1995 - 96, GEO-CHEM SURVEY RESULTS AND TRENCHING

AND

METRO TECK 480 SURVEY

THE VAD-AE MINERAL GROUP CLAIMS

THE GOLDEN MINING DIVISION, GOLDEN, B.C.

NTS MAP: M82K/15W
Lat. 50 Deg. 55 Min.
Long. 116 Deg. 55 Min.

for

James S. Adamson, and Sodi Berrar owners of the VAD MINERAL GROUP,
Calgary, Alberta.

Report prepared by William D. van der Lee, P. Eng. Aug. 20, 1996.

TABLE OF CONTENTS

PROPERTY

The VAD-AB Group Claims are made up of the VAD Claims which consist of; one unpatented mineral claim containing 16 units, and 6 claims of one unit each, for a total of 22 units: and the AB Claims which consist of one unpatented mineral claim of 8 units, and 5 claims of one unit each.

The VAD Claims are owned by James Adamson of Calgary, Alta. and the AB Claims are owned by James Adamson and Sodi Berrar of Calgary, Alberta.

LOCATION AND ACCESS

The VAD-AB Mineral Group is located between Crystal and Conrad Creeks, and just south of the junction of Crystal and Vowell Creeks.

The claim group is 56km from Parsons, B.C., and is accessable by an all-weather road. Parsons is served by Highway 97 and the CPR.

The property is on the west slope of the Vowell Creek valley at an elevation of 1300 to 2000 meters. Some of the property is accessable by 4 wheel drive vehicles over existing logging trails.

Although the valley is heavily timbered about a third of the claim area has been logged.

ECONOMIC GEOLOGY

The VAD-AB Mineral Group is an interesting prospect as it appears to be on strike with the Columbia River mines property to the north-west. Columbia River Mines was in operation during the 1970's and shipped lead-silver concentrates to the smelter.

GEOLOGY

The VAD-AB Claims are in the Purcel Range, in the area that was mapped by J.E. Reesor, (G.S.C.) Map 12, 1957, (Lardeau Half).

The claims are underlain by rock of the Horsethief Creek Series, which consist of argillite, quartzite, pebble conglomerate and limestone of the late precambrian. The mineralization appears to come from a large stock of granodiorite of the Mesozoic age which lies to the southeast. There are several folds in the area with dips of approximately 25 degrees. The ore body at Columbia River Mines occurs in such a synclinal fold within a limestone band.

The VAD-AB property has few outcropings due to heavy overburden in the area, and it is only recently that forestry roads have exposed some of the underlaying rock.

INTRODUCTION

With the Grouping of the VAD and AB Claims to form the VAD-AB Group we find that with the due dates for assessment about a month and a half apart it is necessary to submit two Statements of Work, one for the VAD portion and another for the AB claims. The Statement's of Costs included in this report will show the amounts allocated to each Statement of Work.

Considerable Geo-Chem has been done in the past on the VAD-AB Claims to determine the extent of the mineralization in relation to the claim area. It is now evident that a sizeable area of the Claims is showing interesting mineral values. This year we have begun a Geo-Chem Grid System that will eventually cover most of the areas showing mineralization so that actual anomolous areas can be determined.

GEO-CHEM SURVEY AND TRENCHING RESULTS FOR 1995 - 96.

The Geo-Chem Survey for this season wos carried out in two separate trips to the property. The first trip was made to the Claims June 15 to 17, by Jim Adamson and two men. A new Geo- Chem location line was established and Geo-Chem Lines were run over a newly logged area. Trenching was done as necessary when areas of mineralization were in evidence. All soil removed was replaced after sampling. Geo-Chem samples were also taken along a Metro-Tech Induction Line which is a continuation of a line established in the 1993-4 season.

A second trip was made to the Claims on July 27 - 28, 1996, to follow up on the interesting results of mineralization located in the Survey on June 15 - 17/96. Jim Adamson and 3 men continued the Geo-Chem Survey, and the results of both Surveys are shown on Maps #3 and #4, which are included in this Report.

An area of 420m by 970m was was traversed by seven lines this year. Line 0-340m W. was also extended to 1290m S, and Line 0-570m E, was extended to 500m S.

The results of the Geo-Chem and trenching this year are very encouraging. The mineralization is at least 150 meters wide on some of the newly established lines and is 400m in extent. Some of the silver values on the grid have been as high as 32 ppm, and lead at 2200 ppm. Line 0-340m W has samples as high as 74 ppm in silver and up to 7000 ppm in lead.

All the above samples were assayed by Loring Laboratories Ltd., in Calgary, Alberta.

INDUCED SIGNAL SURVEY

This survey was done with a Metro-Tech 480 instrument with what appears to be very good results. It works well in locating and following bedded mineralized sediments. The survey was carried out by Jim Adamson and Bill van der Lee on June 16, and July 27/1996.

CONCLUSIONS AND RECOMMENDATIONS

It is evident from from this years Geo-Chem Grid that anomalous mineralization is indicated. Shallow hand trenching exposed one sample of 475 (ppm) Ag and >10,000 Pb on the 60W line, and the Metro Tect Survey seems to bear out the NW to SE trend of of the anticline syncline pattern mentioned in the 92 -93 Report.

The present Geo-Chem Grid should be extended directly to the south for at least 500m and an additional geo-chem line at 120E added in this sector to intersect mineralization which was found in previous geo-chem studies of the area. Hand trenching should be done where high values are indicated.

SUMMARY

Two trips were made to the VAD-AB Claim Area to establish a Geo-Chem grid on the AB portion of the claim area. Interesting mineraliztion has been found over an area 150m wide and 400m long. Hand trenching has exposed samples showing anomalous minerization. A Metro-Tech Induction Instrument completed a line which was begun in the 1993-4 season. It indicates that the mineralization on the property is continuous though the property from the SE to the NW.

STATEMENT OF COSTS FOR THE VAD-AB MINERAL GROUP CLAIMS: FOR 1995 - 96.

Claim VAD-AB Mineral Group Claims - 35 units.

Map No. 82K/15W.

The following work is applied on the Statement of Work to -

Tenure Nos. 1893, 2205, 2206, 2207. 19 units.
Mineral Record No. 213436, 213725, 213726, 213727.

These Claims were recorded at Golden, B.C. ;- VAD 1, on July 6/88, and DAV 10, 11, 12, on July 18/90.

Trip made June 15 to June17/96.

Geo-chem and Rock Assays	925.00
Geo-chem, Trenching, 3 men, 3 days, ...	1080.00
Board 8 days	320.00
Flagging, bags, and supplies	100.00
Chain Saw - 10.00 per day - 4 days	40.00
4 X 4 - 50.00 per day - 3 days	150.00
2 wheel drive Camper - 3 days	90.00
Travel in B.C. - 100.00	100.00
Copies of reports and maps	125.00
Total Costs	2930.00

STATEMENT OF COSTS FOR THE VAD-AB MINERAL GROUP CLAIMS:

Claim VAD-AB Mineral Group Claims - 35 units.

Map No. 82K/15W.

The following work is applied to the statement of work for the following claim units: 16 units.

Min. Rec. Nos. 213752, 213748, 213749, 213750, 213751, 213754.
213570, 213571, 213572.

Trip made July 26-28/96

Geo-chem and rock Assays	500.00
Geo-chem, trenching, Metro-Tech Survey 4 men 2 1/2 days	1188.00
Board 4 men for 2 1/2 days = 7.5 days	300.00
Instrument Rental 3 days	150.00
4x4 - 3 days - 50.00 day	150.00
Half ton - 30.00 day - 3 days	90.00
Travel in B.C. 2 vehicles 75.00	150.00
Chain Saw - 10.00 day	30.00
Supplies etc	50.00
Report	375.00
Total Costs	2983.00

C E R T I F I C A T E

This is to certify that I, William D. van der Lee :

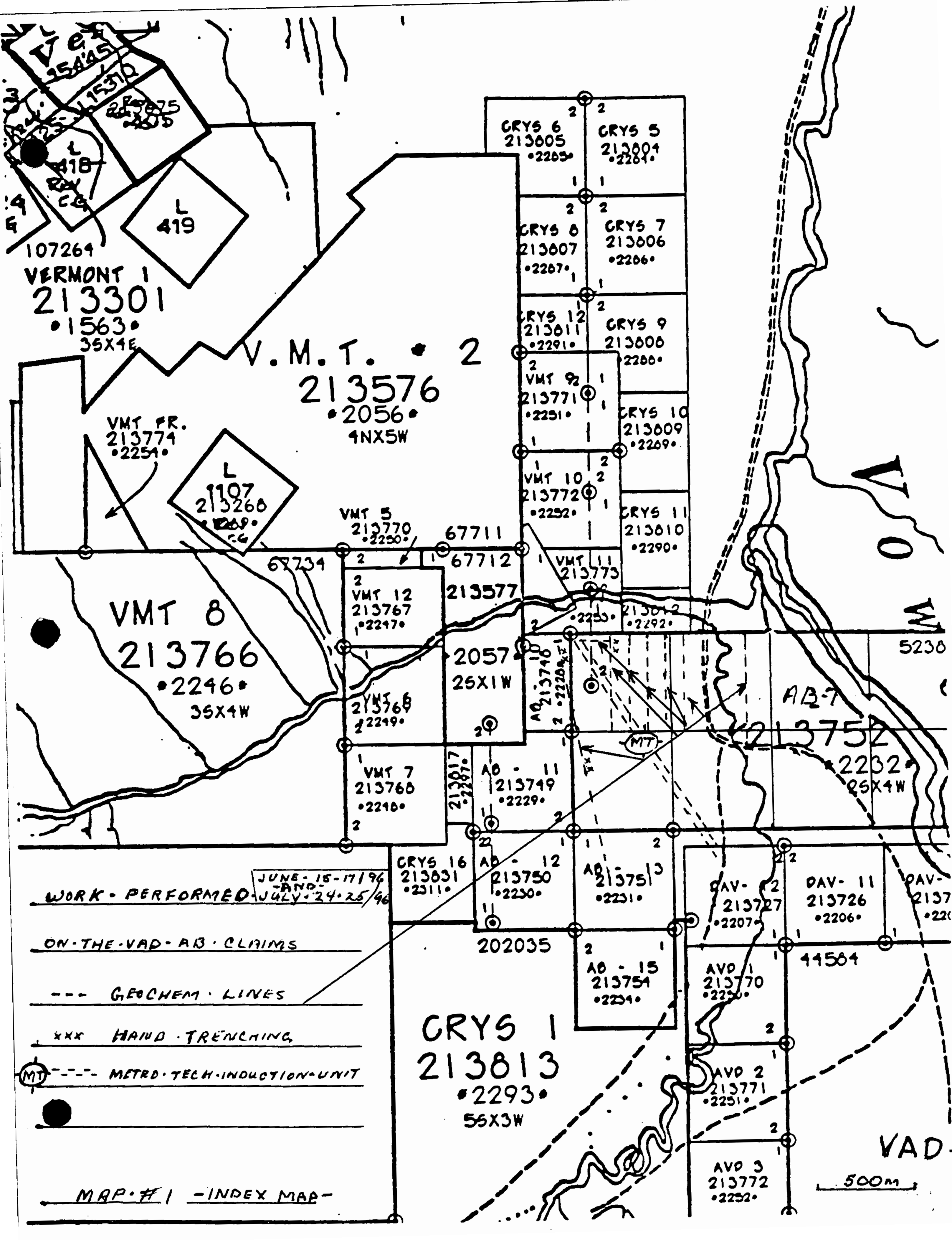
1. Am a resident of Calgary, Alberta, 1416 Colleen Ave. S.W. Calgary, Alberta. T2V 2R5

2. Am a graduate of the University of Alberta, B.Sc. in Civil Eng. (1980)

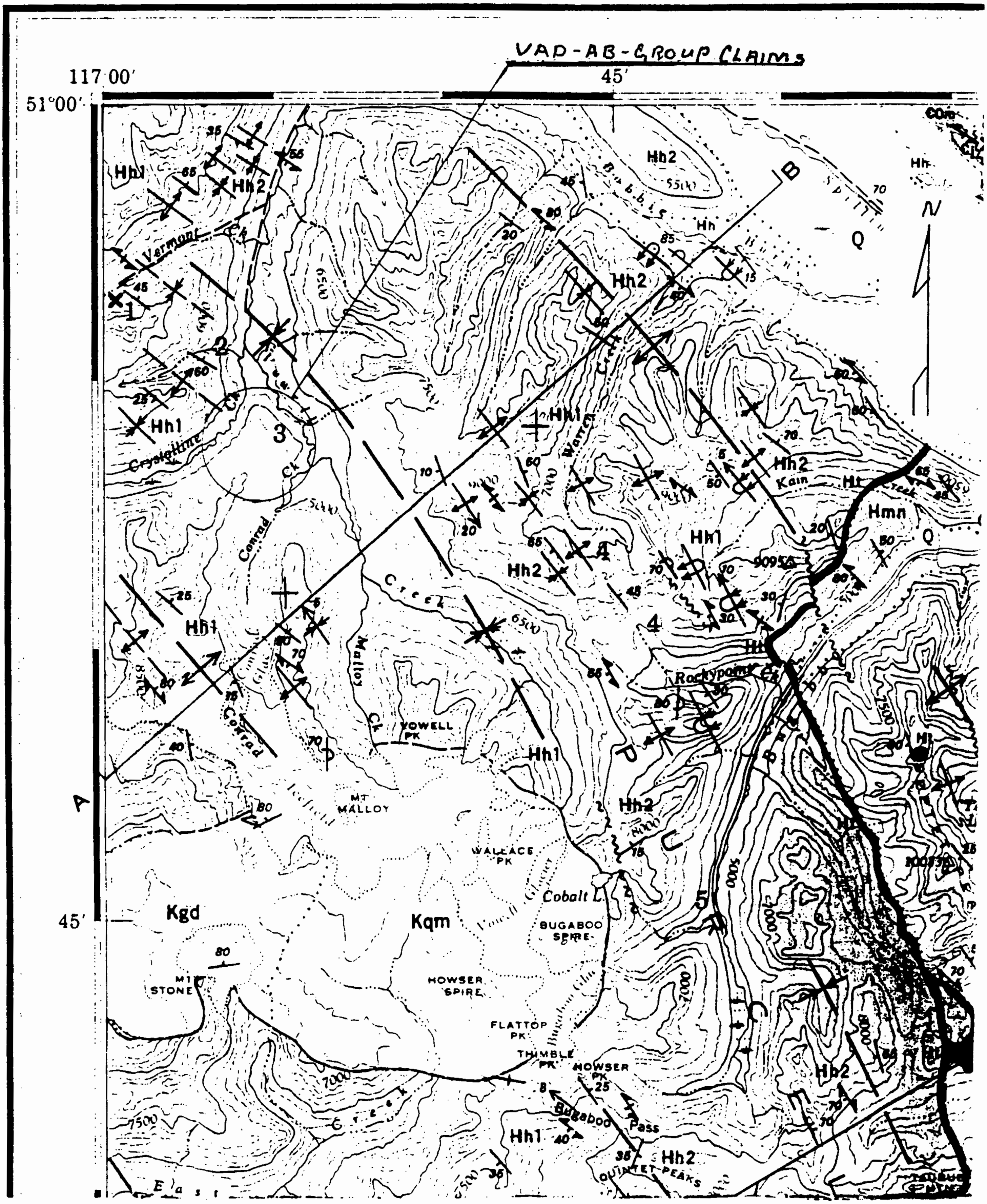
3. Have visited the AB Group Claims during the 1995-96 reporting season.

4 Have authorized this report after examination of the field data and the G.S.C. Reports pertaining to the area.

William D. van der Lee, P. Eng

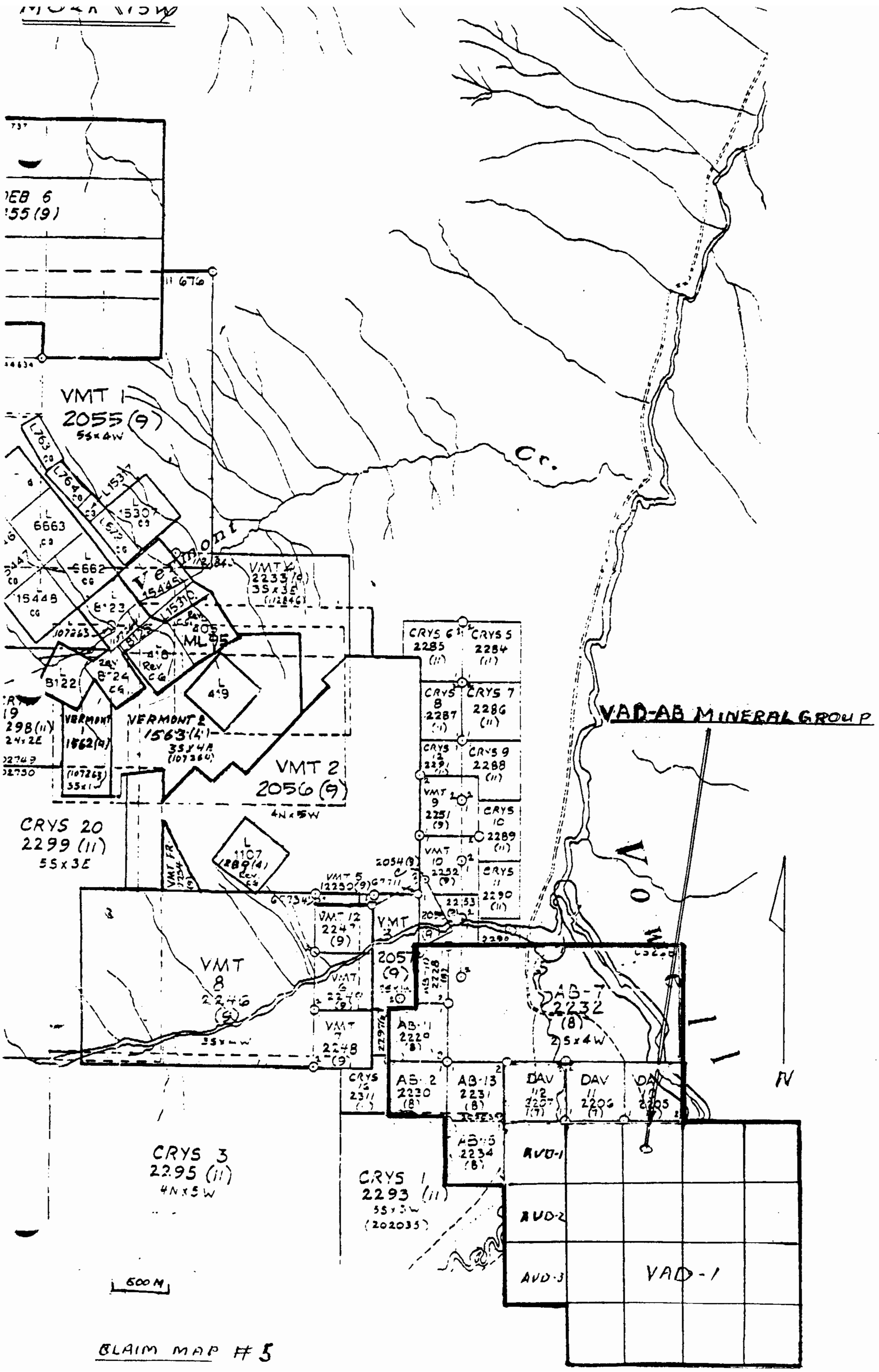


L 418
L 419
107264
VERMONT 1
213301
•1563•
35X4E
V.M.T. • 2
213576
•2056•
4NX5W
VMT FR.
213774
•2251•
L 1107
213268
CRYS 6
213805
•2205•
CRYS 5
213804
•2204•
CRYS 8
213807
•2207•
CRYS 7
213806
•2206•
CRYS 12
213811
•2291•
CRYS 9
213808
•2208•
VMT 9
213771
•2251•
CRYS 10
213809
•2209•
VMT 10
213772
•2252•
CRYS 11
213810
•2290•
VMT 5
213770
•2250•
67711
67712
67734
VMT 11
213773
VMT 12
213767
•2247•
213577
VMT 8
213766
•2246•
35X4W
2057
25X1W
VMT 6
213769
•2249•
VMT 7
213768
•2248•
AB - 11
213749
•2229•
AB-7
213752
•2232•
25X4W
5230
CRYS 16
213831
•2311•
AB - 12
213750
•2230•
AB - 13
213751
•2231•
DAV - 12
213727
•2207•
DAV - 11
213726
•2206•
202035
44584
AB - 15
213754
•2234•
AVD 1
213770
AVD 2
213771
•2251•
AVD 3
213772
•2252•
CRYS 1
213813
•2293•
55X3W
VAD
500m
MT
JUNE - 15 - 17 / 96 - AND - JULY - 24 - 25 / 96
WORK • PERFORMED
ON • THE • VAD • AB • CLAIMS
--- GEOCHEM • LINES
xxx HAND • TRENCHING
MT -.-.- METRO • TECH • INDUCTION • UNIT
MAP • # 1 - INDEX MAP -



GEOLOGICAL MAP # 2

3000 M


VMT 1
2055 (9)
55x4W
VAD-AB MINERAL GROUP
Cr.
Vermont
CRYS 6
2285
CRYS 5
2284
CRYS 8
2287
CRYS 7
2286
CRYS 9
2288
CRYS 10
2289
CRYS 11
2290
VMT 2
2056 (9)
4Nx5W
VERMONT 2
1563 (4)
VMT 4
2233
CRYS 20
2299 (11)
55x3E
VMT 8
2246
(9)
VMT 12
VMT 7
2248
(9)
AB-7
2232
(8)
AB-1
AB-2
2230
(8)
AB-13
2231
(8)
AB-5
2234
(8)
DAV
12
DAV
11
2206
AVD-1
AVD-2
AVD-3
VAD-1
CRYS 3
2295 (11)
4Nx5W
CRYS 1
2293 (11)
55x3W
(202035)
500 M
N
CLAIM MAP #5

To.: VAD - A & B GROUP
539 - 47th Avenue S.W.
Calgary, Alberta
T2J 1C5
ATTN: Jim Adamson

Certificate of Assay
Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

File No : 38450
Date : August 23, 1996
Samples : Soil/Rock
Project :
P.O. #

Sample No		PPM Ag	PPM Pb	PPM Zn
"Geochemical Analysis"				
570E 0	S	0.5	49	62
570E 20	S	0.6	42	53
570E 40	S	0.4	52	59
570E 60	S	0.2	15	75
570E 80	S	0.3	15	60
570E 100	S	0.4	29	68
570E 120	S	0.4	17	60
570E 140	S	0.2	8	17
570E 160	S	0.5	18	25
570E 180	S	0.5	23	26
570E 200	S	0.5	53	45
570E 220	S	0.9	25	42
570E 240	S	0.5	39	40
570E 260	S	0.2	7	48
570E 280	S	0.3	7	36
570E 300	S	0.6	3	8
570E 320	S	<0.1	6	20
570E 340	S	0.1	23	72
570E 360	S	0.2	25	56
570E 380	S	0.1	6	9
570E 400	S	0.7	29	72
570E 420	S	0.1	11	37
570E 440	S	2.5	91	30
570E 460	S	0.4	26	63
570E 480	S	0.7	32	84
570E 500	S	0.6	26	62
60E 0	S	0.3	52	96
60E 20	S	0.4	54	72
60E 40	S	<0.1	35	73
60E 60	S	0.5	60	103

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To: VAD - A & B GROUP
539 - 47th Avenue S.W.
Calgary, Alberta
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File No : 38450
Date : August 23, 1996
Samples : Soil/Rock
Project :
P.O. #

Sample No		PPM Ag	PPM Pb	PPM Zn
60E 80	S	0.6	183	195
60E 100	S	1.2	198	215
60E 120	S	1.1	78	137
60E 140	S	0.9	121	280
60E 160	S	0.5	54	97
60E 180	S	0.8	112	206
60E 200	S	1.3	58	255
60E 220	S	0.4	41	65
60E 240	S	0.5	37	100
60E 260	S	1.5	38	126
60E 280	S	1.0	35	82
60E 300	S	0.3	38	138
60E 320	S	<0.1	27	82
60E 340	S	0.7	37	105
60E 360	S	0.2	25	90
60E 380	S	<0.1	16	65
60E 400	S	0.5	28	72
60E 420	S	0.5	26	110
180W 0	S	0.4	36	84
180W 20	S	0.8	98	144
180W 40	S	1.8	161	155
180W 60	S	1.8	109	130
180W 80	S	0.9	118	98
180W 100	S	1.5	272	195
180W 120	S	11.0	985	220
180W 140	S	0.9	129	127
180W 180	S	1.6	83	175
180W 200	S	0.8	50	195
180W 220	S	0.8	48	191
180W 240	S	1.7	244	438
180W 260	S	4.6	171	434
180W 280	S	0.4	35	140

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Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

File No : 38450
Date : August 23, 1996
Samples : Soil/Rock
Project :
P.O. #

Sample No.		PPM Ag	PPM Pb	PPM Zn
180W 300	S	0.1	15	75
180W 320	S	0.1	30	97
180W 340	S	0.3	24	98
180W 360	S	1.0	27	101
180W 380	S	0.8	19	55
180W 400	S	1.2	25	65
180W 420	S	0.3	20	89
60E 20	N	2.3	36	74
Road Bank 40	S	0.8	155	190
Road Bank 80	S	1.0	34	112
Road Bank 120	S	0.3	75	85
Road 200	S	0.1	35	131
350W to South Middle of Top Road		46.0	7200	375
MN Bed Zach's Bed 520 South on Road		74.0	9700	1200
116S on Road Spring in Bank		0.5	28	37
1150S on Road - Road Starts to Turn East		<0.1	23	95
1290S on Road, South End of Road, Rd due East		0.8	37	80
On Road 160	S	0.2	40	88
On Road 240	S	16.6	61	240
On Road 260	S	0.5	14	43
On Road 280	S	0.5	41	65
On Road 300	S	0.4	21	39
On Road 320	S	0.1	6	101
On Road 340	S	0.5	12	38
On Road 360	S	0.3	15	99
On Road 380	S	0.1	9	148
On Road 400	S	0.2	11	58

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539 - 47th Avenue S.W.
Calgary, Alberta
T2J 1C5
ATTN: Jim Adamson

Certificate of Assay

Loring Laboratories Ltd.
629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

File No : 38450
Date : August 23, 1996
Samples : Soil/Rock
Project :
P.O. #

Sample No	PPM Ag	PPM Pb	PPM Zn
On Road 420 S	0.3	16	58
On Road 440 S	0.7	25	135
On Road 480 S	0.2	18	181
On Road 500 S	0.3	27	412
On Road 560 S	0.2	30	130
On Road 600 S	0.5	49	137
On Road 640 S	0.2	13	88
On Road 680 S	0.7	52	164
On Road 720 S	0.6	19	94
On Road 760 S	0.5	20	110
On Road 800 S	0.2	15	55
On Road 810 S	0.2	41	44
On Road 820 S	0.4	38	134
On Road 850 S	0.1	31	137
On Road 875 S	0.4	16	79
On Road 900 S	0.5	31	97
On Road 1000 S	0.2	22	84
On Road 1100 S	0.2	25	74
1205S on Road Large Creek in Bank	0.1	16	84
1250S on Road - Road More to East	<0.1	15	66
180W 20 N	0.2	39	76
180W 40 N	0.2	41	74
200W +0 S	0.9	81	92
220W +0 S	2.0	185	235
240W +0 S	4.6	218	175
260W +0 S	7.1	235	190
280W +0 S	1.3	171	140
300W +0 S	2.0	146	96
320W +0 S	10.9	122	70
180W 160 S	1.3	217	209
960S on Road	0.1	22	62

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

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To : **VAD - A & B GROUP**
539 - 47th Avenue S.W.
Calgary, Alberta
T2J 1C5
ATTN : Jim Adamson

File No : **38287**
Date : June 28, 1996
Samples : Soil
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.	PPM Ag	PPM Pb	PPM Zn
Geochemical Analysis			
420S - 20W	1.2	30	195
420S - 40W	0.1	36	75
60W - 0S=0S	0.1	81	130
60W - 20S	<0.1	72	117
60W - 40S	3.2	70	94
60W - 60S	0.4	75	116
60W - 80S	2.4	328	213
60W - 100S	3.1	500	203
60W - 120S	3.9	300	195
60W - 140S	2.5	150	202
60W - 160S	5.1	335	159
60W - 180S	2.9	235	169
60W - 200S	1.8	96	168
60W - 220S	0.7	40	156
60W - 240S	1.4	66	175
60W - 260S	1.0	83	156
60W - 280S	0.6	35	115
60W - 300S	1.1	41	109
60W - 320S	0.3	30	112
60W - 340S	1.4	62	166
60W - 360S	1.1	34	117
60W - 380S	2.1	34	134
60W - 400S	0.2	28	90
60W - 420S	1.4	29	116
120W - 0S	<0.1	46	96
120W - 20S	0.7	72	98
120W - 40S	0.8	70	92
120W - 60S	1.6	112	110
120W - 80S	19.2	2200	228
120W - 90S	14.2	840	229

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

To : VAD - A & B GROUP
539 - 47th Avenue S.W.
Calgary, Alberta
T2J 1C5
ATTN : Jim Adamson

File No : 38287
Date : June 28, 1996
Samples : Soil
Project :
P.O.#

Certificate of Assay

Loring Laboratories Ltd.
629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

Sample No.	PPM Ag	PPM Pb	PPM Zn
120W - 100S	32.8	675	196
120W - 120S	0.9	158	176
120W - 140S	4.1	367	220
120W - 160S	0.6	95	158
120W - 180S	1.0	64	106
120W - 186S	2.4	102	110
120W - 200S	1.0	36	168
120W - 220S	0.7	53	123
120W - 240S	1.2	65	179
120W - 260S	0.8	23	85
120W - 280S	0.2	19	110
120W - 300S	1.1	21	136
120W - 320S	0.9	31	111
120W - 340S	0.4	14	122
120W - 360S	1.0	34	135
120W - 380S	0.7	46	154
120W - 400S	1.4	85	186
120W - 420S	0.4	24	107
VAD - 0+0	0.5	62	129
VAD - 0+20S	0.7	44	97
VAD - 0+40S	1.1	50	96
VAD - 0+60S	0.9	28	103
VAD - 0+80S	1.1	72	120
VAD - 0+100S	1.8	98	158
VAD - 0+120S	1.1	51	128
VAD - 0+140S	1.4	210	295
VAD - 0+160S	0.9	171	150
VAD - 0+180S	2.7	78	117
VAD - 0+200S	1.9	167	221
VAD - 0+220S	1.6	70	127
VAD - 0+240S	1.2	33	105
VAD - 0+260S	1.3	46	155

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

To : VAD - A & B GROUP
539 - 47th Avenue S.W.
Calgary, Alberta
T2J 1C5
ATTN : Jim Adamson

Certificate of Assay
Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

File No : 38287
Date : June 28, 1996
Samples : Soil
Project :
P.O.#

Sample No.	PPM Ag	PPM Pb	PPM Zn
VAD - 0+280S	0.7	35	66
VAD - 0+300S	1.0	36	114
VAD - 0+320S	0.5	23	109
VAD - 0+340S	0.4	35	103
VAD - 0+360S	1.2	30	135
VAD - 0+380S	0.6	28	84
VAD - 0+400S	0.7	24	84
Edge of Clean at 427 420S	0.9	21	132
SL1 -S. End Below Zach	1.7	59	105
SL - 77N	2.2	280	70
SL - 132N	1.3	46	58
SL - 201N	1.1	42	90
SL - 292N	0.6	26	125
SL - 357N	1.6	34	108
SL - 405N	0.8	42	83
SL - 445N	0.3	17	118
SL - 518N	1.3	22	129
SL - 545N	4.7	101	390
SL - 615N	1.2	45	110

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

To : VAD - A & B GROUP
539 - 47th Avenue S.W.
Calgary, Alberta
T2J 1C5
ATTN : Jim Adamson

Certificate of Assay
Loring Laboratories Ltd.

629 Beaverdam Road, NE Calgary Alberta
Tel: (403)274-2777 Fax: (403)275-0541

File No : 38287
Date : June 28, 1996
Samples : Rock
Project :
P.O.#

Sample No.	PPM Ag	PPM Pb	% Pb	PPM Zn
Geochemical Analysis				
60W - 100S	475.0	>10000	2.95	422
120W - 90S	<0.1	15	---	28
120W - 95S	110	---	0.92	340

I HEREBY CERTIFY that the above results are those assays made by me upon the herein described samples :

Gary Foxley
Assayer

Rejects and pulps are retained for one month unless specific arrangements are made in advance.

ADDENDA TO 1995 - 6 ASSESSMENT REPORT on VAD-AB CLAIMS

All soil samples taken for Geo-Chem analyses are taken from the "b" zone at depths of from 20cm to 40cm, depending upon the nature of the soils and their environment; for example 20cm for normal loam, sand and clay, and 40cm or more in swampy areas. The sample location is marked on the sample bag (which is supplied by the Assay Laboratory) at the site where the sample was taken. All samples on the "grid" were taken at 20 meter intervals. Samples taken along the Road are mostly at 20 meter intervals but vary up to 100 meters when the terrain is rocky.

Only 3 or 4 rock samples were taken. The samples were mainly Quartz with galena and pyrite stringers.

Please find in this addenda three pages as supplied by Loring Laboratories here in Calgary, showing their procedures in analyzing the above samples.

We have refrained from setting out any anomalous areas at this time because the survey will not be completed until next season.

A zinc map is included in this addenda as requested.

As discussed with Alan Wilcox: - to assist in finding the sample locations on the grid as they relate to the assay certicates, the first sample at the 20m interval will be marked 20m on all "grid" lines, along with a similar designation at the middle and end of each line to match up with the sample location as shown on the assay sheets.

The Metro-Tech 480 is used in the Corrosion field to locate pipes and other conductors at depth. The instrument is able to determine the depth of the conductor through triangulation. It consists of two units: one unit is the transmitter of an induced signal, which enters the ground, while the other unit is a receiver which picks up the secondary signal from the conductor. The operator of the transmitter and the operator of the receiver take positions 12m to 45m apart and walk paralell to each other till the instrument emits a loud continuous sound and the meter moves to a higher reading. The operators move back and forth till a maximum sound or meter reading is obtained. You are now directly over the conductor. The transmitter operator now moves to the position held by the receiving operator, where he now will stay. The receiving operator moves ahead 25m to 40m in line with the line that has just been established for the conductor, and he now is the only operator who will be moving back and forth (but always paralell to the operator of the transmitter) at each new setting until the position of the conductor has been established.

Find included with this Addenda several pages from the Metro Tech Operating Manual that describes the instrument, its' operation its' functions and how to operate it.

We have had a magnetometer survey and a Ronka EM survey conducted in the past by qualified personal, but both surveys were not conclusive. W. van der Lee who had used the the Metro Tech instrument over a five year period in the corrosion branch of engineering felt that if ordinary soils would effect the readings of the Metro Tech 480 (see page 4 of Metro Tech Manual) then soils or mineral conductors beneath them should respond to the instrument in the same way as other conductors. The Metro Tech survey line was begun at a known mineral outcroping in the S.E sector of the claim area and has been extended for 2.5km to almost the N.W. claim boundary. Some of the samples taken along that line have shown above normal readings and this years "grid" geochem which was conducted partially because of this line, has set out a large area of above normal readings in lead silver and zinc, which we feel justifies the good work done by this instrument in this particular environment.

The Metro Tect is a professional metal detector that will detect metallic conductors down to about 5 meters. However this is more than sufficient to follow a conductor covered by normal overburden depths. This allows us to zero in on mineralized soil areas above such conductors, saving much of the hit and miss of most large area geo-chem sampling. This powerful instrument seems to have proved its' worth, as is indicated by the higher than normal assay samples it has directed us to this season.

We are very small operators with limited finances and are trying to spend our money wisely and find some mineral for ever dollar spent. This instrument seems to be helping us do that.

The names of the men who worked on the claims in June are: Willian van der Lee, James Adamson, and Zack van der Lee. The names of the men who worked on the claims in July are: Sodi Berrar, Ben van der Lee, James Adamson and William van der Lee.

Jim Adamson has been doing Geo- Chem sampling almost since its' inception and has done it for a number of geologists. Some of these geologists were: Ernie Pelzer, Dave van der Lee, Fred Peel and others. He also took a course in Geology and prospecting sponsored by the University of Calgary which was conducted by John Wendeborn P.Geo. in 1974. John Wendeborn made field trips with Jim Adamson to mineral locations in the Merit and Mable Lake Areas to thoroughly explain Geo-Chem sampling procedures. Jim Adamson also bought one of the first printings of the Introduction to Exploration Geochemistry directly from the Author A.A. Levinson of the U of C in 1974, to thoroughly understand the theory and mechanics of Geochemistry. Through following years he has collected and bagged samples for Medesto Exploration, on Vowell and Crystalline Creeks, on the Delphine Creek, at two locations in the Creston Area, and at Mable Lake and numerous smaller prospects.

Bill van der Lee has been actively employed in the oil and gas industry for over 11 years interpreting oil and gas well logs and is a proven hydrocarbon finder. He was previously employed as a corrosion engineer for 5 years where he became proficient in using pipe locators, taking soil resistivities, etc. He has throughout this time been very involved propecting. He first conducted geo-chem survey work for Raging Sea

Enterprizes in the Kettle River area of Southern B.C., in or about 1979. He also conducted geo-chem work in the Creston area in 1986 and 1987 with Jim Adamson. He has also been prospecting and sample taking in the Vowell Creek area since 1988. He previously worked on adjacent claims in the Vowell Creek Area for Medesto Exploration in 1977.

All sample locations and assay values are placed on a map to show their relation to each other but no interpretation of anomalies is suggested. When the lines are drawn to show the actual anomalies if any, they will be put on the map by a geologist, who at that time will no doubt relate it to the structures in the area. We are just preparing the ground for interpretation by a geologist.

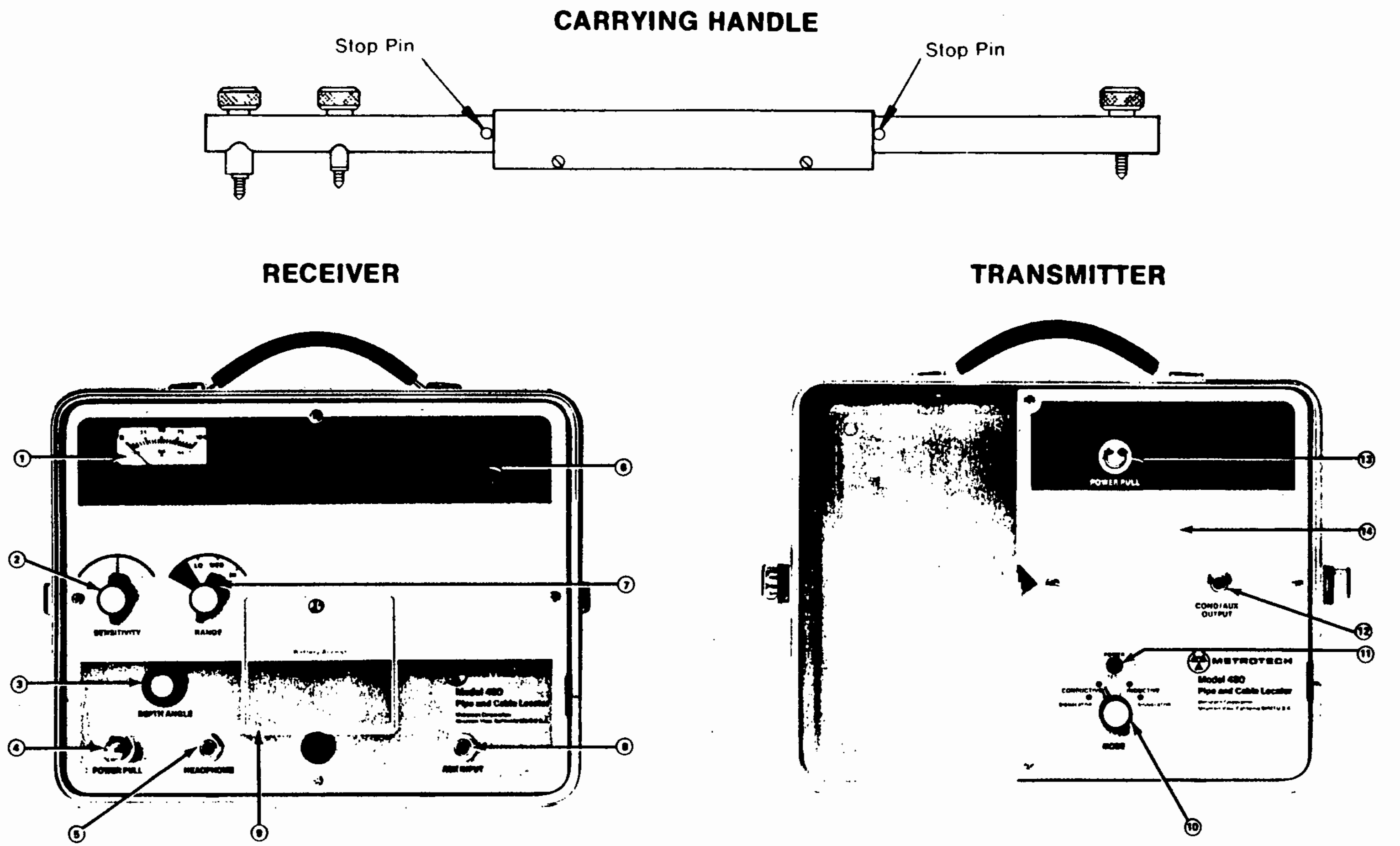
J Adamson

Bill VAN DER LEE

METROTECH

PIPE & CABLE LOCATOR
MODEL 480
Operation Manual

Part No. 600A002
Price $ 5.00



Metrotech Transistorized Pipe and Cable Locator
Model 480

RECEIVER CONTROLS	FUNCTION
1. Visual Indicator-Battery Test Meter	Gives a visual indication of the volume of signal being monitored. Uses new compression circuits with meter movement not exceeding 100 on the scale (does not pin needle). Also used for reading condition of receiver battery.
2. SENSITIVITY CONTROL	Controls the sensitivity (gain) function of the receiver.
3. DEPTH ANGLE Indicator	Provides a quick and accurate method of measuring a 45 degree tilt of the receiver for triangulation in determining the depth of a conductor.
4. POWER On-Off Switch	Applies power to receiver. This switch should be turned off to prolong battery life when not in use.
5. HEADPHONE Jack	Transfers all audible signals from speaker to headphones.
6. Built-in Speaker	Provides audible signal corresponding to visual indicator readings.
7. RANGE Switch	Provides selection of LO, MED, or HI receiver power. "BATT" position tests receiver battery when POWER switch is on.
8. AUX INPUT Jack	Provides a receptacle for optional accessories, and discontinues receiver loop operation.
9. BATTERY ACCESS Door	To change batteries remove by loosening retaining screw
TRANSMITTER CONTROLS	**FUNCTION**
10. MODE Switch (5 positions)	CONDUCTIVE position should be used when transmitter is directly connected to the conductor being traced. INDUCTIVE position: use for in-handle operation and induced (air) coupling to metal conductor. POWER TEST activates indicator when power is on. SIGNALATOR positions provide interrupted signal or tone for tracing operation in conductive and inductive modes. Not used for handle operation. Consistent use of signalator while tracing extends battery life.
11. POWER TEST Indicator	Flashing light shows adequate battery condition and transmitter power output.
12. COND/AUX OUTPUT Jack	Provides receptacle for conductive ground cable assembly and accessories during contact tracing operations.
13. POWER On-Off Switch	Applies power to transmitter. This switch should be turned off to prolong battery life when not in use.
14. BATTERY ACCESS Door	To change batteries remove by loosening retaining screw.

GENERAL INTRODUCTION

These instructions have been written to help you obtain the best results from your new transistorized pipe and cable locator. It would be very difficult, if not impossible, for us to describe in detail how the controls should be set for each application. The reason being that the detectability of a given pipe or cable will vary greatly depending primarily on the size of the pipe, the conductivity of the adjacent soil, the depth of burial, the length of time the pipe has been buried, whether it is wrapped, coated or bare, and other factors. One should keep in mind that your pipe finder is an aid or tool designed for a specific purpose. If used properly, it will help you to successfully detect and locate practically any underground metal pipe and cable under a wide variety of field conditions. It is, therefore, up to the individual operator to develop his own skill and techniques within the framework of suggested procedures outlined in this booklet.

THEORY OF OPERATION

Your pipe and cable locator is an electronic instrument used for detecting and accurately locating buried pipes, conduits, and miscellaneous metal objects.

The instrument consists of two principal component parts: a directional radio-type transmitter assembly and a directional radio-type receiver assembly. The function of the transmitter is to generate an electromagnetic field which surrounds the buried metal object or propagates along it in the case of a pipe. The instrument may be operated with this electromagnetic field inductively coupled through the surrounding air and ground to the buried pipe or other metal object. Alternatively, conductive coupling using a direct wire connection between the transmitter and the pipe may be used. The function of the receiver in locating buried objects is to detect and trace the transmitter-induced electromagnetic field. This determination of the principal direction(s) and strongest points of propagation of the electromagnetic field establishes the orientation and location of the pipe or other object. To get the most from the instrument, the operator should make an attempt to understand the theory and method of operation. He should be aware of the fact that random pieces of metal as well as unusual changes in the conductivity of the soil can sometimes cause indications. To gain confidence in the operation of the instrument he should practice over known pipe locations.

METHODS OF OPERATION

There are two principal methods of operation of your pipe and cable locator. They are respectively, inductively and conductively. The inductive is the most common and refers to the creation of the electromagnetic field about the objects sought, by radiation from the transmitter through both soil and air. You can use your instrument inductively with or without the carrying handle or conductively depending on the specific problem. Experience will dictate which method is best for a given situation and by using one of these methods it is possible to solve practically any pipe locating problem.

NOTE

The word "conductor" as used in this booklet is intended to indicate pipe, cable, conduit, and other metallic service to be located.

TRACING WITH THE LOCATOR INDUCTIVELY WITHOUT HANDLE

Proceed as follows:

1. Pull the transmitter POWER switch on.
2. Set the transmitter CONDUCTIVE-INDUCTIVE MODE switch to INDUCTIVE position.
3. Turn to INDUCTIVE SIGNALATOR position if interrupted (coded) signal is preferred over a steady audio tone. (For tracing operations, the interrupted signal is often preferred.) Signalator operation will prolong battery life of the transmitter.

NOTE

When carrying the transmitter or placing it over a known conductor, always position it vertically so that the long dimension is parallel to the assumed direction of the conductor.

4. Pull the receiver POWER switch on.
5. Start at a distance of at least 35 feet from the transmitter and trace out the position of the buried conductor.

NOTE

For close-in work use LO power. The MED and HI positions are for extended tracing.

When carrying the receiver assembly as a search unit, always hold it vertically so that its long dimension is parallel to the assumed direction of the buried conductor. The conductor position will be indicated by increased audio and Visual Indicator meter reading.

The receiver SENSITIVITY control can be used to effectively govern the power of the signal and width of indication received over a buried conductor. Pass the receiver back and forth over the conductor observing the maximum response. To sharpen the response, decrease the SENSITIVITY control. ***The proper handling of this control is the most important single factor for successful operation of the pipe and cable locator.***

Transmitter. With this method of operation the carrying and connecting handle assembly is not used, the transmitter and receiver are employed as separate units. This can be done as a one or two man operation. (See illustration on facing page.) When using the transmitter and receiver separately, the maximum energy is induced in the buried conductor when the loop of the transmitter is parallel and vertical with the conductor to be located.

Receiver. The maximum response in the receiver (audio tone and meter reading) is also obtained when the loop of the receiver is parallel and vertical with the conductor to be located as shown in the illustration on the facing page. The minimum response in the receiver (audio tone and meter reading) is obtained when the receiver loop is HORIZONTAL over the conductor to be located. Pass receiver back and forth over conductor observing the minimum response. To sharpen the response, increase the SENSITIVITY control.

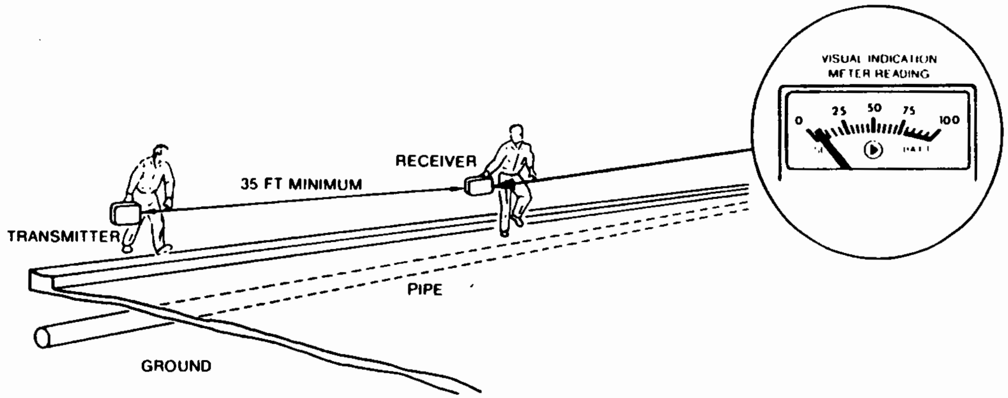
This means, in effect, that to get maximum overall response to a buried conductor, the transmitter and receiver are both vertical and parallel to the conductor, and therefore, on a straight conductor, in line with each other.

CAUTION

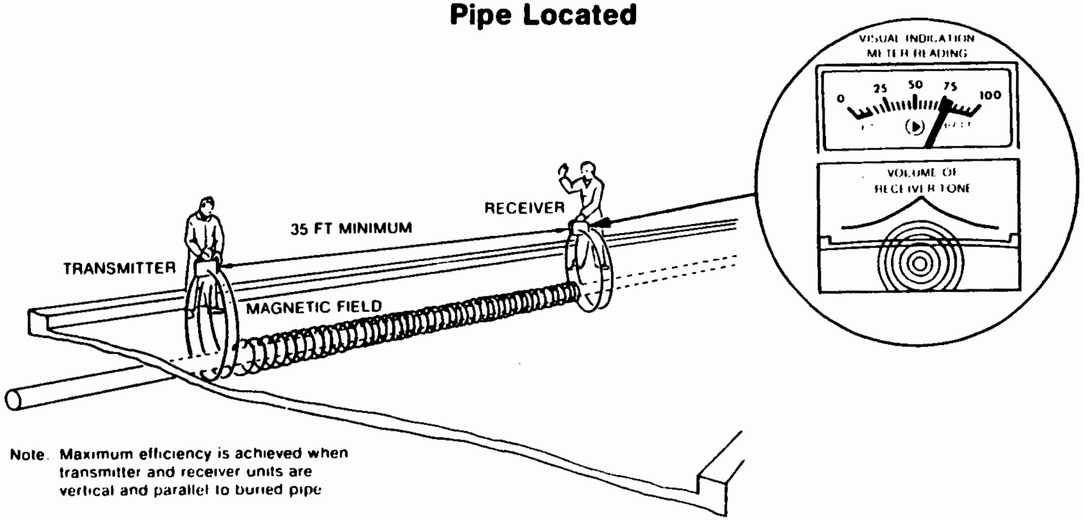
Under these conditions, the possibility of direct air coupling exists.

Air coupling refers to the transmittal of the signal through air without the presence of a buried conductor. To prevent this, it is necessary to maintain adequate distances between the transmitter and receiver. For example, on LO power with the SENSITIVITY turned all the way up, the transmitter and receiver should be at least 35 feet apart. On MED or HI power, these distances should be increased up to 150 feet. However, it is possible to shorten these distances by reducing the SENSITIVITY control on each position.

Start of Street or Field Survey to Locate Pipe

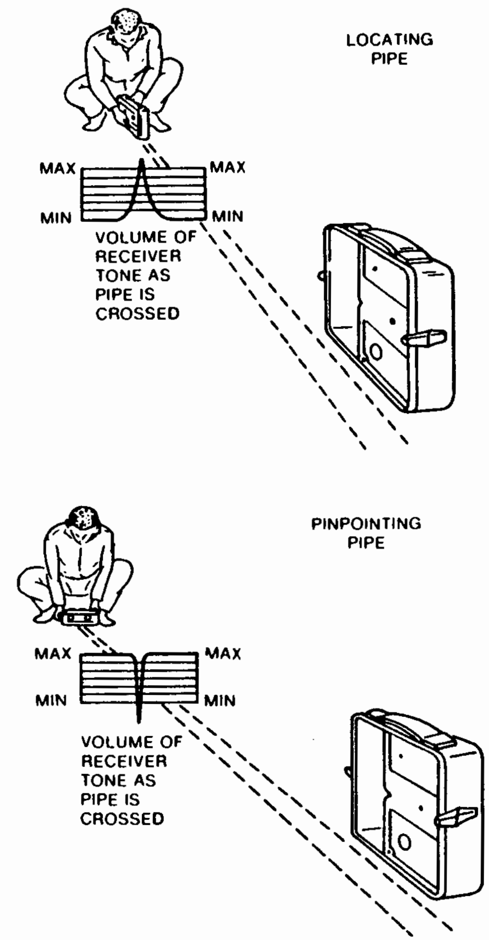


Pipe Located



Note. Maximum efficiency is achieved when transmitter and receiver units are vertical and parallel to buried pipe

Maximum And Minimum Indication When Receiver Is Directly Above Buried Conductor

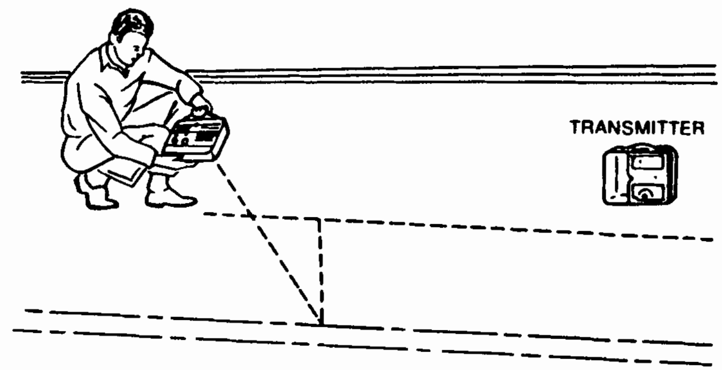


DETERMINING THE DEPTH OF A BURIED CONDUCTOR

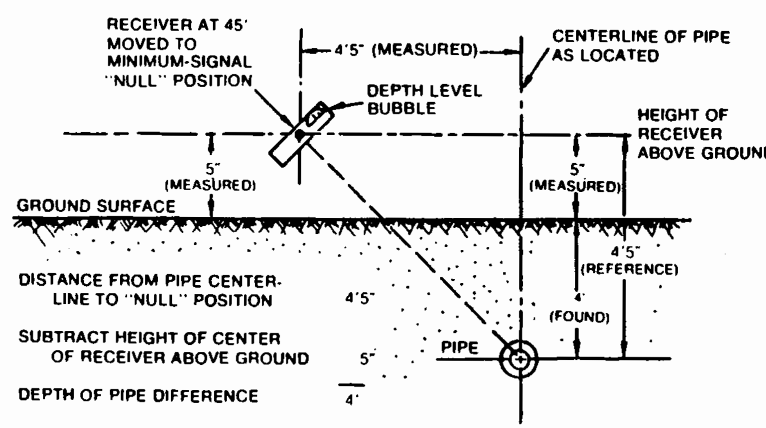
After a buried conductor has been located and pinpointed the approximate depth may be determined using the triangulation method. Proceed as follows:

1. Energize the conductor, either inductively or conductively.
2. Starting at a point directly above the conductor, and approximately 75 to 100 feet away from the transmitter, tilt the receiver to a 45 degree angle. This can be determined by verifying that the bubble is between the inner and outer black circle of the DEPTH ANGLE indicator on the receiver.
3. Move slowly away from the conductor at a right angle to the conductor maintaining the receiver angle at 45 degrees.
4. When a null (or minimum signal) is obtained, stop.
5. Measure the distance from the null position to the pinpoint position. The depth of the pipe will be equal to the measured distance, minus the height of the receiver axis above the ground. See illustrations at right.

Determining Depth Of Buried Pipe



Typical Example



LORING LABORATORIES LTD.

629 Beaverdam Rd. N.E.
Calgary 67, Alberta

Phone 274-2777

Geochemical Analysis of Soils, Sediments and Silts.

FOR: Copper, Lead, Zinc, Nickel and Silver, and Cobalt

Sample Preparation:

-Samples were placed in dryer overnight at 105°C.
-All samples are seived through an 80 mesh nylon screen.
-The minus 80 is placed in pre-marked sample bag for analysis. The plus 80 portion is discarded.

Sample Dissolution:

-1/2 gram samples are weighed and transferred to test tubes.
-One ml water added, then three mls hydrochloric (concentrated), one ml nitric acid (concentrated) are added.
-Test tubes are then placed into hot water bath 100°C and digested for three hours with occasional shaking to ensure complete digestion.
-Test tubes are removed from water bath and allowed to cool.
-Test tubes are bulked to exactly 10 mls, corked and shook.
-All samples are then allowed to settle until clear.
-The clear solutions are then aspirated through the atomic absorption spectrophotometer with appropriate standards to obtain the metal content.

Detection Limits and Precision:

Element	Detection Limit	Precision at 100 ppm level
Copper	1 ppm	± 2 ppm
Lead	2 ppm	± 4 ppm
Zinc	1 ppm	± 2 ppm
Nickel	1 ppm	± 2 ppm
Silver	0.2 ppm	± 1 ppm
Cobalt	1 ppm	± 4 ppm

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Calgary, Alberta T2K 4W2

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Phone 274-2777

Preparation Procedures for Geochemical Samples

1 - Soil And Silts:

a) The soil sample bags are placed in dryer to dry at 105°C.

b) Each sample is passed through an 80 mesh nylon seive. The +80 mesh material is discarded.

c) The -80 mesh sample is placed into a coin envelope and delivered to the laboratory for analysis.

2 - Lake Sediments:

a) The sediment sample bags are placed into the dryer at 105°c until dry.

b) The dried material is transferred to a ring and puck pulverizer and ground to -200 mesh.

c) The -200 mesh pulp is then rolled for mixing, placed into a coin envelope, and taken to the laboratory for analysis.

3 - Rocks and Cores:

a) The samples are dried in aluminum disposable pans at 105°C.

b) They are then crushed to 1/8" in jaw crusher.

c) the 1/8" material is mixed and split to sample pulp size.

d) The sample is then pulverized to 100 mesh, using a ring and puck pulverizer.

e) The -100 mesh material is rolled on rolling mat and transferred to sample bag. The sample is then sent to the laboratory for analysis.

LORING LABORATORIES LTD.

629 Beaverdam Rd. N.E.
Calgary, Alberta T2K 4W7

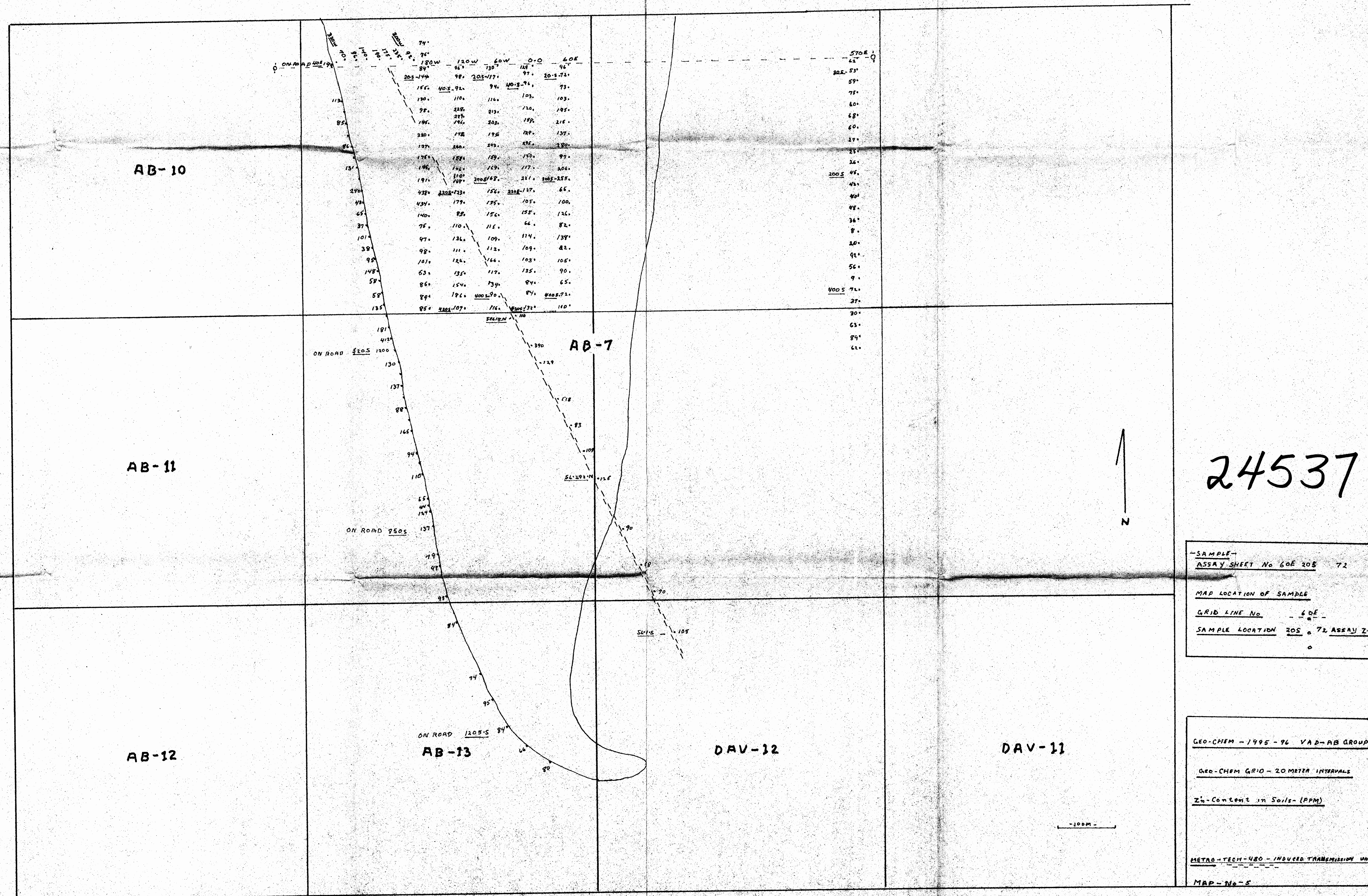
Tel: (403) 274-2777
Fax: (403) 275-0541

ANALYTICAL PROCEDURES FOR 30 ELEMENTS ICP

A) 0.500 gm. of sample is digested with 3 ml of 3-1-2 HCL-HNO3-H2O at 95 degree C for one hour and is diluted to 10 ml with water in test-tube.
B) The test-tubes is shaked and the solution is mixed thoroughly.
C) The samples are loaded into auto-sampler of the ICP unit and run with standard when the setup is completed.

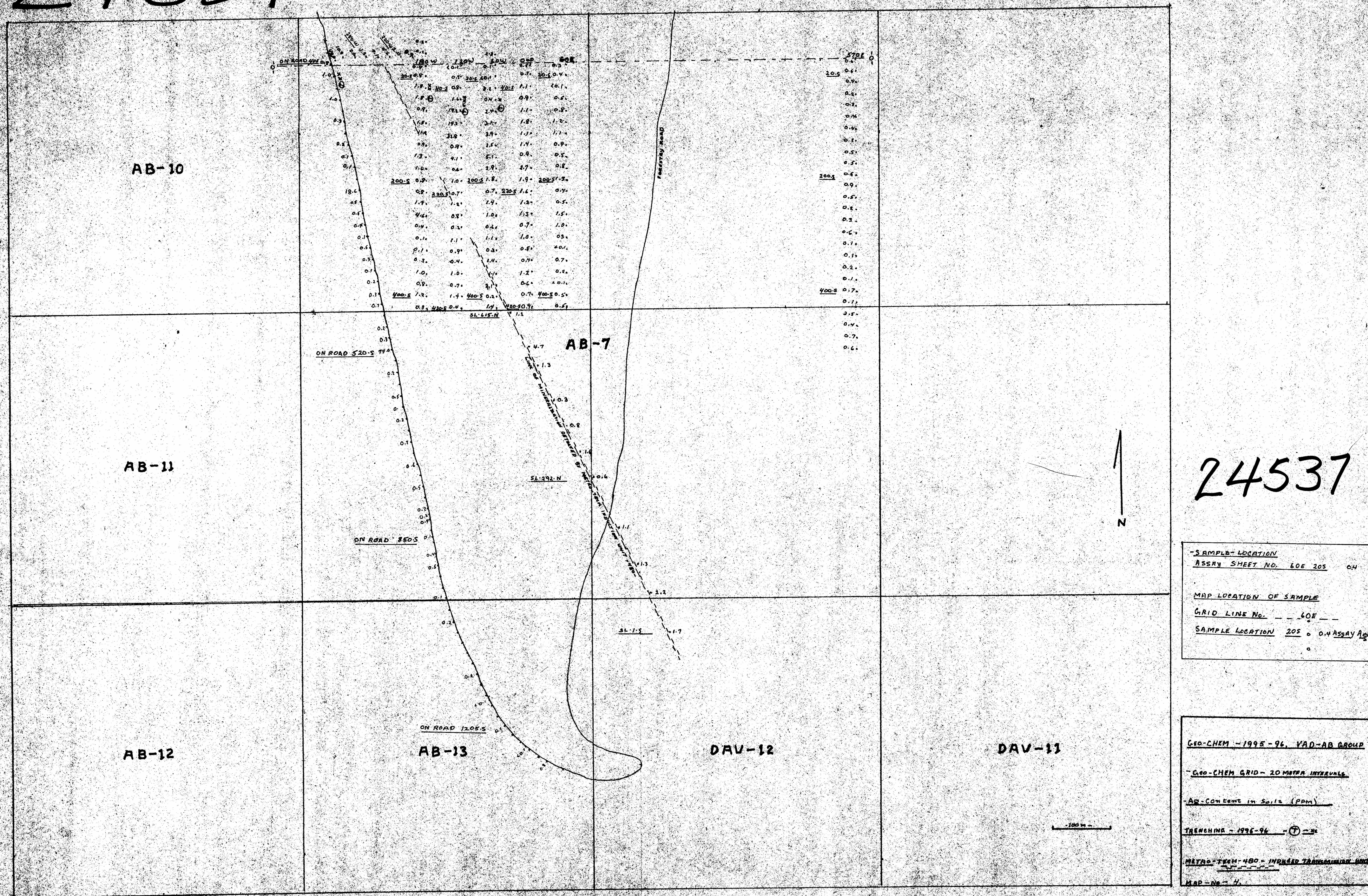
GEOCHEMICAL ANALYSIS OF GOLD BY FIRE ASSAY/AA

A) Weigh 10 grams of sample into a fire assay crucible with appropriate amount of fluxes and flour and mix.
B) Add palladium inquart.
C) Place crucible in assay furnace and fuse for 40 minutes.
D) Pour samples, remove slag and cupel buttons.
E) Place bead in test tubes and dissolve with aua-regia.
F) After dissolution is completed, make to appropriate volume and run against similarly prepared gold standards on Atomic Absorption unit.

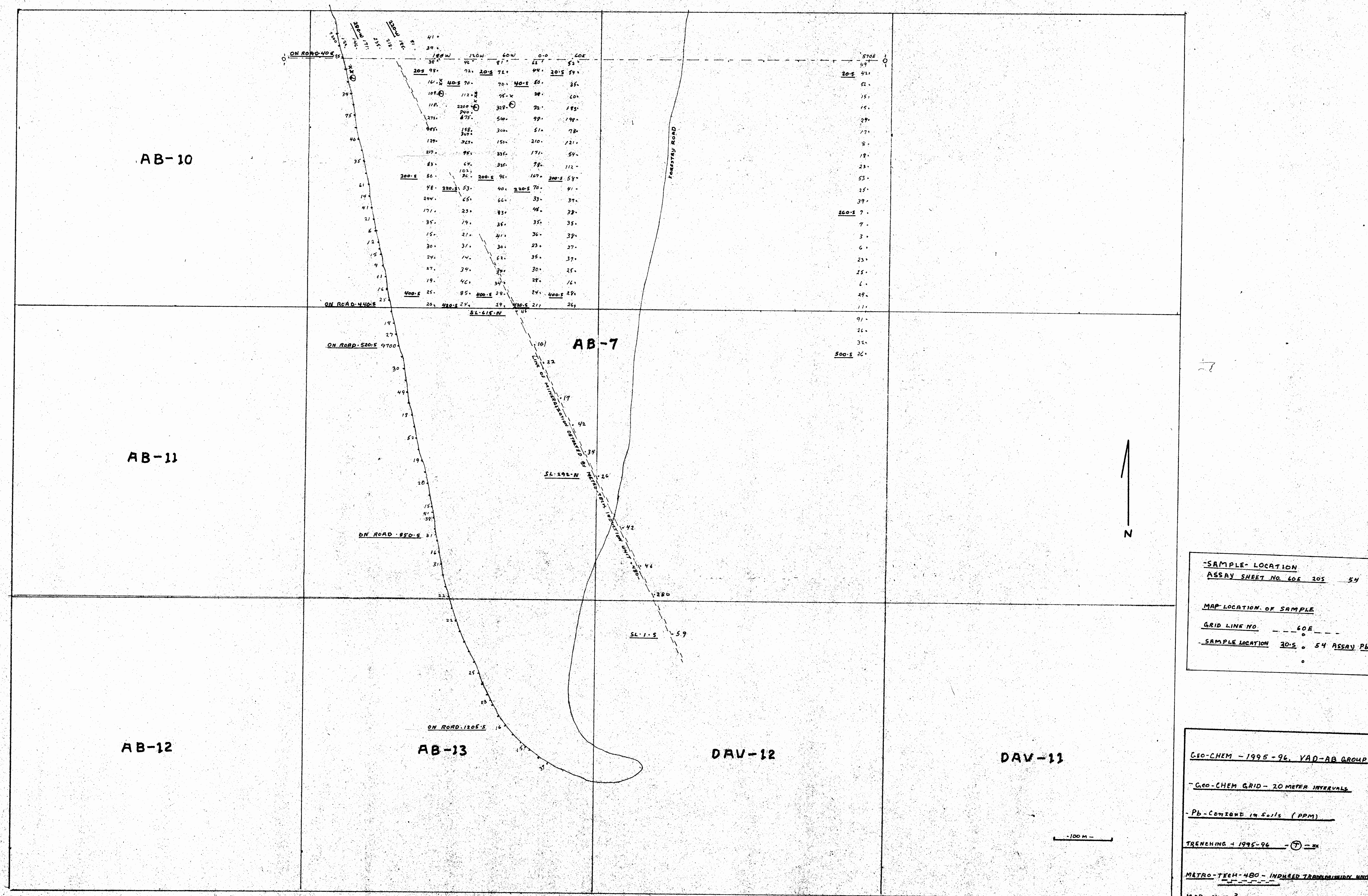


AB-10
AB-11
AB-12
AB-13
AB-7
DAV-12
DAV-11
ON ROAD 520S
ON ROAD 850S
ON ROAD 1205S
180W
120W
60W
0-0
60E
570E
N
24537
-SAMPLE-
ASSAY SHEET No 60E 20S 72
MAP LOCATION OF SAMPLE
GRID LINE No 60E
SAMPLE LOCATION 20S 72 ASSAY Zn
GEO-CHEM - 1995 - 96 VAD-AB GROUP
GEO-CHEM GRID - 20 METER INTERVALS
Zn-Content in Soils- (PPM)
METRO-TECH-480 - INDUCED TRANSMISSION UNIT
MAP-No-5

24537



AB-10
AB-7
AB-11
AB-12
AB-13
DAV-12
DAV-11
ON ROAD 520-S
ON ROAD 850S
ON ROAD 1205S
SL-292-N
SL-1-S
FORESTRY ROAD
N
24537
-SAMPLE-LOCATION
ASSAY SHEET NO. 60E 20S 0.4
MAP LOCATION OF SAMPLE
GRID LINE No. 60E
SAMPLE LOCATION 20S 0.4 ASSAY Ag
GEO-CHEM - 1995-96. VAD-AB GROUP
-GEO-CHEM GRID - 20 METER INTERVALS
-AG-Content in Soils (ppm)
TRENCHING - 1995-96 - T -
METRO-TECH-480 - INDUCED TRANSMISSION UNIT
MAP-No- 4.


AB-10
AB-11
AB-12
AB-13
AB-7
DAV-12
DAV-11
ON ROAD-40S
ON ROAD-440-S
ON ROAD-520-S
ON ROAD-850-S
ON ROAD-1205-S
SL-615-N
SL-292-N
SL-1-S
FORESTRY ROAD
LINE OF MINERALISATION DEFINED BY METRO-TECH INDUCTION UNIT 480
N
-100 m-
-SAMPLE- LOCATION
ASSAY SHEET NO. 60E 20S 54
MAP LOCATION OF SAMPLE
GRID LINE NO 60E
SAMPLE LOCATION 20-S 54 ASSAY Pb
GEO-CHEM - 1995-96, VAD-AB GROUP
-GEO-CHEM GRID - 20 METER INTERVALS
-Pb-Content in Soils (PPM)
TRENCHING - 1995-96 - (T) - xx
METRO-TECH-480 - INDUCED TRANSMISSION UNIT
MAP-No- 3.