



42C16NE8298 2.12500 HAWKINS

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**GEOLOGY REPORT
ON HAWKINS TOWNSHIP
HAWKINS II PROPERTY
OF HAWK RESOURCES INC.**

APRIL 1989

RANDY D. MAASS BSc.

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MINING LANDS SECTION

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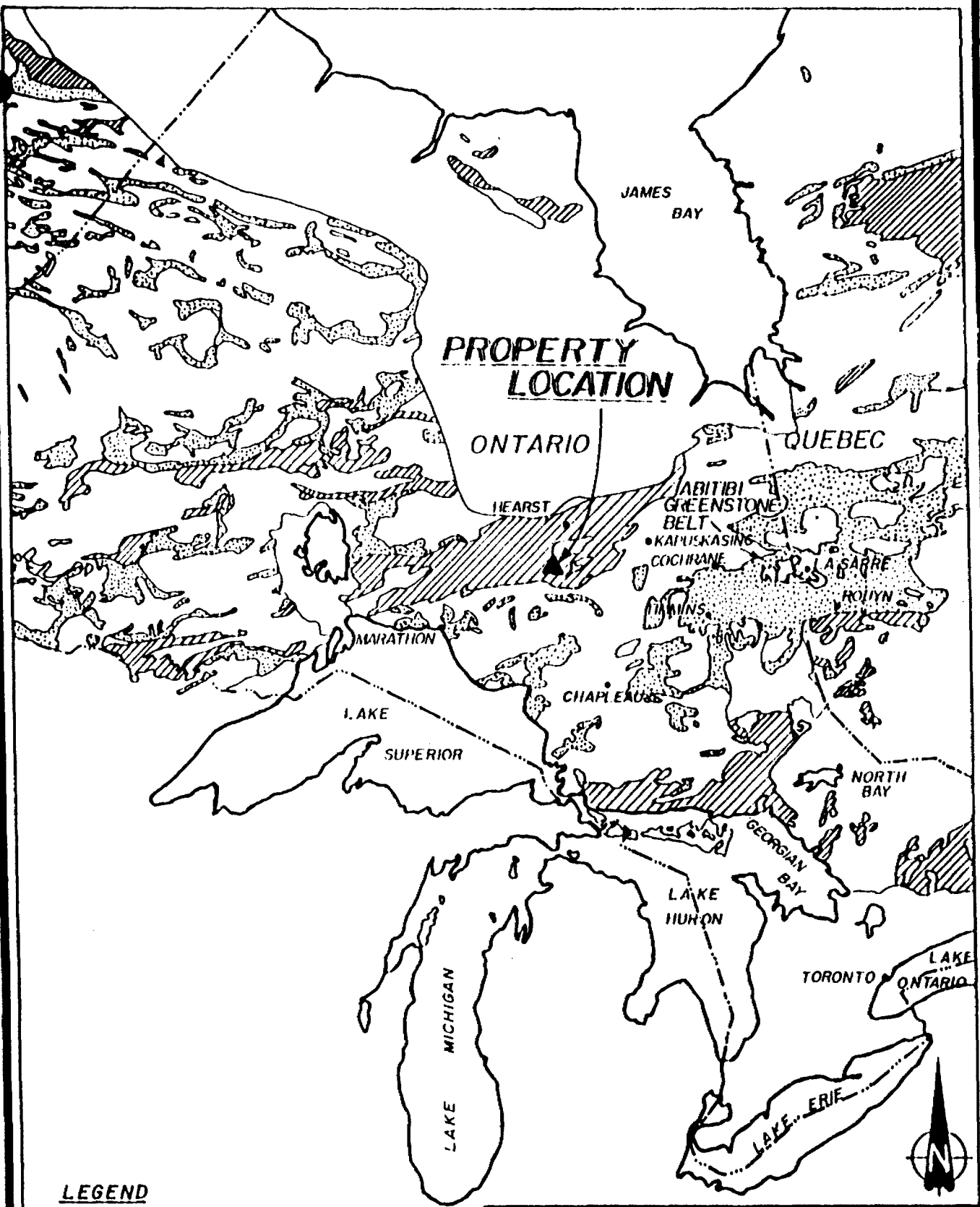
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INTRODUCTION




The following report presents the results of a geological mapping and prospecting program conducted on the Hawkins II property of Hawk Resources Inc.

The program was initiated in order to define bedrock lithologies and locate potential gold bearing structures.

The mapping and prospecting was carried out by Bruce Barnes and Almos Mei of Durham Geological Services, Timmins, Ontario from May 30 to June 11, 1988.



LEGEND

-  Archean greenstone and associated Sediments
-  Granitic Terrain
-  Archean Sediments, some volcanics and intrusions

Revisions	DURHAM GEOLOGICAL SERVICES INC.	
	HAWK RESOURCES INC.	
	PROPERTY LOCATION	
Date	Drawn K.B.	Scale 1:760320
NTS.	Approved B.D.	Figure 1

PROPERTY, LOCATION AND ACCESS

The property is located in Hawkins Township, approximately 15 kilometres south of the small village of Oba, Ontario. Oba is a railway community located at the junction of the Algoma Central and Canadian National Railways, and is approximately 100 kilometres south of Hearst some 250 km northwest of Timmins. (Figure 1.)

The company's Hawkins II property consists of 168 contiguous, unpatented mining claims located in Hawkins Township in the Sault Ste. Marie Mining Division of northeastern Ontario. (Figure 2.)

The claims along with their current recording and expiry dates are listed below:

<u>CLAIM NUMBER</u>	<u>RECORDING DATE</u>	<u>EXPIRY DATE</u>
P 906181-906200 INCL.	JUNE 6, 1986	JUNE 6, 1990
P 906901-906950 INCL.	JUNE 6, 1986	JUNE 6, 1990
P 915278-915297 INCL.	JUNE 6, 1986	JUNE 6, 1990
P 916464-916499 INCL.	JUNE 30, 1986	JUNE 30, 1990
P 932004-932015 INCL.	JUNE 6, 1986	JUNE 6, 1990
P 948916-948944 INCL.	OCT. 15, 1986	OCT. 15, 1990
P 948945	NOV. 6, 1986	NOV. 6, 1990

TOTAL NUMBER OF CLAIMS = 168

Oba is reached by first travelling south on Highway 583 for a distance of 16 kilometres and then travelling approximately 100 kilometres in a southwest direction along a series of well

maintained logging roads.

Access from Oba to the northwest portion of the property is via a network of gravel logging roads maintained by J. R. Poulin Lumber of Oba. Access to both the central and southeast portions of the property is via a winter drill road which extends to L32E 12+00S. The central portion of the property can also be reached by rail along the Algoma Central Railway line from Oba.

HISTORY AND PREVIOUS WORK

The mafic volcanic belt which underlies the property extends to the southwest several townships and easterly several kilometres. The area has been sporadically explored for gold since 1923 when surface sampling by G. Taylor on ground currently held by Falconbridge Ltd., returned results as high as 0.84 oz/ton Au across eight feet in central Hawkins Township, 12 km north of the property.

The following is a summary of previous exploration activity in the area:

1935; Hollinger Gold Mines Ltd. carried out a prospecting and diamond drilling program on the original Taylor showing area. Assay results from the seven drill hole program included values as high as 1.0 oz/ton Au over very narrow widths. (0.15m)

1936; Shenango Mining Company carried out prospecting and

trenching programs and sank a small open pit on a mineralized zone approximately 1.2 km east of Langdon Station, 2 km west of the Taylor showing in central Hawkins Township. Diamond drill results included 0.18 oz/ton Au over 20 feet (1939), 0.22 oz/ton Au over 15 feet (1939) and 0.67 oz/ton Au over 20 feet (1935).

A fifty ton per day amalgamation mill was constructed during 1936 and 1937. From the open pit a short adit (27m) was driven, and 12.9 m of crosscutting was completed. In 1939 a shaft had been sunk to 38 m. Very limited drifting and crosscutting were completed during 1936, 1937 and 1945. Total production was 66 oz of gold and 37 oz of silver.

1937-1939; Hiawatha Gold Mines Ltd. located in Lizar Twp., south west of the subject property, conducted considerable work locating four gold showings. A shaft was sunk to a depth of 229 ft. Mineralization included gold, pyrite, chalcopyrite, galena and molybdenite. The quartz veining has a strike length of 1500 ft and is associated with a quartz porphyry dike which intruded the metavolcanics.

A 25 ton per day amalgamation mill operated between 1937-1940 processing 1,931 tons of rock having a total value of \$6,826 Au.

1937; The Kalibak North showing (central Lizar township) was stripped, trenched and diamond drilled. This work showed the presence of pyrrhotite, pyrite, gold, chalcopyrite, sphalerite and galena. Most of the work was done at Pit No 1.

Gold is reported to be located near a fold in the porphyry-amphibolite contact zone and appears to be localized in a cherty sulphide rich quartz vein. In 1937 twelve chip samples were taken with the best results being 0.01 oz/ton Au, 0.02 oz/ton Au, 0.068 oz/ton Au, 0.09 oz/ton Au and 0.15 oz/ton Au.

Three drill holes were put down under the Pit No. 1 with best results being a 1.25 ft sample yielding \$9.80 of Au/ton (0.25 oz/ton Au; Gold at \$35/oz).

The Kalibak South showing was stripped, trenched and diamond drilled. The quartz vein is very boudinaged and up to two feet in width with a possible strike length of up to 0.8 km. En echelon mineralized shear zones in the adjacent quartz porphyry have been noted.

Sulfide mineralization consists of pyrite, sphalerite and traces of gold.

1956; Algoma Central and Hudson Bay Railway Company carried out an aeromagnetic and airborne electromagnetic survey, over much of the central part of Derry Township. Limited ground geophysics was completed on specific targets through 1963, at which time the project was abandoned.

1969; Primrock Mining and Exploration Ltd. carried out a limited diamond drill program on the Hiawatha Gold Mines Ltd. showings, but subsequently allowed the claims to lapse.

1974; Keltic Mining Corporation Ltd. did extensive work on an 81 claim group covering the Hiawatha showings. Their work included mapping and sampling of the underground workings.

1973-1974; Magi Gold Mines completed a magnetometer survey, an induced polarization survey and three diamond drill holes on a block of 12 claims south of little Watt Lake (north of the Taylor showings). Nothing of economic significance was encountered and the claims were allowed to lapse.

1974-1975; Rio Tinto Exploration (MNR file 1667) carried out an electromagnetic survey and completed two diamond drill holes on an eighteen claim property just west of Langdon Station. They also completed a magnetometer survey and a horizontal loop electromagnetic survey over a weak Dighem airborne E.M. conductor on a block of eight claims in the southwest portion of Hawkins Township but no further work was completed.

Late 1970's; St. Joseph Exploration held a 39 claim property that stretched easterly from Langdon Station to the eastern boundary of Hawkins Township covering both the Shenango and Taylor gold showings. Geological mapping of the claims was completed during the fall of 1979, prior to ground electromagnetic and magnetic surveys. No further work was reported and the claims were allowed to lapse.

1979; Nickel Rim Mines Ltd. cut lines over the Hiawatha showing area and completed magnetic and mapping surveys. They also completed four diamond drill holes.

1981; Sveinson Way Mineral Services Ltd. completed considerable drilling, sampling and soil sampling in the area of the Hiawatha showings.

Early 1980's; A large claim block consisting of hundreds of claims in Derry, Ermine, Hawkins and Lizar townships was staked by Don McKinnon during the "Hemlo Gold Rush"; which included much of the area southwest of the subject property. The optionees, March Resources Ltd., Tundra Gold Mines Ltd., Pacific Express and Tanglewood Petroleum Corp. completed airborne electromagnetic and magnetic surveys of their holdings in the Kabinakagami Lake region.

Numerous conductive zones were outlined in what appeared to be favourable geological environments, but no further work was completed and the claims were allowed to lapse.

Falconbridge Ltd. has over the past few years carried out an extensive exploration program on its 400 contiguous claim group in Hawkins and Walls townships that includes the former Taylor and Shenango prospects, approximately 2 km north of the subject property.

Initially, 1273 soil (humus) samples were taken along claim lines, the results of which indicate that background gold content of the humus layer in the area was 5 ppb. Anomalous values including 24, 31, 32, 80 and 90 ppb gold were obtained in an east trending zone. None of the rock samples collected along claim boundaries contained greater than 85 ppb gold, however two samples obtained while prospecting were found to contain 9,900 ppb (0.26 oz/ton Au) and greater than 10,000 ppb Au.

Follow-up work consisted of induced polarization surveying over part of the "Gervais Option" in the summer of 1983. They have since completed at least 58 diamond drill holes on their holdings in Hawkins and Walls townships. Additional geochemical sampling geophysical surveying and geological mapping have also been completed.

1983; Tanglewood Consolidated Resources Inc., the most recent holders of the Hiawatha property completed a comprehensive evaluation of the area including underground sampling of previous workings.

1984; Golden Range Resources Inc. holds 36 contiguous unpatented mining claims in north western Hawkins Township. To date, work on the their property has consisted of magnetometer and VLF electromagnetic surveys completed in 1984, and geological mapping and soil sampling in 1985.

On this claim group, referred to as the Golden Range Hawkins #1 property, the VLF electromagnetic survey defined numerous conductive trends. The magnetometer survey defined a roughly east-west striking magnetic anomaly that appears to correlate with a zone of amphibolite or iron formation that extends easterly to a point north of the Taylor and Shenango prospects on the Falconbridge property to the east. The magnetic low to the south of the amphibolite appears to correspond to a zone of altered felsic tuffaceous rocks.

In 1985 geological mapping and geochemical surveys were completed by Golden Range Resources Inc. on its Hawkins #1 property. The geology of the property is reported by T. J. Neelands (1986), to

be comprised of "an east trending suite of Archean mafic and felsic metavolcanic rocks in the upper greenschist to lower amphibolite facies of regional metamorphism". Outcrop exposure is less than 5%. Fifty-six rock samples were collected and analyzed for their gold and molybdenum content. Eight of the samples contained more than 25 ppb gold. Two mafic tuff samples containing pyrite assayed 340 ppb gold and 125 ppb gold.

The soil geochemical survey consisted of the collection and analysis of 1017 B horizon samples. Values as high as 40 ppb gold were reported.

An identical program was carried out on a group of claims previously held by Golden Range known as the Hawkins #2 Group, which adjoins the west boundary of the subject property. Again, numerous VLF anomalies were defined, and the magnetic survey coupled with geological mapping indicates that the property is underlain by a generally east trending suite of mafic and felsic metavolcanics, tuffs, and related sediments.

Minor ironstone containing pyrite and pyrrhotite was located in the extreme southwest corner of the property. A soil geochemical anomaly was also defined in this area. A grab sample from an outcrop of felsic tuff containing pyrite in the south central portion of the property was found to contain 790 ppb gold. Further work was recommended on both properties.

The most recent government geological maps covering the area is a 1" to 2 mile preliminary map by P.E. Giblin (1968) which covers approximately 40 townships mainly to the north, south and west of Hawkins Township and a more detailed report on the area to the west entitled "Geology of the Kabinakagami Lake Area" by G.M. Siragusa (1977). The only semi-detailed government report on the area is by J. E. Maynard (1929) in the Ontario Dept of Mines Annual Report.

The Ontario Ministry of Northern Development and Mines has completed, and released (June 23, 1986), the results of a

helicopter borne, multi-frequency, multi-coil, electromagnetic-magnetic survey completed over a large area that includes the subject property. The high quality magnetic and EM data has been published at a scale of 1:20,000. The magnetic survey shows the presence of numerous diabase dikes on the property and a general east to northeast strike to the volcanic rocks in the area. At least 2 weak but persistent conductive zones were outlined which may represent structural trends.

REGIONAL GEOLOGY

The Oba area is underlain by a group of mafic and felsic volcanic and tuffaceous rocks, and their clastic derivatives. All rocks known to occur in the region are of Archean age and have been typically metamorphosed to upper greenschist facies, and frequently to lower and middle amphibolite facies metamorphism, particularly in proximity to granitic bodies. Pegmatitic dikes are found crosscutting all volcanic and sedimentary rocks in the region. All rocks in the area have been intruded by late, northwest and northeast trending diabase dikes.

All bedrock exposures in the area are of Archean age, and while no age relationships are defined, speculation is that the amphibolitic mafic volcanic rocks are the oldest in the sequence. The mafic volcanic rocks, consist of a variety of pillowed,

massive, tuffaceous, amphibolitic and porphyritic mafic units. Interbedded with the mafic volcanics are fine felsic lapilli tuffs and volcanic derived sediments.

Some minor argillite, conglomerate, quartz sandstone, peridotite, and pyroxenite have also been mapped in the general area. These rocks were subsequently intruded, metamorphosed, and partially assimilated by felsic plutonic rocks.

The youngest rocks in the area are the generally northeast and northwest striking diabase dykes.

In the area of the Hawk Resources Inc. property there is an east trending amphibolitic metavolcanic-metasedimentary belt of undetermined thickness. The mafic metavolcanics contain interbeds and lens-shaped bodies of felsic metavolcanics on the Canadian Gold Fields Mining Ltd. property to the west. Felsic plutonic rocks are thought to underlie the extreme northern and southern parts of the property. Dikes of similar composition intrude the volcanic-sedimentary rocks.

Shearing, subparallel to bedding appears to be common in the region, this being developed primarily within the mafic volcanic, felsic tuffaceous and sedimentary rocks. This foliation is also developed to some degree in the felsic plutonic rocks.

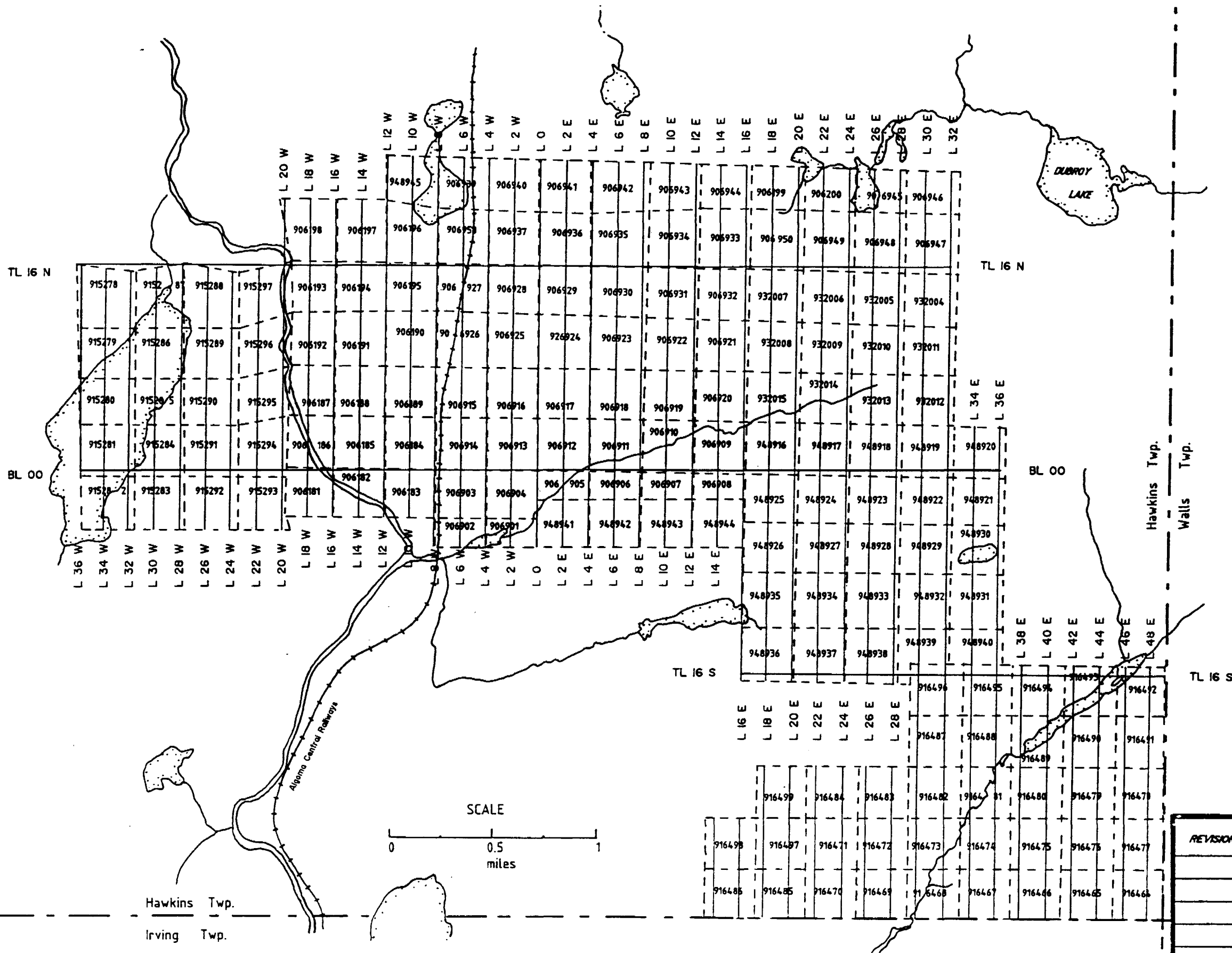
Silicification, sericitization and sulphide mineralization are locally present within the sheared units, particularly along the contact between mafic and felsic units within this region. Examination of some of the drilling completed by Falconbridge Ltd. on the property to the north, in the area of the Shenango prospect, indicates that the gold mineralization to date occurs in such an environment.

1989 GEOLOGICAL MAPPING AND PROSPECTING PROGRAM

Line Cutting

Ferderber Geophysics Ltd. of Val d'or, Quebec was contracted to cut a grid on the Hawkins II property (Figure 3.). Grid lines were cut at 200m intervals with 25m stations. The grid lines and base lines had 000° and 090° orientations respectively. A total of 163 kilometres of grid lines were established on the property in order to provide control for the ground geological mapping and prospecting program and future geophysical surveys.

A geological mapping and prospecting program was conducted on the Hawkins II property between May 30 and June 11, 1988 by Bruce Barnes and Almos Mei.



REVISIONS	DURHAM GEOLOGICAL SERVICES INC.		
	For: HAWK RESOURCES INC.		
	HAWKINS II PROJECT		
	GRID LOCATION		
Date: Apr. 1989	Drawn: C.G.	Scale: 1"=1/2mi.	
Job No.: D-78	Approved: <i>[Signature]</i>	Fig.: 3	

All grid lines on the property and several N-S and E-W claim lines were traversed in search of outcrop, mineralization and alteration. Features such as lakes, rivers, swamps and tree types were also noted on the property. Claim posts were also located and noted on the grid.

Geological mapping on the property located outcrops of mafic-intermediate metavolcanics, felsic intrusives and diabase dykes.

Mafic-intermediate volcanics are typically dark green to black colour and weather dark grey-green. The rocks are fine to medium grained and generally well foliated although outcrops of massive amphibolite were also encountered. The metavolcanics are frequently magnetic due to the presence of magnetite. Patches and vesicles infilled with light green epidote are also common. The metavolcanics frequently display gneissic banding with alternating bands of black amphibole and light grey quartz-feldspar. Quartz veins observed in this unit contain 1% finely disseminated pyrite. Rare thin beds of felsic tuff where observed were aphanitic, well foliated and quartz-feldspar rich with minor pyrite. The mafic volcanic rocks occupy a narrow belt on the property between L22E and L36E from 6S to 18S.

Felsic intrusive rocks located on the property are of three types; quartz-feldspar - biotite gneisses, pegmatites and quartz-

feldspar dykes.

The quartz-feldspar-biotite gneisses were the most abundant rock types encountered during geological mapping. These rocks encompass 80% of the property. The rocks are typically medium to coarse grained, white to light pink in colour with black flakes of biotite and exhibit a well developed gneissic foliation (060° - 080°). The three main minerals present in order of decreasing abundance are quartz, feldspar and biotite. Accessory minerals observed include chlorite, muscovite, amphibole and magnetite.

Pegmatites occur as coarse grained dykelets usually <10cm in width. These rocks are pink in colour with coarse crystals of potassium feldspar and quartz. The pegmatite dykes crosscut the mafic volcanics and occur in widths up to 25cm.

Diabase dykes were observed crosscutting all other rock types on the property. The dykes are typically medium to coarse grained with an intrusive texture comprising lathes of white plagioclase surrounded by dark green pyroxene. The diabase outcrops are high in relief, weather dark brown and are magnetic due to the presence of fine magnetite (5-10%). Light green epidote clots and sugary olivine were also observed in the diabase.

Geological mapping was conducted on the property at a scale

of 1:5000. The property was divided into three map sheets as follows:

Map 1 - Geology Map NW Sheet

Map 2 - Geology Map NE Sheet

Map 3 - Geology Map SE Sheet

The three geology maps can be found in the back pocket of this report.

ASSAY RESULTS

A total of 63 rock samples were collected during the course of the program on the property. The samples were assayed for gold by Min En Labs in Timmins, Ontario. The background value for gold was determined to be <10 ppb Au. No significant gold assays were encountered. A complete set of assay results is contained in Appendix I of this report.

CONCLUSIONS & RECOMMENDATIONS

Geological mapping on the Hawkins II property has revealed that 80% of the claims are underlain by felsic intrusive rocks with mafic metavolcanics occupying a narrow belt in the south east portion of the property. Diabase dykes crosscut all rock types.

Analysis of grab samples taken from the property did no reveal any significant gold concentrations.

It is recommended that a review of all work carried out subsequent to this mapping program be compiled and reviewed prior to any additional exploration activities.

Respectfully Submitted

Randy D Maass

Randy D. Maass

SELECTED REFERENCES

GIBLIN, P.E. (1968). notes on Mineral Occurrences, Hornepayne Sheet, Ontario Department of Mines, Misc. Paper 20.

GLENDHILL, T.D. (1972). Gold East of Langdon Station, Ontario. Department of Mines Annual Report, Vol. 36, Pt. 2

MAYNARD, J.E. (1929). Oba Area, Ontario Department of Mines, Annual Report, Vol. 38 Pt. 6

SIRAGUSA, G.M. (1977). Geology of the Kabinakagami Lake Area, Geoscience Report 159, Ministry of Natural Resources.

ONTARIO GEOLOGICAL SURVEY (1986). Airborne Electromagnetic and Total Intensity Magnetic Survey, Oba Kapuskasing Region, Derry Minnipuka Townships Area. District of Algoma: by Aerodat Limited for Ontario Geological Survey, Geophysical/Geochemical Series Map 80837 Scale 1:20 000. Survey and Compilation, February and March, 1986.

Ministry of Natural Resources Assessment Work Files: Timmins
File 2630, 2764, 2802, Falconbridge Ltd.
2804 Golden Range Resources Ltd.
2835 D. McKinnon- Aerodat
2223 Magi Gold Mines
1957 St. Joseph Exploration
1667 Rio Tinto Exploration
2212, 2211, 2210, 2228, 2229, Algoma Central and Hudson Bay
Railway Company.

Ministry of Natural Resources Assessment Work Files: Toronto
File 633807 Regional Evaluations by Ontario Paper
63E27 Primrock Mining And Explorations Ltd.
2.5970 Tundra Gold Mines Ltd.
21509 2.1615 Keltic Mining Corp. Ltd.
2.3209 Nickel Rim Mines Ltd.
23947 Pacific Cypress
2.5879 Tanglewood Petroleum Corp.- Aerodat

APPENDIX I
ASSAY RESULTS

MIN-EN LABORATORIES LTD.

Specialists in Mineral Environments

705 West 15th Street North Vancouver, B.C. Canada V7M 1T2

PHONE: (604) 980-5814 OR (604) 988-4524

TELEX: VIA USA 7601067 UC

Certificate of GEOCHEM

Company: DURHAM GEOLOGICAL SERVICE
Project: D-78
Attention: A. MEI

File: 82-843/P1
Date: JUNE 8/88
Type: ROCK GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AU-FIRE PPB
9742	3
9743	2
9744	3
9745	1
9746	2
9747	1
9748	1
9749	3
9750	1
9751	2
9752	2
9753	3
9754	1
9755	2
9756	3
9757	1
9758	1
9759	2
9760	4

Certified by



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TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Certificate of GEOCHEM

Company: DURHAM GEOLOGICAL
Project: D-7B
Attention: A. MEI

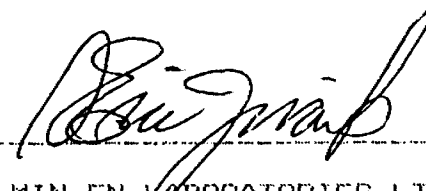
File: 82-949/P1
Date: JULY 1/88
Type: ROCK GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AU-FIRE PPR
9761	2
9762	6
9763	1
9764	3
9765	2

9766	11
9767	3
9768	8
9769	2
9770	9

9771	18
9772	6
9773	4
9774	11
9775	2

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TELEX: VIA USA 7601067 UC

Certificate of GEOCHEM

Company: DURHAM GEOLOGICAL
Project: D-78
Attention: A. MEI

File: 82-904/P1
Date: JUNE 18/88
Type: ROCK GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AU-FIRE PPB
9776	1
9777	2
9778	4

Certified by _____



MIN-EN LABORATORIES LTD.

**** Certificate of GEOCHEM ****

Company: DURHAM GEOLOGICAL
Project: D-7B
Attention: A. MEI/B. DURHAM

File: 82-948/P2
Date: JULY 1/88
Type: ROCK GEOCHEM

We hereby certify the following results for samples submitted.

Sample Number	AU-FIRE PPM
7931	4
7932	3
9779	6
9780	2
9781	2
9782	1
9783	3
9784	2
9785	2
9786	4
9787	5
9788	2
9789	1
9790	3
9791	10
9792	3
9793	6
9794	2
9795	11
9796	9
9797	3
9798	2
9799	1
9800	4
9797A	2

Certified by



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42C16NE8298 2.12500 HAWKINS

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REPORT ON THE
TOTAL FIELD MAGNETIC SURVEY
ON THE PROPERTY OF
HAWK RESOURCES INC.
HAWKINS TOWNSHIP, ONTARIO

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MAY 18 1989

BY MINING LANDS SECTION

H. FERDERBER GEOPHYSICS LTD.

May, 1988
Val d'Or, Quebec

Thai 2.11291
D.M. Thai, B.Sc.
Geophysicist

REPORT ON THE
TOTAL FIELD MAGNETIC SURVEY
ON THE PROPERTY OF
HAWK RESOURCES INC.
HAWKINS TOWNSHIP, ONTARIO

INTRODUCTION

In February and March 1988 a grid was established and a total field magnetic survey was completed on the property of Hawk Resources Inc. in Hawkins Township, Ontario.

The results of the survey provide information which helps define underlying geological structures and identify any potential economic mineralized concentrations from the variations in accessory magnetic minerals.

PROPERTY DESCRIPTION, LOCATION AND ACCESS

The Hawk Resources Inc. property is comprised of 168 claims all in Hawkins Township, Sault Ste. Marie Mining Division, Ontario. The claims cover approximately 2688 hectares and are registered with the Ontario Mining Recorder's Office at Sault Ste. Marie. These claims are listed in Appendix I.

The property is located approximately 14 km south-southwest of the small railway village of Oba and 71 km south-southwest of the town of Hearst. Access is obtained by taking Highway 583 south of Hearst for about 62 km then travelling on a gravel road for 75 km until reaching the village of Oba. A gravel road southwest from Oba passes through the central part of the property. Access can also be obtained by float/ski plane from Hearst to Dubroy Lake, Hawkins Lake or a lake just north of Hawkins. The Algoma Central railway passes through the property in the north-south direction.

The Oba river flows through the northwestern part of the property. Several swamps surround the lakes, creeks and rivers. The topographic relief is generally low.

Supplies and services are available in the Hearst-Kapuskasing-Hornepayne area.

GEOLOGY

The Ontario Department of Mines Geological Compilation sheet 2220 - Manitouwadge-Wawa area indicates that more than two thirds of the property is underlain by Archean Age felsic metamorphic and intrusive rocks. A thick band of mafic metavolcanic rocks strikes west-southwest across the central part of the claim group. Another band of mafic metavolcanic rocks striking east-west lies just off the northern boundary of the claim group. Geological descriptions, contacts and structures are not precisely defined in the area since very few mapping and exploration programs have been performed in the past. Most contacts have been derived directly from geophysics.

Several structural lineaments/faults were mapped on and off the main mafic metavolcanic band. One set of these lineaments/faults run approximately parallel to the band and the other perpendicular to it. A northwest striking middle to late precambrian diabase dyke intrudes both the felsic metamorphic and metavolcanic rocks in the eastern part of the claim group. Rocks underlying the property have been metamorphosed to the upper greenschist-lower amphibolite facies.

Map 2220 outlines two molybdenum showings to be situated in the main metavolcanic band just off to west of the property. The Shenango prospect, in the north central part of Hawkins Township just off the northern boundary, is also located in the mafic-metavolcanic band. In 1936, 1937 and 1945, 67 oz. of Au and 37 oz. of Ag were recovered from 2,400 tons of ore. Mineralization was found in auriferous quartz veins. B. Durham in his report on the Cleyo Resources Inc. Derry Township property (1986) indicates that the Shenango is now owned by Falconbridge Ltd. and the gold mineralization lies along the southern contact of a magnetic anomaly that strikes westward from central Hawkins Township across Derry Township. The results of a recent airborne magnetic and electromagnetic survey by Aerodat for the Ministry of Northern Development and Mines, maps 20832 and 20831, indicate that a weak electromagnetic anomaly is located near this gold prospect.

SURVEY METHODS AND INSTRUMENT DATA

A grid was established by cutting an east-west striking base line. North-south cross lines were established at 200-meter intervals along the base line. All lines were chained and picketed at 25-meter intervals.

The magnetic survey was conducted using a GEM GSM-8 proton precession magnetometer. The GSM-8 magnetometer measures the total field intensity of the earth's magnetic field in gammas. It has a sensitivity and repeatability of one gamma or better. Readings were taken at 25-meter stations. Base stations for determining the magnetic diurnal variations were established at various locations along the grid. The total field readings, corrected for diurnal variations are plotted on maps MG-1, MG-2, MG-3. All readings are 59,000 gammas plus plotted values. The data was contoured at 100-gamma intervals.

RESULTS AND INTERPRETATION

Map MG-1 presents the magnetic data collected on the extreme west of the property. The ground magnetic survey outlines 2 distinct magnetic anomalous zones. The two zones correspond very well with the delineation from the Ontario Geological Survey airborne magnetic survey. The extreme west zone appears to be long, continuous and north-northwest trending. There is another discontinuous, east-west trending magnetic high intersecting the above mentioned zone in the north part of the area. The zone probably represents cross-cut diabase dykes in the area of felsic metamorphic intrusive rocks.

Zone 2, located at the center of the map, is localized and discontinuous. Magnetic readings in this zone are moderately high against very low magnetic background. These suggest the zone is underlain by isolated mafic metavolcanics units within felsic metamorphic intrusive rocks.

Map MG-2 presents the magnetic data collected on the northeastern part of the claim group. The survey outlines two discontinuous magnetic high series. The west series appears trending north-south and the east series trending north-northwest. These series appear to be discontinuous, localized with relative low magnetic readings. These probably represent localized units of mafic intrusive rocks containing small variation of magnetic minerals and/or localized units of mafic metavolcanic rocks.

Map MG-3 presents the magnetic data collected on the southeastern portion of the claim group. The survey outlines the main mafic volcanic band going across the central part of the claim group. This anomalous magnetic zone appears to be a continuous and east-west trending. The geological contacts between the felsic metamorphic intrusive rocks and the mafic metavolcanics are clearly defined by the magnetic contrasts along the zone. These extreme high magnetic readings suggest that some mafic metavolcanic units in the area may have been metamorphosed to amphibolitic facies.

Two north-northwest trending anomalous high magnetic zones are also present in the area. The west zone is comprised of several short, discontinuous and localized magnetic highs which are thought to be isolated units of mafic metavolcanic rocks within the felsic metamorphic-intrusive rocks containing variations in magnetic minerals. The east zone, in contrast, extends across the whole eastern part cutting the felsic metamorphic-intrusive rocks and the volcanic band. Although it is comprised of a series of isolated magnetic highs, its pattern appears to be straight and narrow. This is believed to outline the long, discontinuous diabase dyke which is mapped on the geological map, cutting across the eastern part of the claim group.

CONCLUSION AND RECOMMENDATION

The recent ground total field magnetic survey was successful in delineating and defining lithology. Rocks of low magnetic susceptibilities in the north and south of the claim group is underlain by felsic metamorphic and intrusive rocks striking east-west. Rocks of high magnetic susceptibilities in the central part of the claim group are underlain by mafic metavolcanics which may have been metamorphosed to amphibolitic facies. The survey also outlined some possible geological contacts of these units and geological features such as dykes, isolated metavolcanic flows, sills, etc. A few small, narrow magnetic lows have been outlined lying between magnetic highs. These lows could represent narrow units of felsic metavolcanics or they could be caused by the dipolar nature of magnetism.

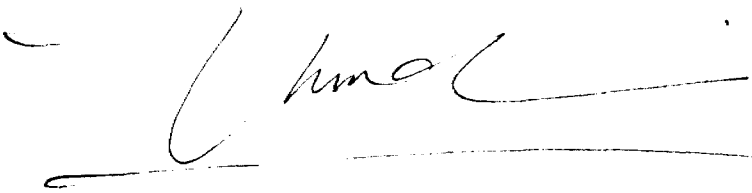
Although there is not enough geophysical information to confirm the existence of lineaments/faults, areas with distortions and breakages of magnetic contours may indicate possible zones of faulting, alteration or shearing.

Further work is warranted on the property. In any upcoming survey attention should be given to the east-west trending mafic metavolcanic band exhibiting high magnetic susceptibilities in the central part of the property.

A horizontal loop-electromagnetic survey followed by a detailed induced polarization survey is recommended to complement the total field magnetic survey. A preliminary drilling program is to be carried out by a selection of targets exhibiting the best geological and geophysical signatures.

Respectfully submitted,

H. FERDERBER GEOPHISICS LTD.



D.M. Thai, B.Sc.
Geophysicist

APPENDIX I - CLAIM LIST

HAWK RESOURCES INC.

906181	948916
906182	948917
906183	948918
906184	948919
906185	948920
906186	948921
906187	948922
906188	948923
906189	948924
906190	948925
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906909	948944
	948945

906910	916464
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932010	915289
932011	915290
932012	915291
932013	915292
932014	915293
932015	915294
	915295
	915296
	915297



Ontario



42C16NE8298 2.12500 HAWKINS

900

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

September 19, 1989

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

Telephone: (416) 965-4888

Your File: W8905-103
Our File: 2.12500

Mining Recorder
Ministry of Northern Development and Mines
875 Queen Street East
Box 669
Sault Ste. Marie, Ontario
P6A 2B3

Dear Madam:

Re: Notice of Intent dated August 16, 1989 for Geological and Geophysical
(Magnetometer) Survey submitted on Mining Claims SSM 906181 et al in
Hawkins Township.

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,

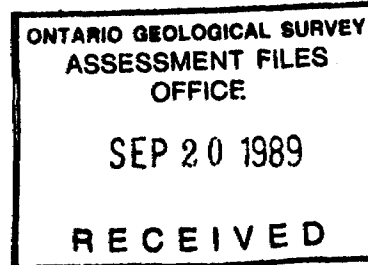
W.R. Cowan
Provincial Manager, Mining Lands
Mines & Minerals Division

RM:eb
Enclosure

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

River Oaks Gold Corporation
c/o Hawk Resources Inc.
805-475 Howe Street
Vancouver B.C.
V6C 3B3

Randy Maas/D.M. Thai
P.O. Box 1330
Timmins, Ontario
P4N 7J8



Resident Geologist
Wawa, Ontario



File
2.12500

Date
August 16, 1989

Mining Recorder's Report of
Work No.
W8905-103

Recorded Holder
RIVER OAKS GOLD CORPORATION

Township or Area
HAWKINS TOWNSHIP.

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic _____ days Magnetometer _____ days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological <u>28.6</u> days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	SSM 906181 to 200 incl. 906901 to 50 incl. 932004 to 15 incl. 916464 to 69 incl. 916472 to 83 incl. 916487 to 96 incl. 915278-79 915282-83-84 915286 to 97 incl. 948916 to 45 incl.

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey insufficient technical data filed

SSM 916470-71
 916484 to 86 incl.
 916497 to 99 incl.
 915280-81
 915285

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; Geological - 40; Geochemical - 40; Section 77(19) - 60.



Recorded Holder
RIVER OAKS GOLD CORPORATION

Township or Area
HAWKINS TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic _____ days Magnetometer <u>14</u> days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological _____ days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	SSM 906181 to 200 incl. 906901 to 50 incl. 932004 to 15 incl. 916464 to 68 incl. 916473 to 82 incl. 916487 to 95 incl. 915278 to 97 incl. 948916 to 45 incl.

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey insufficient technical data filed

SSM 916469 to 72 incl.
 916483 to 86 incl.
 916496 to 99 incl.

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; Geological - 40; Geochemical - 40; Section 77(19) - 60.



Ministry of Northern Development and Mines

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

DOCUMENT NO. W8905-103

Instructions: - Please type or print.
- If number of mining claims traversed exceeds space on this form, attach a list.
Note: - Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
- Do not use shaded areas below.

2,12500
Mining Act

Type of Survey(s): Geological mapping, magnetometer survey Township or Area: Hawkins Twp Ontario
 Claim Holder(s): RIVER OAKS GOLD CORPORATION Prospector's Licence No.: (T4674) T.5125
 Address: o/b Hawk Resources Inc (refers to option agreement)
Suite 305, 475 Howe St., Vancouver, B.C. V6C 3B3
 Survey Company: Durham Geological Services / H. Ferdenber Geophysics Date of Survey (from & to): 10 02 88 11 06 88 Total Miles of line Cut: 163 km
 Name and Address of Author (of Geo-Technical report): Randy Maas / D.M. Thai Box 1330, Timmins, Ont. P4N 7J8

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	20
	- Radiometric	
	- Other	
For each additional survey: using the same grid: Enter 20 days (for each)	Geological	40
	Geochemical	
Man Days Complete reverse side and enter total(s) here	Geophysical	Days per Claim
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	Days per Claim
	Magnetometer	
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
SSM	see attached list				
 RECEIVED JUL 10 1989 MINING LANDS SECTION RECEIVED MAY 18 1989					

Expenditures (excludes power stripping)

Type of Work Performed: _____

Performed on Claim(s): _____

Calculation of Expenditure Days Credits

Total Expenditures: \$ _____ + 15 = _____ Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Total number of mining claims covered by this report of work. **168**

Date: May 8, 1989 Recorded Holder or Agent (Signature): Henry P. Hutteri

For Office Use Only

Total Days Cr. Recorded: 10,080 Date Recorded: May 18/89 Mining Recorder: B. Lan Hite
 Date Approved as Recorded: See reversed statement Branch Director: AWB

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying: Henry P. Hutteri
Box 1330, Timmins, Ont P4N 7J8 Date Certified: May 8, 1989 Certified by (Signature): Henry P. Hutteri

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

Telephone: (416) 965-4888

May 24, 1989

File: 2.12500

Mining Recorder
Ministry of Northern Development and Mines
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

We received reports and maps on May 18, 1989 for a Geophysical (Magnetometer) Survey submitted under Special Provisions (credit for Performance and Coverage) on mining claims P 906181 et al in the Township of Hawkins.

We do not have a copy of the report of work which is normally filed with your office prior to the submission of this technical data. Please forward a copy as soon as possible.

Yours sincerely,

W.R. Cowan
Provincial Manager, Mining Lands
Mines & Minerals Division

AB:eb

cc: REGISTERED

Hawk Resources Inc.
Suite 805-475 Howe St.
Vancouver, B.C.
V6C 3B3

FRANZ TWP.

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

- M.R.O. - MINING RIGHTS ONLY
- S.R.O. - SURFACE RIGHTS ONLY
- M. + S. - MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File
(3)		4/1/72		64585 L

Proposed Forestry Work in Township
1988/89 Work schedule available for
viewing upon request.

LEGEND

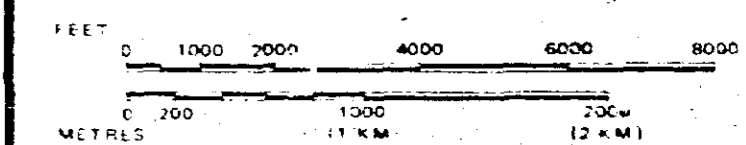
- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
 - TOWNSHIPS, BASE LINES, ETC.
 - LOTS, MINING CLAIMS, ETC.
- UNSURVEYED LINES:
 - LOT LINES
 - PARCEL BOUNDARY
 - MINING CLAIMS, ETC.
- RAILWAY AND RAILWAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" SURFACE RIGHTS ONLY	○
" MINING RIGHTS ONLY	○
LEASE, SURFACE & MINING RIGHTS	■
" SURFACE RIGHTS ONLY	■
" MINING RIGHTS ONLY	■
LICENCE OF OCCUPATION	○
ORDER IN COUNCIL	○
RESERVATION	○
CANCELLED	○
SAND & GRAVEL	○

NOTE: MINING RIGHTS IN THESE PATENTS PRIOR TO MARCH 1913 VESTED IN FEDERAL PATENTEE BY THE FEDERAL LANDS ACT, R.S.O. 1914, CHAP. 380, SEC. 63, SUBSECT. 1.

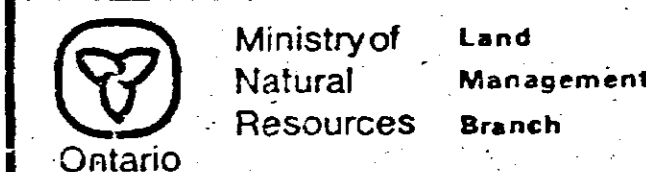
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TOWNSHIP

HAWKINS

M.N.R. ADMINISTRATIVE DISTRICT
HEARST
MINING DIVISION
SAULT STE. MARIE
LAND TITLES / REGISTRY DIVISION
ALGOMA



Date MARCH 3, 1983

Checked by LP

Number

G-2316

DERRY TWP.

WALLS TWP.

IRVING TWP.

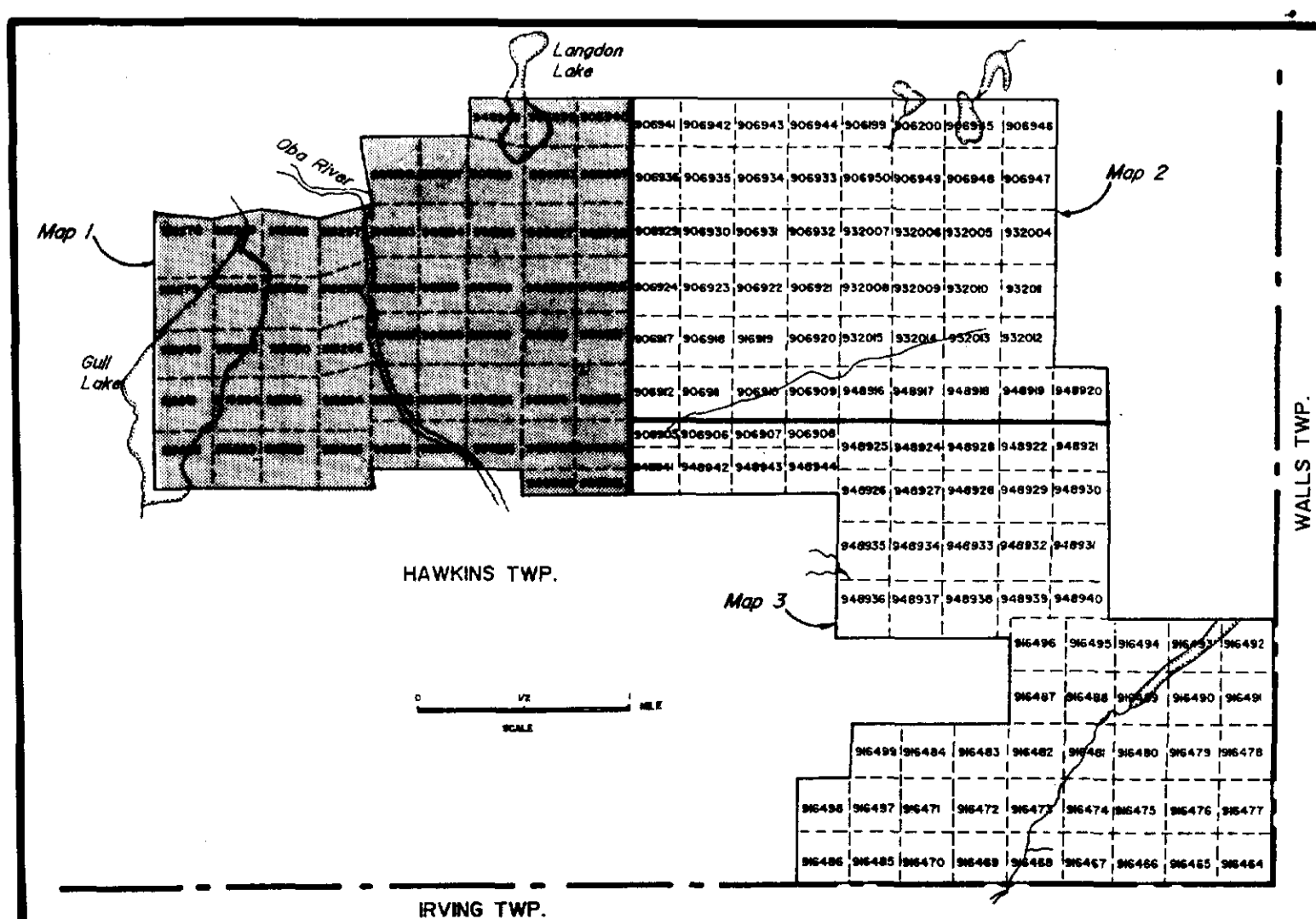




LEGEND

- 7 **DIABASE**
- 6 **FELSIC INTRUSIVES**
 - a) Granite (Quartz-Feldspar-Biotite Gneiss)
 - b) Pegmatite
 - c) Fine grained (Pink Granite) Dykes
 - d) Felsic Dyke
- 4 **MIGMATITES**
- 3 **METASEDIMENTS**
 - a) Greywacke
 - b) Hornblende Schist
 - c) Quartz-Feldspar, Biotite Schist
 - d) Quartzite
- 2 **FELSIC METAVOLCANICS**
 - a) Ash Tuff
 - b) Crystal Tuff
- 1 **MAFIC VOLCANICS**
 - a) Amphibole-Feldspar Schist
 - b) Amphibolite

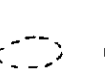

○ outcrop
 * boulder

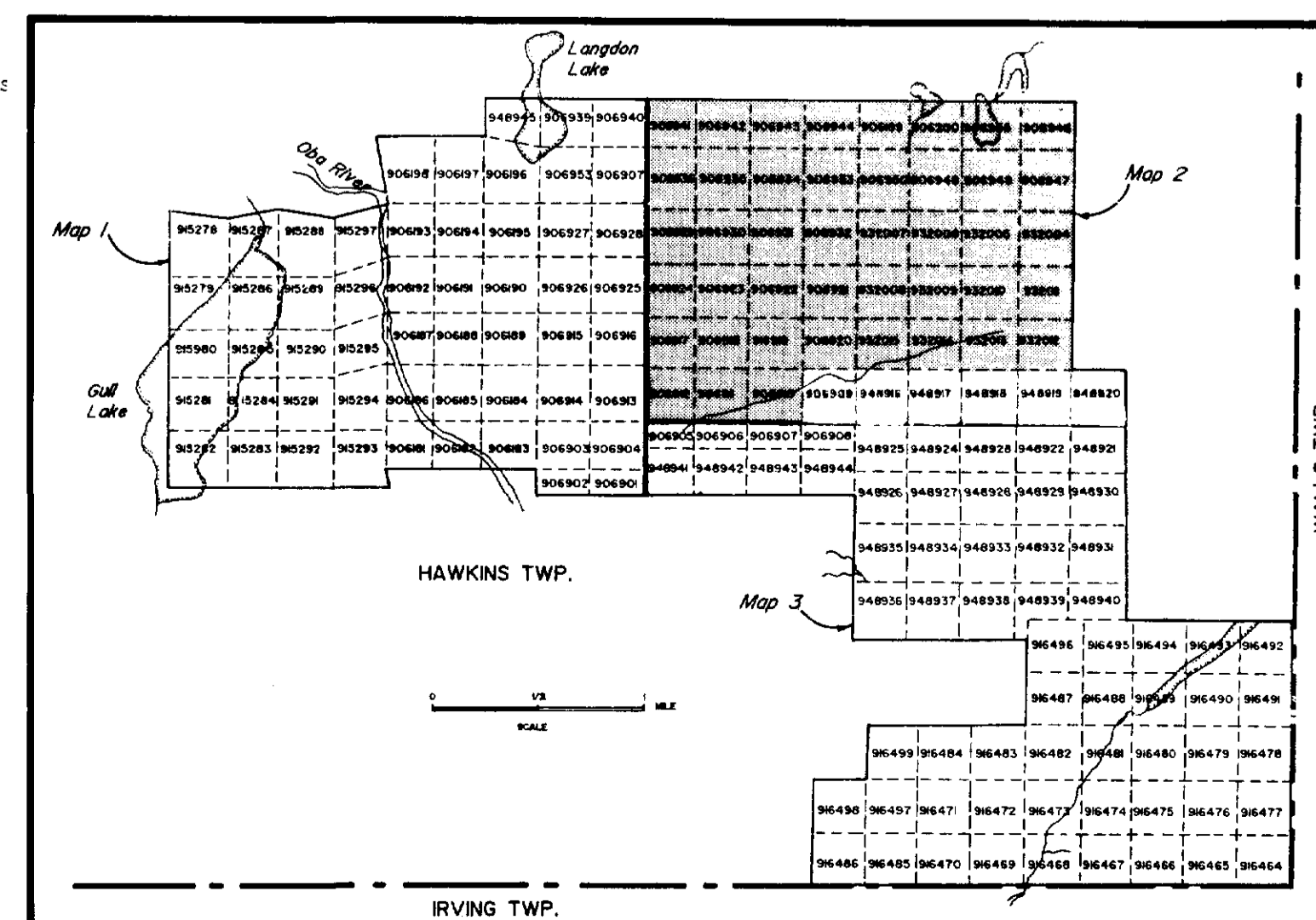


MAP I 212500		
DURHAM GEOLOGICAL SERVICES INC.		
CLIENT:	HAWK RESOURCES INC.	
PROPERTY:	Hawkins II - Hawkins Twp.	
TITLE:	GEOLOGY MAP	
Date: July 1988	Scale: 1 : 5,000	NTS:
Drawn: C.G.	Interp: [Signature]	Job No.: D-78



LEGEND

- 7 DIABASE
 - 6 FELSIC INTRUSIVES
 - a) Granite (Quartz-Feldspar-Biotite Gneiss)
 - b) Pegmatite
 - c) Fine grained (Pink Granite) Dykes
 - d) Felsic Dyke
 - 4 MIGMATITES
 - 3 METASEDIMENTS
 - a) Greywacke
 - b) Hornblende Schist
 - c) Quartz-Feldspar, Biotite Schist
 - d) Quartzite
 - 2 FELSIC METAVOLCANICS
 - a) Ash Tuff
 - b) Crystal Tuff
 - 1 MAFIC VOLCANICS
 - a) Amphibole-Feldspar Schist
 - b) Amphibolite
-  outcrop
 boulder



MAP 2

212500

DURHAM GEOLOGICAL SERVICES INC.

CLIENT: HAWK RESOURCES INC.

PROPERTY: Hawkins II - Hawkins Twp.

TITLE: GEOLOGY MAP

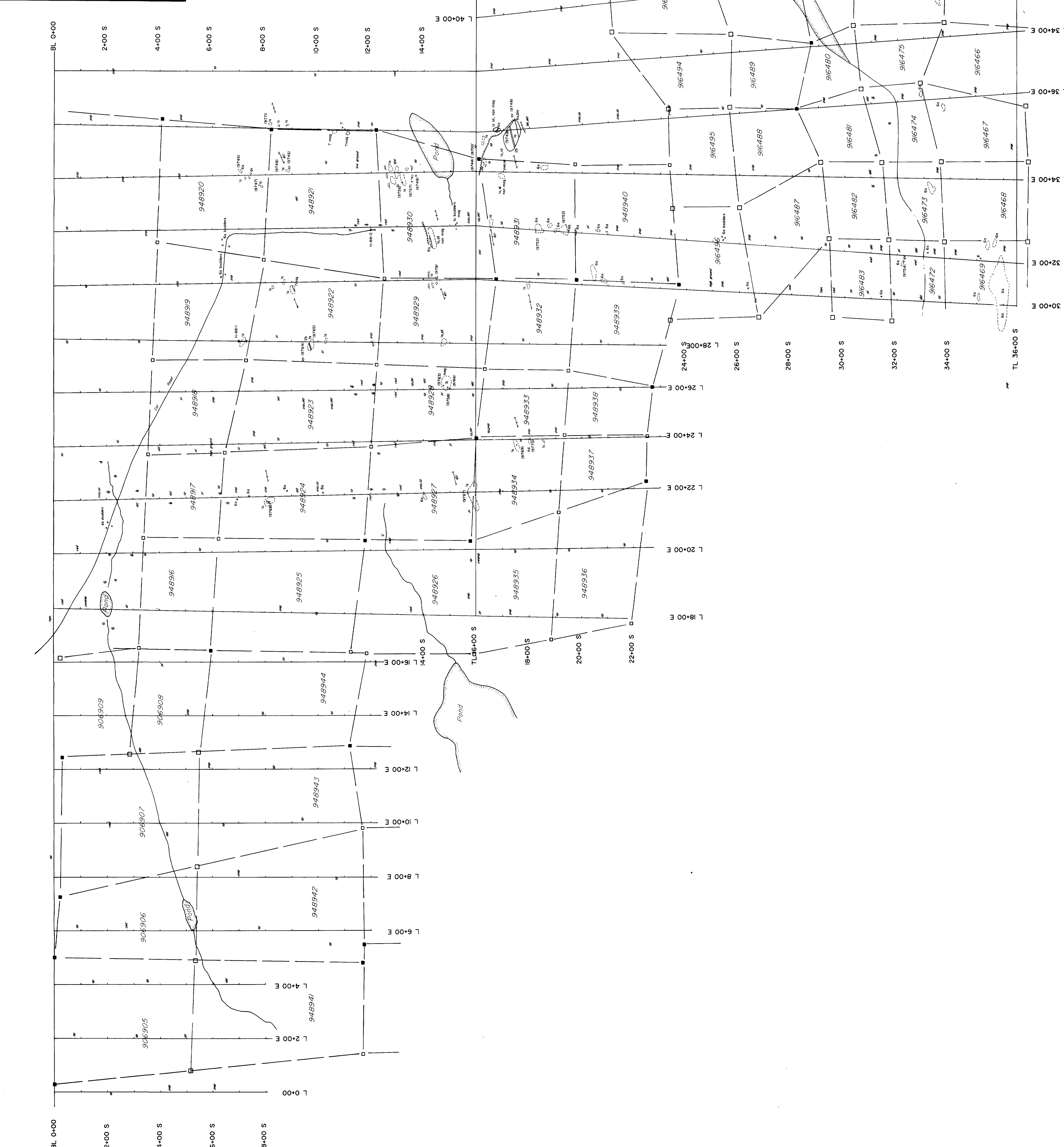
Date: July 1988 Scale: 1 : 5,000 NTS:

Drawn: C.G. Interp: Job No.: D-78



Symbol	Description
1	Granite
2	Quartz-Feldspar-Biotite Gneiss
3	Quartz-Feldspar-Biotite Schist
4	Quartzite
5	Metasediments
6	Metavolcanics
7	Mafic Volcanics
8	Amphibolite
9	Unconsolidated
10	Water
11	Gravel
12	Sand
13	Silt
14	Clay
15	Shale
16	Siltstone
17	Claystone
18	Sandstone
19	Shale
20	Siltstone
21	Claystone
22	Sandstone
23	Shale
24	Siltstone
25	Claystone
26	Sandstone
27	Shale
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37	Claystone
38	Sandstone
39	Shale
40	Siltstone
41	Claystone
42	Sandstone
43	Shale
44	Siltstone
45	Claystone
46	Sandstone
47	Shale
48	Siltstone
49	Claystone
50	Sandstone

- LEGEND**
- 7 DATABASE
 - 6 FELSIC INTERMEDIARIES
 - a) Granite
 - b) Quartz-Feldspar-Biotite Gneiss
 - c) Quartz-Feldspar-Biotite Schist
 - d) Fine grained (Fm) Granitic Dykes
 - e) Felsic Dyke
 - 4 IMMUNITIES
 - 3 METASEDIMENTS
 - a) Greywacke Schist
 - b) Quartz-Feldspar-Biotite Schist
 - c) Quartzite
 - 2 FELSIC METAVOLCANICS
 - a) Ash Turf
 - b) Lava
 - 1 MAFIC VOLCANICS
 - a) Amphibolite
 - b) Amphibolite
 - outcrop
 - boulder



MAP 3 *2.12.88*

DURHAM GEOLOGICAL SERVICES INC.

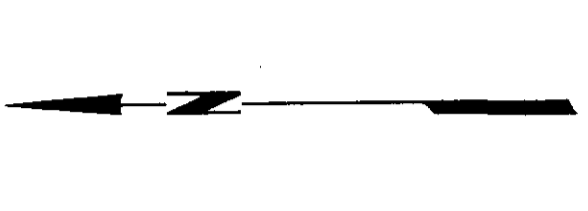
CLIENT: HAWK RESOURCES INC.

PROPERTY: HOWKINS II - Hawkins Twp.

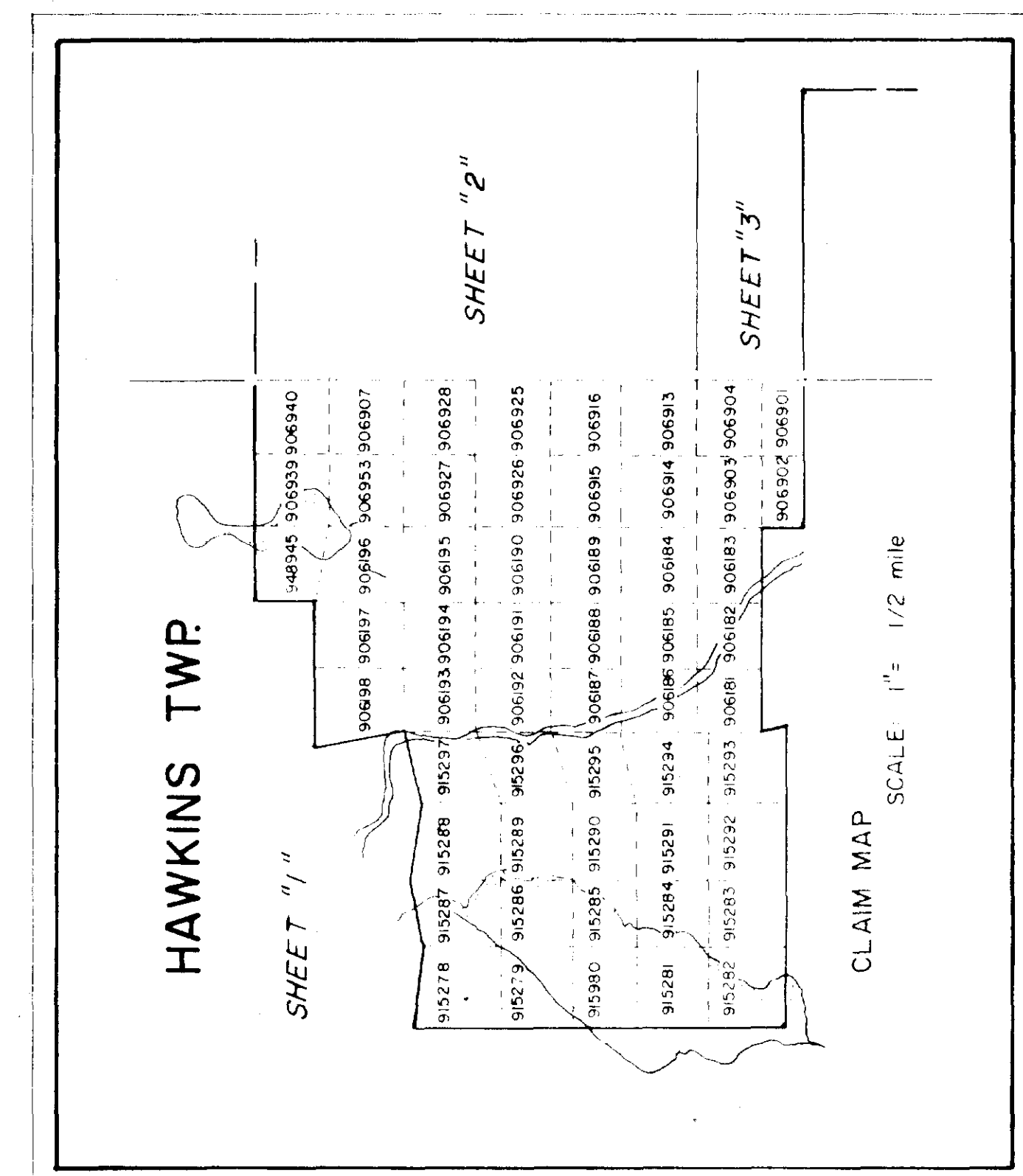
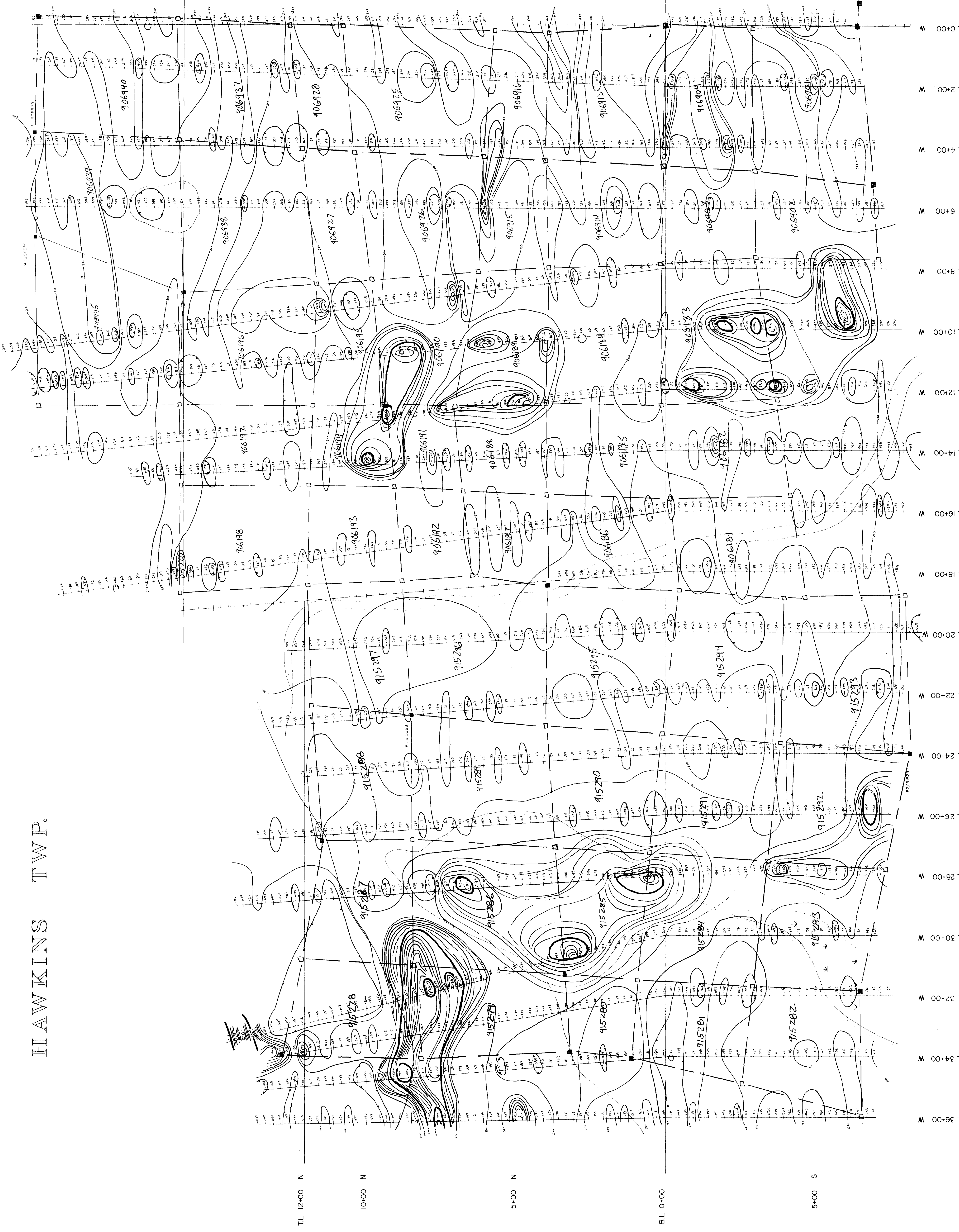
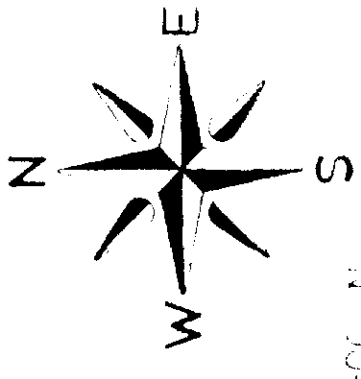
TITLE: GEOLOGY MAP

Date: July 1988 Scale: 1:5,000 WTS:

Drawn: C.G. Insp. Job No. D-78



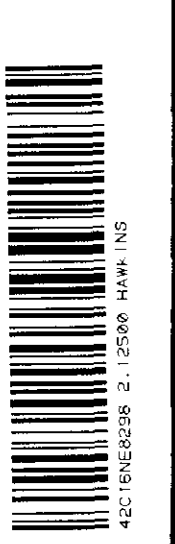
HAWKINS TWP.



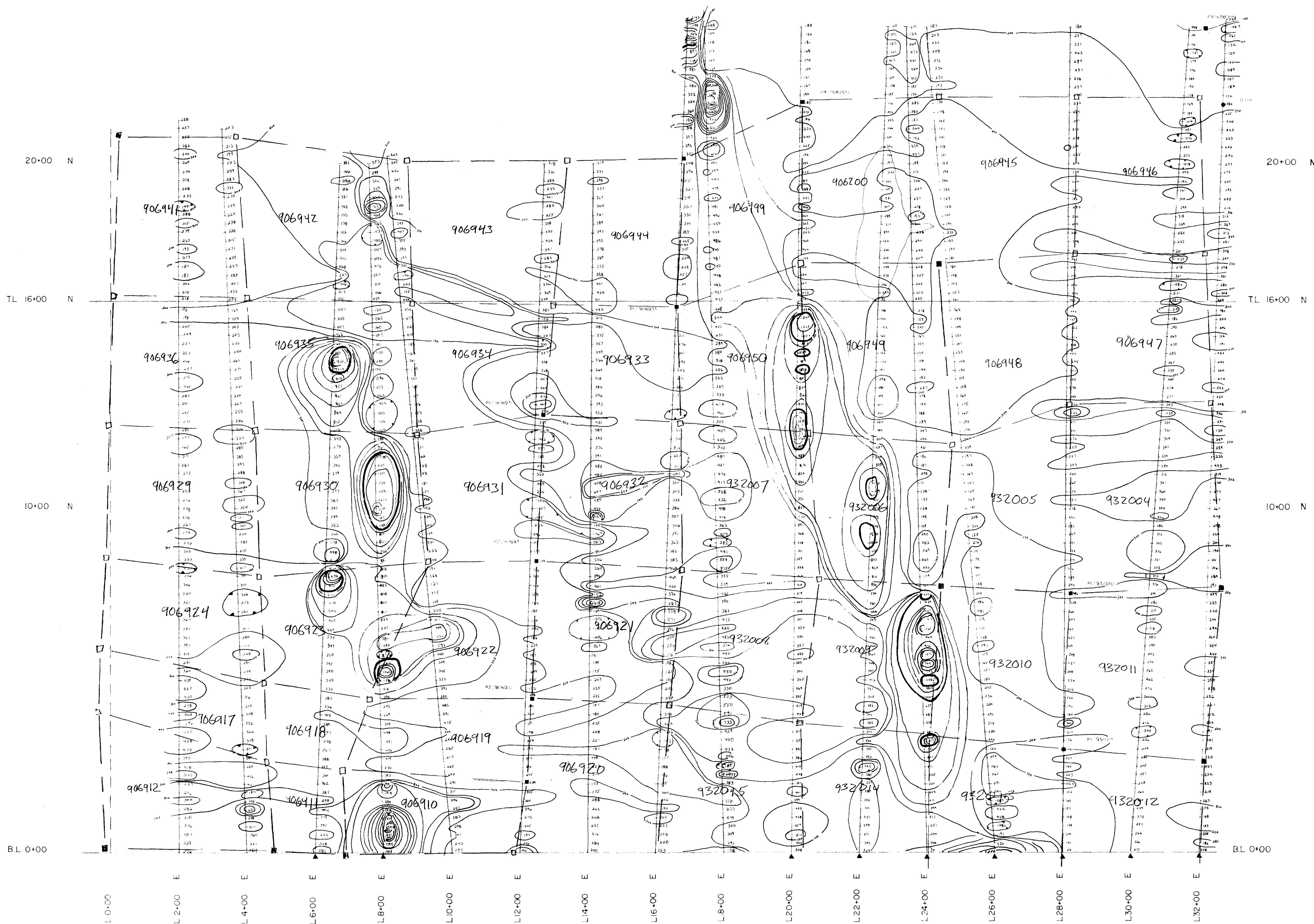
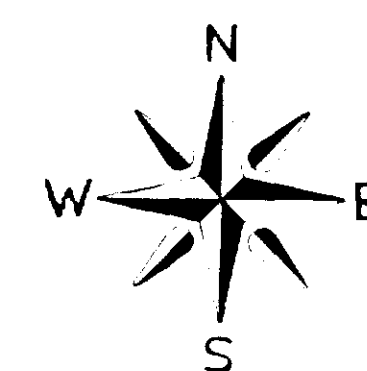
LEGEND
 MEASUREMENT STATIONS ALONG PICKET LINES
 READINGS OF EARTH'S TOTAL MAGNETIC FIELD
 RECORDED READINGS ARE 59 000 PLUS PLOTTED VALUES
 FORCE OF THE EARTH'S MAGNETIC FIELD (IN GAMMAS)
 MAGNETIC CONTOURS
 BASE STATION
 ELECTRICAL CONDUCTOR PROTON MAGNETOMETER GEM, GSM-8
 INSTRUMENT USED:
 TO GAMMAS
 TO GAMMAS
 OVER GAMMAS

2.12.00

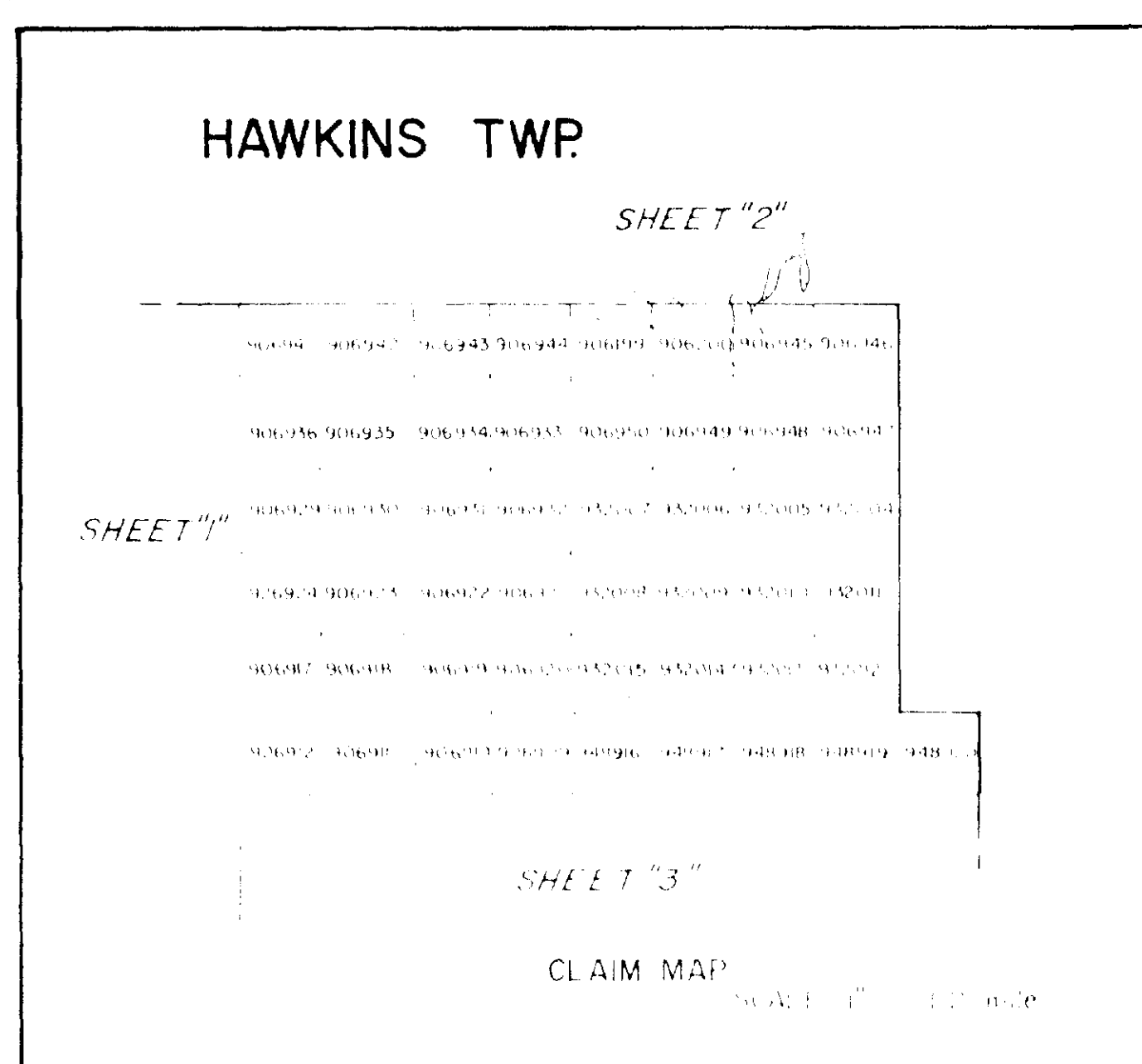
TYPE OF WORK	MAGNETOMETER SURVEY		
CLIENT	HAWK RESOURCES INC.		
PROJECT	AREA	HAWKINS TWP	DATE
	SCALE	1" = 5000	APRIL 1985
	DRAWN BY		MAPS OR SHEETS
			MG-1



HAWKINS TWP.



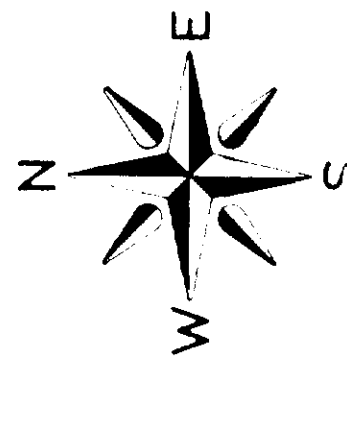
- LEGEND**
- MEASUREMENT STATIONS ALONG PICKET LINES
 - READINGS OF EARTH'S TOTAL MAGNETIC FIELD
 - RECORDED READINGS ARE 59 000 PLUS PLOTTED VALUES
 - FORCE OF THE EARTH'S MAGNETIC FIELD (IN GAMMAS)
 - MAGNETIC CONTOURS
 - ▲ BASE STATION
 - ELECTRICAL CONDUCTOR PROTON MAGNETOMETER GEM,GSM-8
 - INSTRUMENT USED :
 - TO — GAMMAS
 - TO — GAMMAS
 - OVER — GAMMAS



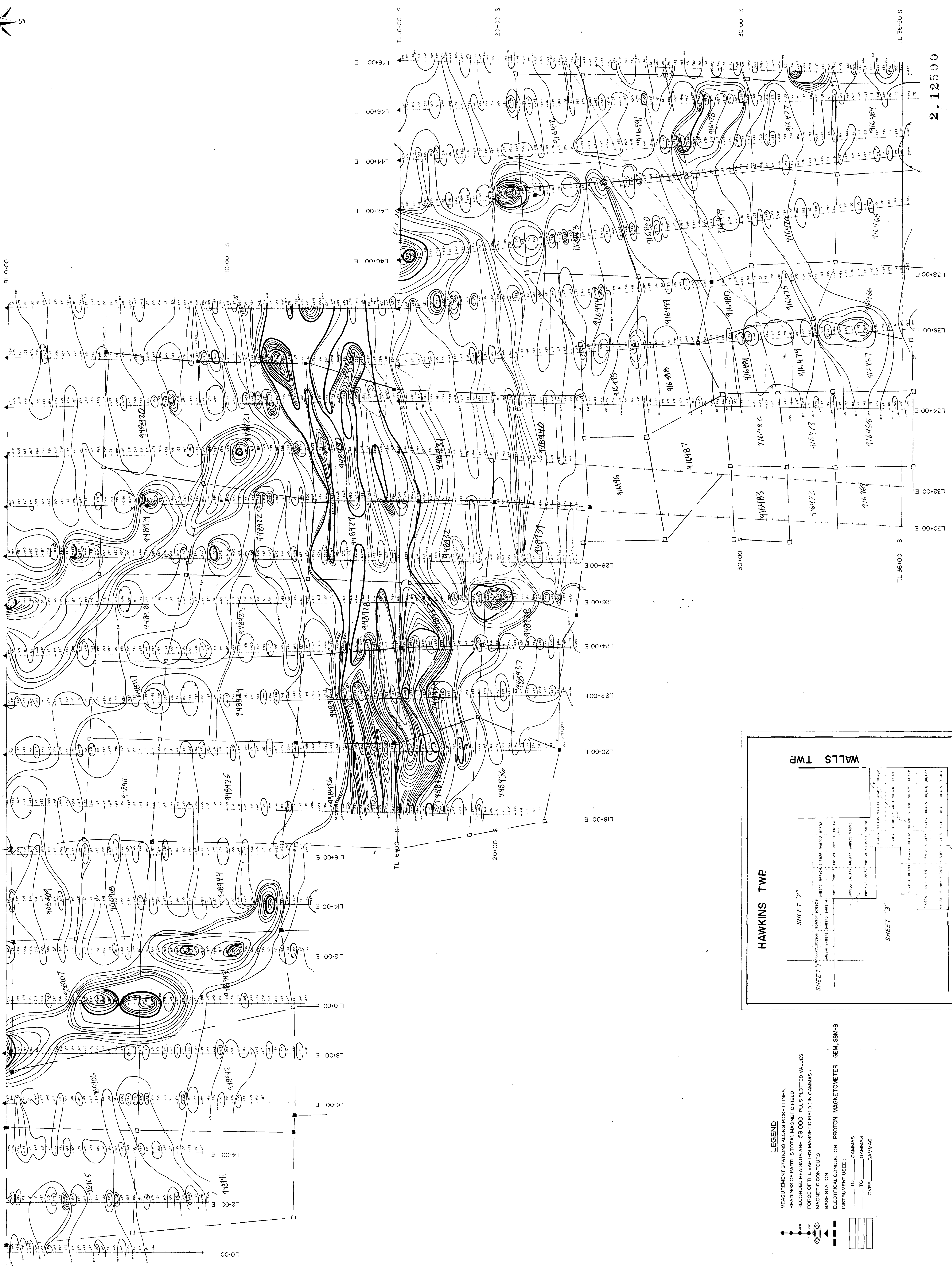
2.12500

TYPE OF WORK		MAGNETOMETER SURVEY	
CLIENT		HAWK RESOURCES INC.	
PROJECT	AREA	HAWKINS TWP.	
SCALE	DATE	1:5000	APRIL 1988
DRAWN BY	MAP OR SHEET NO.	H. Ferderber Geophysics Ltd.	MG-2

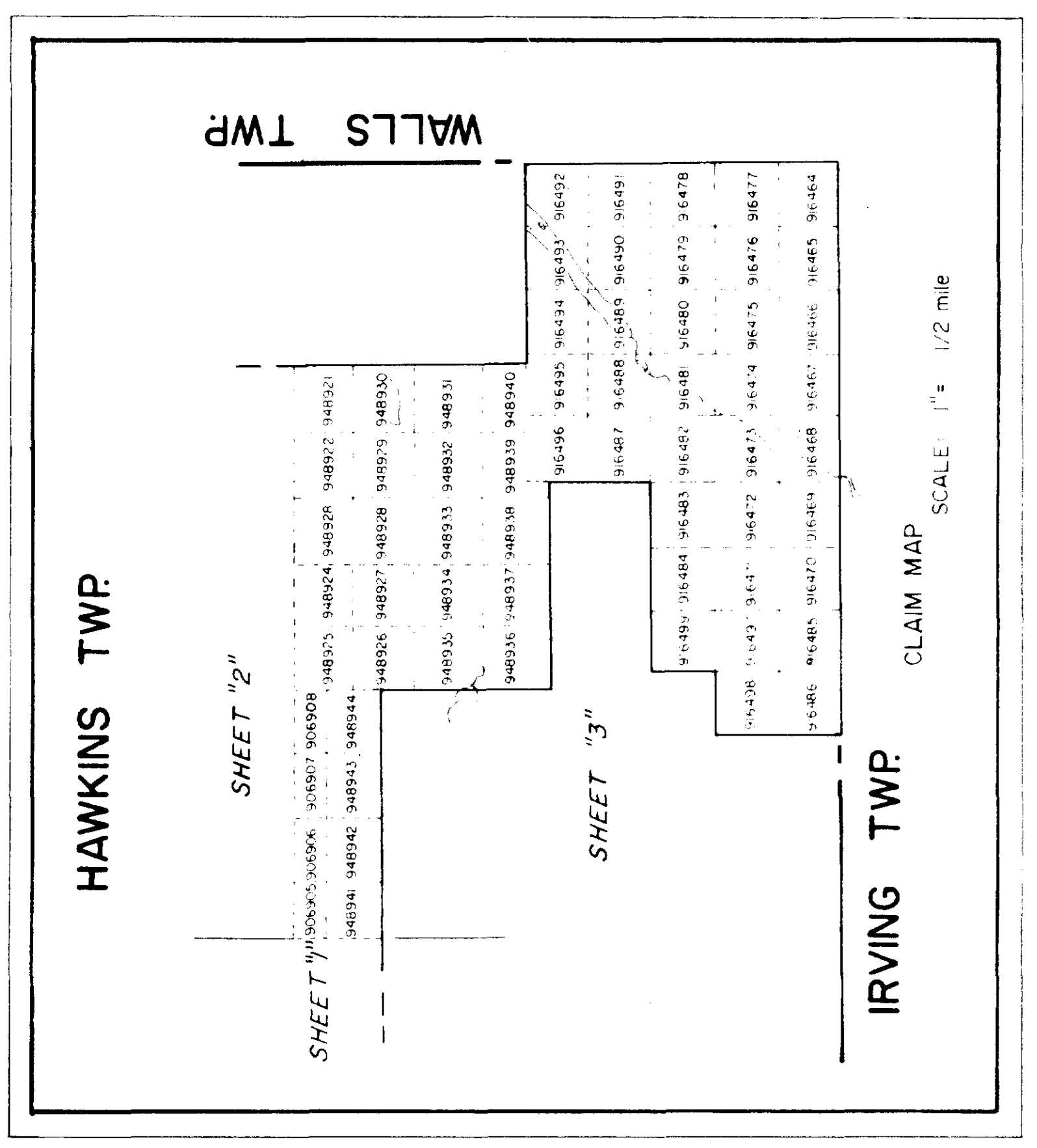




HAWKINS TWP.



2.12500



- LEGEND**
- MEASUREMENT STATIONS ALONG PICKET LINES
 - READINGS OF EARTH'S TOTAL MAGNETIC FIELD
 - RECORDED READINGS ARE 59,000 PLUS PLOTTED VALUES
 - FORCE OF THE EARTH'S MAGNETIC FIELD (IN GAMMAS)
 - MAGNETIC CONTOURS
 - BASE STATION
 - ELECTRICAL CONDUCTOR
 - PROTON MAGNETOMETER GEM, GSM-8
 - TO GAMMAS
 - TO GAMMAS
 - OVER GAMMAS

TYPE OF WORK		MAGNETOMETER SURVEY	
CLIENT		HAWK RESOURCES INC.	
PROJECT		HAWKINS TWP	
SCALE	DATE	SCALE	DATE
1:5000	APRIL 1988	1:5000	APRIL 1988
DRAWN BY	MAP OR SHEET NO.	DRAWN BY	MAP OR SHEET NO.
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