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DOMINION GULF CO.
GEOLOGY ASSESSMENT REPORT

SOTHMAN GROUP I

SOTHMAN TWP.

SUDBURY MINING DIVISION

G. E. PARSONS

January 11, 1952

1. INTRODUCTION

This report covers 47 claims located in west central Sothman Twp. The numbers of the claims are S55797 - 18 incl., S56208 - 56219 incl., 56431 - 56441 incl., S56634 and S57397. The claims were staked in 1950 and 1951. They adjoin south of claims held by Wrigley Syndicate, Upper Canada Mines, Wright-Bargreaves Mines and D. Sirola.

The group is 30 miles due south of the town of Timmins and is accessible via a private lumber road from same. The last six miles of this road is at present only a winter road, however, the remainder is a good truck road.

The group has been mapped and prospected in considerable detail during the summers of 1950 and 1951. The following graduate geologists took part in various parts or phases of this work:- J. Allen, K. Baker and K. Pountney. This report is a compilation of reports prepared by these geologists with added observations by the writer. The mapping was done from picket lines cut every 400 ft. with sufficient transit survey control to give a reasonably accurate base map. Detail outline of lakes was obtained from aerial photographs.

All the claims south of a line between the north ends of Sinclair and Marjorie lakes were burnt over in the Gogama forest fire in late spring of 1951.

There are presently no published government maps that give any clues to the structure or reliable information concerning the geology of Sothman Twp. in which the claims are located.

2. SUMMARY

The claim group appears to be underlain by acid and basic volcanics of Keewatin age. The latter being the youngest members of the series.

These are intruded by gabbro and peridotite intrusives in the form of dike and stock-like masses.

The only indications of structure in the group is the northwest trend of the lavas in the southeast part of the group. Here pillow top determinations indicate these lavas face southwest. Another possible structural trend striking northeast is indicated in the topography although confirmation is not present in the exposed rock.

The only interesting mineralization located was low-nickel bearing pyrrhotite on the edge of a peridotite dike in claim S-55804.

3. TOPOGRAPHY

Large parts of the area is covered with glacial sand drift. In the north part of the group and extending the full length of same, rugged glacial hills are present. Rock exposures are not plentiful except in local areas. Swamps are locally present but not extensive.

Exceptionally good stands of red and white pine exist, although those on the southern part of the property were killed in the Gogama fire.

Topography cont'd.

Although glacial drift no doubt has obliterated most of the structure that might be reflected in the topography, two trends do appear that may indicate structure namely:

- (1) Northwest trend of part of Sothman lake, of northeast and southeast shores of Marjorie lake, of Bern lake, and northwest bay of Net lake.
- (2) Northeast trend of Sinclair lake and part northwest shores of Marjorie and Sothman lakes.

4. GEOLOGY

Cobalt - Conglomerate and greywacke

Algoman - Diorite

Haileyburian - Peridotite
Pyroxenite
Gabbro

Keewatin - Acid Volcanics - rhyolites and dacites
Basic Volcanics - Andesites

(a) Description of Rock Types

Andesites

A band of andesitic lavas is exposed in outcrop areas for a width of 400 ft. and extending in a northwest direction across claim 556441 and 556438 in the southeast corner of the group. Good pillows are exposed on the northeast side of the band which indicate tops to the southwest. The strike conforms with the trend of the outcrop area, namely northwest. The southwest side of the band is medium grained. No evidence was noted to indicate whether this medium grained phase is the centre of a flow or the base of another flow. The lavas are generally a dark greyish green colour.

Further north two outcrops in claim S-56432 are mapped as andesite, however, similarity of medium textured andesite to medium grained gabbro makes these type designations uncertain.

Acid Volcanics

This group of rocks includes a group of light coloured rocks varying from good pillowed lavas to hard, dense, siliceous rocks and also acid breccias. Essentially they consist of a high percentage of soda plagioclase, some of which at least is likely an alteration of orthoclase hence the term rhyolite. Quartz is present although generally not plentiful both as small eyes and as amygdule fillings.

Northeast of the andesite band just described in the southeast part of the claim group is a rather distinctive group of pillowed dacites. They are very similar to rocks exposed in the southeast part of the twp. They are not recognized in exposures in any other parts of this claim group. They are ty-

Acid Volcanics cont'd

pically light grey rocks with quartz-filled amygdules up to an inch in size. They locally carry pillows, the strike and attitude of same conforming to the andesites lying to the southwest.

In the southwest corner of claim S55812 is a group of outcrops mapped as rhyo-dacites. The rock is mostly gossan covered due to the weathering of disseminated pyrrhotite and pyrite. It is a dense, grey, hard, siliceous rock with some small white albite crystals.

In the northeast part of the claim group, especially in claims S55807 and 08 is exposed considerable amount of rock mapped as dacite. This is an extremely structureless rock, hard, massive and light grey in colour. Locally a slight porphyritic texture is evident due to the development of albite crystals. Some fine quartz eyes are locally present.

Gabbro

Rather numerous exposures of gabbro occur in the south half of the group. Three types have been distinguished in the mapping, the distinction mostly based on texture. It is very doubtful if they represent three different intrusions, however, the type mapped as porphyritic gabbro may be such.

The porphyritic gabbro is made distinctive by the presence of equidimensional phenocrysts of pale green feldspars up to 1 inch but averaging about 1/4 inch in size. The borders of the crystals are generally corroded. They are set in a rather fine-grained matrix of altered pyroxenes and feldspars. This type occurs mostly as a band southwest of the andesite in claims S-56441, S-56439, S-56438, S-56437 and S-56436.

The remainder of the gabbro has mostly a fine to medium texture which locally has zones or segregations of a coarse pegmatitic type. In this latter type the pyroxenes quite often weather as brown rusty spots on surface giving the outcrops a distinctive appearance. The rock generally has a fresh and massive appearance.

An outcrop exposed in the northeast corner of claims S-55813 is a type exhibiting a considerable amount of the coarse pegmatitic phase.

In the northeast part of the group are some hills of gabbro which are uniform medium grained type and quite massive.

On the shore of Sinclair lake are two outcrops mapped as diorite. They resemble more in appearance similar types in the area that are related to the granite and syenite intrusions rather than the gabbro - peridotite family. Actually these two exposures are of small extent and now practically covered by water, by the rising of the water level in Sinclair lake.

Peridotites

Except for small exposures in claims S-56439, S-56435 and S-56431 the bulk of this type is found in the northwest part of the group. Generally this rock is olivine-rich and may more rightly be called dunite. Locally a poikilitic tex-

Peridotites cont'd

ture is well developed. Pyroxenite is exposed as a border phase of this intrusive in claims S-56439 and S-56431.

The peridotites are highly serpentized and locally broken up and sheared. They are dark green in colour with a dark grey weathered surface. They are quite magnetic and can be readily followed by dip needle or magnetometer.

Cobalt Conglomerate and Greywacke

Five outcrops of Cobalt sediments were found in the group.

The two outcrops in the south part of the group in claim S-56439 are coarse boulder conglomerate with a wide range of rock types represented.

One outcrop in the west central part of the group in claim S-57397 is a pebble conglomerate with a similar wide range of rock types present.

In the northwest part of the group in claim S-56211 are two small outcrops of greywacke.

These are considered to be shallow remnants of sediments of Cobalt age that at one time covered the area.

(b) Relation and Relative Age of Rock Types

The pillow top determinations in the southeast part of the group indicate that the andesites are younger than the dacites.

The gabbro was found cutting dacite in claim S-55813 and S-55808. In the latter claim it also appears to be a small isolated boss. From this evidence coupled with a distribution scattered throughout both dacite and andesite this rock type has been considered as a true intrusive.

One small outcrop of pyroxene in claim S-56439 has a sharp contact with porphyritic gabbro. The pyroxenite is considered a border phase of a dike-like mass of peridotite cutting the gabbro. Similar intrusive-like contacts in claims S-56431 and S-55804, leads us to believe the peridotites are a latter intrusion than the gabbros.

(c) Structure

From the exposed rocks, the only clue to the structure is the northwest trend of the lavas in the southeast part of the group. Here pillow lavas also indicate the formations to face southwest. The distribution of the gabbro outcrops in the same area also exhibits this trend. As noted under topography this trend is also apparently reflected in same.

There is reason to believe that the other topographical trend previously noted is also a result of structure. However, the geology of the rock exposures to which this report is confined gives little if any clues to substantiate this

Structure cont'd.

feature.

Minor shears have been noted and are marked on the map.

(d) Mineralization

Disseminated pyrrhotite and / or pyrite is locally found throughout the claim group. The best developed dissemination is found in the group of outcrops in claim S-55812. No values in base or precious metals were obtained here.

A small concentration of relatively massive pyrrhotite was exposed on the north side of a peridotite dike in claim S-55804 (Marked as nickel showing on the map). The best value obtained here was 0.66% nickel.

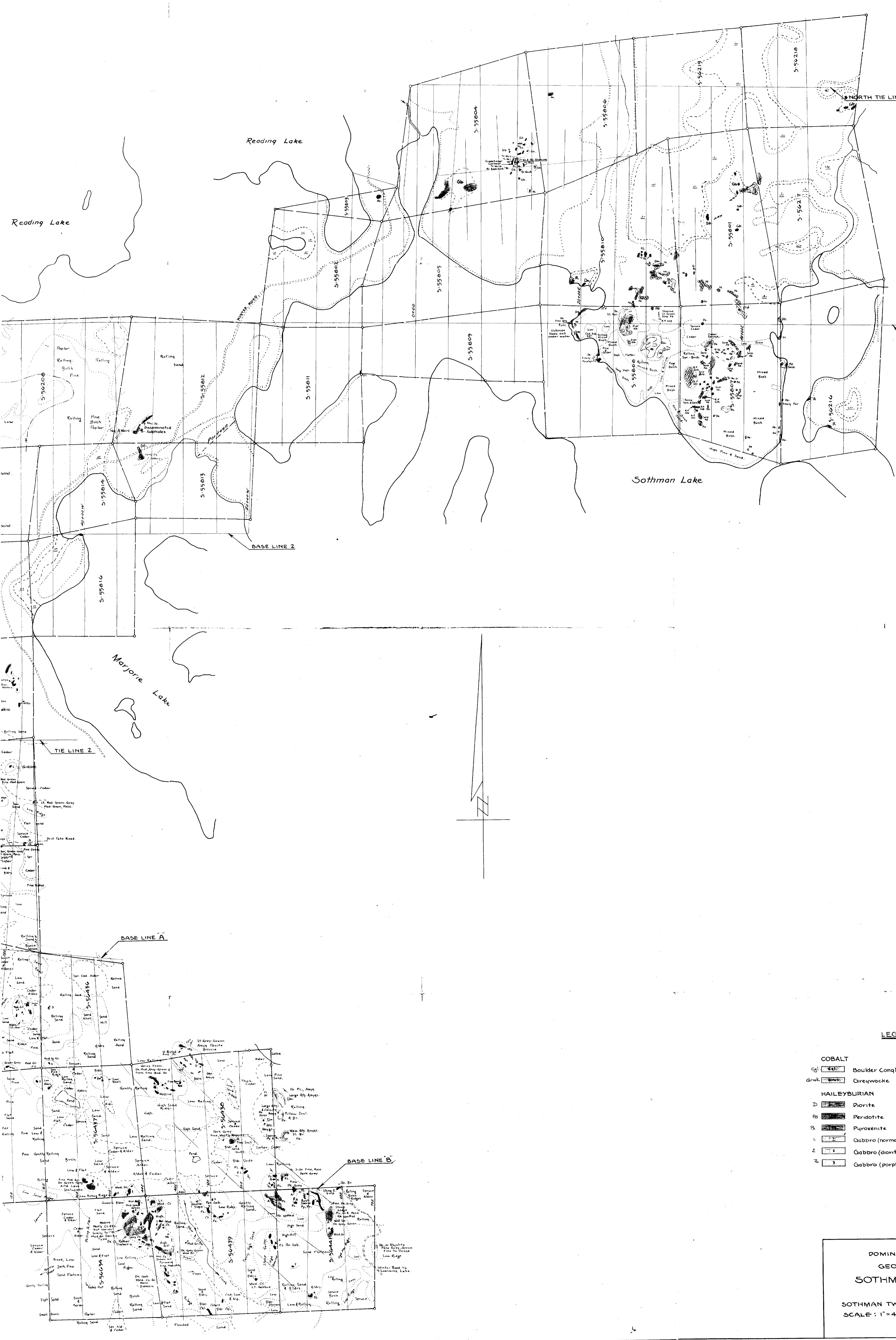
The peridotites generally carry 1/4 % nickel which is considered to be contained in the silicate form.

A few stringers of chrysotile asbestos occurs in the peridotite in claim S-55807.

G. E. Parsons

G. E. PARSONS

/dc



LEGEND

COBALT		KEEWATIN	
Ca	Boulder Conglomerate	A	Andesite
Grw	Greywacke	D	Diorite
HAILEYBURIAN		Pd	Peridotite
D	Diorite	Px	Pyroxenite
Pd	Peridotite	1	Gabbro (normal)
Px	Pyroxenite	2	Gabbro (diaritic)
1	Gabbro (normal)	3	Gabbro (porphyritic)
2	Gabbro (diaritic)		
3	Gabbro (porphyritic)		
			Serpentinization
			Sulphide mineralization

DOMINION GULF COMPANY
GEOLOGICAL PLAN
SOTHMAN TWP. CLAIMS
GROUP I
 SOTHMAN TWP. - PROVINCE OF ONTARIO.
 SCALE: 1"=400' DEC. 3, 1951.