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REPORT ON A SOIL GEOCHEMICAL SURVEY ON THE OPEEPEESWAY LAKE GOLD-BASE METALS PROPERTY HUFFMAN TOWNSHIP PORCUPINE MINING DIVISION

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Qual.2.1510 W.E. Brereton, P.Eng.

November, 1992 Toronto, Ontario

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SUMMARY

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A soil geochemical program has been completed on a 17 claim property staked for its gold and base metals potential on the East Arm of Opeepeesway Lake in the Swayze greenstone belt of northeastern Ontario.

Initial interest in the property area was sparked by the reported presence of high gold and base metal values associated with the Jerome Porphyry and adjoining sediments.

The objectives of the present program were initially to test the effectiveness of soil geochemistry as an exploration tool in the property area. It was also hoped to acquire and sample some critical, copper-bearing drill core from the claims. This core subsequently turned out not to be present at its indicated location and its whereabouts is still unknown. Initial results from the geochemical work showed some strong anomalies associated with known mineralization and also yielded some very intriguing anomalous indications from overburden-covered portions of the property to the south. Accordingly, the entire 1992 program was devoted to soil sampling work.

Geologically, last years' work determined that the Jerome Porphyry is a complex layered body comprising subvolcanic feldspar porphyry intrusives, their pyroclastic equivalents and various sedimentary units. The rocks immediately to the north, previously mapped as clastic sediments have a definite volcanic aspect and grade further to the north into mafic pyroclastics containing a local felsic pyroclastic unit.

The property is sited on a major regional zone of intense deformation and alteration which may, in turn, be a extension to the west of one of the major "Breaks" of the central Abitibi. The previous Jerome gold mine occurs to the west of the present property on the south side of the porphyry complex.

Previous work has yielded some interesting precious and base metal values on the property. For example, a previous hole on a gold-silver bearing carbonate zone in porphyry which outcrops in the area of line 76E just south of the baseline returned 0.11 oz/ton gold, 3.84 oz/ton silver over 7.0 feet. Previous holes on the so-called Jess Mac or Gaffney zone in the east part of the claims returned up to 0.21 oz/ton gold, 4.39 oz/ton silver, 4.97% Pb and 3.78% Zn over 4.0 feet. A 1961 hole on the adjoining Smith gold-quartz zone reportedly returned 0.24 oz/ton gold over 6.5 ft within a 10 foot quartz vein. A previous grab sample from a showing in the vicinity of line 84+65E, 4N, returned 0.07 oz/ton gold, 5.04 oz/ton silver, 11.5 % Pb, 6.5% Zn.

Three large, well defined areas of anomalous soil geochemistry were identified by the 1992 survey:

<u>Anomaly "A"</u> is characterized by elevated to highly anomalous values principally in Au, Ag, Pb and Zn. This feature corresponds generally to the known corridor of precious and base metals mineralization in the west-central portion of the property along the "main" porphyry-sediment contact and is open to the west. Some high values within the anomalous zone are not explained by known occurrences and probably indicate hitherto undiscovered mineralization. <u>Anomaly "B"</u> is primarily a Au-Cu-Pb-Zn anomalous feature located to the south of Anomaly"A". Anomaly amplitudes are lower than in "A" although overburden cover appears to be thicker and many of the samples are of lower quality than those in "A".

<u>Anomaly "C"</u> is most notably a Cu anomaly with local Au and Pb-Zn-Ag correlation. This feature contains the previous, main porphyry-hosted Cu showing area.

Significantly, anomalies "B" and "C" appear to be delineating a previously unrecognized, stratabound mineralized corridor which is virtually untested save for some previous drilling in the copper showing area in the central portion of anomaly "C". These geochemical anomalies are also variably coincident with previously untested EM conductors. The probability of discovering new gold+ base metals zones along this geochemical/geophysical trend is considered to be very good.

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In addition to proving itself as an effective exploration tool, the soil geochemical program has provided some excellent exploration targets that should be the subject of follow-up exploration. The soil geochemistry has also re-focused emphasis away from some of the historical showings, which may be relatively insignificant, towards previously unexplored portions of the property.

The most prospective exploration model on the property is now concluded to be structurally controlled gold deposits, with associated base metal sulphides, of the Jerome Mine type.

Recommendations are presented for a program of linecutting, Induced Polarization surveying and stripping/sampling as a prelude to diamond drill testing of priority targets.



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The soil sampling work reported on herein represents a continuation of the geological mapping and prospecting program commenced on the Opeepeesway Lake property in 1991.

It was thought at the end of the 1991 program that the whereabouts of some critical previous drill core from the property had been located at the E. B. Eddy Forest Products Ltd. camp at Ramsey. However, it was ultimately determined with the assistance of Core Library personnel from the MNDM in Timmins that this was not the case and that the location of this core remains a mystery. At the same time, an initial round of orientation soil sampling returned some solidly anomalous results, partly in some unexpected areas, such that it was decided to devote the entire 1992 program to soil sampling work.

The report on last year's exploration program contains a great deal of information with respect to geology, previous work, etc and the author has drawn freely on this material with respect to the present report.

To reiterate, initial interest in the Opeepeesway Lake property revolved around the indicated presence of numerous gold and gold-base metal occurrences both as surface showings and in diamond drill core associated with the so-called Jerome Porphyry to the east of the old Jerome Gold Mine.

There were two exploration scenarios of particular interest as follows:

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- a) the possibility that the Jerome Porphyry was, in whole or in part, a felsic pyroclastic with the attendant possibilities for classical volcanogenic massive sulphide (VMS) deposits and;
- b) the possibility for large scale, potentially bulk mineable copper-gold, porphyryassociated deposits based on the indicated presence of persistent copper sulphide mineralization with associated low gold values in previous drilling.

There were also indicated to be good exploration possibilities for structurally (shear) controlled gold deposits of the Jerome Mine type on the property.

This report presents the results of the 1992 soil geochemical work in the context of property and regional geology and previous work and makes recommendation for the on-going evaluation of this well located property.

The usage of Imperial units has been retained so as to facilitate use of the existing Imperial database.

2.0 LOCATION AND ACCESS

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The property is located on the north side of the east arm of Opeepeesway Lake in west-central Huffman Township, Porcupine Mining Division, Northeastern Ontario per Figure 1 and the location map inset on the map to accompany this report. The property is within NTS area 41-0-9 and is centred at 82° 11' W. Long, 47° 37' N Lat.

The claims are accessed via the Ramsey-Sultan road, a major logging road which turns west off the Timmins-Sudbury highway, No. 144, at a point 20 miles south of Gogama. Approximately 25 miles west of the junction, a gravel road leads north to the Jerome Mine property, a distance of almost nine miles. It is then a short boat or snowmobile ride east down Opeepeesway Lake to the present property.

Previous operators on the property (Osway Explorations Ltd.) constructed a bush road leading from the property west to the Rush Lake gravel road which in turn leads south to the Sultan Road. Osway also constructed an excellent network of bush roads across the present claims during their exploration work.

Of particular interest in terms of access, E.B. Eddy Forest Products Ltd. is building access roads off the Rush Lake road into the central portion of Huffman Township as a prelude to logging operations in this area. It is anticipated that it will be possible to drive to the north-central portion of the property as early as this winter. This ease of access will greatly facilitate ongoing exploration of the claims.

2.0 LOCATION AND ACCESS

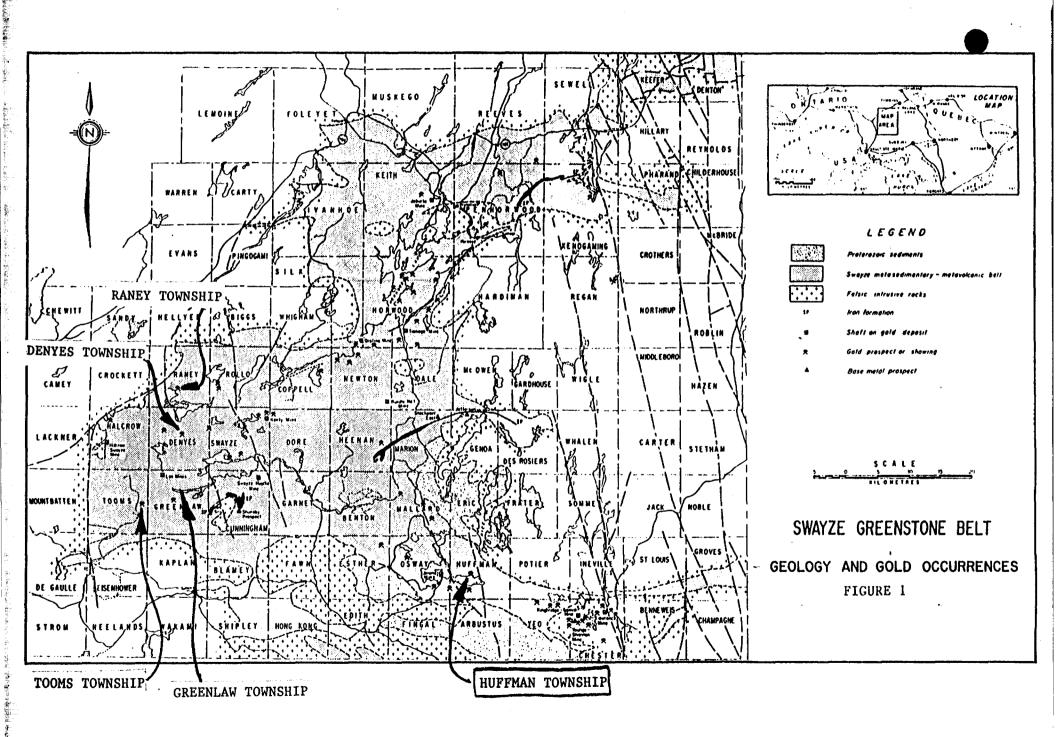
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The property totals 17 unpatented mining claims totalling 680 acres more or less numbered P1170407, P1170414 and P1176292-306 inclusive. The claims were recorded on February 11, 1991 and were subsequently transferred as to 100% to the author. The property is presently in good standing until February 11, 1994. The relative disposition of the claims is shown on the map at rear.

Noranda Exploration Company, Limited holds the adjoining ground on either side of the present property.

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4.0 PREVIOUS WORK

There has been a great deal of previous work carried out on these claims and a considerable amount of time was spent in compiling and analyzing the efforts of past explorationists. The results of this are summarized following with the assessment file number of the Timmins office of the MNDM indicated beside each company where applicable. The location of significant mineralized zones based on this work is presented on the accompanying geochemistry map.

1. Jess-Mac Gold Mines Ltd., 1949-1951 (T-2134)

This company carried out some form of ground geophysical surveying and then did extensive drilling on a base-precious metals occurrence located north of the shore of Opeepeesway Lake in the south part of present claim 1176297.

Mr. W. S. Savage, Resident Geologist for the area at this time, reported as follows in February of 1952:

"In 1950 and 1951 extensive diamond drilling was done on claim S.54293 which straddles the north shore of the lake on the east boundary of the property. The geophysical survey showed two narrow east-west anomalies on this claim about 250 feet apart in a drift covered area. The north anomaly overlies a quartz vein trending east-west which was exposed in a series of north-south trenches by Wm. Smith, a former owner of the property. The south anomaly may be indicative of a narrow zone of lead-zinc sulphides with a low gold-silver content which was intersected in six of the diamond drill holes at an average vertical depth of 250 feet. The sulphides occur in fractured porphyry adjacent and approximately parallel to the south-dipping contact between the porphyry and sheared sediments to the north.

A summary of the information obtained as a result of the diamond drilling is listed in the following table:

Hole No.	Contact	Dip	Footage (ft)	Best Sample (ft)	Au Oz/ton	Cu %	Ag Oz/ton	Pb %	Zn %
28	Por-Sed 30 ft	45° N	295	78 - 90	0.01				
29	Sed-Por 113 ft	46° S	398	50 - 55 303 - 307	0.15 0.21	0.09	4.39	4.97	3.78
30	Abandoned								
31	Por-Sed ft	60° N	298	30 - 36	0.07				

Hole No.	Contact	Dip	Footage (ft)	Best Sample (ft)	Au Oz/ton	Cu %	Ag Oz/ton	Pb %	Zn %
32	Sed-Por 107 ft	48° S	356	40 - 45 293 - 300	0.17 0.04		0.32	0.09	0.28
33	Sed-Por 162 ft	47° S	392	71 - 72.3	0.02				
34	Porphyry	46° S	157						
35	Porphyry	60° S	547	498 - 500	0.04				
36	Porphyry	60° S	441	246 - 250	0.02				
37	Por-Sed 48 ft	45° N	106	83 - 84	0.23				
38	Por-Sed 278 ft	75° N	305	255 - 256.5	0.03		0.79	3.72	2.61
39	Por-Sed 335 ft	70° N	364	290 - 290.5	0.02		1.06	1.37	3.42
40	Por-Sed 295 ft	70° N	309	275 - 280	0.02		0.51	1.03	2.55
41	Por-Sed 301 ft	70° N	330	286 - 289.5	Tr		0.44	0.31	0.93
42	Por-Sed 340 ft	72° N	345						
43	Por-Sed 75 ft	72° N	DRILLI	NG					

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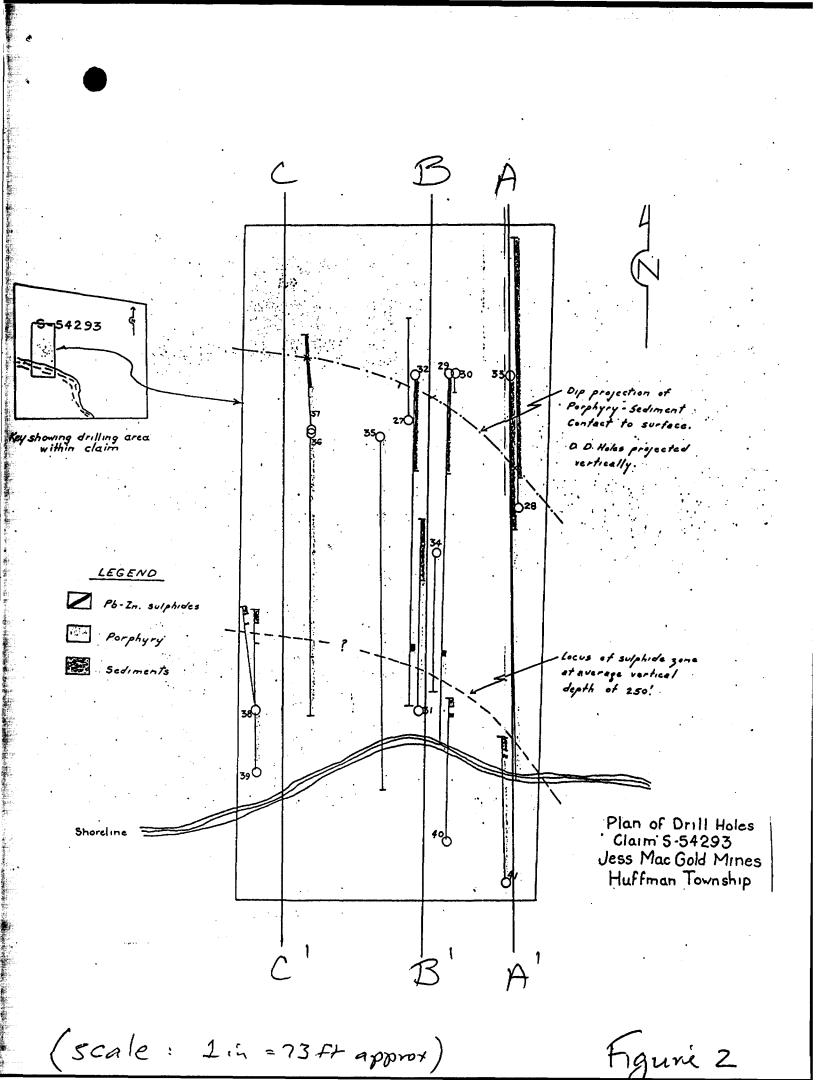
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A copy of a plan obtained from Mr. Gaffney showing the location of the diamond drill holes on claim 54293, and three composite vertical sections prepared by the writer, accompany this report. In making up these sections, since no dip-tests were available, it was necessary to assume that the holes which were collared in the sediments flattened in dip before crossing the porphyry contact. The footage drilled could have been used to much better advantage if the holes had been logged and plotted on plan and section as the drilling proceeded."

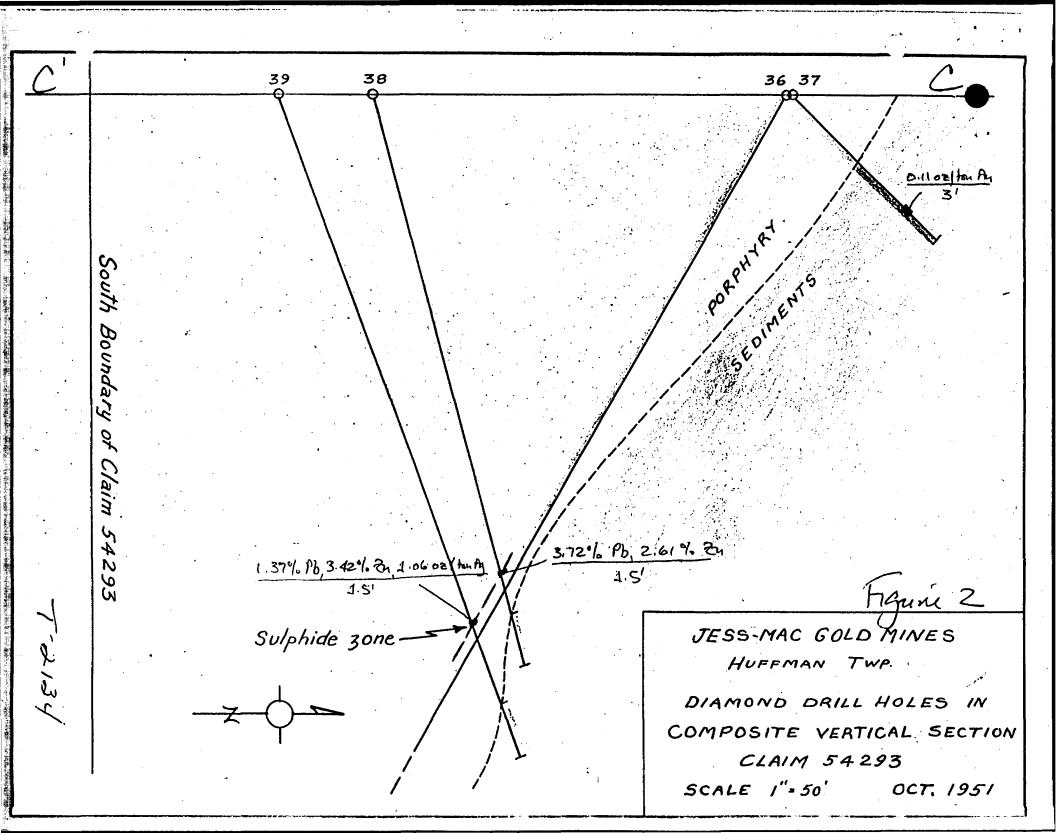
These sections and a photo-reduced copy of the plan are presented following. Locations of the sections on the plan and significant assays have been added by the present author.

One comment with respect to this work is that a number of the holes were drilled down-dip, ie parallel to the porphyry-sediment contact, and therefore did not cross the mineralized contact area, eg holes 34, 36. The width of the intersection in hole 29 may also be somewhat overstated because of the direction of drilling. It would also appear that the base metal mineralization was only encountered just inside the porphyry body in the deeper holes and may not extend to surface, eg holes 27, 28, 37. Conversely, there are a number of very interesting



28 33 41 South Boundary of PORPHYRY SEDIMENTS Claim 54293 gure 2 0.31%, Pb, 0.93% 2 JESS-MAC GOLD MINES Sulphides 3.5 HUFFMAN TWP. 12121 DIAMOND DRILL HOLES IN COMPOSITE VERTICAL SECTION CLAIM 54293 SCALE 1"= 50' OCT. 1951

 \mathcal{R}' 34 35 27 32 29 31 40 40'west 0.07 orlin An (D. 15 02 1 tu An (Usle 29) 0.170 21 the Au (holo 32) Sou SEDIMENTS во 9 0.210= (hun Pu) 4.39 02 (hun PM, 4.47% pb, 3.78 % By 32 293 Ionni 2 29 Sulphide zone 1.03% Pb, 2.57% & JESS-MAC GOLD MINES HUFFMAN TWP. DIAMOND DRILL HOLES IN Ŵ COMPOSITE VERTICAL SECTION CLAIM 54293 SCALE 1"= 50' OCT. 1951



gold intersections, eg holes 29, 32, 37, that were encountered only at shallower depths and in the sediments.

These gold values, however, do not appear to reflect the north, or "Smith" goldbearing quartz vein referred to by W.S. Savage. There is no information in terms of the drilling on this latter structure although I would suspect that holes 1 to 26 were drilled on this target.

Worthington Mines Ltd., 1961-62 (T-2132)

This company carried out additional drilling in the area of the Jess-Mac showings in 1961-62 although there is very little concrete information as to their exploration program and results. The following excerpts from the Northern Miner represent the only information that the author has been able to locate:

"October 26, 1961 - Worthington Probe Cuts Second Vein

A second and parallel vein has been intersected by drilling on the Huffman Twp. property of Worthington Mines, in the Opeepeesway Lake area, northwest of Sudbury, Ont.

Gold values averaging \$8.40 per ton (0.24 oz.) were cut across a width of 6.5 ft. within a quartz vein with a width of 10 ft. The intersection was obtained at a depth of 41.5 ft. in a 45° hole.

The gold-bearing vein is 215 ft. north of the sulphide zone from which an intersection across 4.0 ft. assayed 0.21 oz. gold and 4.39 ozs. silver, 4.97% lead, 3.78% zinc, 0.41% molybdenite and 0.18% antimony.

Another hole has been started from the north and is expected to cut both veins, after which, the drill will be moved 100ft. to the west in an effort to trace the zones along strike. The property adjoins east of Jerome Gold Mines.

June 28, 1962 - Worthington Drilling

Drilling is continuing on the Huffman Twp. property of Worthington Mines in the Opeepeesway Lake area, northwest of Sudbury, Ont.

The current hole has reached a depth of 630 ft. It is expected to continue to about 750 ft. to reach the projected structure cut in an earlier hole, 400 ft. to the west. The earlier hole, No. 29, intersected four feet averaging 0.21 oz. gold, 4.39 ozs. silver per ton, 4.97% lead, 3.78% zinc and 0.41% molybdenite.

Business of the recent annual meeting in Sudbury was routine, M. J. Gaffney, secretary-treasurer, advises. All directors were re-elect

The 1961 article provides the first solid reference to the north or Smith quartz vein (0.24 oz/ton gold over 6.5 ft.). The location of this vein to the north of the Jess-Mac base metal zone corresponds reasonably closely with that provided by W.S. Savage.

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<u>G. Swedlund</u> (T-2135) in 1950 reported drilling 3 short holes on the point on present claim 1170407. The holes intersected both sediments and porphyry according to the drill logs. No assays were reported.

Rio Tinto Canadian Exploration Limited - Jess-Mac Option, 1966 (T-2134)

This group carried out magnetometer and vertical loop EM surveys over the south and east portions of the present property. No noteworthy EM conductors were located. The magnetic surveying disclosed a distinct ESE-WNW magnetic grain within the sediments north of the porphyry-sediment contact.

Falconbridge Nickel Mines Limited, 1971 (T-2133)

Falconbridge carried out extensive ground geophysical surveying (SS-15 VLEM, magnetics) over the entire present property in 1971.

The Falconbridge EM surveying located a number of conductors which might be of considerable interest in terms of the present property, specifically their conductor No. 1 located on claim 1176301 with an inferred eastward continuation on claim 1176292, conductor No. 4 on claim 1176295 and conductors No. 8 and 9 on claim 1176305/306, and conductor No. 6 on claim 1176298. Along with these definite, fairly well defined conductors, there are a large number of lesser anomalies including one-line crossovers on the present claims.

Falconbridge did not do any drilling on the present property. It is of interest to note that conductor No. 1 in particular, which was considered by the Falconbridge geophysicist to be one of the most consistent trends, has never been drill tested. (Tays, 1971) The conductor may represent a large, conformable shear zone.

Osway Explorations Ltd., 1981-83 (T-2452)

This group carried out a large multidisciplinary exploration program on a property along the north side of Opeepeesway Lake which included virtually all of the present claim group. Work began in 1981 when linecutting and ground geophysical (VLF-EM, magnetics) and geochemical surveys were completed. One

of their VLF-EM conductors is virtually coincident with the Jess-Mac zone and may be marking a westward continuation of this mineralization.

During 1982, extensive backhoe stripping and trenching were undertaken to expose and sample geophysical and geochemical anomalies and also to expose potential gold-bearing structures located by surface prospecting. An initial round

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of diamond drilling was then carried out in 1982 with a second drill phase in 1983.

A total of 22 holes was drilled by Osway within the confines of the present property as follows:

<u>1982 drilling</u> - holes 8, 9, 10, 11, 13, 14, 15, 16, 18, 20, 22, 23, 24 <u>1983 drilling</u> - holes 28, 30, 31, 32, 33, 36, 37, 38, 39

The Osway program seems to have been very diligently and competently executed. Their work located numerous new mineralized showings on the present claims. The report on the 1982 exploration program by Robert J. Graham, P.Eng. (1983) makes the following comments:

"The most significant mineralized showings found in the recent exploration program are as follows:

1. The rich but small gold-silver-zinc showing in the vicinity of line 84+65E at 4+00N. This occurs in a magnetic low area and strikes east, dipping steeply to the north in an intensive shear in what appears to be altered porphyry. The best assay from a grab sample was gold 0.07 oz per ton, silver 5.04 oz per ton, lead 11.5% and zinc 6.5%. It has been well exposed by trenching to bedrock with a backhoe, but because of the largely sheared and oxidized nature of the showing the bedrock was not blasted. The very lensy nature of the mineralization and probable faulting is evident from the lack of significant assays in 0S82-15 drilled at -45° to the south, directly under the ore-grade mineralization in the trench which returned a best value of gold 0.05 oz per ton, silver 1.17 oz per ton, lead 1.23%, and zinc 0.24% over a 2.0 foot core length from 243.0-245.0 feet.

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This intersection was virtually massive pyrite with fine galena. To test the area below this drillhole, 0S82-16 was drilled at -60° from the same setup, but failed to intersect any mineralization of interest. A "bracketing" hole 40 feet to the west, 0S82-18 at -45° intersected minor traces of galena and sphalerite between 64.0 and 70.0 feet but the best assays from 64.0-67.0 feet were gold 0.002 oz per ton, silver 0.02 oz per ton, lead 0.15% and zinc 0.23%. A "bracketing" hole to the east, 0S82-14, was collared 60 feet from 0S82-15, and unexpectedly cut a mineralized section between 29.0 and 39.0 feet, higher up in the hole than anticipated, probably due to transverse faulting. Quartz-carbonate veining along and across the coreaxis with strong limonitic fault seams carried up to 25% pyrite and considerable pale yellow sphalerite from 35.6-37.0 feet which returned gold 0.03 oz per ton, silver 0.53 oz per ton, lead 0.47%, and zinc 0.92%.

The probable extension to the west of this new zone was exposed by a trench on line 80+65E at 1+75N, where a sample of the best mineralization



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assayed gold 0.05 oz per ton, silver 3.54 oz per ton, lead 0.96% and zinc 8%. This showing also lies within the magnetic "low" anomaly (near its west end) and was tested by 0S82-11 at -45° to the south, which returned a pyritic concentration with minor galena from 156.0-165.0 feet, with the best part of this from 158.0-163.0 feet assaying gold .004 oz per ton, silver 0.20 oz per ton, lead 0.15% and zinc 0.41%.

The above exploration results indicate that no further work is warranted on this particular structure, but the tenor of the two showings did justify the expense involved, and certainly suggests the possibility of a viable deposit elsewhere on this extensive claim block.

2. The strong gold-bearing blue quartz vein system between line 28 + 65E at 3+00S and line 66+65E at 5+00N. This strikes astronomic east, dips steeply to the south, and is trenched in the vicinity of lines 28+65E and 64+65E, the latter being its strongest exposure with the highest gold values on the property to date. (The showing on line 28+65E is on adjoining ground held by Noranda -WEB). The blue quartz is mineralized locally with molybdenite (especially at its western end) galena, tetrahedrite, chalcopyrite and pyrite.

Gold assays range up to 0.69 oz with accompanying 9.13 oz silver per ton (from plugger chips and dust in the vein) on line 64+65E at 4+00N. The vein at this point is some 4 feet wide, but flooding from a spring in the trench prevented exposing the footwall side of the vein. It occurs in a strong shear in conglomerate, and the vein material and several feet of adjacent wallrock is well mineralized with up to 25% sulphides. Panning failed to show any gold colours despite the assay evidence. Other grab samples from the same location assayed 0.05 and 0.03 ounces of gold per ton, while a grab sample from trench No. 31, 100 feet to the west, assayed 0.39 oz gold per ton and 2.30 oz silver per ton. In addition, on line 60+65E at 2+00N, grab samples assayed 0.30 oz gold and 2.52 oz silver; 0.04 oz gold and 0.28 oz silver; 0.06 oz gold and 0.47 oz silver per ton from the same vein.

Diamond drill hole 0S82-13 drilled north to check the pit on line 60+65E at 2+00N intersected the vein between 80.0 and 90.5 feet, which was 40% quartz with 1-3% pyrite at a high angle to the core axis.

Assays were as follows:

0002-15				
<u>From</u>	<u>To (ft.)</u>	Core length (ft)	<u>Gold</u> (oz pe	<u>Silver</u> er ton)
80.0	85.5	5.5	0.014	0.08
85.5	90.5	5.0	0.09	0.54
90.5	96.0	5.5	0.01	0.07

Further drilling to test the vein on line 64+65E at 4+00N was carried out with 0S82-22 at -45° and 0S82-23 from the same setup at -60° ; a synopsis follows:

<u>0\$82-22</u>

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<u>From</u>	<u>To (ft.)</u>	Core length (ft)	Gold	<u>Silver</u>
119.5	123.3	3.8	(oz p 0.10	er ton) 0.63
<u>0S82-23</u>				
Erom	$T_{\alpha}(f_{t})$	Core length (ft)	Gold	Silver
From	<u>To (ft.)</u>	Core rength (It)		
<u>F10m</u> 148.0	<u>10 (11.)</u> 149.7	<u>Core rengui (10)</u> 1.7		$\frac{511}{2}$ er ton) 0.42
			(oz p	er ton)
148.0	149.7	1.7	(oz p 0.04	er ton) 0.42

At a point 100 feet to the east, 0S82-24 was also drilled at -45° to the north to provide another test of the vein, which was intersected between 122.0 and 128.0 feet. Assays for the 3.2 foot of core from 125.0-128.2 feet were gold 0.084 oz per ton, and silver 0.54 oz per ton.

The strength of this vein, together with the consistent gold values suggests that this possibility of finding viable gold concentrations is good. It would be necessary to drill at least 6 more holes in the vicinity of line 64+65E to properly search for an ore shoot at that location.

3. The major zone of mineralized carbonate in sheared porphyry near the north contact of the main intrusive body. This zone ranges up to 50 feet wide, and carries sporadic gold values. It strikes east and crosses the baseline at line 76+65 east. Block faulting by north-striking diabase dykes confuses the picture, but it appears probable that this is the continuation to the west of the zone hosting the high-grade lead-zinc showing on lines 80-84E. In fact, the carbonate is defined as magnetic lows, in an en-

echelon faulted pattern as far west as line 52+65E at 11+00S where a grab sample assayed gold 0.03 oz per ton, silver 0.31 oz per ton.

On line 76+21E, drillhole 0S82-9 at -45° , drilled to the south from the baseline, returned gold 0.11 oz per ton, silver 3.84 oz per ton over a 7.0 foot core length from 169.0-176.0 feet.

Mineralization in the carbonate zone consists of pyrite, chalcopyrite, galena, sphalerite, and tetrahedrite as small grains, often in small quartz stringers which form local lacy networks. The carbonate zone occurs as a slight ridge above the swamp level, and the samples taken to date carried low grade sporadic values. No further work appears warranted on this zone."

Mr. P.A.R. Brown, (1983) then reported on the 1983 holes drilled on the present property as follows:

"<u>Drillhole #28</u> was completed to 820 ft. This tested the strong conductor that Falconbridge had picked up running parallel to the baseline from line 96E through 116E. The overburden was deep and the ground very blocky all through the hole. Most of the porphyry carried some chalcopyrite, quite heavy in some sections; however, the best assay was 0.02 Au, 0.12 Ag and 0.54% Cu over 4 feet.

<u>Drillhole #30</u> was completed to 546 ft. Located at 96+65E all 11+75N this hole tested weak conductors and low zinc-copper geochem anomalies. Abundant seams of pyrite were cut but assay results were low. The best was 0.01 Au, 0.09 Ag over 2 feet.

<u>Drillhole #32</u> was completed to 325 ft on the strong quartz vein at 63E (100' west of #23). The best assay was 0.05 Au, 0.21 Ag over 5.5 feet.

<u>Drillhole #33</u> was completed to 256 ft. This again cut the strong quartz vein but 100' west of #32. Best assay this time 0.045 Au, 0.27 Ag over 4 feet.

<u>Drillhole #31 and drillhole #36</u> were both put down under a trench where a gold assay of 1.74 oz/ton and 2.94 Ag/ton was obtained from a grab of narrow quartz vein with cpy and tetrahedrite.

#31 returned a best value of 0.022 Au, 0.05 Ag over 10 feet #36 returned a best value of 0.022 Au, 0.12 Ag over 1 foot

<u>Drillhole #37</u> was drilled north across the lead/zinc showing on 84E. Minor lead/zinc was cut. Best assay was 114.5-119.5, 0.92% Zn, 0.34% Pb, 0.26 oz Ag and 0.018 oz Au. This hole was completed at 251 ft.

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<u>Drillhole #38</u> is a 60° hole under # 37 and was to verify the absence or presence of the lead zinc showing down dip. It is possible that these high grade lenses could swell out and this is a final check in that area. Depth 300 ft.

Results from #38 gave 1.31% Zn, 0.32% Pb, 0.32 oz Ag and 0.015 Au over 6 feet, which shows the zone narrowing considerably from surface. This does show the zone still present 100 feet from surface. However, the grade is uneconomic.

<u>Drillhole #39</u>, the last in the series of holes went to 250 ft. Weak mineralization only was encountered".

As is often the case in gold work, the Osway drilling (and the present author's sampling) failed to duplicate the initial high surface values and it is suspected that the Osway grab samples were quite selective. The average gold tenors of these zones, although not uninteresting, is clearly lower than the initial sampling indicated.

Considerable efforts were made to locate the Osway core. It was initially determined through the assistance of the MNDM in Timmins that this material was stored at the E.B. Eddy camp at Ramsey. Subsequent investigations, however, determined that all of the core at Ramsey is from the old Jerome Mine with that from the present property not at the site.

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<u>Muscocho Explorations Limited</u> in 1985 optioned the property from Osway Explorations and drilled a further four holes within the confines of the present property (this information is not present in assessment files but was kindly made available to the author by the former president of the now defunct Osway Explorations Ltd.)

The Muscocho holes are indicated on the 1991 project map by the "85" designation. Hole 1 did not obtain any significant values (best -100 ppb over 2.5 feet at 62.0 feet). Hole 2 was drilled to intersect the Osway VLF-EM conductor which extends west from the Jess-Mac zone. The conductor was indicated to consist of a pyritic sericite schist zone from 85 to 112 ft with the highest gold value being 75 ppb. A lower sericitic zone assaying 85 ppb Au was intersected from 320-322.5 ft.

Holes 85-3 and 5 were indicated by Muscocho to have been drilled in the area of the Gaffney or Jess Mac zone. The best intersection was in "mineralized syenite" from 563.7 to 571.5 feet in hole 85.3 which assayed 0.017 oz Au/ton.

There appears to be some problem with the location of Muscocho holes 2, 3 and 5. What distinctly appeared to be a drill set-up was found some 300 feet east of the indicated location for hole 2. The set-up for hole 5, with legible flagging still present, was found on the drill road some 75 feet south of the Muscocho indicated location. Some of the core was still present in wired-up core boxes at the site. Another 200 feet east of hole 5 along the drill road is another drill set-up identified by flagging as hole 85-4 yet there is no mention of a hole 4 in the Muscocho reports?

The Muscocho drill geology is also at odds with that established by the surface work and other drill results in many cases. For example, the VLF conductor in hole 85-2 is indicated to be dipping 45° to the south, a somewhat unlikely proposition given the generally very steep dips on the property. Attempts are also going to be made to locate and examine the Muscocho core. Until this is done, the Muscocho drill geology was largely ignored in the positioning of geologic contacts recognizing fully, however, that such contacts may have to be modified upon location and examination of both the Osway and Muscocho core.

<u>W.E.</u> Brereton in 1991 carried out a program of geological mapping and prospecting with a view to locating new mineral showings and to more fully understand the geological setting on the property such that the known mineralization could be put in its proper context.

No major new prospecting discoveries were made, a testament to the thorough efforts of previous workers and a general scarcity of outcrop, although two relatively modest copper occurrences were found. One of these is in the area of known copper mineralization in the east-central portion of the property. The second, occurring in highly altered porphyry on the point of land on claim 1170407, contained copper values in 0.20% range.

Limited re-sampling of some of the known surface showings indicates that previous high grade gold values (to 1.74 oz/ton) must have been in very selected samples as they were not repeated by subsequent drilling nor by my work. Geologically it is concluded that the Jerome Porphyry is a complex layered body comprising subvolcanic felsic porphyry intrusives, their pyroclastic equivalents and various sedimentary units. The rocks immediately to the north, previously mapped as clastic sediments, have a definite volcanic aspect and grade to the north into mafic pyroclastics with a local felsic pyroclastic unit present.

The property is sited on a major regional zone of intense deformation and alteration which may, in turn, be an extension to the west of one of the major "Breaks" of the central Abitibi.

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There was concluded to be considerable potential to find additional gold and/or base metal mineralization of the Jerome Mine type associated with shear zones on the property. Obvious target areas were felt to include those in the original Gaffney/Smith showing area and at the "Line 84+65E" showing (both gold-silverlead-zinc), the gold-bearing quartz zones which outcrop in the area of line 64+65E and the gold-silver bearing carbonate zone in porphyry which outcrops in the area of line 76E just south of the baseline.

In light of the recognition that the Jerome Porphyry has distinct pyroclastic phases, it was felt that the above base metal mineralization may be indicative of possibilities for volcanogenic massive sulphide deposits. The known base metal mineralization may represent strongly deformed primary sulphides.

There was also interpreted to be a relatively large scale gold-copper system with associated anhydrite and elevated Ba levels present in porphyry rocks in the eastcentral portion of the property. Virtually no copper assaying was carried out by previous workers although there are interesting descriptions of chalcopyrite and bornite in some of the holes. This type of mineralization may represent an Archean analogue to some of the very large porphyry copper-gold systems being explored in the Canadian Cordillera.

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5.0 REGIONAL GEOLOGY AND MINERALIZATION

5.1 The Swayze Greenstone Belt

The Swayze area is one of Ontario's historic gold areas and has seen prospecting activities for a variety of metals. Although there are no precious or base metals producers in the area at the present time, the Swayze has a rich mineral endowment typical of the Abitibi Orogenic Belt. Deposits and/or occurrences of gold, silver, zinc, nickel, copper, lead, iron, molybdenum, asbestos, talc, barite, quartz and marl are known in the area. Carbonatite-associated rare earths and industrial minerals are present west of the Swayze associated with the Kapuskasing High. There are indicated to be well in excess of 100 deposits, prospects, showings and occurrences of gold alone.

5.1.1 <u>Geology and Mineralization</u>

The Swayze can be thought of as an arcuate volcano-sedimentary ("greenstone") belt of Archean age, convex to the west, extending from Sewell township in the northeast, through Swayze township in the central region, to Groves township in the southeast per Figure 1.

The Swayze greenstone belt forms the westernmost extremity of the central Abitibi belt, partially disconnected from it by a series of north to northwest striking faults and granodiorite/monzonite batholiths.

The volcanics consist primarily of mafic rocks which floor some substantial intermediate-felsic eruptive centres. Two such centres are to be found in the Kenogaming-Penhorwood and Swayze Township areas.

Clastic and chemical sedimentary rocks, including major banded iron formations, are intercalated with the volcanics. These also form regionally extensive sedimentary units as in the southeast portion of the Swayze.

A variety of synvolcanic to post-volcanic intrusions has invaded the supracrustal rocks. The Swayze belt is truncated to the west by a fault-bounded, northnortheast trending Kapuskasing Structural Zone, which contains high-grade metamorphic rocks and associated carbonatite intrusive complexes.

It has been recognized that the rocks in north Swayze represent the first major reappearance of greenstones west of the Timmins-Porcupine gold camp, the latter notable for its production of some 57 million ounces of gold to date.

Known gold mineralization in Swayze is typically of the quartz lode variety generally accompanied by shearing, fracturing and associated sulphides and carbonate. Sulphides typically include pyrite along with any or all of pyrrhotite, chalcopyrite, galena, sphalerite and molybdenite. Gold is present in a large variety of lithological and structural settings. Some prominent examples are gold in quartz veins and replacements in diorite (Orofino deposit - Silk Township); in carbonate zones (Tooms-Greenlaw area); in siliceous zones associated with felsic porphyry (Rundle No. 1 deposit - Newton Township); in quartz vein zones in sheared sediments (Halcrow-Swayze deposit-Halcrow Township); near a porphyry contact in sheared sediments (Jerome Mine - Osway Township); in sheared, carbonatized mafic volcanics (Joburke Mine); and in quartz veins in granodioritegranite (Chester-Yeo area).

Gold is also present in oxide iron formation (Marion Township), in pyritic iron formation (Cree Lake area) and in sheared stratiform pyritic zones in intermediate volcaniclastics (Kenogaming Township).

The Swayze has been notorious for its "narrow, erratic quartz veins that don't go anywhere". It is apparent to this author however that these veins may just be the "smoke" with more substantial deposits of the Harker-Holloway or Doyon-Dumagami variety yet to be found. For example, there are major regional deformation/alteration zones in the north and south Swayze that may represent westward continuations of the Porcupine-Destor and Larder Lake Breaks. A major alteration/deformation zone that seems to be part of a larger system in the south Swayze extends through the present property.

5.1.2 <u>History</u>

The gold potential of the Swayze greenstone belt has been recognized since the early 1900's. An early discovery was made at Moore Lake, Yeo Township, in 1912 by P. Moore who test-pitted an auriferous quartz-carbonate vein within pyritized, carbonatized metasediments. Gold and copper mineralization in quartz-carbonate veins within sheared granite was investigated in Chester Township in 1910. This showing (Lawrence prospect) eventually produced some 16 tons of 7% Cu, 0.15 oz per ton gold in 1916.

Much of the initial exploration focus in the region was directed towards iron deposits. The Woman River iron deposit (Algoma Steel Corp., 1906-07, Heenan and Marion Townships) contains reserves of some 5,100,000 long tons of 40% Fe. Additional iron deposits include that at Radio Hill in Keith and Penhorwood Townships (158,,000 long tons at 27% Fe; Kakatush Mining Corp., 1958-65). Iron exploration was also carried out in Cunningham Township in the late 1920's.

Barite was discovered by R. Cryderman in Penhorwood township in 1917 with some production reported by Barite Syndicate Explorations in 1923. The deposit is currently held by Extender Minerals Ltd. who reportedly carried out bulk sampling in 1984 prior to a decision to ship material to their Matachewan barite processing facility.

The first major thrust in gold exploration and development occurred in the period 1930-1943, during which time most of the reported gold occurrences were discovered. Aside from the Joburke Mine, most of the gold production in the area was also from this time period.

Sporadic gold exploration occurred in the mid 1950's and early 1960's with an explosion of activity during the 1980's following an increase in gold prices and the advent of flow through financings. Earlier prospecting discoveries culminated in the 1970's and early 1980's with gold production from the Joburke Mine, Keith Township (Pamour Porcupine Mines Ltd.) and a major evaluation program at the Orofino deposit (Orofino-Northgate Joint Venture) along with extensive work on various prospects in the Chester Township area.

Approximately 980,000 tons of gold-silver ore have been mined to date from 7 deposits (Joburke, Jerome, Tionaga, Kingbridge-Gomak, Halcrow-Swayze, Young-Shannon, Lawrence). Two of these contained significant copper values (Lawrence, Young-Shannon).

The lions share of gold production has been from the Joburke and Jerome Mines. The Joburke Mine yielded 632,292 tons grading 0.10 oz gold per ton (1973-75, 1971-81), while the Jerome Mine produced some 56,893 oz Au and 15,114 oz Ag from 335,060 tons of ore (1938-45, 1951).

Base metals exploration was a major focus in the Swayze from mid 1950's to the late 1960's. Lead-zinc mineralization was first discovered in the area in iron formation in Cunningham Township in 1904 by Ridout Mining Co. Later work by Shunsby Mines Ltd. (1957-63) in this same township found a Zn-Cu deposit in which the current owner, MW Resources Ltd., reports reserves of 2,400,000 tons at 2.7% Zn, 0.39% Cu, with a higher grade section of 80,000 tons of 6.2% Zn, 3.9% Cu, 1.2 oz Ag per ton, 0.03 oz gold per ton (1981). Work on a copper-nickel deposit in Groves township from 1953 to 1975 resulted in the delineation of some 500,000 tons of reserves grading 1.5 - 2% combined Cu-Ni (Ontario Nickel Mines Ltd., Nickel Gold Mines Ltd.).

A large portion of the northern part of the belt was evaluated by Canadian-Johns Manville for its asbestos potential from 1951 to 1967. The Reeves Mine in Reeves Township reportedly had reserves of 20,000,000 tons of 3 to 3.5% asbestos fibre content (1967). Upon cessation of the asbestos mining activities, a thriving talc mining/milling complex has been established at the site by Steetly Talc Limited.

5.1.3 <u>Opeepeesway Lake Area</u>

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The east arm of Opeepeesway Lake is indicated to be underlain by a subvolcanic felsic intrusive body known locally as the Jerome Porphyry (Siragusa, 1980). The porphyry is indicated to be intrusive into conglomeratic and arenitic sediments.

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A sequence of intermediate and mafic volcanic units, including substantial pyroclastic members, outcrops both to the north and south of the East Arm area. The volcano-sedimentary sequence is in turn sandwiched between felsic batholithic "basement" intrusive rocks which outcrop in the southwest and northeast portions of Huffman Township.

Schistosities in the rock units strike WNW-ESE and everywhere dip steeply to vertically. There is no evidence of any major fold closures in the area. The OGS was not able to make any stratigraphic top determination in the area, a function in part of the intense deformation and alteration that many of these rocks have undergone.

A major, regionally conformable zone of shearing and alteration, possibly 2 kilometres or more in width, extends along and under the East Arm area of Opeepeesway Lake. This deformation is post-porphyry intrusive in age and has greatly affected the porphyry body and the enclosing sediments. As will be discussed in more detail later, large thickness of sediments have been reduced to very fissile chlorite-sericite schists by the intense shearing.

Notable alteration effects in both the porphyry and sediments, include widespread carbonatization along with hematization and variable silicification, sericitization and pyritization. The latter three effects are usually distinctly shear-controlled and often carry gold values.

It is a possibility, as noted, that this zone of intense deformation/alteration represents a westward continuation of one of the major "Breaks" of the central Abitibi, possibly the Cadillac-Larder Lake/Kirkland Lake Break (s).

The Jerome gold deposit occurred in an embayment along the south contact of a porphyry body to the west of the present property.

5.1.4 The Jerome Gold Mine

A brief review of this deposit is important in the context of work on the present ground.

During the period 1941-1945, 58,893 oz of gold and 15,144 oz of silver were produced from 335,060 tons for a recovered grade of 0.17 oz of gold per ton. Present ore-reserves are reported as 344,000 tons grading 0.19 oz gold per ton, from exploration in 1981.

W.L. Brown (1948) makes the following additional comments.

"The rocks in the general area are largely Timiskaming conglomerate and arkose intruded by granodiorite porphyry bodies of various sizes. The largest of these porphyry masses extends east from the mine for over 2 miles, and is rudely lenticular in shape. The maximum width of the mass in a north-south direction is 4,000 feet. The orebody lies along a throughgoing shear zone on the south contact of the porphyry where it narrows down at its western end. Where irregularities exist in the contact, the shear zone cuts through, so that in places the vein has sediments or porphyry on both sides. Contacts between sediments and porphyry are gradational and, as the sediments are highly altered or "porphyritized", it is often difficult to differentiate sediments from porphyry. Close to the vein hydrothermal alteration is extensive and the rocks, both porphyry and sediments, assume a brick-red coloration due largely to fine hematite dust. The vein consists of bluish coloured, cherty replacement silica along the north side and a later, white, quartz-carbonate replacement to the south. Pyrite, chalcopyrite, tetrahedrite, galena, sphalerite, molybdenite, and native gold have been recognized.

The vein, replacing the sheared and brecciated zone along the porphyry contact, has a definite form striking N. 50° W. at the east end of the mine and gradually changing to N. 80° W. at the west end. The average dip is 72° to the north. The gradual arc in the shear zone may be an important structural control on the emplacement of the ore. Fractures or stringer zones diverge tangentially both east and west of the centre of the arc in the main vein. These subsidiary zones consist of a number of rudely parallel, bluish quartz stringers in sufficient number to make ore zones.

The vein material varies from 5 to 75 feet wide. The material of ore grade lies largely along the hanging-wall side and varies from 5 to 40 feet wide. Ore shoots have been found, to date, over a strike length of 3,000 feet.

Post-vein faulting is one of the most prominent structural characteristics of the mine. A series of low-angle thrust faults offset the vein with a right-hand horizontal displacement varying from 1 foot to 50 feet".

6.0 GLACIAL HISTORY OF THE SOUTH SWAYZE AREA

The soils on the present property are developed on various glacial deposits such that an understanding of the glacial history of the region is important in the interpretation of the soil geochemical results.

There is evidence for three till sheets apparently representing two distinct ice advance/retreat cycles in the area. This is based on observations on the present property and in results from some deep overburden trenching work elsewhere in the immediate area. In these latter trenches, rounded "boulders" to 1 ft or more of Fe-cemented till or ferricrete are present as clasts in a coarse greyish cobbly to bouldery till with a predominantly sandy matrix. These Fe-cemented till clasts therefore require the presence of a pre-existing till.

Overlying the above till(s) is a bouldery ablation till which is typically reddish and oxidized. Individual boulders may be in excess of 2 m in greatest dimension. Numerous boulder fields in the area represent deposits of bouldery ablation till out of which the fines have been winnowed by glacial water action leaving areas of bouldery lag. These fines comprise silt with some very fine sand and clay and have themselves collected to form various pod and blanket-like deposits throughout the area. Individual pods or lenses may be a few metres to in excess of several hundred meters in extent. In some cases, this fine material forms clearly defined beds of 1-2 m thickness between lower grey till and overlying reddish ablation till. In other cases, the deposits of fine material contain very large glacial boulders around which the fines have been deposited.

The bouldery ablation till appears to have a relatively patchy distribution given that the uppermost glacial deposit in many cases is the fine silt material.

Ice direction measurements in the area suggest two main advances from oldest to youngest:

- a) a relatively weak SE-trending advance followed by
- b) a strong S to SSW-trending advance

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The relative erosive strength of the various advances is a subjective interpretation based on the depth and intensity of glacial gouging of outcrop surfaces.

The oldest advance (a) may be associated with the ferricrete till boulders, themselves present in the main stage till associated with advance (b). This latter advance represents the main late Wisconsinian ice advance which deposited prominent south-trending eskers in the region such as that followed by the Dore Road for a considerable distance. This advance was a relatively strong one which largely destroyed/re-worked any existing glacial deposits.

A large segment of this latter ice sheet appears to have melted essentially in place over the general area to have formed the ablational bouldery moraine.

7.0 OPERATIONS - 1992 EXPLORATION PROGRAM

The 1992 program consisted primarily of the collection and analysis of a total of 452 soil geochemical samples on the claims. The samples were collected along specific lines laid out both to cover known zones from an orientation viewpoint and to investigate overburden-covered areas of the property felt to be prospective for gold and base metals, particularly areas containing previously untested electromagnetic features.

Samples were collected with a posthole-type soil auger at depths generally varying from 1 to 3 feet (0.3 - 1 m) depending on local overburden conditions. Samples were routinely collected at 50 ft intervals except were swampy conditions dictated a wider sampling interval. Sample sites were marked with flagging tape labelled with the sample number.

Approximately 200 g of sample material was collected at each site. A brief note was made as to sample type. The sample was placed in kraft bags, dried and sent to Swastika Assay Laboratories in Swastika, Ontario for analysis for Cu, Pb, Zn, Au and Ag by atomic absorption methods on the -80 mesh fraction. One assay-ton fusions were used for the gold work.

The field work was carried out in three stages namely an initial access reconnaissance in August to determine how close the new E.B. Eddy roads were to the property (these are still several kilometers to the north in Huffman township), the main phase of soils work and some additional geologic investigations in late September and a follow-up round of soil sampling in late October.

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8.0 <u>RESULTS - 1992 EXPLORATION PROGRAM</u>

8.1 Geology and Mineralization

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A few additional outcrops were located and examined during the soils work specifically a couple of feldspar porphyry outcrops on the land portion of claim 1176306 and on the point of land on claim 1170407 and a local area of diabase outcrop in the northwest portion of claim 1176302. These have been added to the existing geology map but do not materially affect the existing interpretation.

Some additional time was spent around the Cu-bearing trenches in the southwest portion of claim 1176296. There are definitely two ages of mineralization represented here. The oldest consists of finely disseminated chalcopyrite in amounts of up to 3% in variably silicified, hematized and carbonatized schistose to massive feldspar porphyry. Much of the chalcopyrite is distinctly associated with green/black chlorite slips. Some of the chalcopyrite has weathered to secondary malachite and azurite. Thin shear-parallel quartz-carbonate stringers containing very fine blue-grey tetrahedrite/galena cut this rock.

This mineralization appears to trend approximately az 120°, ie parallel to regional shearing and stratigraphy. The base-precious metals mineralization at the Gaffney and line 84+65E showing areas is of this same vintage.

Distinctly crosscutting the above at the main Cu-showing area is a set of late quartzchalcopyrite veins. These trend northerly to north-northeasterly and dip steeply $(60^{\circ} \pm)$ west. Individual veins may be up to 10 cm wide based on rubble in one of the old trenches. The quartz vein material is typically semi-crystalline and drusy attesting to late stage, very passive infillings of tensional type fractures. The chalcopyrite occurs as scattered, often very coarse splashes and aggregates within the quartz material. Selected samples of vein material would probably assay several percent copper although this material would grade less than 1% Cu in average. This material is not appreciably goldbearing based on a single sample which returned approximately 700 ppb Au and 0.73% Cu (sample OP-92-06; Appendix 1).

It would be necessary to properly strip this area to determine how extensive/significant this later vein mineralization may be.

Additional old drillcore was found in the bush near the baseline at about 118E south of the Gaffney showing area. The core was still in wooden core boxes, most badly rotted, and bound with wire as if it had never been examined. The core was laid out to the extent possible and examined by the author on September 24. No hole number was apparent although some of the footage makers could still be read. The hole had a total depth of 667 ft. It was probably one of the Worthington Mines holes drilled in 1962.

In general, the hole started out in feldspar porphyry, passed through a conglomerate unit and ended in porphyry.

No significant base metals mineralization was observed in the hole although a number of zones of 1-3% or more of disseminated pyrite were noted in sheared and variably altered (hematized, carbonatized, sericitized, chloritized) porphyry. Minor disseminated magnetite is present near the top of the hole in porphyry. Up to 5%, somewhat coarser pyrite is present in relatively massive chloritic feldspar porphyry at 30 ft. A strongly sericitized carbonate zone is present in porphyry from about 482-487 ft with minor galena/tetrahedrite in a carbonate veinlet.

A number of representative samples were collected from the core for possible future use.

8.2 <u>Soil Geochemistry</u>

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8.2.1 Topography

Soil geochemical anomalies may be displaced downslope as well as down-ice such that knowledge of local topography is necessary for proper interpretation of the geochemical results.

There are no substantial variations in topographic relief on the present property. The most notable feature is a low, poplar ridge which dominates the central portion of the property. This feature trends ESE, parallel to bedrock strike, and is clearly bedrock-controlled. It gives way, both north and south, over most of the property to swamp. Local bedrock-controlled higher ground is also present along the lakeshore in the southwest property area and on the point of land on claim 1170407.

Areas of dense cedar swamp have been outlined on the accompanying geochemistry map in some detail as it was generally not possible to get samples of clastic material in such areas.

8.2.2 Soil Types and Distribution

There has been variable soil development across the entire property. These soils are developed on the various transported glacial deposits and do not represent residual soils developed on pre-existing bedrock.

A typical non-swamp soil profile would consist of the following:

Type	Thickness	<u>Classical</u> Designation
Organic litter, dark coloured	2-10 cm	$A_0 + A_1$
Zone of leaching, whitish	50-30 cm	A ₂
Zone of accumulation, reddish to yellowish to orangish brown	30 cm <u>+</u>	В
Parent glacial deposit (i) fine silt <u>+</u> clay, sand-whitish (ii) till-brownish to grevish	to several meters	С

The samples taken during this survey consisted variably of B-zone and C-zone material depending on local conditions. All of the very fine silt samples are of generally quite compact, whitish to greyish C-zone material.

In terms of sample type, most of these were of variably weathered till. This is particularly true on the areas of higher ground. Areas of lower ground as in the west-central portion of the property are underlain by silty material. Numerous areas of bouldery lag were encountered during the sampling although with a little effort it was possibly to penetrate through this and obtain good samples in virtually every case. These bouldery lags favoured the lower areas in many cases although not universally so as witnessed by numerous bouldery patches along the central ridge of high ground.

The cedar swamp areas are underlain by a peat layer which is typically thicker than the 1 m plus length of the soil auger. This peat material comprises variably decomposed organics and was not sampled as there would have been insufficient samples to create a statistically meaningful population. When the peat layer could be penetrated by the soil auger, this was found to be invariably underlain by a water-saturated version of the silt/clay material which had a diagnostic putty or plasticence-like consistency. Boulders were encountered on other occasions.

8.2.3 Analytical Results and Threshold Levels

The analytical data are presented in raw form in Appendix 1. Histograms have been generated by computer for each of the elements as presented in Appendix 2. From inspection of these histograms and other experience in south Swayze, the following threshold levels have been selected:

<u>Element</u>	Background	Elevated Background	<u>Anomalous</u>
Cu ppm	0-34	35-54	55+
Pb ppm	0-13	14-19	20+
Zn ppm	0-49	50-84	85+
Ag ppm	0-0.3		0.3+
Au ppb	0-11	12-19	20+

The "elevated background" values may be as significant in an exploration context as the "anomalous" values in that the former may relate simply to increased overburden depth over a mineralized zone otherwise characterized by "anomalous" values.

8.2.4 Data Presentation

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The geochemical data are plotted on the accompanying map at a scale of 1 inch equals 200 feet relative to topography, main geological contacts, known mineralized zones and previously defined electromagnetic features. Where the gold values have been checked by Swastika, the average of the two values has been used. Individual elevated and anomalous values are highlighted and overall areas of anomalous soil geochemistry are outlined.

9.0 GEOCHEMICAL RESULTS

Three large, well defined areas of anomalous soil geochemistry have been identified by the 1992 survey designated "A", "B" and "C" on the accompanying plan as follows:

<u>Anomaly "A"</u> underlies portions of claims 1176303, 304 and 305 and is open to the west. This feature is characterized by elevated to highly anomalous values principally in Au, Ag, Pb and Zn. The highest gold values (130, 140 ppb), silver value (13 ppm), zinc values (300 - 450 ppm) and lead values (to 263 ppm) of the entire survey occur in this anomalous zone.

Sample quality in this area is generally excellent with samples consisting mainly of variably weathered till material. The till cover is generally thin. Overburden cover increases to the west and sample quality decreases with the westernmost samples being generally of whitish silty material.

Highly anomalous sample 92-83 is of till material from the bedrock interface from an old backhoe trench on a mineralized zone (Au, Ag, Pb, Zn). Sample 92-383, which contains even higher Au (140 ppb) and Zn (456 ppm) values than the above, is not clearly related to any known mineralization.

Overall, Anomaly "A" is very clearly mapping the known corridor of precious and base metals mineralization along the main porphyry-sediment contact in the west-central portion of the property.

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<u>Anomaly "B"</u> is primarily a Au-Cu-Pb-Zn anomaly. Anomaly amplitudes are generally lower relative to those encountered in "A" although overburden is considerably thicker in the vicinity of "B" and many or most of the samples here are of the less desirable glaciofluvial/glaciolacustrine silt material.

Anomaly "B" is interrupted in the area of line 76+65 E. The samples in the critical area here are of poor quality and overburden may be quite deep. The anomaly does, however, reappear to the west and is open to the west under Opeepeesway Lake. The highly anomalous value of 84 ppb Au in sample 92-75 is very intriguing in light of the less than ideal sampling conditions in this area.

Anomaly "B" coincides with portions of at least two previous, untested EM conductors, most notable Falconbridge conductor no. 8.

<u>Anomaly "C"</u> is most notably a Cu anomaly with significant Au correlation on line 102+65 E. The Cu value of 708 ppm in sample 92-416 was the highest recorded in the survey. The samples at the east end of anomaly "C" on line 114 E are also notably enriched in Pb and Zn + Ag.

Anomaly "C' is open to the east under the lake and probably continues under the swampy ground to the south.

The anomaly in general corresponds with an area of known disseminated and vein-type Cu mineralization in feldspar porphyry both in surface trenches and previous drill holes. Again, however, some of the best responses, eg at the south end of line 99+65 E, and perhaps most interestingly at the south end of line 114 E, are unexplained by known mineralization.

Anomaly "C" coincides over much of its extent with Falconbridge conductor no. 4.

A final anomalous area worthy of mention is the weak but distinct Au anomaly along the swamp edge flanking Falconbridge EM conductor no. 9 between anomalies "A" and "B" on lines 72+65 E and 76+65 E.

There are a number of other elevated to weakly anomalous metal values scattered throughout the survey area which do not form coherent patterns and which have not been selected for discussion. Some of these may take on increased significance during on-going exploration on the claims.

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10.0 DISCUSSION

Last years' geological work dispelled the notion of a single, thick, homogeneous feldspar porphyry intrusion in contact with conglomeratic sediments to the north. The "feldspar porphyry" is in fact a heterogeneous unit comprising pyroclastic and sub-volcanic phases interbedded with various sedimentary units.

This years' soil geochemistry also seems to clearly dispelled the notion of a single "favourable porphyry-sediment contact" for precious and base metals mineralization.

Soil anomalies "B" and "C" clearly point to additional, largely untested mineralized corridors to the south of the main contact that may very well be more prospective than the former. For example, anomaly "B" may well be more significant than "A" given the generally less than ideal sampling conditions and deeper overburden in "B".

It is also very interesting that there is virtually no anomalous soil response in the area of three of the supposed key showings on the property namely the original Jess Mac Au-Ag-Cu-Pb-Zn zone and Smith Au-quartz vein zones in the east and the Osway Au-quartz vein zone in the extreme northwest. Either these zones do not extend to surface in any appreciable fashion or they are of little substance. I suspect the latter.

There appears to be some down-ice, ie southwards, smearing of the anomalous values in some cases. One example would be at the south end of line 72+65 E where the gold values decrease quite systematically from sample 92-75 southward. In most cases though, it does appear that the highest values are sited directly over bedrock mineralization. Thus it appears, for example, that the anomalous Cu values to the south of the surface trenches in the main Cu-showing area reflect new mineralization and not glacial smearing from the known zone (s).

E.

11.0 <u>CONCLUSIONS</u>

Results of the recently completed soil geochemical survey in the context of previous work permit a number of conclusions regarding the Huffman township property:

- 1. Routine 80 mesh soil geochemistry is a fast and effective method for mineral exploration in the South Swayze Samples should be taken from as deep as possible. Locally derived, weathered till provides the best sampling medium. Finer glaciofluvial/glaciolacustrine material is less desirable although still effective judging by the present survey. Anomaly contrast will be lower than in till. Attempts to sample in thick cedar swamp areas proved ineffective.
- 2. The geochemical results have defined some high priority target areas on the property which should be subjected to follow-up exploration. Specifically, the corridor containing geochemical anomalies "B" and "C" appears to represent a new, laterally extensive mineralized structure(s) which may be more prospective for stratabound, structurally-controlled gold-base metal deposits than the "main" contact area to the north.
- 3. The geochemical results have led to a complete re-focusing, namely away from some of the historic showings, which might be relatively unimportant, towards the largely untested south and west portions of the property.

- 4. Review of mineralization styles on the property indicates that the most prospective model in general is for structurally-controlled gold deposits with associated base metal sulphides of the Jerome Mine type. The potential for a large tonnage, low grade Cu-Au deposit around and to the south of the main Cu showing area on claim 1176246 is still intriguing.
- 5. The type of geophysical surveying probable most appropriate to the observed style of mineralization, namely Induced Polarization, has never been carried out on the property.

12.0 <u>RECOMMENDATIONS</u>

Comprehensive Induced Polarization surveying should be completed over the entire property, including the lake (and previous Falconbridge EM conductor no. 1 area), as a prelude to a diamond drilling program. A new metric grid should be cut for this work using the Osway baseline with lines at 100 m intervals. The all inclusive cost of this work would be in the \$ 50,000 range.

Also, if access permits next year, the main copper showing area should be thoroughly bulldozerstripped, washed and sampled such that relationships here can be more clearly understood.

Respectfully submitted W.E. Brereton, P. Eng.

APPENDIX 1

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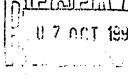
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ANALYTICAL RESULTS



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Geochemical Analysis Certificate

2W-1032-RG1

Date: OCT-02-92

Company:MPH CONSULTING LTDProject:C1448Attn:B. BRERETON

We hereby certify the following Geochemical Analysis of 1 ROCK samples submitted SEP-25-92 by .

Sample	Au	Ag	Cu	· · · · · · · · · · · · · · · · · · ·
Number	PPB	PPM	PPM	
92-OP-06	581/826	1.8	7260	· · · · · · · · · · · · · · · · · · ·

92-09-06: From old trench at 102+65E, 5+50N N3% chalcopynte as coarse aggregates in 5 cm gtz vein cutting altered and unineralized Feldspar paptuyy.

Certified by L Jon - - -Mandaan

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Geochemical Analysis Certificate

Company:MPH CONSULTING LTDProject:C1448Attn:W. BRERETON

We hereby certify the following Geochemical Analysis of 100 SOIL samples submitted SEP-25-92 by .

Sample Number	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	•
92-01	4	0.1	18	5	30	• • • • • • • • • • • • • • • • • • •
92-02	10/6	0.1	13	5 5 3	31	
92-03	14	0.1	11	3	23	
92-04	4	0.1	15	3	19	
92-05	3	0.1	21	6	34	
92-06	3	0.1	21	6	29	
92-07	3	0.1	34	6	33	
92-08	5	0.1	9	4	18	
92-09	32	0.1	12	4	19	
92- 10	2	0.1	14	7	40	•
92-11	3	0.1	20	4	23	
92-12	2	0.1	29	4	24	
92-13	3	0.1	23	4	26	
92-14	14/19	0.1	29	11	55	
92-15	7	0.1	7	9	16	
₹92-16	7	0.1	14	4	27	
92-17	7	0.1	6		22	
92-18	4	0.2	9	5 5	25	
92-19	5	0.1	12	. 4	21	
92-20	5 5	0.1	11	5	28	
92-21	6	0.1	17	4	25	
92-22	15	0.2	15	6	40	
92-23		0.1	8	6 5	25	
92-24	4 5 5	0.1	16	5	32	
92-25	5	0.1	13	6	27	
92-26	3/3	0.1	13	5	25	
92-27	2	0.1	12	5 5 5	25	
92-28	2 3	0.1	11		25	
92- 29	2	0.1	9	4	16	
92-30	18	0.1	12	5	21	

Jonna Hardner Certified by

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2W-1046-SG1

Date: OCT-08-92



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Company: Project: Attn:

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C1448 W. BRERETON

We hereby certify the following Geochemical Analysis of 100 SOIL samples submitted SEP-25-92 by .

Sample Number	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	
92-31	6	0.1	11	4	24	*****************
92-32	3	0.1	15	5	26	
92-33	16/16	0.1	26	. 7	43	
92-34	4	0.1	16	4	25	
92-35	3	0.1	14	4	30	
92-36	2	0.1	12	3	27	
92-37	4	0.1	11	3 5	41	
92-38	44/55	0.4	22	17	50	
92-39	8	0.1	24	9	35	
92-40	6	0.6	9	8	52	
92-41	12	0.4	31	10	55	
92-42	8 7	0.1	37	7	70	
92-43	7	0.1	25	6	51	
92-44	7	0.1	15	3	24	
92-45	5	0.1	17	4	28	
92-46	8	0.1	11	4	15	
92-47	6	0.2	49	6	112	
92-48	10	0.1	23	5	26	
92-49	3	0.1	11	4	23	
92-50	4	0.1	11	7	26	
92-51	21/14	0.1	15	6	24	
92-52	5	0.1	12	4	25	
92-53	10	0.1	16	4	28	
92-54	9 8	0.1	9	8	27	
92-55	8	0.1	13	13	29	
92-56	13	0.1	13	9	38	
92-57	9	0.1	4	10	19	
92-58	4	0.1	28	5	30	
92-59	- 5	0.1	18	4	32	
92-60	1	0.1	16	4	30	

Certified by Donna Hardra

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Date: OCT-08-92

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MPH CONSULTING LTD Company: C1448 Project: Attn:

W. BRERETON

We hereby certify the following Geochemical Analysis of 100 SOIL samples submitted SEP-25-92 by .

Sample Number	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	
92-61	2	0.1	18	4	25	
92-62	3	0.1	14	5	26	
92-63	4	0.2	4	15	65	
92-64	9	0.3	13	46	158	·
92-65	2	0.1	11	5	26	
92-66	2	0.6	8	10	83	
92-67	13/19	0.6	25	97	305	
92-68	3	0.1	14	6	22	
92-69	7	0.1	15	6	27	
92-70	9	0.1	16	. 5	24	
92-71	4	0.1	15	4	23	
92-72	18	0.1	15	4	36	
92-73	14	0.1	19	5	34	
92-74	3	0.1	15	4	26	
92-75	90/77	0.1	68	21	56	
92-76	23	0.1	56	20	63	
92-77	13	0.1	22	11	54	
92-78	9	0.1	17	9	52	
92- 79	9 3	0.1	19	14	63	
92-80	6	0.1	17	7	42	
92-81	11	0.9	36	7	46	
92-82	9	0.4	14	7	31	
92-83	101/157	13.0	28	263	387) -
92-84	6	0.7	19	41	305	
92-85	2	0.2	7	24	89	
92-86	4	0.1	20	7	71	
92-87	4	0.1	11	8	65	
92-88	7/11	0.1	9	6	52	· · · · ·
92-89	3	0.1	10	3	23	
92-90	2	0.1	12	3	29	

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Geochemical Analysis Certificate

Company:MPH CONSULTING LTDProject:C1448Attn:W. BRERETON

We hereby certify the following Geochemical Analysis of 100 SOIL samples submitted SEP-25-92 by .

Sample Number	Au PPB	Ag PFM	Cu PPM	Pb PPM	Zn PPM	
92-91	9	0.1	17	A	39	
92-92	6	0.1	24	4	34	
92-93	3/3	0.1	10	5	28	
92-94	5	0.1	17	2	21	
92-95	3	0.1	14	2	18	
92-96	6	0.1	10	4	24	
92-97	3	0.1	10	3	21	· · · · · ·
92-98	3	0.1	14	5	26	
9 2-99	3	0.1	18	5	23	
92-100	5/3	0.1	15	7	31	•

Certified by Donna Handre

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Date: OCT-08-92



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Company: MPH CONSULTING LTD Project: C1448

Attn: B. BRERETON

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Sample	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	
Number						
92-101	4/6	0.1	20	6	31	
92-102	5	0.1	20	5	27	
92-103	6	0.1	13	6	. 29	
92-104	15	0.1	38	5	29	
92-105	10	0.1	23	4	28	
92-106	6	0.1	9	4	21	
92-107	6 3	0.1	16	4	24	
92-108	15	0.1	54	6	52	
92 -109	15	0.1	17	5	40	
92-110	9/9	0.1	12	5	18	
92-111	10	0.1	48	7	56	
92-112	6	0.1	14	4	30	
92-113	10	0.6	22	32	178	
92-114	14	0.7	16	32	209	
92-115	23/24	0.3	31	51	179	
92-116	5	0.3	82	81	225	
92-117	9	0.4	11	9	31	
92- 118	12	0.1	14	5	25	
92-119	3	0.1	12	7	30	
92-120	3 3	0.1	10	6	31	
92-121	3	0.1	10	6	26	
92-122	3	0.1	9	5	31	
92-123	3	0.1	16	5 5 7	26	
92-124	3	0.1	16	7	30	
92-125	3	0.1	17	6	29	
92-126	3	0.1	13	5	26	
92-127	4	0.1	11	5	29	
92-128	15/7	0.1	29	12	67	
92-129	4	0.1	10	6	23	
92-130	4	0.1	10	4	23	

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We hereby certify the following Geochemical Analysis of 100 SOILS samples submitted SEP-25-92 by .

Sample Number	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	
92-131	15	0.1	29	11	60	
92-132	4	0.1	9	5	29	
92-133	5	0.1	10	5	30	
92-134	21	0.2	43	10	57	
92-135	17	· 0.1	35	11	53	
92-136	28/21	0.1	38	11	55	
92-137	26	0.2	49	11	77	
92-138	28/22	0.1	22	8	56	
92- 139	9	0.1	17	6	32	
92-140	9	0.1	10	9	42	
92-141	9	0.1	17	10	58	
92-142	5	0.2	14	10	39	
92-143	8	0.2	9	7	36	
92-144	2	0.1	28	12	43	
92-145	7	0.2	18	13	52	
92-146 NOT RECD						
92-147 NOT RECD						
92-148 NOT RECD						
92-149 NOT RECD						
92-150	10/7	0.1	11	. 6	36	
92-151	3	0.1	9	4	20	
92-152	3	0.4	10	4	29	
92- 153	3	0.1	9	4	27	
92-154	4	0.1	15	4	36	
92-155	7	0.1	16	3	24	
92-156	3	0.1	26	3	21	
92-157	6	0.1	18	4	19	
92-158	3	0.2	5	8	142	
92-159	13	0.1	14	11	41	
92-160	7/9	0.1	18	6	57	

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Geochemical Analysis Certificate

Company: MPH CONSULTING LTD Project: C1448

Atta: B. BRERETON

We hereby certify the following Geochemical Analysis of 100 SOILS samples submitted SEP-25-92 by .

Sample	Au PPB	Ag PPM	Cu	Pb	Zn	
Number			PPM	PPM	PPM	
92-161	5	0.2	8	8	38	
92-162	3	0.1	10	5	30	
92-163	3	0.2	12	5	69	
92-164	3	0.2	10	4	36	
92-165	2	0.1	12	4	24	
92-166	3	0.1	13	4	24	
92- 167	3 3 3	0.1	17	4 .	25	
92-168		0.1	13	6	27	
92- 169	3	0.1	11	6	28	
92-170	3	0.1	10	5	23	
92-171	3	0.1	12	4	18	
92-172	36/38	0.2	50	32	75	
92-173	13	0.2	32	18	64	
92-174	7	0.1	27	16	95	
92-175	15/15	0.2	36	20	75	
92-176	7	0.1	11	10	45	*************
92-177	21/21	0.2	46	22	67	
92-178	10	0.1	30	23	59	
92 -179	19/21	0.2	48	21	65	
92-180	12	0.2	35	14	43	
92-181	22/15	0.1	49	28	70	
92-182	18/27	0.1	55	27	71	
92-183	. 4	0.1	13	4	24	
92-184	3	0.1	17	5	32	
92-185	3	0.1	15	6	30	
92-186	3	0.1	14	5	26	*************
92-187	2	0.1	5	5	19	
92-188	2	0.1	9	5	27	
92-189	3	0.1	11	5	31	
92-190	3/2	0.1	12	6	22	

Certified by Donna Handron

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We hereby certify the following Geochemical Analysis of 100 SOILS samples submitted SEP-25-92 by.

Sample Number	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	
92-191	3	0.1	21	6	20	
92-192	3	0.1	15	4	25	
92-193	18	0.2	26	25	329	•
92-194	. 3	0.1	14	7	45	
92-195	3	0.1	9	8	56	
92-196	3	0.1	18	6	29	
92-197	5	0.1	8	· 5	18	•
92-198	2	0.1	13	5	24	
92-199	2	0.1	6	6	22	
92-200	7	0.1	10	5	21	
92-201	4/5	0.1	18	4	25	
92-202	3	0.1	6	4	19	
92-203	3	0.1	23	. 4	25	
92-204	5	0.1	20	5	24	

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Date: OCT-09-92

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2W-1048-SG1

Company: MPH CONSULTING LTD

Geochemical Analysis Certificate

Date: OCT-13-92

Project: C1448 Attn: B. BRERETON

We hereby certify the following Geochemical Analysis of 100 SOILS samples submitted SEP-25-92 by .

Sample Number	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	
92-205	2	0.1	17	4	33	
92-206	5	0.1	35	. 4	28	
92-20 7	3	0.1	31	4	40	
92-208	10	0.1	66	4	30	
92-209	9/10	0.1	41	5	27	
92-210	1	0.2	29	5	31	
92-211	3	0.1	56	4	58	
92-212	1	0.1	19	6	24	
92-213	3	0.1	42	3	20	
92-214	2	0.1	28	4	32	
92-215	2	0.1	33	4	29	
92-2 16	3	0.1	24	3	40	
92-2 17	3/2	0.1	25	5	36	
92-2 18	2	0.1	19	3	45	
92-219	3	0.1	15	3	30	
92-220	3	0.1	12	3	27	
92-22 1	3	0.1	16	3 3	27	
92-2 22	3 2	0.1	17	2	27	
92-223		0.1	15	2	26	
9 2-224	3	0.1	28	2	40	
92-225	29/38	0.1	25	8	58	
92-226	3	0.1	15	4	45	
92-227	45/38	0.2	134	4	23	
92-228	79/77	0.6	206	4	25	
92-229	20	0.2	107	3	27	
92-230	10	0.1	144	3	25	
92-231	10	0.1	72	2 2	17	
92-232	3 8	0.1	31	2	13	
92-233	8	0.1	55	2	21	
92-234	3	0.1	53	3	31	

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Geochemical Analysis Certificate

Company:MPH CONSULTING LTDProject:C1448Attn:B. BRERETON

We hereby certify the following Geochemical Analysis of 100 SOILS samples submitted SEP-25-92 by .

Sample Number	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	
92-235	3	0.1	21	4	31	
92-236	3	0.1	17	4	73	
92-237	3	0.1	45	5	57	
92-238	3/2	0.1	17	5	36	
92-239	3	0.1	20	3	30	
92-240	3	0.1	17	3	26	
92-241	1	0.1	13	2	20	
92-242	3	0.1	12	4	22	
92-243	2/3	0.1	15	. 3	22	
92-244	2	0.1	16	4	24	
92-245	2	0.1	11	3	27	
92-246	1	0.1	12	3	25	
92-247	3	0.1	10	4	32	
92-248	2 3	0.1	10	4	21	
92-249	3	0.1	9	4	28	
92-250	2	0.1	22	3	24	
92-251		0.1		4	21	-
92-252	2 2	0.1	10	2	26	
92-253	2/1	0.1	12	4	21	
92-254	9	0.1	89	3	28	
92-255	5	0.1	42	4	30	
92-256	9	0.1	45	4	23	
92-257	7	0.1	235	4	24	
92-258	3	0.1	36	4	26	
92-259	4	0.1	40	4	29	
92-260	3	0.1	15	4	24	
92-261	17/10	0.3	244	14	88	
92-262	16	0.8	69	21	200	•
92-263	5	0.2	38	18	49	
92-264	3	0.2	11	6	103	

Certified by Lorna Hardner

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Company:MPH CONSULTING LTDProject:C1448Attn:B. BRERETON

We hereby certify the following Geochemical Analysis of 100 SOILS samples submitted SEP-25-92 by .

Sample Number	Au PPB	Ag PRM	Cu PPM	Pb PPM	Zn PPM	
92-265	2 3	0.1	14	7	37	
92-266	3	0.3	- 17	9	42	
92-267	3	0.1	13	6	39	
92-268	3	0.1	17	6	32	
92-269	3/2	0.1	19	5	25	
92-270	3	0.1	15	4	24	_
92-271	- 5	0.1	21	4	25	
92-2 72	3	0.1	18	3	25	
92-273	3	0.1	13	4	27	
92-274	3	0.1	7	5	23	
92-275	2	0.1	16	4	23	
92-276	1	0.1	20	5	36	
92- 277	3	0.1	36	4	30	
92-278	3	0.1	16	4	21	
92-279	1/1	0.1	16	5	26	
92-280	1	0.1	14	5	22	
92-281	3	0.1	15	4	21	
92-282	3	0.2	10	4	52	
92-283	5	0.2	23	4	24	
92-284	3	0.1	20	6	38	
92-285	7	0.1	17	5	42	
92-28 6	5	0.2	15	3	49	
92-287	3	0.2	14	5	52	
92-288	3/2	0.1	18	5	38	
92-289	6	0.1	17	6	37	
92-290	2 3 3	0.1	13	6	36	
92-291	3	0.1	16	5	21	,
92-292		0.1	19	4	28	
92- 293	6	0.1	20	4	23	
92-294	7	0.1	13	4	25	

Certified by Donna Alandhe

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Geochemical Analysis Certificate

Company: MPH CONSULTING LTD Project: C1448 Attn: B. BRERETON

We hereby certify the following Geochemical Analysis of 100 SOILS samples submitted SEP-25-92 by .

Sample Number	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	•
92-295	3/2	0.1	27	3	32	**************
92-2 96	2	0.1	15	. 2	15	
92-297	2	0.1	15	4	20	
92-298	2	0.1	8	5	24	
92-299	2	0.2	28	5	30	
92-300	9/9	0.1	21	5	26	
92-301	3	0.1	18	3	27	
92-302	3	0.1	23	5	24	
92-303	2	0.1	9	4	14	
92-304	6	0.1	27	5	26	

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Geochemical Analysis Certificate

MPH CONSULTING LTD Company: C1448 Project: **B. BRERETON** Attn:

We hereby certify the following Geochemical Analysis of 40 SOIL samples submitted SEP-25-92 by .

Sample Number	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	
92-305	9	0.1	17	6	25	
92-306	5	0.3	18	8	35	
92-307	3/6	0.2	14	5	27	
92-308	2	0.1	14	5	28	
92-309	4	0.1	13	5	28	
92-310	6	0.1	22	6	28	· • • • • • • • • • • • • • • • • • • •
92-311	4	0.1	6	7	25	
92-312	5	0.1	3	7	10	
92-313	5/5	0.2	9	6	32	
92-314	7	0.1	36	10	30	
92-315	4	0.1	22	10	37	
92-316	14	0.1	61	10	48	
92-317	5	0.2	16	5	43	
92-318	4	0.1	6	6	21	
92-3 19	3	0.1	17	7	67	
92-320	5	0.2	19	7	31	
92-321	3/3	0.1	15	5	29	
92-322	7	0.1	37	9	33	
92-323	3	0.2	18	6	28	
92-324	3	0.3	10	10	96	
92-325	2	0.4	12	6	127	
92-326	3	0.2	21	7	76	
92-327	9	0.1	28	8	47	
92-328	3	0.1	12	5	55	
92-329	3	0.2	9	11	90	
92-330	3	0.8	8	6	26	
92-331	3	0.1	3	5	26	
92-332	4	0.1	9	5	32	
92-333	14/17	0.1	32	7	38	
92-334	9	0.1	9	7	31	

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Page 2 of 2 2W-1049-SG1 Date: OCT-13-92

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Company:MPH CONSULTING LTDProject:C1448Attn:B. BRERETON

We hereby certify the following Geochemical Analysis of 40 SOIL samples submitted SEP-25-92 by .

Sample Number	Au PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	
92-335	3	0.1	22	4	26	
92-336	- 3	0.1	17	4	28	
92-337	5	0.1	22	5	32	•
92-338	2	0.1	18	4	34	
92-339	6	0.1	39	4	28	
92-340	3	0.1	20	4	30	••••••••••••••••••••••••••••••••••••••
92-341	1	0.1	5	6	28	
92-342	6/5	0.1	4	3	15	
92-343	3	0.1	12	6	45	
92-344	1	0.1	20	3	23	

Certified by Donn Hardner

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Page 1 of 4

Date: NOV-04-92

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Company: MPH CONSULTING LTD Project: C1448 Attn: W BRERETON

We hereby certify the following Geochemical Analysis of 112 SOIL SAMPLES samples submitted OCT-28-92 by .

Sample Number	Au PPB	Aucheck PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	
OP-92-345	6	6	0.1	22	48	237	
OP-92-346	3		0.1	۰9	2	54	
OP-92-347	3		0.2	·9	3	81	
OP-92-348	7		0.1	17	4	37	
OP-92-349	11		0.3	11	2	53 .	
OP-92-350	3		0.2	15	8	42	
OP-92-351	333		0.1	6	2	27	,
OP-92-352	3		0.1	19	4	34	
OP-92-353	14		0.1	17	7	39	
OP-92-354	5`		0.3	13	4	29	
OP-92-355	5		0.1	33	4	40	
OP-92-356	16	13	0.2	26	8	72	
OP-92-357	6		0.1	17	3	29	
OP-92-358	4		0.1	13	4	26	
OP-92-359	4		0.1	18	· 2	25	
OP-92-360	3		0.1	17	3	30 .	
OP-92-361	3		0.1	15	5	27	
OP-92-362	3		0.1	19	6	28	
OP-92-363	3		0.1	18	5	23	
OP-92-36 4	· 1		0.1	16	2	24	
OP-92-365	2		0.1	16	2	25	******
OP-92-366	1		0.1	16	4	25	
OP-92-367	3		0.1	16	5	33	
OP-92-368	3		0.1	18	3	38	
OP-92-369	2		0.1	30	3	39	
OP-92-370	3		0.1	23	3	40	•••••
OP-92-371	3	١	0.2	15	5	40	
OP-92-372	7		0.1	23	5	51	
OP-92-373	7		0.1	25	14	38	
OP-92-374	2	4	0.1	6	6	26	

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Geochemical Analysis Certificate

Company:	MPH CONSULTING LTD
Project:	C1448
Attn:	W BRERETON

We hereby certify the following Geochemical Analysis of 112 SOIL SAMPLES samples submitted OCT-28-92 by .

Sample Number	Au Au PPB	check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	
OP-92-375	6		0.4	10	56	201	
OP-92-376	12		0.1	1	4	17	
OP-92-377	3		0.1	13	2	24	
OP-92-378	3		0.1	14	3	26	
OP-92-379	12		0.1	23	13	86	
OP-92-380	21		0.4	27	17	187	
OP-92-381	9		0.2	5	· 14	100	· · -
OP-92-382	8		0.6	9	43	155	
OP-92-383	135	144	1.8	35	145	456	
OP-92-384	3		0.1	12	2	26	
OP-92-385	2		0.1	16	1	26	
OP-92-386	5		0.1	18	3	30	
OP-92-387	5		0.1	16	3	27	
OP-92-388	2		0.1	15	1	25	
OP-92-389	2		0.1	14	2	32	
OP-92-390	32	29	0.1	23	4	44	
OP-92-391	2		0.1	13	2	19	
OP-92-392	2 5 5		0.1	14	3	25	
OP-92-393			0.1	15.	3	28	
OP-92-394	4		0.1	13	2	21	
OP-92-395	3		0.1	16	2	33	
OP-92-396	3		0.1	15	· 3	32	
OP-92-397	3		0.1	15	3	28	
OP-92-398	3		0.1	16	2	25	
OP-92-399	11	15	0.1	26	7	42	
OP-92-400	3		0.1	35	3	35	
OP-92-401	1		0.1	14	2	23	• .
OP-92-402	2		0.1	18	3	24	
OP-92-403	2		0.1	22	. 3	24	
OP-92-404	2		0.1	12	3	20	

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Date: NOV-04-92



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Page 3 of 4

2W-1134-SG1

Date: NOV-04-92

Company:MPH CONSULTING LTDProject:C1448Attn:W BRERETON

We hereby certify the following Geochemical Analysis of 112 SOIL SAMPLES samples submitted OCT-28-92 by .

Sample Number	Au PPB	Au check PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	
OP-92-405	3		0.1	12	5	38	* • • • • • • • •
OP-92-406	2		0.1	17	4	26	
OP-92-407	1		0.1	12	3	24	ł
OP-92-408	3		0.1	13	6	26	
OP-92-409	3		0.1	21	4	29	
OP-92-410	2		0.1	24	4	31	
OP-92-411	7		0.1	17	3	33	
OP-92-412	2		0.1	7	5	30	
OP-92-413	3	3	0.3	8	· 4.	34	
OP-92-414	3		0.1	15.	4	32	
OP-92-415	7		0.1	268	3	28	
OP-92-416	10		0.2	708	3	35	
OP-92-417	7		0.1	16	4	76	
OP-92-418	13		0.1	24	4	50	
OP-92-419	33	34	0.1	10	2	27	
OP-92-420	3		0.1	7.	1	21	
OP-92-421	3		0.1	10	3	29	
OP-92-422	8		0.1	. 14	3	31	
OP-92-423	3		0.1	20	2	27	
OP-92-424	9		0.2	16	6	48	
OP-92-425	8		0.2	24	8	56	
OP-92-426	4		0.3	9	6	60	
OP-92-427	3		0.2	9	8	83	
OP-92-428	4		0.2	15	6	51	>
OP-92-429	5		0.3	22	9	87	
OP-92-430	3		0.1	27	9	53	********
OP-92-431	3		0.1	12	2	23	
OP-92-432	3		0.1	16	5	33	
OP-92-433	2		0.1	16	2	29	
OP-92-434	3	3	0.1	17	6	36	

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Date: NOV-04-92

Geochemical Analysis Certificate

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Company:MPH CONSULTING LTDProject:C1448Attn:W BRERETON

We hereby certify the following Geochemical Analysis of 112 SOIL SAMPLES samples submitted OCT-28-92 by .

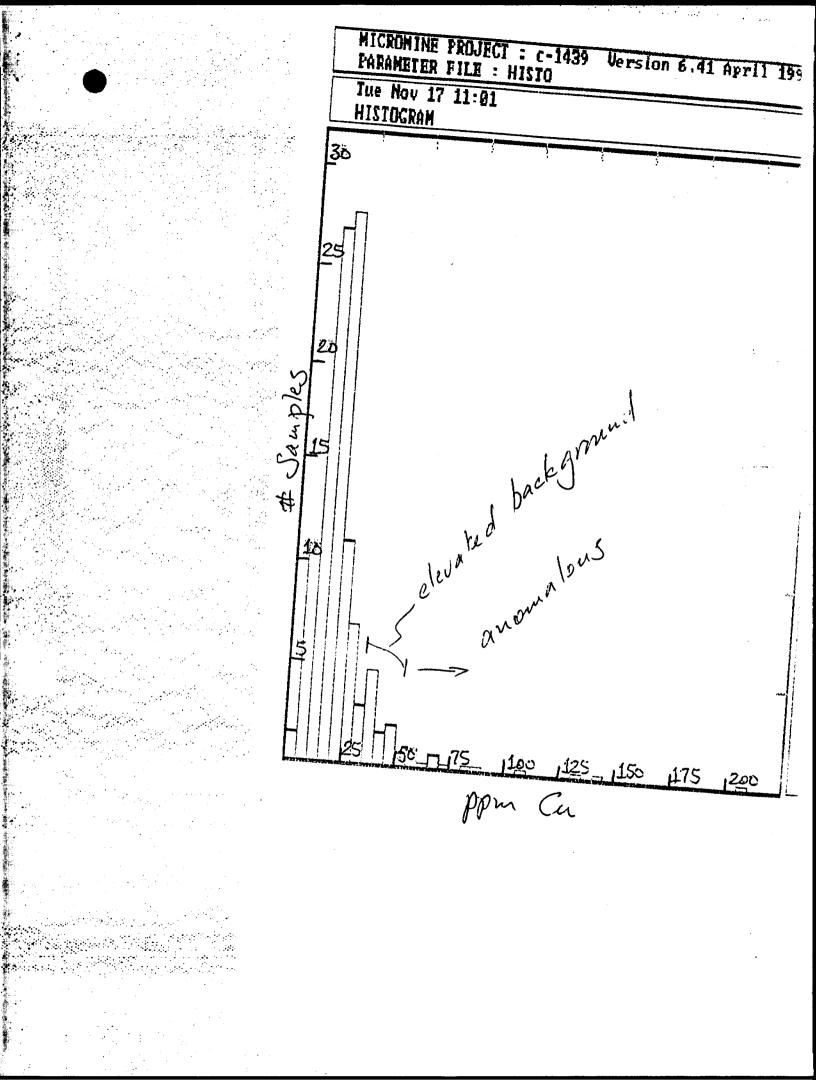
Sample Number	Au Au PPB	check PPB	Ag PFM	Cu PPM	Pb PPM	Zn PPM	
OP-92-435	2		0.1	12	3	35	
OP-92-436	2		0.1	13	2	30	
OP-92-437	2		0.1	12	2	27	
OP-92-438	1		0.1	16	2	28	
OP-92-439	3		0.1	· 14	5	39	
OP-92-440	6		0.1	21	9	40	
OP-92-441	13		0.2	47	16	53	• •
OP-92-442	9	11	0.1	36	17	52	
OP-92-443	14		0.1	26	13	44	
OP-92-444	7		0.1	28	12	38	
OP-92-445	17		0.1	43	16	51	
OP-92-446	12		0.1	, 36	12	44	
OP-92-447	15		0.1	41	15	54	
OP-92-448	13		0.1	33	15	47	
OP-92-449	15		0.2	39.	20	64	
OP-92-450	15		0.1	35	14	54	
OP-92-451	17		0.1	36	14	65	
OP-92-452	9	11	0.1	34	14	64	
OP-92-453	6		0.1	25	10	55	
OP-92-454	9		0.1	20	6	30	
OP-92-455	9		0.2	13	7	24	
OP-92-456	9		0.1	28	10	36	

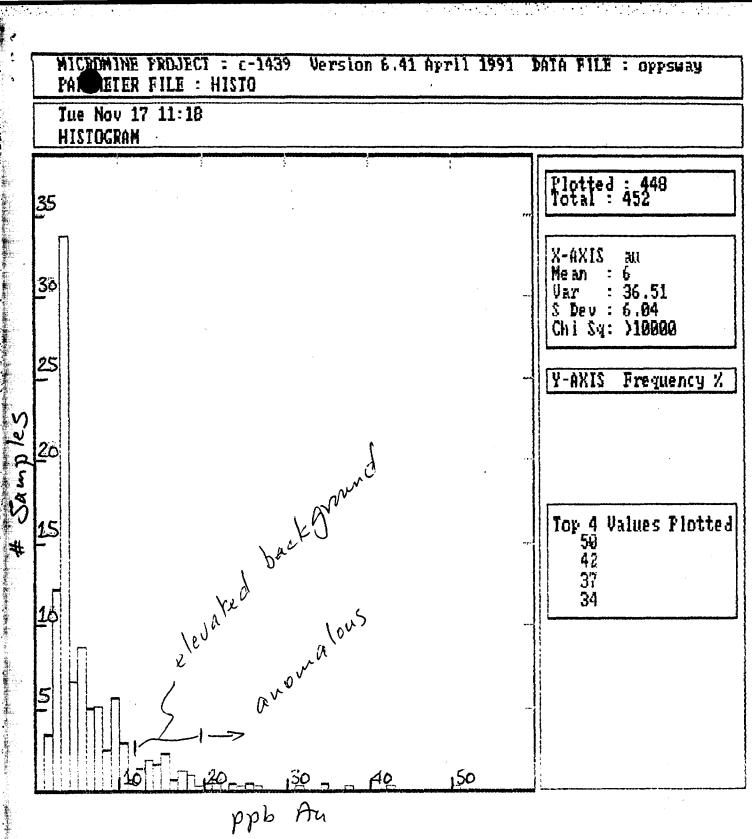
Certified by

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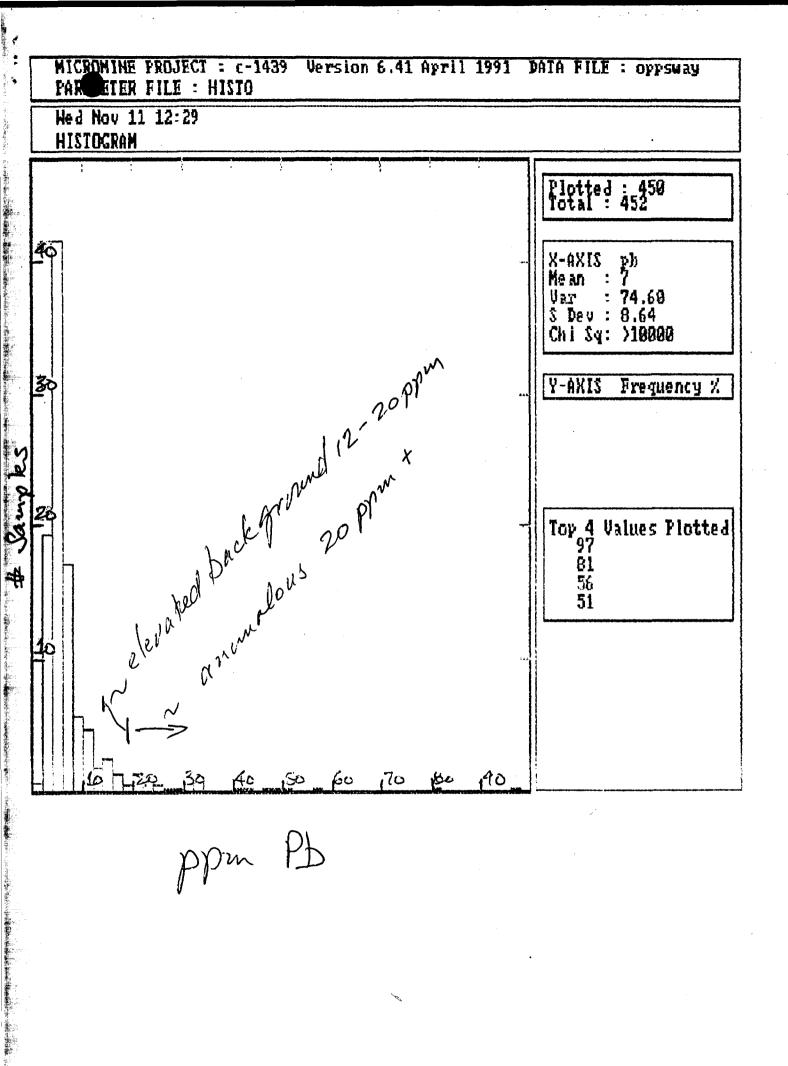
APPENDIX 2

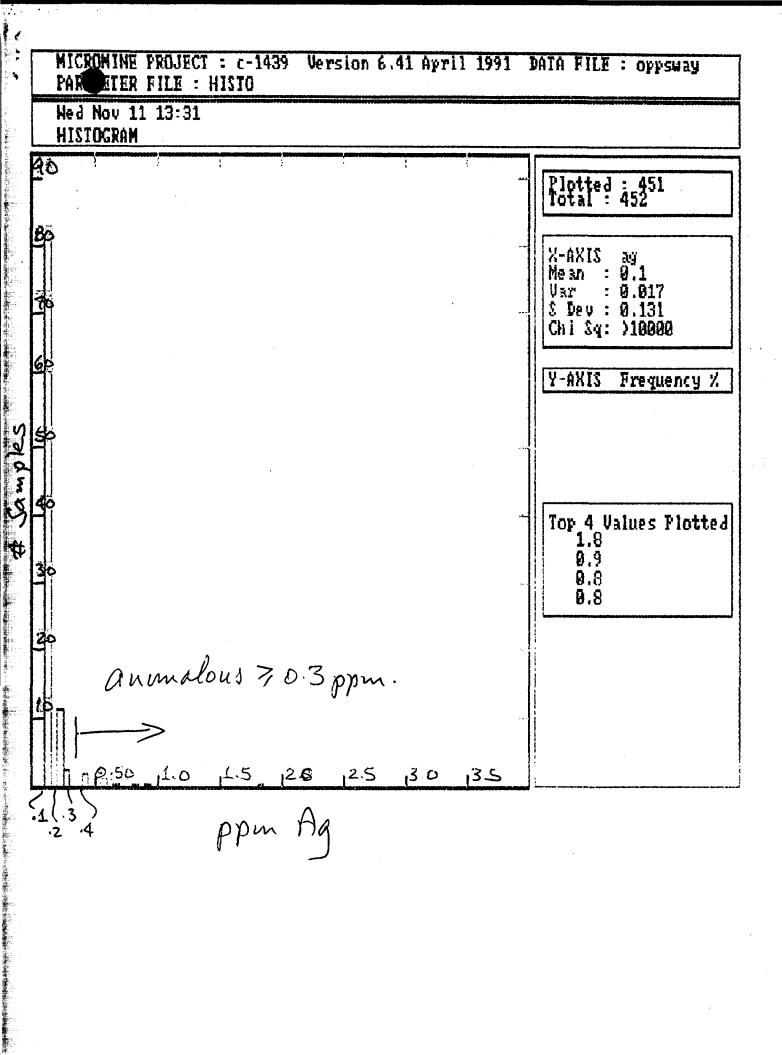
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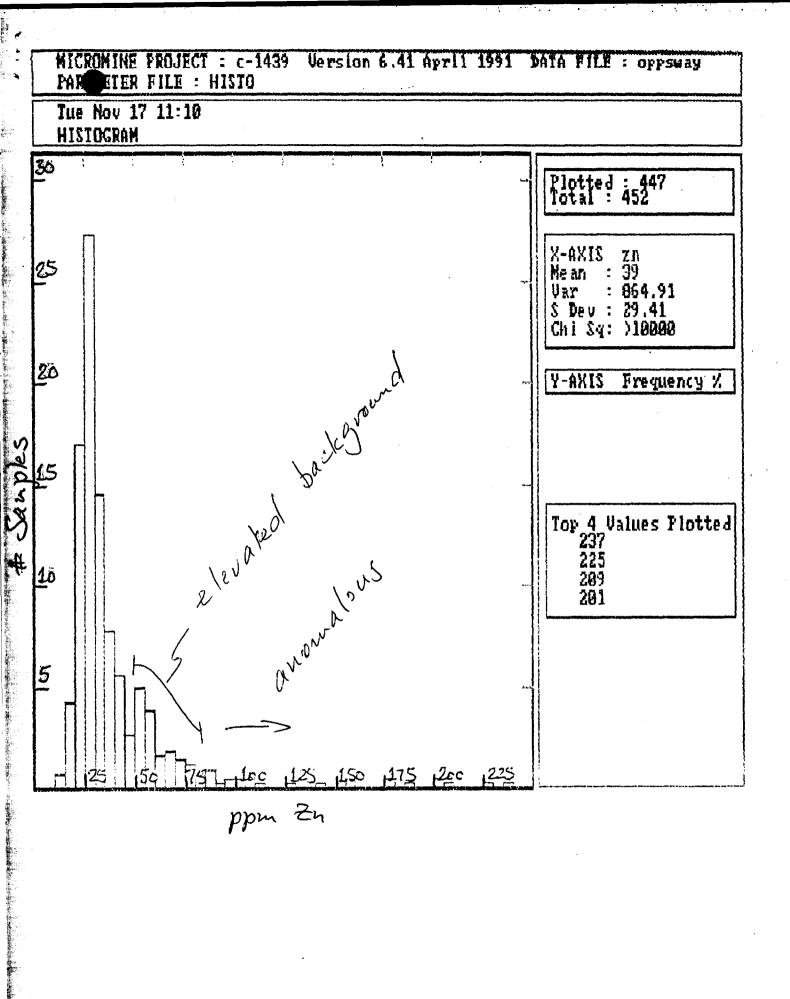




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his collection should Budbury, Ontario, P3 nstructions: - - - -	be directed to the Pro E 6A5, telephone (705) Please type or prin		Conducted J Claim Act	119260.00/65
•		vincial Manager, Mining Lands	, Ministry of Northern Develo	on will be used for correspondence. Questions ab pment and Mines, Fourth Floor, 159 Cedar Stre 14825
	Recorder. A separate copy of	g Act and Regulations for I this form must be comp and maps must accompa	requilited	
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	d in the current holder's	ormed, the claims covered in thi name or held under a beneficial i		Recorded Holder or Agent (Signature)
	Work Report			
Certification of	· · · · · · · · · · · · · · · · · · ·	s of the facts set forth in this V	/ork report, having performed	I the work or witnessed same during and/or afte
f certify that I hav its completion an	e a personal knowledge d annexed report is true	12 1		
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I certify that I hav its completion and Name and Address Telepone No.	e a personal knowledge d annexed report is true	Brure to	Certified By (Signatu	
I certify that I have the completion and Name and Address Telepone No. 4/6/944	e a personal knowledge d annexed report is true of Person Certifying 	Brysne te Nov 30/42		
I certify that I have the completion and Name and Address Telepone No. (4/6)944 For Office Use	e a personal knowledge d annexed report is true of Person Certifying 	Brpsre /c Nov 30/42	Certified By (Signatu	
Its completion and Name and Address Telepone No. 4/6/944 For Office Use	e a personal knowledge d annexed report is true of Person Certifying 1-2542 Only scorded Date Recorde Dec. Deemed Appr MAK	Brpsre /c Nov 30/42	Certilled By (Signatu	March Contract -

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Numéro de rapport tur les travaux exécutés pour l'affectation de la réserve	Numéro de claim	Nombre d'unités
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, N	1176294	1
N	P.1176245	1
	P.1176296	1
	P.1176247	1
	P.117624R	ſ
••	21176249	1.
	P.1176.300	1
	P. 1176 301	1
	P.1176 302	1
	P.1176 303	1
	P.1176 304	1
	P.1176305	1
	P.1176306	1
	P1170 414	1
	P.1176292	1
	P.1176 243	1
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	Nombre total de claims	

		-		
Valeur des travaux d'évaluation exécutés sur ce claim	Valeur affectée à ce claim		Valeur transférée de ce claim	Réserve : traveux à réclamer à une date utérieure
538	400		93	45
307	400		<u> </u>	0
179	400		0	<u> </u>
/383	400	933	221	762_
1255	400	855	.93	762
307	400		0	0
1024	400		0	624
896	400	ania	16	140 480
384	400		0	0
281	400		0	0
1639	400	r34	119	1120 112C
1383	400		400	583
1101	400		400	301
897	400		400	97
0	400		0	0
0	400 400 400		0	D
0	400		0	0
11.574	6800		1742	4774
Valeur totale des travaux exécutés	Valeur totale des travaux qui a été affectée		Total transféré	Réserve totale

Les crédits que vous réciamez dans le présent rapport peuvent être réduits. Afin de diminuer les consequences de la vorables de telles réductions, veuillez indiquer l'ordre dans lequet vous désirez au elles solent appliquées à vos claims. Veuillez cocher (~) l'une des options suivantes : 1.
edits que vous réclamez dans le présent rapport peuvent être réduits. Alin de diminuer les consequences délavorables de telles tions, veuillez indiquer l'ordre dans lequel vous désirez au elles solent appliquées à vos claims. Veuillez cocher (~) l'une des opsuivantes : suivantes : J Les crédits doivent être réduits en commençant par le dernier claim sur la liste.
rédits que vous réclamez dans le présent rapport peuvent être réduits. Alin de diminuer les conséquencés délavorables de telles titons, veuillez indiquer l'ordre dans lequel vous désirez au elles soient appliquées à vos claims. Veuillez cocher (~) l'une des op- suivantes : DEC 0 4 1992

1945 **- 19**46

~ `~

Date ~

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Je certifie que le titulaire enregistré possédait un inlérêt bénéficiaire sur le Signature/ terrain faisant l'objei de lettres patentes ou d'un bail, au moment où les finavaux ont été exécutés.

Sec

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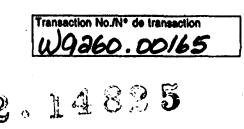
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Ministry of Northern Development and Mines

> re du n ppement du Nord et des mines

Statement of Costs for Assessment Credit

Etat des coûts aux fins du crédit d'évaluation



Mining Act/Lol sur les mines

Personal information collected on this form is obtained under the authority Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used to maintain a record and ongoing status of the mining claim(s). Questions about this collection should be directed to the Provincial Manager, Minings Lands, Ministry of Northern Development and Mines, 4th Floor, 159 Cedar Street, Sudbury, Ontario P3E 6A5, telephone (705) 670-7264.

1. Direct Costs/Coûts directs

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Туре	Description	Amount Montant	Totais Total global
Wages Salaires	Labour Main-d'oeuvre		·
	Field Supervision Supervision sur le terrain		國旗作
Contractor's and Consultant's	Type Skology	2.00	
Fees Droits de l'entrepreneur	Soils Sausting	1100]
et de l'expert- conseil	project recont reporting diating	300	2600
Supplies Used Fournitures utilisées	Type Qussays	6680	
Jun seys	Computertinie	350	
	jonding		
	printing	24	7054
Equipment Rental Location de	bart, motor	520	
matériei			the second s
			"S20"
	Total Di Total des co	rect Costs ûts directs	10174

Note: The recorded holder will be required to verify expenditures claimed in this statement of costs within 30 days of a request for verification. If verification is not made, the Minister may reject for assessment work all or part of the assessment work submitted.

Filing Discounts

- Work filed within two years of completion is claimed at 100% of 1. the above Total Value of Assessment Credit.
- 2. Work filed three, four or five years after completion is claimed at 50% of the above Total Value of Assessment Credit. See calculations below:

Total Value of Assessment Credit Total Assessment Claimed $\times 0.50 =$

Certification Verifying Statement of Costs

I hereby certify:

that the amounts shown are as accurate as possible and these costs were incurred while conducting assessment work on the lands shown on the accompanying Report of Work form.

_ I am authorized

that as

(Recorded Holder, Agent, Position in Company)

to make this certification

Les renseignements personnels contenus dans la présente formule sont recueillis en vertu de la Loi sur les mines et serviront à tenir à jour un registre des concessions minières. Adresser toute quesiton sur la collece de ces renseignements au chef provincial des terrains miniers, ministère du Développement du Nord et des Mines, 159, rue Cedar, 4^e étage, Sudbury (Ontario) P3E 6A5, téléphone (705) 670-7264.

2. Indirect Costs/Coûts Indirects

Note: When claiming Rehabilitation work Indirect costs are not allowable as assessment work. Pour le remboursement des travaux de réhabilitation, les

coûts indirects ne sont pas admissibles en tant que travaux d'évaluation.

Туре	Descript	lion	Amount Montant	Totais Totai giobai
Transportation Transport	iletiica	lė.	750	
				750
Food and Lodging Nourriture et hébergement				650
Mobilization and Demobilization Mobilisation et démobilisation				
	Sub To Total partiel		rect Costs 5 Indirects	1400
Amount Allowable Montant admissible	1400			
Total Value of Assessment Credit (Total of Direct and Allowable indirect costs) (Total des coûts directs et indirects admissibles				11574

Note : Le titulaire enregistré sera tenu de vérifier les dépenses demandées dans le présent état des coûts dans les 30 jours suivant une demande à cet effet. Si la vérification n'est pas effectuée, le ministre peut rejeter tout ou une partie des travaux d'évaluation présentés.

Remises pour dépôt

- 1. Les travaux déposés dans les deux ans suivant leur achèvement sont remboursés à 100 % de la valeur totale susmentionnée du crédit d'évaluation.
- 2. Les travaux déposés trois, quatre ou cinq ans après leur achèvement sont remboursés à 50 % de la valeur totale du crédit d'évaluation susmentionné. Voir les calculs ci-dessous.

Valeur totale du crédit d'évaluation RECE × 0,50 = DEC 0 4 1992

Attestation de l'état des coûts

MINING LANDS BRANCH

J'atteste par la présente : que les montants indiqués sont le plus exact possible et que ces dépenses ont été engagées pour effectuer les travaux d'évaluation sur les terrains indiqués dans la formule de rapport de travail ci-joint.

Et qu'à titre de je suis autorisé (titulaire enregistré, représentant, poste occupé dans la compagnie)

à faire cette attestation.

Date u lt v 30 Ú

Nota : Dans cette formule, lorsqu'il désigne des personnes, le masculin est utilisé au sens neutre.



Ministry of Ministère du Northern Development Développement du Nord Geoscie and Mines et des Mines 933 Ram

Mining Lands Branch Geoscience Approvals Section 933 Ramsey Lake Road 6th Floor Sudbury, Ontario P3E 6B5

Telephone: (705) 670-5853 Fax: (705) 670-5863

January 13, 1993

Our File: 2.14825 Transaction #W9260.00165

Mining Recorder Ministry of Northern Development and Mines 60 Wilson Street Timmins, Ontario P4N 2S7

Dear Sir/Madam:

Subject: APPROVAL OF ASSESSMENT WORK CREDITS ON MINING CLAIMS L. 1170407 ET AL. IN HUFFMAN TOWNSHIP

The assessment work credits for the Assays filed under Section 17 of the Mining Act Regulations have been approved.

The approval date is January 13, 1993.

Please indicate this approval on your records.

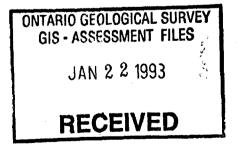
If you have any questions regarding this correspondence, please contact Ted Anderson of the Mining Lands Branch at (705) 670-5856.

Yours sincerely,

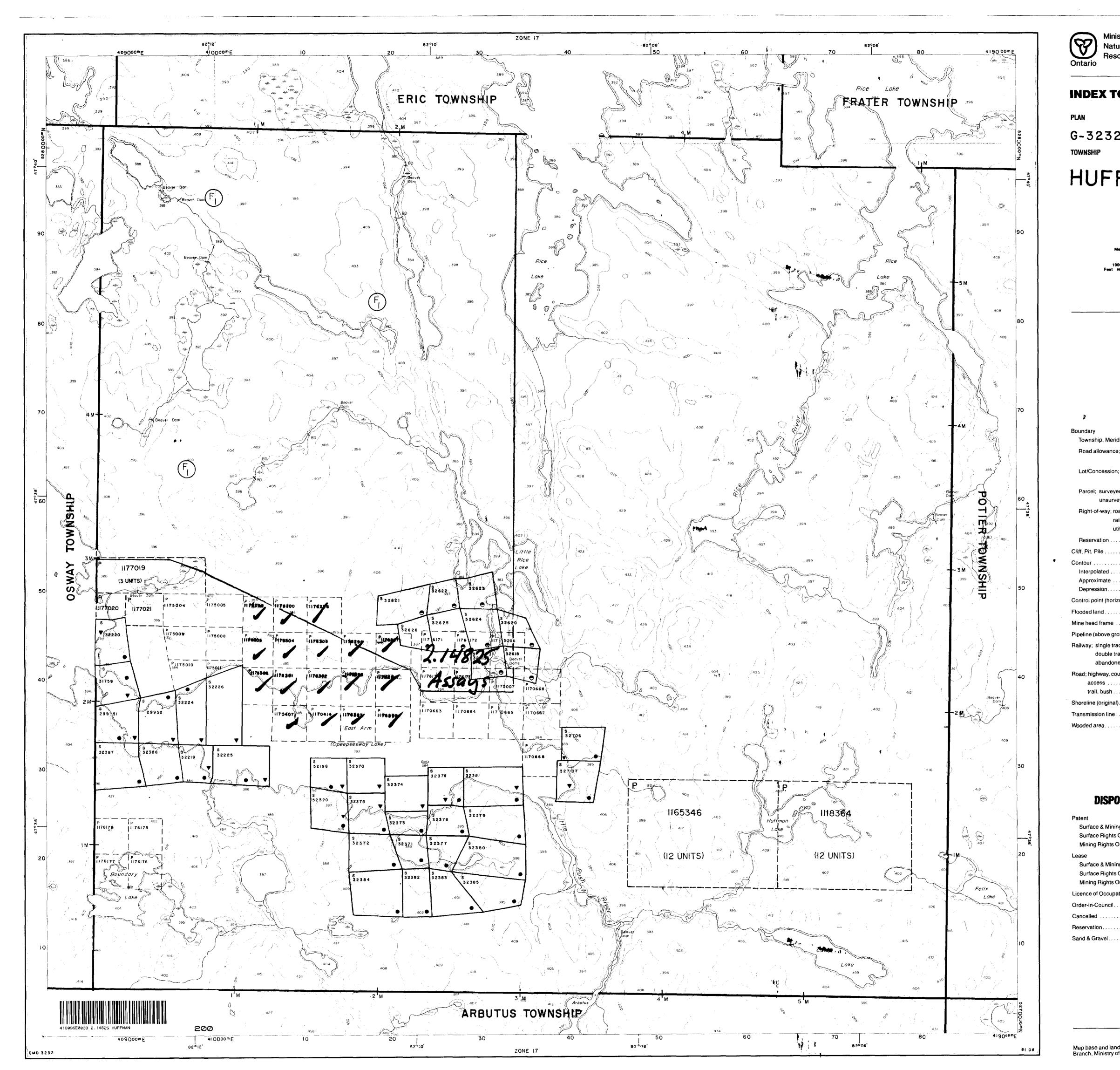
Ron Coding .

Ron C. Gashinski Senior Manager, Mining Lands Branch Mines and Minerals Division TAA TAA/jl Enclosures:

cc: Resident Geologist Timmins, Ontario



Assessment Files Library Toronto, Ontario



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AREAS WITHDRAWN FROM DISPOSITION

M + S - Mining and Surface Rights

File

MRO - Mining Rights Only **SRO** - Surface Rights Only

SYMBOLS

ridian, Baseline	
ce; surveyed	
shoreline	
on; surveyed	
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DISPOSITION OF CROWN LANDS

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THIS TWP. IS SUBJECT TO FOREST ACTIVITIES IN 1992/93 FURTHER INFORMATION AVAILABLE ON FILE.

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THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MIN-ING CLAIMS SHOULD CON-SULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOP-MENT AND MINES, FOR AD-DITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

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