LOVELAND AND ROBB TOWNSHIP PROPERTY

003542

Location and Access:

The property consists of 121 (40 acre) mining claims located in the Porcupine Mining Division of north-eastern Ontario, approximately 450 miles north of the City of Toronto. Forty-one (41) of those claims are under option from Placer Dome Canada. See Fig. 1.

Access is achieved by a series of roads leading west and north-west of the City of Timmins. See Fig. 2.

Deposit Type:

The type of deposit being explored for is a polymetalic volcanogenic massive sulphide deposit, characterized as stratabound massive to stringer base metal sulphides such as copper, lead, zinc and possibly silver within a thick (rhyolitic) volcanic to volcanoclastic terrain. Similar type deposits in close proximity to the property are the Kam-Kotia, Jameland and Canadian Jamieson, all past producers, located in what is known as the Kam-Kotia Camp. In addition to those is the Giant Kidd Creek deposit discovered by Texas Gulf Sulphur in 1963 and situated approximately 12 miles east-northeast of the property. This deposit had a gross value in 1964 of 15 billion dollars. Please see Fig. 3. for location of deposits.

Local Geology:

The Loveland and Robb Township property covers a very thick rhyolite volcanic and volcanoclastic terrain that on the east and part of the west is overlain by thick sequences of mafic flows that are in part pillowed. In particular, numerous quartz-feldspar porphyritic and pyroclastic units (lapilli tuffs) along with thin bedded graphitic interflow sedimentary horizons have been identified in previous drilling. Widespread alteration including intense carbonatization (Ca) along with pervasively weak to moderate and locally intense sericite and chlorite is also present.

Particularly important is the eastern felsic mafic contact where limited diamond drilling has revealed the presence of both alteration and anomalous values in copper, lead and zinc. This suggests or raising the possibility of an economic deposit existing either further along this contact or at depth, what's more this horizon is believed to be the same one which hosted the Kam-Kotia base metal mine some 2 miles south of my property. Please see geological complication map.

Reasons for Optimism:

1. The property is underlain for the most part by felsic volcanic rocks. These rocks make up only 10% of the earth's crust, and the association of base metal mineralization with these rocks is unequivocal. What's more, the felsic rocks on my property are both altered and contain anomalous values in copper, lead and zinc. Raising the possibility of an economic deposit existing on the property.

2. The property is on strike with three past producers located in an area referred to as the Kam-Kotia Camp. A review of all base metal camps from north-western Quebec to north-western Ontario reveal that most camps generally have more than three deposits, there is generally a number of small ones, two or three medium or typical deposits and a giant deposit. Of particular note, is that to-date, only two small ones and a medium sized one has been found in the Kam-Kotia camp. Thus, the possibility of finding another medium size or better still a giant deposit in this area remains high. This is especially true since recent studies have established that the Kidd Creek deposit is not part of the Kam-Kotia Camp. Please see lithologic map of Abitibi Greenstone Belt and comments by Jim Franklin, Chief Scientist from Energy, Mines and Resources.

3. Although this property like so many others in an active mining camp have been explored before, what had not been appreciated until recently was that all previous geophysical surveys carried out to-date were ineffectual for the following reasons: - the particular instruments used were unable to penetrate a thin but widespread clay cover that blankets the property and, - the surveys were carried out over grids orientated in the wrong directions. This fact was borne out in research compiled by geophysicist John B. Boniwell of Excalibur International Consultants. As a consequence, a new geophysical methodology is planned that will for the first time see through the clay cover and survey bedrock below.

Type and Amount of Proposed Work: **FIRST PHASE**

The establishment of a new metric grid with lines cut at 100 m intervals and stations established every 25 m along each line. Please see grid layout on geological complication map. Total number of kilometres to be cut 230.

Cost $275.00/km x 230 =	$63,250.00
Magnetometer Survey $125.00/km x 230 km =	$28,750.00
V.L.F. Survey $125.00/km x 230 km =	$28,750.00
I.P. Survey (Gradient Array) $1600/km x 100 km =	$160,000.00
Deep EM (U.T.E.M.) $1500/km x 12 km =	$18,000.00
Total	$298,750.00

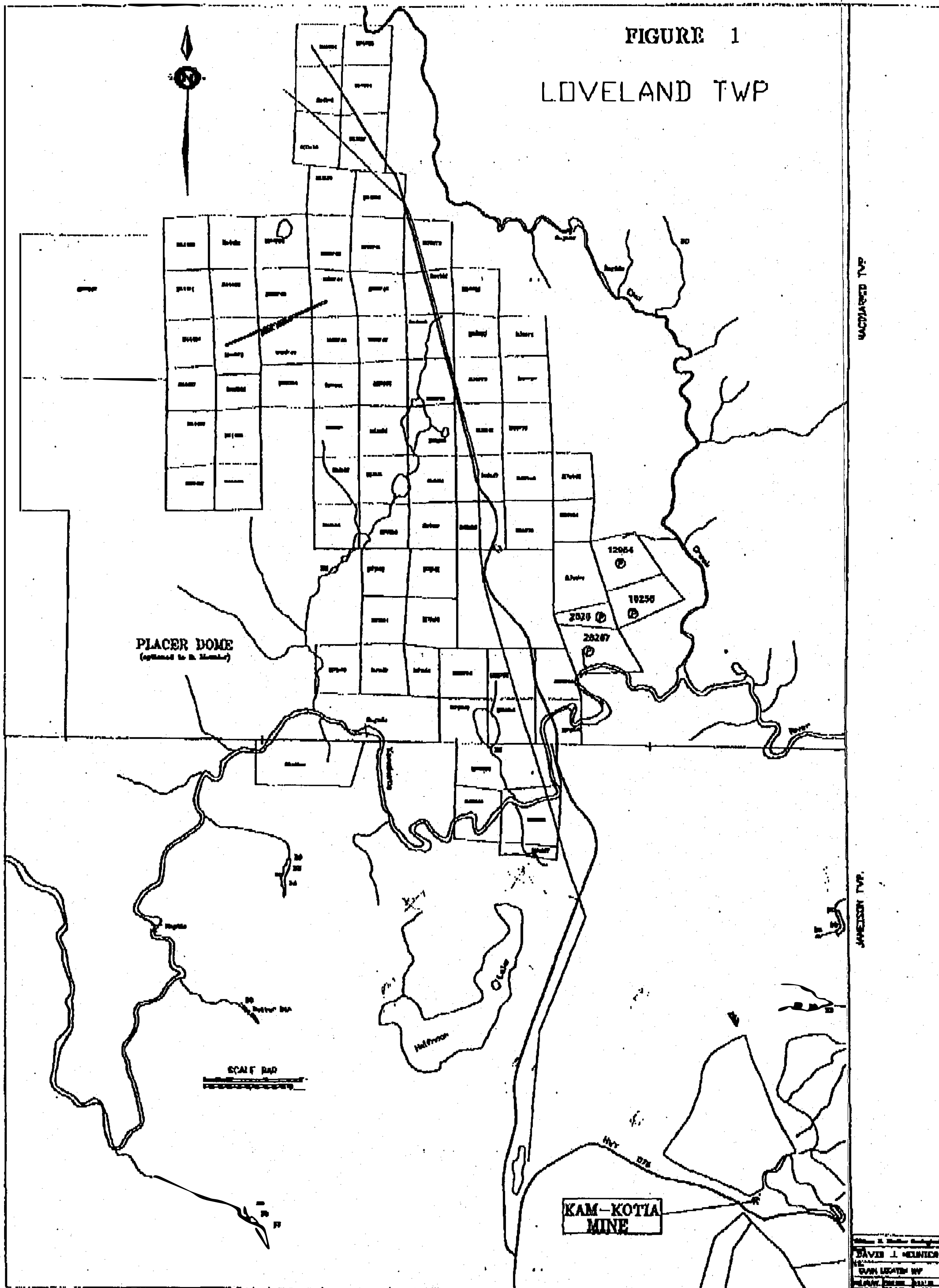
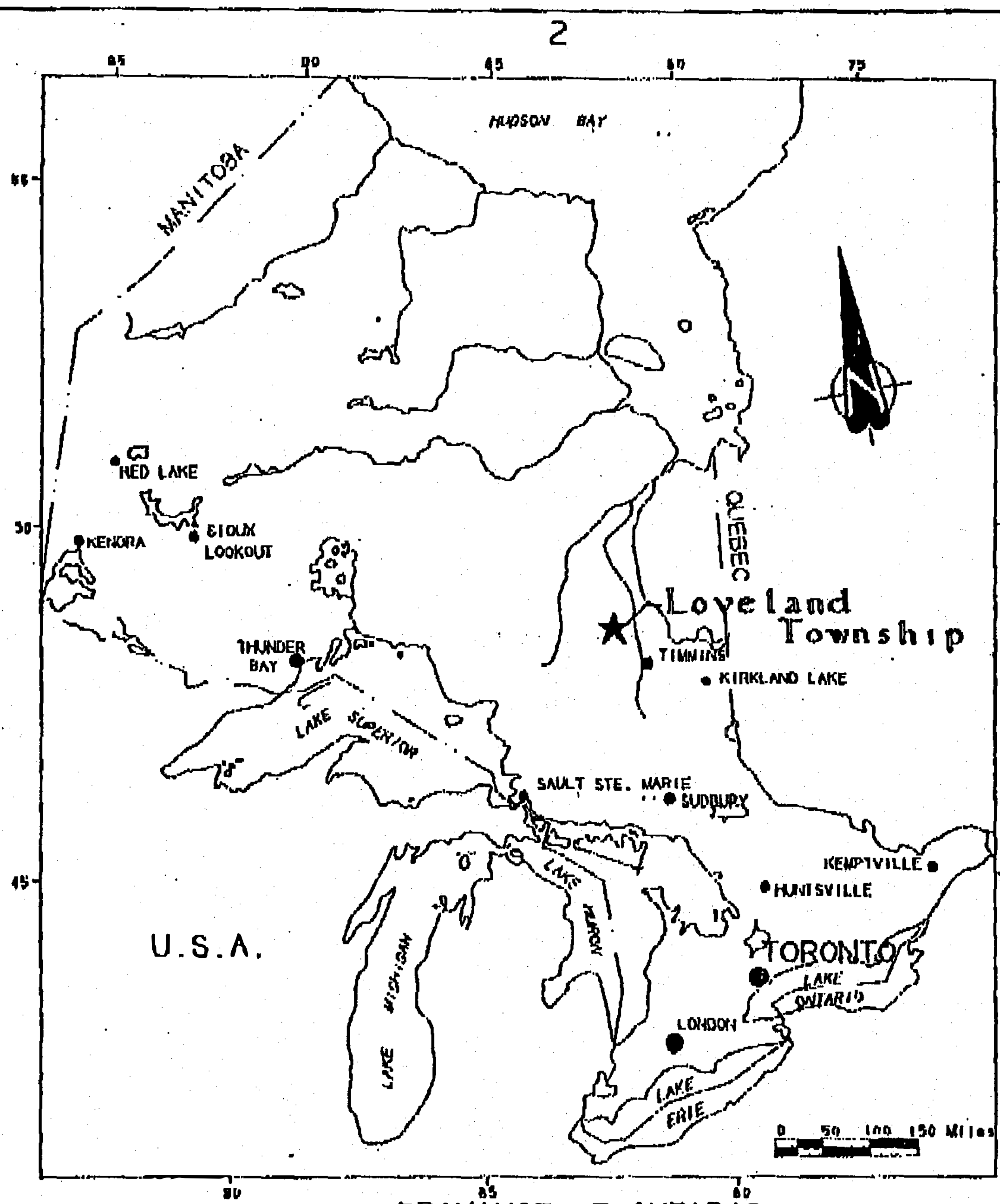


FIGURE 1
LOVELAND TWP
PLACER DOME
12064
10250
2026
20287
SCALE BAR
MACDIARMID TWP
JAMIESON TWP.
KAM-KOTIA MINE



PROVINCE OF ONTARIO

R.P. BOWEN ENGINEERING INC		
Client: DAVID J. MEUNIER		
Title: REGIONAL LOCATION MAP		
Date: SEP 1990	Scale: 1"=150 mi	N.T.S. 42A
Drawn: R.P.B.	File: M-LOOD1-90	Fig. 1

Abstract

Volcanogenic massive sulfide (VHMS) deposits in the Abitibi subprovince are preferen-tially associated with volcanic successions containing >150 m thicknesses of felsic volcani rocks (~50% by area of volcanic terranes) and are found within volcanic sequences of at leas three distinct affinities. Group I, which is host to greater than half of the volcanogenic mas sive sulfide deposits by tonnage and which comprises only ~10 percent by area of volcani terranes, is composed of bimodal, tholeiitic basalt-basaltic andesite, and high silica rhyolite The basaltic andesites and high silica rhyolites are characterized by high high field strengt element and heavy rare earth element (REE) contents, low light to heavy REE ratios (mo with La_N/Yb_N = 0.8–3), and strong negative Eu anomalies. The Kamiskotia, Matagami, an Chibougamau (Lower cycle) volcanogenic massive sulfide areas, all of which are also unde lain by large, synvolcanic gabbroic complexes, are associated with group I volcanic s quences. The Kidd Creek, Potter, Normetal, and Horne deposits are also included in th category. Group II, which is host to one-third of the volcanogenic massive sulfide deposits b tonnage and which is also ~10 percent by area of volcanic terranes, is composed of bimoda transitional tholeiitic to calc-alkalic andesite and rhyolite, characterized by intermedia high field strength element contents and slightly higher REE ratios (La_N/Yb_N = 1–4: Noran camp (excluding the Horne deposit) and Val d'Or camp). Group III is host to only one kno deposit, the Selbaie mine, which is unusual in that much of its mineralization cuts stra graphy. The Selbaie mine sequence contains calc-alkalic andesite-rhyolite with relatively l high field strength element and REE contents, and higher REE ratios (La_N/Yb_N = 3–9). T vast majority of volcanogenic massive sulfide-bearing mafic and felsic volcanic rocks in t Abitibi subprovince have $La_N/Yb_N < 5$.

Barren volcanic sequences are group IV—calc-alkalic basaltic andesite to rhyodacite, w low high field strength element and relatively high REE ratios (La_N/Yb_N = 8–20), rep sented by the upper Skead Group, the Quebec Hunter Mine Group, and the Upper cy Chibougamau rocks; and group V, mafic to felsic alkalic volcanic rocks, with high REE ra (La_N/Yb_N = 12–62), represented by the Timiskaming, Opemisca, and Ridout series rock

Group I is most similar to thickened oceanic rift suites (e.g., Galapagos spreading cen Iceland East rift), group II is similar to suites in rifted island arcs (e.g., Hokuroku dist Japan), and group III is comparable to continental arc suites (e.g., Southern Volcanic z central Chile). Groups IV and V are comparable to arc-related suites derived from metaso tized mantle, with variable amounts of crustal contamination (e.g., Setouchi area, Ja Roman province, Italy).

FUTURE EXPLORATION ON THE LOVELAND CLAIMS OF DAVID HUNTER

Given its strategic location within the volcanic stratigraphy of the camp, the subject claims, not surprisingly, have been the object of past exploration endeavours. However, there is very little outcrop within their encompass, and perforce most investigations have had to be geophysical and/or geochemical in their primary approach. Some core drilling - 12 holes to date - has ensued. This has been enough to confirm the fundamental projections made northwards into the claims of the Kamkotia volcanic environment, even to intersect in one place a short section of mineralization of the type sought.

Historically, what the property has never provided is any easy targets. It contains no airborne electromagnetic (em) anomalies for instance, resulting from the 1987 OGS survey of the region, and on the ground only the weakest of em responses could be obtained in systematic gridding (Gulf Minerals, 1979). These latter turned out to be due to graphite over narrow widths or to bedrock troughs near-surface.

Future exploration on the property requires that the next generation of target be actively pursued, that is, the possibility of deeply buried sulphides being extant. This constitutes a real chance as the successful deep drilling at Kidd Creek recently testifies and especially here on the flank of a felsic dome. To meet this challenge locally, it is proposed that a programme of deep penetrating induced polarization (IP) be initiated, utilizing the existing drill holes in combination with known bedrock highs or outcrop and employing a particular electrode configuration known as the perpendicular gradient array. This kind of work spreads the net wider than conventional em since it responds to quite disseminated sulphides as well as massive or semi-massive, and it is the thesis of this proposal that any significant massive sulphide deposit buried in depth - 2000' (600 m) say, from surface, well beyond the reach of past em including the airborne - would almost certainly possess an aureole of disseminated sulphides as part of its genetic setting. Moreover, such disseminations on the odds would proffer a much larger target to geophysical detection than the massive sulphide core.

An IP programme of this nature is not expensive in itself. However, any anomaly obtained would require follow-up as soundings are undertaken, both in IP and em, to determine whether massive sulphides co-exist at its heart. Should the indications encourage, then clearly a target for deep drill testing would have been established. Finally, and in a further elaboration, it is proposed that all completed holes, no matter the outcome, be logged by down-hole em. Such step would in effect enlarge the diameter of the hole outwards by some 200' (70 m) and would allow thereby the sensing of (other) sulphides in the immediate vicinity.

Looking down the road, such exploration including the drilling and the down-hole logging, would likely require $500,000 at a negative minimum, but on the positive side anywhere from $1-3 million would be needed for a successful discovery or discoveries. Should any of the latter prove economic however, the returns on investment potentially would be enormous.

JBB:sb
July 5, 1995

J. B. Boniwell
Exploration Geophysical Consultant

Energy, Mines and Resources Canada / Énergie, Mines et Ressources Canada

Ottawa, Canada
K1A 0E4

Mr. Dave Meunier,
Box 1624,
South Porcupine, Ontario
P0N 1H0

December 19, 1995

Dear Dave,

Further to our telephone conversation and our meeting in Toronto, I would like to give you the information that I think might be relevant to your property in the Kam Kotia area. You showed me some maps and geochemical data, and thus my comments are based on that information.

1: Role of subvolcanic intrusions: The general "rule" that I have developed is that for every 50 km^3 of mafic intrusion, the hydrothermal system should deliver sufficient metal to the seafloor in a focused discharge site to form about 10 million tonnes of massive sulfide ore. The typical subvolcanic intrusion measures about 25x2 km in area, and from very limited gravity data that we have, the intrusions are probably about 10 km in vertical extent. This yields about 400 km^3 of melt, or about 80 million tonnes of massive sulfide ore. The Kam Kotia intrusion is probably similar (or larger) than the "typical" intrusion that I have used in this calculation, so it should have provided about 80 to 100 million tonnes. There are a number of qualifiers that I could put on this approach, but it seems basically sound.

2: Numbers of deposits: I have included an example of the typical number and size of deposits (here for the Matagami camp). You will note that there is one "giant" deposit, three "typical" deposits. and seven small deposits, and that these fit a log-normal population distribution. Noranda is similar, but not all camps have this well developed a representation. You will also not that there is about 37 million tonnes total here. Camps with "supergiant" deposits (100 million tonnes) are actually rare (there are only three in Canada), and that the size distribution that I gave as an example (below) is typical.

NAME	CU	PB	ZN	AG G/T	AU G/T	TONNES
ISLE DIEU	1.03		17.80	82.00	0.45	2,080
BELL CHANNEL#1	1.95		0.57	39.14	0.34	82,084
RADIORE URAN E	1.57		1.34	6.86	0.34	160,000
LYNX (ODASKA)	1.60		0.35			204,076
BELL ALLARD	1.14		0.30	41.14		260,000
GARON LAKE	1.45		2.22	4.53		512,466
NEW HOSCO	1.41		1.11	4.11	0.03	2,040,780
ORCHAN MINES	1.20		8.70	1268.57	17.14	3,500,000
NORITA (RAD A)	1.80		3.80	27.43	0.69	4,000,000
MATTAGAMI LAKE	0.42		6.10	21.60	0.30	25,600,000

Canada

3: Rhyolite compositions:

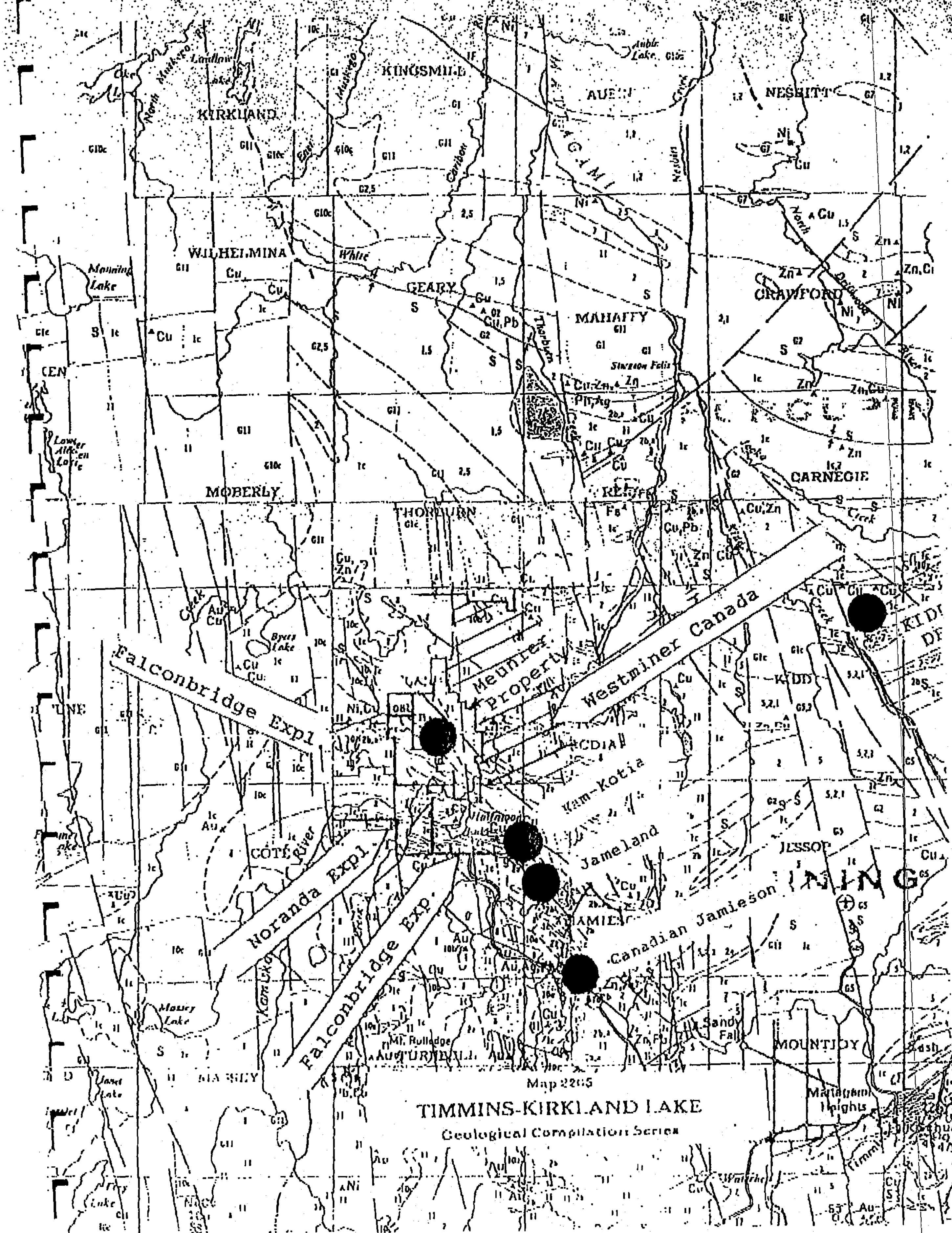
The data that you showed me were unusual in two aspects. A significant number of analyses showed very low sodium, and this could be taken as representing extensive hydrothermal alteration. These samples were generally very high in potassium (for Archean rhyolite). This latter feature may be related to hydrothermal alteration, or it may be a primary petrogenetic feature of these rocks. High-K rhyolite is uncommon in Archean sequences, and is generally formed in late-stage rift-fill or extensional graben features, such as the Temiskaming basin near Kirkland Lake. I do not know much about the tectonic regime at Kam Kotia, so can't comment much more. A K anomaly related to alteration, in the form of K-feldspar, usually forms in shallow water systems. I noted that a few of your samples are high in lead; this is also a feature that could be related to shallow water hydrothermal activity.

All of this is quite speculative, and should be tested with some appropriate volcanological work and petrographic study. You have some very interesting rocks, and in general, the Kam Kotia camp seems to hold potential for discovery of additional resources. Good luck with your work in that area.

Yours sincerely,

James M. Franklin
Chief Scientist

FIGURE


Falconbridge Expl
Meunier Property
Westminer Canada
Kam-Kotia
Jameland
Noranda Expl
Falconbridge Exp
Canadian Jamieson
KINGSMILL
KIRKLAND
AUBIN
NESBITT
WILHELMINA
GEARY
MAHAFFY
CRAWFORD
MOBERLY
THORBURN
CARNEGIE
KIDD
JESSOP
COTE
MOUNTJOY
Map 2205
TIMMINS-KIRKLAND LAKE
Geological Compilation Series

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19-Dec-90

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where from ?

Page: 2
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Project: PO #: Received: 12-Dec-90 12:26

Job: 901384 Status: Final

Sample	SiO2 ICAP %	Al2O3 ICAP %	Fe2O3 ICAP %	MgO ICAP %	CaO ICAP %	Na2O ICAP %	K2O ICAP %	TiO2 ICAP %	P2O5 ICAP %	[illegible] %
S-28	54.9	17.4	9.15	2.25	3.93	2.64	7.56	0.631	0.11	[illegible]
S-29	67.8	10.4	3.66	1.19	5.81	1.82	2.17	0.203	0.07	[illegible]
S-30	79.7	9.07	3.33	0.45	2.13	0.31	3.12	0.115	<0.02	[illegible]
S-31	76.7	11.6	2.82	0.10	3.88	0.34	3.58	0.139	<0.02	[illegible]
S-32	52.8	15.6	9.80	1.29	6.69	5.90	0.99	0.954	0.11	[illegible]

Sample	Ag ICAP ppm	Ba ICAP ppm	Cd ICAP ppm	Co ICAP ppm	Cr ICAP ppm	Cu ICAP ppm	Mn ICAP ppm	Ni ICAP ppm	Pb ICAP ppm	Sr ICAP ppm	V ICAP ppm	Zn ICAP ppm	[illegible]
S-1	<3	257	<5	<30	172	21	351	<30	80	36	9	81	[illegible]
S-2	<3	736	<5	<30	335	16	295	<30	100	57	<5	42	[illegible]
S-3	<3	363	<5	<30	337	93	257	<30	120	92	<5	10	[illegible]
S-4	<3	186	<5	<30	138	19	980	80	60	145	153	102	[illegible]
S-5	<3	574	<5	<30	227	133	319	<30	130	96	<5	77	[illegible]
S-6	<3	268	<5	<30	71	19	954	50	<30	168	147	93	[illegible]
S-7	<3	358	<5	<30	240	29	344	<30	120	167	9	25	[illegible]
S-8	<3	1600	<5	<30	89	20	726	<30	50	83	27	26	[illegible]
S-9	<3	831	<5	<30	113	24	201	<30	100	27	<5	98	[illegible]
S-10	<3	1000	<5	<30	200	15	299	<30	80	132	<5	74	[illegible]
S-11	<3	350	<5	30	145	33	1000	80	<30	123	170	77	[illegible]
S-12	<3	68	<5	30	158	53	1030	90	50	154	169	85	[illegible]
S-13	<3	109	<5	30	143	48	988	90	40	158	165	78	[illegible]
S-14	<3	311	<5	<30	266	43	171	<30	90	48	<5	53	[illegible]
S-15	<3	471	<5	<30	181	39	411	<30	110	41	<5	91	[illegible]
S-16	<3	715	<5	<30	185	15	353	<30	70	35	<5	96	[illegible]
S-17	<3	702	6	<30	170	22	294	<30	80	72	<5	70	[illegible]
S-18	<3	486	<5	<30	206	9	383	<30	80	57	<5	106	[illegible]

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Page: 1
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Sample	SiO2 ICAP %	Al2O3 ICAP %	Fe2O3 ICAP %	MgO ICAP %	CaO ICAP %	Na2O ICAP %	K2O ICAP %	TiO2 ICAP %	P2O5 ICAP %	LOI FURN %
S-1	75.7	11.1	3.66	0.68	3.41	0.81	3.01	0.200	0.07	2.10
S-2	77.8	10.8	2.52	0.19	1.39	2.64	3.30	0.131	<0.02	0.53
S-3	76.1	11.1	4.49	0.39	2.62	3.91	1.16	0.120	<0.02	0.75
S-4	56.0	16.4	8.55	3.80	6.76	4.58	0.75	0.816	0.16	1.20
S-5	75.7	11.9	3.66	0.29	3.57	0.96	3.19	0.157	<0.02	0.80
S-6	57.9	16.4	7.74	3.63	5.39	4.68	1.42	0.817	0.16	1.30
S-7	74.0	11.7	3.20	0.36	5.47	0.58	2.01	0.150	0.07	0.75
S-8	61.6	17.6	2.14	0.13	2.83	0.34	14.2	0.175	<0.02	1.05
S-9	77.0	11.7	2.99	0.27	1.44	0.47	4.36	0.146	<0.02	1.65
S-10	79.1	10.5	2.09	0.13	2.25	0.36	5.02	0.120	<0.02	0.75
S-11	55.6	16.1	9.35	5.75	6.02	3.73	1.52	0.819	0.14	1.75
S-12	55.1	16.1	9.32	5.45	7.44	4.11	0.33	0.831	0.16	1.75
S-13	54.5	15.6	8.55	5.04	8.32	2.99	0.51	0.791	0.16	1.50
S-14	79.1	10.8	2.30	0.57	1.33	4.33	1.51	0.132	<0.02	0.65
S-15	76.3	10.2	2.95	0.61	4.14	0.63	3.30	0.131	<0.02	2.40
S-16	75.9	11.2	2.37	0.60	3.44	0.24	4.39	0.137	<0.02	2.35
S-17	76.3	11.5	2.52	0.83	2.55	0.59	3.99	0.135	<0.02	1.95
S-18	77.8	10.8	2.82	0.58	2.06	0.80	3.83	0.125	<0.02	1.80
S-19	74.8	10.8	2.62	0.57	2.04	0.78	3.77	0.125	<0.02	3.50
S-20	76.5	11.0	2.39	0.51	1.34	3.64	1.72	0.128	<0.02	1.35
S-21	72.3	11.0	4.42	1.38	3.22	3.91	1.72	0.410	0.07	2.20
S-22	75.0	13.2	2.32	0.76	0.16	0.11	4.33	0.260	<0.02	2.15
S-23	56.0	16.0	8.45	3.35	7.53	3.81	0.99	1.10	0.18	1.35
S-24	69.7	2.85	2.82	0.59	12.3	0.49	1.11	0.128	0.07	7.60
S-25	59.6	12.8	10.1	3.88	8.13	1.85	0.98	1.03	0.18	1.30
S-26	78.5	10.1	4.35	0.32	1.36	4.80	0.24	0.119	<0.02	0.70
S-27	59.6	17.2	0.84	0.22	5.20	1.06	12.4	0.235	0.07	3.65

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S-19	<3	488	<5	<30	209	8	350	<30	80	59	<5	118	340
S-20	<3	261	<5	<30	200	27	240	<30	110	41	<5	53	340
S-21	<3	253	<5	<30	137	83	502	<30	60	82	55	48	170
S-22	<3	208	<5	<30	75	21	115	<30	30	8	7	26	140
S-23	<3	146	<5	<30	197	75	1820	100	30	131	188	1150	130
S-24	<3	157	13	40	214	296	823	100	90	26	15	630	20
S-25	<3	293	<5	<30	134	68	1250	30	<30	129	161	97	190
S-26	<3	50	<5	<30	311	535	155	<30	50	70	<5	39	310
S-27	<3	1460	<5	<30	56	6	186	<30	<30	88	46	27	170
S-28	<3	1420	<5	30	107	95	657	50	40	100	102	73	120
S-29	<3	544	<5	<30	104	29	455	30	80	61	19	60	290
S-30	<3	460	<5	<30	132	74	214	<30	160	18	<5	13	280
S-31	<3	159	<5	<30	171	29	319	<30	80	138	<5	95	380
S-32	<3	208	13	<30	174	352	917	90	230	117	163	5040	130

DDH R-80-A-2

P.11

HARMONY HOUSE

SAMPLE	Footage (feet)	SIO2	AL2O3	CAO	MGO	NA2O	K2O	FEO	MNO	TIO2	P2O5	L.O.I	SUM	FE/MG	K/K+NA	AU	B	NI	CU	ZN	AG	BA	HG	PB	CR2O3	ZR	SR	RB
? 0 0 0	143	52.5 0	16.4	9.13 0	4.50 0	3.41	0.56	9.25 0	0.15 0	0.82	0.12	1.85	100.9	1.93 0	0.09 0	.	.	.	50	27	.	205	.	8	205	68	167	10
[illegible]	150															.	.	.	.	.	.	.	-10	.	.	.	.	.
2 0 0 0	177	56.1 0	14.5	7.63 0	5.21 0	3.57	0.79	9.66 0	0.14 0	0.94	0.15	2.16	100.8	1.73 0	0.18 0	.	.	.	56	30	.	250	.	8	169	104	168	-10
2 0 0 0	191.5	67.2 0	14.9	2.57 0	2.7a 0	5.10	1.18	5.58 0	0.08 0	0.84	0.11	2.93	101.5	1.95 0	0.19 0	.	.	.	63	39	.	150	.	8	261	52	55	11
3 0 0 0	220	55.8 0	17.0	10.1 0	2.99 0	1.41	2.10	8.40 0	0.14 0	0.87	0.13	5.47	100.9	2.11 0	0.60 1	.	.	.	2	56	.	150	.	8	173	83	260	48
4 0 0 0	226	61.9 2	11.6	0.75 0	0.79 0	0.00	3.62	1.21 0	0.02 0	0.16	0.01	1.93	100.1	1.72 0	1.00 2	.	30	.	4	9	.	550	.	8	150	243	3	77
65	231															.	.	.	.	.	.	.	-10	.	.	.	.	.
66 1 0 0	252	61.3 2	10.9	2.11 0	0.22 0	0.00	2.84	2.39 0	0.05 0	0.14	0.01	2.06	100.4	10.27 1	1.00 2	.	.	.	23	58	.	400	.	8	198	230	113	55
67 0 0 0	275	63.5 2	9.51	0.38 0	0.03 0	2.94	1.92	0.92 0	0.02 0	0.11	0.01	1.00	100.7	29.45 2	0.19 0	.	15	.	4	39	.	-50	.	12	235	139	34	15
68 0 0 0	302	72.4 1	11.7	1.63 0	0.49 0	2.52	1.90	2.21 0	0.04 0	0.14	0.01	1.93	100.1	4.53 0	0.35 0	.	.	.	22	47	.	200	.	12	214	297	70	51
69 0 0 0	304	55.6 0	14.8	4.80 0	3.80 0	3.22	0.94	12.4 0	0.26 0	2.01	0.26	4.62	101.9	3.54 0	0.23 0	.	.	.	32	200	.	150	.	20	75	111	73	18
870	310															.	.	.	.	.	.	.	-10	.	.	.	.	.
871 1 0 0 0	319	52.6 0	13.9	8.23 0	2.29 0	3.23	1.74	12.7 0	0.27 0	1.84	0.26	4.23	101.9	4.15 0	0.35 0	.	.	.	11	170	.	300	.	16	60	96	172	42
872 1 0 0 0	335	81.8 2	11.2	0.58 0	0.28 0	0.41	3.25	2.19 0	0.04 0	0.16	0.01	1.93	100.3	7.86 0	0.89 1	.	.	.	1	66	.	450	.	12	187	258	25	94
873 1 0 0 0	343	77.2 1	12.9	1.24 0	0.43 0	0.90	3.77	1.22 0	0.06 0	0.21	0.01	2.31	99.7	7.56 0	0.81 1													
874 1 0 0 0	359	81.0 2	10.2	1.52 0	0.06 0	4.77	0.78	1.53 0	0.05 0	0.14	0.01	1.39	100.7	18.19 2	0.14 0	.	.	.	14	52	.	200	.	12	209	195	70	22
875	372															.	.	.	.	.	.	.	-10	.	.	.	.	.

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DDH R-80-A-2 (cont'd.)

SAMPLE*	Footage (feet)	SIO2	AL2O3	CAO	MGO	NA2O	K2O	FEO	MNO	TIO2	P2O5	L.O.I.	SUM	FE/MG	K/K+NA	AU	B	NI	CU	ZN	AG	BA	HG	PB	CR2O3	ZR	SR
G4892	605	55.1	16.2	4.75	5.86	2.84	0.61	9.40	0.16	0.91	0.12	2.00	100.8	1.60	0.13	.	.	.	39	23	.	200	.	8	201	68	177
G4893	633	59.1	16.2	5.16	4.53	4.70	0.08	8.92	0.12	1.03	0.14	3.00	100.6	1.97	0.02	.	.	.	53	34	.	-50	.	12	91	105	131
G4894	668															.	.	.	.	.	.	.	-10	.	.	.	.
G4895	677	56.0	17.2	5.40	4.03	3.65	0.57	8.52	0.16	0.97	0.13	4.08	101.4	1.64	0.13	.	-	.	66	47	.	150	.	12	208	78	61
G4896	699	53.6	17.0	7.61	5.80	4.06	0.64	10.1	0.16	0.91	0.10	8.00	101.3	1.75	0.14												
G4897	752	56.4	16.3	6.34	5.24	2.88	0.38	9.14	0.15	0.93	0.13	2.54	100.3	1.74	0.11	.	.	.	62	35	.	200	.	4	197	94	149
G4898	771	56.1	16.1	9.65	4.98	2.60	0.38	8.97	0.16	0.92	0.14	2.08	100.1	1.80	0.13	.	.	.	76	27	.	150	.	4	212	91	149
G4899	819															.	.	.	.	.	.	.	-10	.	.	.	.
G4900	826	55.7	16.4	9.01	5.22	3.27	0.27	8.93	0.15	0.88	0.12	1.70	100.3	1.71	0.08	.	-10	.	56	23	.	150	.	4	227	99	177

* ANALYSED AS FOLLOWS:

	UNITS	METHOD	DETECTION LIMIT
AU	PPB	FA-NA	1.000
B	PPM	EMS	10.000
NA2O	%	XRF	0.010
MGO	%	XRF	0.010
AL2O3	%	XRF	0.010
SIO2	%	XRF	0.010
P2O5	%	XRF	0.010
K2O	%	XRF	0.010
CAO	%	XRF	0.010
TIO2	%	XRF	0.010
MNO	%	XRF	0.010
FEO	%	XRF	0.010
NI	PPM	AA	1.000
CU	PPM	AA	1.000
ZN	PPM	AA	1.000
[illegible]	PPM	XRF	10.000
[illegible]	PPM	XRF	10.000
[illegible]	PPM	XRF	10.000
AG	PPM	AA	1.000
BA	PPM	XRF-D	50.000
HG	PPB	NET	10.000
PB	PPM	AA	2.000
CR2O3	PPM	XRF	10.000

- less than

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SAMPLE	AU PPB	LI PPM	BE PPM	B PPM	S PPM	CL PPM	SC PPM	V PPM	CR PPM
1431-1441	<1	52	4	27	<100	<100	12.6	76	140
1671-1681	<1	21	4	34	121	<100	3.7	<10	160
1697-1701-L190	<1	28	4	33	180	<100	9.2	47	130

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SAMPLE	CO PPM	NI PPM	CU PPM	ZN PPM	GE PPM	AS PPM	SE PPM	BR PPM	MO PPM
1431-1441	16	59	31.8	164.	<10	5	<3	3	5
1671-1681	<1	12	18.9	89.6	<10	1	<3	2	9
1697-1701-L190	9	43	38.1	117.	<10	4	<3	2	5

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SAMPLE	PD PPB	AG PPM	CD PPM	IN PPM	SN PPM	SB PPM	CS PPM	LA PPM
1431-1441	<1	0.7	<1	<1	<10	<0.2	3	40.3
1671-1681	1	0.6	<1	<1	<10	<0.2	1	44.3
1697-1701-L190	2	0.8	<1	<1	10	<0.2	2	29.7

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SAMPLE	CE PPM	ND PPM	SM PPM	EU PPM	TB PPM	YB PPM	LU PPM	HF PPM
1431-1441	84	42	9.3	1.5	2.0	7.0	1.03	10
1671-1681	92	44	9.8	1.3	2.1	7.3	1.06	10
1697-1701-L190	63	32	7.4	1.2	1.8	6.3	0.94	8

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SAMPLE	TA PPM	W PPM	PT PPB	TL PPM	PB PPM	BI PPM	TH PPM	U PPM
1431-1441	1	<3	<10	<2	<2	<3	5	1.3
1671-1681	1	<3	<10	<2	<2	<3	5	1.4
1697-1701-L190	1	<3	<10	<2	<2	4	4	1.1

XRAL

XRF - WHOLE ROCK ANALYSIS 27-JUL-90 REPORT 12510 REFERENCE FILE 7822

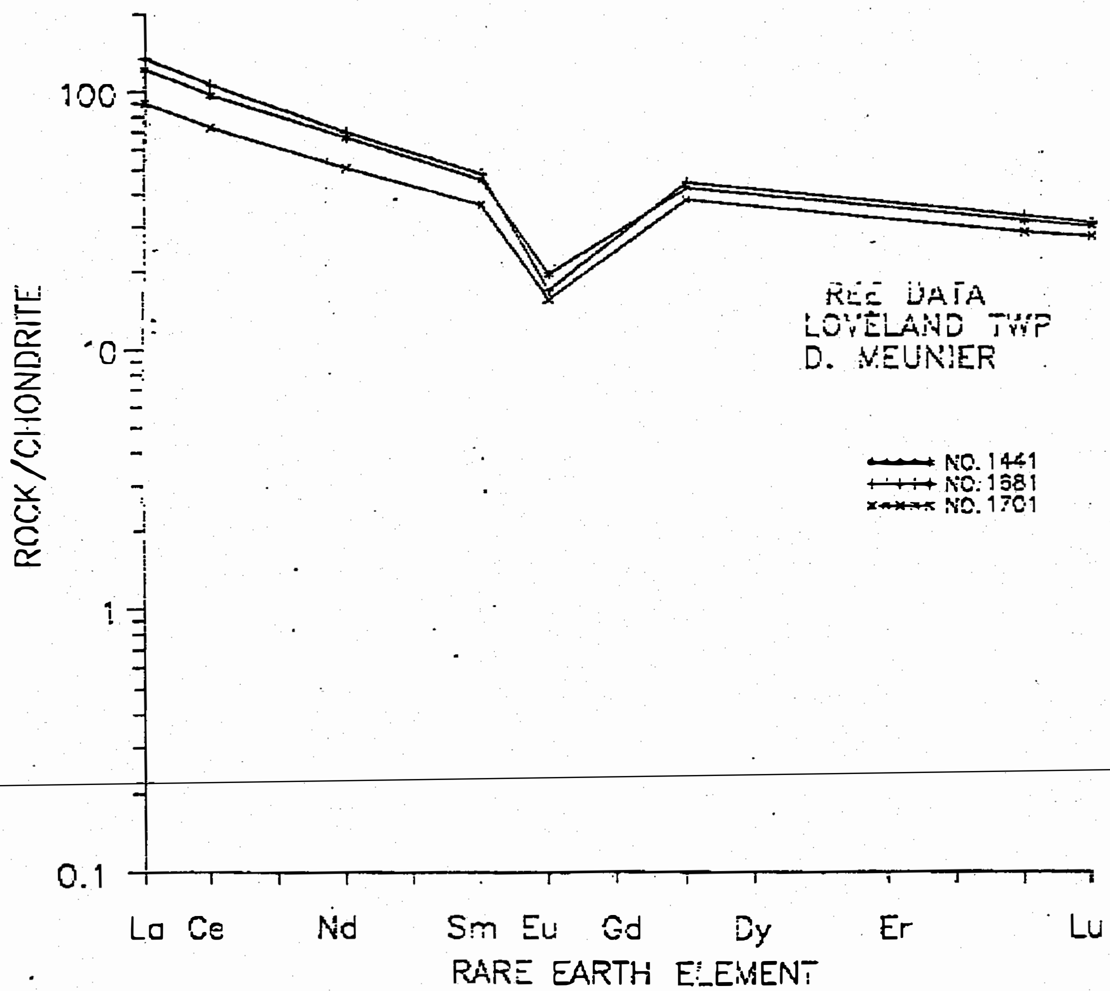
SAMPLE \ %	SIO2	AL2O3	CAO	MGO	NA2O	K2O	FE2O3	MNO	TIO2	P2O5	LOI	SUM
1431-1441	64.8	16.1	2.17	3.47	3.53	3.04	4.39	0.08	0.49	0.06	2.08	100.4
1671-1681	75.6	12.0	2.12	0.56	3.39	2.28	2.42	0.05	0.15	0.02	1.54	100.3
1697-1701-L190	71.5	13.0	3.20	0.73	1.79	4.14	3.37	0.07	0.33	0.04	1.85	100.2

XRF W.R.A. SUMS INCLUDE ALL ELEMENTS DETERMINED. FOR SUMMATION, ELEMENTS ARE CALCULATED AS OXIDES

XRAL

XRF - WHOLE ROCK ANALYSIS 27-JUL-90 REPORT 12510 REFERENCE FILE 7822

SAMPLE \ PPM	RB	SR	Y	ZR	NB	BA
1431-1441	81	145	92	334	34	751
1671-1681	69	49	124	328	24	402
1697-1701-L190	128	97	100	277	26	1180


REE DATA
LOVELAND TWP
D. MEUNIER
NO. 1441
NO. 1681
NO. 1701
ROCK/CHONDRITE
100
10
1
0.1
La
Ce
Nd
Sm
Eu
Gd
Dy
Er
Lu
RARE EARTH ELEMENT