

June 10, 1953

Review of Pacific Nickel Geophysical Results

The geophysical results at Pacific Nickel have been reviewed, June 1st to 4th, 1953.

Two figures are enclosed. Figure 1 shows surface contours of pulse response at an electrode spacing of 400'.

The anomalous locations are plotted in red. These do not necessarily occur at the highest readings, since if the electrode spacing is greater than the dimensions of the anomaly on the line, as is usually the case here, then the high will be located on the left or right side of the anomaly, depending on whether the current electrode is positioned to left or right of the 2 potential pick-ups.

These anomalous locations are not broken down into narrower positions, derivable from the 50' spacing wherever it was used, as indicated by H. O. Seigel on his map and report of October 15, 1952. The reason is that such breakdown does not generally hold on the next longer spacings signifying that, whereas narrower zones are derivable on the 50' spacing, these zones change their magnitude and position within 25-50' in depth. To indicate them then as a guide to drilling at any distance or depth beyond 25-50' is not valid.

The position of the two adits is shown and also the projected position to adit level of the two anomalous zones at the west end of the 2600 adit. The south anomaly here should be intersected by the adit if the plunge is normal, or lie just to the south. The north anomaly will have to be drilled from a point in the 2600 adit, 1350' from the portal. A tentative hole is shown and should be 400' long. The hole has been turned a little to the west on the underground map, so as to head for the center of the projected anomaly.

Drilling from surface to check the other anomalous zones is indicated by drill hole locations 1-11, in designated order of priority. Note that from location 2, two holes are suggested so 12 holes all told are plotted. Location 11, at the west end of the 3500 adit was included, as this anomaly was not adequately tested from underground. Positions have been selected to allow for 50' of cover, the slope of the terrain, the normal 70° north plunge and provide intersection at 100' below surface. All holes dip at 55° and are 250' long except hole 2 to east which is 300'. The total suggested is then 3050' exclusive of the hole in the 2600 level adit.

The priority order has been based in part on the deduced M factor shown, which is representative of percent scattered min-

eralization, and on location of the anomalies. Since the percent scattered mineralization is not necessarily a criterion for commercial values, massive zones may even serve to reduce the computed M, it was thought advisable to drill as many of the higher mineralized showings as possible rather than to put several holes in one.

The second figure shows the plan of the underground workings. In both the 3500 level adit and the Chinaman's Tunnel are shown locations of higher response, i.e. higher percent of scattered mineralization.

The two spots marked in the Chinaman's Tunnel are short but indicate 15% or so of scattered sulphides, a relatively high figure. Unfortunately no work was done to show whether these spots were evidence of greater mineralization to south or north, above or below the Tunnel.

Along the 3500 adit increases in apparent mineralization are evident at the following distance from the east portal.

1050 - 1350. This zone, from azimuth tests, seems to cross from NE to SW across the adit. Its greater concentration seems to lie below the Tunnel within say 100'. The two easternmost surface anomalies on line C<sub>n</sub>, project apparently into this zone. Drilling is in horizontal plane from adit. Response is higher to my mind than spotty fair mineralization as logged.

3050 - 3100. This zone indicates about 15% scattered sulphides essentially just south of Tunnel and down. EM anomalies were also obtained here. There are some gaps in the drilling here.

3750 - 3800)  
3900 - 3950). These local zones indicate about 12-15% scattered sulphides essentially at and just below the tunnel. The easterly zone appears to lie just south of the Tunnel, the westerly zone just north. They would seem to be the projection of the surface zone on line L. There were some smells here from horizontal drilling.

The following should be noted.

(1) The 3500 adit is apparently out by about 3° from the east portal on, relative to the surface lines, as shown on the surface figure. The survey work was done by Pacific Nickel so they have actual record of the location of the 2 base lines relative to their survey grid. This will accurately locate lines and surface anomalies relative to the adit. The 2600 level adit is believed properly located relative to the surface lines.

(2) The high response zone paralleling the 3500 adit continues to the east and does not terminate at the mouth of the 2600 adit or thereabouts. Claim coverage to the east should be assured. See also report by R. J. Searls, April 9, 1953.

(3) The high response zone to the south may well carry westward under thin schist toward sulphide outcrops plotted by Aho. This should be kept in mind.

Recommendations

(1) Drill the suggested surface holes in approximate sequence to extent desired. Further detailed geophysical work would not serve to delineate local anomalies that have to be projected more than 25-50 feet.

(2) If drilling gives encouraging results, exploration to the east along the 3500 adit zone, and east and west on the south zone may well serve to extend the sulphide occurrences.

(Signed) Arthur A. Brant

August 15th, 1952.

Mr. John Drybrough,  
604 - 173 Portage Ave.,  
Winnipeg, Man.

Dear John:

Re: Pacific Nickel

Jim and I visited the property yesterday and saw both McGriffin and the Pacific Nickel men in charge of the work. The woods are still closed, but there has been no interference with the small amount of surface work which Pacific Nickel is carrying out. The "pulse" equipment is working in the lower tunnel and the bush crew consists merely of a few line cutters and two men doing reconnaissance geology.

PREPARATORY WORK

N.2 - The line cutting on the property is nearly completed so that there should be no holdup to either of the geophysical parties in covering the required ground. The lower tunnel was freed of pipe and rail a few weeks ago and the geophysical crew was able to move in. The upper tunnel is now being stripped and should be ready completely in two weeks. It will not be possible to remove rail from all of the raises without going to considerable work in reconditioning at least three raises. The "pulse" equipment can be put to work in this tunnel next week. No 1

GEOLOGICAL WORK

Aho, the company geologist, has completed the underground map. In his work Aho has differentiated the ultrabasic intrusive to a considerable degree and shows a complex of dunite, peridotite, hornblendite, pyroxenite and intermediate phases. This method of mapping is not particularly revealing since the differentiations are based on minor mineral changes in the rocks. Aho has concluded that the large part of the surrounding diorite is older than the intrusive, more or less reversing his original opinion. There are two junior geologists making a reconnaissance of the diorite area around the stock. They have found a number of extensions of the ultrabasic stock and several lesser stocks in the order of 1000 feet in diameter. Disseminated sulfide float has been found in a stock on the Pride of Emory

August 15th, 1952.

Fraction #2 (refer to Horwood's map in G.S.C. Memoir 190).

GEOPHYSICAL WORK - NEWMONT

The coverage of the stock thus far by the combined "pulse" and self-potential methods extends from a line through the north boundary of the Red Rose claim south to the extreme end of the intrusive as it is now known. In addition the equipment has been at work in the lower adit and has nearly completed a survey of this working. In the surface survey a strong anomaly with both the "pulse" and the self-potential equipment has been found on the Summit #2 claim. Horwood's map will show that this claim is underlain by schist. However, the recent mapping has indicated an extension of the pyroxenite stock to the centre of the claim.

Three other anomalies have been found from surface on the Bluebird, Viking and Antler claims. The two latter anomalies have been more or less tied in together by the geophysical work. These anomalies are in a line with the showings in the upper tunnel, although of course at a considerably lower elevation.

GEOPHYSICAL WORK - McPHAR

The McPhar party has been engaged in magnetometer work since their arrival. They have now covered roughly the northeast quadrant of the stock. A number of anomalies have been found but in Aho's opinion these are due to magnetite in the rocks. The area had not previously been covered by a magnetometer survey. The crew intends to start electromagnetic work as soon as their recently arrived E-M equipment can be put in condition.

PROPERTY

The claim Pride of Emory Fraction #2 is not presently held by the company. The ground is open and Aho proposes to restake it as well as any additional claims necessary to cover the occurrence of ultrabasics and sulfides on the west end of the property. The Antler claim on which one of the "pulse" anomalies occurs is one of the two alien claims within the group. Ownership has not thus far been determined. It will be suggested to Dr. James that this claim be acquired by Pacific Nickel.

August 15th, 1952.

COMMENT

There should be several months additional field work for both the geological and geophysical crews, which will carry the camp well into the late fall. The work accomplished to date does not have much bearing on Mr. Searls' proposal to establish a lower tunnel. Only one small anomaly is indicated in the ground which would be traversed by such a tunnel. However, the "pulse" work which will be begun next week from the upper adit may contribute additional data which will influence a decision in respect to a new adit. The number of anomalies found outside of the mine area suggests that diamond drilling should be undertaken immediately. McGriffin is particularly anxious to see some information on their anomalies while the work is in progress. These anomalies will undoubtedly be drilled some day, and it would be a considerable help in interpretation if the drill results could be available to the geophysical crew. There is a prospect that any heavy program of work would be barred by the Forestry regulations now in effect, but the dry weather should not be too prolonged at this time of the year.

Sincerely yours,

*Richard Murphy*

RM/m

December 11, 1951.

Vancouver 2, B.C.

Mr. S.H. Ward,  
McPhar Geophysics,  
36 Cranfield Road,  
Toronto, Ontario.

Dear Mr. Ward:

I am wondering if use can be made of electro magnetic methods in our drill holes at Pacific Nickel.

As you know, there are a great many horizontal drill holes which may have ore bodies in between. The problem of course arises as to getting your equipment down horizontal holes. I should be glad if you could let me know if your equipment could be used in horizontal holes and what if ore bodies in between holes spaced at 200 and 300' could be located.

I think you brought in copies of your report on Pacific Nickel but I cannot find one. If you have one or more there, could you send me a couple if you have that many in hand.

Very truly yours,

CR/dd

C. Riley.

## McPHAR GEOPHYSICS LIMITED

TORONTO, CANADA

GEOLOGIST

DR. C. STANLEY DAVIDSON

December 17th, 1951.

Dr. C. Riley,  
Pacific Nickel Mines Ltd.,  
711-525 Seymour Street,  
Vancouver, B.C.

Dear Sir:-

We have used the electromagnetic method in horizontal drill-holes underground at Madsen Red Lake Mine. It is possible to get the equipment to the bottom of the holes by one or more methods. It seems preferable to push a wedge-type plug down to the bottom with drill rods, then pull the drill hole electromagnetic unit down via cords passing over a pulley in the wedge.

Before answering your question directly, we would like to know the depth and size of the holes. The spacing of the holes (200' to 300') is not extreme, and the only question arising here is how small a body you would consider a cut-off limit. If the ground is relatively dry we can choose a frequency which will allow us - more or less - to cut off at any practical limit.

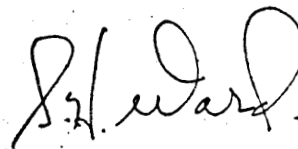
If you will provide answers to the above, then I will have our drill hole expert write you a more detailed account of the possibilities.

We are enclosing, under separate cover, two copies of the Pacific Nickel Report, as per your request.

Best wishes for the holiday season,

Sincerely,

MCPHAR GEOPHYSICS LIMITED.



S. H. Ward, Geophysicist

SHW:rd.  
encls.



# MCPHAR GEOPHYSICS LIMITED

TORONTO, CANADA

GEOLOGIST  
DR. STANLEY DAVIDSON

CABLE: "MCPHAR" TORONTO

February 20th, 1952.

Mr. C. Riley,  
Pacific Nickel Mines Ltd.  
711-525 Seymour Street,  
Vancouver, B.C.

Dear Mr. Riley:-

Mr. S. Ward has referred your correspondence to me about the possibility of testing underground drill holes with our equipment. As Stan mentioned we have done experimental underground survey work at Madsen Red Lake Gold Mines.

The main difficulty is to be able to move the receiver along the drill hole. Previously we pushed the receiver into the hole with plastic tubing but this is inconvenient in holes over 200 ft. We are considering forcing a pulley and cable mounted on a wooden plug into the hole. The receiver could be drawn into the hole and the cable reclaimed at the completion of the survey.

The transmitting equipment operates from an air driven motor, requiring a source of high pressure air. We would like your confirmation that this would be available at each of the drill holes you wish to test.

The equipment has been used from the surface in vertical drill holes with depths up to 2000 ft. for Lake Dufault Mines, Falconbridge Nickel Mines Limited and International Nickel Company of Canada Limited. Our results have been exceptionally good, showing the presence of massive sulphides in the neighbourhood of the hole. Certainly we are optimistic about the tests in the vertical holes.

It seems possible that we can detect sulphides of 10,000 tons and up provided that there is sufficient sulphide concentration as shown up by the experimental surface electromagnetic survey.

The cost of the drill hole survey is \$200.00 per operating day and expenses. The experimental phase of the work would be at cost (engineering and labor time).

Yours very truly,

MCPHAR GEOPHYSICS LIMITED

*H. A. Harvey*  
H. A. Harvey.

HAA:rd.

# McPHAR GEOPHYSICS LIMITED

TORONTO, CANADA

GEOLOGIST  
DR. C. STANLEY DAVIDSON

March 10th, 1952.

Pacific Nickel Mines Ltd.,  
711 - 525 Seymour Street,  
Vancouver, B.C.

Attention Mr. C. Riley.

Dear Sir:-

As there is sufficient ventilation in the tunnel, we will plan on using a gasoline driven generator for the transmitter. Can you send me the approximate minimum clear width of the tunnel in the area we will be working? This will control the lengths of rods we will use to push the unit into the holes.

Mr. Ward will have a crew available and will be sending you a copy of our contract form.

Yours very truly,

MCPHAR GEOPHYSICS LIMITED.

*H. A. Harvey.*

HAA:rd.

H. A. Harvey.

# McPHAR GEOPHYSICS LIMITED

TORONTO, CANADA

GEOLOGIST  
DR. C. STANLEY DAVIDSON

March 17th, 1952.

Pacific Nickel Mines Ltd.,  
711 - 525 Seymour Street,  
Vancouver, B.C.

Attention - Mr. C. Riley.

Dear Sir:-

We wish to acknowledge receipt of your letter dated March 13th, and the enclosed signed copy of the terms for the proposed geophysical surveys of your property.

We will arrange to have a two man crew available for these surveys towards the end of July. This crew will be able to handle both the electro-magnetic and magnetometer surveys. Should you be delayed with a late spring, we would alter the date of arrival of our crew accordingly.

Yours very truly,

MCPHAR GEOPHYSICS LIMITED

*Angela Burlinson*

Angela Burlinson.

AB:rd.

## McPHAR GEOPHYSICS LIMITED

TORONTO, CANADA

GEOLOGIST  
DR. C. STANLEY DAVIDSON

March 12th, 1952.

Pacific Nickel Mines Ltd.,  
711 - 525 Seymour Street,  
Vancouver, B.C.Attention - Mr. C. Riley

Dear Sir:-

Mr. Ward would like to inform you that we will have a crew available in B. C. around the beginning of May. He would appreciate it if you would let him know whether the proposed magnetometer and electromagnetic surveys of your property could be done at this time. If this approximate date is not suitable, we will arrange to have a crew available at any time convenient to you.

Yours very truly,

MCPHAR GEOPHYSICS LIMITED.

*Angela Burlinson*

Angela Burlinson

AB:rd.

PACIFIC NICKEL MINES LIMITED.

711-525 Seymour Street,  
Vancouver 2, B.C.

May 23, 1952.

Mr. H.A. Harvey,  
McPhar Engineering Company of Canada Ltd.,  
36 Cranfield Road,  
Toronto, Ontario.

Dear Mr. Harvey;

Regarding yours of May 20th, I shall want to survey from 20 to 25 holes. There are a great many holes drilled on either side of a long cross cut and it is difficult for me to say exactly how many we shall wish to survey because I do not know how far apart the holes can be and get the results we wish. There are holes over 200 feet, and in some cases, a number have been fanned out from one set up. However, there will be a minimum of 20 and possibly 25. We could use the instruments in the holes which have known ore bodies between them before we try the unknown.

Very truly yours,

C. Riley.

CR/d

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DCK

NEWMONT EXPLORATION LIMITED

BOX 366

JEROME, ARIZONA

July 23, 1954

Mr. Plato Malozemoff  
Newmont Explorations Limited  
1901, 14 Wall Street  
New York 6, N. Y.

Dear Plato:

Don Wagg visited Pacific Nickel the week of July 5th. Lerney was mainly interested in size determinations from drill holes that had intersected ore. In work of this sort our betting average at Leadville was .600, not good enough for reasonably accurate ore estimates. Zones connected by narrow veins gave poor results. I agree with Don Wagg's conclusion that geophysical work is not warranted.

I went over the Kofner geophysical results some time ago. The main anomalies were in the Branswick-Larry end. Don Wagg will review these results and make specific recommendations, should any be warranted.

Sincerely yours,

AAB:lu

Arthur A. Brent

cc: P. Searls  
J. Bryttrough  
J. Pils  
A. Bransick  
R. Sheldon /  
D. Wagg