

LOG NO:	OCT 25 1994	RD.
ACTION:		
	<i>Geochemical</i>	
FILE NO:	M1 92F 401	

ASSESSMENT REPORT

HEBER RIVER PROPERTY

Alberni Mining Division  
Vancouver Island, British Columbia  
NTS 92F/13W  
August 1994

**RECEIVED**  
OCT - 7 1994  
Gold Commissioner's Office  
VANCOUVER, B.C.

*125° 58'*  
*49° 52' 30"*

Prepared By:  
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Vancouver, British Columbia V6E 2K3

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

23,547

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## Introduction

### Background

A forty claim group was staked in June 1993 and a further 20 units added in August 1993 on the basis of Moss Mat results. The moss mat sampling density was increased and the anomalies were followed up by soil sampling and prospecting and rock sampling.

This report includes a description of the work carried out on the claims in the fall of 1993.

### Claim Status

The Heber River claim group consists of 60 units as detailed below:

Claim	Record No.	No. of Units	Date of Record	Expiry Date
Heber 1	319580	20	July 21, 1993	July 21, 1996
Heber 2	319581	20	July 21, 1993	July 21, 1996
Heber 3	320535	20	August 12, 1993	August 12, 1996

### Work Program

Field work on the Heber River claims consisted of follow up moss mat sampling followed by soil and rock sampling of the targets identified by the moss mat results.

The field work was undertaken by employees of Orvana Minerals Corp. with overall co-ordination for the project provided by Andy Laird and Peter Bradshaw.

### Location and Access

The Heber River claim group is situated about 10 km east of the town of Gold River. Access to the property is provided by forestry roads on both sides of Heber River.

### Topography and Vegetation

The claim group is located in very rugged and steep ground within the Vancouver Mountain Range. Local relief is often extreme with cliffs and scree. The Heber Valley is U-shaped as a consequence of glacial erosion. The valley floor along Heber River lies at 1000 feet while the unnamed peak near the centre of the claim group is 5500 feet.

The vegetation on the mountain top is very sparse to none existent and increases down slope to mature old growth forest.

At higher elevations and on steeper slopes soil is sparse between rock outcrops and talus. On lower slopes the soil is typically deep organic podzols.

## Exploration Program

### Moss Mat Sampling

Moss mat samples were taken as a composite from 5 to 10 locations over a 10 to 50 m length of the stream. Field notes on geology (both outcrop and float) and site condition are taken at each sample point. These are given in Appendix 1. These notes are used for subsequent interpretation.

The location of all sample sites are shown on Fig. 2 and the results in Figs. 3 through 6.

### Soil Sampling

Soil samples were collected at 40 metre intervals along contour traverse lines across the claim group. At each sample site a hole was dug with a mattock to reveal the full soil profile. Under most circumstances the B horizon was sampled. At a minority of sites the soil profile developed was not amenable to this form of sampling and decomposed rock or C horizon material was collected. Soils within the area are dominantly deep ferro-humic podzols giving way to humic gleysols in depressions and low lying areas, and to thin regosols on very steep slopes and around outcrops.

Samples were collected in high test strength kraft paper bags. Notes were taken at each sample site on the nature of the site, the soil profile and the material collected. These notes are included in Appendix 2 and are of use in qualifying the interpretation of the geochemical data.

A total of 168 soil samples were collected on the property. All sites were flagged and tagged in the field to enable relocation. The location of all sample sites are shown in Fig. 7 and the results in Figs. 8 through 11.

### Rock Samples

Grab samples of rock material were collected at 8 locations as shown in Fig. 12. The material collected can be considered characteristic only of the available material displaying the most visible evidence of contained mineralization. Sample sites were flagged in the field to enable relocation. Rock descriptions are given in Appendix 3.

### Sample preparation and Analysis

All soil and rock samples were shipped to Acme Analytical Laboratories, Vancouver, B.C. for sample preparation and analysis.

The soil samples were dried and then dry sieved using an 80 mesh (180 microns) sieve. The minus 80 mesh portion was retained for analysis. Rock samples were crushed and approximately 500 grams ground to -200 mesh. All samples were analyzed using the following procedures:

Gold was determined using a 10 gm sample aliquot, ignited at 600 °C, digested with hot aqua regia, extracted using MIBK and determined by graphite furnace AA. The detection limit is 1 ppb.

The elements, Mo, Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, U, Th, Sr, Cd, Sb, Bi, V, Ca, P, La, Cr, Mg, Ba, Ti, B, Al, Na, K and W were determined simultaneously by ICP emission spectroscopy from a 0.5 gm sample aliquot digested with 3 ml of 3-1-2 HCL-HNO<sub>3</sub>-H<sub>2</sub>O at 95 °C for one hour then diluted to 10 cc with H<sub>2</sub>O.

Detection limits for the ICP analysis are:

Ag	0.1 ppm
Cd, Co, Cr, Cu, Mo, Mn, Ni, Sr, Zn, W	1 ppm
As, B, Ba, Bi, La, Pb, Sb, Th, V	2 ppm
U	5 ppm
Al, Ca, Fe, K, Mg, Na, Ti	0.01%
P	0.001%

The resulting analytical data were provided in hard copy and in digital format for direct computer manipulation. Copies of the analytical results are presented in Appendix 4.

#### Data Handling and Data Presentation

Sample locations were digitized and merged with the analytical results. Maps were then produced over a topographic base of 1:25,000. Element distribution patterns are portrayed individually using graduated dots (blobs) with increasing size of symbol proportional to element abundance. The range of values represented by each dot is set after an examination of the histogram for data from this survey.

#### **Results and Interpretation**

The Heber River area is underlain by Karmutsen pillow basalts and andesites intruded by a number of unmapped diorite stocks. The area is cut by a series of northeast trending fault zones (frequently defined by the tributaries to Heber River). The diorite stocks are altered at least locally, with argillic and potassic alteration and minor quartz veining. Mineralization observed to date appears to be related to the northeast faults on both sides of Heber River and is principally gossanous andesite and altered granodiorite. Magnetite garnet skarn boulders have also been found in float and road material.

The moss mat survey shows a large Au, Cu anomaly (Figs. 3 and 4), approximately 3 x 2km, on the west side of Heber River. This is flanked to the southwest by anomalous Zn and As (Figs. 5 and 6). There is a weaker Au, Cu anomaly in a single creek to the east of Heber River. Locations are shown in Fig. 2.

Several contour soil traverses were run over part of the western anomaly in an attempt to define the source of the moss mat anomaly. Figs. 8 through 10 give the results for Au, Cu, As and Mo. The soil results show erratic and spotty Au, Cu, As and Mo anomalies. Soil sample location are given in Fig. 7. These results are consistent with a number of small veins or pods of mineralization but do not demonstrate any large or continuous area of mineralization.

The location of rock samples collected during both moss mat and soil sampling stages are given in Fig. 12. The detailed rock sample descriptions and analytical results are given in Appendices 3 and 4 respectively. The highlights of the rock sampling are given in Table 1.

**Table 1. Rock Samples - Heber River Claim Area**

<b>Sample No.</b>	<b>Description</b>	<b>Au ppb</b>	<b>Cu %</b>	<b>Ag ppm</b>
209320	Basalt, malachite on fractures, rusty	18	0.19	1.1
209334	Fine grained andesite, vuggy, rusty	290	0.30	2.9
209335	Fine grained andesite, pyrite box work	1060	0.53	2.9
209341	Andesite, carbonate, quartz, epidote, chalcopyrite	100	0.29	1.5
209343	andesite, 5-7% f.g. disseminated pyrite, vuggy	1690	0.16	2.2

A significant part of the original area defined as anomalous by the moss mat survey has not yet been tested. This includes almost the entire area enclosed by the anomalous rock samples in Table 1 which run up to 1.6 g Au/t and 0.5% Cu. This is the area to the west of the soil sampling completed to date.

#### **Recommendations**

In order to reduce the area for soil sampling, which is still extensive and includes areas further up slope and more difficult to reach than the area sampled to date, 3 to 4 days prospecting the creeks and ridges is recommended. Provided sufficient signs of mineralization are encountered, the defined area should be covered with contour soil sampling at the sampling spacing employed on the other claims groups.

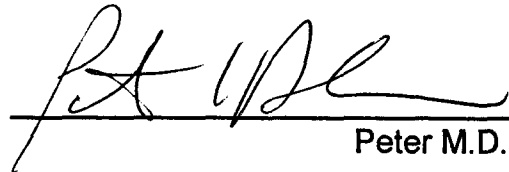
**Statement Of Costs**

Salary	10,768.57
Travel and Meals	1914.49
Field Supplies	99.18
Analysis	3031.01
Drafting and Reproduction	700.00
Miscellaneous	<u>26.75</u>
<b>TOTAL</b>	<b>16540.00</b>

## Statement of Qualifications

I, Peter M.D. Bradshaw of 4725 Rutland Road, West Vancouver, British Columbia, V7W 1G6 hereby certify that:

1. I am a graduate (1962) of Carleton University, Ottawa, Ontario, with a Bachelor of Science degree in Geology; and a graduate (1965) of Durham University, Durham, England, with a Ph.D. in Geology.
2. I am a Professional Engineer in the Province of British Columbia.
3. I have been practicing mineral exploration for 25 years.



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Peter M.D. Bradshaw

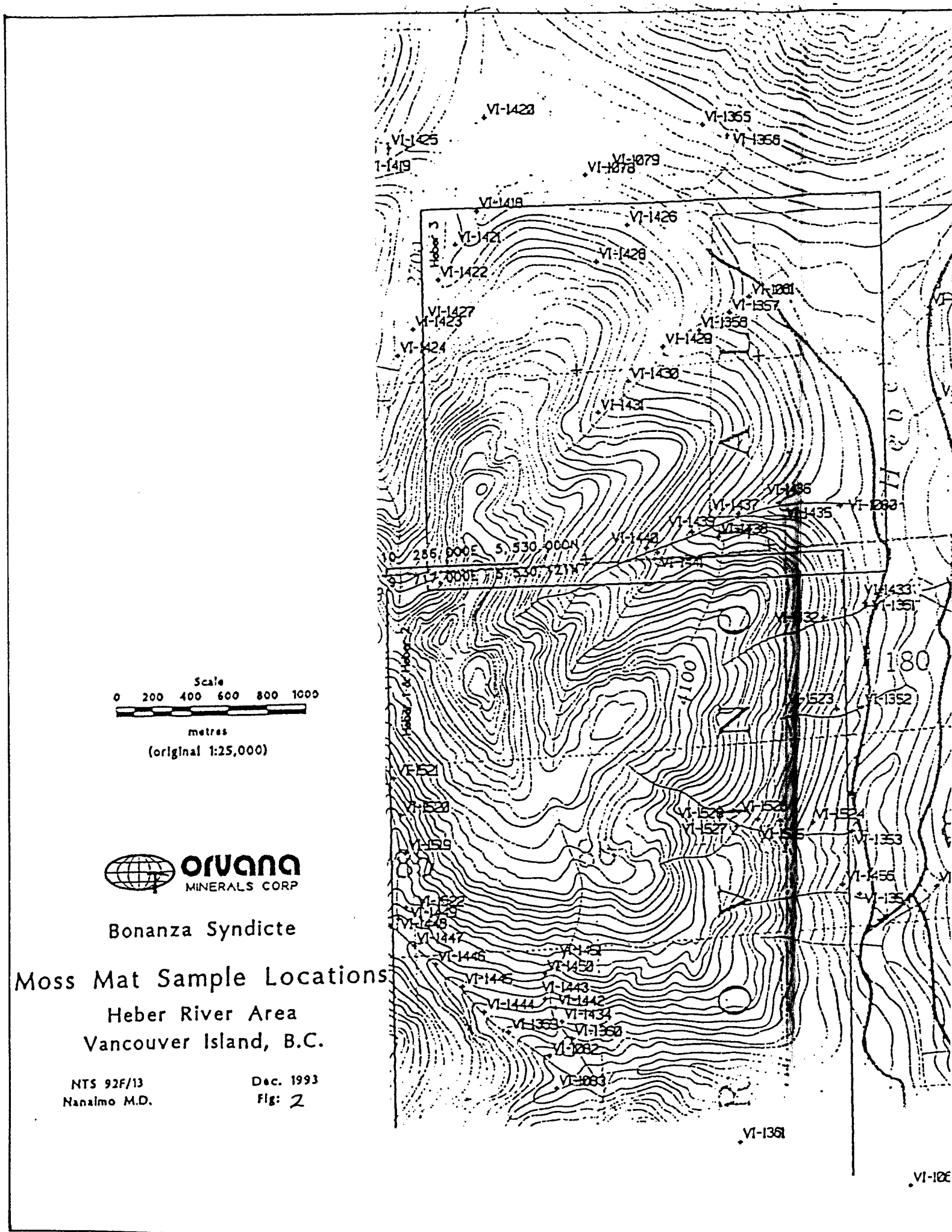


**FIGURES**

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Figure 1  
HEBER RIVER PROPERTY  
Location Map  
1:50,000



Scale  
0 200 400 600 800 1000  
metres  
(original 1:25,000)



Bonanza Syndicte

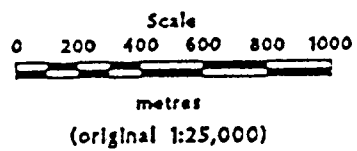
Moss Mat Sample Locations

Heber River Area  
Vancouver Island, B.C.

NTS 92F/13  
Nanaimo M.D.

Dec. 1993  
Fig: 2

- $\geq 200$  ppb Au
- $\geq 100$  ppb Au
- $\geq 25$  ppb Au
- +  $< 25$  ppb Au



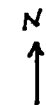
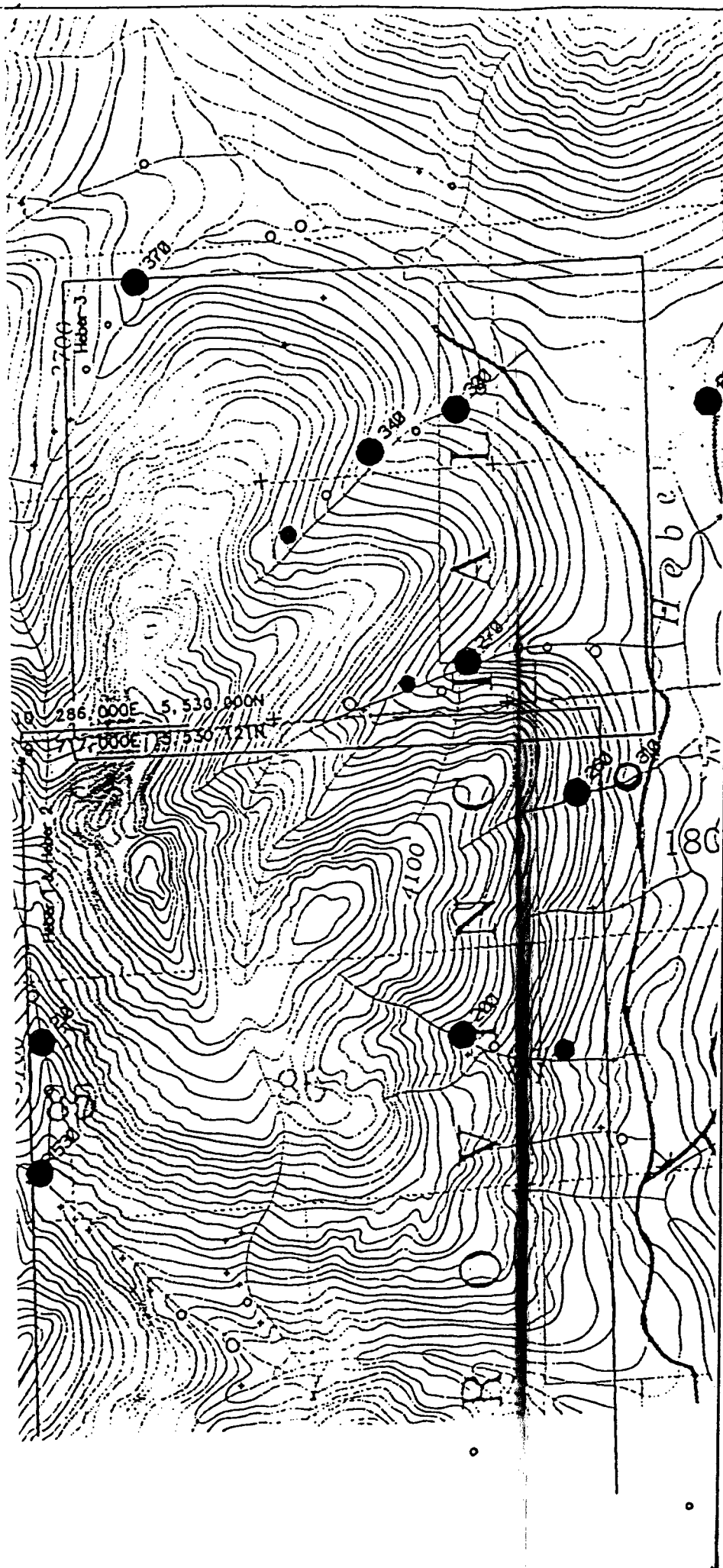
Bonanza Syndicte

Au Moss Mat Geochemistry

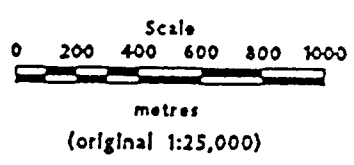
Heber River Area  
Vancouver Island, B.C.

NTS 92F/13  
Nanaimo M.D.

Dec. 1993  
Fig: 3



- <sup>500</sup> >= 500 ppm Cu
- >= 350 ppm Cu
- >= 200 ppm Cu
- < 200 ppm Cu

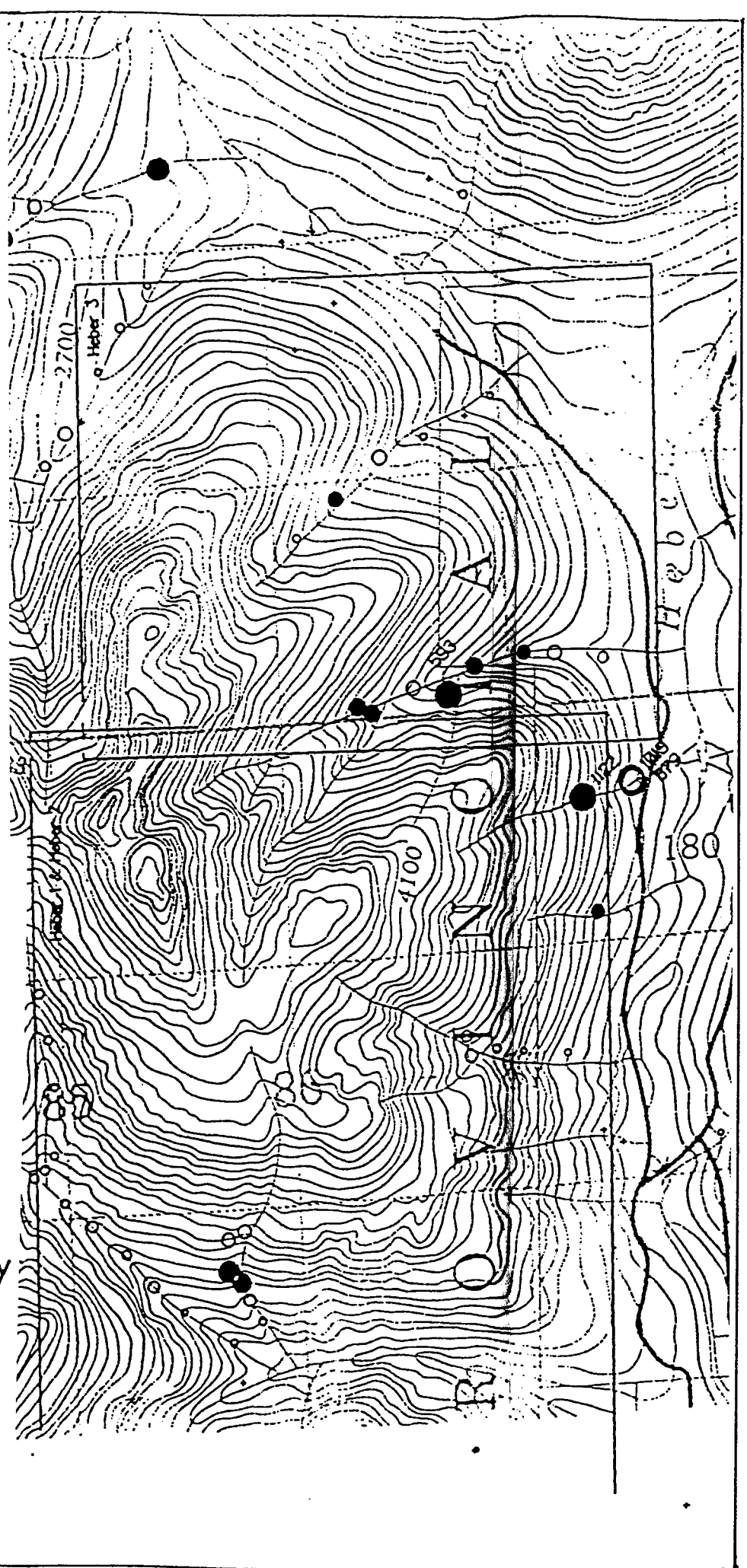


Bonanza Syndicte

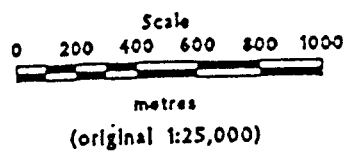
Cu Moss Mat Geochemistry  
Heber River Area  
Vancouver Island, B.C.

NTS 92F/13  
Nanaimo M.D.

Dec. 1993  
Fig: 4



- $\geq 90$  ppm Zn
- $\geq 70$  ppm Zn
- $\geq 50$  ppm Zn
- $< 50$  ppm Zn

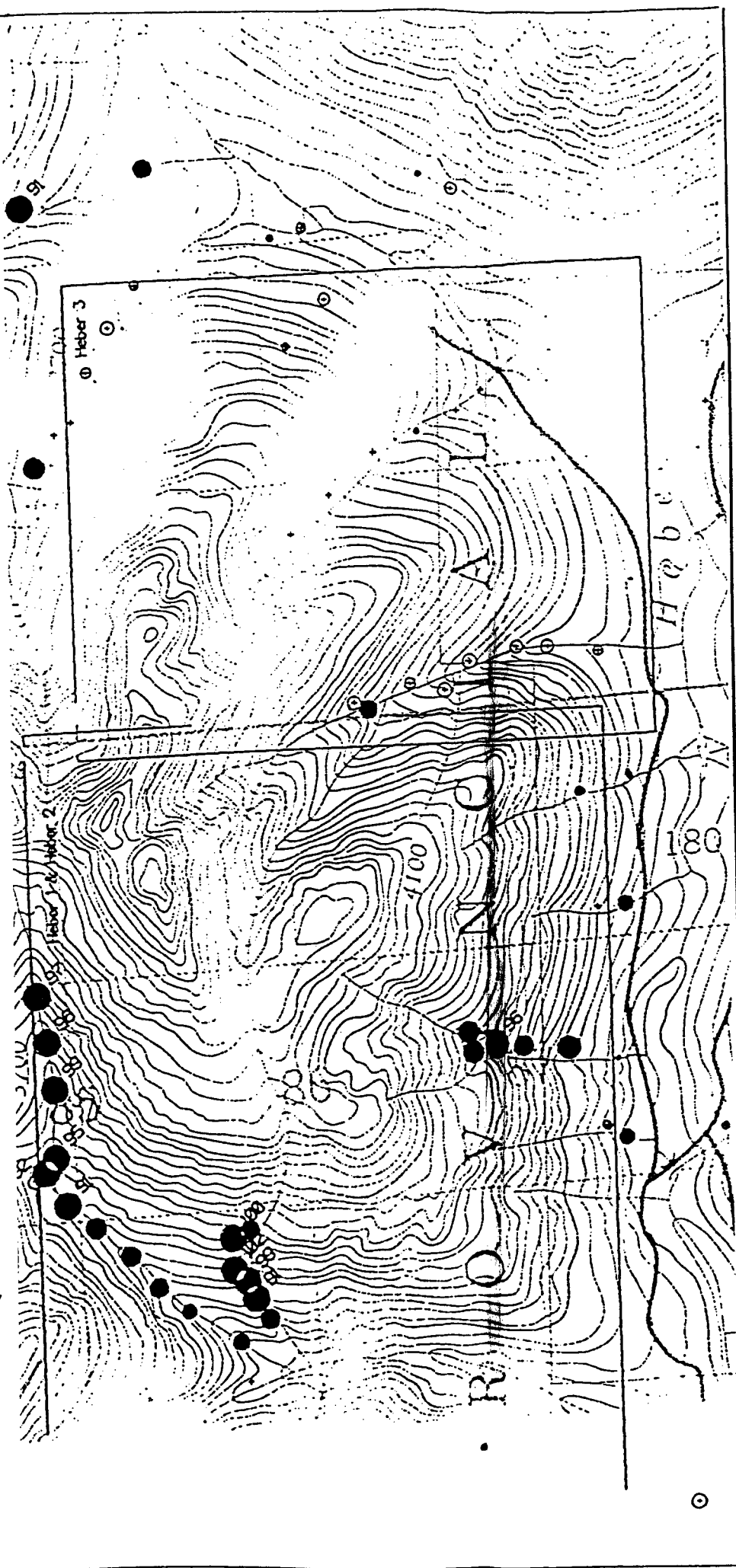


Bonanza Syndicte

Zn Moss Mat Geochemistry  
Heber River Area  
Vancouver Island, B.C.

NTS 92F/13  
Nanaimo M.D.

Dec. 1993  
Fig: 5



- <sup>12</sup> >= 12 ppm As
- >= 8 ppm As
- >= 4 ppm As
- + < 4 ppm As

Scale  
 0 200 400 600 800 1000  
 metres  
 (original 1:25,000)



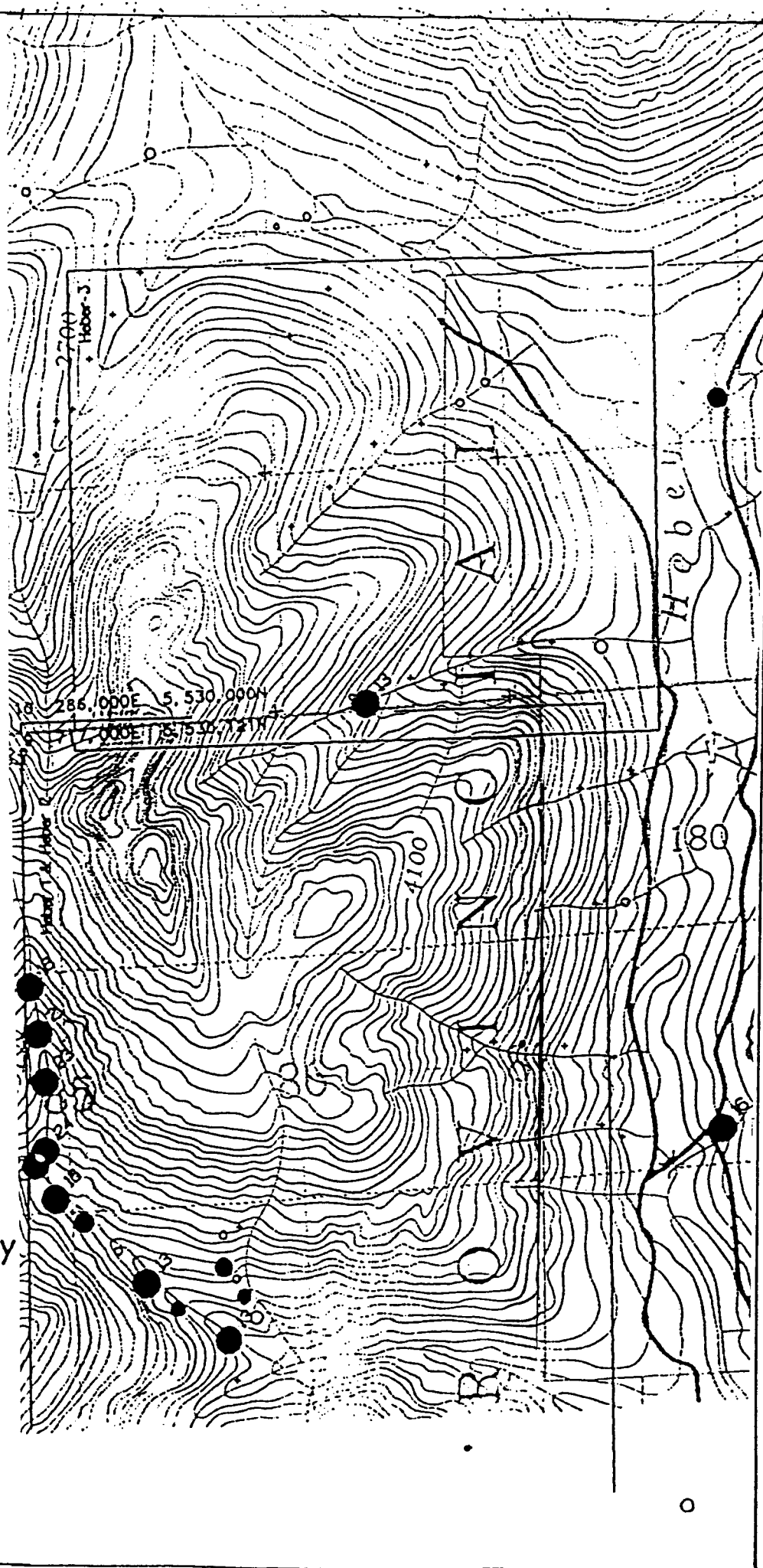
Bonanza Syndicte

AsMoss Mat Geochemistry

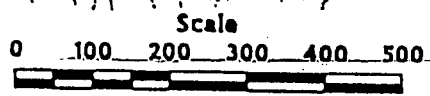
Heber River Area  
 Vancouver Island, B.C.

NTS 92F/13  
 Nanaimo M.D.

Dec. 1993  
 Fig. 6



10 288,000E 5,531,000N  
9 716,919E 5,531,117N



metres  
(original scale 1:10,000)

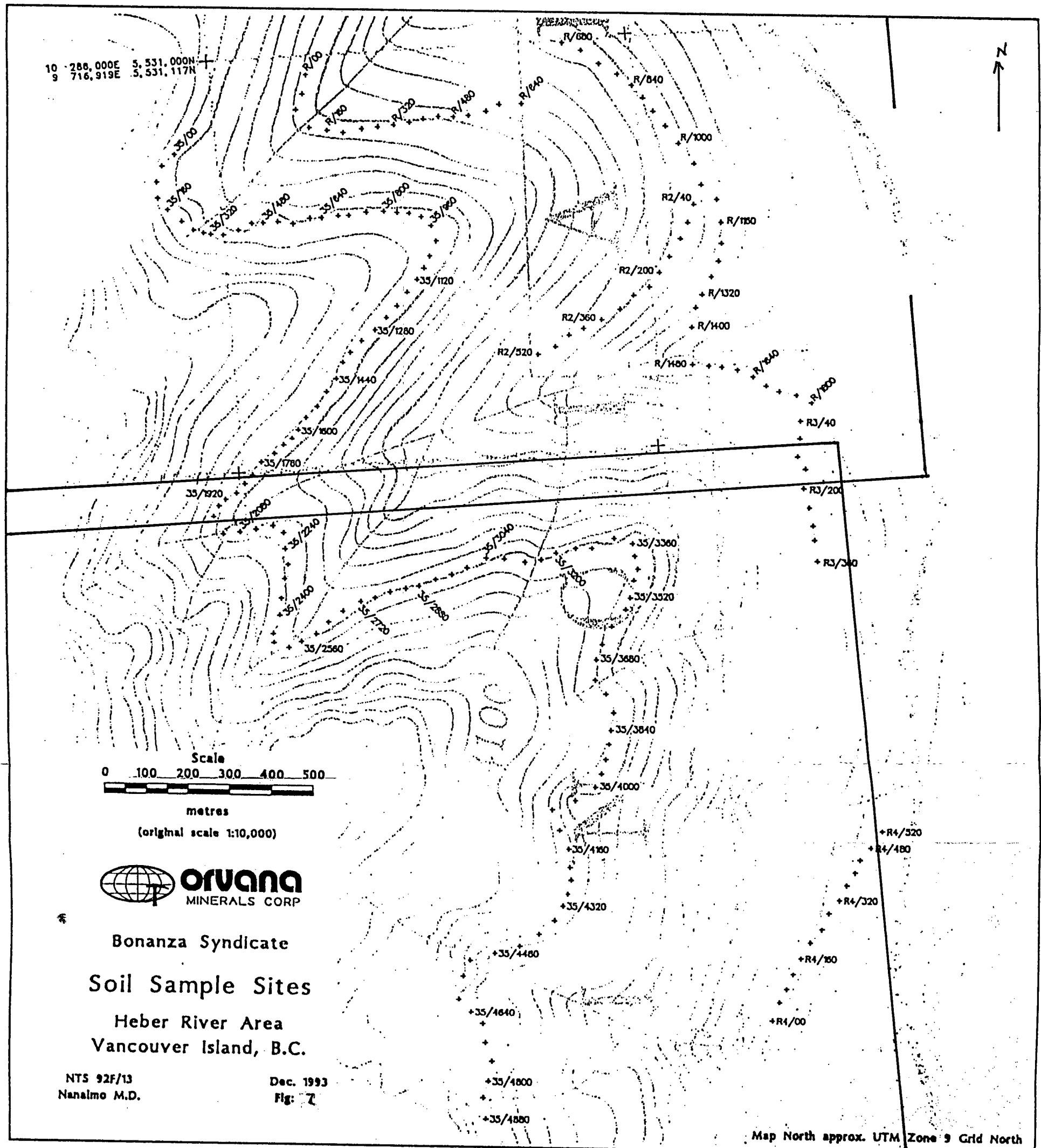


Bonanza Syndicate  
Soil Sample Sites  
Heber River Area  
Vancouver Island, B.C.

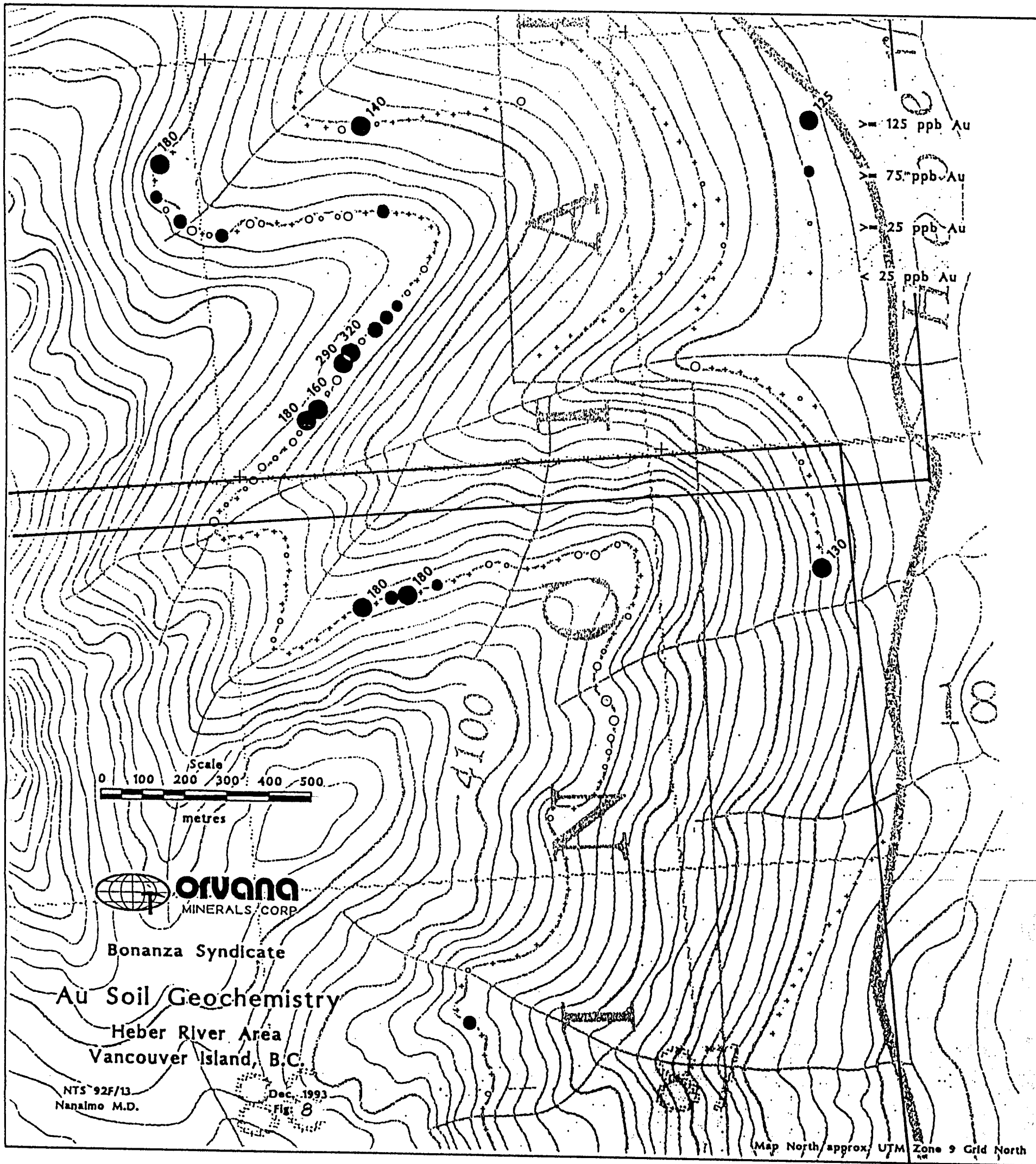
NTS 92F/13  
Nanaimo M.D.

Dec. 1993  
Fig. 7

Map North approx. UTM Zone 9 Grid North







Scale  
0 100 200 300 400 500  
metres

 **orvana**  
MINERALS CORP.

Bonanza Syndicate

**Au Soil Geochemistry**

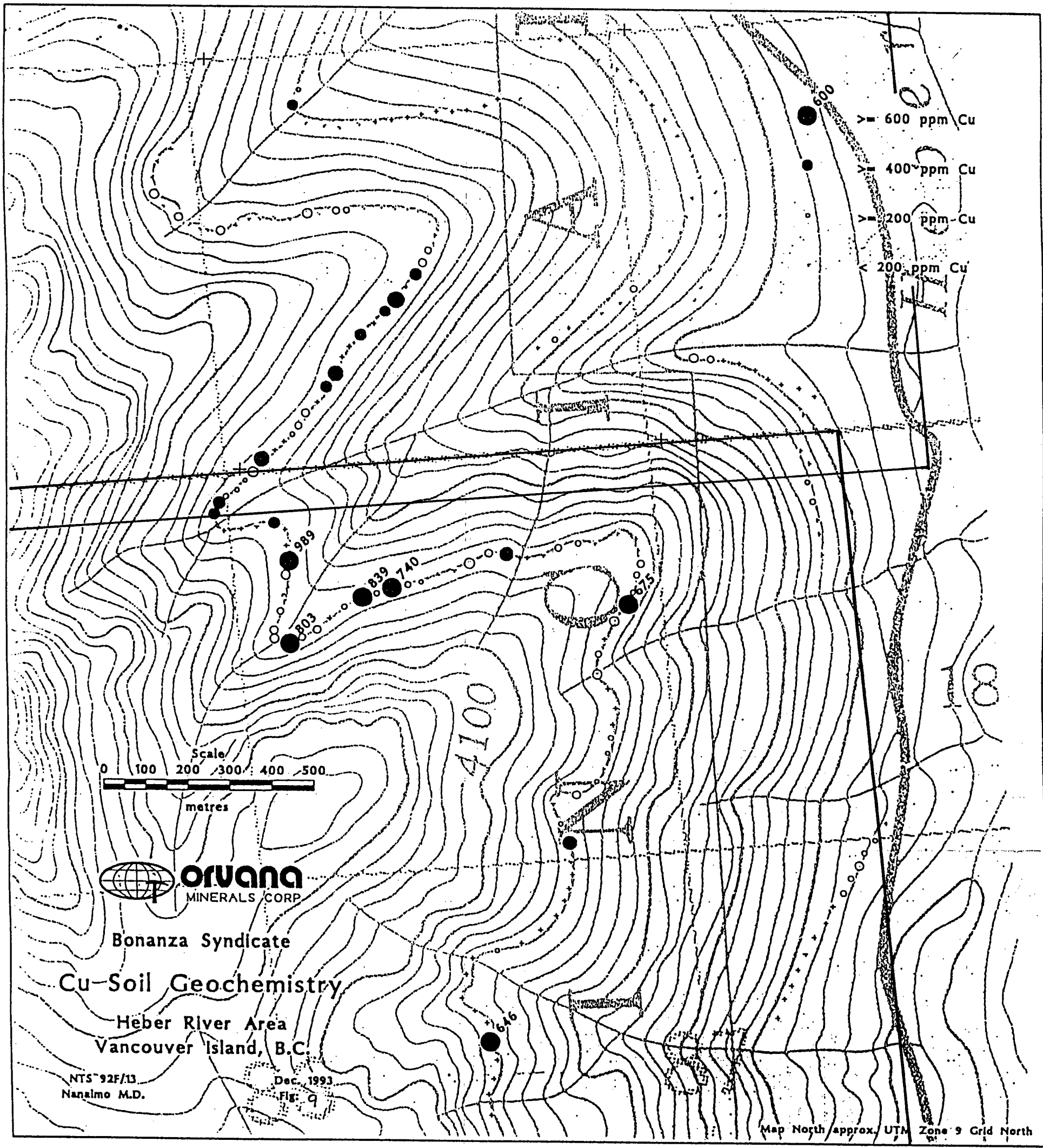
Heber River Area

Vancouver Island, B.C.

NTS 92F/13  
Nanaimo M.D.

Dec. 1993  
Fig. 8

(Map North approx. UTM Zone 9 Grid North)



> 600 ppm Cu  
> 400 ppm Cu  
> 200 ppm Cu  
< 200 ppm Cu



Scale  
0 100 200 300 400 500  
metres



Bonanza Syndicate

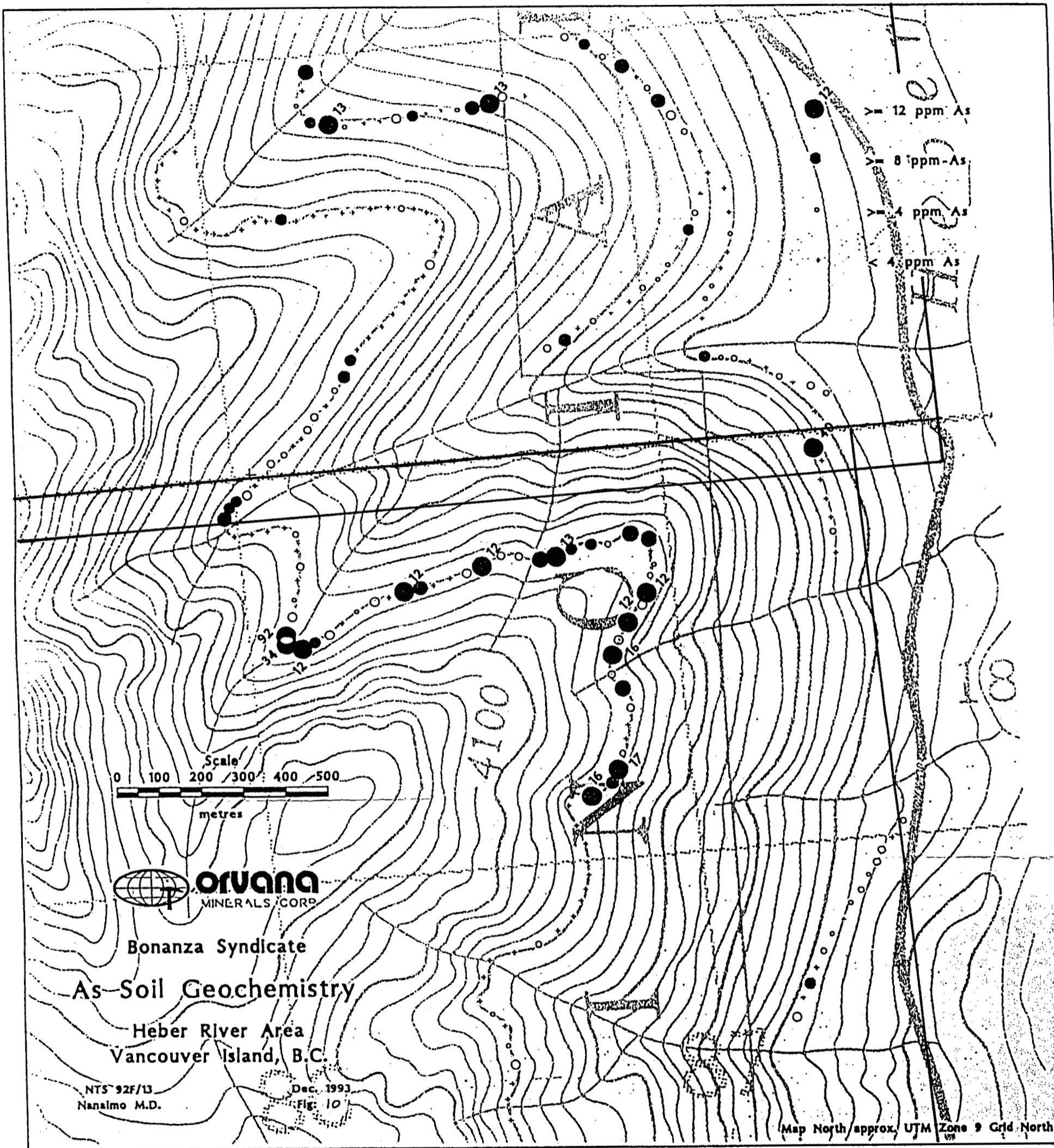
Cu-Soil Geochemistry

Heber River Area  
Vancouver Island, B.C.

NTS 92F/13  
Nanaimo M.D.

Dec. 1993  
Fig. 9

Map North approx. UTM Zone 9 Grid North



>= 12 ppm As  
 >= 8 ppm As  
 >= 4 ppm As  
 < 4 ppm As

Scale  
 0 100 200 300 400 500  
 metres


**orvana**  
 MINERALS CORP

Bonanza Syndicate

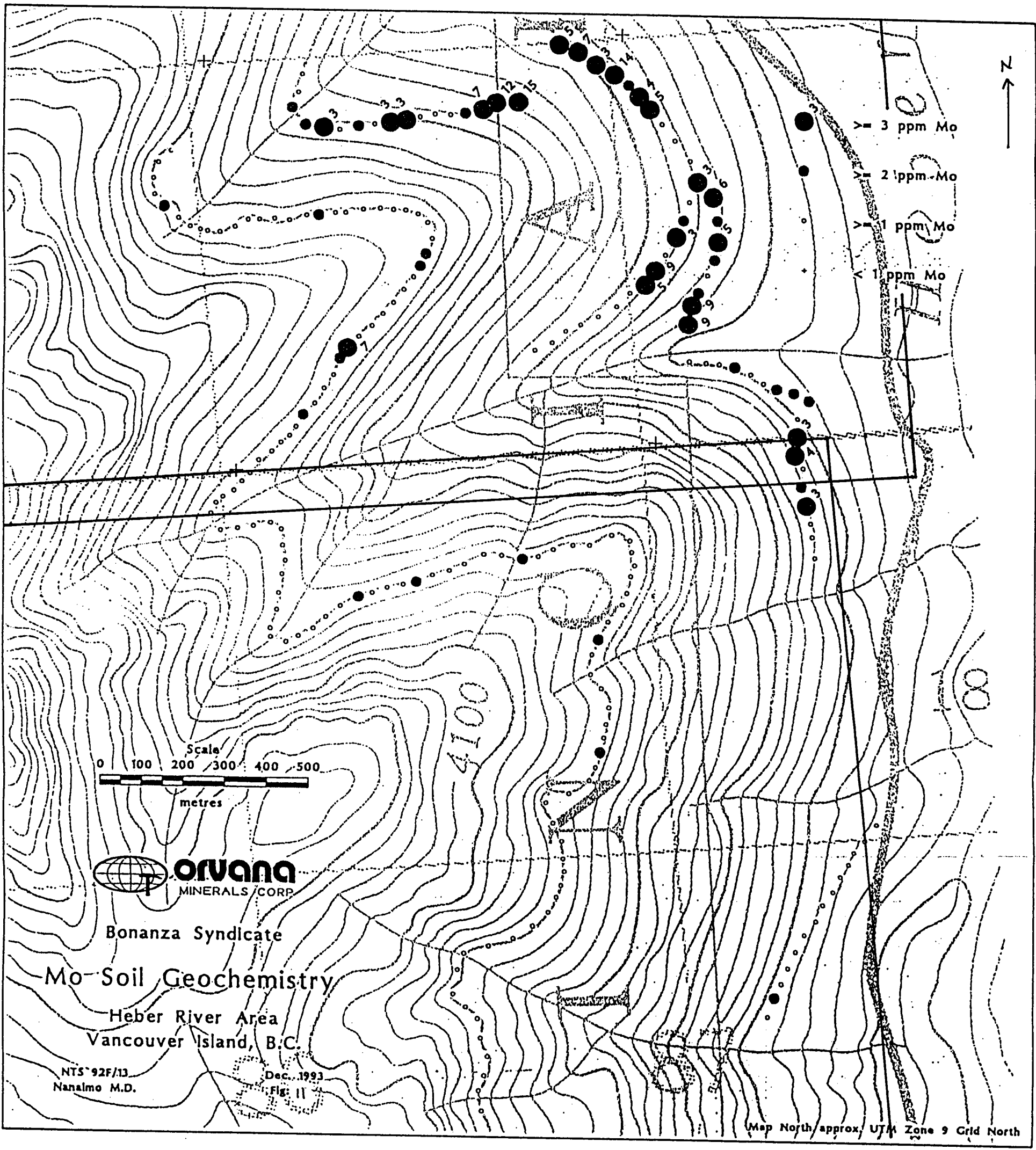
As-Soil Geochemistry

Heber River Area  
 Vancouver Island, B.C.

NTS 92F/13  
 Nanaimo M.D.

Dec. 1993  
 Fig. 10

Map North approx. UTM Zone 9 Grid North



Scale  
0 100 200 300 400 500  
metres

 **orvana**  
MINERALS CORP

Bonanza Syndicate

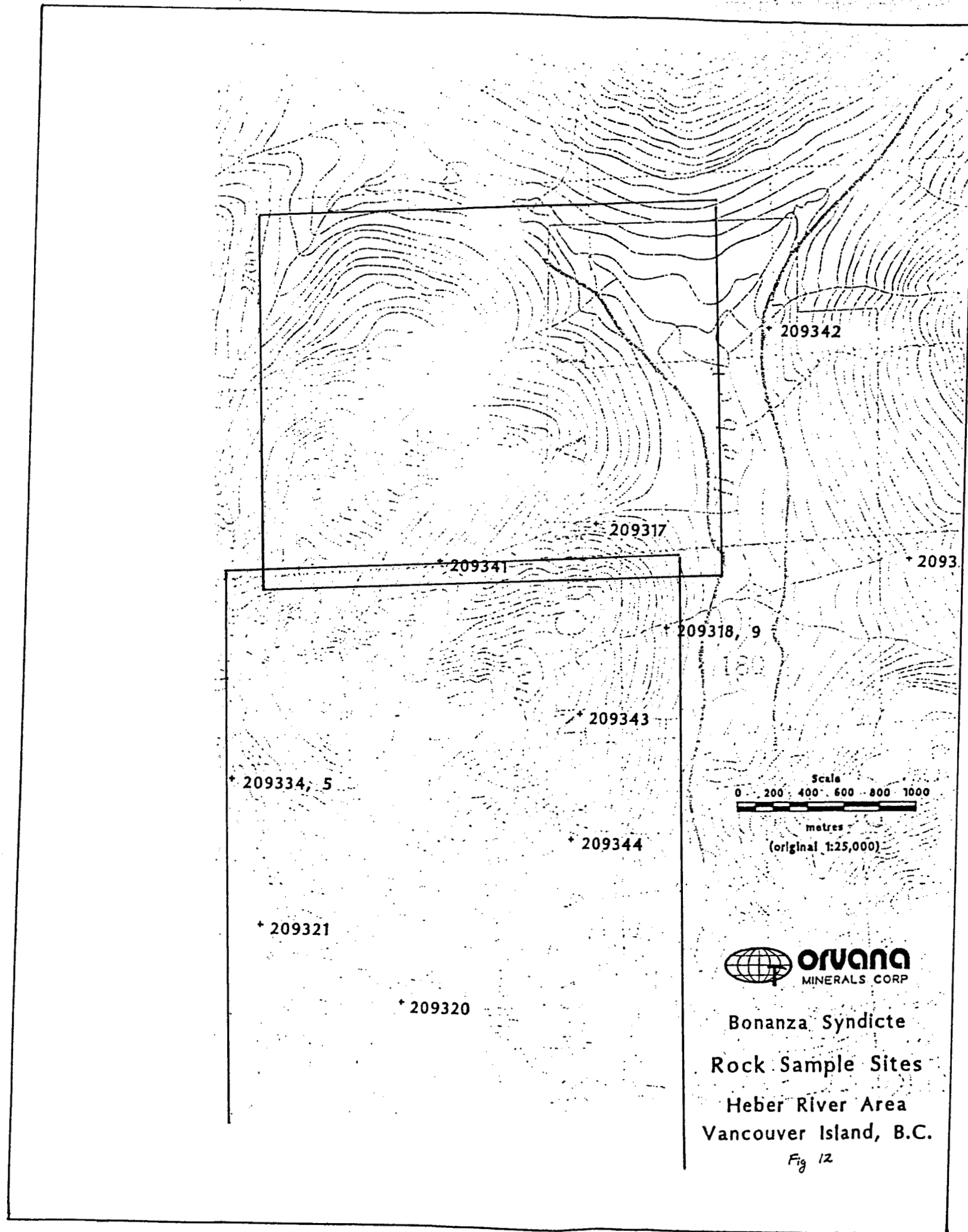
Mo Soil Geochemistry

Heber River Area  
Vancouver Island, B.C.

NTS 92F/13  
Nanaimo M.D.

Dec. 1993  
Fig. 11

Map North/ approx. UTM Zone 9 Grid North







STREAM							VENTURE NUMBER					VENTURE NAME					SAMPLED				
IDEN02																	DAY MONTH YEAR BY ASSTD. BY				
																	21 07 93 ARL				

COMPANY:										PROPERTY:									

HEBER RIVER															AZIMUTH OF				
															-VE EAST OF				

GRID	NORTH		EAST		ELEVATION

FLAG	SAMPLE NUMBER	NORTH CO-ORDINATE	EAST CO-ORDINATE	ELEVATION	SAMPLE TYPE	CHANNEL WIDTH	WATER WIDTH	H <sub>2</sub> O WATER DEPTH	FLOW DIRECTION	STREAM GRADIENT																													
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
VI	1435	200 m above	1080		MM	45.0	30.0	1.00	0.70	10																													
VI	1436	400 m above	1080		MM	40.0	25.0	1.50	0.80	10																													
VI	1437	600 m above	1080		MM	60.0		0.100	0.90	15																													
VI	1438	S. Trk 700m above	1080		MM	1.00	25	75	3.55	20																													
VI	1439	900 m above	1080		MM	80.0	20.0	1.00	0.80	15																													
VI	1440	1200 m above			MM	60.0	15.0	2.00	0.75	20																													
VI	1441	S. Trk, 1100 m above			MM	20.0	10.0	50	0.25	25																													
VI	1442	400 m above	1360		MM	30.0		75	1.85	30																													
VI	1443	W. Trk 500 m above	1360		MM	2.00	120	50	1.55	35																													
					MM	150		40	1.60	35																													
						300		10.0	23.0	35																													

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

WEATHER															N. T. S.					SHEET	
																				No. of	

OR PROJECT AND SUB PROJECT																			

GRID 000					UTM CO-ORDINATES OF GRID ORIGIN														
TRUE NORTH					NORTHING					EASTING					ELEVATION				

DISCHARGE	STREAM ORDER	CATCHMENT AREA	CHANNEL TYPE	BANK MATERIAL	POSITION High water STREAM	% CLAY	% SILT	% SAND	% GRAVEL	% ORGANICS	MAX. PARTIC SIZE	SORTING	COLOR	TURBIDITY	pH	BED ROCK		BOULDERS																							
																TYPE 1	TYPE 2	TYPE 1	TYPE 2	TYPE 3																					
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80		
						20	14	5					4	7		ANX		ANX																							
						30	14	5					6	9		ANX		AN9 DI1																							
						40	3	5	2				5	5		-		ANX																							
						20	4	4	2				4	6		-		ANX																							
						40	3	4	3				5	5		ANX		AN9 DI1																							
						50	2	5	3				7	7		ANX		AN9 DI1																							
						20	3	4	3				6	7		ANX		AN9 DI1																							
						50	3	4	3				8	7		ANX		AN8 BS2																							
						40	2	4	4				8	6		-		AN7 RS3																							
																		ANY																							
						30	2	4	4				7	5			ANX																								
						50	2	4	4				4	5																											

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



STREAM							VENTURE NUMBER			VENTURE NAME			SAMPLED				
1	2	3	4	5	6	7	101102						DAY	MONTH	YEAR	BY	ASSTD. BY
COMPANY												PROPERTY					
Heber River												AZIMUTH OF +VE EAST OF					
SGRID												Height					
FLAG	SAMPLE NUMBER	NORTH CO-ORDINATE	EAST CO-ORDINATE	ELEVATION	SAMPLE TYPE	CHANNEL WIDTH	WATER WIDTH	to WATER High DEPTH	FLOW DIRECTION	STREAM GRADIENT							
	VI-1431	2570	1429		MM	500	200	50	069	14							
	VI-1432	180m above 1351			MM	600	50	200	080	30							
	VI-1433	150m below 1351			MM	500		100	065	10							
	VI-1434	220m above 1760			MM	500	100	125	160	20							
	VI-1452	220m above 1075			MM	400	150	150	215	10							
	VI-1453	420			MM	500	100	150	270	15							
	VI-1454	600			MM	600	100	75	260	15							
	VI-1455	800			MM	600	100	75	225	15							
	VI-1456	150m above 1354			MM	100		30	140	5							
	VI-1457				MM	100		50	170	5							
	VI-1458				MM	100		50	165	0							
					MM	150	20	75	190	15							

WEATHER															N. T. S.					SHEET						
																				No. 01						
OR PROJECT AND SUB PROJECT																										
GRID 000															UTM CO-ORDINATES OF GRID ORIGIN											
TRUE NORTH															NORTHING					EASTING					ELEVATION	
DISCHARGE	STREAM ORDER	CHANNEL TYPE	BANK MATERIAL	DEPTH POSITION	% CLAY	% SILT	% SAND	% GRAVEL	% ORGANICS	MAX. PARTIC. SIZE	SORTING	COLOR	PH	DO	BED ROCK			BOULDERS								
				Below 1/2 m											1	2	3	1	2	3						
				110	23	5					5	5			DI	X		DI	X							
				100	25	3					6	6			AN	X		AN	X	SK						
				75	24	4					4	4			AN	X		AN	X							
				50	14	5					6	7						AN	X							
				10	24	4					6	5						DI	6	AN						
				25	24	4					7	5						AN	6	DI						
				50	14	5					9	9			DI	6	AN	7	AN	6						
				40	24	4					8	8			DI	6	AN	4	AN	6						
				25	5		5				1	1						AN	X							
				25	14	5					9	8						AN	3	MD						
				40	22	6					4	3						AN	5	MD						
				50	14	5					8	7						AN	4	S						













SOIL						VENTURE NUMBER						SUBGRID OR TRAVERSE						SAMPLED					
IDENT						COMPANY						PROPERTY						AZIMUTH OF +VE EAST OF					
						<i>Heber River</i>																	
SAMPLE NUMBER	X COORDINATE	Y COORDINATE	ELEVATION			LOCAL TERRAIN	SECONDARY ENVIRONMENT	FACTORS AFFECTING CONDITIONS	FACTORS AFFECTING CONDITIONS	DRAINAGE	STATUS	PARENT MATERIAL	% RESIDUAL	SLOPE	SLOPE DIRECTION	ROCK TYPE							
			17	18	19												20						
35/1740	3825 ft of 2430 ft	3430	3330	3330	SS						FRCL		41	137	AM								
35/1750	beside stream, rock 20ft		3360	3360	CIV						FRCL		35	141	AM								
35/1800			3360	3360	SS						FRCL		36	139	AM								
35/1840			3370	3370	SS						FRCL		37	115	AM								
35/1880			3380	3380	SS						FRCL		28	113	AM								
35/1920			3380	3380	SS						FRCL		33	111	AM								
35/1960	beside main creek		3380	3380	CIV						EXTL		35	140	AM								
35/2000	1870 creek		3400	3400	CIV						INTL		34	011	AM								
35/2040	after cliff		3450	3450	SS						FRCL		39	007	AM								
35/2080			3450	3450	SS						FRCL		33	024	AM								
35/2120			3430	3430	SS						FRCL		28	013	AM								
35/2160			3430	3430	SS						FRCL		31	032	AM								
35/2200			3460	3460	SS						FRCL		25	122	AM								
35/2240			3460	3460	SS						FRCL		37	115	AM								
35/2280			3480	3480	SS						FRLL		36	080	AM								
35/2320			3420	3420	SS						FRCL		32	103	AM								
35/2360			3430	3430	SS						FRCL		32	123	AM								
35/2400			3420	3420	SS						FRCL		35	136	AM								

WEATHER				N T S					SHEET No. of										
OR PROJECT		AND SUB		PROJECT															
GRID 000		UTM COORDINATES OF GRID ORIGIN																	
TRUE NORTH		NORTHING		EASTING			ELEVATION												
FRAGMENTS	TYPE	TYPE	VEGETATION			COATING	COATING	SAMPLE DEPTH	HORIZON SAMPLED	COLOR	% CLAY	% SILT	% SAND	% GRAVEL	% ORGANIC	MAX. PART. SIZE	% PARTICLES ROUNDER	SHAPE	SORTING
			TYPE	TYPE	TYPE														
X			OG					30	BC	4RU	53	71							
X	MDL	Mica-chlorite	AM					15	BC	60U	53	71							
X	AZ3	Mica-chlorite	OG					20	BC	24RU	62	71							
X			OG					15	BC	3RU	53	71							
X			AM					20	BC	4RU	44	71							
X	MD1		OG AM					50	BC	3RU	48	24							
X			AM					25	XC	40U	23	32							
X			AM					20	XC	5AM	23	32							
X			OG AM					30	BC	4RU	44	71							
X			OG AM					25	BC	7AU	62	71							
X			OG AM					20	BC	4PU	33	22							
X			OG AM					20	BC	30U	53	71							
X			AM					20	BC	50U	43	22							
X			OG AM					15	BC	60U	33	22							
X			OG AM					20	BC	40U	53	71							
X			AM OG					15	BC	50U	33	22							
X			OG AM					45	BC	40U	33	22							
X			AM					15	BC	4RU	44	71							











FW = Fireweed

MK = Mafic Dike

SOIL								VENTURE NUMBER		VENTURE NAME		SAMPLED																												
IDEN01												DAY	MONTH	YEAR	BY	ASSED. BY																								
												30	SEP	93	AAZ	H																								
COMPANY												PROPERTY																												
HEBER RIVER												AZIMUTH OF																												
Road Traverses												VE EAST OF																												
GRID								GRID								GRID																								
FLAG	SAMPLE I.D. OR LINE				SAMPLE NO. OR STATION				ELEVATION				NORTH CO-ORDINATE				EAST CO-ORDINATE				LOCAL TERRAIN	SECONDARY ENVIRONMENT	FACTORS AFFECTING	CONDITIONS																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
R								1080																										RC	CC					10
R2								40																										RC	CC					4
								80																										SS	CC					38
								120																										SS	CC					2
								160																										SS	CC					6
								200																										SS	CC					10
								240																										SS	CC					4
								280																										SS	CC					8
								320																										SS	CC					2
								360																										SS	CC					6
								400																										SS	CC					20
								440																										SS	CC					10
								480																										SS	CC					24
								520																										SS	CC					20

WEATHER																				SHEET																					
																		No.		of																					
OR PROJECT AND SUBPROJECT																																									
GRID 000										UTM CO-ORDINATES OF GRID ORIGIN																															
TRUE NORTH										NORTHING					EASTING					ELEVATION																					
SITE	DRAINAGE	VEGETATION	SLOPE	SLOPE DIRECTION	SAMPLE DEPTH	HORIZON SAMPLED	COLOR	% CLAY	% SILT	% SAND	% GRAVEL	% ORGANICS	MAX PART SIZE	% PARTICLES	COATINGS	COATINGS	ROCK FRAGMENTS			PARENT MATERIAL	% RESIDUAL																				
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80		
FR	FW	10	0	85	15	B2	4	0	3	43																														DI9AN1	
FR	FW	15	0	95	40	B2	3	0	3	43																														DI9AN1	
FR	FW	15	1	10	100	B2	3	0	4	33																														DI8AN2	
FR	CF	20	1	15	20	B2	5	0	2	341																														DI7	
FR	CF	15	1	60	20	B2	5	0	2	35																														DI7AN3	
FR	CF	30	1	55	50	B2	4	0	3	43																														DI7AN3	
FR	CF	30	1	45	30	B2	4	0	3	34																														DI9AN1	
FR	CF	30	1	40	50	B2	5	0	3	43																														MK6DIA	
FR	CF	25	1	45	20	B1	6	0	3	35																														MK5AN3DI2	
FR	CF	25	1	45	25	B	6	7	0	226																														MK3AN4DI27AN5	
FR	CF	25	1	45	40	B2	5	0	3	34																														AN6MK1DI3	
FR	CF	25	1	40	15	B	4	0	2	35																														AN6MK2DI2	
FR	CF	25	1	25	25	B1	7	0	3	42																														ANX	
FR	CF	25	1	35	40	B1	6	0	3	34																														AN7MK3	





SOIL		VENTURE NUMBER	VENTURE NAME	SAMPLED				
IDEN01				DAY	MONTH	YEAR	BY	ASSD. BY
		COMPANY		PROPERTY				
HEBER RIVER		AZIMUTH OF		VE EAST OF				
Road Transverses								
FLAG	SAMPLE I.D. OR LINE	SAMPLE NO. OR STATION	ELEVATION	NORTH CO-ORDINATE	EAST CO-ORDINATE	LOCAL TERRAIN	SECONDARY ENVIRONMENT	FACTORS AFFECTING CONDITIONS
	R3	40				CCCC		
		80				SSCC		
		120				SSCC		
		160				SSCC		
		200				SSCC		
		240				SSCC		
		280				SSCC		
		320				SSCC		
		360				SSCC		
	R4	440				SSCC		
		480				SSCC		
		520				SSCC		

WEATHER		N.Y.		SHEET																	
				No. of																	
OR PROJECT AND SUB. PROJECT																					
GRID 000		UTM CO-ORDINATES OF GRID ORIGIN																			
TRUE NORTH		NORTHING		EASTING																	
SITE	DRAINAGE	VEGETATION	SLOPE	SLOPE DIRECTION	SAMPLE DEPTH	HORIZON SAMPLED	COLOR	% CLAY	% SILT	% SAND	% GRAVEL	% ORGANICS	MAX. PARTICLES	COATINGS	COATINGS	ROCK FRAGMENTS			PARENT MATERIAL		
																TYPE	TYPE	TYPE	PARENT MATERIAL		
FR	CF	15	050	40	BZ	40	44	2									AN	7	DI	3	
FR	CF	15	080	30	BZ	40	44	2									AN	X			
FR	CF	20	065	30	BZ	50	44	2									AN	X			
FR	CF	20	070	20	BZ	40	38	3									AN	9	DI	1	
FR	CF	20	070	20	BZ	40	23	5									AN	X			
FR	CF	20	100	30	BZ	40	34	3									AN	X			
FR	CF	30	080	15	B1	51	44	2									AN	X			
FR	CF	30	085	25	BZ	40	34	3									AN	X			
FR	CF	30	100	30	BZ	30	44	2									AN	X			
FR	CF	20	115	20	B1	41	34	3									AN	X			
FR	CF	20	130	20	B1	71	34	3									AN	X			
FR	CF	20	140	30	BZ	40	34	7									AN	9	DI	1	



- 209317 Float at 560m upstream from VI 1080. Very rusty weathering marble with very minor disseminated quartz, strong disseminated pyrite and trace disseminated chalcopyrite.
- 209318 Garnet-pyrite veins in actinolite? skarn? altered andesite. Coarse brown garnet in veins, weak patchy fine disseminated garnet in andesite. Pyrite and strong limonite in veins in fault running across entire valley at 080/90. At waterfall at head of canyon, 150m above VI-1351.
- 209319 Pyritic, rusty weathering andesite. Trace pyrrhotite. Finely recrystallised amphiboles, fair epidote. Very minor quartz-calcite in blebs veinlets. Float from 100m above VI-1351.
- 209320 Malachite in fractures in maroon basalt with plagioclase-epidote phenocrysts up to 1 cm. Weak pyrite and trace chalcopyrite disseminated in fractures. Float at VI-1434.
- 209321 Pyrite and quartz filling vesicles or replacing amygdules in black andesite. Minor quartz also in weak veinlets. Andesite is fine granular recrystallised amphibole. Float at 800m above 1082.
- 209322 Kspar and Epidote veining in shear zone 070/90 in monzonite-diorite, with minor andesite rafts and xenoliths. Diorite in shear altered to appearance of syenite by massive kspar flooding. No sulphides, very little quartz. From outcrop 700m above VI-1075.
- 209323 Massive magnetite with trace quartz, trace epidote, trace pyrite. Float only but thick to 5cm. Single piece in road at bridge junction near LCP.
- 209334 Float, fine grained andesite, vuggy texture, boxwork as well as limonite, goethite. Brick red surficial features, interior is discoloured as well.
- 209335 Float, fine grained andesite, vuggy texture, limonite, goethite. Pyrite boxwork, some manganese stain? Reddish brown on surface.
- 209341 Float, fine grained andesite, carbonate, quartz, epidote chalcopyrite and pyrite with trace malachite in (vein?) of quartz, very little weathering.
- 209342 Float, medium grained monzonite biotite flakes with 5-7mm hornblende crystals in a plagioclase matrix, disseminated pyrite 4-5%.
- 209343 In situ, outcrop, fine grained andesite 5-7% pyrite disseminated throughout rusty brick red weathered surface of goethite-limonite vuggy texture in places.
- 209344 Float, fine grained andesite, weakly magnetic. Quartz crystals 2-3mm, some vuggy texture, limonite and goethite also present on weathered surface.



MOSS MAT

Orvana Minerals Corp. PROJECT HEBER FILE # 93-1666



AMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au*
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppb
VI-1418	<1	213	<2	58	<.1	37	22	743	5.28	<2	<5	<2	<2	42	<.2	<2	<2	142	1.28	.040	3	49	1.40	10	.43	<2	2.66	.03	.04	<1	370
VI-1419	<1	405	8	81	.1	56	70	1075	5.81	6	<5	<2	<2	57	1.0	<2	<2	127	1.42	.034	3	84	2.28	9	.41	8	3.58	.02	.06	<1	32
VI-1420	<1	483	6	79	.2	54	79	951	5.77	6	<5	<2	<2	57	.2	<2	<2	128	1.42	.035	3	81	2.16	10	.41	8	3.30	.02	.06	<1	47
VI-1421	<1	253	3	67	<.1	40	28	869	5.52	<2	<5	<2	<2	48	.7	<2	<2	142	1.39	.039	3	57	1.58	12	.38	<2	3.31	.03	.04	1	29
VI-1422	<1	219	4	61	<.1	37	25	679	5.44	<2	<5	<2	<2	44	.6	<2	<2	142	1.29	.038	3	52	1.43	13	.37	2	2.85	.03	.05	<1	36
VI-1423	1	330	4	48	.2	17	13	850	1.67	3	<5	<2	<2	41	.2	<2	4	41	1.34	.099	3	40	.40	21	.08	5	1.88	.02	.18	1	7
VI-1424	<1	273	5	85	<.1	48	33	1057	5.64	<2	<5	<2	<2	54	1.1	<2	<2	131	1.40	.039	3	63	2.20	10	.38	<2	3.67	.02	.04	1	10
VI-1425	<1	332	4	91	.1	56	36	1148	5.54	5	<5	<2	<2	50	.9	<2	<2	119	1.40	.045	3	66	2.20	19	.33	<2	3.50	.02	.06	<1	14
VI-1426	2	140	2	64	.3	28	89	3470	3.29	<2	<5	<2	<2	37	.4	<2	<2	86	.97	.061	4	42	.78	25	.23	4	3.99	.02	.05	<1	5
VI-1427	1	35	5	34	.1	6	14	2380	1.22	<2	<5	<2	<2	46	<.2	<2	<2	22	.81	.070	5	8	.16	74	.04	5	1.39	.01	.10	1	2
VI-1428	2	56	3	55	.1	5	46	2713	1.09	<2	<5	<2	<2	48	.3	<2	<2	21	1.15	.084	10	7	.12	79	.04	5	3.23	.01	.05	<1	2
VI-1429	1	349	2	46	.1	33	33	593	4.43	<2	<5	<2	<2	63	.6	<2	<2	106	1.74	.062	2	46	1.08	20	.27	<2	4.02	.04	.10	<1	340
VI-1430	1	357	5	49	.1	31	30	690	4.30	<2	<5	<2	<2	64	<.2	<2	<2	103	2.21	.055	4	45	1.09	20	.26	3	3.88	.04	.11	1	52
VI-1431	1	236	6	45	.1	29	31	759	4.92	<2	<5	<2	<2	65	.3	<2	<2	123	2.06	.047	4	44	1.07	26	.25	23	3.36	.04	.08	<1	140
VI-1432	2	1122	3	56	.5	59	98	853	5.28	<2	<5	<2	<2	86	<.2	<2	3	109	2.73	.050	2	53	1.50	18	.26	5	4.71	.04	.08	<1	260
VI-1433	2	879	<2	51	.5	56	86	763	6.01	3	<5	<2	<2	74	.3	<2	<2	129	2.16	.050	2	59	1.57	19	.33	3	5.03	.04	.06	<1	180
VI-1434	<1	302	<2	91	.1	55	36	1110	6.81	8	<5	<2	<2	33	<.2	<2	<2	166	1.28	.034	4	65	2.11	16	.62	<2	3.20	.02	.03	<1	47
VI-1435	<1	342	5	66	<.1	47	40	768	5.82	<2	<5	<2	<2	50	.4	<2	<2	135	1.60	.043	3	59	1.87	13	.47	3	3.16	.03	.05	<1	50
VI-1436	<1	351	4	66	.3	49	41	754	6.31	2	<5	<2	<2	54	.3	<2	<2	149	1.73	.044	3	62	1.87	11	.50	<2	3.30	.04	.05	<1	63
VI-1437	<1	387	3	69	.5	49	43	780	6.29	<2	<5	<2	<2	56	.8	<2	<2	146	1.80	.040	3	62	1.96	14	.53	<2	3.42	.04	.05	1	270
VI-1438	2	593	<2	69	.1	43	45	1082	5.99	<2	<5	<2	<2	39	<.2	<2	2	119	1.29	.050	3	73	1.74	16	.21	<2	4.50	.02	.05	<1	58
VI-1439	<1	347	2	62	.1	44	33	693	5.08	2	<5	<2	<2	47	.5	<2	<2	115	1.51	.053	3	56	1.63	15	.39	<2	4.47	.03	.04	<1	130
VI-1440	<1	384	<2	66	.1	51	41	828	5.77	4	<5	<2	<2	56	.7	<2	<2	129	1.72	.039	3	60	1.91	16	.47	<2	3.36	.04	.05	<1	90
VI-1441	1	394	2	77	.1	36	50	1331	4.56	13	<5	<2	<2	39	.2	<2	<2	103	1.65	.059	4	53	1.31	15	.32	<2	3.26	.02	.05	<1	18
VI-1442	<1	428	3	99	.1	66	42	1425	7.29	5	<5	<2	<2	40	.3	<2	3	168	1.45	.043	5	74	2.29	25	.63	<2	3.91	.02	.04	<1	15
VI-1443	<1	469	2	102	.2	64	39	1304	7.23	10	<5	<2	<2	37	<.2	<2	2	165	1.31	.037	5	75	2.28	26	.60	<2	4.07	.02	.03	<1	16
VI-1444	1	294	3	80	.1	53	33	1051	5.98	13	<5	<2	<2	65	1.0	<2	<2	136	1.82	.038	3	77	2.20	12	.40	3	3.96	.04	.05	22	13
RE VI-1444	1	268	<2	78	.2	57	31	1003	5.74	8	<5	<2	<2	63	.6	<2	<2	132	1.76	.036	3	75	2.10	16	.39	<2	3.75	.04	.05	15	13
VI-1445	1	260	<2	82	.1	56	33	1113	5.86	5	<5	<2	<2	63	<.2	<2	<2	133	1.85	.038	3	75	2.16	12	.38	3	3.82	.03	.05	15	11
VI-1446	1	286	2	84	.2	59	38	1129	6.32	10	<5	<2	<2	68	.3	<2	<2	141	2.03	.042	3	84	2.32	13	.40	3	4.18	.03	.04	13	19
VI-1447	<1	242	2	91	.1	59	34	1086	6.28	18	<5	<2	<2	59	.3	<2	<2	144	1.71	.035	3	70	2.28	14	.47	6	3.70	.02	.04	1	17
VI-1448	<1	258	3	68	.2	51	27	848	4.55	7	<5	<2	<2	76	<.2	<2	<2	104	2.10	.039	2	68	1.72	13	.32	2	3.91	.04	.05	4	16
VI-1449	<1	262	5	92	.1	55	33	1257	6.20	26	<5	<2	<2	55	<.2	<2	<2	141	1.44	.034	3	65	2.31	14	.46	<2	3.70	.02	.04	<1	1530
VI-1450	<1	330	3	100	.1	48	30	2256	4.85	5	<5	<2	<2	32	.5	<2	<2	112	1.36	.047	8	56	1.45	29	.37	3	3.49	.01	.04	<1	10
VI-1451	<1	329	6	79	.1	33	25	2992	4.57	<2	<5	<2	<2	29	<.2	<2	<2	114	1.04	.068	9	62	1.03	25	.31	3	3.01	.01	.10	<1	13
VI-1452	1	151	<2	51	<.1	34	18	673	5.27	<2	<5	<2	<2	42	<.2	<2	<2	128	1.32	.039	4	36	1.28	20	.39	3	2.49	.02	.03	<1	42
VI-1453	<1	185	<2	56	.1	30	18	710	5.69	<2	<5	<2	<2	45	.3	<2	<2	137	1.32	.042	4	36	1.32	23	.41	<2	2.67	.02	.03	1	9
STANDARD C/AU-S	16	60	37	120	6.6	67	26	1109	3.96	36	21	7	34	53	17.2	13	16	55	.51	.085	36	55	.89	186	.09	31	1.88	.06	.13	10	48

Sample type: MOSS MAT. Samples beginning 'RE' are duplicate samples.



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
VI-1454	<1	161	<2	54	.1	29	20	567	6.00	4	<5	<2	<2	43	.5	<2	<2	148	1.23	.036	4	32	1.33	12	.42	<2	2.42	.02	.03	1	58
VI-1455	<1	189	<2	56	.1	31	20	644	5.47	3	<5	<2	<2	47	.6	<2	<2	135	1.33	.040	4	34	1.40	20	.42	<2	2.70	.02	.04	2	11
VI-1456	<1	60	7	57	.1	15	10	4804	1.25	<2	<5	<2	<2	28	.8	<2	<2	32	1.41	.084	3	12	.27	58	.09	4	.98	.01	.15	1	2

Sample type: MOSS MAT.



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
VI-1519	<1	242	<2	99	.2	64	39	1120	6.43	23	<5	<2	<2	62	.3	<2	<2	162	1.63	.033	4	68	2.50	11	.55	3	3.83	.03	.04	<1	57
VI-1520	<1	251	<2	98	.2	68	44	1145	6.63	21	<5	<2	<2	66	<.2	<2	<2	161	1.56	.030	3	69	2.66	10	.54	2	3.98	.02	.03	<1	210
VI-1521	<1	263	<2	97	.3	65	37	1115	5.94	18	<5	<2	<2	63	<.2	<2	<2	144	1.58	.038	3	68	2.59	13	.50	4	4.26	.02	.04	<1	71
VI-1522	<1	239	<2	95	.3	62	38	1140	6.18	24	<5	<2	<2	62	<.2	<2	<2	158	1.62	.034	4	66	2.44	12	.54	4	3.70	.03	.04	<1	21
VI-1523	1	356	3	29	.5	13	15	613	.97	3	7	<2	<2	48	.4	<2	<2	29	4.34	.084	3	119	.36	7	.05	13	1.08	.03	.10	<1	11
VI-1524	<1	222	2	88	.2	50	69	1306	4.67	3	<5	<2	<2	60	.2	<2	<2	123	1.56	.048	5	56	1.63	19	.44	4	3.08	.02	.06	<1	180
VI-1525	<1	209	<2	82	.2	52	76	1020	5.58	4	<5	<2	<2	63	.2	3	<2	143	1.46	.038	4	58	1.81	16	.52	4	2.95	.02	.04	1	110
VI-1526	<1	255	2	96	.2	50	87	1296	4.63	<2	<5	<2	<2	59	<.2	<2	<2	117	1.70	.046	6	57	1.61	19	.42	4	3.53	.02	.05	<1	56
RE VI-1526	<1	253	3	96	.1	50	88	1252	4.82	2	<5	<2	<2	60	<.2	<2	2	122	1.69	.045	5	58	1.63	19	.44	4	3.53	.02	.06	<1	17
VI-1527	<1	314	2	86	.2	51	43	1214	3.83	<2	<5	<2	<2	88	.5	<2	<2	97	2.98	.050	5	83	1.75	23	.29	6	5.34	.02	.07	<1	9
VI-1528	<1	287	5	86	.2	47	93	1912	5.33	<2	<5	<2	<2	45	<.2	<2	<2	131	1.03	.054	4	57	1.50	25	.41	4	3.54	.02	.05	<1	200
VI-1529	<1	308	<2	76	.4	53	64	920	8.41	5	<5	<2	<2	70	<.2	<2	<2	193	1.69	.049	6	63	2.04	30	.46	7	3.22	.02	.05	10	78
VI-1530	<1	288	<2	73	.1	50	63	894	8.51	3	<5	<2	<2	67	<.2	<2	<2	193	1.62	.048	6	63	1.95	26	.44	5	3.06	.02	.05	13	38
VI-1531	1	300	<2	85	.4	57	75	920	7.57	4	<5	<2	<2	74	.4	<2	<2	165	1.79	.043	5	69	2.33	17	.46	4	3.89	.02	.05	9	88
VI-1532	1	334	<2	84	<.1	55	94	809	8.52	5	<5	<2	<2	66	.8	<2	<2	174	1.56	.040	4	72	2.13	13	.46	3	3.66	.02	.05	20	690
VI-1533	<1	305	<2	80	.1	51	77	900	7.23	5	<5	<2	<2	68	.8	<2	<2	151	1.64	.042	4	72	2.15	12	.41	4	3.83	.02	.05	6	70
VI-1534	1	205	2	63	<.1	31	25	1270	4.17	<2	<5	<2	<2	48	.5	<2	<2	118	1.20	.032	4	44	1.15	17	.40	4	2.41	.02	.05	<1	28
STANDARD C/AU-S	19	63	36	131	7.4	72	32	1040	3.96	41	15	7	36	54	18.5	15	23	58	.49	.087	39	60	.94	186	.09	34	1.88	.10	.17	9	53

Sample type: MOSS MAT. Samples beginning 'RE' are duplicate samples.



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
VI-1635	<1	144	5	45	<.1	27	16	835	4.05	7	<5	<2	<2	74	.2	<2	<2	105	1.99	.041	5	70	.89	41	.20	73	3.04	.04	.06	1	35
VI-1636	1	253	5	41	<.1	19	11	960	2.13	3	5	<2	<2	49	.4	<2	<2	52	1.69	.069	13	50	.56	31	.10	8	2.16	.02	.11	1	6
VI-1637	<1	364	8	69	.4	60	96	1440	7.67	34	<5	<2	<2	62	.3	<2	<2	145	1.41	.039	4	84	2.23	11	.36	7	3.35	.01	.04	15	60
VI-1638	<1	352	10	73	.5	65	120	1387	8.24	34	<5	<2	<2	60	.3	<2	<2	148	1.38	.038	4	84	2.30	10	.37	8	3.30	.01	.04	17	150
VI-1639	1	504	7	75	.6	65	116	1551	7.77	24	<5	<2	<2	64	.4	<2	<2	137	1.53	.041	4	84	2.26	10	.33	12	3.44	.01	.05	15	270
VI-1640	<1	203	7	55	.2	44	33	1119	5.78	16	<5	<2	<2	59	.3	<2	<2	139	1.43	.040	5	68	1.71	24	.31	3	3.07	.02	.04	<1	20
VI-1641	<1	210	9	57	.1	43	30	1206	6.14	9	<5	<2	<2	59	.2	<2	<2	148	1.37	.037	4	69	1.70	30	.28	2	3.30	.02	.04	<1	22
VI-1642	<1	236	8	63	.2	42	34	1419	5.22	8	<5	<2	<2	66	.3	<2	<2	115	1.48	.040	4	65	1.89	41	.17	<2	3.84	.01	.05	<1	11
VI-1643	1	163	7	60	.1	27	29	1891	5.25	8	<5	<2	<2	38	.2	<2	<2	124	.97	.054	6	40	.95	54	.21	<2	2.82	.02	.04	<1	12
VI-1644	<1	115	4	36	.1	24	15	912	5.12	4	<5	<2	<2	35	.2	<2	<2	143	1.22	.038	5	37	.76	34	.33	<2	2.21	.04	.04	1	12
VI-1645	<1	116	5	35	<.1	23	14	900	4.43	3	<5	<2	<2	33	<.2	<2	<2	125	1.13	.038	5	34	.73	32	.31	4	2.24	.03	.04	<1	5
RE VI-1648	<1	147	4	31	<.1	24	15	850	5.80	12	<5	<2	<2	41	<.2	<2	<2	154	1.04	.037	5	53	.82	24	.28	3	2.44	.03	.04	<1	220
VI-1646	<1	131	5	45	.1	33	18	1289	4.89	7	<5	<2	<2	28	.2	<2	<2	154	2.14	.031	4	38	1.16	14	.51	6	2.60	.01	.03	<1	2
VI-1647	<1	166	8	46	<.1	34	18	992	3.77	<2	<5	<2	<2	52	.2	<2	<2	97	1.45	.043	3	46	1.17	14	.33	4	2.53	.02	.06	<1	4
VI-1648	<1	150	5	32	<.1	23	14	810	5.50	10	<5	<2	<2	42	<.2	<2	<2	147	1.04	.037	5	50	.83	25	.26	3	2.54	.03	.04	1	250
VI-1649	1	123	5	33	.2	21	13	812	5.70	3	<5	<2	<2	34	<.2	<2	<2	146	.98	.036	6	42	.82	23	.24	2	2.10	.03	.04	<1	2
STANDARD C/AU-S	17	58	37	127	6.9	66	30	1121	3.95	40	19	6	35	52	18.3	14	19	56	.51	.085	39	60	.91	183	.09	33	1.91	.06	.14	11	50

Sample type: MOSS MAT. Samples beginning 'RE' are duplicate samples.



## GEOCHEMICAL ANALYSIS CERTIFICATE

Orvana Minerals Corp. PROJECT ~~THUNDER~~ <sup>HEBER</sup> (BONANZA) File # 93-2511

710 - 1177 W. Hastings St, Vancouver BC V6E 2K3 Submitted by: Ed Ronyecz

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
VI-1633	1	48	4	31	<.1	19	6	185	1.71	3	<5	<2	<2	26	.2	5	<2	49	.56	.036	2	27	.61	37	.09	5	1.17	.08	.08	2	<1
VI-1634	2	44	3	58	.2	9	13	613	5.59	2	<5	<2	2	84	.5	6	<2	145	1.68	.060	11	11	.82	46	.11	5	2.82	.03	.10	6	3
VI-1650	<1	168	3	118	.3	41	24	1576	4.77	4	<5	<2	<2	42	.7	7	<2	134	1.52	.048	7	57	1.52	29	.39	8	3.03	.02	.05	1	3
VI-1651	<1	144	<2	96	.4	46	35	916	5.41	8	<5	<2	<2	45	.5	7	<2	153	1.65	.037	5	48	1.87	16	.65	8	2.71	.02	.04	1	4
VI-1652	<1	145	<2	100	.4	40	29	2212	5.48	6	<5	<2	<2	42	.6	10	<2	157	1.26	.047	4	58	1.48	24	.40	8	3.25	.02	.06	3	<1
VI-1653	<1	292	<2	84	.4	46	26	955	5.68	6	<5	<2	<2	57	.6	7	<2	152	1.69	.035	4	54	1.92	32	.47	8	3.13	.03	.04	3	5
VI-1654	<1	305	<2	85	.5	46	27	1114	5.48	5	<5	<2	<2	65	.6	7	<2	141	1.95	.037	4	57	2.02	54	.43	7	3.54	.04	.05	1	750
VI-1655	<1	275	<2	81	.5	46	25	894	6.03	9	<5	<2	<2	57	.7	11	<2	166	1.65	.036	4	57	1.89	53	.51	9	3.02	.03	.04	3	11
RE VI-1655	<1	289	<2	79	.6	45	25	890	5.92	5	<5	<2	<2	55	.6	7	<2	161	1.61	.036	4	56	1.86	53	.49	8	2.97	.03	.04	1	5
VI-1656	2	121	<2	38	.1	21	13	517	6.60	3	<5	<2	12	51	.3	5	<2	161	1.15	.064	15	42	.89	45	.22	5	2.02	.05	.07	4	<1
VI-1657	1	107	<2	36	.2	21	12	535	7.04	<2	<5	<2	9	50	.2	3	<2	169	1.10	.063	14	43	.88	50	.22	4	1.91	.04	.07	4	1
VI-1658	<1	190	<2	58	.1	32	17	1011	5.22	3	<5	<2	<2	53	.5	7	<2	161	1.38	.047	8	63	1.10	44	.29	8	2.56	.05	.06	1	9
VI-1659	<1	242	<2	62	.3	34	22	591	7.07	3	<5	<2	2	73	.6	7	<2	214	1.41	.040	8	62	1.23	42	.33	5	2.44	.05	.03	1	29
STANDARD C/AU-S	17	56	38	122	7.1	69	29	1031	3.94	42	18	7	36	53	17.9	15	18	55	.50	.085	37	57	.91	189	.09	34	1.88	.09	.15	9	49

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.

- SAMPLE TYPE: MOSS MAT AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: SEP 16 1993 DATE REPORT MAILED: *Sept 24/93* SIGNED BY: *D. Toye* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



Orvana Minerals Corp. PROJECT HEBER RIVER FILE # 93-2510

Soils



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
35/00	1	197	<2	22	<.1	4	3	257	4.43	<2	<5	<2	2	9	.2	<2	<2	52	.12	.048	3	18	.05	11	.17	2	6.52	.01	.01	<1	8
35/40	<1	110	8	28	<.1	13	8	118	8.08	<2	<5	<2	3	14	.3	<2	<2	180	.26	.037	<2	60	.23	11	.54	<2	5.72	.01	.01	<1	180
35/80	1	139	<2	14	<.1	7	6	76	.60	<2	<5	<2	<2	4	.2	<2	<2	7	.04	.088	10	12	.01	4	.03	<2	10.77	<.01	<.01	<1	2
35/120	1	360	2	30	.3	15	14	161	5.44	<2	<5	<2	2	22	.3	<2	<2	116	.29	.035	2	37	.45	21	.35	2	8.72	.01	.01	<1	83
35/160	2	156	8	40	.5	14	12	486	4.79	<2	<5	<2	2	34	.3	<2	<2	129	.51	.037	<2	31	.40	18	.42	2	3.93	.01	.02	<1	35
35/200	1	330	8	49	.1	28	26	337	4.56	6	<5	<2	<2	51	.3	<2	<2	97	1.10	.046	<2	37	1.00	29	.24	2	5.60	.02	.02	<1	94
35/240	1	68	10	24	.2	9	6	110	5.29	3	<5	<2	<2	15	.2	<2	<2	186	.36	.030	<2	25	.14	8	.37	3	1.59	.01	.03	<1	63
35/280	1	165	4	23	<.1	14	11	135	5.80	<2	<5	<2	2	18	.2	<2	<2	141	.30	.026	<2	42	.31	13	.50	2	5.96	.01	.01	<1	14
35/320	1	137	3	41	.3	16	12	536	6.62	<2	<5	<2	2	20	.4	<2	<2	104	.33	.063	2	47	.44	14	.34	3	3.72	.01	.02	1	36
35/360	<1	342	2	49	.1	27	38	467	4.10	3	<5	<2	<2	80	.2	<2	3	94	2.08	.058	<2	35	1.36	16	.16	3	5.31	.02	.05	<1	93
35/400	1	68	12	28	.3	13	7	81	6.12	2	<5	<2	2	16	.4	<2	<2	218	.31	.024	<2	34	.22	11	.45	<2	1.78	.02	.02	<1	22
35/440	1	64	19	33	.2	13	6	141	3.88	2	<5	<2	2	16	.3	<2	<2	246	.40	.014	<2	45	.43	11	.79	2	2.22	.01	.03	<1	52
35/480	1	57	24	19	.1	7	4	67	5.61	<2	<5	<2	2	10	.2	<2	<2	281	.24	.019	<2	28	.10	12	.69	<2	1.30	.01	.04	<1	39
35/520	1	104	14	19	.1	7	4	61	14.24	8	<5	<2	3	8	2.4	<2	<2	317	.17	.035	<2	50	.11	9	.73	2	2.81	.01	.02	<1	8
35/560	1	141	11	24	.1	11	8	92	6.57	3	<5	<2	2	11	.2	<2	<2	216	.28	.018	<2	28	.16	11	.54	2	2.34	.02	.01	<1	15
35/600	1	374	7	23	.1	10	10	79	4.27	<2	<5	<2	<2	15	.3	<2	2	94	.32	.024	2	20	.16	15	.27	2	3.47	.01	.01	<1	49
35/640	2	106	7	14	<.1	11	14	46	5.23	<2	<5	<2	<2	8	.2	<2	<2	117	.19	.026	<2	36	.09	9	.38	2	4.71	.01	<.01	<1	28
35/680	1	291	9	24	.1	13	19	130	4.60	<2	<5	<2	<2	20	.2	<2	<2	94	.32	.031	2	34	.20	15	.25	<2	5.07	.01	.01	<1	32
35/720	1	253	6	16	1.1	12	8	64	5.43	<2	<5	<2	2	16	.2	<2	2	175	.22	.021	2	37	.20	17	.34	<2	3.71	.02	.01	1	58
35/760	<1	44	7	10	<.1	10	3	81	3.61	<2	<5	<2	<2	8	<.2	<2	<2	208	.17	.012	<2	60	.07	4	.30	2	.48	.01	.03	<1	20
35/800	1	164	<2	35	<.1	12	10	198	4.46	<2	<5	<2	2	18	.2	<2	3	96	.42	.042	6	42	.46	28	.20	2	6.65	.01	.03	<1	88
35/840	1	94	7	23	.4	9	5	374	4.99	5	<5	<2	2	13	.2	<2	2	144	.27	.042	<2	41	.15	10	.31	2	3.50	.01	.01	<1	21
35/880	1	93	2	24	<.1	6	3	76	3.62	<2	<5	<2	<2	8	.2	<2	<2	65	.15	.077	3	52	.07	14	.14	3	7.39	.01	.01	<1	5
35/920	<1	64	6	20	<.1	11	5	103	5.54	2	<5	<2	2	8	.2	<2	<2	181	.21	.023	<2	74	.12	10	.30	<2	3.12	.01	.01	<1	8
35/960	1	101	8	31	<.1	15	6	104	4.86	3	<5	<2	2	16	.2	<2	<2	136	.33	.037	<2	35	.14	23	.35	2	5.03	.01	.01	<1	17
35/1000	1	157	<2	31	.1	17	8	143	5.68	<2	<5	<2	3	17	.2	<2	<2	119	.34	.038	<2	61	.26	14	.30	2	6.27	.01	.02	<1	11
35/1040	2	279	6	39	.1	26	11	144	4.27	<2	<5	<2	2	23	.2	<2	2	105	.37	.038	<2	37	.31	36	.28	3	8.11	.02	.01	<1	18
35/1080	2	326	<2	30	<.1	17	8	158	4.12	7	<5	<2	2	18	.3	<2	2	98	.35	.065	4	41	.44	15	.20	3	9.01	.01	.02	<1	45
35/1120	<1	443	3	29	.1	22	9	125	4.81	<2	<5	<2	2	18	.3	<2	<2	132	.36	.040	<2	41	.27	36	.42	<2	7.55	.01	.02	<1	17
35/1160	<1	197	12	25	.2	16	10	126	5.60	<2	<5	<2	2	23	<.2	<2	<2	178	.44	.032	<2	31	.25	13	.54	2	3.52	.01	.01	<1	34
RE 35/1160	<1	196	9	25	.2	16	11	129	5.73	<2	<5	<2	2	24	.2	<2	<2	182	.46	.032	<2	31	.26	13	.54	<2	3.50	.01	.02	<1	40
35/1200	1	585	5	41	.4	24	14	235	6.44	2	<5	<2	3	28	.3	<2	<2	185	.46	.025	<2	46	.85	15	.58	2	6.41	.01	.02	<1	75
35/1240	<1	408	5	36	.3	21	33	193	5.04	<2	<5	<2	2	46	.4	<2	<2	129	.69	.043	2	36	.56	27	.31	2	5.09	.02	.02	<1	94
35/1280	1	150	12	27	.3	11	10	202	4.36	3	<5	<2	<2	25	.2	<2	<2	174	.70	.019	<2	22	.21	15	.45	2	1.88	.02	.02	<1	110
35/1320	<1	425	6	31	.1	20	11	155	6.34	2	<5	<2	2	21	.2	<2	<2	214	.39	.028	<2	41	.56	12	.64	<2	4.59	.02	.02	<1	41
STANDARD C/AU-S	17	64	38	122	6.9	66	30	1038	3.95	41	17	7	36	52	16.8	14	18	54	.51	.086	39	56	.89	183	.08	34	1.88	.06	.13	10	53

Sample type: SOIL. Samples beginning 'RE' are duplicate samples.





ACME ANALYTICAL



ACME ANALYTICAL

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
35/1360	7	1425	8	36	1.3	29	46	206	4.35	3	<5	<2	<2	38	.5	<2	<2	106	.54	.039	<2	28	.90	23	.23	2	4.48	.02	.03	1	320
35/1400	2	1491	5	40	.2	24	27	226	4.86	8	<5	2	<2	30	.6	2	<2	116	.65	.041	<2	27	.76	17	.29	2	6.05	.02	.02	2	290
35/1440	1	552	3	30	<.1	18	19	99	4.29	9	<5	<2	<2	16	.4	<2	<2	89	.33	.041	<2	24	.26	18	.23	2	8.45	.02	.02	2	60
35/1480	<1	433	2	36	.3	21	16	190	5.26	5	<5	<2	<2	18	.5	<2	<2	145	.37	.042	<2	37	.53	15	.43	2	6.45	.02	.02	1	27
35/1520	<1	1038	4	45	.1	43	25	259	5.47	<2	<5	<2	3	20	.5	<2	<2	130	.31	.020	2	38	2.09	36	.32	<2	7.88	.02	.03	<1	160
35/1560	2	317	4	36	1.1	23	22	243	9.74	6	5	<2	2	41	.8	<2	<2	243	.40	.026	<2	45	1.12	11	.66	<2	3.96	.01	.02	<1	180
35/1600	1	292	8	51	.3	23	24	290	5.21	6	<5	<2	<2	21	.4	<2	<2	142	.45	.065	<2	33	1.07	21	.17	<2	4.21	.02	.03	1	35
35/1640	<1	222	5	47	.1	28	21	386	7.43	<2	<5	<2	<2	38	.6	<2	<2	164	.75	.043	<2	48	.87	33	.40	<2	5.64	.01	.02	1	48
35/1680	1	100	7	42	.1	15	12	262	6.62	3	<5	<2	<2	30	.5	<2	<2	196	.42	.038	<2	34	.49	19	.64	<2	3.57	.01	.02	1	18
35/1720	<1	76	6	39	.1	16	15	268	7.15	5	<5	<2	<2	34	.4	<2	<2	240	.44	.014	<2	37	.49	19	.78	<2	2.69	.02	.02	<1	30
35/1760	1	552	4	39	.1	22	22	283	4.64	6	<5	<2	<2	34	.4	<2	<2	116	.68	.037	2	97	.84	13	.25	<2	7.30	.01	.02	<1	50
35/1800	<1	394	8	50	.1	18	47	2495	5.01	3	<5	<2	<2	25	.3	<2	<2	135	.42	.051	4	33	.63	41	.19	<2	3.35	.01	.03	1	54
35/1840	1	204	8	54	.5	23	25	426	8.61	3	<5	<2	<2	33	.7	<2	<2	205	.53	.033	<2	49	.59	18	.78	<2	3.25	.01	.02	1	26
35/1880	<1	209	12	38	.2	26	13	320	5.58	7	<5	<2	<2	34	.6	<2	<2	110	.52	.071	<2	49	.49	14	.33	2	3.80	.01	.02	<1	3
35/1920	1	236	15	88	.2	36	33	1314	4.23	8	<5	<2	<2	70	.6	<2	<2	88	1.28	.076	<2	42	1.11	21	.20	2	4.25	.02	.03	3	26
35/1960	<1	448	11	70	.1	44	40	1145	4.79	8	<5	<2	<2	59	.6	<2	<2	107	1.12	.086	<2	52	1.87	19	.32	<2	4.45	.02	.03	<1	19
35/2000	<1	414	8	59	<.1	37	105	2429	6.04	10	<5	<2	2	42	.4	<2	<2	127	.61	.138	<2	59	1.85	14	.27	2	3.85	.01	.05	<1	64
35/2040	<1	36	10	22	<.1	7	6	123	8.50	2	<5	<2	2	12	.4	<2	<2	373	.18	.018	<2	40	.18	17	.77	<2	2.07	.01	.03	<1	21
35/2080	<1	54	13	24	.1	7	6	220	3.91	<2	<5	<2	<2	21	.3	3	<2	384	.31	.010	<2	26	.17	12	.80	<2	1.24	.01	.02	<1	14
35/2120	<1	146	8	27	<.1	6	7	173	5.18	3	<5	<2	<2	9	.3	2	<2	119	.14	.028	3	19	.12	11	.34	2	1.94	.01	.02	<1	15
35/2160	<1	423	8	27	<.1	14	7	141	10.79	3	5	<2	3	18	.6	<2	<2	316	.15	.023	<2	63	.52	6	.95	<2	4.74	.01	.02	<1	7
35/2200	<1	67	8	19	<.1	9	13	98	7.20	5	<5	<2	<2	17	.5	<2	<2	240	.25	.019	<2	42	.26	6	.75	<2	2.55	.01	.02	<1	18
35/2240	<1	135	7	27	.1	17	7	153	6.82	2	<5	<2	<2	25	.4	<2	<2	274	.31	.018	<2	48	.57	16	.75	<2	2.27	.01	.02	<1	26
35/2280	1	989	5	24	<.1	13	8	119	6.60	6	<5	<2	<2	18	.3	<2	3	181	.27	.042	2	49	.50	11	.45	<2	5.89	.01	.02	<1	12
35/2320	<1	348	6	23	<.1	12	10	101	9.76	<2	5	<2	3	12	.8	<2	<2	317	.17	.022	<2	62	.44	4	.98	<2	3.16	.01	.02	<1	13
35/2360	1	93	9	30	.3	14	12	120	6.24	4	<5	<2	<2	26	.3	<2	<2	164	.33	.032	<2	43	.33	11	.54	<2	2.02	.01	.03	<1	15
35/2400	<1	280	6	55	.3	34	78	1800	7.10	7	<5	<2	2	47	.6	2	<2	139	.76	.060	<2	58	1.22	19	.46	<2	3.69	.01	.03	<1	34
RE 35/2440	<1	330	8	105	.2	53	50	1136	6.01	90	<5	<2	<2	62	.8	<2	<2	126	1.28	.039	<2	59	2.54	15	.37	4	3.99	.01	.04	1	36
35/2440	<1	318	7	108	.2	56	51	1124	6.09	92	<5	<2	<2	64	.7	<2	<2	128	1.29	.039	<2	59	2.61	15	.38	3	4.05	.01	.03	<1	31
35/2480	<1	342	9	78	.2	43	52	3010	6.11	34	<5	<2	2	58	.6	<2	<2	139	.96	.153	<2	60	2.12	12	.35	<2	4.49	.01	.03	<1	12
35/2520	1	803	3	84	.2	56	43	1527	6.19	12	<5	<2	2	55	.7	<2	2	140	1.12	.049	<2	72	2.77	13	.39	<2	4.31	.01	.03	<1	11
35/2560	<1	284	9	71	.1	42	31	983	7.24	8	<5	<2	<2	39	.7	<2	<2	155	.62	.047	<2	69	2.10	12	.43	<2	3.46	.01	.03	<1	8
35/2600	<1	308	9	77	.2	41	44	1991	6.18	7	<5	<2	<2	32	.6	<2	<2	152	.46	.045	<2	71	2.08	12	.39	<2	3.31	.01	.02	<1	12
35/2640	<1	169	9	36	.2	15	13	1585	3.94	2	<5	<2	<2	35	.2	3	<2	129	.57	.138	2	34	.52	23	.36	2	2.10	.01	.04	1	10
35/2680	1	243	6	27	.1	15	8	227	3.20	4	<5	<2	<2	26	.3	2	<2	84	.67	.060	<2	28	.47	6	.23	<2	1.86	.01	.02	<1	2
STANDARD C/AU-S	16	62	38	128	6.8	66	29	1024	3.91	39	22	5	36	51	17.2	14	18	54	.50	.085	37	56	.90	189	.08	33	1.87	.06	.13	10	47

Sample type: SOIL. Samples beginning 'RE' are duplicate samples.



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
35/2720	2	839	9	33	1.2	17	25	2349	7.20	7	<5	<2	<2	32	.8	<2	2	170	.40	.071	3	35	.66	19	.37	2	2.44	.02	.03	1	180
35/2760	<1	241	5	49	.1	34	55	1257	4.70	<2	<5	<2	<2	73	.3	<2	2	94	1.00	.060	3	56	1.05	36	.21	2	4.39	.02	.03	4	15
35/2800	1	740	9	54	.2	51	66	520	9.08	12	<5	<2	<2	24	.4	<2	3	184	.23	.040	2	84	1.89	11	.23	<2	4.38	.01	.04	2	97
35/2840	1	250	8	24	.1	24	41	298	10.00	10	<5	<2	<2	24	.6	<2	<2	248	.29	.029	2	47	.82	7	.89	2	2.68	.01	.02	2	180
35/2880	2	205	6	22	1.0	9	5	104	5.45	<2	<5	<2	<2	17	.5	<2	<2	129	.47	.061	2	21	.21	6	.26	4	2.27	.01	.03	<1	8
35/2920	1	83	8	12	<.1	6	4	115	6.46	2	<5	<2	<2	12	.5	<2	<2	288	.21	.015	3	31	.12	6	.68	<2	1.40	.01	.01	1	77
35/2960	1	198	6	23	.3	13	8	125	5.44	7	<5	<2	<2	22	.6	<2	<2	89	.23	.033	2	28	.23	19	.28	2	3.50	.01	.01	1	23
35/3000	<1	395	7	19	.3	15	10	178	7.33	12	<5	<2	<2	24	.5	<2	<2	197	.27	.022	3	48	.43	11	.58	<2	5.11	.01	.01	1	20
35/3040	<1	301	6	15	.4	14	7	149	7.99	6	5	<2	<2	17	.4	<2	<2	233	.26	.013	4	36	.21	12	.61	2	3.88	.02	.02	1	41
35/3080	<1	493	5	17	.4	9	4	112	8.09	6	<5	<2	<2	21	.5	<2	<2	220	.23	.020	3	49	.17	5	.67	2	4.08	.01	.01	<1	27
35/3120	2	115	12	20	<.1	6	4	104	15.34	11	<5	<2	<2	6	.5	<2	<2	439	.04	.041	4	69	.11	10	.65	<2	2.34	.01	.04	1	4
35/3160	1	167	9	18	.9	14	58	123	4.57	13	<5	<2	<2	72	.3	<2	<2	119	.91	.037	4	28	.33	19	.27	3	6.64	.02	.03	<1	17
35/3200	1	279	7	21	<.1	14	10	185	8.15	8	<5	<2	<2	23	.5	<2	<2	172	.30	.020	4	44	.50	8	.58	<2	4.08	.01	.02	<1	12
35/3240	1	247	5	21	.6	4	2	64	3.45	8	<5	<2	<2	12	.4	<2	2	159	.18	.016	2	33	.08	4	.40	3	1.46	.01	.02	<1	48
35/3280	<1	80	11	14	<.1	6	8	106	8.82	5	<5	<2	<2	14	.6	<2	<2	357	.27	.018	3	36	.11	4	.75	<2	2.00	.01	.02	1	62
35/3320	<1	30	8	15	.1	5	2	170	3.07	11	<5	<2	<2	15	.5	<2	2	285	.54	.011	4	26	.15	4	.58	<2	1.39	.01	.02	<1	32
RE 35/3320	1	29	11	14	.1	5	2	167	2.96	8	<5	<2	<2	14	.4	<2	<2	278	.54	.010	4	29	.15	4	.56	3	1.35	.01	.02	1	23
35/3360	1	126	9	25	<.1	15	6	173	10.93	11	<5	<2	<2	13	.7	<2	2	234	.19	.024	4	53	.31	10	.71	2	2.65	.01	.03	1	8
35/3400	<1	164	9	27	.1	13	8	110	8.51	3	<5	<2	<2	12	.6	<2	<2	229	.28	.049	3	37	.20	11	.64	2	2.36	.01	.03	1	6
35/3440	<1	299	11	22	<.1	14	6	155	8.03	4	<5	<2	<2	15	.4	<2	<2	222	.29	.016	4	45	.25	9	.59	3	2.36	.01	.02	<1	21
35/3480	<1	261	7	25	<.1	20	10	194	8.45	5	<5	<2	<2	24	.5	<2	<2	202	.41	.037	2	52	.46	9	.78	2	3.88	.02	.02	1	11
35/3520	<1	223	7	19	.4	14	3	116	5.66	12	<5	<2	<2	15	.4	<2	2	156	.29	.044	4	29	.22	24	.37	<2	5.34	.01	.05	2	17
35/3560	<1	675	10	28	.4	22	11	243	9.25	7	<5	<2	<2	29	.5	<2	<2	232	.42	.036	2	41	.54	16	.73	<2	3.51	.01	.02	1	38
35/3600	1	358	7	31	.6	20	10	303	7.86	12	<5	<2	<2	25	.4	<2	<2	198	.40	.040	2	45	.49	12	.55	<2	4.75	.02	.02	2	16
35/3640	2	193	7	29	.4	27	36	308	10.30	7	<5	<2	<2	36	.6	<2	<2	285	.44	.019	2	45	.69	10	.95	3	2.89	.01	.02	2	29
35/3680	1	271	10	41	.1	59	27	340	7.46	16	<5	<2	<2	33	.4	<2	<2	207	.55	.028	3	53	1.30	12	.42	<2	4.00	.01	.03	<1	54
35/3720	<1	363	7	23	.1	14	7	217	6.07	6	<5	<2	<2	21	.4	<2	<2	269	.24	.010	4	34	.54	12	.77	<2	2.24	.02	.03	<1	19
35/3760	1	172	9	29	.1	20	9	332	7.73	11	<5	<2	<2	27	.5	<2	<2	207	.41	.030	3	35	.58	12	.74	<2	3.39	.01	.03	<1	71
35/3800	<1	130	8	23	.2	14	6	209	8.65	6	<5	<2	<2	30	.6	<2	<2	236	.36	.037	3	35	.34	12	.88	<2	2.72	.01	.02	1	63
35/3840	<1	56	10	23	.2	9	5	214	8.18	2	<5	<2	<2	21	.6	<2	<2	279	.33	.036	3	36	.20	8	.90	<2	1.59	.01	.02	1	46
35/3880	1	236	5	38	.4	22	11	287	8.40	<2	<5	<2	<2	31	.6	<2	<2	241	.32	.040	3	46	.72	12	.91	<2	2.86	.01	.02	1	36
35/3920	2	203	4	36	.5	25	7	168	5.01	5	6	<2	<2	31	.4	<2	<2	146	.36	.037	3	26	.44	12	.47	4	2.53	.01	.02	1	30
35/3960	1	187	9	46	.3	35	18	375	6.99	17	<5	<2	<2	28	.4	<2	3	182	.23	.033	3	46	1.16	21	.34	<2	3.94	.01	.02	2	15
35/4000	<1	203	8	33	.2	40	15	340	8.41	9	<5	<2	<2	37	.6	<2	<2	243	.35	.033	3	55	.90	18	.81	<2	3.50	.01	.04	2	9
35/4040	<1	318	6	19	.3	25	9	169	12.47	16	<5	<2	<2	15	.6	<2	<2	206	.20	.023	2	71	.92	7	.72	<2	4.39	.01	.04	1	7
STANDARD C/AU-S	18	61	38	128	6.9	66	30	1042	3.95	37	19	7	34	52	18.2	14	20	56	.51	.085	39	62	.91	183	.09	33	1.91	.06	.14	11	49

Sample type: SOIL. Samples beginning 'RE' are duplicate samples.



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Hg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
35/4080	<1	159	13	28	.6	9	13	142	5.42	<2	<5	<2	<2	16	1.0	7	<2	184	.28	.026	<2	19	.24	9	.45	2	1.94	.01	.02	1	34
35/4120	1	211	14	33	.9	15	8	215	11.66	<2	<5	<2	4	15	.4	<2	<2	401	.19	.041	<2	59	.25	9	1.16	<2	2.15	.01	<.01	2	4
35/4160	<1	500	6	.84	.4	43	22	478	9.89	2	<5	<2	4	26	1.1	<2	<2	215	.19	.067	<2	50	1.72	65	.57	<2	6.86	.01	.02	2	6
35/4200	<1	108	16	41	.4	13	10	261	10.50	<2	<5	<2	4	18	.8	<2	<2	308	.23	.060	<2	42	.28	10	.85	<2	2.21	.01	.02	1	14
RE 35/4200	<1	103	13	40	.4	13	9	251	10.19	<2	<5	<2	4	17	.7	<2	<2	300	.22	.058	<2	39	.27	9	.83	<2	2.10	.01	.02	1	7
35/4240	<1	121	11	47	.4	22	12	245	10.36	<2	<5	<2	3	21	.6	<2	<2	305	.25	.044	<2	40	.66	14	.85	<2	2.70	.01	.02	<1	6
35/4280	<1	131	13	48	.3	21	13	330	9.73	<2	5	<2	4	19	.9	2	<2	241	.24	.058	<2	48	.72	15	.77	<2	2.84	.01	.02	<1	2
35/4320	<1	124	9	45	.5	18	12	296	10.39	<2	<5	<2	4	19	.5	<2	<2	326	.19	.032	<2	63	.60	9	.93	<2	2.77	.01	.02	<1	4
35/4360	<1	51	7	64	.3	24	20	488	8.49	<2	<5	<2	3	22	1.1	<2	<2	236	.29	.052	<2	66	.75	19	.83	<2	2.90	.01	.02	<1	8
35/4400	<1	65	8	40	.5	21	22	412	8.76	<2	<5	<2	3	17	.9	<2	<2	217	.19	.030	<2	73	.54	12	.64	<2	4.07	.01	.02	<1	18
35/4440	<1	102	9	62	.6	21	18	876	10.85	5	<5	<2	3	18	.8	<2	<2	279	.19	.063	<2	76	.82	13	.83	<2	2.93	.01	.02	<1	13
35/4480	<1	201	5	71	.4	35	31	2064	9.51	<2	<5	<2	3	23	1.1	<2	<2	220	.24	.045	<2	88	1.41	15	.67	<2	4.10	.01	.01	<1	8
35/4520	<1	184	8	76	.4	40	33	1641	7.90	2	<5	<2	2	26	1.2	2	<2	193	.30	.044	<2	85	1.60	13	.61	<2	4.17	.01	.02	1	30
35/4560	<1	76	6	45	.5	20	13	502	8.71	<2	<5	<2	3	17	1.3	5	<2	155	.18	.050	<2	73	.50	16	.52	<2	4.71	.01	.02	1	16
35/4600	<1	79	9	32	.3	15	14	150	8.47	<2	<5	<2	2	13	1.1	7	<2	188	.17	.051	<2	58	.29	10	.53	<2	2.37	.01	.03	<1	17
35/4640	<1	132	13	31	.7	14	17	213	14.10	4	<5	<2	4	13	3.4	2	<2	331	.14	.047	<2	75	.29	12	.68	<2	3.19	.01	.02	2	96
35/4680	<1	136	12	32	.1	13	11	236	9.94	<2	<5	<2	2	12	1.1	5	<2	240	.19	.032	<2	40	.26	10	.63	<2	3.01	.01	.01	<1	6
35/4720	<1	646	8	57	.4	39	45	429	7.46	4	<5	<2	2	33	1.3	3	<2	123	.36	.042	2	56	1.60	18	.40	2	4.70	.01	.02	2	22
35/4760	<1	164	16	30	.4	18	29	226	13.09	7	<5	<2	3	16	2.0	2	<2	245	.12	.045	<2	56	.48	10	.56	<2	3.40	.01	.02	2	23
35/4800	<1	116	19	40	.1	19	37	200	9.22	<2	<5	<2	3	12	.8	3	<2	332	.19	.014	<2	41	.51	26	.82	<2	1.91	.01	.01	<1	33
35/4840	<1	195	16	84	.4	36	29	915	8.60	<2	7	<2	2	34	1.2	7	<2	221	.44	.027	<2	46	.86	23	.53	<2	4.17	.01	.02	<1	9
35/4880	<1	129	15	46	.2	22	14	255	10.40	<2	<5	<2	3	22	.5	<2	<2	334	.20	.024	<2	47	.54	18	.92	<2	3.18	.01	.02	<1	7
STANDARD C/AU-S	16	62	37	128	6.7	66	30	1030	3.94	38	17	6	37	52	16.8	15	18	57	.50	.085	39	56	.92	182	.09	32	1.89	.06	.14	10	49

Sample type: SOIL. Samples beginning 'RE' are duplicate samples.

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
R/00	1	147	4	26	<.1	17	6	230	5.37	11	<5	<2	<2	30	<.2	<2	<2	125	.76	.028	4	71	.45	10	.43	2	7.12	.01	.02	5	6
R/40	<1	202	6	28	.3	11	4	128	3.40	<2	<5	<2	<2	13	<.2	<2	<2	47	.29	.053	6	60	.26	9	.21	2	9.26	.01	.01	2	4
R/80	2	400	2	29	.5	19	10	221	2.69	4	<5	<2	<2	19	<.2	<2	<2	65	.32	.071	6	58	.50	23	.17	3	8.22	.02	.01	4	9
R/120	2	153	5	24	<.1	16	9	174	5.92	8	<5	<2	<2	16	<.2	<2	<2	121	.32	.043	6	67	.38	10	.45	3	6.59	.01	.02	5	17
R/160	3	168	3	28	.1	16	8	177	5.15	13	<5	<2	<2	16	.2	<2	<2	85	.34	.037	5	58	.48	13	.32	<2	4.83	.01	.02	3	22
R/200	1	122	6	31	.1	12	7	189	6.11	4	<5	<2	<2	15	<.2	<2	2	108	.26	.024	7	69	.41	25	.24	<2	5.86	.02	.02	3	47
R/240	2	126	3	32	<.1	12	7	209	4.26	<2	<5	<2	3	12	<.2	<2	2	68	.22	.069	8	69	.46	24	.17	<2	9.05	.01	.02	3	140
R/280	1	118	4	33	<.1	12	8	220	6.23	<2	<5	<2	<2	13	<.2	<2	<2	93	.25	.032	7	51	.58	29	.21	2	4.77	.01	.03	3	25
R/320	3	86	8	22	<.1	7	5	120	10.31	7	<5	<2	<2	13	<.2	<2	<2	209	.19	.025	4	52	.17	14	.42	3	2.76	.01	.02	1	9
R/360	3	180	4	31	<.1	15	9	226	5.65	8	<5	<2	<2	19	<.2	<2	<2	110	.37	.026	4	48	.56	13	.36	3	4.79	.01	.02	1	13
R/400	<1	112	<2	25	.1	13	6	130	4.12	<2	<5	<2	<2	14	<.2	<2	2	110	.33	.040	4	67	.30	9	.32	2	5.73	.01	.01	2	16
R/440	1	138	6	22	<.1	13	5	124	3.94	<2	<5	<2	<2	11	<.2	<2	<2	92	.36	.034	4	73	.30	9	.31	<2	7.47	.02	.01	3	19
R/480	1	79	5	27	.2	12	8	160	7.34	4	<5	<2	<2	12	.2	<2	<2	147	.29	.029	4	74	.33	17	.39	<2	4.73	.02	.02	1	8
R/520	2	116	4	26	.1	15	8	182	5.72	10	<5	<2	<2	17	<.2	<2	<2	135	.46	.022	4	66	.44	13	.38	2	3.86	.02	.01	3	7
R/560	7	123	5	37	.1	12	10	243	6.58	13	<5	<2	<2	22	<.2	<2	<2	127	.46	.031	6	36	.52	25	.26	2	2.56	.01	.03	2	7
R/600	12	57	5	21	<.1	5	3	95	6.63	7	<5	<2	<2	9	<.2	<2	<2	89	.14	.026	5	23	.12	14	.23	<2	3.00	.01	.02	2	6
RE R/600	13	59	8	21	<.1	5	3	93	6.82	4	<5	<2	<2	10	<.2	<2	2	91	.16	.027	5	25	.12	14	.23	2	3.06	.01	.02	3	7
R/640	15	66	6	40	.1	8	8	257	6.25	<2	<5	<2	<2	30	<.2	<2	<2	135	.54	.022	5	23	.45	28	.27	3	2.57	.01	.03	2	54
R/680	5	71	5	29	<.1	12	7	175	6.08	6	<5	<2	<2	20	<.2	<2	<2	118	.37	.028	6	37	.34	22	.34	2	3.39	.01	.02	3	4
R/720	7	38	6	25	.1	7	5	256	5.75	8	<5	<2	<2	17	.2	<2	<2	149	.36	.024	5	33	.18	22	.32	3	1.88	.01	.02	1	6
R/760	3	59	4	26	.2	8	6	148	3.38	5	<5	<2	<2	16	.2	<2	<2	59	.32	.059	7	29	.25	28	.14	2	4.96	.01	.01	4	2
R/800	14	74	4	29	.2	9	7	185	6.68	10	<5	<2	<2	19	<.2	<2	<2	120	.38	.020	4	37	.40	20	.20	4	2.88	.02	.02	2	9
R/840	2	159	3	27	.1	12	9	225	2.95	<2	<5	<2	<2	27	<.2	<2	<2	75	.63	.083	7	39	.48	26	.15	<2	6.01	.02	.02	5	10
R/880	4	65	8	33	.2	9	7	172	5.27	5	<5	<2	<2	24	<.2	<2	<2	117	.50	.036	6	40	.22	25	.21	4	3.77	.01	.02	3	12
R/920	5	63	5	20	<.1	7	4	107	7.83	10	<5	<2	<2	12	<.2	<2	<2	205	.22	.016	5	57	.12	13	.41	4	3.24	.01	.01	1	10
R/960	1	87	4	27	<.1	12	7	160	4.78	7	<5	<2	2	18	<.2	<2	<2	128	.37	.034	7	44	.29	24	.31	3	5.02	.02	.02	5	10
R/1000	<1	88	2	24	.2	9	5	131	3.96	5	<5	<2	<2	13	<.2	<2	2	70	.29	.075	10	37	.28	19	.18	<2	6.49	.01	.01	4	9
R/1040	<1	139	4	22	.3	8	6	150	3.04	<2	<5	<2	3	15	<.2	<2	<2	67	.32	.145	15	33	.27	16	.17	4	7.73	.02	.01	2	14
STANDARD C/AU-S	16	62	37	122	6.9	66	31	1063	4.02	42	19	8	35	52	18.3	13	17	56	.49	.086	39	60	.93	184	.09	32	1.94	.06	.14	11	46

Sample type: SOIL. Samples beginning 'RE' are duplicate samples.



GEOCHEMICAL ANALYSIS CERTIFICATE



Orvana Minerals Corp. PROJECT HEBER RIVER File # 93-2765 Page 1

710 - 1177 W. Hastings St, Vancouver BC V6E 2K3

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
R/1080	3	54	3	34	.4	11	6	164	6.85	<2	8	<2	4	16	<.2	<2	<2	175	.34	.041	6	52	.28	20	.40	<2	3.38	.03	.01	<1	25
R/1120	6	30	5	24	.2	6	4	274	4.95	<2	12	<2	2	14	<.2	<2	<2	174	.31	.042	4	38	.21	18	.30	2	2.11	.02	.03	1	18
R/1160	2	40	4	28	.5	6	4	84	5.43	3	7	<2	5	10	.4	3	<2	134	.22	.048	9	39	.13	17	.29	2	5.98	.02	.01	1	12
R/1200	5	60	3	34	.1	11	7	146	4.49	4	<5	<2	2	20	<.2	2	<2	109	.40	.054	8	38	.36	27	.31	3	4.13	.03	.01	1	28
R/1240	2	68	3	36	.2	11	8	133	6.85	3	6	<2	3	19	.2	3	<2	163	.35	.047	8	48	.25	24	.29	3	3.54	.03	.03	1	18
R/1280	1	57	2	27	.2	8	6	109	7.16	2	<5	<2	4	17	<.2	<2	<2	160	.29	.072	6	54	.21	25	.29	2	4.72	.02	.01	<1	13
R/1320	2	50	5	31	.3	9	6	111	7.91	4	<5	<2	3	17	<.2	<2	<2	178	.31	.061	7	55	.21	28	.35	2	5.68	.02	.01	1	6
R/1360	9	87	6	53	.2	15	11	199	5.42	4	<5	<2	<2	27	.2	2	<2	177	.57	.042	5	46	.33	34	.28	3	2.10	.03	.02	2	12
R/1400	9	77	4	44	.1	13	8	175	6.69	<2	<5	<2	<2	30	<.2	<2	<2	186	.79	.055	5	49	.35	28	.35	3	2.45	.03	.02	<1	14
R/1480	<1	350	<2	42	.3	34	27	429	4.54	8	<5	<2	<2	52	.4	3	<2	114	1.30	.055	3	58	1.17	20	.27	3	5.63	.05	.03	3	64
R/1520	1	287	3	39	.3	24	20	385	4.30	4	<5	<2	<2	50	<.2	<2	<2	116	1.27	.043	3	45	.83	20	.32	3	3.29	.05	.04	2	22
R/1560	1	172	<2	32	.5	21	17	182	10.29	5	<5	<2	3	27	.2	<2	<2	241	.48	.038	4	74	.60	19	.75	<2	4.47	.02	.01	<1	11
R/1600	2	63	3	29	.1	13	9	183	7.56	3	<5	<2	<2	19	.2	<2	<2	232	.39	.030	3	58	.36	15	.66	2	3.30	.03	.02	1	14
R/1640	1	85	<2	33	.1	15	6	145	4.88	2	<5	<2	2	15	<.2	<2	<2	136	.36	.048	6	86	.35	12	.38	<2	7.45	.02	.01	<1	8
R/1680	1	62	4	25	.2	11	6	125	7.35	5	<5	<2	2	15	.2	<2	<2	210	.31	.029	5	62	.24	16	.55	<2	4.49	.02	.02	1	10
R/1720	2	106	4	27	.1	11	5	111	3.09	2	<5	<2	2	18	<.2	<2	<2	180	.46	.028	6	64	.24	16	.45	2	5.02	.03	.01	1	11
R/1760	2	175	<2	46	.1	27	13	249	4.05	6	<5	<2	<2	32	.2	2	<2	134	.90	.084	7	67	.83	20	.23	2	5.62	.04	.01	2	26
R/1800	2	110	4	36	.2	17	9	299	6.76	5	<5	<2	2	25	.2	2	<2	199	.65	.039	5	64	.54	17	.38	2	2.90	.04	.03	1	10
R2/40	1	90	<2	39	.2	10	6	140	4.08	3	<5	<2	4	12	.3	<2	<2	96	.31	.138	10	37	.33	21	.24	2	8.01	.03	.01	<1	21
R2/080	2	119	<2	33	.3	11	7	143	3.65	5	<5	<2	2	16	.2	3	<2	77	.36	.070	14	40	.42	20	.19	2	6.63	.03	.02	2	11
R2/120	3	93	2	32	<.1	10	6	149	4.78	8	<5	<2	5	13	.3	<2	<2	106	.30	.077	12	46	.33	20	.21	3	8.42	.03	.01	3	11
R2/160	1	81	2	31	.2	12	8	162	5.19	2	<5	<2	4	17	<.2	<2	<2	148	.38	.056	4	53	.37	18	.26	2	4.10	.03	.02	<1	21
R2/200	9	164	3	40	.2	12	9	177	5.02	4	<5	<2	2	19	.4	<2	<2	129	.36	.100	15	41	.31	35	.27	3	6.70	.03	.03	1	5
R2/240	5	182	2	42	.2	18	10	166	6.91	4	<5	<2	3	19	.2	<2	<2	180	.34	.035	4	57	.48	25	.34	<2	4.38	.02	.02	1	24
R2/280	1	285	<2	49	<.1	17	13	169	5.44	5	<5	<2	<2	21	.3	<2	<2	130	.32	.095	5	51	.51	27	.22	2	6.82	.02	.01	1	8
R2/320	<1	100	<2	37	.2	14	8	145	6.08	2	<5	<2	2	20	<.2	<2	<2	188	.35	.065	5	49	.27	23	.32	2	4.21	.02	.02	1	25
R2/360	1	34	2	19	.1	12	4	91	5.63	<2	<5	<2	<2	14	<.2	3	<2	243	.21	.023	2	69	.11	9	.34	2	1.11	.02	<.01	<1	12
R2/400	1	138	<2	29	.2	14	9	167	4.61	5	<5	<2	3	18	.2	<2	2	117	.30	.086	5	70	.35	18	.22	2	8.37	.02	<.01	<1	18
R2/440	<1	125	2	30	.5	16	11	395	4.00	2	<5	<2	2	31	.2	<2	<2	111	.47	.128	5	57	.35	27	.21	2	4.12	.02	.02	<1	22
R2/480	1	239	<2	34	<.1	26	13	353	3.95	9	<5	<2	<2	30	.5	8	<2	77	.46	.095	3	68	.45	30	.16	3	8.09	.02	.01	5	18
RE R2/480	1	255	<2	36	<.1	27	13	376	4.21	6	<5	<2	<2	32	.5	5	<2	82	.48	.101	3	70	.48	32	.17	3	8.66	.02	.01	3	45
R2/520	<1	142	2	65	.4	21	18	713	3.67	6	<5	<2	2	25	.6	2	<2	59	.51	.159	5	44	.34	29	.16	3	9.78	.02	.02	<1	10
R3/40	1	108	<2	37	.4	14	8	216	5.91	2	<5	<2	2	22	.3	<2	<2	128	.87	.052	6	53	.30	19	.30	2	6.06	.03	.01	<1	8
R3/80	3	52	2	39	<.1	15	8	222	8.30	2	<5	<2	2	23	<.2	<2	<2	208	.59	.031	4	45	.42	18	.50	<2	2.76	.03	.01	<1	5
R3/120	4	146	<2	22	.6	12	6	154	2.99	40	34	<2	2	11	.5	<2	3	71	.23	.078	8	285	.19	18	.20	3	6.83	.02	.03	3	30
STANDARD C/AU-S	18	63	39	128	7.3	71	32	1066	4.01	42	17	7	36	53	19.1	15	19	62	.50	.087	39	62	.94	186	.09	34	1.91	.08	.17	10	49

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.  
 - SAMPLE TYPE: SOIL AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: OCT 4 1993

DATE REPORT MAILED: Oct 8/93

SIGNED BY: C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
R3/160	1	148	9	31	.2	12	8	195	3.76	<2	<5	<2	<2	13	<.2	<2	<2	73	.30	.068	4	44	.19	10	.21	4	8.83	.01	.01	<1	4
R3/200	2	209	8	59	.1	22	22	931	6.06	3	<5	<2	<2	29	.5	<2	<2	104	.36	.052	5	45	.58	18	.33	<2	8.60	.01	.02	<1	5
R3/240	3	244	18	33	.1	12	52	1436	2.16	3	<5	<2	<2	10	.4	2	<2	40	.20	.111	5	40	.07	6	.10	<2	14.80	.01	.01	<1	3
R3/280	1	107	6	39	.3	16	10	298	7.74	2	<5	<2	<2	23	.2	<2	<2	170	.49	.052	4	40	.31	15	.52	5	4.18	.01	.03	1	5
R3/320	1	107	8	44	.1	14	8	663	4.55	5	<5	<2	<2	20	.3	<2	<2	117	.56	.054	3	38	.30	15	.34	<2	5.45	.02	.02	<1	2
R3/360	1	106	6	37	.1	15	8	193	4.43	<2	<5	<2	<2	21	<.2	<2	<2	118	.44	.036	4	41	.34	18	.36	<2	5.76	.02	.02	<1	130
R4/00	1	140	8	54	.1	25	21	303	8.39	7	<5	<2	<2	37	<.2	<2	<2	203	.60	.041	5	48	.58	23	.65	<2	3.50	.02	.02	<1	12
R4/40	2	159	<2	42	<.1	27	25	379	6.19	2	<5	<2	<2	33	<.2	<2	<2	143	.71	.051	4	48	.62	19	.42	2	5.25	.02	.02	<1	9
R4/80	<1	93	5	34	.1	17	14	279	6.68	8	<5	<2	<2	24	<.2	<2	<2	170	.47	.024	3	48	.35	22	.51	<2	4.17	.02	.02	<1	11
R4/120	1	86	3	28	.3	11	10	227	8.41	<2	<5	<2	2	20	.5	<2	<2	184	.39	.029	3	66	.32	11	.52	2	4.76	.01	.02	<1	7
R4/160	1	187	7	42	.3	25	18	475	6.22	5	<5	<2	<2	28	.2	<2	<2	163	.44	.035	4	58	.67	10	.45	<2	5.01	.01	.02	<1	17
R4/200	1	69	6	19	<.1	15	6	127	5.34	4	<5	<2	<2	19	<.2	<2	3	122	.43	.015	2	52	.31	11	.42	3	6.43	.02	.01	<1	5
R4/240	1	121	5	32	<.1	21	11	257	4.52	<2	<5	<2	<2	21	.3	<2	<2	113	.63	.054	3	48	.55	9	.36	<2	5.96	.02	.02	<1	13
R4/280	<1	137	7	49	.1	23	21	442	6.63	4	<5	<2	<2	25	<.2	<2	<2	124	.38	.141	3	55	.60	23	.44	3	7.57	.01	.03	<1	17
R4/320	<1	254	6	47	.2	47	26	370	6.47	5	<5	<2	<2	29	<.2	<2	5	139	.39	.066	2	74	1.31	26	.49	4	8.03	.01	.02	<1	15
R4/360	<1	243	7	47	.1	40	23	321	6.84	4	<5	<2	<2	32	.3	<2	<2	132	.48	.071	2	80	1.20	12	.51	2	6.01	.01	.02	<1	10
R4/400	<1	346	5	61	.1	55	35	446	5.69	6	<5	<2	<2	38	<.2	<2	<2	125	.57	.054	2	69	1.50	29	.49	7	5.87	.02	.02	<1	16
R4/440	<1	232	4	34	.1	21	17	406	9.03	6	<5	<2	<2	30	<.2	<2	<2	231	.43	.084	3	72	.61	13	.65	<2	3.99	.02	.01	<1	13
RE R4/440	<1	226	9	32	.1	20	16	400	8.97	4	<5	<2	<2	29	.3	<2	2	229	.41	.084	3	71	.60	10	.63	5	3.87	.02	.01	<1	29
R4/480	<1	210	7	42	.1	34	32	734	5.98	<2	<5	<2	<2	32	<.2	<2	<2	103	.47	.083	2	77	1.01	15	.35	5	6.99	.01	.02	<1	8
R4/520	<1	123	<2	33	.2	28	19	386	9.48	5	<5	<2	<2	46	.2	<2	<2	223	.41	.050	2	83	.99	12	.75	4	4.30	.01	.01	<1	23
STANDARD C/AU-S	17	60	38	128	6.7	64	29	1058	3.95	42	20	6	34	52	17.3	14	20	57	.51	.085	38	55	.92	184	.09	34	1.88	.06	.14	11	52

Sample type: SOIL. Samples beginning 'RE' are duplicate samples.



GEOCHEMICAL ANALYSIS CERTIFICATE

Rock SAMPLES



Orvana Minerals Corp. PROJECT HEBER File # 93-1666 Page 1

710 - 1177 W. Hastings St, Vancouver BC V6E 2K3 Submitted by: Ed Ronyecz

AMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
209317	<1	149	4	34	.7	31	199	7265	8.15	118	26	<2	<2	52	.4	<2	<2	30	19.58	.004	5	5	2.51	2	<.01	<2	.35	.01	<.01	1	110
209318	1	631	2	43	.8	71	371	854	6.63	92	13	<2	<2	33	.4	2	<2	105	4.47	.106	2	66	2.23	6	.11	3	1.95	.20	.04	2	20
209319	1	19	3	15	.5	16	6	130	3.49	28	7	<2	<2	125	.5	2	<2	83	2.24	.052	2	32	.17	4	.55	4	1.41	.01	<.01	1	3
209320	1	1870	3	80	1.1	50	29	673	7.08	12	12	<2	<2	16	.8	<2	<2	149	1.66	.054	7	60	2.25	4	.53	4	1.95	.06	<.01	<1	18
209321	<1	288	3	41	.5	89	70	585	6.87	37	<5	<2	<2	11	.3	3	<2	111	1.18	.039	<2	108	1.39	11	.29	4	1.74	.13	.11	1	6
E 209321	<1	268	2	39	.5	85	65	547	6.50	37	<5	<2	<2	11	.2	<2	<2	104	1.11	.038	<2	101	1.31	10	.27	4	1.64	.12	.10	1	4
209322	1	66	<2	18	<.1	9	6	359	2.91	13	<5	<2	3	120	<.2	<2	<2	51	2.86	.052	7	13	.95	15	.12	4	2.96	.03	.10	1	1
209323	6	164	4	17	.1	54	13	177	48.74	8	<5	<2	2	3	<.2	<2	<2	117	.10	.011	<2	4	.26	7	.02	<2	.34	.02	.02	99	4
STANDARD C/AU-R	18	59	38	127	6.8	70	31	1005	3.96	42	18	7	37	52	19.2	19	20	55	.51	.086	39	59	.91	183	.09	35	1.88	.09	.16	10	470

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.  
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
 - SAMPLE TYPE: P1 ROCK P2 TO P3 MOSS MAT AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.  
 Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: JUL 26 1993 DATE REPORT MAILED: July 29/93 . SIGNED BY: C. Leong . D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



GEOCHEMICAL ANALYSIS CERTIFICATE

Rocks



Orvana Minerals Corp. PROJECT HEBER RIVER File # 93-2125 Page 1

710 - 1177 W. Hastings St, Vancouver BC V6E 2K3 Submitted by: Ed Ronyecz

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
E 209334	25	2977	8	31	2.9	137	671	93	43.39	442	<5	6	5	5	.3	<2	24	163	.07	.024	2	50	.07	3	.02	34	.90	<.01	.01	<1	290
E 209335	25	5343	3	202	2.9	52	702	112	54.85	2590	<5	6	10	6	<.2	<2	28	160	.04	.025	3	55	.03	3	.01	70	.71	.01	.02	2	1060
RE E 209335	24	5145	2	198	2.7	49	671	106	53.66	2511	<5	3	9	6	<.2	<2	25	154	.04	.024	2	53	.03	3	.01	68	.68	.01	.02	<1	840

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.  
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
 - SAMPLE TYPE: P1 ROCK P2 MOSS MAT AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.  
 Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: AUG 24 1993 DATE REPORT MAILED: Aug 31/93 SIGNED BY: *C. Leong* D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS





## GEOCHEMICAL ANALYSIS CERTIFICATE

Orvana Minerals Corp. PROJECT HEBER RIVER File # 93-2510

Page 1

Rocks.



710 - 1177 W. Hastings St, Vancouver BC V6E 2K3 Submitted by: Ed Ronyecz

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
E 209341	1 2887	28	31	1.5	25	20	266	5.95	3	<5	<2	<2	66	3.3	<2	<2	122	1.81	.057	2	9	.34	4	.56	9	1.21	.06	.02	<1	100	
E 209342	1 63	<2	21	.1	5	6	388	3.22	<2	<5	<2	4	47	.2	<2	<2	72	.88	.063	11	7	.53	49	.14	5	1.07	.14	.08	1	11	
E 209343	86 1571	2	2	2.2	412	4695	23	50.98	427	<5	<2	2	<1	<.2	2	<2	135	.01	.039	<2	46	.03	2	.01	15	.44	<.01	.01	2	1690	
E 209344	1 119	3	7	<.1	28	336	146	22.37	16	<5	<2	2	7	.5	<2	<2	113	.63	.004	<2	4	.09	2	.02	<2	.27	.01	.01	63	11	
RE E 209344	1 114	2	7	<.1	27	319	155	21.74	16	<5	<2	<2	7	.6	<2	<2	112	.62	.004	<2	5	.09	2	.02	<2	.27	<.01	<.01	62	11	

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.

THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.

ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS &gt; 1%, AG &gt; 30 PPM &amp; AU &gt; 1000 PPB

- SAMPLE TYPE: P1 ROCK P2 MOSS MAT P3 TO P7 SOIL AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: SEP 16 1993

DATE REPORT MAILED: *Sept 20/93*SIGNED BY: *D. Toy* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS