1804

# GEOPHYSICAL REPORT

on the

## HORSEFLY CLAIM GROUP

situated near

Lower Lake, Ecstall River Area, 60 miles south of Prince Rupert, B.C.

in the

## SKEENA MINING DIVISION

53°N, 129°W, ~~S.E.~~ N.E.

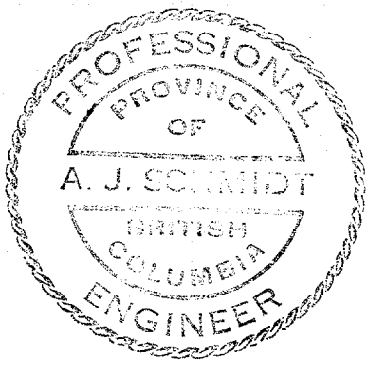
by

D.Watson, Geophysicist
A.J.Schmidt, B.A.Sc.,P.Eng.

A group of 6 contiguous mining claims held by staking by Texas Gulf Sulphur Company. Work performed between August 23rd and September 10th, 1968, on Horsefly M.C.'s 1-6 inclusive.

Vancouver, B.C.

April 1, 1969



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# GEOPHYSICAL REPORT

## on the HORSEFLY GROUP, B.C.

### INTRODUCTION

A small showing of massive pyrite was discovered in August, 1968, on the western slope of Horsefly Ridge, approximately 2 miles due east of Lower Lake. Lower Lake is located at the big bend of the Ecstall River, approximately 60 miles due south of Prince Rupert, B.C. Latitude and longitude of the showing are, respectively, $53^{o}46'N$, $129^{o}22'W$.

6 full-sized mineral claims were staked by the author on August 23rd to cover the discovery area. Access to the claim group was by helicopter from the base camp at Johnston Lake, which is suitable for small, float-equipped aircraft.

A base line was established running North-South through the discovery, and East-West cross lines were cut every 200 feet along the base line. A total of 8825 feet of line were cut by three men in a six day period, using power saws and axes. This grid was then used for the topographical, geological, and geophysical surveys which were conducted.

### EM EQUIPMENT and METHOD

The equipment that was used was the McPhar I.R.E.M. (Intermediate range electromagnetic) unit which has a power output of approximately 36 volts and utilizes frequencies of 2,000 and 400 cycles per second.

The method used was the fixed transmitter and moving receiver system. On the accompanying map, the high frequency angles are on the left side of the line and the low frequency angles are on the right side of the line.

This vertical loop survey measures dip or tilt angles of the major axis of the ellipse of polarization of the total magnetic field. When the receiver passes over a conductor the angles will reach a maximum on one side, pass through zero over the edge of the conductor and reach a maximum on the other side. This passing from one side to the other is called a "cross-over" and is noted on the accompanying map as passing from west dipping angles on the west side of the conductor to east dipping angles on the east side of the conductor.

Errors could be introduced into the survey from misorientation of the transmitter coil with respect to the receiver due to elevation differences between the transmitter and receiver. Therefore, small angles up to six or seven degrees would have no significance in this survey.

INTERPRETATION OF EM SURVEY

A vertical loop E.M. survey does not give a definite width to a sulphide body, it simply traces out the axis of the conductor. However, one can speculate on the width of the upper part of the conductor.

The massive sulphides that were found are an excellent conductor, as are the disseminated sulphides (up to 40%) on the east side of the massive material, so it is difficult to distinguish by this vertical loop survey whether the conductor is massive sulphides or lesser material. The profiles tend to give the impression that the conductor is narrow (50 feet or less of massive plus lesser sulphides) for the length of the grid. The conductor appears to be cut off after line 2N. The cross-overs on 4N and 6N are small and do not have the same characteristics of the other profiles. The axis

drawn from 2N to 6N on the accompanying map, are therefore, not necessarily true. The cross-overs are strong on all lines from 2N to 6S and it would be safe to say that there is over 40% sulphides causing the conductor in this region.

The parallel conductors on the southern part of the grid gives the impression that there is a fault or folding in the vicinity of 4S.

MAGNETOMETER EQUIPMENT and METHOD

The magnetometer survey which was completed on the Horsefly grid utilized a McPhar Fluxgate magnetometer. This magnetometer measures the vertical component of the magnetic field and the readings are not absolute but relative to a base station reading. The readings were taken to the nearest 10 gammas.

The Fluxgate magnetometer works on the principle that when a sinusoidal magnetic field is impressed in a permalloy (near saturation - by earth's field) the wave form will be distorted. This distortion is then measured through an electronic current by a meter reading.

The survey was run using the base line for control; the magnetometer readings were taken every one hundred feet along the cross lines and corrected to the base line readings. There was an attempt to check back into the base line every half hour or less so that reasonable control over the drift of the instrument and the diurnal could be made. The drift on the instrument plus the diurnal did not vary more than 100 gammas.

INTERPRETATION OF THE MAGNETOMETER SURVEY

The magnetic contours shown on the accompanying maps clearly parallel the strike of the metasedimentary rocks of the area.

There is an apparent correlation also between the magnetic highs and the EM conductor, the magnetic highs lying adjacent to the main conductor and to the parallel conductor in the southern portion of the grid area.

## RECOMMENDATIONS AND CONCLUSIONS

The main conductor between 2N and 6S is probably caused by massive pyrite or a combination of massive and disseminated pyrite along a strong shear zone. Although the conductor is narrow, a drilling programme could be initiated and drill holes spotted with the data already in hand, if the grade of the deposit warranted such work.

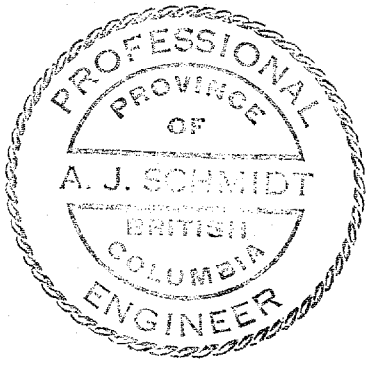
David Watson

David Watson, Geophysicist

per: A. Schmidt

A.J.Schmidt, B.A.Sc., P.Eng.

AJS/js



# QUALIFICATIONS OF D. WATSON, GEOPHYSICIST
# TEXAS GULF SULPHUR CO.
# TORONTO OFFICE

## ACADEMIC QUALIFICATIONS

Bachelor of Science, Michigan Technological University, 1967, in Geophysical Engineering

## EXPERIENCE

Prior to Graduation:

1. Five summers 1955-1959 - geophysical operator with Selco Exploration Co., Ltd.

2. One Summer - 1960 - geophysical operator with M. J. Boylen Engineering Office.

3. Two years - 1961 - 1963 - geophysical party leader with Canadian Nickel Co., Copper Cliff.

4. Two summers - 1965 - 1966 - a) geophysical party leader with Texas Gulf Sulphur Co. and b) airborne navigator and operator in T.G.S. airborne E.M. and Mag. system.

## AFTER GRADUATION

1. One year as geophysicist with Texas Gulf Sulphur in charge of various kinds of ground geophysics.

David Watson

Form No. Z 1 - 220

WILLSON STATIONERS

# Canada

Province of British Columbia

To Wit:

# In the Matter of

Assessment work carried out on the Horsefly claim group, Skeena Mining Division; specifically line cutting, magnetometer and EM surveys.

I, Andrew J. Schmidt, agent for Texas Gulf Sulphur Company, of 701 - 1281 West Georgia Street Vancouver 5, B.C.

in the Province of British Columbia.

**Do Solemnly Declare that** during the period August 23 to September 10, 1968, casued assessment work to be done to the value of $613.50. These expenses were incurred as follows:

a) Line cutting - 8825 ft. of grid lines cut between Aug.23 and Aug.28th

| | | | |
|---|---|---|---|
| by the following crew; | C.Forster | 6 days @ $450/mo. | $90.00 |
| | D.VanTyne | 6 days @ $375/mo. | 75.00 |
| | J.Franzen | 6 days @ 325/mo. | 65.00 |
| | | | $230.00 |

b) Geophysical Surveys, EM and Magnetometer

| | | |
|---|---|---|
| D.Watson, TGS Geophysicist, Sept.1,2,& 10th,1968 | | |
| 3 days @ $50/day | | $150.00 |
| F.Glass, assistant, Sept.1st & 2nd, 1968 | | |
| 2 days @ $28.75/day | | 57.50 |
| | | $207.50 |

and that their

c) Living Expenses were at the rate of $8.00/day/man for 22 man/days $176.00

Total $613.50

**And** I make this solemn Declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath, and by virtue of the Canada Evidence Act.

**Declared** before me

at Vancouver

in the Province of British Columbia.

this 16 day of April A.D. 1969

A. Schmidt

Joan Turner

A Notary Public in and for the Province of British Columbia
A Commissioner for taking affidavits for British Columbia

SUB-MINING RECORDER

*Dated* 19

In the Matter of

# Statutory Declaration

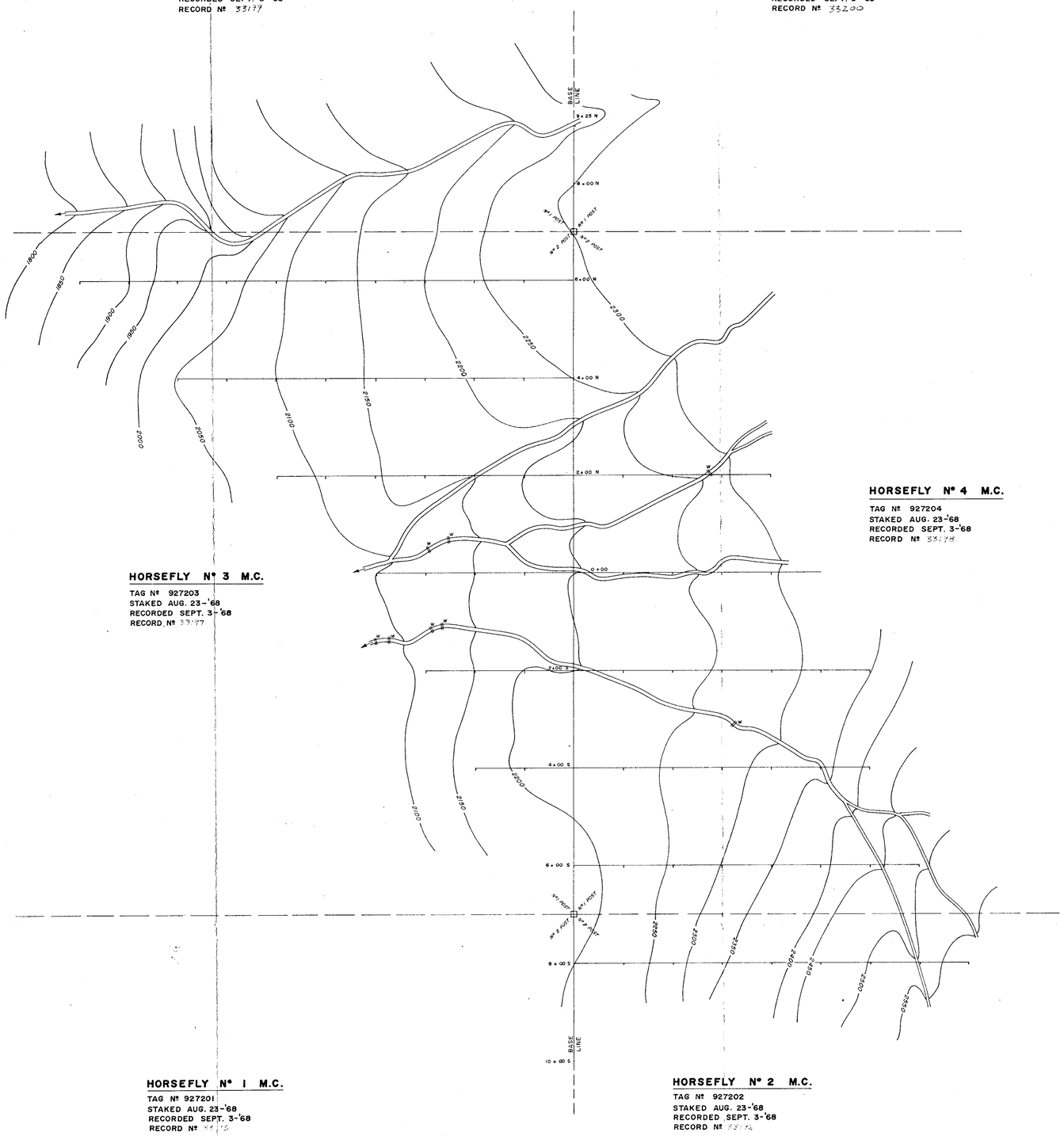
Form No. Z 1 - 220 WILLSON STATIONERS

**HORSEFLY N° 5 M.C.**

TAG N°: 927205
STAKED AUG. 23-'68
RECORDED SEPT. 3-'68
RECORD N°: 33179

**HORSEFLY N° 6 M.C.**

TAG N°: 927206
STAKED AUG. 23-'68
RECORDED SEPT. 3-'68
RECORD N°: 33200




**HORSEFLY N° 4 M.C.**

TAG N°: 927204
STAKED AUG. 23-'68
RECORDED SEPT. 3-'68
RECORD N°: 33178

**HORSEFLY N° 3 M.C.**

TAG N°: 927203
STAKED AUG. 23-'68
RECORDED SEPT. 3-'68
RECORD N°: 33177

**HORSEFLY N° 1 M.C.**

TAG N°: 927201
STAKED AUG. 23-'68
RECORDED SEPT. 3-'68
RECORD N°: 33175

**HORSEFLY N° 2 M.C.**

TAG N°: 927202
STAKED AUG. 23-'68
RECORDED SEPT. 3-'68
RECORD N°: 33176

27°

TO:

To accompany:

Geophysical Report on the Horsefly Claim Group situated near Lower Lake, Ecstall River Area, 60 miles south of Prince Rupert, B.C. in the Skeena Mining Division 55°N, 129°W, S.E.

A. Schmidt Apr. 16/69

N

Contour Interval 50'

SCALE: ONE INCH = 100'

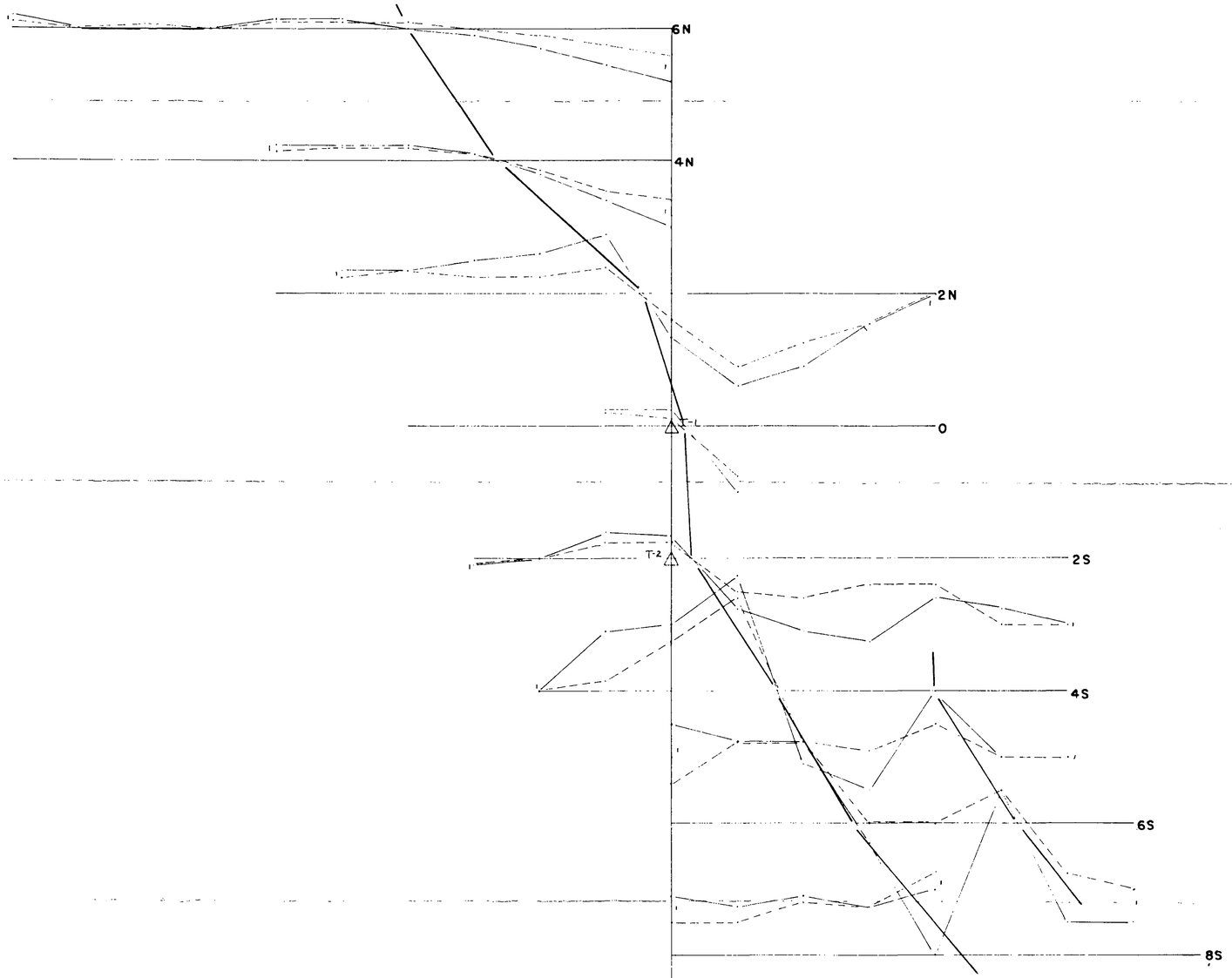
1804

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1804 MAP 1

TEXAS GULF SULPHUR CO.

# HORSEFLY GROUP
## ECSTALL RIVER AREA
## GRID LINES - TOPOGRAPHY

| WORK BY | DRAWN BY | DATE |
|---|---|---|
| A.J.S. | | AUGUST 1968 |



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A. Schmidt, P. Eng.
Apr. 16/69

N

SCALE: ONE INCH = 100'

EM SCALE 1" = 20°

EM CROSS OVER

FREQUENCIES

2000 cps
400 cps

TRANSMITTER SET-UP △

CONDUCTOR AXIS

1804

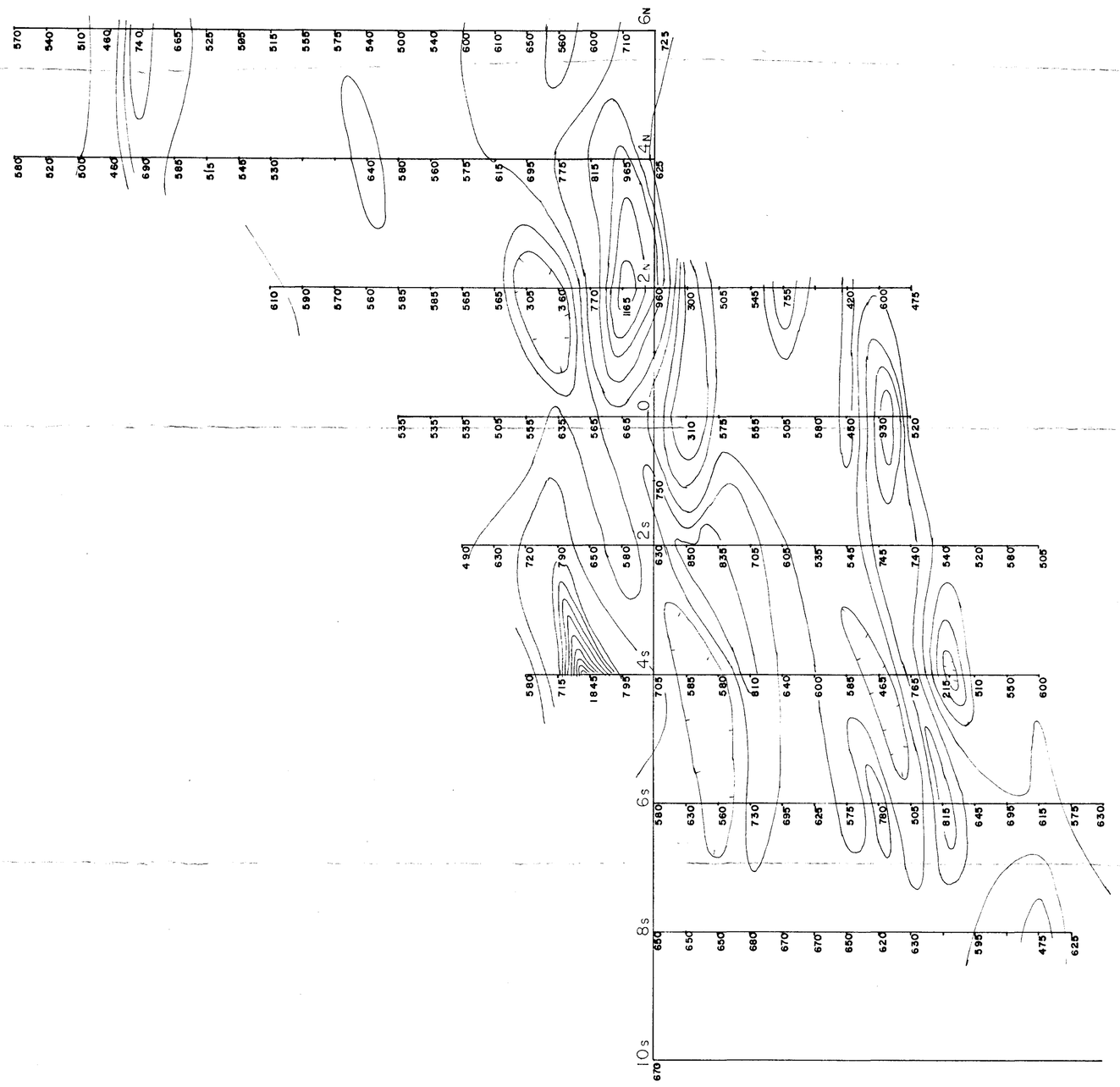
TEXAS GULF SULPHUR CO.

I.R.E.M. SURVEY

HORSEFLY GROUP

ECSTALL RIVER AREA B.C.

| WORK BY | DRAWN BY | DATE |
|---|---|---|
| D W | D W | SEPT. 1968 |




Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1804 MAP 3

To accompany:

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A. Schmidt, P. Eng. Apr. 16/69

N

SCALE: ONE INCH = 100'

1804

TEXAS GULF SULPHUR CO.

MAGNETOMETER SURVEY
HORSEFLY GROUP
ECSTALL RIVER AREA B.C.
CONTOUR INTERVAL 100 GAMMAS

| WORK BY | DRAWN BY | DATE |
|---|---|---|
| F. G. | C.G. L. S. | SEPT. 1968 |