

REPORT ON THE ELECTROMAGNETIC SURVEY

FOR

PACIFIC NICKEL MINES, YALE DISTRICT, B.C.

COPY

EUGENE E. BERGMAN  
1574 ASBURY AVENUE  
EVANSTON, ILLINOIS

Fairgrounds Motel,  
Bakersfield, California  
April 21, 1951

*This is the original  
magnetic survey map*  
*B*

Mr. C. Riley,  
Chief Geologist  
Pioneer Gold Mines  
Vancouver, B.C.

Dear Mr. Riley:

Enclosed are the geological map of the B.C. Nickel area, and a plan of the magnetic survey grid. In answer to your two questions:-

1. All of the norrblande arça below the level of the No. 1 adit was not surveyed. It is probable that the area north-east of the Pioneer claim was not surveyed with the magnetometer.

2. A grid of 100' squares was established by a surveying party. This grid was tied-in to the underground survey. Observations were made at each 100' station. When an anomaly was found at one of the 100' stations, the surveying party established 25' squares. Observations then were made not only at each 25' station but also at 12½' intervals. All anomalies shown on the plan of anomalies were detailed by 12½' stations.

The No. 1. anomaly of the Summit group had diorite at the surface throughout its areal extent. This No. 1 anomaly was caused by magnetite in the diorite.

Have you contacted Mr. Frank Forward, who was the assayer at the B.C. Nickel during the time I made the magnetic survey? Mr. Forward left the B.C. Nickel to teach at the University of British Columbia in the Department of Mines. Mr. Forward is a very capable person, and was well informed of the results of the magnetic survey.

Yours very truly,

"Eugene E. Bergman"

REPORT ON THE ELECTROMAGNETIC SURVEY

FOR

PACIFIC NICKEL MINES, YALE DISTRICT, B. C.

At the request of Mr. C. Riley, Consulting Geologist, an electromagnetic survey was conducted for the Pacific Nickel Mines Ltd., on their property in the Yale District of British Columbia. This property can be reached by a 7 mile road up Stulkawit Creek from Choate on the Canadian Pacific Railway. Choate is 6 miles up the Fraser River from Hope and 95 miles by rail from Vancouver.

Our survey covered approximately 138 acres. From five transmitter coil positions a total of 279 receiver coil readings were taken at 100 ft. intervals from 241 stations, previously established along cross lines 200 ft. apart. Two field technicians required eight days, from September 11th to September 18th, 1951 to complete this work.

Most of the dip angles, as shown on the accompanying map, are zero degrees. A few low angles are recorded. These are of no significance and are probably due to small errors of orientation. Consequently the results of this survey can be considered as negative.

MCPHAR GEOPHYSICS LIMITED

*G. H. Ward*

Dated:- October 4, 1951

G. H. Ward, Geophysicist.

Virginia Motor Lodge,  
Tulare, California  
March 21, 1951

Mr. C. Riley  
Pioneer Gold Mines,  
Vancouver, B.C

Dear Mr. Riley:

Enclosed is a brief memo of the results of the testing of the magnetic anomalies found by the magnetometer survey of the B.C. Nickel property. I have had to depend entirely on my memory to supply the facts for this memo. I believe however that the information is essentially correct. Such facts as the number of diamond drill holes, or the number of anomalies are unknown to me.

The sporadic occurrence of magnetite in the country rock has remained clearly in my mind, because it marked the beginning of an improvement in the application of the magnetic method. The large anomalies to the north were all caused by magnetite in the diorite.

It is my belief that some of the magnetic anomalies were not thoroughly explored. When I return to Evanston, I will search for my B.C. Nickel records. Possibly I could indicate which anomalies have been thoroughly tested, and which anomalies have not been thoroughly tested.

If I had a map showing the position of the anomalies, I believe it would be helpful.

Very truly yours,

"Eugene E. Bergman"

Virginia Motor Lodge,  
Tulare, California  
March 21, 1951

Mr. C. Riley  
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Very truly yours,

"Eugene E. Ferguson"

Tulare, California  
March 21, 1951.

MEMORANDUM: for Mr. C. Wiley

SUBJECT: Results of the Magnetometer Survey of the B.C. Nickel Property.

The magnetic anomalies discovered by the magnetometer survey in 1934 were explored as follows:

1. The magnetic anomaly found by the trial survey in June 1934 was explored by removing the overburden. Two percent nickel ore was found.
2. The magnetic survey work was resumed in July 1934. The first two magnetic anomalies that were found, were explored by trenching through the overburden. Two nickel ore bodies were discovered. These anomalies were in the area between the main camp and the Pride of Emory ore body. It was incorrectly assumed, based on the three nickel ore bodies discovered by the magnetometer, that every magnetic anomaly found on the B.C. Nickel property would be caused by the presence of Nickel ore. No more trenching was done during 1934.
3. A crosscut was driven northerly from the main tunnel, during the winter of 1934-35. To explore the area under the large anomalies found to the north. Diorite is exposed throughout the areal extent of these large anomalies. No nickel ore was found by the crosscut, or by the diamond drill holes from the crosscut.
4. A week of underground magnetic surveying was done in February 1935. This underground surveying was limited to those areas, in which all of the iron equipment could be removed. An anomaly was found on the north side of the main tunnel. A diamond drill hole placed between two regular drill stations found a small nickel ore body.
5. During the summer of 1935, most of the remaining magnetic anomalies were explored at the surface by trenching, or by a few diamond drill holes. Two or three anomalies were found to be caused by nickel ore of less than one percent. The other anomalies that were trenched, were found to be caused by magnetite. Sporadic occurrences of magnetite were found in the diorite. It was magnetite in the diorite that caused the large magnetic anomalies to the north.
6. A diamond drill was used to explore a magnetic anomaly, midway between the main camp and the Pride of Emory ore body. The magnetic characteristics of this anomaly compared favorably with the anomaly of the Pride of Emory. This favorable comparison, together with the areal extent of the anomaly, made it attractive. The results of a few holes were negative.

It is possible that anomalies considered too weak to be significant might be caused by nickel ore bodies at depth. The small ore body found by the underground survey, was not expressed by a strong anomaly on the surface. This thought is only applicable to the area between the main camp and the Brunswick-Pride of Emory ore bodies.

"EUGENE E. BERGMAN"  
Consulting Magnetist