COMINCO LTD.

EXPLORATION
NTS 82L/4E

WESTERN DISTRICT
January 6, 1981

ASSESSMENT REPORT 1980

GEOLOGY, SOIL GEOCHEMISTRY AND PERCUSSION DRILLING ON THE DOBBIN PROPERTY

(Esperon 1 - 4, 12, 14 - 16 and 18 Claims)

DUN WATERS CREEK, VERNON M.D., B.C.

(Work performed May 23 - September 8, 1980)

LATITUDE: 50°06'N

LONGITUDE: 119°40'W

REPORT BY:

M.J. OSATENKO

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The Esperon claims are located 29 km northwest of Kelowna, B.C.

Work in 1980 on these claims consisted of geological mapping, 72 km of new grid, soil sampling, 23.4 km of IP and ground magnetics and 1620' of percussion drilling in five holes. Mapping shows a granitic stock(147±6m.y.) that cuts argillaceous sediments and is composed mainly of quartz monzonite porphyry. This stock is cut by plugs and dykes of diorite which in turn is cut by dykes of aplite and pegmatite. Tertiary basalt dykes cut the quartz monzonite porphyry and basalt flows related to these dykes unconformably overlie the porphyry off the claims.

To date eleven Mo showings have been found but only two of them are considered of interest. All showings consist of MoS_2 and pyrite in quartz veinlets usually associated with minor amounts of chlorite and sericite. Quartz veinlets show a major set striking about 094° and dipping 50-80° both to the north and to the south, with a minor one striking north-south also with steep dips. The Mo showings lie within an area 3.5 x 1.7 km and are in part coincident with Mo soil anomalies(5-55ppm), usually about 200 x 600 m, which group to form a donut-shaped area 4.5 x 2.0 km. Coincident in part with the above Mo showing and Mo soil anomalies are two weak chargeability(IP) anomalies (6-10 mv/v against a background of 3.5 mv/v) that are 300 x 1500 m and 300 x greater than 2300 m respectively.

Percussion drilling(5 holes, 1620') tested three of the Mo soil anomalies, the best Mo showing and an area of Mo boulders in a Noranda trench. The best mineralization encountered was in hole 80-37, adjacent to the best showing, where 100' of 0.045% W(120-220') and 50' of 0.025% Mo(270-320') at the bottom of the hole was encountered. Two other holes hit Mo mineralization with 80-36 having 30' of 0.021% Mo midway in the hole and 80-38 60' of 0.006% Mo at the bottom. These three holes are in the area of the largest chargeability anomaly.

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The work to date has completed all the mapping, soil geochemistry and geophysics that is necessary on the claims. It remains to continue the percussion drilling, beginning with the easternmost target where the best showing, largest chargeability anomaly and best intersections were found. A secondary target occurs in the western part of the claims and again has minor Mo showings that are in part coincident with Mo soil anomalies and a weak chargeability anomaly. These targets would require about 9000' of percussion drilling to test them adequately.

INTRODUCTION

The Esperon claims of the Dobbin property were initially staked late in 1978 to protect Mo silt anomalies. In the following year additional claims were acquired to cover Mo showings on ground dropped by Shell Oil. At this time geological mapping and soil sampling programs were started. In 1980 we completed all the necessary grid lines, geological mapping, soil geochemistry(1236 samples) and did 23.4 km of IP and ground magnetics. Also a start was made on percussion drilling with five holes completed(1620').

Mapping was done by K. Russell and A. Wilkins while the soil sampling was done by M. McDonagh, D. Fediuk, B. Grant and S. Fyles. The grid provided the main mapping control but some was also done along the numerous logging roads in the area. All geophysical work was done under the supervision of A. Scott. Percussion drilling was done by A. Miller of Kamloops and supervised by R.A. Ryziuk and M.J. Osatenko.

LOCATION AND ACCESS

The property is located 29 km northwest of Kelowna, B.C. along a good system of logging roads which are mainly owned by Crown Zellerbach(Plate 1). It takes about 45 minutes to drive to the property from Kelowna. The working season is from June to October.

TOPOGRAPHY AND VEGETATION

The Esperon claims lie at a elevation of 1400 to 1650 m and straddle the Terrace Creek Valley. It is covered by a thick blanket of mature spruce which has been logged over the past ten years. Water for drilling is available from Dun Waters Creek and a few small ponds.

PROPERTY AND OWNERSHIP

This report covers the following Esperon claims(100% owned by Cominco Ltd. see Plate 2).

CLAIM	RECORD NUMBER	NUMBER OF UNITS	DUE DATE
ESPERON 1	573	15	Dec.18/84
ESPERON 2	574	18	Dec.18/84

CLAIM	RECORD NUMBER	NUMBER OF UNITS	DUE DATE
ESPERON 3	575	15	Dec.18/84
ESPERON 4	576	18	Dec.18/84
ESPERON 12	626	16	June 7/86
ESPERON 14	650	12	July 13/86
ESPERON 15	654	4	Aug.3/82
ESPERON 16	655	10	Aug.3/81
ESPERON 18	657	2	Aug.3/88

PREVIOUS WORK

The first known work in the area was by Noranda Exploration Co. in 1966 and 1967, mainly near Dun Waters Creek. Work consisted of recce soil geochem which defined a number of irregularly shaped and poorly defined Mo anomalies (assessment report 1071). In 1972 Canadian Johns Manville acquired 8 claims to protect a Mo silt anomaly near Dun Waters Creek and did a small soil survey(assessment report 4133). This showed two Mo anomalies(5-47ppm) over the full extent of the grid, 850 x 850 m, in an area of quartz veined granodiorite. The property lapsed and was acquired by Shell Oil in 1977. Work by Shell was strictly for uranium and consisted of mapping, silt and soil geochemistry and a little drilling. No mention of the Mo potential of the area appeared in their assessment report and they apparently did not find significant uranium. In 1978 and 1979 Cominco Ltd. acquired the property and did mapping and an extensive soil sampling program which located a number of small Mo showings coincident with large weak to moderate Mo soil anomalies.

REGIONAL GEOLOGY

The oldest rocks in the Esperon area are gneisses and schists of Proterozoic or possibly of early Paleozoic age(Plate 3, Unit 1). They are overlain by a sequence of(Cache Creek) argillaceous rocks with minor limestone, basalt and rhyolite(flows and tuffs) of presumed Upper Paleozoic or possibly in part of Upper Triassic age(Unit 2). Cutting these rocks are small ultramafic-monzonite complexes(Unit 3) such as those found at Whiterocks Mtn and Kruger Mtn near Keremeos. Underlying most of the Esperon claims are late Jurassic granitic rocks(Unit 4) of the Okanagan complex which have a Rb/Sr isochron of 147±6m.y.(unpublished Cominco dating). MoS_2 mineralization in the area is related to this event. Following this episode was a period of early Tertiary plutonism which formed plugs and stocks of alkaline composition (monzonite, syenite, Unit 5) and small bodies of quartz-feldspar and quartz latite porphyry(Unit 6). Coeval with the calc-alkaline Tertiary intrusive rocks are large volumes of basalt and rhyolite(Unit 7).

PROPERTY GEOLOGY

The geology of the property is shown in Plate 4. It is dominated by calc-alkaline and alkaline intrusive rocks with large xenoliths of Cache Creek sediments. Age relationship of these major units are discussed in the REGIONAL GEOLOGY part of this report.

The sediments(Unit 1) on the grid occur in large patches thought to be xenoliths. To the south, off the plate, they are clearly cut by the intrusive rocks and consist of northwesterly trending argillaceous rocks. Pyrite is common(1-3%) and is present principally as disseminations but some also occurs along fractures. Rocks of Unit 2(Esperon phase) are the most common on the Esperon claims. They are medium to coarse grained porphyritic quartz monzonite to quartz monzonite porphyry that contain 10-20% K-feldspar(1-8cm) and 10% quartz phenocrysts in a matrix of plagioclase, quartz and minor K-feldspar, biotite and hornblende. The percentage of quartz in the matrix is inversely proportional to the percentage of K-feldspar phenocrysts, and with the higher percentage of phenocrysts the dominant mafic mineral becomes hornblende rather than biotite. Typically the Esperon rocks consists of 30% quartz, 44% plagioclase, 20% K-feldspar, 4% biotite and 2% hornblende. These rocks host most of the fracture controlled Mo mineralization on the property. Cutting the Esperon phase rocks are dykes and plugs of fine to medium grained diorite(Unit 3, Terrace phase). These rocks are typically fresh, foliated and contain 5% quartz, 76% plagioclase, 3% K-feldspar with the remainder biotite and hornblende. Quartz veining is rare and MoS_2 is absent.

The Via phase rocks(Unit 4) cut the sediments and are inferred to cut the Esperon rocks but nowhere were they seen to cut the Terrace diorites. These rocks are porphyritic quartz monzonite and contain 5% K-feldspar and 2-5% quartz phenocrysts in a fine grained felsic matrix. Typically they contain 30% quartz, 48% plagioclase, 20% K-feldspar and 2% biotite. Although they are texturally dissimilar to the Esperon rocks there is a group that texturally and mineralogically appears to be transitional between the two. This transition is not supported by the major element geochemistry(see rock geochemistry). Cutting both the Esperon and Terrace phase rocks are 1-7 m wide, pink to grey aplitic dykes of the Stuart phase(Unit 5) that are sometimes found with small bodies of pegmatite. Mineralogically they are similar to the Via phase but they have only 1-2% quartz phenocrysts. They often contain disseminated MoS_2 and occasionally are cut by quartz veinlets that contain MoS_2. The youngest rocks on the property(Unit 6) are vesicular, brown basalt dykes of Tertiary age that cut the Esperon rocks and presumably all rock units on the property.

MINERALIZATION AND ALTERATION

Mapping in 1980 failed to locate any new significant Mo showings but two new minor occurrences were noted(Plate 4). Of the 11 Mo showings found to date only two can be considered as significant showings. The first and best showing occurs on the east side of the Stuart Main road about 600 m north of where this road crosses Dun Waters Creek. This showing consists of angular boulders, probably close to outcrop, of chloritized and sericitized quartz monzonite porphyry that are cut by quartz veinlets(1-10cm) that carry splashes of MoS_2 and minor pyrite. The second showing (35N/12W) is again in an area of very poor exposure and is made up of angular boulders and small outcrops of quartz monzonite porphyry that are quartz veined. These veinlets carry MoS_2 and pyrite and grade 0.021% Mo over a width of at least 25 m. This showing has not been drill tested. Of the remaining nine Mo occurrences

eight show only traces of MoS_2 but like the more significant showings the mineralization is found in quartz veinlets with pyrite, chlorite and sericite. The last occurrence consists of angular boulders of quartz monzonite porphyry with interesting MoS_2 in quartz veinlets in an old Noranda trench near 46N/ 1W.

Plate 4 shows the distribution of quartz veinlets and chlorite, sericite and secondary K-feldspar alteration. Because outcrop is scarse in the eastern and southern part of the property patterns of alteration are difficult to discern except to note that the area of most intense quartz veining, which at best is weak, is in the central part of the property. Here, chlorite alteration, with very minor sericite and K-feldspar, is also best developed and is generally coincident with areas of Mo soil anomalies and minor Mo occurrences.

STRUCTURE

An important part of the mapping was to determine preferred orientations of the previously indicated quartz stockwork. However, because of poor outcrop only limited amounts of data were collected. Quartz veinlets show a major set striking about 094° and dipping 50-80° both to the north and to the south (Plate 4). In addition a poorly defined set, striking roughly north-south and dipping about 70° to both the east and west, was also identified. None of these sets are parallel to any of the regional faults inferred from topographic features(see 1979 assessment report). Orientations of fractures and joints are random while the aplitic dykes tend to follow an east-west trend and the Terrace diorite dykes generally follow north-south directions.

GEOCHEMISTRY

SOIL

The soil survey covered all of the grid lines that were cut in 1980. These essentially filled in the spacing of lines, 200-500 m apart, that were done in 1979. Samples were collected from the B horizon at a depth of 12-20 cm and at intervals of 50 m along the cross lines. These samples were analyzed for Mo at Cominco's laboratory in Vancouver using a Zn dithiol colorimetric method after a $HClO_4$-HNO_3 digestion(coefficient of variation of about 15%).

Plate 5 shows a contoured plot of the Mo soil values. Anomalous ones(5-55ppm) occur in irregularly shaped patches, usually about 200 x 600 m, which group to form a donut-shaped area 4.5 x 2.0 km. The central background area is underlain mainly by Terrace diorite which probably post dates the main episode of Mo mineralization.

ROCK

Major and trace element data for intrusive rocks on the property are given in Appendix "A" on page 9. A major element plot of SiO_2 against Na_2O + K_2O clearly shows the strong calc-alkaline character of the Esperon and Via phases and the transitional unit and surprisingly the alkaline character of the Terrace phase. The unit that is texturally and mineralogically transitional between the Esperon and Via doesn't show a chemical transition so perhaps it represents a distinct unit. Most of the rocks which were analyzed for major elements were also analyzed for trace Mo,Zn and F. Mo contents are only anomalous in the Esperon phase, which hosts most of the Mo mineralization found to date, while Zn shows background contents in all units. F is highest in the Esperon and oddly enough in the Terrace phases.

GEOPHYSICS

Details of the IP and ground magnetic surveys are given in a separate report by A. Scott.

Chargeability responses are generally low with background values about 3.5 mv/v. Anomalous areas are usually 6-10mv/v and occur in two distinct northerly trending zones on either side of a plug of Terrace diorite(Plate 4). The western most anomaly is about 300 x 1500 m and is in part coincident with weak Mo soil anomalies and areas of minor quartz veinlets that carry traces of MoS_2. This anomaly was not drill tested. The easternmost anomaly is the larger of the two, 300 x greater than 2300 m, and is largely covered by overburden. With it are found weak-moderate Mo soil anomalies, the best Mo showing and the highest drill indicated grades of W and Mo. The ground magnetic work outlined numerous, narrow, northerly trending magnetic anomalies that do not correlate with any mappable rock units. There are no obvious lows that might indicate altered zones.

PERCUSSION DRILLING

Five vertical percussion holes were drilled to depths from 300 to 350' to test three Mo soil anomalies, the best Mo showing as well as an area of Mo boulders in one of Noranda's old trenches. Logs of the chips and the assays are given in Appendices "B" and "C" on pages 10 and 12 respectively.

The highest grade mineralization intersected was in hole 80-37, adjacent to the best Mo showing, where 100' of 0.045% W(120-220') and 50' of 0.025% Mo(270-320') was encountered. This hole shows moderately chloritized and weakly sericitized granitic rock with pyrite most common from 190' to the bottom of the hole. Scheelite was noted in the 160 to 170' sample. Hole 80-38 shows moderately sericitized granitic rocks but only 0.006% Mo over 60' at the bottom of the hole. The only other hole to show noticeable Mo and altered rock is 80-36 where 30' of 0.021% Mo(200-230') occurs in chloritized granitic rocks. No mineralization is present in hole 80-40, adjacent to the Noranda trench.

CONCLUSIONS

1. MoS_2 and pyrite mineralization occurs principally in quartz veinlets with chlorite and sericite alteration in an area 3.5 x 1.7 km. Of the eleven showings on the property only two are of interest with the best one in the eastern part of the property along Stuart Main road, just north of Dun Waters Creek.

2. The above showings are coincident with Mo soil anomalies which cover a donut-shaped area about 4.5 x 2.0 km.

3. The two, large but weak chargeability anomalies are in part coincident with Mo showings and Mo soil anomalies and are essentially untested.

4. The three percussion holes that contain minor Mo mineralization are found on the east side of the property in the area of the largest chargeability anomaly.

5. Drilling done to date is obviously insufficient to define patterns of alteration and mineralization.

RECOMMENDATIONS

1. Work to date has completed all the mapping, soil geochemistry and geophysics that is necessary, but further percussion drilling is required.

2. The best drill target is in the easternmost chargeability anomaly area (between 33N to 57N and 1E to 6E) where we have obtained our best intersections and where we see the best showing and coincident Mo soil anomalies. About ten holes(3000') are necessary to test this area adequately. Another area worthy of drill testing is on the western side of the property(between 57N to 29N and 3W to 12W) where the second most significant Mo showing on the property is coincident with areas of weak quartz veining, other minor Mo occurrences, a weak chargeability anomaly and Mo soil anomalies. Because this area of testing is large at least 20 holes(6000') would be required. Both drill targets should be drilled on lines 500 m apart with 200-300 m between holes.

Report by: M. Osatenko

M.J. Osatenko
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Endorsed by:

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Approved for
Release by:

G.Harden, Manager, Western
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MJO/sw

Distribution:

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APPENDIX "A"

MAJOR AND TRACE ELEMENTS IN INTRUSIVE ROCKS

FROM THE ESPERON CLAIMS

		wt. %										ppm		
Sample No.	Phase	SiO2	Al2O3	Fe2O3	TiO2	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Mo	Zn	F
15	Esperon	67.65	15.48	3.80	.41	1.01	3.50	3.46	3.76	.17	.59	99.83	8	26	440
27		68.27	15.71	3.31	.37	.84	3.10	3.86	3.94	.14	.48	100.02	-	--	---
40		70.18	14.39	3.05	.34	.72	2.48	2.98	5.22	.15	.49	100.00	-	--	---
52		65.66	16.33	3.88	.49	.99	3.12	3.43	4.32	.20	.52	98.94	2	52	620
83		75.75	11.69	1.80	.22	.01	1.82	5.63	.71	.06	1.78	99.47	4	26	140
85		65.90	15.81	3.75	.43	1.12	3.49	3.80	4.23	.17	.68	99.38	5	35	520
106		68.08	15.14	3.38	.40	.85	2.83	3.16	4.50	.16	.92	99.42	3	27	450
MEAN		68.78						3.76	3.81						
4	Terrace	54.14	20.88	7.26	.82	2.57	6.74	3.92	2.40	.43	.44	99.60	<2	115	1050
51		53.80	20.71	7.58	.74	2.56	6.86	3.95	2.22	.47	1.26	100.15	2	124	640
72		57.57	20.48	5.65	.64	1.60	5.00	5.04	2.65	.30	.94	99.87	<2	87	560
MEAN		55.17						4.30	2.42						
61	Esperon-	70.02	15.69	2.49	.31	.48	2.14	3.67	4.38	.10	.56	99.84	<2	47	400
74	Via	69.86	15.31	2.63	.34	.50	2.50	3.16	4.07	.11	.80	99.28	2	44	360
79		68.18	15.65	3.12	.35	.70	2.65	3.55	4.26	.14	.54	99.14	3	39	270
MEAN		69.35						3.46	4.24						
77_0	Altered-	71.13	15.49	2.17	.28	.27	1.60	4.03	4.22	.08	.84	100.11	3	55	205
77_1	Via	71.87	15.41	2.55	.34	.40	.71	3.69	3.88	.09	1.03	99.97	3	39	420
127*	Via	70.72	15.56	1.80	.18	.13	1.77	2.94	5.79	.04	.56	99.49	<2	28	130

* off grid

APPENDIX "B"

LOGS OF PERCUSSION HOLE SAMPLES

Hole(footage)	Depth of Overburden	Rock type	Alteration	Mineralization
80-36 50-60	25'	d	wch	--
(310') 70-80		d	wch	tr py
90-100		g	sch,ws	tr py
110-120		g	wch	--
130-140		d	wch	tr py
150-160		g	wch	tr MoS_2
170-180		d	--	--
190-200		g	mch,ws	tr py, tr MoS_2
210-220		g	mch,ws	" "
230-240		g	wch	" "
250-260		d	fresh	--
270-280		d	fresh	--
290-300		d	fresh	--
80-37 6-20	6'	g	fresh	--
(320') 30-40		g	w-mch	tr py, tr MoS_2
40-50		g	mch,w-ms	" "
60-70		g	mch,w-ms	" "
80-90		g	w-mch	--
100-110		g	mch	--
120-130		g	mch,ws	tr py, tr MoS_2
140-150		g	mch	tr MoS_2
160-170		g	sch,ws	py,tr MoS_2 scheelite?
170-180		g	sch,ws	tr py
190-200		g	sch	py
210-220		g	m-sch	py
230-240		g	mch	py
250-260		g	mch	py
270-280		g	mch,ws	py, MoS_2
290-300		g	mch,ws	" "
310-320		g	mch,ws	tr py, tr MoS_2
80-38 30-40	18'	g	mch,m-ss	tr py, tr MoS_2
(350') 50-60		g	m-sch,ws	tr py
70-80		g	mch,m-ss	tr py, tr MoS_2
90-100		g	w-mch,m-ss	tr py, tr MoS_2, tr cpy
110-120		g	w-mch	tr py
130-140		g	sch,w-ms	tr py
150-160		g	sch,m-ss	tr py, tr MoS_2

Rock type

d diorite(Terrace phase)
g granitic rock(Esperon phase)

Alteration

wch weak chlorite
mch moderate chlorite
sch strong chlorite
ws weak sericite
ms moderate sericite
ss strong sericite
ep epidote

Mineralization

py pyrite
MoS_2 molybdenite
cpy chalcopyrite

Hole(footage)	Depth of Overburden	Rock type	Alteration	Mineralization
80-38 170-180		g	sch,m-ss	tr py
(350') 190-200		g	mch,ms	tr py
210-220		g	ss	tr py, tr MoS_2
230-240		g	mch,m-ss	tr py
250-260		g	mch,ws	tr py
270-280		g	mch,ws	tr py
290-300		g	mch	tr py, tr MoS_2
310-320		g	mch,ws	tr py
330-340		g	mch,w-ms	tr py, tr MoS_2
340-350		g	mch,ms	tr py, tr MoS_2
80-39 30-40	16'	g	m-sch,wep	tr py, tr cpy
(340') 50-60		g	m-sch,wep	tr py
70-80		g	w-mch,wep	"
90-100		g	mch	"
110-120		g	mch	"
130-140		g	mch	"
150-160		g	m-sch	"
170-180		g	m-sch,w-ms	"
190-200		g	wch	"
210-220		g	w-mch	"
230-240		g	w-mch	"
250-260		g	mch	"
270-280		g	mch	"
290-300		g	m-sch,ws	tr py, tr MoS_2
310-320		g	m-sch	tr py
330-340		g	mch	tr py
80-40 30-40	17'	g	mch,ws	tr py
(300') 50-60		g	w-mch	"
70-80		g	w-mch	"
90-100		g	w-mch	"
110-120		g	fresh	--
130-140		g	fresh	--
150-160		g	mch	tr py
170-180		g	mch	"
190-200		g	mch,ws	tr py, tr MoS_2
210-220		g	fresh	tr py
230-240		g	mch,ws	"
250-260		g	mch,ws	tr py, tr MoS_2
270-280		g	fresh	--
290-300		g	mch,ws	tr py

APPENDIX "C"

Mo ASSAYS OF PERCUSSION HOLE SAMPLES

HOLE (footage)		%Mo	
80-36 (310')	35-40	<.001	
	50-60	<.001	
	60-70	.001	
	70-80	<.001	
	80-90	<.001	
	90-100	.002	
	100-110	<.001	
	110-120	.002	
	120-130	.001	
	130-140	.001	
	150-160	.004	
	160-170	.002	
	170-180	.002	
	180-190	.002	
	190-200	.004	
	200-210	.021	
	210-220	.005	.021
	220-230	.036	
	230-240	.003	
	240-250	.003	
	250-260	.001	
	260-270	.003	
	270-280	.001	
	280-290	.002	
	290-300	.001	
	300-310	.002	
80-37 (320')	6-20	.001	
	20-30	<.001	
	30-40	.002	
	40-50	<.001	
	50-60	<.001	
	60-70	<.001	
	70-80	<.001	
	80-90	.001	
	90-100	.001	
	100-110	.002	
	110-120	<.001	
	120-130	<.001	
	130-140	<.001	
	140-150	.004	
	150-160	.001	
	160-170	.008	
	170-180	.011	
	180-190	.002	
	190-200	<.001	
	200-210	<.001	
	210-220	<.001	
	220-230	.001	
	230-240	.001	
	240-250	.003	
	250-260	.002	
	260-270	.001	
	270-280	.044	
	280-290	.033	
	290-300	.042	.025
	300-310	.003	
	310-320	.005	
80-38 (350')	18-30	<.001	
	30-40	<.001	
	40-50	.001	
	50-60	.001	
	60-70	.003	
	70-80	<.001	
	80-90	<.001	
	90-100	<.001	
	100-110	.001	
	110-120	.002	
	120-130	.001	
	130-140	<.001	
	140-150	<.001	
	150-160	<.001	
	160-170	.001	
	170-180	<.001	
	180-190	<.001	
	190-200	<.001	
	200-210	.001	
	210-220	.001	
	220-230	<.001	
	230-240	<.001	
	240-250	.001	
	250-260	<.001	
	260-270	<.001	
	270-280	<.001	
	280-290	.001	
	290-300	.019	
	300-310	.002	
	310-320	.001	
	320-330	.003	
	330-340	.003	
	340-350	.004	

NOTE: 80-37 120-220'/0.045% W

HOLE (footage)		%Mo
80-39 (340')	16-30	.003
	30-40	.003
	40-50	.002
	50-60	.002
	60-70	.002
	70-80	.004
	80-90	.002
	90-100	.003
	100-110	.002
	110-120	.001
	120-130	.003
	130-140	.002
	140-150	.002
	150-160	.002
	160-170	.002
	170-180	.001
	180-190	.001
	190-200	.003
	200-210	.001
	210-220	.002
	220-230	.003
	230-240	.002
	240-250	.003
	250-260	.002
	260-270	.002
	270-280	.002
	280-290	.005
	290-300	.002
	300-310	.001
	310-320	.001
	320-330	<.001
	330-340	.001
80-40 (300')	17-30	.001
	30-40	.001
	40-50	.001
	50-60	.001
	60-70	.003
	70-80	.004
	80-90	.004
	90-100	.002
	100-110	.002
	110-120	<.001
	120-130	.001
	130-140	.003
	140-150	.003
	150-160	.003
	160-170	.002
	170-180	.003
	180-190	.015
	190-200	.003
	200-210	.003
	210-220	.001
	220-230	.001
	230-240	.001
	240-250	.002
	250-260	.003
	260-270	.002
	270-280	.002
	280-290	.002
	290-300	.001

APPENDIX "D"

STATEMENT OF EXPENDITURES FOR GEOLOGY, SOIL GEOCHEMISTRY AND PERCUSSION DRILLING ON THE ESPERON CLAIMS

SALARIES	
M.J. Osatenko Report writing(4 days @$155/day)	$ 620.00
J.K. Russell May 26-31,1980;June 1-3,8-11,13-22, 24-26(26 days @$100/day)	2,600.00
A. Wilkins May 26-31,1980;June 1-3;8-11,13-22, 24-26(26 days @$75/day)	1,950.00
D. Fediuk May 23-29,1980;June 1-7,21,23-26,30; July 2-5,7-10,12-17,19-21,23-24; August 1-5 and 18-24(51 days @$60/day)	3,060.00
M. McDonagh May 23-29,1980;June 1-7,21,23-26,30; July 2-5,7-10,12-17,19-21,23-24; August 1-5 and 18-24(51 days @$60/day)	3,060.00
R.A. Ryziuk Sept. 2-8,1980(7 days @$85/day)	595.00
B. Grant July 29-31,1980(3 days @$60/day)	180.00
S. Fyles July 29-31,1980(3 days @$60/day)	180.00
TRUCK	
1 for 1 month and 1 for 2 months	3,000.00
PERCUSSION DRILLING	
1620' @ $6.07/foot; site preparation $2,400	12,233.00
ANALYSES	
1236 soil samples for Mo @ $1.95/sample	2,410.00
153 percussion samples for Mo @ $6.75/sample	1,033.00

LINECUTTING	
72 km @ $125/km	9,000.00
DOMICILE	
R.A. Ryziuk(7 days @$30/day)	210.00
D. Fediuk & M. McDonagh (51 days @$45/day)	2,295.00
J.K. Russell & A. Wilkins(26 days @$45/day)	1,170.00
MISCELLANEOUS	
Flagging, survey thread, hammers, packsacks, compasses, shipping and bags	500.00
TOTAL	$ 44,095.00

APPENDIX "E"

COMINCO LTD.

EXPLORATION WESTERN DISTRICT

STATEMENT OF QUALIFICATIONS

I, MYRON J. OSATENKO, OF THE CITY OF VERNON, BRITISH COLUMBIA, HEREBY CERTIFY:

1. THAT I AM A GEOLOGIST, RESIDING AT 7702 SAGE DR., VERNON, BRITISH COLUMBIA WITH A BUSINESS ADDRESS AT 4405 - 28th STREET, VERNON, BRITISH COLUMBIA.

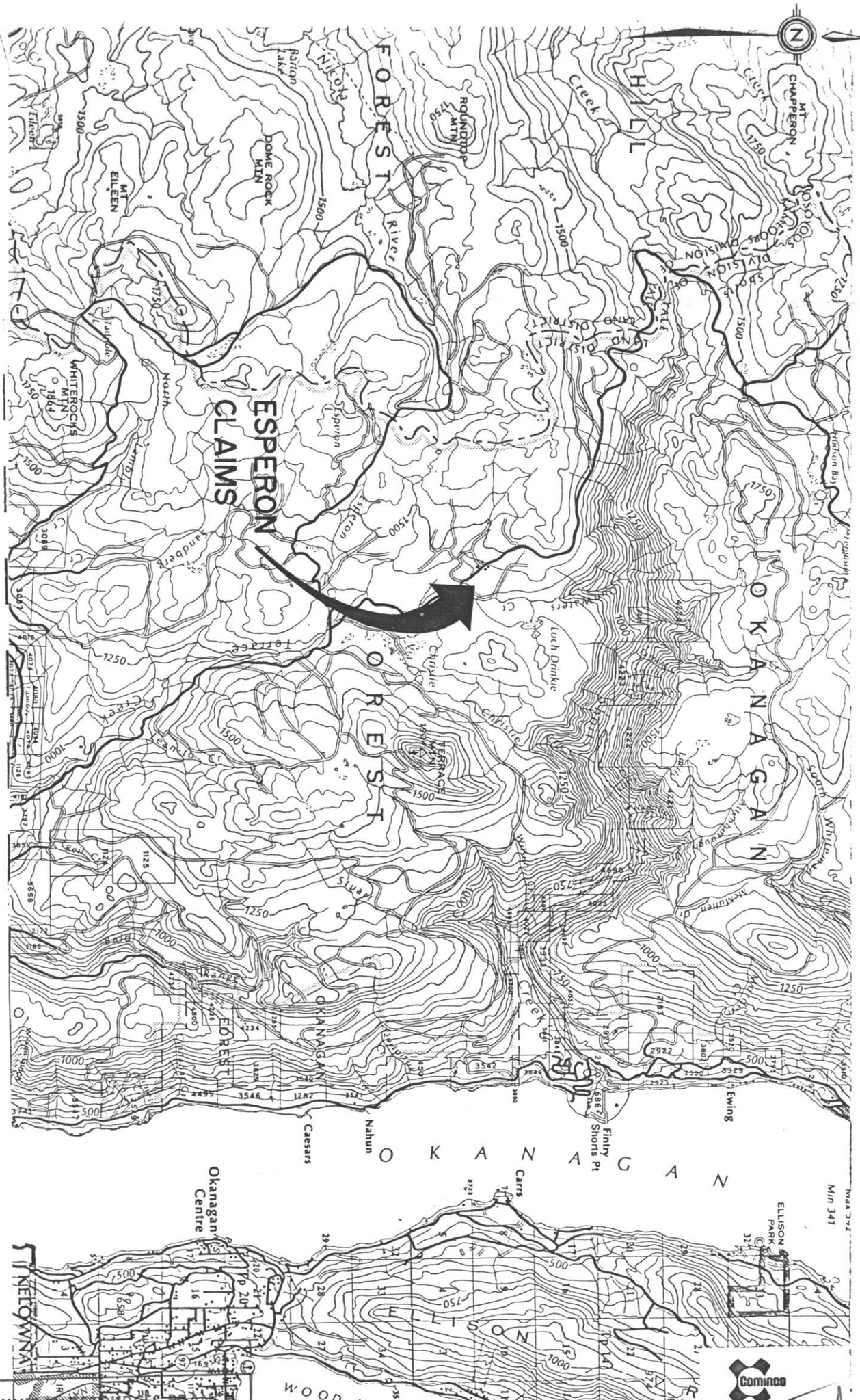
2. THAT I GRADUATED WITH B. SC. AND M. SC. DEGREES IN GEOLOGY FROM THE UNIVERSITY OF BRITISH COLUMBIA IN 1965 AND 1967 RESPECTIVELY.

3. THAT I HAVE PRACTISED GEOLOGY WITH COMINCO LTD. FROM 1967 TO PRESENT.

DATED THIS 8th day of January 1981 at Vernon, British Columbia.

SIGNED M. Osatenko

Myron J. Osatenko, M. Sc.



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

Drawn by: Traced by: RAR

Revised by	Date	Revised by	Date

8664

NO.

part 1 of 2

LOCATION MAP
DOBBIN PROPERTY
ESPERON CLAIMS

M. Dobbin

Scale: 1:125,000 Date: December 13, 1979 Plate: 1

NCI - 112A - CL

210-0610

MOUNT CHAPPERON

Creek

Beak

Vernon M.D.
Nicola M.D.

Shorja

Creek

ESPERON 16

ESPERON 18

ESPERON 12

ESPERON 14

Loch Drinkie

ESPERON 15

ESPERON 1

ESPERON 2

ESPERON 3

ESPERON 4

Christie Lake

Duo Via Lake

TERRACE MOUNTAIN

ROUNDTOP MOUNTAIN

River

Nicola

Esperon Lake

Barton Lake

TAD 20

DOME ROCK MOUNTAIN

TAD 11

TAD 22

ESPERON 10

ESPERON 17

Terrace

TAD 10

TAD 7

TAD 12

ESPERON 11

TAD 21

TAD 14

North

Creek

TAD 9

TAD 23

Tadpole Lake

TAD 24

TAD 19

Lambly

MOUNT EILEEN

TAD 15

TAD 25

WHITEROCKS MOUNTAIN

TAD 8

Eileen Lake

TAD 4

TAD 16

Creek

Raymer Lake

Dobbin Lk

West Lake

Isiaht Lake

TAD 17

TAD 18

Lambly

Cameo Lake

MOUNT SWITE

Paynter Lake

Powers

Creek

Lambly Lake

Locoma Lake

Jackpine Lake

0 5

Kilometres

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8664
NO.

part 1 of 2

M. Ontland

DOBBIN PROPERTY

Cominco

82 L/4
82 E/13

Drawn by:		Traced by: RAR	
Revised by	Date	Revised by	Date
RAR	Oct/80		
RAR	Jan/81		

CLAIM MAP

Vernon and Nicola Mining Divisions

Scale: 1:50,000 | Date: December 14, 1979 | Plate: 2

NCE 229 CL

LEGEND

TERTIARY

7 — *Basalt and rhyolite – flows and tuffs.*

6 — *Quartz feldspar porphyry.*

5 — *Monzonite.*

UPPER JURASSIC

4 — *Granodiorite, quartz monzonite porphyry, quartz porphyry.*

LOWER JURASSIC

3 — *Pyroxenite, monzonite.*

PALEOZOIC to UPPER TRIASSIC

2 — *Argillite, minor limestone, basalt, and rhyolite.*

PROTEROZOIC

1 — *Gneiss, schist.*

○ Mineral showing.

AREA OF Mo SHOWINGS

MAIN Mo TRENDS AS DEFINED BY SHOWINGS, ANOMALOUS STREAM SILTS, AND LINEAMENTS.

WIT PROPERTY

DOBBIN PROPERTY

ESPERON CLAIMS

BRENDA MINE

BRENDA MINE
177 Million Tons at
0.049% Mo, 0.18% Cu

VERNON

KELOWNA

PENTICTON

HWY 97

LAKE

OKANAGAN

49° 40'

119° 25'

0 5 10 15 20
Kilometers

Reference – G.S.C. Maps by H.W Little, maps 6-1957, 15-1961;
A. Jones, map 1059A.

Part 1
g2

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8664
NO.

M. Ostenso

OKANAGAN Mo BELT

NTS 82L 82E

Drawn by:		Traced by: RAR	
Revised by	Date	Revised by	Date
RAR	Nov. 15/79		
RAR	Jan 7/81		

REGIONAL GEOLOGY

Scale: 1:250,000 | Date: November 10, 1978 | Plate: 3

ESPERON CLAIMS

82 L/4

COMPILATION

GEOLOGY, GEOCHEM, and I.P.

Scale: 1:5,000 | Date: OCT. 3, 1980 | Plate: 4

Traced by: NC | Date:

Drawn by: | Revised by: | Date:

RAR | Revised by: Jan 5/81

FORM 210-1000

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8064

Part of

SYMBOLS

- Contact.
- Area of ≥5 ppm Mo in soils.
- Trench.
- Foliation.
- Fracture or joint.
- Quartz veinlet.
- Percussion hole.
- ▬▬ ≥ 10 Mv/v (n=1).
- ▮▮▮▮ 6 to 10 Mv/v (n=1).
- (51) Rock sample for major and trace elements.
- Outcrop, boulders.

LEGEND

TERTIARY

- 6 Basalt dykes.

UPPER JURASSIC (?)

- 5 Stuart phase; aplite dykes.
- 4 Via phase; porphyritic quartz monzonite dykes.
- 3 Terrace phase; diorite.
- 2 Esperon phase; quartz monzonite porphyry.

UPPER PALEOZOIC – UPPER TRIASSIC (?)

- 1 Cache creek, argillite.

ALTERATION

- Q Quartz veining.
- ch Chlorite.
- ep Epidote.
- kf Secondary K-feldspar.
- s Sericite.

MINERALIZATION

- py Pyrite.
- MoS_2 Molybdenite.
- cpy Chalcopyrite.

ESPERON 16 | ESPERON 18 | ESPERON 15 | ESPERON 12 | ESPERON 14 | ESPERON 1 | ESPERON 2 | ESPERON 3 | ESPERON 4

80-36 | 80-37 | 80-38 | 80-39 | 80-40

0.021% Mo/25m
Q, MoS_2
3% py

NOTE: grid extends to 2,000m

0 500
metres

LEGEND

- —5000— elevation contour
- roads
- creeks
- old grid
- new grid

Mo SOIL CONTOURS

- 5 ppm
- 10 ppm
- 20 ppm

N.B. contours in feet

0 100 200 300 400 Metres

NOTE: grid extends to 2,000m

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 8664

Part 1 of 2

M. Gruenwald

ESPERON CLAIMS

Cominco 82 L/4

Drawn by:	Traced by: NC
Revised by / Date	Revised by / Date
RAR Jan 5/81	

Mo SOIL GEOCHEMISTRY

Scale: 1:5,000 Date: OCT. 3, 1980 Plate: 5

FORM 210 - 0660