



42A06NE0053 2.2464 WHITNEY

2464

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PROJECTS UNIT

INDUCED POLARIZATION AND RESISTIVITY SURVEY  
OF THE ALLERSTON AND MEUNIER CLAIMS  
WHITNEY TOWNSHIP  
DISTRICT OF COCHRANE  
PORCUPINE MINING DIVISION  
ONTARIO

BY

R. S. Middleton  
Rosario Resources Corp.  
Suite 310 - 55 Yonge St.  
TORONTO, Ontario.  
January, 1977

INTRODUCTION

Purpose of Survey

An induced polarization survey was carried out over rhyolitic tuff (quartz sericite schist) areas on the Allerston claims and the two Meunier claims in order to outline sulphide iron formations and other possible sulphide zones within the rhyolitic rocks which could host deposits of precious or base metals. Several weak airborne EM anomalies had been indicated in this area of interest (ODM File 63.2730) and detection and classification of these anomalies was a primary objective.

Location and Access

The Allerston and Meunier claims are located in southwest Whitney Twp. The area covered by the survey (in part) for which assessment credits are sought is shaded on Plate 2 and is contained in the following areas of Whitney Twp.:

Allerston: Con. I, Lot 6  $N\frac{1}{2}$   
Con. I, Lot 7  
Con. II, Lot 6  
Con. II, Lot 7  
Con. II, Lot 8  
Con. III, Lot 7  $S\frac{1}{2}$   
Meunier: Con. III, Lot 8  $S\frac{1}{2}$   $SW\frac{1}{4}$ ,  $SW\frac{1}{4}$

Access to the grid is by road from Porcupine down Lot 8-9 boundary and by road from Hwy. 101 via the Township of Whitney dump road (to Lot 6 and 7, Con. III area).

Property

All but two of the claims are held under option from Ralph Allerston by Alamo Petroleum Ltd., Suite 310, 55 Yonge Street, Toronto, Ontario. M5E 1J4. Claims P.452637 and P.451063 are held by Alamo through an option with D. Meunier. Forty-Two claims which are to be credited with assessment work are shaded on Plate 2 and are as follows:

Alamo Claims - Allerston and Meunier Option

Meunier	P.452637	24.5 days I.P.	
	451063	"	"
Allerston	P.413434	"	"
	413433	"	"
	443578	"	"
	443579	"	"
	443586	"	"
	443587	"	"
	420074	"	"
	420075	"	"
	451039	"	"
	451040	"	"
	451041	"	"
	451042	"	"
	444080	"	"
	444083	"	"
	444084	"	"
	427444	"	"
	420076	"	"
	420077	"	"
	420078	"	"
	420079	"	"
	420080	"	"
	420081	"	"
	420082	"	"
	420083	"	"
	420084	"	"
	420085	"	"
	420086	"	"
	420087	"	"
	420330	"	"
	420331	"	"
	420332	"	"
	420333	"	"
	443580	"	"
	443581	"	"
	443582	"	"
	443583	"	"
	482879	"	"
	482880	"	"
	479905	"	"
	479906	"	"

Total 42 claims

### Previous Work

The area has been flown with EM and magnetometer by Canadian Aero for Oro Mines Ltd. in 1970 (File 63.2730). Ground EM and magnetometer surveys for Noranda Mines Ltd. covered both areas surveyed in 1968 (File 63.2466).

Oro Mines Ltd. covered part of the area in Figure 2 in 1970 with magnetometer and vertical loop (File 63.2675).

Canadian Lencourt Mines carried out I.P. and drilling on part of the area covered in Figure 2 in 1967 (File 63.2218).

Geological mapping and magnetometer surveying completed in 1976 by Alamo Petroleum Ltd. on the claims was submitted as a separate report.

### GEOLOGY

The property is underlain by Archean mafic and felsic volcanics with associated sulphide and oxide iron formations. An ultramafic sill composed by peridotite with talc magnesite phases is situated on the west central part of the property. This sill lies stratigraphically at the base of the felsic (quartz sericite schists) rhyolitic tuff sequence. A sulphide iron formation marks the lower 100 feet of this felsic sequence. Felsic intrusives of fine-grained equigranular granodiorite (aplite) occurs in the west central part of the property.

A thin sill of gabbro and serpentine occurs in Con. III, Lot 7 cutting the quartz sericite schists.

Numerous diabase dikes trending N20°W cutting all other rock types are found on the property.

A complete geological survey has been submitted as a separate report for this property (Middleton, 1976).

INSTRUMENTATION AND SURVEY PROCEDURE

The I.P.-resistivity survey resulted in 576 readings with "a" = 100, n = 2 and "a" = 200, n = 2, on 65650 feet (12.43 miles) of line. Some overlap in coverage between the different arrays occurred. In addition 7000 feet of line was covered with "a" = 100 feet n = 1 resulting in an additional 75 stations (see Figure 3).

The survey was carried out using a Scintrex IPR-8 receiver and 2.5 k watt IPC-7 transmitter. A two second square wave pulse was transmitted into the ground via steel stake electrodes (2 seconds on, 2 seconds off). The decay voltage was measured after the shut off of the pulse at 3 different time intervals (windows) 130 ms to 650 ms; 650 ms to 1170 ms; and 1170 ms to 1690 ms. The centre value was plotted on the maps. The decays after 4 pulses (2 cycles) were measured and averaged to obtain the readings.

A pole dipole array was used with an "a" spacing of 100 feet and 200 feet. In the case of Lot 7, Con. III, detailed profiling was done with "a" = 100 feet, n = 1, 2 and for the remainder of the property n = 2 "a" = 200 feet was used. The "a" = 100 feet was only effective in the shallow overburden areas however allowed for detection of narrow features. A theoretical depth of measurement for a = 100 n = 2 is 125 feet whereas for a = 200 n = 2, the depth of measurement is roughly 250 feet. The data plot point was chosen to be halfway between the current electrode and centre point between the two potential electrodes. Contact with the ground in the voltage decay measurement was made through non-polarizing porcelain pots containing copper sulphate. In some cases, 100 foot moves were made with the 200 foot electrode array in order to detail the features of some anomalies.

The resistivity formula for a pole - dipole array is:

$$P = \frac{V}{I} 2 \pi \left( \frac{1}{\frac{1}{na} + \frac{1}{a + na}} \right)$$

All resistivity values were converted to ohm metres from ohm feet and are shown on the attached map.

Personnel and Survey Dates

The following crew carried out the I.P. survey in October and November, 1976:

	<u>October, 1976</u>														<u>November, 1976</u>														<u>Total</u>																																														
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	<u>Field</u>	<u>Office</u>																																
J. Robinson - Field (Operator) - Office	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	34	6																																
A. Philipp - Field - Office	5	6	7	8	9	10	11	-	13	14	-	16	17	18	19	-	-	-	22	24	25	-	27	28	29	30	31	1	2	3	4	5	6	7	-	-	10	-	-	-	-	29																																	
P. Bowen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1																											
Jerry Klages	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1																											
Tom Cumming	-	-	-	-	-	-	-	-	-	-	-	-	17	18	19	20	21	22	23	24	25	-	27	28	29	30	31	1	2	3	4	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	22																												
W. Youssef - Field - Office	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-	22	23	24	25	-	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	34	5																																
J. Winter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	11	12	13	14	5																																
R. Middleton	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3																											
W. Youssef - Final drafting Dec. 1 2 3 6 7																																																																										5	
R. Middleton - report Jan. 11 12																																																																											2
																																																																										<u>129</u>	<u>18</u>
																														147 Days																																													

Assessment distribution 147 X 7 = 1,029 units ÷ 42 claims = 24.5 units per claim.

## INTERPRETATION

Several I.P. anomalies which correspond to weak airborne anomalies were outlined during the survey. In some cases the I.P. anomalies were new features such as the anomalous trend crossing claims P.452637, P.451039 and P.451040.

An iron formation consisting of chert and pyrite outcropping on claim P.443578 was traced with the I.P. to the southeast part of claim P.420075. This anomaly crosses lines 28E, 32E and 36E and is extrapolated to lines 52E and 56E by the fact that this trend was previously detected by the Canadian Lencourt Survey. This I.P. anomaly has corresponding erratic 1000 gamma magnetic readings associated with it and chargeabilities of 12 to 16 ms. This I.P. anomaly also marks the base of the rhyolitic rock sequence.

A second I.P. anomaly occurs at 72E, 10N and trends northeast to line 92E, 28N. This anomaly is broad and suggests a north dipping sulphide and/or graphitic zone. Chargeabilities are 8 ms to 24 ms. The anomaly parallels the south flank of a magnetic high (2000 gammas +) and therefore is interpreted to be associated with volcanic rocks. The magnetic high to the north is either oxide iron formation or peridotite.

A third anomaly (9.7 - 10 ms) which was not extended due to water conditions occurs on lines 76E and 80E at 38N and 47N respectively. This anomaly is possibly sulphide iron formation or a sulphide body within the rhyolite.

A fourth anomaly is situated on lines 64E, 66E, 68E at 46N, 43N and 42N respectively. This anomaly is very discrete having the highest chargeability on line 66E of 26 ms. A sulphide body in rhyolite is interpreted to occur here however the northwest strike to the zone is not consistent with regional trends suggesting refolding or misorientation due to nearby north trending faults. This anomaly has a correlating airborne EM conductor.

A fifth I.P. anomaly north of the fourth mentioned above is also oriented northwest but has chargeabilities of 7.2-13 ms. This anomaly is on 66E - 68E and was detected on  $n = 2$ ,  $a = 200$  only on line 68E, and  $n = 2$ ,  $l = 100$  only on 66E. Perhaps a deep sulphide zone occurs here (below 125' +). A weak airborne anomaly is associated with this I.P. anomaly.

On the Lot 8, Con. II area of Allerston's claims (#413434 and 413433) a broad I.P. anomaly with a peak of 12.7 ms occurs. The bedrock in this area is quartz sericite schist however localized porphyry-granodiorite dikes occur as well. A disseminated sulphide zone is interpreted to cause this anomaly.

On the Meunier claims P.451063, P.452637 two broad I.P. anomalies occur with values of 11 ms to 35 ms. The highest values appear to be associated with a granodiorite intrusion into quartz sericite schists and therefore may represent concentrations of pyrite around the granodiorite contact and disseminations within the granodiorite. A general increase in pyrite content in the felsic rocks occurs on the Meunier claims and this belt extends eastward to the Allerston claims (i.e.) P.451039. On the Allerston ground this I.P. trend is definitely associated with highly pyritized quartz sericite schist that has been partly kaolinized. A fault offset on this trend occurs on claim P.451040 (along a diabase dike) and continues eastward to the east boundary of claim P.451040. A north dip is suggested by schistosity readings and chargeability distributions.

RECOMMENDATIONS AND CONCLUSIONS

Drilling of the I.P. anomalies at the following general locations is recommended to investigate the possibility of economic precious or base metal within interpreted sulphide zones:

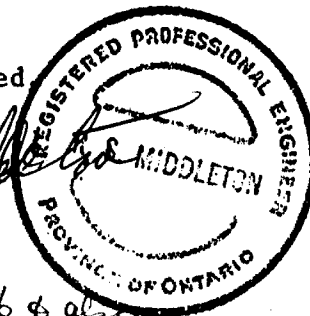
1. Line 66E, 44N
2. Line 68E, 56N
3. Line 60E, 60N
4. Line 56E, 75N
5. Line 76E, 38N
6. Line 79+30E, 76N
7. Line 80E, 15N or  
Line 76E, 12N
8. Line 52E, 7N

These holes are not listed in any particular order however 5 should be drilled before 7 in order to define stratigraphy.

Respectfully submitted,

*R. S. Middleton*  
R. S. Middleton  
Chief Geophysicist

Qualifications: 2.706 & also  
On this file





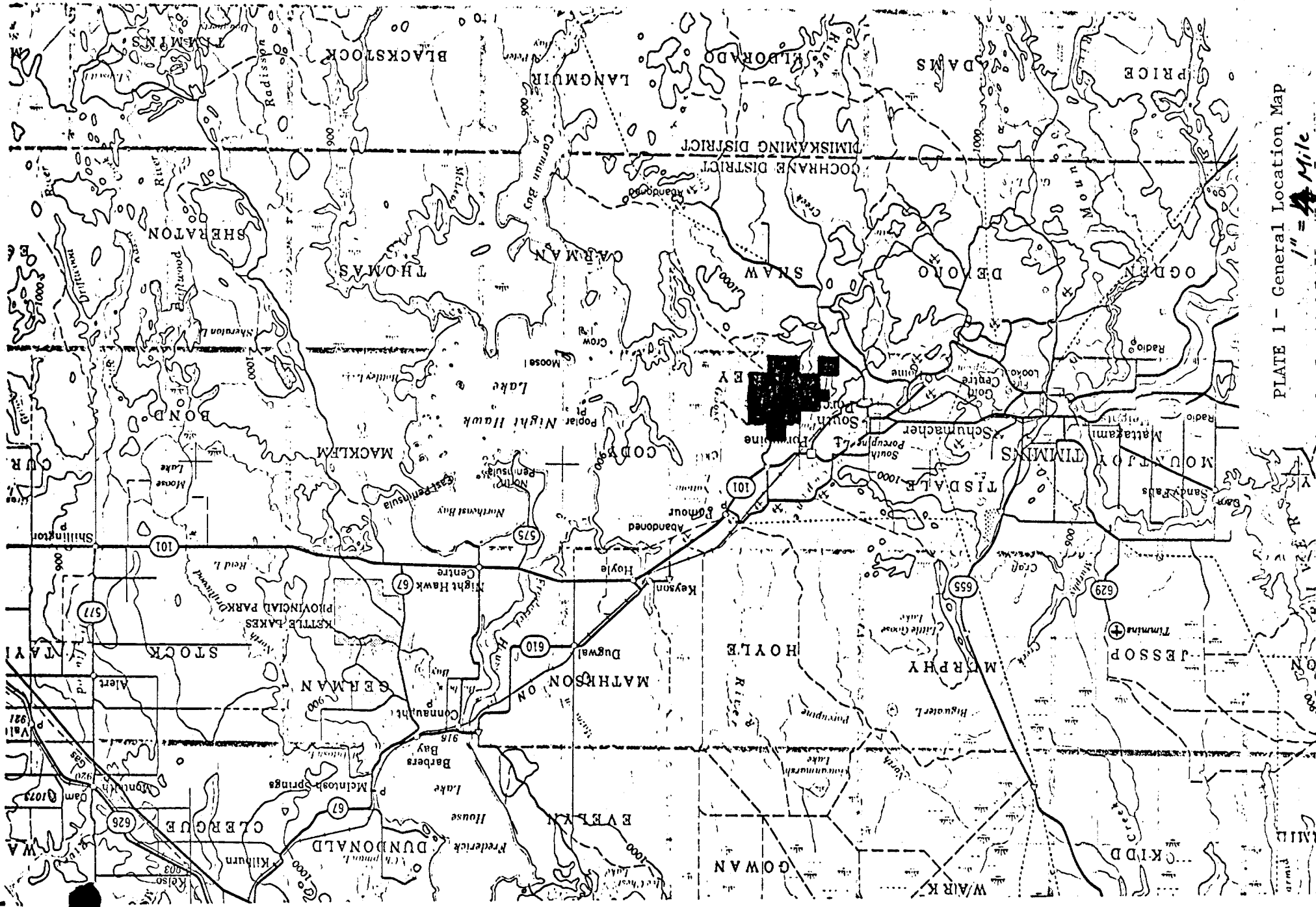
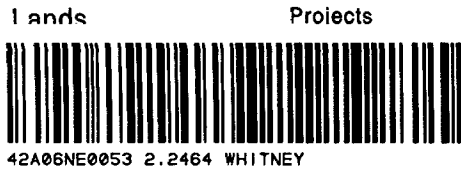


PLATE 1 - General Location Map  
 1" = 4 Mile





900

Recorded Holder  
**Rosario Resources Canada Limited**

Township or Area  
**Whitney Township**

Type of survey and number of Assessment days credit per claim	Mining Claims
Geophysical	P. 413433 - 34
Electromagnetic _____ days	420074 to 85 inclusive
Magnetometer _____ days	420330 to 33 "
Radiometric _____ days	443578 to 83 "
Induced polarization <u>29</u> days	443586 - 87
Section 86 (18) _____ days	444080 - 83
Geological _____ days	451039 to 42 inclusive
Geochemical _____ days	451063
Man days <input type="checkbox"/> Airborne <input type="checkbox"/>	452637
Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	479906
	482879 - 80
<b>Notice of Intent to be issued:</b>	
<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.	
<input checked="" type="checkbox"/> No credits have been allowed for the following mining claims as they were not sufficiently covered by the survey:	
<u>P. 420086 - 87</u>	
<u>427444</u>	
<u>444084</u>	
<u>479905</u>	

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;



Ontario

Ministry of Natural Resources

Lands Administration Branch

Projects Unit

Technical Assessment Work Credits

File 2.2464

REVISED STATEMENT

(Supersedes Notice of Intent statement dated March 31, 1978)

Recorded Holder: Rosario Resources Canada Limited
Township or Area: Whitney Township

Table with 2 columns: Type of survey and number of Assessment days credit per claim; Mining Claims. Includes rows for Geophysical, Geological, and Geochemical surveys with associated claim numbers.

Notice of Intent to be issued:
[ ] Credits have been reduced because of partial coverage of claims.
[ ] Credits have been reduced because of corrections to work dates and figures of applicant.
[X] No credits have been allowed for the following mining claims as they were not sufficiently covered by the survey:
P. 420086 - 87
427444
444084
479905

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;

HOYLE TWP. M-287

THE TOWNSHIP

OF 2.2464

WHITNEY

DISTRICT OF COCHRANE

PORCUPINE MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

- PATENTED LAND (P)
- CROWN LAND SALE (C.S.)
- LEASES (L)
- LOCATED LAND (Loc.)
- LICENSE OF OCCUPATION (L.O.)
- MINING RIGHTS ONLY (M.R.O.)
- SURFACE RIGHTS ONLY (S.R.O.)
- ROADS (—)
- IMPROVED ROADS (—)
- KING'S HIGHWAYS (—)
- RAILWAYS (—)
- POWER LINES (—)
- MARSH OR MUSKEG (—)
- MINES (—)
- CANCELLED (—)
- S.R.O. PATENTED (—)

NOTES

400' Surface rights reservation along the shores of all lakes and rivers.

This township lies within the Municipality of CITY of TIMMINS.

No disposition of sand and gravel on lands north of O.N.Ry., from May 8, 1964 until further notice. Form D.O.M. file 550.13

Any restakings within stippled area in Lots 5, 6, 7, 8 Con 4 and 5 subject to rights and privileges granted to Pamour Porcupine Mines Ltd. for tailings disposal.

DATE OF ISSUE

AUG - 9 1977

SURVEYS AND MAPPING BRANCH

ONTARIO

MINISTRY OF NATURAL RESOURCES

SURVEYS AND MAPPING BRANCH

Date 10th. JULY 1974 (Rev.)

Whitney Block  
Queen's Park, Toronto

M-319

TISDALE TWP. M-315

CODY TWP. M-270

SHAW TWP. M-311



42A06NE0053 2.2464 WHITNEY

8

7

6



8

7

WHITNEY TOWNSHIP, ONTARIO  
ALLERSTON CLAIM GROUP



ROSARIO RESOURCES CORP.  
ALAMO PETROLEUM

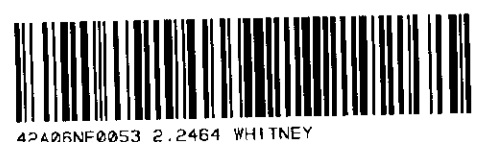
I.P. PROFILES

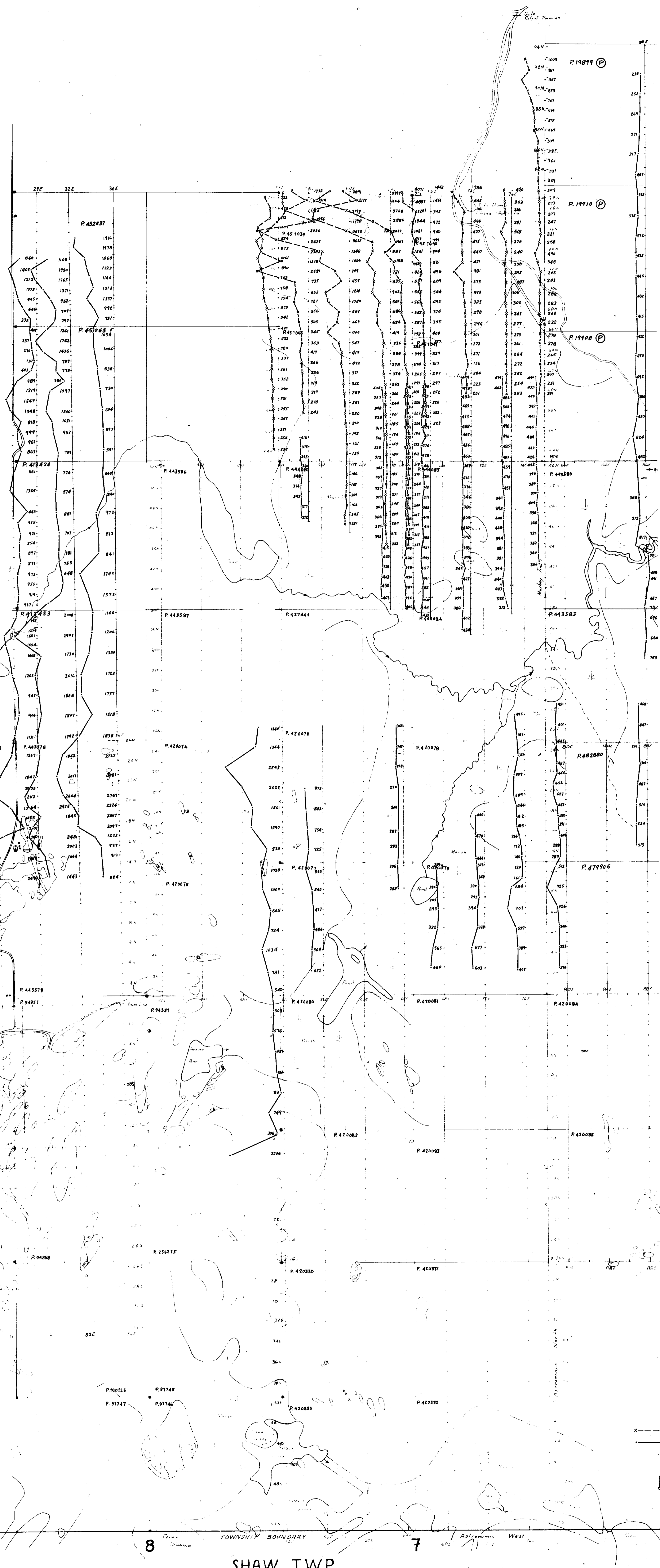
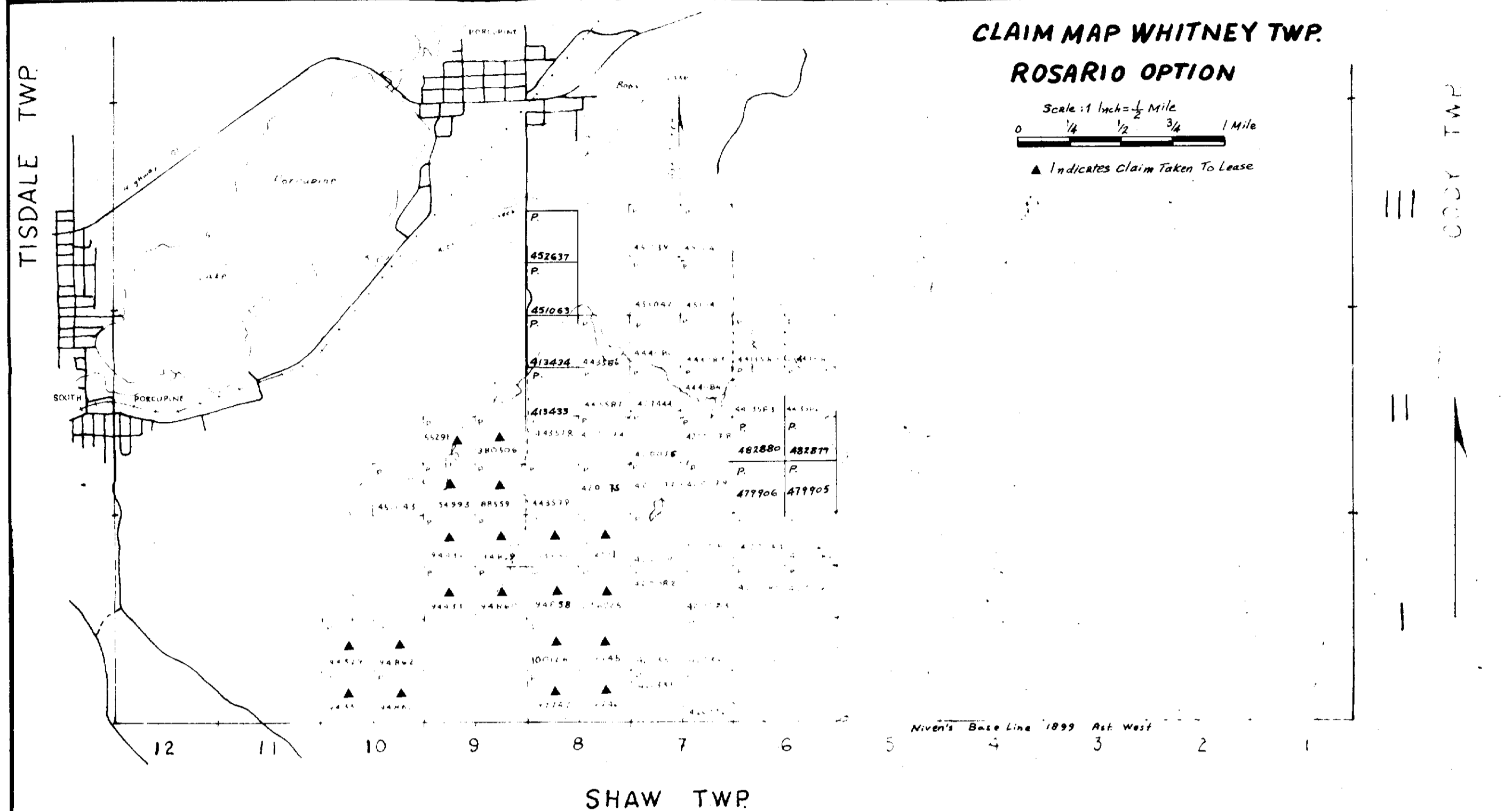
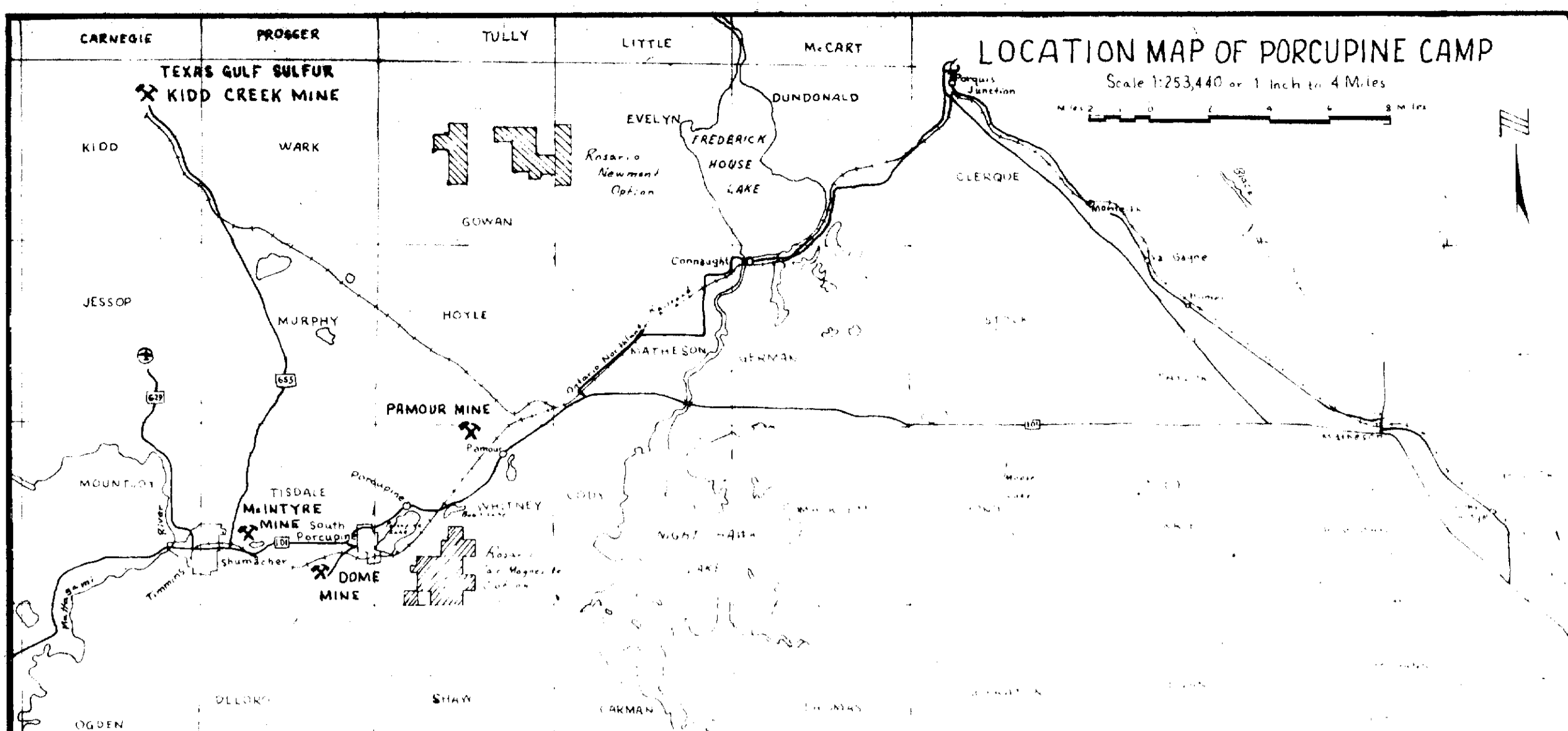
1" = 10 ms.

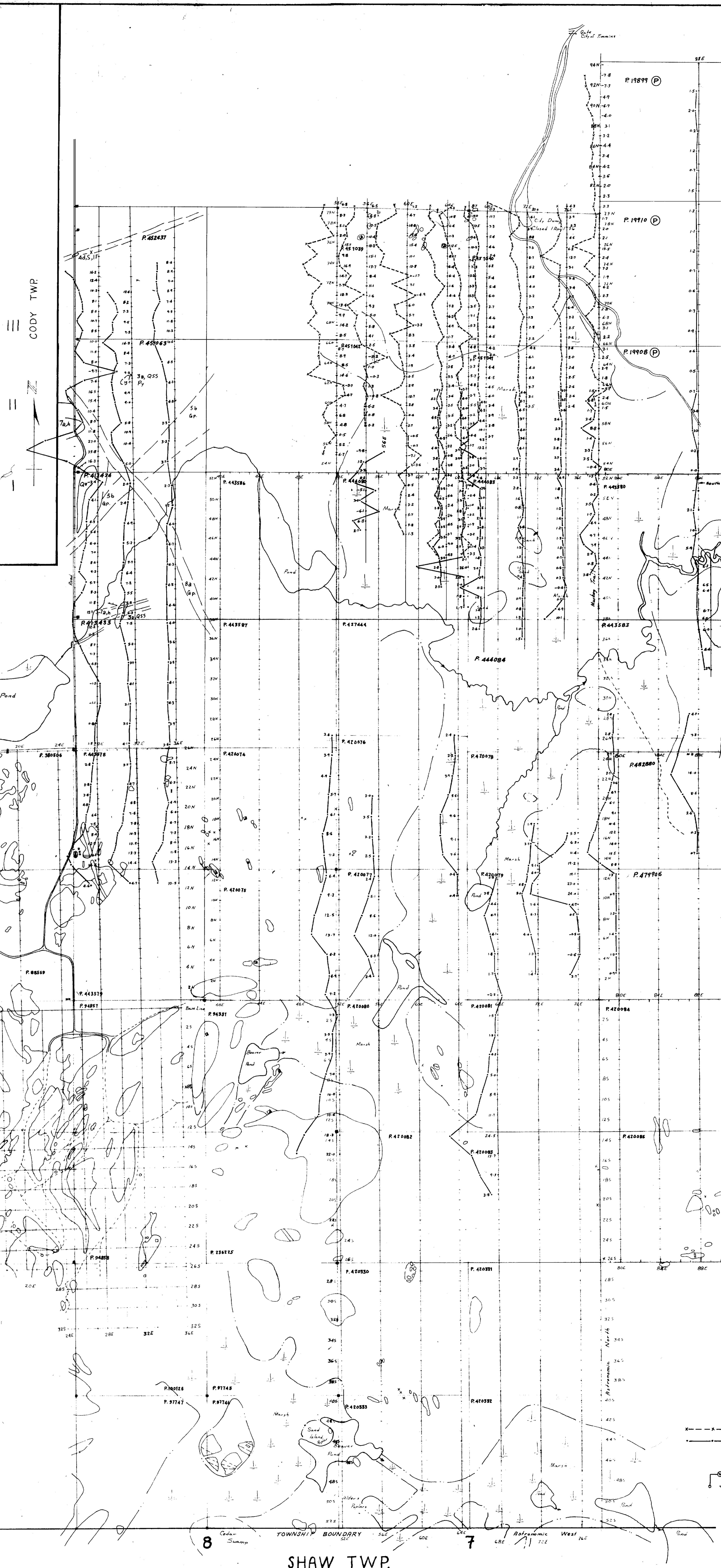
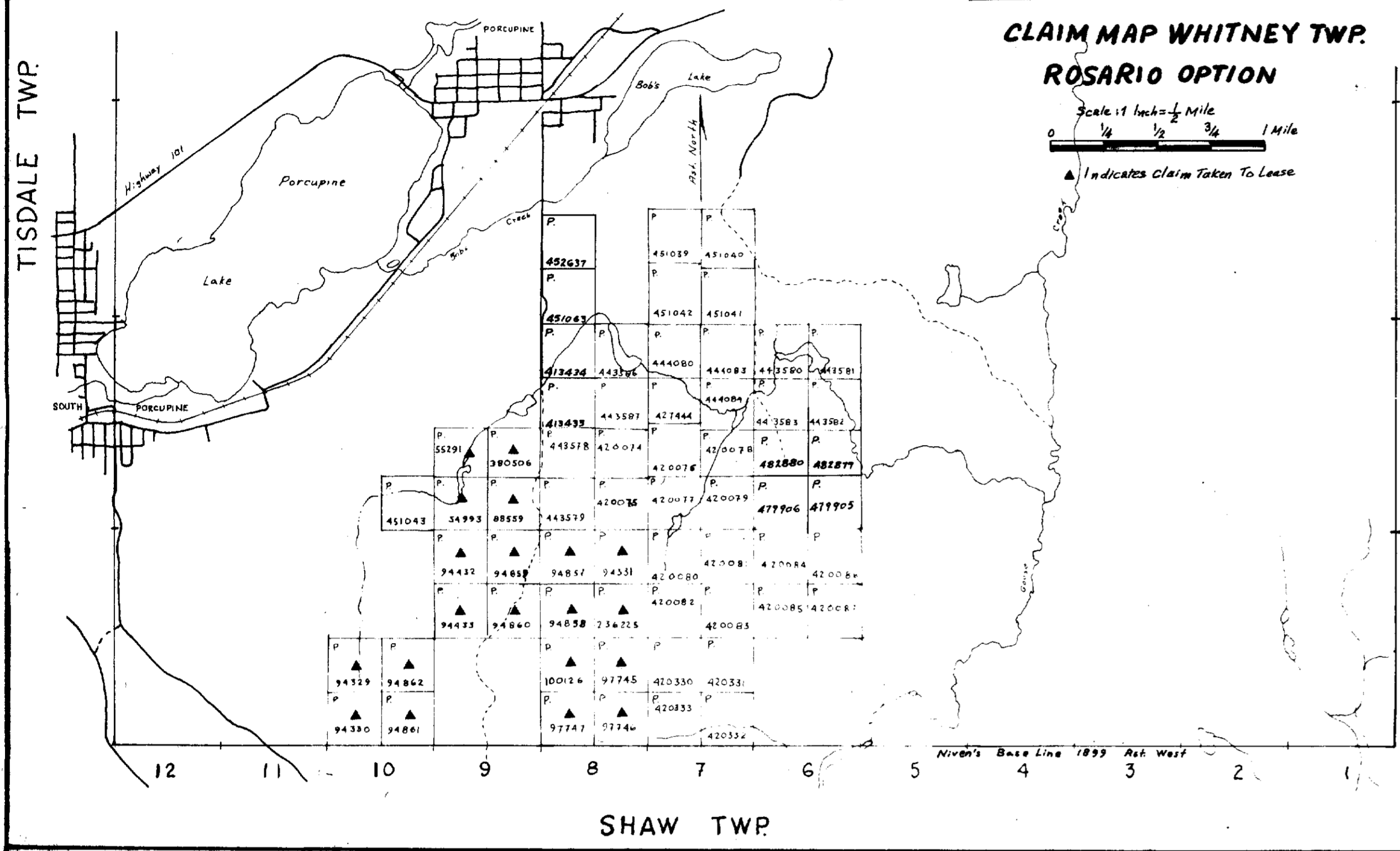
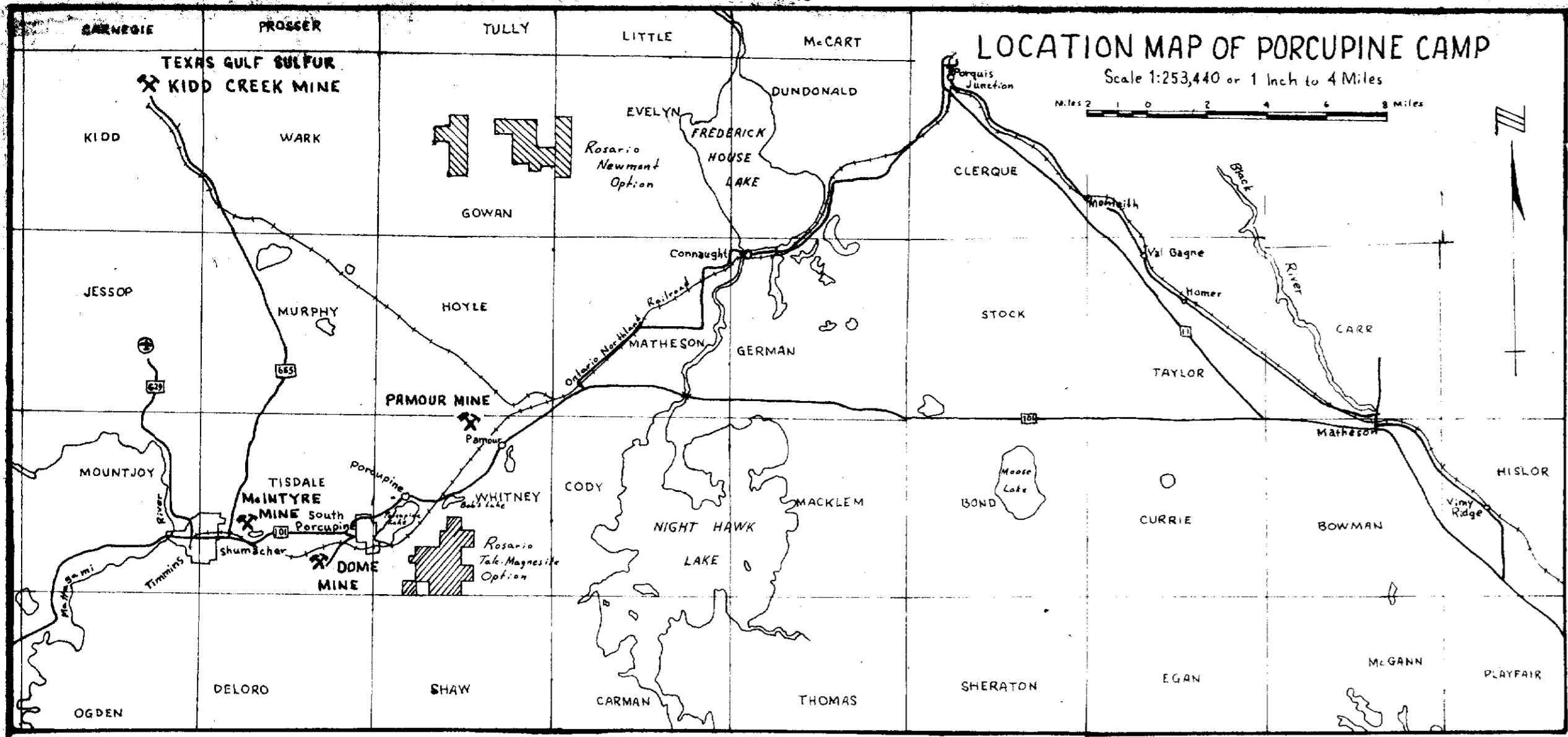
1" = 200 ft.

Date : Oct. 1976

Operator : J. Robinson

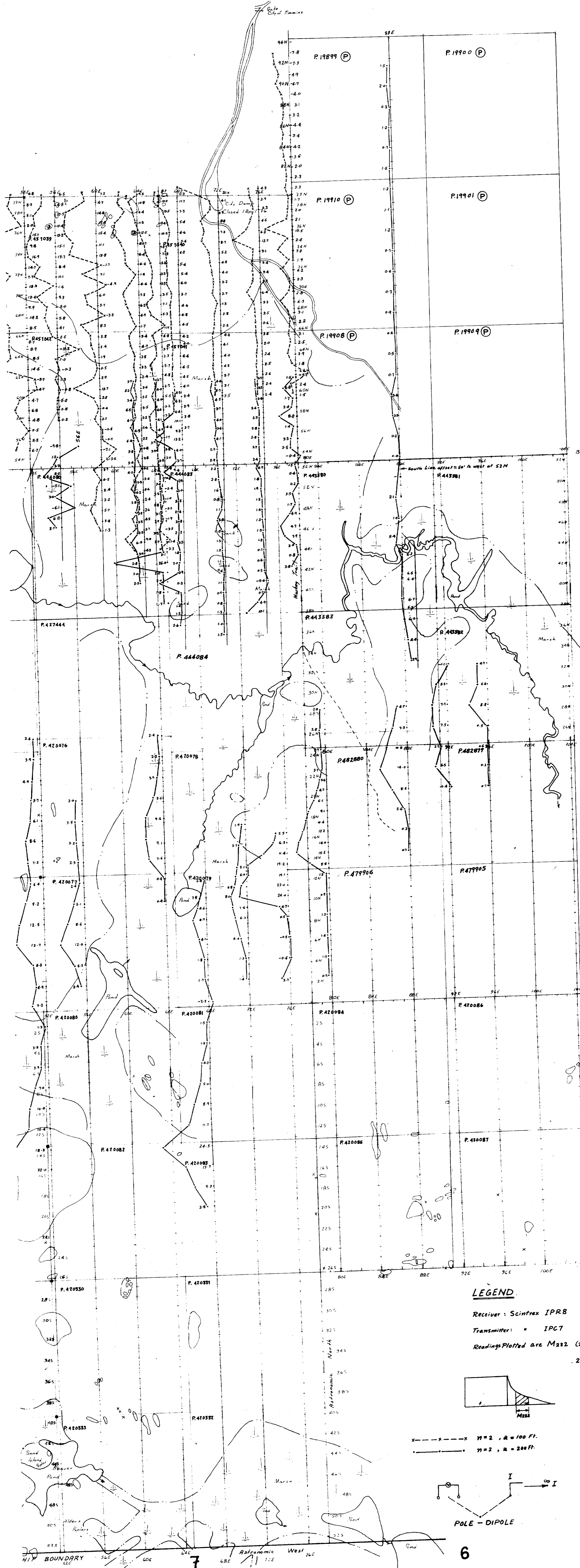












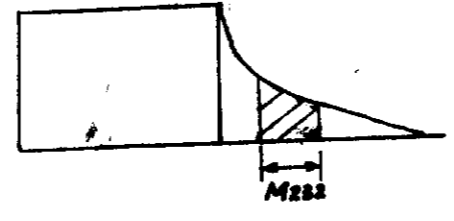
III

II

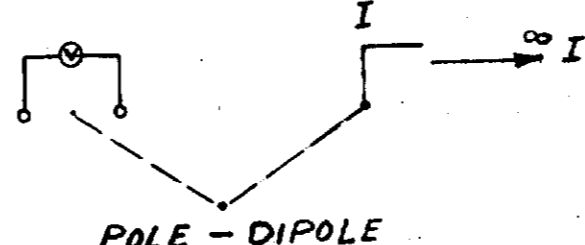
I

**LEGEND.**

Receiver : Scintrex IPR8  
 Transmitter : IPCT  
 Readings Plotted are M232 (2 sec. pulse, 3 time windows, 2nd window)  
 2nd Window = 650 - 1170 ms.



---X---X---X  $\eta = 2, a = 100$  Ft.  
 ---X---X---X  $\eta = 2, a = 200$  Ft.



<p><b>ROSARIO RESOURCES CORP.</b></p> <p>ALLERSTON CLAIM GROUP                  WHITNEY TOWNSHIP, ONTARIO</p>	
<p>PLOTTED FROM LAND SURVEY MAP                  SCALE 1" = 400' DRAWN BY: R.P. BOWEN</p>	
<p><b>I.P. SURVEY</b></p>	
<p>GEOLGY BY: R.P. BOWEN ASSISTED BY: J. WINTERS</p>	
<p>1" = 10 ms. — (Vertical)</p>	

HAW TWP.

6