MAR 20010003: BAD HEART SANDSTONE

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20010003

A REPORT AND BACKGROUND INFORMATION PERTINENT TO THE EXPLORATION AND ANALYSIS OF THE BAD HEART SANDSTONE ON PERMITS 9396110003 AND 9396110004

February 5, 2001

Ronald T. Owens

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February 5, 2001

Ronald T. Owens
[redacted]
Ponoka, AB T4J 1H6
Phone [redacted]
Fax

Alberta Energy
Mineral Operations Division
Mineral Tenure Branch
9th Floor, 9945 - 108 St.
Edmonton, AB T5K 2G6

Attention: Hazel Hensen, Agreement Administrator

I hereby submit an Assessment Work Report to cover the required expenditures for sections nineteen through thirty-six of 6-09-079 of Metallic Minerals Permit No. 939611003 and section one through eighteen of 6-09-080 of Permit No. 939611004.

During the 1999-2000 Assessment period, I have continued operating and expanding my own lab facilities and equipment.

I had amortized the initial investment of $27,000.00 in equipment, glassware, instruments and associated hardware over four years. I therefore submit the balance of $13,500.00 towards the second Assessment Period.

In addition I have added a $21,000.00 test drill, a Refraction Seismic unit at $4,000.00, a mobile field lab at $10,500.00, glassware and apparatus at $3,700.00, an Assay furnace and associated fume-hoods at $1,800.00 and fine grinding equipment at $900.00 for a total of $31,900.00.

Thus the balance of initial investment	$13,500.00
Fifty percent of additional investment	15,900.00
Auric Report and separate analyses	10,657.50
Travel related to the program	7,000.00
Value of estimated time @ $20.00 per hr. (600 hrs.) for period ending Mar/2000	12,000.00
Full time April 2000 to Dec. 31/2000 (1,440 hrs.)	28,800.00
Canadian I.C.P. analysis	2,960.00
Costs related to maintaining lab facilities	9,600.00
Microprobe analysis at the U. of A.	480.00
	$ 100,897.50
Credit from previous period	20,000.00
Total	$ 120,897.50

The primary goals of these efforts and expenditures has been:

A. To systematically collect samples by backhoe, hand-auger, shallow pitting and mobile power auger from various locations within the permit area.

B. To evaluate a combination of drill and refraction seismic techniques in locating the limits of the Badheart formation on these permits. This program needs a great deal more work.

C. To establish a data base, using a combination of in house wet chemistry, fusion and contract lab analysis.
Conflicting results have made this data unreliable so far.

D. To attempt to discover why recognized Canadian labs cannot consistently get comparable results from I.C.P. Mass Spec from split samples, spiked samples and blank samples submitted to them.

The interferences are not being recognized, and to this point, I don't know why. But that is undoubtedly happening.

This problem is most pressing, and I, along with others, I am sure, will concentrate on this aspect of proving precious metal values in some Alberta locations.

The limited work done for me by Salt Lake City, Utah's Auric Labs, I believe is credible, but this may be better established by events now playing out, in other jurisdictions.

Respectfully yours,

[redacted]

Ronald T. Owens

AMENDED APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9396110003

COMMENCEMENT OF TERM:

1996 NOVEMBER 5

DATE OF AMENDMENT:

1998 NOVEMBER 2

AGGREGATE AREA:

4 608 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

6-09-079: 19-36

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

Hazel Henson

FOR: MINISTER OF ENERGY

AMENDED APPENDIX

TO

METALLIC AND INDUSTRIAL MINERALS PERMIT NO. 9396110004

COMMENCEMENT OF TERM:

1996 NOVEMBER 5

DATE OF AMENDMENT:

1998 NOVEMBER 2

AGGREGATE AREA:

4 608 HECTARES

DESCRIPTION OF LOCATION AND PERMITTED SUBSTANCES:

6-09-080: 1-18

METALLIC AND INDUSTRIAL MINERALS

SPECIAL PROVISIONS:

NIL

FOR: MINISTER OF ENERGY

Total Work Done In Period or Time Frame

May 14, 1999

Company	Permit	Cancelled Date
OWENS, RONALD THOMAS	9396110003	

Period	Due Date	Hectare	$/Ha	Required Spending	Expenditure	Cash Payment	Previous Credit	Balance
1	Nov 05, 1998	4608.0000	$5.00	$23,040.00	$28,074.23	$0.00		$5,034.23
2	Nov 05, 2000	4608.0000	$10.00	$46,080.00	$0.00	$0.00	$5,034.23	($41,045.77)
3	Nov 05, 2002	0	$10.00	$0.00	$0.00	$0.00		
4	Nov 05, 2004	0	$15.00	$0.00	$0.00	$0.00		
5	Nov 05, 2006	0	$15.00	$0.00	$0.00	$0.00		

Source: Minerals Tenure Branch, Mineral Agreements May 14, 1999

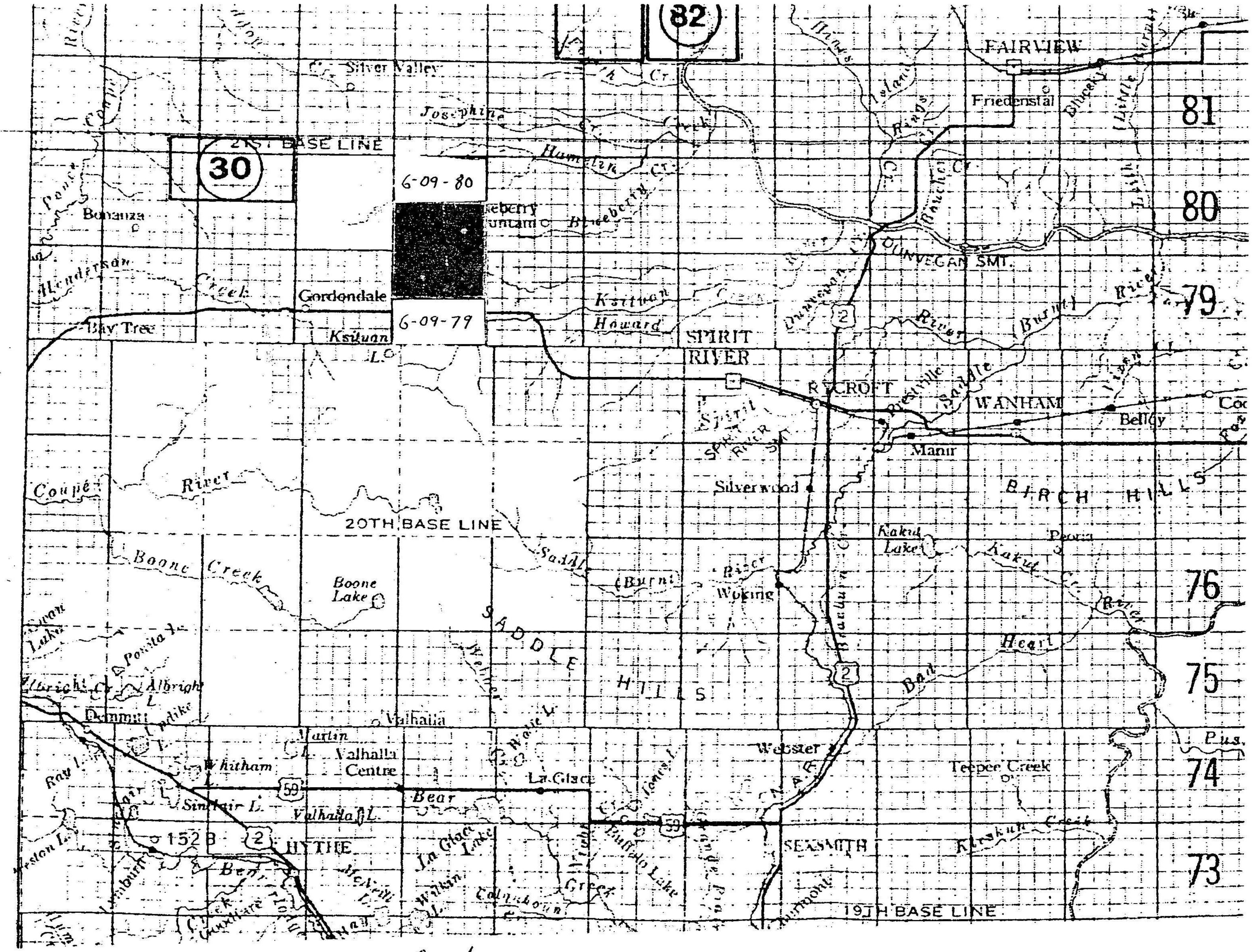
Total Work Done In Period or Time Frame

May 14, 1999

Company	Permit	Cancelled Date
OWENS, RONALD THOMAS	9396110004	

Period	Due Date	Hectare	$/Ha	Required Spending	Expenditure	Cash Payment	Previous Credit	Balance
1	Nov 05, 1998	4608.0000	$5.00	$23,040.00	$28,074.22	$0.00		$5,034.22
2	Nov 05, 2000	4608.0000	$10.00	$46,080.00	$0.00	$0.00	$5,034.22	($41,045.78)
3	Nov 05, 2002	0	$10.00	$0.00	$0.00	$0.00		
4	Nov 05, 2004	0	$15.00	$0.00	$0.00	$0.00		
5	Nov 05, 2006	0	$15.00	$0.00	$0.00	$0.00		

Source: Minerals Tenure Branch, Mineral Agreements May 14, 1999


82
FAIRVIEW
Friedenstal
81
Silver Valley
Josephine Cr.
Creek
21ST BASE LINE
30
6-09-80
Hamelin Cr.
Blueberry Cr.
80
Bonanza
Henderson Creek
Gordondale
6-09-79
Dunvegan Cr.
DUNVEGAN SMT.
79
Bay Tree
Ksituan L.
Ksituan Creek
Howard
SPIRIT RIVER
RYCROFT
WANHAM
Belloy
Saddle
Manir
Burnt River
Spirit River
SPIRIT RIVER SMT.
Silverwood
BIRCH HILLS
Coupe River
20TH BASE LINE
Boone Creek
Boone Lake
Kakut Lake
Kakut Cr.
Peoria
76
Woking
SADDLE HILLS
Heart River
75
Albright L.
Valhalla
Webster
Martin L.
Valhalla Centre
Whitham L.
La Glace
Teepee Creek
74
Bear
Sinclair L.
Valhalla L.
152B
HYTHE
SEXSMITH
Kleskun Creek
73
Buffalo Lake
Calahoun
19TH BASE LINE
2
59

9w6

Authorization to Reproduce or Copy

I hereby give authorization to reproduce or copy this report, after the customary one year delay.

[redacted]

Ronald T. Owens

Statement of Expenditures

Metallic and Industrial Minerals Permit Nos. 9396110003 and 9396110004

DESCRIPTION	COST ($)	TOTAL COST ($)
Value of equipment required for the development of these Permits - $58,900.00 Proportion allocated to the present assessment period	$29,450.00	$29,450.00
Value of time spent on this project @ $20.00 / hr.	$40,800.00	$40,800.00
SERVICES Backhoe rental Laboratories analysis Consultants report Microprobe time @ U of A Motels Fuel Repairs Rent, fuel and electricity of lab	 450.00 2960.00 10,657.50 480.00 2330.00 3461.00 709.00 9600.00 30,647.50	30,647.50
GRAND TOTAL		100,897.50

I certify that these expenditures are valid and were incurred in conducting assessment work on the above permits.

Signed [redacted]

Carolyn Phillips
Signature/Stamp:
Commissioner
for Oaths

CAROLYN PHILLIPS
A Commissioner for Oaths in and for
The Province of Alberta.
My Commission Expires January 25, 2003

Allocation of Expenditures

Permit No.	Ha.	Expenditure Required	Expenditure Assigned
9396110003	4608	46,080.00	60,448.75
9396110004	4608	46,080.00	60,448.75
TOTAL	9216	92,160.00	120,897.50

Body of Report

Report on the Chain of Custody Program
Conducted for
Mineral Recovery Systems

By Terry Christopher, Ph.D.
Oct 15, 1999

Introduction:

At the request of Mineral Recovery Systems (MRS), Auric Metallurgical Laboratories, LLC of Salt Lake City, Utah was contracted to complete a chain of custody sampling and assay program of MRS's property in Alberta. The author was contracted by Auric to carry out the chain of custody sampling program and to deliver the samples to its facility in Salt Lake City.

The project objective was to establish, under an independent analysis, the gold and platinum group metal (PGM) contents of an oolitic hematite unit which traverses the property.

The Property

MRS's property is located in northwestern Alberta, in the Peace River area, at approximately 55^0 55' North latitude and 119^0 20' West longitude. The property covers 9216 hectares encompassing the northern half of Township 79 and southern half Township 80. This property is covered by Metallic and Industrial Minerals Permits Nos. 9396110003 and 9396110004, issued by the province of Alberta, Canada. See Map 1 for the sample site locations.

Sampling Dates, Procedure and Preparation

The author travelled by vehicle to the property, near Spirit River, Alberta and completed a small sampling program on August 24 and 25, 1999.

Under strict chain of custody procedures the author collected all samples without any interference or assistance from the property owner. Both grab and pit samples were collected from the eastern portion of the claim covering Township 79.

Pit samples were taken with the aid of a backhoe. Two pits were dug to a depth of 10 to 12 feet, and in both cases were deep enough to penetrate the oolitic ironstone, exposing an underlying greyish green mudstone.

Four distinct units were exposed in each pit and sampling was conducted to obtain a representative sample from each unit. Approximately 40 lbs of sample was collected from the larger units (units I, II and IV) in each pit. A third unit (III), at the base of the ironstone bed, was not sampled in Pit #2, although a 10 lb sample was collected from the equivalent unit in Pit #1. Samples were placed in plastic lined bags and sealed.

Grab samples were collected from several other exposures throughout the property, including both the ironstone and the underlying mudstone. These samples were collected and stored in 'Ziplock' plastic storage bags.

Sample integrity and chain of custody protocol was achieved by placing all samples in a 'truck locker', which was secured with a combination lock. Only the author has the combination to this lock. The samples were transported by the author, via truck, from the property to Salt Lake City.

At Auric's facility in Salt Lake City, all samples were crushed to -1/4" with a jaw crusher. Samples taken from the pits were then split with a sample splitter to a sub-sample of about 1 lb. These splits and all other samples were then further comminuted with a roller, and finally were pulverized using a Bico pulverizer. The final product was at least 90% of 80 to 100 mesh. This material was then further split to a sample size of 15 grams (one-half assay ton) which was used for the fire assay analysis.

Geologic Characteristics

Four distinct stratigraphic units were present in the sampled area. These included three units within the ironstone formation and an underlying greenish clay rich mudstone. Figure 1 exhibits the stratigraphic sequence encountered in each pit. For a description and additional notes for the samples collected, including pit and grab samples, see Appendix A.

In Pit #1, two primary ironstone units were noted and a third minor one. Unit I (sample RO-04) at the top of the section was distinguished from the underlying unit II (sample RO-02) as being more heavily oxidized. Unit II was dark greenish brown in colour. The third ironstone unit (unit III and sample RO-03) at the base of the ironstone bed, was relatively hard compared to units I and II, and possessed a deeper iron colour. Units I and II were matric supported oolitic beds, while unit III appeared to be a massive iron rich precipitate.

Pit #2 was located in a cleared field and the integrity of the upper portion of the stratigraphy was questionable. Thus, the upper 1.5 feet of this section was not sampled, as it exhibited possible disturbance. Sample RO-06 was collected from the lower undisturbed ironstone bed, and is believed to be equivalent to unit II in Pit #1. The stratigraphy observed in Pit #1 is believed to be equivalent to that observed in Pit #2.

Fire assay analysis

Fire assay analysis was performed by Auric's metallurgical engineer, Ahmet Altinay. An optimal fire assay flux was developed to suit this ore. Assays are listed at the end on the attached assay sheet.

Results and Discussion

As the attached assay sheet shows, all but one sample from the sampling program contained relatively high metal levels. On average, the ironstone units showed slightly lower grades than that of the underlying mudstone.

Within Pit #1, where each unit of the ironstone was sampled, the data showed relatively uniform grades throughout. In Pit #2, where only ironstone unit II was sampled (Fig 2), the assay data was much lower, recording the lowest metal content of all samples collected. To the west of Pit #1 where grab samples RO-08 and RO-10 were collected from other ironstone localities, precious metal grades were more consistent with that recorded in Pit #1. It is unclear if sample RO-08 represented undisturbed or disturbed material. It is possible that this material was pushed from the gentle slope between the road and the existing tree line, some 80 to 100 feet to the north.

The variation in precious metal content in the ironstone between pits #1 and #2 could be real, representing a natural decline in metal grades, or could represent random sampling variation. This decline should be investigated further, with infill sampling, to determine whether metal contents do decline.

Assays from the mudstone unit, at all sampled sites, showed precious metal contents of interest. The single highest assay was recorded from sample RO-09, collected along a road cut, where levels of 0.107 opt Au, 0.133 opt Pt and 0.141 opt Pd were recorded. Precious metal contents in the mudstone were more consistently uniform than those obtained from the ironstone units. Based on these findings, this mudstone unit should be investigated in full, both spatially and at depth.

Fire assay data from this chain of custody program show metal levels of interest in both the ironstone and underlying mudstone. These levels warrant additional study, as the potential for MRS's property to host a precious metal ore body is high.

Recommendations and Future Work

The oolitic ironstones in northwestern Alberta are known to be thin, having a thickness up to 30 feet (Kidd, 1959). On MRS's property the thickness of the ironstone at both pit localities was about 8 feet. It is unknown at this time if this ironstone bed is thicker at other localities within MRS's claimed area.

Based on colour alone, grab sample RO-10 may be equivalent to unit II observed in both pits. Visually, sample site RO-10 appeared slightly higher in elevation than the surface of Pit #1. This observation, however, needs to be examined more closely. If correct, however, this observation suggests the ironstone undulates, and thus probably contains areas of greater thickness and areas of pinching.

Mapping of ironstone bed to determine its spatial distribution should be a primary goal, especially in this study area. Based on the thin soil cover, sample hand augering could possibly map the ironstone unit, while at the same time provide additional sampling for precious metal determination. In areas of thick overburden, hand augering may ineffective and a geophysical method may be employed. Geophysical methods may not be needed in the immediate future, if auger sampling can identify a large enough area of interest.

Metal levels obtained in the mudstone were more consistent, and on average slightly higher than those from the ironstone. Additional mapping and sampling of this unit should also be conducted and be a priority. Although the ironstone unit on MRS property is known with respect to its thickness and regional distribution, these parameters of the mudstone are unknown. Depending on the thickness and spatial distribution as well as the metal content of the mudstone, this unit may be of more economic interest than the ironstone.

It is recommended that the property should be explored in a staged manner. Exploration should focus on the immediate area that was sampled in this program.

1. First, a systematic hand auger sampling program should be employed. This would satisfy a two-fold goal of mapping and sampling the units of interest. If the soil conditions permit augering should be conducted at several different depths per sampling site.

2. Once assay data from this program is obtained, a pitting and or trenching program in areas of interest should be conducted. Pitting and trenching would provide larger more representative samples and more detail on thickness of areas of interest. At this stage, or where convenient, several larger bulk samples should be collected for bench scale recovery tests. Auric is in the possession of several 40 to 50 lb samples, that were collected under this chain of custody program, which could be examined as well. These bulk tests would confirm which unit, if any is of more economic interest.

3. After a pitting and trenching program has been completed, areas of interest should be tested with drilling to a prescribed depth. Initially, a 5 to 10 shallow (50') hole drilling program over the area of interest should suffice. This would provide the data for a detailed drilling program to outline potential ore reserves.

Reference:

Kidd, D. J., 1959. Iron Occurrences in the Peace River Region, Alberta. Research Council of Alberta, Geological Division. Preliminary Report 59-3. 38 pages.

Location schematic for sample and pit locations

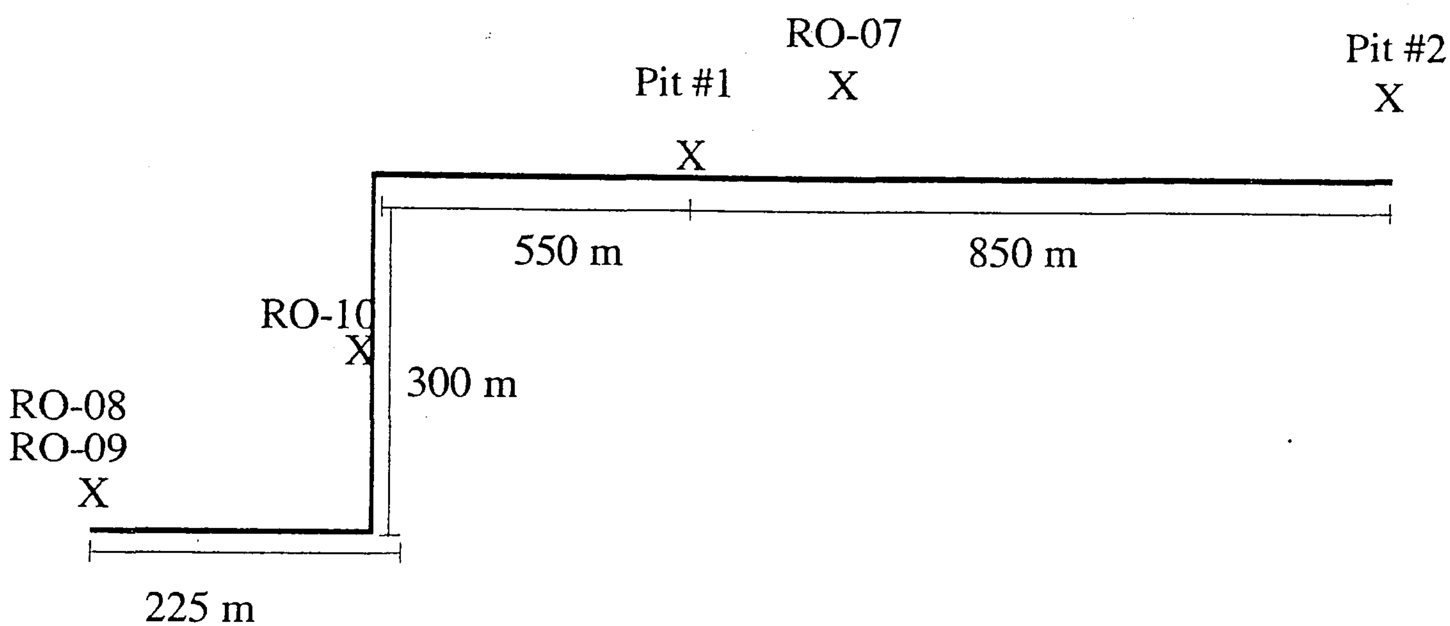
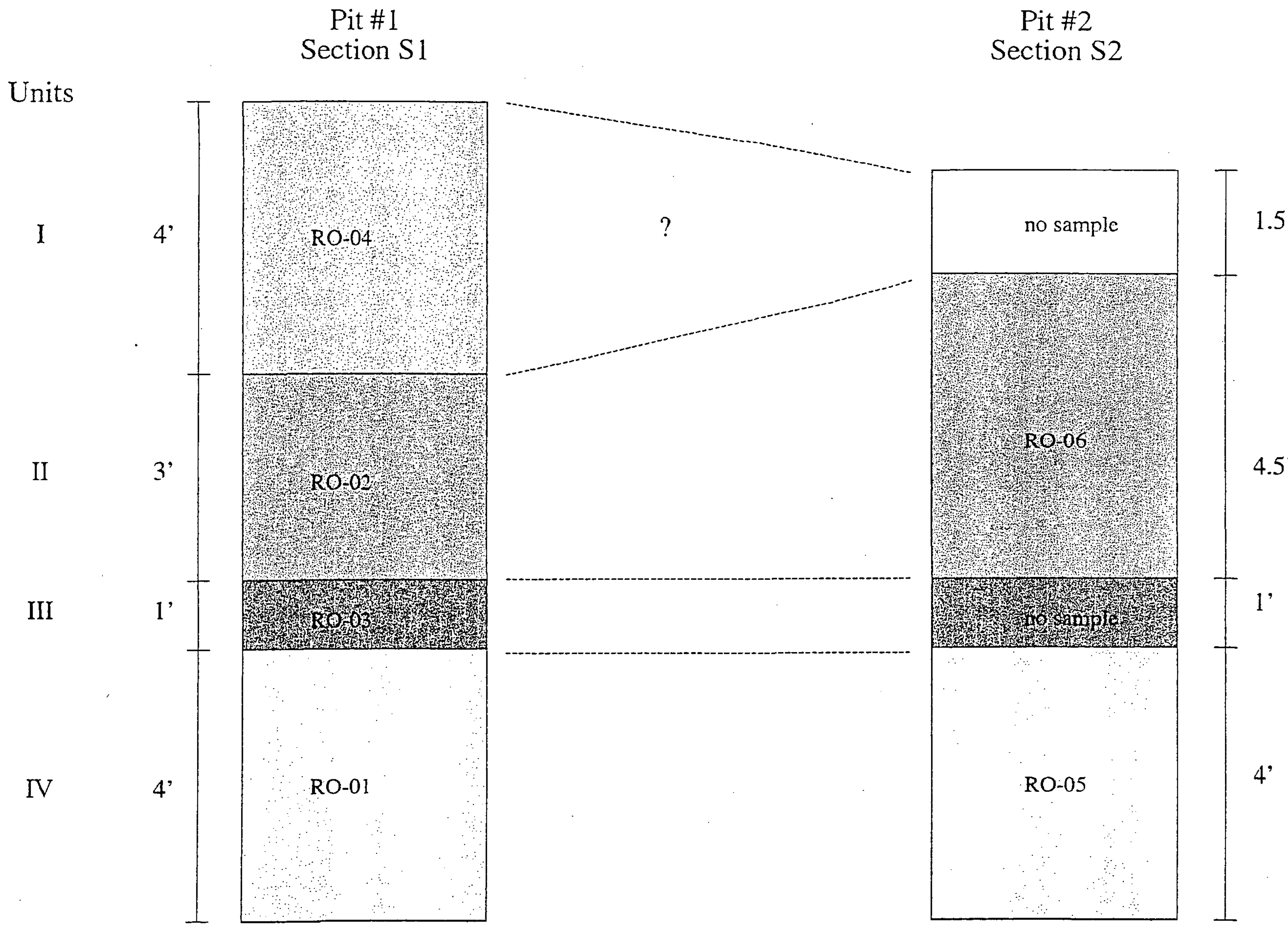


Figure 1: Stratigraphic profiles from Pits #1 and #2.




Map 1
Pit #2
RO-07
Pit #1
RO-10
RO-08/09
98-059 1:20K 98-04-30
AS4917
AIR PHOTO SERVICES (403) 427-3520

Appendix A: 1999 field samples: for Mineral Recovery Systems.

Sample #	Location/ Property/ Map# (M:#) X-section (S#)	Notes
RO-01	Pit #1 (S1)	Sample is a composite, collected by the backhoe, through the bottom most exposed unit in Pit #1. This sample is composed of a very soft greenish grey mudstone. No visible oxidized iron or ooids. This unit had an exposure of 4' vertical.
RO-02	Pit #1 (S1)	Sample is composed of a composite of 3' oolitic ironstone, collected by the backhoe. This unit, dark greenish brown in colour, is less oxidized in appearance than the upper iron unit (see sample RO-04).
R0-03	Pit #1 (S1)	This sample was taken from a 'hard-pan' like material at the base of the ironstone units. This material appears to be an iron precipitate of some sort. Unit, which is about 1' in thickness, is very hard. This is a grab sample of a number of pieces that were dug out of the hole buy the backhoe.
RO-04	Pit #1 (S1)	This sample is a 4' trench sample from the upper oolitic ironstone unit. In appearance, this unit is more oxidized than the lower iron unit. The upper 2' of this sample seems slightly harder than the bottom 2' of the unit. A 50 lb (5 gallon) bucket of this material was collected as a bulk sample from this unit.
Notes	Pit #2 (S2)	On section 26-8, about 200' from an oil well and 860 metres to the east of Pit #1. The natural surface has been disturbed, with the vegetation cleared and surface levelled. It is possible that the upper 1.5' exposed in this pit is anthropogenicly disturbed and thus this upper material was not sampled. The 'hard-pan' surface at the bottom of the iron sandstone unit was present. The Pit was 11' deep, not including the upper 1.5' which was thought to have been disturbed.

RO-05	Pit #2 (S2)	Sample from the bottom 4' of the pit. Composed of greenish-grey mudstone, equivalent to R0-01 in Pit #1.
R0-06	Pit #2 (S2)	Oxidized oolitic material above the hard pan (there may be a few pieces of hard pan material in this sample, however, I am not positive of this). Sample was collected with the backhoe. It is less oxidized than the upper material, and thus probably equivalent to RO-02 in Pit #1.
RO-07	Grab	Grab sample of a greenish grey clay material collected from an exposed bank, near an oil well, between Pit sites #1 and #2. The material weathered from a greenish grey mudstone-shale, which is stratigraphicly below the iron units.
RO-08	Grab	Oxidized ironstone material along a road cut. Sample contains ooids. This material is from the iron units, however, I cannot be sure it is in-situ. The area along the road has been cleared of forest, though small hard woods now grow along the roadside. The sample site is believed to be lower in elevation than Pit #1 and sample RO-10. The sample was taken from a hand dug pit about 20' from the road cut. At the pit site, there was 4 to 5 inches of organic topsoil. If the ironstone collected is in-situ, it is from the bottom most of the iron units. There was no evidence of the hard pan unit suggesting it is a disturbed site, though this is not definitive either. If the sample is from a disturbed site, it may have been pushed from the gentle upward slope that extends from the road to the tree line, about 80' away.
R0-09	Grab	Sample was collected from the road cut, at the sample site of RO-08. This sample is composed of greenish grey mudstone that is stratigraphicly below RO-08. This material is in-situ.
RO-10	Grab	Oolitic sandstone from road cut. Material appears to be in-situ. Ore is less oxidized (dark greenish brown in colour), which may make it equivalent to RO-02 and R0-06. Although the exact elevation of this site is unknown, it is estimated that this site is 10'-15' higher in elevation than Pit #1.

Date: August 6, 1999

ASSAY REPORT:

To: Mr. Ron Owens
Mineral Recovery Systems
201-5201-52 Ave
Ponoka, Alberta
Canada T4J 1HD

AuRIC Sample No:	Customer Sample ID No:	Gold Tr oz/ton	Silver Tr oz/ton	Platinum Tr oz/ton	Palladium Tr oz/ton	Other Tr oz/ton
1994 A	Sandstone # 1	0.044	0.112	N/A	N/A	----
1995 A	Sandstone # 1	0.069	0.106	0.166	0.067	----
1996 A	Sandstone # 1	0.061	0.097	0.134	0.072	----
1997 A	Sandstone # 1	0.092	0.127	0.187	0.069	----
2094 A	Sandstone # 2	0.005	0.129	0.020	N/D	----
2096 A	Sandstone # 2	0.008	0.133	0.031	N/D	----
2095 A	Sandstone # 3	0.001	0.080	0.014	N/D	----
2097 A	Sandstone # 3	0.001	0.098	0.014	N/D	----
0814 C	Sandstone # 1	0.181	0.099	0.237	0.171	----
0815 C	Sandstone # 1	0.250	0.108	1.954	0.817	----
0816 C	Sandstone # 1	0.195	0.110	0.212	0.198	----
0817 C	Sandstone # 1	0.245	0.087	0.302	0.134	----
0818 C	Sandstone # 2	0.017	0.120	0.087	0.002	----
0819 C	Sandstone # 3	0.002	0.065	0.017	N/D	----

Analysis method: (for AuRIC Sample No.'s ending with A - FA/GFAA)
(for AuRIC Sample No.'s ending with C - AR/SX/GFAA)

The results reported above are based on well known, accepted analytical procedures used solely on the sample submitted by the customer. No warranty as to the reproducibility or extractability of the material other than the sample is given. AuRIC Metallurgical Laboratories, LLC makes no representation express or implied on the material other than that represented by the assayed sample

Ahmet B. Altinay
Metallurgical Engineer

[redacted]

AuRIC Metallurgical Laboratories

Date: September 27, 1999

ASSAY REPORT:

To: Mr. Ron Owens
Mineral Recovery Systems
201-5201-52 Ave
Ponoka, Alberta
Canada T4J 1HD

AuRIC Sample No:	Customer Sample ID No:	Gold Tr oz/ton	Silver Tr oz/ton	Platinum Tr oz/ton	Palladium Tr oz/ton	Other Tr oz/ton
2180 A	RO - 01	0.050	0.076	0.038	N/D	----
2181 A	RO – 02	0.037	0.127	0.059	N/D	----
2182 A	RO – 03	0.040	0.139	0.057	N/D	----
2183 A	RO – 04	0.038	0.110	0.051	N/D	----
2184 A	RO – 05	0.059	0.147	0.088	0.017	----
2185 A	RO – 06	0.007	0.094	0.033	N/D	----
2186 A	RO – 07	0.040	0.130	0.061	0.003	----
2187 A	RO – 08	0.039	0.111	0.058	N/D	----
2188 A	RO – 09	0.107	0.250	0.233	0.141	----
2189 A	RO – 10	0.017	0.098	0.071	0.016	----
2190 A	ROA – 01	0.008	0.049	0.017	0.002	----
2191 A	ROA - 02	0.003	0.042	0.014	N/D	----
2192 A	ROA – 03	0.005	0.055	0.019	0.004	----
2193 A	ROA – 04	0.018	0.107	0.066	0.009	----
2194 A	ROA – 05	0.011	0.069	0.045	0.006	----
2195 A	ROA - 06	0.037	0.143	0.076	0.023	----

Analysis method: (for AuRIC Sample No.'s ending with A - FA/GFAA)

The results reported above are based on well known, accepted analytical procedures used solely on the sample submitted by the customer. No warranty as to the reproducibility or extractability of the material other than the sample is given. AuRIC Metallurgical Laboratories, LLC makes no representation express or implied on the material other than that represented by the assayed sample.

Ahmet B. Altinay
Metallurgical Engineer

[redacted]

AuRIC Metallurgical Laboratories

Date: May 4, 2000

CHEMICAL ANALYSIS REPORT:

To: Mr. Ron Owens
Mineral Recovery Systems
201-5201-52 Ave
Ponoka, Alberta
Canada T4J 1HD

AuRIC Sample No:	Customer Sample ID No:	Gold Tr oz/ton	Silver Tr oz/ton	Platinum Tr oz/ton	Palladium Tr oz/ton	Other Tr oz/ton
1132 C	(None)	0.007	0.001	0.145	0.021	----

Analysis method: (for AuRIC Sample No.'s ending with C: Chemical Assay/SX/GFAA
(for AuRIC Sample No.'s ending with C-a: Chemical Assay with analytical finish.)
(for AuRIC Sample No.'s ending with H: Hydrometallurgical extraction / Analytical finish.)

The results reported above are based on well known, accepted analytical procedures used solely on the sample submitted by the customer. No warranty as to the reproducibility or extractability of the material other than the sample is given. AuRIC Metallurgical Laboratories, LLC makes no representation express or implied on the material other than that represented by the assayed sample.

Ahmet B. Altinay
Metallurgical Engineer

[redacted]

Curriculum vitae

Terry K. Christopher

Present

[redacted]
Logan, UT
84321
U.S.A.

Personal Background

Born
Date of Birth
Martial Status
Health
Physical Limitations

[redacted]

Education Background

1992-1994 and 1996-1999 (p.t.)	Ph.D. in Geochemistry, Memorial University of and Newfoundland, St. John's, Newfoundland.
1991.	B.Sc. Honours in Earth Science, Memorial University of Newfoundland, St. John's, Newfoundland.

Work Experience

Full-time Employment

1999-present	Geologist with Auric Metallurgical Laboratories. Duties include field analysis, sample collection under chain of custody procedures, field mapping and other geological evaluations.
1998-1999	Head geologist/geochemist with LS Capital Corp. Duties included locating and testing conventional mining projects of merit, detailed sampling and mapping of prospective properties. Other duties included R&D into refractory ore leach methods.
1995-1997	Geologist. Co-founder and director of Imperial Venture Corp (IVC). As a director and geologist, I located promising exploration targets. This

resulted in the acquisition of 480,000 acres of promising targets, with combined potential in excess of 1 Billion barrels of recoverable oil.

1995-1996	Geologist. Extensively involved in the Labrador exploration play which included; locating, staking and vending properties to junior exploration companies.

Part-time Employment

July 1994.	Soil and stream sediment sampler with Cominco.
1990-1995	Laboratory demonstrator for various courses at the Earth Science Department, Memorial University of Newfoundland. Courses included the first two introductory courses as well as Earth Science 2310 (Maps and Sections), 3600 (Environmental Geochemistry) and 3811 (Palaeontology). Earth Science 2310 includes a eight day field school in which I was the teaching assistant for two years.
Summer 1991	Junior field assistant with the local Department of Mines Energy and Resources; mapped an area of central Newfoundland for mineral aggregate resource; duties included many field and camp responsibilities.
Summer 1989	Junior field assistant with the local Department of Mines Energy and Resources; detailed mapping project in central Newfoundland; duties included mapping, sampling and field orientation along with numerous camp duties.

Religious Associations

[redacted]

Creative Products

Dissertation

Christopher, Terry K., 1999 "Paleolimnology in an urban environment: The history of environmental change in St. John's, Newfoundland".

Thesis

Christopher, T.K., 1991. "Mapping anthropogenic effects of urbanization in the St. John's area using the inorganic geochemistry of lake sediments". Unpublished B.Sc. Honours thesis, Memorial University of Newfoundland, 105 pages.

Publications and Presentations

Refereed;

Christopher, T.K., Davenport, P.H., and Burden, E.T., 1994. "The pollution history of a city from the sediment record of urban lakes." *In* Trace Substances, Environment and Health. Richard Cothern - editor. Proceedings from the Society for Environmental Geochemistry and Health, New Orleans, 1993 Conference, pages 145-152.

Davenport, P.H., Christopher, T.K., Vardy, S. and Nolan, L.W., 1993. "Geochemical mapping in Newfoundland and Labrador: its role in establishing geochemical baselines for the measurement of environmental change. Journal of Geochemical Exploration, volume 49, pages 177-200.

Non-Refereed;

Christopher, T.K., Davenport, P.H. and Burden, E.T., 1994. "Lake ecosystems in the urban environment; Can they be saved?" In Proceedings of the 9th Atlantic regional Hydrotechnical Conference, St. John's, Newfoundland, November 9-10.

Christopher, T.K., Davenport, P.H. and Burden, E.T., 1994. "The challenge of preserving urban lakes. *In* Programs with Abstracts, Geological Association of Canada Annual Meeting, Waterloo, Ontario, May 16-18.

Christopher, T.K., Davenport, P.H. and Burden, E.T., 1993. The effect of urban and industrial development on the geochemistry of the watersheds in the St. John's area: Preliminary Results. *In* Proceedings from The Scientific Challenge of our Changing Environment, St. John's, Newfoundland, March 3-5.

Christopher, T.K, Davenport, P.H. and Burden, E.T., 1993. The effect of urban and industrial development on the geochemistry of the watersheds in the St. John's area: Preliminary Results: *In* Current Research Newfoundland Department of Mines and Energy, Geological Survey Branch, Report 93-1, pages 419-433.

Ricketts, M.J. and Christopher, T.K., 1992. "Granular aggregate resource mapping of the Grand Falls (NTS-2D/13) and Mount Peyton (NTS 2D/14) map areas. *In* Current Research Newfoundland Department of Mines and Energy, Geological Survey Branch, Report 92-1, pages 39-49.

Davenport, P.H., Christopher, T.K., Honarvar, 1991. Mapping anthropogenetic changes in the inorganic geochemistry of urban drainage system using organic lake sediments. *In* Proceedings from 2nd International symposium on Environmental Geochemistry including 3rd International Symposium on Environmental Geochemistry and Health and 9th European Meeting of the Society for Environmental Geochemistry and Health, Uppsala, Sweden, September 16-19.

Media Presentations

Radio: Interviewed on The Morning Show, February, 1993.

Awards and Honours

1991-95 Special Resource Scholarship to Pursue Studies related to Resource Development.

1993-95 Buchans ASARCO Scholarship.

1993-94 Fellow of the School of Graduate Studies.

1992-93 Academic All-Canadian.

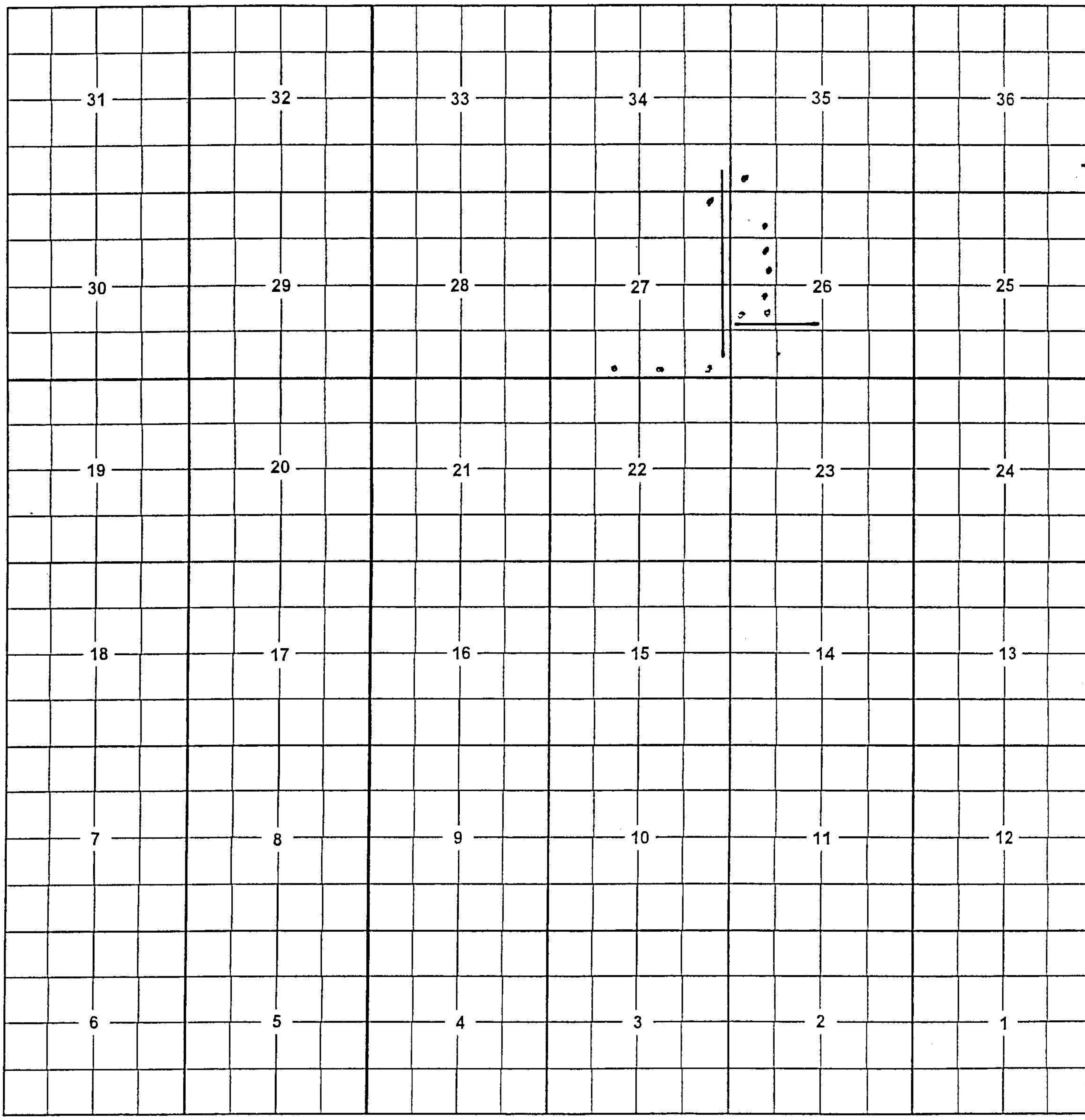
1986 Harriet Curtis Collegiate Award.

References

Dr. Elliott T. Burden
Associate Professor,
Memorial University of Newfoundland
St. John's, Newfoundland
A1B 3X5
[redacted]

Dr. Henry Williams
Associate Professor,
Memorial University of Newfoundland
St. John's, Newfoundland
A1B 3X5
[redacted]

Dr. Peter H. Davenport
Geologic Survey of Canada
Calgary office.



Refraction Seismic Lines

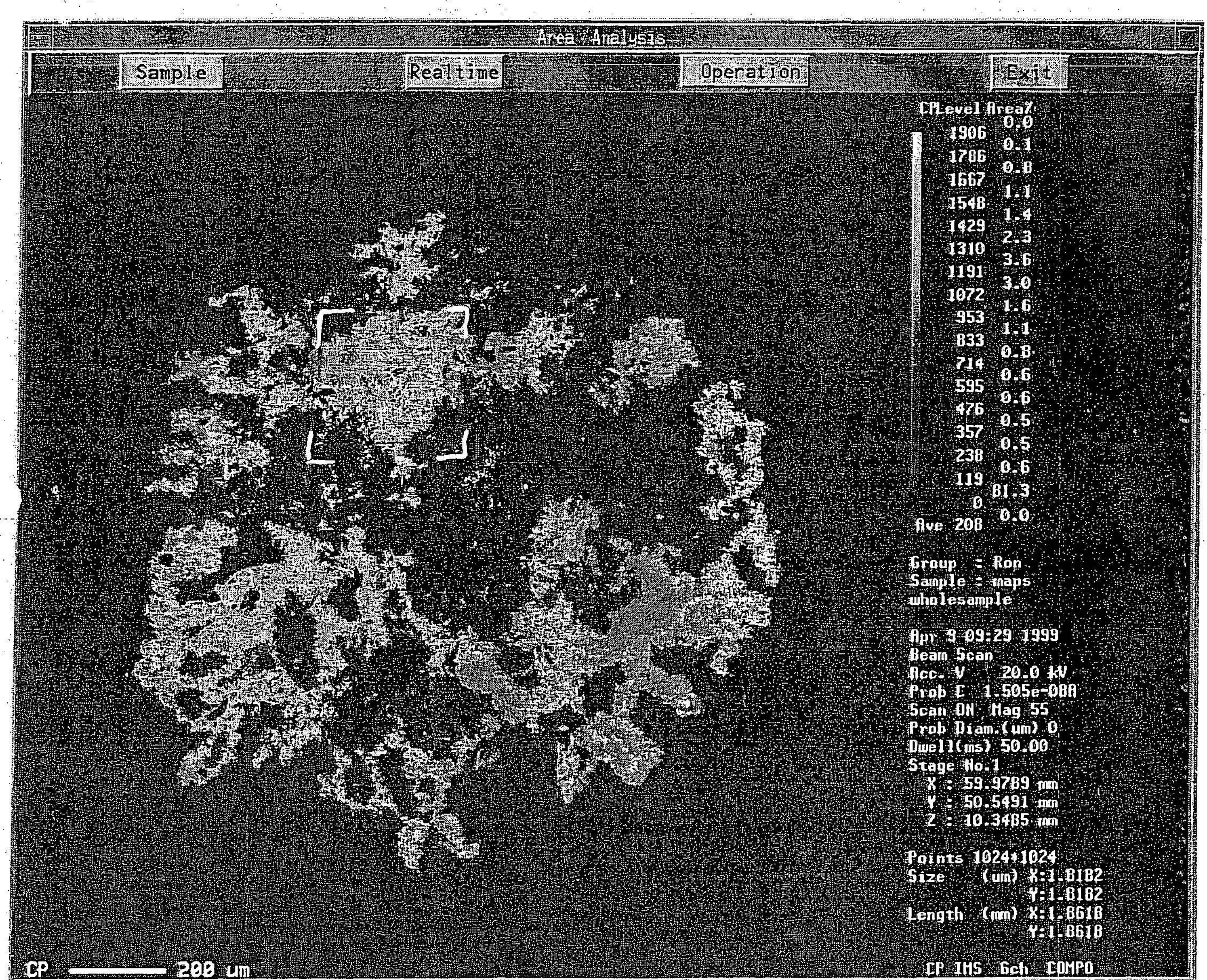
Auger Sample Sites

Meridian 6 TWP. 79 Range 09

Seismic Lines W½ 26-6-09-79

Backscatter Image - Compositional contrast

Selected Area for X-Ray Map.



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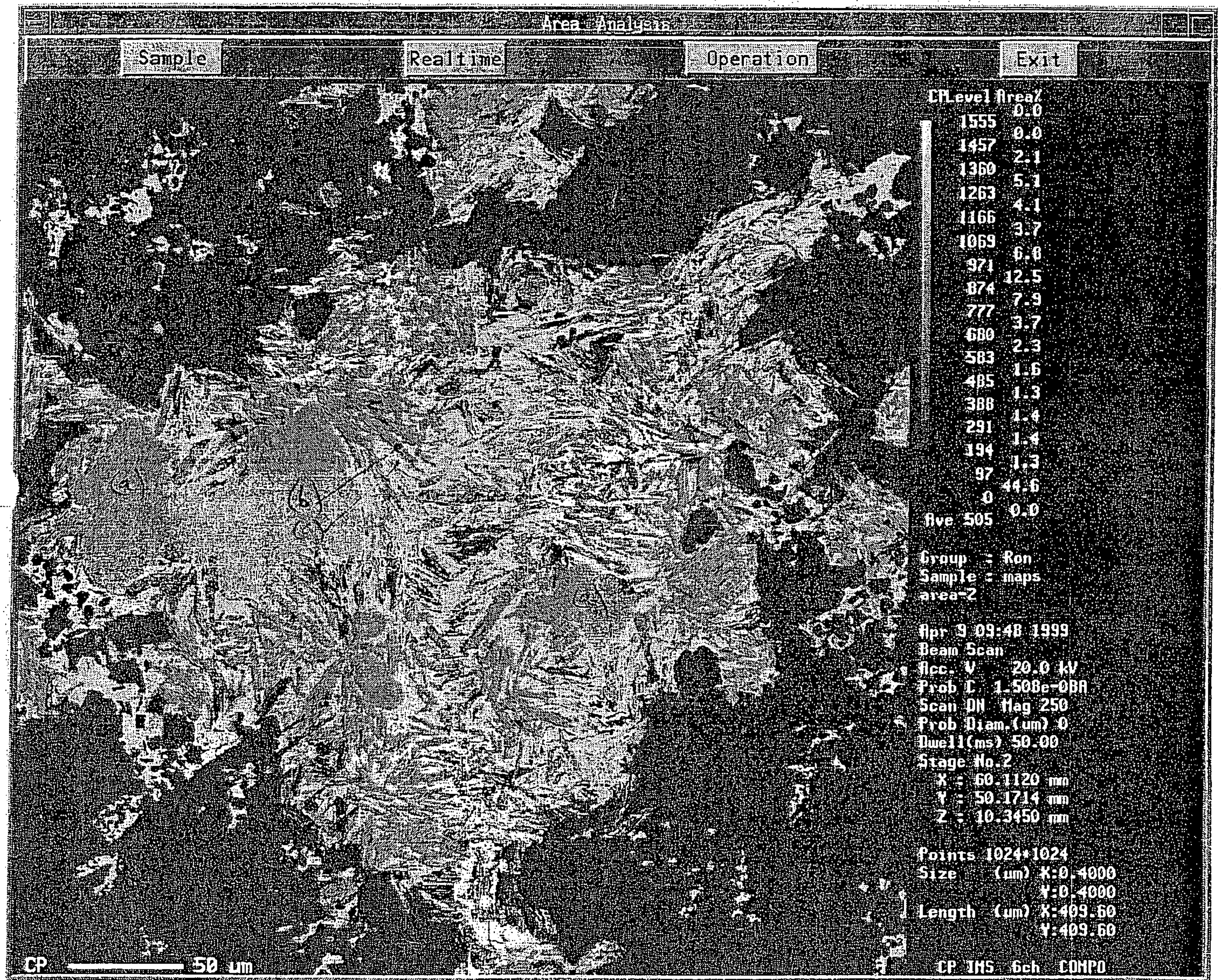
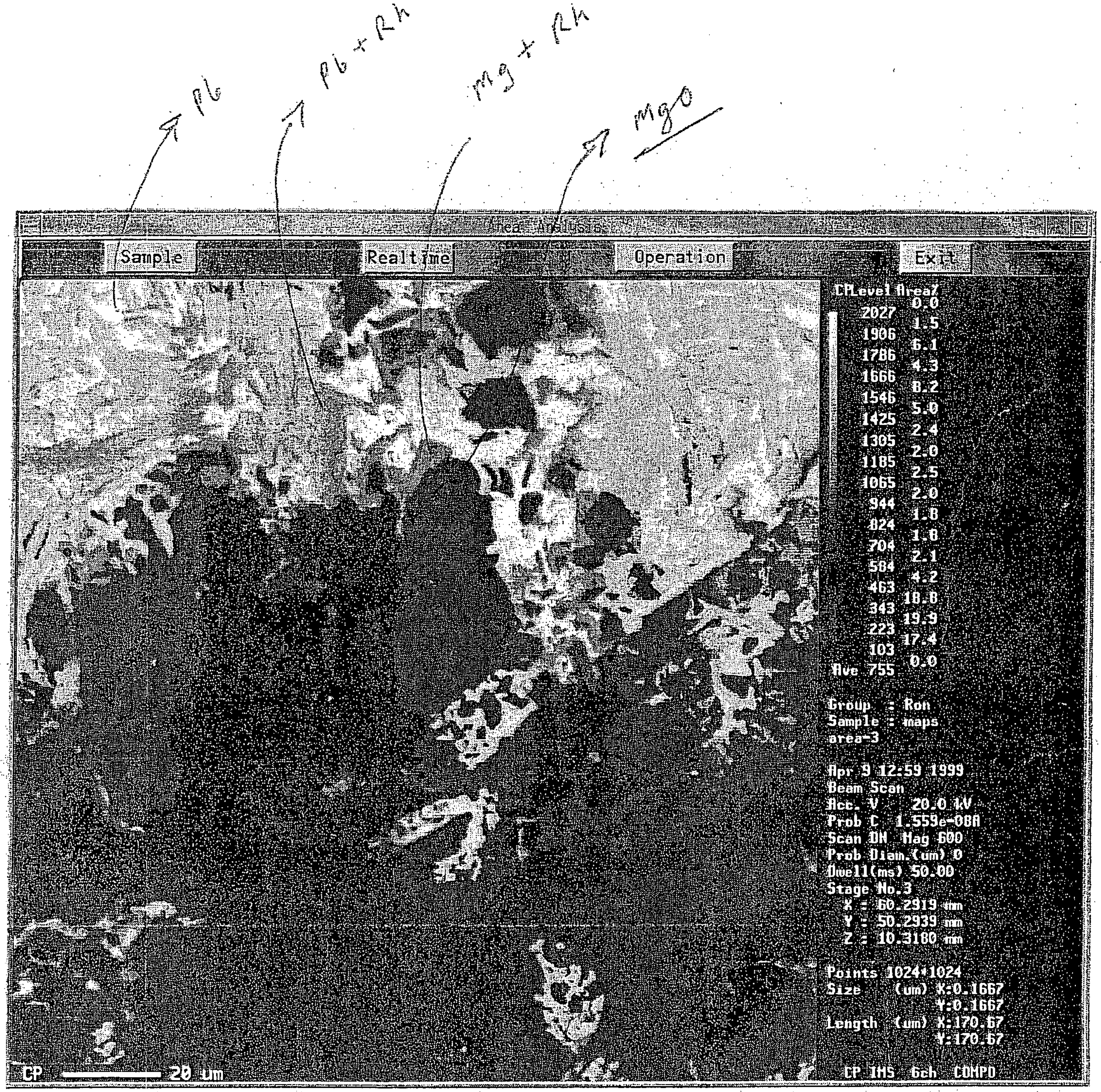
Back scatter Image – Composition contrast.



(d)

(a) Gold / Silver
(b) Rh / Pb
(c) Pb
(d) Void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Ave 755
Group : Ron
Sample : maps
area-3
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Scan ON Mag 600
Prob Diam.(um) 0
Dwell(ms) 50.00
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Z : 10.3180 mm
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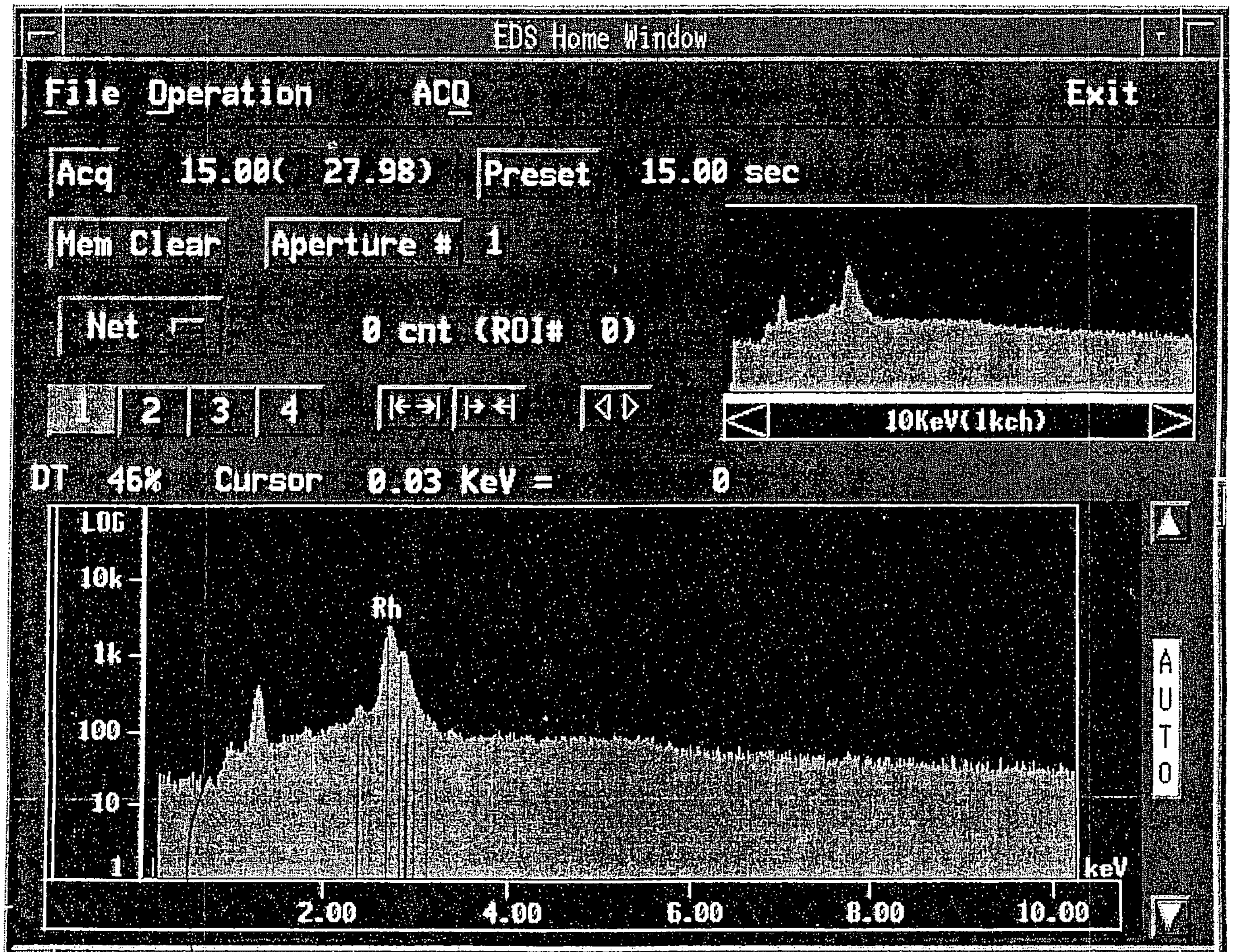
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2
3
4
10KeV(1kch)
DT 46% Cursor 0.03 KeV = 0
LOG
10k
1k
100
10
1
Rh
keV
2.00
4.00
6.00
8.00
10.00
AUTO

Mg

EDS Home Window

Semi Quantitative Result

Element	Mode	ROI(KeV)	K-ratio(%)	+/-
Ag L	Normal	2.34- 4.04	0.0000	0.0000
Au M	Normal	1.40- 2.67	0.0367	0.0023
Pb M	Normal	1.57- 2.92	0.2849	0.0044
Rh L	Normal	2.10- 3.64	2.3597	0.0047
Tb L	Normal	5.16- 8.81	0.0147	0.0014
Mg K	Normal	0.98- 1.57	0.2078	0.0003

Chi_square = 1.9500

Element	Weight%	Atomic%	ZAF	Z	A	F
Ag	0.000	0.0000	1.0953	1.0439	1.0493	1.0000
Au	1.330	0.5244	1.2568	1.2098	1.0388	1.0000
Pb	9.183	3.4431	1.1186	1.1051	1.0122	1.0000
Rh	77.242	58.3128	1.1359	1.0360	1.0965	1.0000
Tb	0.521	0.2546	1.2286	1.1633	1.0561	1.0000
Mg	11.725	37.4651	1.9584	0.7722	2.5385	0.9991

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Print

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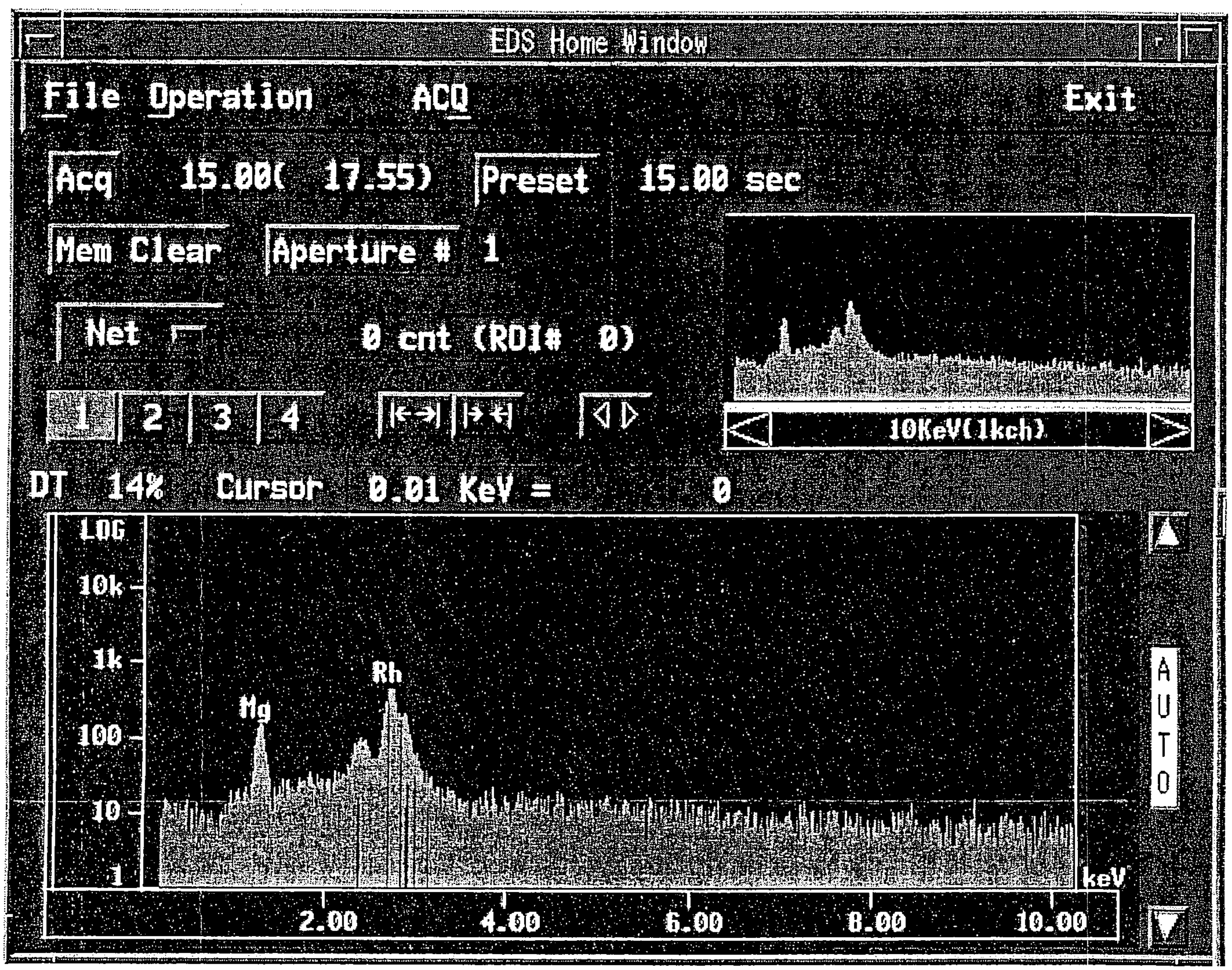

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DT 14% Cursor 0.01 KeV = 0
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10k
1k
100
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1
Mg
Rh
keV
2.00
4.00
6.00
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AUTO

EDS Home Window

Semi Quantitative Result

Acq. Date : Fri Apr 9 12:35:13 1999

Element	Mode	ROI(KeV)	K-ratio(%)	+/-
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Au M	Normal	1.40- 2.67	0.0163	0.0046
Pb M	Normal	1.57- 2.92	0.0000	0.0000
Rh L	Normal	2.10- 3.64	13.6835	0.0110
Tb L	Normal	5.16- 8.81	0.0000	0.0000

Chi_square = 8.1258

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Ag	0.000	0.0000	0.9815	1.0074	0.9743	1.0000
Au	0.140	0.0729	1.1717	1.1680	1.0032	1.0000
Pb	0.000	0.0000	1.0387	1.0667	0.9738	1.0000
Rh	99.860	99.9271	1.0006	0.9998	1.0007	1.0000
Tb	0.000	0.0000	1.1941	1.1208	1.0654	1.0000

Total 100.000 100.0000

Normalization factor = 7.2936

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