is located northwest of Forty-Mile Lake, 13 miles east of Sioux Lookout, Ontario. (Figure 1.) A temporary camp was established at the north end of Forty-Mile Lake.

Access and servicing is via aircraft from Sioux Lookout or through the use of a four (4) mile all-terrain vehicle trail from Hwy. 642 east of Sioux Lookout.

Water is available from Forty-Mile, Split, and Walton Lakes as well as numerous ponds and creeks found on the property. Hydro power is avaliable as close as the Alcona Junction four miles west of the property. The Alcona Junction is on a branch line of the Canadian National Railway. Labour manpower is readily available in Sioux Lookout.





TOPOGRAPHY AND PHYSIOGRAPHY

The property lies in the drainage basins of the English River and its tributary, the Sturgeon River, and has an elevation of between 1200 and 1350 feet above sea level. The lakes of the claim group are connected to these rivers by small streams.

The map area is covered by glacial drift, swamp and muskeg. In many places, rock outcrops occur on rounded hills up to 100 feet above the level of the surrounding country. Steep cliffs often occur at the edges of some of these outcrop areas. Due to the relative lack of outcrop in the area, the geophysical surveys undertaken were expected to assist in the geological interpretation of the property.

LINECUTTING AND SURVEY PROCEDURE

Survey lines totalling 59.6 miles (including baselines and tielines) was cut over the property. A baseline 8700 feet long was established. The baseline was oriented at 130 degrees azimuth and was planned to parallel the known trend of mineralized vein systems.

Three tielines were used to enclose the grid. The longest tieline, TL 2000N, is 11600 feet in length and was used as baseline control at the grid's extremity.

Cross lines were established at 200 foot intervals along the baselines and lines were cut to lakes or tielines. Pickets were erected at 100 foot intervals.

Geophysical surveys were performed using an EDA Omni IV-Plus instrument, with readings taken at 50 foot stations. Data was dumped onto hard copies and manually plotted onto base maps on a daily basis.

The VLF Omni-IV Survey

Cutler, Maine was the station used for the VLF survey. Testing by the operator demonstrated that Seattle, Washington and Cultler produced very similar results and the coupling angle of both signals were adequate to produce a reliable survey. Cutler was selected as a survey station because of its stronger signal.

The Omni-IV Magnetometer

The magnetometer was operated in the tieline mode with tiepoints at 200 foot intervals on the baselines. Diurnal variations were processed to the initial set of tiepoint readings.

DISCUSSION OF RESULTS

known mineralization on the The property consists of fissure filling quartz veins in pre-tectonic brittle fault zones. Potential exists to locate conductive mineralized faults in the areas other than the known occurences. Potential also exists on the property to locate significant deposits of conductive sulphides in mineralized stratigraphic horizons or shear zones. The surveys yield excellent information on the local geology and defined numerous interesting exploration targets.

THE MAGNETOMETER SURVEY

The magnetic highs indicate the regional trend of the underlying geology. High magnetic zones generally give expressions between 1000 to 2000 gammas above background. These highs probably result from magnetite in mafic flows or in thin iron formations, the latter of which was never mapped on the property.

The strongest magnetic trend is located along a persistant major linear trend which is coincident with a major contact between mafic flows to the south and sediments to the north.

The total field survey was useful in outlining numerous magnetic areas which underly Grid A. Generally the mafic volcanics give a higher magnetic response than the large thickness of greywacke and mudstone sediments which dominate the northern-central area of the grid. Abundant mafic volcanics occur in the southern and southwestern portion of the grid.

THE VLF SURVEY

The results of the VLF Survey proved useful in delineating numerous conductive horizons present on the property. Each conductive zone which may be significant is given an arbitrary number (eg. 24). A description of each conductive zone and its interpretation is presented in Appendix 1.

A total of seventy-six (76) conductive zones are labelled on Grid "A". Twenty-five (25) of these zones are interpreted to represent bedrock conductors. Most of these responses are weak to moderate. Fourteen (14) of conductive zones are interpreted to result from conductivity changes at geological contacts.

The remainder of the conductive zones are thought to result from topographic configurations which

DISCUSSION (cont..)

result in conductivity. These are generally strong responses and often correlate with swamps or cliffs.

The following VLF anomalies are considered notable:

22 - Strong signature from lines 26W to 46W. Coincident with lineament adjacent to the Pond Zone and extends to the cliffs north of the Alcona site.

24 - Persistant strong signature on land, especially between 48W and 50W numerous old trenches were located. This may be a conductive extension of the Pond Vein.

38 - Long consistant anomaly flanking a magnetic high possibly representing a fault structure parallel with the Central Vein System.

39 - Weak, persistant anomaly over the trend of the Central Vein.

42 - Coincident with linear magnetic high at a geological contact between sediments and cherty tuffs.

51 - Possibly a mineralized fault cutting a magnetic high close to a folded geological contact.

52 - May correlate with old trenches in which is exposed sulphide bearing sediment.

53 - Possibly a mineralized fault in the nose of a large scale fold.

59 - Carbonate altered outcrops with minor sulphides.

70 - Fault? Crosses regional geology at 60 degrees in the vicinity of felsic volcanics. Should continue onto Grid B.

CONCLUSIONS AND RECOMMENDATIONS

1) The geophysical surveys were successful in defining a number of magnetic and conductive horizons occurring on the property.

2) Several conductors located by the VLF displayed a good correlation with the magnetic trends outlined by the magnetometer survey.

3) Several conductors were outlined over or adjacent to areas with known metallic mineralization. This may reflect conductive mineralization or related shearing.

4) It is recommended that a second EM survey using a Max Min II be used over a selected area of the property. This area would include from L 58W to L 8W between TL 2000N and BL 0. This will allow for conclusive interpretation and yield useful information of the nature of the conductive zones, particularly in the vicinity of the known mineral occurrences.

5) Prospecting of several areas on the property should be undertaken in the vicinity of interesting geophysics (eg. south of Walton Lake).

Respectfully Submitted,

Jaroule

C. Larouche P.Eng.

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D. Saunders Geologist

APPENDIX 1

COMPILATION LIST OF ANOMALIES

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APPENDIX 1

COMPILATION LIST OF ANOMALIES

Ano s No.	Length feet	Best Definition along axis	Est. Depth feet	Magnetic Correlation?	Strength/ Interpretation
1	700	66W	2 50	Flanking weak linear high (+950 g)	Weak, GC
2	600	66W	125	None	Strong, Swamp topographic
3	600	78W	50	None	Strong, Topographic in valley Possible strike continuation of A-11
4	900	80W	225	None	Moderate, Follows centre of swamp
5	1000	66W	150	None	Moderate, Swamp topographic -south edge
6	1200	62W,64W	100	None	Strong, Svamp topographic -north edge
7	600	64W	50	Possible - 200 feet west of high (+1750 g)	Weak, BRC?
8	600	58W	75	Direct (+1245 g)	Weak BRC
9	1300	70W	125	Flanking? Located between two parallel highs (+1300 g)	Strong to Noderate, GC
10	1100	52W	100	None	Moderate, Topographic - valley
11	2 500	56W	75	None	Strong, Follovs swamp across ridge, BRC? Possible strike continuation with A-3
12	2000	58W	100	Flanking (+1000 g)	Strong to weak, GC
13	1700	52W	50	Flanking? Located between two highs (+1200 g)	Weak to moderate, GC
14	1100	EOM	100	None	Weak, 6C
15	1400	54W	50	Crosses linear high (+1200 g)	Moderate, Fault?
16	900	30W	75	Direct on linear high (+1000 g)	Moderate, BRC? and topographic (cliff)
17	4100	46W	75	Direct? - Follows linear high (+2000 g) extends to low (+800 g)	Strong to moderate, BRC at high and 6C at low
18	2100	40W	150	None	Moderate to strong, GC - crosses large swamp
19	1600	44W	100	Direct (+1000 g)	Moderate, Probably BRC
20	2200	36W	100	Flanking south edge of linear high (+1200 g)	Strong, BRC at major 6C
21	600	441	50	Flanking north edge high (+1600 g)	Weak BRC
22	3500	45W-25W	150	Flanked by or crossing two highs (+2000 g) No data under pond	Strong, BRC? Coincides with lineament
23	600	52W	25	None	Weak, BRC?

24	1400	60W-48W	75	None	Strong, Topographic in part, BRC? Numerous trenches between L48W & 50W
25	600	54W	25	None	Weak, BRC
26	1800	48W	50	None	Strong to moderate, Swamp topographic
27	900	44W	50	None	Weak, BRC
28	1000	45W	50	None	Moderate, BRC
29	900	50W	50	None	Moderate, swampy topographic
30	900	46W	50	None	Moderate, BRC
31	600	36W	75	None	Weak, Topographic (in swamp)
3 2	1700	42W, 32W	100	None	Weak to moderate, topographic low
33	1300	32W	100	None	Weak, Swamp topographic
34	700	26W	25	None	Moderate to weak, BRC?
35	800	16W	100	None	Weak, topographic svamp
36	600	20W	75	None	¥eak, BRC
37	2400	16W-6W	75	Flanking to south a high centred at L14W (+1800 g)	Strong to moderate, Fault
38	1500	30W	75	Flanking to south a broad high south of the Alcona site (+2000 g)	Moderate to weak, BRC
39	1600	20₩	75	Strikes onto high which begins at L26W (+1500 g)	Weak, follows Central Vein, BRC?
40	800	18W	50	None	Weak, topographic low
41	1200	26W	75	None	Strong, Topgraphic low, fault?
42	900	20W	75	Direct with linear high (+2500 g)	Moderate, GC, BRC
43	600	26W	75	None	Moderate, topographic low
44	600	20W	225	None	Strong, Swamp
45	600	18W	50	None	Weak, Svamp
46	1600	6W	150	Direct with linear high (+1000 g)	Strong to moderate, BRC?, Swamp
47	600	6W	75	Flanking north of high (+1200 g)	Weak, BRC
48	1300	41	125	Flanking south of high (+1200 g)	Noderate to weak, BRC
49	1700	4W	125	Flanking north of linear high (+1600 g)	Strong to moderate, BRC near GC, Follows swamp
50	600	8W	50	Direct with high (+1500 g)	Moderate, 6C
51	2000	LO	75	Crosses high on 2E and 4E (+1600 g)	Moderate, BRC, Fault in fold nose?

52	1300	88	50	None	Moderate, BRC?, Swampy area Fault in fold nose?
53	600	6E	75	Direct with high (+1200 g)	Noderate, BRC
54	1100	2E	150	None	Weak to moderate, centre of large swamp
55	800	8E	50	Direct with high on L12E (+1000 g)	Weak, Topographic ridge, GC?
56	800	16E	25	None	Weak, Base of bench on high hill
57	600	16E	25	None	Weak, Base of cliff at crest of hill
58	800	14E	25	None	Weak, Crest of high hill
59	2400	LO	125	None	Moderate, Swamp over BRC?, Exposures at east e
60	1000	10E	50	None	of conductor show rusty weathering Weak, Base of high ridge
61	600	6W	25	None	Weak, BRC
62	600	6W	50	None	Moderate, BRC
63	9 00	2₩	50	None	Moderate, Swampy, topographic low
64	1700	10E	75	None	Moderate to strong, Topographic low to river
65	1000	10E	100	High on L12E and 14E (+1500 g)	Strong, Topographic low
66	800	18E	125	Direct with linear high (+1100 g)	Strong, BRC on GC
67	800	12E	50	None	Trenches, carbonatization Moderate, GC
68	1000	10E	200	None	Strong, GC and swamp
69	1300	12E	100	None	Moderate, Swampy topographic low
70	800	30E	100	None	Strong, BRC? -narrow topographic low
71	1000	2 6E	100	None	Weak to moderate, topographic low
72	600	24E	50	None, crosses geology	Moderate, Fault?
73	700	22E	75	Direct between two broad highs (+1400 g)	Weak, BRC, GC?
74	1000	30E	125	Flanking south of high (+2200 g)	Strong, BRC
75	1000	28E	50	Flanking south of high (+2400 g)	Weak, BRC?
76	800	6W	75	None	Weak to moderate, BRC?

APPENDIX 2

THEORY OF OPERATION

THEORY OF OPERATION

THE PROTON MAGNETOMETER

The Proton Precession Magnetometer is 50 named because it utilizes the precession of spinning protons or nuclei of the hydrogen atom in a sample of hydrocarbon fluid to measure the total magnetic field intensity. The spinning protons in a sample of kerosene behave as small, spinning magnetic dipoles. These magnets are temporarily polarized by application of a uniform magnetic field generated by a current in a coil of wire. When the current is removed, the spin of the protons causes them to precess about the direction of the ambient (earth's) magnetic field. The precessing protons then generate a small signal whose frequency is precisely proportional to the total magnetic field intensity and independent of the orientation the coil (sensor). The proportionality which relates frequency to the field intensity is called the gyromagnetic ratio of the proton. The precession frequency, typically 2000 Hz, is measured as the absolute value of the total magnetic field intensity with an accuracy of 1 gamma.

The total magnetic intensity, as measured by the proton magnetometer is the magnetitude of the earth's field vector independent of of its direction. The measurement can be expressed as a length (50,000 gammas) of the earth's field vector. local Α say 10 gammas, would add (or subtract) to disturbance. the undisturbed field of 50,000 gammas in the usual proton vector addition. Since the manner of measures only the magnitude of magnetometer the resultant vector (whose direction is almost parallel to the undisturbed total field vector), that which is very nearly the component measured is of the disturbance vector in the direction of the undisturbed total field. Thus the change in total field intensity is called the anomaly.

THE VLF SENSOR

The VLF transmitting stations operating for communications with submarines have a vertical antenna. The antenna current is thus vertical, creating a concentric horizontal magnetic field around them. When these magnetic fields meet conductive bodies in the ground, there will be secondary fields radiating from these bodies. The Omni-IV VLF sensors measure the vertical components of these secondary fields. The Omni-IV VLF is a sensitive receiver covering the frequency bands of the VLF transmitting stations with means of measuring the vertical field components.

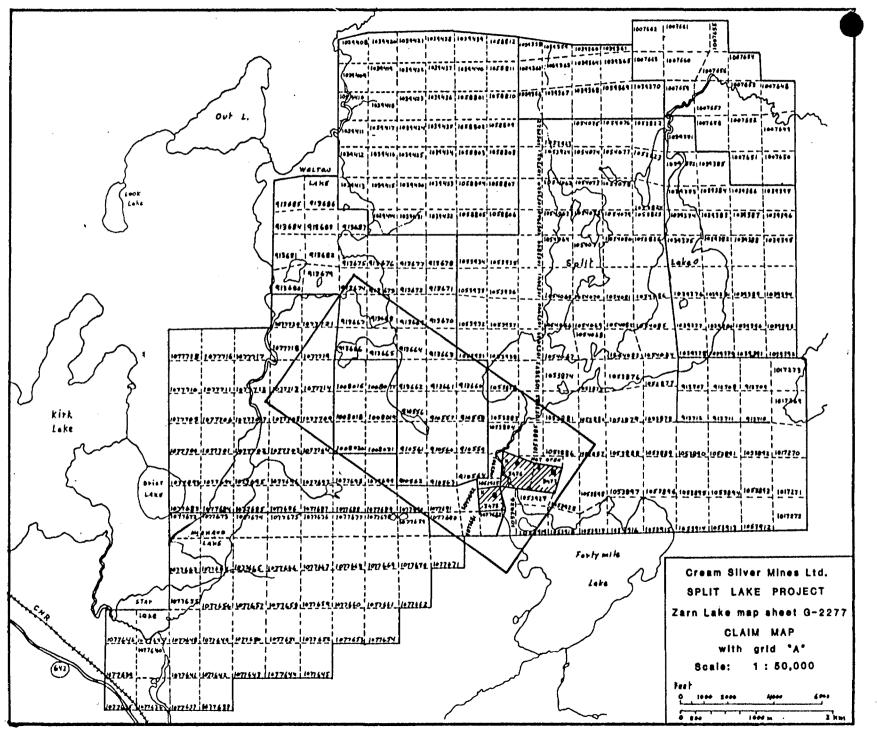
The receiver has two inputs with two receiving coils built into the instrument. One coil has a normally vertical axis and the other has a horizontal axis.

The signal from one of the coils (vertical axis) is first minimized by tilting the instrument. The tilt angle on the Omni-IV VLF is calibrated as a percentage and not as a true dip. This is significant in the calculation of the Fraser Filter data since the larger numbers obtained from the percentage data will result in larger filtered values. The remaining signal in this coil is balanced out by a measured percentage of a signal from another coil, after being shifted 90 degrees. This coil is normally parallel to the primary field.

Thus, if the secondary field signals are small compared to the primary horizontal field, the mechanical tilt angle is an accurate measurement of the vertical real component, and the compensation 90 degree signal from the horizontal coil is a measure of the quadrature vertical signal.

APPENDIX 3

LIST OF CLAIMS COVERED BY THIS REPORT



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APPENDIX 3

LIST OF CLAIMS COVERED BY THIS REPORT

	CLAIM NUMBER	RECORDING DATE	WORK DAYS APPLIED	EXPIRY DATE*
KEN	BERNIER			
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	PA 910556 PA 910557 PA 910559 PA 910559 PA 910560 PA 910561 PA 910562 PA 910563 PA 910564 PA 913660 PA 913661 PA 913663 PA 913665	Jan 14/87 Jan 14/87	80 80 80 80 80 80 80 80 80 80 80 80 80 8	Jan 15/89 Jan 15/89
16. 17.	PA 913666 PA 913667	Jan 14/87 Jan 14/87	80 80	Jan 15/89 Jan 15/89
18.	PA 913668	Jan 14/87	BO	Jan 15/89
JOSE	PH BERNIER			
19.	PA 1008016	Oct 2/87	80	Oct 3/89
20. 21.	PA 1008017 PA 1008018	Oct 2/87 Oct 2/87	80 80	Oct 3/89 Oct 3/89
22.	PA 1008019	Oct 2/87	80	Oct 3/89
23.	PA 1008020	Oct 2/87	80	Oct 3/89
24.	PA 1008021	Oct 2/87	80	Oct 3/89
DAVI	D SAUNDERS			
25. 26. 27. 28. 28. 28.	PA 1077680 PA 1077681 PA 1077682 PA 1077691 PA 1077692 PA 1077699	May 6/88 May 6/88 May 6/88 May 6/88 May 6/88 May 6/88	80 80 80 80 80 80	May 7/90 May 7/90 May 7/90 May 7/90 May 7/90 May 7/90
DENN	IIS SWEANY			
29. 30. 31. 32.	PA 1053882 PA 1053883 PA 1053884 PA 1053885	May 24/88 May 24/88 May 24/88 May 24/88 May 24/88	80 80 80 80	May 25/90 May 25/90 May 25/90 May 25/90

*pending

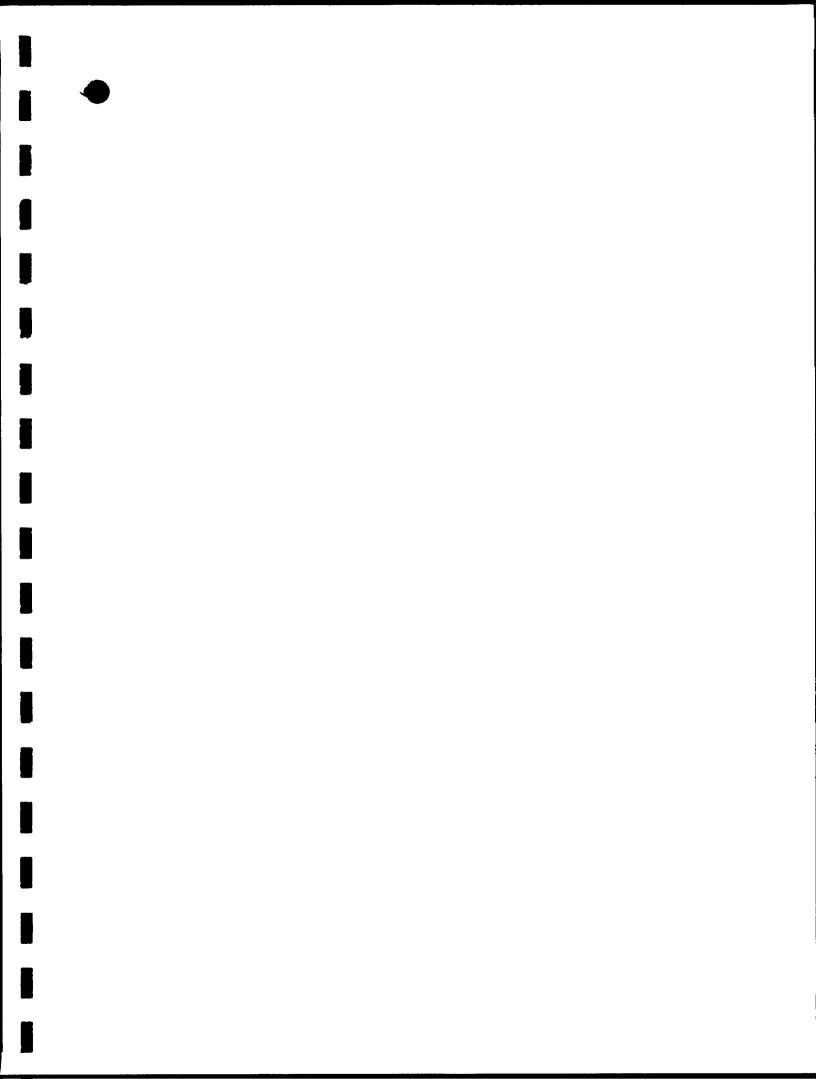
APPENDIX 3 (cont..)

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	CLAIM NUMBER		RECORDING DATE		WORK APPL	DAYS IED		(PIRY DATE*
DENN	IS S	WEANY (c	ont:)				
33.	PA	1053886	May	24/88	80)	May	25/90
34.	PA	1053901	May	24/88	80)	May	25/90
35.	PA	1053919	June	27/88	80)	June	28/90
36.	ΡA	1053925	June	27/88	80)	June	28/90
37.	PA	1053926	June	27/88	80)	June	28/90
38.	ΡA	1053927	June	27/88	80)	June	28/90
39.	PA	1053928	June	27/88	80)	June	28/90

,

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ASSESSEMENT WORK

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GRID "A"

CREAM SILVER MINES LTD.

SPLIT LAKE PROJECT

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BY: D. Saunders P. Simoneau C. Mitz

SWEANY MINING SERVICES OVALBAY GEOLOGICAL SERVICES INC. NOVEMBER, 1988



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FIGURE 4	Claim Map 1

APPENDIX 1. LIST OF CLAIM NUMBERS AND DUE DATES (Map included)

BACK POCKET MAPS

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MAP 1. Geological Map 1"=200'

INTRODUCTION

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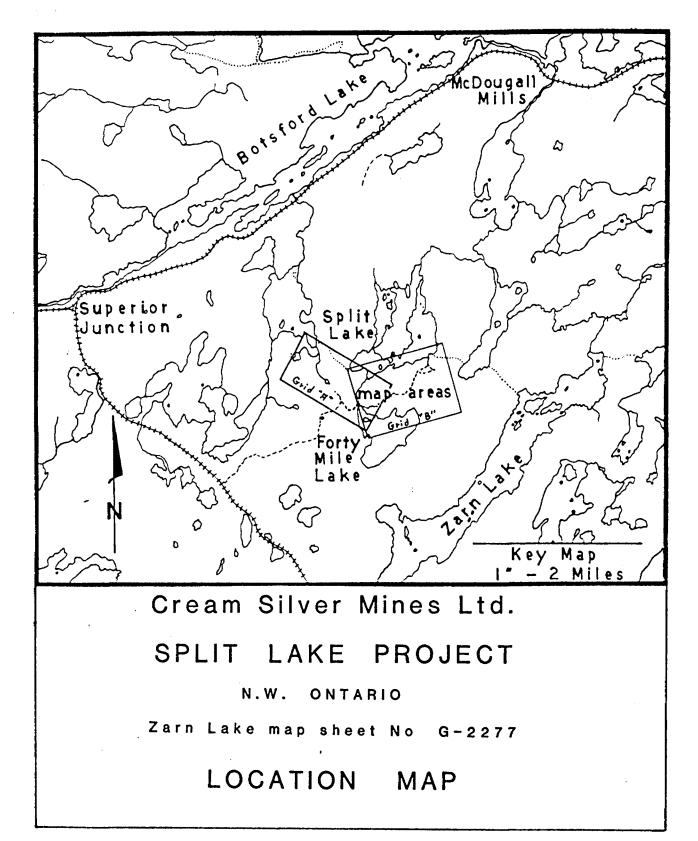
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Three tielines were used to enclose the grid. The longest tieline, TL 2000N, is 11600 feet in length and was used as baseline control at grid extremities.

Cross lines were established at 200 foot intervals along the baselines and lines were cut to lakes or tielines. Pickets were erected at 100 foot intervals.

PREVIOUS WORK

The following descriptions are divided in two distinctive sections. The first section groups all the general works of wide mapping that includes the present property. The second section describes the work on three properties that are now inside the Split Lake property. The properties are arranged in alphabetical order.

GENERAL GEOLOGICAL SURVEY

- 1897 First geological work done by W.A. Parks.
- 1906 1907 W. H. Collins did a reconnaissance mapping along the National Transcontinental Railway.
- 1929 During the summer, A.R. Graham examined the Sturgeon Lake area.
- 1931 M.E. Hurst made a survey of the Sioux Lookout area that covers much fo the Alcona-Split Lake area.
- 1936 1937 Development work on three properties in the neighbourhood of Alcona and Split Lake made desirable a reconnaissance survey of the Superior Junction-Sturgeon Lake area by H.C. Horwood.

PREVIOUS WORK ON PROPERTIES

ALCONA MINES LIMITED

- 1929 In October, the ground was staked by George and Stanley Michaud of Alcona. Shortly afterwards the Consolidated Mining and Smelting Company of Canada Limited optioned the claims and did a considerable amount of trenching and test-pitting, principally on No. 3 vein and on the quartz-carbonate vein on claim 910561.
- 1930 In July, the Atlas Exploration Company Limited took over the ground and opened up several veins including Nos 1 and 2, on claim 910560. No 1 vein contains pyrite, chalcopyrite, sphalerite, galena and variable amount of gold up to 0.50 ounces of gold per ton.
- 1932 Late in the year, Alcona Gold Mines obtained control of the property.
- 1933 After some trenching and sampling, Veins No 1, 2 and 3 were explored in the Fall by 5 diamond-drill holes, with a total length of about 1,960 feet, to test the continuity of the veins both along the strike and with depth. Results were disappointing, as considerable core and sludge was lost in fractured ground and the quartz veins intersected gave very low assays in gold.

- 1936 In July, Alcona Mines Limited was formed to take over Alcona Gold Mines Limited. A 3-compartment shaft was started in September. The shaft was sunk to 325 feet, and levels were established at 180 feet and 305 feet. The 305-foot level was driven to crosscut the No 1 or No 2 vein, but without success.
- 1937 Work was stopped in May, 1937, in order to conserve the Company's funds during the market depression.

SIOUX GOLD MINES LIMITED

1936 During the summer, four diamond drill holes totalling 1,578 feet, were drilled to prospect the zone containing the small veins located on the surface near the shore south of the southeast bay of Walton Lake. One vein, known as the "Centre" vein has a variable width up to 27 inches. Amounts of gold in grab and chip samples varied considerably, and no estimate of average values could be made. No work was done during the summer of 1937.

SPLIT LAKE GOLD MINES LIMITED

- 1935 The claims were staked to take in the contact zone of the Split Lake granite stock and the adjoining country where a series of quartz veins were discovered.
- 1935-36 During the winter, a program of diamond-drill holes was set to explore the quartz veins.
- 1936 During the summer, a 2-compartment shaft was sunk to about 360 feet, and some crosscutting and drifting were done from the 100-, 225-, and 350- foot levels.

Four quartz veins have been explored by stripping, trenching, drilling and underground markings. The veins consist of fine-to medium-grained, massive white quartz, which contains up to 5 per cent siderite, up to 7 per cent albite, small quantities of pyrite, and very minor amounts of chalcopyrite and sphalerite. Samples assayed from 0.02 to 0.2 ounces of gold per ton.

Underground working was stopped in the fall. After the completion of a geological examination and some underground diamond-drilling in December, the mine was closed down and all machinery and equipment moved to the railway.

REGIONAL GEOLOGY

The studied area is part of the Wabigoon greenstone belt of Precambrian age. The rocks have been divided into three main groups, which have been termed Keewatin, Timiskaming, and Post-Timiskaming (see Figure 3).

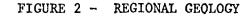
The Keewatin formations form a belt, which is 16 miles wide in the extreme western part of the area. This belt splits west of Zarn Lake to form a northern belt, which continues east for 16 miles and pinches out in the Kinnniwap brook area, and a southern belt, which extends southeastward into the Sturgeon Lake area. In the Alcona-Split Lake area, the Keewatin is made up principally of andesitic and basaltic flows, with some dacitic flows, a few thin rhyolite layers, intercalated beds of volcanic breccia and tuff, and sediments (conglomerate, greywacke and slate). The Keewatin formations have been altered by two processes: First, by regional shearing in a general northeast trending and, second by contact action of intrusive bodies of granite.

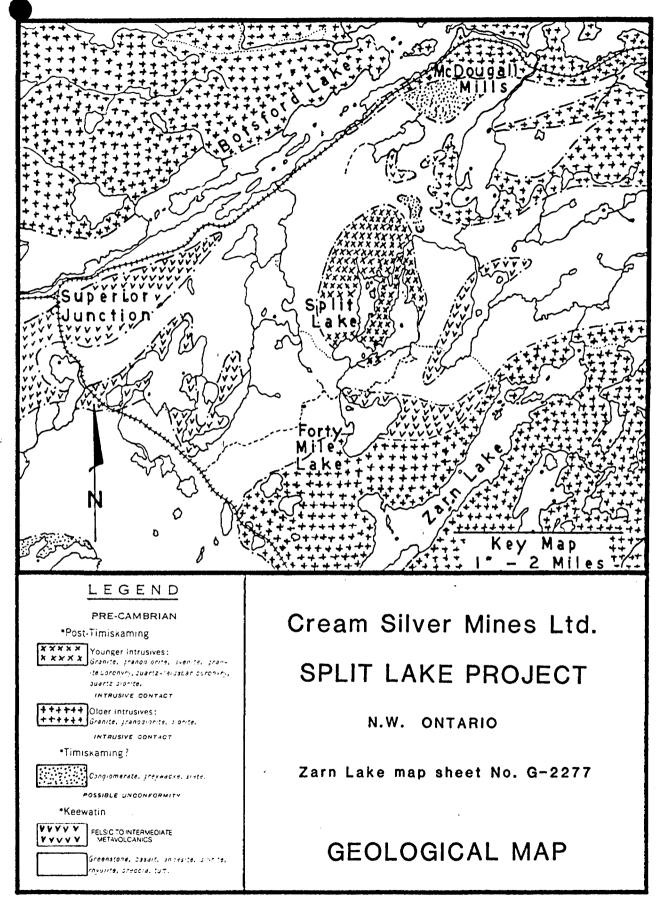
The Timiskaming formations outcrop in the area around the east bay of Minnitaki Lake and at the McDougall Mills. The rocks include conglomerate greywacke or arkose, and slate. The conglomerate contains pebbles that are generally of granitic composition.

The Post-Timiskaming formations include older intrusive rocks of granitic to granodiorite in composition, which outcrop in most of the area surrounding the older volcanic and sedimentary formations, and younger intrusive rocks (like the Split Lake stock) ranging from granite to granodiorite, which occurs as small stocks intrusive into all the older rocks. The Split Lake stock is a medium-to coarse-grained, greyish-pink rock with 60 per cent orthoclase, 18 per cent oligoclase, 15 per cent quartz, and 7 per cent biotite. In places, at the south side, it approaches a granodiorite in composition.

The bedrock is overlain by sands, gravels, and clays of glacial or post-glacial origin, and in some localities by recent swamp and muskeg accumulations.

6





DISCUSSION

INTRODUCTION

Geologic mapping and prospecting took place on the grid over the months of July and August, 1988. Grid lines were traversed systematically and priority in mapping and prosecting was stressed in areas of magnetic contrast and apparent conductive bedrock zones. The geology is presented at 1"=200' as Map 1 (Back Pocket).

The mapping program took place concurrently with a power stripping program on the mineralized veins of the Alcona Mine site. Hydralulic washing of outcrops and detailed geologic mapping yielded several well mineralized vein sections and provided useful information which assisted in the mapping of Grid A.

Results of the geophysical surveys indicate that:

Numerous conductive horizons cross the property, some of which can be interpreted as resulting from bedrock conductors (ie faults or conductive rocks).

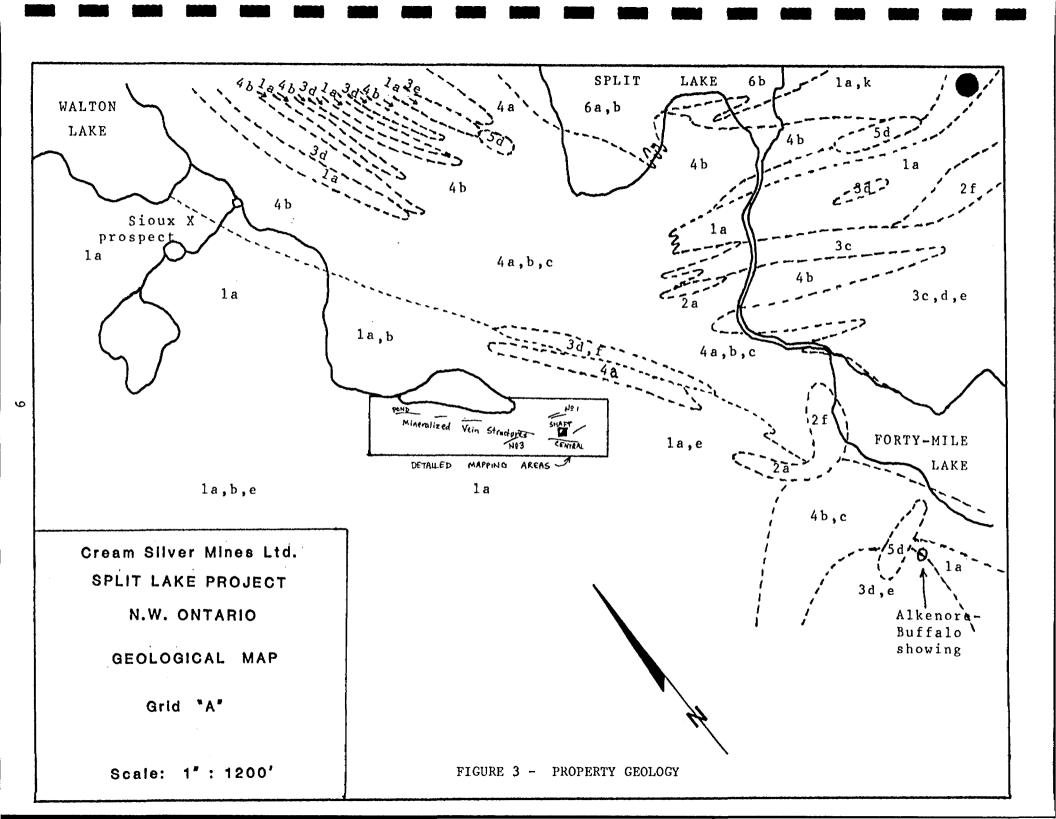
Areas of known mineralization appear to occur in an area of magnetic contrast, not restricted to a given magnetic signature. It is probable that the vein structures crosscut the local magnetic strike indicating that the displacement across strike of the mineralized vein-fault systems was not discernable at 50 foot spacing between readings.

Comparing the strong conductor which follows a lineament through the "Pond" (north of the Pond Vein) and the plot of the vein system trends, it is apparent that the mineralized veins parallel or offshoot from the lineament. This indicates potential in the "Pond Lineament" for the presence of conductive sulphides. The conductivity of the Pond Lineament, however, could enhance or result from conductive overburden within the lineament.

PROPERTY GEOLOGY

The geology of Grid A is summarized on Fig. 3. The geology consists predominantly mafic volcanics to the south west and a sedimentary basin of greywakes and mudstones to the north and east. The Split Lake Stock occurs on the north end of the Grid A.

The sediments and flows "wrap around" the stock which appears to be a late (post tectonic?) felsic intrusion. Quartz feldspar porpyry dikes which crosscut all rock units and structures in the Alcona Mine site area are probably related to the Split Lake Stock.



MINERALIZATION

Mapping of the known occurrences has defined a trend of fissure veins for approximately 3600 feet along the property. Areas of mineralization are known as the "Pond Vein, Quartz-Carbonate Vein, and Central Vein (Map 1.) These occurrences parallel and are probably intimately related the Pond Lineament.

Base metal sulphides occur in the quartz veins often yield spectacular gold-silver in several of the veins on the property. Argentiferous galena is the indicator mineral and is the most common sulphide. Pyrite occurs with about the same frequency as galena, chalcopyrite is common, sphalerite is rare.

Analysis of the sulphides with microscopic examinations indicate the sulphides are probably remobilized out of an fluid source similar to a volcanogenic massive sulphide deposit. The sulphides are anomalous in copper, lead, zinc, antimony, cadmium and gold and silver. The source of the metals may be from one of these deposit types, however, the most likely source would be from hydrothermal alteration combined with remobilization along fractures related to the Pond Lineament. 1) The geophysical targets on the property outlined responses, although some very weak, that indicate potential for economic sulphide mineralization.

2) The known mineralization on the property consists of fissure filling quartz veins in pre-tectonic brittle fault zones.

3) Potential exists to locate conductive mineralized faults in the areas other than the known occurences.

4) FHASE I of the exploration program at Grid A of the Split Lake Project has been completed. An integrated program of Power Stripping to coincide with the Geophysical and Geological Surveying has yielded positive information which indicates potential for economic mineralization on the property. RECOMMENDATIONS

PHASE II

1) Completion of Geophysical Surveys over the areas of the property which were not accessible under water. This should be done using the same tiepoint references as the summer survey, at a scale of 1"= 200"

2) It is recommended that a second EM survey using a Max Min II be used over a selected area of the property. This area would include from L 58W to L 8W between TL 2000N and BL 0. This will allow for conclusive interpretation and yield useful information of the nature of the conductive zones, particularly in the vicinity of the known mineral occurrences.

3) Prospecting of several areas on the property should be undertaken in the vicinity of interesting geophysics (eg. south of Walton Lake).

4) Detailed winter magnetometer surveys over the Pond and the Pond Zone area. This will delineate a detailed signature over a shear zone which may underly the Pond Lineament.

PHASE III Diamond Drilling

A program of winter diamond drilling is recommended on the Grid A of the Split Lake Project. Approximately 5500 feet of drilling will be required to further tes the Pond and Central Veins and other targets on the property.

The following VLF anomalies are recommended for drilling:

22 - Strong signature from lines 26W to 46W. Coincident with lineament adjacent to the Pond Zone and extends to the cliffs north of the Alcona site.

24 - Persistant strong signature on land, especially between 48W and 50W numerous old trenches were located. This may be a conductive extension of the Pond Vein.

38 - Long consistant anomaly flanking a magnetic high possibly representing a fault structure parallel with the Central Vein System.

39 - Weak, persistant anomaly over the trend of the Central Vein.

42 - Coincident with linear magnetic high at a geological contact between sediments and cherty tuffs.

RECOMMENDATIONS (cont..)

51 - Possibly a mineralized fault cutting a magnetic high close to a folded geological contact.

52 - May correlate with old trenches in which is exposed sulphide bearing sediment.

53 - Possibly a mineralized fault in the nose of a large scale fold.

59 - Carbonate altered outcrops with minor sulphides.

70 - Fault? Crosses regional geology at 60 degrees in the vicinity of felsic volcanics. Should continue onto Grid B.

Respectfully Submitted,

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D. Saunders BSc. Geologist

P. Simoneau MSc. Geologist

APPENDIX 1

LIST OF CLAIMS COVERED BY THIS REPORT

APPENDIX 1

LIST OF CLAIMS COVERED BY THIS REPORT

	CLAIM NUMBER		RECORDING DATE		WORK DAYS APPLIED		EXPIRY DATE*	
KEN	KEN BERNIER							
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.	РА РА РА РА РА РА РА РА РА РА		Jan 2 Jan 2	L4/87 L4/87 L4/87 L4/87 L4/87 L4/87 L4/87 L4/87 L4/87 L4/87 L4/87 L4/87 L4/87 L4/87 L4/87 L4/87		80 80 80 80 80 80 80 80 80 80 80 80 80 8	Jan Jan	15/89 15/89 15/89 15/89 15/89 15/89 15/89 15/89 15/89 15/89 15/89 15/89
17.		913667		4/87		80	Jan	15/89
18.	PA	913668	Jan 1	14/87		80	Jan	15/89
JOSE	PH B	BERNIER						
19.	PA	1008016		2/87		80		3/89
20.		1008017	Oct	2/87		80	Oct	
21. 22.	PA PA	1008018 1008019	Dct Dct	2/87 2/87		80 80	Oct Oct	
23.	PA	1008020		2/87		80	Oct	
24.	PA			2/87		80	Oct	
DAVI	DAVID SAUNDERS							
25.		1077680	-	6/88		80		7/90
26.		1077681	-	6/88		80		7/90
27.	PA	1077682	-	6/88		80	-	7/90
28.	-	1077691	-	6/88		80	-	7/90
28.		1077692	-	6/88		80	-	7/90
28.	PA	1077699	May	6/88	1	80	May	7/90
DENN	IS S	WEANY						
29.	PA	1053882	May	24/88	1	80	May	25/90
30.	PA	1053883	-	24/88	1	80		25/90
31.		1053884	-	24/88	1	80		25/90
32.	PA	1053885	May	24/88	1	80	May	25/90

*pending

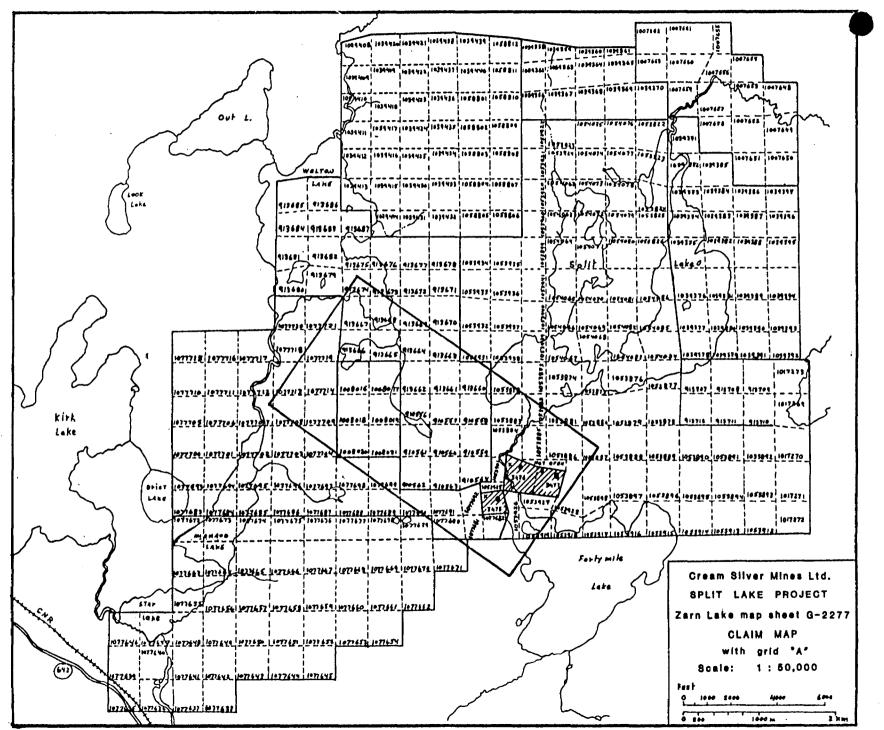
APPENDIX 3 (cont..)

LIST OF CLAIMS COVERED BY THIS REPORT

CLAIM NUMBER		RECORDING DATE			WORK DAYS APPLIED		EXPIRY DATE*	
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33.	PA	1053886	May	24/88	80	5	May	25/90
34.	PA	1053901	May	24/88	80	5	May	25/90
35.	PA	1053919	June	27/88	80	5	June	28/90
36.	PA	1053925	June	27/88	80)	June	28/90
37.	PA	1053926	June	27/88	80)	June	28/90
38.	PA	1053927	June	27/88	80)	June	28/90
39.	PA	1053928	June	27/88	80)	June	28/90

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*pending



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includes line cutting)	- Magnetometer	20		list			
For each additional survey:	- Radiometric			• · · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
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LIST	OF CLAN	IMS TO ACCOMPANY
WORK	REPORT	- GEOPHYSICAZ, GEOLOGICAZ
		ZARN LAKE AREA
DOCUME	INT NO	W8803-213.
KEN BERN	ICR	JOSEPH BERNIER
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Ministry of Northern Development and Mines

Ministère du Développement du Nord et des Mines

December 21, 1988

Mining Lands Section 3rd floor, 880 Bay Street Toronto, Ontario M5S 1Z8

Telephone: (416) 965-4888

ONTARIO GEOLOGICAL SURVEY

ASSESSMENT FILES

OFFICE

DEC 21 1988

Your file: W8803-213 Our file: 2.11871

Mining Recorder Ministry of Northern Development and Mines Court House P.O. Box 3000 Sioux Lookout, Ontario POV 2TO

Dear Madam:

Re: Notice of Intent dated December 6, 1988 - Geological Survey and Geophysical (Magnetometer & Electromagnetic) Survey submitted on Mining Claims Pa 910556 et al in Zarn Lake

The assessment work credits, as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

1 10 W.R. Cowan

Provincial Manager, Mining Lands Mines & Minerals Division

SH:pl Enclosure

> cc: Mr. G.H. Ferguson Mining and Lands Commissioner Toronto, Ontario

> > Mr. Ken Bernier & Mr. Joseph G. Bernier P.O. Box 1841 Sioux Lookout, Ontario POV 2TO

Resident Geologist Sioux Lookout, Ontario

Mr. Dave Saunders 309 Catherine Street Thunder Bay, Ontario P7E 1K7

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Ontario	Ministry of Northern Development and Mines

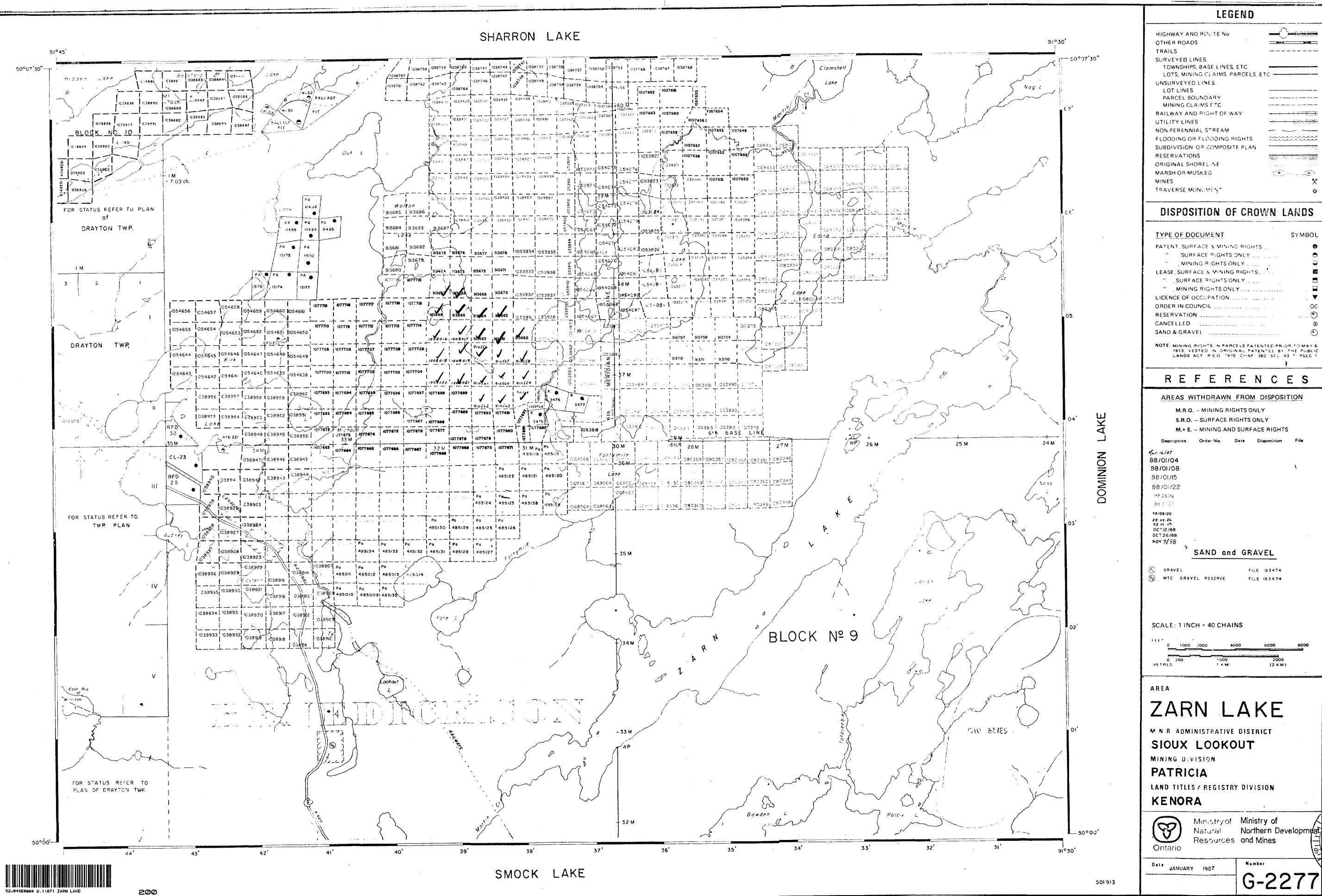
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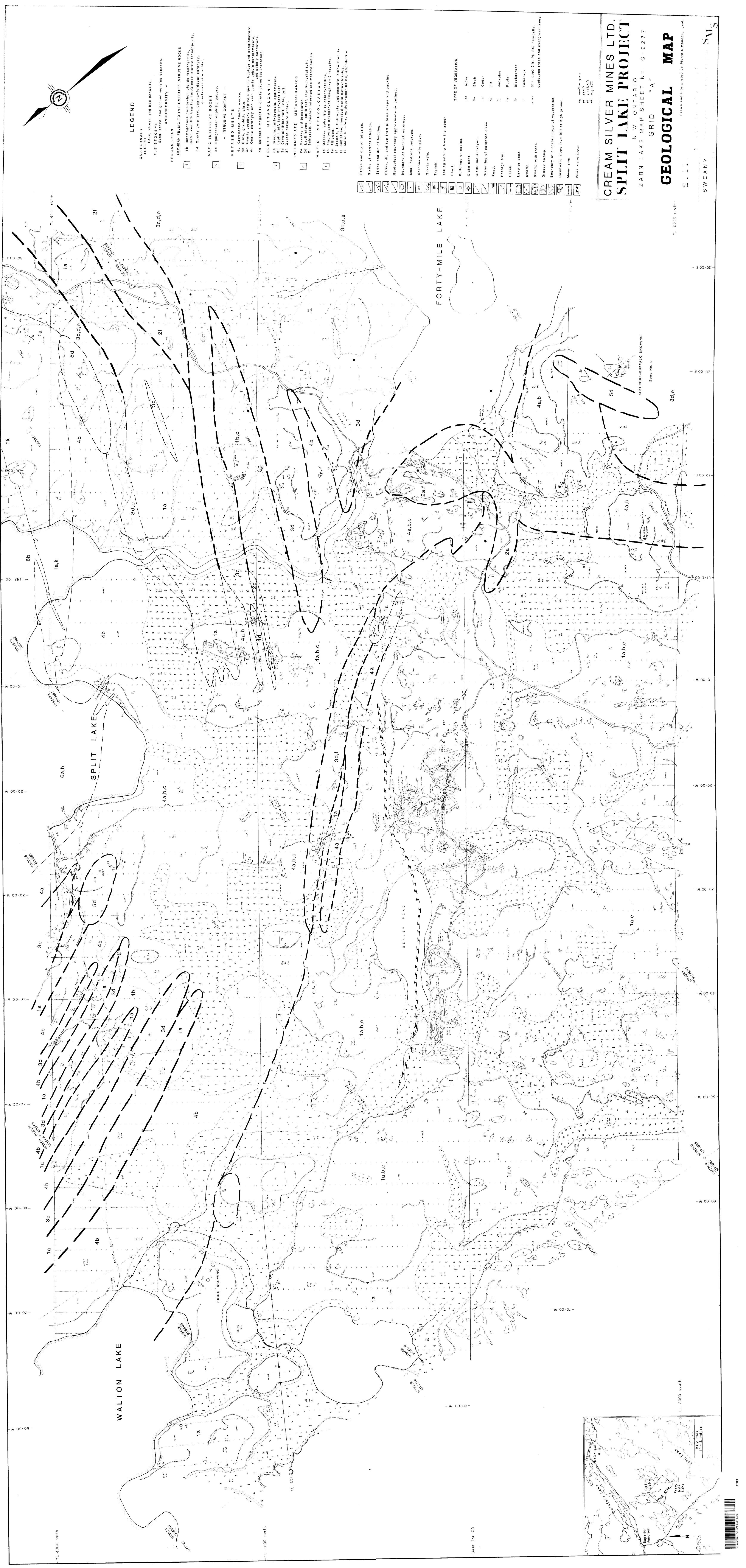
Technical Assessment Work Credits

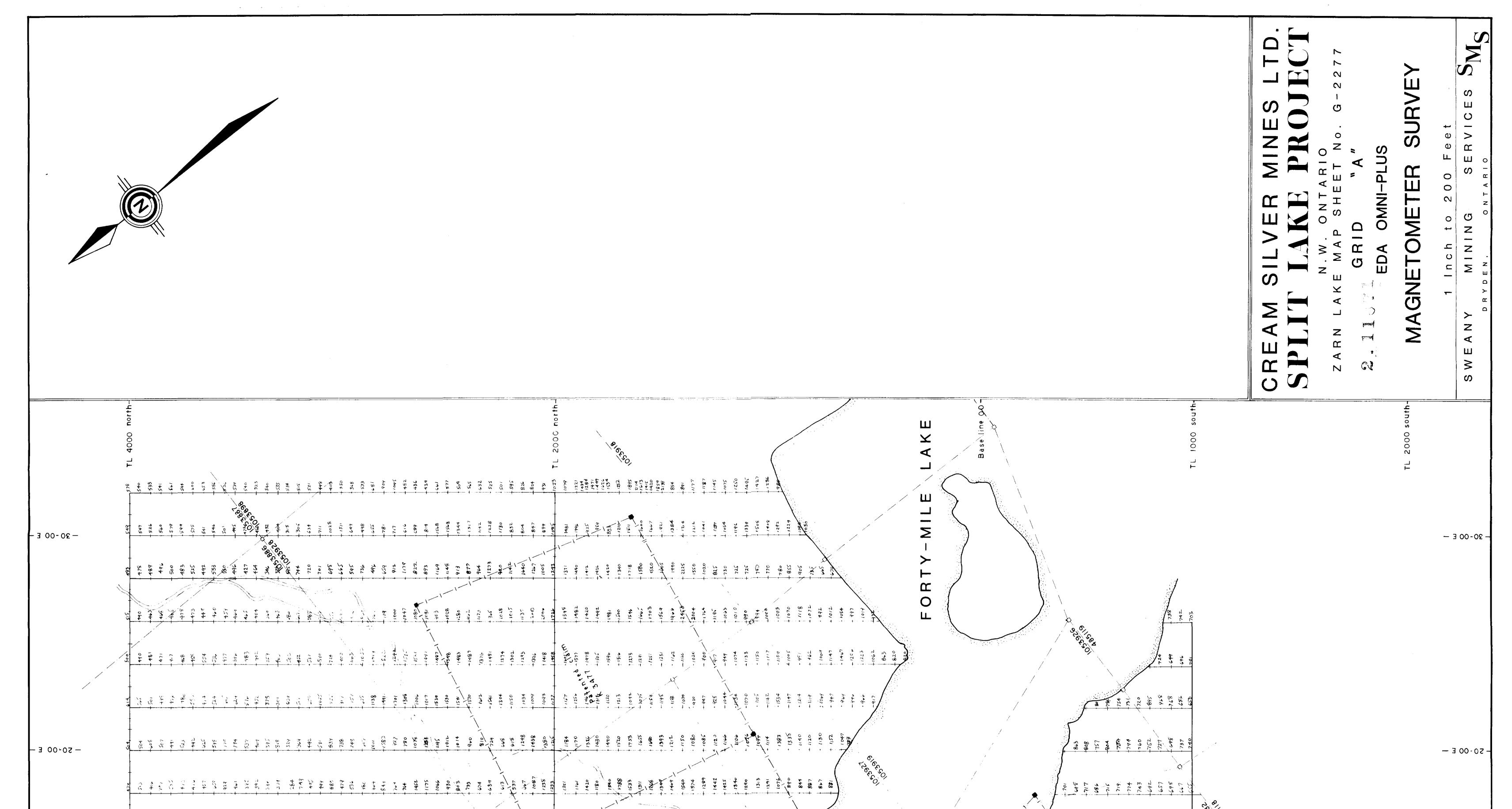
		File 2.11871
Date		Mining Recorder's Report of Work No.
December 6,	1988	W8803-213

Recorded Holder Ken Bei	rnier & Josep	oh G. Bernier
Township or Area Zarn La	ake Area	
Type of survey and number of Assessment days credit per claim		Mining Claims Assessed
Geophysical		
Electromagnetic20	days	
Magnetometer 20	days	Pa 910556 to 564 inclusive 913660 to 662 inclusive
Radiometric	days	913664-65 1008016 to 021 inclusive
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Special credits under section 77 (16) for the	following mining o	claims
10 days Magne 10 days Elect 20 days Geolo	romagnetic	5 days Magnetometer 5 days Electromagnetic 10 days Geological
Pa 913663-66		Pa 913667-68
No credits have been allowed for the following the followi	no mining claims	
not sufficiently covered by the survey		ficient technical data filed

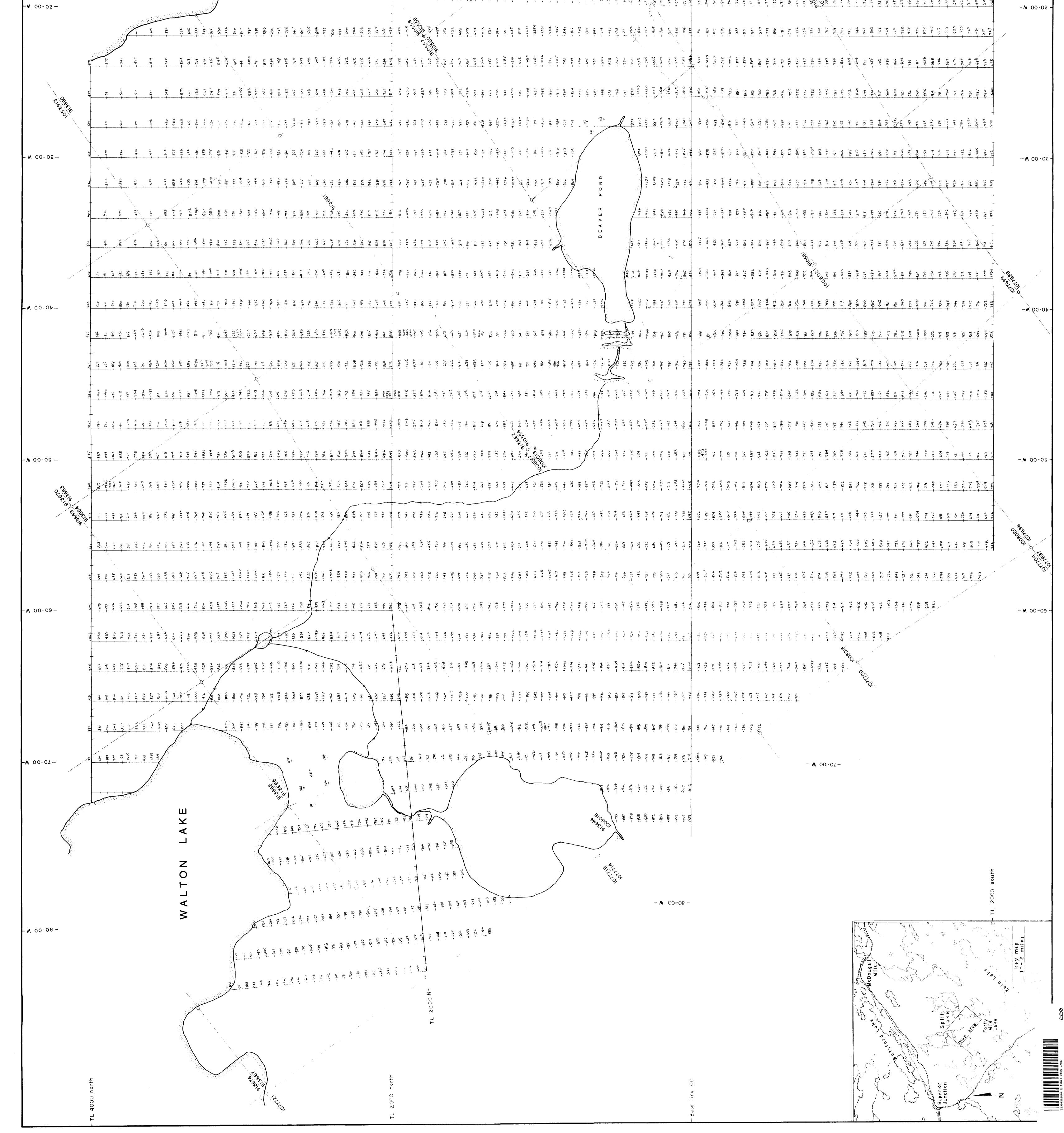
The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

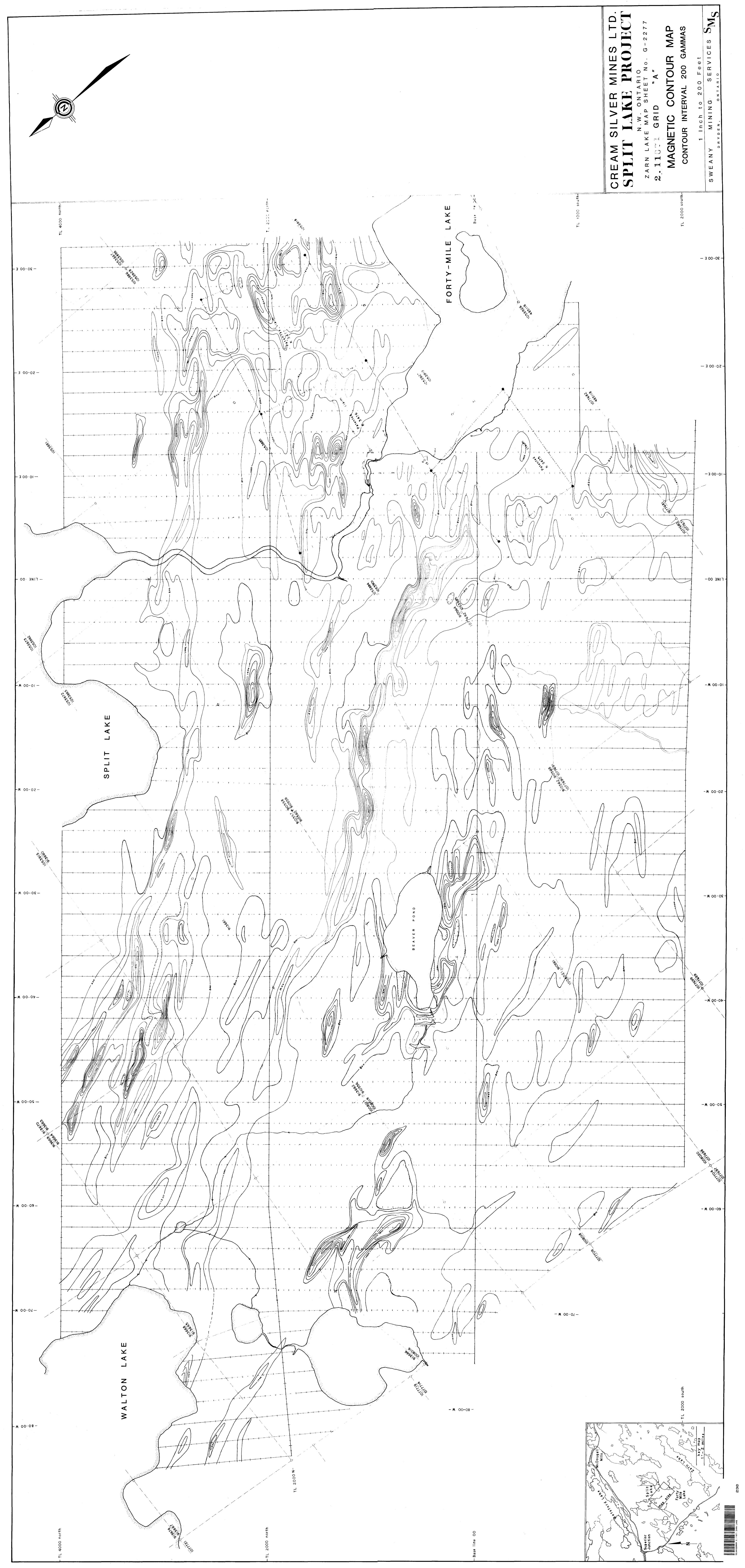


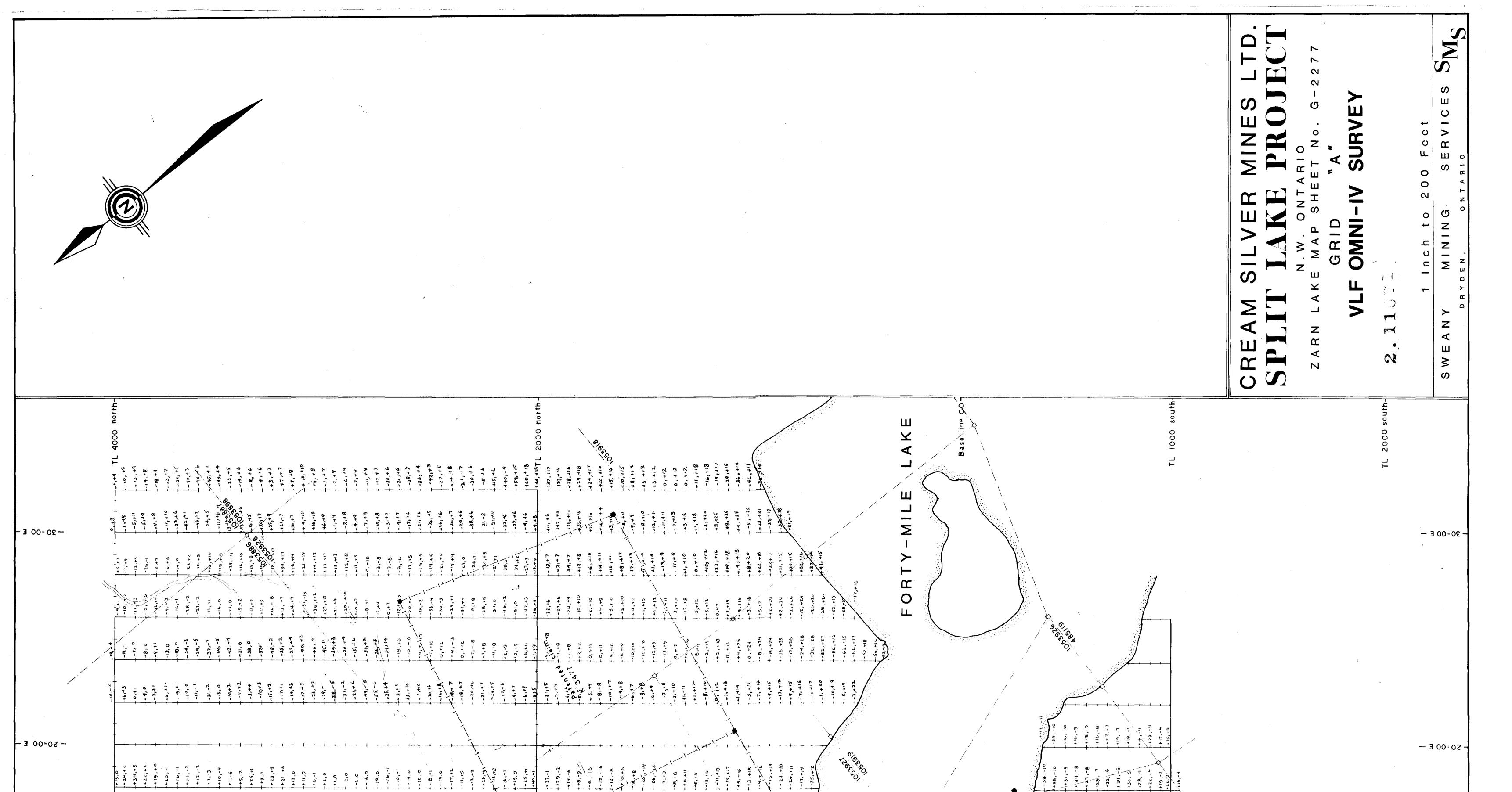




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