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MINE CENTRE PROJECT
THE HANNA MINING COMPANY
REPORT ON
DIAMOND DRILLING

by

NELSON HOGG, DISTRICT GEOLOGIST

FEBRUARY 10, 1976

THE HANNA MINING COMPANY

MINE CENTRE PROJECT

REPORT ON DIAMOND DRILLING

INTRODUCTION:

During 1975 The Hanna Mining Company acquired 149 claims by staking and 6 patented claims by option agreement in the Mine Centre area, Kenora Mining Division, Ontario. A program of geological mapping and geophysical work was carried out during the summer of 1975 and was followed by diamond drilling in January, 1976. Separate reports have been written describing the geological, magnetic and electromagnetic surveys. This report covers the results of diamond drilling. A map showing the location of the property, a map showing the claim group, and a geological map showing the location of three drill holes drilled by Hanna are included with this report. In a pocket at the back of the report are two maps at 1 inch = 200 feet showing the drill hole location in detail.

LOCATION & ACCESS:

The property crosses Ontario Highway No. 11 about $3\frac{1}{2}$ miles east of Mine Centre, or 43 miles east of Fort Frances. It extends 3 miles south-west of the highway, almost to Shoal Lake, and to the east it occupies the ground lying between Highway 11 and the Little Turtle River for a distance of 4 miles.

The west end is reached by old logging roads branching east from the Shoal Lake Road. The eastern portion is reached from Highway 11, from the road to Bowes Camp, and from the CNR, which traverses the central part of the claims.

Three power lines, Highway 11, and the C.N. Railway cross the property in an east-west direction.

HISTORY OF THE MINE CENTRE AREA:

Prospecting for gold in the Mine Centre area dates back to 1893 when prospectors entered the area from Minnesota. Quite a number of patented claims that are still in good standing were patented before 1900. In 1934, T. L. Tanton^{1,2} mapped the area for the Geological Survey of Canada, and at that time he reported the existence of more than 60 gold-bearing veins in the quartz porphyry mass south-east of Bad Vermillion Lake, plus at least 20 gold-bearing veins in the quartz porphyry lying close to the north shore of the same lake.

The titaniferous magnetite deposits west of Bad Vermillion Lake were also investigated by prospectors in the early 1900's and are described by A. C. Lawson⁷ in 1913. In 1957 some of these occurrences were drilled by Stratmat Ltd.

Copper has also been found in the gabbro and volcanic rocks of the area. In 1916 the Port Arthur Copper Company worked on a copper deposit located 3 miles west of Mine Centre, on claim HP 187. Another copper occurrence in gabbro was developed by International Copper Company on claim FF 388 located 1 mile south-east of Mine Centre.

OWNERSHIP:

The 149 unpatented claims are held by The Hanna Mining Company, Room 805, 69 Yonge Street, Toronto. These claims are numbered as follows:

K-419522-531	- 10
K-413966-972	- 7
K-414984-415000	- 17
K-419501-03	- 3
K-419505-521	- 17
K-412629-662	- 34
K-434751-789	- 39
K-434791-795	- 5
K-434797-805	- 9
K-412716-723	- 8
Total	<u>-149</u>

Five patented claims, K298, K300, K301, P683 and K304 are held under an option agreement with G. L. Pidgeon of Wabigoon, Ontario.

The Hanna Mining Company is responsible for submitting assessment work on the unpatented claims.

One unpatented claim (K-416612), and one patented claim (K388) located within the Hanna claim block, are not owned by The Hanna Mining Company.

GEOLOGY:

The regional geology and the detailed geology of the property are treated in a separate report filed with the Ministry of Natural Resources. Briefly, the property is underlain by Archean sedimentary and volcanic rocks trending in a north-easterly to easterly direction. Felsic volcanics including rhyolite are the predominant rock type, but they are interbedded with lavas and tuffs of intermediate to basic composition. Two lenticular sill-like bodies of quartz gabbro intrude the volcanics.

The project was undertaken because there are a number of exposures of zinc mineralization in rhyolitic rocks, and because rhyolite and associated felsic volcanic rocks constitute a large percentage of the rocks of the area. In particular G. L. Pidgeon has exposed sphalerite with minor chalcopyrite and galena in trenches in several places in patented claims P683 and K301, over a strike length of 1½ miles.

The sphalerite is generally in disseminated blebs and irregular stringers in a brecciated rhyolite, and is accompanied by pyrite stringers and disseminated grains. The mineralization is too lean to be of economic importance, but may be an indication of richer deposits in the general area.

GEOPHYSICS:

The property was covered with a magnetic survey, a Crone C.E.M. survey and in part by an Apex Parametrics Max-Min 11 electromagnetic survey. Electromagnetic readings are complicated by three power lines and a railroad which run parallel to each other through the property in an east-west direction.

The Crone C.E.M. survey did not give meaningful results closer than about 600 feet from the power lines, but was used initially to survey the entire property. More than a dozen conductors were identified by this method, using a coil spacing of 300 feet.

Later the areas of power line interference, and the areas of C.E.M. anomalies were covered using the Max-Min 11 method with a coil spacing of 400 feet. None of the C.E.M. anomalies were confirmed.

In the end, a decision was made to drill some of the best C.E.M. anomalies recommended by Duncan Crone, and to test the zone under the best surface exposures of zinc mineralization.

DIAMOND DRILLING:

Four drill holes were originally laid out on the basis of Crone C.E.M. anomalies, but only three were drilled. Drilling was done by Norwescon Development Limited of Port Frances. The first hole was started on January 8, 1976, and the third hole was completed on January 28, 1976. A total of 1649 feet was drilled in the three holes; statistical information is tabulated below.

Hole No.	Location			Bearing	Inclination	Length Total	Length Overburden
	Claim No.	Picket Line	Station				
76-1	419524	100+00E	12+508	N35°W	-50°	802'	109'
76-2	412719	286+00E	18+00N	South	-50°	427'	43'
76-3	412642	228+00E	42+00N	South	-52°	420'	193'

Overburden is surprisingly deep for holes 1 and 3, both of which are located in spruce swamp with no rock outcrop nearby. In both cases overburden consisted mainly of sand and clay, with only a few boulders on the bedrock surface.

Hole No. 3 flattened to -4° at a depth of 600 feet. Two attempts to obtain an acid test at 800 feet were unsuccessful, but foliation indicates that the inclination remained constant from 600 feet to the end of the hole.

RESULTS:

Detailed drill records are appended to this report, and cross-sections showing the geology and assay results are included.

Hole Number 1 intersected low grade, disseminated sphalerite mineralization, accompanied by pyrite, at several places in siliceous rhyolite. It failed to explain a C.E.M. anomaly in the spruce swamp near the collar of the hole except on the basis of overburden effects. Weak sulphide mineralization from 326 to 351 may correlate with a C.E.M. anomaly, but if so the mineralization does not conform to the stratigraphy.

Hole Number 2 collared in interbedded felsic and intermediate volcanic rocks with one narrow gabbroic sill, but from 83 feet the hole was in hard siliceous rhyolite. From 324 to 326 the rhyolite contains about 5% pyrite in very thin seams and disseminated grains, and from 326 to 346 it carries about 2% sulphides. This weak mineralization correlates reasonably well with the C.E.M. conductor.

Hole Number 3 was in overburden to 193 feet at an angle of 52°, giving a vertical depth of 152 feet. This depth is approximately the limit to which the C.E.M. unit would penetrate with a coil separation of 300 feet. From 193 feet to 420 feet the hole intersected intermediate tuffs and lavas with no sulphide mineralization or other conductive material. The C.E.M. anomaly can only be explained as an overburden effect.

No significant base metal sulphide mineralization was encountered. In Hole Number 1, sphalerite in small disseminations was present in several places in the felsic volcanic rocks. It is generally accompanied by very minor amounts of chalcopyrite and galena, and 5 to 15% pyrite. Mineralized sections were split and assayed but the highest value returned was .8% zinc over a core length of 2.5 feet. The felsic volcanic rock in some places is speckled with an earthy, bluish-gray mineral thought to be leucoxene. Three samples were assayed for titanium to check this unusual association, and all three assayed more than 0.7% Ti.

Assaying was done by Swastika Laboratory. Complete results are given in the accompanying drill logs and cross sections.

Nelson Hogg
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Nelson Hogg
District Geologist
The Hanna Mining Company
February 10, 1976



Swastika, Ont., POK 1T0, Jan. 27, 1976 19

SWASTIKA LABORATORIES LIMITED

Certificate of Analysis

No. 45945

We have assayed fifteen samples of split core

Received Jan. 23, 1976 and submitted by The Hanna Mining Company

Attention: Nelson Hegg, Esq. with the following results:

76-1 ?

Sample No.	Gold Oss/ton	Silver Oss/ton	Copper %	Zinc %
2335	0.002	Trace		0.09
2336	Nil	0.01		0.15
2337	0.002	Nil		0.08
2338	0.01	0.025		0.19
2339	Nil	0.04		0.19
2340	Nil	0.02	0.06	0.83 ✓
2341	Nil	Nil		0.19
2342	0.002	0.19	0.04	0.70 ✓
2343	Nil	Nil	0.03	0.41 ✓
2344	0.005	0.01	0.03	0.46 ✓
2345	Nil	Nil	0.01	0.39 ✓
2346	Nil	Nil	None	0.08
2347	Nil	Nil	None	0.08
2348	Nil	0.01	None	0.19
2349	Nil	Nil	0.01	0.16

SWASTIKA LABORATORIES LIMITED,

per: *[Signature]*



Swastika, Ont., POK 1T0, Jan. 30, 1976 19

SWASTIKA LABORATORIES LIMITED

Certificate of Analysis

No. 45945-A

We have assayed _____ samples of _____

Received _____ and submitted by **The Hanna Mining Company**

Attention: **Nelson, Hogg, Esq.**

with the following results:

Sample No.	Titanium %
2335	0.75
2336	0.72
2337	0.73

SWASTIKA LABORATORIES LIMITED,

per: *D. C. [Signature]*

Swastika, Ont., POK 1T0, Feb. 4, 1976 19.....

SWASTIKA LABORATORIES LIMITED

Certificate of Analysis

No. 45959 MINE CENTRE

We have assayed two samples of split core

Received Feb. 3, 1976 and submitted by The Hanna Mining Company

with the following results:

Sample No.	Gold Oza/ton	Silver Oza/ton	Copper %	Zinc %
<i>O.H. #</i> 76-2 2350	Nil	0.03	None	0.04
2438	Nil	Trace	None	0.02

SWASTIKA LABORATORIES LIMITED,

per: *[Signature]*