Lat.: 49° 47'

Long.: 124° 18'

NTS 92F11 & 14

LEACHING TEST - 1980

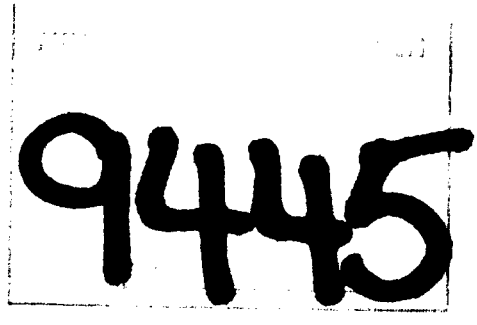
CLAIMS MWC 234 & MWC 204

MOUNT WASHINGTON PROJECT

NANAIMO MINING DIVISION

BRITISH COLUMBIA

ESSO MINERALS CANADA LIMITED



R.BECKETT

VANCOUVER

JANUARY 1981

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GEOLOGY

Regional Geology

Mount Washington project is within the Insular Belt of Cordilleran Structural Province. Geology of the area has been described by Muller and Carson (1969). The area is near the northeastern margin of a belt of high level intrusions of Tertiary Age. These high level intrusive cut Triassic Karmutsen Formation volcanics and Cretaceous Comox Formation sediments. Granitic intrusions of middle Jurassic age outcrop fifteen kilometres south of Mount Washington project area. Karmutsen Formation rocks and Comox Formation rocks strike northwesterly; dips range between 10 and 25 degrees northeasterly.

Geology, Mount Washington Project Area.

Detailed geology of Mount Washington Project area has been described by Bridge (1973 & 1975). The area is underlain by Triassic Karmutsen Formation volcanic rocks unconformably overlain by Cretaceous Comox Formation sediments and intruded by Tertiary quartz diorite intrusive breccias.

Karmutsen Formation rocks comprise thick basalt flows, tuffs and agglomerates. Comox Formation rocks, near the western margin of Comox basin comprise sandstone, silstone shale, conglomerate and coal. Tertiary quartz diorite and breccias intrude both Karmutsen Formation rocks and Comox Formation rocks and occur as stocks and sills.

Comox Formation rocks strike northwesterly and dip about twenty-five degrees northeasterly. Two west-northwesterly striking faults extend through to area; displacement is not known.

PREVIOUS WORK

Gold and base metal deposits have been explored for sporadically since 1941 in the Mount Washington area.

In 1972 Imperial Oil Limited obtained Mineral Lease 2 and certain mineral claims from Mount Washington Copper Limited and started evaluation of the potential for high grade copper and gold deposits and for porphyry copper type deposits.

In 1972 Imperial Oil Limited performed geological mapping and evaluation, geochemical soil and water sampling and geophysical induced polarization surveying. Chip samples from mineralization northwest of the open pits contained 0.05 per cent copper over 300 feet; a quartz realgar vein containing up to 0.005 ounces per ton gold, 0.03 per cent copper and 9.6 per cent arsenic was discovered west of Mount Washington.

The 1973 exploration comprised geological mapping and evaluation, geochemical soil and stream silt and water sampling; geophysical airborne electromagnetic and magnetic surveying and geophysical ground electromegnetic and induced polarization surveying; and diamond drilling comprising 895 metres in eight holes (Bridge 1973). Mineralization comprising

0.37% copper over 48.8 metres was intersected in intrusive breccia in drill hole 73-3.

In 1974 geological evaluation, prospecting, trenching, geochemical surveying, geophysical surveying and diamond drilling were performed (Bridge, 1975). Drilling comprised 1340 metres in 21 holes. Mining Lease 7 was acquired from CanPac Minerals Limited to protect geophysical anomalies north and west of Mineral Lease 2 and an intrusive breccia discovered in 1973. Hole 74-2 intersected 46.5 metres containing 0.53% copper within intrusive breccia. Chip sample from a vein near Mount Washington contained 3.2% copper 0.59 ounces gold per ton, 10.96 ounces silver per ton and 4.7% arsenic over a width of 0.98 metres.

In 1975 geophysical ground electromagnetic and magnetic ground geophysical surveying, geochemical soil surveying; and diamond drilling comprising 671 metres in three holes were performed (Bridge, 1975).

In 1976 diamond drilling was performed to test an area of mineralization near the former open pit. Hole MW84 intersected 146 metres containing 0.28% copper (Somerville, 1978).

As a result of this exploration, the potential for a large tonnage deposit of grade suitable for open pit mining was felt to be low. Water draining from the toe of old waste dumps were found to have an acidity of 2.9 pH and to contain up to 53 parts per million copper. A decision was made to evaluate the

potential for a low grade deposit amenable to leach extraction of copper.

B. C. Research Limited assessed the leaching characteristics of samples of dump rock freshly blasted rock and drill core. These samples were selected to represent possible grades and types of mineralization that might be mineable in the area. The assessment included determination of rate of extraction of copper, ultimate extraction likely to be attained, acid consuming or producing charcteristics, factors likely to affect leaching including production of clay, building of impervious coatings and suitability for biological leaching.

The range of results obtained from different samples of mineralized rock was wide. (Bruynestein, 1977, 1978, 1979, 1980). The best extraction rate and acid production was obtained from a sample containing 1.20% copper. In the remaining samples extraction rates and ultimate extraction were much lower. Acid consumption was high in several of these samples.

In 1979 percussion drilling was performed to test the copper content of low grade dumps at Mount Washington and from this to find a suitable location for a field scale leaching and a field site leaching test (Somerville 1979). Drilling comprised 210 metres in seventeen holes. An area near drill hole 6 was selected as suitable for a leaching test. This hole averaged 0.25% copper over 13 metres.

1980 PROGRAM

The purpose of the 1980 Program was to evaluate the leaching qualities of low grade dumps from former Mount Washington Copper Mines Limited operation.

Factors involved in this assessment included acidity of leach solution produced; acid consumption required to maintain a suitable acidity; copper content of leach solution; and evidence of bacterial action in the leaching dump.

The leach site utilized for the test was the same as in 1979; this site is on the north dump adjacent to Pyrrholite Creek.

Technical operations and results are presented by Dunn (1980). The following parameters were measured: pregnant solution acidity and temperature, copper and arsenic content of pregnant and stripped solution, redox potential of pregnant solution and solution flow rate.

As a result of delay in permission to proceed with the program from British Columbia Department of the Environment, operations did not start until September 1, 1980. Pumping of leach solutions stopped on October 18, 1980 due to freezing conditions. Hose lines, settling ponds and scrap can stripping launders were left in place; pump and generator were removed from the property.

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INTRODUCTION

Esso Minerals Canada has explored for porphyry type copper deposits at Mount Washington since 1972. Significant amounts of rock containing about 0.3 % copper are reasonably expected to exist but have not yet been discovered in amounts sufficient to justify operation of a conventional mining operation.

Geochemical surveying discovered a stream containing 33 parts per million copper draining from previous mining operations. This copper content is comparable to solutions from commercial leaching plants. The application of leaching methods at Mount Washington was evaluated by laboratory scale tests in 1977 and 1978 and by field scale test in 1979. Field testing continued in 1980.

Location and Access

Mount Washington project is 175 kilometres northwesterly from Vancouver on the eastern side of Vancouver Island, British Columbia. It is centred near 49° 45' N latitude, 125° 15'W longitude within NTS 92F 11 & 14. Topography is rugged and elevation ranges from 300 metres up to 1590 metres. Lower areas are covered by thick timber; much of this has been logged. Higher areas are covered by alpine meadow.

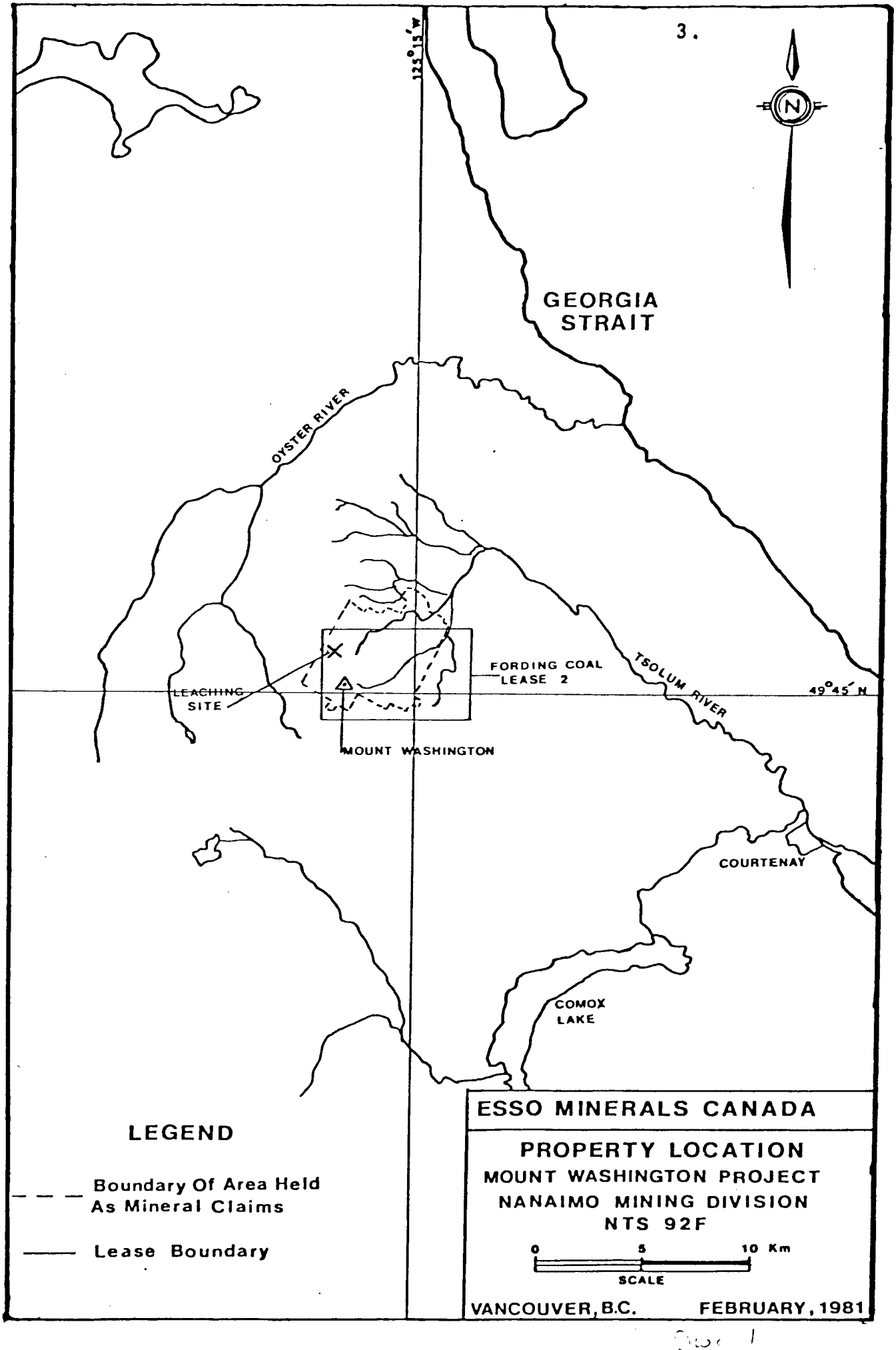
Logging roads connect Mount Washington project with Courtenay 26 kilometres away. Comox Airport near Courtenay is serviced by scheduled air service from Vancouver; Courtenay is on a provincial highway and on tidewater.

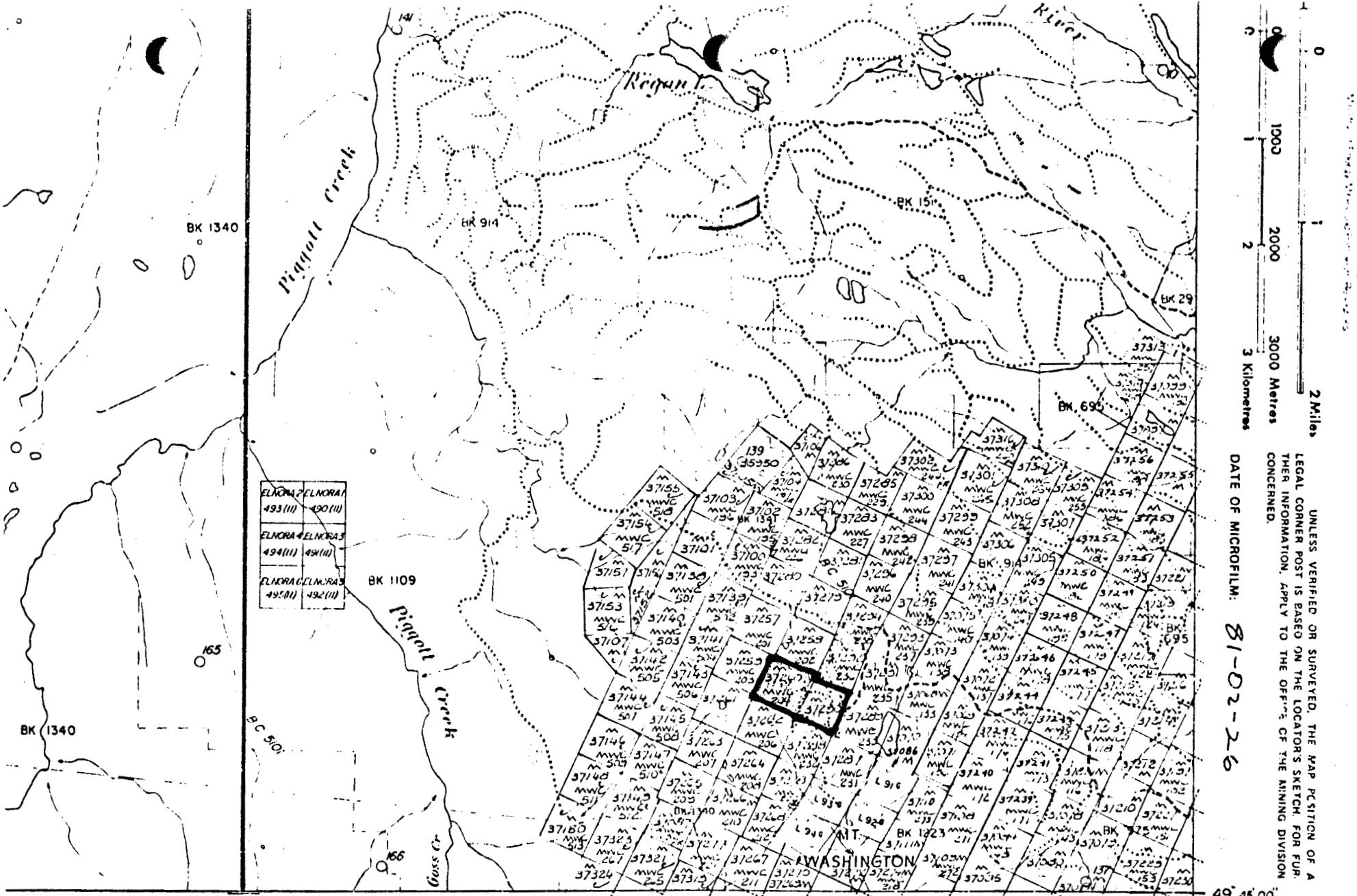
Property

The Mount Washington property is comprised of Fording Coal Limited Lease no. 2, leased by Mount Washington Copper Company Limited; four crown grant claims owned by Mount Washington Copper Company Limited; one hundred and thirty five mineral claims and eight fractional claims owned by Esso Resources Canada Limited.

Details of status are included in Table 1; location of property held is shown in drawing 1.

Work described in this report was performed on mineral claims MWC 234 & 204.


125°15' W
N
GEORGIA STRAIT
OYSTER RIVER
FORDING COAL LEASE 2
LEACHING SITE
MOUNT WASHINGTON
TSOLUM RIVER
49°45' N
COURTENAY
COMOX LAKE
LEGEND
Boundary Of Area Held As Mineral Claims
Lease Boundary
ESSO MINERALS CANADA
PROPERTY LOCATION
MOUNT WASHINGTON PROJECT
NANAIMO MINING DIVISION
NTS 92F
0 5 10 Km
SCALE
VANCOUVER, B.C. FEBRUARY, 1981



Province of British Columbia

UNLESS VERIFIED OR SURVEYED, THE MAP POSITION OF A LEGAL CORNER POST IS BASED ON THE LOCATOR'S SKETCH. FOR FURTHER INFORMATION, APPLY TO THE OFFICE OF THE MINING DIVISION CONCERNED.

DATE OF MICROFILM: 81-02-26

TO SOUTH SEE MAP 92 F/11 W

...ENT OF MINES AND PETROLEUM RESOURCES

This map is prepared only as a guide to the location

RESULTS

A summary of results is included in Table II. Analytical reports are included in Dunn (1980). Drawing 2 shows changes in parameters against time.

1. A copper bearing leach solution was obtained and for most of the time during the test the copper content ranged between 75 and 205 parts per million. For comparison the copper content of leach solutions at fifteen commercial leaching operations in the western United States ranged between 75 and 216 parts per million (Evans & Sheaffer, 1968).
2. Maintenance of an optimum acidity for leaching of about pH 2.5 required addition of sulphuric acid intermittently throughout the test. This may have resulted from dilution of leach solutions by influx of groundwater from heavy rainfall.
3. There is a moderately good correlation between flow rate and copper content of the pregnant solution.
4. There is poor correlation between acidity and copper content in the pregnant solution.

CONCLUSIONS

1. Assessment of significance of results of 1980 field leaching test is complicated by the following:
    a) uncertainty of grade and nature of copper mineralization in the area of low grade dump utilized for leaching.

b) inability to control inflow of water into leach system.

c) low efficiency of scrap can launder system in removing copper from pregnant leach solution resulting in a copper content in barren solution of a similar magnitude to pregnant solution.

2. Copper can be leached from weakly copper bearing rock material on low grade dumps at Mount Washington. The copper content of the resulting leach solutions is comparable to that at some commercial operations.

RECOMMENDATIONS

1. No further field scale leaching should be performed at Mount Washington utilizing waste dumps.

2. Results of previous exploration should be re-evaluated to determine areas with potential for low grade material suitable for leaching.

R. J. Beckett. P. Eng., P. Geol.

REFERENCES

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	1975	1974 Progress Report, Mount Washington Project, Courtenay Area, Vancouver Island, B.C.; unpublished report prepared for Imperial Oil Limited
	1975	1975 Progress Report, Mount Washington Project 6023, Courtenay Area,Vancouver Island, B.C.; unpublished report nrepared for Imperial Oil Limited.
Bruynesteyn, A.	1977	Assessment of the Leaching Characteristics of two samples of leach ore from the Mount Washington Mine; unpublished report prepared by B.C. Research for Imperial Oil Limited.
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	1979	Addendum to Interim Report of August 15, 1978 Column Leaching Tests on Mt. Washington Ore #4, unpublished report prepared by B.C. Research for Imperial Oil Canada Limited.
		Addendum 11 to the Interim Report of August 15, 1978 on the Leachability of Mt. Washington Ores; unpublished report prepared by B.C. Research Ltd. for Esso Minerals (Canada) Limited.
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	1979	1979 Interim Report on the Test Leaching On Mount Washington Copper Property; unpublished report prepared for Esso Resources Canada Limited.
Walcott, P.E.	1973	A report on an Induced Polarization Survey, Mount Washington, British Columbia; unpublished report prepared for Imperial Oil Limited.
Young, G.	1980	Addendum 111 to the Interim Report of August 15, 1978 on the Leachability of Mount Washington Ores; unpublished report prepared by B.C. Research for Esso Minerals (Canada) Ltd.

Mount Washington Project

Leaching Test 1980

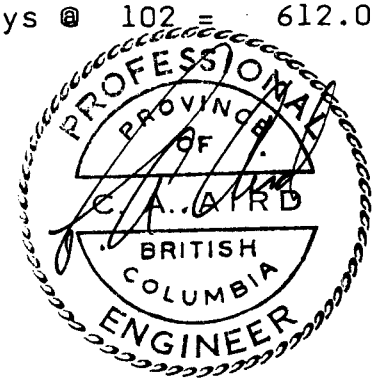
Expenditures

September 14, to October 22, 1980

Salaries, wages	$6,198.00
Camp supplies, food	2,741.07
Technical supplies	7,475.48
Services	620.00
Transportation	6,897.05
Analytical	1,152.50
Total	25,084.10

Personnel

Geologist	Sept. 14 - Oct. 22/81	5 days @ $152 =	$760.00
Technologist	Sept. 14 - Oct. 18/81	31 days @ 102 =	3,162.00
Helper	Sept. 14 - Oct. 22/81	32 days @ 52 =	1,664.00
Technologist	Oct. 11 - Oct. 22/81	6 days @ 102 =	612.00



CERTIFICATION

I, Robert J. Beckett, of West Vancouver, British Columbia, declare as follows:

1. I graduated from Oxford University with a B.A. (Hons.) in Geology in 1962.

2. I have practised by profession continuously since graduation.

3. G. Dunn performed the work described in this report under my supervision.

R.J. Beckett

TABLE I
MOUNT WASHINGTON CLAIMS

Mt. Washington - 2119	Domineer 001	Lot 91G	July 2	1981/07/02
Mt. Washington - 2119	Domineer 003	Lot 92G	July 2	1981/07/02
Mt. Washington - 2119	Domineer 004	Lot 93G	July 2	1981/07/02
Mt. Washington - 2119	Domineer 006	Lot 94G	July 2	1981/07/02
Mt. Washington - 2119	MWC 001 Fr.	37086	Sept 14	1983/09/14
Mt. Washington - 2119	MWC 101	37196	Sept 13	1983/09/13
Mt. Washington - 2119	MWC 102	37197	Sept 13	1984/09/13
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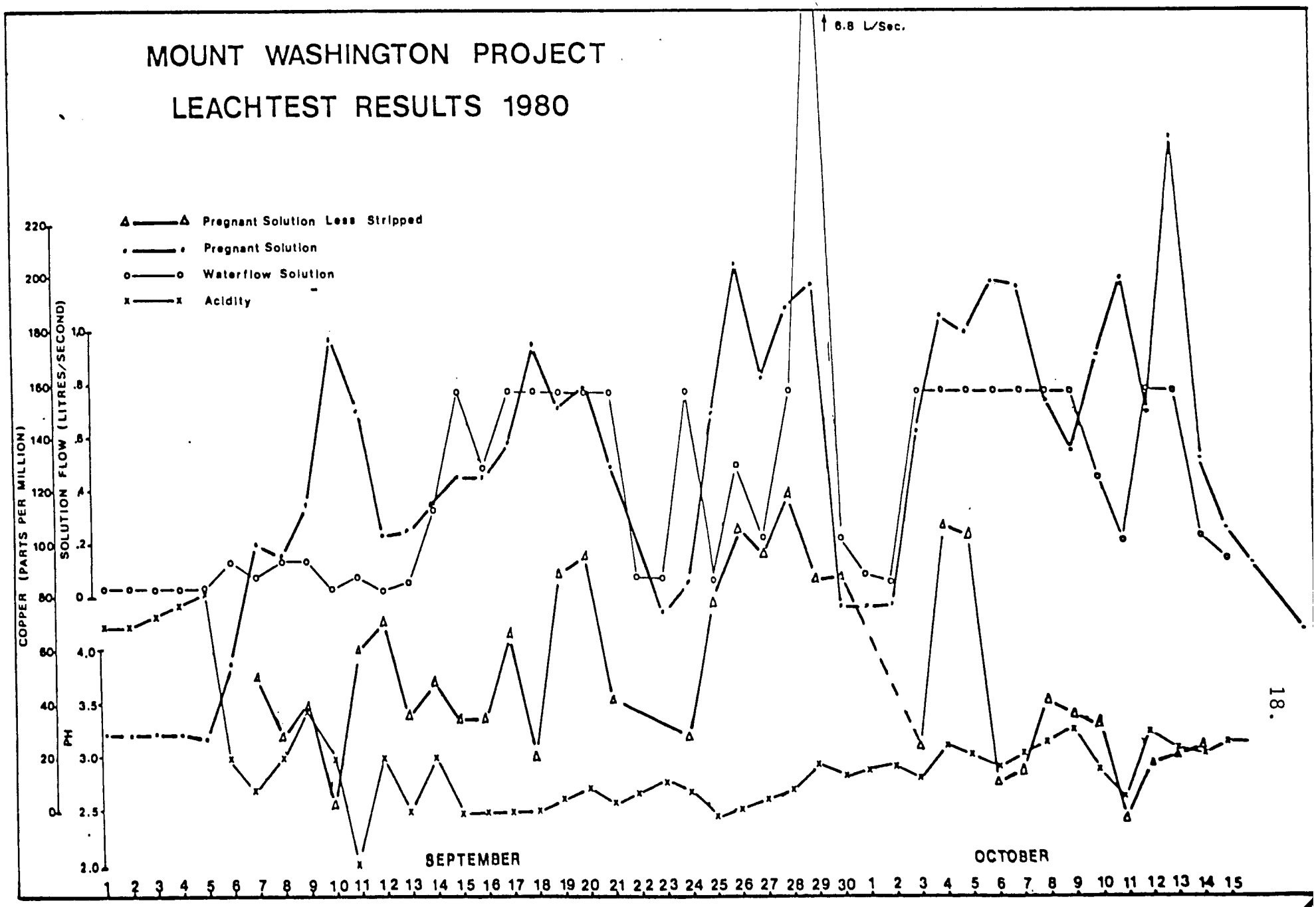
Mt. Washington - 2119 MWC 294	37131	Sept 14	1986/09/14

TABLE II
LEACH TEST RESULTS
Pregnant Solution

Day		Acidity pH	Redox Potential Millivolts	Content Copper Parts per Million	Content Iron Parts per Million	Content Arsenic Parts per Billion
Sept	1	-	-	-	-	-
	2	-	-	28.6	7.1	1
	3	-	-	28.4	8	1
	4	-	-	28.1	8	1
	5	5.0	-	26.7	8	2
	6	3.0	-	55	46	7
	7	2.8	-	100	220	351
	8	3.0	-	85	190	162
	9	3.5	-	115	370	615
	10	3.0	-	177	1850	4650
	11	2.0	-	150	1150	2655
	12	3.0	-	103	458	795
	13	2.5	-	105	635	2280
	14	3.0	-	115	605	1395
	15	2.5	-	125	625	2325
	16	2.5	-	125	546	1635
	17	2.5	-	138	550	870
	18	2.5	-	175	690	1200
	19	2.6	-	98	260	615
	20	2.7	-	92	222	255
	21	2.6	-	129	235	390
	22	-	-	-	-	-
	23	3.2	-258	60	76	114
	24	3.1	-348	73	117	153
	25	2.9	-350	122	289	500
	26	2.9	-350	184	442	3025
	27	3.0	-335	148	247	900
	28	3.0	-345	152	219	450
	29	3.1	-330	40	96	69
	30	2.8	-332	76	63	23
Oct.	1	2.9	-335	77	68	57
	2	2.9	-335	77	58	30
	3	2.8	-310	152	646	2250
	4	3.1	-331	101	178	495
	5	3.0	-330	110	266	645
	6	2.9	-295	198	934	7200
	7	3.0	-290	196	658	3580
	8	3.1	-285	153	382	1755
	9	3.2	-332	134	214	660
	10	2.9	-280	170	600	2865
	11	2.6	-260	199	1470	20000
	12	3.2	-262	149	780	9000
	13	3.0	-300	169	738	6000
	14	3.0	-338	132	340	1740
	15	3.1	-345	106	204	525
	16	3.1	-335	92	151	165
	17	-	-	-	-	-
	18	2.4	-338	67	98	249
	19	-	-	-	-	-
	20	2.5	-350	67	90	108

Note: - measurement not taken.


MOUNT WASHINGTON PROJECT
LEACHTEST RESULTS 1980
↑ 6.8 L/Sec.
Pregnant Solution Less Stripped
Pregnant Solution
Waterflow Solution
Acidity
COPPER (PARTS PER MILLION)
SOLUTION FLOW (LITRES/SECOND)
PH
SEPTEMBER
OCTOBER

APPENDIX 1

ANALYTICAL RESULTS

AUG - 6 1980

R. Beckett

August 5, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.

File No: 0-580
Project: 2119 Mt. Wash.

WATER SAMPLES

Sample Number	Dissolved Cu ppm	total Fe ppm	total As ppb	pH
101	.03	0.1	< 1	6.3
102	.06	0.3	< 1	6.1
103	1.34	0.1	37	4.7
104	8.95	0.1	< 1	3.5
105	.01	0.2	1	4.3
106	34.50	5.5	< 1	3.0
101a	.01	0.1	< 1	6.2
102a	.07	0.1	2	6.0
103a	1.32	0.2	< 1	4.6
104a	9.10	0.1	< 1	3.5
105a	.01	0.1	< 1	4.2
106a	34.00	5.2	< 1	2.9

Certified By

PHONE: (604) 980-5814 or 988-4524

TELEX: 04-352828

MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

SEP 19 1980

September 18, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.

File No: 0-883
Attn: Gary Dunn

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Total Fe ppm	Total As ppb	pH
A-9	115.50	370.0	615	3.7
10	177.50	1850.0	4650	4.4
A-11	150.00	1150.0	2655	4.6
B-9	75.00	630.0	600	4.7
10	175.00	3300.0	7950	4.7
B-11	90.00	1900.0	2535	4.8
A10-AM	133.00	480.0	1050	4.7
A11-PM	135.00	850.0	2190	4.6
B11-PM	65.00	1650.0	3045	4.8
401-L	0.01	1.5	<1	6.2
402-K	0.02	2.0	<1	6.0
403-M	1.65	0.3	11	5.9
404-E	7.80	1.8	<1	4.6
405-J	0.01	1.2	1	6.0
406-C	133.00	370.0	960	4.0

Certified By

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MIN-EN Laboratories Ltd.

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Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

SEP 19 1980

September 18, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver,B.C.

File No: 0-859
Project: 2119
Attn: Gary Dunn

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Total Fe ppm	Total As ppb	pH
A-2	28.60	7.8	< 1	4.2
3	28.40	8.4	< 1	4.3
4	28.10	8.3	< 1	4.4
5	26.70	8.2	2	4.5
6	55.00	46.0	7	4.3
7	100.00	220.0	351	4.2
A-8	85.00	190.0	162	4.4
B-6	13.70	39.5	11	4.8
7	50.00	760.0	13	4.4
B-8	67.00	370.0	106	4.5
A-6-P.M.	113.00	325.0	1215	4.4
B-6-P.M.	150.00	500.0	1080	4.5

Certified By

PHONE: (604) 980-5814 or 988-4524

TELEX: 04-352828

MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

SEP 19 1980

September 18, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.

File No: 0-810
Attn: Gary Dunn

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Total Fe ppm	Total As ppb	pH
A1	28.50	8.4	1	4.2
201-L	.02	0.2	<1	6.1
202-K	.03	0.5	<1	5.9
203-M	1.02	0.3	17	5.7
204-E	6.03	2.5	<1	4.3
205-J	.01	0.4	10	5.7
206-C	28.70	10.2	19	3.8

Certified By

SEP 19 1980

September 18, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.

File No: 0-859
Project: 2119
Attn: Gary Dunn

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Total Fe ppm	Total As ppb	pH
A-2	28.60	7.8	< 1	4.2
3	28.40	8.4	< 1	4.3
4	28.10	8.3	< 1	4.4
5	26.70	8.2	2	4.5
6	55.00	46.0	7	4.3
7	100.00	220.0	351	4.2
A-8	85.00	190.0	162	4.4
B-6	13.70	39.5	11	4.8
7	50.00	760.0	13	4.4
B-8	67.00	370.0	106	4.5
A-6-P.M.	113.00	325.0	1215	4.4
B-6-P.M.	150.00	500.0	1080	4.5

Certified By

SEP 19 1980

September 18, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.

File No: 0-883
Attn: Gary Dunn

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Total Fe ppm	Total As ppb	pH
A-9	115.50	370.0	615	3.7
-10	177.50	1850.0	4650	4.4
A-11	150.00	1150.0	2655	4.6
B-9	75.00	630.0	600	4.7
-10	175.00	3300.0	7950	4.7
B-11	90.00	1900.0	2535	4.8
A10-AM	133.00	480.0	1050	4.7
A11-PM	135.00	850.0	2190	4.6
B11-PM	65.00	1650.0	3045	4.8
401-L	0.01	1.5	<1	6.2
402-K	0.02	2.0	<1	6.0
403-M	1.65	0.3	11	5.9
404-E	7.80	1.8	<1	4.6
405-J	0.01	1.2	1	6.0
406-C	133.00	370.0	960	4.0

Certified By

SEP 19 1980

September 18, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.

File No: 0-810
Attn: Gary Dunn

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Total Fe ppm	Total As ppb	pH
Al –	28.50	8.4	1	4.2
201–L	.02	0.2	<1	6.1
202–K	.03	0.5	<1	5.9
203–M	1.02	0.3	17	5.7
204–E	6.03	2.5	<1	4.3
205–J	.01	0.4	10	5.7
206-C	28.70	10.2	19	3.8

Certified By

PHONE: (604) 980-5814 or 988-4524

TELEX: 04-352828

MIN-EN Laboratories Ltd.

SEP 22 1980

Specialists in Mineral Environments

Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

September 19, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.

File No: 0-909
Project: 2119
Attn: Gary Dunn

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Total Fe ppm	Total As ppb	pH
A-12	103.00	458.0	795	4.3
13	105.00	635.0	2280	4.6
14	115.00	605.0	1395	4.7
15	125.00	625.0	2325	4.7
A-16	125.00	546.0	1635	4.8
B-12	31.50	1090.0	570	4.8
13	70.00	985.0	672	4.8
14	67.00	955.0	1170	4.4
15	90.00	770.0	1890	4.5
B-16	90.50	855.0	1755	4.7
A-14-PM	176.00	1420.0	4200	4.8
B-14-PM	145.00	1605.0	5250	4.9

Certified By

PHONE: (604) 980-5814 or 988-4524

TELEX: 04-352828

MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

SEP 29 1980

September 27, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.
V6E 3J7.

File No: 0-947
Attn: G. Dunn
Project: 2119

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Total Fe ppm	Total As ppb	pH
A 17	138.00	550.0	870	2.5
18	175.00	690.0	1200	2.5
19	98.00	260.0	615	2.6
20	92.00	222.0	255	2.7
A 21	129.00	235.0	390	2.6
B 17	72.00	780.0	1320	2.7
18	155.00	760.0	330	2.6
19	62.00	358.0	165	2.8
20	63.00	278.0	195	2.7
B 21	88.00	320.0	180	2.7
A 20	158.00	315.0	750	2.7
A 19	151.00	465.0	795	2.5
B 20	117.00	355.0	420	2.7
B 19	100.00	490.0	630	2.6
501 L	0.10	8.2	1	6.5
502 K	0.03	6.0	4	6.7
503 M	1.02	5.5	2	4.6
504 E	8.80	4.2	4	3.9
505 J	0.05	2.8	12	6.0
506 C	16.50	5.5	7	3.3
C 21 Effluent	72.50	80.0	225	3.3
A 21 AM	123.00	215.0	375	2.7

Certified By

*Q/WATER BK
EGC

BURN # 1 WA16 275:48

IS									
1334									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
-.001	.1254	-.040	.0024	-.002	-.010	.0015	.0210	.0002	-.046
U	IS	TH	IS	CD	SB	BI	V	CA	P
.0045	-.008	-.047	7.130	.0003	.0090	.0207	-.006	-.002	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
-.000	.0580	-.003	-.000	-.000	.0011	.0000	7.504	.0057	-.242

*

WATER ANALYSIS

THE WATER SAMPLE IS ANALYSED BY ICP AS RECEIVED.
THE RESULT S ARE IN PPM OR UG/ ML EXCEPT FOR FE , CA P , MG,
T I , AL, WHICH IS IN PERCENT.

.1000 % = 1000 PPM

IS STANDS FOR INTERNAL STANDARD

*O/606-C
EGC

BURN # 1 WA16 275:42
IS
1334

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .038
-.001	12.84	-.032	.6381	-.001	.0965	.1749	2.179	.0002	~~-.027~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.017	-.012	-.067	-2.91	.0056	.0091	.0195	-.006	.0045	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0057	.0274	-.003	.0000	-.000	-.001	.0015	687.4	.0008	-.239

*O/A-29 AM
EGC

BURN # 1 WA16 275:43
IS
1334

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
.0075	197.0	.0246	8.088	.0152	1.848	3.473	41.79	.0274	1.151
U	IS	TH	IS	CD	SB	BI	V	CA	P
.0163	-.025	-.087	-74.5	.0714	.1364	.1171	.0277	.0352	.0003
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.2176	.0065	.0034	.0000	-.000	.1078	.0653	7929	.0172	-.221

*O/B-29 AM
EGC

BURN # 1 WA16 275:44
IS
1334

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .653
-.004	111.0	.0045	7.798	.0101	1.857	3.509	42.98	.0474	~~.5833~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.198	-.047	-.119	-71.9	.0531	.0674	.0811	.0300	.0344	.0002
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.2283	-.022	.0033	.0000	-.000	.1833	.0656	7619	.0283	-.247

*O/C-29
EGC

BURN # 1 WA16 275:46
IS
1333

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .055
.0020	26.48	-.060	1.582	.0001	.2537	.4586	5.552	.0019	~~-.016~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
.0420	-.008	-.063	-53.2	.0075	.0017	.0205	-.004	.0273	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0203	.0135	-.000	.0000	-.000	.0279	.0038	1643	-.007	-.235

*O/A-29 B
EGC

BURN # 1 WA16 275:47
IS
1334

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .054
.0021	45.14	-.010	2.451	.0036	.3923	.6963	7.902	.0069	~~-.017~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
.1162	-.001	-.065	-24.7	.0151	.0609	.0372	.0026	.0154	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0401	.0129	-.001	.0000	-.000	.0312	.0102	2610	-.007	-.250

*0/602-K
EGC

BURN # 1 WA16 275:36

IS									
1333									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .018
-.000	.1032	-.056	.0053	-.002	-.002	.0008	.0215	.0001	~~-.046~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.004	-.006	-.054	6.511	-.000	.0081	.0256	-.006	-.002	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0009	.0181	-.003	-.000	-.000	.0063	-.000	12.51	-.002	-.235

*0/603-M
EGC

BURN # 1 WA16 275:37

IS									
1333									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .018
-.002	.5887	-.038	.0463	-.000	.0119	.0126	.1574	.0001	~~-.046~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.018	-.012	-.048	6.303	.0000	-.022	.0199	-.010	-.001	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0017	.0251	-.003	-.000	-.000	.0064	.0000	55.02	-.003	-.240

*0/604-E
EGC

BURN # 1 WA16 275:38

IS									
1333									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .007
.0002	8.882	-.033	.3945	-.002	.0726	.1207	1.422	.0001	~~-.057~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.058	-.011	-.069	1.746	.0036	-.009	.0342	-.009	.0015	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
-.000	.0026	-.003	.0000	-.000	-.005	.0011	422.6	-.008	-.245

*0/WATER BK
EGC

BURN # 1 WA16 275:39

IS									
1334									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
.0004	.0899	-.034	-.004	-.001	-.006	.0034	.0068	.0001	-.068
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.032	-.014	-.065	7.141	.0002	.0088	.0177	-.011	-.002	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
-.001	.0039	-.003	-.000	-.000	-.002	.0000	.0035	.0017	-.232

*0/605-J
EGC

BURN # 1 WA16 275:40

IS									
1334									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .039
.0060	.0168	-.092	-.002	-.002	-.009	-.001	.0019	.0001	~~-.026~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.018	-.007	-.054	6.361	-.002	.0268	.0274	-.006	-.001	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
-.001	-.005	-.003	-.000	-.000	-.003	-.000	22.49	.0024	-.234

*O/C-27
EGC

BURN # 1 WA16 275:29

IS									
1333									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .051
.0040	46.23	-.003	2.423	-.001	.5781	.7933	9.235	.0019	-.013
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.040	-.016	-.070	-44.5	.0186	.0203	.0572	-.007	.0238	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0373	.0136	-.000	.0000	-.000	.0230	.0110	2429	.0028	-.235

*O/A-28 PM
EGC

BURN # 1 WA16 275:30

IS									
1333									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
-.002	187.8	-.016	7.765	.0176	1.777	3.658	45.91	.0314	1.578
U	IS	TH	IS	CD	SB	BI	V	CA	P
.1710	-.028	-.080	-67.6	.0691	.1236	.1736	.0378	.0328	.0003
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.2270	.0220	.0030	.0000	-.000	.1291	.0658	7522	.0345	-.230

*O/WATER BK
EGC

BURN # 1 WA16 275:32

IS									
1333									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
-.001	.3497	-.058	.0129	-.003	-.003	.0054	.0889	.0002	-.057
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.069	-.015	-.068	7.079	.0007	-.003	.0043	-.006	-.002	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
-.001	-.008	-.003	-.000	-.000	-.000	.0001	17.51	.0045	-.240

*O/B-28 PM
EGC

BURN # 1 WA16 275:33

IS									
1333									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
.0011	159.3	.1635	8.099	.0183	1.900	3.863	48.71	.0423	1.486
U	IS	TH	IS	CD	SB	BI	V	CA	P
.1234	-.029	-.069	-73.8	.0660	.1786	.1223	.0496	.0351	.0003
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.2483	.0380	.0033	.0000	-.000	.1629	.0696	7605	.0241	-.226

*O/601-L
EGC

BURN # 1 WA16 275:34

IS									
1333									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .026
-.000	.1965	-.034	.0088	-.002	-.007	.0059	.0582	.0001	-.038
U	IS	TH	IS	CD	SB	BI	V	CA	P
.1011	-.010	-.064	6.522	.0024	-.031	.0109	-.008	-.002	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0002	.0226	-.003	-.000	-.000	.0117	.0001	15.01	.0013	-.243

*0/B-25
EGC

BURN # 1 WA16 275:23
IS
1333

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .255
.0028	71.80	.0328	5.613	.0146	1.229	1.962	22.72	.0511	~~.1918~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
.0621	-.013	-.062	-52.8	.0287	.1184	.0322	.0547	.0273	.0002
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.1735	.0204	.0014	.0000	-.000	.2085	.0420	5423	.0195	-.211

*0/WATER BK
EGC

BURN # 1 WA16 275:24
IS
1333

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
-.001	.1167	-.056	.0065	-.002	-.001	.0039	.0342	.0002	-.044
U	IS	TH	IS	CD	SB	BI	V	CA	P
.0045	-.014	-.064	7.113	.0016	.0118	.0180	-.007	-.002	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
-.002	.0111	-.003	-.000	-.000	-.001	.0000	.0049	.0021	-.239

*0/B-26
EGC

BURN # 1 WA16 275:25
IS
1333

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .899
-.002	99.61	.0457	6.303	.0157	1.422	2.623	31.96	.0494	~~.8390~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
.0551	-.018	-.064	-58.3	.0433	.1727	.0737	.0578	.0292	.0002
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.2030	.0212	.0020	.0000	-.000	.2019	.0513	6155	.0359	-.231

*0/B-27
EGC

BURN # 1 WA16 275:26
IS
1333

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .282
.0019	66.27	-.015	6.319	.0140	1.441	2.534	29.90	.0485	~~.2220~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.040	-.013	-.058	-57.2	.0264	.1184	.0430	.0504	.0291	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.1896	.0198	.0021	.0000	-.000	.1949	.0495	6284	.0328	-.237

*0/B-28
EGC

BURN # 1 WA16 275:28
IS
1333

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .275
.0044	69.91	-.016	6.301	.0117	1.426	2.556	30.37	.0407	~~.0153~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
.0862	-.017	-.076	-55.5	.0353	.1055	.0572	.0405	.0283	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.1818	.0450	.0020	.0000	-.000	.1729	.0491	6190	.0362	-.246

*0/WATER B.
EGC

BURN # 1 WA16 275:11
IS
1334

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
-.002	.0167	-.084	-.002	-.001	-.012	.0008	.0019	.0001	-.071
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.097	-.017	-.061	7.207	-.001	-.007	.0104	-.012	-.002	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
-.002	.0136	-.003	-.000	-.000	-.005	-.000	15.00	.0003	-.245

*0/A-26
EGC

BURN # 1 WA16 275:16
IS
1333

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
.0039	205.0	.0687	7.704	.0201	1.747	3.570	44.97	.0476	3.615
U	IS	TH	IS	CD	SB	BI	V	CA	P
.0767	-.029	-.091	-70.0	.0612	.2232	.1359	.0631	.0336	.0006
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.2517	.0351	.0031	.0000	-.000	.1773	.0691	6987	.0271	-.200

*0/A-27
EGC

BURN # 1 WA16 275:17
IS
1334

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
.0052	162.0	.0720	6.568	.0139	1.402	2.482	28.75	.0260	1.020
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.011	-.019	-.077	-58.5	.0600	.0932	.0959	.0291	.0293	.0003
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.1692	.0396	.0021	.0000	-.000	.1043	.0496	6083	.0060	-.214

*0/A-28
EGC

BURN # 1 WA16 275:18
IS
1333

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .870
-.002	168.2	.0201	6.950	.0133	1.493	2.699	31.39	.0231	~~.8099~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
.0908	-.016	-.079	-61.9	.0621	.1370	.1049	.0254	.0306	.0003
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.1720	.0296	.0023	.0000	-.000	.0953	.0523	6484	.0070	-.211

*0/29
*0/A-29
EGC

BURN # 1 WA16 275:20
IS
1334

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .049
-.002	42.99	.0021	2.342	.0028	.3721	.6605	7.513	.0070	~~-.015~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
.1014	-.019	-.074	-22.6	.0136	.0367	.0392	-.004	.0144	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0362	.0025	-.001	.0000	-.000	.0292	.0097	2360	-.006	-.241

EGC

BURN # 1 WA16 275:01

IS									
1334									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .064
-.000	58.34	.0467	3.146	.0056	.7781	1.124	14.56	.0244	~~.0012~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
.1161	-.014	-.084	-35.4	.0164	.0671	.0283	.0276	.0197	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0703	.0144	-.000	.0000	-.000	.0906	.0156	3038	-.010	-.229

*O/C-23
EGC

BURN # 1 WA16 275:03

IS									
1334									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .040
.0018	58.79	-.026	3.002	.0094	.6696	.9954	11.04	.0025	~~-.023~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
.4090	.0051	-.025	-50.5	.0258	.0722	.0427	.0153	.0258	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0588	.0830	.0015	.0000	-.000	.0360	.0154	2872	.0068	-.226

*O/A-24 PM
EGC

BURN # 1 WA16 275:04

IS									
1334									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .121
.0015	84.89	.0151	3.866	.0104	.7743	1.196	13.51	.0096	~~.0570~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
.3615	.0054	-.016	-35.8	.0351	.0962	.0787	.0249	.0199	.0002
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0862	.0627	-.000	.0000	-.000	.0397	.0233	3662	.0129	-.210

*O/B-24 PM
EGC

BURN # 1 WA16 275:06

IS									
1334									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .113
-.001	116.6	.0648	5.419	.0083	1.159	1.980	23.52	.0192	~~.0488~~
U	IS	TH	IS	CD	SB	BI	V	CA	P
.0273	-.017	-.074	-50.0	.0412	.0452	.0719	.0146	.0257	.0002
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.1345	.0373	.0012	.0000	-.000	.0738	.0373	5039	.0012	-.242

*O/A-25
EGC

BURN # 1 WA16 275:07

IS									
1333									
MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
-.002	138.5	.0377	5.622	.0121	1.165	1.883	21.30	.0320	1.333
U	IS	TH	IS	CD	SB	BI	V	CA	P
.0831	-.014	-.073	-51.8	.0447	.0789	.0818	.0390	.0266	.0004
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.1543	.0182	.0013	.0000	-.000	.1237	.0407	5257	.0063	-.209

*HO/WTER ESSO MINERSL PROJECT 2119 FILE 801007A MPLE A23
E GC

ACME ANALYTICAL LABORATORIES LTD.
852 EAST HASTINGS STREET
VANCOUVER, B.C. V6A 1R6

BURN # 1 WA16 274:55
IS
1334

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .002
.0008	73.84	.0283	3.540	.0026	.8110	1.121	12.30	.0048	-.068
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.078	-.017	-.077	-33.9	.0274	.0387	.0717	-.004	.0193	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0635	.0050	-.000	.0000	-.000	.0214	.0184	3420	-.009	-.246

*O/A 24
EGC

BURN # 1 WA16 274:56
IS
1334

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS .045
.0009	91.07	.0402	4.131	.0073	.8349	1.284	14.58	.0103	-.017
U	IS	TH	IS	CD	SB	BI	V	CA	P
.0193	-.004	-.078	-39.4	.0356	.0706	.0725	.0070	.0216	.0002
LA	IN	MG	BA	TI	B	AL	IS	IS	W
.0835	-.021	.0002	.0000	-.000	.0450	.0251	3950	.0005	-.232

*O/WATER BLANK
EGC

BURN # 1 WA16 274:58
IS
1334

MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
.0000	.1188	-.017	.0041	-.002	-.000	.0029	.0145	.0002	-.062
U	IS	TH	IS	CD	SB	BI	V	CA	P
-.078	-.010	-.071	7.134	.0031	-.008	.0224	-.010	-.002	.0001
LA	IN	MG	BA	TI	B	AL	IS	IS	W
-.002	.0345	-.003	-.000	-.000	-.001	.0000	17.50	.0065	-.246

*

WATER ANALYSIS

THE WATER SAMPLE IS ANALYSED BY ICP AS RECEIVED.
THE RESULT S ARE IN PPM OR UG/ ML EXCEPT FOR FE , CA P , MG,
T I , AL, WHICH IS IN PERCENT.

.1000 % = 1000 PPM

IS STANDS FOR INTERNAL STANDARD

ACME ANALYTICAL LABORATORIES LTD.
Assaying & Trace Analysis
852 E. Hastings St., Vancouver, B.C. V6A 1R6
phone:253-3158

OCT - 2 1980

To: Esso Minerals Ltd.,
314 1281 W. Georgia St.,
Vancouver, B.C.
V6E 3J7

File No. 80-1007 A

Type of Samples water

Disposition

GEOCHEMICAL ASSAY CERTIFICATE

Project No.: 2119

SAMPLE No.	Cu	Fe	As	pH	
A 23	74	48	.002	2.8	1
A 24	91	103	.045	2.7	2
B 24	58	244	.064	2.7	3
C 23	59	25	.040	3.1	4
A 24 PM	85	96	.121	2.5	5
B 24 PM	117	192	.113	2.5	6
A 25	139	320	1.333	2.5	7
A 26	205	476	3.615	2.5	8
A 27	162	260	1.020	2.6	9
A 28	168	231	.870	2.7	10
A 29	43	70	.049	2.9	11
B 25	72	511	.255	2.7	12
B 26	100	494	.899	2.7	13
B 27	66	485	.282	2.8	14
B 28	70	407	.275	2.8	15
					16
C 27	46	19	.051	3.2	17
A 28 PM	188	314	1.578	2.6	18
B 28 PM	159	423	1.486	2.8	19
601 L	0	1	.026	5.0	20
602 K	0	1	.018	5.5	21
603 M	1	1	.018	5.1	22
604 E	9	1	.007	3.8	23
605 J	0	1	.039	5.1	24
606 C	13	1	.038	3.4	25
A 29 AM	197	274	1.151	2.6	26
B 29 AM	111	474	.653	2.8	27
C 29	26	19	.055	4.1	28
A 29 B	45	69	.054	2.9	29
					30
					31
					32
					33
					34
					35
					36
					37
					38
					39
					40

All reports are the confidencial property of clients
All results are in PPM.

DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Sept. 30, 1980

DATE REPORTS MAILED Oct. 1, 1980

ASSAYER

DEAN TOYE, B.Sc.
CHIEF CHEMIST
CERTIFIED B.C. ASSAYER

PHONE: (604) 980-5814 or 988-4524

TELEX: 04-352828

MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

OCT 15 1980

October 15, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.
V6E 3J7.

File No: 0-987

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Ferric Fe ppm	Ferrous Fe ppm	Total Fe ppm	Total As ppb	pH	Eh m.v.
A 30	76.00	34.8	0.1	63.0	23	2.8	-332
A 31	76.50	34.0	0.1	68.4	57	2.9	-335
A 32	77.00	33.7	0.1	57.8	30	2.9	-335
C 30	62.50	0.1	0.1	33.8	18	3.8	-310
C 31	61.50	0.2	0.2	22.4	6	3.6	-302
C 32	54.50	0.2	0.1	19.8	17	3.7	-290

Certified By

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705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

OCT 15 1980

October 15, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.
V6E 3J7.

File No: 0-1009

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Ferric Fe ppm	Ferrous Fe ppm	Total Fe ppm	Total As ppb	pH	Eh m.v.
A 33	152.00	536.0	0.5	646.0	2250	2.8	-310
A 34	101.00	165.0	1.5	178.0	495	3.1	-331
A 35	110.00	252.0	1.0	266.0	645	3.0	-330
B 33	135.00	298.0	1.5	546.0	1005	3.1	-345
B 34	79.50	247.0	1.0	537.0	192	3.1	-205
B 35	76.00	310.0	1.0	518.0	243	3.1	-200
A 34 Late PM	185.00	1100.0	2.0	1120.0	8000	2.7	-278
701 L	.20	0.1	0.1	0.1	15	5.3	-260
702 K	.18	0.1	0.1	0.1	11	5.6	-245
703 M	1.85	0.1	0.1	0.2	16	5.0	-220
704 E	14.80	0.1	0.1	1.4	14	4.1	-240
705 J	.10	0.1	0.1	0.1	23	5.4	-220
706 C	33.50	0.7	2.0	3.8	5	3.6	-300
A 34 PM	168.00	730.0	1.5	776.0	4200	2.8	-280
B 34 PM	132.00	530.0	1.0	760.0	990	3.1	-210
A 35 PM	179.00	1015.0	2.0	1060.0	4350	2.8	-258
B 35 PM	122.00	695.0	1.5	798.0	1260	3.1	-212

Certified By

DTD GJ File 2119

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TELEX: 04-352828

MIN-EN Laboratories Ltd.

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705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

OCT 15 1980

October 15, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.
V6E 3J7.

File No: 0-990

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Ferric Fe ppm	Ferrous Fe ppm	Total Fe ppm	Total As ppb	pH	Eh m.v.
A 23	60.20	33.3	0.1	75.8	114	3.2	-258
C 23	55.50	20.3	0.6	54.0	45	3.6	-200
B 24	49.20	159.5	1.0	539.0	48	3.0	-345
B 24 PM	112.00	177.0	2.0	426.0	950	2.9	-350
A 24	73.00	79.0	1.0	116.8	153	3.1	-348
A 24 PM	148.00	362.0	1.0	372.0	1250	2.9	-359
A 25	122.00	277.0	1.0	289.0	500	2.9	-350
B 25	58.00	368.0	0.2	745.0	75	2.9	-232
A 26	184.00	432.0	0.2	442.0	3025	2.9	-350
B 26	95.00	348.0	0.2	642.0	705	2.9	-229
A 27	148.00	242.0	1.0	247.0	900	3.0	-335
B 27	64.20	342.0	0.2	841.0	276	3.0	-205
C 27	43.50	1.0	2.2	39.2	12	3.4	-295
A 28	152.00	215.0	1.0	219.0	450	3.0	-345
A 28 PM	182.00	308.0	2.5	312.5	1125	3.0	-349
B 28	72.50	298.0	0.5	578.0	333	3.0	-212
B 28 PM	142.00	286.0	1.0	493.0	765	2.9	-337
A 29	39.80	34.2	0.1	95.9	69	3.1	-330
A 29 AM	168.00	249.0	1.0	258.0	930	3.0	-340
B 29 AM	99.50	299.0	0.5	584.0	330	3.0	-228
C 29 EFF	25.70	1.5	4.4	49.8	75	4.2	-182
601 L	.18	0.1	0.1	0.1	1	5.8	-205
602 K	.40	0.1	0.1	0.2	5	5.9	-218
603 M	.95	0.1	0.1	0.1	29	5.6	-212
604 E	8.35	0.1	0.1	0.9	4	4.2	-230
605 J	.03	0.1	0.1	0.1	16	5.7	-205
606 C	12.05	0.1	0.1	2.0	5	3.9	-252

Certified By

PHONE: (604) 980-5814 or 988-4524 TELEX: 04-352828

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

NOV 3 1980

November 1, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.

Project: 2119
Attn: G. Dunn
File No: 0-1073

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Ferrous Fe ppm	Total Fe ppm	Total As ppb	Ferric Fe ppm	Eh mv	pH
A 48	67.40	66.6	98.0	249	18.0	-338	2.4
704E	13.38	0.2	0.3	21	0.1	-315	3.6
901L	.01	0.1	0.2	9	0.1	-310	5.8
[illegible]3M	1.26	0.2	0.3	48	0.1	-285	4.7
C48	63.40	1.3	100.0	102	0.3	-308	3.4
C50	49.35	1.0	34.2	54	0.2	-325	3.3
A50	67.15	50.4	89.5	108	8.5	-350	2.5
C51	43.40	7.8	25.8	54	3.0	-250	2.8

Certified By

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TELEX: 04-352828

MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

NOV 3 1980

November 1, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.

File No:0-1041
Project 2119
Attn: G. Dunn

Sample Number	Dissolved Cu ppm	Ferrous Fe ppm	Ferric Fe ppm	Total Fe ppm	Total As ppb	pH	Eh mv
901L	0.04	0.1	0.1	0.2	1	6.2	-222
902K	0.14	0.1	0.1	0.6	6	6.0	-210
903M	1.59	0.3	0.1	0.7	18	4.7	-210
904E	12.05	0.4	0.3	0.8	11	4.1	-225
905J	0.03	0.1	0.1	0.1	27	5.4	-235
906C	25.05	0.1	2.1	2.2	9	3.7	-255
A43	252.00	250.0	1200.0	1555.0	22575	2.7	-290
A44	131.80	291.0	46.0	340.0	1740	3.0	-338
A45	105.60	177.0	22.0	204.0	525	3.1	-345
A46	91.50	120.5	19.5	151.0	165	3.1	-335
B43	232.00	455.0	1200.0	1695.0	20625	2.8	-220
B44	108.00	334.0	48.0	409.0	1920	3.1	-250
C45	66.90	89.7	3.3	148.0	585	3.3	-210
C46	64.25	24.3	2.7	112.0	210	3.6	-200
D43	169.00	738.0	350.0	1120.0	11700	1.5	-130

Certified By

PHONE: (604) 980-5814 or 988-4524

TELEX: 04-352828

MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

NOV 3 1980

November 1, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.

File No: 0-1027
Project: 2119
Attn: G. Dunn

WATER SAMPLES

Sample Number	Dissolved Cu ppm	Ferrous Fe ppm	Ferric Fe ppm	Total Fe ppm	Total As ppb	Eh mv	pH
A36	198.00	440.0	450.0	934.0	7200	-295	2.9
B36	189.00	502.0	460.0	998.0	7875	-285	3.0
D36	141.00	596.0	210.0	818.0	7000	-215	3.1
A37	196.00	420.0	202.0	658.0	3580	-290	3.0
B37	182.00	472.0	185.0	796.0	4650	-235	3.1
D37	167.00	540.0	180.0	782.0	7125	-215	3.1
A38	153.00	285.0	55.0	382.0	1755	-285	3.1
B38	112.00	261.0	35.0	423.0	1500	-240	3.1
D38	142.00	469.0	110.0	702.0	3330	-218	3.1
A39	133.50	156.0	37.0	214.0	660	-332	3.2
C39	43.70	0.1	0.5	14.9	135	-252	4.1
A40	170.00	463.0	125.0	600.0	2865	-280	2.9
B40	139.00	450.0	90.0	658.0	1185	-215	3.1
D40	133.00	450.0	140.0	598.0	1995	-100	1.5
A41	199.00	290.0	1100.0	1470.0	20000	-260	2.6
B41	203.00	430.0	1250.0	1735.0	20000	-188	2.8
A42A	233.0	530.0	1050.0	1635.0	17775	-268	2.9
A42	149.00	527.0	235.0	780.0	9000	-262	3.2
B42	132.00	325.0	75.0	440.0	2115	-240	3.1
D42	124.50	389.0	90.0	538.0	2715	-245	2.9
A43-S	169.00	424.0	280.0	738.0	6000	-300	3.0
801L	0.01	0.1	0.1	0.1	14	-292	5.4
802K	0.09	0.1	0.1	0.2	6	-255	5.6
803M	1.07	0.1	0.1	0.3	45	-250	5.5
804E	12.80	0.1	0.1	0.2	12	-285	4.2
805J	0.04	0.1	0.2	0.4	24	-278	5.3
806C	21.00	0.1	1.7	1.8	21	-305	4.0

Certified By

MIN-EN LABORATORIES LTD.
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
Phone: 980-5814

NOV 2 1 1980

Certificate of Assay

TO: Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver B.C.

PROJECT No. 2119

DATE Nov.20/80.

File No. 0-1122

SAMPLE No.	Cu %			
CAN 1	30.450			
2	31.500			
3	32.850			
4	27.400			
CAN 5	27.600			

MIN-EN Laboratories Ltd.

CERTIFIED BY .....

PHONE 980-5814

MIN-EN Laboratories Ltd.
Specialists in Mineral Environments
Corner 15th Street and Bewicke
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
CANADA V7M 1T2

DEC 1 1980

November 27, 1980.

Esso Minerals Canada,
600-1281 W. Georgia St.,
Vancouver, B.C.

File No: 0-1122
Project: 2119 WATER SAMPLES

Sample Number	Dissolved Cu ppm	Total Fe ppm	Total As ppm	pH	Eh
A 43	293.00	1500.0	5400	1.9	-318
B 43	264.00	1600.0	7500	2.1	-322

Certified By

PHONE 980-5814

Copy 1: ~~C. Aird~~ D.D.
#2119

Copy 2: 7.1.D

MIN-EN Laboratories Ltd.

Specialists in Mineral Environments

Corner 15th Street and Bewicke
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Vancouver, B.C.

File No: 0-1122
Project: 2119

WATER SAMPLES

Sample Number	Ferric Fe ppm	Ferrous Fe ppm	Eh
A 6	14.0	18.0	-295
7	120.0	136.0	-308
8	110.0	90.0	-300
9	200.0	240.0	-305
10	1160.0	760.0	-315
11	800.0	440.0	-320
12	210.0	480.0	-315
13	400.0	320.0	-318
14	370.0	330.0	-312
15	350.0	350.0	-315
16	270.0	310.0	-312
17	260.0	260.0	-320
18	440.0	240.0	-315
19	90.0	102.0	-302
20	65.0	15.0	-310
A 21	90.0	106.0	-312
A 6-PM	180.0	200.0	-305
A 11-PM	490.0	390.0	-315
A 14-PM	810.0	790.0	-319
A 19-PM	220.0	280.0	-315
A 20-PM	140.0	1540.0	-310
A 43	1280.0	340.0	-318
B 43	1360.0	380.0	-322
A 10 Duplicate	220.0	260.0	-315

Certified By