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GEOLOGICAL REPORT

ON

SEWELL 21

NTS 42-A-~~4~~  
4NW

PROJECT 66

**RECEIVED**

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**MINING LANDS SECTION**

*Sewell h J  
Reeves h J*

Timmins, Ontario

Roberta Bald  
Dave Mullen

Report on Sewell 21  
Antimony-Arsenic-Gold Prospect  
Sewell-Reeves Townships  
N.T.S. 42-A-5  
Project #66

SUMMARY:

The Sewell 21 property is underlain in the western part by northeasterly-trending mafic volcanic rocks, including massive, pillowed and amygdaloidal flows, and coarse-grained, probably intrusive, mafic rocks. Tops face southeast. A northerly-trending fault truncates these units, close to the base line. The area east of the fault is underlain by northwesterly-trending pillowed and massive volcanic flows and coarse-grained, probably intrusive, mafic rocks. Tops face southwest. These units are intruded by felsic granitoid and diabase dikes. The antimony-arsenic mineralization appears to be restricted to a silicified shear zone at least 200 feet (60.9 m) long. Sampling of a carbonated zone in massive volcanic flows, and a visibly mineralized, carbonaceous (graphitic) interflow sedimentary unit, shows only traces of mineralization.

CONCLUSIONS AND RECOMMENDATIONS:

The antimony-arsenic mineralized zone appears to be too restricted to be of further economic interest. The southern electromagnetic conductor (L 24+00N, 10+00E to L16+00N, 8+00E) has not been drilled and cannot be explained by the geology. It would be a possible drill target. This conductor, however, may be truncated by the northerly-trending fault. A VLF survey could be done to trace out the limit of the conductor. If the conductor continues southward, the ground should be staked and mapped.

INTRODUCTION:

During the months of May and June, 1980, a group of thirteen contiguous, unpatented claims in Sewell Township, numbered 500034 to 500036 inclusive, 500592, 501257 to 501260 inclusive 501524 to 501526 inclusive; and 504593 and 504594 in Reeves Township, were mapped at a scale of 1 inch to 200 feet (1:2400) to investigate a known berthierite (antimony) occurrence and electromagnetic anomalies in other areas. A pre-existing grid was re-established with a base line running north-south along the Sewell-Reeves Township line and east-west traverse lines at 400 foot (121.9 m) intervals.

LOCATION, ACCESS AND TOPOGRAPHY:

The claim group straddles the boundary between the southern portion of Sewell and Reeves Townships, approximately 35 miles (56.3 km) southwest of Timmins, Ontario. The grid is accessible by logging roads that branch southward from Highway 101 West.

The topography varies from low-lying swampy areas to higher areas of outcrop and glacial features such as eskers and boulder till. Khomeini Lake lies in the central part of the grid. A large portion of the claims in Sewell Township have been logged over. Exposure in these areas is very good, though often covered with slash.

ACKNOWLEDGEMENTS:

The able assistance of W. Bentkowski during the mapping of this property is gratefully acknowledged.

PREVIOUS WORK:

In 1967, the Townships of Reeves, Sewell, Penhorwood and Kenogaming were mapped by the Ontario Division of Mines (Milne, 1967; Milne, 1972). In 1970, reconnaissance mapping, including the western part of the grid area, was done by the Ontario Division of Mines (Thurston, Siragusa and Sage, 1977). In 1971, Card Lake Copper Mines Ltd. held a group of claims, some of which overlapped the present grid. No geological map was produced but from 1971 to 1974, twenty diamond drill holes were drilled on what is now the Sewell 21 property. Nine of those were shallow holes drilled in the antimony-arsenic showing area (32+00N, 4+00E) (Northern Miner, 1971). Electromagnetic (Horizontal Loop and V.L.F.) and Magnetic surveys were done (Tremblay, 1979). The antimony-arsenic showing was mapped in detail (Mullen, 1978).

PROPERTY GEOLOGY:

The Sewell 21 property is underlain by metamorphosed, mafic volcanic flows and coarse-grained mafic rocks, probably intrusive in nature, which have been intruded by felsic granitoid and northwesterly-trending diabase dikes. The general trend of the volcanic rocks in the western part is northeast, while in the eastern part, the volcanic rocks trend northwest. Although the pillows are stretched, southeast-facing tops in the western part and southwest-facing tops in the eastern part, were observed. The volcanic rocks are foliated parallel to the stratigraphy.

Interbedded greywacke and pyritic carbonaceous argillites crop out in the extreme eastern portion of the property. Overlying these sediments, alternating pillowed volcanic flows, massive volcanic flows and coarse-grained mafic, probably intrusive, rocks occur in the central portion of the property. The pillowed flows are fine-grained and greenish-grey. Individual pillows are stretched. Rare hyaloclastite occurs between pillows. Near the antimony showing, a thin unit, less than 3 feet (90 cm) thick, of broken pillow breccia occurs at the contact between pillowed and massive flows. The massive flows are fine-grained and greenish-grey. They are cross-cut by rare, fine-to medium-grained mafic dikes from less than a foot (30 cm) wide to 10 feet (3 m) wide. The intrusive unit is dark green, medium-to coarse-grained, massive and has a distinctive spotted appearance caused by green chlorite porphyroblasts less than a quarter of an inch (6.4 mm) in diameter.

Contacts between these units are gradational, where exposed. A thin, less than 5 foot (1.5 m) wide, interflow sedimentary unit consists of fine-grained, bedded, locally pyritic and rusty, carbonaceous argillite with local magnetite-rich beds (between 34+00E and 36+00E). This unit appears to be continuous along strike across the grid, but crops out in a few areas only. A large, open fold is traced out by this unit at 38+00N, 35+00E.

The western portion of the property is underlain by alternating massive volcanic flows, pillowed and variolitic pillowed flows and minor coarse-grained, probably intrusive, mafic rock. The massive and pillowed flows and the mafic intrusive rocks are similar to those in the eastern portion of the grid. The variolitic flows are medium-to coarse-grained with up to half an inch (1.3 cm), stretched and locally coalescing varioles. A rusty, carbonated zone, trending slightly east of north, cross cuts the volcanic stratigraphy.

Quartz veins and pods, usually less than one foot (30.5 cm) wide, are ubiquitous in all the units described so far, usually amounting to less than 5% of any outcrop.

The volcanic sequence is cross-cut by white, locally rusty, medium-to coarse-grained, felsic, granitoid dikes.

Two parallel, north-northwesterly trending diabase dikes intrude the volcanic sequence close to the base line. They are about 10 (3 m) to 20 (6.1 m) feet wide and about 30 feet (9.1 m) apart. The dikes are massive, medium-to coarse-grained, dark green to black, magnetic and locally rusty and plagioclase glomeroporphyritic. The volcanics at the margins of these dikes have been baked to a black, fine-grained hard material. The diabase appears to be the youngest unit in the area.

Northerly-trending chlorite schists occur close to the base line, and are probably related to the northerly-trending fault. The fault is clearly traced out by a V.L.F. anomaly (Tremblay, 1979). The stretching of the pillows may be the result of regional metamorphism associated with large granitoid bodies to the north and east of the area.

ECONOMIC GEOLOGY:

The berthierite (antimony)-arsenopyrite mineralization is associated with a shear zone in a pillowed mafic volcanic flow (32+00N, 4+00E). Both the pillows and the shear zone strike about north west. The silicified and locally sericitized zone is about 6 feet (1.8 m) wide and 200 feet (60.9 m) long. Detailed descriptions and assays are given by D. Mullen (1978) and R. Sage (Thurston, Siragusa and Sage, 1977, P. 234). The berthierite mineralization appears to be in a localized zone since it cannot be traced along strike.

The carbonated zone in the mafic volcanic rocks, from the western portion of the property, (from 54 + 00N, 2 + 00W to 28 + 00N, 12 + 00W), appears to be the southern extension of a gold-bearing zone on the Lamport-Lumbers property to the north (Milne, 1968, p. 102). The carbonated zone locally contains minor disseminated pyrite and was once observed being cut by narrow black quartz veins. Grab samples from this unit are disappointing since they show traces of mineralization.

The graphitic argillite interflow unit is generally pyritic but contains sphalerite, chalcopyrite and galena in one trenched area (48+60N, 36+00E). Only traces of gold, copper and lead mineralization, and minor zinc mineralization were detected from sampling.

<u>SAMPLE #</u>	<u>LOCATION</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Ni</u>	<u>Ag</u>	<u>Au</u>
SEW-1	56+20N, 0+40W	102	ND	102	75	0.3	10
SEW-2	55+60N, 0+20W	125	ND	188	96	0.1	5
SEW-3	56+00N, 2+00W	17	ND	78	68	0.1	5
SEW-4	55+00N, 5+00W	89	7	188	105	0.2	L5
SEW-5	52+00N, 4+40W	6	ND	138	27	0.1	50
SEW-6	36+00N, 10+00W	31	ND	152	34	0.1	5
SEW-7	28+00N, 12+00W	4	ND	46	14	0.1	5
SEW-8	28+00N, 12+00W	22	ND	63	35	0.1	10
SEW-9	48+60N, 36+00E	380	74	4000	66	0.4	30
SEW-10	48+60N, 36+00E	103	100	285	76	1.9	55
SEW-11	48+60N, 36+00E	94	50	315	18	0.2	35

NOTE: SEW-11 is a chip sample over 3 feet (91 cm). All others are grab samples. Gold values in ppb. All other values in ppm. ND means not detected. L means less than.

Sample SEW-1 and SEW-2: rusty chlorite schist

Samples SEW-3, SEW-5, SEW-6 and SEW-8: carbonated zone in mafic volcanic flow

Samples SEW-4: rusty, sheared mafic volcanic flow

Sample SEW-9, SEW-10 and SEW-11: pyritic, carbonaceous (graphite) interflow sediment, from old pit.

Sample SEW-7: quartz vein from carbonated zone in mafic volcanic flow.

GEOPHYSICAL ANOMALIES:

The geophysical survey (Tremblay, 1979) shows the eastern diabase dike dividing a northerly-trending electromagnetic conductor. This conductor is the strongest one on the property and its two segments occur from L42 +00N, 14 + 00E to L33 + 00N, 13 + 00E (the northern conductor) and L24 +00N, 10 +00E to L16 + 00N, 8 + 00E (the southern conductor). A few outcrops of pillowed volcanic flows with minor (less than 2%), disseminated pyrite occur in the northern conductor area. No bedrock crops out in the southern conductor area. Card Lake Copper Mines Ltd. drilled two diamond drill holes (B-1, B-2) through the northern conductor, which is associated with a strong magnetic anomaly. The location of the holes were marked on the map from assessment data, since their location could not be found in the field. The drill logs for these holes show about 16 feet (4.8 m) of from 2 to 50% total sulphides, including pyrrhotite, pyrite and minor chalcopyrite. The southern conductor, which shows low associated magnetic values, has not been drilled, and cannot be explained by the geology. Its full extent southward is unknown.

Roberta Bald

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Dave Mullen

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September, 1980

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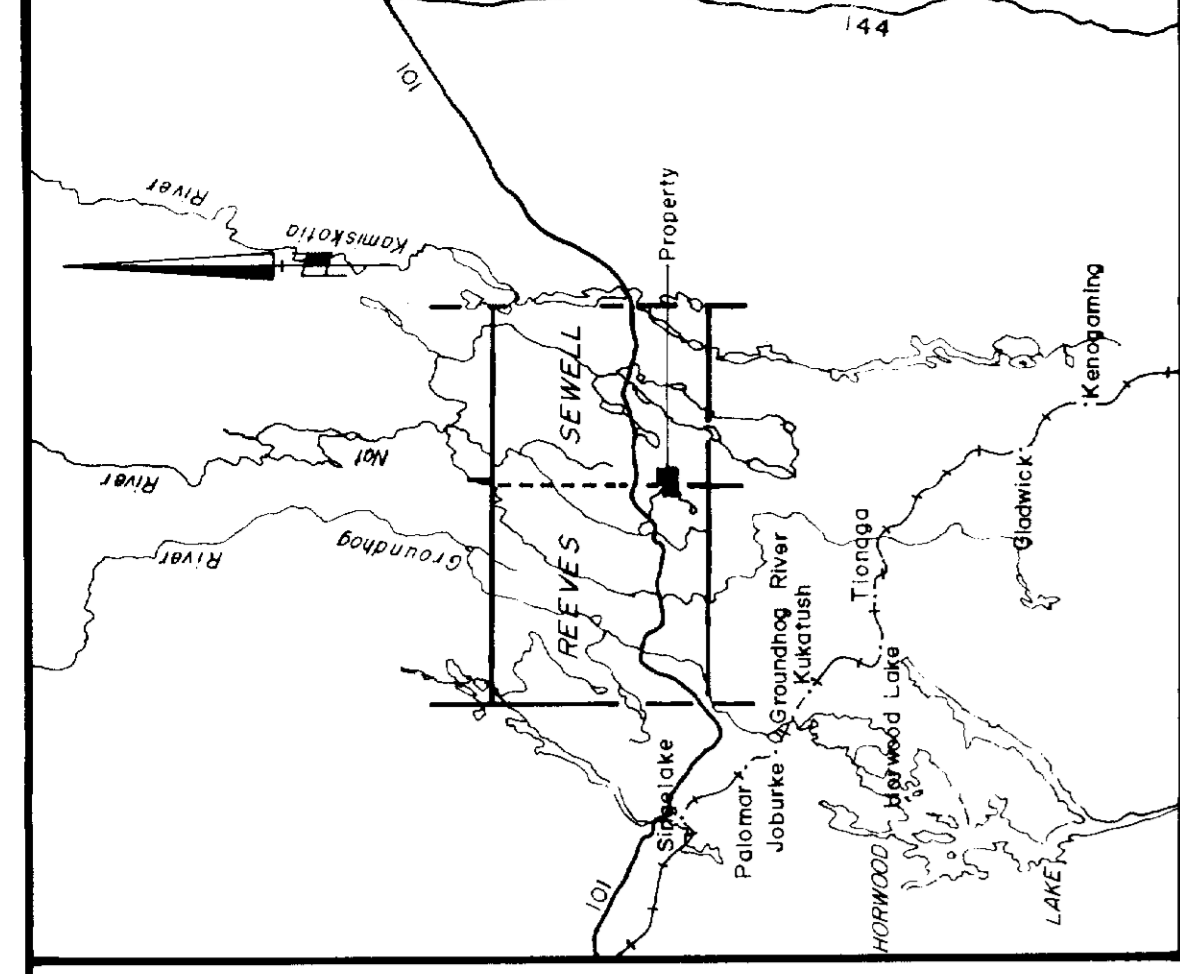


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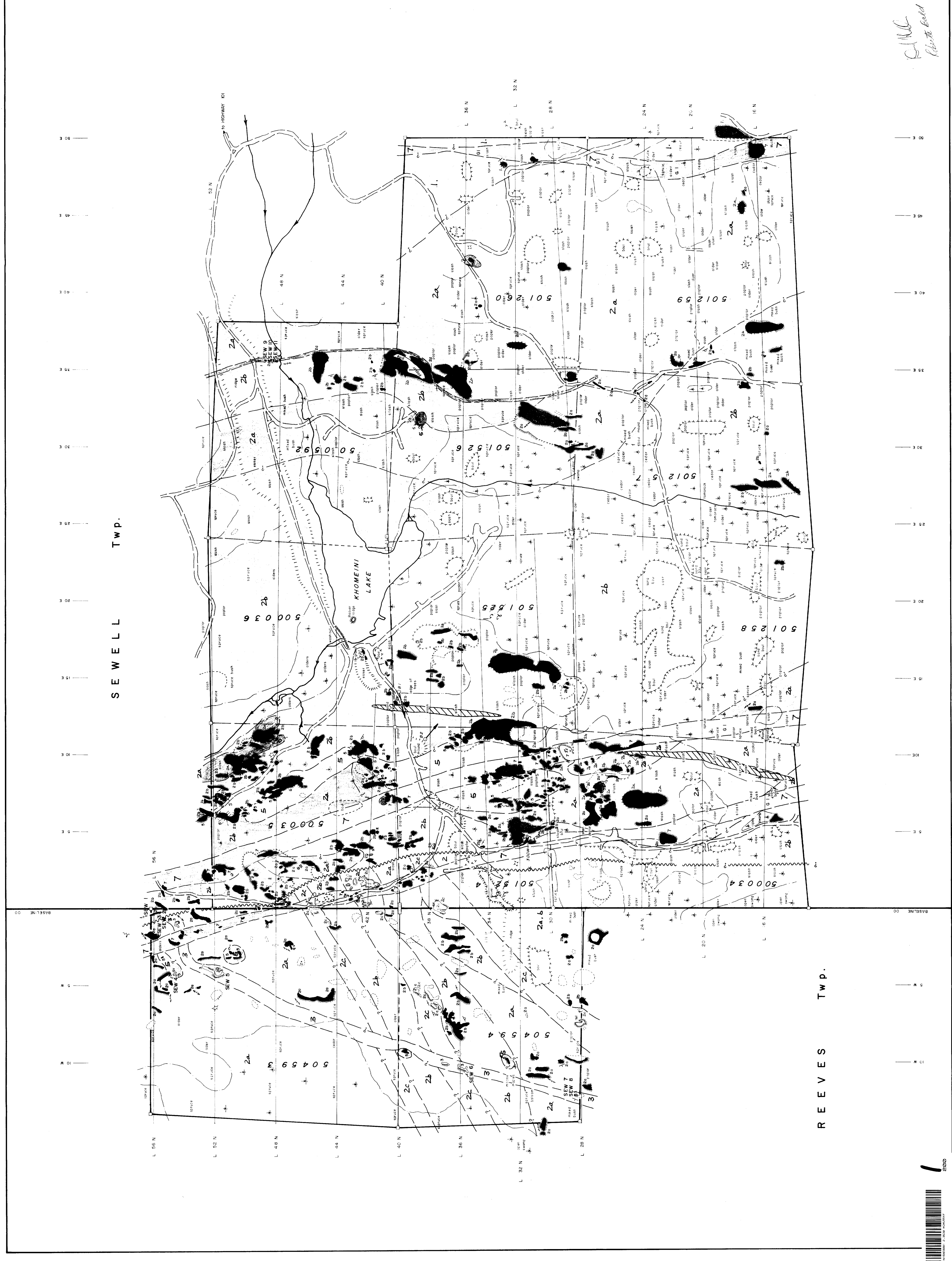
SEWELL TWP.

REEVES TWP.



LEGEND

- 7 OIBASE DIKES
- 6 GRANITOID, FELSIC DIKES
- 5 COARSE-GRAINED, PROBABLY INTRUSIVE, MAFIC ROCKS
- 4 MAFIC DIKES
- 3 CARBONATED ZONE
- 2a MASSIVE MAFIC VOLCANIC FLOWS, CHLORITE SCHEDT
- 2b PILLOWED MAFIC VOLCANIC FLOWS
- 2c VULCANIC PILLOWED, MAFIC VOLCANIC FLOWS
- 2d CARBONACEOUS INTERFLOW SEDIMENT (GRAPHIC)
- 1 SEDIMENTS: GREYWACHE & SHALE
- SULPHIDE ZONES, QUARTZ VEINS
- G1 Geophysical interpretation
- SEW 1 Assayed sample numbers
- Fault
- Electromagnetic conductivity



*Handwritten signature:* C. M. ...  
*Handwritten name:* Robert E. Gold

TEXASGULF I n c .  
 SEWELL CLAIMS  
 SEWELL Twp

**GEOLOGY**

SCALE 1" = 2000 FEET

City of Survey, Map, June 1980, Drawn by D. E. Lott  
 Survey of Moore, Bad, Bismarck, NTS - 52 - 5, 7, 5

