AP - 2

STAGE 1 & 2 REPORTS

(APPENDIX VIII)

DATE:

July 1999

WESTGATE SUBDIVISION, GRIMES BATTERY and TASKER ROAD

STAGE 1 ABATEMENT PLAN REPORT (SITE ASSESSMENT INVESTIGATION)

July 1999

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OIL CONSERVATION DIVISION

Shell Exploration and Production Company
Houston, Texas

Prepared by

BBC International, Incorporated
ARCADIS Geraghty & Miller

Appendix VIII

Additional Soil Sample Laboratory Results

Risk Assessment Data

Arthur D. Little
Environmental Monitoring and Analysis Unit

Project Title : Shell - Hobbs, NM
Data Package: 1822
Data Table: BTEX - GC/MS - Main - Not Surrogate Corrected

Field ID	TSB-7 2'-3'	TSB-8 2'-3'
Lab ID	99A1348	99A1349
Lab Batch	B0514	B0514
File	T0648.D	T0651.D
Sample Type	SAMP	SAMP
Weight Basis	VOLUME	VOLUME
Matrix	SOIL	SOIL
Sample Size	3.64 g	3.47 g
Associated Blank	022699VBLK01	022699VBLK03
Field Date	02/17/99	02/17/99
Extract Date	02/26/99	02/26/99
Analysis Date	02/26/99	02/26/99
Min Reporting Limit	14	14
Units	ug/Kg	ug/Kg
Benzene	20	9.8 J
Toluene	12 J	6.5 J
Ethylbenzene	3200 L	11000 L
m,p-Xylene	12000 L	48000 L
o-Xylene	100	240
%Dibromofluoromethane	104	109
%Toluene-d8	94	96
%4-Bromofluorobenzene	127	134

Project Title : Shell - Hobbs, NM
Data Package: 1822
Data Table: BTEX - GC/MS - PB - Not Surrogate Corrected

Field ID	Procedural Blank	Procedural Blank	Procedural Blank
Lab ID	022699VBLK01	022699VBLK03	022699VBLK13
Lab Batch	B0514	B0514	B0514
File	T0645.D	T0650.D	T0664.D
Sample Type	QC	QC	QC
Weight Basis	VOLUME	VOLUME	VOLUME
Matrix	WATER	WATER	WATER
Sample Size	5 mL	5 mL	5 mL
Associated Blank	NA	NA	NA
Field Date	NA	NA	NA
Extract Date	02/26/99	02/26/99	02/27/99
Analysis Date	02/26/99	02/26/99	02/27/99
Min Reporting Limit	10	10	10
Units	ug/L	ug/L	ug/L
Benzene	ND	ND	ND
Toluene	ND	ND	ND
Ethylbenzene	ND	ND	ND
m,p-Xylene	ND	ND	ND
o-Xylene	ND	ND	ND
%Dibromofluoromethane	96	98	101
%Toluene-d8	98	99	102
%4-Bromofluorobenzene	97	97	96

Project Title : Shell - Hobbs, NM
Data Package: 1822
Data Table: BTEX - GC/MS - BS-BSD - Not Surrogate Corrected

Field ID	Procedural Blank	Laboratory Control Sample			
Lab ID	022699VBLK01	022699VLCS01			
Lab Batch	B0514	B0514			
File	T0645.D	T0646.D			
Sample Type	QC	QC			
Weight Basis	VOLUME	VOLUME			
Matrix	WATER	WATER			
Sample Size	5 mL	5 mL			
Associated Blank	NA	022699VBLK01			
Field Date	NA	NA			
Extract Date	02/26/99	02/26/99			
Analysis Date	02/26/99	02/26/99			
Min Reporting Limit	10	10			
Units	ug/L	ug/L	T	%R	Q
Benzene	ND	49	50	98	
Toluene	ND	48	50	96	
Ethylbenzene	ND	ND			
m,p-Xylene	ND	ND			
o-Xylene	ND	ND			
%Dibromofluoromethane	96	98			
%Toluene-d8	98	99			
%4-Bromofluorobenzene	97	99			

Project Title : Shell - Hobbs, NM
Data Package: 1822
Data Table: BTEX - GC/MS - BS-BSD - Not Surrogate Corrected

	Laboratory					
Field ID	**Control Sample**					
Lab ID	**022699VLCS02**					
Lab Batch	**B0514**					
File	**T0647.D**					
Sample Type	**QC**					
Weight Basis	**VOLUME**					
Matrix	**WATER**					
Sample Size	**5**	**mL**				
Associated Blank	**022699VBLK01**					
Field Date	**NA**					
Extract Date	**02/26/99**					
Analysis Date	**02/26/99**					
Min Reporting Limit	**10**					
Units	**ug/L**		**T**	**%R**	**Q**	**RPD**	**Q**
Benzene	50		50	100		2	
Toluene	49		50	98		2.1	
Ethylbenzene	ND						
m,p-Xylene	ND						
o-Xylene	ND						
%Dibromofluoromethane	101						
%Toluene-d8	100						
%4-Bromofluorobenzene	99						

Arthur D. Little
Environmental Monitoring and Analysis Unit

Project Title : Shell - Hobbs, NM
Sample Set: B0530
Data : SHC/TPH - GC/FID - Main - Not Surrogate Corrected

Field ID	TSB-7 2'-3'	TSB-8 2'-3'
Lab ID	99A1348	99A1349
Lab Batch	B0530	B0530
File	03299932.D	03299934.D
Sample Type	SAMP	SAMP
Weight Basis	DRY	DRY
Matrix	SOIL	SOIL
Sample Size	1.83 g	4.8 g
Associated Blank	CG-S-30PB	CG-S-30PB
Field Date	02/17/99	02/17/99
Extract Date	03/04/99	03/04/99
Analysis Date	03/30/99	03/30/99
Min Reporting Limit	27	17
Units	ug/g	ug/g
nC9	34	53
nC10	33	59
nC11	48	66
nC12	45	60
nC13	34	71
1380	130	91
nC14	65	110
1470	110	85
nC15	38	87
nC16	20 J	83
1650	180	100
nC17	24 J	76
pristane	180	120
nC18	26 J	72
phytane	170	110
nC19	30	63
nC20	37	62
nC21	27	55
nC22	21 J	48
nC23	18 J	39
nC24	19 J	38
nC25	26 J	40
nC26	20 J	33
nC27	20 J	27
nC28	28	27
nC29	37	28
nC30	58	26
nC31	110	40
nC32	120	27
nC33	130	17
nC34	160	20
nC35	180	29
nC36	160	18
nC37	120	8.2 J
nC38	120	10 J
nC39	90	7.6 J
nC40	81	7.3 J
TPH (RES)	10000	7100
TPH	57000	32000
%OTP	103	111
%5AA	124	118
%D50T	117	121

Project Title : Shell - Hobbs, NM
Sample Set: B0530
Data : SHC/TPH - GC/FID - PB - Not Surrogate Corrected

Field ID	Procedural Blank	
Lab ID	CG-S-30PB	
Lab Batch	B0530	
File	03299933.D	
Sample Type	QC	
Weight Basis	DRY	
Matrix	SOIL	
Sample Size	2	g
Associated Blank	NA	
Field Date	NA	
Extract Date	03/04/99	
Analysis Date	03/30/99	
Min Reporting Limit	1	
Units	ug/g	
nC9	ND	
nC10	0.033	J
nC11	ND	
nC12	ND	
nC13	ND	
1380	ND	
nC14	0.058	J
1470	ND	
nC15	0.041	J
nC16	0.013	J
1650	ND	
nC17	ND	
pristane	ND	
nC18	ND	
phytane	ND	
nC19	ND	
nC20	ND	
nC21	ND	
nC22	ND	
nC23	0.032	J
nC24	0.034	J
nC25	0.045	J
nC26	0.047	J
nC27	0.053	J
nC28	0.046	J
nC29	0.075	J
nC30	0.055	J
nC31	0.061	J
nC32	0.04	J
nC33	0.037	J
nC34	0.031	J
nC35	0.025	J
nC36	0.028	J
nC37	0.016	J
nC38	ND	
nC39	ND	
nC40	ND	
TPH (RES)	96	
TPH	96	
%OTP	81	
%5AA	90	
%D50T	85	

Project Title : Shell - Hobbs, NM
Sample Set: B0530
Data : SHC/TPH - GC/FID - BS-BSD - Not Surrogate Corrected

Field ID	Procedural Blank	Blank Spike			
Lab ID	CG-S-30PB	CG-S-31BS			
Lab Batch	B0530	B0530			
File	03299933.D	03299931.D			
Sample Type	QC	QC			
Weight Basis	DRY	DRY			
Matrix	SOIL	SOIL			
Sample Size	2 g	2 g			
Associated Blank	NA	CG-S-30PB			
Field Date	NA	NA			
Extract Date	03/04/99	03/04/99			
Analysis Date	03/30/99	03/30/99			
Min Reporting Limit	1	1			
Units	ug/g	ug/g	T	%R	Q
nC9	ND	ND			
nC10	0.033 J	14	25	56	
nC11	ND	ND			
nC12	ND	0.032 J			
nC13	ND	0.046 J			
1380	ND	ND			
nC14	0.058 J	0.17 JB			
1470	ND	0.46 J			
nC15	0.041 J	18	25	72	
nC16	0.013 J	0.11 J			
1650	ND	ND			
nC17	ND	0.13 J			
pristane	ND	20	25	80	
nC18	ND	0.17 J			
phytane	ND	0.23 J			
nC19	ND	0.12 J			
nC20	ND	18	25	72	
nC21	ND	0.14 J			
nC22	ND	0.16 J			
nC23	0.032 J	0.26 J			
nC24	0.034 J	0.23 J			
nC25	0.045 J	19	25	76	
nC26	0.047 J	0.27 J			
nC27	0.053 J	0.28 J			
nC28	0.046 J	0.36 J			
nC29	0.075 J	0.33 JB			
nC30	0.055 J	19	25	76	
nC31	0.061 J	0.29 JB			
nC32	0.04 J	0.34 J			
nC33	0.037 J	0.28 J			
nC34	0.031 J	22	25	88	
nC35	0.025 J	0.3 J			
nC36	0.028 J	22	25	88	
nC37	0.016 J	0.21 J			
nC38	ND	0.22 J			
nC39	ND	0.19 J			
nC40	ND	0.2 J			
TPH (RES)	96	280			
TPH	96	280			
%OTP	81	87			
%5AA	90	98			
%D50T	85	89			

Project Title : Shell - Hobbs, NM
Sample Set: B0530
Data : SHC/TPH - GC/FID - NSC - Not Surrogate Corrected

	Oil Reference				Oil Reference			
Field ID	**Sample**				**Sample**			
Lab ID	**BM91**				**BM91**			
Lab Batch	**B0530**				**B0530**			
File	**03299913.D**				**03299914.D**			
Sample Type	**QC**				**QC**			
Weight Basis	**OIL**				**OIL**			
Matrix	**OIL**				**OIL**			
Sample Size	**5 mg**				**5 mg**			
Associated Blank	**NA**				**NA**			
Field Date	**NA**				**NA**			
Extract Date	**NA**				**NA**			
Analysis Date	**3/29/99**				**3/29/99**			
Min Reporting Limit	**0.2**				**0.2**			
Units	**ug/mg**	**T**	**%D**	**Q**	**ug/mg**	**T**	**%D**	**Q**
nC9	4.4	4.8	-8.3		4.9	4.8	2.1	
nC10	3.8	4.2	-9.5		4.2	4.2	0	
nC11	3.8	4.3	-12		3.9	4.3	-9.3	
nC12	3.8	4	-5		3.8	4	-5	
nC13	3.3	4	-18		3.4	4	-15	
1380	1.1	1	10		1.2	1	20	
nC14	3.4	4.2	-19		4.2	4.2	0	
1470	1.3	1.4	-7.2		1.2	1.4	-14	
nC15	3.1	3.7	-16		3.3	3.7	-11	
nC16	3.1	3.2	-3.1		3.2	3.2	0	
1650	1.6	1.5	6.7		1.7	1.5	13	
nC17	2.8	3.2	-13		2.8	3.2	-13	
pristane	1.8	2.2	-18		2	2.2	-9.1	
nC18	2.6	2.9	-10		2.5	2.9	-14	
phytane	1.4	1.6	-13		1.3	1.6	-19	
nC19	2.3	2.6	-12		2.3	2.6	-12	
nC20	2.2	2.7	-19		2.4	2.7	-11	
nC21	2.1	2.4	-12		2.3	2.4	-4.2	
nC22	2	2.2	-9.1		2	2.2	-9.1	
nC23	1.9	2	-5		2	2	0	
nC24	1.7	2	-15		1.8	2	-10	
nC25	1.6	1.7	-5.9		1.5	1.7	-12	
nC26	1.4	1.5	-6.7		1.4	1.5	-6.7	
nC27	0.99	1.2	-18		1	1.2	-17	
nC28	0.84	0.88	-4.6		0.87	0.88	-1.1	
nC29	0.79	0.81	-2.5		0.83	0.81	2.5	
nC30	0.58	0.65	-11		0.61	0.65	-6.2	
nC31	0.57	0.58	-1.7		0.74	0.58	28	
nC32	0.41	0.44	-6.8		0.5	0.44	14	
nC33	0.43	0.4	7.5		0.35	0.4	-13	
nC34	0.4	0.35	14		0.34	0.35	-2.9	
nC35	0.42	0.35	20		0.39	0.35	11	
nC36	0.27	0.23	17		0.28	0.23	22	
nC37	0.23	0.23	0		0.22	0.23	-4.4	
nC38	0.2	0.22	-9.1		0.23	0.22	4.5	
nC39	0.15	0.18	-17	J	0.16	0.18	-11	J
nC40	0.18	0.19	-5.3	J	0.18	0.19	-5.3	J
TPH (RES)	180	220	-18		190	220	-14	
TPH	600	660	-9.1		600	660	-9.1	
%OTP	96				95			
%5AA	113				113			
%D50T	97				96			

Project Title : Shell - Hobbs, NM
Data Package: 1932
Data Table: PAH - GC/MS/SIM - Main - Surrogate Corrected

Field ID	TSB-7 2'-3'	TSB-8 2'-3'
Lab ID	99A1348	99A1349
Lab Batch	B0530	B0530
File	W7035.D	W7036.D
Sample Type	SAMP	SAMP
Weight Basis	DRY	DRY
Matrix	SOIL	SOIL
Sample Size	1.83 g	4.8 g
Associated Blank	CG-S-30PB	CG-S-30PB
Field Date	02/17/99	02/17/99
Extract Date	03/04/99	03/04/99
Analysis Date	04/03/99	04/03/99
Min Reporting Limit	680	420
Units	ug/Kg	ug/Kg
Naphthalene	12000	11000
C1-Naphthalenes	45000	36000
C2-Naphthalenes	100000	70000
C3-Naphthalenes	110000	68000
C4-Naphthalenes	79000	46000
Acenaphthylene	ND	ND
Acenaphthene	ND	ND
Biphenyl	6200	4100
Fluorene	6100	3700
C1-Fluorenes	15000	8400
C2-Fluorenes	23000	13000
C3-Fluorenes	32000	16000
Anthracene	ND	ND
Phenanthrene	14000	8300
C1-Phenanthrenes/anthracenes	33000	19000
C2-Phenanthrenes/anthracenes	46000	25000
C3-Phenanthrenes/anthracenes	39000	20000
C4-Phenanthrenes/anthracenes	32000	15000
Dibenzothiophene	23000	13000
C1-Dibenzothiophenes	60000	32000
C2-Dibenzothiophenes	99000	50000
C3-Dibenzothiophenes	89000	45000
Fluoranthene	ND	ND
Pyrene	2000	810
C1-Fluoranthenes/pyrenes	7200	3400
C2-Fluoranthenes/pyrenes	12000	5500
C3-Fluoranthenes/pyrenes	15000	7200
Benzo[a]anthracene	1200	450
Chrysene	3600	1500
C1-Chrysenes	7200	3100
C2-Chrysenes	11000	5000
C3-Chrysenes	11000	4800
C4-Chrysenes	7000	3100
Benzo[b]fluoranthene	1100	380 J
Benzo[k]fluoranthene	220 J	88 J
Benzo[e]pyrene	2100	910
Benzo[a]pyrene	1100	350 J
Perylene	610 J	210 J
Indeno[1,2,3,-c,d]pyrene	950	200 J
Dibenzo[a,h]anthracene	340 J	120 J
Benzo[g,h,i]perylene	1600	390 J
%d8-Naphthalene	89	92
%d10-Acenaphthene	100	101
%d10-Phenanthrene	106	106
%d12-Benzo[a]pyrene	117	122

Project Title : Shell - Hobbs, NM
Data Package: 1932
Data Table: PAH - GC/MS/SIM - PB - Surrogate Corrected

Field ID	Procedural Blank
Lab ID	CG-S-30PB
Lab Batch	B0530
File	W7033.D
Sample Type	QC
Weight Basis	DRY
Matrix	SOIL
Sample Size	2 g
Associated Blank	NA
Field Date	NA
Extract Date	03/04/99
Analysis Date	04/03/99
Min Reporting Limit	25
Units	ug/Kg
Naphthalene	6 J
C1-Naphthalenes	2.9 J
C2-Naphthalenes	ND
C3-Naphthalenes	ND
C4-Naphthalenes	ND
Acenaphthylene	2.3 J
Acenaphthene	ND
Biphenyl	ND
Fluorene	ND
C1-Fluorenes	ND
C2-Fluorenes	ND
C3-Fluorenes	ND
Anthracene	ND
Phenanthrene	3.4 J
C1-Phenanthrenes/anthracenes	ND
C2-Phenanthrenes/anthracenes	ND
C3-Phenanthrenes/anthracenes	ND
C4-Phenanthrenes/anthracenes	ND
Dibenzothiophene	ND
C1-Dibenzothiophenes	ND
C2-Dibenzothiophenes	ND
C3-Dibenzothiophenes	ND
Fluoranthene	1.4 J
Pyrene	1.1 J
C1-Fluoranthenes/pyrenes	ND
C2-Fluoranthenes/pyrenes	ND
C3-Fluoranthenes/pyrenes	ND
Benzo[a]anthracene	ND
Chrysene	ND
C1-Chrysenes	ND
C2-Chrysenes	ND
C3-Chrysenes	ND
C4-Chrysenes	ND
Benzo[b]fluoranthene	ND
Benzo[k]fluoranthene	ND
Benzo[e]pyrene	ND
Benzo[a]pyrene	ND
Perylene	ND
Indeno[1,2,3,-c,d]pyrene	ND
Dibenzo[a,h]anthracene	ND
Benzo[g,h,i]perylene	ND
%d8-Naphthalene	92
%d10-Acenaphthene	87
%d10-Phenanthrene	97
%d12-Benzo[a]pyrene	35

Project Title : Shell - Hobbs, NM
Data Package: 1932
Data Table: PAH - GC/MS/SIM - BS-BSD - Surrogate Corrected

Field ID	Procedural Blank		Blank Spike				
Lab ID	CG-S-30PB		CG-S-31BS				
Lab Batch	B0530		B0530				
File	W7033.D		W7034.D				
Sample Type	QC		QC				
Weight Basis	DRY		DRY				
Matrix	SOIL		SOIL				
Sample Size	2 g		2 g				
Associated Blank	NA		CG-S-30PB				
Field Date	NA		NA				
Extract Date	03/04/99		03/04/99				
Analysis Date	04/03/99		04/03/99				
Min Reporting Limit	25		25				
Units	ug/Kg		ug/Kg		T	%R	Q
Naphthalene	6	J	560		500	111	
C1-Naphthalenes	2.9	J	4.2	JB			
C2-Naphthalenes	ND		ND				
C3-Naphthalenes	ND		ND				
C4-Naphthalenes	ND		ND				
Acenaphthylene	2.3	J	420		500	84	
Acenaphthene	ND		540		500	108	
Biphenyl	ND		ND				
Fluorene	ND		570		500	114	
C1-Fluorenes	ND		ND				
C2-Fluorenes	ND		ND				
C3-Fluorenes	ND		ND				
Anthracene	ND		150		500	30	&
Phenanthrene	3.4	J	590		500	117	
C1-Phenanthrenes/anthracenes	ND		3.6	J			
C2-Phenanthrenes/anthracenes	ND		ND				
C3-Phenanthrenes/anthracenes	ND		ND				
C4-Phenanthrenes/anthracenes	ND		ND				
Dibenzothiophene	ND		ND				
C1-Dibenzothiophenes	ND		ND				
C2-Dibenzothiophenes	ND		ND				
C3-Dibenzothiophenes	ND		ND				
Fluoranthene	1.4	J	620		500	124	
Pyrene	1.1	J	600		500	120	
C1-Fluoranthenes/pyrenes	ND		ND				
C2-Fluoranthenes/pyrenes	ND		ND				
C3-Fluoranthenes/pyrenes	ND		ND				
Benzo[a]anthracene	ND		500		500	100	
Chrysene	ND		540		500	108	
C1-Chrysenes	ND		ND				
C2-Chrysenes	ND		ND				
C3-Chrysenes	ND		ND				
C4-Chrysenes	ND		ND				
Benzo[b]fluoranthene	ND		750		500	150	&
Benzo[k]fluoranthene	ND		580		500	116	
Benzo[e]pyrene	ND		ND				
Benzo[a]pyrene	ND		200		500	40	
Perylene	ND		ND				
Indeno[1,2,3,-c,d]pyrene	ND		620		500	124	
Dibenzo[a,h]anthracene	ND		600		500	120	
Benzo[g,h,i]perylene	ND		620		500	124	
%d8-Naphthalene	92		102				
%d10-Acenaphthene	87		99				
%d10-Phenanthrene	97		108				
%d12-Benzo[a]pyrene	35		31	&			

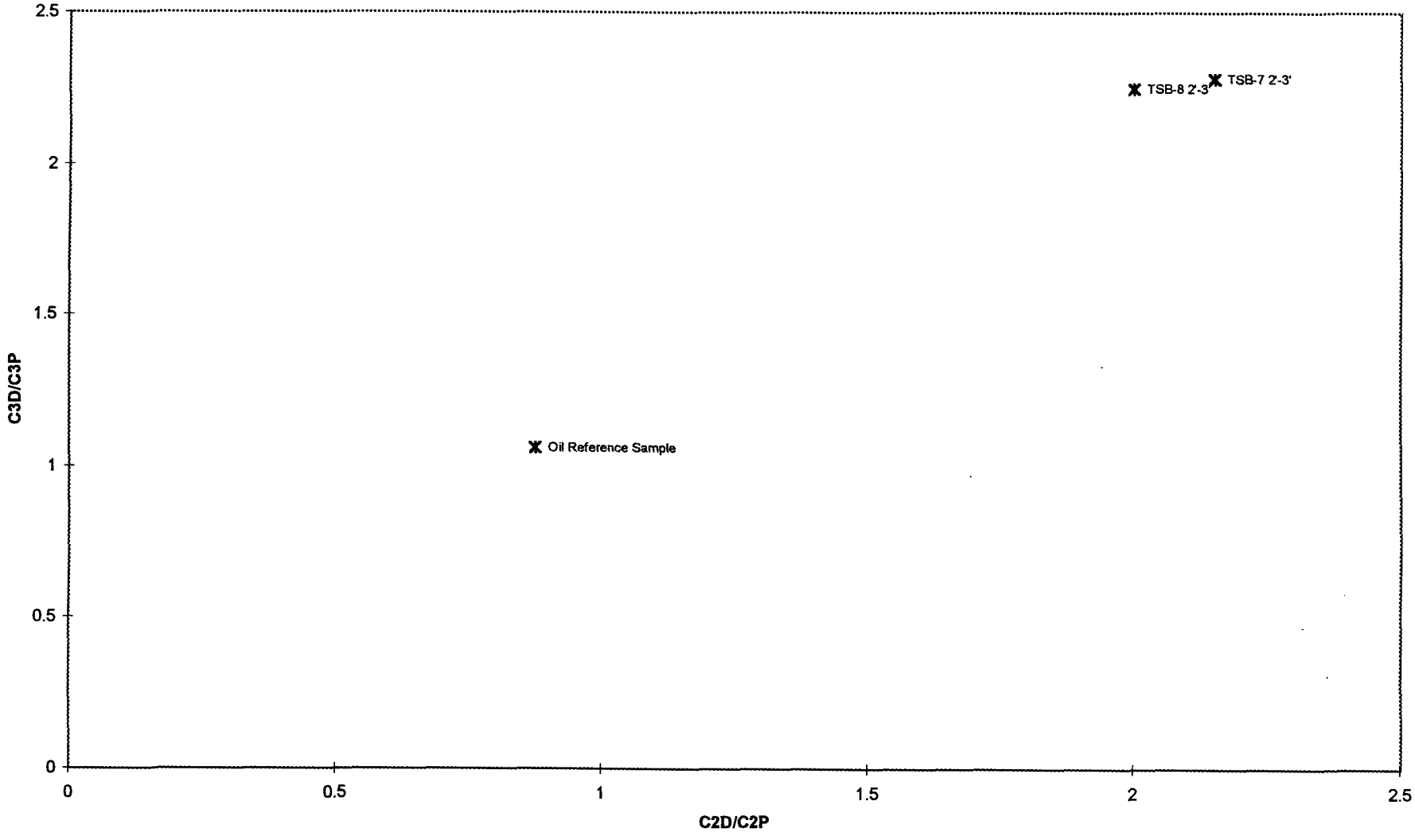
Project Title : Shell - Hobbs, NM
Data Package: 1932
Data Table: PAH - GC/MS/SIM - IRM - Surrogate Corrected

Field ID	Instr Reference Material			
Lab ID	BO72			
Lab Batch	B0530			
File	W7031.D			
Sample Type	QC			
Weight Basis	VOLUME			
Matrix	SRM			
Sample Size	0.1 mL			
Associated Blank	NA			
Field Date	NA			
Extract Date	NA			
Analysis Date	04/03/99			
Min Reporting Limit	250			
Units	ug/L	T	%D	Q
Naphthalene	6300	6890	-8.6	
C1-Naphthalenes	ND			
C2-Naphthalenes	ND			
C3-Naphthalenes	ND			
C4-Naphthalenes	ND			
Acenaphthylene	6400	6960	-8	
Acenaphthene	6200	7280	-15	
Biphenyl	7100	7000	1.4	
Fluorene	6200	7270	-15	
C1-Fluorenes	ND			
C2-Fluorenes	ND			
C3-Fluorenes	ND			
Anthracene	6800	7820	-13	
Phenanthrene	6900	7010	-1.6	
C1-Phenanthrenes/anthracenes	ND			
C2-Phenanthrenes/anthracenes	ND			
C3-Phenanthrenes/anthracenes	ND			
C4-Phenanthrenes/anthracenes	ND			
Dibenzothiophene	ND			
C1-Dibenzothiophenes	ND			
C2-Dibenzothiophenes	ND			
C3-Dibenzothiophenes	ND			
Fluoranthene	5700	5910	-3.6	
Pyrene	5700	5890	-3.2	
C1-Fluoranthenes/pyrenes	ND			
C2-Fluoranthenes/pyrenes	ND			
C3-Fluoranthenes/pyrenes	ND			
Benzo[a]anthracene	3600	3590	0.28	
Chrysene	6400	7030	-9	
C1-Chrysenes	ND			
C2-Chrysenes	ND			
C3-Chrysenes	ND			
C4-Chrysenes	ND			
Benzo[b]fluoranthene	6000	5250	14	
Benzo[k]fluoranthene	5500	5570	-1.3	
Benzo[e]pyrene	5600	5620	-0.4	
Benzo[a]pyrene	6200	6790	-8.7	
Perylene	6700	7120	-5.9	
Indeno[1,2,3,-c,d]pyrene	5700	6290	-9.4	
Dibenzo[a,h]anthracene	4700	5180	-9.3	
Benzo[g,h,i]perylene	4900	5290	-7.4	
%d8-Naphthalene	111			
%d10-Acenaphthene	101			
%d10-Phenanthrene	101			
%d12-Benzo[a]pyrene	100			

Project Title : Shell - Hobbs, NM
Data Package: 1932
Data Table: PAH - GC/MS/SIM - ORS - Surrogate Corrected

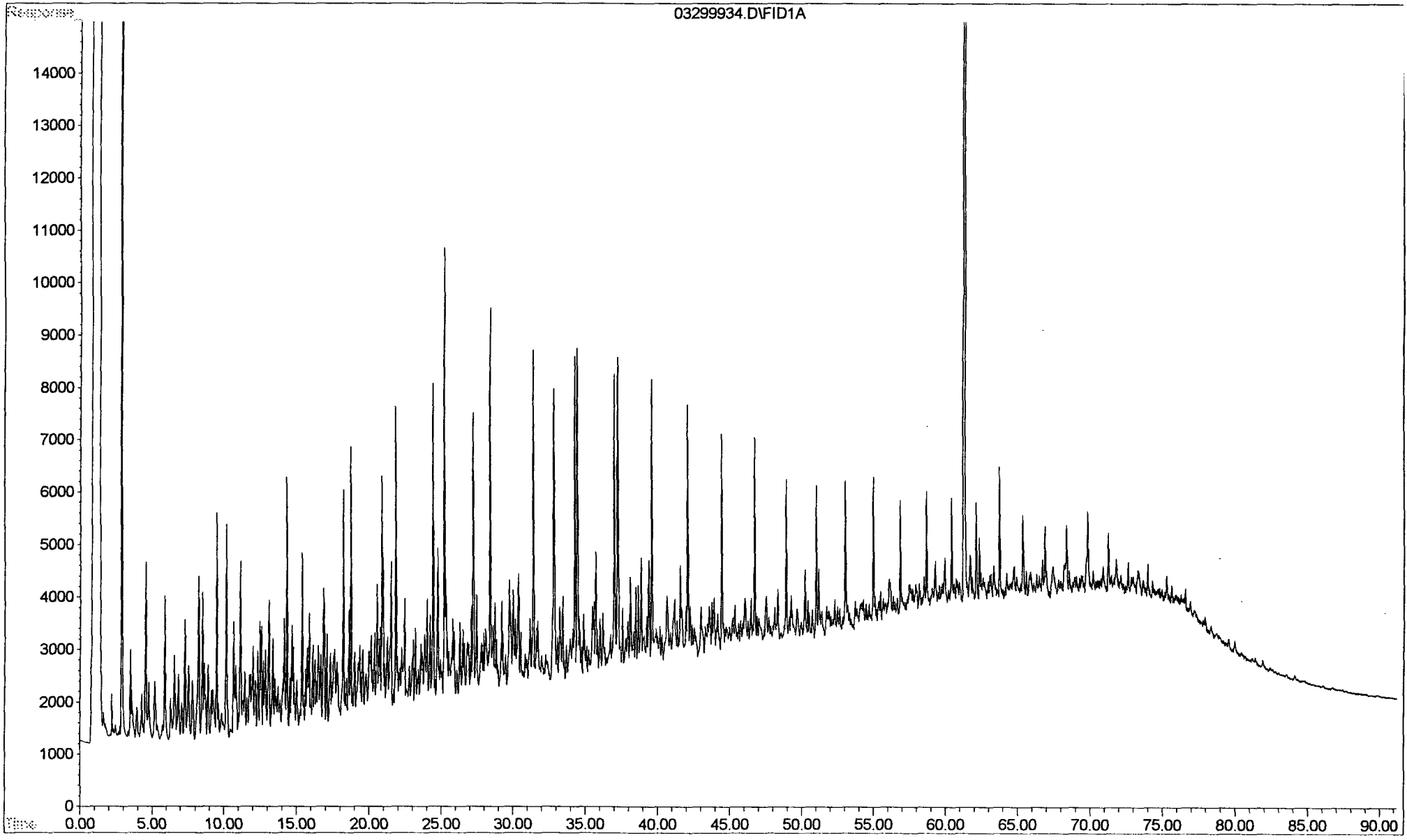
Field ID	**Oil Reference Sample**			
Lab ID	**BO43**			
Lab Batch	**B0530**			
File	**W7032.D**			
Sample Type	**QC**			
Weight Basis	**OIL**			
Matrix	**OIL**			
Sample Size	**5.02 mg**			
Associated Blank	**NA**			
Field Date	**NA**			
Extract Date	**NA**			
Analysis Date	**04/03/99**			
Min Reporting Limit	**5**			
Units	**mg/Kg**	**T**	**%D**	**Q**
Naphthalene	720	750	-4	
C1-Naphthalenes	1400	1700	-18	
C2-Naphthalenes	2000	2400	-17	
C3-Naphthalenes	1600	2000	-20	
C4-Naphthalenes	970	1200	-19	
Acenaphthylene	ND			
Acenaphthene	ND			
Biphenyl	220	220	0	
Fluorene	100	94	6.4	
C1-Fluorenes	240	240	0	
C2-Fluorenes	340	350	-2.9	
C3-Fluorenes	400	400	0	
Anthracene	ND			
Phenanthrene	280	260	7.7	
C1-Phenanthrenes/anthracenes	580	600	-3.3	
C2-Phenanthrenes/anthracenes	730	740	-1.4	
C3-Phenanthrenes/anthracenes	500	540	-7.4	
C4-Phenanthrenes/anthracenes	330	330	0	
Dibenzothiophene	230	240	-4.2	
C1-Dibenzothiophenes	500	500	0	
C2-Dibenzothiophenes	640	740	-14	
C3-Dibenzothiophenes	530	660	-20	
Fluoranthene	ND			
Pyrene	15	14	7.1	
C1-Fluoranthenes/pyrenes	88	83	6	
C2-Fluoranthenes/pyrenes	140	150	-6.7	
C3-Fluoranthenes/pyrenes	170	170	0	
Benzo[a]anthracene	ND			
Chrysene	44	49	-10	
C1-Chrysenes	74	84	-12	
C2-Chrysenes	96	110	-13	
C3-Chrysenes	69	92	-25	
C4-Chrysenes	56	75	-25	
Benzo[b]fluoranthene	6.6	6.6	0	
Benzo[k]fluoranthene	ND			
Benzo[e]pyrene	13	12	8.3	
Benzo[a]pyrene	ND			
Perylene	ND			
Indeno[1,2,3,-c,d]pyrene	ND			
Dibenzo[a,h]anthracene	ND			
Benzo[g,h,i]perylene	3.4 J			
%d8-Naphthalene	102			
%d10-Acenaphthene	103			
%d10-Phenanthrene	104			
%d12-Benzo[a]pyrene	116			

Characteristic Source Ratios

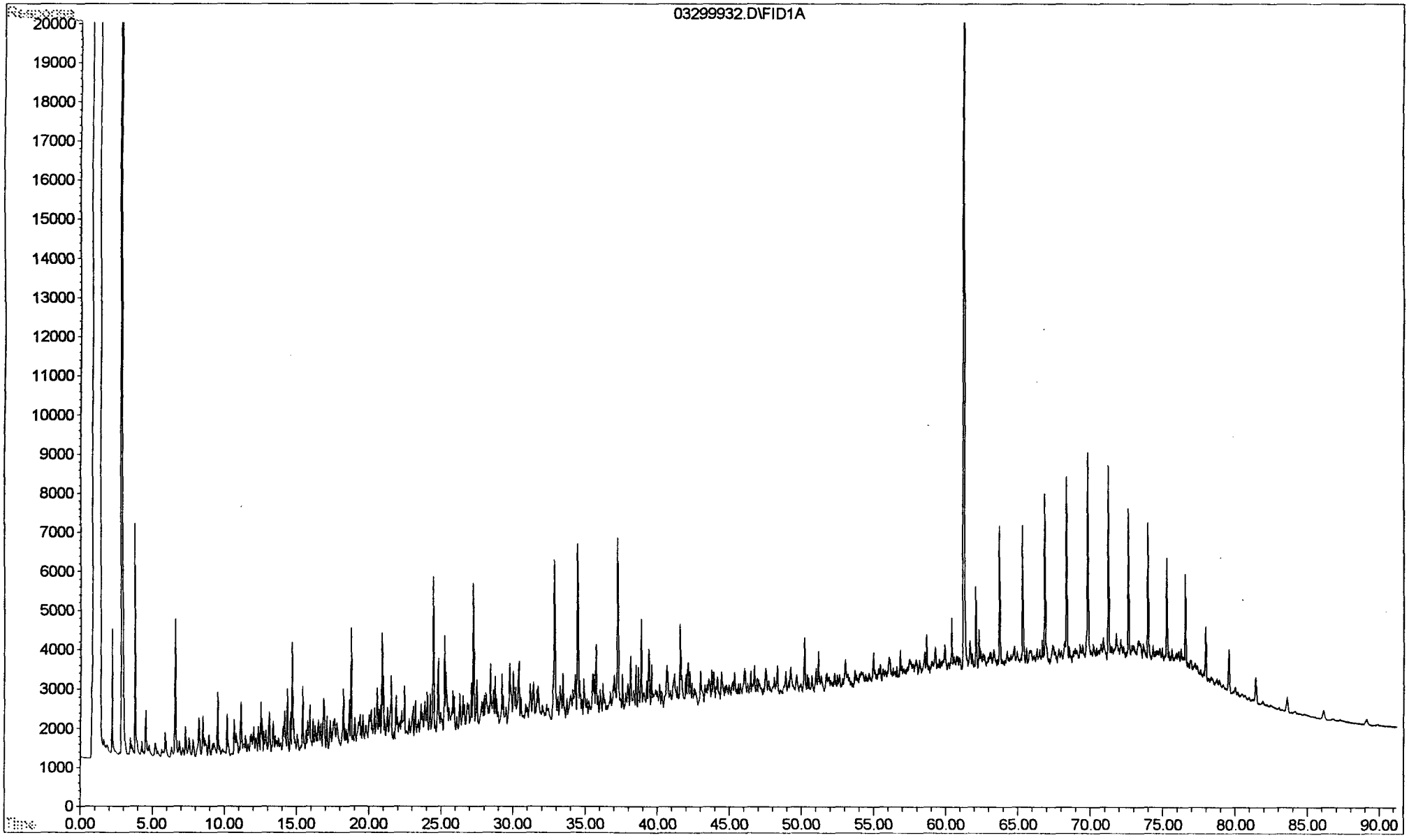


5/10/99

Arthur D[redacted]ttle - Environmental Monitoring and Analysis
File : U:\SHELLWES\03299934.D
Operator : FQ
Acquired : 30 Mar 99 7:34 pm using AcqMethod SHCDUAL.M
Instrument : GC FID #1
Sample Name: 99A1349
Misc Info : TSB-8 2'-3'
Vial Number: 14



Arthur D[redacted]ttle - Environmental Monitoring and Analysis
File : U:\SHELLWES\03299932.D
Operator : FQ
Acquired : 30 Mar 99 5:52 pm using AcqMethod SHCDUAL.M
Instrument : GC FID #1
Sample Name: 99A1348
Misc Info : TSB-7 2'-3'
Vial Number: 13



6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915)585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS RE

LAB Order ID #

Company Name: BBC International, Inc. Phone #: (505) 397-6388

Address: (Street, City, Zip) 1324 W. Marland - Hobbs, NM 88240 Fax #: (505) 397-0397

Contact Person: Cliff P. Brunson

Invoice to: (If different from above)

Project #: Project Name: Shell Westgate

Project Location: Hobbs, New Mexico Sampler Signature: Cliff P. Brunson

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
	TSB-7 2'-3'											2/17/99	4:30pm
	TSB-8 2'-3'											"	"
	(shipped to Arthur D. Little)												

	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard
99A1348							X									
99A1349							X									

Does COC match samples? (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N / (N/a)
Any other discrepancies: Y or (N)
If problems, Client contacted: Y or N
Date contacted: / /
Temperature (°C) 10.8

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Cliff P. Brunson	2/17/99	4:30pm			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: Linda T. Le	Date: 2/18/99	Time: 10:30

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

LAB USE ONLY

Intact Y / N
Headspace Y / N
Temp °
Log-in Review

REMARKS:

Carrier #

Resident's Split Sample Data

	Field ID	WG-SB1-7	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42
	Lab ID	98D3030	98D3031	98D3032	98D3033	98D3034	98D3035	98D3036	98D3037	98D3038	98D3039
	Minimum Reporting Limit	1.5	1.6	1.4	1.4	1.4	1.4	1.6	1.5	1.4	1.4
	Units	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g
Analyte	Method										
1,2,4-Trichlorobenzene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
1,2-Dichlorobenzene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
1,3,5-Trinitrobenzene(1)	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
1,3-Dichlorobenzene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
1,3-Dinitrobenzene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
1,4,5-Tetrachlorobenzene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
1,4-Dichlorobenzene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
1,4-Naphthoquinone	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
1-Naphthylamine(1)	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2,3,4,6-Tetrachlorophenol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2,4,5-Trichlorophenol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2,4,6-Trichlorophenol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2,4-Dichlorophenol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2,4-Dimethylphenol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2,4-Dinitrophenol(1)	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2,4-Dinitrotoluene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2,6-Dichlorophenol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2,6-Dinitrotoluene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2-Acetylaminofluorene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2-Chloronaphthalene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2-Chlorophenol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2-Methylnaphthalene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2-Naphthylamine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2-Nitroaniline	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2-Nitrophenol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
2-Picoline	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
3,3'-Dichlorobenzidine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
3,3'-Dimethylbenzidine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
3-Methylcholanthrene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
3-Nitroaniline	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
4,6-Dinitro-2-methylphenol(1)	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
4-Aminobiphenyl	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
4-Bromophenyl-phenylether	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
4-Chloro-3-methylphenol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
4-Chloroaniline	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
4-Chlorophenyl-phenylether	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
4-Nitroaniline	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4

	Field ID	WG-SB1-7	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42
	Lab ID	98D3030	98D3031	98D3032	98D3033	98D3034	98D3035	98D3036	98D3037	98D3038	98D3039
4-Nitrophenol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
4-Nitroquinoline-1-oxide(1)	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
5-Nitro-o-toluidine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
7,12-Dimethylbenz[a]anthracene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
a,a-dimethylphenethylamine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Acenaphthene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Acenaphthylene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Acetophenone	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Aniline	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Anthracene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Benzo[a]anthracene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Benzo[a]pyrene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Benzo[b]fluoranthene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Benzo[g,h,I]perylene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Benzo[k]fluoranthene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Benzyl Alcohol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
bis(2-Chloroethoxy)methane	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
bis(2-Chloroethyl)ether	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
bis(2-chloroisopropyl)ether	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
bis(2-Ethylhexyl)phthalate	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Butylbenzylphthalate	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Chrysene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Dibensofuran	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Dibenz[a,h]anthracene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Diethylphthalate	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Dimethylphthalate	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Di-n-butylphthalate	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Dinoseb	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Diphenylamine(3)	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Dk-n-octylphthalate	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Ethylmethanesulfonate	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Fluoranthene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Fluorene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Hexachlorobenzene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Hexachlorobutadiene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Hexachlorocyclopentadiene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Hexachloroethane	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Hexachlorophene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Hexachloropropene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Indeno[1,2,3-cd]pyrene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Isophorone	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4

	Field ID	WG-SB1-7	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42
	Lab ID	98D3030	98D3031	98D3032	98D3033	98D3034	98D3035	98D3036	98D3037	98D3038	98D3039
Isosafrole	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
m,p-Cresol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Methapyrilene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Methyl methanesulfonate	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Naphthalene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Nitrobenzene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
N-Nitrosodiethylamine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
N-nitrosodimethylamine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
N-Nitrosodi-n-butylamine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
N-Nitroso-di-n-propylamine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
n-Nitrosodiphenylamine(2)	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
N-Nitrosomethylethylamine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
N-Nitrosomorpholine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
N-Nitrosopiperidine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
N-Nitrosopyrolidine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
o-Cresol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
o-Toluidine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
p-(Dimethylamino)azobenzene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Pentachlorobenzene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Pentachloroethane	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Pentachloronitrobenzene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Pentachlorophenol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Phenacetin	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Phenanthrene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Phenol	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
p-Phenylenediamine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Pyrene	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Pyridine	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
Safrole	S-8270	<1.5	<1.6	<1.4	<1.4	<1.4	<1.4	<1.6	<1.5	<1.4	<1.4
	Minimum Reporting Limit	3	3.2	2.9	2.8	2.7	2.9	3.2	3	2.9	2.8
O,O,O-Triethyl phosphorothioate	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Thionazin	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Sulfotepp	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Diallate	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Phorate	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Dimethoate	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Pronamide	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Disulfoton	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Methyl parathion	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Ethyl parathion	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8

	Field ID	WG-SB1-7	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42
	Lab ID	98D3030	98D3031	98D3032	98D3033	98D3034	98D3035	98D3036	98D3037	98D3038	98D3039
Isodrin	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Aramite	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Chlorobenzilate	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Famphur	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
Kepone	S-8270	<3.0	<3.2	<2.9	<2.8	<2.7	<2.9	<3.2	<3.0	<2.9	<2.8
	Minimum Reporting Limit	320	190	210	120	170	410	220	180	190	170
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
	Method										
1,1,1,2-Tetrachloroethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,1,1-Trichloroethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,1,2,2-Tetrachloroethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,1,2-Trichloroethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,1-Dichloroethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,1-Dichloroethene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,1-Dichloropropene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,2,3-Trichlorobenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,2,3-Trichloropropane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,2,4-Trichlorobenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,2,4-Trimethylbenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,2-Dibromo-3-chloropropane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,2-Dibromoethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,2-Dichlorobenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,2-Dichloroethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,2-Dichloropropane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,3,5-Trimethylbenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,3-Dichlorobenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,3-Dichloropropane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
1,4-Dichlorobenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
2,2-Dichloropropane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
2-Butanone (MEK)	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
2-Chlorotoluene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
2-Hexanone	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
4-Chlorotoluene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
4-Isopropyltoluene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
4-Methyl-2-pentanone	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Acetone	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Benzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170

	Field ID	WG-SB1-7	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42
	Lab ID	98D3030	98D3031	98D3032	98D3033	98D3034	98D3035	98D3036	98D3037	98D3038	98D3039
Bromobenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Bromochloromethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Bromodichloromethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Bromoform	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Bromomethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Carbon tetrachloride	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
chlorobenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Chloroethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Chloroform	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Chloromethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
cis-1,2-Dichloroethene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
cis-1,3-Dichloropropene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Dibromochloromethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
dibromomethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Dichlorodifluoromethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Ethylbenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Hexachlorobutadiene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Isopropylbenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
m,p-Xylene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Methylene chloride	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Naphthalene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
n-Butylbenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
n-Propylbenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
o-Xylene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
sec-Butylbenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Styrene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
tert-Butylbenzene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Tetrachloroethene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Toluene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
trans-1,2-Dichloroethene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
trans-1,3-dichloropropene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Trichloroethene	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Trichlorofluoromethane	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
Vinyl chloride	S-8260B	<320	<190	<210	<120	<170	<410	<220	<180	<190	<170
	Minimum Reporting Limit	0.75	0.8	0.72	1.40	0.68	1.40	0.79	0.76	0.72	0.71
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
	Method										
Alpha-BHC	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
HCB	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71

	Field ID	WG-SB1-7	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42
	Lab ID	98D3030	98D3031	98D3032	98D3033	98D3034	98D3035	98D3036	98D3037	98D3038	98D3039
beta-BHC	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
gamma-BHC	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
delta-BHC	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
Heptachlor	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
Aldrin	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
Heptachlor Epoxide	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
gamma-Chlordane	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
Endosulfan I	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
2,4'-DDE	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
alpha-Chlordane	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
trans-Nonachlor	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
Dieldrin	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
4,4'-DDE	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
2,4'-DDD	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
Endrin	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
Endosulfan II	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
cis-Nonachlor	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
4,4'-DDD	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
2,4'-DDT	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
Endrin Aldehyde	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
Endosulfan Sulfate	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
4,4'-DDT	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
Endrin Ketone	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
Methoxychlor	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
Mirex	S-8080	<0.75	<0.8	<0.72	<1.40	<0.68	<1.40	<0.79	<0.76	<0.72	<0.71
	Minimum Reporting Limit	75	80	72	70	68	72	79	76	72	71
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
	Method										
Aroclor 1242	S-8080	<75	<80	<72	<70	<68	<72	<79	<76	<72	<71
Aroclor 1248	S-8080	<75	<80	<72	<70	<68	<72	<79	<76	<72	<71
Aroclor 1254	S-8080	<75	<80	<72	<70	<68	<72	<79	<76	<72	<71
Aroclor 1260	S-8080	<75	<80	<72	<70	<68	<72	<79	<76	<72	<71
	Minimum Reporting Limit										
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

	Field ID	WG-SB1-7	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42
	Lab ID	98D3030	98D3031	98D3032	98D3033	98D3034	98D3035	98D3036	98D3037	98D3038	98D3039
	Method										
Aluminum	CLP SOW	2400	2920	1420	683	718	2170	2240	1250	1700	1190
Arsenic	CLP SOW	6.8	5.5	3.7	1.3 J	0.98 J	5.2	5.5	3	1.4 J	0.73 J
Barium	CLP SOW	707	455	219	24.0 J	9.6 J	310	474	196	8.9 J	8.1 J
Cadmium	CLP SOW	<0.09	0.09 J	<0.07	<0.07	<0.08	0.09 J	0.10 J	<0.07	<0.07	<0.08
Chromium	CLP SOW	1.5 J	2.5	1.8	1.3 J	1.7 J	1.6 J	1.8 J	1.3 J	2.2	2.5
Cobalt	CLP SOW	1.3 J	1.6 J	1.0 J	0.49 J	0.63 J	1.6 J	1.5 J	0.71 J	0.71 J	0.76 J
Copper	CLP SOW	2.7 J	3.4 J	2.9 J	0.88 J	0.97 J	2.7 J	3.1 J	2.6 J	1.1 J	0.98 J
Iron	CLP SOW	1420	1700	1090	796	998	1390	1500	1010	1720	1690
Lead	CLP SOW	1.1	1.3	0.99	1.4	1.5	1.6	1.0	0.91	1.4	1.1
Manganese	CLP SOW	17.3	42.9	17.9	10.5	16.3	20.4	35.8	15.2	15.4	18.1
Total Mercury	CLP SOW	<0.06	<0.06	<0.05	<0.05	<0.05	<0.05	<0.06	<0.06	<0.05	<0.05
Nickel	CLP SOW	5.0 J	5.1 J	2.0 J	0.87 J	0.96 J	4.1 J	4.1 J	1.3 J	1.6 J	1.3 J
Selenium	CLP SOW	<0.80	<0.78	<0.65	<0.67	<0.70	<0.72	0.85 J	<0.64	<0.65	<0.68
Silver	CLP SOW	<0.11	<0.11	<0.09	<0.09	<0.10	<0.10	<0.11	<0.09	<0.09	<0.09
Zinc	CLP SOW	5.2	4.9	3.6	2.1 J	2.9 J	4.6	4.4 J	3.5 J	3.5 J	3.5 J
Molybdenum	CLP SOW	0.37 J	0.38 J	0.35 J	0.26 J	0.26 J	0.32 J	0.57 J	<0.16	0.37 J	0.37 J
Boron	CLP SOW	13.5 J	9.7 J	4.0 J	1.3 J	1.2 J	4.6 J	5.9 J	2.8 J	2.0 J	1.4 J
Uranium	CLP SOW	<13.5	<13.1	<10.9	<11.3	<11.8	<12.1	<13.9	<10.8	<10.9	<11.4
Cyanide	CLP SOW	<0.28	<0.29	<0.27	<0.26	<0.26	<0.27	<0.29	<0.29	<0.27	<0.26
	Minimum Reporting Limit	0.24	0.30	0.29	0.26	0.29	0.40	0.43	0.27	0.39	0.26
	Units	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error
	Method										
Radium 226	EPA 903.0 Mod	0.20 +/- 0.17	0.42 +/- 0.25	0.15 +/- 0.16	0.13 +/- 0.15	0.06 +/- 0.12	0.61 +/- 0.35	0.10 +/- 0.19	0.38 +/- 0.24	0.16 +/- 0.19	0.27 +/- 0.19
	Minimum Reporting Limit	2.41	2.24	1.68	1.85	1.63	2.34	1.83	2.36	2.53	2.00
	Units	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error
	Method										
Radium 228	EPA 904.0 Mod	-1.21 +/- 0.82	0.46 +/- 0.93	1.22 +/- 0.80	1.23 +/- 0.87	1.26 +/- 0.79	-0.53 +/- 0.86	1.02 +/- 0.84	0.94 +/- 1.03	-1.06 +/- 0.89	0.14 +/- 0.81

	Field ID	WG-SB1-7	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42
	Lab ID	98D3030	98D3031	98D3032	98D3033	98D3034	98D3035	98D3036	98D3037	98D3038	98D3039
	Minimum Reporting Limit										
	Units	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]
	Method										
% Solids	CLP SOW	89.7	86.4	91.0	96.3	96.4	93.1	86.4	87.4	93.0	94.9
Chloride	9056	560	747	453	16.0	5.2	8.4	70.0	190	157	132
Fluoride	9056	<2.8	<2.9	<2.7	<2.6	<2.6	4.8	4.0	3.2	<2.7	<2.6
Nitrate	9056	2	2.9	11	<1.3	<1.3	35	26	4.8	5	1.3
Sulfate	9056	2140	723	297	47.3	9.3	207	513	437	62.7	41.1
pH[b]	9045B	8.3	8.9	9.3	9.6	9.8	9.1	9.1	9.5	9.4	9.4
TRPHC	9071	39.7	13.2	9.5	6.8	12.6	614	208	15.5	10.4	17.5

[a] except as noted

[b] pH units

	Field ID	WG-SB3-7	WG-SB3-10	WG-SB3-24	WG-SB3-30	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30	WG-SB4-40	WG-SB5-7
	Lab ID	98D3040	98D3041	98D3042	98D3043	98D3044	98D3021	98D3022	98D3023	98D3024	98D3025
	Minimum Reporting Limit	1.4	1.4	1.4	1.5	1.4	1.4	1.5	1.4	1.4	1.4
	Units	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g	ug/g
Analyte	Method										
1,2,4-Trichlorobenzene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
1,2-Dichlorobenzene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
1,3,5-Trinitrobenzene(1)	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
1,3-Dichlorobenzene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
1,3-Dinitrobenzene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
1,4,5-Tetrachlorobenzene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
1,4-Dichlorobenzene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
1,4-Naphthoquinone	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
1-Naphthylamine(1)	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2,3,4,6-Tetrachlorophenol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2,4,5-Trichlorophenol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2,4,6-Trichlorophenol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2,4-Dichlorophenol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2,4-Dimethylphenol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2,4-Dinitrophenol(1)	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2,4-Dinitrotoluene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2,6-Dichlorophenol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2,6-Dinitrotoluene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2-Acetylaminofluorene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2-Chloronaphthalene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2-Chlorophenol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2-Methylnaphthalene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2-Naphthylamine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2-Nitroaniline	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2-Nitrophenol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
2-Picoline	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
3,3'-Dichlorobenzidine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
3,3'-Dimethylbenzidine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
3-Methylcholanthrene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
3-Nitroaniline	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
4,6-Dinitro-2-methylphenol(1)	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
4-Aminobiphenyl	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
4-Bromophenyl-phenylether	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
4-Chloro-3-methylphenol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
4-Chloroaniline	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
4-Chlorophenyl-phenylether	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
4-Nitroaniline	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4

	Field ID	WG-SB3-7	WG-SB3-10	WG-SB3-24	WG-SB3-30	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30	WG-SB4-40	WG-SB5-7
	Lab ID	98D3040	98D3041	98D3042	98D3043	98D3044	98D3021	98D3022	98D3023	98D3024	98D3025
4-Nitrophenol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
4-Nitroquinoline-1-oxide(1)	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
5-Nitro-o-toluidine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
7,12-Dimethylbenz[a]anthracene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
a,a-dimethylphenethylamine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Acenaphthene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Acenaphthylene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Acetophenone	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Aniline	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Anthracene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Benzo[a]anthracene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Benzo[a]pyrene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Benzo[b]fluoranthene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Benzo[g,h,I]perylene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Benzo[k]fluoranthene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Benzyl Alcohol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
bis(2-Chloroethoxy)methane	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
bis(2-Chloroethyl)ether	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
bis(2-chloroisopropyl)ether	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
bis(2-Ethylhexyl)phthalate	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Butylbenzylphthalate	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Chrysene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Dibensofuran	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Dibenz[a,h]anthracene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Diethylphthalate	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Dimethylphthalate	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Di-n-butylphthalate	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Dinoseb	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Diphenylamine(3)	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Dk-n-octylphthalate	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Ethylmethanesulfonate	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Fluoranthene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Fluorene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Hexachlorobenzene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Hexachlorobutadiene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Hexachlorocyclopentadiene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Hexachloroethane	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Hexachlorophene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Hexachloropropene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Indeno[1,2,3-cd]pyrene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Isophorone	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4

	Field ID	WG-SB3-7	WG-SB3-10	WG-SB3-24	WG-SB3-30	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30	WG-SB4-40	WG-SB5-7
	Lab ID	98D3040	98D3041	98D3042	98D3043	98D3044	98D3021	98D3022	98D3023	98D3024	98D3025
Isosafrole	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
m,p-Cresol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Methapyrilene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Methyl methanesulfonate	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Naphthalene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Nitrobenzene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
N-Nitrosodiethylamine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
N-nitrosodimethylamine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
N-Nitrosodi-n-butylamine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
N-Nitroso-di-n-propylamine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
n-Nitrosodiphenylamine(2)	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
N-Nitrosomethylethylamine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
N-Nitrosomorpholine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
N-Nitrosopiperidine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
N-Nitrosopyrolidine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
o-Cresol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
o-Toluidine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
p-(Dimethylamino)azobenzene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Pentachlorobenzene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Pentachloroethane	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Pentachloronitrobenzene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Pentachlorophenol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Phenacetin	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Phenanthrene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Phenol	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
p-Phenylenediamine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Pyrene	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Pyridine	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Safrole	S-8270	<1.4	<1.4	<1.4	<1.5	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
	Minimum Reporting Limit	2.8	2.9	2.9	3	2.9	2.8	3.1	2.8	2.8	2.8
O,O,O-Triethyl phosphorothioate	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Thionazin	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Sulfotepp	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Diallate	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Phorate	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Dimethoate	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Pronamide	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Disulfoton	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Methyl parathion	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Ethyl parathion	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8

	Field ID	WG-SB3-7	WG-SB3-10	WG-SB3-24	WG-SB3-30	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30	WG-SB4-40	WG-SB5-7
	Lab ID	98D3040	98D3041	98D3042	98D3043	98D3044	98D3021	98D3022	98D3023	98D3024	98D3025
Isodrin	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Aramite	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Chlorobenzilate	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Famphur	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
Kepone	S-8270	<2.8	<2.9	<2.9	<3.0	<2.9	<2.8	<3.1	<2.8	<2.8	<2.8
	Minimum Reporting Limit	190	190	200	160	170	190	230	170	180	200
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
	Method										
1,1,1,2-Tetrachloroethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,1,1-Trichloroethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,1,2,2-Tetrachloroethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,1,2-Trichloroethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,1-Dichloroethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,1-Dichloroethene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,1-Dichloropropene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,2,3-Trichlorobenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,2,3-Trichloropropane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,2,4-Trichlorobenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,2,4-Trimethylbenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,2-Dibromo-3-chloropropane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,2-Dibromoethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,2-Dichlorobenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,2-Dichloroethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,2-Dichloropropane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,3,5-Trimethylbenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,3-Dichlorobenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,3-Dichloropropane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
1,4-Dichlorobenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
2,2-Dichloropropane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
2-Butanone (MEK)	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
2-Chlorotoluene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
2-Hexanone	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
4-Chlorotoluene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
4-Isopropyltoluene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
4-Methyl-2-pentanone	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Acetone	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Benzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200

	Field ID	WG-SB3-7	WG-SB3-10	WG-SB3-24	WG-SB3-30	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30	WG-SB4-40	WG-SB5-7
	Lab ID	98D3040	98D3041	98D3042	98D3043	98D3044	98D3021	98D3022	98D3023	98D3024	98D3025
Bromobenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Bromochloromethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Bromodichloromethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Bromoform	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Bromomethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Carbon tetrachloride	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
chlorobenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Chloroethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Chloroform	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Chloromethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
cis-1,2-Dichloroethene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
cis-1,3-Dichloropropene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Dibromochloromethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
dibromomethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Dichlorodifluoromethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Ethylbenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Hexachlorobutadiene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Isopropylbenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
m,p-Xylene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Methylene chloride	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Naphthalene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
n-Butylbenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
n-Propylbenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
o-Xylene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
sec-Butylbenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Styrene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
tert-Butylbenzene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Tetrachloroethene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Toluene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
trans-1,2-Dichloroethene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
trans-1,3-dichloropropene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Trichloroethene	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Trichlorofluoromethane	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
Vinyl chloride	S-8260B	<190	<190	<200	<160	<170	<190	<230	<170	<180	<200
	Minimum Reporting Limit	0.70	0.72	0.72	0.75	0.72	0.69	0.77	0.7	0.69	0.69
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
	Method										
Alpha-BHC	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
HCB	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69

	Field ID	WG-SB3-7	WG-SB3-10	WG-SB3-24	WG-SB3-30	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30	WG-SB4-40	WG-SB5-7
	Lab ID	98D3040	98D3041	98D3042	98D3043	98D3044	98D3021	98D3022	98D3023	98D3024	98D3025
beta-BHC	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
gamma-BHC	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
delta-BHC	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
Heptachlor	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
Aldrin	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
Heptachlor Epoxide	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
gamma-Chlordane	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
Endosulfan I	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
2,4'-DDE	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
alpha-Chlordane	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
trans-Nonachlor	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
Dieldrin	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
4,4'-DDE	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
2,4'-DDD	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
Endrin	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
Endosulfan II	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
cis-Nonachlor	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
4,4'-DDD	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
2,4'-DDT	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
Endrin Aldehyde	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
Endosulfan Sulfate	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
4,4'-DDT	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
Endrin Ketone	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
Methoxychlor	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
Mirex	S-8080	<0.70	<0.72	<0.72	<0.75	<0.72	<0.69	<0.77	<0.7	<0.69	<0.69
	Minimum Reporting Limit	70	72	72	75	72	69	77	70	69	69
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
	Method										
Aroclor 1242	S-8080	<70	<72	<72	<75	<72	<69	<77	<70	<69	<69
Aroclor 1248	S-8080	<70	<72	<72	<75	<72	<69	<77	<70	<69	<69
Aroclor 1254	S-8080	<70	<72	<72	<75	<72	<69	<77	<70	<69	<69
Aroclor 1260	S-8080	<70	<72	<72	<75	<72	<69	<77	<70	<69	<69
	Minimum Reporting Limit										
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

	Field ID	WG-SB3-7	WG-SB3-10	WG-SB3-24	WG-SB3-30	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30	WG-SB4-40	WG-SB5-7
	Lab ID	98D3040	98D3041	98D3042	98D3043	98D3044	98D3021	98D3022	98D3023	98D3024	98D3025
	Method										
Aluminum	CLP SOW	1960	5170	1750	937	774	3170	2930	1160	936	2740
Arsenic	CLP SOW	3.9	4.9	1.5 J	1.2 J	0.80 J	3.9	6.0	1.2 J	0.92 J	3.7
Barium	CLP SOW	142	348	40.5 J	28.7 J	17.9 J	253	186	70.0	4.6 J	49.5
Cadmium	CLP SOW	<0.06	0.08 J	<0.08	<0.09	<0.08	<0.08	0.10 J	<0.06	<0.08	<0.07
Chromium	CLP SOW	1.9	4.2	2.5	1.5 J	1.9 J	2.5	1.9 J	1.8	2.5	2.3
Cobalt	CLP SOW	1.5 J	2.0 J	1.0 J	2.4 J	0.53 J	1.4 J	1.8 J	0.79 J	0.53 J	1.0 J
Copper	CLP SOW	0.83 J	2.7 J	2.2 J	1.7 J	1.4 J	2.7 J	3.4 J	1.5 J	1.8 J	2.3 J
Iron	CLP SOW	1550	3370	1710	1070	824	2020	1590	1030	1080	1770
Lead	CLP SOW	1.5	2.3	1.4	3.1	0.79	2.1	1.5	1.1	1.0	2.0
Manganese	CLP SOW	17.8	41.1	20.3	43.0	11.6	21.9	64.9	13.2	10.8	20.1
Total Mercury	CLP SOW	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.06	<0.05	<0.05	<0.05
Nickel	CLP SOW	2.8 J	6.4 J	2.0 J	1.3 J	0.89 J	5.0 J	4.1 J	1.2 J	1.2 J	3.2 J
Selenium	CLP SOW	<0.51	<0.71	0.82 J	<0.78	<0.70	<0.74	<0.75	<0.52	<0.72	<0.59
Silver	CLP SOW	0.54 J	<0.10	<0.73	<0.75	<0.68	<0.72	<0.72	<0.51	<0.70	<0.57
Zinc	CLP SOW	4.7	8.9	4.8	3.3 J	2.6 J	5.5	5.3	2.7 J	2.8 J	4.7
Molybdenum	CLP SOW	0.35 J	0.71 J	0.32 J	0.44 J	0.27 J	0.38 J	0.39 J	0.24 J	0.32 J	0.15 J
Boron	CLP SOW	5.0 J	12.9 J	5.9 J	2.0 J	1.1 J	8.6 J	8.5 J	1.3 J	1.2 J	5.6 J
Uranium	CLP SOW	<8.6	<11.9	<12.6	<13.1	<11.7	<12.5	<12.6	<8.7	<12.1	<9.9
Cyanide	CLP SOW	<0.26	<0.27	<0.27	<0.28	<0.27	<0.27	<0.30	<0.26	<0.26	<0.26
	Minimum Reporting Limit	0.30	0.25	0.19	0.32	0.31	0.31	0.28	0.33	0.50	0.28
	Units	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error
	Method										
Radium 226	EPA 903.0 Mod	0.49 +/- 0.30	0.37 +/- 0.25	0.06 +/- 0.09	0.19 +/- 0.19	0.08 +/- 0.14	0.19 +/- 0.19	0.23 +/- 0.19	0.12 +/- 0.16	0.27 +/- 0.27	0.28 +/- 0.22
	Minimum Reporting Limit	1.82	1.52	2.19	1.88	1.88	2.14	3.05	2.33	2.48	2.89
	Units	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error
	Method										
Radium 228	EPA 904.0 Mod	1.58 +/- 0.90	0.68 +/- 0.68	-0.75 +/- 0.79	0.79 +/- 0.83	0.73 +/- 0.82	0.21 +/- 0.87	-1.26 +/- 1.09	0.74 +/- 1.00	-0.34 +/- 0.94	-1.34 +/- 1.01

	Field ID	WG-SB3-7	WG-SB3-10	WG-SB3-24	WG-SB3-30	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30	WG-SB4-40	WG-SB5-7
	Lab ID	98D3040	98D3041	98D3042	98D3043	98D3044	98D3021	98D3022	98D3023	98D3024	98D3025
	Minimum Reporting Limit										
	Units	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]
	Method										
% Solids	CLP SOW	94.7	93.2	92.6	89.3	93.9	94.2	84.7	94.9	96.0	95.3
Chloride	9056	232	174	9.7	4.6	3.6	76.7	679	4.3	2.4	75.5
Fluoride	9056	7.6	3.7	<2.7	<2.8	<2.7	2.8	<3.0	<2.6	<2.6	4.3
Nitrate	9056	2.9	2.2	1.7	1.6	1.3	2.0	1.9	<1.3	<1.3	1.9
Sulfate	9056	185	184	24.1	13.3	8.7	124	481	20.7	7.1	122
pH[b]	9045B	9.3	9.3	9.4	9.6	9.8	9.7	8.9	9.6	9.8	9.3
TRPHC	9071	15.4	14.5	10.5	<3.7	8.9	7.4	<3.9	9.2	5.5	6.2
[a] except as noted											
[b] pH units											

	Field ID	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40
	Lab ID	98D3026	98D3027	98D3028	98D3029
	Minimum Reporting Limit	1.5	1.4	1.4	1.4
	Units	ug/g	ug/g	ug/g	ug/g
Analyte	Method				
1,2,4-Trichlorobenzene	S-8270	<1.5	<1.4	<1.4	<1.4
1,2-Dichlorobenzene	S-8270	<1.5	<1.4	<1.4	<1.4
1,3,5-Trinitrobenzene(1)	S-8270	<1.5	<1.4	<1.4	<1.4
1,3-Dichlorobenzene	S-8270	<1.5	<1.4	<1.4	<1.4
1,3-Dinitrobenzene	S-8270	<1.5	<1.4	<1.4	<1.4
1,4,5-Tetrachlorobenzene	S-8270	<1.5	<1.4	<1.4	<1.4
1,4-Dichlorobenzene	S-8270	<1.5	<1.4	<1.4	<1.4
1,4-Naphthoquinone	S-8270	<1.5	<1.4	<1.4	<1.4
1-Naphthylamine(1)	S-8270	<1.5	<1.4	<1.4	<1.4
2,3,4,6-Tetrachlorophenol	S-8270	<1.5	<1.4	<1.4	<1.4
2,4,5-Trichlorophenol	S-8270	<1.5	<1.4	<1.4	<1.4
2,4,6-Trichlorophenol	S-8270	<1.5	<1.4	<1.4	<1.4
2,4-Dichlorophenol	S-8270	<1.5	<1.4	<1.4	<1.4
2,4-Dimethylphenol	S-8270	<1.5	<1.4	<1.4	<1.4
2,4-Dinitrophenol(1)	S-8270	<1.5	<1.4	<1.4	<1.4
2,4-Dinitrotoluene	S-8270	<1.5	<1.4	<1.4	<1.4
2,6-Dichlorophenol	S-8270	<1.5	<1.4	<1.4	<1.4
2,6-Dinitrotoluene	S-8270	<1.5	<1.4	<1.4	<1.4
2-Acetylaminofluorene	S-8270	<1.5	<1.4	<1.4	<1.4
2-Chloronaphthalene	S-8270	<1.5	<1.4	<1.4	<1.4
2-Chlorophenol	S-8270	<1.5	<1.4	<1.4	<1.4
2-Methylnaphthalene	S-8270	<1.5	<1.4	<1.4	<1.4
2-Naphthylamine	S-8270	<1.5	<1.4	<1.4	<1.4
2-Nitroaniline	S-8270	<1.5	<1.4	<1.4	<1.4
2-Nitrophenol	S-8270	<1.5	<1.4	<1.4	<1.4
2-Picoline	S-8270	<1.5	<1.4	<1.4	<1.4
3,3'-Dichlorobenzidine	S-8270	<1.5	<1.4	<1.4	<1.4
3,3'-Dimethylbenzidine	S-8270	<1.5	<1.4	<1.4	<1.4
3-Methylcholanthrene	S-8270	<1.5	<1.4	<1.4	<1.4
3-Nitroaniline	S-8270	<1.5	<1.4	<1.4	<1.4
4,6-Dinitro-2-methylphenol(1)	S-8270	<1.5	<1.4	<1.4	<1.4
4-Aminobiphenyl	S-8270	<1.5	<1.4	<1.4	<1.4
4-Bromophenyl-phenylether	S-8270	<1.5	<1.4	<1.4	<1.4
4-Chloro-3-methylphenol	S-8270	<1.5	<1.4	<1.4	<1.4
4-Chloroaniline	S-8270	<1.5	<1.4	<1.4	<1.4
4-Chlorophenyl-phenylether	S-8270	<1.5	<1.4	<1.4	<1.4
4-Nitroaniline	S-8270	<1.5	<1.4	<1.4	<1.4

	Field ID	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40
	Lab ID	98D3026	98D3027	98D3028	98D3029
4-Nitrophenol	S-8270	<1.5	<1.4	<1.4	<1.4
4-Nitroquinoline-1-oxide(1)	S-8270	<1.5	<1.4	<1.4	<1.4
5-Nitro-o-toluidine	S-8270	<1.5	<1.4	<1.4	<1.4
7,12-Dimethylbenz[a]anthracene	S-8270	<1.5	<1.4	<1.4	<1.4
a,a-dimethylphenethylamine	S-8270	<1.5	<1.4	<1.4	<1.4
Acenaphthene	S-8270	<1.5	<1.4	<1.4	<1.4
Acenaphthylene	S-8270	<1.5	<1.4	<1.4	<1.4
Acetophenone	S-8270	<1.5	<1.4	<1.4	<1.4
Aniline	S-8270	<1.5	<1.4	<1.4	<1.4
Anthracene	S-8270	<1.5	<1.4	<1.4	<1.4
Benzo[a]anthracene	S-8270	<1.5	<1.4	<1.4	<1.4
Benzo[a]pyrene	S-8270	<1.5	<1.4	<1.4	<1.4
Benzo[b]fluoranthene	S-8270	<1.5	<1.4	<1.4	<1.4
Benzo[g,h,i]perylene	S-8270	<1.5	<1.4	<1.4	<1.4
Benzo[k]fluoranthene	S-8270	<1.5	<1.4	<1.4	<1.4
Benzyl Alcohol	S-8270	<1.5	<1.4	<1.4	<1.4
bis(2-Chloroethoxy)methane	S-8270	<1.5	<1.4	<1.4	<1.4
bis(2-Chloroethyl)ether	S-8270	<1.5	<1.4	<1.4	<1.4
bis(2-chloroisopropyl)ether	S-8270	<1.5	<1.4	<1.4	<1.4
bis(2-Ethylhexyl)phthalate	S-8270	<1.5	<1.4	<1.4	<1.4
Butylbenzylphthalate	S-8270	<1.5	<1.4	<1.4	<1.4
Chrysene	S-8270	<1.5	<1.4	<1.4	<1.4
Dibensofuran	S-8270	<1.5	<1.4	<1.4	<1.4
Dibenz[a,h]anthracene	S-8270	<1.5	<1.4	<1.4	<1.4
Diethylphthalate	S-8270	<1.5	<1.4	<1.4	<1.4
Dimethylphthalate	S-8270	<1.5	<1.4	<1.4	<1.4
Di-n-butylphthalate	S-8270	<1.5	<1.4	<1.4	<1.4
Dinoseb	S-8270	<1.5	<1.4	<1.4	<1.4
Diphenylamine(3)	S-8270	<1.5	<1.4	<1.4	<1.4
Dk-n-octylphthalate	S-8270	<1.5	<1.4	<1.4	<1.4
Ethylmethanesulfonate	S-8270	<1.5	<1.4	<1.4	<1.4
Fluoranthene	S-8270	<1.5	<1.4	<1.4	<1.4
Fluorene	S-8270	<1.5	<1.4	<1.4	<1.4
Hexachlorobenzene	S-8270	<1.5	<1.4	<1.4	<1.4
Hexachlorobutadiene	S-8270	<1.5	<1.4	<1.4	<1.4
Hexachlorocyclopentadiene	S-8270	<1.5	<1.4	<1.4	<1.4
Hexachloroethane	S-8270	<1.5	<1.4	<1.4	<1.4
Hexachlorophene	S-8270	<1.5	<1.4	<1.4	<1.4
Hexachloropropene	S-8270	<1.5	<1.4	<1.4	<1.4
Indeno[1,2,3-cd]pyrene	S-8270	<1.5	<1.4	<1.4	<1.4
Isophorone	S-8270	<1.5	<1.4	<1.4	<1.4

	Field ID	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40
	Lab ID	98D3026	98D3027	98D3028	98D3029
Isosafrole	S-8270	<1.5	<1.4	<1.4	<1.4
m,p-Cresol	S-8270	<1.5	<1.4	<1.4	<1.4
Methapyrilene	S-8270	<1.5	<1.4	<1.4	<1.4
Methyl methanesulfonate	S-8270	<1.5	<1.4	<1.4	<1.4
Naphthalene	S-8270	<1.5	<1.4	<1.4	<1.4
Nitrobenzene	S-8270	<1.5	<1.4	<1.4	<1.4
N-Nitrosodiethylamine	S-8270	<1.5	<1.4	<1.4	<1.4
N-nitrosodimethylamine	S-8270	<1.5	<1.4	<1.4	<1.4
N-Nitrosodi-n-butylamine	S-8270	<1.5	<1.4	<1.4	<1.4
N-Nitroso-di-n-propylamine	S-8270	<1.5	<1.4	<1.4	<1.4
n-Nitrosodiphenylamine(2)	S-8270	<1.5	<1.4	<1.4	<1.4
N-Nitrosomethylethylamine	S-8270	<1.5	<1.4	<1.4	<1.4
N-Nitrosomorpholine	S-8270	<1.5	<1.4	<1.4	<1.4
N-Nitrosopiperidine	S-8270	<1.5	<1.4	<1.4	<1.4
N-Nitrosopyrolidine	S-8270	<1.5	<1.4	<1.4	<1.4
o-Cresol	S-8270	<1.5	<1.4	<1.4	<1.4
o-Toluidine	S-8270	<1.5	<1.4	<1.4	<1.4
p-(Dimethylamino)azobenzene	S-8270	<1.5	<1.4	<1.4	<1.4
Pentachlorobenzene	S-8270	<1.5	<1.4	<1.4	<1.4
Pentachloroethane	S-8270	<1.5	<1.4	<1.4	<1.4
Pentachloronitrobenzene	S-8270	<1.5	<1.4	<1.4	<1.4
Pentachlorophenol	S-8270	<1.5	<1.4	<1.4	<1.4
Phenacetin	S-8270	<1.5	<1.4	<1.4	<1.4
Phenanthrene	S-8270	<1.5	<1.4	<1.4	<1.4
Phenol	S-8270	<1.5	<1.4	<1.4	<1.4
p-Phenylenediamine	S-8270	<1.5	<1.4	<1.4	<1.4
Pyrene	S-8270	<1.5	<1.4	<1.4	<1.4
Pyridine	S-8270	<1.5	<1.4	<1.4	<1.4
Safrole	S-8270	<1.5	<1.4	<1.4	<1.4
	Minimum Reporting Limit	3	2.8	2.8	2.8
O,O,O-Triethyl phosphorothioate	S-8270	<3.0	<2.8	<2.8	<2.8
Thionazin	S-8270	<3.0	<2.8	<2.8	<2.8
Sulfotepp	S-8270	<3.0	<2.8	<2.8	<2.8
Diallate	S-8270	<3.0	<2.8	<2.8	<2.8
Phorate	S-8270	<3.0	<2.8	<2.8	<2.8
Dimethoate	S-8270	<3.0	<2.8	<2.8	<2.8
Pronamide	S-8270	<3.0	<2.8	<2.8	<2.8
Disulfoton	S-8270	<3.0	<2.8	<2.8	<2.8
Methyl parathion	S-8270	<3.0	<2.8	<2.8	<2.8
Ethyl parathion	S-8270	<3.0	<2.8	<2.8	<2.8

	Field ID	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40
	Lab ID	98D3026	98D3027	98D3028	98D3029
Isodrin	S-8270	<3.0	<2.8	<2.8	<2.8
Aramite	S-8270	<3.0	<2.8	<2.8	<2.8
Chlorobenzilate	S-8270	<3.0	<2.8	<2.8	<2.8
Famphur	S-8270	<3.0	<2.8	<2.8	<2.8
Kepone	S-8270	<3.0	<2.8	<2.8	<2.8
	Minimum Reporting Limit	200	200	160	170
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg
	Method				
1,1,1,2-Tetrachloroethane	S-8260B	<200	<200	<160	<170
1,1,1-Trichloroethane	S-8260B	<200	<200	<160	<170
1,1,2,2-Tetrachloroethane	S-8260B	<200	<200	<160	<170
1,1,2-Trichloroethane	S-8260B	<200	<200	<160	<170
1,1-Dichloroethane	S-8260B	<200	<200	<160	<170
1,1-Dichloroethene	S-8260B	<200	<200	<160	<170
1,1-Dichloropropene	S-8260B	<200	<200	<160	<170
1,2,3-Trichlorobenzene	S-8260B	<200	<200	<160	<170
1,2,3-Trichloropropane	S-8260B	<200	<200	<160	<170
1,2,4-Trichlorobenzene	S-8260B	<200	<200	<160	<170
1,2,4-Trimethylbenzene	S-8260B	<200	<200	<160	<170
1,2-Dibromo-3-chloropropane	S-8260B	<200	<200	<160	<170
1,2-Dibromoethane	S-8260B	<200	<200	<160	<170
1,2-Dichlorobenzene	S-8260B	<200	<200	<160	<170
1,2-Dichloroethane	S-8260B	<200	<200	<160	<170
1,2-Dichloropropane	S-8260B	<200	<200	<160	<170
1,3,5-Trimethylbenzene	S-8260B	<200	<200	<160	<170
1,3-Dichlorobenzene	S-8260B	<200	<200	<160	<170
1,3-Dichloropropane	S-8260B	<200	<200	<160	<170
1,4-Dichlorobenzene	S-8260B	<200	<200	<160	<170
2,2-Dichloropropane	S-8260B	<200	<200	<160	<170
2-Butanone (MEK)	S-8260B	<200	<200	<160	<170
2-Chlorotoluene	S-8260B	<200	<200	<160	<170
2-Hexanone	S-8260B	<200	<200	<160	<170
4-Chlorotoluene	S-8260B	<200	<200	<160	<170
4-Isopropyltoluene	S-8260B	<200	<200	<160	<170
4-Methyl-2-pentanone	S-8260B	<200	<200	<160	<170
Acetone	S-8260B	<200	<200	<160	<170
Benzene	S-8260B	<200	<200	<160	<170

	Field ID	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40
	Lab ID	98D3026	98D3027	98D3028	98D3029
Bromobenzene	S-8260B	<200	<200	<160	<170
Bromochloromethane	S-8260B	<200	<200	<160	<170
Bromodichloromethane	S-8260B	<200	<200	<160	<170
Bromoform	S-8260B	<200	<200	<160	<170
Bromomethane	S-8260B	<200	<200	<160	<170
Carbon tetrachloride	S-8260B	<200	<200	<160	<170
chlorobenzene	S-8260B	<200	<200	<160	<170
Chloroethane	S-8260B	<200	<200	<160	<170
Chloroform	S-8260B	<200	<200	<160	<170
Chloromethane	S-8260B	<200	<200	<160	<170
cis-1,2-Dichloroethene	S-8260B	<200	<200	<160	<170
cis-1,3-Dichloropropene	S-8260B	<200	<200	<160	<170
Dibromochloromethane	S-8260B	<200	<200	<160	<170
dibromomethane	S-8260B	<200	<200	<160	<170
Dichlorodifluoromethane	S-8260B	<200	<200	<160	<170
Ethylbenzene	S-8260B	<200	<200	<160	<170
Hexachlorobutadiene	S-8260B	<200	<200	<160	<170
Isopropylbenzene	S-8260B	<200	<200	<160	<170
m,p-Xylene	S-8260B	<200	<200	<160	<170
Methylene chloride	S-8260B	<200	<200	<160	<170
Naphthalene	S-8260B	<200	<200	<160	<170
n-Butylbenzene	S-8260B	<200	<200	<160	<170
n-Propylbenzene	S-8260B	<200	<200	<160	<170
o-Xylene	S-8260B	<200	<200	<160	<170
sec-Butylbenzene	S-8260B	<200	<200	<160	<170
Styrene	S-8260B	<200	<200	<160	<170
tert-Butylbenzene	S-8260B	<200	<200	<160	<170
Tetrachloroethene	S-8260B	<200	<200	<160	<170
Toluene	S-8260B	<200	<200	<160	<170
trans-1,2-Dichloroethene	S-8260B	<200	<200	<160	<170
trans-1,3-dichloropropene	S-8260B	<200	<200	<160	<170
Trichloroethene	S-8260B	<200	<200	<160	<170
Trichlorofluoromethane	S-8260B	<200	<200	<160	<170
Vinyl chloride	S-8260B	<200	<200	<160	<170
	Minimum Reporting Limit	0.75	0.7	0.71	0.7
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg
	Method				
Alpha-BHC	S-8080	<0.75	<0.7	<0.71	<0.7
HCB	S-8080	<0.75	<0.7	<0.71	<0.7

	Field ID	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40
	Lab ID	98D3026	98D3027	98D3028	98D3029
beta-BHC	S-8080	<0.75	<0.7	<0.71	<0.7
gamma-BHC	S-8080	<0.75	<0.7	<0.71	<0.7
delta-BHC	S-8080	<0.75	<0.7	<0.71	<0.7
Heptachlor	S-8080	<0.75	<0.7	<0.71	<0.7
Aldrin	S-8080	<0.75	<0.7	<0.71	<0.7
Heptachlor Epoxide	S-8080	<0.75	<0.7	<0.71	<0.7
gamma-Chlordane	S-8080	<0.75	<0.7	<0.71	<0.7
Endosulfan I	S-8080	<0.75	<0.7	<0.71	<0.7
2,4'-DDE	S-8080	<0.75	<0.7	<0.71	<0.7
alpha-Chlordane	S-8080	<0.75	<0.7	<0.71	<0.7
trans-Nonachlor	S-8080	<0.75	<0.7	<0.71	<0.7
Dieldrin	S-8080	<0.75	<0.7	<0.71	<0.7
4,4'-DDE	S-8080	<0.75	<0.7	<0.71	<0.7
2,4'-DDD	S-8080	<0.75	<0.7	<0.71	<0.7
Endrin	S-8080	<0.75	<0.7	<0.71	<0.7
Endosulfan II	S-8080	<0.75	<0.7	<0.71	<0.7
cis-Nonachlor	S-8080	<0.75	<0.7	<0.71	<0.7
4,4'-DDD	S-8080	<0.75	<0.7	<0.71	<0.7
2,4'-DDT	S-8080	<0.75	<0.7	<0.71	<0.7
Endrin Aldehyde	S-8080	<0.75	<0.7	<0.71	<0.7
Endosulfan Sulfate	S-8080	<0.75	<0.7	<0.71	<0.7
4,4'-DDT	S-8080	<0.75	<0.7	<0.71	<0.7
Endrin Ketone	S-8080	<0.75	<0.7	<0.71	<0.7
Methoxychlor	S-8080	<0.75	<0.7	<0.71	<0.7
Mirex	S-8080	<0.75	<0.7	<0.71	<0.7
	Minimum Reporting Limit	75	70	71	70
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg
	Method				
Aroclor 1242	S-8080	<75	<70	<71	<70
Aroclor 1248	S-8080	<75	<70	<71	<70
Aroclor 1254	S-8080	<75	<70	<71	<70
Aroclor 1260	S-8080	<75	<70	<71	<70
	Minimum Reporting Limit				
	Units	mg/kg	mg/kg	mg/kg	mg/kg

	Field ID	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40
	Lab ID	98D3026	98D3027	98D3028	98D3029
	Method				
Aluminum	CLP SOW	2750	1360	1100	649
Arsenic	CLP SOW	7.8	4.2	1.5 J	0.80 J
Barium	CLP SOW	170	743	98.4	28.5 J
Cadmium	CLP SOW	<0.08	<0.07	<0.07	<0.07
Chromium	CLP SOW	2.6	1.5 J	2.1	3.2
Cobalt	CLP SOW	1.4 J	0.89 J	0.87 J	0.50 J
Copper	CLP SOW	2.7 J	1.7 J	2.5 J	1.3 J
Iron	CLP SOW	1620	873	1000	606
Lead	CLP SOW	1.4	0.98	1.4	0.65
Manganese	CLP SOW	29.5	12.7	13.8	9.0
Total Mercury	CLP SOW	<0.04	<0.05	<0.05	<0.05
Nickel	CLP SOW	3.5 J	1.9 J	1.5 J	0.96 J
Selenium	CLP SOW	<0.72	<0.66	<0.67	<0.64
Silver	CLP SOW	<0.70	<0.64	<0.65	<0.62
Zinc	CLP SOW	5.2	3.0 J	2.8 J	2.6 J
Molybdenum	CLP SOW	0.61 J	0.19 J	0.43 J	0.32 J
Boron	CLP SOW	8.6 J	3.9 J	1.6 J	0.82 J
Uranium	CLP SOW	<12.2	<11.1	<11.2	<10.8
Cyanide	CLP SOW	<0.27	<0.26	<0.27	<0.26
	Minimum Reporting Limit	0.42	0.32	0.29	0.25
	Units	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error
	Method				
Radium 226	EPA 903.0 Mod	0.43 +/- 0.29	0.23 +/- 0.21	0.22 +/- 0.21	0.17 +/- 0.17
	Minimum Reporting Limit	1.92	2.01	2.03	3.09
	Units	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error	pCi/g +/- error
	Method				
Radium 228	EPA 904.0 Mod	1.36 +/- 0.91	0.00 +/- 0.79	-0.50 +/- 0.73	66.19 +/- 4.12

	Field ID	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40
	Lab ID	98D3026	98D3027	98D3028	98D3029
	Minimum Reporting Limit				
	Units	mg/kg[a]	mg/kg[a]	mg/kg[a]	mg/kg[a]
	Method				
% Solids	CLP SOW	93.1	96.3	92.9	95.4
Chloride	9056	217	153	5.3	4.6
Fluoride	9056	<2.7	<2.6	<2.7	<2.6
Nitrate	9056	<1.3	1.4	1.7	2.0
Sulfate	9056	236	146	18.4	10
pH[b]	9045B	9.4	8.8	9.6	9.5
TRPHC	9071	42.6	14.1	6.4	5.9
[a] except as noted					
[b] pH units					

RECRA Environmental, Inc.

AD Little

STANDARD LEVEL IV
REPORT OF ANALYSIS

TNU WORK ORDER #98-10173-OR

November 11, 1998

THERMO NUTECH/OAK RIDGE LABORATORY
OAK RIDGE, TN

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SECTION I

CHAIN OF CUSTODY

Thermo NUtechOak Ridge

LABORATORY DATA SUPPORT CHECKLIST

Thermo NUtech Batch # 98 10173

Thermo NUtech Work Order #(s) _____

The items listed must be initialed by appropriate staff upon completion.

DATE FOR PARTIAL	INITIALS	DATE COMPLETE	INITIALS	CHECKLIST ITEMS
		10/29/98	KAB	Sample Log-In (Manual & MAC)
		11/11/98		Data Compilation
		11/11/98	NK	Technical Data Review
		11/11/98	DB	Data Entry/Create Electronic Deliverable
		11/11/98	DB	Generate Case Narrative Letter
		11/11/98		Proof Electronic Deliverable against PDR and COC
		11/11/98		QA/QC Review
				Invoiced by Laboratory

Data package approved by: _____ 11/11/98
Laboratory Manager Date

UPON QA/QC REVIEW THE FOLLOWING MUST BE COMPLETED:

TECHNICAL/CLERICAL CORRECTIONS SIGNATURES NEEDED, ETC.	DATE & INITIAL WHEN COMPLETED
	00003

CHKLST.LAB

RECRA LabNet Use Only

8UL067

Custody Transfer Record/Lab Work Request

Page 2 of 2

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

98 10173

Client AD Little

Est. Final Proj. Sampling Date

Project #

Project Contact/Phone #

RECRA Project Manager

COC Del TAT

see page 1

Date Rec'd Date Due

Account #

Refrigerator #

#/Type Container: Liquid / Solid

Volume: Liquid / Solid

Preservatives

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN

MATRIX CODES: S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, EP/TCLP Leachate, WI - Wipe, OT - Other Fish

	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	RECRA LabNet Use Only: Metals	IONS	IPHC	IPH	TCCL ICSO4	ICFL ICND3	ISUB
14	011	WGSB5-32			Soil	9-24-98	1140	✓	✓	✓	✓	✓	✓	✓
15	012	1 40			1	1	1200	✓	✓	✓	✓	✓	✓	✓

Special Instructions:

90000

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

RECEIVED OAK RIDGE LAB OCT 29 1998

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	10/29/98	0800

Relinquished by	Received by	Date	Time
Fed-Ex	K. Bannister	10/29/98	0900

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

RECRA LabNet Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # [signature]
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. ___ °C

RECRA LabNet Use Only

98101067

Custody Transfer Record/Lab Work Request

Page 1 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

98 10173

RECRA LabNet

Client: AD Little - New Mexico

Est. Final Proj. Sampling Date:

Project #: 60038-002-001-0001-00

Project Contact/Phone #:

RECRA Project Manager: DST

QC: CLP Del: CLP TAT: 21 days

Date Rec'd: 10/9/98 Date Due: 10/30/98

Account #: DIANEPM

Refrigerator #:

#/Type Container: Liquid / Solid

Volume: Liquid / Solid

Preservatives:

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN

RECRA LabNet Use Only

MATRIX CODES: S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish

	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Metals (1)	TOTO	TPHC	TPH	TCL TCLP	TCL TCMP	TSUB
4	001	WGSB3-24			S	9-23-98	1545	✓	✓	✓	✓	✓	✓	✓
5	002	30					1605							
6	003	40					1625							
7	004	WGSB4-5				9-24-98	0810							
8	005	14					0830							
9	006	30					0925							
10	007	40					0945							
11	008	WGSB5-7					1045							
12	009	14					1105							
13	010	22					1120							

Special Instructions:

10/27/98 - ISub sent to TNL

00005

DATE/REVISIONS:

#010 1. Prioritize; METALS, ANIONS, TPH, RAD

012 2. Rec'd 1EA 125ML Broken Zip.

Metals (1) = Al, As, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Mo, Ni, Se, Ag, Zn, Hg, U See attached methods + DL.

RECEIVED OCT 29 1998

Relinquished by	Received by	Date	Time
Fed Ex	K. Barrister	10/28/98	1000

Relinquished by	Received by	Date	Time
Fed Ex	K. Barrister	10/29/98	0900

RECRA LabNet Use Only

Samples were: 1) Shipped ___ or Hand Delivered ✓

Airbill # Surbeld

2) Ambient or ~~Chilled~~

3) Received in Good Condition Y or N

4) Labels Indicate Properly Preserved Y or N

5) Received Within Holding Times Y or N

COC Tape was: 1) Present on Outer Package Y or N; 2) Unbroken on Outer Package Y or N; 3) Present on Sample Y or N; 4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: 807460269538

Cooler Temp. 3 °C

ThermoNUtech
OAK RIDGE
Internal Chain of Custody
QCP-001-1

Work Order Number: 98-10173	Storage Location: QQ1.2
Analysis: Ra228 - Level 4	Sample Matrix: SO
Comments:	Comments:
	Lab Deadline: Thu 11/05/98

Initial and Date	Sample Location
Received By: L Mikey 10/29/98	Accepted From Sample Storage
Relinquished By: L Mikey 10/30/98	To prep
Received By: Joe Rowland 10/30/98	from rough prep
Relinquished By: Joe Rowland 11/2/98	to sep
Received By: [illegible] 11/2/98	from prep lab
Relinquished By: [illegible] 11/2/98	to countroom
Received By: Ashli Sm 11/2/98	QC
Relinquished By: [illegible] 11-3-98	to SEP.
Received By: [illegible] 11/3/98	from countroom
Relinquished By: [illegible] 11/10/98	to countroom
Received By: Ashli Sm 11/10/98	QC
Relinquished By: Ashli Sm 11/10/98	Store
Received By:	00008

ThermoNUtech
OAK RIDGE
Internal Chain of Custody
QCP-001-1

Work Order Number: 98-10173	Storage Location: QQ1.2
Analysis: Ra226 - Level 4	Sample Matrix: SO
Comments:	Comments:
	Lab Deadline: Thu 11/05/98

Initial and Date	Sample Location
Received By: A Miles 10/29/98	Accepted From Sample Storage
Relinquished By: A Miles 10/30/98	To prep
Received By: J Packard 10/30/98	from rough prep
Relinquished By: J Packard 11/2/98	to sep
Received By: [illegible] 11/2/98	from prep lab
Relinquished By: [illegible] 11/2/98	to countroom
Received By: Ashley 11/2/98	CR
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	

98-10173	Client Sample ID	Company Code	PO	Work Order	Project	Matrix	Date Received	TAT Days	Actual DL	Lab DL	Sample Date
98-10173-04	WGSB3-24	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10173-05	WGSB3-30	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10173-06	WGSB3-40	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10173-07	WGSB4-5	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/24/98 00:00
98-10173-08	WGSB4-14	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/24/98 00:00
98-10173-09	WGSB4-30	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/24/98 00:00
98-10173-10	WGSB4-40	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/24/98 00:00
98-10173-11	WGSB5-7	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/24/98 00:00
98-10173-12	WGSB5-14	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/24/98 00:00
98-10173-13	WGSB5-22	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/24/98 00:00
98-10173-14	WGSB5-32	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/24/98 00:00
98-10173-15	WGSB5-40	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/24/98 00:00

Client Information

00010

Contact: Dianne Therry
Voice: (610) 280-3000
Fax: (610) 280-3041

Address: Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

Report Address: Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

Invoice Address: RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

SECTION II

SAMPLE ACKNOWLEDGEMENT

Thermo [redacted]
Oak Ridg[redacted]37830
(615) 481-0683

98-10173	Client Sample ID	Cs137	Gamma	Am241	CuISO	Np237	Po210	PuISO	Ra226	Th227	ThISO	UU236	UUISO	C0014	Ca045	CsPMo	Fe055	GaGbD	GaGbS	GaGbT	H0003	I0129	I0131	Ni063	Pb210	Pm147	Pu241	Ra228	Rn222	Ru106	Sr090	Sr890	SrTOT	Tc099	TTACT	TUKPA	RaTOT
98-10173-04	WGSB3-24								X																			X									
98-10173-05	WGSB3-30								X																			X									
98-10173-06	WGSB3-40								X																			X									
98-10173-07	WGSB4-5								X																			X									
98-10173-08	WGSB4-14								X																			X									
98-10173-09	WGSB4-30								X																			X									
98-10173-10	WGSB4-40								X																			X									
98-10173-11	WGSB5-7								X																			X									
98-10173-12	WGSB5-14								X																			X									
98-10173-13	WGSB5-22								X																			X									
98-10173-14	WGSB5-32								X																			X									
98-10173-15	WGSB5-40								X																			X									
									12																			12									

Client Information

Contact: Dianne Therry
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Fax: (610) 280-3041

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208 Welsh Pool Rd.
Lionville, PA 19341-1313

Address: Dianne Therry
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208 Welsh Pool Rd.
Lionville, PA 19341-1313

Invoice Address: RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

B0012

Thermo NUtech
Oak Ridge, TN 37830
(615) 481-0683

98-10173	Client Sample ID	DS	Holding Period	Storage Location	Sample Coordinate	Depth	Depth Units	Comments
98-10173-04	WGSB3-24	R	180	QQ1.2				
98-10173-05	WGSB3-30	R	180	QQ1.2				
98-10173-06	WGSB3-40	R	180	QQ1.2				
98-10173-07	WGSB4-5	R	180	QQ1.2				
98-10173-08	WGSB4-14	R	180	QQ1.2				
98-10173-09	WGSB4-30	R	180	QQ1.2				
98-10173-10	WGSB4-40	R	180	QQ1.2				
98-10173-11	WGSB5-7	R	180	QQ1.2				
98-10173-12	WGSB5-14	R	180	QQ1.2				
98-10173-13	WGSB5-22	R	180	QQ1.2				
98-10173-14	WGSB5-32	R	180	QQ1.2				
98-10173-15	WGSB5-40	R	180	QQ1.2				

Client Information

00011

Contact: Dianne Therry
Voice: (610) 280-3000
Fax: (610) 280-3041

Address: Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

Report Address: Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

Invoice Address: RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

SECTION III

CASE NARRATIVE

THERMO NUTECH - OAK RIDGE
SAMPLE RECEIPT CHECKLIST

QCP-002-2

WORK ORDER # 98 10173

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS (NON-AQUEOUS)

WERE SAMPLES:

(CIRCLE EITHER YES, NO, OR N/A)

1) RECEIVED IN GOOD CONDITION? (Y) OR N
2) IF AQUEOUS, PROPERLY PRESERVED? Y OR N (N/A)

WERE CHAIN OF CUSTODY SEALS:

1) PRESENT ON OUTSIDE OF PACKAGE? (Y) OR N
2) UNBROKEN ON OUTSIDE OF PACKAGE? (Y) OR N
3) PRESENT ON SAMPLES? (Y) OR N
4) UNBROKEN ON SAMPLES? (Y) OR N

WAS CHAIN OF CUSTODY PRESENT UPON SAMPLE RECEIPT? (Y) OR N

IF ANY OF THE ABOVE ARE CIRCLED "NO", A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: _____

SIGNATURE: K. Bannister DATE: 10/29/98

Copy No. _____

"quality nuclear services"

00013

SPECIAL PROBLEMS OR UNUSUAL CIRCUMSTANCES CONTINUED

RADIUM-228

Samples demonstrated background equivalent results for Radium-228 activity. Results for the replicate demonstrated an acceptable normalized difference. Relative percent difference is slightly high, however, this is due to the non-active nature of this sample. Sample results are statistically equivalent with consideration of the error estimate. Results for the laboratory control sample demonstrated an acceptable normalized difference. No significant problems were noted during the analysis process.

CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package and in the electronic data submitted on diskette has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.

M. R. McDougall
Laboratory Manager

Date: 11/11/98

90016

Thermo NUtech
601 Scarboro Road
Oak Ridge TN 3783
423 481-08
FAX 423 483-46
FAX 423 481-01

TNU-OR-9131

November 11, 1998

Ms. Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

CASE NARRATIVE
Work Order #98-10173-OR
South Carolina DHEC Lab ID #84013001

SAMPLE RECEIPT

This work order contains twelve soil samples received 10/29/98. All samples were analyzed for Radium-226/228.

CLIENT ID	RFW #	LAB ID
WGSB3-24	9810L067-001	98-10173-04
WGSB3-30	9810L067-002	98-10173-05
WGSB3-40	9810L067-003	98-10173-06
WGSB4-5	9810L067-004	98-10173-07
WGSB4-14	9810L067-005	98-10173-08
WGSB4-30	9810L067-006	98-10173-09
WGSB4-40	9810L067-007	98-10173-10
WGSB5-7	9810L067-008	98-10173-11
WGSB5-14	9810L067-009	98-10173-12
WGSB5-22	9810L067-010	98-10173-13
WGSB5-32	9810L067-011	98-10173-14
WGSB5-40	9810L067-012	98-10173-15

ANALYTICAL METHODS

Radium-226 was analyzed using EPA Method 903.0 modified. Radium-228 was analyzed using EPA Method 904.0 modified.

SPECIAL PROBLEMS OR UNUSUAL CIRCUMSTANCES

RADIUM-226

Samples demonstrated background equivalent results for Radium-226 activity. Results for the replicate demonstrated an acceptable normalized difference. Relative percent difference is slightly high, however, this is due to the non-active nature of this sample. Sample results are statistically equivalent with consideration of the error estimate. Results for the laboratory control sample demonstrated an acceptable normalized difference. No significant problems were noted during the analysis process.

00015

A Subsidiary of Thermo Remediation Inc.

Diann[redacted]herry
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341-1313

SDG: [redacted]0173
MATRIX: Soil

Final Report of [redacted]alysis
Date of Report: 11/11/98

Lab ID		Sample ID	Sample Date	Receipt Date	Analysis Date	Analyte	Method	Result	Error	MDA	Units
98-10173-01	K	KNOWN	10/29/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	11.25	0.52		pCi/g
98-10173-01	S	SPIKE	10/29/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	12.07	1.38	0.15	pCi/g
98-10173-02	B	BLANK	10/29/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.09	0.09	0.16	pCi/g
98-10173-03	D	WGSB3-24	09/23/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.29	0.20	0.18	pCi/g
98-10173-04		WGSB3-24	09/23/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.06	0.09	0.19	pCi/g
98-10173-05		WGSB3-30	09/23/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.19	0.19	0.32	pCi/g
98-10173-06		WGSB3-40	09/23/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.08	0.14	0.31	pCi/g
98-10173-07		WGSB4-5	09/24/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.19	0.19	0.31	pCi/g
98-10173-08		WGSB4-14	09/24/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.23	0.19	0.28	pCi/g
98-10173-09		WGSB4-30	09/24/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.12	0.16	0.33	pCi/g
98-10173-10		WGSB4-40	09/24/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.27	0.27	0.50	pCi/g
98-10173-11		WGSB5-7	09/24/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.28	0.22	0.28	pCi/g
98-10173-12		WGSB5-14	09/24/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.43	0.29	0.42	pCi/g
98-10173-13		WGSB5-22	09/24/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.23	0.21	0.32	pCi/g
98-10173-14		WGSB5-32	09/24/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.22	0.21	0.29	pCi/g
98-10173-15		WGSB5-40	09/24/98	10/29/98	11/03/98	Radium-226	EPA 903.0 Modified	0.17	0.17	0.25	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Approved by: _____ 11/11/98
M.R. McDougall, Laboratory Manager

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[redacted] NU [redacted]

SECTION IV

ANALYTICAL RESULTS SUMMARY

Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341-1313

SDG: 9810173
MATRIX: Soil

Final Report of Analysis
Date of Report: 11/11/98

Lab ID		Sample ID	Sample Date	Receipt Date	Analysis Date	Analyte	Method	Result	Error	MDA	Units
98-10173-01	K	KNOWN	10/29/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	12.06	0.15		pCi/g
98-10173-01	S	SPIKE	10/29/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	12.94	1.35	1.50	pCi/g
98-10173-02	B	BLANK	10/29/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	-0.18	0.50	1.33	pCi/g
98-10173-03	D	WGSB3-24	09/23/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	0.31	0.92	2.25	pCi/g
98-10173-04		WGSB3-24	09/23/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	-0.75	0.79	2.19	pCi/g
98-10173-05		WGSB3-30	09/23/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	0.79	0.83	1.88	pCi/g
98-10173-06		WGSB3-40	09/23/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	0.73	0.82	1.88	pCi/g
98-10173-07		WGSB4-5	09/24/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	0.21	0.87	2.14	pCi/g
98-10173-08		WGSB4-14	09/24/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	-1.26	1.09	3.05	pCi/g
98-10173-09		WGSB4-30	09/24/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	0.74	1.00	2.33	pCi/g
98-10173-10		WGSB4-40	09/24/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	-0.34	0.94	2.48	pCi/g
98-10173-11		WGSB5-7	09/24/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	-1.34	1.01	2.89	pCi/g
98-10173-12		WGSB5-14	09/24/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	1.36	0.91	1.92	pCi/g
98-10173-13		WGSB5-22	09/24/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	0.00	0.79	2.01	pCi/g
98-10173-14		WGSB5-32	09/24/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	-0.50	0.73	2.03	pCi/g
98-10173-15		WGSB5-40	09/24/98	10/29/98	11/10/98	Radium-228	EPA 904.0 Modified	66.19	4.12	3.09	pCi/g

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Approved by: _____ 11/11/98
M.R. McDougall, Laboratory Manager

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SECTION V

ANALYTICAL STANDARD

Ba Sa

RADIOACTIVE REFERENCE STANDARDS

SOLUTION

Principal Radionuclide: Barium-133

Half-Life: 10.48 ± 0.04 years

Radionuclide: ^{133}Ba

Solution Number: SRM 4251B-~~48~~ 47 wm

Activity: 135,851 dpm/ml

Activity Date: 6/10/81

Volume: _____

~~NA~~ Ampoule/Solution

~~NA~~ Empty Ampoule

Chemical Composition of Solution: $BaCl_2$ in 1M HCl

Dilution Instruction: Dilute 26 ml to 1l use Ba-5 for motherisolution

Dilution Solution Used: 1M HCl

Calculations: $\frac{\text{Activity/ml} \times \text{Volume (ml)} \times \text{decay factor}}{\text{Final Volume (ml)}}$

$$\frac{(25\text{ml})(135{,}851\text{ dpm/ml})}{1000\text{ ml}} = 3{,}396.3\text{ dpm/ml @ 6/10/81}$$

Decay correction: See decay sheet to Activity Date: See decay sheet

Final Activity See decay sheet per ml 1000 Total Volume

Expiration Date 6/17/99 New Solution Number NA

Diluted by William L. Mitchell Date 6/17/96

Approved by M. M. Dewey Date 6/17/96

00022

U. S. Department of Commerce
Malcolm Baldrige
Secretary

National Bureau of Standards
Ernest Ambler, Director

QA/QC REVIEWED
Date 10/20/91 Initials LK
Ba-5

National Bureau of Standards

Certificate

Standard Reference Material 4251B

Radioactivity Standard

Radionuclide	Barium-133
Source identification	4251B-47
Source description	Liquid in NBS borosilicate-glass ampoule (1)*
Solution composition	Approximately 118 μg $BaCl_2$ per gram of 1 molar hydrochloric acid (2)
Mass	5.00482 grams
Radioactivity concentration	4.524×10^5 Bq g^{-1} ($s^{-1}g^{-1}$)
Reference time	1400 EST June 10, 1981
Random uncertainty	0.06 percent (3)
Systematic uncertainty	1.38 percent (4)
Total uncertainty (Random plus systematic)	1.44 percent
Photon-emitting impurities	None observed (5)
Half life	10.48 ± 0.04 years (6)
Measuring instrument	NBS pressurized "4π"γ ionization chamber calibrated by 4π(e,x)-γ coincidence and anti-coincidence efficiency-extrapolation technique

This Standard Reference Material was prepared in the Center for Radiation Research, Nuclear Radiation Division, Radioactivity Group, Dale D. Hoppes, Group Leader.

00021

Washington, D.C. 20234
December, 1981

George A. Uriano, Chief
Office of Standard Reference Materials

Ra-56

RADIOACTIVE REFERENCE STANDARDS

SOLUTION

Principal Radionuclide: Radium-226

Half-Life: 1600 ± 7 years

Radionuclide: ^{226}Ra

Activity: 2222.22 dpm/ml

Volume: _____

Solution Number: Ra-5

Activity Date: 2 February 1994

~~NA~~ Ampoule/Solution

~~NA~~ Empty Ampoule

Chemical Composition of Solution

$Ra(NO_3)_2$ in HNO_3

Dilution Instruction:

Dilute 20 ml of Ra-5 to 1l with 1N HNO_3

Dilution Solution Used: 1 N HNO_3

Calculations: $\frac{\text{Activity/ml} \times \text{Volume (ml)} \times \text{decay factor}}{\text{Final Volume (ml)}}$

$$\frac{2222.22 \text{ dpm/ml} \times 20 \text{ ml}}{1000 \text{ ml}} = 44.44 \text{ dpm/ml}$$

Decay correction: See decay sheet to Activity Date: -NA-

Final Activity See decay sheet per ml NA Total Volume

Expiration Date 6/4/99 New Solution Number NA

Diluted by Willie L McDowell Date 6/4/94 Um 6/4/96

Approved by M&M Date 6/4/96

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Ra-5
QA/QC REVIEWED
Date 2/8/94 Initials WT

Radionuclide:	Ra-226	Customer:	TMA EBERLINE
Half Life:	1600 ± 7 years	P.O.No.:	VH1888
Catalog No.:	7226	Reference Date:	February 1 1994 12:00 PST.
Source No.:	453-26	Contained Radioactivity: (Ra-226)	1.001 μCi.
		Contained Radioactivity: (Ra-226)	37.0 kBq.

Description of Solution

a. Mass of solution:	5.1864 g (in a 5 ml Flame Sealed Ampoule)
b. Chemical form:	Ra(NO3)2 in 1 N HNO3
c. Carrier content:	None added
d. Density:	1.0318 g/ml @ 20°C.

Radioimpurities: None detected(other than daughters)

Radioactive Daughters
Rn-222, Po-218, At-218, Pb-214, Bi-214, Po-214, Tl-210, Pb-210, Bi-210, Po-210 and Tl-206.

Radionuclide Concentration

(Ra-226) 0.1929 μCi/g.

Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry:
Energy peak(s) integrated under: 186 keV.
Branching ratio(s) used: 0.0351 gamma rays per decay.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	±3.4%
b. Random uncertainty in assay:	±3.1%
c. Random uncertainty in weighing(s):	±0.2%
d. Total uncertainty at the 99% confidence level:	±4.6%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).

Anna U. Kuen
QUALITY CONTROL

Feb. 3, 1994
Date Signed

ISOTOPE PRODUCTS LABORATORIES
1800 North Keystone Street
Burbank, California 91504
(818) 843 - 7000

00023

Ra-8

Recommended Procedure for Opening the SRM Ampoule

1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.

2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood. In addition to the radioactive material, the solution contains strong acid and is corrosive.

3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.

4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.

5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.

6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.

7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.

8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. *NEVER PIPETTE BY MOUTH.*

9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]*.

*Notes and references are on pages 5 and 6.

Ra-8

National Institute of Standards & Technology

Certificate

QA/QC REVIEWED
Date 5/4/98 Initials WT

Standard Reference Material 4339A
Radium-228 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive radium-228 nitrate, non-radioactive barium nitrate, and nitric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of alpha-particle and gamma-ray counting instruments and for the monitoring of radiochemical procedures.

Radiological Hazard

The SRM ampoule contains radium-228 with a total activity of approximately 1 kBq. Radium-228 decays by beta-particle emission. The progeny of radium-228 have a total activity of approximately 7 kBq and decay by alpha- and beta-particle emission. None of the alpha or beta particles escape from the SRM ampoule. During the decay process X-rays and gamma rays with energies from 8 keV to 3 MeV are also emitted. Most of these photons escape from the SRM ampoule and can represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]*. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard

The SRM ampoule contains nitric acid (HNO_3) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least April 2004.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899
August 1995

Thomas E. Gills, Chief
Standard Reference Materials Program

00025

*Notes and references are on pages 5 and 6.

PROPERTIES OF SRM 4339A
(Certified values are shown in bold type)

Source identification number	NIST SRM 4339A		
Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter Wall Thickness Barium content Lead-oxide content Other heavy elements	(16.5 ± 0.5) mm (0.60 ± 0.04) mm Less than 2.5% Less than 0.02% Trace quantities	
Solution density	**(1.031 ± 0.002) g·mL^{-1} at 22.8 °C** [b]*		
Solution mass	**(5.162 ± 0.002) g** [b]		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration (mol·L^{-1})	Mass Fraction (g·g^{-1})
	H_2O	54	0.94
	HNO_3	1.0	0.06
	$Ba(NO_3)_2$	3×10^{-4}	8×10^{-5}
	$Ra(NO_3)_2$	1×10^{-10}	3×10^{-11}
Radiological Properties:			
Radionuclide	**Radium-228**		
Reference time	**1200 EST, 12 April 1994** [c]		
Massic activity of the solution [d]	**214.5 Bq·g^{-1}**		
Relative expanded uncertainty ($k=2$)	**2.20%** [e]		
Photon-emitting impurities	Radium-226: (1.3 ± 0.3) Bq·g^{-1} [b,f]		
Half lives used	Radium-228: (5.75 ± 0.03) a [g] Actinium-228: (6.13) h Thorium-228: (1.913 ± 0.002) y Radium-224: (3.66 ± 0.04) d Radon-220: (55.6 ± 0.1) s Polonium-216: (145 241 2) ms Lead-216: (10.64 ± 0.01) h Bismuth-212: (60.55 ± 0.06) m Polonium-212: (298 ± 3) ns Thallium-208: (3.035 ± 0.004) m		
Measuring instruments	Calibrated germanium spectrometer systems		

*Notes and references are on pages 5 and 6

EVALUATION OF THE UNCERTAINTY OF THE MASSIC ACTIVITY [e]*

Input Quantity x_i, the source of uncertainty	Method Used To Evaluate $u(x_i)$, the standard uncertainty of x_i	Relative Uncertainty Of Input Quantity, $u(x_i)/x_i$, (%) [h]	Relative Sensitivity Factor, $\lvert \partial y/\partial x_i \rvert \cdot (x_i/y)$ [i]	Relative Uncertainty Of Output Quantity, $u_i(y)/y$, (%) [j]
Uncertainties Evaluated By Statistical Methods				
Massic photon emission rate	Standard deviation of the mean for 17 sets of gamma-ray spectrometer measurements	0.26	1.0	0.26
Uncertainties Evaluated By Other Means				
Mass calibration of the balance	Estimated from manufacturer's data	0.05	1.0	0.05
Decay correction for radium-228	Standard uncertainty of the half life	0.52 [m]	1.33 [n]	0.69
Decay-scheme data	Standard uncertainty of the photon emission probabilities	0.61	1.0	0.61
Live-time [p]	Estimated	0.10	1.0	0.10
Photon detection efficiency	Estimated	0.50	1.0	0.50
Source geometry	Estimated	0.20	1.0	0.20
Photon-emitting impurities	Estimated [q] Limit of detection [r]	10. 100.	0.001 0.0001	0.01 0.01
Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$, (%)				1.10
Coverage Factor, k				x 2
Relative Expanded Uncertainty of the Output Quantity, U/y, (%)				2.20

05/04/1998 11:41 5057615416 THERMO NUTECH PAGE 05

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*Notes and references are on pages 5 and 6.

Ra-8

THERMO NUTECH - OAK RIDGE LABORATORY

RADIOACTIVE REFERENCE STANDARD SOLUTIONS

QCP-009-1

Principal Radionuclide	Half-Life
Radium-228	5.75 years

Radionuclide: 228Radium
Activity: 160.986 dpm/ml
Volume: 106.179 ml

Solution Number: NIST 4339A (F103)
Activity Date: 5/4/98

~~NA~~ Ampule/Solution
Empty Ampule

Chemical Composition of Solution: $Ra(NO_3)_2$

106.179 ml transfered from Albuquerque. Added 222 ml of 1M HNO_3 to reach total volume of 328.179 ml.

Dilution Instruction: Transfer total volume to 1ℓ jar and add 222 ml of 1M HNO_3

Dilution Solution Used: 1M HNO_3

Calculations: Activity/ml x Volume (ml) x decay factor / Final Volume (ml)

$$\frac{106.179\text{ml} \times 160.986\ \text{dpm/ml}}{(106.179 + 222)\text{ml}} = 52.085\ \text{dpm/ml @ 5/4/98}$$

Decay correction: NA to Activity Date: 5/4/98
Final Activity 52.085 dpm per ml 328.18 ml Total Volume
Expiration Date 5/4/99 New Solution Number NA

Diluted by William L. McDonald Date 5/4/98

Approved by W.J. Templeton Date 5/4/98

Copy No. U2

Ra-8

QA/QC REVIEWED
Date 5/4/98 Initials MT

TMA/Eberline
Albuquerque Laboratory

RADIOACTIVE REFERENCE STANDARDS

SOLUTION

Principal Radionuclide	Half-Life
Radium-228	5.75 years

Radionuclide Radium-228 Solution Number 4339A
Activity 214.5 Bq/gm Activity Date 4-12-94
Volume ~5 gms

105.7271 gms FLASK ~~Ampoule~~/Solution
100.6274 gms Empty ~~Ampoule~~ FLASK
5.0997 gms Volume

Chemical Composition of Solution
1M HNO_3

Dilution Instruction: Dilution Solution Used: 1M HNO_3

Diluted contents of ampoule to 250 mls with 1M HNO_3

Calculations: $\frac{\text{Activity/mL} \times \text{Volume (mL)} \times \text{Decay Factor}}{\text{Final Volume (mL)}}$

$\frac{214.5\ Bq}{gm} \times 5.0997\ gm = 1093.88\ Bq \times 60\ dpm = 65633.14\ dpm \div 250\ ml$

$= 262.53\ \frac{Bq}{ml} \times 0.7551 = 198.24\ \frac{dpm}{ml}$

Decay Correction: 0.7551 to Activity Date: 8-12-96
Final Activity: 198.24 dpm per mL 250 ml Total Volume.
Expiration Date: 8-5-99 New Solution Number F-103

Diluted by: Nick Valdez Date: 8-5-96
Approved by: Kathy Burnham Date: 9-20-96

Thermo NUtech
Oak Ridge Laboratory
Calculation of LCS Normalized Difference
Version 1.0 (12/14/96)

DATE:	11/11/98
WO#:	98-10-173
Associated WO#s:	
Analyte:	Ra-226

LCS measured:	107.53%	**Normalized Difference**	1.24
LCS expected:	100.00%		
C.U. Measured:	11.40%	@ 2 Sigma	
C.U. Expected:	4.60%	@ 3 Sigma	

Ra-226, dpm/ml:	44.35		
ml, Added:	0.5633		
Certified Error%	4.60%		
Known, pCi	11.25	Result	12.1
Known Error, pCi:	0.52	Error	1.38

Calculated By: _____ Date: 11/11/98

Reviewed By: _____ Date: 11/11/98

Remarks:

Calculation is based on ***one sigma*** counting uncertainty and expected uncertainty as required in the

SECTION VI

QUALITY CONTROL SAMPLE RESULTS SUMMARY

Thermo NUtech
Oak Ridge Laboratory
Calculation of LCS Normalized Difference
Version 1.0 (12/14/96)

DATE:	11/11/98
WO#:	9810-173
Associated WO#s:	
Analyte:	Ra-228

LCS measured:	106.58%	**Normalized Difference**	1.23
LCS expected:	100.00%		
C.U. Measured:	10.47%	@ 2 Sigma	
C.U. Expected:	1.20%	@ 3 Sigma	

Ra-228, dpm/ml:	49.10		
ml, Added:	0.5473		
Certified Error%	1.20%		
Known, pCi	12.10	Result	12.9
Known Error, pCi:	0.15	Error	1.35

Calculated By: _____ Date: 11/11/98

Reviewed By: _____ Date: 11/11/98

Remarks:

Calculation is based on ***one sigma*** counting uncertainty and expected uncertainty as required in the September 9, 1996 Analytical Support Services agreement.

000384

1D.XLD

Thermo NUtech
Oak Ridge Laboratory

Calculation of Replicate Normalized Difference

Version 1.0 (2/11/97)

DATE: 11/11/98
WO#: 98-10-173
Associated WO#s:
Analyte: Ra-226

Rep. Measurement	0.285		**Normalized Difference**	2.07
Orig. Measurement:	0.055			
C.U. Replicate:	0.198	@ 2 Sigma		
C.U. Original:	0.091	@ 3 Sigma	**R. P. Difference:**	135.00%

Calculated By: _____ Date: 11/11/98

Reviewed By: _____ Date: 11/11/98

Remarks:

Calculation is based on ***one sigma*** counting uncertainty and expected uncertainty as required in the

SECTION VII

LABORATORY TECHNICIAN'S NOTES
&
INSTRUMENT RUN LOGS

RPDND1R8.XLS

Thermo NUtech
Oak Ridge Laboratory
Calculation of Replicate Normalized Difference
Version 1.0 (2/11/97)

DATE:	11/11/98
WO#:	98-10-173
Associated WO#s:	
Analyte:	Ra-228

Rep. Measurement	0.311		
Orig. Measurement:	-0.747		
C.U. Replicate:	0.921	@ 2 Sigma	
C.U. Original:	0.794	@ 3 Sigma	

Normalized Difference 1.71

R. P. Difference: -485.32%

Calculated By: _____ Date: 11/11/98

Reviewed By: _____ Date: 11/11/98

Remarks:

Calculation is based on ***one sigma*** counting uncertainty and expected uncertainty as required in the September 9, 1996 Analytical Support Services agreement.

000345

98-10-173 RA224/228
Aliquoted - Added appropriate Spikes + tracers - Added 1.5mls of 1mg/ml BA Carrier - Added 20mls of .25M EDTA, Phenolphthalein + 3drops of NH4OH - Vortexed + put Samples in a hot H2O bath Vortexed + Centrifuged - Transferred Supernate to a clean C-Tube - Added 5mls of .25M EDTA - Heat to precip - Vortexed + Centrifuged - Transferred Supernate to Previous ones - Submitted to Separations - Discarded insolubles
11/2/98 Joy Bernard

98-10-189 RA224/228
Decanted Samples - Transferred to a 50 ml C-Tube - Centrifuged - Discarded supernate as Waste - Submitted RA precip to Separations
11/2/98 Joy Bernard

11/2/98

RA-226 NOTES

DATE	SAMPLE #	CLIENT	LOAD TIME	CT. TIME	ANALYSIS	TECH
11/2/98	981014/A(1-10)	BSC	1834	2'50	U	
11/2/98	9810147A(4-7)	PCC	1834	2'50	Th	
11/2/98	9810189A(1)	MYF	1834	2'50	Ra	
11-3-98	Daily Pulser	LAB	0433	10 min.	NA	
11-3-98	9810173A(1-15)	RECRA	0519	2HR 50 min.	Ra	

TITLE Prep Radium Project No. LA Book No. LC709-14 41

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Sample #	Client	Matrix	Aliquot	BA133 / BA56	RA226 / RA56	RA228 / RA58	Comp By	Rcd By	Remarks
98-10-179-6	MKF	H_2O	0.4L	1.0130	LA	LA	11/2/98 B		
7			↓	1.0123	↓	↓	↓		
2nd LCS 8	↓	↓	1L	1.0145	0.5161	0.5415			
98-10-172-1	RECRA	Soil	1g	1.0148	0.5584	0.5482	10/30/98 B	10/30/98 COS	
2			↓	1.0163	LA	LA			
3			.5020	1.0162					
4			.5116	1.0158					
5			.5031	0.9847					
6			.5438	1.0148					
7			.5034	1.0133					
8			.5254	1.0127					
9			.5075	1.0125					
10			.5052	1.0114					
11			.5008	1.0116					
12			.5200	1.0120					
13			.5790	1.0100					
14	↓	↓	.5181	1.0116	↓	↓	↓	↓	
15			.5018	1.0137					
98-10-173-1	RECRA	Soil	1g	1.0167	0.5633	0.5473	11/2/98 B	11/2/98 COS	
2			↓	1.0158	LA	LA			
3			.5016	1.0147					
4			.5737	1.0149					
5			.5300	1.0146					
6			.5288	1.0111					
7			DF.5024	1.0110					
8			.5101	1.0133					
9			.5303	1.0120					
10			.5002	1.0134					
11			.5022	1.0127					
12			.5172	1.0178					
13			.5018	1.0124					
14	↓	↓	.5031	1.0176	↓	↓	↓	↓	
15			.5170	1.0155					
					LA 10/30 KRB				

To Page No. 42

Witnessed & Understood by me, | Date | Invented by LA B | Date 11/2/98 | LA

Recorded by

98-10-151 Ra228

Filters were returned from countroom. They were placed into c-tubes with EDTA.

10/30/98

98-10-155 Ra226/228

Followed procedure QAP-006 Rev.2 steps 8.1 to 8.8. Recorded T_0 time of 1028 hrs. Sent filters to countroom.

10/30/98

98-10-172 Ra226/228

Followed procedure QAP-006 Rev.2 steps 8.1 to 8.8. Recorded T_0 time of 1253 hrs. Sent filters to countroom.

10/30/98

98-10-151 Ra228

Followed procedure QAP007 Rev.2 steps 8.1 to 8.11. Recorded T_3 time of hrs. Sent filters to the countroom.

11/2/98

98-10-173, 189 Ra226/228

Followed procedure QAP-006 Rev.2 steps 8.1 to 8.8. Recorded T_0 time of 1150hrs. Sent filters to the countroom

11/2/98

RA-228 NOTES

98-11-002 Ra226/228

Followed procedure QAP-006 Rev.2 steps 8.1 to 8.8. Recorded T∅ time of 0735 hrs. Sent filters to countroom.

11/4/98

98-10-173, 189 Ra228

Followed procedure QAP-007 Rev.2 steps 8.1 to 8.5.

11/4/98

98-10-153 Total Radium

Followed procedure QAP-006 Rev.2 steps 8.1 to 8.8. Recorded T∅ time of 1320 hrs. Sent filters to countroom.

11/4/98

98-10-172 Ra228 (8-15)

Followed procedure QAP-007 Rev.2 steps 8.6 to 8.11. Recorded T3 time of 0705 hrs. Sent filters to countroom.

11/5/98

98-10-189 Ra228

Followed procedure QAP-007 Rev.2 steps 8.6 to 8.11 Recorded T3 time of 1253 hrs. Sent filters to countroom.

11/5/98

NA COS

00044

11/5/98

98-10-173, 189 Ra228

Filters were returned from countroom. They were placed into c-tubes with EDTA.

11/3/98

98-10-152 Total Radium

Followed procedure QAP-006 Rev.2 Steps 8.1 to 8.8. Recorded Tϕ time of 0930 hrs. Sent filters to the countroom.

11/3/98

98-10-155, 172 Ra228

Filters were returned from countroom 11/2/98 and placed into c-tubes with EDTA.

11/3/98

98-10-155-172 Ra228

Followed procedure QAP-007 Rev.2 Steps 8.1 to 8.5.

11/3/98

98-10-172 (1-7) Ra228

Followed procedure QAP-007 Rev.2 Steps 8.6 to 8.11. Recorded T_3 time of 1257 hrs. Sent filters to Countroom.

11/3/98

NA CDJ 11/3/98

TITLE Radium Separation Project No. NA Book No. QC 21C-15 4

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Sam #	T_0/T_2	Tech	Tare Wt	Final Wt	Rec by	T_3	Tare Wt	Final Wt	Net Wt	Tech	Rec by	Rem.
98-10-189-5	1150 11/2/98	CDJ	0.0222	0.0275	Ann 11-2-98	1253 11/5/98	0.0989	0.1549	0.0560	CDJ	Ann 11-5-98	Ra226/228
-6			0.0222	0.0270			0.0985	0.1541	0.0556			
-7			0.0222	0.0278			0.0986	0.1528	0.0542			
-8			0.0220	0.0272			0.0991	0.1550	0.0559			
98-10-173-1	1150 11/2/98	CDJ	0.0216	0.0258	Ann 11-2-98	1235 11/10/98	0.0958	0.1527	0.0569	CDJ	Ann 11-10-98	Ra226/228
-2			0.0217	0.0263			0.0956	0.1520	0.0564			
-3			0.0218	0.0269			0.0966	0.1530	0.0564			
-4			0.0218	0.0265			0.0969	0.1526	0.0557			
-5			0.0217	0.0272			0.0967	0.1522	0.0555			
-6			0.0219	0.0267			0.0968	0.1510	0.0542			
-7			0.0220	0.0275			0.0964	0.1530	0.0566			
-8			0.0220	0.0272			0.0964 0.0959	0.1515	0.0556			
-9			0.0220	0.0270		1335 11/10/98	0.0959	0.1518	0.0559			
-10			0.0219	0.0277			0.0963	0.1528	0.0565			
-11			0.0221	0.0266			0.0972	0.1540	0.0568			
-12			0.0220	0.0269			0.0961	0.1527	0.0566			
-13			0.0220	0.0280			0.0966	0.1518	0.0552			
-14			0.0218	0.0273			0.0970	0.1531	0.0561			
-15			0.0222	0.0267			0.0973	0.1524	0.0551			
98-10-138-1	0930 11/3/98	CDJ	0.0220	0.0260	Ann 11-3-98							Ra226/228
2			0.0219	0.0266								
3			0.0221	0.0269								
4			0.0221	0.0266								
98-10-152-1	0930 11/3/98	CDJ	0.0955	0.1039	Ann 11-3-98	NA				CDJ	11/3/98	Tot Ra
2			0.0962	0.1020								
3			0.0961	0.1049								
4			0.0966	0.1058								
98-10-169-1	1100 11/3/98	CDJ	0.0929	0.1006	Ann 11-3-98	NA				CDJ	11/3/98	Tot Ra
2			0.0933	0.1022								
3			0.0927	0.1018								
4			0.0935	0.1035								
5			0.0938	0.1056								
6			0.0933	0.1022								
7			0.0935	0.1028								
8			0.0937	0.1074								
9			0.0941	0.1100								

00046

Witnessed & Understood by me, | Date | Invented by NA | Date

Recorded by CDJ

98-11-002 Ra228

Followed procedure QAP007 Rev.2 steps 8.6 to 8.11. Recorded T_3 time of 1330 hrs. Sent filters to countroom. 11/9/98

98-10-172 Ra228 B

Filters were returned from countroom. They were placed into c-tubes with EDTA. 11/10/98

98-10-173 Ra228 (1-8)

Followed procedure QAP-007 Rev.2 steps 8.6 to 8.11. Recorded T_3 time of 1235 hrs. Sent filters to the countroom. 11/10/98

98-10-173 (9-15) Ra228

Followed procedure QAP007 Rev.2 steps 8.6 to 8.11. Recorded T_3 time of 1335 hrs. Sent filters to the countroom. 11/10/98

SECTION VIII

ANALYTICAL DATA (RADIUM-226)

DATE	SAMPLE #	CLIENT	LOAD TIME	CT. TIME	ANALYSIS	TECH
11-5-98	9810172A2 (15)	RECRA	0935	1HR	Ra^{228}	JDP
11-5-98	9810153SA (1-6)	BJC	1055	1HR	Sr	JDP
11-5-98	9810189A(1-7)	MKF	1407	1hr	Ra^{228}	
11-5-98	9810189A (8)	MKF	1510	1hr	Ra^{228}	
11-5-98	9810142A (1-4)	BSC	1625 1545	1hr	SR	
11-5-98	9810142A(5-7)	BSC	1625	1hr	SR	
11-5-98	9810142A(8-11)	BJC	1650	1hr	SR	
11-5-98	9810142A(12-14)	BSC	1730	1hr	SR	
11-5-98	9810152A(1-4)	BSC	1750	1hr	SR	
11-5-98	9810152A(5)	BSC	1830	1hr	SR	
11-5-98	9810169AB3(11-17)	BEC	1935	5hr	LB	
11-6-98	DAILY BLKD	LAB	0520	1HR	αBKGD	JDP
↓	QC	↓	0625	30min.	Sr-90	JDP
11-6-98	9810131RB(1-6)	OLVER	1145	1HR	Ra^{228}	JDP
11-6-98	9810151A(1-6)	EEE	1328	1hr	Ra^{228}	
11-6-98	9810187TA(1-6)	BJC	1545	1/2HR	10T Ra	
11-9-98	DAILY BLKD	LAB	0400	1HR	BLKD	JDP
↓	QC	↓	0505	30min.	Sr-90	JDP
11-9-98	9811002A (1-7)	MKF	1450	1hr	Ra^{228}	
11-9-98	9811002A(8-13)	MKF	1555	1hr	Ra^{228}	
11-10-98	DAILY BLKD	LAB	0400	1HR	BLKD	JDP
↓	QC	↓		30min.	Sr-90	JDP
11-10-98	9810173A(1-7)	Recra	1348	1hr	Ra^{228}	
11-10-98	9810173A(8-12)	Recra	1455	1hr	Ra^{228}	
11-10-98	9810173A(13)	Recra	1600	1hr	Ra^{228}	
11-10-98	9811028SA(1-4)	Recra	1646	1hr	SR	
11-10-98	9811028SA(5-7)	Recra	1706	1hr	SR	
11-10-98	9810187A(1-4)	BSC	1754	1hr	SR	
11-10-98	9810187A(5)	BSC	1816	1hr	SR	
11-10-98	9809190A(1,2)	EMS	1902	30min	LB	
11-10-98	9809190A(3,4,5)	EMS	1930	8hr	LB	

98-10173-Ra226-SO-A	Lab Deadline: Thu 11/05/98	Lab ID	Wet Wt. (g)	Dry Wt. (g)	Tare Wt. (g)	Final Wt. (g)	Recovery (dec.)	SAF (dec.)	Analyst Comments
Sample Matrix	Soil/Solid	01			0.0216	0.0258		1.1406	
Reporting Units	pCi/g	02			0.0217	0.0263		1.1816	
Client	RECRA	03			0.0218	0.0269		1.2462	
PO		04			0.0218	0.0265		1.1934	
Job #	AD-Little	05			0.0217	0.0272		1.3077	
MDA Required	6.00E-02	06			0.0219	0.0267		1.2058	
Dup. Sample ID	04	07			0.0220	0.0275		1.3077	
MS ID		08			0.0220	0.0272		1.2608	
MS Original ID		09			0.0220	0.0270		1.2322	
MS Dup ID		10			0.0219	0.0277		1.3590	
Tracer ID	BA-5A	11			0.0221	0.0266		1.1705	
Tracer Ref Date	10/30/98	12			0.0220	0.0269		1.2187	
Tracer T1/2	3.83E+03	13			0.0220	0.0280		1.3956	
Tracer Initial ACT	1.08E+03	14			0.0218	0.0273		1.3077	
Carrier		15			0.0222	0.0267		1.1705	
Carrier Concentration									
Procedure Used									
Count Duration (mins)									

00050

Data Entry: _____ Date: 11/2/98

98-10173-Ra226-SO-A	Lab Deadline: Thu 11/05/98	Lab ID	CLIENT ID	Sample Descrip	Sample Date	Aliquot (g)		Tracer Aliq (g)	Witness			
Sample Matrix	Soil/Solid	01	Spike	LCS	10/30/98	1.0000		1.0162		88.6		
Reporting Units	pCi/g	02	Blank	MBL	10/30/98	1.0000		1.0158		87.6		
Client	RECRA	03	WGSB3-24	DUP	09/23/98	0.5016		1.0147		96.2		
PO		04	WGSB3-24	DO	09/23/98	0.5737		1.0149		100		
Job #	AD-Little	05	WGSB3-30	TRG	09/23/98	0.5300		1.0146		94.6		
MDA Required	6.00E-02	06	WGSB3-40	TRG	09/23/98	0.5288		1.0141		100		
Dup. Sample ID	04	07	WGSB4-5	TRG	09/24/98	0.5027		1.0140		89.5		
MS ID		08	WGSB4-14	TRG	09/24/98	0.5101		1.0133		100		
MS Original ID		09	WGSB4-30	TRG	09/24/98	0.5303		1.0120		96		
MS Dup ID		10	WGSB4-40	TRG	09/24/98	0.5002		1.0134		88.5		
Tracer ID	BA-5A	11	WGSB5-7	TRG	09/24/98	0.5022		1.0127		84.9		
Tracer Ref Date	10/30/98	12	WGSB5-14	TRG	09/24/98	0.5172		1.0128		94.4		
Tracer T1/2	3.83E+03	13	WGSB5-22	TRG	09/24/98	0.5018		1.0124		100		
Tracer Initial ACT	1.08E+03	14	WGSB5-32	TRG	09/24/98	0.5031		1.0126		96.6		
Carrier		15	WGSB5-40	TRG	09/24/98	0.5170		1.0155		97.8		
Carrier Concentration												
Procedure Used												
Count Duration (mins)												

00049

Data Entry _____ Date: 11/2/98

Thermo NUtech
Spike & Tracer Worksheet

BATCH ID:	98-10-173			ANALYSIS	Ra-226 & Ra-228				DATE	10/30/98 8:59
	Isotope	Sol #	Activity dpm/ml	Solution Date	Volume Used, ml	Date	Technician	Known pCi	Error Estimate	Witness
SPIKE	Ra-226	Ra-5b	44.349	10/30/98	0.5633	10/30/98	JB	11.25	0.518	EEL
SPIKE	Ra-228	Ra-8	49.095	10/30/98	0.5473	10/30/98	JB	12.10	0.145	EEL
TRACER	Ba-133	Ba-5a	1075.327	10/30/98	BELOW	10/30/98	JB			EEL

PASTE PRINT OUT FROM BALANCE BELOW

ADD APPROXIMATE STANDARD ADDITIONS AS BELOW
Ra-5b ~ 0.5000 g
Ra-8 ~ 0.5000 g Ba-5a ~ 1.0000g
FOR THE MATRIX SPIKE SEE LAB MANAGER OR COUNT ROOM SUPERVISOR

LCS	TRACER	MATRIX SPIKE
RA5b RA8 0.5473	Aliquot	BA5A

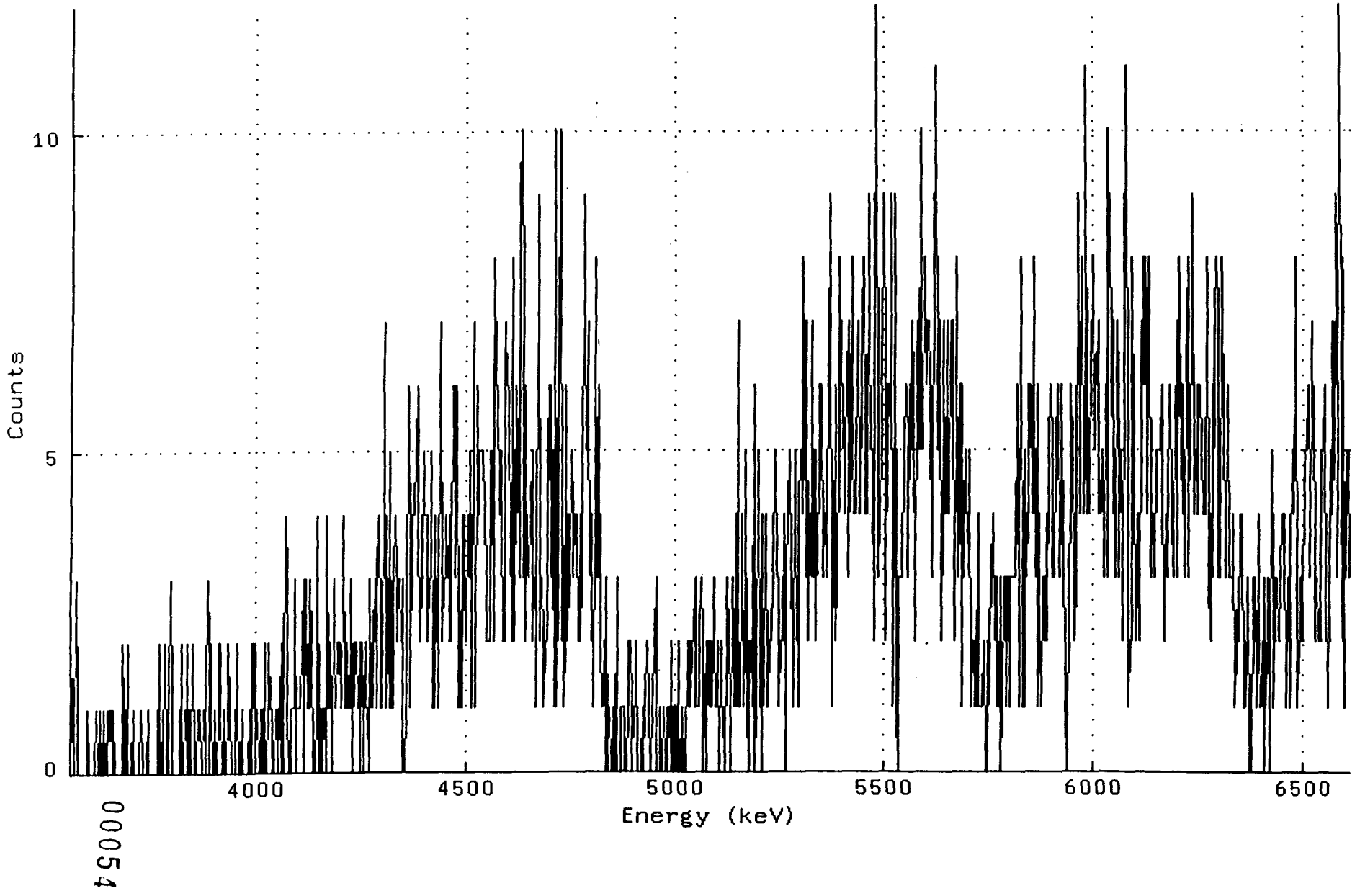
00052

98-10173-Ra226-SO-A	Lab Deadline: Thu 11/05/98	Lab ID	Rough Prep Date/Time	By	Prep Date/Time	By	Chemistry Date/Time	By	Count Date/Time	By	P	PID	S
Sample Matrix	Soil/Solid	01	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
Reporting Units	pCi/g	02	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
Client	RECRA	03	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
PO		04	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
Job #	AD-Little	05	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
MDA Required	6.00E-02	06	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
Dup. Sample ID	04	07	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
MS ID		08	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
MS Original ID		09	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
MS Dup ID		10	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
Tracer ID	BA-5A	11	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
Tracer Ref Date	10/30/98	12	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
Tracer T1/2	3.83E+03	13	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
Tracer Initial ACT	1.08E+03	14	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
Carrier		15	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Mon 11/02/98 11:50	CDJ					
Carrier Concentration													
Procedure Used													
Count Duration (mins)													

00051

Data Entry: _____ Date: 11/2/98

Spectr[redacted] : DKA200:[ALPHA.ALUSR.ARCHIVE.C]C_[redacted]0173A-RA$01_RA.CNF;1
Title : 017
Sample Title: SPIKE
Start Time: 3-NOV-1998 05:18: Sample Time: 3-NOV-1998 00:00: Energy Offset: 3.54826E+03
Real Time : 0 02:49:44.99 Sample ID : 01 Energy Slope : 2.68853E+00
Live Time : 0 02:50:00.00 Sample Type: RA Energy Quad : 2.96155E-04



000054

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:23:06

Spectral File: ND_AMS_ARCHIVE_C:C_9810173A-RA$01_RA.CNF

BATCH ID:	9810173A-RA	SAMPLE ID:	01
SAMPLE DATE:	3-NOV-1998 00:00	ALIQUOT: 1.000E+00	gram
SAMPLE TITLE:	SPIKE	DETECTOR NUMBER:	017
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	21.1%
ELAPSED LIVE TIME:	10200.	RECOVERY:	88.60%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_017_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.14

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	688.77	3.58	100.0	9.755E+00	1.168E+00	1.857E-01
RN-222	5490.0	655.28	1.70	99.9	9.286E+00	1.125E+00	1.418E-01
RA-226	4785.0	852.27	2.04	100.0	1.207E+01	1.379E+00	1.510E-01

Jeff Price
Analyst

11.3.98
Date

Alan Gregg
Reviewer

11/3/98
Date

00053

433:	2	4	2	3	9	7	5	7
441:	5	4	2	4	1	4	8	3
449:	3	6	2	1	1	2	0	3
457:	0	1	1	0	0	1	0	3
465:	0	0	0	1	1	1	0	0
473:	1	2	2	1	0	1	1	2
481:	0	0	0	0	1	0	1	2
489:	1	1	0	1	1	2	3	0
497:	0	0	1	0	1	1	0	1
505:	0	1	0	2	0	1	0	0
513:	2	0	0	1	0	0	1	0
521:	2	2	1	2	2	3	1	1
529:	1	2	3	2	0	1	2	0
537:	2	2	1	1	3	2	1	1
545:	2	0	2	1	1	0	2	3
553:	2	1	0	3	2	1	1	7
561:	1	1	3	4	1	2	5	1
569:	0	2	2	1	6	0	1	5
577:	5	1	4	0	2	3	4	1
585:	2	2	2	3	5	5	3	3
593:	1	2	2	2	4	0	3	4
601:	5	4	4	1	5	3	3	1
609:	4	5	4	8	6	3	7	2
617:	4	3	7	3	5	2	4	4
625:	6	6	3	4	4	3	4	6
633:	9	1	2	3	6	2	3	5
641:	8	6	6	4	5	6	7	3
649:	5	8	5	4	5	4	7	4
657:	6	7	8	5	4	4	9	7
665:	5	5	2	6	12	3	3	4
673:	5	6	9	6	2	6	6	5
681:	9	1	5	9	1	0	3	3
689:	3	5	5	6	5	3	6	5
697:	7	6	2	7	5	5	10	5
705:	5	8	6	6	7	6	6	3
713:	9	6	11	5	6	7	2	4
721:	7	4	7	4	4	7	5	7
729:	2	6	8	3	6	1	6	3
737:	5	4	4	3	5	1	2	1
745:	2	1	4	1	1	1	2	2
753:	0	2	0	2	3	4	3	3
761:	1	3	1	3	0	1	3	1
769:	3	3	1	3	3	3	3	3
777:	6	1	2	8	1	1	5	3
785:	4	6	6	4	8	4	5	1
793:	6	2	1	3	2	2	4	2
801:	5	6	5	3	3	5	5	6
809:	3	4	6	3	2	1	0	3
817:	4	6	5	3	2	3	9	5
825:	4	8	4	5	11	4	4	5
833:	6	8	5	6	6	7	4	4
841:	5	3	3	6	3	10	8	7
849:	4	7	3	7	6	3	5	3
857:	2	7	11	4	1	2	2	8
865:	5	2	3	4	2	6	8	6
873:	8	4	7	8	3	4	4	3
881:	5	5	5	5	6	5	2	4
889:	3	4	6	4	3	4	5	7
897:	3	8	5	4	6	3	7	8
905:	3	6	6	9	4	5	4	6

Channel Contents for ND_AMS_ARCHIVE_C:C_9810173A-RA$01_RA

Channel

1:	0	0	2	1	1	0	0	3
9:	1	0	0	0	0	0	0	0
17:	0	1	0	0	0	0	0	0
25:	0	1	0	0	0	1	0	0
33:	1	0	1	0	1	1	1	0
41:	1	0	0	0	0	0	0	0
49:	2	1	0	0	2	0	0	0
57:	0	1	0	0	0	0	0	0
65:	1	0	0	0	0	0	1	0
73:	0	0	0	0	0	0	0	0
81:	2	0	0	1	0	2	0	1
89:	0	1	3	1	0	0	0	0
97:	0	0	0	2	0	0	1	1
105:	0	2	0	0	1	1	2	0
113:	0	0	1	1	1	0	0	1
121:	0	1	3	2	0	2	1	0
129:	1	0	0	1	2	2	1	0
137:	0	1	0	1	2	1	1	0
145:	0	0	0	2	1	0	0	0
153:	1	0	0	0	0	0	1	0
161:	2	0	2	2	0	1	0	0
169:	1	0	0	2	0	0	1	2
177:	1	1	0	0	0	1	1	0
185:	1	2	0	0	1	4	3	1
193:	0	0	1	1	1	3	0	1
201:	1	1	1	2	3	0	3	1
209:	1	1	3	2	0	1	0	1
217:	4	0	1	0	0	1	1	0
225:	4	1	1	2	0	3	2	1
233:	1	2	2	2	1	3	4	1
241:	1	2	1	1	3	1	0	2
249:	2	2	1	2	0	2	0	1
257:	2	1	1	0	3	1	1	2
265:	3	1	3	4	2	1	1	5
273:	7	1	4	2	1	5	1	1
281:	3	4	3	2	3	2	2	3
289:	0	0	1	2	6	3	1	4
297:	4	4	5	6	4	2	3	3
305:	5	4	4	4	2	3	3	5
313:	1	4	1	3	1	1	7	2
321:	2	3	3	4	3	4	2	2
329:	3	6	3	6	6	1	3	1
337:	4	1	4	2	2	4	3	5
345:	1	7	6	1	6	5	4	5
353:	5	5	5	4	3	2	2	2
361:	5	5	2	8	6	6	6	4
369:	5	4	2	2	7	6	6	5
377:	4	2	8	2	5	6	5	3
385:	9	10	7	3	6	2	4	3
393:	3	4	5	2	3	3	1	9
401:	2	2	3	2	1	2	2	5
409:	6	3	6	4	1	10	1	3
417:	6	10	2	6	1	2	6	2
425:	3	3	5	4	3	4	3	4

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:22:51.74

Detector ID: 17 Acquisition Start: 3-NOV-1998 05:18:02.01
Live Time: 0 02:50:00.00 Real Time: 0 02:49:44.99
Batch Id: 9810173A-RA Sample Id: 01
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4547.30	749	0479.11		357.51	230	227	7.34E-02	3.7	
2	0	5337.23	576	0334.80		622.70	518	168	5.65E-02	4.2	
3	0	5813.49	607	0	0.00	776.19	703	147	5.95E-02	4.1	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:22:59.41

Acquisition Start: 30-OCT-1998 17:27:36.01
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4505.27	12	0564.59		343.00	230	227	2.00E-04	28.9	
2	0	5272.56	10	0	2.69	601.50	518	168	1.67E-04	31.6	
3	0	5812.90	21	0110.23		776.00	703	147	3.51E-04	21.8	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:23:00.77

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4547.30*	852	0479.11		357.51	230	227	8.36E-02	3.7	
2	0	5337.23*	655	0334.80		622.70	518	168	6.42E-02	4.2	
3	0	5813.49*	689	0	0.00	776.19	703	147	6.75E-02	4.1	

Flag: "*" = Peak area was modified by background subtraction

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913:	6	5	4	4	4	7	8	3
921:	2	6	3	7	8	7	3	3
929:	8	5	6	3	6	6	3	3
937:	3	4	1	2	3	2	4	4
945:	1	2	1	3	3	0	0	[redacted]
953:	2	3	1	4	2	1	2	0
961:	3	1	3	0	1	5	3	1
969:	3	3	2	2	3	4	3	4
977:	1	3	1	3	5	4	7	8
985:	1	2	2	3	2	5	5	5
993:	6	4	3	7	5	4	2	3
1001:	2	2	5	5	6	2	3	1
1009:	3	7	4	5	9	3	5	12
1017:	5	2	8	1	5	5	5	3

[redacted]

[redacted]

[redacted]

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:23:03

Configuration : MCA0:[ALPHA]ALPHA8C97$1
Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2
Sample title : SPIKE
Sample date : 3-NOV-1998 00:00:00 Acquisition date : 3-NOV-1998 05:18:02
Sample ID : 01 Sample quantity : 1.0000 gram
Sample type : RA Sample geometry :
Detector name : 017 Detector geometry:
Elapsed live time: 0 02:50:00.00 Elapsed real time: 0 02:49:44.99 0.1%
Energy tolerance : 0.00 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Average value Efficiencies at : Peak Energy
Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4547.30*	852479.11	357.51	230	227	7.3			RA-226	10.7
0	5337.23*	655334.80	622.70	518	168	8.4			RN-222	8.23
0	5813.49*	689 0.00	776.19	703	147	8.2			PO-218	8.64

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:24:24

****

Spectral File: ND_AMS_ARCHIVE_R:R_9810173A-RA$02_RA.CNF

****

BATCH ID:	9810173A-RA	SAMPLE ID:	02
SAMPLE DATE:	3-NOV-1998 00:00	ALIQUOT:	1.000E+00 gram
SAMPLE TITLE:	BLANK	DETECTOR NUMBER:	018
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	19.3%
ELAPSED LIVE TIME:	10185.	RECOVERY:	87.60%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_018_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.18

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	3.34	4.93	100.0	5.251E-02	1.025E-01	2.417E-01
RN-222	5490.0	0.50	0.68	99.9	7.887E-03	3.867E-02	1.214E-01
RA-226	4785.0	5.56	1.53	100.0	8.735E-02	9.266E-02	1.569E-01

****

Jeff Price
Analyst

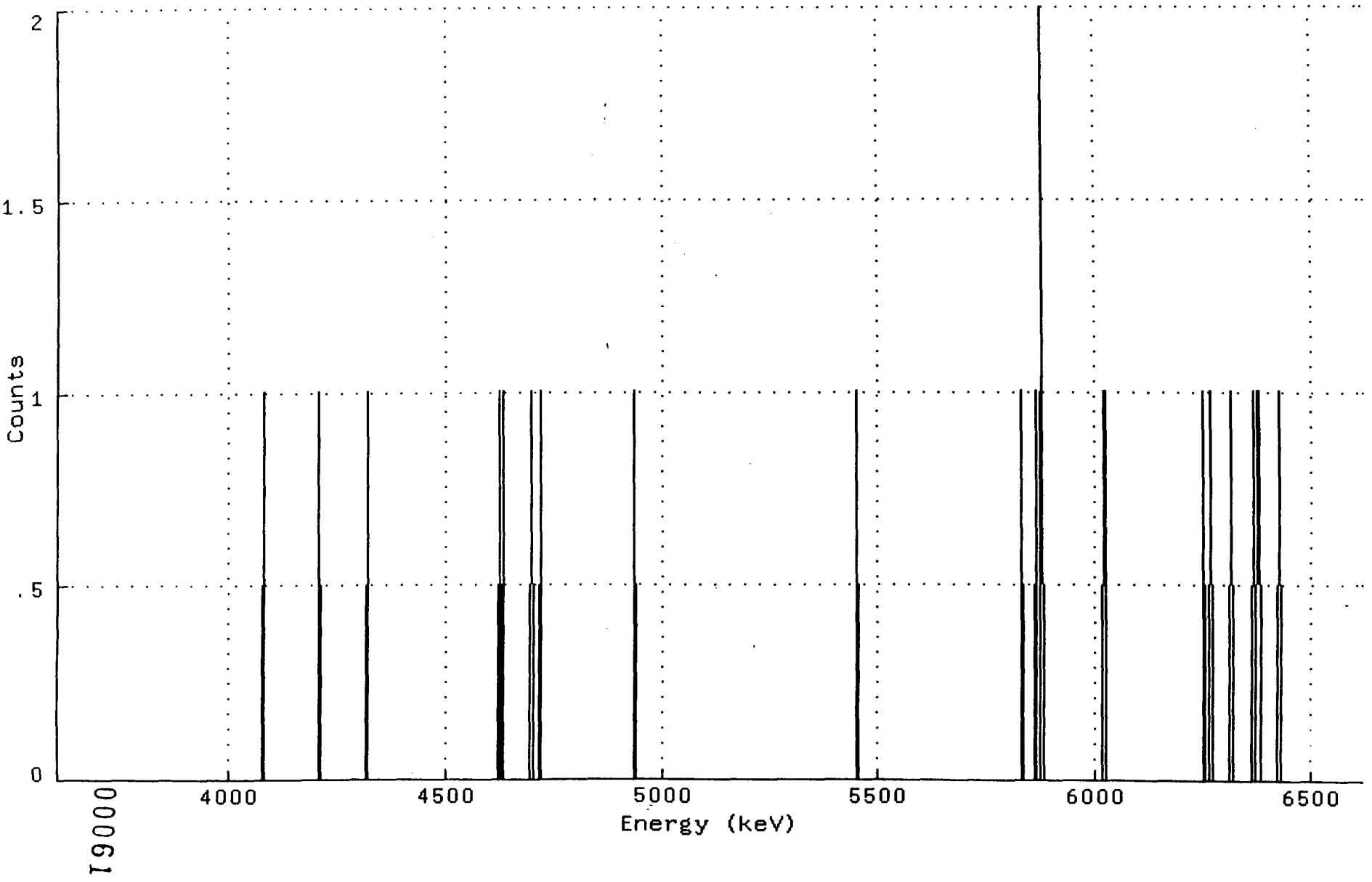
11-3-98
Date

Steve Riegel
Reviewer

11/3/98
Date

00060

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.R]R_9[redacted]173A-RA$02_RA.CNF;1
Title : 018
Sample Title: BLANK
Start Time: 3-NOV-1998 05:18: Sample Time: 3-NOV-1998 00:00: Energy Offset: 3.59286E+03
Real Time : 0 02:49:44.99 Sample ID : 02 Energy Slope : 2.66001E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 2.86659E-04



Channel Contents for ND_AMS_ARCHIVE_R:R_9810173A-RA$02_RA

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	1	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	1	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	1
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	1	0	0	1	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	1	0	0
401:	0	0	0	0	1	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

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913:	0	1	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	1	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	1	0	0	1	1	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	1	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	1
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	1	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	1
777:	0	0	0	0	0	0	0	0
785:	0	1	0	0	0	2	1	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	1	1	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	1	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:23:47.21

Detector ID: 18 Acquisition Start: 3-NOV-1998 05:18:02.02
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810173A-RA Sample Id: 02
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4529.93	6	0	481.46	339.83	216	231	5.89E-04	40.8	
2	0	5449.05	1	0	2.66	652.00	509	170	9.82E-05	100.0	
3	0	5907.00	7	0	3.91	800.86	696	149	6.87E-04	37.8	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:24:16.75

Acquisition Start: 30-OCT-1998 17:27:36.02
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4504.73	9	0	0.00	331.00	216	231	1.50E-04	33.3	
2	0	5272.55	4	0	247.38	593.50	509	170	6.68E-05	50.0	
3	0	5811.03	29	0	54.53	770.00	696	149	4.84E-04	18.6	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:24:18.24

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4529.93*	6	0	481.46	339.83	216	231	5.46E-04	52.9	
2	0	5449.05*	1	0	2.66	652.00	509	170	4.93E-05	245.1	
3	0	5907.00*	3	0	3.91	800.86	696	149	3.28E-04	97.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:24:20

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: BLANK		
Sample date	: 3-NOV-1998 00:00:00	Acquisition date	: 3-NOV-1998 05:18:02
Sample ID	: 02	Sample quantity	: 1.0000 gram
Sample type	: RA	Sample geometry	:
Detector name	: 018	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4529.93*	6481.46	339.83		216	231105.7			RA-226	7.652E-02
0	5449.05*	1 2.66	652.00		509	170490.2			RN-222	6.909E-03
0	5907.00*	3 3.91	800.86		696	149195.0			PO-218	4.600E-02

00066

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:25:01

****

Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$03_RA.CNF

****

BATCH ID:	9810173A-RA	SAMPLE ID:	03
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT: 5.016E-01	gram
SAMPLE TITLE:	WGSB3-24	DETECTOR NUMBER:	019
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	21.0%
ELAPSED LIVE TIME:	10185.	RECOVERY:	96.20%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_019_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.24

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	-0.17	3.91	100.0	-4.490E-03	1.209E-01	3.869E-01
RN-222	5490.0	1.47	1.02	99.9	3.861E-02	9.503E-02	2.408E-01
RA-226	4785.0	10.88	0.34	100.0	2.850E-01	1.976E-01	1.761E-01

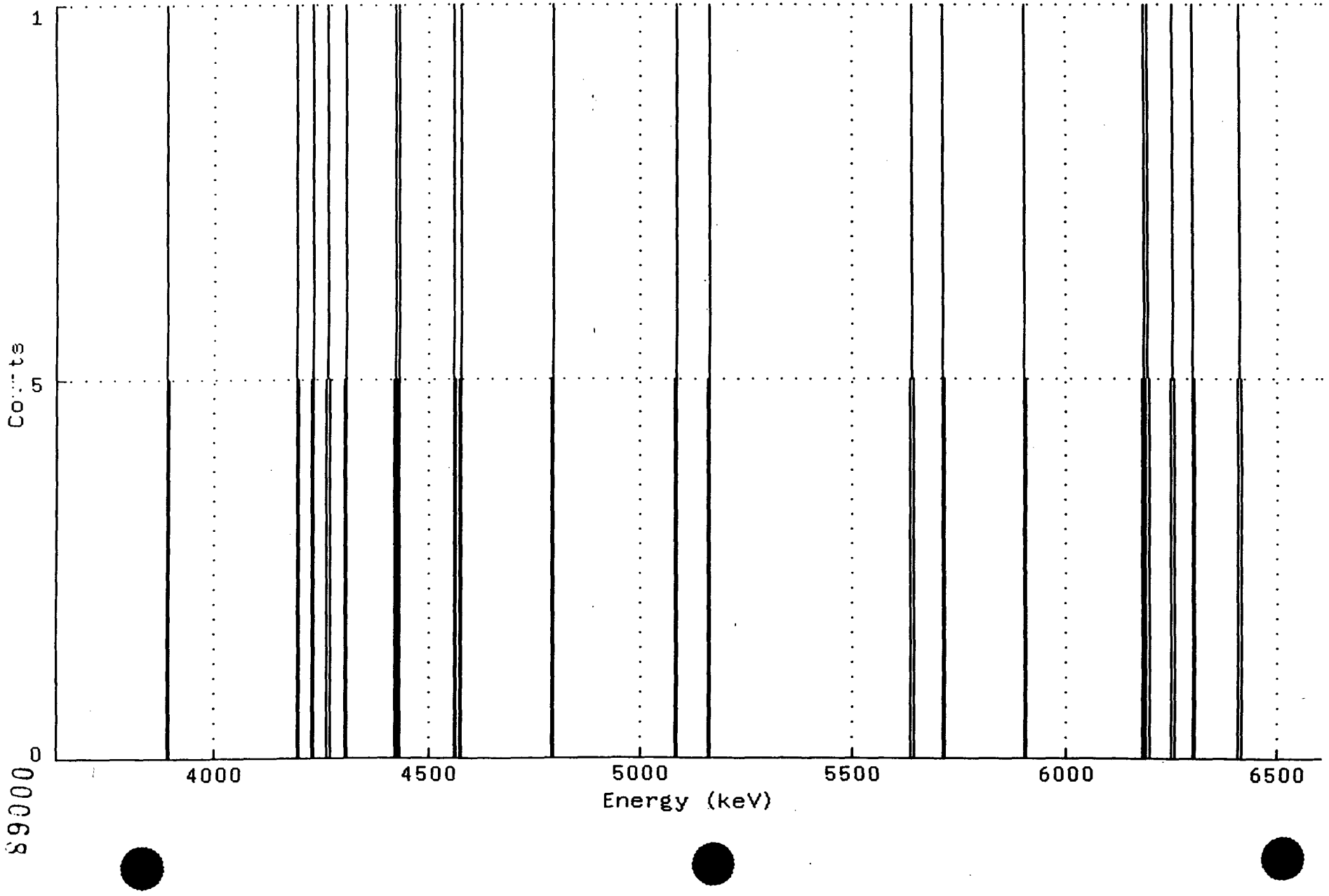
****

Analyst _____ Date 11-3-98

Reviewer _____ Date 11/3/98

00067

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810173A-RA$03_RA.CNF;1
Title : 019
Sample Title: WGSB3-24
Start Time: 3-NOV-1998 05:18: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.62045E+03
Real Time : 0 02:49:44.99 Sample ID : 03 Energy Slope : 2.54691E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 3.55418E-04



89000

Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$03_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	1
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]3:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	1	0	0	0	0	0
225:	0	0	0	0	0	0	0	1
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	1	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	1	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	1	0	0
305:	1	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	1
353:	0	0	0	0	1	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]3:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

00069

433:	0	1	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	1	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	1
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	1	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	1	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	1	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	1	0	0	1
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

00070

913:	0	0	1	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	1	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]53:	0	0	0	0	0	0	0	0
961:	0	0	0	1	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
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Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:24:41

Detector ID: 19 Acquisition Start: 3-NOV-1998 05:18:02.03
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810173A-RA Sample Id: 03
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4418.35	9	0550.13	300.67	214	236		8.84E-04	33.3	
2	0	5119.96	2	0 68.77	547.00	513	172		1.96E-04	70.7	
3	0	5748.02	3	0221.58	755.67	702	149		2.95E-04	57.7	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:24:53.52

Acquisition Start: 30-OCT-1998 17:27:36.03
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4503.81	2	0 12.73	331.50	214	236		3.34E-05	70.7	
2	0	5272.09	6	0338.74	598.50	513	172		1.00E-04	40.8	
3	0	5810.88	23	0122.25	776.00	702	149		3.84E-04	20.9	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:24:55.02

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4418.35*	11	0550.13	300.67	214	236		1.07E-03	34.4	
2	0	5119.96*	1	0 68.77	547.00	513	172		1.45E-04	123.0	
3	0	5748.02*	0	0221.58	755.67	702	149		-1.68E-05	*****	

Flag: "*" = Peak area was modified by background subtraction

00072

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:24:57

Configuration : MCA0:[ALPHA]ALPHA8C97$1
Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2
Sample title : WGSB3-24
Sample date : 23-SEP-1998 00:00:00 Acquisition date : 3-NOV-1998 05:18:02
Sample ID : 03 Sample quantity : 0.50160 gram
Sample type : RA Sample geometry :
Detector name : 019 Detector geometry:
Elapsed live time: 0 02:49:44.99 Elapsed real time: 0 02:49:44.99 0.0%
Energy tolerance : 0.00 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Average value Efficiencies at : Peak Energy
Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw %Err	Fit	Nuclides	Activity pCi/gram
0	4418.35*	11550.13	300.67	214	236	68.9		RA-226	0.274
0	5119.96*	1 68.77	547.00	513	172246.0			RN-222	3.715E-02
0	5748.02*	0221.58	755.67	702	149*****			PO-218	-4.319E-03

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:27:00

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Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$04_RA.CNF

****

BATCH ID:	9810173A-RA	SAMPLE ID:	04
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT: 5.737E-01	gram
SAMPLE TITLE:	WGSB3-24	DETECTOR NUMBER:	020
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	21.4%
ELAPSED LIVE TIME:	10185.	RECOVERY:	100.00%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_020_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.19

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	-1.01	3.40	100.0	-2.187E-02	7.992E-02	2.898E-01
RN-222	5490.0	1.37	2.21	99.9	2.959E-02	9.315E-02	2.473E-01
RA-226	4785.0	2.56	1.02	100.0	5.525E-02	9.110E-02	1.902E-01

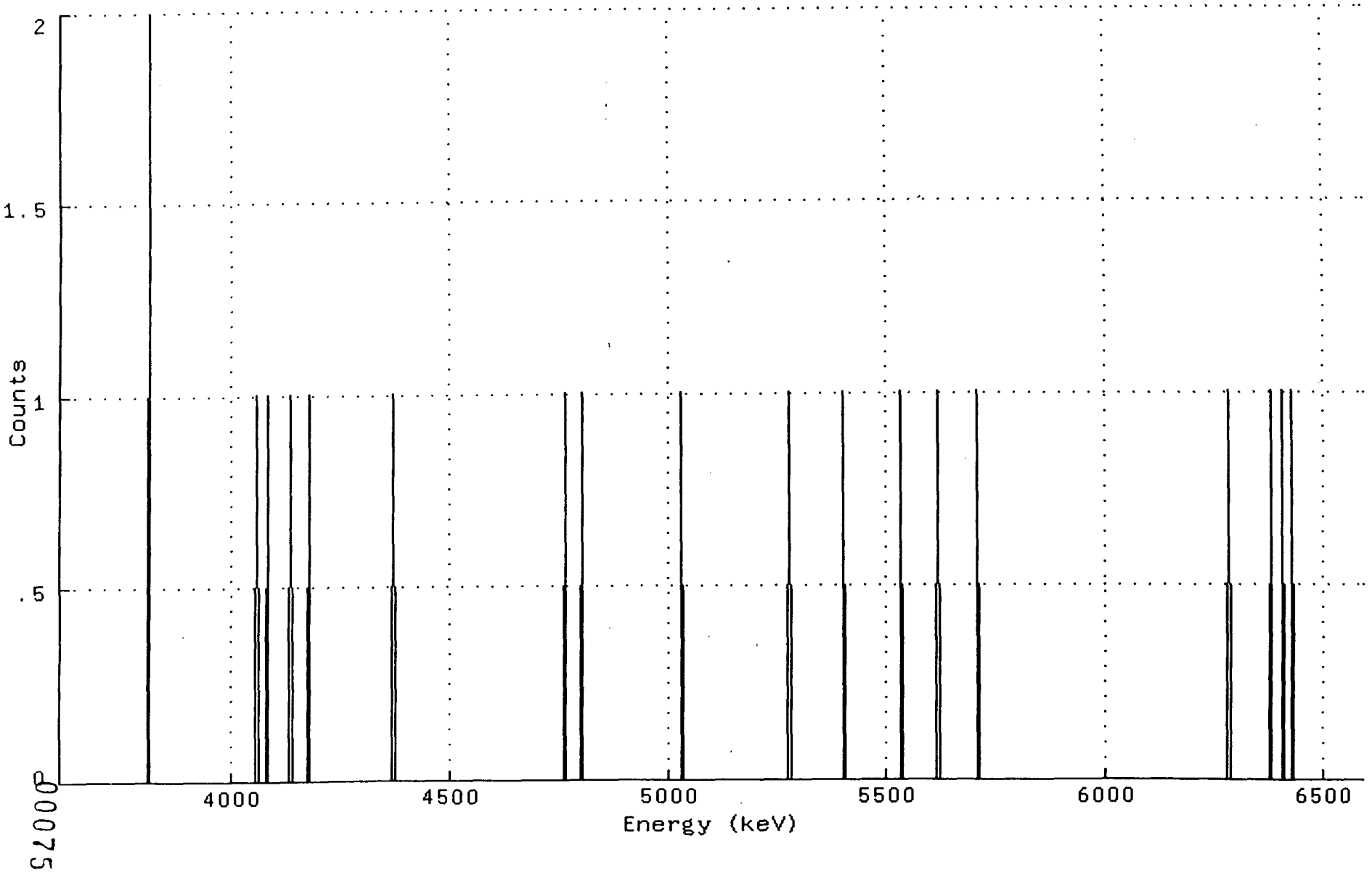
****

Edi Price — Analyst — 11-3-98 — Date

Alan Gregley — Reviewer — 11/3/98 — Date

00071

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9[redacted]173A-RA$04_RA.CNF;1
Title : 020
Sample Title: WGSB3-24
Start Time: 3-NOV-1998 05:18: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.60048E+03
Real Time : 0 02:49:44.99 Sample ID : 04 Energy Slope : 2.66540E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 2.49072E-04



Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$04_RA

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	2	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	1	0	0	0	0	0	0
177:	0	0	1	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	1	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	1	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	1	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	1	0	0	0	0
425:	0	0	0	0	0	0	0	0

433:	1	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
[redacted]5:	0	0	0	0	0	0	0	0
[redacted]73:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	1
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	1	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	1	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
[redacted]5:	0	0	0	0	0	0	0	0
[redacted]3:	0	0	0	0	0	0	0	0
681:	0	1	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	1	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	1	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
[redacted]5:	0	0	0	0	0	0	0	0
[redacted]3:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	1	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	1	0	0	0	0
961:	0	0	0	0	1	0	0	0
969:	0	0	0	1	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:25:15.29

Detector ID: 20 Acquisition Start: 3-NOV-1998 05:18:02.04
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810173A-RA Sample Id: 04
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4644.54	3	0405.14	378.33		214	232	2.95E-04	57.7	
2	0	5236.11	3	0338.51	582.00		508	173	2.95E-04	57.7	
3	0	5663.82	2	0 82.63	725.00		699	151	1.96E-04	70.7	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:26:53.66

Acquisition Start: 30-OCT-1998 17:27:36.04
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4505.78	6	0277.20	329.50		214	232	1.00E-04	40.8	
2	0	5271.61	13	0 2.67	594.00		508	173	2.17E-04	27.7	
3	0	5812.72	20	0 21.21	774.00		699	151	3.34E-04	22.4	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:26:54.85

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4644.54*	3	0405.14	378.33		214	232	2.51E-04	82.4	
2	0	5236.11*	1	0338.51	582.00		508	173	1.35E-04	157.3	
3	0	5663.82*	-1	0 82.63	725.00		699	151	-9.95E-05	182.7	

Flag: "*" = Peak area was modified by background subtraction

00079

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:26:57

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB3-24		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 3-NOV-1998 05:18:02
Sample ID	: 04	Sample quantity	: 0.57370 gram
Sample type	: RA	Sample geometry	:
Detector name	: 020	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4644.54*	3405.14	378.33		214	232164.7			RA-226	5.525E-02
0	5236.11*	1338.51	582.00		508	173314.7			RN-222	2.959E-02
0	5663.82*	-1 82.63	725.00		699	151365.4			PO-218	-2.187E-02

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Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:29:25

Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$05_RA.CNF

BATCH ID:	9810173A-RA	SAMPLE ID:	05
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT:	5.300E-01 gram
SAMPLE TITLE:	WGSB3-30	DETECTOR NUMBER:	021
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	19.8%
ELAPSED LIVE TIME:	10185.	RECOVERY:	94.60%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_021_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.30

NUCLIDE ACTIVITY SUMMARY

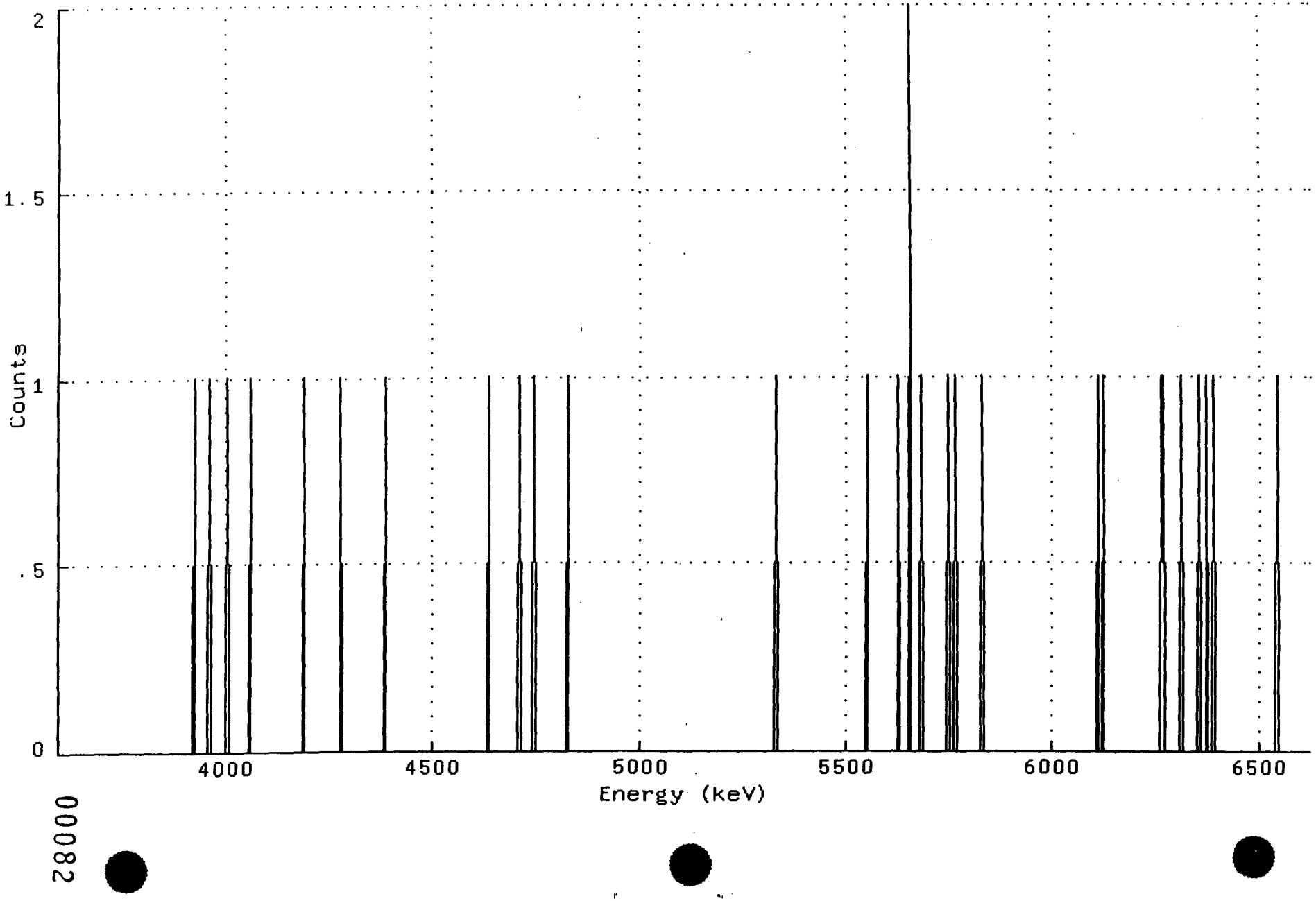
NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
[redacted]218	6003.0	4.56	4.59	100.0	1.220E-01	1.911E-01	4.404E-01
RN-222	5490.0	-1.58	2.89	99.9	-4.232E-02	7.944E-02	3.691E-01
RA-226	4785.0	7.28	1.87	100.0	1.947E-01	1.880E-01	3.151E-01

Analyst _____ Date 11-3-98

Reviewer _____ Date 11/3/98

00081

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810173A-RA$05_RA.CNF;1
Title : 021
Sample Title: WGSB3-30
Start Time: 3-NOV-1998 05:18: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.58948E+03
Real Time : 0 02:49:44.99 Sample ID : 05 Energy Slope : 2.64760E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 3.06675E-04



28000

Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$05_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	1	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	1	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	1	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	1	0	0
177:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]3:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	1	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	1	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	1	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	1	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]3:	0	0	0	0	0	0	0	0
401:	0	0	0	1	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	1
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	1	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	1	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	1	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	1	0	0
721:	0	0	0	0	0	0	2	0
729:	0	0	0	0	0	0	0	1
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	1	0	0	0
753:	0	1	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	1	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	1	0	0	0	1
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	1

913:	1	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	1	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	1	0	0	0	0
[illegible]:	0	1	0	0	0	0	1	0
[illegible]:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	1	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:27:13.5

Detector ID: 21 Acquisition Start: 3-NOV-1998 05:18:02.05
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810173A-RA Sample Id: 05
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4535.73	7	0	593.06	343.71	218	231	6.87E-04	37.8	
2	0	5327.70	1	0	2.65	613.00	510	170	9.82E-05	100.0	
3	0	5705.13	7	0	2.65	736.29	697	148	6.87E-04	37.8	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:29:17.57

Acquisition Start: 30-OCT-1998 17:27:36.05
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4505.14	11	0	550.70	333.00	218	231	1.84E-04	30.2	
2	0	5271.87	17	0	3.89	594.50	510	170	2.84E-04	24.3	
3	0	5811.52	27	0	123.11	770.50	697	148	4.51E-04	19.2	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:29:19.05

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4535.73*	7	0	593.06	343.71	218	231	7.15E-04	48.1	
2	0	5327.70*	-2	0	2.65	613.00	510	170	-1.55E-04	93.8	
3	0	5705.13*	5	0	2.65	736.29	697	148	4.48E-04	78.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:29:21

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB3-30		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 3-NOV-1998 05:18:02
Sample ID	: 05	Sample quantity	: 0.53000 gram
Sample type	: RA	Sample geometry	:
Detector name	: 021	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4535.73*	7593.06	343.71	218	231	96.3			RA-226	0.184
0	5327.70*	-2 2.65	613.00	510	170	187.5			RN-222	-4.004E-02
0	5705.13*	5 2.65	736.29	697	148	156.5			PO-218	0.115

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:30:20

Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$06_RA.CNF

BATCH ID:	9810173A-RA	SAMPLE ID:	06
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT: 5.288E-01	gram
SAMPLE TITLE:	WGSB3-40	DETECTOR NUMBER:	022
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	20.6%
ELAPSED LIVE TIME:	10186.	RECOVERY:	100.00%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_022_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.20

NUCLIDE ACTIVITY SUMMARY

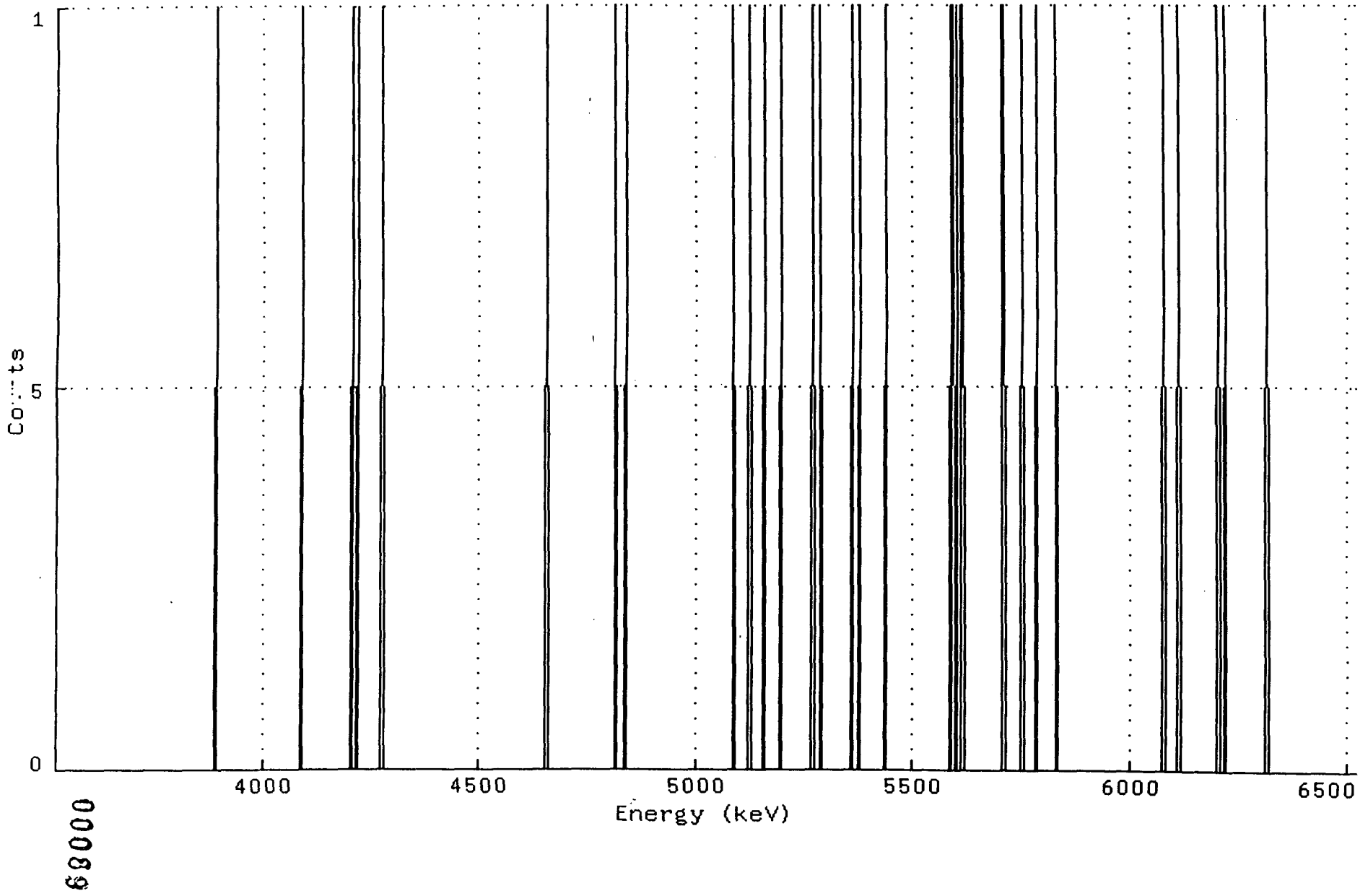
NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	8.83	3.23	100.0	2.149E-01	1.899E-01	3.234E-01
RN-222	5490.0	7.79	3.06	99.9	1.898E-01	1.803E-01	3.170E-01
RA-226	4785.0	3.14	2.89	100.0	7.641E-02	1.358E-01	3.101E-01

Analyst _____ Date 11-3-98

Reviewer _____ Date 11/3/98

00088

Spectr[redacted] : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_[redacted]0173A-RA$06_RA.CNF;1
Title : 022
Sample Title: WGSB3-40
Start Time: 3-NOV-1998 05:18: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.51859E+03
Real Time : 0 02:49:44.99 Sample ID : 06 Energy Slope : 2.72955E+00
Live Time : 0 02:49:45.99 Sample Type: RA Energy Quad : 1.92197E-04



68089

Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$06_RA

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	1
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	1	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	1	0
249:	0	0	0	1	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	1
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	1	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	1	0	0	0	0
[redacted]65:	0	0	0	1	0	0	0	0
[redacted]73:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	1
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	1	0	0	0
569:	0	0	0	0	0	0	0	1
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	1	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	1	0	0
617:	0	0	0	1	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	1	0	0	0
649:	0	0	1	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
[redacted]65:	0	0	0	0	0	0	1	0
[redacted]3:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	1	0	1	0	1	0	0	0
729:	1	1	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	1
761:	1	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	1	0
777:	0	0	0	0	0	0	0	0
785:	0	1	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	1	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
[redacted]3:	0	0	0	0	0	0	0	0
[redacted]81:	0	1	0	0	0	0	0	0
889:	0	0	0	0	1	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

00091

913:	0	0	0	0	0	0	0	0
921:	0	1	0	0	0	0	1	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	1	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

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Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:29:40.20

Detector ID: 22 Acquisition Start: 3-NOV-1998 05:18:02.06
Live Time: 0 02:49:45.99 Real Time: 0 02:49:44.99
Batch Id: 9810173A-RA Sample Id: 06
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4432.27	5		0584.12	327.20	239	229	4.91E-04	44.7	
2	0	5252.82	9		0327.55	609.22	530	173	8.84E-04	33.3	
3	0	5677.18	10		0221.09	751.10	720	152	9.82E-04	31.6	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:30:13.33

Acquisition Start: 30-OCT-1998 17:27:36.06
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.07	17	0	2.73	353.00	239	229	2.84E-04	24.3	
2	0	5272.92	18	0	2.73	616.00	530	173	3.00E-04	23.6	
3	0	5811.57	19		0382.14	795.50	720	152	3.17E-04	22.9	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:30:14.66

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4432.27*	3		0584.12	327.20	239	229	3.08E-04	88.8	
2	0	5252.82*	8		0327.55	609.22	530	173	7.65E-04	47.3	
3	0	5677.18*	9		0221.09	751.10	720	152	8.67E-04	44.0	

Flag: "*" = Peak area was modified by background subtraction

00093

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:30:17

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB3-40		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 3-NOV-1998 05:18:02
Sample ID	: 06	Sample quantity	: 0.52880 gram
Sample type	: RA	Sample geometry	:
Detector name	: 022	Detector geometry	:
Elapsed live time	: 0 02:49:45.99	Elapsed real time	: 0 02:49:44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4432.27*	3584.12	327.20	239	229	177.5			RA-226	7.641E-02
0	5252.82*	8327.55	609.22	530	173	94.7			RN-222	0.190
0	5677.18*	9221.09	751.10	720	152	88.0			PO-218	0.215

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ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:31:11

Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$07_RA.CNF

BATCH ID:	9810173A-RA	SAMPLE ID:	07
SAMPLE DATE:	24-SEP-1998 00:00	ALIQUOT: 5.027E-01	gram
SAMPLE TITLE:	WGSB4-5	DETECTOR NUMBER:	023
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	19.8%
ELAPSED LIVE TIME:	10185.	RECOVERY:	89.50%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_023_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.30

NUCLIDE ACTIVITY SUMMARY

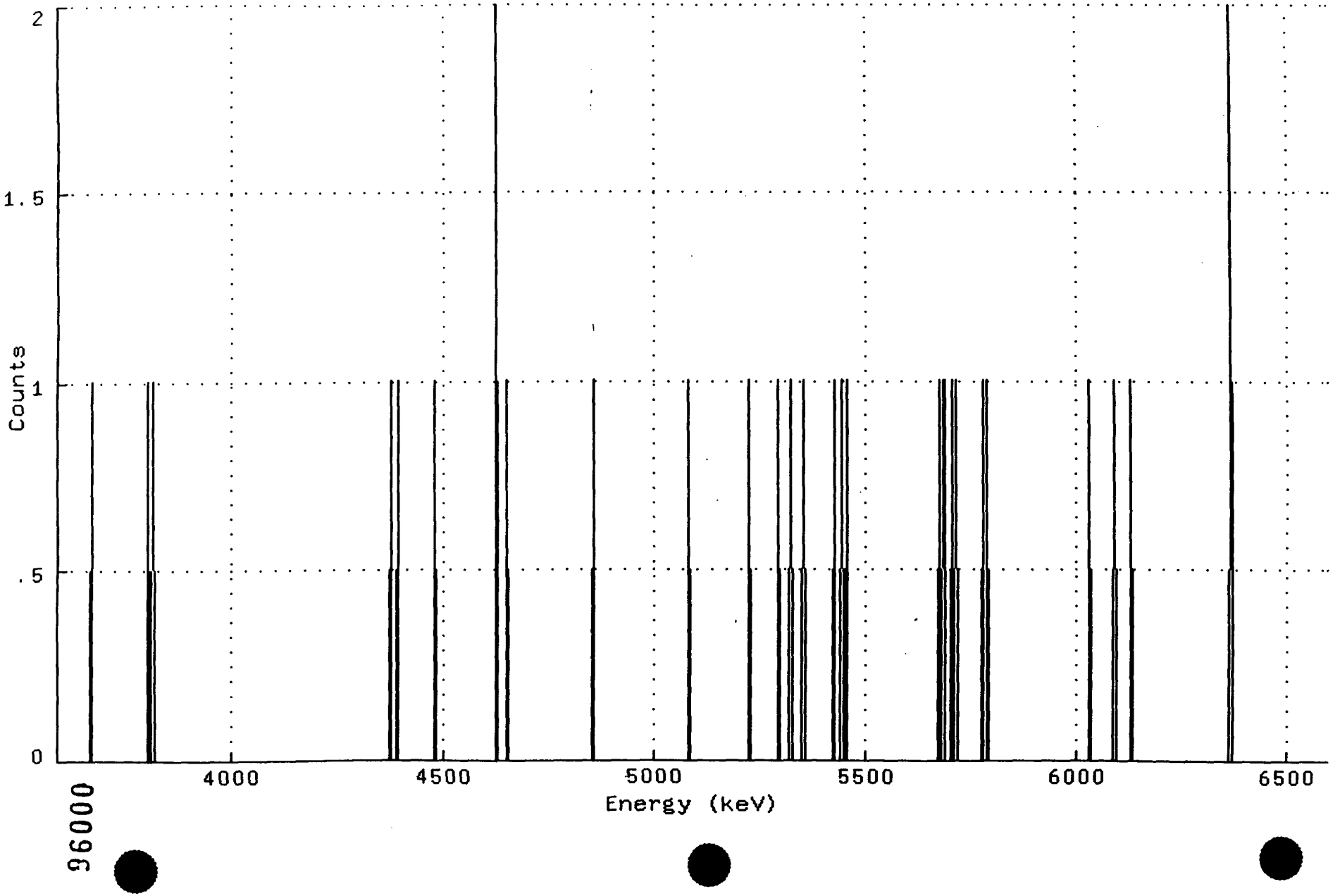
NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	6.38	4.08	100.0	1.900E-01	2.263E-01	4.683E-01
RN-222	5490.0	6.89	3.57	99.9	2.053E-01	2.259E-01	4.451E-01
RA-226	4785.0	6.49	1.36	100.0	1.930E-01	1.935E-01	3.146E-01

Analyst Jeff Price — Date 11-3-98

Reviewer Stan Gregory — Date 11/13/98

00095

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810173A-RA$07_RA.CNF;1
Title : 023
Sample Title: WGSB4-5
Start Time: 3-NOV-1998 05:18: Sample Time: 24-SEP-1998 00:00 Energy Offset: 3.57792E+03
Real Time : 0 02:49:44.99 Sample ID : 07 Energy Slope : 2.76514E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 1.76774E-04



96000

Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$07_RA

[redacted]nnel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	1
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	1	0	0	0	1	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
[redacted]5:	0	0	0	0	0	0	0	0
[redacted]93:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	1	0	0	0	0	0	1
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	1	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	2	0	0	0	0	0	0
377:	0	0	1	0	0	0	0	0
[redacted]5:	0	0	0	0	0	0	0	0
[redacted]3:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

00097

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	1	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	1	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	1	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	1	0	0	0
601:	0	0	0	0	0	0	1	0
609:	0	0	0	0	0	0	0	0
617:	1	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	1	0	0	0	0	0	1	0
649:	0	0	1	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	1	0	0	1	1
729:	0	0	0	0	0	1	0	0
737:	1	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	1	0	0	0	1	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	1	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	1	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	1	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	1	2	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

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Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:30:33.2

Detector ID: 23 Acquisition Start: 3-NOV-1998 05:18:02.07
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810173A-RA Sample Id: 07
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4523.12	6	0	2.77	334.67	215	228	5.89E-04	40.8	
2	0	5322.99	8	0348.41		607.50	505	172	7.85E-04	35.4	
3	0	5755.38	8	0326.29		751.38	695	152	7.85E-04	35.4	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:31:03.86

Acquisition Start: 30-OCT-1998 17:27:36.07
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4505.35	8	0591.74		328.50	215	228	1.34E-04	35.4	
2	0	5272.38	21	0453.48		590.50	505	172	3.51E-04	21.8	
3	0	5813.41	24	0	0.00	770.50	695	152	4.01E-04	20.4	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:31:05.41

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4523.12*	6	0	2.77	334.67	215	228	6.37E-04	49.9	
2	0	5322.99*	7	0348.41		607.50	505	172	6.77E-04	54.8	
3	0	5755.38*	6	0326.29		751.38	695	152	6.27E-04	59.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:31:07

Configuration : MCA0:[ALPHA]ALPHA8C97$1
Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2
Sample title : WGSB4-5
Sample date : 24-SEP-1998 00:00:00 Acquisition date : 3-NOV-1998 05:18:02
Sample ID : 07 Sample quantity : 0.50270 gram
Sample type : RA Sample geometry :
Detector name : 023 Detector geometry:
Elapsed live time: 0 02:49:44.99 Elapsed real time: 0 02:49:44.99 0.0%
Energy tolerance : 0.00 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Average value Efficiencies at : Peak Energy
Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4523.12*	6	2.77	334.67	215	228	99.9		RA-226	0.173
0	5322.99*	7348.41		607.50	505	172	109.7		RN-222	0.184
0	5755.38*	6326.29		751.38	695	152	118.8		PO-218	0.170

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ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:31:40

Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$08_RA.CNF

BATCH ID:	9810173A-RA	SAMPLE ID:	08
SAMPLE DATE:	24-SEP-1998 00:00	ALIQUOT:	5.101E-01 gram
SAMPLE TITLE:	WGSB4-14	DETECTOR NUMBER:	024
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	19.7%
ELAPSED LIVE TIME:	10186.	RECOVERY:	100.00%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_024_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.26

NUCLIDE ACTIVITY SUMMARY

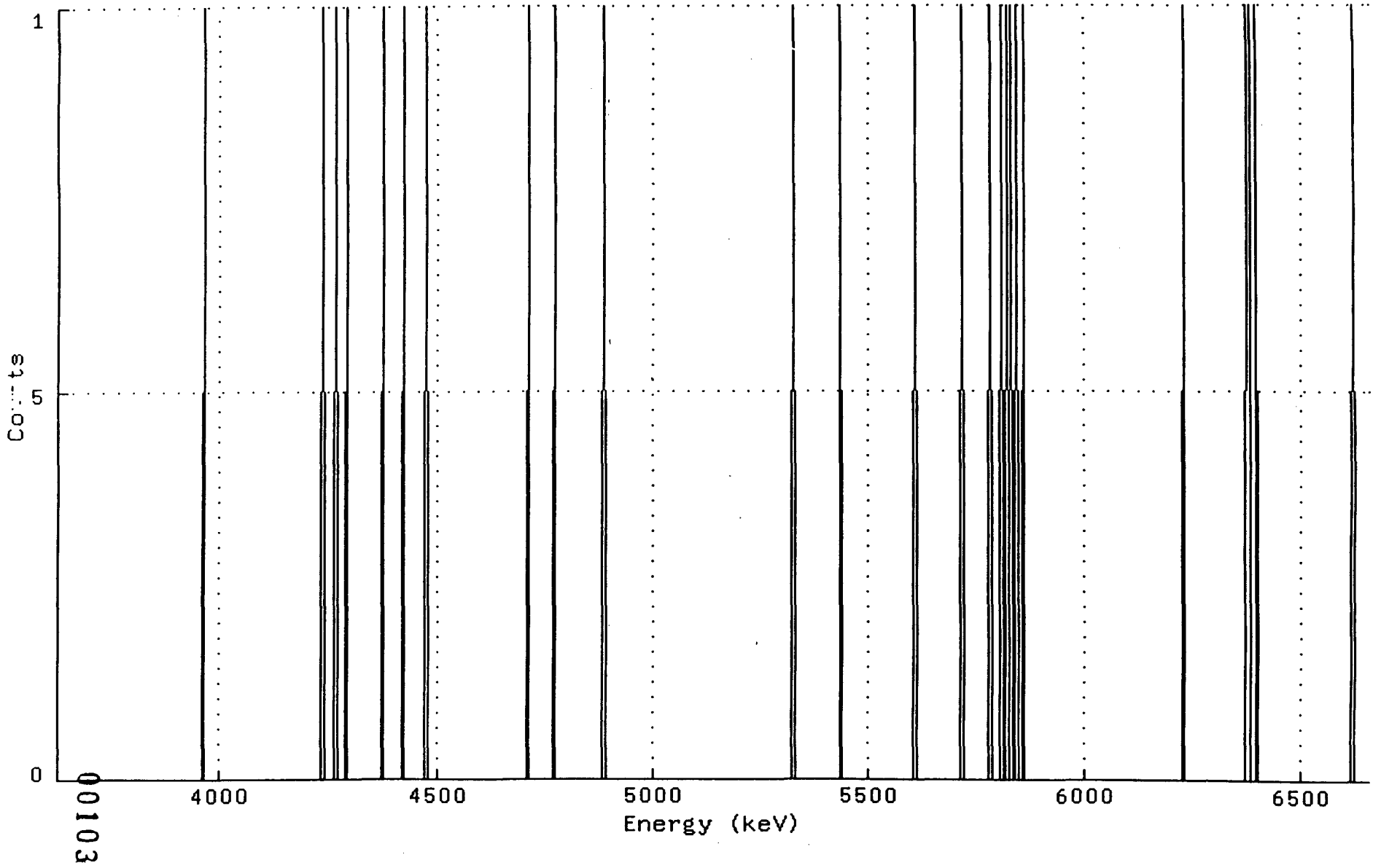
NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	4.48	5.61	100.0	1.183E-01	1.956E-01	4.569E-01
RN-222	5490.0	-0.54	3.06	99.9	-1.424E-02	1.017E-01	3.613E-01
RA-226	4785.0	8.56	1.53	100.0	2.260E-01	1.911E-01	2.817E-01

Jeff Price — Analyst — 11.3.98 — Date

Alan Gregley — Reviewer — 11/3/98 — Date

00102

Spectru : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9 0173A-RA$08_RA.CNF;1
Title : 024
Sample Title: WGSB4-14
Start Time: 3-NOV-1998 05:18: Sample Time: 24-SEP-1998 00:00 Energy Offset: 3.61690E+03
Real Time : 0 02:49:44.99 Sample ID : 08 Energy Slope : 2.62657E+00
Live Time : 0 02:49:45.99 Sample Type: RA Energy Quad : 3.32604E-04



00103

Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$08_RA

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	1	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	1	0	0	0
233:	0	0	0	0	0	0	0	1
241:	0	0	0	0	0	0	0	0
249:	1	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	1	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	1	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	1	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	1	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	1	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
[redacted]7:	1	0	0	0	0	0	0	0
[redacted]5:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	1	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	1
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
[redacted]7:	0	0	0	0	0	0	0	0
[redacted]5:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	1
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	1	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	1
753:	0	0	0	0	0	0	0	1
761:	0	0	0	1	0	0	1	0
769:	0	0	1	0	0	0	0	1
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
[redacted]5:	0	0	0	0	0	0	0	0
[redacted]3:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	1	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	1	1	1	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	1	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:31:24.28

Detector ID: 24 Acquisition Start: 3-NOV-1998 05:18:02.08
Live Time: 0 02:49:45.99 Real Time: 0 02:49:44.99
Batch Id: 9810173A-RA Sample Id: 08
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4441.87	8	0499.05	302.50		210	231	7.85E-04	35.4	
2	0	5379.31	2	0 97.18	622.00		502	170	1.96E-04	70.7	
3	0	5780.56	8	0212.75	752.13		689	147	7.85E-04	35.4	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:31:33.13

Acquisition Start: 30-OCT-1998 17:27:36.08
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4505.67	9	0493.80	325.00		210	231	1.50E-04	33.3	
2	0	5271.79	18	0111.63	586.50		502	170	3.00E-04	23.6	
3	0	5811.47	33	0143.15	762.00		689	147	5.51E-04	17.4	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:31:34.59

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4441.87*	9	0499.05	302.50		210	231	8.40E-04	42.1	
2	0	5379.31*	-1	0 97.18	622.00		502	170	-5.29E-05	357.1	
3	0	5780.56*	4	0212.75	752.13		689	147	4.39E-04	82.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:31:37

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB4-14		
Sample date	: 24-SEP-1998 00:00:00	Acquisition date	: 3-NOV-1998 05:18:02
Sample ID	: 08	Sample quantity	: 0.51010 gram
Sample type	: RA	Sample geometry	:
Detector name	: 024	Detector geometry	:
Elapsed live time	: 0 02:49:45.99	Elapsed real time	: 0 02:49:44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4441.87*	9499.05	302.50	210	231	84.2			RA-226	0.226
0	5379.31*	-1 97.18	622.00	502	170714.2				RN-222	-1.424E-02
0	5780.56*	4212.75	752.13	689	147165.2				PO-218	0.118

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:32:13

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Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$09_RA.CNF

****

BATCH ID:	9810173A-RA	SAMPLE ID:	09
SAMPLE DATE:	24-SEP-1998 00:00	ALIQUOT:	5.303E-01 gram
SAMPLE TITLE:	WGSB4-30	DETECTOR NUMBER:	025
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	18.3%
ELAPSED LIVE TIME:	10185.	RECOVERY:	96.00%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_025_30OCT98	BKG ELAPSED TIME:	59914.
		SAF:	1.23

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	9.86	4.93	100.0	2.806E-01	2.492E-01	4.564E-01
RN-222	5490.0	8.71	2.38	99.9	2.481E-01	2.143E-01	3.463E-01
RA-226	4785.0	4.12	2.04	100.0	1.173E-01	1.606E-01	3.273E-01

****

Jeff Price
Analyst

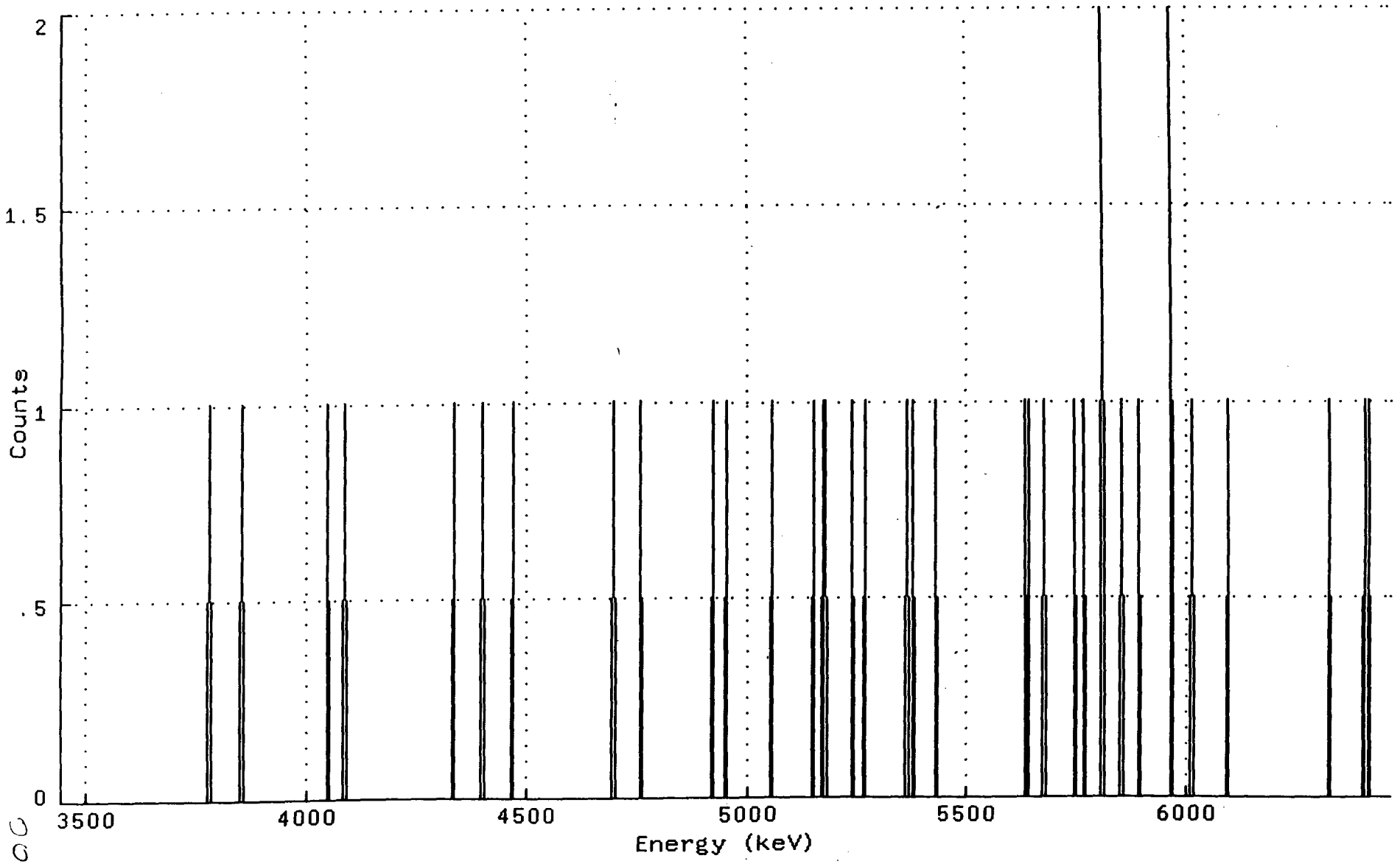
11-3-98
Date

Alan Gregelevicz
Reviewer

11/3/98
Date

00109

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810173A-RA$09_RA.CNF;1
Title : 025
Sample Title: WGSB4-30
Start Time: 3-NOV-1998 05:18: Sample Time: 24-SEP-1998 00:00 Energy Offset: 3.43345E+03
Real Time : 0 02:49:45.99 Sample ID : 09 Energy Slope : 2.78750E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 1.68151E-04



YA0100

Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$09_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	1	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	1	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]3:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	1	0	0	0	0	0	0
225:	0	0	0	0	0	0	1	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	1	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	1	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	1	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]3:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

00110

433:	0	0	0	0	0	0	0	0
441:	1	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	1	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	1	0	0	0
521:	0	0	0	0	0	0	1	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	1	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	1	0	0	0	0	0	0
601:	1	0	1	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	1
625:	0	0	0	0	0	0	0	0
633:	1	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	1	0	0	0	0	1	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	1	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	1	0	1	0	0	0	0
761:	0	0	0	0	0	0	0	1
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	1	0
793:	0	0	0	0	0	1	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	2	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	1	0	0	0	0	0	0
833:	0	0	0	0	0	0	1	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	2	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	1	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	1
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]53:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	1	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	1	0	0	0	1
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

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Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:31:53.23

Detector ID: 25 Acquisition Start: 3-NOV-1998 05:18:02.09
Live Time: 0 02:49:44.99 Real Time: 0 02:49:45.99
Batch Id: 9810173A-RA Sample Id: 09
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4528.65	5	0409.76		384.00	264	226	4.91E-04	44.7	
2	0	5245.99	9	0351.23		626.56	551	170	8.84E-04	33.3	
3	0	5811.85	12	0144.95		813.33	739	151	1.18E-03	28.9	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:32:06.60

Acquisition Start: 30-OCT-1998 17:27:36.09
Live Time: 0 16:38:34.00 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.78	12	0	2.79	376.50	264	226	2.00E-04	28.9	
2	0	5272.82	14	0	4.09	635.50	551	170	2.34E-04	26.7	
3	0	5813.89	29	0248.09		814.00	739	151	4.84E-04	18.6	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:32:08.24

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4528.65*	4	0409.76		384.00	264	226	4.05E-04	68.4	
2	0	5245.99*	9	0351.23		626.56	551	170	8.55E-04	43.1	
3	0	5811.85*	10	0144.95		813.33	739	151	9.68E-04	44.3	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:32:10

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB4-30		
Sample date	: 24-SEP-1998 00:00:00	Acquisition date	: 3-NOV-1998 05:18:02
Sample ID	: 09	Sample quantity	: 0.53030 gram
Sample type	: RA	Sample geometry	:
Detector name	: 025	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:45.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4528.65*	4409.76	384.00	264	226	136.7			RA-226	0.113
0	5245.99*	9351.23	626.56	551	170	86.1			RN-222	0.238
0	5811.85*	10144.95	813.33	739	151	88.6			PO-218	0.269

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:32:43

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Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$10_RA.CNF

****

BATCH ID:	9810173A-RA	SAMPLE ID:	10
SAMPLE DATE:	24-SEP-1998 00:00	ALIQUOT: 5.002E-01	gram
SAMPLE TITLE:	WGSB4-40	DETECTOR NUMBER:	026
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	17.6%
ELAPSED LIVE TIME:	10185.	RECOVERY:	88.50%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_026_30OCT98	BKG ELAPSED TIME:	59914.
		SAF:	1.35

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	2.89	3.91	100.0	9.843E-02	2.148E-01	5.483E-01
RN-222	5490.0	1.53	2.55	99.9	5.213E-02	1.669E-01	4.671E-01
RA-226	4785.0	7.81	3.06	100.0	2.665E-01	2.678E-01	4.993E-01

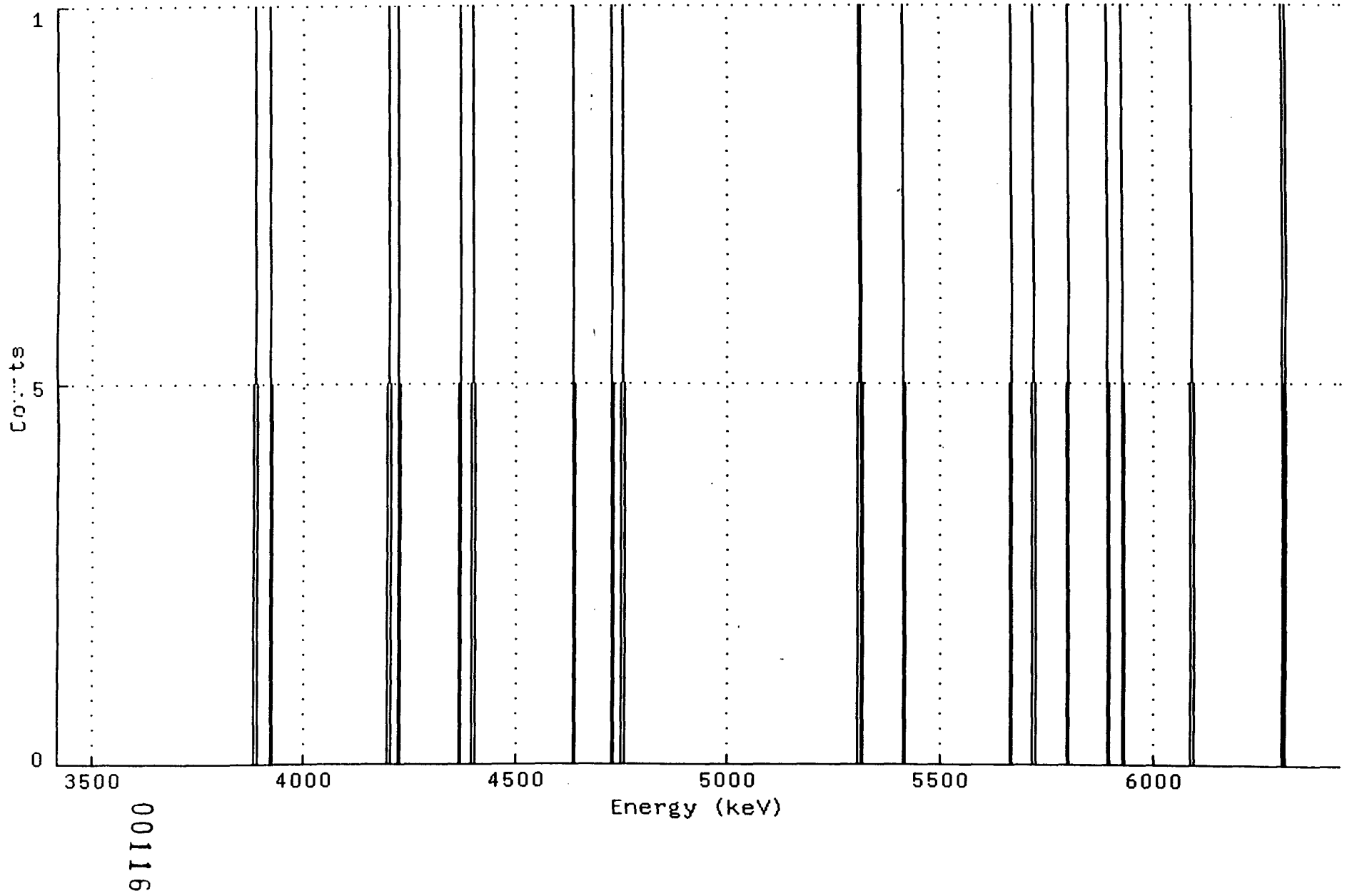
****

Analyst _____ Date 11-3-98

Reviewer _____ Date 11/3/98

00115

Spectru : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_0173A-RA$10_RA.CNF;1
Title : 026
Sample Title: WGSB4-40
Start Time: 3-NOV-1998 05:18: Sample Time: 24-SEP-1998 00:00 Energy Offset: 3.41144E+03
Real Time : 0 02:49:45.99 Sample ID : 10 Energy Slope : 2.79687E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 1.55100E-04



00116

Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$10_RA

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	1
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	1	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	1	0	0
281:	0	0	0	0	0	1	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	1
337:	0	0	0	0	0	0	0	0
345:	0	0	1	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	1	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	1	0	0	0	0	0	0
465:	0	1	1	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	1	0	1
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	1	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	1	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	1	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	1
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	1	0
849:	0	0	0	0	0	0	0	0
857:	0	1	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	1	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	1	0	1	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:32:26.70

Detector ID: 26 Acquisition Start: 3-NOV-1998 05:18:02.10
Live Time: 0 02:49:44.99 Real Time: 0 02:49:45.99
Batch Id: 9810173A-RA Sample Id: 10
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4505.75	8	0531.40		383.13	271	226	7.85E-04	35.4	
2	0	5343.95	3	0100.69		666.33	558	170	2.95E-04	57.7	
3	0	5798.78	5	0243.33		816.60	746	151	4.91E-04	44.7	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:32:35.72

Acquisition Start: 30-OCT-1998 17:27:36.10
Live Time: 0 16:38:34.00 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.85	18	0623.70		383.50	271	226	3.00E-04	23.6	
2	0	5272.45	15	0 2.80		642.50	558	170	2.50E-04	25.8	
3	0	5812.21	23	0285.28		821.00	746	151	3.84E-04	20.9	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:32:37.11

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4505.75*	8	0531.40		383.13	271	226	7.67E-04	50.1	
2	0	5343.95*	2	0100.69		666.33	558	170	1.50E-04	160.1	
3	0	5798.78*	3	0243.33		816.60	746	151	2.83E-04	109.1	

Flag: "*" = Peak area was modified by background subtraction

00120

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:32:39

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB4-40		
Sample date	: 24-SEP-1998 00:00:00	Acquisition date	: 3-NOV-1998 05:18:02
Sample ID	: 10	Sample quantity	: 0.50020 gram
Sample type	: RA	Sample geometry	:
Detector name	: 026	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:45.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4505.75*	8531.40	383.13	271	226	100.1			RA-226	0.236
0	5343.95*	2100.69	666.33	558	170	320.1			RN-222	4.613E-02
0	5798.78*	3243.33	816.60	746	151	218.1			PO-218	8.711E-02

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:33:15

****

Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$11_RA.CNF

****

BATCH ID:	9810173A-RA	SAMPLE ID:	11
SAMPLE DATE:	24-SEP-1998 00:00	ALIQUOT: 5.022E-01	gram
SAMPLE TITLE:	WGSB5-7	DETECTOR NUMBER:	027
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	20.4%
ELAPSED LIVE TIME:	10185.	RECOVERY:	84.90%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_027_30OCT98	BKG ELAPSED TIME:	59914.
		SAF:	1.17

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	-4.97	7.31	100.0	-1.513E-01	1.219E-01	5.444E-01
RN-222	5490.0	-0.57	4.08	99.9	-1.732E-02	1.336E-01	4.314E-01
RA-226	4785.0	9.34	1.19	100.0	2.845E-01	2.163E-01	2.772E-01

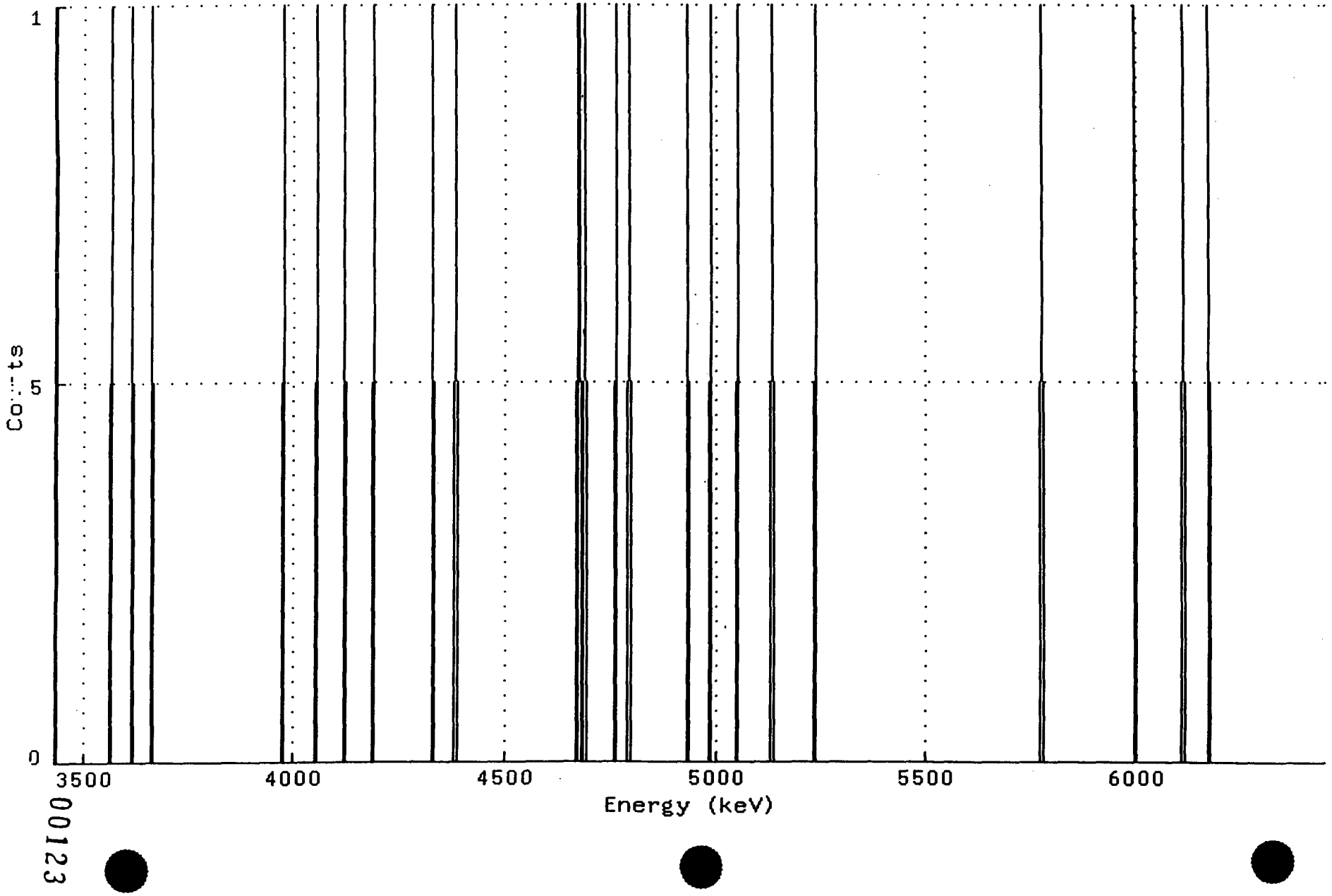
****

Analyst C H Price — Date 11-3-98

Reviewer Stan Hagel — Date 11/3/98

00122

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810173A-RA$11_RA.CNF;1
Title : 027
Sample Title: WGSB5-7
Start Time: 3-NOV-1998 05:18: Sample Time: 24-SEP-1998 00:00 Energy Offset: 3.42406E+03
Real Time : 0 02:49:45.99 Sample ID : 11 Energy Slope : 2.76085E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 1.90019E-04



00123

Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$11_RA

Channel								
1:	0	0	0	1	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	1	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	1	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	1	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]3:	0	0	0	0	1	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	1
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	1
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	1	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	1
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	1	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]3:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

00124

433:	0	0	0	0	0	1	0	1
441:	0	0	0	1	1	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	1	0	0	0
473:	0	0	0	0	0	0	0	1
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	1	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	1	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	1	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	1	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	1	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	1	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	1	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	1	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	1	0
[illegible]7:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:32:56

Detector ID: 27
Live Time: 0 02:49:44.99
Batch Id: 9810173A-RA
Sample Type: RA

Acquisition Start: 3-NOV-1998 05:18:02.11
Real Time: 0 02:49:45.99
Sample Id: 11

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4573.70	9	0579.78	405.11	270	226		8.84E-04	33.3	
2	0	5140.01	3	0173.93	597.00	557	170		2.95E-04	57.7	
3	0	5883.41	2	0201.54	842.00	744	151		1.96E-04	70.7	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:33:08.18

Live Time: 0 16:38:34.00

Acquisition Start: 30-OCT-1998 17:27:36.11
Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4507.89	7	0488.67	382.50	270	226		1.17E-04	37.8	
2	0	5273.34	24	0336.82	641.50	557	170		4.01E-04	20.4	
3	0	5812.65	43	0154.54	819.00	744	151		7.18E-04	15.2	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:33:09.53

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4573.70*	9	0579.78	405.11	270	226		9.17E-04	37.9	
2	0	5140.01*	-1	0173.93	597.00	557	170		-5.58E-05	385.6	
3	0	5883.41*	-5	0201.54	842.00	744	151		-4.88E-04	40.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:33:12

Configuration : MCA0:[ALPHA]ALPHA8C97$1
Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2
Sample title : WGSB5-7
Sample date : 24-SEP-1998 00:00:00 Acquisition date : 3-NOV-1998 05:18:02
Sample ID : 11 Sample quantity : 0.50220 gram
Sample type : RA Sample geometry :
Detector name : 027 Detector geometry:
Elapsed live time: 0 02:49:44.99 Elapsed real time: 0 02:49:45.99 0.0%
Energy tolerance : 0.00 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Average value Efficiencies at : Peak Energy
Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4573.70*	9579.78	405.11	270	226	75.8			RA-226	0.242
0	5140.01*	-1173.93	597.00	557	170	771.3			RN-222	-1.470E-02
0	5883.41*	-5201.54	842.00	744	151	80.3			PO-218	-0.128

00128

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ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:33:49

Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$12_RA.CNF

BATCH ID:	9810173A-RA	SAMPLE ID:	12
SAMPLE DATE:	24-SEP-1998 00:00	ALIQUOT:	5.172E-01 gram
SAMPLE TITLE:	WGSB5-14	DETECTOR NUMBER:	028
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	18.3%
ELAPSED LIVE TIME:	10185.	RECOVERY:	94.40%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_028_30OCT98	BKG ELAPSED TIME:	59914.
		SAF:	1.21

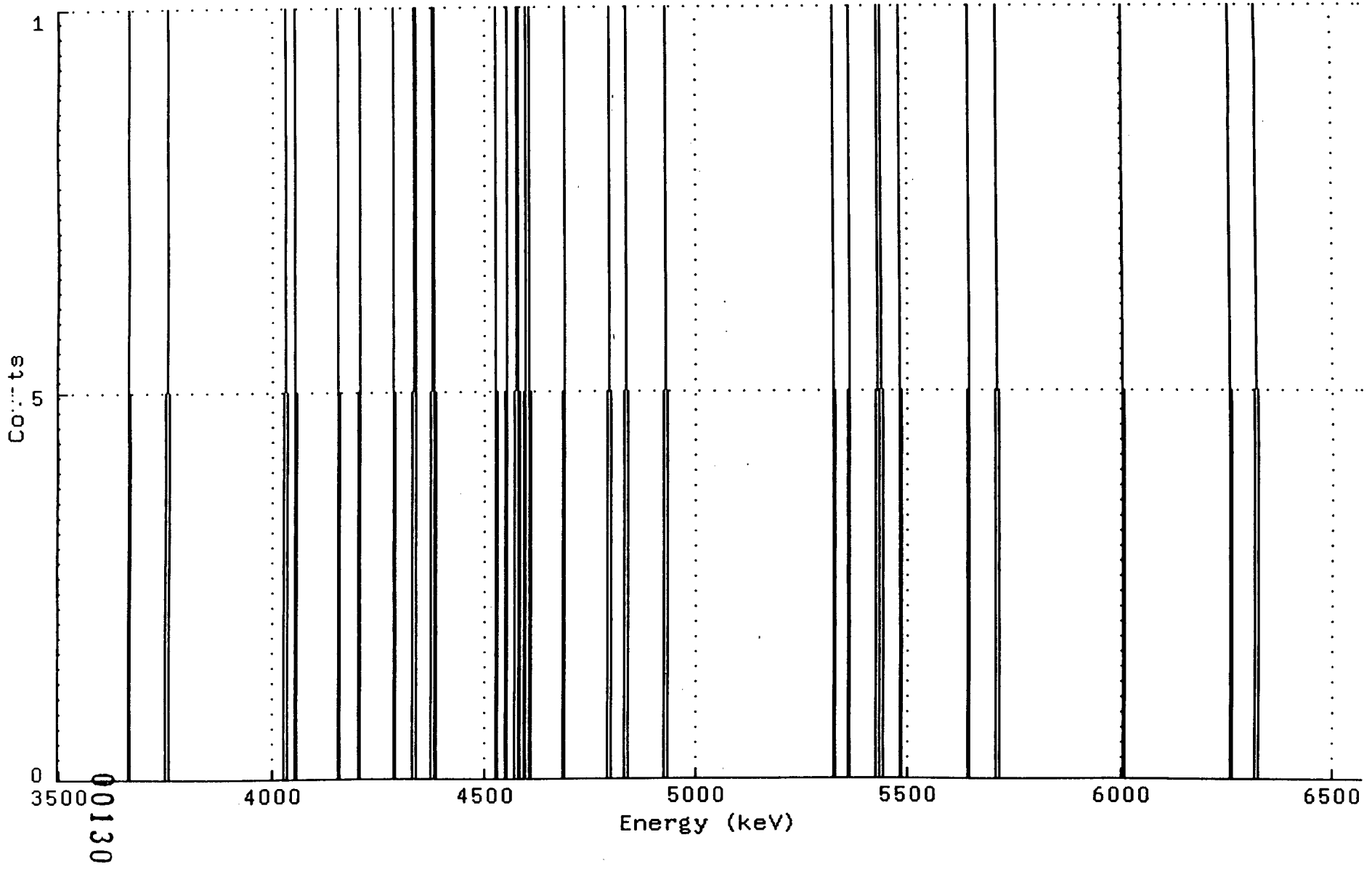
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	0.09	3.57	100.0	2.557E-03	1.334E-01	4.125E-01
RN-222	5490.0	2.86	3.23	99.9	8.497E-02	1.677E-01	3.973E-01
RA-226	4785.0	14.54	3.74	100.0	4.311E-01	2.852E-01	4.198E-01

Analyst _____ Date 11-3-98

Reviewer _____ Date 11/3/98

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9[redacted]173A-RA$12_RA.CNF;1
Title : 028
Sample Title: WGSB5-14
Start Time: 3-NOV-1998 05:18: Sample Time: 24-SEP-1998 00:00 Energy Offset: 3.48535E+03
Real Time : 0 02:49:45.99 Sample ID : 12 Energy Slope : 2.83276E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 1.69824E-04



00130

Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$12_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	1	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	1	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	1	0	0
193:	0	0	0	0	0	1	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	1	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	1	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	1	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	1	1	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	1	0	1	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	1
361:	0	0	0	0	0	0	0	1
369:	0	0	0	0	0	0	0	1
377:	0	1	0	0	0	0	1	0
385:	0	0	1	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	1	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	1	0	0	0	0	0	0
457:	0	0	0	0	0	0	1	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]73:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	1	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	1	0	0	0	0	0	0	0
633:	0	0	0	0	1	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	1	0	0	1	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]3:	0	0	0	0	1	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	1	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	1	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	1	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]3:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	1	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	
945:	1	0	0	0	0	0	0	
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

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Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:33:28.30

Detector ID: 28
Live Time: 0 02:49:44.99
Batch Id: 9810173A-RA
Sample Type: RA

Acquisition Start: 3-NOV-1998 05:18:02.12
Real Time: 0 02:49:45.99
Sample Id: 12

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4510.61	15	0606.21	354.40	242	223	1.47E-03	25.8		
2	0	5404.50	5	0150.14	652.00	525	168	4.91E-04	44.7		
3	0	5783.77	3	0334.27	775.33	711	149	2.95E-04	57.7		

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:33:42.88

Live Time: 0 16:38:34.00

Acquisition Start: 30-OCT-1998 17:27:36.12
Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.48	22	0144.47	353.00	242	223	3.67E-04	21.3		
2	0	5271.97	19	0 65.15	608.50	525	168	3.17E-04	22.9		
3	0	5813.72	21	0115.44	785.00	711	149	3.51E-04	21.8		

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:33:44.27

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4510.61*	15	0606.21	354.40	242	223	1.43E-03	32.9		
2	0	5404.50*	3	0150.14	652.00	525	168	2.81E-04	98.6		
3	0	5783.77*	0	0334.27	775.33	711	149	8.47E-06	*****		

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:33:46

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB5-14		
Sample date	: 24-SEP-1998 00:00:00	Acquisition date	: 3-NOV-1998 05:18:02
Sample ID	: 12	Sample quantity	: 0.51720 gram
Sample type	: RA	Sample geometry	:
Detector name	: 028	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:45.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4510.61*	15606.21	354.40	242	223	65.8			RA-226	0.407
0	5404.50*	3150.14	652.00	525	168	197.2			RN-222	8.021E-02
0	5783.77*	0334.27	775.33	711	149	*****			PO-218	2.414E-03

Thermo NUtech
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ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:34:20

****

Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$13_RA.CNF

****

BATCH ID:	9810173A-RA	SAMPLE ID:	13
SAMPLE DATE:	24-SEP-1998 00:00	ALIQUOT: 5.018E-01	gram
SAMPLE TITLE:	WGSB5-22	DETECTOR NUMBER:	029
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	19.2%
ELAPSED LIVE TIME:	10186.	RECOVERY:	100.00%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_029_30OCT98	BKG ELAPSED TIME:	59914.
		SAF:	1.39

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	5.99	2.38	100.0	1.647E-01	1.914E-01	3.776E-01
RN-222	5490.0	-0.13	1.53	99.9	-3.698E-03	8.172E-02	3.234E-01
RA-226	4785.0	8.24	1.53	100.0	2.264E-01	2.054E-01	3.232E-01

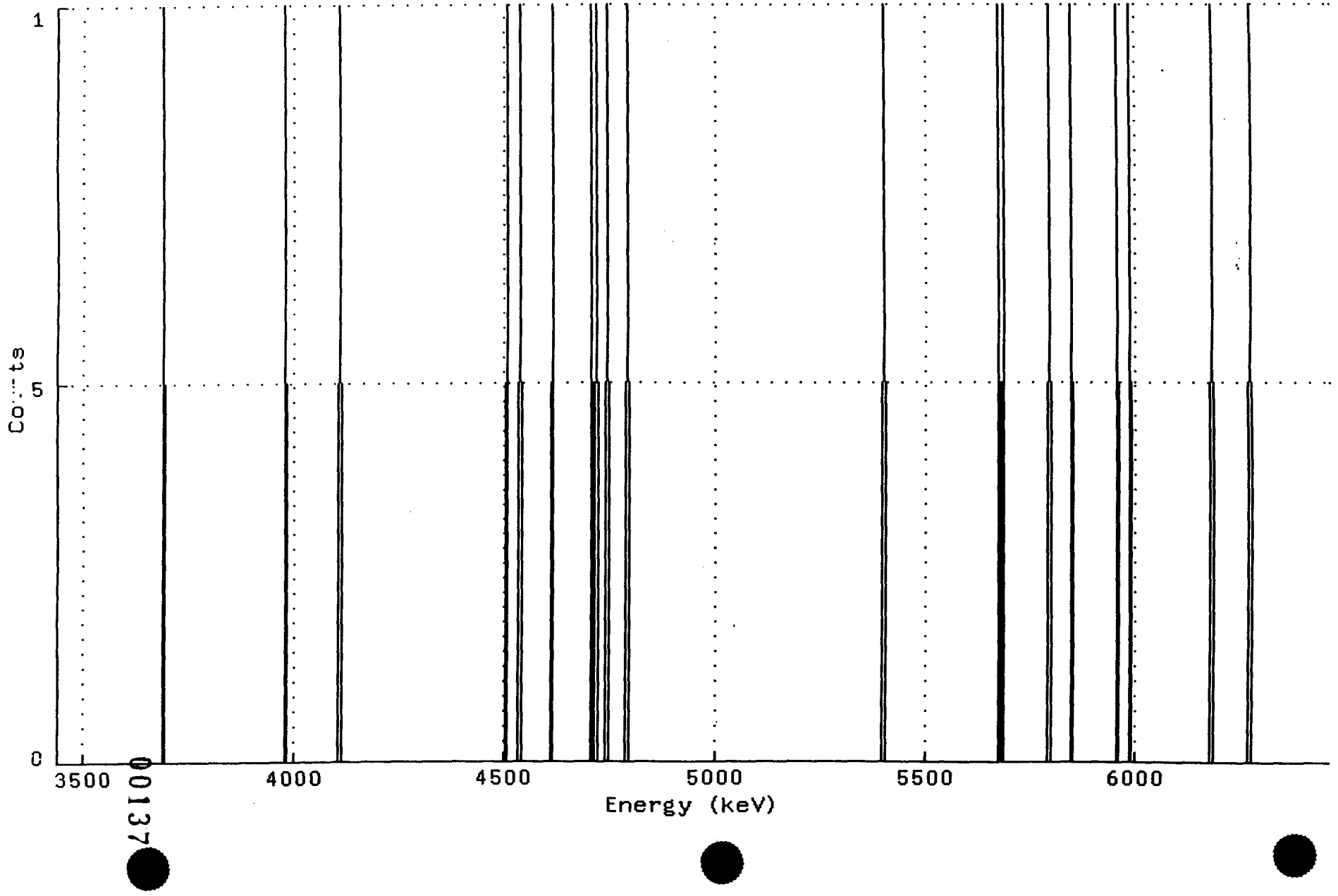
****

Analyst _____ Date 11-3-98

Reviewer _____ Date 11/3/98

00136

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810173A-RA$13_RA.CNF;1
Title : 029
Sample Title: WGSB5-22
Start Time: 3-NOV-1998 05:18: Sample Time: 24-SEP-1998 00:00 Energy Offset: 3.43197E+03
Real Time : 0 02:49:45.99 Sample ID : 13 Energy Slope : 2.74642E+00
Live Time : 0 02:49:45.99 Sample Type: RA Energy Quad : 2.02402E-04



Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$13_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	1	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
[redacted]5:	0	0	0	0	0	0	0	0
[redacted]93:	0	0	0	0	1	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	1	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	1	0	0	0	0
[redacted]5:	0	0	0	0	0	0	1	0
[redacted]3:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	1	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	1	0	0	0	1	0	0	0
457:	0	0	0	0	0	1	0	
465:	0	0	0	0	0	0	0	
473:	0	0	0	0	0	1	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	
665:	0	0	0	0	0	0	0	
673:	0	0	0	0	0	0	0	0
681:	0	1	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	1	0	0	1	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	1	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	1	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	1	0
865:	0	0	0	0	0	0	0	
873:	1	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	1	0
[illegible]7:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	1	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:34:02.[illegible]

Detector ID: 29 Acquisition Start: 3-NOV-1998 05:18:02.13
Live Time: 0 02:49:45.99 Real Time: 0 02:49:45.99
Batch Id: 9810173A-RA Sample Id: 13
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4658.71	7	0	271.90	432.86	268	226	6.87E-04	37.8	
2	0	5399.18	1	0	2.75	682.00	555	171	9.82E-05	100.0	
3	0	5821.16	6	0	280.14	820.33	743	150	5.89E-04	40.8	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:34:13.04

Acquisition Start: 30-OCT-1998 17:27:36.13
Live Time: 0 16:38:34.00 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.29	9	0	2.75	380.50	268	226	1.50E-04	33.3	
2	0	5272.59	9	0	4.03	640.00	555	171	1.50E-04	33.3	
3	0	5812.44	14	0	145.56	817.50	743	150	2.34E-04	26.7	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:34:14.38

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4658.71*	8	0	271.90	432.86	268	226	8.09E-04	45.2	
2	0	5399.18*	0	0	2.75	682.00	555	171	-1.32E-05	*****	
3	0	5821.16*	6	0	280.14	820.33	743	150	5.88E-04	58.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:34:16

Configuration : MCA0:[ALPHA]ALPHA8C97$1
Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2
Sample title : WGSB5-22
Sample date : 24-SEP-1998 00:00:00 Acquisition date : 3-NOV-1998 05:18:02
Sample ID : 13 Sample quantity : 0.50180 gram
Sample type : RA Sample geometry :
Detector name : 029 Detector geometry:
Elapsed live time: 0 02:49:45.99 Elapsed real time: 0 02:49:45.99 0.0%
Energy tolerance : 0.00 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Average value Efficiencies at : Peak Energy
Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4658.71*	8271.90	432.86	268	226	90.5			RA-226	0.226
0	5399.18*	0 2.75	682.00	555	171	*****			RN-222	-3.698E-03
0	5821.16*	6280.14	820.33	743	150	116.0			PO-218	0.165

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:34:47

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Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$14_RA.CNF

****

BATCH ID:	9810173A-RA	SAMPLE ID:	14
SAMPLE DATE:	24-SEP-1998 00:00	ALIQUOT: 5.031E-01	gram
SAMPLE TITLE:	WGSB5-32	DETECTOR NUMBER:	031
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	17.1%
ELAPSED LIVE TIME:	10178.	RECOVERY:	96.60%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_031_30OCT98	BKG ELAPSED TIME:	59834.
		SAF:	1.30

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	4.50	2.04	100.0	1.434E-01	1.904E-01	3.876E-01
RN-222	5490.0	6.49	1.36	99.9	2.069E-01	2.071E-01	3.373E-01
RA-226	4785.0	7.00	0.85	100.0	2.230E-01	2.061E-01	2.899E-01

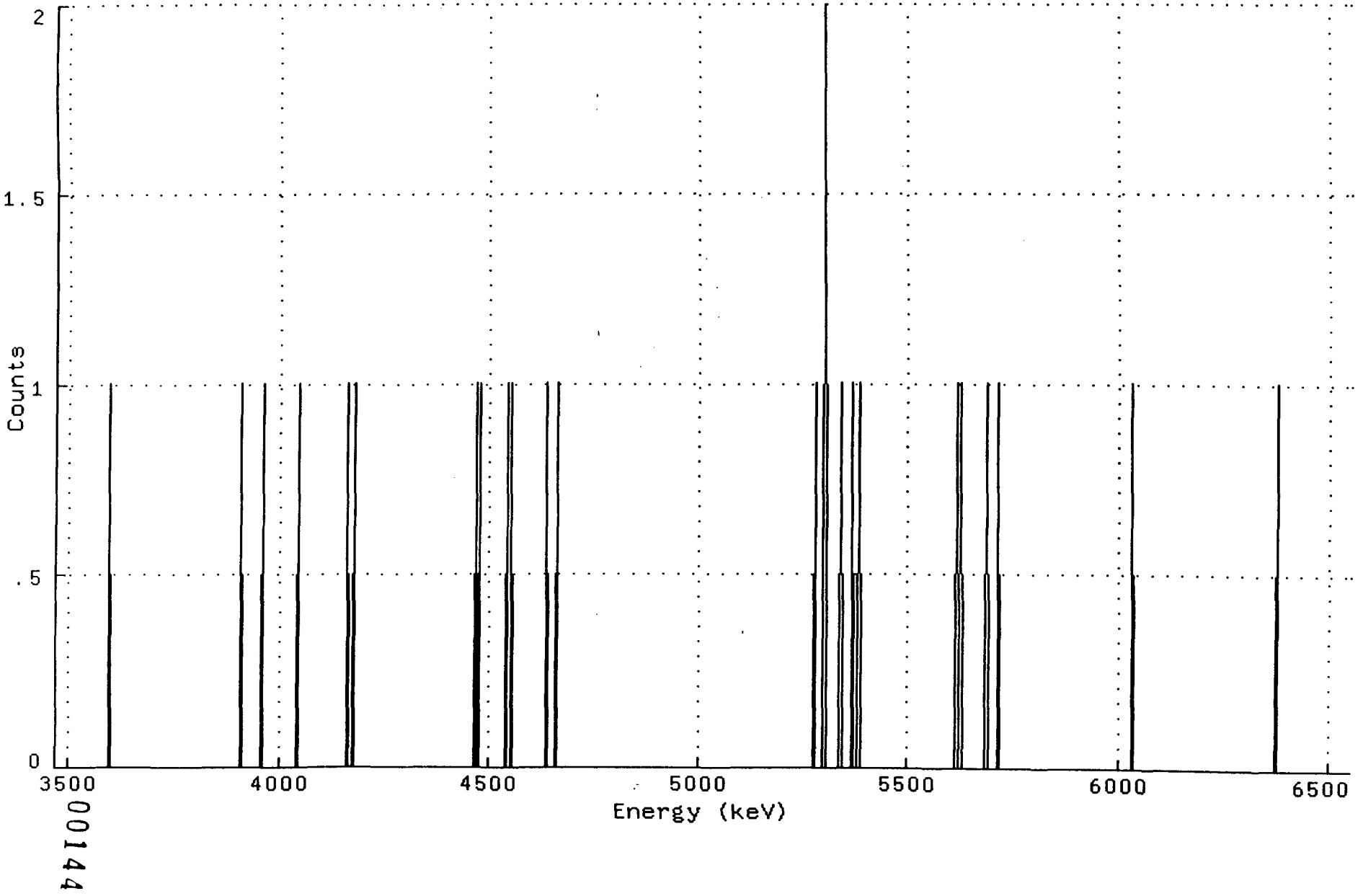
****

Analyst _____ Date 11-3-98

Reviewer _____ Date 11/3/98

00143

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9[illegible]173A-RA$14_RA.CNF;1
Title : 031
Sample Title: WGSB5-32
Start Time: 3-NOV-1998 05:18: Sample Time: 24-SEP-1998 00:00 Energy Offset: 3.45945E+03
Real Time : 0 02:49:45.99 Sample ID : 14 Energy Slope : 2.84862E+00
Live Time : 0 02:49:37.99 Sample Type: RA Energy Quad : 1.64699E-04



001444

Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$14_RA

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	1
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	1	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	1	0	0
177:	0	0	0	0	0	0	0	[redacted]
185:	0	0	0	0	0	0	0	[redacted]
193:	0	0	0	0	0	0	0	0
201:	0	0	1	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	1	0	0	0	0	1
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	1	0	0	1	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	1	0	0	0	1
377:	0	0	0	0	0	0	0	[redacted]
385:	0	0	0	0	0	0	0	[redacted]
393:	0	0	0	0	0	0	0	0
401:	0	0	0	1	0	0	0	0
409:	0	0	0	1	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
[redacted]7:	0	0	0	0	0	0	0	0
[redacted]5:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	1	0
617:	0	0	0	0	0	0	2	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	1	0	0	0	0
641:	0	0	0	0	1	0	0	0
649:	0	1	0	0	0	0	0	0
[redacted]7:	0	0	0	0	0	0	0	0
[redacted]5:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	1	0	0
729:	1	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	1	0	0	0
753:	0	0	0	0	0	1	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	1	0	0	0	0
[redacted]5:	0	0	0	0	0	0	0	0
[redacted]3:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	1
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:34:32.69

Detector ID: 31 Acquisition Start: 3-NOV-1998 05:18:02.15
Live Time: 0 02:49:37.99 Real Time: 0 02:49:45.99
Batch Id: 9810173A-RA Sample Id: 14
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4556.29	6	0188.01	376.83	250	221	5.90E-04	40.8		
2	0	5325.56	6	0 2.85	632.00	531	168	5.90E-04	40.8		
3	0	5733.17	5	0384.56	764.40	716	149	4.91E-04	44.7		

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:34:40.67

Acquisition Start: 30-OCT-1998 17:27:36.15
Live Time: 0 16:37:14.00 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.29	5	0338.99	360.00	250	221	8.36E-05	44.7		
2	0	5272.11	8	0376.02	614.50	531	168	1.34E-04	35.4		
3	0	5812.64	12	0 4.18	790.00	716	149	2.01E-04	28.9		

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:34:42.04

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4556.29*	7	0188.01	376.83	250	221	6.87E-04	46.1		
2	0	5325.56*	6	0 2.85	632.00	531	168	6.37E-04	49.9		
3	0	5733.17*	4	0384.56	764.40	716	149	4.42E-04	66.3		

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:34:44

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB5-32		
Sample date	: 24-SEP-1998 00:00:00	Acquisition date	: 3-NOV-1998 05:18:02
Sample ID	: 14	Sample quantity	: 0.50310 gram
Sample type	: RA	Sample geometry	:
Detector name	: 031	Detector geometry	:
Elapsed live time	: 0 02:49:37.99	Elapsed real time	: 0 02:49:45.99 0.1%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4556.29*	7188.01	376.83	250	221	92.2			RA-226	0.215
0	5325.56*	6	2.85	632.00	531	168	99.9		RN-222	0.200
0	5733.17*	4384.56	764.40	716	149	132.7			PO-218	0.138

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
3-NOV-1998 08:35:15

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Spectral File: ND_AMS_ARCHIVE_S:S_9810173A-RA$15_RA.CNF

****

BATCH ID:	9810173A-RA	SAMPLE ID:	15
SAMPLE DATE:	24-SEP-1998 00:00	ALIQUOT: 5.170E-01	gram
SAMPLE TITLE:	WGSB5-40	DETECTOR NUMBER:	032
ACQ DATE:	3-NOV-1998 05:18	AVERAGE EFFICIENCY:	16.2%
ELAPSED LIVE TIME:	10185.	RECOVERY:	97.80%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_032_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.17

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	-1.89	3.06	100.0	-6.130E-02	8.933E-02	4.116E-01
RN-222	5490.0	3.32	1.36	99.9	1.078E-01	1.554E-01	3.089E-01
RA-226	4785.0	5.17	0.68	100.0	1.678E-01	1.717E-01	2.484E-01

****

Jeff Price
Analyst

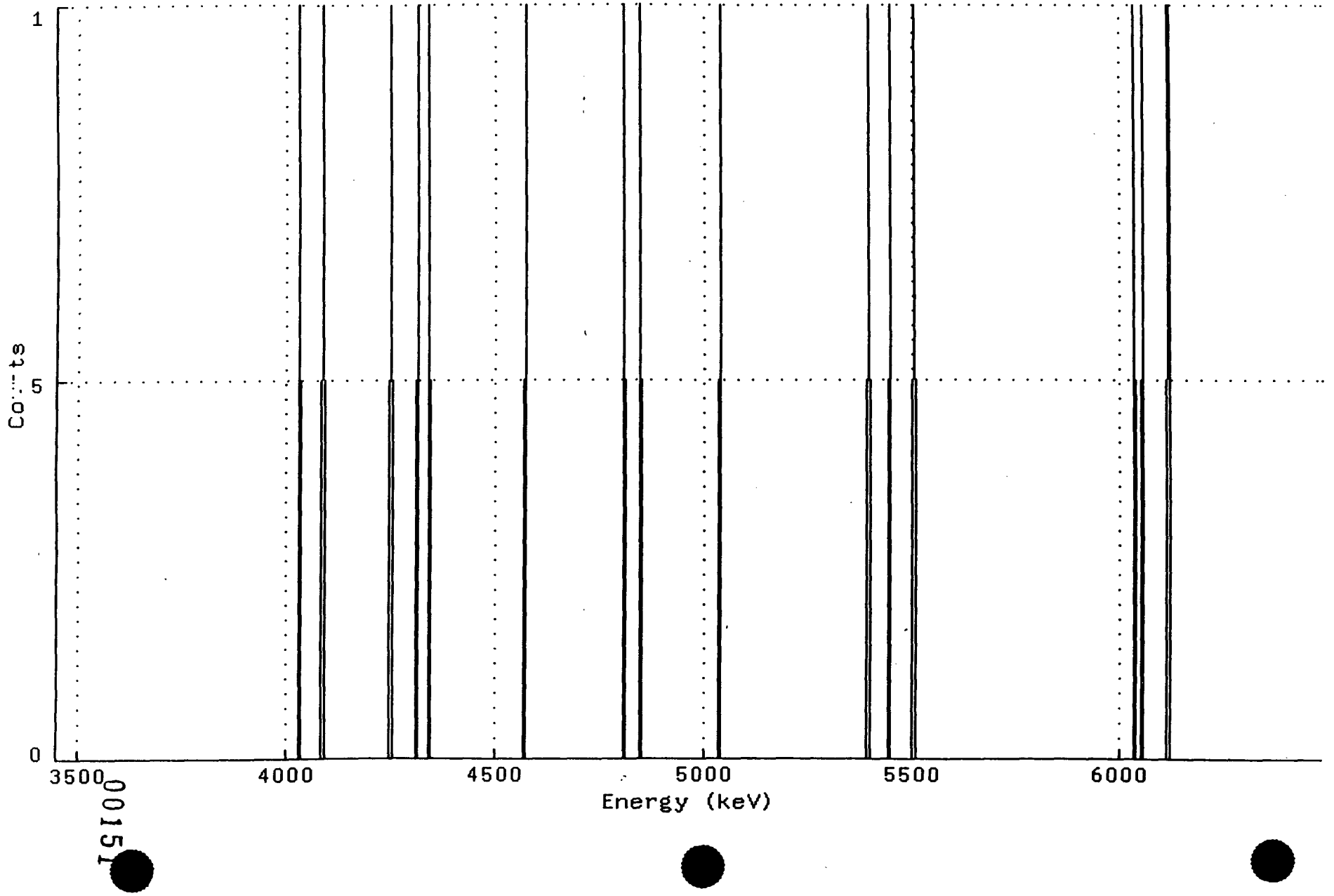
11-3-98
Date

Reviewer

11/3 98
Date

00150

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810173A-RA$15_RA.CNF;1
Title : 032
Sample Title: WGSB5-40
Start Time: 3-NOV-1998 05:18: Sample Time: 24-SEP-1998 00:00 Energy Offset: 3.43920E+03
Real Time : 0 02:49:45.99 Sample ID : 15 Energy Slope : 2.79559E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 1.73429E-04



Channel Contents for ND_AMS_ARCHIVE_S:S_9810173A-RA$15_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]3:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	1	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	1	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	1	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	1	0	0	0	0	0	0
313:	0	0	0	1	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
[illegible]5:	0	0	0	0	0	0	0	0
[illegible]3:	0	0	1	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

00152

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	[redacted]
465:	0	0	0	0	0	0	0	
473:	0	0	0	1	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	1	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	1
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	[redacted]
665:	0	0	0	0	0	0	1	
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	1
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	1	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	[redacted]
873:	0	0	0	0	0	0	0	1
881:	0	0	0	0	0	1	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	1	1	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:35:00.26

Detector ID: 32 Acquisition Start: 3-NOV-1998 05:18:02.16
Live Time: 0 02:49:44.99 Real Time: 0 02:49:45.99
Batch Id: 9810173A-RA Sample Id: 15
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4454.66	5	0539.55		355.40	261	225	4.91E-04	44.7	
2	0	5343.21	4	0436.11		654.50	547	169	3.93E-04	50.0	
3	0	6033.63	1	0	2.80	880.00	734	150	9.82E-05	100.0	

Background Counts Within Peak Regions Generated: 3-NOV-1998 08:35:08.90

Acquisition Start: 30-OCT-1998 17:27:36.16
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.09	4	0556.32		373.00	261	225	6.68E-05	50.0	
2	0	5272.27	8	0	2.80	631.00	547	169	1.34E-04	35.4	
3	0	5812.81	18	0103.44		808.50	734	150	3.00E-04	23.6	

Net Sample Counts Within Peak Regions Generated: 3-NOV-1998 08:35:10.27

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4454.66*	5	0539.55		355.40	261	225	5.08E-04	51.0	
2	0	5343.21*	3	0436.11		654.50	547	169	3.26E-04	71.9	
3	0	6033.63*	-2	0	2.80	880.00	734	150	-1.86E-04	72.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 3-NOV-1998 08:35:12

Configuration : MCA0:[ALPHA]ALPHA8C97$1
Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2
Sample title : WGSB5-40
Sample date : 24-SEP-1998 00:00:00 Acquisition date : 3-NOV-1998 05:18:02
Sample ID : 15 Sample quantity : 0.51700 gram
Sample type : RA Sample geometry :
Detector name : 032 Detector geometry:
Elapsed live time: 0 02:49:44.99 Elapsed real time: 0 02:49:45.99 0.0%
Energy tolerance : 0.00 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Average value Efficiencies at : Peak Energy
Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4454.66*	5539.55	355.40	261	225	102.1			RA-226	0.164
0	5343.21*	3436.11	654.50	547	169	143.9			RN-222	0.105
0	6033.63*	-2 2.80	880.00	734	150	145.5			PO-218	-5.995E-02

SECTION IX

ANALYTICAL DATA (RADIUM-228)

98-10173-Ra228-SO-A	Lab Deadline: Thu 11/05/98	Lab ID	CLIENT ID	Sample Descrip	Sample Date	Aliquot (g)	Ba-133 ACT from Gamma	Tracer Aliq (g)	Witness	Carrier Aliq		
Sample Matrix	Soil/Solid	01	Spike	LCS	10/30/98	1.0000	436.2000	1.0162		2.0		
Reporting Units	pCi/g	02	Blank	MBL	10/30/98	1.0000	430.9000	1.0157		2.0		
Client	RECRA	03	WGSB3-24	DUP	09/23/98	0.5016	472.7000	1.0147		2.0		
PO		04	WGSB3-24	DO	09/23/98	0.5737	515.1000	1.0149		2.0		
Job #	AD-Little	05	WGSB3-30	TRG	09/23/98	0.5300	465.0000	1.0146		2.0		
MDA Required	6.00E-02	06	WGSB3-40	TRG	09/23/98	0.5288	520.1000	1.0141		2.0		
Dup. Sample ID	04	07	WGSB4-5	TRG	09/24/98	0.5027	439.5000	1.0140		2.0		
MS ID		08	WGSB4-14	TRG	09/24/98	0.5101	496.6000	1.0133		2.0		
MS Original ID		09	WGSB4-30	TRG	09/24/98	0.5303	470.5000	1.0120		2.0		
MS Dup ID		10	WGSB4-40	TRG	09/24/98	0.5002	434.5000	1.0134		2.0		
Tracer ID	BA-5a	11	WGSB5-7	TRG	09/24/98	0.5022	416.7000	1.0127		2.0		
Tracer Ref Date	10/30/98	12	WGSB5-14	TRG	09/24/98	0.5172	463.1000	1.0128		2.0		
Tracer T1/2	3.63E+03	13	WGSB5-22	TRG	09/24/98	0.5018	514.0000	1.0124		2.0		
Tracer Initial ACT	1.08E+03	14	WGSB5-32	TRG	09/24/98	0.5031	473.7000	1.0126		2.0		
Carrier	Yttrium	15	WGSB5-40	TRG	09/24/98	0.5170	480.9000	1.0155		2.0		
Carrier Concentration	2.75E+01											
Procedure Used												
Count Duration (mins)												

0158

Data Entry: _____ Date: 11/10/98

98-10173-Ra228-SO-A	Lab Deadline: Thu 11/05/98	Lab ID	Wet Wt. (g)	Dry Wt. (g)	Tare Wt. (g)	Final Wt. (g)	Total R (dec.)	SAF (dec.)	Analyst Comments
Sample Matrix	Soil/Solid	01			0.0958	0.1527	0.9168	1.1365	
Reporting Units	pCi/g	02			0.0956	0.1520	0.8981	1.1345	
Client	*RECRA*	03			0.0966	0.1530	0.9862	1.1345	
PO		04			0.0969	0.1526	1.0611	1.1317	
Job #	AD-Little	05			0.0967	0.1522	0.9548	1.1309	
MDA Required	6.00E-02	06			0.0968	0.1510	1.0434	1.1258	
Dup. Sample ID	04	07			0.0964	0.1530	0.9208	1.1353	
MS ID		08			0.0959	0.1515	1.0228	1.1313	
MS Original ID		09			0.0959	0.1518	0.9755	1.1325	
MS Dup ID		10			0.0963	0.1528	0.9093	1.1349	
Tracer ID	BA-Sa	11			0.0972	0.1540	0.8773	1.1361	
Tracer Ref Date	10/30/98	12			0.0961	0.1527	0.9714	1.1353	
Tracer T1/2	3.83E+03	13			0.0966	0.1518	1.0520	1.1297	
Tracer Initial ACT	1.08E+03	14			0.0970	0.1531	0.9851	1.1333	
Carrier	Yttrium	15			0.0973	0.1524	0.9794	1.1293	
Carrier Concentration	2.75E+01								
Procedure Used									
Count Duration (mins)									

00159

Data Entry: _____ Date: 11/10/98

98-10173-Ra228-SO-A	Lab Deadline: Thu 11/05/98	Lab ID	Rough Prep Date/Time	By	Prep Date/Time	By	Chemistry Date/Time	By	Count Date/Time	By	P	PID	S
Sample Matrix	Soil/Solid	01	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 12:35	CDJ					
Reporting Units	pCi/g	02	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 12:35	CDJ					
Client	RECRA	03	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 12:35	CDJ					
PO		04	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 12:35	CDJ					
Job #	AD-Little	05	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 12:35	CDJ					
MDA Required	6.00E-02	06	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 12:35	CDJ					
Dup. Sample ID	04	07	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 12:35	CDJ					
MS ID		08	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 12:35	CDJ					
MS Original ID		09	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 13:35	CDJ					
MS Dup ID		10	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 13:35	CDJ					
Tracer ID	BA-5a	11	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 13:35	CDJ					
Tracer Ref Date	10/30/98	12	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 13:35	CDJ					
Tracer T1/2	3.83E+03	13	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 13:35	CDJ					
Tracer Initial ACT	1.08E+03	14	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 13:35	CDJ					
Carrier	Yttrium	15	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Tue 11/10/98 13:35	CDJ					
Carrier Concentration	2.75E+01												
Procedure Used													
Count Duration (mins)													

00160

Data Entry: _____ Date: 11/10/98

Thermo NUtech - Oak Ridge Laboratory
ROUGH SAMPLE PREPARATION, LOG BOOK
Version 1.0, 9/98

WORK ORDER NUMBER: 98-10-173

LIMS FACTION	CLIENT IDENTIFICATION	CLIENT	PAN TARE WEIGHT, g	GROSS WET WEIGHT, g	GROSS FINAL DRY WEIGHT, g	NET WET WEIGHT, g	NET DRY WEIGHT, g	PERCENT LIQUID	PERCENT SOLIDS	DATE REC'D PREPARATION	Gamma DRY WEIGHT, g	DATE SEALED	DATE RETURNED TO STORAGE	TECH's Initials
04	WGSB3-24	RECRA	13.27	107.85	101.47	94.58	88.20	6.75%	93.25%	10/29/98	NA	10/30/98	11/2/98	TM
05	WGSB3-30	RECRA	13.28	148.41	134.60	135.13	121.32	10.22%	89.78%	10/29/98	NA	10/30/98	11/2/98	TM
06	WGSB3-40	RECRA	13.41	151.19	142.95	137.78	129.54	5.98%	94.02%	10/29/98	NA	10/30/98	11/2/98	TM
07	WGSB4-5	RECRA	13.42	101.30	96.90	87.88	83.48	5.01%	94.99%	10/29/98	NA	10/30/98	11/2/98	TM
08	WGSB4-14	RECRA	13.49	41.78	38.39	28.29	24.90	11.98%	88.02%	10/29/98	NA	10/30/98	11/2/98	TM
09	WGSB4-30	RECRA	13.50	140.07	133.37	126.57	119.87	5.29%	94.71%	10/29/98	NA	10/30/98	11/2/98	TM
10	WGSB4-40	RECRA	13.50	68.80	64.81	53.30	51.31	3.73%	96.27%	10/29/98	NA	10/30/98	11/2/98	TM
11	WGSB5-7	RECRA	13.34	157.29	150.78	143.95	137.44	4.52%	95.48%	10/29/98	NA	10/30/98	11/2/98	TM
12	WGSB5-14	RECRA	13.37	106.39	99.02	93.02	86.25	7.28%	92.72%	10/29/98	NA	10/30/98	11/2/98	TM
13	WGSB5-22	RECRA	13.39	100.69	97.85	87.30	84.46	3.25%	96.75%	10/29/98	NA	10/30/98	11/2/98	TM
14	WGSB5-32	RECRA	13.41	94.45	89.14	81.04	75.73	6.55%	93.45%	10/29/98	NA	10/30/98	11/2/98	TM
15	WGSB5-40	RECRA	13.42	39.56	38.49	26.14	25.07	4.09%	95.91%	10/29/98	NA	10/30/98	11/2/98	TM
16														
17														
18														
19														
20														

COMMENTS

Samples were received, weighed and dried. Then pulverized for chemistry using procedural guidelines.RUSH.

ENTERED BY: _____ DATE: 10/30/98

PAGE # 066

0016

Therm tech
Oak Ridge Laboratory
Dryness Confirmation Data Sheet
Version 1.1 4/29/98

1st Weighing Time	9:15:00 AM					
DATE & TIME:	10/30/98	Technician:	TSM		WO #	98-10-173
Fraction	1st Weight	Time	2nd Weight	Time	3rd Weight	Time
04	101.47	9:15 AM	101.47	9:45 AM	101.47	10:15 AM
05	134.6	9:15 AM	134.6	9:45 AM	134.6	10:15 AM
06	142.95	9:15 AM	142.95	9:45 AM	142.95	10:15 AM
07	96.9	9:15 AM	96.9	9:45 AM	96.9	10:15 AM
08	38.39	9:15 AM	38.39	9:45 AM	38.39	10:15 AM
09	133.37	9:15 AM	133.37	9:45 AM	133.37	10:15 AM
10	64.81	9:15 AM	64.81	9:45 AM	64.81	10:15 AM
11	150.78	9:15 AM	150.78	9:45 AM	150.78	10:15 AM
12	99.62	9:15 AM	99.62	9:45 AM	99.62	10:15 AM
13	97.85	9:15 AM	97.85	9:45 AM	97.85	10:15 AM
14	89.14	9:15 AM	89.14	9:45 AM	89.14	10:15 AM
15	38.49	9:15 AM	38.49	9:45 AM	38.49	10:15 AM
16						
17						
18						
19						
20						

All samples must be removed from the drying oven at three (3) seperate times and weighed to confirm consistent dryness if the sample(s). Remove sample(s) and document dryness at 1/2 hour increments. Place a copy of this information within the data package.

Thermo NUtech
Spike & Tracer Worksheet

BATCH ID:	98-10-173			ANALYSIS	Ra-226 & Ra-228			DATE	10/30/98 8:59	
	Isotope	Sol #	Activity dpm/ml	Solution Date	Volume Used, ml	Date	Technician	Known pCi	Error Estimate	Witness
SPIKE	Ra-226	Ra-5b	44.349	10/30/98	0.5633	10/30/98	JB	11.25	0.518	EEL
SPIKE	Ra-228	Ra-8	49.095	10/30/98	0.5473	10/30/98	JB	12.10	0.145	EEL
TRACER	Ba-133	Ba-5a	1075.327	10/30/98	BELOW	10/30/98	JB			EEL

PASTE PRINT OUT FROM BALANCE BELOW

ADD APPROXIMATE STANDARD ADDITIONS AS BELOW
Ra-5b ~ 0.5000 g
Ra-8 ~ 0.5000 g Ba-5a ~ 1.0000g
FOR THE MATRIX SPIKE SEE LAB MANAGER OR COUNT ROOM SUPERVISOR

LCS	TRACER	MATRIX SPIKE
RA5b RA8 0.5473	Aliquot 0.5000 g 0.5289 g 0.5007 g	BA5A

Lab ID	Client ID	Sample Desc.	Nuclide	Activity Units	Result	Error 2s	MDA (0.06)	Eff%	LCS/MS Known	LCS/MS R%	Dup RPD (20)
98-10173-01	Spike	LCS	Ra228	pCi/g	1.29E+01	1.35E+00	1.50E+00	41.20	12.06	107.31	
98-10173-02	Blank	MBL	Ra228	pCi/g	-1.80E-01	5.03E-01	1.33E+00	41.30			
98-10173-03	WGSB3-24	DUP	Ra228	pCi/g	3.11E-01	9.21E-01	2.25E+00	43.40			-486.04
98-10173-04	WGSB3-24	DO	Ra228	pCi/g	-7.47E-01	7.94E-01	2.19E+00	44.10			
98-10173-05	WGSB3-30	TRG	Ra228	pCi/g	7.87E-01	8.29E-01	1.88E+00	44.60			
98-10173-06	WGSB3-40	TRG	Ra228	pCi/g	7.25E-01	8.19E-01	1.88E+00	46.10			
98-10173-07	WGSB4-5	TRG	Ra228	pCi/g	2.13E-01	8.67E-01	2.14E+00	45.20			
98-10173-08	WGSB4-14	TRG	Ra228	pCi/g	-1.26E+00	1.09E+00	3.05E+00	41.20			
98-10173-09	WGSB4-30	TRG	Ra228	pCi/g	7.38E-01	9.96E-01	2.33E+00	41.30			
98-10173-10	WGSB4-40	TRG	Ra228	pCi/g	-3.43E-01	9.37E-01	2.48E+00	43.40			
98-10173-11	WGSB5-7	TRG	Ra228	pCi/g	-1.34E+00	1.01E+00	2.89E+00	44.10			
98-10173-12	WGSB5-14	TRG	Ra228	pCi/g	1.36E+00	9.10E-01	1.92E+00	44.60			
98-10173-13	WGSB5-22	TRG	Ra228	pCi/g	0.00E+00	7.90E-01	2.01E+00	46.10			
98-10173-14	WGSB5-32	TRG	Ra228	pCi/g	-5.03E-01	7.31E-01	2.03E+00	45.20			
98-10173-15	WGSB5-40	TRG	Ra228	pCi/g	6.62E+01	4.12E+00	3.09E+00	41.20			

THERMO NUCLEAR SERVICES

Comments:

Lab ID	MDA Test	LCS Test	Blk MDA Test	RPD Test	Dup Sigma	MS Test	Drawer Test	L S Test	Analysis Number	Detect	% Solid	% Moist	F/UF	W/D
98-10173-01	INV	OK					#######	INV	98-10173-Ra228-SO-A	######				
98-10173-02	INV		OK				#######	INV	98-10173-Ra228-SO-A	######				
98-10173-03	INV			OK	OK		#######	INV	98-10173-Ra228-SO-A	######				
98-10173-04	INV						#######	INV	98-10173-Ra228-SO-A	######				
98-10173-05	INV						#######	INV	98-10173-Ra228-SO-A	######				
98-10173-06	INV						#######	INV	98-10173-Ra228-SO-A	######				
98-10173-07	INV						#######	INV	98-10173-Ra228-SO-A	######				
98-10173-08	INV						#######	INV	98-10173-Ra228-SO-A	######				
98-10173-09	INV						#######	INV	98-10173-Ra228-SO-A	######				
98-10173-10	INV						#######	INV	98-10173-Ra228-SO-A	######				
98-10173-11	INV						#######	INV	98-10173-Ra228-SO-A	######				
98-10173-12	INV						#######	INV	98-10173-Ra228-SO-A	######				
98-10173-13	INV						#######	INV	98-10173-Ra228-SO-A	######				
98-10173-14	INV						#######	INV	98-10173-Ra228-SO-A	######				
98-10173-15	INV						#######	INV	98-10173-Ra228-SO-A	######				

00164

THERMO NUCLEAR SERVICES

Reviewed by: Steve Grigsby *Date:* 11/11/98

Ans 11/10/98

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage	TOD
A2	9810173-01	30	545	60	1410	11/10/98 14:48
A3	9810173-02	4	73	60	1410	11/10/98 14:48
A4	9810173-03	5	82	60	1410	11/10/98 14:48
B1	9810173-04	6	85	60	1410	11/10/98 14:48
B2	9810173-05	6	74	60	1410	11/10/98 14:48
B3	9810173-06	9	85	60	1410	11/10/98 14:48
B4	9810173-07	5	69	60	1410	11/10/98 14:48

00165

11/10/98

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage	TOD
A2	9810173-15	2	1196	60	1410	11/10/98 17:00

00166

Ans 11/10/98

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage	TOD
A2	9810173-08	1	86	60	1410	11/10/98 15:55
A3	9810173-09	3	93	60	1410	11/10/98 15:55
A4	9810173-10	6	70	60	1410	11/10/98 15:55
B1	9810173-11	2	79	60	1410	11/10/98 15:55
B2	9810173-12	7	85	60	1410	11/10/98 15:55
B3	9810173-13	7	69	60	1410	11/10/98 15:55
B4	9810173-14	2	55	60	1410	11/10/98 15:55

001167

JOP
11-10-98

Detector ID	Sample ID	Alpha	Beta	Guard	Count Count Time	Event	Voltage	TOD
A1	BKGD	27	139	33076	60	0	1470	36109.21
A2	BKGD	4	107	33076	60	0	1470	36109.21
A3	BKGD	3	79	33077	60	0	1470	36109.21
A4	BKGD	8	76	33077	60	0	1470	36109.21
B1	BKGD	12 OK	102	33705	60	0	1410	36109.21
B2	BKGD	4	58	33704	60	0	1410	36109.21
B3	BKGD	4	69	33706	60	0	1410	36109.21
B4	BKGD	3	65	33710	60	0	1410	36109.21

A-1 OUT OF SERVICE
JOP 11-10-98

00168

Printed 11/10/98 5:35 AM

SECTION X

BARIUM-133 ANALYTICAL TRACER DATA

TMA/Eberline, Oak Ridge Laboratory

ANALYSIS: BA-133 DATE: 11/02/98

CLIENT: recra

SAM #: 98-10-173

ASSOCIATION:

SAM#	SAM FRACTION	BA 133 ACTIVITY	AMOUNT ADDED	INITIAL AMOUNT	ACTUAL AMOUNT	%BA133 RECOVERY
01	SPIKE	1075.327	1.0162	492.229	436.2	88.6
02	BLANK	1075.327	1.0158	492.035	430.9	87.6
03	WGSB3-24	1075.327	1.0147	491.502	472.7	96.2
04	WGSB3-24	1075.327	1.0149	491.599	515.1	104.8
05	WGSB3-30	1075.327	1.0146	491.454	465	94.6
06	WGSB3-40	1075.327	1.0141	491.211	520.1	105.9
07	WGSB4-5	1075.327	1.014	491.163	439.5	89.5
08	WGSB4-14	1075.327	1.0133	490.824	496.6	101.2
09	WGSB4-30	1075.327	1.012	490.194	470.5	96.0
10	WGSB4-40	1075.327	1.0134	490.872	434.5	88.5
11	WGSB5-7	1075.327	1.0127	490.533	416.7	84.9
12	WGSB5-14	1075.327	1.0128	490.582	463.1	94.4
13	WGSB5-22	1075.327	1.0124	490.388	514	104.8
14	WGSB5-32	1075.327	1.0126	490.485	473.7	96.6
15	WGSB5-40	1075.327	1.0155	491.889	480.9	97.8
		1075.327		0		#DIV/0!
		1075.327		0		#DIV/0!
		1075.327		0		#DIV/0!
		1075.327		0		#DIV/0!
		1075.327		0		#DIV/0!

Calculated by: Asmi Jm 11/2/98

00170

Thermo NUtech
Spike & Tracer Worksheet

BATCH ID:	98-10-173			ANALYSIS	Ra-226 & Ra-228				DATE	10/30/98 8:59
	Isotope	Sol #	Activity dpm/ml	Solution Date	Volume Used, ml	Date	Technician	Known pCi	Error Estimate	Witness
SPIKE	Ra-226	Ra-5b	44.349	10/30/98	0.5633	10/30/98	JB	11.25	0.518	EEL
SPIKE	Ra-228	Ra-8	49.095	10/30/98	0.5473	10/30/98	JB	12.10	0.145	EEL
TRACER	Ba-133	Ba-5a	1075.327	10/30/98	BELOW	10/30/98	JB			EEL

PASTE PRINT OUT FROM BALANCE BELOW

ADD APPROXIMATE STANDARD ADDITIONS AS BELOW
Ra-5b ~ 0.5000 g
Ra-8 ~ 0.5000 g Ba-5a ~ 1.0000g
FOR THE MATRIX SPIKE SEE LAB MANAGER OR COUNT ROOM SUPERVISOR

LCS

RA5B
RA8 0.5473

TRACER

Aliquot

MATRIX SPIKE

BA5A

00171

11/24/98

VAX/VMS Peak Search Report Generated 2-NOV-1998 13:22:05.33

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017301_GE4_BAFIL_45177.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : spike
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 13:16:48.
Sample ID : 9810173-01 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.24 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.15	133	23	1.27	34.93	34	5	4.42E-01	11.8	
2	2	53.03	21	20	1.56	52.80	49	21	7.12E-02	38.3	9.03E-01
3	2	61.50	24	20	1.58	61.27	49	21	8.11E-02	38.3	
4	2	65.95	12	20	1.59	65.72	49	21	4.09E-02	66.7	
5	0	80.92	255	42	1.22	80.69	77	8	8.49E-01	7.7	
6	0	112.47	22	37	1.73	112.23	107	8	7.49E-02	51.0	
7	0	276.84	14	5	1.14	276.55	273	7	4.63E-02	38.2	
8	0	295.09	10	0	1.67	294.80	292	6	3.33E-02	31.6	
9	0	303.44	37	19	1.30	303.15	299	8	1.25E-01	25.7	
10	3	333.84	9	5	2.17	333.54	329	14	2.96E-02	54.1	1.02E+00
11	3	339.31	5	1	1.64	339.00	329	14	1.67E-02	74.9	
[redacted]	5	353.31	5	0	1.65	353.00	352	9	1.74E-02	42.8	1.59E+01
[redacted]	5	356.24	97	0	1.78	355.93	352	9	3.22E-01	12.0	
14	5	383.81	29	1	1.48	383.49	382	13	9.83E-02	14.6	3.65E+00
15	5	386.88	23	4	2.22	386.56	382	13	7.80E-02	35.8	
16	5	391.34	12	4	2.70	391.02	382	13	3.88E-02	52.9	
17	0	437.66	14	4	1.56	437.33	434	7	4.50E-02	35.6	

[redacted]

00172

Acquisition date : 2-NOV-1998 13:16:48

Total number of lines in spectrum 17
Number of unidentified lines 13
Number of lines tentatively identified by NID 4 23.53%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.362E+02	4.362E+02	1.188E+02	27.23	
	Total Activity :		4.362E+02	4.362E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	1.356E+02	1.356E+02	1.047E+02	77.22	
AM-241	432.20Y	1.00	1.436E+01	1.436E+01	1.109E+01	77.22	
	Total Activity :		1.500E+02	1.500E+02			
	Grand Total Activity :		5.862E+02	5.862E+02			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.440E+01	4.831E+02	4.832E+02	34.69	OK
	302.84	17.80	3.067E+00	6.170E+02	6.170E+02	124.67	OK
	356.01	60.00	3.844E+00	3.773E+02	3.774E+02	45.74	OK

Final Mean for 3 Valid Peaks = 4.362E+02+/- 1.188E+02 (27.23%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.255E+01	1.356E+02	1.356E+02	77.22	OK

Final Mean for 1 Valid Peaks = 1.356E+02+/- 1.047E+02 (77.22%)

AM-241	59.54	35.90*	4.255E+01	1.436E+01	1.436E+01	77.22	OK

Final Mean for 1 Valid Peaks = 1.436E+01+/- 1.109E+01 (77.22%)

Flags: "*" = Keyline

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	8.	122.06	3.6813E+01
CD-109	14.	88.03	4.4084E+02
PA-231	0.	9.28	6.2703E-07
PA-234	42.	21.72	1.6245E-02
NP-237	16.	86.50	1.3126E+02

Arms 11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 13:30:34.58

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017302_GE4_BAFIL_45179.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : blank
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 13:25:13.
Sample ID : 9810173-02 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.21 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.26	141	30	1.16	35.04	34	5	4.70E-01	11.0	
2	0	62.74	46	64	2.12	62.51	57	12	1.54E-01	37.4	
3	0	81.00	233	39	1.25	80.77	78	6	7.76E-01	7.8	
4	0	92.63	15	10	1.59	92.40	89	7	4.99E-02	44.0	
5	0	111.76	35	22	1.34	111.52	108	7	1.15E-01	28.5	
6	0	239.08	15	9	3.73	238.80	235	9	5.00E-02	44.3	
7	0	248.98	8	5	1.85	248.70	245	7	2.53E-02	62.2	
8	0	276.50	20	4	1.31	276.21	273	6	6.58E-02	28.1	
9	0	303.33	37	15	1.58	303.04	298	9	1.22E-01	25.6	
10	0	333.61	14	1	1.88	333.30	330	6	4.53E-02	30.5	
11	0	356.15	103	18	1.62	355.84	352	9	3.44E-01	12.5	
12	0	376.81	5	2	1.07	376.49	374	6	1.74E-02	58.3	
13	4	383.92	18	3	2.45	383.61	380	13	6.04E-02	34.9	2.74E+00
14	4	386.96	28	2	2.24	386.64	380	13	9.27E-02	27.4	
15	4	390.59	14	0	2.46	390.27	380	13	4.53E-02	32.5	

00176

Total number of lines in spectrum 15
Number of unidentified lines 11
Number of lines tentatively identified by NID 4 26.67%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.308E+02	4.309E+02	1.175E+02	27.27	
	Total Activity :		4.308E+02	4.309E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	2.814E+02	2.814E+02	2.123E+02	75.46	
	Total Activity :		2.814E+02	2.814E+02			

Grand Total Activity : 7.122E+02 7.123E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.435E+01	4.426E+02	4.427E+02	34.86	OK
	302.84	17.80	3.065E+00	6.033E+02	6.033E+02	124.79	OK
	356.01	60.00	3.843E+00	4.030E+02	4.030E+02	46.32	OK

Final Mean for 3 Valid Peaks = 4.309E+02+/- 1.175E+02 (27.27%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	3.898E+01	2.814E+02	2.814E+02	75.46	OK

Final Mean for 1 Valid Peaks = 2.814E+02+/- 2.123E+02 (75.46%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810173-02

Acquisition date : 2-NOV-1998 13:25:13

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	16.	122.06	4.8582E+01
CD-109	10.	88.03	3.8046E+02
PA-231	0.	9.28	6.2703E-07
PA-234	45.	21.72	1.6872E-02
NP-237	13.	86.50	1.2139E+02
AM-241	33.	59.54	1.5104E+01

Amrs 11/2/98

VAX/VMS Peak Search Report Generated 2-NOV-1998 13:38:46.75

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017303_GE4_BAFIL_45181.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : wgsb3-24
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 13:33:29.
Sample ID : 9810173-03 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.44 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.31	147	24	1.27	35.09	34	5	4.90E-01	10.4	
2	1	53.22	22	16	1.41	53.00	48	21	7.32E-02	27.7	6.26E+00
3	1	61.36	18	11	1.43	61.13	48	21	6.06E-02	41.2	
4	1	66.10	17	7	1.44	65.87	48	21	5.69E-02	39.8	
5	0	81.02	225	30	1.29	80.79	77	7	7.50E-01	7.8	
6	0	111.92	25	38	1.43	111.68	107	8	8.29E-02	47.4	
7	0	194.00	20	11	2.84	193.73	188	9	6.55E-02	38.2	
8	0	276.58	26	4	1.82	276.29	272	8	8.67E-02	23.7	
9	3	302.84	44	2	1.70	302.55	300	15	1.46E-01	17.6	4.23E+00
10	3	307.11	11	5	2.14	306.82	300	15	3.76E-02	42.1	
11	3	311.83	7	6	2.14	311.53	300	15	2.24E-02	62.4	
12	0	333.78	20	4	1.41	333.48	329	8	6.67E-02	28.3	
13	0	356.18	146	4	1.30	355.87	353	7	4.86E-01	8.7	
14	1	383.48	25	2	1.84	383.17	381	17	8.48E-02	21.2	8.30E-01
15	1	387.26	13	3	1.84	386.94	381	17	4.39E-02	44.6	
16	1	391.15	6	3	1.85	390.83	381	17	2.05E-02	63.9	
17	0	436.96	19	0	1.77	436.63	433	7	6.33E-02	22.9	

Acquisition date : 2-NOV-1998 13:33:29

Total number of lines in spectrum	17	
Number of unidentified lines	13	
Number of lines tentatively identified by NID	4	23.53%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.727E+02	4.727E+02	1.259E+02	26.64	
	Total Activity :		4.727E+02	4.727E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	1.003E+02	1.003E+02	0.831E+02	82.84	
AM-241	432.20Y	1.00	1.062E+01	1.062E+01	0.879E+01	82.84	
	Total Activity :		1.109E+02	1.109E+02			
	Grand Total Activity :		5.836E+02	5.836E+02			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.434E+01	4.286E+02	4.286E+02	34.86	OK
	302.84	17.80	3.060E+00	7.233E+02	7.233E+02	119.90	OK
	356.01	60.00	3.843E+00	5.696E+02	5.696E+02	42.65	OK

Final Mean for 3 Valid Peaks = 4.727E+02+/- 1.259E+02 (26.64%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.298E+01	1.003E+02	1.003E+02	82.84	OK

Final Mean for 1 Valid Peaks = 1.003E+02+/- 8.309E+01 (82.84%)

AM-241	59.54	35.90*	4.298E+01	1.062E+01	1.062E+01	82.84	OK

Final Mean for 1 Valid Peaks = 1.062E+01+/- 8.795E+00 (82.84%)

Flag: "*" = Keyline

Sample ID : 9810173-03
Acquisition date : 2-NOV-1998 13:33:29

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	12.	122.06	4.3169E+01
CD-109	11.	88.03	4.0604E+02
PA-231	0.	9.28	6.2703E-07
PA-234	38.	21.72	1.5628E-02
NP-237	8.	86.50	1.0078E+02

Ams 11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 13:46:26.33

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017304_GE4_BAFIL_45185.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : wgsb3-24
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 13:41:07.
Sample ID : 9810173-04 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.29 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.19	130	22	1.16	34.97	34	4	4.33E-01	10.7	
2	0	62.17	39	36	1.56	61.94	57	8	1.30E-01	31.1	
3	0	80.95	263	33	1.29	80.72	77	8	8.76E-01	7.3	
4	0	112.20	44	30	1.98	111.95	107	11	1.45E-01	28.8	
5	0	173.69	20	27	5.82	173.43	168	13	6.78E-02	56.3	
6	0	238.49	20	7	1.65	238.21	234	9	6.50E-02	32.9	
7	0	268.65	13	7	6.02	268.36	264	9	4.40E-02	44.9	
8	0	276.51	25	3	2.10	276.22	273	6	8.33E-02	22.8	
9	0	302.90	37	4	1.73	302.60	299	6	1.22E-01	18.8	
10	0	335.62	17	8	5.57	335.32	330	10	5.53E-02	42.6	
11	2	352.31	7	6	1.65	352.00	351	8	2.39E-02	44.6	2.17E+00
12	2	356.15	137	3	1.47	355.84	351	8	4.56E-01	8.6	
13	0	387.48	15	7	1.20	387.17	385	4	4.95E-02	37.5	
14	0	437.28	10	2	1.75	436.95	433	7	3.42E-02	37.9	

Total number of lines in spectrum 14
Number of unidentified lines 10
Number of lines tentatively identified by NID 4 28.57%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	5.151E+02	5.151E+02	1.347E+02	26.15	
	Total Activity :		5.151E+02	5.151E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	2.277E+02	2.277E+02	1.435E+02	63.03	
	Total Activity :		2.277E+02	2.277E+02			

Grand Total Activity : 7.428E+02 7.428E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.438E+01	4.988E+02	4.989E+02	34.37	OK
	302.84	17.80	3.060E+00	6.070E+02	6.071E+02	120.56	OK
	356.01	60.00	3.843E+00	5.350E+02	5.350E+02	42.62	OK

Final Mean for 3 Valid Peaks = 5.151E+02+/- 1.347E+02 (26.15%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.057E+01	2.277E+02	2.277E+02	63.03	OK

Final Mean for 1 Valid Peaks = 2.277E+02+/- 1.435E+02 (63.03%)

Flag: "*" = Keyline

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	8.	122.06	3.5640E+01
CD-109	10.	88.03	3.8257E+02
PA-231	0.	9.28	6.2703E-07
PA-234	34.	21.72	1.4782E-02
NP-237	7.	86.50	9.5658E+01
AM-241	31.	59.54	1.4514E+01

Ams 11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 13:52:49.38

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017305_GE4_BAFIL_45186.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : wgsb3-30
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 13:47:32.
Sample ID : 9810173-05 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.22 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.28	113	37	1.25	35.06	34	5	3.77E-01	13.2	
2	0	52.94	24	20	1.90	52.71	49	8	7.94E-02	38.5	
3	4	62.03	27	17	1.91	61.80	58	12	9.15E-02	34.1	2.10E+00
4	4	65.82	22	14	1.92	65.59	58	12	7.19E-02	39.0	
5	0	81.00	218	24	1.23	80.77	78	7	7.26E-01	7.8	
6	0	112.92	41	24	1.82	112.68	108	11	1.36E-01	28.2	
7	0	145.69	8	16	2.30	145.43	141	9	2.53E-02	105.9	
8	0	152.33	8	11	2.63	152.07	149	7	2.54E-02	80.4	
9	0	276.68	24	3	1.15	276.40	273	7	7.95E-02	24.1	
10	0	303.14	40	14	1.74	302.84	298	9	1.34E-01	22.8	
11	2	351.96	7	0	1.99	351.65	350	11	2.27E-02	44.1	2.13E+00
[redacted]	2	356.07	155	1	1.54	355.76	350	11	5.15E-01	8.0	
[redacted]	0	377.47	7	4	1.13	377.15	374	7	2.17E-02	61.8	
14	0	385.32	70	4	4.79	385.01	382	8	2.33E-01	12.9	
15	0	436.73	15	0	2.21	436.40	434	6	5.00E-02	25.8	

Total number of lines in spectrum 15
Number of unidentified lines 11
Number of lines tentatively identified by NID 4 26.67%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.650E+02	4.650E+02	1.241E+02	26.69	
	Total Activity :		4.650E+02	4.650E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	1.588E+02	1.588E+02	1.095E+02	68.98	
	Total Activity :		1.588E+02	1.588E+02			

Grand Total Activity : 6.238E+02 6.238E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.435E+01	4.141E+02	4.141E+02	34.85	OK
	302.84	17.80	3.063E+00	6.661E+02	6.662E+02	122.89	OK
	356.01	60.00	3.841E+00	6.041E+02	6.042E+02	42.16	OK

Final Mean for 3 Valid Peaks = 4.650E+02+/- 1.241E+02 (26.69%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.098E+01	1.588E+02	1.588E+02	68.98	OK

Final Mean for 1 Valid Peaks = 1.588E+02+/- 1.095E+02 (68.98%)

Flag: "*" = Keyline

Sample ID : 9810173-05 Acquisition date : 2-NOV-1998 13:47:32

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	9.	122.06	3.7686E+01
CD-109	7.	88.03	3.3963E+02
PA-231	0.	9.28	6.2703E-07
PA-234	38.	21.72	1.5511E-02
NP-237	7.	86.50	9.0706E+01
AM-241	29.	59.54	1.4235E+01

Anns 11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 14:05:59.72

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017306_GE4_BAFIL_45188.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : wgsb3-40
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 14:00:36.
Sample ID : 9810173-06 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.34 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.35	117	33	1.26	35.13	34	5	3.90E-01	12.6	
2	0	53.46	11	19	0.84	53.24	51	4	3.53E-02	67.5	
3	0	63.28	53	47	5.71	63.06	57	11	1.77E-01	28.4	
4	0	80.97	247	27	1.43	80.74	76	10	8.25E-01	7.5	
5	0	112.39	67	12	4.97	112.15	106	12	2.24E-01	16.0	
6	4	142.92	13	8	2.10	142.66	138	12	4.26E-02	49.0	1.56E+00
7	4	146.25	8	3	1.44	146.00	138	12	2.70E-02	57.8	
8	0	239.04	15	10	3.25	238.76	234	8	4.89E-02	47.7	
9	0	271.35	8	4	1.23	271.07	267	7	2.50E-02	55.2	
10	0	276.78	25	4	1.53	276.49	273	7	8.17E-02	23.8	
11	0	303.69	58	5	1.95	303.40	299	10	1.93E-01	15.0	
12	0	333.11	12	2	1.56	332.80	328	8	3.94E-02	35.9	
13	0	356.05	161	6	1.54	355.74	352	8	5.37E-01	8.3	
14	0	387.76	13	20	1.53	387.44	385	5	4.36E-02	59.7	
15	0	391.40	13	3	1.16	391.08	390	5	4.40E-02	38.2	
16	0	415.39	6	2	1.56	415.07	412	5	1.88E-02	59.3	
17	0	437.61	7	7	1.33	437.28	433	7	2.48E-02	69.0	

Total number of lines in spectrum 17
Number of unidentified lines 13
Number of lines tentatively identified by NID 4 23.53%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	5.200E+02	5.201E+02	1.377E+02	26.48	
	Total Activity :		5.200E+02	5.201E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	3.362E+02	3.362E+02	1.944E+02	57.82	
	Total Activity :		3.362E+02	3.362E+02			

Grand Total Activity : 8.562E+02 8.562E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.437E+01	4.701E+02	4.702E+02	34.54	OK
	302.84	17.80	3.070E+00	9.563E+02	9.564E+02	117.10	OK
	356.01	60.00	3.841E+00	6.300E+02	6.301E+02	42.38	OK

Final Mean for 3 Valid Peaks = 5.201E+02+/- 1.377E+02 (26.48%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	3.754E+01	3.362E+02	3.362E+02	57.82	OK

Final Mean for 1 Valid Peaks = 3.362E+02+/- 1.944E+02 (57.82%)

Flag: "*" = Keyline

Sample ID : 9810173-06 Acquisition date : 2-NOV-1998 14:00:36

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	15.	122.06	4.6449E+01
CD-109	9.	88.03	3.6484E+02
PA-231	0.	9.28	6.2703E-07
PA-234	34.	21.72	1.4779E-02
NP-237	7.	86.50	9.5037E+01
AM-241	31.	59.54	1.4621E+01

Amo 11/2/98

VAX/VMS Peak Search Report Generated 2-NOV-1998 14:28:13.66

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017307_GE4_BAFIL_45190.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : wgsb4-5
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 14:22:49.
Sample ID : 9810173-07 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.21 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.18	123	44	1.23	34.96	34	5	4.09E-01	12.9	
2	0	53.72	21	37	1.56	53.49	49	8	7.05E-02	54.7	
3	1	62.10	16	14	1.43	61.87	57	15	5.24E-02	46.7	3.27E+00
4	1	66.10	21	14	1.44	65.87	57	15	7.11E-02	33.8	
5	0	80.98	217	32	1.26	80.75	77	8	7.25E-01	8.2	
6	0	111.46	28	18	2.01	111.22	107	7	9.22E-02	32.3	
7	1	273.45	5	1	1.73	273.16	272	7	1.53E-02	56.4	2.69E+00
8	1	276.35	18	4	1.74	276.06	272	7	5.92E-02	28.0	
9	4	303.00	40	0	2.15	302.70	299	11	1.33E-01	16.8	9.19E-01
10	4	306.62	6	0	2.35	306.32	299	11	1.94E-02	104.3	
[redacted]	0	335.12	8	9	1.54	334.81	330	7	2.78E-02	68.1	
[redacted]	0	356.13	122	8	1.36	355.82	352	8	4.08E-01	9.9	
13	3	383.44	27	1	2.23	383.13	380	10	9.06E-02	24.4	1.26E+00
14	3	386.87	23	3	2.23	386.55	380	10	7.54E-02	31.9	
15	0	391.46	10	1	1.20	391.14	390	4	3.48E-02	33.1	
16	0	437.44	15	4	1.27	437.11	434	7	5.12E-02	32.6	

Total number of lines in spectrum 16
Number of unidentified lines 12
Number of lines tentatively identified by NID 4 25.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.395E+02	4.395E+02	1.180E+02	26.85	
	Total Activity :		4.395E+02	4.395E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	9.149E+01	9.149E+01	8.594E+01	93.94	
	Total Activity :		9.149E+01	9.149E+01			

Grand Total Activity : 5.310E+02 5.310E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.436E+01	4.133E+02	4.134E+02	35.19	OK
	302.84	17.80	3.062E+00	6.610E+02	6.610E+02	119.19	OK
	356.01	60.00	3.842E+00	4.778E+02	4.779E+02	43.71	OK

Final Mean for 3 Valid Peaks = 4.395E+02+/- 1.180E+02 (26.85%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.077E+01	9.149E+01	9.149E+01	93.94	OK

Final Mean for 1 Valid Peaks = 9.149E+01+/- 8.594E+01 (93.94%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810173-07

Acquisition date : 2-NOV-1998 14:22:49

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	9.	122.06	3.7584E+01
CD-109	17.	88.03	4.8620E+02
PA-231	0.	9.28	6.2703E-07
PA-234	29.	21.72	1.3791E-02
NP-237	12.	86.50	1.1786E+02
AM-241	35.	59.54	1.5320E+01

Amos 11/21/98

VAX/VMS Peak Search Report Generated 2-NOV-1998 14:36:25.70

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017308_GE4_BAFIL_45192.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB4-14
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 14:31:02.
Sample ID : 9810173-08 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.22 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.25	123	28	1.26	35.03	34	5	4.10E-01	12.1	
2	3	53.01	21	6	1.71	52.79	49	19	6.94E-02	30.9	2.63E+00
3	3	61.63	27	8	1.73	61.41	49	19	8.87E-02	29.9	
4	0	81.05	240	26	1.21	80.82	77	8	7.99E-01	7.5	
5	0	93.97	14	18	2.90	93.73	89	8	4.78E-02	59.2	
6	0	111.07	29	33	3.44	110.83	106	10	9.75E-02	40.9	
7	0	208.12	8	8	2.53	207.85	203	6	2.80E-02	62.1	
8	0	276.30	32	6	1.83	276.02	272	9	1.05E-01	23.1	
9	5	302.64	35	8	1.82	302.35	299	12	1.17E-01	22.0	6.68E+00
10	5	307.56	5	9	2.59	307.26	299	12	1.60E-02	165.1	
11	0	333.82	15	5	2.73	333.52	330	7	4.98E-02	36.1	
[redacted]	0	338.52	11	1	1.33	338.22	337	4	3.81E-02	31.6	
[redacted]	0	356.04	149	6	1.51	355.73	351	8	4.98E-01	8.7	
14	0	385.47	59	0	4.05	385.15	382	7	1.97E-01	13.0	
15	0	415.81	6	5	1.60	415.48	410	7	1.95E-02	76.6	
16	0	436.89	16	0	1.79	436.56	434	5	5.33E-02	25.0	
17	0	468.55	6	1	2.48	468.22	465	6	1.88E-02	53.9	

Sample ID : 9810173-08 Acquisition date : 2-NOV-1998 14:31:02

Total number of lines in spectrum	17	
Number of unidentified lines	13	
Number of lines tentatively identified by NID	4	23.53%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.965E+02	4.966E+02	1.313E+02	26.45	
	Total Activity :		4.965E+02	4.966E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	1.497E+02	1.497E+02	0.907E+02	60.60	
	Total Activity :		1.497E+02	1.497E+02			
	Grand Total Activity :		6.462E+02	6.463E+02			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.432E+01	4.572E+02	4.572E+02	34.62	OK
	302.84	17.80	3.058E+00	5.790E+02	5.790E+02	122.90	OK
	356.01	60.00	3.841E+00	5.838E+02	5.839E+02	42.67	OK

Final Mean for 3 Valid Peaks = 4.966E+02+/- 1.313E+02 (26.45%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.214E+01	1.497E+02	1.497E+02	60.60	OK

Final Mean for 1 Valid Peaks = 1.497E+02+/- 9.072E+01 (60.60%)

Flag: "*" = Keyline

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	9.	122.06	3.8334E+01
CD-109	15.	88.03	4.6688E+02
PA-231	0.	9.28	6.2703E-07
PA-234	41.	21.72	1.6135E-02
NP-237	11.	86.50	1.1454E+02
AM-241	28.	59.54	1.3928E+01

Ams 11-24-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 14:43:09.98

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017309_GE4_BAFIL_45194.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB4-30
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 14:37:49.
Sample ID : 9810173-09 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.21 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.15	122	32	1.38	34.93	34	5	4.06E-01	12.8	
2	0	53.64	12	28	1.50	53.41	50	6	3.93E-02	76.0	
3	0	61.82	47	34	1.94	61.59	58	7	1.58E-01	24.8	
4	0	81.01	224	30	1.23	80.78	77	7	7.47E-01	7.8	
5	0	270.86	8	12	4.86	270.58	265	9	2.62E-02	90.2	
6	0	276.60	23	3	1.45	276.31	273	7	7.67E-02	24.6	
7	2	298.63	6	1	1.94	298.34	297	12	1.94E-02	40.3	3.50E+00
8	2	302.96	34	3	1.94	302.66	297	12	1.14E-01	19.5	
9	0	356.20	148	0	1.31	355.89	353	7	4.93E-01	8.2	
10	0	385.55	65	0	4.39	385.23	382	7	2.17E-01	12.4	
11	0	391.78	7	1	1.59	391.46	390	5	2.44E-02	42.3	
12	0	413.99	12	0	4.06	413.67	410	8	4.00E-02	28.9	
13	0	437.10	13	0	1.55	436.77	434	6	4.33E-02	27.7	
14	0	510.62	11	0	2.00	510.27	507	7	3.67E-02	30.2	

Acquisition date : 2-NOV-1998 14:37:49

Total number of lines in spectrum	14	
Number of unidentified lines	10	
Number of lines tentatively identified by NID	4	28.57%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.705E+02	4.705E+02	1.249E+02	26.54	
	Total Activity :		4.705E+02	4.705E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	2.707E+02	2.707E+02	1.371E+02	50.64	
	Total Activity :		2.707E+02	2.707E+02			

Grand Total Activity : 7.412E+02 7.412E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.435E+01	4.262E+02	4.263E+02	34.87	OK
	302.84	17.80	3.061E+00	5.647E+02	5.648E+02	120.92	OK
	356.01	60.00	3.844E+00	5.782E+02	5.782E+02	42.30	OK

Final Mean for 3 Valid Peaks = 4.705E+02+/- 1.249E+02 (26.54%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.158E+01	2.707E+02	2.707E+02	50.64	OK

Final Mean for 1 Valid Peaks = 2.707E+02+/- 1.371E+02 (50.64%)

Flag: "*" = Keyline

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	12.	122.06	4.3169E+01
CD-109	13.	88.03	4.3043E+02
PA-231	0.	9.28	6.2703E-07
PA-234	46.	21.72	1.6980E-02
NP-237	15.	86.50	1.2676E+02
AM-241	34.	59.54	1.5162E+01

Ams 11/21 98

VAX/VMS Peak Search Report Generated 2-NOV-1998 14:51:04.07

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017310_GE4_BAFIL_45196.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB4-40
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 14:45:41.
Sample ID : 9810173-10 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.19 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.28	104	49	1.27	35.06	34	4	3.46E-01	13.6	
2	0	62.37	40	48	1.09	62.14	60	7	1.32E-01	32.6	
3	1	77.23	8	5	1.33	77.00	76	8	2.55E-02	49.8	4.47E+01
4	1	81.10	227	15	1.47	80.87	76	8	7.57E-01	7.1	
5	0	113.22	37	16	1.95	112.98	107	11	1.24E-01	26.6	
6	0	187.44	11	18	1.51	187.17	183	8	3.80E-02	70.6	
7	0	276.35	22	5	1.48	276.07	272	7	7.29E-02	27.5	
8	0	303.59	30	8	1.70	303.29	299	9	9.84E-02	25.8	
9	0	356.12	110	2	1.29	355.81	352	7	3.67E-01	9.7	
10	7	383.62	18	1	2.45	383.30	380	14	6.05E-02	31.7	4.81E+00
11	7	386.94	18	4	2.48	386.62	380	14	5.97E-02	39.1	
12	7	391.27	10	5	2.92	390.95	380	14	3.46E-02	37.4	
13	0	437.26	14	0	1.16	436.93	434	6	4.67E-02	26.7	

00208

Sample ID : 9810173-10 Acquisition date : 2-NOV-1998 14:45:41

Total number of lines in spectrum 13
Number of unidentified lines 9
Number of lines tentatively identified by NID 4 30.77%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.344E+02	4.345E+02	1.145E+02	26.36	
	Total Activity :		4.344E+02	4.345E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	2.352E+02	2.352E+02	1.553E+02	66.03	
	Total Activity :		2.352E+02	2.352E+02			
	Grand Total Activity :		6.696E+02	6.696E+02			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.429E+01	4.338E+02	4.338E+02	34.32	OK
	302.84	17.80	3.068E+00	4.870E+02	4.871E+02	124.61	OK
	356.01	60.00	3.842E+00	4.303E+02	4.304E+02	43.58	OK

Final Mean for 3 Valid Peaks = 4.345E+02+/- 1.145E+02 (26.36%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.000E+01	2.352E+02	2.352E+02	66.03	OK

Final Mean for 1 Valid Peaks = 2.352E+02+/- 1.553E+02 (66.03%)

Flag: "*" = Keyline

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	11.	122.06	4.0516E+01
CD-109	13.	88.03	4.3194E+02
PA-231	0.	9.28	6.2703E-07
PA-234	47.	21.72	1.7180E-02
NP-237	15.	86.50	1.2840E+02
AM-241	35.	59.54	1.5381E+01

VAX/VMS Peak Search Report Generated 2-NOV-1998 15:02:47.63

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017311_GE4_BAFIL_45200.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB5-7
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 14:57:26.
Sample ID : 9810173-11 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.22 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.06	137	36	1.51	34.84	34	4	4.57E-01	11.4	
2	0	52.86	38	20	2.92	52.63	48	10	1.27E-01	27.3	
3	0	62.43	49	44	2.24	62.20	58	11	1.64E-01	29.1	
4	0	80.97	194	42	1.22	80.74	77	8	6.47E-01	9.2	
5	0	111.96	40	25	1.94	111.72	107	9	1.34E-01	27.4	
6	0	269.84	5	8	1.71	269.55	266	7	1.51E-02	117.2	
7	0	276.53	14	11	1.21	276.24	273	7	4.72E-02	46.5	
8	3	302.76	36	8	1.84	302.47	299	11	1.19E-01	21.7	3.50E+00
9	3	306.83	6	4	2.14	306.53	299	11	1.87E-02	121.3	
10	0	333.74	15	2	1.28	333.44	329	8	4.98E-02	30.7	
11	0	356.11	139	6	1.32	355.80	353	7	4.65E-01	8.9	
12	0	385.64	40	10	4.69	385.32	380	10	1.34E-01	21.5	
13	0	437.05	14	0	1.32	436.71	434	5	4.67E-02	26.7	

Sample ID : 9810173-11 Acquisition date : 2-NOV-1998 14:57:26

Total number of lines in spectrum	13	
Number of unidentified lines	9	
Number of lines tentatively identified by NID	4	30.77%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.167E+02	4.167E+02	1.144E+02	27.46	
	Total Activity :		4.167E+02	4.167E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	2.936E+02	2.936E+02	1.736E+02	59.14	
	Total Activity :		2.936E+02	2.936E+02			
	Grand Total Activity :		7.103E+02	7.103E+02			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.437E+01	3.689E+02	3.689E+02	36.18	OK
	302.84	17.80	3.059E+00	5.931E+02	5.932E+02	122.57	OK
	356.01	60.00	3.842E+00	5.449E+02	5.449E+02	42.86	OK

Final Mean for 3 Valid Peaks = 4.167E+02+/- 1.144E+02 (27.46%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	3.983E+01	2.936E+02	2.936E+02	59.14	OK

Final Mean for 1 Valid Peaks = 2.936E+02+/- 1.736E+02 (59.14%)

Flag: "*" = Keyline

Sample ID : 9810173-11 Acquisition date : 2-NOV-1998 14:57:26

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	11.	122.06	4.1882E+01
CD-109	9.	88.03	3.6644E+02
PA-231	0.	9.28	6.2703E-07
PA-234	39.	21.72	1.5808E-02
NP-237	13.	86.50	1.2216E+02
AM-241	29.	59.54	1.4144E+01

VAX/VMS Peak Search Report Generated 2-NOV-1998 15:14:36.00

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017312_GE4_BAFIL_45202.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB5-14
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 15:09:17.
Sample ID : 9810173-12 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.20 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.16	106	27	1.21	34.94	34	4	3.52E-01	12.8	
2	5	53.14	18	12	2.07	52.91	50	20	6.01E-02	40.9	4.91E+00
3	5	60.02	24	13	2.09	59.79	50	20	8.14E-02	36.5	
4	5	65.23	17	10	1.31	65.00	50	20	5.83E-02	41.2	
5	5	78.41	15	22	2.15	78.18	76	8	4.95E-02	49.4	3.88E+01
6	5	81.15	232	18	1.43	80.91	76	8	7.73E-01	6.8	
7	0	112.19	17	9	1.53	111.94	109	5	5.72E-02	35.4	
8	0	137.71	7	23	1.45	137.47	134	8	2.40E-02	119.5	
9	0	238.81	12	2	2.02	238.54	236	6	4.08E-02	32.9	
10	0	276.40	16	10	1.16	276.11	273	7	5.38E-02	41.2	
[redacted]	0	303.03	35	5	1.63	302.74	299	7	1.16E-01	20.2	
[redacted]	0	336.06	12	14	6.52	335.75	328	12	3.99E-02	70.3	
13	0	356.12	125	6	1.57	355.81	352	7	4.18E-01	9.4	
14	6	384.06	50	0	2.96	383.75	380	10	1.68E-01	13.0	4.00E+00
15	6	387.09	19	0	2.11	386.77	380	10	6.19E-02	32.3	
16	0	391.81	6	2	1.24	391.49	390	5	2.08E-02	49.5	
17	0	415.46	9	2	1.93	415.13	412	7	3.02E-02	41.5	
18	0	436.71	9	1	1.19	436.38	432	7	2.85E-02	42.3	
19	0	510.85	7	1	1.89	510.50	508	5	2.29E-02	45.0	

Total number of lines in spectrum 19
Number of unidentified lines 13
Number of lines tentatively identified by NID 6 31.58%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.631E+02	4.631E+02	1.216E+02	26.25	
	Total Activity :		4.631E+02	4.631E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	1.257E+02	1.257E+02	1.048E+02	83.35	
AM-241	432.20Y	1.00	1.291E+01	1.291E+01	0.948E+01	73.42	
	Total Activity :		1.386E+02	1.386E+02			

Grand Total Activity : 6.017E+02 6.018E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.426E+01	4.439E+02	4.439E+02	34.19	OK
	302.84	17.80	3.062E+00	5.748E+02	5.749E+02	121.21	OK
	356.01	60.00	3.842E+00	4.903E+02	4.904E+02	43.31	OK

Final Mean for 3 Valid Peaks = 4.631E+02+/- 1.216E+02 (26.25%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	3.299E+01	1.257E+02	1.257E+02	83.35	OK

Final Mean for 1 Valid Peaks = 1.257E+02+/- 1.048E+02 (83.35%)

AM-241	59.54	35.90*	4.744E+01	1.291E+01	1.291E+01	73.42	OK

Final Mean for 1 Valid Peaks = 1.291E+01+/- 9.483E+00 (73.42%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810173-12

Acquisition date : 2-NOV-1998 15:09:17

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	7.	122.06	3.4652E+01
CD-109	12.	88.03	4.1669E+02
PA-231	0.	9.28	6.2703E-07
PA-234	35.	21.72	1.4937E-02
NP-237	14.	86.50	1.2604E+02

Ams 11/24/98

VAX/VMS Peak Search Report Generated 2-NOV-1998 14:44:03.37

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017313_GE1_BAFIL_45195.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB5-22
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 14:38:45.
Sample ID : 9810173-13 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE1 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.10 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	30.89	703	33	1.57	30.98	26	14	2.34E+00	4.0	3.05E+00
2	3	35.22	184	25	1.80	35.31	26	14	6.13E-01	8.5	
3	0	53.20	27	39	2.16	53.31	49	7	9.02E-02	42.7	
4	0	61.36	79	73	3.49	61.48	56	10	2.64E-01	23.1	
5	0	81.06	277	52	1.52	81.21	76	10	9.22E-01	7.8	
6	1	111.59	95	9	2.42	111.78	105	16	3.17E-01	11.1	3.01E+00
7	1	116.58	20	5	2.43	116.78	105	16	6.54E-02	37.2	
8	0	212.59	10	16	1.68	212.90	208	8	3.33E-02	76.2	
9	0	224.51	9	19	2.16	224.83	220	7	2.98E-02	87.8	
10	0	237.58	17	12	5.69	237.91	233	11	5.73E-02	47.6	
11	0	276.45	15	9	2.21	276.82	273	7	5.03E-02	41.5	
12	0	302.79	44	21	1.38	303.19	299	10	1.45E-01	24.6	
13	0	334.30	19	19	1.80	334.73	329	9	6.19E-02	49.2	
14	0	338.27	13	2	2.64	338.71	337	5	4.23E-02	34.9	
15	0	355.84	186	6	1.93	356.29	352	8	6.20E-01	7.7	
16	3	383.73	48	9	2.60	384.21	380	10	1.58E-01	21.8	3.46E+00
17	3	386.88	50	8	1.97	387.37	380	10	1.66E-01	19.8	
18	0	413.38	9	0	2.99	413.89	411	6	3.00E-02	33.3	
19	0	438.30	20	9	2.62	438.84	431	12	6.72E-02	37.1	

Acquisition date : 2-NOV-1998 14:38:45

Total number of lines in spectrum	19	
Number of unidentified lines	15	
Number of lines tentatively identified by NID	4	21.05%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	5.140E+02	5.140E+02	1.372E+02	26.69	
	Total Activity :		5.140E+02	5.140E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	1.250E+03	1.250E+03	0.706E+03	56.53	
AM-241	432.20Y	1.00	1.323E+02	1.323E+02	0.748E+02	56.53	
	Total Activity :		1.382E+03	1.382E+03			
	Grand Total Activity :		1.896E+03	1.896E+03			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.407E+01	5.370E+02	5.370E+02	40.42	OK
	302.84	17.80	6.044E+00	3.652E+02	3.653E+02	96.09	OK
	356.01	60.00	5.128E+00	5.442E+02	5.443E+02	37.67	OK

Final Mean for 3 Valid Peaks = 5.140E+02+/- 1.372E+02 (26.69%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.501E+01	1.250E+03	1.250E+03	56.53	OK

Final Mean for 1 Valid Peaks = 1.250E+03+/- 7.064E+02 (56.53%)

AM-241	59.54	35.90*	1.501E+01	1.323E+02	1.323E+02	56.53	OK

Final Mean for 1 Valid Peaks = 1.323E+02+/- 7.477E+01 (56.53%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810173-13

Acquisition date : 2-NOV-1998 14:38:45

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	18.	122.06	1.9937E+01
CD-109	27.	88.03	4.7626E+02
PA-231	322.	9.28	2.2446E+02
PA-234	102.	21.72	5.1053E+01
NP-237	27.	86.50	1.3888E+02

Ams 11/2198

VAX/VMS Peak Search Report Generated 2-NOV-1998 14:51:54.39

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017314_GE1_BAFIL_45197.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB5-32
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 14:46:33.
Sample ID : 9810173-14 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE1 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.12 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	30.91	732	35	1.63	30.99	25	15	2.44E+00	3.9	4.43E+00
2	3	35.24	157	37	1.97	35.34	25	15	5.24E-01	12.6	
3	0	52.28	8	61	1.10	52.40	50	7	2.71E-02	161.7	
4	0	61.64	33	88	1.32	61.76	58	7	1.11E-01	49.8	
5	0	81.13	250	41	1.47	81.28	77	9	8.34E-01	7.9	
6	1	112.03	60	30	2.42	112.22	107	13	1.99E-01	19.7	2.45E+00
7	1	115.03	16	27	2.43	115.22	107	13	5.43E-02	71.7	
8	0	196.22	11	16	1.29	196.50	193	6	3.57E-02	67.1	
9	0	209.37	10	11	1.01	209.67	207	6	3.40E-02	59.3	
10	0	269.79	10	7	2.24	270.16	266	7	3.42E-02	52.7	
11	0	276.51	13	14	1.90	276.89	274	7	4.41E-02	52.6	
[redacted]	2	302.59	69	7	2.29	302.99	297	15	2.29E-01	13.0	2.71E+00
[redacted]	2	307.60	10	7	2.84	308.01	297	15	3.26E-02	55.4	
14	0	333.94	35	3	5.33	334.38	328	12	1.16E-01	19.6	
15	0	355.81	154	6	1.84	356.27	352	10	5.15E-01	8.5	
16	2	383.39	31	23	2.89	383.87	380	10	1.03E-01	31.6	1.10E+01
17	2	386.87	24	23	1.94	387.35	380	10	7.91E-02	35.3	
18	0	391.34	16	3	2.33	391.83	390	6	5.17E-02	32.1	
19	0	436.64	8	6	1.79	437.18	434	7	2.81E-02	57.1	
20	0	468.93	11	2	3.42	469.50	465	8	3.67E-02	37.5	

00221

Acquisition date : 2-NOV-1998 14:46:33

Total number of lines in spectrum	20	
Number of unidentified lines	16	
Number of lines tentatively identified by NID	4	20.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.736E+02	4.737E+02	1.259E+02	26.58	
	Total Activity :		4.736E+02	4.737E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	5.255E+02	5.255E+02	5.508E+02	104.82	
	Total Activity :		5.255E+02	5.255E+02			

Grand Total Activity : 9.991E+02 9.991E+02

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.406E+01	4.857E+02	4.858E+02	40.51	OK
	302.84	17.80	6.048E+00	5.754E+02	5.755E+02	86.52	OK
	356.01	60.00	5.129E+00	4.519E+02	4.519E+02	38.39	OK

Final Mean for 3 Valid Peaks = 4.737E+02+/- 1.259E+02 (26.58%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.500E+01	5.255E+02	5.255E+02	104.82	OK

Final Mean for 1 Valid Peaks = 5.255E+02+/- 5.508E+02 (104.82%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810173-14

Acquisition date : 2-NOV-1998 14:46:33

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	23.	122.06	2.2393E+01
CD-109	27.	88.03	4.7564E+02
PA-231	437.	9.28	2.6043E+02
PA-234	115.	21.72	5.4109E+01
NP-237	28.	86.50	1.4086E+02
AM-241	115.	59.54	8.7403E+01

VAX/VMS Peak Search Report Generated 2-NOV-1998 15:03:24.02

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017315_GE1_BAFIL_45201.CNF
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB5-40
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 14:58:06.
Sample ID : 9810173-15 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE1 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.11 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	30.92	690	32	1.48	31.01	27	14	2.30E+00	4.0	4.89E+00
2	4	35.26	201	24	2.05	35.35	27	14	6.70E-01	10.0	
3	1	62.09	62	39	2.36	62.21	48	21	2.07E-01	22.4	2.57E+00
4	1	65.80	35	33	2.01	65.93	48	21	1.18E-01	32.6	
5	0	81.08	313	30	1.43	81.23	76	10	1.04E+00	6.5	
6	0	92.06	20	31	1.75	92.23	88	9	6.70E-02	54.9	
7	6	111.17	60	21	3.90	111.36	107	17	1.99E-01	21.3	1.55E+00
8	6	115.81	19	19	2.21	116.00	107	17	6.47E-02	46.3	
9	0	276.10	22	8	2.19	276.48	272	9	7.20E-02	32.8	
10	0	303.05	41	20	1.60	303.45	298	9	1.37E-01	25.1	
11	0	333.97	15	11	1.39	334.41	331	8	5.16E-02	43.8	
12	0	355.84	154	15	1.70	356.30	351	10	5.13E-01	9.3	
13	4	383.71	42	0	2.60	384.20	381	13	1.41E-01	17.1	3.28E+00
14	4	386.75	57	0	2.63	387.24	381	13	1.90E-01	16.8	
15	0	418.94	10	2	2.27	419.46	417	6	3.28E-02	41.3	
16	0	510.30	10	0	2.96	510.90	507	7	3.33E-02	31.6	

00228

Total number of lines in spectrum 16
Number of unidentified lines 12
Number of lines tentatively identified by NID 4 25.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.809E+02	4.809E+02	1.308E+02	27.19	
	Total Activity :		4.809E+02	4.809E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	9.812E+02	9.812E+02	5.439E+02	55.43	
	Total Activity :		9.812E+02	9.812E+02			

Grand Total Activity : 1.462E+03 1.462E+03

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.406E+01	6.073E+02	6.074E+02	39.55	OK
	302.84	17.80	6.039E+00	3.449E+02	3.449E+02	96.48	OK
	356.01	60.00	5.128E+00	4.509E+02	4.509E+02	39.13	OK

Final Mean for 3 Valid Peaks = 4.809E+02+/- 1.308E+02 (27.19%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.498E+01	9.812E+02	9.812E+02	55.43	OK

Final Mean for 1 Valid Peaks = 9.812E+02+/- 5.439E+02 (55.43%)

Flag: "*" = Keyline

Sample ID : 9810173-15 Acquisition date : 2-NOV-1998 14:58:06

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	24.	122.06	2.2504E+01
CD-109	30.	88.03	4.9505E+02
PA-231	351.	9.28	2.3427E+02
PA-234	98.	21.72	4.9983E+01
NP-237	24.	86.50	1.3255E+02
AM-241	108.	59.54	8.5068E+01

Arthur D Little

Dow Cogburn – Shell Westgate Site Investigation

Volatile Organic Compounds in Soil

Final Laboratory Report

Report to:
Mr. James Rice
Arthur D. Little, Inc.

November 11, 1998

Environmental Monitoring and Analysis

Arthur D. Little, Inc.
Acorn Park
Cambridge, Massachusetts
02140-2390

Reference No.: 38051-01

ARTHUR D. LITTLE
Environmental Monitoring and Analysis Unit
Volatile Organic Compounds in Soil and Water Blank Samples
Project Narrative

Entered By:	Richard Purdy	Date:	November 11, 1998
Client:	Dow Cogburn	Package Number:	1353
Project Name:	Shell Westgate	Project Number:	38051

Volatile Organic Compounds in Soil and Water Blank Samples

Sample Receipt

Arthur D. Little, Inc. received twenty-four (24) soil samples and two (2) water blank samples on September 25, 1998 on behalf of Dow Cogburn. All samples were received intact and in good condition. The soil samples were preserved with methanol prior to shipping. Additional pertinent sample receipt information is noted on the chain of custody records included as part of this deliverable. Data for the following samples are reported in this package:

WG-SB1-7	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7
WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42	WG-SB3-7	WG-SB3-10
WG-SB3-24	WG-SB3-30	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30
WG-SB4-40	WG-SB5-7	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40

Laboratory Methods

The samples were analyzed for Volatile Organic Compounds in accordance with Method 8260B, "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)" (USEPA SW846, *Test Methods for Evaluating Solid Waste*). The samples were prepared for analysis diluting the methanol to a known volume and spiking a 200µL portion of the methanol extract into reagent water. The resulting solution was analyzed by purge and trap GC/MS.

Quality control samples include preparation blanks, laboratory control samples (BS/BSD), matrix spike and duplicate samples.

Quality Assurance/Quality Control

Quality assurance and quality control procedures for the analyses are documented in the laboratory quality assurance plan and standard operating procedures (SOPs).

Approved By: _____ Date: 11/11/98

ARTHUR D. LITTLE
Environmental Monitoring and Analysis Unit
Volatile Organic Compounds in Soil and Water Blank Samples
Project Narrative

The mass spectrometer tune is verified using BFB at the start of each analytical sequence, before the calibration. Continuing calibration standards are analyzed every twelve hours. Target compounds are quantified from the average response factor (RRF) of the calibration curve.

Quality assurance audits were performed on all data generated as part of this deliverable. Please note the following:

- Methanol had been added to the soils during the sampling process, limiting the laboratory to the methanol dilution analysis technique.
- Initial and continuing calibration standards met quality control requirements with the exception of the %RSD for vinyl chloride in the initial calibration. This compound was not detected in the samples.
- The recoveries for the surrogate and matrix spike compounds met control limit requirements. Duplicate analyses met precision requirements.

The final report includes the following components:

- Narrative – includes project discussion, sample listing, report qualifiers
- Chain of Custody – includes all signed chain of custody records and observation forms for the reported field samples.
- Data Tables – includes data summary, surrogate recovery summary and quality control results

The minimum reporting limits (MRL) were adjusted for sample size and dilution amounts. The minimum reporting limits (MRL) were calculated based on the low calibration standard (10 µg/L).

Qualifiers used in the reporting of the analytical data are described in the table of Report Qualifiers.

Approved By: _____ Date: 11/11/04

Arthur D Little

ARTHUR D. LITTLE
Environmental Monitoring and Analysis Unit
Volatile Organic Compounds in Soil and Water Blank Samples
Project Narrative

Report Qualifiers

Qualifier	Explanation
J	Concentration between the adjusted minimum reporting limit (MRL) and the adjusted method detection limit (MDL)
ND	Concentration below MDL
D	Concentration quantitated from dilution analysis
B	Detected in the associated procedural blank
DO	Diluted out; result could not be measured

Additional qualifiers may be used as defined in the individual data reports or project narrative

Cooler Num 1 of 1

Arthur D. Little, Inc.

CHAIN OF CUSTODY RECORD

Page 1 of 2

PROJ. NO.	PROJECT NAME
38051	SHELL WESTGATE

SAMPLERS: (Signature) Henry Bond

SAMPLE/ STATION NUMBER	DATE	TIME	*COMP	*GRAB	STATION LOCATION	PRESERVATION	Analyses: VOC	# vials	Remarks: ADL LAB ID	SAMPLE CONDITION UPON RECEIPT
WG-SB1-TB	9/23/98	0830		W		NONE/HCl MeOH	X	2	98D2995	
WG-SB1-7		0840		S		Me OH		1	98D2996	
WG-SB1-12		0900						1	98D2997	
WG-SB1-20		0930						1	98D2998	
WG-SB1-30		1020						1	98D2999	
WG-SB1-40		1100						2	98D3000	
WG-SB2-7		1245						2	98D3001	
WG-SB2-10		1300						1	98D3002	
WG-SB2-20		1320						1	98D3003	
WG-SB2-30		1400						2	98D3004	
WG-SB2-42		1415						1	98D3005	
WG-SB3-7		1510						2	98D3006	
WG-SB3-10		1515						1	98D3007	
WG-SB3-24		1545						2	98D3008	
WG-SB3-30	↓	1605		↓		↓	↓	2	98D3009	

Does COC match samples? (Y or N)
Broken container: Y or (N)
Received within holding time (Y) or N
COC seal intact (Y or N / Non)
Any other problems: Y or (N)
If problems, Client contacted: Y or N
Date contacted: / /
Temperature (C): 4.4

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Henry Bond	9/24/98 1700	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature) Linda T. Le 9/25/98 10:00

Shipped to:
Arthur D. Little, Inc.
20 Acorn Park
Cambridge, MA 02140
ATTN: Henry Camp

Date/Time

Carrier: Fedex AirBill #805866620308

Distribution: Original Accompanies Shipment; Yellow Copy to Case Manager; Pink Copy for Field Files

Arthur D. Little, Inc. 25 Acorn Park, Cambridge, MA 02140 (617) 498-5000
Telex 921436 Tel-Fax (617) 498-7200

*Letter denotes sample matrix
W - Water S - Soil LW - Liquid Waste SW - Solid Waste

Cooler Num 1 of 1

Arthur D. Little, Inc.

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
38051	SHELL WESTGATE

SAMPLERS: *(Signature)* Henry Bond

SAMPLE/ STATION NUMBER	DATE	TIME	•COMP	•GRAB	STATION LOCATION	PRESERVATION	Analyses: VOC	# VIALS	Remarks: ADL LAB ID	SAMPLE CONDITION UPON RECEIPT
WG-SB3-40	9/23/98	1625		S		MeOH	X	2	98D3010	
WG-SB4-5	9/24/98	0810						1	98D3011	
WG-SB4-14		0830						1	98D3012	
WG-SB4-30		0925						1	98D3013	
WG-SB4-40		0945						1	98D3014	
WG-SB5-7		1045						1	98D3015	
WG-SB5-14		1105						1	98D3016	
WG-SB5-22		1120						1	98D3017	
WG-SB5-32		1140						1	98D3018	
WG-SB5-40	↓	1200		↓		↓		1	98D3019	
WG-SB5-EB	9/24/98	1050		W		NONE		1	98D3020	

Does COC match samples (Y or N)
Broken container: Y or N (N)
Received within holding time: (Y) or N
COC seal intact (Y) or N / None
Any other problems: Y or (N)
If problems, Client contacted: Y or N
Date contacted: / /
Temperature (°C): 4.4

Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
Henry Bond	9/24/98 1700	
Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date/Time	Received for Laboratory by: *(Signature)*
		Linh T. Le 9/25/98 10:00

Shipped to:
Arthur D. Little, Inc.
20 Acorn Park
Cambridge, MA 02140
ATTN: Henry Camp

Date/Time

Carrier: fedex Airbill
#8005866 20308

Distribution: Original Accompanies Shipment; Yellow Copy to Case Manager; Pink Copy for Field Files

*Letter denotes sample matrix
W - Water S - Soil LW - Liquid Waste SW - Solid Waste

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - Main - Not Surrogate Corrected

Field ID	WG-SB1-TB	WG-SB5-EB	WG-SB1-7	WG-SB1-12	WG-SB1-20
Lab ID	98D2995	98D3020	98D2996	98D2997	98D2998
Lab Batch	B0167	B0167	B0167	B0167	B0167
File	DV2560.D	DV2561.D	DV2562.D	DV2563.D	DV2564.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	WET	WET	WET	WET	WET
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	5 mL	5 mL	0.175 g	0.313 g	0.254 g
Associated Blank	092998VBLK01	092998VBLK01	092998VBLK01	092998VBLK01	092998VBLK01
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	09/29/98	09/29/98	09/29/98	09/29/98	09/29/98
Analysis Date	09/29/98	09/29/98	09/29/98	09/29/98	09/29/98
Min Reporting Limit	10	10	280	160	200
Units	ug/L	ug/L	ug/Kg	ug/Kg	ug/Kg
Dichlorodifluoromethane	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND
Acetone	41	29	ND	ND	ND
Methylene chloride	3.4 JB	5.4 JB	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND
2,2-Dichloropropane	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND
1,1-Dichloropropene	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND
Dibromomethane	3.1 J	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND
1,3-Dichloropropane	ND	ND	ND	ND	ND
2-Hexanone	2.1 J	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
m,p-Xylene	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND	ND
Bromobenzene	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND
n-Propylbenzene	ND	ND	ND	ND	ND
2-Chlorotoluene	ND	ND	ND	ND	ND
4-Chlorotoluene	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND
tert-Butylbenzene	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND
sec-Butylbenzene	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND
4-Isopropyltoluene	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND

Arthur D Little

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - Main - Not Surrogate Corrected

Field ID	WG-SB1-TB	WG-SB5-EB	WG-SB1-7	WG-SB1-12	WG-SB1-20
Lab ID	98D2995	98D3020	98D2996	98D2997	98D2998
Lab Batch	B0167	B0167	B0167	B0167	B0167
File	DV2560.D	DV2561.D	DV2562.D	DV2563.D	DV2564.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	WET	WET	WET	WET	WET
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	5 mL	5 mL	0.175 g	0.313 g	0.254 g
Associated Blank	092998VBLK01	092998VBLK01	092998VBLK01	092998VBLK01	092998VBLK01
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	09/29/98	09/29/98	09/29/98	09/29/98	09/29/98
Analysis Date	09/29/98	09/29/98	09/29/98	09/29/98	09/29/98
Min Reporting Limit	10	10	280	160	200
Units	ug/L	ug/L	ug/Kg	ug/Kg	ug/Kg
1,2-Dichlorobenzene	ND	ND	ND	ND	ND
n-Butylbenzene	0.74 JB	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.4 JB	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND
Naphthalene	4.8 JB	0.38 JB	ND	ND	ND
1,2,3-Trichlorobenzene	2.1 JB	ND	ND	ND	ND
%Dibromofluoromethane	93	89	92	98	98
%Toluene-d8	97	97	96	96	97
%4-Bromofluorobenzene	89	92	87	91	91

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - Main - Not Surrogate Corrected

Field ID	WG-SB1-30	WG-SB1-40	WG-SB1-40	WG-SB2-7	WG-SB2-10
Lab ID	98D2999	98D3000	98D3000DUP	98D3001	98D3002
Lab Batch	B0167	B0167	B0167	B0167	B0167
File	DV2565.D	DV2572.D	DV2573.D	DV2574.D	DV2575.D
Sample Type	SAMP	SAMP	QC	SAMP	SAMP
Weight Basis	WET	WET	WET	WET	WET
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	0.441 g	0.311 g	0.311 g	0.132 g	0.268 g
Associated Blank	092998VBLK01	092998VBLK02	092998VBLK02	092998VBLK02	092998VBLK02
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	09/29/98	09/29/98	09/30/98	09/30/98	09/30/98
Analysis Date	09/29/98	09/29/98	09/30/98	09/30/98	09/30/98
Min Reporting Limit	110	160	160	380	190
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Dichlorodifluoromethane	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND
2,2-Dichloropropane	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND
1,1-Dichloropropene	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND
Dibromomethane	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND
1,3-Dichloropropane	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
m,p-Xylene	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND	ND
Bromobenzene	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND
n-Propylbenzene	ND	ND	ND	ND	ND
2-Chlorotoluene	ND	ND	ND	ND	ND
4-Chlorotoluene	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND
tert-Butylbenzene	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND
sec-Butylbenzene	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND
4-Isopropyltoluene	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - Main - Not Surrogate Corrected

Field ID	WG-SB1-30	WG-SB1-40	WG-SB1-40	WG-SB2-7	WG-SB2-10
Lab ID	98D2999	98D3000	98D3000DUP	98D3001	98D3002
Lab Batch	B0167	B0167	B0167	B0167	B0167
File	DV2585.D	DV2572.D	DV2573.D	DV2574.D	DV2575.D
Sample Type	SAMP	SAMP	QC	SAMP	SAMP
Weight Basis	WET	WET	WET	WET	WET
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	0.441 g	0.311 g	0.311 g	0.132 g	0.268 g
Associated Blank	092998VBLK01	092998VBLK02	092998VBLK02	092998VBLK02	092998VBLK02
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	09/29/98	09/29/98	09/30/98	09/30/98	09/30/98
Analysis Date	09/29/98	09/29/98	09/30/98	09/30/98	09/30/98
Min Reporting Limit	110	160	160	380	190
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
1,2-Dichlorobenzene	ND	ND	ND	ND	ND
n-Butylbenzene	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND
%Dibromofluoromethane	94	90	93	87	93
%Toluene-d8	100	97	96	99	96
%4-Bromofluorobenzene	92	91	88	92	89

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - Main - Not Surrogate Corrected

Field ID	WG-SB2-30	WG-SB2-30	WG-SB2-42	WG-SB3-7	WG-SB3-10
Lab ID	98D3004MS	98D3004MSD	98D3005	98D3006	98D3007
Lab Batch	B0167	B0167	B0167	B0167	B0167
File	DV2578.D	DV2579.D	DV2580.D	DV2581.D	DV2582.D
Sample Type	QC	QC	SAMP	SAMP	SAMP
Weight Basis	WET	WET	WET	WET	WET
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	0.28 g	0.28 g	0.312 g	0.277 g	0.285 g
Associated Blank	092998VBLK02	092998VBLK02	092998VBLK02	092998VBLK02	092998VBLK02
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
Analysis Date	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
Min Reporting Limit	180	180	180	180	180
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Dichlorodifluoromethane	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND	ND
1,1-Dichloroethene	540	560	ND	ND	ND
Acetone	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND
2,2-Dichloropropane	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND
1,1-Dichloropropene	ND	ND	ND	ND	ND
Benzene	750	760	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND
Trichloroethene	760	750	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND
Dibromomethane	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND
Toluene	760	750	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND
1,3-Dichloropropane	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND
Chlorobenzene	770	770	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
m,p-Xylene	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND	ND
Bromobenzene	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND
n-Propylbenzene	ND	ND	ND	ND	ND
2-Chlorotoluene	ND	ND	ND	ND	ND
4-Chlorotoluene	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND
tert-Butylbenzene	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND
sec-Butylbenzene	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND
4-Isopropyltoluene	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - Main - Not Surrogate Corrected

Field ID	WG-SB2-30	WG-SB2-30	WG-SB2-42	WG-SB3-7	WG-SB3-10
Lab ID	98D3004MS	98D3004MSD	98D3005	98D3006	98D3007
Lab Batch	B0167	B0167	B0167	B0167	B0167
File	DV2578.D	DV2579.D	DV2580.D	DV2581.D	DV2582.D
Sample Type	QC	QC	SAMP	SAMP	SAMP
Weight Basis	WET	WET	WET	WET	WET
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	0.28 g	0.28 g	0.312 g	0.277 g	0.285 g
Associated Blank	092998VBLK02	092998VBLK02	092998VBLK02	092998VBLK02	092998VBLK02
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
Analysis Date	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
Min Reporting Limit	180	180	180	180	180
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
1,2-Dichlorobenzene	ND	ND	ND	ND	ND
n-Butylbenzene	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND
%Dibromofluoromethane	85	86	85	87	95
%Toluene-d8	97	100	97	92	91
%4-Bromofluorobenzene	89	83	88	90	89

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - Main - Not Surrogate Corrected

Field ID	WG-SB3-24	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30
Lab ID	98D3008	98D3010	98D3011	98D3012	98D3013
Lab Batch	B0167	B0167	B0167	B0167	B0167
File	DV2583.D	DV2589.D	DV2590.D	DV2591.D	DV2592.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	WET	WET	WET	WET	WET
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	0.268 g	0.324 g	0.28 g	0.255 g	0.304 g
Associated Blank	092998VBLK02	093098VBLK01	093098VBLK01	093098VBLK01	093098VBLK01
Field Date	09/23/98	09/23/98	09/24/98	09/24/98	09/24/98
Extract Date	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
Analysis Date	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
Min Reporting Limit	190	150	180	200	160
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Dichlorodifluoromethane	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND
2,2-Dichloropropane	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND
1,1-Dichloropropene	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND
Dibromomethane	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND
1,3-Dichloropropane	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
m,p-Xylene	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND	ND
Bromobenzene	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND
n-Propylbenzene	ND	ND	ND	ND	ND
2-Chlorotoluene	ND	ND	ND	ND	ND
4-Chlorotoluene	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND
tert-Butylbenzene	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND
sec-Butylbenzene	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND
4-Isopropyltoluene	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - Main - Not Surrogate Corrected

Field ID	WG-SB3-24	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30
Lab ID	98D3008	98D3010	98D3011	98D3012	98D3013
Lab Batch	B0167	B0167	B0167	B0167	B0167
File	DV2583.D	DV2589.D	DV2590.D	DV2591.D	DV2592.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	WET	WET	WET	WET	WET
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	0.268 g	0.324 g	0.28 g	0.255 g	0.304 g
Associated Blank	092998VBLK02	093098VBLK01	093098VBLK01	093098VBLK01	093098VBLK01
Field Date	09/23/98	09/23/98	09/24/98	09/24/98	09/24/98
Extract Date	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
Analysis Date	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
Min Reporting Limit	190	150	180	200	160
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
1,2-Dichlorobenzene	ND	ND	ND	ND	ND
n-Butylbenzene	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND
%Dibromofluoromethane	89	85	89	87	87
%Toluene-d8	94	98	95	95	96
%4-Bromofluorobenzene	83	87	88	86	84

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - Main - Not Surrogate Corrected

Field ID	WG-SB4-40	WG-SB5-7	WG-SB5-14	WG-SB5-22	WG-SB5-32
Lab ID	98D3014	98D3015	98D3016	98D3017	98D3018
Lab Batch	B0167	B0167	B0167	B0167	B0167
File	DV2593.D	DV2594.D	DV2595.D	DV2596.D	DV2597.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	WET	WET	WET	WET	WET
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	0.299 g	0.262 g	0.286 g	0.262 g	0.334 g
Associated Blank	093098VBLK01	093098VBLK01	093098VBLK01	093098VBLK01	093098VBLK01
Field Date	09/24/98	09/24/98	09/24/98	09/24/98	09/24/98
Extract Date	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
Analysis Date	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
Min Reporting Limit	170	190	170	190	150
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Dichlorodifluoromethane	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND
2,2-Dichloropropane	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND
1,1-Dichloropropene	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND
Dibromomethane	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND
1,3-Dichloropropane	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND
m,p-Xylene	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND	ND
Bromobenzene	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND
n-Propylbenzene	ND	ND	ND	ND	ND
2-Chlorotoluene	ND	ND	ND	ND	ND
4-Chlorotoluene	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND
tert-Butylbenzene	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND
sec-Butylbenzene	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND
4-Isopropyltoluene	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - Main - Not Surrogate Corrected

Field ID	WG-SB4-40	WG-SB5-7	WG-SB5-14	WG-SB5-22	WG-SB5-32
Lab ID	98D3014	98D3015	98D3016	98D3017	98D3018
Lab Batch	B0167	B0167	B0167	B0167	B0167
File	DV2593.D	DV2594.D	DV2595.D	DV2596.D	DV2597.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	WET	WET	WET	WET	WET
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	0.299 g	0.262 g	0.286 g	0.262 g	0.334 g
Associated Blank	093098VBLK01	093098VBLK01	093098VBLK01	093098VBLK01	093098VBLK01
Field Date	09/24/98	09/24/98	09/24/98	09/24/98	09/24/98
Extract Date	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
Analysis Date	09/30/98	09/30/98	09/30/98	09/30/98	09/30/98
Min Reporting Limit	170	190	170	190	150
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
1,2-Dichlorobenzene	ND	ND	ND	ND	ND
n-Butylbenzene	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND
%Dibromofluoromethane	84	84	86	84	85
%Toluene-d8	95	100	96	100	103
%4-Bromofluorobenzene	87	85	84	86	88

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - Main - Not Surrogate Corrected

Field ID	WG-SB5-40	WG-SB2-30	WG-SB2-20	WG-SB3-30
Lab ID	98D3019	98D3004	98D3003	98D3009
Lab Batch	B0167	B0167	B0167	B0167
File	DV2598.D	DV2601.D	DV2608.D	DV2609.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Weight Basis	WET	WET	WET	WET
Matrix	SOIL	SOIL	SOIL	SOIL
Sample Size	0.313 g	0.28 g	0.332 g	0.353 g
Associated Blank	093098VBLK01	093098VBLK01	100198VBLK01	100198VBLK01
Field Date	09/24/98	09/23/98	09/23/98	09/23/98
Extract Date	09/30/98	10/01/98	10/01/98	10/01/98
Analysis Date	09/30/98	10/01/98	10/01/98	10/01/98
Min Reporting Limit	160	180	150	140
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Dichlorodifluoromethane	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND
Acetone	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND
2,2-Dichloropropane	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND
1,1-Dichloropropene	ND	ND	ND	ND
Benzene	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND
Dibromomethane	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND
Toluene	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND
1,3-Dichloropropane	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND
m,p-Xylene	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND
Styrene	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND
Bromobenzene	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND
n-Propylbenzene	ND	ND	ND	ND
2-Chlorotoluene	ND	ND	ND	ND
4-Chlorotoluene	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND
tert-Butylbenzene	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND
sec-Butylbenzene	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND
4-Isopropyltoluene	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - Main - Not Surrogate Corrected

Field ID	WG-SB5-40	WG-SB2-30	WG-SB2-20	WG-SB3-30
Lab ID	98D3019	98D3004	98D3003	98D3009
Lab Batch	B0167	B0167	B0167	B0167
File	DV2598.D	DV2601.D	DV2608.D	DV2609.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Weight Basis	WET	WET	WET	WET
Matrix	SOIL	SOIL	SOIL	SOIL
Sample Size	0.313 g	0.28 g	0.332 g	0.353 g
Associated Blank	093098VBLK01	093098VBLK01	100198VBLK01	100198VBLK01
Field Date	09/24/98	09/23/98	09/23/98	09/23/98
Extract Date	09/30/98	10/01/98	10/01/98	10/01/98
Analysis Date	09/30/98	10/01/98	10/01/98	10/01/98
Min Reporting Limit	160	180	150	140
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg
1,2-Dichlorobenzene	ND	ND	ND	ND
n-Butylbenzene	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND
1,2,3-Trichlorobenzene	ND	ND	ND	ND
%Dibromofluoromethane	87	93	84	85
%Toluene-d8	100	103	98	98
%4-Bromofluorobenzene	86	93	85	83

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - DUP - Not Surrogate Corrected

Field ID	WG-SB1-40	WG-SB1-40		
Lab ID	98D3000	98D3000DUP		
Lab Batch	B0167	B0167		
File	DV2572.D	DV2573.D		
Sample Type	SAMP	QC		
Weight Basis	WET	WET		
Matrix	SOIL	SOIL		
Sample Size	0.311 g	0.311 g		
Associated Blank	092998VBLK02	092998VBLK02		
Field Date	09/23/98	09/23/98		
Extract Date	09/29/98	09/30/98		
Analysis Date	09/29/98	09/30/98		
Min Reporting Limit	160	160		
Units	ug/Kg	ug/Kg	RPD	Q
Dichlorodifluoromethane	ND	ND		
Chloromethane	ND	ND		
Vinyl chloride	ND	ND		
Bromomethane	ND	ND		
Chloroethane	ND	ND		
Trichlorofluoromethane	ND	ND		
1,1-Dichloroethene	ND	ND		
Acetone	ND	ND		
Methylene chloride	ND	ND		
trans-1,2-Dichloroethene	ND	ND		
1,1-Dichloroethane	ND	ND		
2,2-Dichloropropane	ND	ND		
cis-1,2-Dichloroethene	ND	ND		
2-Butanone (MEK)	ND	ND		
Bromochloromethane	ND	ND		
Chloroform	ND	ND		
1,1,1-Trichloroethane	ND	ND		
Carbon tetrachloride	ND	ND		
1,1-Dichloropropene	ND	ND		
Benzene	ND	ND		
1,2-Dichloroethane	ND	ND		
Trichloroethene	ND	ND		
1,2-Dichloropropane	ND	ND		
Dibromomethane	ND	ND		
Bromodichloromethane	ND	ND		
cis-1,3-Dichloropropene	ND	ND		
4-Methyl-2-pentanone	ND	ND		
Toluene	ND	ND		
trans-1,3-Dichloropropene	ND	ND		
1,1,2-Trichloroethane	ND	ND		
Tetrachloroethene	ND	ND		
1,3-Dichloropropane	ND	ND		
2-Hexanone	ND	ND		
Dibromochloromethane	ND	ND		
1,2-Dibromoethane	ND	ND		
Chlorobenzene	ND	ND		
1,1,1,2-Tetrachloroethane	ND	ND		
Ethylbenzene	ND	ND		
m,p-Xylene	ND	ND		
o-Xylene	ND	ND		
Styrene	ND	ND		
Bromoform	ND	ND		
Isopropylbenzene	ND	ND		
Bromobenzene	ND	ND		
1,1,2,2-Tetrachloroethane	ND	ND		
1,2,3-Trichloropropane	ND	ND		
n-Propylbenzene	ND	ND		
2-Chlorotoluene	ND	ND		
4-Chlorotoluene	ND	ND		
1,3,5-Trimethylbenzene	ND	ND		
tert-Butylbenzene	ND	ND		
1,2,4-Trimethylbenzene	ND	ND		
sec-Butylbenzene	ND	ND		
1,3-Dichlorobenzene	ND	ND		
4-Isopropyltoluene	ND	ND		
1,4-Dichlorobenzene	ND	ND		

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - DUP - Not Surrogate Corrected

Field ID	WG-SB1-40	WG-SB1-40		
Lab ID	98D3000	98D3000DUP		
Lab Batch	B0167	B0167		
File	DV2572.D	DV2573.D		
Sample Type	SAMP	QC		
Weight Basis	WET	WET		
Matrix	SOIL	SOIL		
Sample Size	0.311 g	0.311 g		
Associated Blank	092998VBLK02	092998VBLK02		
Field Date	09/23/98	09/23/98		
Extract Date	09/29/98	09/30/98		
Analysis Date	09/29/98	09/30/98		
Min Reporting Limit	160	160		
Units	ug/Kg	ug/Kg	RPD	Q
1,2-Dichlorobenzene	ND	ND		
n-Butylbenzene	ND	ND		
1,2-Dibromo-3-chloropropane	ND	ND		
1,2,4-Trichlorobenzene	ND	ND		
Hexachlorobutadiene	ND	ND		
Naphthalene	ND	ND		
1,2,3-Trichlorobenzene	ND	ND		
%Dibromofluoromethane	90	93		
%Toluene-d8	97	96		
%4-Bromofluorobenzene	91	88		

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - MS-MSD - Not Surrogate Corrected

Field ID	WG-SB2-30	WG-SB2-30				WG-SB2-30				
Lab ID	98D3004	98D3004MS				98D3004MSD				
Lab Batch	B0167	B0167				B0167				
File	DV2601.D	DV2578.D				DV2579.D				
Sample Type	SAMP	QC				QC				
Weight Basis	WET	WET				WET				
Matrix	SOIL	SOIL				SOIL				
Sample Size	0.28 g	0.28 g				0.28 g				
Associated Blank	093098VBLK01	092998VBLK02				092998VBLK02				
Field Date	09/23/98	09/23/98				09/23/98				
Extract Date	10/01/98	09/30/98				09/30/98				
Analysis Date	10/01/98	09/30/98				09/30/98				
Min Reporting Limit	180	180				180				
Units	ug/Kg	ug/Kg	T	%R	Q	ug/Kg	T	%R	Q RPD	Q
Dichlorodifluoromethane	ND	ND				ND				
Chloromethane	ND	ND				ND				
Vinyl chloride	ND	ND				ND				
Bromomethane	ND	ND				ND				
Chloroethane	ND	ND				ND				
Trichlorofluoromethane	ND	ND				ND				
1,1-Dichloroethene	ND	540	893	60		560	893	63	4.9	
Acetone	ND	ND				ND				
Methylene chloride	ND	ND				ND				
trans-1,2-Dichloroethene	ND	ND				ND				
1,1-Dichloroethane	ND	ND				ND				
2,2-Dichloropropane	ND	ND				ND				
cis-1,2-Dichloroethene	ND	ND				ND				
2-Butanone (MEK)	ND	ND				ND				
Bromochloromethane	ND	ND				ND				
Chloroform	ND	ND				ND				
1,1,1-Trichloroethane	ND	ND				ND				
Carbon tetrachloride	ND	ND				ND				
1,1-Dichloropropene	ND	ND				ND				
Benzene	ND	750	893	84		760	893	85	1.2	
1,2-Dichloroethane	ND	ND				ND				
Trichloroethene	ND	760	893	85		750	893	84	1.2	
1,2-Dichloropropane	ND	ND				ND				
Dibromomethane	ND	ND				ND				
Bromodichloromethane	ND	ND				ND				
cis-1,3-Dichloropropene	ND	ND				ND				
4-Methyl-2-pentanone	ND	ND				ND				
Toluene	ND	760	893	85		750	893	84	1.2	
trans-1,3-Dichloropropene	ND	ND				ND				
1,1,2-Trichloroethane	ND	ND				ND				
Tetrachloroethene	ND	ND				ND				
1,3-Dichloropropane	ND	ND				ND				
2-Hexanone	ND	ND				ND				
Dibromochloromethane	ND	ND				ND				
1,2-Dibromoethane	ND	ND				ND				
Chlorobenzene	ND	770	893	86		770	893	86	0	
1,1,1,2-Tetrachloroethane	ND	ND				ND				
Ethylbenzene	ND	ND				ND				
m,p-Xylene	ND	ND				ND				
o-Xylene	ND	ND				ND				
Styrene	ND	ND				ND				
Bromoform	ND	ND				ND				
Isopropylbenzene	ND	ND				ND				
Bromobenzene	ND	ND				ND				
1,1,2,2-Tetrachloroethane	ND	ND				ND				
1,2,3-Trichloropropane	ND	ND				ND				
n-Propylbenzene	ND	ND				ND				
2-Chlorotoluene	ND	ND				ND				
4-Chlorotoluene	ND	ND				ND				
1,3,5-Trimethylbenzene	ND	ND				ND				
tert-Butylbenzene	ND	ND				ND				
1,2,4-Trimethylbenzene	ND	ND				ND				
sec-Butylbenzene	ND	ND				ND				
1,3-Dichlorobenzene	ND	ND				ND				
4-Isopropyltoluene	ND	ND				ND				
1,4-Dichlorobenzene	ND	ND				ND				

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - MS-MSD - Not Surrogate Corrected

Field ID	WG-SB2-30	WG-SB2-30			WG-SB2-30			
Lab ID	98D3004	98D3004MS			98D3004MSD			
Lab Batch	B0167	B0167			B0167			
File	DV2601.D	DV2578.D			DV2579.D			
Sample Type	SAMP	QC			QC			
Weight Basis	WET	WET			WET			
Matrix	SOIL	SOIL			SOIL			
Sample Size	0.28 g	0.28 g			0.28 g			
Associated Blank	093098VBLK01	092998VBLK02			092998VBLK02			
Field Date	09/23/98	09/23/98			09/23/98			
Extract Date	10/01/98	09/30/98			09/30/98			
Analysis Date	10/01/98	09/30/98			09/30/98			
Min Reporting Limit	180	180			180			
Units	ug/Kg	ug/Kg	T	%R Q	ug/Kg	T	%R	Q RPD Q
1,2-Dichlorobenzene	ND	ND			ND			
n-Butylbenzene	ND	ND			ND			
1,2-Dibromo-3-chloropropane	ND	ND			ND			
1,2,4-Trichlorobenzene	ND	ND			ND			
Hexachlorobutadiene	ND	ND			ND			
Naphthalene	ND	ND			ND			
1,2,3-Trichlorobenzene	ND	ND			ND			
%Dibromofluoromethane	93	85			86			
%Toluene-d8	103	97			100			
%4-Bromofluorobenzene	93	89			83			

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - BS-BSD - Not Surrogate Corrected

Field ID	Procedural Blank	Laboratory Control Sample				Laboratory Control Sample				
Lab ID	092998VBLK01	092998VLCS01				092998VLCS02				
Lab Batch	B0167	B0167				B0167				
File	DV2559.D	DV2566.D				DV2567.D				
Sample Type	QC	QC				QC				
Weight Basis	VOLUME	VOLUME				VOLUME				
Matrix	WATER	WATER				WATER				
Sample Size	5 mL	5 mL				5 mL				
Associated Blank	NA	092998VBLK01				092998VBLK01				
Field Date	NA	NA				NA				
Extract Date	09/29/98	09/29/98				09/29/98				
Analysis Date	09/29/98	09/29/98				09/29/98				
Min Reporting Limit	10	10				10				
Units	ug/L	ug/L	T	%R	Q	ug/L	T	%R	Q RPD	Q
Dichlorodifluoromethane	ND	ND				ND				
Chloromethane	ND	ND				ND				
Vinyl chloride	ND	ND				ND				
Bromomethane	ND	ND				ND				
Chloroethane	ND	ND				ND				
Trichlorofluoromethane	ND	ND				ND				
1,1-Dichloroethene	ND	33	50	66		37	50	74	11	
Acetone	ND	ND				ND				
Methylene chloride	4.1 J	ND				3.6 JB				
trans-1,2-Dichloroethene	ND	ND				ND				
1,1-Dichloroethane	ND	ND				ND				
2,2-Dichloropropane	ND	ND				ND				
cis-1,2-Dichloroethene	ND	ND				ND				
2-Butanone (MEK)	ND	ND				ND				
Bromochloromethane	ND	ND				ND				
Chloroform	ND	ND				ND				
1,1,1-Trichloroethane	ND	ND				ND				
Carbon tetrachloride	ND	ND				ND				
1,1-Dichloropropene	ND	ND				ND				
Benzene	ND	41	50	82		44	50	88	7	
1,2-Dichloroethane	ND	ND				ND				
Trichloroethene	ND	43	50	86		44	50	88	2.3	
1,2-Dichloropropane	ND	ND				ND				
Dibromomethane	ND	ND				ND				
Bromodichloromethane	ND	ND				ND				
cis-1,3-Dichloropropene	ND	ND				ND				
4-Methyl-2-pentanone	ND	ND				ND				
Toluene	ND	42	50	84		44	50	88	4.6	
trans-1,3-Dichloropropene	ND	ND				ND				
1,1,2-Trichloroethane	ND	ND				ND				
Tetrachloroethene	ND	ND				ND				
1,3-Dichloropropane	ND	ND				ND				
2-Hexanone	ND	ND				ND				
Dibromochloromethane	ND	ND				ND				
1,2-Dibromoethane	ND	ND				ND				
Chlorobenzene	ND	43	50	86		44	50	88	2.3	
1,1,1,2-Tetrachloroethane	ND	ND				ND				
Ethylbenzene	ND	ND				ND				
m,p-Xylene	0.77 J	ND				ND				
o-Xylene	ND	ND				ND				
Styrene	ND	ND				ND				
Bromoform	ND	ND				ND				
Isopropylbenzene	ND	ND				ND				
Bromobenzene	ND	ND				ND				
1,1,2,2-Tetrachloroethane	ND	ND				ND				
1,2,3-Trichloropropane	ND	ND				ND				
n-Propylbenzene	0.54 J	ND				ND				
2-Chlorotoluene	0.51 J	ND				ND				
4-Chlorotoluene	ND	ND				ND				
1,3,5-Trimethylbenzene	0.54 J	ND				ND				
tert-Butylbenzene	ND	ND				ND				
1,2,4-Trimethylbenzene	0.84 J	ND				ND				
sec-Butylbenzene	ND	ND				ND				
1,3-Dichlorobenzene	ND	ND				ND				
4-Isopropyltoluene	1.1 J	ND				ND				
1,4-Dichlorobenzene	1.1 J	ND				ND				

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - BS-BSD - Not Surrogate Corrected

Field ID	Procedural Blank	Laboratory Control Sample				Laboratory Control Sample				
Lab ID	092998VBLK01	092998VLCS01				092998VLCS02				
Lab Batch	B0167	B0167				B0167				
File	DV2559.D	DV2566.D				DV2567.D				
Sample Type	QC	QC				QC				
Weight Basis	VOLUME	VOLUME				VOLUME				
Matrix	WATER	WATER				WATER				
Sample Size	5 mL	5 mL				5 mL				
Associated Blank	NA	092998VBLK01				092998VBLK01				
Field Date	NA	NA				NA				
Extract Date	09/29/98	09/29/98				09/29/98				
Analysis Date	09/29/98	09/29/98				09/29/98				
Min Reporting Limit	10	10				10				
Units	ug/L	ug/L	T	%R	Q	ug/L	T	%R	Q RPD	Q
1,2-Dichlorobenzene	0.63 J	ND				ND				
n-Butylbenzene	1.6 J	ND				ND				
1,2-Dibromo-3-chloropropane	ND	ND				ND				
1,2,4-Trichlorobenzene	2.1 J	ND				ND				
Hexachlorobutadiene	ND	ND				ND				
Naphthalene	3.1 J	0.37 JB				0.41 JB				
1,2,3-Trichlorobenzene	2.5 J	ND				ND				
%Dibromofluoromethane	93	88				94				
%Toluene-d8	99	97				97				
%4-Bromofluorobenzene	89	88				88				

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - PB - Not Surrogate Corrected

Field ID	Procedural Blank	Procedural Blank	Procedural Blank	Procedural Blank
Lab ID	092998VBLK01	092998VBLK02	093098VBLK01	100198VBLK01
Lab Batch	B0167	B0167	B0167	B0167
File	DV2559.D	DV2571.D	DV2588.D	DV2605.D
Sample Type	QC	QC	QC	QC
Weight Basis	VOLUME	VOLUME	VOLUME	VOLUME
Matrix	WATER	WATER	WATER	WATER
Sample Size	5 mL	5 mL	5 mL	5 mL
Associated Blank	NA	NA	NA	NA
Field Date	NA	NA	NA	NA
Extract Date	09/29/98	09/29/98	09/30/98	10/01/98
Analysis Date	09/29/98	09/29/98	09/30/98	10/01/98
Min Reporting Limit	10	10	10	10
Units	ug/L	ug/L	ug/L	ug/L
Dichlorodifluoromethane	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND
Acetone	ND	ND	ND	ND
Methylene chloride	4.1 J	3.1 J	3.7 J	2.5 J
trans-1,2-Dichloroethene	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND
2,2-Dichloropropane	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND
1,1-Dichloropropene	ND	ND	ND	ND
Benzene	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND
Dibromomethane	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	ND
Toluene	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND
1,3-Dichloropropane	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND
m,p-Xylene	0.77 J	ND	ND	0.46 J
o-Xylene	ND	ND	ND	ND
Styrene	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND
Bromobenzene	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND
n-Propylbenzene	0.54 J	ND	ND	ND
2-Chlorotoluene	0.51 J	ND	ND	ND
4-Chlorotoluene	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.54 J	ND	ND	ND
tert-Butylbenzene	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.84 J	ND	ND	ND
sec-Butylbenzene	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND
4-Isopropyltoluene	1.1 J	ND	ND	ND
1,4-Dichlorobenzene	1.1 J	ND	ND	ND

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1353
Data Table: VOA - PB - Not Surrogate Corrected

Field ID	Procedural Blank	Procedural Blank	Procedural Blank	Procedural Blank
Lab ID	092998VBLK01	092998VBLK02	093098VBLK01	100198VBLK01
Lab Batch	B0167	B0167	B0167	B0167
File	DV2559.D	DV2571.D	DV2588.D	DV2605.D
Sample Type	QC	QC	QC	QC
Weight Basis	VOLUME	VOLUME	VOLUME	VOLUME
Matrix	WATER	WATER	WATER	WATER
Sample Size	5 mL	5 mL	5 mL	5 mL
Associated Blank	NA	NA	NA	NA
Field Date	NA	NA	NA	NA
Extract Date	09/29/98	09/29/98	09/30/98	10/01/98
Analysis Date	09/29/98	09/29/98	09/30/98	10/01/98
Min Reporting Limit	10	10	10	10
Units	ug/L	ug/L	ug/L	ug/L
1,2-Dichlorobenzene	0.63 J	ND	ND	ND
n-Butylbenzene	1.6 J	ND	ND	ND
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND
1,2,4-Trichlorobenzene	2.1 J	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND
Naphthalene	3.1 J	ND	ND	ND
1,2,3-Trichlorobenzene	2.5 J	ND	ND	ND
%Dibromofluoromethane	93	86	86	85
%Toluene-d8	99	98	98	97
%4-Bromofluorobenzene	89	90	87	82

Arthur D Little

Dow Cogburn – Shell Westgate Site Investigation

Polychlorinated Biphenyls in Soil

Final Laboratory Report

Report to:
Mr. James Rice
Arthur D. Little, Inc.

November 19, 1998

Environmental Monitoring and Analysis

Arthur D. Little, Inc.
Acorn Park
Cambridge, Massachusetts
02140-2390

Reference No.: 38051-01

ARTHUR D. LITTLE
Environmental Monitoring and Analysis Unit
Project Narrative

Entered By:	Richard Purdy	Date:	November 19, 1998
Client:	Dow Cogburn	Package Number:	1401
Project Name:	Shell Westgate	Project Number:	38051-01

Polychlorinated Biphenyls in Soil Samples

Sample Receipt

Arthur D. Little, Inc. received twenty-four (24) soil samples on September 25, 1998 on behalf of Dow Cogburn. All samples were received intact and in good condition. Pertinent sample receipt information is noted on the chain of custody records included as part of this deliverable. Data for the following samples are reported in this package:

WG-SB1-7	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7
WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42	WG-SB3-7	WG-SB3-10
WG-SB3-24	WG-SB3-30	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30
WG-SB4-40	WG-SB5-7	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40

Laboratory Methods

The sediment samples were prepared for analysis by ultrasonic extraction using acetone and methylene chloride. The extracts were concentrated to a known volume and fortified with internal standard compounds for GC analysis.

The samples were analyzed for polychlorinated biphenyls as Aroclors in accordance with laboratory standard operating procedures and EPA Method 8080, "Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography" (USEPA SW846, *Test Methods for Evaluating Solid Waste*). The samples were evaluated for Arloclors 1242, 1248, 1254, and 1260

Quality control samples include preparation blanks and laboratory control samples (BS).

Quality Assurance/Quality Control

Quality assurance and quality control procedures for the analyses are documented in the laboratory quality assurance plan and standard operating procedures (SOPs).

Approved By: _____ Date: 11/19/98

ARTHUR D. LITTLE
Environmental Monitoring and Analysis Unit
Polychlorinated Biphenyls in Soil Samples
Project Narrative

The instrument was calibrated using three levels of the target Aroclors. Continuing calibration Aroclor standards were analyzed every twelve hours and at the conclusion of the analysis. Target compounds were identified by peak pattern recognition and quantified from the response factor (RRF) of five characteristic peaks for each Aroclor.

Quality assurance audits were performed on all data generated as part of this deliverable. Please note the following:

- The recoveries for the surrogate and matrix spike compounds met control limit requirements. Matrix spike duplicate analyses met precision requirements.

The final report includes the following components:

- Narrative – includes project discussion, sample listing, report qualifiers
- Chain of Custody – includes all signed chain of custody records and observation forms for the reported field samples.
- Data Tables – includes data summary, surrogate recovery summary and quality control results

The minimum reporting limits (MRL) were adjusted for sample size and dilution amounts. The minimum reporting limits (MRL) were calculated based on the low calibration standard (500 µg/L).

Qualifiers used in the reporting of the analytical data are described in the table of Report Qualifiers.

Approved By: _____ Date: 11/19/93

Report Qualifiers

Qualifier	Explanation
J	Concentration between the adjusted minimum reporting limit (MRL) and the adjusted method detection limit (MDL)
ND	Concentration below MDL
D	Concentration quantitated from dilution analysis
B	Detected in the associated procedural blank
DO	Diluted out; result could not be measured

Additional qualifiers may be used as defined in the individual data reports or project narrative

Approved By: _____ Date: 11/19/98

Cooler Num 1 of 1

Arthur D. Little, Inc.

CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJ. NO.	PROJECT NAME
38051	SHELL WHITGATE

SAMPLERS: (Signature) Henry Bair

SAMPLE/ STATION NUMBER	DATE	TIME	*COMP	*GRAB	STATION LOCATION	PRESERVATION	Analyses: TO BE DETERMINED	# JARS 2-oz	# JARS 4-oz	ADL LAB ID	Remarks	SAMPLE CONDITION UPON RECEIPT
WG-SB4-5	9/24/98	0810		S			X	1	3	98D3021		
WG-SB4-14		0830						1	2	98D3022		
WG-SB4-30		0925						1	3	98D3023		
WG-SB4-40		0945						1	3	98D3024		
WG-SB5-7		1045						1	3	98D3025		
WG-SB5-14		1105						1	3	98D3026		
WG-SB5-22		1120						1	1	98D3027		
WG-SB5-32		1140						1	3	98D3028		
WG-SB5-40		1200						1	3	98D3029		
WG-SB1-7	9/23/98	0840						0	2	98D3030		
WG-SB1-12		0900						0	2	98D3031		
WG-SB1-20		0930						0	2	98D3032		
WG-SB1-30		1020						1	2	98D3033		
WG-SB1-40		1100						1	2	98D3034		
WG-SB2-7		1245						1	2	98D3035		

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N / NA
Any other problems: Y or N
If problems: Client contacted: Y or N
Date contacted: / /
Temperature °C: 2.7

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Shipped to:
Henry Bair	9/24/98 1700		Arthur D. Little, Inc. 20 Acorn Park Cambridge, MA 02140 ATTN: Henry Camp
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature) Linh T. Le 9/25/98 10:00	Date/Time / Carrier: Fedex Airbill #5160753905

Distribution: Original Accompanies Shipment; Yellow Copy to Case Manager; Pink Copy for Field Files

*Letter denotes sample matrix
W - Water S - Soil LW - Liquid Waste SW - Solid Waste

Arthur D. Little, Inc. 25 Acorn Park, Cambridge, MA 02140 (617) 498-5000
Telex 921438 Tel-Fax (617) 498-7200

Cooler No. 1 of 1

Arthur D. Little, Inc.

CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJ. NO.	PROJECT NAME
98051	SHELL WESTGATE

SAMPLERS: (Signature) Henry Foil

SAMPLE/ STATION NUMBER	DATE	TIME	*COMP	*GRAB	STATION LOCATION	PRESERVATION	Analyses: TO BE DETERMINED # JARS 2-oz	4-oz	Remarks: ADL LAB ID	SAMPLE CONDITION UPON RECEIPT
WG-SB2-10	9/23/98	1300		S			1	3	98D3036	
WG-SB2-20		1320					1	3	98D3037	
WG-SB2-30		1400					1	3	98D3038	
WG-SB2-42		1415					1	3	98D3039	
WG-SB3-7		1510					1	3	98D3040	
WG-SB3-10		1515					1	3	98D3041	
WG-SB3-24		1545					1	3	98D3042	
WG-SB3-30		1605					1	3	98D3043	
WG-SB3-40		1625					1	3	98D3044	

Does COC match samples Y or N
Broken container: Y or N
Received within holding time Y or N
COC seal intact: Y or N / NA
Any other problems: Y or N
If problems, Client contacted Y or N
Date contacted
Temperature (°C): 1.3

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Shipped to:
Henry Foil	9/24/98 1700		Arthur D. Little, Inc. 20 Acorn Park Cambridge, MA 02140 ATTN: Henry Camp
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature) Linh T. Le 9/25/98 10:00	Date/Time

Carrier: Fedex Airbill #5160853916

Distribution: Original Accompanies Shipment; Yellow Copy to Case Manager; Pink Copy for Field Files

*Letter denotes sample matrix
W - Water S - Soil LW - Liquid Waste SW - Solid Waste

Arthur D. Little, Inc. 25 Acorn Park, Cambridge, MA 02140 (617) 498-5000
Telex 921436 Tel-Fax (617) 498-7200

Project Title : Dow Cogburn, Shell Westgate
Sample Set: B0176
Data : PCB Archlors - Archlors - Not Surrogate Corrected

Field ID	WG-SB1-7	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7
Lab ID	98D3030	98D3031	98D3032	98D3033	98D3034	98D3035
Lab Batch	B0176	B0176	B0176	B0176	B0176	B0176
File	10269821.D	10269822.D	10269823.D	10269824.D	10269829.D	10269830.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY	DRY
Matrix	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
Sample Size	26.7 g	25 g	27.7 g	28.7 g	29.4 g	27.6 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	10/28/98	10/28/98	10/28/98	10/28/98	10/28/98	10/28/98
Min Reporting Limit	75	80	72	70	68	72
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Archlor 1242	ND	ND	ND	ND	ND	ND
Archlor 1248	ND	ND	ND	ND	ND	ND
Archlor 1254	ND	ND	ND	ND	ND	ND
Archlor 1260	ND	ND	ND	ND	ND	ND
%DBOFB	72	83	77	69	88	77
%103	88	89	88	80	92	72
%198	96	98	98	89	101	54

Project Title : Dow Cogburn, Shell Westgate
Sample Set: B0176
Data : PCB Archlors - Archlors - Not Surrogate Corrected

Field ID	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42	WG-SB3-7	WG-SB3-10
Lab ID	98D3036	98D3037	98D3038	98D3039	98D3040	98D3041
Lab Batch	B0176	B0176	B0176	B0176	B0176	B0176
File	10269831.D	10269832.D	10269833.D	10269834.D	10269835.D	10269836.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY	DRY
Matrix	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
Sample Size	25.2 g	26.3 g	27.7 g	28.3 g	28.5 g	27.8 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	10/28/98	10/28/98	10/28/98	10/29/98	10/29/98	10/29/98
Min Reporting Limit	79	76	72	71	70	72
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Archlor 1242	ND	ND	ND	ND	ND	ND
Archlor 1248	ND	ND	ND	ND	ND	ND
Archlor 1254	ND	ND	ND	ND	ND	ND
Archlor 1260	ND	ND	ND	ND	ND	ND
%DBOFB	95	85	79	78	84	83
%103	87	93	93	94	94	91
%198	71	81	91	95	93	97

Project Title : Dow Cogburn, Shell Westgate
Sample Set: B0176
Data : PCB Archlors - Archlors - Not Surrogate Corrected

Field ID	WG-SB3-24	WG-SB3-30	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30
Lab ID	98D3042	98D3043	98D3044	98D3021	98D3022	98D3023
Lab Batch	B0176	B0176	B0176	B0179	B0179	B0179
File	10269837.D	10269838.D	10269841.D	10269850.D	10269851.D	10269852.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY	DRY
Matrix	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
Sample Size	27.8 g	26.7 g	27.8 g	28.8 g	26 g	28.5 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-70PB	BW-S-70PB	BW-S-70PB
Field Date	09/23/98	09/23/98	09/23/98	09/24/98	09/24/98	09/24/98
Extract Date	10/07/98	10/07/98	10/07/98	10/08/98	10/08/98	10/08/98
Analysis Date	10/29/98	10/29/98	10/29/98	10/30/98	10/30/98	10/30/98
Min Reporting Limit	72	75	72	69	77	70
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Archlor 1242	ND	ND	ND	ND	ND	ND
Archlor 1248	ND	ND	ND	ND	ND	ND
Archlor 1254	ND	ND	ND	ND	ND	ND
Archlor 1260	ND	ND	ND	ND	ND	ND
%DBOFB	79	86	84	81	77	75
%103	91	97	96	92	88	87
%198	93	99	100	100	96	89

Project Title : Dow Cogburn, Shell Westgate
Sample Set: B0176
Data : PCB Archlors - Archlors - Not Surrogate Corrected

Field ID	WG-SB4-40	WG-SB5-7	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40
Lab ID	98D3024	98D3025	98D3026	98D3027	98D3028	98D3029
Lab Batch	B0179	B0179	B0179	B0179	B0179	B0179
File	10269857.D	10269858.D	10269859.D	10269860.D	10269861.D	10269862.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY	DRY
Matrix	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
Sample Size	28.8 g	28.8 g	26.8 g	28.5 g	28.1 g	28.5 g
Associated Blank	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB
Field Date	09/24/98	09/24/98	09/24/98	09/24/98	09/24/98	09/24/98
Extract Date	10/08/98	10/08/98	10/08/98	10/08/98	10/08/98	10/08/98
Analysis Date	10/30/98	10/30/98	10/30/98	10/30/98	10/30/98	10/30/98
Min Reporting Limit	69	69	75	70	71	70
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Archlor 1242	ND	ND	ND	ND	ND	ND
Archlor 1248	ND	ND	ND	ND	ND	ND
Archlor 1254	ND	ND	ND	ND	ND	ND
Archlor 1260	ND	ND	ND	ND	ND	ND
%DBOFB	79	73	85	79	73	82
%103	84	78	91	89	87	91
%198	90	79	99	98	94	102

Project Title : Dow Cogburn, Shell Westgate
Sample Set: B0176
Data : PCB Archlors - BS - Not Surrogate Corrected

Field ID	Procedural Blank	Blank Spike				Procedural Blank	Blank Spike			
Lab ID	BW-S-61PB	BW-S-64BS				BW-S-70PB	BW-S-73BS			
Lab Batch	B0176	B0176				B0179	B0179			
File	10269817.D	10269820.D				10269846.D	10269849.D			
Sample Type	QC	QC				QC	QC			
Weight Basis	DRY	DRY				DRY	DRY			
Matrix	Sediment	Sediment				Sediment	Sediment			
Sample Size	30 g	30 g				30 g	30 g			
Associated Blank	NA	BW-S-61PB				NA	BW-S-70PB			
Field Date	NA	NA				NA	NA			
Extract Date	10/07/98	10/07/98				10/08/98	10/08/98			
Analysis Date	10/27/98	10/28/98				10/29/98	10/30/98			
Min Reporting Limit	67	67				67	67			
Units	ug/Kg	ug/Kg	T	%R	Q	ug/Kg	ug/Kg	T	%R	Q
Archlor 1254	ND	36	33.3	108		ND	37	33.3	111	
Archlor 1254 Peak1	ND	33 J	33.3	99		ND	34 J	33.3	102	
Archlor 1254 Peak2	ND	35 J	33.3	105		ND	35 J	33.3	105	
Archlor 1254 Peak3	ND	38 J	33.3	114		ND	38 J	33.3	114	
Archlor 1254 Peak4	ND	36 J	33.3	108		ND	36 J	33.3	108	
Archlor 1254 Peak5	ND	38 J	33.3	114		ND	41 J	33.3	123	
%DBOFB	91	94				89	79			
%103	83	87				92	87			
%198	92	100				101	97			

Project Title : Dow Cogburn, Shell Westgate
Sample Set: B0176
Data : PCB Archlors - PB - Not Surrogate Corrected

Field ID	Procedural Blank	Procedural Blank
Lab ID	BW-S-61PB	BW-S-70PB
Lab Batch	B0176	B0179
File	10269817.D	10269846.D
Sample Type	QC	QC
Weight Basis	DRY	DRY
Matrix	Sediment	Sediment
Sample Size	30 g	30 g
Associated Blank	NA	NA
Field Date	NA	NA
Extract Date	10/07/98	10/08/98
Analysis Date	10/27/98	10/29/98
Min Reporting Limit	67	67
Units	ug/Kg	ug/Kg
Archlor 1242	ND	ND
Archlor 1248	ND	ND
Archlor 1254	ND	ND
Archlor 1260	ND	ND
%DBOFB	91	89
%103	83	92
%198	92	101

Case Narrative

RECRA
LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

Recra LabNet Philadelphia
Analytical Report

Client : A.D. LITTLE-NEW MEXICO
RFW# : 9810L067

W.O.# : 60038-002-001-0001-00
Date Received: 10-09-98

CLP/ILM04.0 METALS

1. This narrative covers the analyses of 12 soil samples.

2. The samples were prepared and analyzed in accordance with CLP/ILM04.0 protocol.

3. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures and High Purity.

4. All analyses were performed within the required holding times.

5. The cooler temperature has been recorded on the Chain of Custody.

6. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within control limits with the exception of the final CCV for Silver at 110.6%. All samples reported in this package were bracketed by QC within the control limits. The CCV was reported in order to include the ending QC. In addition, 11 samples were run between CCVs for Cyanide in file CN1015. The samples were still reported as all the QC bracketing the samples was within the control limits. Also, the samples were not rerun as it is now past the holding time.

7. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits.

8. All preparation/method blanks were below reporting limits. Refer to form 3.

9. All ICP Interference Check Samples (ICSA and ICSAB) were within control limits with the exception of the initial ICSA for Nickel at 96 µg/L. Contamination was suspected in the autosampler cup. The cup was cleaned and the solution was replaced prior to the analysis of the final ICSA. The final ICSA read 2.0 µg/L, which is well below the method criteria. This demonstrates that the IECs are correct. The samples were reported as all results were below the ILM04.0 CRDL.

10. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to form 7.

11. All serial dilution percent differences were within CLP control limits. Refer to form 9.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 320 pages.

12. All matrix spike (MS) recoveries were within the 75-125% control limits (exception allowed when sample concentration exceeds the spike added concentration by a factor of 4 or more). MS analyses are not required for Calcium, Magnesium, Sodium and Potassium in waters and soils. Also, not required for Aluminum and Iron in soils. Refer to form 5A.

13. The duplicate analyses for 4 analytes were outside the method criteria. Refer to form 6.

14. All sample IDs were changed to accommodate the EPA naming convention which allows a maximum of 6 characters on all CLP Forms. Refer to the comment section on the form 1.

15. Recoveries on the Laboratory Summary Report and CLP forms will vary depending on the number of significant figures used in the recovery calculation.

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

11-10-96
Date

alm\m10-067

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra Lot#: 9801067

Leaching Procedure: __1310 __1311 __1312 __Other:_____

CLP Metals /Digestion and /Analysis Methods: __ILM03.0 /ILM04.0

Metals Digestion Methods: __3005A __3010A __3015 __3020A __3050A __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846	EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B	__200.7				__99
Antimony	__6010B __7041 [5]	__200.7	__204.2			__99
Arsenic	__6010B __7060A [5]	__200.7	__206.2	__3113B		__99
Barium	__6010B	__200.7				__99
Beryllium	__6010B	__200.7				__99
Bismuth	__6010B [1]	__200.7 [1]			__1620	__99
Boron	__6010B	__200.7				__99
Cadmium	__6010B __7131A [5]	__200.7	__213.2			__99
Calcium	__6010B	__200.7				__99
Chromium	__6010B __7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B	__200.7				__99
Copper	__6010B __7211 [5]	__200.7	__220.2			__99
Iron	__6010B	__200.7				__99
Lead	__6010B __7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B __7430 [4]	__200.7			__1620	__99
Magnesium	__6010B	__200.7				__99
Manganese	__6010B	__200.7				__99
Mercury	__7470A [3] __7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B	__200.7				__99
Nickel	__6010B	__200.7				__99
Potassium	__6010B __7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]	__200.7 [1]			__1620	__99
Selenium	__6010B __7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]	__200.7			__1620	__99
Silica	__6010B	__200.7			__1620	__99
Silver	__6010B __7761 [5]	__200.7	__272.2			__99
Sodium	__6010B __7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B	__200.7				__99
Thallium	__6010B __7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B	__200.7				__99
Titanium	__6010B	__200.7				__99
Uranium	__6010B [1]	__200.7 [1]			__1620	__99
Vanadium	__6010B	__200.7				__99
Zinc	__6010B	__200.7				__99
Zirconium	__6010B [1]	__200.7 [1]			__1620	__99

Other:_____ Method:_____

WET CHEMISTRY
METHODS GLOSSARY FOR ANALYSIS OF SOIL/SOLID SAMPLES

	ASTM	SW846	OTHER
%Ash	__ D2216-80		
%Moisture	__ D2216-80		__ ILMO4.0 (e)
%Solids			__ ILMO4.0 (e)
%Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Corrosivity __by coupon __by pH		__ 1110 (mod)__ 9045	
Cyanide, Total		__ 9010	__ ILMO4.0 (e)
Cyanide, Reactive		__ Sec 7.3	
Density			__ b
Halides, Extractable Organic			__ EPA 600/4/84-008 (mod)
Halides, Total			__ EPA 600/4/84-008 (mod)
EP-Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Carbon, Total Organic (by LOI)			__ c
Oil and Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87 (mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071	__ EPA 418.1 (mod)
pH, Soil		__ 9045B	
Sulfide, Reactive		__ Sec 7.3	
Specific Gravity	__ D1429-76C		
Sulfur, Total		__ 9056	
TCLP		__ 1311	
TCLV		__ 1311	
Synthetic Precipitation Leach		__ 1312	
Chlorine, Total		__ 9056	
Paint Filter		__ 9095	

Other: _____ Method: _____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

B = Indicates that the parameter was between the Instrument Detection Limit (IDL) and the Contract Required Detection Limit (CRDL)

Q QUALIFIERS

E = The reported value is estimated because of the presence of interference.

M = Duplicate injection precision not met.

N = Spiked sample recovery not within control limits.

S = The reported value was determined by the Method of Standard Additions (MSA).

W = Post Digestion spike for Furnace AA analysis is out of control limits (85 -115 %), while sample absorbance is less than 50% of spike absorbance.

* = Duplicate analysis not within control limits.

+ = Correlation coefficient for the MSA is less than 0.995.

ABBREVIATIONS

PB = Method or Preparation Blank.
S = Matrix Spike.
T = Matrix Spike Duplicate.
R or D = Sample Replicate

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).
4. Flame AA.
5. Graphite Furnace AA.

Inorganic Analysis Data Package

RECRA

METHOD REFERENCES AND DAT. L''IERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or a .he reported limit. The associated numerical value is the sample detection l

* = Indicates that the original sample result is greater ' < the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a ..licate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and W..te, 16 ed., (1989).

b. Standard Methods for the Examination of Water and Was.. 17 ed., (1983)

c. Method of Soil Analysis, Part 1, Physical and Mineralogic.. ethods, 2nd. Ed. (1986)

d. Method of Soil Analysis, Part 2, Chemical and Microbiologica.. operties, Am. Soc. Agron., Madison, WI (1965)

e. USEPA Contract Laboratory Program, Statement of Work for Inc.. anic Analysis.

f. Code of Federal Regulations.

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB324

Lab Name: RECRA_LABNET Contract: 60038-2

Lab Code: RECRA Case No.: NEW_ME SAS No.: SDG No.: GSB324

Matrix (soil/water): SOIL Lab Sample ID: 9810L067-001

Level (low/med): LOW Date Received: 10/09/98

% Solids: 92.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1750		*	P
7440-38-2	Arsenic	1.5	B		P
7440-39-3	Barium	40.4	B	*	P
7440-43-9	Cadmium	0.08	U		P
7440-47-3	Chromium	2.5			P
7440-48-4	Cobalt	1.0	B		P
7440-50-8	Copper	2.2	B		P
7439-89-6	Iron	1710		*	P
7439-92-1	Lead	1.4			P
7439-96-5	Manganese	20.3		*	P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	2.0	B		P
7782-49-2	Selenium	0.82	B		P
7440-22-4	Silver	0.73	U		P
7440-66-6	Zinc	4.8			P
7439-98-7	Molybdenu	0.32	B		P
7440-42-8	Boron	5.9	B		P
7440-61-1	Uranium	12.6	U		P
5955-70-0	Cyanide	0.27	U		C

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

WGSB3-24

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

ab Name: RECRA_LABNET_____ Contract: 60038-2___

ab Code: RECRA_ Case No.: NEW_M SAS No.: _____ SDG No.:GSB324

OW No.: ILM04.0

EPA Sample No.	Lab Sample ID
_GSB324_____	_9810L067-001___
_GSB324D_____	_9810L067-001D__
_GSB324S_____	_9810L067-001S__
_GSB330_____	_9810L067-002___
_GSB340_____	_9810L067-003___
_GSB4-5_____	_9810L067-004___
_GSB414_____	_9810L067-005___
_GSB430_____	_9810L067-006___
_GSB440_____	_9810L067-007___
_GSB5-7_____	_9810L067-008___
_GSB514_____	_9810L067-009___
_GSB522_____	_9810L067-010___
_GSB532_____	_9810L067-011___
_GSB540_____	_9810L067-012___
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

ere ICP interelement corrections applied ? Yes/No YES

ere ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

omments:

certify that this data package is in compliance with the terms and onditions of the contract, both technically and for completeness, for ther than the conditions detailed above. Release of the data contained n this hardcopy data package and in the computer-readable data submitted n floppy diskette has been authorized by the Laboratory Manager or the anager's designee, as verified by the following signature.

ignature: Pat E Name: PATRICIA E Feldman

ate: 11-10-98 Title: Data Mgt Supervisor

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB340

Lab Name: RECRA_LABNET Contract: 60038-2

Lab Code: RECRA Case No.: NEW_ME SAS No.: SDG No.: GSB324

Matrix (soil/water): SOIL Lab Sample ID: 9810L067-003

Level (low/med): LOW Date Received: 10/09/98

% Solids: 93.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	774		*	P
7440-38-2	Arsenic	0.80	B		P
7440-39-3	Barium	17.9	B	*	P
7440-43-9	Cadmium	0.08	U		P
7440-47-3	Chromium	1.9	B		P
7440-48-4	Cobalt	0.53	B		P
7440-50-8	Copper	1.4	B		P
7439-89-6	Iron	824		*	P
7439-92-1	Lead	0.79		*	P
7439-96-5	Manganese	11.6		*	P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.89	B		P
7782-49-2	Selenium	0.70	U		P
7440-22-4	Silver	0.68	U		P
7440-66-6	Zinc	2.6	B		P
7439-98-7	Molybdenu	0.27	B		P
7440-42-8	Boron	1.1	B		P
7440-61-1	Uranium	11.7	U		P
5955-70-0	Cyanide	0.27	U		C

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

WGSB3-40

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB330

ab Name: RECRA_LABNET_____ Contract: 60038-2___

ab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

atrix (soil/water): SOIL_ Lab Samp ID: 9810L067-002

evel (low/med): LOW__ Date Rec ved: 10/09/98

Solids: _89.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	937		*	P
7440-38-2	Arsenic__	1.2	B		P
7440-39-3	Barium___	28.7	B	*	P
7440-43-9	Cadmium__	0.09	U		P
7440-47-3	Chromium_	1.5	B		P
7440-48-4	Cobalt___	2.4	B		P
7440-50-8	Copper___	1.7	B		P
7439-89-6	Iron_____	1070		*	P
7439-92-1	Lead_____	3.1			P
7439-96-5	Manganese	43.0		*	P
7439-97-6	Mercury__	0.06	U		AV
7440-02-0	Nickel___	1.3	B		P
7782-49-2	Selenium_	0.78	U		P
7440-22-4	Silver___	0.75	U		P
7440-66-6	Zinc_____	3.3	B		P
7439-98-7	Molybdenu	0.44	B		P
7440-42-8	Boron____	2.0	B		P
7440-61-1	Uranium__	13.1	U		P
5955-70-0	Cyanide__	0.28	U		C

lor Before: _____ Clarity Before: _____ Texture: _____

lor After: _____ Clarity After: _____ Artifacts: _____

mments:

WGSB3-30_____

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB414

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Matrix (soil/water): SOIL_ Lab Sample ID: 9810L067-005

Level (low/med): LOW__ Date Received: 10/09/98

% Solids: _84.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	2930		*	P
7440-38-2	Arsenic__	6.0			P
7440-39-3	Barium___	186		*	P
7440-43-9	Cadmium__	0.10	B		P
7440-47-3	Chromium_	1.9	B		P
7440-48-4	Cobalt___	1.8	B		P
7440-50-8	Copper___	3.4	B		P
7439-89-6	Iron_____	1590		*	P
7439-92-1	Lead_____	1.5			P
7439-96-5	Manganese	64.9		*	P
7439-97-6	Mercury__	0.06	U		AV
7440-02-0	Nickel___	4.1	B		P
7782-49-2	Selenium_	0.75	U		P
7440-22-4	Silver___	0.72	U		P
7440-66-6	Zinc_____	5.3			P
7439-98-7	Molybdenu	0.39	B		P
7440-42-8	Boron____	8.5	B		P
7440-61-1	Uranium__	12.6	U		P
5955-70-0	Cyanide__	0.30	U		C

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

WGSB4-14

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB4-5

ab Name: RECRA_LABNET Contract: 60038-2

ab Code: RECRA_ Case No.: NEW_ME SAS No.: SDG No.: GSB324

atrix (soil/water): SOIL_ Lab Sample ID: 9810L067-004

evel (low/med): LOW Date Received: 10/09/98

Solids: 94.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3170		*	P
7440-38-2	Arsenic	3.9			P
7440-39-3	Barium	253		*	P
7440-43-9	Cadmium	0.08	U		P
7440-47-3	Chromium	2.5			P
7440-48-4	Cobalt	1.4	B		P
7440-50-8	Copper	2.7	B		P
7439-89-6	Iron	2020		*	P
7439-92-1	Lead	2.1			P
7439-96-5	Manganese	21.9		*	P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	5.0	B		P
7782-49-2	Selenium	0.74	U		P
7440-22-4	Silver	0.72	U		P
7440-66-6	Zinc	5.5			P
7439-98-7	Molybdenu	0.38	B		P
7440-42-8	Boron	8.6	B		P
7440-61-1	Uranium	12.5	U		P
5955-70-0	Cyanide	0.27	U		C

olor Before: Clarity Before: Texture:

olor After: Clarity After: Artifacts:

omments:
WGSB4-5
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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB440

Lab Name: RECRA_LABNET Contract: 60038-2

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: SDG No.: GSB324

Matrix (soil/water): SOIL Lab Sample ID: 9810L067-007

Level (low/med): LOW Date Received: 10/09/98

% Solids: 96.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	936		*	P
7440-38-2	Arsenic	0.92	B		P
7440-39-3	Barium	4.6	B	*	P
7440-43-9	Cadmium	0.08	U		P
7440-47-3	Chromium	2.5			P
7440-48-4	Cobalt	0.53	B		P
7440-50-8	Copper	1.8	B		P
7439-89-6	Iron	1080		*	P
7439-92-1	Lead	1.0			P
7439-96-5	Manganese	10.8		*	P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	1.2	B		P
7782-49-2	Selenium	0.72	U		P
7440-22-4	Silver	0.70	U		P
7440-66-6	Zinc	2.8	B		P
7439-98-7	Molybdenu	0.32	B		P
7440-42-8	Boron	1.2	B		P
7440-61-1	Uranium	12.1	U		P
5955-70-0	Cyanide	0.26	U		C

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

WGSB4-40

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GS[illegible]30

ab Name: RECRA_LABNET_____ Contract: 60038-2___

ab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG N[illegible]: [illegible]24

atrix (soil/water): SOIL_ Lab Sample ID: 81[illegible]7-006

evel (low/med): LOW__ Date Received: 10/09/98

Solids: _94.9

Concentration Units (ug/L or mg/kg dry weight): M[illegible]/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1160		*	P
7440-38-2	Arsenic	1.2	B		P
7440-39-3	Barium	70.0		*	P
7440-43-9	Cadmium	0.06	U		P
7440-47-3	Chromium	1.8			P
7440-48-4	Cobalt	0.79	B		P
7440-50-8	Copper	1.5	B		P
7439-89-6	Iron	1030		*	P
7439-92-1	Lead	1.1			P
7439-96-5	Manganese	13.2		*	P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	1.2	B		P
7782-49-2	Selenium	0.52	U		P
7440-22-4	Silver	0.51	U		P
7440-66-6	Zinc	2.7	B		P
7439-98-7	Molybdenu	0.24	B		P
7440-42-8	Boron	1.3	B		P
7440-61-1	Uranium	8.7	U		P
5955-70-0	Cyanide	0.26	U		C

olor Before: _____ Clarity Before: _____ Texture: _____

olor After: _____ Clarity After: _____ Artifacts: _____

omments:

WGSB4-30

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB514

Lab Name: RECRA_LABNET Contract: 60038-2

Lab Code: RECRA Case No.: NEW_ME SAS No.: SDG No.: GSB324

Matrix (soil/water): SOIL Lab Sample ID: 9810L067-009

Level (low/med): LOW Date Received: 10/09/98

% Solids: 93.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2750		*	P
7440-38-2	Arsenic	7.8			P
7440-39-3	Barium	170		*	P
7440-43-9	Cadmium	0.08	U		P
7440-47-3	Chromium	2.6			P
7440-48-4	Cobalt	1.4	B		P
7440-50-8	Copper	2.7	B		P
7439-89-6	Iron	1620		*	P
7439-92-1	Lead	1.4			P
7439-96-5	Manganese	29.5		*	P
7439-97-6	Mercury	0.04	U		AV
7440-02-0	Nickel	3.5	B		P
7782-49-2	Selenium	0.72	U		P
7440-22-4	Silver	0.70	U		P
7440-66-6	Zinc	5.2			P
7439-98-7	Molybdenu	0.61	B		P
7440-42-8	Boron	8.6	B		P
7440-61-1	Uranium	12.2	U		P
5955-70-0	Cyanide	0.27	U		C

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

WGSB5-14

FINE, TAN

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

MPLE NO.

B5-7

ab Name: RECRA_LABNET_____ Contract: 60038-2___

ab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ S lo.: GSB324

latrix (soil/water): SOIL_ Lab Sample 9810L067-008

evel (low/med): LOW__ Date Recei : 10/09/98

Solids: _95.3

Concentration Units (ug/L or mg/kg dry weight): KG

CAS No.	Analyte	Concentration	C	Q	
7429-90-5	Aluminum	2740		*	
7440-38-2	Arsenic	3.7			
7440-39-3	Barium	49.5		*	
7440-43-9	Cadmium	0.07	U		
7440-47-3	Chromium	2.3			
7440-48-4	Cobalt	1.0	B		P
7440-50-8	Copper	2.3	B		P
7439-89-6	Iron	1770		*	P
7439-92-1	Lead	2.0			P
7439-96-5	Manganese	20.1		*	P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	3.2	B		P
7782-49-2	Selenium	0.59	U		P
7440-22-4	Silver	0.57	U		P
7440-66-6	Zinc	4.7			P
7439-98-7	Molybdenu	0.15	B		P
7440-42-8	Boron	5.6	B		P
7440-61-1	Uranium	9.9	U		P
5955-70-0	Cyanide	0.26	U		C

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

WGSB5-7

FINE, TAN

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB532

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Matrix (soil/water): SOIL_ Lab Sample ID: 9810L067-011

Level (low/med): LOW__ Date Received: 10/09/98

% Solids: _92.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	1100	_	*	P_
7440-38-2	Arsenic__	1.5	B		P_
7440-39-3	Barium___	98.4		*	P_
7440-43-9	Cadmium__	0.07	U		P_
7440-47-3	Chromium_	2.1			P_
7440-48-4	Cobalt___	0.87	B		P_
7440-50-8	Copper___	2.5	B		P_
7439-89-6	Iron_____	1000	_	*	P_
7439-92-1	Lead_____	1.4	_		P_
7439-96-5	Manganese	13.8	_	*	P_
7439-97-6	Mercury__	0.05	U		AV
7440-02-0	Nickel___	1.5	B		P_
7782-49-2	Selenium_	0.67	U		P_
7440-22-4	Silver___	0.65	U		P_
7440-66-6	Zinc_____	2.8	B		P_
7439-98-7	Molybdenu	0.43	B		P_
7440-42-8	Boron____	1.6	B		P_
7440-61-1	Uranium__	11.2	U		P_
5955-70-0	Cyanide__	0.27	U		C_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

WGSB5-32

FINE,_TAN

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB522

Lab Name: RECRA_LABNET Contract: 60038-2

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Matrix (soil/water): SOIL_ Lab Sample ID: 9810L067-010

Level (low/med): LOW__ Date Received: 10/09/98

% Solids: _96.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1360		*	P
7440-38-2	Arsenic	4.2			P
7440-39-3	Barium	743		*	P
7440-43-9	Cadmium	0.07	U		P
7440-47-3	Chromium	1.5	B		P
7440-48-4	Cobalt	0.89	B		P
7440-50-8	Copper	1.7	B		P
7439-89-6	Iron	873		*	P
7439-92-1	Lead	0.98			P
7439-96-5	Manganese	12.7		*	P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	1.9	B		P
7782-49-2	Selenium	0.66	U		P
7440-22-4	Silver	0.64	U		P
7440-66-6	Zinc	3.0	B		P
7439-98-7	Molybdenu	0.19	B		P
7440-42-8	Boron	3.9	B		P
7440-61-1	Uranium	11.1	U		P
5955-70-0	Cyanide	0.26	U		C

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

WGSB5-22

FINE, TAN

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Initial Calibration Source: IV_____

Continuing Calibration Source: IV_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	3750.0	3735.46	99.6	5000.0	5043.63	100.9	4923.30	98.5	P
Arsenic	375.0	369.16	98.4	500.0	495.88	99.2	496.63	99.3	P
Barium	375.0	370.07	98.7	500.0	483.10	96.6	475.78	95.2	P
Cadmium	375.0	372.17	99.2	500.0	486.31	97.3	475.02	95.0	P
Chromium	375.0	370.23	98.7	500.0	498.06	99.6	497.47	99.5	P
Cobalt	375.0	370.64	98.8	500.0	498.50	99.7	497.29	99.5	P
Copper	375.0	378.08	100.8	500.0	517.90	103.6	530.10	106.0	P
Iron	3750.0	3725.17	99.3	5000.0	4984.10	99.7	4970.35	99.4	P
Le	375.0	380.68	101.5	500.0	513.86	102.8	518.24	103.6	P
Manganese	3750.0	3725.25	99.3	5000.0	4985.67	99.7	4962.85	99.3	P
Mercury	2.5	2.56	102.4	5.0	5.13	102.6	5.11	102.2	AV
Nickel	375.0	363.24	96.9	500.0	472.16	94.4	459.53	91.9	P
Selenium	375.0	372.75	99.4	500.0	507.67	101.5	507.36	101.5	P
Silver	375.0	395.60	105.5	500.0	538.75	107.8	530.72	106.1	P
Zinc	375.0	371.52	99.1	500.0	492.86	98.6	488.41	97.7	P
Molybdenu	375.0	365.86	97.6	500.0	494.87	99.0	495.65	99.1	P
Boron	375.0	369.56	98.5	500.0	491.40	98.3	483.25	96.6	P
Uranium	7500.0	7470.35	99.6	10000.0	10079.33	100.8	9893.93	98.9	P
Cyanide	100.0	93.10	93.1	100.0	93.80	93.8	93.80	93.8	C

1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB540

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Matrix (soil/water): SOIL_ Lab Sample ID: 9810L067-012

Level (low/med): LOW__ Date Received: 10/09/98

% Solids: _95.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	649		*	P
7440-38-2	Arsenic	0.80	B		P
7440-39-3	Barium	28.5	B	*	P
7440-43-9	Cadmium	0.07	U		P
7440-47-3	Chromium	3.2			P
7440-48-4	Cobalt	0.50	B		P
7440-50-8	Copper	1.3	B		P
7439-89-6	Iron	606		*	P
7439-92-1	Lead	0.65			P
7439-96-5	Manganese	9.0		*	P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.96	B		P
7782-49-2	Selenium	0.64	U		P
7440-22-4	Silver	0.62	U		P
7440-66-6	Zinc	2.6	B		P
7439-98-7	Molybdenu	0.32	B		P
7440-42-8	Boron	0.82	B		P
7440-61-1	Uranium	10.8	U		P
5955-70-0	Cyanide	0.26	U		C

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

WGSB5-40_____

FINE,_TAN_____

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Initial Calibration Source: IV_____

Continuing Calibration Source: IV_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum									NR
Arsenic									NR
Barium									NR
Cadmium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Manganese									NR
Mercury									NR
Nickel									NR
Selenium									NR
Silver	375.0	403.97	107.7	500.0	545.38	109.1	545.43	109.1	P
Zinc									NR
Molybdenu									NR
Boron									NR
Uranium				10000.0	9777.19	97.8			P
Cyanide	100.0	90.09	90.1	100.0	90.09	90.1	89.43	89.4	C

1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Initial Calibration Source: IV_____

Continuing Calibration Source: IV_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum				5000.0	5169.30	103.4	5138.90	102.8	P
Arsenic				500.0	511.72	102.3	510.00	102.0	P
Barium				500.0	498.40	99.7	494.06	98.8	P
Cadmium				500.0	512.87	102.6	507.28	101.5	P
Chromium				500.0	509.97	102.0	508.18	101.6	P
Cobalt				500.0	510.80	102.2	511.07	102.2	P
Copper				500.0	515.58	103.1	520.25	104.0	P
Iron				5000.0	5076.79	101.5	5060.11	101.2	P
Lead				500.0	519.08	103.8	521.28	104.3	P
Manganese				5000.0	5069.32	101.4	5056.59	101.1	P
Mercury				5.0	5.11	102.2	5.12	102.4	AV
Nickel				500.0	493.20	98.6	486.49	97.3	P
Selenium				500.0	515.84	103.2	516.66	103.3	P
Silver				500.0	547.38	109.5	553.15	110.6	P
Zinc				500.0	509.96	102.0	507.59	101.5	P
Molybdenu				500.0	502.43	100.5	502.67	100.5	P
Boron				500.0	502.44	100.5	504.88	101.0	P
Uranium				10000.0	9908.74	99.1	10008.87	100.1	P
Cyanide				100.0	93.80	93.8			C

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

AA CRDL Standard Source: HIGH PURITY_

ICP CRDL Standard Source: HIGH PURITY_

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Arsenic				20.0	20.35	101.8	21.64	108.2
Barium								
Cadmium				10.0	10.03	100.3	10.14	101.4
Chromium				20.0	19.79	99.0	20.17	100.8
Cobalt				100.0	101.80	101.8	104.32	104.3
Copper				50.0	52.62	105.2	54.31	108.6
Iron				200.0	199.39	99.7	202.21	101.1
Lead				6.0	6.98	116.3	7.58	126.3
Manganese				30.0	30.20	100.7	30.64	102.1
Mercury	0.2	0.17	85.0					
Nickel				80.0	79.70	99.6	79.60	99.5
Selenium				10.0	11.31	113.1	13.69	136.9
Silver								
Zinc				40.0	40.06	100.2	40.53	101.3
Molybdenu				200.0	200.65	100.3	203.71	101.9
Boron				200.0	199.44	99.7	202.41	101.2
Uranium								
Cyanide								

Control Limits: no limits have been established by EPA at this time

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No. GSB324

Initial Calibration Source: IV_____

Continuing Calibration Source: IV_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum									NR
Arsenic									NR
Barium									NR
Cadmium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Manganese									NR
Mercury									NR
Nickel									NR
Selenium									NR
Silver									NR
Zinc									NR
Molybdenu									NR
Boron									NR
Uranium									NR
Cyanide				100.0	90.09	90.1			C

1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

AA CRDL Standard Source: HIGH PURITY_

ICP CRDL Standard Source: HIGH PURITY_

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Arsenic								
Barium								
Cadmium								
Chromium								
Cobalt								
Copper								
Iron								
Le								
Manganese								
Mercury								
Nickel								
Selenium								
Silver				20.0	22.21	111.0	18.83	94.2
Zinc								
Molybdenu								
Boron								
Uranium								
Cyanide								

ontrol Limits: no limits have been established by EPA at this time

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

AA CRDL Standard Source: HIGH PURITY_

ICP CRDL Standard Source: HIGH PURITY_

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Arsenic								
Barium								
Cadmium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Manganese								
Mercury								
Nickel								
Selenium								
Silver				20.0	19.50	97.5	16.19	81.0
Zinc								
Molybdenu								
Boron								
Uranium								
Cyanide								

Control Limits: no limits have been established by EPA at this time

3
BLANKS

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	14.2	U	-30.3	B	-53.3	B	14.2	U	-5.088	B	P
Arsenic	2.8	U	2.8	U	3.0	B	2.8	U	0.560	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.060	U	P
Cadmium	0.4	U	0.4	U	0.4	U	0.4	U	0.080	U	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.120	U	P
Cobalt	0.7	B	0.7	U	0.7	U	0.7	U	0.140	U	P
Copper	1.6	B	2.1	B	3.5	B	1.8	B	0.760	B	P
Iron	13.9	U	13.9	U	13.9	U	13.9	U	2.780	U	P
Lead	1.7	U	1.7	U	1.7	U	1.7	U	0.340	U	P
Manganese	0.2	B	0.1	U	0.2	B	0.2	B	0.020	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.050	U	AV
Nickel	1.5	U	1.5	U	1.5	U	1.5	U	0.300	U	P
Selenium	3.6	U	3.6	U	3.6	U	3.6	U	0.720	U	P
Silver	3.5	U	3.5	U	3.5	U	3.5	U	0.700	U	P
Zinc	0.6	U	0.6	U	0.6	U	0.6	U	0.120	U	P
Molybdenu	1.0	B	1.0	B	1.2	B	1.1	B	0.353	B	P
Boron	2.3	U	2.3	U	3.3	B	3.0	B	0.460	U	P
Uranium	60.6	U	60.6	U	60.6	U	60.6	U	12.120	U	P
Cyanide	5.0	U	5.0	U	5.0	U	5.0	U	0.250	U	C

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No. GSB324

AA CRDL Standard Source: HIGH PURITY_

ICP CRDL Standard Source: HIGH PURITY_

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	Initial True	Initial Found	Initial %R	Final Found	Final %R
Aluminum								
Arsenic								
Barium								
Cadmium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Manganese								
Mercury								
Nickel								
Selenium								
Silver								
Zinc								
Molybdenu								
Boron								
Uranium				400.0	461.60	115.4	391.73	97.9
Cyanide								

Control Limits: no limits have been established by EPA at this time

U.S. EPA - CLP

3
BLANKS

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											NR
Arsenic											NR
Barium											NR
Cadmium											NR
Chromium											NR
Cobalt											NR
Copper											NR
Iron											NR
Lead											NR
Manganese											NR
Mercury											NR
Nickel											NR
Selenium											NR
Silver	3.5	U	4.4	B	3.5	U					P
Zinc											NR
Molybdenu											NR
Boron											NR
Uranium											NR
Cyanide											NR

3
BLANKS

ab Name: RECRA_LABNET_____ Contract: 60038-2___

ab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

reparation Blank Matrix (soil/water): SOIL_

reparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			-19.3	B							P
Arsenic			2.8	U							P
Barium			0.3	U							P
Cadmium			0.4	U							P
Chromium			0.6	U							P
Cobalt			0.7	B							P
Copper			1.9	B							P
Iron			13.9	U							P
Lead			1.7	U							P
Manganese			0.2	B							P
Mercury			0.1	U							AV
Nickel			1.5	U							P
Selenium			3.6	U							P
Silver			3.5	U							P
Zinc			0.6	U							P
Molybdenu			1.2	B							P
Boron			5.4	B							P
Uranium			60.6	U	60.6	U					P
Cyanide	5.0	U	5.0	U	5.0	U	5.0	U	0.250	U	C

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No: _____ SDG No.: GSB324

ICP ID Number: IC3_____ ICS Source: IV_____

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum								
Arsenic								
Barium								
Cadmium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Manganese								
[illegible]rcury								
[illegible]ckel								
Selenium								
Silver	0	1000	-3	1124.2	112.4	-3	1110.5	111.0
Zinc								
Molybdenu								
Boron								
Uranium								
Cyanide								

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No: _____ SDG No.: GSB324

ICP ID Number: IC1_____ ICS Source: IV_____

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum								
Arsenic								
Barium								
Cadmium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Manganese								
Mercury								
Nickel								
Selenium								
Silver								
Zinc								
Molybdenu								
Boron								
Uranium	0	5000	1	5287.9	105.8	-67	5247.2	104.9
Cyanide								

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No: _____ SDG No.: GSB324

ICP ID Number: TR_____ ICS Source: IV_____

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	471213	474718.3	94.9	481097	484704.3	96.9
Arsenic	0	100	2	96.6	96.6	3	99.4	99.4
Barium	0	500	-2	465.2	93.0	-2	475.0	95.0
Cadmium	0	1000	3	831.9	83.2	2	876.4	87.6
Chromium	0	500	10	443.9	88.8	0	458.7	91.7
Cobalt	0	500	1	427.1	85.4	1	441.4	88.3
Copper	0	500	2	495.9	99.2	2	497.3	99.5
Iron	200000	200000	173729	176448.5	88.2	179486	180939.9	90.5
Lead	0	50	0	44.7	89.4	4	47.4	94.8
Manganese	0	500	2	451.8	90.4	0	462.0	92.4
Mercury								
Nickel	0	1000	96	803.5	80.4	2	837.0	83.7
Selenium	0	50	-4	45.7	91.4	0	45.4	90.8
Silver								
Zinc	0	1000	0	890.2	89.0	-1	921.9	92.2
Molybdenu	0	1000	1	882.6	88.3	17	917.9	91.8
Boron	0	1000	1	934.4	93.4	5	961.2	96.1
Uranium								
Cyanide								

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No: _____ SDG No.: GSB324

ICP ID Number: IC3_____ ICS Source: IV_____

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum								
Arsenic								
Barium								
Cadmium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Manganese								
Mercury								
Nickel								
Selenium								
Silver	0	1000	2	1148.3	114.8	3	1142.5	114.2
Zinc								
Molybdenu								
Boron								
Uranium								
Cyanide								

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6
DUPLICATES

EPA SAMPLE NO.

GSB324D

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Matrix (soil/water): SOIL_ Level (low/med): _LOW__

% Solids for Sample: _92.6 % Solids for Duplicate: __92.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		1750.9678		1241.1744		34.1	*	P
Arsenic		1.5491	B	1.2099	B	24.6		P
Barium	41.5351	40.4075	B	83.4625		69.5	*	P
Cadmium		0.0831	U	0.0847	U			P
Chromium	2.0768	2.4998		2.1132	B	16.8		P
Cobalt		1.0132	B	0.9397	B	7.5		P
Copper		2.2057	B	1.8841	B	15.7		P
Iron		1714.8135		1119.4787		42.0	*	P
Lead	0.6230	1.4132		1.1049		24.5		P
Manganese	3.1151	20.3294		12.8658		45.0	*	P
Mercury		0.0540	U	~~0.0540~~ 0.0491	U			AV
Nickel		2.0053	B	1.6358	B	20.3		P
Selenium		0.8247	B	0.7623	U	200.0		P
Silver		0.7269	U	0.7411	U			P
Zinc	4.1535	4.8420		2.8643	B	51.3		P
Molybdenu		0.3215	B	0.3746	B	15.3		P
Boron		5.9449	B	2.6183	B	77.7		P
Uranium		12.5851	U	12.8319	U			P
Cyanide								NR

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

GSB324S

Lab Name: RECRA_LABNET_____ Contract: 600 -2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Matrix (soil/water): SOIL__ Level (low/med): LOW___

% Solids for Sample: _92.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Arsenic	75-125	373.3354		1.5491	B	419.38	88.7		P
Barium	75-125	399.2292		40.4075	B	419.38	85.6		P
Cadmium	75-125	8.4900		0.0831	U	10.48	81.0		P
Chromium	75-125	38.2864		2.4998		41.94	85.3		P
Cobalt	75-125	89.5565		1.0132	B	104.85	84.4		P
Copper	75-125	50.4789		2.2057	B	52.42	92.1		P
Iron									NR
Lead	75-125	94.4604		1.4132		Diff 104.85	88.7		P
Manganese	75-125	0.5048 104.1456		20.3294		Diff 104.85	79.9		P
Mercury	75-125	~~0.505~~ ~~0.4565~~		Diff 0.0540	U	0.54 ~~0.49~~	93.5 ~~93.2~~		AV
Nickel	75-125	84.6053		2.0053	B	104.85	78.8		P
Selenium	75-125	372.8801		0.8247	B	419.38	88.7		P
Silver	75-125	10.1178		0.7269	U	10.48	96.5		P
Zinc	75-125	92.8246		4.8420		104.85	83.9		P
Molybdenu	75-125	179.6959		0.3215	B	209.69	85.5		P
Boron	75-125	173.6690		5.9449	B	209.69	80.0		P
Uranium	75-125	936.0163		12.5851	U	1048.46	89.3		P
Cyanide									NR

Comments:
WGSB3-24 Corrected the spike sample result, spiked added & the % recovery
FINE, TAN due to an incorrect weight on the mercury preparation sheet (FORM 13)
11/9/98

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7

LABORATORY CONTROL SAMPLE

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Solid LCS Source: IV_____

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Arsenic									
Barium									
Cadmium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Manganese									
Mercury				1.16	0.97		0.928	1.392	83.6
Nickel									
Selenium									
Silver									
Zinc									
Molybdenu									
Boron									
Uranium									
Cyanide									

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7

LABORATORY CONTROL SAMPLE

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Solid LCS Source: IV_____

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				1000.0	1029.4		800.0	1200.0	102.9
Arsenic				2000.0	2009.7		1600.0	2400.0	100.5
Barium				1000.0	973.9		800.0	1200.0	97.4
Cadmium				50.0	48.0		40.0	60.0	96.0
Chromium				100.0	99.6		80.0	120.0	99.6
Cobalt				500.0	496.4		400.0	600.0	99.3
Copper				250.0	263.7		200.0	300.0	105.5
Iron				1000.0	995.0		800.0	1200.0	99.5
Lead				500.0	515.1		400.0	600.0	103.0
Manganese				150.0	150.4		120.0	180.0	100.3
Mercury									
Nickel				400.0	373.2		320.0	480.0	93.3
Selenium				2000.0	2021.6		1600.0	2400.0	101.1
Silver				100.0	82.4		80.0	120.0	82.4
Zinc				200.0	196.4		160.0	240.0	98.2
Molybdenu				1000.0	1004.5		800.0	1200.0	100.4
Boron				1000.0	949.9		800.0	1200.0	95.0
Uranium				1000.0	988.7		800.0	1200.0	98.9
Cyanide									

7

LABORATORY CONTROL SAMPLE

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Solid LCS Source: IV_____

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Arsenic									
Barium									
Cadmium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Manganese									
Mercury									
Nickel									
Selenium									
Silver									
Zinc									
Molybdenu									
Boron									
Uranium									
Cyanide				10.0	9.5		8.0	12.0	95.0

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7

LABORATORY CONTROL SAMPLE

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Solid LCS Source: IV_____

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Arsenic									
Barium									
Cadmium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Manganese									
Mercury									
Nickel									
Selenium									
Silver									
Zinc									
Molybdenu									
Boron									
Uranium									
Cyanide				10.0	9.6		8.0	12.0	96.0

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10
Instrument Detection Limits (Quarterly)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

ICP ID Number: IC1_____ Date: 10/01/98

Flame AA ID Number : _____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Arsenic			10		NR
Barium			200		NR
Cadmium			5		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Selenium			5		NR
Silver			10		NR
Zinc			20		NR
Molybdenu			100		NR
Boron			100		NR
Uranium	367.00			60.6	P
Cyanide			10		NR

Comments:

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9

ICP SERIAL DILUTION

EPA SAMPLE NO.

GSB324L

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

Matrix (soil/water): SOIL_ Level (low/med): LOW__

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	8431.26		8354.50		0.9		P
Arsenic	7.46	B	16.92	B	126.8		P
Barium	194.57	B	198.07	B	1.8		P
Cadmium	0.40	U	2.00	U			P
Chromium	12.04		11.94	B	0.8		P
Cobalt	4.88	B	6.71	B	37.5		P
Copper	10.62	B	17.86	B	68.2		P
Iron	8257.17		8656.50		4.8		P
Lead	6.80		8.65	B	27.2		P
Manganese	97.89		101.35		3.5		P
Mercury							NR
Nickel	9.66	B	10.50	B	8.7		P
Selenium	3.97	B	18.00	U	100.0		P
Silver	3.50	U	17.50	U			P
Zinc	23.32		19.50	B	16.4		P
Molybdenu	1.55	B	5.52	B	256.1		P
Boron	28.63	B	49.10	B	71.5		P
Uranium	60.60	U	303.00	U			P
Cyanide							NR

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10

Instrument Detection Limits (Quarterly)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

ICP ID Number: _____ Date: 10/01/98

Flame AA ID Number : CN1_____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Arsenic			10		NR
Barium			200		NR
Cadmium			5		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Selenium			5		NR
Silver			10		NR
Zinc			20		NR
Molybdenu			100		NR
Boron			100		NR
Uranium					NR
Cyanide			10	5.0	C

Comments:

10

Instrument Detection Limits (Quarterly)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: B324

ICP ID Number: IC3_____ Date: 10/01/98

Flame AA ID Number : _____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Arsenic			10		NR
Barium			200		NR
Cadmium			5		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Selenium			5		NR
Silver	328.00		10	3.5	P
Zinc			20		NR
Molybdenu			100		NR
Boron			100		NR
Uranium					NR
Cyanide			10		NR

Comments:

10

Instrument Detection Limits (Quarterly)

Lab Name: RECRA_LABNET Contract: 60038-2

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: SDG No.: GSB324

ICP ID Number: TR Date: 10/01/98

Flame AA ID Number :

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.20		200	14.2	P
Arsenic	189.00		10	2.8	P
Barium	493.40		200	0.3	P
Cadmium	226.50		5	0.4	P
Chromium	267.70		10	0.6	P
Cobalt	228.60		50	0.7	P
Copper	324.70		25	0.8	P
Iron	271.40		100	13.9	P
Lead	220.30		3	1.7	P
Manganese	257.60		15	0.1	P
Mercury			0.2		NR
Nickel	231.60		40	1.5	P
Selenium	196.00		5	3.6	P
Silver			10		NR
Zinc	213.80		20	0.6	P
Molybdenu	202.00		100	0.9	P
Boron	249.60		100	2.3	P
Uranium					NR
Cyanide			10		NR

Comments:

10

Instrument Detection Limits (Quarterly)

Lab Name: RECRA_LABNET Contract: 60038-2

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: DG No.: GS3324

ICP ID Number: Date: 10/01/98

Flame AA ID Number : HG2

Furnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Arsenic			10		NR
Barium			200		NR
Cadmium			5		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Manganese			15		NR
Mercury	253.70		0.2	0.1	AV
Nickel			40		NR
Selenium			5		NR
Silver			10		NR
Zinc			20		NR
Molybdenu			100		NR
Boron			100		NR
Uranium					NR
Cyanide			10		NR

Comments:

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11B
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

ICP ID Number: IC1_____ Date: 01/01/98

Analyte	Wavelength (nm)	Interelement Correction Factors for : AS_	B__	BA_	CO_	MN_
Aluminum_						
Arsenic__						
Barium___						
Cadmium__						
Chromium_						
Cobalt___						
Copper___						
Iron_____						
Lead_____						
Manganese						
Mercury__						
Nickel___						
S[illegible]nium_						
S[illegible]er___						
Zinc_____						
Molybdenu						
Boron____						
Uranium__	367.00	0.0000000	0.0004900	0.0000000	0.0012400	-0.0009400
Cyanide__						

Comments:

_____
_____
_____
_____

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11A

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

ICP ID Number: IC1_____ Date: 01/01/98

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	AG_
Aluminum_						
Arsenic__						
Barium___						
Cadmium__						
Chromium_						
Cobalt___						
Copper___						
Iron_____						
Lead_____						
Manganese						
Mercury__						
Nickel___						
Selenium_						
Silver___						
Zinc_____						
Molybdenu						
Boron____						
Uranium__	_367.00__	_0.0001660	_0.0000000_	_0.0028000	_0.0000000	_0.0000000
Cyanide__						

Comments:

_____

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11B

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

ICP ID Number: IC1_____ Date: 01/01/98

Analyte	Wavelength (nm)	Interelement Correction Factors for : TL_	U__	V__	ZN_	___
Aluminum_						
Arsenic__						
Barium___						
Cadmium__						
Chromium_						
Cobalt___						
Copper___						
Iron____						
Lead____						
Manganese						
Mercury__						
Nickel___						
Selenium_						
Silver___						
Zinc____						
Molybdenu						
Boron___						
Uranium__	367.00	0.0000000	0.0000000	-0.0080200	0.0000000	
Cyanide__						

Comments:

FORM XI (Part 2) - IN ILM04.0

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11B

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

ab Name: RECRA_LABNET_____ Contract: 60038-2___

ab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

CP ID Number: IC1_____ Date: 01/01/98

Analyte	Wave-length (nm)	Interelement Correction Factors for : MO_	NI_	PB_	SB_	TI_
Aluminum_						
Arsenic__						
Barium___						
Cadmium__						
Chromium_						
Cobalt___						
Copper___						
Iron_____						
Lead_____						
Manganese						
Mercury__						
Nickel___						
Selenium_						
Silver___						
Zinc_____						
Molybdenu						
Boron____						
Uranium__	_367.00__	_0.0000000	_0.0000000_	_0.0000000	_0.0000000	_0.0000000
Cyanide__						

omments:

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11B
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

ICP ID Number: IC3_____ Date: 01/01/98

Analyte	Wave-length (nm)	Interelement Correction Factors for : CR_	NI_	V__	___	___
Aluminum	308.20	0.0000000	0.0000000	-0.0291050		
Arsenic	193.60	0.0000000	0.0000000	0.0149680		
Barium	493.40	0.0000000	0.0000000	0.0000000		
Cadmium	228.80	0.0000000	0.0000000	0.0000000		
Chromium	267.70	0.0000000	0.0000000	0.0000000		
Cobalt	228.60	0.0000000	0.0000000	0.0000000		
Copper	324.70	0.0000000	0.0000000	0.0000000		
Iron	259.90	0.0000000	0.0000000	0.0000000		
Lead	220.30	-0.0014600	0.0000000	0.0000000		
Manganese	257.60	0.0000000	0.0000000	0.0000000		
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000		
[illegible]nium	196.00	0.0000000	0.0000000	0.0000000		
[illegible]ver	328.00	0.0000000	0.0000000	-0.0087870		
Zinc	213.80	0.0000780	0.0035760	0.0000000		
Molybdenu	203.00	0.0000000	0.0000000	0.0000000		
Boron	249.00	0.0000000	0.0000000	0.0000000		
Uranium	367.00	0.0000000	0.0000000	0.0000000		
Cyanide						

Comments:

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U.S. EPA - CLP

11A
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

ICP ID Number: IC3_____ Date: 01/01/98

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	AS_
Aluminum_	308.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic__	193.60	0.0046500	0.0000000	0.0002010	0.0000000	0.0000000
Barium___	493.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium__	228.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0067500
Chromium_	267.70	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cobalt___	228.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper___	324.70	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Iron_____	259.90	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead_____	220.30	0.0008360	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.60	0.0000120	0.0000000	-0.0000580	0.0000000	0.0000000
Mercury__						
Nickel___	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium_	196.00	0.0000830	0.0000000	-0.0005080	0.0000000	0.0000000
Silver___	328.00	0.0000000	0.0000000	-0.0000100	0.0000000	0.0000000
Zinc_____	213.80	0.0000080	0.0000000	0.0000860	0.0000000	0.0000000
Molybdenu	203.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Boron____	249.00	0.0000000	0.0000000	0.0017200	0.0000000	0.0000000
Uranium__	367.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cyanide__						

Comments:

U.S. EPA - CLP

11B

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

ICP ID Number: TR_____ Date: 01/01/98

Analyte	Wavelength (nm)	Interelement Correction Factors for : MN_	TI_	TL_	V__	___
Aluminum	308.20	0.0000000	0.0000000	0.0000000	0.0472660	
Arsenic	189.00	0.0000000	0.0000000	0.0000000	0.0000000	
Barium	493.40	0.0000000	0.0000000	0.0000000	0.0000000	
Cadmium	226.50	0.0000000	0.0000910	0.0000000	0.0000000	
Chromium	267.70	0.0884200	0.0000000	0.0000000	0.1003470	
Cobalt	228.60	0.0000000	0.0007460	0.0000000	0.0537750	
Copper	324.70	0.0000000	0.0000000	0.0000000	-0.0172240	
Iron	271.40	0.0000000	0.0000000	0.0000000	0.1544880	
Lead	220.30	0.0000000	-0.0005440	0.0000000	-0.3906210	
Manganese	257.60	0.0000000	0.0000000	0.0000000	0.0000000	
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	
S[illegible]nium	196.00	0.2921430	0.0000000	0.0000000	0.0000000	
S[illegible]er	328.00	0.0000000	0.0000000	0.0000000	0.0369210	
Zinc	213.80	0.0000000	0.0000000	0.0000000	0.0266840	
Molybdenu	202.00	0.0000000	0.0000000	0.0000000	-0.2394460	
Boron	249.60	0.0000000	0.0000000	0.0000000	0.0000000	
Uranium		0.0000000	0.0000000	0.0000000	0.0000000	
Cyanide						

Comments:

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11A
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

ICP ID Number: TR_____ Date: 01/01/98

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	CR_
Aluminum_	308.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic__	189.00	0.0000000	0.0000000	-0.0057060	0.0000000	-0.0018440
Barium___	493.40	0.0000000	0.0000000	0.0100100	0.0000000	0.0000000
Cadmium__	226.50	-0.0023100	0.0000000	0.3095520	0.0000000	0.0000000
Chromium_	267.70	0.0000000	0.0000000	-0.0230680	0.0000000	0.0000000
Cobalt___	228.60	0.0000000	0.0000000	0.0036730	0.0000000	0.0000000
Copper___	324.70	0.0031930	0.0000000	0.0061410	0.0000000	0.0000000
Iron_____	271.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead_____	220.30	-0.2198400	0.0000000	0.0638520	0.0125620	0.0000000
Manganese	257.60	0.0000000	0.0000000	-0.0000560	0.0000190	0.0000000
Mercury__						
Nickel___	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium_	196.00	0.0000000	0.0000000	-0.3394540	0.0000000	0.0000000
Silver___	328.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc_____	213.80	0.0014000	0.0000000	0.1168450	0.0000000	0.0000000
Molybdenu	202.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Boron____	249.60	0.0000000	0.0000000	-0.0135640	0.0000000	0.0002530
Uranium__		0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cyanide__						

Comments:

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12
ICP LINEAR RANGES (QUARTERLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

ICP ID Number: IC3_____ Date: 10/01/98

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	3.30	1000000.0	P
Arsenic	3.30	100000.0	P
Barium	3.30	100000.0	P
Cadmium	3.30	100000.0	P
Chromium	3.30	100000.0	P
Cobalt	3.30	100000.0	P
Copper	3.30	50000.0	P
Iron	3.30	500000.0	P
Lead	3.30	100000.0	P
Manganese	3.30	100000.0	P
Mercury			NR
Nickel	3.30	100000.0	P
Selenium	3.30	100000.0	P
Silver	3.30	50000.0	P
Zinc	3.30	100000.0	P
Molybdenu	3.30	100000.0	P
Boron	3.30	100000.0	P
Uranium	3.30	100000.0	P
Cyanide			

omments:

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12
ICP LINEAR RANGES (QUARTERLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG : GSB324

ICP ID Number: IC1_____ Date: 10/[illegible]/98

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum			NR
Arsenic			NR
Barium			NR
Cadmium			NR
Chromium			NR
Cobalt			NR
Copper			NR
Iron			NR
Lead			NR
Manganese			NR
Mercury			NR
Nickel			NR
Selenium			NR
Silver			NR
Zinc			NR
Molybdenu			NR
Boron			NR
Uranium	3.30	50000.0	P
Cyanide			

Comments:

12
ICP LINEAR RANGES (QUARTERLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.: GSB324

ICP ID Number: TR_____ Date: 10/01/98

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	15.00	1000000.0	P
Arsenic	15.00	100000.0	P
Barium	15.00	100000.0	P
Cadmium	15.00	100000.0	P
Chromium	15.00	50000.0	P
Cobalt	15.00	50000.0	P
Copper	15.00	100000.0	P
Iron	15.00	500000.0	P
Lead	15.00	400000.0	P
Manganese	15.00	20000.0	P
Mercury			NR
Nickel	15.00	100000.0	P
Selenium	15.00	100000.0	P
Silver	15.00	10000.0	P
Zinc	15.00	10000.0	P
Molybdenu	15.00	100000.0	P
Boron	15.00	100000.0	P
Uranium	15.00		P
Cyanide			

Comments:

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13
PREPARATION LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.:_NEW_ME SAS No.: _____ SDG No.:GSB324

Method: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
GSB324	10/15/98	1.04	200
GSB324D	10/15/98	1.02	200
GSB324S	10/15/98	1.03	200
GSB330	10/15/98	1.04	200
GSB340	10/15/98	1.10	200
GSB4-5	10/15/98	1.03	200
GSB414	10/15/98	1.14	200
GSB430	10/15/98	1.46	200
GSB440	10/15/98	1.04	200
GSB5-7	10/15/98	1.29	200
GSB514	10/15/98	1.07	200
GSB522	10/15/98	1.13	200
GSB532	10/15/98	1.16	200
GSB540	10/15/98	1.18	200
LCSS114	10/15/98	1.00	200
PBS114	10/15/98	1.00	200

13
PREPARATION LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.:_NEW_ME SAS No.: _____ SDG No.:GSB324

Method: AV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)	
GSB324	10/21/98	0.10	50	
GSB324D	10/21/98	~~0.10~~ 0.11	50	} Correction MLD 11/9/98
GSB324S	10/21/98	~~0.11~~ 0.10	50	
GSB330	10/21/98	0.10	50	
GSB340	10/21/98	0.10	50	
GSB4-5	10/21/98	0.10	50	
GSB414	10/21/98	0.10	50	
GSB430	10/21/98	0.10	50	
GSB440	10/21/98	0.10	50	
GSB5-7	10/21/98	0.10	50	
GSB514	10/21/98	0.12	50	
GSB522	10/21/98	0.11	50	
GSB532	10/21/98	0.10	50	
GSB540	10/21/98	0.10	50	
LCSS104	10/21/98	0.20	50	
PBS104	10/21/98	0.10	50	

13
PREPARATION LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.:_NEW_ME SAS No.: _____ SDG No.:GSB324

Method: C_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
GSB324	10/14/98	5.00	250
GSB330	10/14/98	5.00	250
LCSS260	10/14/98	5.00	250
PBS160	10/14/98	5.00	250

13
PREPARATION LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.:_NEW_ME SAS No.: _____ SDG No.:GSB324

Method: C_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
GSB340	10/15/98	5.00	250
GSB4-5	10/15/98	5.00	250
GSB414	10/15/98	5.00	250
GSB430	10/15/98	5.00	250
GSB440	10/15/98	5.00	250
GSB5-7	10/15/98	5.00	250
GSB514	10/15/98	5.00	250
GSB522	10/15/98	5.00	250
GSB532	10/15/98	5.00	250
GSB540	10/15/98	5.00	250
LCSS261	10/15/98	5.00	250
PBS161	10/15/98	5.00	250

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14
ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: IC1_____ Method: P_

Start Date: 10/27/98 End Date: 10/27/98

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN						
S0	1.00	1054		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
S2	1.00	1100		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
ICV	1.00	1102		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
ICB	1.00	1105		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCV	1.00	1108		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCB	1.00	1112		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CRI	1.00	1115		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
ICSA	1.00	1117		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
ICSAB	1.00	1121		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCV	1.00	1125		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCB	1.00	1129		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
PBS114	1.00	1132		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
LCSS114	1.00	1134		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB324	1.00	1137		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB324L	5.00	1140		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB324D	1.00	1143		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB324S	1.00	1146		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB330	1.00	1149		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB340	1.00	1152		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB4-5	1.00	1155		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB414	1.00	1158		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCV	1.00	1202		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCB	1.00	1206		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB430	1.00	1209		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB440	1.00	1212		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB5-7	1.00	1215		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB514	1.00	1218		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB522	1.00	1221		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB532	1.00	1224		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
GSB540	1.00	1227		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCV	1.00	1232		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
CCB	1.00	1235		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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14
ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: IC1_____ Method: P_

Start Date: 10/27/98 End Date: 10/27/98

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN						
CRI	1.00	1237																			X							
ICSA	1.00	1240																			X							
ICSAB	1.00	1243																			X							
CCV	1.00	1247																			X							
CCB	1.00	1251																			X							

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14
ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: IC3_____ Method: P_

Start Date: 10/30/98 End Date: 10/30/98

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN						
S0	1.00	0850		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
S1	1.00	0853		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
ICV	1.00	0858		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
ICB	1.00	0901		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
CRI	1.00	0904		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
ICSA	1.00	0906		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
ICSAB	1.00	0909		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
CCV	1.00	0912		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
CCB	1.00	0915		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
PBS114	1.00	0918		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
LCSS114	1.00	0920		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB324	1.00	0923		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB324L	5.00	0925		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB324D	1.00	0928		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB324S	1.00	0931		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB330	1.00	0934		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB340	1.00	0936		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB4-5	1.00	0939		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB414	1.00	0942		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
CCV	1.00	0946		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
CCB	1.00	0949		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB430	1.00	0951		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB440	1.00	0954		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB5-7	1.00	0957		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB514	1.00	0959		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
GSB522	1.00	1005		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
CCV	1.00	1009		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
CCB	1.00	1012		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
CRI	1.00	1015		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
ICSA	1.00	1017		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
ICSAB	1.00	1020		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
CCV	1.00	1023		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: IC3_____ Method: P_

Start Date: 10/30/98 End Date: 10/30/98

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN								
CCB_____	1.00	1026		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: IC3_____ Method: P_

Start Date: 10/30/98 End Date: 10/30/98

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
S0	1.00	1503		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
S1	1.00	1505		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
ICV	1.00	1511		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
ICB	1.00	1514		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
CRI	1.00	1516		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
ICSA	1.00	1519		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
ICSAB	1.00	1522		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
CCV	1.00	1525		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
CCB	1.00	1528		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
GSB532	1.00	1530		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
GSB540	1.00	1533		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
CRI	1.00	1536		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
ICSA	1.00	1539		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
ICSAB	1.00	1542		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
CCV	1.00	1545		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
CCB	1.00	1548		-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
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U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: CN1_____ Method: C_

Start Date: 10/14/98 End Date: 10/14/98

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
S0	1.00	1034		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
S5	1.00	1035		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
S10	1.00	1036		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
S20	1.00	1037		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
S50	1.00	1038		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
S100	1.00	1039		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
S150	1.00	1040		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
S200	1.00	1041		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
ICV	1.00	1114		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
ICB	1.00	1115		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
CCV	1.00	1116		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
CCB	1.00	1117		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
ZZZZZZ	1.00	1118		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1119		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1120		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1121		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1122		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1123		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1124		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1125		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1126		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCV	1.00	1127		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
CCB	1.00	1128		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
ZZZZZZ	1.00	1129		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1130		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1131		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1132		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB324	1.00	1133		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
GSB330	1.00	1134		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
ZZZZZZ	1.00	1135		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PBS160	1.00	1136		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
LCSS260	1.00	1137		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: CN1_____ Method: C_

Start Date: 10/14/98 End Date: 10/14/98

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
ZZZZZZ	1.00	1138																									
CCV	1.00	1139																				X					
CCB	1.00	1140																				X					

FORM XIV - IN ILM04.0

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: CN1_____ Method: C_

Start Date: 10/15/98 End Date: 10/15/98

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
S0	1.00	1131																				X					
S5	1.00	1132																				X					
S10	1.00	1133																				X					
S20	1.00	1134																				X					
S50	1.00	1135																				X					
S100	1.00	1136																				X					
S150	1.00	1137																				X					
S200	1.00	1138																				X					
ICV	1.00	1202																				X					
ICB	1.00	1203																				X					
CCV	1.00	1204																				X					
CCB	1.00	1205																				X					
ZZZZZZ	1.00	1206																									
ZZZZZZ	1.00	1207																									
ZZZZZZ	1.00	1208																									
ZZZZZZ	1.00	1209																									
ZZZZZZ	1.00	1210																									
ZZZZZZ	1.00	1211																									
GSB340	1.00	1212																				X					
GSB4-5	1.00	1213																				X					
CCV	1.00	1214																				X					
CCB	1.00	1215																				X					
GSB414	1.00	1216																				X					
GSB430	1.00	1217																				X					
GSB440	1.00	1218																				X					
GSB5-7	1.00	1219																				X					
GSB514	1.00	1220																				X					
GSB522	1.00	1221																				X					
GSB532	1.00	1222																				X					
GSB540	1.00	1223																				X					
ZZZZZZ	1.00	1224																									
PBS161	1.00	1225																				X					

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: CN1_____ Method: C_

Start Date: 10/15/98 End Date: 10/15/98

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
LCSS261_	1.00	1226																				X					
CCV_____	1.00	1227																				X					
CCB_____	1.00	1228																				X					

FORM XIV - IN ILM04.0

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: HG2_____ Method: AV

Start Date: 10/22/98 End Date: 10/22/98

EPA Sample No.	D/F	Time	% R	Analytes																									
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
S0	1.00	1149		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
S0.2	1.00	1151		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
S1	1.00	1153		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
S2	1.00	1156		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
S5	1.00	1158		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
S10	1.00	1201		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
ICV	1.00	1203		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
ICB	1.00	1206		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
CCV	1.00	1208		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
CCB	1.00	1211		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
CRA	1.00	1213		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
PBS104	1.00	1215		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
LCS104	1.00	1217		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB324	1.00	1220		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB324D	1.00	1222		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB324S	1.00	1224		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB330	1.00	1227		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB340	1.00	1229		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB4-5	1.00	1231		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB414	1.00	1233		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
CCV	1.00	1235		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
CCB	1.00	1238		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB430	1.00	1240		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB440	1.00	1242		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB5-7	1.00	1245		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB514	1.00	1247		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB522	1.00	1249		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB532	1.00	1251		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
GSB540	1.00	1254		-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1256		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1258		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ZZZZZZ	1.00	1300		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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14
ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: HG2_____ Method: AV

Start Date: 10/22/98 End Date: 10/22/98

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN						
CCV	1.00	1303												X														
CCB	1.00	1305												X														
ZZZZZZ	1.00	1307																										
ZZZZZZ	1.00	1310																										
ZZZZZZ	1.00	1312																										
ZZZZZZ	1.00	1314																										
CCV	1.00	1316												X														
CCB	1.00	1319												X														

FORM XIV - IN ILM04.0

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ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: TR_____ Method: P_

Start Date: 10/28/98 End Date: 10/28/98

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN						
S0	1.00	0806		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
S1B	1.00	0813		X	X	X	X	X	X	X	X	X	_	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
S1	1.00	0821		X	X	X	X	X	X	X	X	X	_	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
S2	1.00	0829		X	_	_	_	_	_	_	X	X	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
S3	1.00	0837											X	_							_	_	_	_	_	_	_	_
ICV	1.00	0845		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
ICB	1.00	0854		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
CRI	1.00	0901			X	_	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
ICSA	1.00	0926		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
ICSAB	1.00	0940		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
CCV	1.00	0948		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
CCB	1.00	1003		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
PB114	1.00	1010		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
ICB114	1.00	1016		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB324	1.00	1026		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB324L	5.00	1034		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB324D	1.00	1041		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB324S	1.00	1049		_	X	X	X	X	X	X	_	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
ZZZZZZ	1.00	1057																			_	_	_	_	_	_	_	_
GSB330	1.00	1105		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB340	1.00	1112		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB4-5	1.00	1120		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
CCV	1.00	1129		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
CCB	1.00	1139		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB414	1.00	1146		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB430	1.00	1153		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB440	1.00	1201		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB5-7	1.00	1209		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB514	1.00	1223		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB522	1.00	1231		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB532	1.00	1238		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
GSB540	1.00	1246		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_	_
				_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_

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ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-2___

Lab Code: RECRA_ Case No.: NEW_ME SAS No.: _____ SDG No.:GSB324

Instrument ID Number: TR_____ Method: P_

Start Date: 10/28/98 End Date: 10/28/98

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
CCV	1.00	1255		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_
CCB	1.00	1305		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_
CRI	1.00	1311		_	X	_	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_
ICSA	1.00	1318		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_
ICSAB	1.00	1325		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_
CCV	1.00	1334		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_
CCB	1.00	1343		X	X	X	X	X	X	X	X	X	X	_	X	X	_	X	X	X	_	_	_	_	_	_	_

Raw Data

Metals by ICP

Method: UONLY Sample Name: S0 Operator:
Run Time: 10/27/98 10:54 Filename: IC1027A
Mode: IR Type: X Corr. Facts: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.:

Elems	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924
Units	count	count	count	count	count	count
Avge	-.05906	.00006	.00053	0	.05253	.00053
SDev	.0056	.00011	.0003	0	.0163	.00011
%RSD	9.48887	173.205	57.2822	0	31.0445	21.6506

Elems	B-2496	Ca3179
Units	count	count
Avge	0	-.00333
SDev	0	.0007
%RSD	0	21.0713

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IC1027A

98L1314

9810L067

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Updated Rev
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Method: UONLY Sample Name: S1 Operator:
Run Time: 10/27/98 10:57 Filename: IC1027A
Mode: IR Type: X Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.:

Elems	Al3082	Co2286	Fe2599	Mn2576	V-2924	Ca3179
Units	count	count	count	count	count	count
Avge	2.80279	1.71453	2.25986	.06506	1.41473	12.0599
SDev	.01551	.01365	.01578	.0005	.0116	.09874
%RSD	.55369	.79615	.69833	.77355	.82059	.81875

Method: UONLY Sample Name: S2 Operator:
Time: 10/27/98 11:00 Filename: IC102?A
Mode: IR Type: X Corr. Factor: 1.00000
Lab ID.: Cust. Smpl. ID.: Cust. ID.:

Elems	U-3670	B-2496
Units	count	count
Avge	3.82026	.40993
SDev	.06065	.00236
%RSD	.68767	.57937

Method: UONLY Sample Name: ICV Operator: MDL
Run Time: 10/27/98 11:02 Filename: IC1027A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: RECRA Cust. Smpl. ID.: Cust. ID.:

Elems	Al3082	Co2286	Fe2599	Mn2576	V-3670	V-2924
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3729.	1918.	3813.	562.5	7470.	1871.
SDev	13.12	4.082	16.47	.0001	3.442	3.533
%RSD	.352	.2129	.4319	0	.0461	.1889

Elems	B-2496	Ca3179
Units	ppb	ppb
Avge	3657.	19050.
SDev	16.93	35.67
%RSD	.463	.1872

Method: UONLY Sample Name: ICB Operator: MDL
Run Time: 10/27/98 11:05 Filename: IC102TA
Mode: CONC Type: B Corr. Factor: 1.00000
Lab ID.: RECRA Cust. Smpl. ID.: Cust. ID.:

Elems	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.9691	.1976	.0039	.0000	16.12	-.1290
SDev	2.735	2.053	2.233	.0001	26.53	1.203
%RSD	282.2	1039	57240	700.6	164.6	932.6

Elems	B-2496	Ca3179
Units	ppb	ppb
Avge	H16.30	3.169
SDev	5.648	4.589
%RSD	34.65	144.8

Method: UONLY Sample Name: CCV Operator: MDL
Run Time: 10/27/98 11:08 Filename: IC1027A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: RECRA Cust. Spl. ID.: Cust. ID.:

Elems	Al3082	Co2286	Fe2599	Mn2576	U-3670 ✓	V-2924
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5024.	2582.	5149.	762.3	10080.	2530.
SDev	14.78	12.56	4.047	7.043	57.51	4.432
%RSD	.2941	.4865	.0786	.9239	.5706	.1752

Elems	B-2496	Ca3179
Units	ppb	ppb
Avge	4880.	25660.
SDev	29.29	56.22
%RSD	.6002	.2191

Analysis Report Averages Wed 10-28-98 08:47:40 AM [illegible]

Method: UONLY Sample Name: CCB Operator: MDL
Run Time: 10/27/98 11:12 Filename: IC10?7A
Mode: CONC Type: B Corr. Factor: 1.00000
Lab ID.: RECRA Cust. Smpl. ID: Cust. ID.:

Elems	Al3082	Co2286	Fe2739	Mn2576	V-3708	Y-2024 ✓
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-9.294	.1947	.9706	-1.537	1.459	-1.169
SDev	5.713	2.222	3.695	2.662	72.03	1.87
%RSD	61.47	1142	420.4	173.2	4935	160

Elems	B-2496	Ca3179
Units	ppb	ppb
Avge	H16.30	4.710
SDev	5.648	7.16
%RSD	34.66	152

Method: UONLY Sample Name: CRI Operator: MDL
Run Time: 10/27/98 11:15 Filename: IC1027A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: RECRA Cust. Smpl. ID: Cust. ID.:

Elems	Al3082	Sb2238	Fe2599	Mn2576	U-3670	V-2924
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	199.2	107.8	219.2	33.81	461.6	103.4
SDev	16.67	1.176	3.189	2.662	48.84	.9667
%RSD	8.372	1.091	1.455	7.873	10.58	.9345

Elems	B-2496	Ca3179
Units	ppb	ppb
Avge	202.1	1078.
SDev	5.644	6.745
%RSD	2.793	.6256

Method: UONLY Sample Name: ISA Operator: MDL
Run Time: 10/27/98 11:17 Filename: I01027A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: RECRA Cust. Smpl. ID.: Cust. ID.:

Elems	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	553300.	2.470	201900.	-4.982	1.127	1.256
SDev	7108	1.107	2518	.053	70.5	3.122
%RSD	1.285	44.79	1.247	1.064	6254	248.6

Elems	B-2496	Ca3179
Units	ppb	ppb
Avge	-29.79	530200.
SDev	10.13	6036
%RSD	34.02	1.138

Method: UONLY Sample Name: ISB Operator: MDL
Run Time: 10/27/98 11:21 Filename: IC1027A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: RECRA Cust. Smpl. ID.: Cust. ID.:

Elems	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	549000.	505.1	201700.	514.5	5288.	521.4
SDev	2905	7.007	781.4	2.672	59.82	3.122
%RSD	.529	1.387	.3874	.5194	1.131	.5988

Elems	B-2496	Ca3179
Units	ppb	ppb
Avge	1007.	529100.
SDev	24.95	2006
%RSD	2.478	.3792

Method: UONLY Sample Name: CCV Operator: MDL
Acq. Time: 10/27/98 11:25 Filename: IC1027A
Mode: CONC Type: Q Corr. Factor: 1.00000
Lab ID.: RECRA Cust. Smpl. ID.: Cust. ID.:

Elems	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4999.	2511.	5061.	757.6	9894.	2476.
SDev	13.64	12.16	34.14	2.662	55.53	18.74
%RSD	.2729	.4844	.6746	.3513	.5618	.7571

Elems	B-2496	Ca3179
Units	ppb	ppb
Avge	4805.	25130.
SDev	31.44	145.6
%RSD	.6543	.5795

Method: UONLY Sample Name: CCB Operator: MDL
Run Time: 10/27/98 11:29:08
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-10.03	.9731	3.553	1.537	5.933	-.4324	H16.30
SDev	7.88	1.160	1.007	2.662	31.39	.9134	5.64
%RSD	78.62	119.2	28.34	173.2	529.0	211.2	34.60
#1	-1.075	2.133	4.716	.0002	-27.72	-1.363	H19.55
#2	-15.93	-.1878	2.959	.0000	34.41	.4634	9.786
#3	-13.07	.9741	2.985	4.611	11.10	-.3982	H19.56
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	61.20	10.20	13.80	7.500	71.20	6.900	11.10
Low	-61.20	-10.20	-13.80	-7.500	-71.20	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	13.04
SDev	7.70
%RSD	59.09
#1	17.74
#2	4.146
#3	17.22
Errors	LC Pass
High	39.00
Low	-39.00

Method: UONLY Sample Name: 98L1314-MB1 Operator: MDL
Run Time: 10/27/98 11:32:06
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-2.525	.5791	H25.97	1.537	-13.21	-.3256	H13.05
SDev	15.352	1.350	.91	2.662	50.38	.6077	5.65
%RSD	608.1	233.2	3.507	173.1	381.3	186.6	43.33
#1	14.85	-.1912	H26.89	4.611	24.51	-.3115	H19.57
#2	-14.25	-.2099	H25.07	.0006	-70.42	-.9402	9.776
#3	-8.181	2.138	H25.97	.0005	6.285	.2749	9.788
Errors	LC Pass	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC High
High	61.20	10.20	13.80	7.500	71.20	6.900	11.10
Low	-61.20	-10.20	-13.80	-7.500	-71.20	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	19.51
SDev	4.00
%RSD	20.51
#1	21.47
#2	14.91
#3	22.16
Errors	LC Pass
High	39.00
Low	-39.00

Method: UONLY Sample Name: 98L1314-LC1 Operator: MDL
Run Time: 10/27/98 11:34:43
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5022.	2560.	5123.	773.0	4943.	2506.	4836.
SDev	45.	16.	35.	10.6	34.	15.	31.
%RSD	.8954	.6116	.6837	1.377	.6805	.5883	.6497
#1	4978.	2548.	5083.	760.7	4931.	2492.	4800.
#2	5068.	2578.	5150.	779.2	4981.	2522.	4849.
#3	5021.	2555.	5136.	779.2	4918.	2504.	4859.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	6000.	3000.	6000.	900.0	6000.	3000.	6000.
Low	4000.	2000.	4000.	600.0	4000.	2000.	4000.

Elem	Ca3179
Units	ppb
Avge	25500.
SDev	147.
%RSD	.5774
#1	25330.
#2	25620.
#3	25530.
Errors	LC Pass
High	30000.
Low	20000.

Method: UONLY Sample Name: 9810L067-001 Operator: MDL
Run Time: 10/27/98 11:37:32
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	8604.	4.726	8697.	78.55	-7.434	162.7	23.60
SDev	69.	.663	70.	.00	39.222	1.2	9.75
%RSD	.8077	14.03	.8081	.0018	527.6	.7134	41.32
#1	8596.	5.111	8667.	78.55	-37.23	161.8	33.36
#2	8539.	3.960	8646.	78.55	37.00	162.3	23.59
#3	8677.	5.107	8777.	78.56	-22.07	164.0	13.86
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	362600.
SDev	2876.
%RSD	.7933
#1	361000.
#2	360800.
#3	365900.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L067-001L Operator: MDL
Run Time: 10/27/98 11:40:35
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1675.	3.201	1830.	23.09	30.05	32.79	7.372
SDev	6.	1.760	8.	.00	51.34	1.05	5.635
%RSD	.3394	54.96	.4394	.0005	170.9	3.189	76.44
#1	1680.	1.441	1824.	23.09	-23.42	31.73	10.62
#2	1675.	4.960	1839.	23.09	78.96	33.82	.8654
#3	1669.	3.202	1827.	23.09	34.59	32.82	10.63
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	74830.
SDev	160.
%RSD	.2145
#1	74750.
#2	75010.
#3	74730.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L067-001R Operator: MDL
Run Time: 10/27/98 11:43:37
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5890.	2.968	5607.	64.66	-3.853	129.3	5.867
SDev	17.	2.015	29.	.00	26.734	2.5	14.95
%RSD	.2834	67.88	.5195	.0007	693.9	1.956	254.8
#1	5902.	1.804	5628.	64.66	15.74	132.1	22.18
#2	5871.	1.806	5574.	64.66	7.005	127.1	-7.181
#3	5896.	5.294	5620.	64.66	-34.31	128.9	2.604
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	390100.
SDev	1813.
%RSD	.4647
#1	390600.
#2	388100.
#3	391600.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L067-001S Operator: MDL
Run Time: 10/27/98 11:46:40
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	7857.	448.1	5110.	507.2	4464.	562.0	863.0
SDev	7.	2.7	16.	4.6	74.	.5	.0
%RSD	.0864	.6120	.3038	.9089	1.655	.1110	.0025
#1	7853.	447.2	5126.	502.6	4519.	561.4	863.1
#2	7865.	451.2	5109.	51..9	4380.	561.9	863.0
#3	7853.	446.0	5095.	507.2	4492.	562.7	863.0
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	447000.
SDev	1598.
%RSD	.3574
#1	447100.
#2	448500.
#3	445300.
Errors	LC Pass
High	1000000.
Low	-39.00

89 1.

Method: UONLY Sample Name: 9810L067-002 Operator: MDL
Run Time: 10/27/98 11:49:42
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4317.	12.33	5092.	199.9	-.6289	56.57	8.873
SDev	45.	2.10	53.	2.7	59.328	1.68	5.655
%RSD	1.044	17.06	1.044	1.332	9433.	2.964	63.73
#1	4275.	12.93	5041.	198.4	67.18	57.49	2.343
#2	4311.	9.994	5089.	199.4	-25.08	57.58	12.13
#3	4365.	14.07	5147.	203.0	-42.99	54.63	12.15
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	269800.
SDev	2678.
%RSD	.9924
#1	267600.
#2	269100.
#3	272800.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L067-003 Operator: MDL
Run Time: 10/27/98 11:52:53
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4040.	2.651	4451.	64.64	6.485	32.40	11.85
SDev	25.	1.219	38.	.00	49.27	.39	.01
%RSD	.6194	46.00	.8546	.0012	759.7	1.197	.0752
#1	4050.	1.287	4460.	64.64	-3.971	32.33	11.85
#2	4012.	3.636	4409.	64.64	60.14	32.05	11.84
#3	4059.	3.029	4483.	64.64	-36.71	32.81	11.85
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	257400.
SDev	1964.
%RSD	.7630
#1	257800.
#2	255200.
#3	259100.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L067-004 Operator: MDL
Run Time: 10/27/98 11:55:55
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	15600.	7.546	10250.	73.98	-25.23	60.88	34.09
SDev	191.	1.880	123.	.00	101.70	1.59	.04
%RSD	1.227	24.91	1.196	.0036	403.0	2.604	.1105
#1	15480.	6.206	10160.	73.98	54.51	61.18	34.07
#2	15510.	9.694	10200.	73.98	9.550	62.29	34.07
#3	15820.	6.737	10390.	73.99	L-139.8	59.17	34.14
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	491600.
SDev	4335.
%RSD	.8820
#1	488000.
#2	490200.
#3	496400.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L067-005 Operator: MDL
Run Time: 10/27/98 11:58:57
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	14530.	7.489	8008.	324.4	-9.237	199.3	33.05
SDev	86.	2.025	27.	2.7	31.528	1.1	.02
%RSD	.5909	27.04	.3430	.8206	341.3	.5754	.0494
#1	14450.	8.663	8007.	322.9	27.11	199.8	33.06
#2	14520.	8.653	7981.	322.9	-29.22	198.0	33.03
#3	14620.	5.151	8036.	327.5	-25.60	200.1	33.06
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	753400.
SDev	791.
%RSD	.1050
#1	753500.
#2	752600.
#3	754200.
Errors	LC Pass
High	1000000.
Low	-39.00

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
WGSB3-24						
SILVER, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/30/98
SILVER, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/30/98
SILVER, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/30/98
ALUMINUM, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
ALUMINUM, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
ALUMINUM, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
ARSENIC, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
ARSENIC, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
ARSENIC, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
BORON, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
BORON, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
BORON, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
[illegible]IUM, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
[illegible]RIUM, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
BARIUM, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
CADMIUM, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
CADMIUM, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
CADMIUM, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
COBALT, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
COBALT, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
COBALT, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
CHROMIUM, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
CHROMIUM, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
CHROMIUM, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
COPPER, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
COPPER, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
COPPER, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
IRON, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
IRON, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
IRON, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
MERCURY, TOTAL	001	S	98C0504	09/23/98	10/21/98	10/22/98
MERCURY, TOTAL	001 REP	S	98C0504	09/23/98	10/21/98	10/22/98
MERCURY, TOTAL	001 MS	S	98C0504	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
MANGANESE, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98

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INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
NICKEL, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
NICKEL, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
NICKEL, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
LEAD, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
LEAD, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
LEAD, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
SELENIUM, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
SELENIUM, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
SELENIUM, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
URANIUM, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/27/98
ZINC, TOTAL	001	S	98L1314	09/23/98	10/15/98	10/28/98
ZINC, TOTAL	001 REP	S	98L1314	09/23/98	10/15/98	10/28/98
ZINC, TOTAL	001 MS	S	98L1314	09/23/98	10/15/98	10/28/98
WGSB3-30						
SILVER, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/30/98
ALUMINUM, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
ARSENIC, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
BORON, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
BARIUM, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
CADMIUM, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
COBALT, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
CHROMIUM, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
COPPER, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
IRON, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
MERCURY, TOTAL	002	S	98C0504	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
NICKEL, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
LEAD, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
SELENIUM, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98

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DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
URANIUM, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/27/98
ZINC, TOTAL	002	S	98L1314	09/23/98	10/15/98	10/28/98
WGSB3-40						
SILVER, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/30/98
ALUMINUM, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
ARSENIC, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
BORON, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
BARIUM, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
CADMIUM, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
COBALT, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
CHROMIUM, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
COPPER, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
IRON, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
MERCURY, TOTAL	003	S	98C0504	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
NICKEL, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
LEAD, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
SELENIUM, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
URANIUM, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/27/98
ZINC, TOTAL	003	S	98L1314	09/23/98	10/15/98	10/28/98
WGSB4-5						
SILVER, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/30/98
ALUMINUM, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
ARSENIC, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
BORON, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
BARIUM, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
CADMIUM, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
COBALT, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
CHROMIUM, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
COPPER, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
IRON, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
MERCURY, TOTAL	004	S	98C0504	09/24/98	10/21/98	10/22/98
MANGANESE, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98

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INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MOLYBDENUM, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
NICKEL, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
LEAD, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
SELENIUM, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
URANIUM, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/27/98
ZINC, TOTAL	004	S	98L1314	09/24/98	10/15/98	10/28/98
WGSB4-14						
SILVER, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/30/98
ALUMINUM, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
ARSENIC, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
BORON, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
BARIUM, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
CADMIUM, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
COBALT, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
CHROMIUM, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
COPPER, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
IRON, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
MERCURY, TOTAL	005	S	98C0504	09/24/98	10/21/98	10/22/98
MANGANESE, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
NICKEL, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
LEAD, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
SELENIUM, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
URANIUM, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/27/98
ZINC, TOTAL	005	S	98L1314	09/24/98	10/15/98	10/28/98
WGSB4-30						
SILVER, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/30/98
ALUMINUM, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
ARSENIC, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
BORON, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
BARIUM, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
CADMIUM, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
COBALT, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
CHROMIUM, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
IRON, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
MERCURY, TOTAL	006	S	98C0504	09/24/98	10/21/98	10/22/98
MANGANESE, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
NICKEL, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
LEAD, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
SELENIUM, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
URANIUM, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/27/98
ZINC, TOTAL	006	S	98L1314	09/24/98	10/15/98	10/28/98
WGSB4-40						
SILVER, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/30/98
ALUMINUM, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
ARSENIC, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
BORON, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
[illegible]RIUM, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
[illegible]MIUM, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
COBALT, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
CHROMIUM, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
COPPER, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
IRON, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
MERCURY, TOTAL	007	S	98C0504	09/24/98	10/21/98	10/22/98
MANGANESE, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
NICKEL, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
LEAD, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
SELENIUM, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
URANIUM, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/27/98
ZINC, TOTAL	007	S	98L1314	09/24/98	10/15/98	10/28/98
WGSB5-7						
SILVER, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/30/98
ALUMINUM, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
ARSENIC, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
BORON, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
CADMIUM, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
COBALT, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
CHROMIUM, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
COPPER, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
IRON, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
MERCURY, TOTAL	008	S	98C0504	09/24/98	10/21/98	10/22/98
MANGANESE, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
NICKEL, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
LEAD, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
SELENIUM, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
URANIUM, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/27/98
ZINC, TOTAL	008	S	98L1314	09/24/98	10/15/98	10/28/98
WGSB5-14						
SILVER, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/30/98
ALUMINUM, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
ARSENIC, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
BORON, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
BARIUM, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
CADMIUM, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
COBALT, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
CHROMIUM, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
COPPER, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
IRON, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
MERCURY, TOTAL	009	S	98C0504	09/24/98	10/21/98	10/22/98
MANGANESE, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
NICKEL, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
LEAD, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
SELENIUM, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
URANIUM, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/27/98
ZINC, TOTAL	009	S	98L1314	09/24/98	10/15/98	10/28/98
WGSB5-22						
SILVER, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/30/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ALUMINUM, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
ARSENIC, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
BORON, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
BARIUM, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
CADMIUM, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
COBALT, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
CHROMIUM, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
COPPER, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
IRON, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
MERCURY, TOTAL	010	S	98C0504	09/24/98	10/21/98	10/22/98
MANGANESE, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
NICKEL, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
LEAD, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
SELENIUM, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
URANIUM, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/27/98
ZINC, TOTAL	010	S	98L1314	09/24/98	10/15/98	10/28/98
SB5-32						
SILVER, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/30/98
ALUMINUM, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
ARSENIC, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
BORON, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
BARIUM, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
CADMIUM, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
COBALT, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
CHROMIUM, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
COPPER, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
IRON, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
MERCURY, TOTAL	011	S	98C0504	09/24/98	10/21/98	10/22/98
MANGANESE, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
NICKEL, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
LEAD, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
SELENIUM, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98
URANIUM, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/27/98
ZINC, TOTAL	011	S	98L1314	09/24/98	10/15/98	10/28/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
WGSB5-40						
SILVER, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/30/98
ALUMINUM, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
ARSENIC, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
BORON, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
BARIUM, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
CADMIUM, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
COBALT, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
CHROMIUM, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
COPPER, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
IRON, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
MERCURY, TOTAL	012	S	98C0504	09/24/98	10/21/98	10/22/98
MANGANESE, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
MOLYBDENUM, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
NICKEL, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
LEAD, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
SELENIUM, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
URANIUM, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/27/98
ZINC, TOTAL	012	S	98L1314	09/24/98	10/15/98	10/28/98
LAB QC:						
SILVER LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/30/98
SILVER, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/30/98
ALUMINUM LABORTORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
ALUMINUM, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
ARSENIC LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
ARSENIC, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
BORON LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
BORON, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
BARIUM LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
BARIUM, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
CADMIUM LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
CADMIUM, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
COBALT LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
COBALT, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
CHROMIUM, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
COPPER LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
COPPER, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
IRON LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
IRON, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
MERCURY LABORATORY	LC1 BS	S	98C0504	N/A	10/21/98	10/22/98
MERCURY, TOTAL	MB1	S	98C0504	N/A	10/21/98	10/22/98
MANGANESE LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
MANGANESE, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
MOLYBDENUM LABORATOR	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
MOLYBDENUM, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
NICKEL LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
NICKEL, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
LEAD LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
LEAD, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
SELENIUM LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
SELENIUM, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98
URANIUM LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/27/98
URANIUM, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/27/98
ZINC LABORATORY	LC1 BS	S	98L1314	N/A	10/15/98	10/28/98
ZINC, TOTAL	MB1	S	98L1314	N/A	10/15/98	10/28/98

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Lab Chron 001

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Case Narrative 015

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C. Initial & Continuing Calibration Verification (Form 2A)
D. CRDL Standard for AA & ICP (Form 2B)
E. Blanks (Form 3)
F. ICP Interference Check Sample (Form 4)
G. Spike Sample Recovery (Form 5A)
H. Post Digest Spike Sample Recovery (Form 5B)
I. Duplicates (Form 6)
J. Laboratory Control Samples (Form 7)
K. Standard Addition Results (Form 8)
L. ICP Serial Dilutions (Form 9)
M. Instrument Detection Limits (Quarterly)(Form 10)
N. ICP Interelement Correction Factors (Quarterly)(Form 11)
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P. Preparation Log (Form 13)
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C. Cyanide 299

III Digestion Log 304

Chain of Custody

RECRA LabNet Use Only

98101067

Custody Transfer Record/Lab Work Request

Page 1 of 2

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: AD Little - New Mexico

Est. Final Proj. Sampling Date:

Project #: 60038-002-001-0001-00

Project Contact/Phone #:

RECRA Project Manager: DST

QC: CLP Del: CLP TAT: 21 days

Date Rec'd: 10/9/98 Date Due: 10/30/98

Account #: DIANEPM

Refrigerator #																				
#/Type Container	Liquid																			
	Solid																			
Volume	Liquid																			
	Solid																			
Preservatives																				
ANALYSES REQUESTED →		ORGANIC										INORG								
		VOA	BNA	Pest/PCB	Herb							Metal	CN							

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	RECRA LabNet Use Only: metals (1)	8270	TPHC	TPH	TAL ICP	TAL ICP/MS	ISUB
S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish	001	WGSB3-24			S	9-23-98	1545	✓	✓	✓	✓	✓	✓	✓
	002	" 30				"	1605							
	003	" 40				"	1625							
	004	WGSB4-5				9-24-98	0810							
	005	" 14					0830							
	006	" 30					0925							
	007	" 40					0945							
	008	WGSB5-7					1045							
	009	" 14					1105							
	010	" 22					1120							

Special Instructions:

DATE/REVISIONS:

#010 1. Prioritize: METALS, ANIONS, TPH, RAD

012 2. Rec'd 1EA 125ML Broken Lid.

3. Metals (1) = Al, As, Ba, B, Cd, Cr, Co, Cu, Fe,

4. Pb, Mn, Mo, Ni, Se, Ag, Zn, Hg, U

5. See attached methods + DL.

6.

010

012

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	10-9-98	1000

Relinquished by	Received by	Date	Time

RECRA LabNet Use Only

Samples were: 1) Shipped / or Hand Delivered

Airbill # Surburban

2) Ambient or Chilled

3) Received in Good Condition Y or N

4) Labels Indicate Properly Preserved Y or N

5) Received Within Holding Times Y or N

COC Tape was 1) Present on Outer Package Y or N; 2) Unbroken on Outer Package Y or N; 3) Present on Sample Y or N; 4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: 807460269538

Co[illegible] Te[illegible]3 C.

RECRA LabNet Use Only

9810L067

Custody Transfer Record/Lab Work Request

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client AD Little

Est. Final Proj. Sampling Date

Project #

Project Contact/Phone #

RECRA Project Manager

QC Del TAT

Date Rec'd see page 1 Date Due

Account #

Refrigerator #																			
#/Type Container	Liquid																		
	Solid																		
Volume	Liquid																		
	Solid																		
Preservatives																			

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN

RECRA LabNet Use Only

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Metals	IONTD	IPHC	IPH	TCCL ICSW	ICFL ICNW3	ISUB
011	WGSB5-32			Soil	9-24-98	1140	✓	✓	✓	✓	✓	✓	✓
012	1 40			1	1	1200	✓	✓	✓	✓	✓	✓	✓

Special Instructions:

DATE/REVISIONS:

1.

2.

3.

4.

5.

6.

0113

Relinquished by	Received by	Date	Time
		10-9-98	1000

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES

RECRA LabNet Use Only

Samples were:
1) Shipped or Hand Delivered
Airbill #
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicated Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp °C

Sample Custody Transfer Record

RFW BATCH #: 98IRL067

CLIENT: A.D. Little

Page ___ of ___

LF = Locked Refrigerator

SAMPLE SIGN-OUT:						SAMPLE RETURN:					
Item/Reason (e.g., "all VOA water," "001-004, Extraction")	Total # /Matrix (e.g., 4 W)	Relinquished By	Received By	Date	Time	Total # /Matrix (e.g., 4 W)	Relinquished By	Received By	Date	Time	Comments (e.g., "volume depleted," "kept #002")
001-012 %Sol	12S	LF	TM	10 12 98	0930	12S	TM	LF	10 12 98	1002	
001-002 CN-	2S	LF	TM	10-13-98	1430	2S	TM	LF	10 13 98	1505	
Mtf 1-12	12S	LF	IB	10-14	12:03	12S	IB	LF	11-5-98	3102	
003-012 CN-	9S	LF	TM	10 15 98	0810	9S	TM	LF	10 15 98	0915	
PHC	12S	LF	AJP	10-17-98	1240	12S	AJP	LF	10/21/98	13:20	
LF RIB 11/12/98											
001→# 006→12 I.C	11S	LF	MC	11-7-98	1000						005 missing

Method: UONLY Sample Name: CCV Operator: MDL
Run Time: 10/27/98 12:02:53
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4941.	2530.	5088.	762.3	9909.	2436.	4827.
SDev	28.	20.	31.	5.3	5.	12.	41.
%RSD	.5650	.7856	.6011	.6984	.0548	.4920	.8430
#1	4924.	2511.	5057.	756.1	9914.	2475.	4782.
#2	4926.	2528.	5090.	763.3	9909.	2483.	4860.
#3	4973.	2550.	5118.	765.3	9903.	2499.	4840.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.	2500.	5000.	750.0	10000.	2500.	5000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Ca3179
Units	ppb
Avge	25390.
SDev	152.
%RSD	.5991
#1	25230.
#2	25410.
#3	25540.
Errors	QC Pass
Value	25000.
Range	10.00

Method: UOM Sample Name: CCB Operator: MDL
Run Time: 1 /98 12:06:09
Comment:
Mode: CONC orr. Factor: 1

Elem	Al 82	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	pp	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-5(3	1.559	2.103	4.611	20.05	-.5745	H22.82
SDev	13 4	1.533	1.544	.000	52.26	.8796	5.66
%RSD	27..	98.34	73.42	.0017	260.7	153.1	24.79
#1	-45.	-.1800	3.001	4.611	H73.52	-1.399	H29.35
#2	-39.	2.716	.3201	4.611	-30.90	-.6761	H19.55
#3	L-65.	2.142	2.987	4.611	17.53	.3515	H19.56
Errors	LC Pa	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	61.20	10.20	13.80	7.500	71.20	6.900	11.10
Low	-61.20	-10.20	-13.80	-7.500	-71.20	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	H41.89
SDev	8.43
%RSD	20.13
#1	H47.57
#2	H45.90
#3	32.20
Errors	LC High
High	39.00
Low	-39.00

Method: UONLY Sample Name: 9810L067-006 Operator: MDL
Run Time: 10/27/98 12:09:07
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	8202.	6.344	7596.	83.14	-24.44	142.0	13.30
SDev	58.	1.749	39.	.00	10.10	1.0	9.79
%RSD	.7132	27.56	.5181	.0011	41.34	.7196	73.61
#1	8269.	6.343	7641.	83.14	-15.60	140.9	23.10
#2	8167.	8.093	7572.	83.14	-35.45	142.8	10.29
#3	8170.	4.596	7574.	83.14	-22.27	142.2	3.518
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	206600.
SDev	1066.
%RSD	.5160
#1	207800.
#2	205900.
#3	206100.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L067-007 Operator: MDL
Run Time: 10/27/98 12:12:09
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	694.	1.023	5642.	56.98	2.087	37.44	5.887
SDev	24.	1.787	29.	2.66	34.52	1.40	5.628
%RSD	.5079	174.7	.5094	4.672	1654.	3.744	95.59
#1	677.	2.972	5666.	60.06	33.30	38.12	2.643
#2	4721.	.6347	5650.	55.14	7.952	35.83	2.634
#3	4684.	-.5380	5610.	55.44	-34.99	38.38	12.39
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	75500.
SDev	433.
%RSD	.5742
#1	75700.
#2	75790.
#3	75000.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L067-008 Operator: MDL
Run Time: 10/27/98 12:15:12
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	17460.	7.280	11540.	69.40	6.640	50.13	31.44
SDev	176.	2.923	113.	.00	32.29	.22	5.62
%RSD	1.006	40.15	.9825	.0034	486.2	.4344	17.88
#1	17260.	7.290	11410.	69.40	17.45	50.21	34.64
#2	17530.	10.20	11600.	69.40	32.13	50.29	24.95
#3	17590.	4.352	11610.	69.40	-29.66	49.88	34.73
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	649800.
SDev	6113.
%RSD	.9407
#1	642900.
#2	654300.
#3	652300.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L067-009 Operator: MDL
Run Time: 10/27/98 12:18:25
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	820.	8.435	8522.	150.8	16.34	116.5	36.55
SDev	88.	.890	56.	2.7	28.85	2.2	5.66
%RSD	395	10.55	.6597	1.765	176.5	1.886	15.47
#1	780.	8.634	8552.	152.3	48.66	115.0	33.31
#2	1720.	7.463	8457.	152.3	-6.786	115.4	33.26
#3	13870.	9.209	8557.	147.7	7.152	119.0	43.09
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	730600.
SDev	4866.
%RSD	.6661
#1	731100.
#2	725500.
#3	735200.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L067-010 Operator: MDL
Run Time: 10/27/98 12:21:41
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	7399.	8.059	4925.	67.72	-29.04	141.5	18.57
SDev	61.	1.462	43.	2.66	26.31	.6	5.64
%RSD	.8192	18.14	.8709	3.931	90.58	.4529	30.39
#1	7359.	6.508	4915.	64.64	-10.14	141.1	12.06
#2	7469.	9.411	4972.	69.26	-59.09	142.2	21.85
#3	7370.	8.258	4888.	69.25	-17.90	141.1	21.82
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	H1090000.
SDev	8748.
%RSD	.8027
#1	H1090000.
#2	H1099000.
#3	H1081000.
Errors	LC High
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L067-011 Operator: MDL
Run Time: 10/27/98 12:24:53
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5809.	5.304	5503.	75.42	-20.92	116.7	5.812
SDev	53.	2.671	63.	2.66	11.34	2.5	5.660
%RSD	.9157	50.36	1.151	3.531	54.19	2.176	97.39
#1	5747.	2.389	5430.	73.88	-33.86	114.1	2.520
#2	5839.	5.887	5534.	73.38	-12.76	117.0	2.567
#3	5840.	7.635	5545.	78.49	-16.14	119.1	12.35
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	511800.
SDev	6208.
%RSD	1.213
#1	504700.
#2	515800.
#3	515000.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L067-012 Operator: MDL
Run Time: 10/27/98 12:27:56
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3577.	3.095	3521.	52.33	5.454	34.83	11.41
SDev	6.	2.922	11.	2.66	41.03	.58	.01
%RSD	.1655	94.43	.3213	5.088	752.2	1.652	.0515
#1	3570.	3.101	3511.	50.79	33.07	34.78	11.42
#2	3581.	.1695	3518.	50.79	-41.69	34.28	11.41
#3	3580.	6.015	3533.	55.40	24.98	35.43	11.42
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	209100.
SDev	722.
%RSD	.3454
#1	208800.
#2	208600.
#3	209900.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: CCV Operator: MDL
Run Time: 10/27/98 12:32:05
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4898.	2581.	5145.	773.0	10010.	2480.	4946.
SDev	49.	10.	30.	2.7	79.	23.	29.
%RSD	1.002	.3829	.5804	.3443	.7913	.9177	.5798
#1	4920.	2589.	5159.	774.6	10080.	2495.	4968.
#2	4933.	2584.	5166.	774.6	10020.	2492.	4958.
#3	4842.	2570.	5111.	769.9	9925.	2454.	4914.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.	2500.	5000.	750.0	10000.	2500.	5000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Ca3179
Units	ppb
Avge	25590.
SDev	115.
%RSD	.4487
#1	25670.
#2	25660.
#3	25460.
Errors	QC Pass
Value	25000.
Range	10.00

Method: UONLY Sample Name: CCB Operator: MDL
Run Time: 10/27/98 12:35:21
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-38.74	1.949	1.787	1.537	24.49	-.0736	H22.82
SDev	10.62	2.049	2.853	2.662	3.37	1.4499	5.65
%RSD	27.42	105.1	159.6	173.2	13.78	1969.	24.75
#1	-50.17	-.1902	2.987	4.611	22.14	1.089	H29.34
#2	-29.17	3.894	3.845	.0002	28.36	-1.698	H19.56
#3	-36.88	2.143	-1.469	-.0001	22.97	.3880	H19.56
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	61.20	10.20	13.80	7.500	71.20	6.900	11.10
Low	-61.20	-10.20	-13.80	-7.500	-71.20	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	31.15
SDev	8.93
%RSD	28.66
#1	H41.35
#2	27.31
#3	24.78
Errors	LC Pass
High	39.00
Low	-39.00

Method: UONLY Sample Name: CRI Operator: MDL
Run Time: 10/27/98 12:37:58
Comment:
Mode: CONC Corr. Factor: 1

Elem	13082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	169.5	107.2	218.3	32.27	391.7	102.3	215.1
SDev	2.8	.6	.9	.00	8.4	.8	9.8
%RSD	1.680	.5434	.4064	.0002	2.157	.7980	4.544
#1	169.0	107.8	217.4	32.27	391.3	103.2	215.1
#2	172.6	107.2	218.3	32.27	383.5	101.8	224.9
#3	167.0	106.6	219.1	32.27	400.4	101.9	205.4
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	200.0	100.0	200.0	30.00	400.0	100.0	200.0
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Elem	Ca3179
Units	ppb
Avge	1095.
SDev	10.
%RSD	.9249
#1	1103.
#2	1100.
#3	1084.
Errors	QC Pass
Value	1000.
Range	50.00

Method: UONLY Sample Name: ISA Operator: MDL
Run Time: 10/27/98 12:40:34
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	547300.	-.7282	199900.	-.4138	-67.21	2.166	-24.21
SDev	211.	1.6793	478.	.0100	61.07	1.065	9.65
%RSD	.0385	230.6	.2389	2.414	90.86	49.18	39.85
#1	547500.	-1.716	200300.	-.4035	3.271	2.352	-33.74
#2	547300.	1.211	199800.	-.4143	-170.6	3.125	-14.45
#3	547100.	-1.680	199400.	-.4235	-104.3	1.020	-24.43
Errors	QC Pass	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	500000.		200000.				
Range	20.00		20.00				

Elem	Ca3179
Units	ppb
Avge	522900.
SDev	793.
%RSD	.1517
#1	523800.
#2	522600.
#3	522400.
Errors	QC Pass
Value	500000.
Range	20.00

Method: UONLY Sample Name: ISB Operator: MDL
Run Time: 10/27/98 12:43:49
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	38700.	500.7	200600.	516.0	5247.	512.5	1006.
SDev	6665.	7.5	2836.	9.3	63.	6.0	31.
%RSD	237	1.506	1.414	1.799	1.193	1.176	3.091
#1	300.	494.1	198100.	505.7	5250.	509.0	972.6
#2	400.	508.9	203700.	525.3	5308.	519.4	1034.
#3	535400.	499.2	200100.	516.0	5183.	509.0	1013.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500000.	500.0	200000.	500.0	5000.	500.0	1000.
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Elem	Ca3179
Units	ppb
Avge	524800.
SDev	7080.
%RSD	1.349
#1	518000.
#2	532100.
#3	524200.
Errors	QC Pass
Value	500000.
Range	20.00

Method: UONLY Sample Name: CCV Operator: MDL
Run Time: 10/27/98 12:47:18
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4889.	2542.	5102.	766.9	9777.	2457.	4865.
SDev	16.	6.	7.	5.3	67.	5.	31.
%RSD	.3254	.2379	.1328	.6942	.6893	.2213	.6279
#1	4905.	2535.	5095.	760.7	9855.	2456.	4889.
#2	4874.	2546.	5104.	769.9	9732.	2452.	4831.
#3	4889.	2546.	5108.	769.9	9745.	2463.	4875.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.	2500.	5000.	750.0	10000.	2500.	5000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Ca3179
Units	ppb
Avge	25450.
SDev	66.
%RSD	.2580
#1	25390.
#2	25430.
#3	25520.
Errors	QC Pass
Value	25000.
Range	10.00

Method: UONLY Sample Name: CCB Operator: MDL
Run Time: 10/27/98 12:51:01
Comment:
Mode: CO Corr. Factor: 1

Elem	3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units		ppb	ppb	ppb	ppb	ppb	ppb
Avge	3.21	1.944	8.264	.0002	3.072	-.4518	H14.67
SDev	.29	.897	1.540	.0000	34.38	.9004	4.89
%RSD	23	46.13	18.64	13.66	1119.	199.3	33.37
#1	67	2.143	9.155	.0002	26.66	-.2957	H19.56
#2	38	2.725	9.152	.0002	18.94	.3603	H14.67
#3	-41.58	.9645	6.486	.0002	-36.38	-1.420	9.772
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC High
High	61.20	10.20	13.80	7.500	71.20	6.900	11.10
Low	-61.20	-10.20	-13.80	-7.500	-71.20	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	18.54
SDev	2.94
%RSD	15.86
#1	20.66
#2	19.77
#3	15.18
Errors	LC Pass
High	39.00
Low	-39.00

Method: TCLP Standard: S0

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Avge	.0153	.0740	.0213	.0067	.0000	.0027	.0067
SDev	.0011	.0035	.0061	.0031	.0000	.0142	.0011
%RSD	7.531	4.681	28.64	45.83	.0000	532.1	17.32
#1	.0140	.0760	.0280	.0060	.0000	.0000	.0080
#2	.0160	.0700	.0200	.0100	.0000	.0180	.0060
#3	.0160	.0760	.0160	.0040	.0000	-.0100	.0060

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Avge	.0153	.0007	.0013	-.0047	-.0020	.0027	.0280
SDev	.0064	.0219	.0121	.0253	.0159	.0099	.0035
%RSD	41.93	3291.	904.2	542.7	793.7	370.0	12.37
#1	.0180	-.0240	.0000	-.0320	.0040	-.0020	.0320
#2	.0200	.0180	.0140	.0180	.0100	.0140	.0260
#3	.0080	.0080	-.0100	.0000	-.0200	-.0040	.0260

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Method Updated Kim MEL 10/30/98

Method: TCLP Standard: S1

Elem	Ag3280	Al3082	Ba4934	Cd2288	Cr2677	Cu3247	Fe2599
Avge	2.662	9.727	101.3	2.737	3.647	5.778	62.44
SDev	.013	.095	.7	.001	.013	.110	.19
%RSD	.4927	.9743	.7332	.0422	.3526	1.896	.3087
#1	2.660	9.676	100.9	2.738	3.652	5.746	62.62
#2	2.650	9.668	100.8	2.736	3.656	5.688	62.46
#3	2.676	9.836	102.1	2.736	3.632	5.900	62.24

Elem	Mg2790	Ni2316	Pb2203	V-2924	Zn2138
Avge	50.22	15.23	2.717	18.38	5.851
SDev	.26	.04	.018	.03	.004
%RSD	.5194	.2587	.6638	.1741	.0712
#1	49.98	15.26	2.700	18.35	5.854
#2	50.16	15.18	2.736	18.38	5.852
#3	50.50	15.24	2.716	18.42	5.846

Method: TCLP Standard: S2

Elem	As1936	Se1960
Avge	16.09	16.64
SDev	.05	.07
%RSD	.2819	.4026
#1	16.06	16.60
#2	16.07	16.61
#3	16.14	16.72

Method: TCLP Sample Name: ICV Operator: MDL
Run Time: 10/30/98 08:58:53
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	395.6	3878.	7727.	3866.	769.0	379.1	939.0
SDev	3.5	19.	43.	22.	5.5	2.5	1.0
%RSD	.8866	.4861	.5547	.5603	.7092	.6635	.1065
#1	399.4	3857.	7758.	3841.	767.4	379.6	939.5
#2	394.8	3882.	7745.	3880.	764.6	376.3	939.5
#3	392.5	3894.	7678.	3877.	775.1	381.3	937.8
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	375.0	3750.	7500.	3750.	750.0	375.0	937.5
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3826.	18850.	1536.	1899.	7773.	1903.	746.9
SDev	5.	98.	23.	17.	65.	5.	2.2
%RSD	.1431	.5176	1.485	.8715	.8418	.2655	.2884
#1	3831.	18850.	1521.	1882.	7847.	1909.	744.4
#2	3820.	18950.	1525.	1901.	7751.	1902.	747.8
#3	3825.	18750.	1562.	1915.	7722.	1899.	748.4
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	3750.	18750.	1500.	1875.	7500.	1875.	750.0
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Method: TCLP Sample Name: ICB Operator: MDL
Run Time: 10/30/98 09:01:54
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-2.527	-24.89	-29.73	-.1317	.1397	.0000	-3.177
SDev	.880	2.11	22.62	.3017	.1063	.6338	2.501
%RSD	34.81	8.477	76.07	229.1	76.07	797e6	78.73
#1	-3.542	-24.91	-8.975	.1317	.0422	.3659	-4.621
#2	-2.031	-26.99	-26.39	-.4608	.1240	-.7318	-4.620
#3	-2.007	-22.77	-53.84	-.0658	.2530	.3659	-.2887
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.50	243.6	95.70	9.300	12.90	14.40	20.40
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-2.243	-9.293	3.678	-9.776	-4.807	-.9061	.4456
SDev	2.426	9.198	5.859	13.246	33.900	1.5702	1.594
%RSD	108.2	98.97	159.3	135.5	705.1	173.3	357.6
#1	-.5340	-14.60	-2.978	4.919	-36.05	-1.813	1.385
#2	-5.019	1.328	5.955	-13.45	-9.616	-1.812	-1.394
#3	-1.175	-14.60	8.057	-20.80	31.24	.9070	1.346
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	15.30	121.5	33.60	101.1	172.8	11.13	
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.13	

Method: TCLP Sample Name: CRI Operator: MDL
Run Time: 10/30/98 09:04:17
Comment:
Mode: CON Corr. Factor: 1

Elem	3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units		ppb	ppb	ppb	ppb	ppb	ppb
Avge	51	232.0	354.0	203.5	Q-1.664	20.86	49.95
SDev	44	21.2	12.6	.5	.059	.63	.87
%RSD	12 0	9.133	3.549	.2443	3.549	3.039	1.734
#1	17	207.8	366.5	203.0	Q-1.723	21.22	49.95
#2	18.	241.0	353.9	203.6	Q-1.663	20.12	49.08
#3	22.29	247.3	341.4	204.0	Q-1.605	21.22	50.82
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	20.00	200.0	400.0	200.0	10.00	20.00	50.00
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	204.8	993.1	86.18	112.4	403.1	98.23	31.24
SDev	1.5	8.7	9.75	39.3	30.4	1.09	2.04
%RSD	.7168	.8741	11.31	34.94	7.549	1.107	6.534
#1	203.2	987.1	85.30	137.0	391.9	97.15	29.18
#2	205.2	1003.	76.89	67.13	437.5	98.23	31.27
#3	206.1	989.1	96.33	133.3	379.9	99.32	33.26
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	200.0	1000.	80.00	100.0	400.0	100.0	40.00
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Method: TCLP Sample Name: ISA Operator: MDL
Run Time: 10/30/98 09:06:39
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-2.535	510300.	-7.280	1.448	-1.915	5.306	-4.188
SDev	.749	5317.	15.007	.411	1.649	2.392	.867
%RSD	29.55	1.042	206.2	28.39	86.10	45.09	20.70
#1	-3.277	514500.	.1194	1.317	-2.924	3.659	-4.222
#2	-2.549	512000.	2.591	1.119	-.0122	4.208	-3.305
#3	-1.779	504300.	-24.55	1.909	-2.808	8.050	-5.038
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		500000.					
Range		20.00					

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	182900.	509500.	12.61	-7.698	65.44	-9.293	-22.17
SDev	650.	2606.	1.61	34.022	53.11	1.023	1.75
%RSD	.3551	.5116	12.73	442.0	81.16	11.00	7.913
#1	183700.	511400.	11.21	-28.50	46.77	-8.580	-23.26
#2	182500.	510500.	12.26	-26.16	24.18	-10.46	-23.11
#3	182500.	506500.	14.36	31.56	125.4	-8.834	-20.15
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	200000.	500000.					
Range	20.00	20.00					

Method: TCLP Sample Name: ISB Operator: MDL
Run Time: 10/30/98 09:09:40
Comment:
Mode: CON Corr. Factor: 1

Elem	1280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units		ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.	503900.	1077.	502.5	1047.	496.0	527.6
SDev	1.	2750.	48.	4.1	5.	2.4	2.0
%RSD	.0	.5457	4.479	.8247	.4530	.4824	.3786
#1	11	507000.	1125.	505.7	1049.	497.1	528.8
#2	11	501800.	1028.	504.0	1050.	493.2	525.3
#3	1124.	502900.	1078.	497.8	1041.	497.6	528.8
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	1000.	500000.	1000.	500.0	1000.	500.0	500.0
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	179100.	497700.	1004.	998.6	1153.	485.6	1000.
SDev	148.	1773.	14.	22.0	33.	.8	6.
%RSD	.0826	.3562	1.421	2.201	2.887	.1636	.6183
#1	179200.	499700.	987.5	989.9	1134.	486.5	1000.
#2	179000.	497100.	1012.	1024.	1192.	484.9	994.3
#3	179000.	496400.	1013.	982.3	1134.	485.5	1007.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	200000.	500000.	1000.	1000.	1000.	500.0	1000.
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Method: TCLP Sample Name: CCV Operator: MDL
Run Time: 10/30/98 09:12:53
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	538.7	5253.	10510.	5229.	1023.	512.4	1274.
SDev	4.8	42.	90.	34.	17.	5.2	14.
%RSD	.8860	.8035	.8579	.6439	1.636	1.022	1.080
#1	533.6	5224.	10450.	5221.	1016.	507.0	1266.
#2	539.7	5234.	10480.	5201.	1010.	513.0	1265.
#3	543.0	5302.	10620.	5266.	1042.	517.4	1289.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0	5000.	10000.	5000.	1000.	500.0	1250.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5188.	25640.	2108.	2595.	10410.	2569.	1019.
SDev	44.	212.	34.	24.	128.	22.	5.
%RSD	.8393	.8252	1.615	.9092	1.226	.8686	.5365
#1	5170.	25560.	2104.	2605.	10330.	2555.	1017.
#2	5156.	25470.	2076.	2568.	10350.	2558.	1015.
#3	5237.	25870.	2144.	2612.	10560.	2595.	1026.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.	25000.	2000.	2500.	10000.	2500.	1000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Method: TCLP Sample Name: CCB Operator: MDL
Run Time: 10/30/98 09:15:54
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.018	-9.679	-20.69	.1975	.0973	-.5488	-.5779
SDev	4.973	12.210	11.14	.6936	.0524	.3169	2.7849
%RSD	5.4	126.1	53.83	351.2	53.83	57.74	481.9
#1	-.275	-18.70	-21.45	.1317	.1008	-.1829	.5772
#2	2.541	4.214	-9.192	.9217	.0432	-.7318	1.444
#3	-7.321	-14.55	-31.43	-.4608	.1477	-.7318	-3.754
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.50	243.6	95.70	9.300	12.90	14.40	20.40
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	6.835	-2.655	-5.255	12.25	9.619	-.3644	.7054
SDev	1.155	3.983	4.994	33.07	19.67	2.5126	1.205
%RSD	16.90	150.0	95.04	270.0	204.5	689.5	170.9
#1	7.155	-2.655	-5.079	12.26	26.44	-1.815	1.392
#2	7.796	1.328	-.3503	-20.82	14.43	2.537	-.6864
#3	5.553	-6.638	-10.33	45.32	-12.01	-1.815	1.411
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	15.30	121.5	33.60	101.1	172.8	11.13	
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.13	

Method: TCLP Sample Name: 98L1314-MB1 Operator: MDL
Run Time: 10/30/98 09:18:16
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.2583	-10.38	-24.00	-.2633	.1128	.7318	-1.444
SDev	2.3149	7.18	28.70	.7900	.1349	1.381	.500
%RSD	896.3	69.15	119.6	300.0	119.6	188.7	34.64
#1	.2551	-14.49	-56.36	-.2533	.2649	2.012	-1.155
#2	-2.787	-14.55	-14.00	-1.053	.0658	.9147	-2.021
#3	1.757	-2.092	-1.637	.5267	.0077	-.7318	-1.155
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.50	243.6	95.70	9.300	12.90	14.40	20.40
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.2136	6.638	.8758	25.73	-27.23	-.7255	-7.331
SDev	.1850	16.94	13.95	18.85	25.24	1.0880	.442
%RSD	86.60	255.1	1592.	73.27	92.68	150.0	6.025
#1	.4272	23.23	14.36	4.913	-52.87	.3624	-7.609
#2	.1068	-10.62	1.752	41.65	-2.403	-1.814	-7.563
#3	.1068	7.302	-13.49	30.62	-26.43	-.7253	-6.822
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	15.30	121.5	33.60	101.1	172.8	11.13	
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.13	

Analysis Report

Method: TCLP
Run Time: 10/30/98 09:20:38 Sample Name: 98L1314-LC1 Fri 10-30-98 09:22:57 AM pag
Comment:
Mode: CONC Corr. Factor: 1 Operator: MDL

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	411.9	5413.	10540.	5310.	263.8	517.9	1285.
SDev	1.3	19.	23.	38.	4.4	4.1	8.
%RSD	.3047	.3420	.2162	.7237	1.679	.8001	.5891
#1							
#2	413.1	5401.	10530.	5289.	267.7	518.5	1276.
#3	412.2	5434.	10520.	5288.	259.0	513.5	1291.
	410.6	5403.	10560.	5355.	264.6	521.8	1287.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	600.0	6000.	12000.	6000.	300.0	600.0	1500.
Low	400.0	4000.	8000.	4000.	200.0	400.0	1000.

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5208.	25750.	2073.	2591.	10540.	2587.	1029.
SDev	11.	164.	15.	15.	105.	12.	1.
%RSD	.2061	.6365	.7346	.5734	.9934	.4668	.1339
#1							
#2	5203.	25560.	2061.	2608.	10560.	2599.	1027.
#3	5202.	25840.	2069.	2582.	10420.	2585.	1029.
	5221.	25840.	2090.	2582.	10630.	2575.	1030.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	6000.	30000.	2400.	3000.	12000.	3000.	1200.
Low	4000.	20000.	1600.	2000.	8000.	2000.	800.0

Method: TCLP Sample Name: 9810L067-001 Operator: MDL
Run Time: 10/30/98 09:23:00
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-3.509	8916.	-3.051	206.9	-2.909	12.99	5.957
SDev	2.729	132.	6.997	3.2	1.444	.95	1.002
%RSD	77.78	1.480	229.3	1.536	49.63	7.319	16.82
#1	-2.753	8815.	-2.553	204.0	-1.450	12.44	5.380
#2	-6.536	9065.	3.684	210.3	-2.941	12.44	5.377
#3	-1.237	8868.	-10.28	206.5	-4.337	14.09	7.114
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	8799.	44390.	12.26	17.24	-1.803	164.0	10.27
SDev	49.	452.	1.89	22.85	34.045	.6	.37
%RSD	.5514	1.019	15.45	132.5	1888.	.3391	3.618
#1	8785.	43960.	11.74	-8.392	-28.25	164.0	10.05
#2	8852.	44860.	14.36	35.47	-13.77	163.5	10.69
#3	8758.	44330.	10.68	24.64	36.61	164.6	10.05
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: 9810L067-001L Operator: MDL
Run Time: 10/30/98 09:25:47
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-3.526	-53.18	-42.06	-.5267	1.172	.9147	-2.021
SDev	.746	8.66	13.65	.4561	4.403	2.392	2.292
%RSD	21.16	16.28	32.45	86.60	375.7	261.5	113.4
#1	-3.533	-60.11	-51.14	-.2633	-2.683	3.659	-4.621
#2	-2.777	-55.96	-48.67	-.2633	.2287	-.1829	-.2888
#3	-4.269	-43.47	-26.36	-1.053	5.970	-.7318	-1.155
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.1068	-3.319	4.379	13.52	19.23	-.0001	-10.32
SDev	.4894	14.129	8.258	20.23	32.51	1.2564	1.19
%RSD	458.3	425.7	188.6	149.7	169.1	1972000.	11.58
#1	-.5340	-18.59	5.955	-9.742	50.47	-.7256	-11.70
#2	-.2136	-.6638	11.74	26.99	-14.42	-.7253	-9.659
#3	.4272	9.293	-4.554	23.30	21.63	1.451	-9.601
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: 9810L067-001R Operator: MDL
Run Time: 10/30/98 09:28:34
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.8344	6183.	-35.51	419.2	1.629	14.64	5.525
SDev	.7436	18.	10.01	1.7	1.485	1.98	.868
%RSD	89.12	.2933	28.19	.4062	91.21	13.52	15.71
#1	-1.582	6178.	-25.55	418.8	.1201	12.44	4.657
#2	-.8267	6203.	-45.57	421.0	1.676	15.18	6.393
#3	-.0947	6168.	-35.40	417.7	3.090	16.28	5.525
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5566.	35190.	12.44	27.72	13.73	128.0	6.748
SDev	32.	112.	11.03	16.02	29.07	1.6	1.471
%RSD	.5711	.3182	88.67	57.80	211.7	1.227	21.80
#1	5596.	35210.	8.583	35.06	36.19	128.9	7.217
#2	5533.	35290.	24.87	9.343	24.12	129.0	5.100
#3	5568.	35060.	3.853	38.75	-19.11	126.2	7.928
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: 9810L067-001S Operator: MDL
Run Time: 10/30/98 09:31:21
Comment:
Mode: CC Corr. Factor: 1

Elem	[illegible]3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	[illegible]b	ppb	ppb	ppb	ppb	ppb	ppb
Avge	[illegible].25	8295.	1875.	2003.	45.27	185.7	227.6
SDev	[illegible].25	86.	14.	11.	6.68	2.2	1.3
%RSD	[illegible]64	1.039	.7546	.5337	14.76	1.195	.5810
#1	4[illegible]02	8361.	1861.	2000.	39.49	185.3	227.3
#2	4[illegible]21	8326.	1874.	2014.	52.58	183.7	229.1
#3	50.52	8198.	1889.	1994.	43.74	188.1	226.5
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5081.	52370.	456.5	434.2	1838.	554.8	453.9
SDev	19.	278.	5.3	24.1	52.	4.9	2.1
%RSD	.3722	.5307	1.159	5.561	2.837	.8902	.4582
#1	5080.	52570.	462.1	437.8	1812.	559.4	455.7
#2	5100.	52490.	451.5	408.4	1804.	549.6	454.4
#3	5063.	52060.	455.8	456.3	1898.	555.6	451.6
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: 9810L067-002 Operator: MDL
Run Time: 10/30/98 09:34:07
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-3.248	4511.	-11.91	141.7	.0560	8.050	3.233
SDev	.437	24.	5.28	1.2	.0248	4.391	.999
%RSD	13.45	.5277	44.34	.8702	44.34	54.55	30.91
#1	-3.015	4535.	-13.65	143.1	.0642	3.659	3.810
#2	-3.752	4487.	-5.981	141.3	.0281	8.050	2.079
#3	-2.977	4512.	-16.11	140.8	.0757	12.44	3.810
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5161.	11130.	6.831	21.84	-18.63	54.52	8.509
SDev	23.	46.	7.056	35.05	5.53	2.18	.383
%RSD	.4501	.4092	103.3	160.5	29.68	3.991	4.496
#1	5174.	11150.	1.752	3.438	-21.82	52.34	8.068
#2	5134.	11080.	14.89	-.1795	-12.24	54.52	8.714
#3	5175.	11160.	3.853	62.25	-21.82	56.69	8.746
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: 9810L067-003 Operator: MDL
Run Time: 10/30/98 09:36:55
Comment:
Mode: CO[illegible] Corr. Factor: 1

Elem	[illegible]3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	[illegible]	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.973	4184.	-33.78	98.95	.1588	13.90	.9557
SDev	.300	13.	22.13	.75	.1040	2.54	1.001
%RSD	25	.3077	65.51	.7557	65.51	18.23	104.7
#1	[illegible]55	4170.	-26.29	98.09	.1235	16.83	.3781
#2	-.[illegible]471	4194.	-16.37	99.28	.0770	12.44	2.111
#3	-6.995	4188.	-58.68	99.48	.2758	12.44	.3777
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	2[illegible]000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4432.	8223.	1.927	14.97	22.37	30.95	6.396
SDev	10.	38.	11.04	18.37	31.35	2.26	.430
%RSD	.2337	.4578	572.9	122.7	140.2	7.314	6.728
#1	4434.	8180.	2.277	14.98	25.57	33.49	6.167
#2	4421.	8236.	12.79	33.33	51.99	29.14	6.129
#3	4441.	8252.	-9.283	-3.410	-10.47	30.22	6.893
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: 9810L067-004 Operator: MDL
Run Time: 10/30/98 09:39:41
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-5.424	16190.	-4.795	1312.	.0225	14.82	7.625
SDev	3.061	130.	20.957	14.	1.560	1.68	1.323
%RSD	56.43	.8000	437.0	1.063	6921.	11.31	17.36
#1	-3.646	16050.	-6.622	1298.	.0311	16.28	8.783
#2	-8.959	16210.	-24.78	1313.	1.578	15.18	6.182
#3	-3.668	16310.	17.02	1325.	-1.542	12.99	7.909
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	10240.	46640.	26.27	39.08	.8959	59.00	18.40
SDev	89.	324.	6.42	14.89	10.83	1.59	.40
%RSD	.8706	.6938	24.44	38.11	1208.	2.688	2.191
#1	10170.	46330.	33.28	36.76	11.25	60.83	17.94
#2	10210.	46610.	24.87	54.99	-10.35	58.10	18.64
#3	10340.	46980.	20.67	25.48	1.785	58.07	18.63
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: 9810L067-005 Operator: MDL
Run Time: 10/30/98 09:42:29
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag 30	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-3. 5	15420.	21.22	973.4	.3875	11.16	12.05
SDev	2.	171.	14.27	6.8	3.742	2.22	1.32
%RSD	63.3	1.111	67.24	.7012	965.8	19.88	10.99
#1	-.89	15230.	17.95	966.3	-.0843	8.599	13.20
#2	-4.70	15450.	36.85	973.8	-3.096	12.44	10.60
#3	-3.94	15570.	8.878	979.9	4.343	12.44	12.34
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	8194.	137300.	27.67	17.00	1.438	201.5	19.35
SDev	17.	754.	9.93	5.75	27.64	2.1	1.25
%RSD	.2100	.5489	35.89	33.83	1922.	1.024	6.438
#1	8176.	136700.	16.46	23.28	28.66	203.9	20.79
#2	8198.	137100.	31.18	15.75	-26.60	200.1	18.65
#3	8210.	138100.	35.38	11.98	2.249	200.6	18.60
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: CCV Operator: MDL
Run Time: 10/30/98 09:46:07
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	530.7	5166.	10380.	5111.	1009.	510.2	1249.
SDev	1.2	13.	72.	25.	1.	4.3	3.
%RSD	.2184	.2471	.6938	.4832	.1426	.8401	.2436
#1	532.1	5157.	10450.	5139.	1011.	512.4	1249.
#2	530.1	5160.	10300.	5097.	1008.	505.3	1246.
#3	530.0	5181.	10390.	5096.	1008.	513.0	1252.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0	5000.	10000.	5000.	1000.	500.0	1250.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5147.	25170.	2074.	2586.	10400.	2486.	1013.
SDev	14.	108.	18.	1.	57.	18.	9.
%RSD	.2741	.4275	.8486	.3761	.5498	.7191	.8425
#1	5147.	25240.	2064.	2594.	10390.	2467.	1004.
#2	5162.	25230.	2065.	2575.	10470.	2502.	1016.
#3	5134.	25050.	2095.	2590.	10350.	2491.	1020.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.	25000.	2000.	2500.	10000.	2500.	1000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Method: TCLP Sample Name: CCB Operator: MDL
Run Time: 10/30/98 09:49:07
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-2.018	-8.298	-22.36	.2633	.1051	.7318	-.5778
SDev	.751	5.476	26.13	.3017	.1228	1.927	1.0003
%RSD	37.21	65.99	116.9	114.6	116.9	263.4	173.1
#1	-1.266	-2.092	-21.55	.3292	.1013	2.561	.5772
#2	-2.768	-10.35	3.362	-.0658	-.0158	.9147	-1.155
#3	-2.021	-12.45	-48.88	.5267	.2298	-1.281	-1.155
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.50	243.6	95.70	9.300	12.90	14.40	20.40
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	6.087	-7.966	-9.108	11.03	-.7952	-.3643	.4903
SDev	1.514	6.994	3.499	18.49	3.6713	.6284	1.060
%RSD	24.87	87.80	38.41	167.7	461.7	172.5	216.3
#1	7.796	-8.630	-12.96	-6.120	.0072	-.7276	1.420
#2	4.913	-14.60	-6.130	8.581	-4.801	.3613	-.6650
#3	5.553	-.6638	-8.232	30.62	2.409	-.7267	.7162
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	15.30	121.5	33.60	101.1	172.8	11.13	
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.13	

Analysis Report

Method: TCLP Sample Name: 9810L067-006 Operator: MDL
Run Time: 10/30/98 09:51:29
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-2.608	8271.	-21.25	520.6	-2.336	13.90	4.578
SDev	1.676	241.	14.17	11.9	2.984	2.54	.872
%RSD	64.26	2.919	66.69	2.286	127.7	18.23	19.05
#1	-1.656	7993.	-9.789	506.9	-1.416	16.83	5.452
#2	-1.625	8399.	-16.87	528.5	.0793	12.44	4.575
#3	-4.542	8422.	-37.10	526.5	-5.672	12.44	3.707
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	7367.	26160.	8.758	5.919	12.12	124.8	11.91
SDev	142.	617.	9.708	49.81	32.34	8.0	.81
%RSD	1.928	2.359	110.9	841.5	266.8	6.403	6.811
#1	7203.	25450.	14.36	55.18	44.82	118.7	12.84
#2	7438.	26470.	-2.452	-44.42	11.38	121.9	11.47
#3	7460.	26550.	14.36	6.993	-19.84	133.9	11.41
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: 9810L067-007 Operator: MDL
Run Time: 10/30/98 09:54:16
Comment:
Mode: CONC Corr. Factor: 1

Elem	g3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.637	4842.	-23.31	24.49	.1096	13.36	4.945
SDev	1.523	70.	9.75	.41	.0458	1.58	1.002
%RSD	93.04	1.436	41.83	1.679	41.83	11.86	20.26
#1	-.1178	4862.	-27.57	24.62	.1296	15.18	5.523
#2	-1.629	4764.	-12.16	24.03	.0571	12.44	5.524
#3	-3.164	4899.	-30.21	24.82	.1420	12.44	3.788
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5623.	7206.	5.780	19.00	28.25	36.62	4.931
SDev	36.	76.	2.124	14.91	13.25	1.58	.793
%RSD	.6321	1.060	36.74	78.49	46.92	4.311	16.08
#1	5618.	7194.	5.430	21.43	14.63	37.53	5.390
#2	5591.	7137.	8.057	32.54	29.02	37.54	5.387
#3	5661.	7288.	3.853	3.018	41.10	34.80	4.015
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: 9810L067-008 Operator: MDL
Run Time: 10/30/98 09:57:04
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.4677	18080.	2.426	327.2	-2.935	17.01	10.46
SDev	1.5757	151.	12.91	1.8	2.485	.32	.00
%RSD	336.9	.8369	532.2	.5532	84.68	1.862	.0314
#1	.0179	17940.	16.39	325.6	-1.539	17.38	10.46
#2	-2.229	18240.	-.0545	329.2	-1.461	16.83	10.45
#3	.8081	18040.	-9.063	326.8	-5.804	16.83	10.45
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	11510.	51290.	19.44	26.17	-.3980	48.34	21.81
SDev	73.	360.	4.28	29.95	9.6571	1.89	1.19
%RSD	.6330	.7023	22.01	114.5	2426.	3.916	5.449
#1	11430.	50960.	24.35	12.83	9.942	46.36	20.44
#2	11550.	51680.	17.52	5.203	-9.183	48.51	22.49
#3	11560.	51220.	16.46	60.47	-1.954	50.14	22.51
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: 9810L067-009 Operator: MDL
Run Time: 10/30/98 09:59:51
Comment:
Mode: CONC Corr. Factor: 1

Elem	A 280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	p	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-. 60	14130.	17.33	859.9	1.380	15.37	12.62
SDev	01	78.	9.23	8.7	6.732	2.54	1.32
%RSD	30	.5503	53.28	1.006	487.8	16.50	10.47
#1	-2.	14220.	9.341	869.5	2.879	12.44	14.06
#2	-2.	14110.	27.44	857.5	-5.975	16.83	11.47
#3	-4.0	14070.	15.21	852.8	7.237	16.83	12.33
Errors	LC Pa s	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	8326.	78750.	24.87	27.82	23.23	112.3	18.03
SDev	40.	603.	5.68	12.65	32.42	4.5	1.62
%RSD	.4846	.7652	22.85	45.47	139.6	4.026	8.978
#1	8373.	79440.	26.45	42.42	-9.574	117.3	17.08
#2	8302.	78430.	29.60	20.50	24.01	110.8	17.11
#3	8304.	78370.	18.57	20.53	55.25	108.6	19.90
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: 9810L067-010 Operator: MDL
Run Time: 10/30/98 10:05:32
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-4.299	7700.	-8.001	4116.	.0376	8.599	7.287
SDev	2.323	98.	8.791	36.	2.524	3.599	.867
%RSD	54.04	1.271	109.9	.8828	6712.	41.86	11.90
#1	-3.806	7738.	-15.63	4134.	1.535	12.44	7.288
#2	-2.262	7589.	-9.985	4074.	-2.876	8.050	8.155
#3	-6.829	7774.	1.613	4140.	1.454	5.306	6.420
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4909.	61010.	12.44	20.53	1.867	135.8	8.022
SDev	24.	533.	1.85	4.30	13.37	2.2	2.621
%RSD	.4902	.8743	14.84	20.97	716.0	1.622	32.68
#1	4901.	61070.	12.26	22.96	16.28	134.6	9.852
#2	4890.	60450.	10.68	23.08	-.5504	138.4	9.194
#3	4936.	61510.	14.36	15.56	-10.13	134.5	5.019
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TC. Sample Name: CCV Operator: MDL
Run Time: /98 10:09:37
Comment:
Mode: CONC orr. Factor: 1

Elem	Ag 0	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	547	5372.	10660.	5327.	1026.	519.6	1304.
SDev		26.	74.	51.	15.	2.0	8.
%RSD	.034	.4763	.6961	.9653	1.425	.3809	.6029
#1	547.	5401.	10730.	5369.	1009.	517.4	1311.
#2	547.	5351.	10580.	5270.	1035.	521.2	1305.
#3	547.	5365.	10680.	5342.	1034.	520.1	1296.
Errors	QC Pa	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0	5000.	10000.	5000.	1000.	500.0	1250.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5269.	25910.	2108.	2600.	10530.	2576.	1033.
SDev	8.	163.	8.	21.	76.	21.	4.
%RSD	.1582	.6288	.3764	.8041	.7179	.8305	.4176
#1	5270.	26080.	2107.	2593.	10580.	2584.	1032.
#2	5261.	25760.	2116.	2623.	10580.	2593.	1030.
#3	5278.	25900.	2100.	2582.	10450.	2552.	1038.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.	25000.	2000.	2500.	10000.	2500.	1000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Method: TCLP Sample Name: CCB Operator: MDL
Run Time: 10/30/98 10:12:38
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.2328	-2.011	-30.73	.3292	-.3428	-.1829	-1.444
SDev	1.5923	35.397	22.51	.5925	.8378	1.9789	1.804
%RSD	684.1	1760.	73.26	180.0	244.4	1082.	124.9
#1	.2551	35.23	-6.815	.9217	.0320	2.012	.5776
#2	-2.012	-35.21	-33.85	-.2633	-1.303	-1.829	-2.888
#3	1.059	-6.054	-51.51	.3292	.2421	-.7318	-2.022
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.50	243.6	95.70	9.300	12.90	14.40	20.40
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.3204	-2.655	-4.554	2.450	-18.42	2.176	1.161
SDev	1.125	16.301	11.524	18.83	20.72	3.141	.436
%RSD	351.2	613.9	253.1	768.3	112.5	144.3	37.54
#1	-.8544	-16.60	-7.181	23.24	-.0019	.3627	1.400
#2	1.388	15.27	8.057	-13.44	-14.42	.3625	.6581
#3	.4272	-6.638	-14.54	-2.445	-40.85	5.803	1.426
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	15.30	121.5	33.60	101.1	172.8	11.13	
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.13	

Method: TCLP Sample Name: CRI Operator: MDL
Run Time: 10/30/98 10:15:01
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	6.19	227.1	366.5	205.5	Q-1.723	19.94	46.49
SDev	1.30	3.1	16.3	1.4	.077	2.22	1.73
%RSD	.058	1.383	4.453	.6726	4.453	11.12	3.728
#1	1[illegible].95	224.3	349.1	204.5	Q-1.641	21.22	48.22
#2	1[illegible].94	230.5	381.4	204.9	Q-1.793	17.38	46.49
#3	14.69	226.4	369.0	207.1	Q-1.734	21.22	44.75
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass
Value	20.00	200.0	400.0	200.0	10.00	20.00	50.00
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	200.2	968.5	72.34	107.6	399.9	93.88	29.46
SDev	3.2	11.7	11.82	27.7	1.4	.94	1.75
%RSD	1.603	1.205	16.35	25.79	.3469	1.003	5.953
#1	200.0	977.1	72.16	133.3	401.5	94.43	27.85
#2	197.1	955.2	84.25	78.16	399.1	92.80	29.19
#3	203.6	973.2	60.60	111.2	399.1	94.43	31.33
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	200.0	1000.	80.00	100.0	400.0	100.0	40.00
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Method: TCLP Sample Name: ISA Operator: MDL
Run Time: 10/30/98 10:17:23
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-3.277	509600.	-15.46	.9217	-5.774	6.220	-2.712
SDev	.778	2739.	106.94	.3950	1.951	3.169	.522
%RSD	23.74	.5374	691.5	42.86	33.79	50.94	19.25
#1	-2.484	506500.	-134.8	1.317	-3.751	2.561	-2.423
#2	-4.039	510600.	71.57	.5267	-7.645	8.050	-3.315
#3	-3.307	511700.	16.87	.9217	-5.926	8.050	-2.398
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		500000.					
Range		20.00					

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	182200.	503400.	16.81	-44.91	30.36	-6.931	-22.15
SDev	559.	1644.	14.60	8.27	77.66	3.674	1.15
%RSD	.3066	.3265	86.85	18.42	255.8	53.00	5.171
#1	182200.	501600.	22.77	-39.94	57.70	-2.761	-22.77
#2	182800.	504200.	.1752	-54.46	-57.27	-8.345	-22.87
#3	181600.	504600.	27.50	-40.33	90.65	-9.688	-20.83
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	200000.	500000.					
Range	20.00	20.00					

ysis Report QC Standard Fri 10-30-98 10:22:44 AM

iod: TCLP Sample Name: ISB Operator: MDL
Time: 10/30/98 10:20:25
ment:
le: CONC Corr. Factor: 1

lem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Jnits	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1110.	502900.	1053.	501.7	1025.	486.1	525.1
SDev	3.	3671.	88.	3.5	1.	2.2	9.5
%RSD	.3076	.7299	8.357	.6958	.1225	.4516	1.814
#1	1114.	505500.	993.6	504.0	1026.	486.1	531.4
#2	1110.	504600.	1011.	503.4	1026.	483.9	529.7
#3	1107.	498700.	1154.	497.6	1024.	488.3	514.1
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	1000.	500000.	1000.	500.0	1000.	500.0	500.0
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	177700.	492000.	967.9	943.4	1147.	472.9	986.9
SDev	591.	2682.	8.5	3.1	15.	2.0	1.8
%RSD	.3325	.5452	.8826	.3253	1.294	.4186	.1797
#1	178400.	494800.	975.4	939.9	1157.	474.2	986.9
#2	177400.	491800.	958.6	944.6	1154.	470.7	985.1
#3	177300.	489500.	969.7	945.7	1130.	473.9	988.7
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	200000.	500000.	1000.	1000.	1000.	500.0	1000.
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Method: TCLP Sample Name: CCV Operator: MDL
Run Time: 10/30/98 10:23:13
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	Q553.1	5369.	10860.	5362.	1061.	531.1	1309.
SDev	2.0	30.	24.	6.	7.	1	7.
%RSD	.3635	.5623	.2254	.1205	.6964	.1790	.5628
#1	Q552.1	5385.	10880.	5368.	1067.	530.6	1315.
#2	Q555.5	5388.	10860.	5356.	1063.	532.2	1312.
#3	Q551.8	5334.	10840.	5361.	1053.	530.6	1301.
Errors	QC Fail	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0	5000.	10000.	5000.	1000.	500.0	1250.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5377.	26150.	2172.	2672.	10780.	2602.	1049.
SDev	16.	45.	23.	9.	60.	35.	7.
%RSD	.3010	.1720	1.055	.3460	.5608	1.328	.6384
#1	5395.	26200.	2159.	2663.	10800.	2603.	1053.
#2	5374.	26150.	2198.	2682.	10820.	2636.	1053.
#3	5363.	26110.	2158.	2671.	10710.	2567.	1041.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.	25000.	2000.	2500.	10000.	2500.	1000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Method: TCLP Sample Name: CCB Operator: MDL
Run Time: 10/30/98 10:26:14
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-2.780	-4.174	-11.58	.2633	.0544	.1829	-1.444
SDev	.029	5.562	22.18	.3017	.1043	3.121	1.323
%RSD	1.050	133.3	191.6	114.6	191.6	1706.	91.66
#1	-2.787	-2.122	5.849	.3292	-.0275	3.659	-1.155
#2	-2.806	-10.47	-4.031	-.0658	.0189	-.7318	-2.888
#3	-2.748	.0707	-36.55	.5267	.1718	-2.378	-.2887
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.50	243.6	95.70	9.300	12.90	14.40	20.40
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.4272	13.28	.8758	25.72	-1.602	-1.088	.9125
SDev	1.9312	13.06	2.696	11.81	29.855	3.325	.3871
%RSD	452.1	98.36	307.9	45.90	1863.	305.6	42.42
#1	-.2136	15.27	.1752	30.62	14.42	-1.814	.6856
#2	1.388	25.23	3.853	12.25	16.82	-3.990	1.359
#3	-2.456	-.6638	-1.401	34.29	-36.05	2.540	.6924
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	15.30	121.5	33.60	101.1	172.8	11.13	
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.13	

STATUS INFORMATION **

Version: 116.0
Date Created: 07/31/91 08:49 Date Last Updated: 10/30/98 08:29

Number of elements: 14 Number of lines: 14

# of lines calibrated: 0
# of lines standardized: 14 10/30/98 08:56 - 10/30/98 08:56

Data collection mode: Spectrum Shifter <4 positions>

Approx. time for analysis 2.0 mins.

Protection status: Un-protected

METHOD INFORMATION **

Sample Introduction Device: Normal
Calibration Mode: Concentration

Default Setup:

Number of Repeats : 3
Flush Time (sec) : 60.0
Auto-Increment Sample Names? No
Auto-store Analysis Data? Yes
Auto-store Stdzn Data? Yes
Store Individual Repeats? Yes
Auto-print Analysis Data? Yes
Auto-print Stdzn Report : None
Condensed Print Format? No

Default File Names:

Analysis Data File : PS1030A
Calibration Data File : PS1030A
Calibration Stds Table : PS1030A
Autosampler Table : PS1030A
Sample Limits Table : LR
Blank Limits Table : MB846
QC Check Table : CCV

INTERNAL STANDARDS INFORMATION **

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
1	Time		0	5.0	Yes

Ratio Constant/Intensity Multiplication Factor: .1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
2	Time		0	5.0	No

Ratio Constant ntensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
3	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
4	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
5	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
6	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
7	Time		0	5.0	No

Ratio Constant/Ir ty Multiplication Factor: 1

OUTPUT INFORMATION **

Output Mode:		Concentration
Override Print Limits?		Yes
Override Significant Figures?		No
Apply Background Correction?		Yes
Apply Blank Subtraction?		No
Limits Table: LR	Check?	Yes
Correction Factor:		1

Report to:
Screen Avgs
Printer Avgs, Stats, Reps, Errs, Units

PLASMA INFORMATION **

Gas Flow Rates

Torch gas flow : High Flow
Auxiliary gas flow: Medium (1.0 L/min)

Peristaltic Pump Parameters

Flush Pump Rate (RPM): 100
Relaxation time (sec): 0
Pump Tubing type : Tygon-Orange

Plasma Parameters

	Group #1	Group #2	Group #3	Group #4	Special Group
Approximate RF Power (W):	1150	1350	950	1750	1150
Analysis Pump Rate (RPM):	100	100	100	100	100
Nebulizer Pressure (PSI):	30	30	30	30	30

Element:	Ag	Al	As	Ba	Cd
Wavelength:	328.068	308.215/2	193.696	493.409	228.802/2
Element Name:	Ag3280	Al3082	As1936	Ba4934	Cd2288
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	0	0	0	0	0
Timing Group No.:	1	1	1	1	1
Print Limit Low:	0	0	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	4	4	4	4	4
Print Units:	ppb	ppb	ppb	ppb	ppb
BKG Low SS Offset:	NONE	NONE	NONE	NONE	NONE
BKG High SS Offset:	15	15	15	15	15
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	2pt Uncalib	2pt Uncalib	2pt Uncalib	2pt Uncalib	2pt Uncalib
Std #1 (High) Name:	S1	S1	S2	S1	S1
Conc/Sig:	1000	10000	20000	10000	2000
Std #2 (Low) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #3 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	-5.79345	-76.6628	-26.5516	-.658345	0
Slope:	377.834	1035.98	1244.61	98.7518	730.816
Date Standardized:	10/30/98	10/30/98	10/30/98	10/30/98	10/30/98
Time Standardized:	08:56	08:56	08:56	08:56	08:56
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n)	1	1	1	1	1
Max. Inflectic	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	YES	YES	YES	NO	YES
Number of I :	2	2	3	0	1

Affecting Element:	Fe2599	V-2924	Al3082	--n/a--	As1936
k1 factor:	-.00001	-.02782	.004874	--n/a--	.0047
k2 factor:	0	0	0	--n/a--	0
use?:	YES	YES	YES	--n/a--	YES
Affecting Element:	V-2924	Fe2599	Fe2599	--n/a--	--n/a--
k1 factor:	-.00879	.000002	.000283	--n/a--	--n/a--
k2 factor:	0	0	0	--n/a--	--n/a--
use?:	YES	YES	YES	--n/a--	--n/a--
Affecting Element:	--n/a--	--n/a--	V-2924	--n/a--	--n/a--
k1 factor:	--n/a--	--n/a--	.016705	--n/a--	--n/a--
k2 factor:	--n/a--	--n/a--	0	--n/a--	--n/a--
use?:	--n/a--	--n/a--	YES	--n/a--	--n/a--

Element:	Cr	Cu	Fe	Mg	Ni
Wavelength:	267.716	324.754	259.940	279.079	231.604/2
Element Name:	Cr2677	Cu3247	Fe2599	Mg2790	Ni2316
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	0	0	0	0	0
Timing Group No.:	1	1	1	1	1
Print Limit Low:	0	0	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	4	4	4	4	4
Print Units:	ppb	ppb	ppb	ppb	ppb
BKG Low SS Offset:	-15	NONE	-15	-15	-15
BKG High SS Offset:	NONE	15	NONE	NONE	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	2pt Uncalib	2pt Uncalib	2pt Uncalib	2pt Uncalib	2pt Uncalib
Std #1 (High) Name:	S1	S1	S1	S1	S1
Conc/Sig:	1000	2500	10000	50000	4000
Std #2 (Low) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #3 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--

Y - intercept:	-.731797	-2.88784	-2.45629	-.663816	-.350309
Slope:	274.424	433.175	160.193	995.725	262.732
Date Standardized:	10/30/98	10/30/98	10/30/98	10/30/98	10/30/98
Time Standardized:	08:56	08:56	08:56	08:56	08:56
Offset (A :	0	0	0	0	0
Gain (B :	1	1	1	1	1
Curvature (A	0	0	0	0	0
Exponent (n	1	1	1	1	1
Max. Inflectic	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	NO	YES	NO	NO	NO
Number of IECs:	0	1	0	0	0
Affecting Element:	--n/a--	Fe2599	--n/a--	--n/a--	--n/a--
k1 factor:	--n/a--	.000045	--n/a--	--n/a--	--n/a--
k2 factor:	--n/a--	0	--n/a--	--n/a--	--n/a--
use?:	--n/a--	YES	--n/a--	--n/a--	--n/a--

Element:	Pb	Se	V	Zn
Wavelength:	220.353	196.026	292.402	213.856
Element Name:	Pb2203	Se1960	V-2924	Zn2138
Line Switch Conc:	0	0	0	0
Peak SS Offset:	0	0	0	0
Timing Group No.:	1	1	1	1
Print Limit Low:	0	0	0	0
Print Limit High:	0	0	0	0
Significant Figrs:	4	4	4	4
Print Units:	ppb	ppb	ppb	ppb
BKG Low SS Offset:	-15	-15	NONE	NONE
BKG High SS Offset:	NONE	NONE	29	15
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	2pt Uncalib	2pt Uncalib	2pt Uncalib	2pt Uncalib
Std #1 (High) Name:	S1	S2	S1	S1
Conc/Sig:	5000	20000	5000	2000
Std #2 (Low) Name:	S0	S0	S0	S0
Conc/Sig:	0	0	0	0
Std #3 Name:	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	8.57213	2.40308	-.725374	-9.61759
Slope:	1836.88	1201.54	272.015	343.485
Date Standardized:	10/30/98	10/30/98	10/30/98	10/30/98
Time Standardized:	08:56	08:56	08:56	08:56
Offset (A0):	0	0	0	0
Gain (A1):	1	1	1	1
Curvature (A2):	0	0	0	0
Exponent (n):	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:				
Use IECs:	YES	YES	YES	YES
Number of IECs:	3	2	2	5

Affecting Element:	Al3082	Fe2599	Fe2599	Fe2599
k1 factor	.000815	-.00092	.000259	.000086
k2 factor	0	0	0	0
use?:	YES	YES	YES	YES
Affecting Element:	Cr2677	Al3082	Cr2677	Ni2316
k1 factor	-.00146	.000032	.0001	.003576
k2 factor:	0	0	0	0
use?:	YES	YES	YES	YES
Affecting Element:	Fe2599	--n/a--	--n/a--	Al3082
k1 factor:	.000279	--n/a--	--n/a--	.000012
k2 factor:	0	--n/a--	--n/a--	0
use?:	YES	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	Cr2677
k1 factor:	--n/a--	--n/a--	--n/a--	.000078
k2 factor:	--n/a--	--n/a--	--n/a--	0
use?:	--n/a--	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	Mg2790
k1 factor:	--n/a--	--n/a--	--n/a--	.000032
k2 factor:	--n/a--	--n/a--	--n/a--	0
use?:	--n/a--	--n/a--	--n/a--	YES

Method: TCLP Standard: S0

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Avge	.0047	.0780	.0060	.0073	.0000	.0613	.0020
SDev	.0095	.0087	.0060	.0070	.0000	.0031	.0035
%RSD	202.5	11.18	100.0	95.78	.0000	4.981	173.2
#1	.0120	.0880	.0120	.0140	.0000	.0620	.0040
#2	.0080	.0720	.0060	.0080	.0000	.0640	.0040
#3	-.0060	.0740	.0000	.0000	.0000	.0580	-.0020

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Avge	.4107	.0007	.0240	.0053	.0007	.0027	.0293
SDev	.0076	.0070	.0327	.0046	.0011	.0058	.0011
%RSD	1.844	1054.	136.4	86.60	173.2	216.5	3.936
#1	.4020	.0000	.0520	.0080	.0000	.0060	.0300
#2	.4140	.0080	.0320	.0000	.0020	.0060	.0280
#3	.4160	-.0060	-.0120	.0080	.0000	-.0040	.0300

PS1030B

(98L1314)

9810L067-11,12 Ag only

Method updated Lin mm 10/31/98

Method: TCLP Standard: S1

Elem	Ag3280	Al3082	Ba4934	Cd2288	Cr2677	Cu3247	Fe259
Avge	2.567	9.037	95.60	2.658	3.563	5.088	59.88
SDev	.057	.415	3.43	.053	.034	.449	1.68
%RSD	2.215	4.590	3.584	1.978	.9433	8.825	2.808
#1	.504	8.584	92.01	2.598	3.526	4.590	58.01
#2	.584	9.130	95.95	2.680	3.570	5.212	60.38
#3	2.614	9.398	98.84	2.696	3.592	5.462	61.27

Elem	Mg2790	Ni2316	Pb2203	V-2924	Zn2138
Avge	47.13	14.58	2.635	16.03	5.581
SDev	1.98	.35	.028	1.24	.170
%RSD	4.200	2.385	1.047	7.719	3.050
#1	45.02	14.20	2.604	14.62	5.386
#2	47.42	14.68	2.646	16.50	5.660
#3	48.95	14.87	2.656	16.96	5.698

Method: TCLP Standard: S2

Elem	As1936	Se1960
Avge	15.54	16.20
SDev	.11	.12
%RSD	.6758	.7291
#1	15.44	16.08
#2	15.54	16.19
#3	15.65	16.32

Method: TCLP Sample Name: ICV Operator: MDL
Run Time: 10/30/98 15:11:31
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	404.0	3992.	7929.	3960.	753.3	378.9	981.9
SDev	4.4	39.	84.	41.	.9	4.1	9.7
%RSD	1.090	.9678	1.056	1.041	.1200	1.087	.9859
#1	401.2	3948.	7840.	3919.	753.2	374.3	971.1
#2	401.7	4021.	8006.	4001.	752.4	380.0	989.8
#3	409.1	4007.	7942.	3960.	754.2	382.3	984.9
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	375.0	3750.	7500.	3750.	750.0	375.0	937.5
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3925.	19460.	1601.	1959.	7867.	2005.	771.1
SDev	29.	179.	2.	29.	109.	32.	6.5
%RSD	.7496	.9185	.1049	1.465	1.390	1.603	.8468
#1	3892.	19270.	1601.	1956.	7831.	1983.	763.7
#2	3936.	19630.	1599.	1933.	7989.	2042.	773.7
#3	3948.	19490.	1602.	1990.	7780.	1991.	775.9
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	3750.	18750.	1500.	1875.	7500.	1875.	750.0
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Method: TCLP Sample Name: ICB Operator: MDL
Run Time: 10/30/98 15:14:31
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.0188	-35.03	-7.499	-.1395	.5369	L-17.33	-.9800
SDev	3.7138	14.44	18.585	.5536	.9532	1.19	3.5446
%RSD	19770.	41.21	247.8	396.9	177.6	6.863	361.7
#1	2.848	-24.60	-28.16	.2790	1.637	L-18.66	1.969
#2	-4.214	-51.50	-2.207	-.7671	.0104	L-16.95	-4.912
#3	1.309	-28.99	7.866	.0697	-.0370	L-16.37	.0030
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	10.50	243.6	95.70	9.300	12.90	14.40	20.40
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L-67.70	4.244	-15.02	-21.52	-2.531	-2.061	1.022
SDev	.58	10.47	11.32	10.07	59.289	3.474	2.483
%RSD	.8603	246.6	75.36	46.77	2343.	168.6	243.0
#1	L-67.37	-2.829	-2.198	-32.94	-62.63	-1.437	2.417
#2	L-68.38	-.7073	-19.23	-17.71	55.92	-5.805	-1.845
#3	L-67.37	16.27	-23.63	-13.92	-.8843	1.059	2.493
Errors	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	15.30	121.5	33.60	101.1	172.8	11.13	
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.13	

Method: TCLP Sample Name: CRI Operator: MDL
Run Time: 10/30/98 15:16:54
Comment:
Mode: CONC Corr. Factor: 1

Elem	[illegible]3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	[illegible]b	ppb	ppb	ppb	ppb	ppb	ppb
Avge	[illegible].21	261.0	412.4	208.5	Q18.63	Q3.237	52.43
SDev	[illegible].95	3.4	10.4	.4	2.29	.873	.57
%RSD	[illegible]29	1.304	2.526	.2089	12.29	26.96	1.083
#1	2[illegible].13	257.3	424.4	208.0	Q19.07	Q3.046	53.08
#2	20.91	261.7	406.3	208.9	Q16.15	Q2.475	52.10
#3	25.59	264.0	406.3	208.7	Q20.66	Q4.189	52.10
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Fail	QC Pass
Value	20.00	200.0	400.0	200.0	10.00	20.00	50.00
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	140.9	1000.	78.94	73.26	417.5	100.0	30.17
SDev	1.4	16.	13.19	20.12	9.3	.4	1.86
%RSD	.9646	1.606	16.71	27.46	2.240	.3606	6.161
#1	139.4	981.7	63.74	80.87	421.6	100.2	28.06
#2	141.1	1011.	87.37	50.45	406.8	100.2	31.58
#3	142.1	1007.	85.72	88.47	424.1	99.60	30.87
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	200.0	1000.	80.00	100.0	400.0	100.0	40.00
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Method: TCLP Sample Name: ISA Operator: MDL
Run Time: 10/30/98 15:19:17
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.939	523400.	69.21	1.046	.1764	-10.09	1.641
SDev	2.522	3600.	59.31	.483	5.806	5.45	1.035
%RSD	130.1	.6877	85.70	46.19	3292.	54.00	63.06
#1	.1359	527600.	2.775	.4882	-6.033	-7.235	2.182
#2	4.821	521200.	116.8	1.325	5.470	-16.37	2.293
#3	.8600	521500.	88.02	1.325	1.091	-6.664	.4479
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		500000.					
Range		20.00					

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	189300.	521700.	-10.99	-35.81	8.389	5.268	-24.08
SDev	2581.	3852.	3.60	9.46	16.37	1.984	1.47
%RSD	1.364	.7384	32.79	26.42	195.1	37.65	6.094
#1	191800.	525200.	-7.144	-29.76	-6.692	4.401	-24.96
#2	189400.	522300.	-14.29	-46.71	6.058	7.538	-22.39
#3	186700.	517500.	-11.54	-30.96	25.80	3.865	-24.90
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	200000.	500000.					
Range	20.00	20.00					

Method: TCLP Sample Name: ISB Operator: MDL
Run Time: 10/30/98 15:22:18
Comment:
Mode: CONC Corr. Factor: 1

Elem	[illegible]	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	14.	526900.	Q1219.	518.0	1063.	497.5	553.9
SDev	3	1013.	66.	5.1	14.	3.1	2.6
%RSD	.219	.1922	5.442	.9930	1.301	.6323	.4725
#1	1147.	528000.	Q1201.	520.6	1048.	494.3	556.9
#2	1146.	526100.	1164.	521.2	1075.	500.6	552.9
#3	1151.	526700.	Q1292.	512.0	1065.	497.7	552.0
Errors	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass	QC Pass	QC Pass
Value	1000.	500000.	1000.	500.0	1000.	500.0	500.0
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	186300.	515300.	1004.	987.0	1174.	530.2	1033.
SDev	1180.	993.	15.	48.1	50.	2.9	6.
%RSD	.6332	.1928	1.486	4.871	4.287	.5391	.5342
#1	185600.	514200.	986.9	938.1	1119.	527.6	1039.
#2	187600.	515500.	1013.	1034.	1185.	529.6	1033.
#3	185600.	516200.	1012.	988.7	Q1217.	533.3	1028.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	200000.	500000.	1000.	1000.	1000.	500.0	1000.
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Method: TCLP Sample Name: CCV Operator: MDL
Run Time: 10/30/98 15:25:32
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	545.4	5367.	10590.	5227.	996.1	505.0	1316.
SDev	2.8	66.	52.	42.	6.8	1.4	38.
%RSD	.5134	1.229	.4871	.8067	.6842	.2847	2.862
#1	543.2	5390.	10650.	5267.	997.3	505.1	1334.
#2	544.4	5293.	10560.	5183.	988.8	506.3	1273.
#3	548.5	5419.	10570.	5232.	1002.	503.4	1342.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0	5000.	10000.	5000.	1000.	500.0	1250.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5220.	26010.	2104.	2593.	10510.	2671.	1030.
SDev	17.	134.	28.	30.	104.	22.	4.
%RSD	.3199	.5148	1.336	1.175	.9920	.8182	.4106
#1	5238.	26070.	2136.	2593.	10630.	2690.	1034.
#2	5206.	25850.	2091.	2624.	10440.	2647.	1030.
#3	5216.	26100.	2085.	2563.	10470.	2676.	1026.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.	25000.	2000.	2500.	10000.	2500.	1000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Method: TCLP Sample Name: CCB Operator: MDL
Run Time: 10/30/98 15:28:33
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4.406	-9.725	-10.20	.0697	.0480	L-14.47	.0026
SDev	2.059	18.568	16.85	.4184	.0792	2.88	1.966
%RSD	46.73	190.9	165.1	600.0	165.1	19.87	76290.
#1	2.848	-24.60	-28.16	-.3487	.1323	-14.09	.0026
#2	3.629	-15.67	5.265	.0697	-.0247	-11.81	-1.964
#3	6.740	11.09	-7.715	.4882	.0363	L-17.52	1.969
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low	LC Pass
High	10.50	243.6	95.70	9.300	12.90	14.40	20.40
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L-57.28	15.56	1.282	1.270	27.11	-1.856	-.9595
SDev	3.03	14.13	6.440	21.18	24.74	.720	1.8329
%RSD	5.284	90.80	502.2	1667.	91.25	38.78	191.0
#1	L-57.28	22.63	3.847	24.10	36.17	-1.440	-2.650
#2	L-54.25	24.75	6.045	-17.73	46.05	-1.441	-1.217
#3	L-60.31	-.7073	-6.045	-2.553	-.8791	-2.687	.9887
Errors	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	15.30	121.5	33.60	101.1	172.8	11.13	
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.13	

Method: TCLP Sample Name: 9810L067-011 Operator: MDL
Run Time: 10/30/98 15:30:55
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.627	6198.	-10.63	550.1	-1.455	-2.856	12.53
SDev	.822	78.	13.74	7.8	2.955	3.803	.98
%RSD	50.50	1.262	129.3	1.413	203.1	133.2	7.828
#1	.8063	6129.	-2.471	542.8	-1.493	-3.808	11.55
#2	1.626	6283.	-26.50	558.3	-4.390	1.333	13.51
#3	2.450	6182.	-2.913	549.3	1.519	-6.093	12.53
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5616.	23420.	-2.564	4.784	16.49	119.6	6.868
SDev	56.	214.	3.860	13.40	23.84	4.7	1.247
%RSD	1.004	.9122	150.5	280.0	144.6	3.907	18.16
#1	5553.	23190.	1.099	6.125	6.559	115.0	5.428
#2	5660.	23610.	-6.594	-9.232	43.70	119.4	7.591
#3	5636.	23440.	-2.198	17.46	-.7749	124.4	7.585
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: 9810L067-012 Operator: MDL
Run Time: 10/30/98 15:33:42
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.426	3811.	-21.02	166.8	1.102	2.094	6.395
SDev	1.544	16.	13.13	1.6	.915	4.437	2.270
%RSD	63.65	.4239	62.46	.9500	83.01	211.8	35.50
#1	2.430	3829.	-9.965	167.4	.0468	.7616	7.705
#2	3.969	3803.	-35.53	164.9	1.672	7.045	7.707
#3	.8801	3800.	-17.56	167.9	1.587	-1.523	3.774
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50000.	1000000.	200000.	50000.	25000.	50000.	125000.
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3521.	7530.	-.5495	6.054	-18.29	35.28	4.456
SDev	16.	30.	7.2692	5.788	55.09	1.91	.402
%RSD	.4571	.3948	1323.	95.60	301.3	5.401	9.015
#1	3539.	7559.	-6.045	12.37	44.29	35.69	3.992
#2	3509.	7500.	7.693	1.002	-39.70	33.20	4.668
#3	3514.	7532.	-3.297	4.792	-59.45	36.95	4.706
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500000.	1000000.	200000.	250000.	200000.	20000.	100000.
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.10	-14.70

Method: TCLP Sample Name: CRI Operator: MDL
Run Time: 10/30/98 15:36:55
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	18.83	234.2	381.6	208.4	Q17.27	Q3.618	50.46
SDev	2.97	27.6	6.4	.7	.90	1.511	3.72
%RSD	15.77	11.78	1.672	.3526	5.193	41.78	7.376
#1	15.43	203.6	375.8	208 5	Q17.80	Q4.760	46.20
#2	20.14	257.3	380.6	209.1	Q17.77	Q4.189	53.08
#3	20.91	241.6	388.4	207.6	Q16.23	Q1.904	52.10
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Fail	QC Fail	QC Pass
Value	20.00	200.0	400.0	200.0	10.00	20.00	50.00
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	142.2	1016.	76.20	97.37	407.6	99.60	30.66
SDev	2.6	11.	10.56	28.53	3.8	1.65	.87
%RSD	1.836	1.071	13.86	29.30	.9258	1.657	2.830
#1	141.5	1014.	85.72	96.13	404.3	97.73	30.15
#2	145.2	1028.	78.03	126.5	411.7	100.8	30.17
#3	140.1	1007.	64.84	69.48	406.8	100.2	31.66
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	200.0	1000.	80.00	100.0	400.0	100.0	40.00
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Method: TCLP Sample Name: ISA Operator: MDL
Run Time: 10/30/98 15:39:17
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.702	518000.	107.9	1.744	-.5073	-11.61	2.057
SDev	1.675	5698.	34.6	.209	12.199	1.65	2.894
%RSD	61.97	1.100	32.06	12.00	2405.	14.20	140.7
#1	3.263	521600.	145.5	1.953	-12.72	-10.66	.3122
#2	4.025	511500.	100.8	1.744	-.4739	-13.52	5.399
#3	.8193	521000.	77.45	1.534	11.68	-10.66	.4616
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		500000.					
Range		20.00					

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	187300.	516800.	-2.198	-58.77	34.73	5.572	-24.68
SDev	2068.	6029.	11.474	44.40	36.99	5.310	.90
%RSD	1.104	1.167	522.0	75.56	106.5	95.31	3.649
#1	189700.	522700.	-15.39	-50.94	33.51	7.454	-24.59
#2	185900.	510600.	5.495	-18.80	72.32	9.685	-23.83
#3	186400.	517000.	3.297	-106.6	-1.633	-.4231	-25.63
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	200000.	500000.					
Range	20.00	20.00					

Method: TCLP Sample Name: ISB Operator: MDL
Run Time: 10/30/98 15:42:18
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1143.	518300.	1189.	510.2	1061.	499.0	538.6
SDev	3.	5921.	43.	4.4	15.	.7	9.6
%RSD	.2761	1.142	3.585	.8644	1.409	.1322	1.791
#1	1143.	523700.	1142.	512.9	1047.	499.4	543.2
#2	1139.	512000.	Q1200.	505.1	1076.	498.3	527.5
#3	1146.	519300.	Q1226.	512.7	1060.	499.4	545.1
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	1000.	500000.	1000.	500.0	1000.	500.0	500.0
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	184600.	510400.	1013.	1017.	1154.	527.5	1025.
SDev	1173.	4592.	7.	13.	34.	6.6	5.
%RSD	.6357	.8996	.7296	1.323	2.922	1.260	.4816
#1	185300.	513600.	1011.	1003.	1141.	534.6	1026.
#2	183200.	505200.	1022.	1020.	1129.	521.4	1020.
#3	185200.	512500.	1007.	1029.	1193.	526.5	1029.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	200000.	500000.	1000.	1000.	1000.	500.0	1000.
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Method: TCLP Sample Name: CCV Operator: MDL
Run Time: 10/30/98 15:45:07
Comment:
Mode: CONC C[illegible]. Factor: 1

Elem	Ag328[illegible]	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	545.4	5337.	10620.	5245.	1002.	508.4	1293.
SDev	4.2	42.	102.	33.	7.	.3	14.
%RSD	.7663	.7928	.9634	.6306	.7030	.0649	1.097
#1	541.1	[illegible]297.	10520.	[illegible]207.	995.0	508.6	1281.
#2	545.7	[illegible]333.	10720.	5269.	1009.	508.0	1289.
#3	549.5	5381.	10610.	5258.	1002.	508.6	1308.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0	5000.	10000.	5000.	1000.	500.0	1250.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5251.	25960.	2138.	2601.	10460.	2678.	1038.
SDev	39.	87.	19.	15.	74.	43.	12.
%RSD	.7361	.3368	.8706	.5857	.7085	1.597	1.155
#1	5208.	25860.	2132.	2616.	10390.	2630.	1025.
#2	5265.	25990.	2123.	2586.	10460.	2712.	1040.
#3	5281.	26020.	2158.	2601.	10540.	2691.	1049.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.	25000.	2000.	2500.	10000.	2500.	1000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Method: TCLP Sample Name: CCB Operator: MDL
Run Time: 10/30/98 15:48:08
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Cd2288	Cr2677	Cu3247
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.804	13.34	2.559	-.0000	-.0120	-14.28	1.641
SDev	.462	5.93	20.15	.3196	.0947	3.25	.568
%RSD	25.59	44.41	787.4	1287e6	787.4	22.74	34.57
#1	2.073	20.07	-20.66	-.3487	.0971	L-16.95	1.969
#2	2.068	8.889	15.45	.0697	-.0726	L-15.23	.9861
#3	1.271	11.07	12.89	.2790	-.0606	-10.66	1.969
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.50	243.6	95.70	9.300	12.90	14.40	20.40
Low	-10.50	-243.6	-95.70	-9.300	-12.90	-14.40	-20.40

Elem	Fe2599	Mg2790	Ni2316	Pb2203	Se1960	V-2924	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	L-65.80	12.73	-6.045	8.859	-13.23	-1.854	.7483
SDev	1.36	12.06	2.518	19.75	21.39	1.299	.4249
%RSD	2.065	94.77	41.66	223.0	161.6	70.10	56.78
#1	L-65.01	22.63	-8.243	20.26	-.8837	-.8135	.9960
#2	L-67.37	-.7073	-6.594	-13.95	-37.93	-1.437	.9911
#3	L-65.01	16.27	-3.297	20.27	-.8834	-3.310	.2577
Errors	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	NOCHECK
High	15.30	121.5	33.60	101.1	172.8	11.13	
Low	-15.30	-121.5	-33.60	-101.1	-172.8	-11.13	

STATUS INFORMATION **

Version: 116
Date Created 07/31/91 08:49 Date Last Updated: 10/30/98 01:59

Number of elements: 14 Number of lines: 14

# of lines calibrated: 0
# of lines standardized: 14 10/30/98 03:08 - 10/30/98 03:08

Data collection mode: Spectrum Shifter <4 positions>

Approx. time for analysis 2.0 mins.

Protection status: Un-protected

METHOD INFORMATION **

Sample Introduction Device: Normal
Calibration Mode: Concentration

Default Setup:

Number of Repeats : 3	Auto-store Analysis Data? Yes
Flush Time (sec) : 60.0	Auto-store Stdzn Data? Yes
Auto-Increment Sample Names? No	Store Individual Repeats? Yes
	Auto-print Analysis Data? Yes
	Auto-print Stdzn Report : None
	Condensed Print Format? No

Default File Names:

Analysis Data File	: PS1030B	Autosampler Table	: PS1030A
		Sample Limits Table	: LR
Calibration Data File	: PS1030B	Blank Limits Table	: MB846
Calibration Stds Table	: PS1030B	QC Check Table	: CCV

INTERNAL STANDARDS INFORMATION **

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
1	Time		0	5.0	Yes

Ratio Constant/Intensity Multiplication Factor: .1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
2	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
3	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
4	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
5	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
6	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
7	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

OUTPUT INFORMATION **

Output Mode	Concentration
Override Print Limits?	Yes
Override Significant Figures?	No
Apply Background Correction?	Yes
Apply Blank Subtraction?	No
Limits Table LR Check?	Yes
Correction Factor:	1

Report to:
Screen Avgs
Printer Avgs, Stats, Reps, Errs, Units

PLASMA INFORMATION **

Gas Flow Rates

Torch gas flow : High Flow
Auxiliary gas flow: Medium (1.0 L/min)

Peristaltic Pump Parameters

Flush Pump Rate (RPM): 100
Relaxation time (sec): 0
Pump Tubing type : Tygon-Orange

Plasma Parameters

	Group #1	Group #2	Group #3	Group #4	Special Group
Approximate RF Power (W):	1150	1350	950	1750	1150
Analysis Pump Rate (RPM):	100	100	100	100	100
Nebulizer Pressure (PSI):	30	30	30	30	30

Element:	Ag	Al	As	Ba	Cd
Wavelength:	328.068	308.215/2	193.696	493.409	228.802/2
Element Name:	Ag3280	Al3082	As1936	Ba4934	Cd2288
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	0	0	0	0	0
Timing Group No.:	1	1	1	1	1
Print Limit Low:	0	0	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	4	4	4	4	4
Print Units:	ppb	ppb	ppb	ppb	ppb
BKG Low SS Offset:	NONE	NONE	NONE	NONE	NONE
BKG High SS Offset:	15	15	15	15	15
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	2pt Uncalib	2pt Uncalib	2pt Uncalib	2pt Uncalib	2pt Uncalib
Std #1 (High) Name:	S1	S1	S2	S1	S1
Conc/Sig:	1000	10000	20000	10000	2000
Std #2 (Low) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #3 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	-1.82102	-87.06	-7.72333	-.767149	0
Slope:	390.219	1116.15	1287.22	104.611	752.445
Date Standardized:	10/30/98	10/30/98	10/30/98	10/30/98	10/30/98
Time Standardized:	15:08	15:08	15:08	15:08	15:08
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n):	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	YES	YES	YES	NO	YES
Number of IECs:	2	2	3	0	1

Affecting Element:	Fe2599	V-2924	Al3082	--n/a--	As1936
k1 factor:	-.00001	-.02782	.004874	--n/a--	.0047
k2 factor:	0	0	0	--n/a--	0
use?:	YES	YES	YES	--n/a--	YES
Affecting Element:	V-2924	Fe2599	Fe2599	--n/a--	--n/a--
k1 factor:	-.00879	.000002	.000283	--n/a--	--n/a--
k2 factor:	0	0	0	--n/a--	--n/a--
use?:	YES	YES	YES	--n/a--	--n/a--
Affecting Element:	--n/a--	--n/a--	V-2924	--n/a--	--n/a--
k1 factor:	--n/a--	--n/a--	.016705	--n/a--	--n/a--
k2 factor:	--n/a--	--n/a--	0	--n/a--	--n/a--
use?:	--n/a--	--n/a--	YES	--n/a--	--n/a--

Element:	Cr	Cu	Fe	Mg	Ni
Wavelength:	267.716	324.754	259.940	279.079	231.604/2
Element Name:	Cr2677	Cu3247	Fe2599	Mg2790	Ni2316
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	0	0	0	0	0
Timing Group No.:	1	1	1	1	1
Print Limit Low:	0	0	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	4	4	4	4	4
Print Units:	ppb	ppb	ppb	ppb	ppb
BKG Low SS Offset:	-15	NONE	-15	-15	-15
BKG High SS Offset:	NONE	15	NONE	NONE	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	2pt Uncalib	2pt Uncalib	2pt Uncalib	2pt Uncalib	2pt Uncalib
Std #1 (High) Name:	S1	S1	S1	S1	S1
Conc/Sig:	1000	2500	10000	50000	4000
Std #2 (Low) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #3 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--

Y - intercept:	-17.5171	-.983091	-69.0498	-.707284	-6.59401
Slope:	285.605	491.545	168.141	1060.93	274.75
Date Standardized:	10/30/98	10/30/98	10/30/98	10/30/98	10/30/98
Time Standardized:	15:08	15:08	15:08	15:08	15:08
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n):	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	NO	YES	NO	NO	NO
Number of IECs:	0	1	0	0	0
Affecting Element:	--n/a--	Fe2599	--n/a--	--n/a--	--n/a--
k1 factor:	--n/a--	.000045	--n/a--	--n/a--	--n/a--
k2 factor:	--n/a--	0	--n/a--	--n/a--	--n/a--
use?:	--n/a--	YES	--n/a--	--n/a--	--n/a--

Element:	Pb	Se	V	Zn
Wavelength:	220.353	196.026	292.402	213.856
Element Name:	Pb2203	Se1960	V-2924	Zn2138
Line Switch Conc:	0	0	0	0
Peak SS Offset:	0	0	0	0
Timing Group No.:	1	1	1	1
Print Limit Low:	0	0	0	0
Print Limit High:	0	0	0	0
Significant Figrs:	4	4	4	4
Print Units:	ppb	ppb	ppb	ppb
BKG Low SS Offset:	-15	-15	NONE	NONE
BKG High SS Offset:	NONE	NONE	29	15
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	2pt Uncalib	2pt Uncalib	2pt Uncalib	2pt Uncalib
Std #1 (High) Name:	S1	S2	S1	S1
Conc/Sig:	5000	20000	5000	2000
Std #2 (Low) Name:	S0	S0	S0	S0
Conc/Sig:	0	0	0	0
Std #3 Name:	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	-10.1394	-.823215	-.832051	-10.5668
Slope:	1901.14	1234.82	312.019	360.231
Date Standardized:	10/30/98	10/30/98	10/30/98	10/30/98
Time Standardized:	15:08	15:08	15:08	15:08
Offset (A0):	0	0	0	0
Gain (A1):	1	1	1	1
Curvature (A2):	0	0	0	0
Exponent (n):	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:				
Use IECs	YES	YES	YES	YES
Number of IECs:	3	2	2	5

Affecting Element:	Al3082	Fe2599	Fe2599	Fe2599
k1 factor:	.000815	-.00092	.000259	.000086
k2 factor:	0	0	0	0
use?:	YES	YES	YES	YES
Affecting Element:	Cr2677	Al3082	Cr2677	Ni2316
k1 factor:	-.00146	.000032	.0001	.003576
k2 factor:	0	0	0	0
use?:	YES	YES	YES	YES
Affecting Element:	Fe2599	--n/a--	--n/a--	Al3082
k1 factor:	.000279	--n/a--	--n/a--	.000012
k2 factor:	0	--n/a--	--n/a--	0
use?:	YES	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	Cr2677
k1 factor:	--n/a--	--n/a--	--n/a--	.000078
k2 factor:	--n/a--	--n/a--	--n/a--	0
use?:	--n/a--	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	Mg2790
k1 factor:	--n/a--	--n/a--	--n/a--	.000032
k2 factor:	--n/a--	--n/a--	--n/a--	0
use?:	--n/a--	--n/a--	--n/a--	YES

Standardization Rpt.

Method: MIX Standard: S0

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	B[illegible]
Avge	.0001[illegible]	.0236	-.00656	.0121	.01478	.00093	[illegible]
SDev	.[illegible]0[illegible]0	.0009[illegible]	.00154	.0043	.00108	.00164	.0[illegible]
%RSD	3[illegible].51	3.758	23.419	37.34	7.3068	175.55	1[illegible]
LC = LOW							
#1	-.[illegible]020	.0229	-.00787	.0158	.01353	-.00093	.0097
#2	.[illegible]0073	.0246	-.00693	.0135	.01533	.00213	-.0059
#3	-.00047	.0234	-.00487	.0071	.01547	.00160	-.0018

Elem	Ca3179	Ca3968	Cd2265	Co[illegible]53	Cr2677	Cu3247	Fe2714
Avge	.0004	.27322	.00956	-.00102	.00116	.00949	.0005
SDev	.0002	.00086	.00128	.00143	.00097	.00174	.001[illegible]
%RSD	48.24	.31469	13.408	140.23	83.670	18.339	323.1
#1	.0002	.27227	.01093	-.00260	.00113	.00753	-.0015
#2	.0006	.27347	.00840	.00020	.[illegible]213	.01007	.0013
#3	.0005	.27393	.00933	-.00067	.00020	.01087	-.0013

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2[illegible]
Avge	.00576	.06238	.02000	-.0002	.00771	.0004	.00384
SDev	.00220	.02347	.00356	.0014	.00352	.0002	.00[illegible]7
%RSD	38.317	37.628	17.786	919.5	45.628	57.28	181.21
#1	.00487	.08860	.01593	-.0018	.00940	.0005	.00430
#2	.00827	.05520	.02153	.0008	.01007	.0004	.00787
#3	.00413	.04333	.02253	.0005	.00367	.0001	.00787

Pb Sb Se

Elem	Na5889	Ni2316	2203/1	2203/2	2068/1	2068/2	1960/1
Avge	.28453	-.00049	.04000	.00436	-.00632	.00080	[illegible]
SDev	.01229	.00221	.02912	.01078	.01565	.00735	.01160
%RSD	4.3180	451.10	71.333	247.53	229.43	108.08	83.504
#1	.27040	.00113	.06807	-.01480	-.01833	.01153	-.01167
#2	.29053	.00040	.04427	-.00500	-.01313	.01053	-.01167
#3	.29267	-.00300	.01013	.00673	.01100	-.00167	-.03220

Elem	1960/2	S[illegible]381	Sn1899	Sr4215	Ti3349	Tl1908	V-2924
Avge	.00791	[illegible]42	.00480	.01627	-.00222	-.01533	-.0003
SDev	.00773	[illegible]34	.00243	.00093	.00307	.00681	.0005
%RSD	97.670	[illegible]721	50.537	5.6936	138.27	44.444	186.5
#1	.00080	[illegible]1480	.00760	.01673	-.00540	-.02313	-.0009
#2	.00680	[illegible].1433	.00333	.01687	.00073	-.01233	.0002
#3	.01613	[illegible].01413	.00347	.01520	-.00200	-.01053	-.0002

Elem	Zn2138
Avge	-.00004
SDev	.00020
%RSD	458.26
#1	-.00027
#2	.00013
#3	.00000

J.D. Little CLP

Reviewed PMP 10-29-98

TA1028A TR1.1

98L1314-MB1, LC1

9810L067-001, A-S

-012

Initial ISA for Ni high. All samples < CRDL (40 ppb.) O.K per Maureen. PMP 10-29-98

PMP 10-28-98

Reanal Ag ↓ PS1030A

IntSld	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	
wavlen	--	--	--	--	--	--	
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Standardization Rpt.

Method: MT> Standard: STD

Elem	Mg3	Al3082	As1890	B 249	Ba4934	Be313	
Avge	.71	.8540	.84722	.8570	3.5390	14.780	.6833
SDev	.00	.0021	.00277	.0071	.0083	.049	.0059
%RSD	.3	.2463	.32876	.8298	.23337	.32973	.8440
#1	.712	.8532	.84450	.8525	3.5427	14.731	.7023
#2	.710	.8529	.84710	.8538	3.5295	14.780	.6908
#3	.7075	.8567	.85007	.8654	3.5447	14.828	.6943
Elem	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2599	K-7664
Avge	116.91	11.837	1.2984	.61418	.90693	4.5672	3.8584
SDev	.62	.111	.0085	.00201	.00784	.0105	.0412
%RSD	.52851	.93363	.65216	.32660	.86430	.23016	1.0685
#1	116.85	11.778	1.2935	.61187	.90727	4.5557	3.9011
#2	116.32	11.768	1.2935	.61547	.89893	4.5696	3.8189
#3	117.55	11.964	1.3082	.61520	.91460	4.5763	3.8552
Elem	Li6707	Mg2852	Mo2020	Na5889	Ni2316	2203/1	2203/2
Avge	135.02	55.754	3.1271	26.181	1.3212	2.2066	1.4640
SDev	1.49	.034	.0118	.173	.0076	.0493	.0245
%RSD	1.1056	.06089	.37589	.65994	.57409	2.2329	1.6765
#1	134.60	55.723	3.1195	26.188	1.3183	2.2425	1.4452
#2	133.78	55.749	3.1213	26.005	1.3156	2.2269	1.4549
#3	136.68	55.790	3.1407	26.350	1.3299	2.1505	1.4917
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Avge	1.4104	.74933	.63666	.76651	.96673	.99869	11.273
SDev	.0353	.00987	.01235	.01414	.00042	.00500	.041
%RSD	2.5003	1.3177	1.9360	1.8549	.62388	.50151	.29294
#1	1.3883	.75760	.64153	.75080	.06707	1.0025	14.077
#2	1.3919	.75200	.64820	.75867	.06687	.99907	14.030
#3	1.4511	.73840	.62427	.77827	.06627	.99267	14.112
Elem	Ti3349	Tl1908	Zn2138				
Avge	3.5403	.92376	.51513				
SDev	.0073	.01209	.00411				
%RSD	.20762	1.3093	.79704				
#1	3.5333	.91573	.51253				
#2	3.5397	.91787	.51300				
#3	3.5479	.93767	.51987				

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Standardization Rpt.

Method: MTX Standard: S1

Elem	3280	Al3082	As1890	B [illegible]	Ba4934	Be3130	Bi2230
Avge	330	1.703	1.7039	1.719	7.0646	29.855	1.389
SDev	.073	.006	.0041	.012	.0427	.184	.006
%RSD	131	.3582	.23985	.7188	.60492	.61770	.4649
#1	81	1.699	1.7073	1.721	7.0680	29.714	1.390
#2	1 .15	1.710	1.6994	1.705	7.0203	30.064	1.382
#3	1 95	1.700	1.7051	1.729	7.1055	29.786	1.395

Elem	Ca 9	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Avge	.45	238.01	23.607	2.6167	1.2374	1.8122	.9498
SDev	.00	1.05	.104	.0160	.0075	.0121	.0060
%RSD	.763	.44068	.43962	.61247	.60440	.66950	.6361
#1	.4489	238.55	23.538	2.6045	1.2323	1.8169	.9457
#2	.4557	236.80	23.556	2.6349	1.2460	1.7985	.9567
#3	.4513	238.68	23.726	2.6109	1.2340	1.8213	.9470

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mo2020	Na5889
Avge	9.1804	8.0073	273.03	1.439	114.27	6.2924	53.310
SDev	.0497	.0381	1.17	.008	.53	.0251	.274
%RSD	.54153	.47530	.42972	.5481	.46414	.39947	.51374
#1	9.1524	8.0353	272.63	1.433	113.99	6.2736	53.326
#2	9.2378	7.9640	272.11	1.448	114.88	6.3209	53.029
#3	9.1510	8.0227	274.35	1.436	113.94	6.2826	53.576

Elem	Ni2316	2203/1	2203/2	2068/1	2068/2	1960/1	1960/2
Avge	2.6268	4.4229	2.9413	2.8291	1.5022	1.3304	1.5270
SDev	.0145	.0234	.0090	.0051	.0107	.0043	.0115
%RSD	.55256	.52827	.30420	.18050	.71005	.31979	.75508
#1	2.6187	4.4627	2.9363	2.8260	1.5129	1.3338	1.5143
#2	2.6181	4.4349	2.9426	2.8284	1.4916	1.3317	1.5296
#3	2.6435	4.4161	2.9540	2.8358	1.5022	1.3256	1.5369

Elem	Si2881	Sn1899	Sr4215	Ti3349	Tl1908	Zn2138
Avge	.12058	999	28.215	7.1130	1.8602	1.0266
SDev	.00054	138	.163	.0364	.0110	.0053
%RSD	.44690	026	.57749	.51189	.59370	.51511
#1	.12067	9837	28.224	7.0856	1.8513	1.0251
#2	.12107	.0057	28.048	7.1543	1.8567	1.0222
#3	.12000	.9802	28.373	7.0991	1.8725	1.0325

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Item	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Standardization Rpt. Wed 10-[illegible]-96 08:[illegible] AM

Method: MIX Standard: 02

Elem	Al3082	Ca3179	Fe2714	K 7664	Mg2790	Na5889	[illegible]
Avge	16.43	5.344	4.485	77.332	8.619	258.42	[illegible]
SDev	.05	.017	.009	.183	.019	.31	[illegible]
%RSD	.2796	.3108	.2063	.23657	.2250	.12013	.12[illegible]
#1	16.42	5.334	4.484	77.129	8.617	258.19	84.055
#2	16.39	5.335	4.476	77.383	8.601	258.48	84.137
#3	16.48	5.363	4.494	77.484	8.640	258.81	83.929

Elem	2703/2	V-2924
Avge	55.594	5.557
SDev	.085	.012
%RSD	.15263	.2095
#1	55.669	5.554
#2	55.502	5.548
#3	55.612	5.570

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--		--	--	--
#3	15000						

Standardization Rpt. Wed 10-28-98 09:40:04 Am

Method: MIX Standard: 55

Elem	Mn257
Avge	21.32
SDev	.09
%RSD	.4248
#1	21.37
#2	21.36
#3	21.21

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standards

Method: MIX Sample Name: ICV
Run Time: 10/28/98 08:45:03
Comment:
Mode: 201 Corr. Factor: 1

Elem	g3280	Al3082	As1890	[illegible]	Ba4934	Be3130	[illegible]
Units	ab	PPM	ppb	ppb	ppb	ppb	ppb
Avge	9.6361	3.735466	369.1558	369.5551	370.0691	370.7072	[illegible]
SDev	1.7040	.019751	4.8251	2.7377	2.6083	1.8629	4.9240
%RSD	10039	.5287310	1.307073	.7408072	.7048148	.5025265	1.277358
#1	.5672	3.750796	374.6993	37[illegible]691	373.0545	372.5241	390.9445
#2	3 .9973	3.742424	365.8997	368.4694	368.9216	370.7961	381.3847
#3	3[illegible].3437	3.713178	366.8684	367.5268	368.2314	368.8015	384.11[illegible]
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Valu	375.0000	3.750000	375.0000	375.0000	375.0000	375.0000	375.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	1.473277	1.476241	372.1729	370.6442	370.2330	378.0759	3.805680
SDev	.012271	.004382	3.5479	1.7267	1.8456	1.4428	.012217
%RSD	.8329374	.2968204	.9532932	.4685497	.4985025	.3816241	.3210317
#1	1.482379	1.480810	375.8807	371.9379	371.8358	377.7076	3.811543
#2	1.478131	1.472074	371.8281	371.3243	370.6481	376.8529	3.81385[illegible]
#3	1.459321	1.475837	368.8100	368.6704	368.2152	379.6671	3.7918[illegible]
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pas
Value	1.500000	1.500000	375.0000	375.0000	375.0000	375.0000	3.750000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	3.725171	3609.982	2926.352	2.958551	2.928846	3.725237	365.9560
SDev	.014025	55.792	12.217	.009645	.011568	.013981	.8820
%RSD	.3764947	1.545486	.4174687	.3 59886	.3949645	.3753114	.2410743
#1	3 [illegible]9374	3671.702	2939.979	2.963345	2.939470	3.738831	366.8617
#2	3.724806	3563.131	2922.695	2.964859	2.930546	3.726040	365.2144
#3	3 [illegible]1331	3595.115	2916.381	2.947449	2.916523	3.710901	365.4918
Errors	ass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	50000	3750.000	3000.000	3.000000	3.000000	3.750000	375.0000
Range	.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ab	ppb	ppb	ppb	ppb	ppb	ppb
Avge	518.771	363.2435	380.1283	380.9579	380.6825	372.7466	364.1585
SDev	23.776	4.6373	6.0315	2.4028	2.8362	2.5598	2.7087
%RSD	.6570118	1.276646	1.586696	.6307149	.7450240	.6867430	.7438127
#1	3646.012	368.5053	385.9061	379.9647	381.9449	370.0676	364.9[illegible]
#2	3608.111	361.4727	380.6075	383.6980	382.6683	375.1676	361.1301
#3	3602.192	359.7524	373.8733	379.2110	377.4343	373.0048	366.3496
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value	3750.000	3[illegible]5 00			375.0000	375.0000	375.0000

Range	10.00000	10.00000			10.00000	10.00000	10.00000
Elem	2068/1	2068/2	1960/1	1960/2	Sr2861	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	363.2742	364.5993	371.9608	373.1333	369.5227	364.0700	371.1363
SDev	5.5112	3.4938	3.0630	5.4361	6.4841	2.1638	2.4400
%RSD	1.517092	.9582662	.8847935	1.456859	1.803538	.5943401	.6574361
#1	358.9806	367.9984	376.1242	367.0430	364.9795	364.0780	373.9380
#2	361.3532	361.0179	370.5249	377.4847	352.3545	366.2298	369.9934
#3	369.4888	364.7816	369.2332	375.5869	361.2341	361.9022	369.4775
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value					375.0000	375.0000	375.0000
Range					10.00000	10.00000	10.00000

Elem	T13349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	366.4466	378.3700	3.795134	371.5188
SDev	1.5807	.2604	.014350	2.3907
%RSD	.4313485	.0688114	.3781125	.6434880
#1	368.0833	378.1350	3.809221	374.2368
#2	366.3276	378.3253	3.795646	370.5780
#3	364.9287	378.6499	3.780535	369.7417
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	375.0000	375.0000	3.750000	375.0000
Range	10.00000	10.00000	10.00000	10.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Blank Sample Wed 10 28 98 08:54:38

Method: MTX Sample Name: ICB Operator: PMF
Run Time: 10/28/98 08:54:38
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B 249[illegible]	Ba4934	Be3130	Ca3179
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	.0425223	-.009117	2.037618	2.092531	.1547071	.2019539	2.832549
SDev	.4945967	.001410	.531313	2.151077	.1022859	.0260255	2.550881
%RSD	1163.146	15.46549	26.07521	102.7979	66.11584	12.88687	90.05600
#1	.4163946	-.009249	1.791935	4.[illegible]3873[illegible]	.0696126	.1742488	.991897[illegible]
#2	.2294719	-.007646	1.673609	.4963436	.1263207	.2057242	1.7[illegible]1395
#3	-.518300	-.010456	2.647310	1.242512	.2681882	.2258886	5.744355
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.00000	.2000000	10.00000	100.0000	100.0000	100.0000	100.0000
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-100.000	-100.000

Elem	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0001860	-.001338	.7095371	.1908996	1.599006	.0041945
SDev	.0000484	.061050	.3714843	.5685559	.687649	.0101113
%RSD	26.05140	4562.252	52.35586	297.8298	43.00481	241.059[illegible]
#1	.0002415	-.053872	.3253415	.7501836	.8825902	-.007111
#2	.0001520	-.015780	.7364203	.2090106	2.253732	.0073205
#3	.0001645	.0656378	1.066850	-.386495	1.660694	.0123[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.000000	5.000000	5.000000	50.00000	10.00000	25.00000	.[illegible]
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-25.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn257[illegible]	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	-.000828	14.253[illegible]	.5776413	.0068933	.0003490	.0001774	.9548714
SDev	.000292	24.8[illegible]359	.0543073	.0038287	.0003753	.0000934	.4772108
%RSD	35.21215	174.2966	9.401570	55.54262	107.5356	52.63694	49.97645
#1	-.000536	41.56229	.6156186	.0024777	.0006766	.0002707	.6180255
#2	-.000828	-7.00870	.6018682	.0089119	.0004309	.0001775	1.500960
#3	-.001120	8.207288	.5154371	.0092904	-.000060	.0000840	.7456286
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1000000	5000.000	100.0000	5.000000	5.000000	.0150000	100.0000
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.015000	-100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.531475	.6669179	-3.04122	1.345564	-.114526	1.554552	.5310868
SDev	.8893[illegible]	1.[illegible]	[illegible].31929	3.482259	1.630880	1.154556	2.015351
%RSD	58.07056	151.9314	142.0248	258.7955	1424.031	74.26936	379.4769
#1	1.011638	.8608632	1.182547	.3337354	.6504064	.2444457	2.545[illegible]
#2	2.558364	-.429295	-2.85613	-1.55469	-1.98727	2.423416	.5322[illegible]
#3	1.024421	1.569185	-7.45009	5.207645	.9932866	1.995[illegible]	-1.48483
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	[illegible]00.000	40.00000			3.000000	5.000000	60.00000

Analysi Report Blank Sample Wed 10-28-98 09:01:[illegible]

ow	-5000.00	-40.0000			-3.00000	-5.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	6.380025	-2.38980	-.467248	2.563137	2.967917	-.113240	.0296333
SDev	2.027615	4.02753	4.733264	4.032683	2.758022	.443552	.0331403
%RSD	31.78067	168.5301	1013.008	157.3339	92.92784	391.6920	111.8467
#1	4.219383	1.709568	4.924282	-2.09276	6.131619	.3683314	.0535027
#2	6.679358	-2.53754	-2.38691	4.824172	1.702182	-.505040	.0440233
#3	8.241334	-6.34142	-3.93912	4.[illegible]8001	1.069952	-.203011	-.008058
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100.0000	100.0000	100.0000
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zr2138
Units	ppb	ppb	PPM	ppb
Avge	.2775790	2.469462	.0002113	-.227348
SDev	.0729695	1.727025	.0003497	.110957
%RSD	26.28784	69.93529	165.4663	48.80513
#1	.1961510	2.454141	-.000192	-.355357
#2	.3370456	4.204097	.0004178	-.158682
#3	.2995403	.7501481	.0004086	-.168004
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100.0000	10.00000	.0500000	20.00000
Low	-100.000	-10.0000	-.050000	-20.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard Wed 10-28-98 09:07:53 am

Method: MIX Sample Name: CRI Operator: PMP
Run Time: 10/28/98 09:01:17
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-249e	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	0.05729	.1949498	20.35305	199.4395	196.9757	10.13129	-.644213
SDev	.81665	.0036196	1.46222	1.0297	.8756	.00330	4.222817
%RSD	4.071586	1.856665	7.184292	.5162907	.4444973	.0325917	655.4999
#1	20.27540	.1914702	21.46470	200.3817	196.9348	10.13479	3.594762
#2	19.15373	.1946845	20.89778	199.5965	197.8711	10.13084	-4.85069
#3	20.74274	.1986947	18.69665	198.3403	196.1214	10.12824	-.676716
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	NOCHECK
Value	20.00000	.2000000	20.00000	200.0000	200.0000	10.00000	
Range	50.00000	50.00000	50.00000	50.00000	50.00000	50.00000	

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0014230	.0010156	10.03305	101.7974	19.78739	52.61880	.2225820
SDev	.0007007	.0001642	.42747	.1798	.54238	.65290	.0016622
%RSD	49.23723	16.17079	4.260581	.1766001	2.741038	1.240819	.7467715
#1	.0018275	.0008393	10.42149	101.9599	19.75129	53.37240	.2235456
#2	.0006140	.0011643	9.575081	101.6043	19.26396	52.22335	.2206673
#3	.0018275	.0010431	10.10257	101.8280	20.34692	52.26065	.2235356
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	NOCHECK
Value			10.00000	100.0000	20.00000	50.00000	
Range			50.00000	50.00000	50.00000	50.00000	

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	.1993988	5.110455	198.9384	.0043701	.0004214	.0302093	200.6489
SDev	.0001114	34.87794	1.0802	.0019666	.0000760	.0001364	1.2389
%RSD	.0558721	682.4822	.5429740	45.00250	18.04232	.4514368	.6174558
#1	.1995203	19.86798	199.9631	.0055055	.0004923	.0303032	200.6524
#2	.1993747	-34.7203	199.0418	.0020992	.0003411	.0300528	201.8861
#3	.1993014	30.18369	197.8102	.0055055	.0004309	.0302718	199.4082
Errors	QC Pass	NOCHECK	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass
Value	.2000000		200.0000			.0300000	200.0000
Range	50.00000		50.00000			50.00000	50.00000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5.025452	79.69542	5.996911	7.461454	6.974560	11.30897	121.0896
SDev	.752236	.97028	3.112024	2.087867	.682780	2.62297	1.7396
%RSD	14.96852	1.167299	51.89379	27.98204	9.789578	23.19375	1.436616
#1	5.268326	80.49650	8.433219	6.852617	7.379758	14.20769	119.9099
#2	4.181784	78.67509	2.491182	9.786064	7.357666	9.099320	120.2714
#3	5.626245	79.91466	7.066330	5.745680	6.186257	10.61989	123.0874
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value		80.00000			6.000000	10.00000	120.0000

Range		50.00000			50.00000	50.00000	50.00000
Elem	2068/1	2068/2	1960/1	1960/2	Si3331	Zn1899	Zn2138
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	118.8613	122.2012	10.40769	11.75810	192.6083	196.3250	192.0814
SDev	4.0905	3.6226	8.80900	1.81920	3.6537	.9973	.6931
%RSD	3.441435	2.964427	84.63934	15.47187	1.896967	.5079653	.3608295
#1	115.6771	122.0223	18.05376	12.28674	194.7193	196.0008	192.1132
#2	123.4747	118.6714	.7750369	13.25442	188.3894	195.5301	192.7586
#3	117.4321	125.9099	12.39426	9.73127	194.7163	197.4440	191.3734
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	QC Pass
Value					200.0000		200.0000
Range					50.00000		50.00000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	197.1494	22.18516	.1019698	40.06320
SDev	.2586	.5614o	.0005890	.09352
%RSD	.1311621	2.530511	.5776061	.2334197
#1	196.8834	22.51674	.1018899	40.16562
#2	197.3998	21.53697	.1014249	39.98278
#3	197.1650	22.50177	.1025947	40.04100
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	200.0000	20.00000	.1000000	40.00000
Range	50.00000	50.00000	50.00000	50.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard Wed 10-28-98 09:55:10 AM

Method: MIX Sample Name: ISA Operator: PMP
Run Time: 10/28/98 09:20:51
Comment:
Mode: CONC Corr. Factor: 1

• Suspect Cr, Ni contamination in ISA cup. (from Autosampler). ISA cup was cleaned and [redacted] repoured ISA. Since ending ISA is fine for Cr, Ni.

PMP 10-28-98

Elem	Ag3280	Al3082	As1890	B [illegible]	Ba4934	Be3130	Bi [illegible]
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	250173	471.2133	2.469214	.9545042	-2.11304	.3835883	.9993[illegible]
SDev	.407305	.6853	2.687145	.7001431	.10898	.0102482	.8368473
%RSD	162.8095	.1454288	108.8259	73.35149	5.157693	2.671656	83.74174
#1	-.141714	471.3359	5.043736	.745035	-2.14548	.3947514	1.407366
#2	.0919248	470.4749	2.681829	.4126239	-1.99152	.3746062	1.553871
#3	-.700729	471.8290	-.317922	.7058535	-2.20212	.3814073	.0367203
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		500.0000					
Range		20.00000					

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	408.3463	92.621087	2.791475	1.470643	9.523389	1.926083	173.7286
SDev	1.1673	.035918	.082077	.659800	.403506	.270402	.2852
%RSD	.2858556	1.370355	2.940282	44.86474	4.236998	14.03896	.1645805
#1	407.8360	92.662039	2.715858	.7371325	9.989278	1.854138	173.5668
#2	407.5211	92.594928	2.779802	2.015746	9.285200	2.225182	173.5697
#3	409.6818	92.6062 3	2.878763	1.659049	9.295689	1.698931	174.05
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	500.0000						500.0000
Range	20.00000						20.00000

• O.K < 2 x CRDL RMP 10-29-98

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	158.9559	-10.1895	.2653106	468.8666	333.16152	.0016130	.9451179
SDev	.2409	10.4340	.0362385	.9369	.01186	.0000474	.4130166
%RSD	.1515399	102.3998	13.65888	.1998162	.0357749	2.937629	43.70000
#1	158.8188	-22.1389	.3052523	468.3460	333.17495	.0015694	.5700836
#2	158.8149	-5.54757	.2561437	468.3055	333.15249	.0016061	.8774986
#3	159.2340	-2.88191	.2345359	469.9481	333.15711	.0016634	1.387772
Errors	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value				500.0000			
Range				20.00000			

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	7.688540	96.23979	-4.96763	2.158340	-.214006	-4.20794	2.434387
SDev	1.276833	1.01009	3.43079	.883970	.578939	1.68543	3.493463
%RSD	16.60696	1.049555	69.06289	40.95603	270.5241	40.05353	143.5048
#1	6.521042	95.52304	-5.95967	2.202560	-.514863	-5.02253	-.2225
#2	7.492537	97.39503	-7.79308	3.019371	-.580574	-2.26996	6.391495
#3	9.052041	95.80132	-1.15013	1.253090	.4534173	-5.33133	1.[illegible]254
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		- see note on front.					

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Range

Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn189[illegible]	Sr42[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3.682859	1.810287	-2.38330	-5.11979	24.37434	-4.08156	1e.07575
SDev	7.138380	5.034170	7.65057	3.02985	4.42662	2.17175	.0447[illegible]
%RSD	193.8271	278.0868	321.0080	59.17960	18.23578	53.20892	.2794377
#1	7.226529	-3.94236	-10.9938	-2.04218	28.67613	-4.53772	1e.1072e
#2	8.356044	5.409893	3.632478	-5.21755	19.82331	-1.71795	1e.0269e
#3	-4.53099	3.963330	.2114115	-8.09951	24.32356	-5.98899	1e.10203
Errors Value Range	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	-1.70414	.4031779	-.001315	-.421402
SDev	.11298	.7913820	.000368	.219175
%RSD	6.629795	196.2860	27.98036	52.01084
#1	-1.81956	-.504797	-.001717	-.208584
#2	-1.69909	.7678814	-.001233	-.409199
#3	-1.59377	.9464493	-.000995	-.646423
Errors Value Range	NOCHECK	NOCHECK	NOCHECK	NOCHECK

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analyt...s Report QC Standard ...d 10-28-98 09:41:41 ...

Method: MIX Sample Name: TSD Oper...tor: PMF
Run Time: 10/28/98 09:40:12
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2196	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	191.4676	474.7183	96.60828	934.4352	465.2086	458.3545	887.6409
SDev	.3843	1.5192	.89768	3.0677	.5634	1.6226	2.9493
%RSD	.2007224	.3200211	.9291997	.3282977	.1211120	.3538583	.3322599
#1	191.3728	473.9535	96.09130	931.2240	464.5604	457.2634	885.9189
#2	191.1395	473.7334	96.08871	937.4238	465.5808	458.0242	891.0463
#3	191.8904	476.4679	97.64484	934.5878	465.4846	460.3759	885.9574
Errors	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	200.0000	500.0000	100.0000		500.0000	500.0000	
Range	20.00000	20.00000	20.00000		20.00000	20.00000	

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	410.7199	S2.507466	831.8676	427.0879	443.9081	495.9149	176.4485
SDev	1.9954	.055143	2.0592	1.7612	1.6697	1.4895	.5273
%RSD	.4858411	2.199156	.2475361	.4123800	.3761363	.3003522	.2988395
#1	408.6764	S2.446909	829.5041	426.8104	443.7021	497.4146	176.0661
#2	410.8196	S2.520705	833.2741	425.4819	442.3510	495.8938	176.2[illegible]
#3	412.6636	S2.554785	832.8247	428.9714	445.6713	494.4360	177.053[illegible]
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000		1000.000	500.0000	500.0000	500.0000	200.0000
Range	20.00000		20.00000	20.00000	20.00000	20.00000	20.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	160.9343	-5.68710	1054.007	477.2790	533.09313	.4517637	882.6093
SDev	.4179	14.10014	.858	1.5835	.01714	.0013772	3.1001
%RSD	.2597019	2[illegible].9320	.0813946	.33.7664	.0310047	.3048461	.3512425
#1	160.6572	3.339741	1054.449	476.2052	533.07381	.4511286	880.6663
#2	160.7307	1.534089	1054.555	476.5344	533.10651	.4508187	880.9766
#3	161.4151	-21.9351	1053.019	479.0976	533.09907	.4533439	886.1845
Errors	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	QC Pass	NOCHECK
Value				500.0000		.5000000	
Range				20.00000		20.00000	

Elem	[illegible]889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	[illegible]	ppb	ppb	ppb	ppb	ppb	ppb
Avge	[illegible].17531	803.4993	43.02568	45.60700	44.74815	45.72185	583.7393
SDev	.36253	.2910	5.84689	3.79561	1.66251	4.56629	2.9447
%RSD	2.977597	.0362147	13.58930	8.322427	3.715265	9.987101	.5044[illegible]
#1	11.76200	803.2127	49.23259	43.69984	45.54292	47.43688	587.1393
#2	12.43949	803.4909	42.22267	43.14317	42.83743	40.54635	582.0668
#3	12.32445	803.7944	37.62183	49.97799	45.86412	49.18232	582.0117
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value		1000.000			50.00000	50.00000	600.0000

Range		20.00000			20.00000	20.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	593.8150	578.7082	42.80550	47.17708	918.2194	844.3424	920.6601
SDev	11.4649	9.3811	11.18434	10.43084	2.4685	5.0799	1.6856
%RSD	1.930713	1.621035	26.12828	22.10999	.2694255	.6016346	.1830875
#1	584.5381	588.4372	52.29605	45.01014	918.7033	839.3235	918.9724
#2	590.2744	577.9684	45.64551	37.99990	916.1885	844.2226	922.3436
#3	606.6326	569.7189	30.47493	58.52119	917.7665	849.4811	920.6644
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	T 3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	-1.60028	90.45825	.4628663	890.1581
SDev	.11655	.48861	.0014103	.8880
%RSD	7.283235	.5401452	.3046867	.0997583
#1	-1.73311	89.96692	.4615289	889.8264
#2	-1.51514	90.94408	.4627304	891.1643
#3	-1.55259	90.46376	.4643396	889.4838
Errors	NOCHECK	QC Pass	QC Pass	QC Pass
Value		100.0000	.5000000	1000.000
Range		20.00000	20.00000	20.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard

Method: MIX Sample Name: CCV
Run Time: 10/26/98 09:48:44
Comment:
Mode: CONC Corr. Factor: 1

Elem	3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Units	b	PPM	ppb	ppb	ppb	ppb	ppb
Avge	9.6309	5.043632	495.8818	491.4053	483.0951	490.3825	501.8993
SDev	1.7102	.016081	2.9820	3.4717	1.7796	2.0988	4.153
%RSD	.92834	.3188406	.6013511	.7064850	.3683694	.4279852	.8275794
#1	4 .2139	5.056006	497.4630	487.6760	481.6922	488.6926	498.7721
#2	489.1482	5.025455	497.7402	491.9940	482.4963	489.7230	500.3135
#3	491.5305	5.049435	492.4423	494.5450	485.0969	492.7317	506.6121
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	5.000000	500.0000	500.0000	500.0000	500.0000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	1.945354	2.064960	486.3127	498.4974	498.0604	517.9004	5.181972
SDev	.005184	.012480	3.2653	1.4891	2.2137	.9792	.006918
%RSD	.2665024	.6043528	.6714376	.2987230	.4444726	.1890700	.1334950
#1	1.945961	2.079006	483.9393	497.7812	496.0598	518.8862	5.189815
#2	1.939893	2.060728	484.9622	497.5018	497.6828	517.8870	5.176738
#3	1.950209	2.055147	490.0366	500.2093	500.4387	516.9279	5.179363
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000000	2.000000	500.0000	500.0000	500.0000	500.0000	5.000000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	4.984105	4951.390	3986.705	4.049211	4.033953	4.985679	494.8674
SDev	.014247	17.776	9.717	.014737	.012816	.012892	1.8002
%RSD	.2858409	.3590115	.2437372	.3639394	.3177081	.2585790	.3637753
#1	4 3205	4936.064	3975.742	4.0 4510	4.048296	4.976453	493.0117
#2	4 78886	4970.877	3994.256	4.032558	4.023624	4.980175	494.9842
#3	5 0225	4947.229	3990.117	4.0605	4.029940	5.000410	496.6064
Errors	ass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	0000	5000.000	4000.000	4.000000	4.000000	5.000000	500.0000
Range	00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	b	ppb	ppb	ppb	ppb	ppb	ppb
Avge	797. 2	47 .1564	531.1354	505.2490	513.8637	507.6692	507.3320
SDev	18.283	2.9152	2.5258	5.7923	3.9949	2.8589	2.8062
%RSD	3810855	.6174312	.4755512	1.146443	.7774243	.5631430	.5531361
#1	4776.436	469.7194	529.3211	510.2620	516.6092	510.8888	505.7
#2	4808.777	471.3637	530.0648	498.9033	509.2806	505.4281	510.5723
#3	4807.383	475.3860	534.0201	506.5545	515.7012	506.690	505.6938
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value	5000.000	5 .0000			500.0000	500.0000	00.0000

Range	10.00000	10.00000			10.00000	10.00000	10.00000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Ta1915
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	506.1395	507.9266	513.9248	504.5452	480.9209	490.0672	486.8856
SDev	3.4943	5.6488	1.3782	4.9579	5.0823	2.5701	1.7441
%RSD	.6903765	1.112127	.2681689	.9826502	1.056792	.5247989	.3582431
#1	509.9338	503.6305	512.4974	510.0850	476.3087	487.7048	485.3420
#2	503.0539	514.3251	515.2478	500.5248	480.0844	492.3020	486.5354
#3	505.4308	505.8243	514.0293	503.0258	486.3696	491.9948	488.7795
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value					500.0000	500.0000	500.0000
Range					10.00000	10.00000	10.00000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	480.2178	506.8442	5.047987	492.8559
SDev	1.9754	2.3883	.017397	1.7854
%RSD	.4113585	.4712196	.3446327	.3622651
#1	478.4372	505.9898	5.034289	491.3526
#2	479.8736	505.0006	5.042109	492.3856
#3	482.3427	509.5423	5.067561	494.8293
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	500.0000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Blank Sample Wed 10 28-98 10:07 47 -0

Method: MTA Sample Name: CCB Operator: ENS
Run Time: 10/28/98 10:03:15
Comment:
Mode: CONC Corr. Factor: 1

Elem	A 280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Units	p	PPM	ppb	ppb	ppb	ppb	ppb
Avge	- 3288	-.030262	2.381079	2.066588	.1169612	.4644915	-1.19922
SDev	. 2833	.003414	1.357448	1.593034	.1114962	.0394774	2.29019
%RSD	68 7669	11.28251	57.00978	77.08524	95.32751	8.499065	190.9745
#1	-.1 15	-.028923	1.185214	2.133915	-.005970	.4232009	-3.13e5e
#2	-.5 27	-.027721	3.856561	.4181343	.1453018	.4684101	-1.78939
#3	-.8 2	-.034143	2.101460	3.597716	.2115521	.5018635	1.328305
Errors	LC P S	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.0000	.2000000	10.00000	100.0000	100.0000	100.0000	100.0000
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-100.000	-100.000

Elem	Ca3179	Cd3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0002094	.0019848	-.095946	.3522149	-.242204	2.055992	.0061250
SDev	.0003503	.0004245	.097466	.3610195	.165274	.833843	.0077167
%RSD	167.2618	21.38994	101.5837	102.4998	68.23734	40.55673	125.9875
#1	.0000072	.0024404	-.088350	-.031603	-.061901	1.104878	-.002776
#2	.0006140	.0019139	-.196989	.6850058	-.386517	2.661282	.01021
#3	.0000072	.0016002	-.002501	.4032423	-.278194	2.401817	.01093
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.000000	5.000000	5.000000	50.00000	10.00000	25.00000	.1000000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-25.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	-.000682	-6.86521	- 071247	.0020992	.0014388	.0000422	1.025590
SDev	.000364	6.18088	.067630	.0014622	.0004601	.0000358	.357520
%RSD	53.4	90.03191	94.92308	212.5685	31.97606	84.77353	34.85995
#1	-.0	-4.85926	-.148511	-.001686	.0019569	.0000835	.7136162
#2	-.0	-13.7999	-.022793	.0070195	.0012813	.0000214	1.415724
#3	-.0	-1.93645	-.042437	.0009637	.0010782	.0000216	.9474294
Errors	LC	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1C 00	5000.000	100.0000	5.000000	5.000000	.0150000	100.0000
Low	-. 000	-5000.00	-100.000	-5.00000	-5.00000	-.015000	-100.000

Elem	N 9	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	p	ppb	ppb	ppb	ppb	ppb	ppb
Avge	- 1490	.2368657	-2.07472	.2812063	-.569918	.6793525	-.691309
SDev	. 405	.9143231	5.32159	1.581000	1.103240	3.844799	.833011
%RSD	3 121	386.0098	233.9446	564.2272	193.5788	565.9506	120.497
#1	- 754	.8861604	3.851081	-1.28153	.4282821	3.651549	.0956100
#2	- 7	-.808753	-5.75619	.2423986	-1.75446	-3.66279	-1.56380
#3	-	.6331883	-4.91906	1.039771	-.383572	2.049304	-.605732
Errors	L	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5	40.00000			3.000000	5.000000	60.00000

Analysis Report Blank Sample [illegible]

[illegible]ow	5000.00	-49.0000			3.00000	[illegible]	[illegible]
Elem	2068/1	2068/2	1?8/1	1?8/2	Si2881	Sn1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.244034	-1.65836	-1.68547	1.553026	2.336585	1.59028	.006054
SDev	4.441856	3.26492	8.91616	1.981633	2.530885	1.39803	.0213563
%RSD	357.0527	196.8759	529.0005	106.6359	108.3155	87.91078	308.4413
#1	-3.85809	2.068697	7.128623	1.914818	4.868570	-.974394	.0085063
#2	3.340866	-4.01326	-10.7003	-.150113	2.334384	-.605942	-.015181
#3	4.249326	-3.03052	-1.48473	3.523374	-.193199	-3.19051	.0274481
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100.0000	100.0000	100.0000
Low					-100.000	-100.000	-100.000

Elem	Ti3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	.1712092	.8858086	-.000308	-.377339
SDev	.2202836	2.095685	.000322	.1621e3
%RSD	128.6635	236.5844	104.5118	42.97527
#1	-.019726	.7880045	-.000551	-.550568
#2	.4122193	-1.15926	.0000568	-.[illegible]32293
#3	.1211346	3.028683	-.000429	-.[illegible]29157
[illegible]rrors	LC Pass	LC Pass	LC Pass	LC Pass
High	100.0000	10.00000	.0500000	20.00000
Low	-100.000	-10.0000	-.050000	-20.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MIX Sample Name: 98L131-MS Operator: PJC
Run Time: 10/28/98 10:10:01
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	Ba2494	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-.892178	-.025445	2.153200	1.294891	.2335553	.4991729	.4356846
SDev	1.426063	.007511	2.054968	.364532	.1627846	.0341862	2.974852
%RSD	159.8407	29.51977	95.43787	28.15152	69.69852	6.848560	682.7994
#1	-2.48125	-.028522	1.062132	.713450	.3628455	.4930592	-2.84337
#2	-.471512	-.016884	4.523583	1.047013	.2870704	.5360035	1.188547
#3	.2762335	-.030930	.8738858	1.124210	.0507499	.4684562	2.961777
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.00000	.2000000	10.00000	100.0000	100.0000	100.0000	100.0000
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-100.000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0091089	.0101291	-.035493	.6771990	-.386463	3.797767	.0123773
SDev	.0021020	.0000663	.082596	1.008732	1.782241	.791642	.0200084
%RSD	23.07580	.6542510	232.7078	148.9566	461.1668	20.84494	161.6537
#1	.0078954	.0101117	-.080181	.2002117	-2.39019	4.254973	.0001105
#2	.0115361	.0102023	.0598186	1.835966	1.021853	4.254671	.0354655
#3	.0078954	.0100732	-.086118	-.004581	.2089422	2.883657	.0015551
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.000000	5.000000	5.000000	50.00000	10.00000	25.00000	.1000000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-25.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	-.001702	-2.65298	-.228394	.0089119	.0037917	-.000010	1.766423
SDev	.000821	15.13129	.102867	.0092089	.0003745	.000109	.354653
%RSD	48.22566	570.3501	45.03935	103.3325	9.875606	1115.110	20.07746
#1	-.002650	-7.18038	-.176012	.0028562	.0033602	-.000135	1.510519
#2	-.001266	-15.0038	-.162261	.0195094	.0039838	.0000538	2.171256
#3	-.001192	14.22520	-.346910	.0043701	.0040311	.0000523	1.617492
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1000000	5000.000	100.0000	5.000000	5.000000	.0150000	100.0000
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.015000	-100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	20.42877	.3717837	-5.10716	3.697859	.7614545	-.003432	1.592547
SDev	1.82177	.7428657	5.11868	3.675390	.9493809	1.393410	2.060578
%RSD	8.917657	199.8113	100.2256	99.39239	123.8666	40605.86	129.3889
#1	21.83488	1.037944	-10.3504	6.752219	1.057725	1.521850	2.852409
#2	21.08069	-.429205	-4.84829	4.722474	1.536076	-1.20961	-.78539
#3	18.37073	.5067022	-.122823	-.381116	-.294438	-.322532	2.710635
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5000.000	40.00000			3.000000	5.000000	60.00000

Low	-5000.00	-40.0000			-3.00000	5.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	8.45e894	1.83528	-8.29612	4.133897	5.918079	5.347185	.0000[illegible]
SDev	5.868366	3.29425	5.80281	3.320597	6.011774	1.786198	.00[illegible]
%RSD	69.39150	179.4956	69.94605	80.28723	101.5832	33.40443	30.9[illegible]
#1	15.16258	-3.29426	-9.49880	7.023116	-.194699	3.657e33	.0247[illegible]
#2	5.948501	-4.14810	-13.4033	4.877314	6.125453	5.167491	.0225[illegible]
#3	4.259[illegible]06	1.936511	-1.98621	5072[illegible]60	11.82348	7.216444	.0131[illegible]
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100.0000	100.0000	100.0000
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	.5124175	3.119163	.0000610	-.144376
SDev	.2896389	1.972025	.0009408	.185088
%RSD	56.52400	63.22288	1542.299	128.1980
#1	.3091604	.9391003	-.000422	-.038832
#2	.8440583	4.778735	.0011451	-.03e205
#3	.3840339	3.639652	-.000540	-.358092
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100.0000	10.00000	.0500000	20.00000
Low	-100.000	-10.0000	-.050000	-20.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MTX Sample Name: 98L1314 L11
Run Time: 10/28/98 10:16:52
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B 2496	Ba4934	Be3130	Ca3179
Units	ppb	PPM	ppb	ppb	ppb	ppb	PPM
Avge	L382.0424	5.147199	10048.31	4749.016	4869.333	242.9541	L-3.3717
SDev	1.6087	.024321	32.09	8.709	15.404	.9019	1.38394
%RSD	.4210781	.4725160	.3194069	.1833686	.3163413	.3712233	36.25552
#1	L383.8303	5.173794	10081.02	4751.092	4886.211	243.9031	L-4.27594
#2	L381.3571	5.141716	10016.87	4739.724	4856.033	242.8510	L-4.94336
#3	L380.8899	5.126087	10047.02	4756.131	4865.755	242.1081	L-2.27232
Errors	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	600.0000	6.000000	12000.00	6000.000	6000.000	300.0000	6000.000
Low	400.0000	4.000000	8000.000	4000.000	4000.000	200.0000	4000.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	23.79521	H32.65459	239.8085	2481.909	498.1854	1318.261	5.279408
SDev	.08739	.07881	.5961	10.666	1.5605	3.563	.021228
%RSD	.3672433	.2413524	.2485828	.4297619	.3132316	.2702563	.4020882
#1	23.89574	H32.74462	240.4432	2492.945	499.5926	1322.297	5.296028
#2	23.75254	H32.62110	239.2605	2481.127	498.4564	1315.555	5.279028
#3	23.73737	H32.59805	239.7217	2471.656	496.5071	1316.929	5.263494
Errors	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	30.00000	30.00000	300.0000	3000.000	600.0000	1500.000	[illegible]
Low	20.00000	20.00000	200.0000	2000.000	400.0000	1000.000	4.000000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	4.974826	27076.30	5150.579	25.30995	26.40198	.7522464	5022.373
SDev	.017734	79.29	12.124	.10072	.09217	.0027984	20.986
%RSD	.3564719	.2928503	.2353922	.3979495	.3491097	.3720045	.4178503
#1	4.993380	27156.90	5164.113	25.41719	26.50098	.7550496	5044.513
#2	4.973053	26998.39	5140.712	25.29532	26.38033	.7522368	5019.684
#3	4.958045	27073.61	5146.912	25.21735	26.31863	.7494528	5002.860
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	6.000000	30000.00	6000.000	30.00000	30.00000	.9000000	6000.000
Low	4.000000	20000.00	4000.000	20.00000	20.00000	.6000000	4000.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	24303.24	1866.193	2699.816	2513.109	2575.283	10108.19	3194.812
SDev	98.29	5.819	12.774	6.621	7.012	33.30	13.009
%RSD	.4044203	.3117982	.4731373	.2634583	.2722971	.3294633	.4071807
#1	24414.44	1871.969	2704.941	2520.748	2582.084	10122.37	3205.091
#2	24227.96	1860.333	2685.274	2509.564	2568.077	10070.15	3180.186
#3	24267.33	1866.277	2709.232	2509.015	2575.688	10132.06	3199.158
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	30000.00	2000.000			3000.000	12000.00	3600.000

Raw	20000.00	10000.000			2000.000	6000.000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Sn1881	Sn1899	Sn2173
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3209.106	3187.675	10363.07	9980.940	4775.509	4928.092	4886.913
SDev	3.446	21.132	98.17	2.613	20.716	22.361	17.215
%RSD	.1073853	.6629363	.9473192	.0261833	.4337952	.4537415	.3522749
#1	3205.568	3204.852	10399.61	9983.957	4796.617	4951.540	4905.263
#2	3212.453	3164.077	10251.87	9979.416	4774.701	4925.725	4872.112
#3	3209.297	3194.096	10437.73	9977.445	4755.209	4907.009	4880.662
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					6000.000	6000.000	6000.000
Low					4000.000	4000.000	4000.000

Elem	T 3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	4849.477	10203.10	2.536007	981.7572
SDev	19.474	29.83	.008697	2.9893
%RSD	.4015669	.2923454	.3429319	.3044897
#1	4870.638	10235.43	2.545191	985.1301
#2	4845.483	10176.65	2.534936	979.4351
#3	4832.310	10197.22	2.527896	980.7064
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	6000.000	12000.00	3.000000	1200.000
Low	4000.000	8000.000	2.000000	800.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MIX Sample Name: 9810[illegible] Operator: [illegible]
Run Time: 10/28/98 10:26:30
Comment:
Mode: CONT Corr. Factor: 1

Elem	3280	Al3082	As1890	B [illegible]	Ba[illegible]	Be3130	[illegible]
Units	b	PPM	ppb	ppb	ppb	ppb	ppb
Avge	340957	8.431265	7.459339	28.62572	194.5701	.9552519	-1.33366
SDev	420611	.011245	2.025068	4.85916	.6281	.0034395	1.13272
%RSD	75314	.1333699	27.14808	16.97482	.3228129	.3600634	58.59776
#1	-.61607	8.442373	8.499866	33.36303	194.4532	.9513055	-3.22641
#2	-.540877	8.431532	5.125549	28.24729	194.0087	.9576117	-1.11770
#3	-.120386	8.419889	8.752602	23.96683	195.2484	.9568386	-1.45500
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	313.0407	83.518338	.2730275	4.879307	12.03687	10.62055	8.471049
SDev	.7609	.027601	.1493911	.200211	.13643	.35248	.021266
%RSD	.2430821	.7844803	54.71650	4.103260	1.133430	3.318807	.2510394
#1	313.8380	83.549036	.3553151	4.655596	12.16310	10.27458	8.466718
#2	312.9618	83.495570	.3631821	5.041652	12.05537	10.60787	8.494147
#3	312.3223	83.510410	.1005853	4.940674	11.89213	10.97919	8.4527[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	8.257177	1437.287	16.12608	41.75993	H45.36959	.0978933	1.547792
SDev	.017650	8.726	.16226	.09298	.04691	.0001829	.308678
%RSD	.2137544	.6070867	1.006183	.2226500	.1034052	.1868116	19.94314
#1	8.26[illegible]22	1434.163	16.31073	41.81342	H45.38227	.0979652	1.231887
#2	8.26[illegible]12	1430.553	16.00625	41.81380	H45.40886	.0980293	1.848697
#3	8.2[illegible]09	1447.144	16.06125	41.65257	H45.31764	.0976854	1.562792
Errors	LC [illegible]ss	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50[illegible]0000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-[illegible]0000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	[illegible]89	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units		ppb	ppb	ppb	ppb	ppb	ppb
Avge	3338	9.655867	7.896071	6.258858	6.804850	3.971385	-.193942
SDev	0181	.114071	1.083599	.693264	.735920	.868890	1.004893
%RSD	8440	1.181368	13.72327	11.07653	10.81464	21.87877	518.1406
#1	.0624	9.765483	7.316101	5.[illegible]67523	6.083900	4.685472	.96592[illegible]
#2	.1705	9.537808	7.225893	6.549851	6.775773	4.224695	-.744981
#3	2.7684	9.664294	9.146219	6.[illegible]59200	7.554878	3.00390[illegible]	-.[illegible]02775
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	10000[illegible]0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-3.00000	5.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Ti2681	Sn1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.2787598	-.430738	-1.59804	6.751055	916.1946	2.544904	[illegible]
SDev	3.291662	3.102415	5.03978	1.331382	7.4914	1.068171	[illegible]
%RSD	1180.824	720.2548	315.3735	19.72110	.8176619	42.01223	[illegible]
#1	-3.25522	3.072538	3.576889	5.238035	924.8372	1.995913	266.7053
#2	.8340153	-1.53409	-1.88017	7.271654	912.1897	1.861754	266.4799
#3	3.257480	-2.83066	-6.49082	7.743478	911.5570	3.777043	267.7543
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	198.9676	5.565618	.1608755	23.31474
SDev	.6779	1.683820	.0001840	.49550
%RSD	.3407277	30.25396	.1143976	2.125249
#1	199.5602	7.503291	.1609117	23.85358
#2	199.1143	4.457802	.1610387	22.87872
#3	198.2283	4.735760	.1606760	23.21193
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Wed 10-28-98 10:41:02 AM

Method: MTX Sample Name: 9810L067 (61) Operator: JMC
Run Time: 10/28/98 10:34:31
Comment:
Mode: CO Corr. Factor: 1

Elem	3 [illegible]0	Al3082	As1890	B-249e	Ba4934	Be3130	Bi2530
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	.6 16	1.670901	3.383528	9.820986	39.61384	.0312953	-.536733
SDev	.402 08	.003013	.480117	1.768565	.32204	.0317603	2.971194
%RSD	637.1 5	.1803371	14.18983	18.00802	.8129525	5.030983	553.5703
#1	.4215	1.673846	3.428535	9.716423	39.72416	.6142912	-.935554
#2	-.372	1.667824	2.882493	11.63951	39.86622	.6116571	-3.28837
#3	.14113	1.671034	3.839557	8.107021	39.25113	.6679374	2.613729
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	67.10720	67.617554	-.270194	1.342124	2.388442	3.572449	1.781590
SDev	.25969	.017510	.151570	.435125	.298279	.426398	.005319
%RSD	.3869747	.2298635	56.09669	32.42062	12.48846	11.93575	.2985651
#1	67.35355	67.631562	-.444391	1.511537	2.189936	3.560027	1.783514
#2	66.83597	67.623176	-.197767	1.667062	2.243938	4.004923	1.77557
#3	67.13207	67.597923	-.168425	.8477737	2.731451	3.152398	1.7856
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	1.731303	227.6402	3.077596	8.660640	8.712362	.0202796	1.102904
SDev	.004649	27.6210	.006315	.034827	.024048	.0000623	.221469
%RSD	.2685179	12.13361	.2051772	.4021266	.2760249	.3072652	20.08053
#1	1.73395	196.1193	3.084799	8.661397	8.731097	.0202796	.9122463
#2	1.7259	239.1884	3.074977	8.625441	8.685245	.0202172	1.345833
#3	1.7340	247.6130	3.073013	8.695082	8.720745	.0203418	1.050633
Errors	LC Pa	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.0C	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.10[illegible]0	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	[illegible]	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	55. 87	2.100427	[illegible]2404	.9834173	1.729800	1.936709	.6952614
SDev	. 74	.811485	2.259536	1.178144	.884062	1.258365	1.180624
%RSD	.34 72	38.63428	70.11958	119.8011	51.10775	64.97439	169.8101
#1	55. 13	1.215024	3.313714	2.245791	2.602209	1.390342	.3260[illegible]
#2	55. 37	2.277507	.9185971	.7213585	.8345290	1.043876	2.016373
#3	55.[illegible]61	2.808749	5.434901	-.086898	1.752661	3.375908	-.256621
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	5000.00	40.0000			5.00000		
Elem	2068/1	2068/2	1960/1	1960/2	317851	5[illegible]37	[illegible]217
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.651394	1.366780	.8521546	2.477373	187.3073	.5121766	54.76661
SDev	3.677253	.206335	1.218699	1.965401	3.1830	.8038010	.315677
%RSD	564.5203	15.09644	143.0138	79.33405	1.699340	174.5105	.5806260
#1	-2.23741	1.605033	-.466620	2.316631	187.7270	.9594527	54.60717
#2	3.552714	1.248554	1.936808	.5972797	190.2596	-.516967	54.46848
#3	-3.26949	1.246753	1.086276	4.5[illegible]8209	183.9353	1.094043	54.00450
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	40.95506	4.954449	.0324952	3.900674
SDev	.22678	1.114659	.0001811	.294877
%RSD	.5537293	22.49814	.5571722	7.559651
#1	41.17859	3.673189	.0325329	3.926415
#2	40.72517	5.489034	.0322983	4.[illegible]31836
#3	40.96143	5.701122	.0326545	3.593769
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MTA Sample Name: [illegible] Oper[illegible]
Run Time: 10/28/98 10:41:41
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B 2496	Ba4934	Be3,30	Bi2330
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	.0411116	5.861574	5.713671	12.33487	394.1604	.8751302	-.347778
SDev	.6345215	.018218	.588060	.70450	1.6377	.0165015	1.23e673
%RSD	1543.412	.3108010	10.29180	5.697552	.4154807	1.885600	355.5723
#1	-.550863	5.882320	6.266021	13.10342	395.2349	.8562109	-1.72164
#2	-.036788	5.854215	5.095506	13.16272	394.9707	.8826301	.6764442
#3	.7109864	5.848186	5.780086	11.82848	392.2755	.8865498	.0017981
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	334.3635	53.237627	.1276318	4.437659	9.979590	8.898507	5.433738
SDev	1.4874	.016899	.2974580	.258954	.391773	.190395	.007636
%RSD	.4448579	.5219511	233.0595	5.835380	3.925743	2.139632	.1405222
#1	335.8218	53.255001	-.008664	4.197774	9.781138	8.688269	5.439514
#2	334.4201	53.236632	-.077256	4.403009	9.726752	8.947946	5.425081
#3	332.8485	53.221249	.4688160	4.712193	10.43088	9.059306	5.436[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	[illegible]	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn257e	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	5.286857	1036.867	13.75118	33.53690	H36.01244	.0607625	1.768632
SDev	.008135	3.159	.10024	.07169	.08464	.0001093	.293602
%RSD	.1538758	.3046656	.7289470	.2137714	.2350305	.1799061	16.60053
#1	5.295674	1033.227	13.84940	33.61776	H36.10934	.0608762	1.732263
#2	5.285253	1038.901	13.75511	33.51179	H35.97502	.0606582	1.494909
#3	5.279642	1038.471	13.64904	33.48113	H35.95296	.0607531	2.078725
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	327.3958	7.724841	4.504767	5.573052	5.218114	2.903951	-.821416
SDev	1.4297	.708473	.631786	.779488	.487614	.391200	1.661815
%RSD	.4367517	9.171355	14.02482	13.98673	9.344639	13.47129	202.3111
#1	328.0221	7.741706	3.776089	5.929244	5.213044	2.694153	.5344[illegible]
#2	328.4056	7.009086	4.899496	5.110811	5.708243	2.662403	-2.67528[illegible]
#3	325.7596	8.424730	4.838717	4.679103	4.733055	3.355298	-.323453
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-3.00000	-5.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr-[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.269172	-1.86594	-3.43563	5.568907	1923.178	3.563794	286.7[illegible]
SDev	1.957699	2.62740	3.54463	1.341183	5.304	2.558648	1.03[illegible]
%RSD	154.2501	140.8085	145.5321	24.08341	.2758146	71.79562	.3612770
#1	2.951589	-.673051	-1.83424	4.954154	1929.292	2.085851	286.4583
#2	1.735514	-4.87817	-6.24248	7.107271	1919.804	6.518265	286.2955
#3	-.879537	-.046603	.7698253	-.645296	1920.438	2.087264	284.5941
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	164.7270	4.971336	.1292547	13.52732
SDev	.5403	1.169877	.0006072	.07215
%RSD	.3279961	23.53245	.4697870	.5333329
#1	165.2918	6.321663	.1291742	13.61052
#2	164.6741	4.328971	.1286918	13.48043
#3	164.2151	4.263374	.1298982	13.48202
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MIX Sample Name: [illegible]
Run Time: 10/28/98 10:49:01
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi[illegible]
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	47.65876	7.900010	1780.399	829.2100	1903.883	43.30901	-4.9[illegible]
SDev	.28035	.014856	3.034	3.6039	3.909	.05893	1.80751
%RSD	.5882479	.1880529	.1704112	.4351436	.2053376	.1360857	36.39363
#1	47.65873	7.882881	1777.237	824.[illegible]56	1899.369	43.25813	-6.735[illegible]
#2	47.37841	7.909380	1783.287	829.2314	1906.121	43.37117	-5.04117
#3	47.93912	7.907770	1780.673	831.1929	1906.160	43.28574	-3.12291
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-1[illegible]0.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	383.5974	82.341353	40.48843	427.0861	182.5836	240.7288	5.034373
SDev	1.1941	.044565	.28826	1.2231	.6417	.4892	.018726
%RSD	.3112909	1.903384	.7119548	.2863782	.3514418	.2031976	.3719568
#1	382.2225	82.293220	40.23839	426.9436	181.8433	240.8282	5.012221
#2	384.3741	82.349658	40.42319	428.3741	182.9811	241.1606	5.055308
#3	384.1957	82.381181	40.80372	425.9405	182.9264	240.1976	5.0285[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.[illegible]
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	4.923701	27270.16	991.3147	50.17851	H55.50344	.4966652	856.9518
SDev	.004189	53.48	1.4205	.05634	.05251	.0002821	1.4144
%RSD	.0850756	.[illegible]961007	.1432923	.1[illegible]2727	.0946109	.0568043	.1650518
#1	4.919864	27286.10	992.3441	50.[illegible]3284	H55.44286	.4963733	855.8831
#2	4.928170	27313.86	991.9059	50.24147	H55.53142	.4969364	858.5557
#3	4.923070	27210.53	989.6941	50.16123	H55.53603	.4966859	856.4166
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	23551.61	403.4745	474.2910	438.5789	450.4716	1778.227	342.9754
SDev	36.90	1.9405	2.0559	2.5809	1.1233	7.316	2.7652
%RSD	.1566630	.4809517	.4334577	.5884620	.2493638	.4113989	.8062501
#1	23579.94	401.3664	472.9407	439.1831	450.4250	1772.291	345.5[illegible]
#2	23565.01	403.8708	473.2751	440.8040	451.6175	1775.992	340.0337
#3	23509.89	405.1862	476.6571	435.7495	449.3723	1786.400	343.3711
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

[redacted]	-5000.00	-40.0000			-3.00000	-5.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	31.88[illegible]	5[illegible]89	3[illegible]15
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	348.5255	340.2038	1826.351	1754.201	4360.791	838.5997	1155.339
SDev	2.3273	4.1196	9.486	6.931	7.716	3.0597	3.565
%RSD	.6677601	1.210936	.5193964	.3956662	.1769355	.3648534	.3220062
#1	347.2737	344.6460	1816.116	1750.410	4352.374	835.7828	1152.419
#2	347.0920	336.5090	1828.088	1749.982	4367.531	838.1616	1156.370
#3	351.2108	339.4564	1834.848	176 .212	4362.466	841.8549	1157.228
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	T[illegible]3349	T11908	V-2924	Zn2138 ✓
Units	ppb	ppb	PPM	ppb
Avge	975.7132	1748.374	.5605763	442.6707
SDev	1.9525	7.249	.0007248	.9440
%RSD	.2001139	.4146052	.1292931	.2132505
#1	973.4589	1740.609	.5598840	441.6471
#2	976.8690	1749.550	.5605153	442.8578
#3	976.8118	1754.963	.5613297	443.5071
[redacted]rors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MI Sample Name: 9810[illegible] Operator: [illegible]
Run Time: 10/28/98 10:57:09
Comments:
Mode: CONC Corr. Factor: 1

(BLK) NO PDS required. NO PDS in tube BMP 10-28-98

Elem	Ag3280	Al3082	As1890	B [illegible]	Ba4934	Be3130	Bi[illegible]
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	.[illegible]994262	-.060247	2.985797	12.[illegible]9210	1.693760	.5351099	3.217457
SDev	.4342585	.002234	1.038579	1.52497	.423184	.0315634	1.560494
%RSD	48.28173	3.708231	34.78399	12.01513	24.99224	5.898496	48.50117
#1	.6034151	-.062654	2.101777	13. 5811	1.932871	.5379608	3.29e632
#2	1.397951	-.058241	4.129611	14.00075	1.942269	.5651512	1.618852
#3	.6969128	-.059845	2.726005	11.01742	1.204640	.5022177	4.766823
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0313577	.0369143	.5188581	.5447605	-.258939	2.167007	.0229610
SDev	.0116137	.0136942	.2532307	.3279744	.156246	.238261	.0066649
%RSD	37.03636	37.09726	48.80537	60.20525	60.10870	10.99495	29.02704
#1	.0436956	.0510521	.7135327	.3069220	-.169848	2.068259	.0152650
#2	.0297396	.0359790	.2325708	.9189088	-.440357	2.438766	.0268071
#3	.0206378	.0237117	.6104710	.4084507	-.169613	1.993996	.0268109
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	-.001533	19.18229	.0773885	.0068933	.0036499	.0001370	3.291205
SDev	.000427	14.05320	.0426312	.0053570	.0013756	.0000180	.119517
%RSD	27.86693	73.24573	55.08733	77.71313	37.68733	13.12954	3.631414
#1	-.001047	10.18461	.0989962	.0036131	.0049996	.0001471	3.394042
#2	-.001703	11.98968	.1048893	.0130752	.0037003	.0001162	3.160082
#3	-.001848	35.37255	.0282799	.0039916	.0022499	.0001476	3.319490
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

BMP 10-28-98

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	6.337820	1.004214	8.450287	.1990460	2.947465	1.109983	5.758354
SDev	.633018	.508677	4.620282	2.436577	1.084834	1.086970	1.121365
%RSD	9.987950	50.65428	54.67604	1224.128	36.80568	97.92673	19.47370
#1	6.086424	1.569185	6.188167	-.524481	1.711631	-.049900	6.156211
#2	7.057919	.8608632	5.396956	2.915441	3.742585	2.105266	6.626543
#3	5.869118	.5825939	13.76574	-1.79382	3.388178	1.274581	4.492307
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-3.00000	-5.00000	-40.000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3.247750	7.010974	-16.8929	10.09711	-16.2225	.3336193	.4166544
SDev	7.443399	2.044665	3.4565	2.23986	5.3799	.0891442	.0696466
%RSD	229.1863	29.16378	20.46134	22.18317	33.16326	26.72034	16.72552
#1	6.532395	5.967601	-18.8133	9.316829	-14.1120	.4347413	.4695300
#2	8.483837	5.698489	-18.9629	12.62275	-12.2178	.2997148	.4413358
#3	-5.27298	9.366832	-12.9026	8.3.1759	-22.3377	.2664017	.3372981
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	.5938975	2.142148	.0004390	-2.19829
SDev	.1890053	.359487	.0003584	.07450
%RSD	31.82457	16.78159	81.63454	3.388864
#1	.3936469	2.522548	.0000805	-2.24312
#2	.7691746	1.808065	.0007972	-2.11229
#3	.6188710	2.095830	.0004393	-2.23945
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	100.000	-10.0000	-.050000	-50.0000

RMP 10-28-98

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: [illegible] Sample Name: [illegible] Operator: [illegible]
Run Time: 10/28/98 11:05:04
Comments:
Mode: [illegible]NC Corr. Factor: 1

Elem	Ag3280	Al3082	[illegible]90	B-2496	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	4486595	4.350787	5.411238	9.503323	133.1419	.9852348	1.804617
SDev	7598796	.006021	.987865	1.475285	.3453	.0243101	3.396721
%RSD	9.3666	.1384002	18.25581	15.52389	.2593601	2.467440	188.2243
#1	-.221262	4.344765	6.529216	9.385133	133.4856	.9574259	-2.00293
#2	1.274355	4.350788	5.048386	11.03415	132.7950	1.002453	4.523705
#3	.2928849	4.356808	4.656111	8.090688	133.1449	.9958257	2.893050
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	238.8406	84.493958	.1308214	11.32734	7.050759	7.714611	5.123626
SDev	.2407	.045313	.0571557	.15263	.437574	.406580	.010111
%RSD	.1007799	1.008309	43.68986	1.347442	6.206058	5.270259	.1973395
#1	239.0768	84.544487	.1895171	11.25220	6.978418	7.949461	5.113287
#2	238.8493	84.480460	.0753415	11.50298	7.519996	7.245133	5.124[illegible]
#3	238.5957	84.456929	.1276056	11.22686	6.653863	7.949239	5.13348[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	4.983460	861.5182	7.077655	10.85937	11.19161	.1995171	2.060073
SDev	.008376	18.0222	.069181	.02117	.02504	.0002660	1.058323
%RSD	.1680751	2.091918	.9774594	.1949749	.2237084	.1333147	51.37310
#1	4.973915	882.1215	7.117597	10.83540	11.17202	.1992459	2.478988
#2	4.989581	853.7527	6.997772	10.87552	11.18300	.1997775	.8564169
#3	4.986885	848.6805	7.117597	10.86719	11.21982	.1995279	2.844815
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	Na5889	N[illegible]316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	276.4860	5.[illegible]11874	[illegible].02909	14.[illegible]6164	14.51791	1.847447	1.193374
SDev	2.4615	.676119	4.72948	1.40914	.76593	1.676169	.699396
%RSD	.8902727	11.43663	31.46887	9.880637	5.275794	90.72898	58.60663
#1	278.4759	6.223873	12.24764	14.55385	13.78668	3.581608	.7673001
#2	273.7335	6.375656	20.48991	[illegible]2.72930	15.31438	1.724715	2.000550
#3	277.2487	5.136093	12.34973	15.50176	14.45266	.2360163	.8122720
Errors	[illegible]C Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	[illegible]0000.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			3.00000	-5.00000	
Elem	2068/1	2068/2	1960/1	1960/2	Si3881	Sn1899	
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.123512	1.227486	-.295573	2.916817	1153.957	3.551356	314.0412
SDev	.728715	1.200275	3.438023	3.334007	2.394	1.990981	.5424
%RSD	64.86044	97.78318	1163.171	114.3373	.2074437	53.71819	.1727063
#1	.5575665	.8712101	-2.78362	6.758552	1154.992	1.461522	314.4092
#2	.8672214	2.565564	3.627483	.7739578	1151.197	3.945488	313.4184
#3	1.945747	.2456844	-1.73058	1.2 7042	1155.622	5.187059	314.2960
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	109.7404	4.593036	.0550887	15.12519
SDev	.1820	2.777338	.0003922	.24731
%RSD	.1658682	60.46845	.7118848	1.635101
#1	109.5632	5.994551	.0548140	15.23329
#2	109.7310	1.394195	.0549143	14.94223
#3	109.9269	6.390362	.0555378	15.30065
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MTA Sample Name: 981026-7-002 Operator:
Run Time 10/28/98 11.12.55
Comments:
Mode: CO Dil. Factor: 1

Elem	[illegible]	Al3082	As1890	B 249[illegible]	Ba4934	Be3130	Bi[illegible]
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	7[illegible]48	3.994855	4.151[illegible]8	5.728325	92.32954	.9306951	-2.17072
SDev	27[illegible]83	.017412	2.423981	.833631	.28935	.0242720	2.80889
%RSD	3[illegible].65 [illegible]0	.4358509	58.38571	14.55279	.3133834	2.607938	129.3986
#1	-.970[illegible]	4.014797	6.921071	.68[illegible]133	92.54999	.9192798	.6146777
#2	-.456[illegible]	3.987093	3.118382	5.349239	92.43675	.9142352	-5.00253
#3	-.8774	3.982673	2.415552	5.151603	92.00190	.9585701	-2.12433
Errors	LC Pas[illegible]	C Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.0[illegible]	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	222.4168	54.779706	-.117637	2.729583	9.941590	7.071115	4.375993
SDev	1.7050	.040063	.053448	.495665	.136281	.185380	.020479
%RSD	.7665803	.8381833	45.43469	18.15901	1.370818	2.621655	.4678853
#1	224.0899	54.820828	-.057558	2.608118	9.815477	6.885484	4.3809[illegible]0
#2	222.4789	54.777494	-.135447	3.274690	10.08616	7.256244	4.384418
#3	220.6816	54.740774	-.159907	2.305941	9.923136	7.071617	4.3526[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	500.0000	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	4.257573	942.7341	6.935567	7.958303	8.146052	.0596731	1.385064
SDev	.013958	5.0207	.028216	.034443	.026501	.0003320	.360355
%RSD	.3278358	.5325730	.4068353	.4327888	.3253234	.5563152	26.01720
#1	4.2708[illegible]	948.4078	6.946699	7.992619	8.176352	.0599756	1.077130
#2	4.2587[illegible]	940.9289	6.903483	7.958555	8.134614	.0597257	1.296670
#3	4.243[illegible]	938.8655	6.956521	7.923735	8.127192	.0593179	1.781391
Errors	LC P[illegible]	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.0[illegible]0	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-10[illegible]00	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	[illegible]5	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5[illegible]076	4.[illegible]	[illegible].565273	4.349713	4.089295	1.429469	-1.10541
SDev	[illegible]155	.847488	.786119	.905721	.378905	2.086736	1.61211
%RSD	.2[illegible]455	18.47190	22.04932	20.82253	9.265780	145.9798	145.8377
#1	25[illegible]505	4.579554	2.730105	5.067910	4.290221	1.457480	-2.94[illegible]
#2	25[illegible].701	5.439659	4.290840	3.332227	3.652245	-.671131	-.44869[illegible]
#3	258.2023	3.744746	3.674873	4.649003	4.325418	3.502059	.0746[illegible]36
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000[illegible].0	1[illegible]00.0			400000.0	100000.0	100000.0

[illegible]w	-5000.00	-40.0000			-3.00000	-5.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.9616933	-2.13825	-4.26840	4.273365	1201.453	2.152375	333.4[illegible]
SDev	3.934307	3.13179	.90347	2.898786	1.931	1.359294	1.[illegible]
%RSD	409.1020	146.4651	21.16638	67.83379	.1606954	63.15322	.3745[illegible]
#1	1.750237	-5.28574	-3.39935	3.881452	1201.870	1.905169	333.0650
#2	-3.30716	.9775963	-5.20273	1.590474	1203.140	3.618307	333.1812
#3	4.442207	-2.10660	-4.20311	.348169	1199.347	.9336488	331.0334
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	86.67149	3.729657	.0332194	13.52618
SDev	.59268	.551738	.0003193	.13130
%RSD	.6838272	14.79327	.9610933	.9707279
#1	87.28748	3.277540	.0333354	13.67487
#2	86.62172	4.344441	.0328583	13.47749
#3	86.10525	3.566988	.0334644	13.42617
[illegible]rrors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analy is Report

Method: MT[illegible]
Run Time: 10/28/98 11.20:35
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag [illegible]80	Al3082	A[illegible]1890	B [illegible]	Ba4934	Be3130	Bi2230
Units	pp[illegible]	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-[illegible].0552	15.38644	18.76529	41.35357	1208.085	1.545829	2.4[illegible]
SDev	.[illegible]/985	.02533	1.24044	.94106	3.068	.020859	3.[illegible]
%RSD	51.[illegible]706	.1646493	6.610284	2.264697	.2498307	1.866925	131.181[illegible]
#1	-1.[illegible]75	15.37493	17.99087	40.[illegible]716	1224.863	1.553851	2.140310
#2	-.3[illegible]57	15.41549	20.19600	42.07721	1230.972	1.513808	-.5[illegible]200
#3	-1.1[illegible]4	15.36891	18.10899	42.11634	1228.419	1.569829	5.87[illegible]334
Errors	LC Pa[illegible]	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.[illegible]0	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-[illegible]00.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	413.7153	51.589146	.2427363	6.678962	12.17910	13.33583	10.08090
SDev	1.1883	.054418	.0588699	.286270	.21903	.11911	.00961
%RSD	.2872281	3.424353	24.25260	4.286151	1.798368	.8931946	.0953724
#1	412.4293	51.535917	.1801714	6.730193	11.92620	13.38545	10.07032
#2	414.7728	51.586842	.2509995	6.370535	12.30559	13.42211	10.08902
#3	413.9439	51.644679	.2970380	6.936158	12.30553	13.19993	10.0831[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	50[illegible].0
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	9.817027	3544.831	224.7675	44.49535	H48.85234	.1063665	1.853173
SDev	.010280	9.769	.5375	.06499	.07453	.0001295	.619474
%RSD	.1047211	.[illegible]755844	.2391546	.1[illegible]0556	.1525566	.1217237	33.42775
#1	9.80[illegible]	3537.180	224.7472	44.45447	H48.79495	.1063248	1.69470[illegible]
#2	9.82[illegible]	3555.835	225.3149	44.57029	H48.93657	.1065116	1.328330
#3	9.81[illegible]	3541.479	224.2404	44.46128	H48.82550	.1062629	2.536490
Errors	LC P[illegible]	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.[illegible]00	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.1[illegible]000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	Na[illegible]	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	pp[illegible]	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3[illegible].269	24.[illegible]0176	6.713052	12.00402	10.24286	-1.60423	.3138896
SDev	.338	.49465	3.351891	2.57255	.80734	3.13472	1.532843
%RSD	.7[illegible]3094	2.043840	49.93097	21.43072	7.881971	195.4036	488.3381
#1	3[illegible]3.788	24.15960	2.999791	14.95760	10.97672	-3.70826	2.0804[illegible]
#2	3[illegible]2.838	23.[illegible]955	7.624193	10.25286	9.378048	-3.10296	-.474160
#3	3[illegible]36.182	24.[illegible]14	9.315171	10.80160	10.37382	1.998526	-.664616
Errors	LC Pass	LC [illegible]	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	1[illegible]0			400000.0	100000.0	100000.0

Low	5000.00	-40.0000			-3.00000	-5.00000	[illegible]

Elem	2068/1	2068/2	1960/1	1960/2	51288[illegible]	Sn1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4.406319	-1.73006	-9.70086	2.437187	2241.139	.8918255	1404.009
SDev	1.882567	1.40401	4.54502	3.017361	6.766	1.406157	3.531
%RSD	42.72426	81.15406	46.85170	123.8051	.3019014	157.6718	.2514840
#1	6.544859	-.149215	-14.5431	1.760218	2244.723	1.306261	1400.241
#2	2.999341	-2.20911	-9.03252	-.143418	2245.358	2.044189	1407.241
#3	3.674758	-2.83185	-5.52702	5.747761	2233.334	-.674973	1404.545
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	T 3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	175.7265	5.056723	.0609298	26.81467
SDev	.1913	2.553476	.0001901	.14847
%RSD	.1088644	50.49666	.3120546	.5536968
#1	175.5070	8.002022	.0609680	26.73101
#2	175.8573	3.703031	.0607234	26.98609
#3	175.8153	3.465116	.0610979	26.72690
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard

Method: MIX Sample Name: QCV
Run Time: 10/28/98 11:29:54
Comment:
Mode: ONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B [illegible]	Ba4934	Be [illegible]	B [illegible]
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	484.8977	4.923304	490.6343	483.2329	475.7820	483.9074	489.8917
SDev	1.8390	.013178	3.7304	2.6841	2.3736	.8727	4.5156
%RSD	.3792590	.2676718	.7611397	.5554179	.4988843	.1803349	.9217512
#1	482.7950	4.908087	493.4269	480.7765	473.0583	482.9255	489.6578
#2	485.6921	4.930919	500.7281	484.0645	476.8790	484.5941	485.4965
#3	486.2060	4.930906	495.7478	485.4373	477.4087	484.2028	494.5185
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	5.000000	500.0000	500.0000	500.0000	500.0000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	1.855348	2.090069	475.0197	497.2905	497.4714	530.0968	5.153487
SDev	.002131	.009197	1.7612	.5563	1.4061	.9770	.017791
%RSD	.1148562	.4400100	.3707558	.1118739	.2826569	.1843114	.3452282
#1	1.857371	2.099239	473.0577	496.6867	496.6603	529.2924	5.151420
#2	1.855550	2.090122	476.4639	497.4025	499.0951	531.1840	5.172221
#3	1.853123	2.080846	473.5376	497.7823	496.6589	529.8140	5.136687
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000000	2.000000	500.0000	500.0000	500.0000	500.0000	5.000000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	4.970357	4933.355	4010.940	3.997611	3.985599	4.962860	495.0337
SDev	.006260	30.416	2.835	.007154	.001276	.003980	1.4177
%RSD	.1259492	.6165392	.0704336	.1789673	.0320219	.0801861	.2864645
#1	4.964702	4969.861	4008.944	3.995088	3.985358	4.959376	494.4773
#2	4.977084	4922.494	4009.704	4.005685	3.984461	4.967197	497.2303
#3	4.969286	4907.711	4014.173	3.992060	3.986979	4.962003	495.2504
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.000000	5000.000	4000.000	4.000000	4.000000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	N 5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4691.396	459.5331	555.9217	499.4332	518.2445	507.3607	526.0960
SDev	12.644	2.4834	2.6261	2.5943	2.4404	2.6459	4.3729
%RSD	.2695210	.5404288	.4723790	.5194429	.4708957	.5215012	.8311894
#1	4678.891	456.6660	553.1423	498.2654	516.5402	504.7072	524.4218
#2	4691.123	460.9160	558.3671	502.4062	521.0401	507.3761	531.0580
#3	4704.175	461.0172	555.2601	497.6281	517.1531	509.9989	522.8078
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value	5000.000	500.0000			500.0000	500.0000	500.0000

Range	10.00000	10.00000			10.00000	10.00000	10.00000
Elem	2068/1	2068/2	1960/1	1960/2	Si288:	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	520.7745	528.7520	526.6332	497.7382	481.2801	487.5318	477.8654
SDev	.9426	6.0885	3.7123	3.6873	3.5041	1.2459	2.3179
%RSD	.1809926	1.151476	.7049064	.7408092	.7280838	.2555559	.4850597
#1	520.5278	526.3648	527.1876	493.4830	485.3096	486.6844	475.2403
#2	521.8159	535.6723	522.6749	499.7374	478.9477	488.9624	478.7257
#3	519.9798	524.2189	530.0371	499.9941	479.5829	486.9487	479.6302
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value					500.0000	500.0000	500.0000
Range					10.00000	10.00000	10.00000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	468.5871	511.2159	4.987497	488.4075
SDev	1.5969	3.2437	.008308	1.2254
%RSD	.3407923	.6345132	.1665808	.2508875
#1	466.7750	514.8805	4.978046	487.7104
#2	469.7888	510.0542	4.990795	489.8234
#3	469.1975	508.7130	4.993650	487.6897
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	500.0000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Blank Sample

Method: MIX Sample Name: CCB

Run Time: 10/28/98 11:39:28

Comment:

Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	[illegible]
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	.1204247	-.053256	2.992549	3.2[illegible]7384	.1170111	.7502163	-.169455
SDev	.6027490	.006838	1.989094	.873155	.0982666	.0486838	.641056
%RSD	500.5195	12.83253	66.46820	26.60565	83.98058	6.492162	444.0023
#1	.7903035	-.057032	4.227177	2.772818	.0035426	.7914077	.6561601
#2	-.050951	-.045394	4.052515	4.265337	.1736907	.8320963	-.200681
#3	-.378078	-.057433	.6979567	2.733909	.1738000	.7351448	-1.02374
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.00000	.2000000	10.00000	100.0000	100.0000	100.0000	100.0000
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-100.000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0038502	.0058252	-.056544	.4885537	-.115886	3.489095	.0068409
SDev	.0012631	.0007424	.083038	.9613703	.195414	.679646	.0108522
%RSD	32.80706	12.74482	146.8537	196.7788	168.6253	19.47915	158.6361
#1	.0042547	.0066174	-.105207	.1215371	-.332725	3.254458	-.003501
#2	.0048614	.0057127	.0393355	1.579370	-.061524	4.254973	.0181395
#3	.0024343	.0051454	-.103762	-.235246	.0465901	2.957856	.0058[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.000000	5.000000	5.000000	50.00000	10.00000	25.00000	[illegible]
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-25.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	-.000537	-.331958	.2574533	.0052532	.0009632	.0001674	1.153492
SDev	.000263	20.86270	.1222373	.0077689	.0001784	.0001408	.413538
%RSD	48.93707	6284.741	47.47943	147.8880	18.51891	84.09579	35.85097
#1	-.000318	5.284623	.3190027	.0052346	.0011585	.0003025	.7988215
#2	-.000464	17.14750	.3366818	.0138321	.0009223	.0001782	1.607722
#3	-.000828	-23.4280	.1166753	-.001301	.0008088	.0000215	1.053933
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1000000	5000.000	100.0000	5.000000	5.000000	.0150000	100.0000
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.015000	-100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.773696	.7259447	-3.16579	.8995153	-.453432	2.443453	2.102240
SDev	2.237337	.2910096	3.15471	2.443537	.879147	2.343763	.864834
%RSD	289.1752	40.08702	99.65003	271.6503	193.8871	95.92012	41.13871
#1	-2.20963	.7343772	.3067571	-1.36352	-1.14002	-.262188	1.784[illegible]
#2	1.804176	.4308105	-5.85510	1.785961	-.757711	3.849708	1.440926
#3	-1.91563	1.012646	-3.94904	2.776105	.5374324	3.742840	3.080922
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5000.000	40.00000			3.000000	5.000000	60.00000

Low	-5000.00	-40.0000			-3.00000	-5.00000	-3.0000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sn4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5.302026	.5039461	-1.38503	4.354024	.8593539	-.628116	.0234417
SDev	1.237716	1.483739	1.92028	4.422e92	.7269424	.707581	.0214044
%RSD	23.34420	294.4241	138.6453	101.5771	84.59174	112.6513	91.56576
#1	3.991245	.6825410	.6676680	-.727219	.4389458	-1.41115	.0321171
#2	6.450701	-1.06101	-3.13753	7.337287	1.698754	-.438629	.0392108
#3	5.464131	1.890304	-1.68523	6.4 2005	.4403616	-.034570	-.001003
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100.0000	100.0000	100.0000
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	.3026682	2.957818	.0002537	.1793327
SDev	.3594292	1.601093	.0008723	.1976249
%RSD	118.7536	54.13086	343.8766	110.2002
#1	.1962773	1.355875	-.000190	.2241684
#2	.7032828	4.558058	.0012586	.3506877
#3	.0084444	2.959521	-.000307	-.036858
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100.0000	10.00000	.0500000	20.00000
Low	-100.000	-10.0000	-.050000	-20.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MI Sample Name: 9810Cu7 [illegible] Date [illegible]: P05
Run Time: 10/28/98 11:46:05
Comment:
Mode: CONC Corr. Factor: 1

Elem	3280	Al3082	As1890	B-249[illegible]	Ba4934	Be3130	Bi2230
Units	[illegible]	PPM	ppb	ppb	ppb	ppb	ppb
Avge	[illegible]29412	14.15099	28.91523	40.38160	899.5286	1.246677	[illegible].326380
SDev	[illegible]56535	.01219	1.42142	.38122	5.8814	.037568	1.[illegible]4898
%RSD	.0121	.0861565	4.915834	.933e433	.6538310	3.013453	50[illegible].9153
#1	-[illegible]1748	14.14764	27.95256	41.[illegible]582[illegible]	906.3198	1.205801	1.242157
#2	.[illegible]0673	14.14081	30.54782	40.41273	896.1149	1.254536	-.20089[illegible]
#3	-1[illegible].5256	14.16450	28.24531	40.92379	896.1511	1.279693	-2.02041
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H600.8342	S-2.26167	.4843119	8.602901	9.2e0270	16.50949	7.87873e
SDev	.9164	.08158	.1162137	.448941	.250084	1.17834	.012517
%RSD	.1525276	3.607235	23.99563	5.218489	2.700611	7.137330	.1588702
#1	H601.8216	S-2.[illegible]3180	.4094899	8.54358e	9.115808	15.43473	7.867912
#2	H600.0109	S-2.25835	.4252508	8.1865e5	9.549042	16.32426	7.87585[illegible]
#3	H600.6699	S-2.34487	.6181951	9.078551	9.115960	17.76947	7.8924[illegible]
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	7.683854	2348.459	165.8484	127.0638	S109.6684	.3134846	1.862034
SDev	.014479	11.225	.9153	2048	63.4789	.0006634	.345953
%RSD	.1884317	.4779612	.5518722	.1611593	57.88256	.2116251	18.57928
#1	7.67[illegible]32	2350.464	166.8128	126.9046	H145.6251	.3128921	2.169998
#2	7.67[illegible]66	2336.366	164.9919	126.9920	S36.37364	.3133605	1.928397
#3	7.6[illegible]93	2358.545	165.7403	127.2948	H147.0064	.3142013	1.487707
Errors	LC[illegible]ss	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	5[illegible]0000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-[illegible]0000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	[illegible]389	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units		ppb	ppb	ppb	ppb	ppb	ppb
Avge	[illegible].084	[illegible].76631	10.92099	5.201604	7.106717	.2843878	-.860236
SDev	.911	.12479	1.41860	1.729474	.688398	.3892905	.984984
%RSD	[illegible]7764	.6313195	12.98968	33.24886	9.686578	136.8872	114.5016
#1	2.971	19.90967	12.08682	3.604140	6.429472	-.052585	-.1231[illegible]
#2	3.693	19.70729	11.33461	4.962472	7.084928	.7105252	-.478657
#3	[illegible]29.586	19.68199	9.341552	7.0[illegible]3201	7.805750	.1952238	-[illegible]892
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

NIR

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IW	5000.00	40.0000			-3.00000	5.00000	
Elem	2068/1	2068/2	1960/1	1960/2	312881	Sn1899	
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.704791	-.938641	-3.70575	2.275633	1673.473	1.939811	3825....
SDev	2.32e004	2.559616	2.70251	1.888069	.963	1.477521	22....
%RSD	330.0274	272.6938	72.92748	82.9...39e	.0575302	76.18791	.5810...
#1	-1.27179	.4495395	-.684448	.2e20728	1674.30e	.4620663	3851.293
#2	-2.69488	.6269919	-5.89269	4.00e282	1672.419	3.417108	3811.917
#3	1.852290	-3.89246	-4.54011	2.5...3543	1673.694	1.938760	3814.20e
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	222.0182	3.251533	.1971155	25.36333
SDev	.3834	1.029295	.0006565	.12997
%RSD	.1727081	31.65568	.3330506	.5124201
#1	222.2519	2.863894	.1966796	25.41454
#2	221.5756	2.472341	.1967965	25.....1556
#3	222.2270	4.418363	.1975706	25.45989
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	-	
%RSD	.0000000	--	--	--	--	--	
#1	15000	--	--	--	-	-	-
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: Mix [illegible]
Run Time: 10/28/98 11:53:49
Comment:
Mode: CONC Dil. Factor: 1

Elem	Ag [illegible]0	Al3082	As1890	B 249[illegible]	Ba4934	Be3130	[illegible]
Units	ppb	PPM		ppb	ppb	ppb	ppb
Avge	-1. [illegible]0	8.034505	8.544546	3.911188	484.7183	1.205061	.4504[illegible]
SDev	. [illegible]0	.020633	1.986932	1.897924	.9119	.034800	2.484[illegible]
%RSD	28.[illegible]97	.2568047	23.25380	21.29821	.1881292	2.887799	577.1044
#1	-1.3[illegible]	8.038920	5.745711	2.57293	485.7461	1.164956	1.167e17
#2	-.671 [illegible]	8.052573	10.42324	3.317676	484.4027	1.223262	2.462397
#3	-.8243	8.012022	6.464683	6.842954	484.0061	1.227025	-2.33873
Errors	LC Pas[illegible]	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.0[illegible]	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	175.9615	55.415002	.0136066	5.489401	12.66525	10.41596	7.359823
SDev	.8391	.025461	.0900117	.358809	.24977	.09343	.019847
%RSD	.4768451	.4702008	661.5273	6.536390	1.972087	.8970278	.269e650
#1	176.4762	55.435580	.1150513	5.130892	12.52087	10.32949	7.359575
#2	176.4150	55.422898	-.056707	5.488802	12.52123	10.40333	7.379791
#3	174.9933	55.386508	-.017524	5.848508	12.95366	10.51507	7.34000[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pas[illegible]
High	500.0000	10.00000	[illegible]0.00	50000.0	50000.00	100000.0	500.[illegible]
Low	-5.00000	5.00000	-5.00000	-50.0000	10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	7.153075	1374.223	15.11837	35.94277	H27.33901	.0917527	1.651e38
SDev	.011917	16.465	.03161	.05674	.06449	.0001363	.031343
%RSD	.1665947	1.198099	.2091084	.2187054	.2356902	.1485970	1.8[illegible]7714
#1	7.154192	1378.549	15.15176	35.99700	H27.31997	.0916590	1.673372
#2	7.164[illegible]94	1388.092	15.08890	36.00573	H27.41088	.0919091	1.665833
#3	7.14[illegible]9	1356.027	15.11444	35.89559	H27.28619	.0916899	1.615709
Errors	LC [illegible]	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.[illegible]00	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.1 [illegible]00	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	Na [illegible]39	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	pp[illegible]	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3[illegible]4262	8.298244	3.075717	9.430365	7.315067	.1183064	.3272701
SDev	9301	.775185	[illegible].99592	1.445856	1.946630	.3218415	1.136849
%RSD	.[illegible]1348	9.341553	107.2788	15.33.92	26.61124	272.0406	347.3732
#1	3[illegible]0640	7.741706	3.230560	8.439108	6.706130	.1620541	.78268[illegible]
#2	3[illegible].7317	9.183646	-.299502	8.762567	5.745698	-.223171	1.165833
#3	380.4829	7.969380	6.994086	11.08942	9.493372	.4160363	-.966673
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	5000.00	-40.0000			-3.00000	5.000000	-2.00000
Elem	2068/1	2068/2	1960/1	1960/2	S12881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	6.820885	-2.91547	-9.62436	4.981535	1816.813	2.318621	397.0733
SDev	.160714	1.78374	4.63639	1.840435	8.292	.649229	.2117
%RSD	2.356206	61.18185	48.17348	36.94514	.4564049	28.26273	.0530151
#1	6.784159	-2.21440	-9.87470	5.172108	1824.400	2.352431	398.0852
#2	6.681712	-1.58877	-14.1305	6.719269	1818.079	1.512913	396.8620
#3	6.996783	-4.94323	-4.86787	3.053229	1807.961	2.790519	396.2710
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	170.2529	2.654167	.1400607	18.46982
SDev	.5498	1.542443	.0006234	.21036
%RSD	.3229054	58.11402	.4451144	1.138943
#1	170.5936	4.347691	.1404208	18.71096
#2	170.5463	1.329792	.1404204	18.37156
#3	169.6187	2.285019	.1393408	18.32394
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analy[illegible] Report

Method: MI[illegible] Sample Name: [illegible]
Run Time: 10/28/98 12:01:29
Comments:
Mode: "ON" Corr. Factor: 1

Elem	[illegible]3280	Al3082	As1890	B 249[illegible]	Ba4934	Be3130	[illegible]
Units	[illegible]	PPM	ppb	ppb	ppb	ppb	ppb
Avge	[illegible]48114	4.[illegible]2093	4.602288	6.[illegible]3924	23.1[illegible]967	[illegible].109733	[illegible]4.[illegible]
SDev	.[illegible]686382	.014869	1.876293	.990342	.01450	.011183	.97333
%RSD	[illegible] 9.183	.3182541	40.76675	1[illegible].72304	.0026006	1.007751	21.24947
#1	.[illegible]691930	4.688558	6.702901	6.[illegible]72073	23.[illegible]17263	1.098769	[illegible]5.044[illegible]
#2	-.265604	4.668075	4.011009	5.[illegible]005204	23.15391	1.121123	5.23347
#3	-.359155	4.659646	3.092953	6.927494	23.18246	1.109306	-3.46221
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	65.98061	67.483987	.0558439	2.669449	12.27742	8.979579	5.518913
SDev	.31172	.009562	.1334414	.425229	.28682	.333665	.01[illegible]65
%RSD	.4724385	.1277625	238.9543	15.92946	2.336197	3.715515	.3[illegible]35[illegible]
#1	66.22736	67.473155	.1665077	2.805510	12.49420	8.645731	5.[illegible]2[illegible]8
#2	66.08416	67.491256	.0933653	3.009995	12.38588	9.[illegible]13060	5.527810
#3	65.63029	67.487549	-.093341	2.192841	11.95218	8.979945	5.[illegible]2[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.60000	2[illegible].[illegible]	[illegible]0000.0	50000.00	10000[illegible]	[illegible].[illegible]
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	5.369381	1061.051	8.141e74	7.[illegible]13782	7.1[illegible]8624	.0540477	1.60742[illegible]
SDev	.014598	12.614	.025936	.029349	.018860	.0002086	.[illegible]09757
%RSD	.2718729	1.[illegible]88783	.3185628	.4125670	.2630929	.3859763	12.49112
#1	5.385267	10[illegible]4.719	8.146913	7.142547	7.187911	.054225[illegible]	1.704[illegible]
#2	5.366321	1071.424	8.164592	7.114918	7.1[illegible]7741	.0541003	1.741444
#3	5.356557	1[illegible]7.010	8.113519	7.[illegible]83882	7.150222	.0538179	1.376575
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	274.[illegible]109	5.979333	4.129705	5.576392	5.095446	3.217066	1.209591
SDev	1.[illegible]445	.[illegible]2996	.[illegible]562301	1.205944	.580239	.877693	1.559270
%RSD	.4170898	6.572470	62.52991	21.62589	11.38741	27.28241	128.9088
#1	275.5742	6.097386	6.[illegible]27548	5.340013	5.702962	2.239495	1.350[illegible]
#2	274.3726	5.540848	4.626452	4.[illegible]06139	4.547003	3.474312	-.41525[illegible]
#3	273.2860	6.299764	1.[illegible]35117	6.[illegible]63024	5.036371	3.937391	2.693757
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	10[illegible]0000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-5.00000	-5.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Si7881	Sn1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.9713101	1.327754	-3.00920	6.324754	1214.325	3.570938	72.65779
SDev	1.815745	1.668141	3.55834	2.965519	3.284	1.187774	.2479[illegible]
%RSD	186.9377	125.6363	118.2485	46.88765	.2704728	33.26225	.3412[illegible]
#1	-.069151	2.058112	-.8979883	2.903443	1216.223	2.708939	72.88713
#2	-.084851	-.581001	-6.06378	8.235410	1216.220	3.078073	72.69049
#3	3.067932	2.506151	-3.86182	7.870349	1210.533	4.925802	72.39453
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	102.1138	2.666144	.0375634	14.08464
SDev	.4061	2.514326	.0005413	.11084
%RSD	.3976874	94.30572	1.441027	.7869275
#1	102.3248	1.306928	.0370446	14.14726
#2	102.3710	5.567515	.0381247	14.14999
#3	101.6456	1.123988	.0375209	13.95667
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MTz
Run Time: 10/28/98 12:02:06
Comment:
Mode: CONC Corr. Factor: 1

Elem	A 3280	Al3082	As1890	B 249e	Ba4934	Be3130	Bi[illegible]
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	356157	16.85251	22.77133	34.20e34	304.4258	1.828355	-.[illegible]
SDev	392034	.02008	1.87492	1.28237	1.0478	.028946	1.121756
%RSD	7[illegible] 48981	.1191770	8.233697	3.748731	.3441726	1.582716	260.9e22
#1	-.04279	16.87071	21.16643	35.[illegible]1097	304.7186	1.852116	.591159e
#2	-.805446	16.83096	22.31537	34.[illegible]4983	303.2628	1.838012	-1.e1739
#3	-.758747	16.85585	24.83217	32.85825	305.2960	1.796439	-.171524
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H517.5681	S-.963092	.2244761	6.149390	14.23824	13.90516	11.2047e
SDev	1.4200	.074067	.0602111	.394001	.29852	.40854	.01809
%RSD	.2743665	7.690514	26.82292	4.943594	2.096582	2.938020	.1611157
#1	H516.8325	S-1.01384	.2481862	6.242234	14.54544	13.43338	11.2254e
#2	H516.6668	S- .997336	.2692227	5.809787	13.94923	14.17718	11.19223
#3	H519.2050	S- .878100	.1560195	6.396127	14.22006	14.10293	11.1965
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	10.90217	4531.987	260.1899	48.09080	H53.64484	.123e102	.2662406
SDev	.02538	17.[illegible]54	.8053	.05783	.05793	.0003086	.3520779
%RSD	.2327775	.3895327	.3094906	.1202543	.1079926	.2496639	38.01150
#1	10.93110	4552.358	260.9462	48.[illegible]5717	H53.71173	.1239647	.6690571
#2	10.88367	4522.355	259.3433	48.05119	H53.61235	.1234643	.7821579
#3	10.89175	4521.237	260.2802	48.0640[illegible]	H53.61045	.1234016	1.327507
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	[illegible] 5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2336.487	19.44588	10.04705	12.97921	12.00334	1.938226	.6038986
SDev	10.054	.66563	.25018	.29193	.26340	.373776	.8246756
%RSD	.4303239	3.422966	2.490118	2.249193	2.194361	19.28446	136.558e
#1	2342.060	19.02426	9.817707	12.91114	11.88156	2.129713	-.3412[illegible]
#2	2324.880	20.21323	10.31385	13.29916	12.30559	2.177457	.9756768
#3	2342.521	19.10016	10.00960	12.72734	11.82286	1.507507	1.177236
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	00000.0

Blnk	5000.00	-40.0000			-3.00000	5.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	C10681	Sn1899	Ta4018
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1.951884	-.069883	-4.08348	4.943765	2536.744	1.609714	1754.361
SDev	1.314196	1.056318	3.45934	1.463967	5.879	1.717694	4.916
%RSD	67.32964	1511.550	84.71537	29.61239	.2317379	101.0579	.2802197
#1	1.327412	-1.17508	-5.90183	6.138664	2543.284	-.281291	1756.460
#2	1.066356	.9296057	-.094175	3.310767	2531.899	2.775016	1748.744
#3	3.461883	.0358261	-6.25444	5.381864	2535.050	2.605415	1757.879
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	197.7714	4.025627	.0474665	28.63408
SDev	.6512	1.705850	.0005709	.17419
%RSD	.3292869	42.37476	1.202717	.6083457
#1	197.8207	5.493179	.0472631	28.56747
#2	197.0969	2.154028	.0470251	28.50301
#3	198.3966	4.429674	.0481112	28.83175
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report [illegible]

Method: MIX [illegible]
Run Time: 10/28/98 [illegible]
Comment:
Model: CONC Corr. Factor: 1

Elem	As3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	.[illegible]57114	13.68670	38.82965	42.71663	845.1071	.8906532	-.[illegible]3740
SDev	.3283575	.05397	.84453	.56795	4.2618	.0167532	2.684561
%RSD	5749.185	.3943454	2.174968	1.536391	.5042891	1.881000	758.8881
#1	-.305932	13.63965	38.18549	42.06311	840.2405	.9042886	.2198322
#2	.3485559	13.74565	38.51766	42.27687	848.1730	.8719516	-3.27874
#3	-.025490	13.67498	39.78579	43.60959	846.9076	.8957194	1.997664
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H635.5842	S.3079678	.2833095	7.057152	12.97738	13.57881	8.264333
SDev	1.8292	.0383225	.1059397	.144173	.17395	.48318	.030553
%RSD	.2878031	12.44369	37.39362	2.042928	1.340442	3.558340	.3696935
#1	H634.7639	S.2640211	.3548534	6.896588	12.85067	13.12212	8.241239
#2	H637.6800	S.3344284	.3334695	7.175461	12.90577	14.08471	8.298977
#3	H634.3087	S.3254538	.1616055	7.099426	13.17571	13.52960	8.25278[illegible]
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	8.069728	3453.777	296.4798	75.91456	H84.46663	.1469378	3.045248
SDev	.016953	13.368	1.3983	.22433	.37738	.0004759	.330973
%RSD	.2100756	.3870441	.4716295	.2955019	.4467796	.3238992	10.86850
#1	8.056975	3440.366	294.9313	75.76140	H84.12659	.1465220	2.938367
#2	8.088965	3453.863	297.6499	76.17205	H84.87265	.1474569	3.416455
#3	8.063242	3467.101	296.8583	75.81022	H8[illegible].40064	.1468345	2.780923
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.[illegible]00000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	[illegible]5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4162.102	17.54859	9.582709	5.788629	7.052947	.2425360	-.458599
SDev	16.815	.32032	1.722410	.632084	.667687	2.819502	.970698
%RSD	.4039998	1.825337	17.97414	10.91941	9.466779	1162.508	211.6660
#1	4143.788	17.91119	9.012076	5.121601	6.417663	-1.27227	-1.3088[illegible]
#2	4176.844	17.43054	8.218033	[illegible].378727	6.992282	-1.49578	.5990281
#3	4165.672	17.30405	11.51802	5.865560	7.748896	3.495658	-.665972
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-10.0000			3.00000		
Elem	206/1	206/2	196/1	196/2	51881	5n189	
Units	ppb	ppb	ppb	ppb	ppb	ppb	
Avge	1.051491	-1.21331	-3.94407	2.331855	3131.398	3.263387	
SDev	3.69e10e	2.37287	2.615e9	3.934554	4.752	.541271	
%RSD	351.5110	192.2733	66.31961	168.7367	.1517512	16.09331	
#1	3.783454	-3.85199	-6.95037	1.581724	3128.655	3.691223	
#2	2.525137	.363382	2.18903	-1.15048	3136.885	3.988332	
#3	-3.15412	.5754355	-2.69280	6.734445	3128.653	3.050425	
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	194.5219	2.710672	.1166719	25.76323
SDev	.7986	1.220700	.0004823	.36268
%RSD	.4105206	45.03310	.4133604	1.407729
#1	193.8322	1.311443	.1161912	25.55425
#2	195.3968	3.557687	.1171557	26.18201
#3	194.3368	3.262886	.1166689	25.55343
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

-IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: [illegible]
Run Time: [illegible]/98 [illegible]
Comment:
Mode: CON Corr. Factor: 1

Elem	[illegible]280	[illegible]3093	[illegible]1590	[illegible]2496	Ba4934	Be3130	[illegible]2220
Units	[illegible]	PPM	PPM	ppb	ppb	ppb	ppb
Avge	[illegible]3921	7.411711	22.90703	21.46880	4042.994	.5114410	[illegible]2.33293
SDev	[illegible]8011	.008582	1.04800	.41956	6.826	.0046924	2.30363
%RSD	[illegible]12[illegible]9700	.1157930	4.575028	1.954276	.1688451	.9174879	81.15151
#1	.0[illegible]718	7.418538	24.10365	21.67085	4036.720	.5130489	-4.[illegible]214
#2	-1.[illegible]42	7.414518	22.15261	21.73068	4050.264	.5151180	-3.38263
#3	-.4[illegible]98	7.402077	22.46482	20.98488	4041.999	.5061560	-.311814
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe271[illegible]
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H912.3243	S-4.25035	.1835493	4.862114	7.979704	9.076593	4.864501
SDev	1.0297	.12097	.0577837	.2o5789	.143109	.097946	.00[illegible]
%RSD	.1128669	2.846227	31.48129	5.466526	1.793413	1.079108	.1370395
#1	H911.1500	S-4.35767	.1304o30	4.556776	8.141959	9.039573	4.85o533
#2	H913.0728	S-4.27413	.2480329	5.041616	7.871461	9.002554	4.8683[illegible]
#3	H912.7501	S-4.11[illegible]25	.1661522	4.967931	7.925o93	9.187655	4.8683[illegible]
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	[illegible]0.00	[illegible]0.0	50000.00	100000.0	[illegible]
Low	-5.00000	5.00000	5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K 7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	4.749734	1560.o82	88.70135	57.62894	H64.89870	.0689660	1.050121
SDev	.010080	9.309	.2624o	.11040	.13074	.0001586	.744077
%RSD	.2122274	.5964672	.2958903	.1915o35	.2014534	.2300237	70.[illegible]152
#1	4.75[illegible]	1556.327	88.66893	57.72785	H65.01961	.0690997	1.648069
#2	4.7[illegible]	1571.370	88.9o983	57.64912	H64.91653	.0690076	1.285627
#3	4.7[illegible]4	1554.350	88.44536	57.50984	H64.75996	.0687907	.2168768
Errors	LC [illegible]s	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50[illegible]000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.[illegible]0000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	[illegible]89	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	[illegible]	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.365	[illegible].78[illegible]7	[illegible].[illegible]5749	6.006837	5.314546	2.355075	-.029608
SDev	759	1.03852	1.828324	1.697213	1.413088	3.596685	.706252
%RSD	[illegible]3073	10.20292	46.57261	28.25468	26.58907	152.7206	2385.346
#1	793	9.031863	4.547425	4.337048	4.407637	-1.69625	.530968[illegible]
#2	[illegible]390	11.05564	1.867654	5.953258	4.593286	5.172069	.2030503
#3	[illegible]1	10.44851	5.362170	7.730205	6.942716	3.589409	-.822837
Errors	L[illegible]	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	1[illegible]	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			3.00000	3.00000	
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	[illegible]	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.5e97643	-.329644	-1.57438	4.31e055	1641.775	1.274404	2866.[illegible]
SDev	.4248089	.847693	4.17704	4.93330[illegible]	4.151	.823935	[illegible]
%RSD	74.55871	257.1538	265.3137	114.3013	.2528230	48.95818	.17806[illegible]
#1	.9355953	.3281509	-4.44643	-.324031	1646.208	1.968272	2838.937
#2	.6698474	-.030798	-3.49412	9.497868	1637.980	.7594962	2866.[illegible]
#3	.1038500	-1.28629	3.217413	1.774328	1641.138	1.095503	2859.543
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	130.6525	2.452456	.1427299	16.58025
SDev	.1061	.772563	.0006388	.33854
%RSD	.0812452	31.50160	.4475602	2.041855
#1	130.7433	1.582953	.1424973	16.45373
#2	130.6784	2.714512	.1434525	16.97384
#3	130.5358	3.059909	.1422401	16.32319
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MIX Sample Name: 2810L007 11
Run Time: 9/28/98 12:38:45
Comment:
Mode: CON Corr. Factor: 1

Elem	[illegible]280	Al3082	As1890	B[illegible]249[illegible]	Ba4934	Be3130	Bi[illegible]
Units		PPM	ppb	ppb	ppb	ppb	ppb
Avge	[illegible]8980	5.901902	7.909099	3.[illegible]70222	530.1764	.4833586	[illegible].[illegible]
SDev	[illegible]5505	.010104	.497353	.401582	.9208	.0094482	.84429
%RSD	5 [illegible]1273	.1712000	6.288359	4.786268	.1736723	1.954693	82.74[illegible]71
#1	-.[illegible]319	5.911269	7.343697	8.[illegible]80887	530.6744	.4804171	-.033[illegible]
#2	-.[illegible]593	5.903242	8.104626	8.848819	529.1139	.493927[illegible]	1.52141
#3	-.[illegible]327	5.891194	8.278975	8.101171	530.7409	.4757311	-1.47185[illegible]
Errors	LC [illegible]s	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000[illegible].00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	470.1122	82.348842	.0320518	4.707632	11.36773	13.33671	5.51275[illegible]
SDev	.5596	.058181	.0307241	.190873	.16595	.18986	.025[illegible]
%RSD	.1190409	2.477010	95.85775	4.054550	1.459816	1.423691	.46[illegible]
#1	470.7242	82.415682	.0665585	4.[illegible]96958	11.40420	13.28712	5.[illegible]
#2	469.9858	82.309565	.0076614	4.597905	11.51242	13.54644	5.[illegible]
#3	469.6266	82.321278	.0219355	4.[illegible]88033	11.18658	13.17696	5.48[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC P[illegible]
High	500.0000	10.00000	5.000000	[illegible]0000.0	30000.00	100000.0	[illegible]
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	[illegible]62599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	5.[illegible]88124	1145.273	11.71547	22.19416	H23.71375	.0744266	2.[illegible]10283
SDev	.004588	8.432	.02487	.02834	.03657	.0001120	.5[illegible]2[illegible]
%RSD	.0851495	.7362367	.2123078	.1[illegible]76758	.1542113	.1505563	22.21734
#1	5.387201	1139.570	11.69618	22.20576	H23.73076	.0743021	2.[illegible]37727
#2	5.393103	1154.958	11.70630	22.21485	H23.73872	.0744583	2.747683
#3	5.[illegible]84067	11[illegible].289	11.74363	22.16186	H23.67178	.0745194	1.745197
Errors	L[illegible] Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	[illegible]00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	[illegible]00000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	[illegible]889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb206[illegible]
Units	[illegible]	ppb	ppb	ppb	ppb	ppb	ppb
Avge	[illegible].2585	7.[illegible]94677	4.[illegible]65300	9.110706	7.731086	.4602119	.7199376
SDev	.6113	.792332	2.552011	1.656092	.284821	.8026539	2.680516
%RSD	[illegible]73685	9.910742	51.39692	18.17743	3.684106	174.4096	372.3262
#1	365.9488	8.525919	4.8254[illegible]0	8.950283	7.577504	.8423137	-2.259[illegible]
#2	364.7856	7.083978	7.584373	7.540663	7.556018	-.462106	2.935767
#3	365.0412	8.374136	2.486105	10.84117	8.059735	1.000428	1.483556
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.[illegible]	1[illegible]0000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			5.00000	-5.00000	-2.[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	[illegible]881	Sn189	Cr4[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4.348774	-1.09256	-7.77907	4.572879	1565.412	2.301192	600.0130
SDev	2.777468	4.30808	.92543	1.437536	6.079	.997454	.7191
%RSD	63.86783	394.3107	11.89646	31.43613	.3883025	43.34512	.11985-0
#1	3.615530	-5.19346	-8.84622	5.678516	1566.466	1.181736	600.6651
#2	2.011493	3.396442	-7.29382	2.947827	1570.895	3.095501	599.2415
#3	7.419300	-1.48067	-7.19719	5.087293	1558.876	2.626338	600.1389
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	136.1801	2.651493	.1201032	15.35318
SDev	.1463	3.064022	.0004199	.00419
%RSD	.1074144	115.5584	.3496113	.0273225
#1	136.2929	3.033341	.1205443	15.34838
#2	136.2327	-.585555	.1197084	15.35505
#3	136.0149	5.506694	.1200569	15.35612
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MIX Sample Name:
Run Time. /28/98 12:4
Comment:
Mode: CONC Corr. Factor: 1

Elem	[illegible]280	Al3082	[illegible]	[illegible]	[illegible]	Be3130	[illegible]
Units	p	PPM	ppb	ppb	ppb	ppb	ppb
Avge	- 1293	3.652734	4.513985	[illegible]	160.2728	.4191121	[illegible]
SDev	. 4921	.014461	1.581992	.639755	.7329	.0320072	4.88103
%RSD	27 246	.3958922	35.02317	13.32149	.4572982	7.636900	[illegible]
#1	-.4 81	3.652197	2.782728	[illegible]	161.0640	.3826776	[illegible]
#2	-.6 986	3.667456	4.887160	[illegible]	160.1371	.4319572	[illegible]
#3	-.4 12	3.638549	5.881067	3.895570	159.6171	.4427013	-5.20427
Errors	LC Pa s	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	198.3366	56.019027	-.142093	2.827494	18.02954	7.405715	3.495040
SDev	1.2528	.029869	.082865	.340501	.53347	.140442	.010628
%RSD	.6316650	.4962385	58.31752	12.04251	2.958874	1.896397	.3041012
#1	199.4339	56.048266	-.133976	2.742522	18.62535	7.30e764	3.504421
#2	198.6044	56.020248	-.228718	3.202434	17.86712	7.343923	3.4973
#3	196.9715	55.988566	-.063585	2.537525	17.59e16	7.566457	3.4834
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn257e	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	3.412777	910.2668	7.126703	7.296842	7.347379	.0507142	1.796765
SDev	.010644	5. 214	.013956	.009381	.017763	.0001367	.465797
%RSD	.3118821	.5736148	.1955426	.1285621	.2417589	.2694823	25.92424
#1	3.417368	911.6995	7.139704	7.2 8482	7.348393	.0508085	2.159985
#2	3.420356	914.6223	7.129382	7.305294	7.364613	.0507766	1.958690
#3	3.4 509	904.4786	7.111704	7.286749	7.329131	.0505574	1.271612
Errors	LC ss	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5C 0000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	- 0000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	[illegible]89	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units		ppb	ppb	ppb	ppb	ppb	ppb
Avge	.5531	5.390627	1.639830	4.689639	3.674853	-.219129	1.718383
SDev	.1098	.052660	.668496	2.997891	2.216042	2.344749	.483960
%RSD	57270	.9787000	40.76616	63.92583	60.30289	1070.030	28.16368
#1	4863	5.363768	2.315259	7.213497	5.583183	-2.00664	1.76167
#2	8471	5.439659	.9784859	1.375893	1.244358	-1.08647	2.179241
#3	3260	5.338470	1.625741	5.479527	4.197017	2.435720	1.214230
Errors	LC ss	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	10 0.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-5.00000	5.00000	
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sr1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3.283996	.9359506	-5.31640	2.324887	2235.890	2.571603	205.7153
SDev	2.283665	1.191505	.39116	3.594466	6.761	1.729951	.7077
%RSD	69.53923	127.3043	7.357607	154.6082	.3024020	67.27132	.3440191
#1	.7858324	2.248068	-5.51608	-.255348	2243.689	4.137813	206.4151
#2	5.264181	.6382841	-4.86570	.7995160	2231.672	2.862264	205.7240
#3	3.801973	-.078501	-5.56743	6.430494	2232.310	.7147326	204.9899
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	84.69118	1.557929	.0358766	14.68224
SDev	.40079	.879305	.0005283	.18638
%RSD	.4732336	56.44065	1.472520	1.269413
#1	84.97858	.7689055	.0362407	14.89744
#2	84.86161	2.505848	.0361185	14.57345
#3	84.23334	1.399034	.0352707	14.57561
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard Wed 10-28-98 01:07:13 PM

Method: M1> Sample Name: QCV Operator: TMP
Run Time: 10/28/98 12:55:43
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	Ba2494	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	501.0288	5.169303	511.7185	502.4362	498.3996	506.1089	520.3606
SDev	2.7786	.035644	2.9714	1.1705	2.3032	2.1226	6.0620
%RSD	.5545862	.6895370	.5806706	.2329663	.4621165	.4193919	1.164957
#1	503.5829	5.205094	508.3482	502.2395	500.7291	507.8980	526.4690
#2	501.4336	5.169008	513.9604	503.6925	498.3460	506.6651	520.2667
#3	498.0700	5.133808	512.8470	501.3764	496.1237	503.7636	514.3461
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	5.000000	500.0000	500.0000	500.0000	500.0000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	2.051946	2.080579	512.8666	510.8041	509.9684	515.5851	5.254555
SDev	.015270	.006037	2.2955	1.6662	1.3269	.7476	.003817
%RSD	.7441918	.2901606	.4475749	.3261849	.2601938	.1449960	.0725396
#1	2.066104	2.087243	515.4921	511.7098	511.4623	515.3533	5.254600
#2	2.053968	2.079019	511.8685	511.7422	509.5162	514.9809	5.258340
#3	2.035765	2.075475	511.2391	508.8804	508.9267	516.4211	5.250725
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000000	2.000000	500.0000	500.0000	500.0000	500.0000	5.000000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	5.076793	4994.680	4031.196	4.129323	4.069026	5.069321	502.4269
SDev	.016838	6.451	7.062	.013119	.022506	.016895	1.9339
RSD	.3316667	.1291623	.1751772	.3234879	.5530957	.3332747	.3849211
#1	5.092137	4999.460	4026.414	4.141182	4.091021	5.084135	503.9432
#2	5.079462	4987.342	4027.866	4.129826	4.070015	5.072907	503.0859
#3	5.058780	4997.237	4039.307	4.116960	4.046042	5.050921	500.2496
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.000000	5000.000	4000.000	4.000000	4.000000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4904.068	493.2037	522.6468	517.2976	519.0795	515.8408	497.3908
SDev	10.980	1.9425	1.8996	1.6183	.9531	1.7847	2.4827
%RSD	.2238955	.3938563	.3634516	.3128393	.1836050	.3459860	.4991501
#1	4915.398	495.4467	523.8449	518.1788	520.0660	517.8998	499.5[illegible]
#2	4903.332	492.0822	520.4566	518.2840	519.0081	514.8866	499.1908
#3	4893.476	492.0822	523.6389	515.4299	518.1641	514.7360	498.4230
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value	5000.000	500.0000			500.0000	500.0000	500.0000

Range	10.00000	10.00000			10.00000		
Elem	206/1	206/2	190/1	190/2	213881	Sn1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppm	ppm	ppm
Avge	497.6856	497.3428	519.4181	514.0540	494.1671	506.8162	500.24 [illegible]
SDev	4.1766	1.9294	7.5048	1.7545	[illegible].2044	1.5071	1.75[illegible]
%RSD	.8392393	.3880129	1.444851	.3[illegible]61	1.255519	.2973591	.357557[illegible]
#1	493.5095	495.0814	527.0857	513.3129	501.2972	506.8336	502.7241
#2	501.8631	497.8559	519.0810	512.7916	491.[illegible]065	508.3145	500.9532
#3	497.6843	498.7911	512.0874	51[illegible].0574	489.9975	505.3005	499.1445
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value					500.0000	500.0000	500.0000
Range					10.00000	10.00000	10.00000

Elem	Ti3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	497.7254	517.0643	5.171393	509.9654
SDev	3.0824	2.4709	.021816	1.2569
%RSD	.6192959	.4778645	.4218579	.24[illegible]711
#1	500.5766	515.1463	5.189405	511.2506
#2	498.1448	519.8525	5.177638	50[illegible].9067
#3	494.4547	516.1940	5.147135	50[illegible].7389
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	500.0000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Blank Sample Wed 10-28-98 01:[illegible]

Method: MTL Sample Name: CCB Operator: TMP
Run Time: 10/28/98 13:05:11
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	.082089	-.011662	1.062007	3.008931	.1956958	.1511358	.4328257
SDev	.176983	.005029	1.372078	.585461	.0908255	.0556512	2.193345
%RSD	215.6005	43.12522	129.1967	19.45743	46.41159	36.82199	506.7501
#1	-.284665	-.016879	-.512110	3.439905	.0980177	.1001796	.2239169
#2	.025475	-.011260	2.004678	3.244509	.2114664	.1427073	-1.604859
#3	-.004148	-.006845	1.693453	2.342378	.2776033	.2105205	2.723151
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.00000	.2000000	10.00000	100.0000	100.0000	100.0000	100.0000
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-100.000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0024343	.0031537	.0178854	.5392606	.0105883	1.759511	.0140567
SDev	.0016054	.0005535	.0683752	.9439530	.2445735	1.198586	.0191522
%RSD	65.94852	17.54908	382.2965	175.0458	2309.859	68.12044	136.2536
#1	.0018275	.0037244	.0699960	-.188247	-.224470	.6084937	-.005[illegible]
#2	.0012208	.0031175	-.059537	.2000939	-.007444	1.364224	.0152568
#3	.0042547	.0026193	.0431967	1.605935	.2636789	3.105815	.03257[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.000000	5.000000	5.000000	100.0000	10.00000	25.00000	.1000000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-25.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	.000512	4.367434	.1736413	.0070195	.0007348	.0002405	1.068517
SDev	.000276	8.068143	.0451799	.0079201	.0000830	.0000535	1.241156
%RSD	53.83695	184.7342	26.01910	112.9727	11.28993	22.24313	116.1569
#1	-.000318	8.809159	.2188212	.0007068	.0006136	.0002709	-.328571
#2	-.000828	-4.94555	.1284614	.0051271	.0006482	.0002718	1.490338
#3	-.000391	9.233697	.1736413	.0157246	.0007427	.0001787	2.043786
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1000000	5000.000	100.0000	5.000000	5.000000	.0150000	100.0000
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.015000	-100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-2.99791	.6163235	-1.33006	.4989230	-.109327	3.530717	1.569985
SDev	1.05691	.7089241	2.41554	.5407468	.897531	1.065089	.864662
%RSD	35.25497	115.0247	181.6122	108.3628	820.9600	30.16636	55.07456
#1	-4.01202	-.176323	1.043951	.1975977	.4802335	4.567530	2.302[illegible]
#2	-3.07887	.8355660	-3.78510	.1759726	-1.14226	2.439442	1.791489
#3	-1.90285	1.189727	-1.24902	1.123199	.3340493	3.585180	.6161178
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5000.000	40.00000			3.000000	5.000000	60.00000

Low	-5000.00	-45.0000			3.00000	5.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	513881	5n1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	[illegible]
Avge	1.345481	1.681[illegible]e9	-2.2e950	6.425681	1.490774	-.51e41e	[illegible]
SDev	3.5e5494	3.0e7701	2.73833	.421413	2.852249	1.5e0073	[illegible]
%RSD	264.9977	182.4634	120.6578	6.558269	191.3268	302.2194	110.2e[illegible]
#1	-2.06453	4.481711	-.083814	6.888916	-1.45953	-2.31757	.0132132
#2	1.052576	2.159592	-5.34112	6.323092	4.233647	.4350165	.0097e[illegible]
#3	5.048393	-1.59750	-1.38357	.0e5033	1.698201	.3333039	-.001031
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100.0000	100.0000	100.0000
Low					-100.000	-100.000	-100.000

Elem	Ti3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	.3746344	1.418036	.0005324	-.250149
SDev	.3264647	2.048732	.0004938	.160534
%RSD	87.14223	144.4768	92.74442	64.17529
#1	.2150331	.2070552	.0000361	-.220469
#2	.1586736	.2635695	.0005375	-.423152
#3	.7501964	3.783483	.0010237	-.106526
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100.0000	10.00000	.0500000	20.00000
Low	-100.000	-10.0000	-.050000	-20.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard

Method: MI Sample Name: CCI
Run Time: /28/98 13:11:33
Comment:
Mode: ONE Corr. Factor: 1

Elem	A 280	2983	[illegible]	B 2496	Ba4934	Be3130	Bi [illegible]
Units	p		ppb	ppb	ppb	ppb	ppb
Avge	20 5729	.1915987	21.64143	202 4103	197.6567	10.30550	.5339170
SDev	7777	.0044205	1.62200	1.7098	.2844	.04957	1 37.900
%RSD	1.8 1434	2.307139	7.494885	.8447443	.1438736	.4810257	256.9533
#1	20. 34	.1966820	19.80799	202 3340	197 3615	10.36122	1.304587
#2	19.9 97	.1894581	22.88945	200.4998	197.3320	10.28895	1.05003
#3	19.7 3	.1886561	22.22686	203.7970	197.7765	10.26631	1.347218
Errors	QC Pas	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	NOCHECK
Value	20.00000	.2000000	20.00000	200.0000	200.0000	10.00000	
Range	50.00000	50.00000	50.00000	50.00000	50 00000	50.00000	

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0034456	.0028857	10.14035	104.3150	20.16659	54.31092	.2367672
SDev	.0012631	.0002191	.09481	.2672	.11269	.96732	.0067013
%RSD	36.65866	7.592452	.9349711	.2561941	.5587759	1.781077	2.830345
#1	.0048614	.0031050	10.03117	104.6236	20.13063	55.07676	.2314064
#2	.0024343	.0028854	10.20190	104.1599	20.07628	54.63214	.2336413
#3	.0030411	.0026668	10.18790	104.1615	20.29287	53.22385	.2332
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	NO HEC
Value			10.00000	100.0000	20.00000	5.000000	
Range			50.00000	50.00000	50.00000	50.00000	

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2870
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	.2022160	2.645756	202.0050	.0039119	.0004876	.0306478	203.7050
SDev	.0005782	9.565116	.1838	.0065991	.0000378	.0000543	.9813
%RSD	.2859310	3 .3267	.0905691	74 .4793	7.752057	.1772174	.4817240
#1	.2 729	4.707567	203.1139	.0104815	.0004498	.0306795	204.8159
#2	.2 346	11.27108	202.8330	.0043701	.0005254	.0306790	202.9541
#3	.2 603	-7.3 138	202.7682	.0038840	.0004876	.0305851	203.3474
Errors	Q ass	NOCHECK	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass
Value	.0000		200.0000			.0300000	200.0000
Range	00000		50.00000			50.00000	50.00000

Elem	9	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units		ppb	ppb	ppb	ppb	ppb	ppb
Avge	400	[illegible]	340975	9.692643	7.578335	13.68847	122.4859
SDev	23491	.39217	1.549521	1.696808	1.516067	2.04729	1.8544
%RSD	67.215	.4926633	46.37930	17.50614	20.00528	14.95632	1.513937
#1	.5514595	79 99055	1.650224	9.017100	6.567391	Q16.02803	123.3
#2	.816304	7 1109	3.655779	8.437653	6.846086	12.81234	123.7406
#3	.3213646	7 634	4.708926	11.02318	Q9.321528	12.22503	120.3559
Errors	NOCHECK	Q 5	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value		8 0			6.000000	10.00000	120.0000

Range		50.00000			50.00000	50.00000	50.00000
Elem	2065/1	2065/2	1960/1	1960/2	Cl386	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	129.1326	119.1667	7.753281	16.65065	199.0751	203.4397	192.7751
SDev	.4092	2.7145	4.135942	4.52832	3.1879	.8917	.2984
%RSD	.3168950	2.277926	53.34441	27.19606	1.602434	.4383247	.1548068
#1	129.6043	120.2432	4.631809	21.71630	194.6969	203.9201	193.1137
#2	128.8726	121.1779	12.44424	12.99531	198.4979	203.9882	192.6615
#3	128.9209	116.0791	6.183789	15.24053	201.0305	202.4108	192.5502
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	QC Pass
Value					200.0000		200.0000
Range					50.00000		50.00000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	198.8176	22.88965	.1030859	40.53191
SDev	.4401	.66684	.0005776	.25929
%RSD	.2213700	2.913291	.5603083	.6397269
#1	199.3058	22.37974	.1037389	40.80838
#2	198.6955	22.84493	.1028770	40.29414
#3	198.4513	23.64428	.1026418	40.49321
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	200.0000	20.00000	.1000000	40.00000
Range	50.00000	50.00000	50.00000	50.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis: QC Standard

Run Time: 3/98 13:15:38

Comments:

Mode: CONC Corr. Factor: 1

Elem	[illegible]0	Al3082	[illegible]00	B-249[illegible]	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-.[illegible]769	481.0967	2.813305	4.574255	-2.19239	.2116249	4.059457
SDev	.2 319	1.4388	1.499549	.740918	.05456	.0335784	3.531755
%RSD	105 73	.2990701	53.3020[illegible]	16.[illegible]74[illegible]	2.488692	15.86695	87.00005
#1	-.0[illegible]7	482.0677	2.842766	4.877583	-2.13017	.1772720	1.196567
#2	-.3[illegible]	481.7786	1.299242	5.1[illegible]753	-2.23209	.2132315	2.975780
#3	-.12[illegible]	479.4437	4.297907	3.733517	-2.21491	.2443712	8.006113
Errors	NOCHE[illegible]	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		500.0000					
Range		20.00000					

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	432.5007	52.843380	2.196454	1.301040	-.408512	2.225162	179.485[illegible]
SDev	1.9692	.038467	.285835	.337061	.494763	.207073	.4090
%RSD	.4552977	1.352859	13.01347	25.90705	121.1133	9.305971	.2278911
#1	433.9999	52.882135	2.014162	.9130615	.1563792	1.986546	179.7392
#2	433.2317	52.842796	2.049316	1.468298	-.764873	2.357729	179.7073
#3	430.2706	52.805208	2.525883	1.521761	-.617043	2.331212	179.011
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	500.0000						[illegible]
Range	20.00000						20.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	164.3122	4.940796	.2325716	490.6494	533.19633	.0005055	16.63210
SDev	.3819	11.37[illegible]62	.0405911	1.3093	.02720	.0000979	1.380[illegible]
%RSD	.2324207	230.3135	17.45318	.2668558	.0819500	19.35979	8.301010
#1	164.[illegible]880	-2.79587	.2698941	491.[illegible]322	533.22602	.0005005	15.18018
#2	164.[illegible]4722	18.00716	.2384646	491.2711	533.19037	.0004102	15.52832
#3	16[illegible].[illegible]763	-.388895	.1893560	489.145	533.17260	.0006058	18.18779
Errors	N[illegible]ECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value				500.0000			
Range				20.00000			

Elem	[illegible]889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	[illegible]	ppb	ppb	ppb	ppb	ppb	ppb
Avge	771116	1.602915	7.075755	2.118675	3.770294	-.080985	3.837875
SDev	169744	.569234	1.616046	2.146258	1.955133	.995371	2.266961
%RSD	[illegible].941260	35.51244	22.83921	101.3019	51.85626	1229.074	59.06815
#1	5.869118	1.796860	5.768356	-.032021	1.900305	.9262417	1.2534[illegible]
#2	5.869118	2.049832	8.882553	4.260467	5.800689	-.105137	5.490292
#3	5.575113	.9620521	6.576355	2.127579	3.609888	-1.06406	4.769862
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							

Elem	2066/1	2066/2	1960/1	1960/2	3123S1	Sn1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	[illegible]
Avge	3.404699	4.053338	-4.60041	2.174340	28.05777	-4.17923	[illegible]
SDev	6.100035	1.866942	7.87519	3.970328	3.59783	3.53585	.10647
%RSD	179.1652	46.05937	171.1844	182.5824	12.82294	84.60696	[illegible]
#1	-3.03189	3.392140	1.025719	.8757782	25.98654	-2.64987	16.42911
#2	4.145466	6.160897	-13.6004	6.631599	25.97459	-8.22235	16.34925
#3	9.100523	2.606978	-1.22651	-.903757	32.21218	-1.66546	16.23417
Errors Value Range	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	-1.58470	3.654567	-.001173	-1.32246
SDev	.14272	5.460031	.000141	.15198
%RSD	9.006075	149.4029	12.01029	11.49200
#1	-1.52989	9.710821	-.001238	-1.47084
#2	-1.47752	2.144095	-.001270	-1.32941
#3	-1.74670	-.891214	-.001011	-1.16712
Errors Value Range	NOCHECK	NOCHECK	NOCHECK	NOCHECK

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard [illegible]

Method: MTA Sample Name: ICS Oper Init: PMT
Run Time: 10/28/98 13:25:15
Comment:
Mode: CONC Corr. Factor: 1

Elem	A 280	Al3082	As1890	B 249o	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	1 .4068	484.7043	99.41896	961.2188	474.9813	474.4450	919.2535
SDev	.3564	.8014	2.62323	3.8068	.7803	.5683	1.9453
%RSD	. 4542	.1653279	2.638565	.3960428	.1642794	.1197805	.2116213
#1	19 0184	485.5847	102.4114	957 1981	474.5276	474.9639	917.0167
#2	196.7186	484.5106	97.51600	964 7678	474.5339	474.5332	920.1937
#3	196.4836	484.0175	98.32951	961.6906	475.8823	473.8377	920.5501
Errors	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	200.0000	500.0000	100.0000		500.0000	500.0000	
Range	20.00000	20.00000	20.00000		20.00000	20.00000	

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	432.5632	S2.733918	876.4483	441.4244	458.6562	497.3091	180.9399
SDev	.8091	.081183	2.2810	.8859	.5287	2.2861	.2973
%RSD	.1870467	2.969478	.2602548	.2006914	.1152767	.4596953	.1643192
#1	431.7335	S2.e5o649	874.2o80	442.2736	458.5351	499.7142	181.2041
#2	432.6061	S2.726586	876.2588	441.4937	459.2350	497.0490	180.997o
#3	433.3500	S2.818518	878.8182	440.5059	458.1986	495.1642	180.617
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000		1000.000	500.0000	500.0000	500.0000	200.0000
Range	20.00000		20.00000	20.00000	20.00000	20.00000	20.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	165.2564	11.78852	1070.2o7	493.8022	S33.11042	.4619747	917.8588
SDev	.3263	10.79533	.593	.7317	.02436	.0012548	2.4348
%RSD	.1974313	91.57501	.0554499	.14o1830	.0735847	.2716230	.2 52717
#1	165.5642	16.31596	1070.947	494.5101	S33.08722	.4631722	919.8918
#2	165.2906	-.533333	1069.855	493.8478	S33.10826	.4620824	915.1605
#3	164.9144	19.58292	1069.998	493.0488	S32.13580	.4606695	918.5241
Errors	NO ECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	QC Pass	NOCHECK
Value				500.0000		.5000000	
Range				20.00000		20.00000	

Elem	389	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	o	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.54763	83 7330	57 90639	44.08548	47.35655	45.38383	582.1130
SDev	14235	2.1519	3.27965	4.09201	1.86964	1.74614	2.4838
%RSD	.49554	.2570868	6.083970	9.281980	3.948008	3.847487	.4266894
#1	10.52207	834.6064	54.04810	46.31549	48.89098	43.54067	584.98
#2	10.41981	837.7939	50.55818	43.57807	47.90452	45.59756	580.7165
#3	10.70103	838.7046	57.11288	39.36287	45.27416	47.01327	580.6417
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value		1000.000			50.00000	50.00000	600.0000

Range		20.00000			20.00000		
Elem	2068/1	2063/1	1940/1	1963/1	310831	2h1679	.215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	586.5304	579.9067	47.07001	44.54155	941.2276	883.4097	935.4594
SDev	3.5033	4.3576	5.30191	3.55204	.7590	1.3971	1.5...
%RSD	.5972907	.7514394	11.26387	7.97751	.0806375	.2147486	.1...
#1	585.8298	584.5560	42.04008	40.79439	941.6791	885.5098	937.7500
#2	590.3311	575.9155	41.06508	47.85960	941.6523	881.8199	938.0693
#3	583.4304	579.2487	51.10486	44.97975	940.3513	882.8995	940.0290
Errors Value Range	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	-1.53931	93.29531	.4765773	921.8788
SDev	.11893	1.48098	.0004476	.5111
%RSD	7.726447	1.587412	.0939104	.0554451
#1	-1.66883	92.27325	.4769176	921.4196
#2	-1.51410	92.61898	.4767439	922.4295
#3	-1.43501	94.99371	.4760703	921.7873
Errors Value Range	NOCHECK	QC Pass 100.0000 20.00000	QC Pass .5000000 20.00000	QC Pass 1000.000 20.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard

Method: Mix Sample Name:

Run Time: 10/28/98 15:34:02

Comment:

Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	498.9270	5.138909	509.9975	504.8835	494.0588	502.4327	512.1037
SDev	1.2382	.023018	2.0172	.8685	1.7657	.7246	5.8947
%RSD	.2481733	.4479120	.3955352	.1720263	.3573857	.1442114	1.1355538
#1	500.3131	5.163899	511.5395	505.7624	496.0762	503.2123	525.3387
#2	498.5379	5.134252	510.7384	505.4983	493.3054	502.3057	513.6169
#3	497.9302	5.118576	507.7146	503.8899	492.7948	501.7800	518.3677
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	5.000000	500.0000	500.0000	500.0000	500.0000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	2.014932	2.089577	507.2756	511.0731	508.1855	520.2504	5.257730
SDev	.014105	.013214	1.4997	.6070	.4358	.1120	.014225
%RSD	.7000117	.6323789	.2956417	.1187752	.0857631	.0215335	.2705570
#1	2.030711	2.104025	508.6617	511.4492	508.6527	520.1285	5.247053
#2	2.009673	2.086601	507.4816	511.3973	508.1137	520.2741	5.252263
#3	2.004212	2.078104	505.6836	510.3728	507.7899	520.3487	5.273874
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000000	2.000000	500.0000	500.0000	500.0000	500.0000	5.000000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	5.060117	4993.484	4051.965	4.120547	4.077314	5.056592	502.0702
SDev	.005638	1.194	1.809	.014334	.021189	.005581	1.4675
%RSD	.1114192	.0239187	.0446330	.3478670	.5196906	.1103697	.2922428
#1	5.064898	4992.164	4049.906	4.142318	4.100139	5.062774	504.2740
#2	5.061553	4993.802	4053.298	4.123015	4.073535	5.055081	502.3422
#3	5.053900	4994.488	4052.689	4.114310	4.058269	5.051923	501.3945
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.000000	5000.000	4000.000	4.000000	4.000000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4888.231	486.4915	530.7225	516.5613	521.2776	516.6559	503.6947
SDev	10.303	3.1858	3.9113	2.7204	1.4133	1.4262	.8525
%RSD	.2107793	.6548429	.7369723	.5266118	.2711290	.2760363	.1692568
#1	4898.743	490.1596	534.0142	518.7767	522.5177	517.9978	504.48
#2	4878.149	484.8978	528.3990	519.1675	521.5762	516.8116	503.8036
#3	4887.800	484.4171	531.7538	513.7395	519.7388	515.1583	502.7924
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value	5000.000	500.0000			500.0000	500.0000	500.0000

Range	10.00000	10.00000			10.00000	10.00000	10.00000
Elem	2068/1	2068/2	1960/1	1960/2	S.3881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	505.8833	502.6012	517.1761	516.3953	494.6591	506.7693	497.4640
SDev	2.1294	2.3411	3.5506	1.5436	3.5867	2.4634	1.7177
%RSD	.4209386	.4657967	.6865455	.2987939	.7250833	.4861060	.3454647
#1	503.8668	504.7966	517.8379	518.0768	497.5932	509.4639	499.3459
#2	505.6729	502.8695	520.3493	515.0446	495.7235	506.2111	496.7890
#3	508.1101	500.1375	513.3411	516.0646	490.6607	504.6328	496.0570
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value					500.0000	500.0000	500.0000
Range					10.00000	10.00000	10.00000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	492.2138	513.9828	5.143685	507.5917
SDev	1.1541	.6771	.007823	.7988
%RSD	.2344807	.1317451	.1520909	.1573620
#1	493.5440	513.6610	5.152462	508.4171
#2	491.6191	513.5265	5.137444	507.5355
#3	491.4782	514.7608	5.141151	506.8225
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	500.0000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Blank Sample Used 10-28-98 01:56 pm

Method: MT2 Sample Name: QCB Page 1
Run Time: 10/28/98 13:43:29
Comments:
Mode: CONC Corr. Factor: 1

Elem	Al3280	Al3082	As1890	B 249c	Ba4934	Be5130	Bi2[illegible]
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-.589684	-.019290	1.398693	5.376077	.1452980	.0550000	1.[illegible]
SDev	.796361	.005431	.579338	1.342411	.0433658	.0260720	.[illegible]
%RSD	115.4676	28.15397	41.41407	24.90514	29.84610	10.22421	[illegible]
#1	.2294797	-.014071	1.653425	6.[illegible]4185	.0979779	.2346616	.5595[illegible]
#2	-1.12592	-.018888	1.807390	4.5[illegible]0102	.1547737	.2459525	.9459497
#3	-1.17261	-.024910	.7358627	4.736005	.1831424	.2843937	1.953122
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.00000	.2000000	10.00000	100.0000	100.0000	100.0000	100.0000
Low	-10.0000	-.200000	-10.0000	-100.000	-[illegible]00.000	-100.000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2486	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0042547	.0055387	.2014221	.7446411	-.422749	1.883139	.00[illegible]999
SDev	.0006068	.0006975	.0684124	.4174618	.380433	.421042	.00[illegible]929
%RSD	14.26158	12.59387	33.96467	56.06216	89.99037	22.35850	95.34840
#1	.0048614	.0062777	.2233225	.4546738	-.061700	1.697845	.01[illegible]
#2	.0036479	.0054466	.2562027	1.223112	-.819982	2.365049	-.000612
#3	.0042547	.0048918	.1247412	.5561377	-.386565	1.586523	.00[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.000000	5.000000	5.000000	50.00000	10.00000	25.00000	[illegible]
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-25.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	-.000051	12.76352	.1120919	.0029823	.0029539	.0002193	1.[illegible]
SDev	.000547	10.36556	.0970381	.0037911	.0006348	.0001006	.[illegible]
%RSD	1074.784	8[illegible].21242	86.57011	127.1198	21.49042	45.87117	29.26104
#1	.0004834	12.33361	.2207855	.0066410	.0036342	.000334[illegible]	1.054[illegible]
#2	-.000610	23.33734	.0813171	-.000929	.0028499	.0001773	1.671074
#3	-.000026	2.[illegible]17597	.0341729	.0032346	.0023774	.0001466	1.022361
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1000000	5000.000	100.0000	5.000000	5.000000	.0150000	100.0000
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.015000	-100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.824826	.6922151	-2.99079	1.028785	-.308933	2.725219	2.040323
SDev	.287637	.1022374	1.58537	.565948	.572089	1.615314	1.617595
%RSD	34.87239	14.76961	53.00852	55.01130	185.1822	59.27284	79.28133
#1	-1.11031	.5825939	-1.679[illegible]	.4753583	.241359	4.383649	1.17924[illegible]
#2	-.535083	.7090799	-2.54079	1.006474	.2263677	1.156783	3.906312
#3	-.829087	.7849715	-4.752e3	1.004523	-.911809	2.635224	1.035414
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5000.000	4[illegible].00000			3.000000	5.000000	60.00000

Low	-5000.00	40.0000			3.000000	[illegible]	[illegible]
Elem	206.8/1	206.8/2	196.0/1	196.0/2	[illegible]	Sn1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3.220094	1.101047	-1.68577	4.220607	3.811633	1.66162	.0093357
SDev	2.785277	1.168460	3.46426	.796242	3.120679	.48226	.0103441
%RSD	71.06914	106.1226	205.5002	18.84629	81.87250	30.54511	128.4857
#1	3.337749	.1008052	1.469788	5.837597	1.704131	-1.04198	.0202682
#2	6.951216	2.385347	-5.39262	4.425775	7.396681	-1.94837	.0060815
#3	1.471317	.8169898	-1.13448	4.5 [illegible]449	2.334087	-1.81451	-.001031
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100.0000	100.0000	100.0000
Low					-100.000	-100.000	-100.000

Elem	T 3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	.2181942	3.230838	.0002948	.2256021
SDev	.1777396	1.172864	.0002401	.1122598
%RSD	81.45937	36.30217	81.46011	49.75962
#1	.0929721	2.033657	.0005323	.2906631
#2	.1399829	3.221087	.0003000	.0959772
#3	.4216277	4.377770	.0000521	.2901660
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100.0000	10.00000	.0500000	20.00000
Low	-100.000	-10.0000	-.030000	-20.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	.	--	--
SDev	.0000000	.	.	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Method: MI> Method Report Page 1

STATUS INFORMATION **

Version: 2.0
Date Created: 09/06/94 05:13 Date Last Updated: 10/28/98 08:37

Number of Elements: 31 Number of lines: 39

# of lines Calibrated: 0
# of lines Standardized: 36 10/28/98 08:21 - 10/28/98 08:37

Data collection mode: Spectrum Shifter (6 positions)

Approx. time for analysis 6.0 mins.

Protection status: Un-protected

METHOD INFORMATION **

Sample Introduction Device: Normal
Calibration Mode: Concentration

Default Setup:

Number of Repeats	: 3	Auto-store Analysis Data?	Yes
Flush Time (sec)	: 70.0	Auto-store Stdzn Data?	Yes
Auto-Increment Sample Names?	No	Store Individual Repeats?	Yes
		Auto-print Analysis Data?	Yes
		Auto-print Stdzn Report	None
		Condensed Print Format?	No

Default File Names:

Analysis Data File	: TA1028A	Autosampler Table	: TA1027A
		Sample Limits Table	: LR
Calibration Data File	: TA1028A	Blank Limits Table	: MB
Calibration Stds Table	TA1028A	QC 'Check' Table	: CCV

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
	Time		1.0	15.0	

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
2	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: .06667

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
3	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
4	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
5	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
6	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
7	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

OUTPUT INFORMATION **

Output Mode		Concentration
Override Pr	t Limits?	Yes
Override Si	ificant Figures?	Yes
Apply Backg	und Correctio	Yes
Apply Blank	ubtraction?	No
Limits Tabl	LR Check?	No
Correction F	tor:	1

Report to:
Screen Avgs
Printer Avgs, Stats, Reps, Errs, Units, Int.Stds

PLASMA INFORMA[illegible] **

Gas Flow
Torch gas : High Flow
Auxiliary gas flow : Low (.5 L/min)
Nebulizer Press. (PSI): 30

Power
Approximate RF Power (W): 950

Peristaltic Pump Parameters
Analysis Pump Rate (RPM): 130
Flush Pump Rate (RPM): 130
Relaxation time (sec): 0
Pump Tubing type : Tygon for Org.

Method: MIX Element Information

Element:	A	Al			
Wavelength:	328.068	396.152	267.595	249.773	
Element Name:	Ag3280	Al3961	As1890	B 2496	Ba455
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	5	5	0	0	0
Timing Group No :	1	1	1	1	1
Print Limit Low:	0	0	-100	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	5	4	5	4	5
Print Units:	ppb	PPM	ppb	ppb	ppb
BKG Low SS Offset:	-10	NONE	-10	-15	NONE
BKG High SS Offset:	NONE	20	10	NONE	10
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	Multiple	Multiple	Multiple	Multiple	Multiple
Std #1 (High) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #2 (Low) Name:	S1B	S1B	S1B	S1B	S1B
Conc/Sig:	500	5	500	500	500
Std #3 Name:	S1	S1	S1	S1	S1
Conc:	1000	10	1000	1000	1000
Std #4 Name:	--n/a--	S2	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	100	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	-.097694	-.14256	3.83799	-7.11918	-2.02615
Slope:	701.054	6.02304	585.13	588.806	141.861
Date Standardized:	10/28/98	10/28/98	10/28/98	10/28/98	10/28/98
Time Standardized:	08:21	08:29	08:21	08:21	08:21
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n):	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	2	1	2	3	2

Method: MTX Element Information

Affecting Element:	V 3014	V 3025	Fe3714	Fe3714	[illegible]
k1 factor:	.049464	.004111	.00781	-.04441	[illegible]
k2 factor:	0	0	0	0	0
use?:	YES	YES	YES	YES	[illegible]

Affecting Element:	Fe3714	--n/a--	Cr2677	Cr2677	Mg2790
k1 factor:	-.00373	--n/a--	.00261	.000174	.004953
k2 factor:	0	--n/a--	0	0	0
use?:	YES	--n/a--	YES	YES	YES

Affecting Element:	--n/a--	--n/a--	--n/a--	Al3082	--n/a--
k1 factor:	--n/a--	--n/a--	--n/a--	.002712	--n/a--
k2 factor:	--n/a--	--n/a--	--n/a--	0	--n/a--
use?:	--n/a--	--n/a--	--n/a--	YES	--n/a--

Element:	Be	Bi	Ca	Ca	Cd
Wavelength:	313.041	223.061/2	317.933	396.847	226.502/2
Element Name:	Be3130	Bi2230	Ca3179	Ca3968	Cd2265
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	5	0	5	0	0
Timing Group No.:	1	1	1	1	1
Print Limit Low:	0	0	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	5	4	4	5	5
Print Units:	ppb	ppb	PPM	PPM	ppb
BKG Low SS Offset:	NONE	-15	NONE	-10	-15
BKG High SS Offset:	20	NONE	20	NONE	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	Multiple	Multiple	Multiple	Multiple	Multiple
Std #1 (High) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #2 (Low) Name:	S1B	S1B	S1	S1B	S1B
Conc/Sig:	500	500	4	2	500
Std #3 Name:	S1	S1	S2	S1	S1
Conc:	1000	1000	50	4	1000
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--

Method: MIX Element Information Wed [illegible]

Intercept:	[illegible]	[illegible]	.004817	[illegible]	[illegible]
Slope:	33.[illegible]	719.904	2.10175	.016984	[illegible]
Date Standardized:	10/28/98	10/28/98	10/ 2/98	10/28/98	[illegible]
Time Standardized:	08:21	08:21	08:29	08:21	[illegible]
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n):	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	YES	YES	NO	NO	YES
Number of IECs:	2	5	0	0	4
Affecting Element:	V-2924	Fe2714	--n/a--	--n/a--	Fe2714
k1 factor:	.12059	.058369	--n/a--	--n/a--	.131077
k2 factor:	0	0	--n/a--	--n/a--	0
use?:	YES	YES	--n/a--	--n/a--	YES
Affecting Element:	Ti3349	Ti3349	--n/a--	--n/a--	Al3082
k1 factor:	-.00092	-.00464	--n/a--	--n/a--	-.00264
k2 factor:	0	0	--n/a--	--n/a--	0
use?:	YES	YES	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	Cr2677	--n/a--	--n/a--	Ti3349
k1 factor:	--n/a--	.000398	--n/a--	--n/a--	.000071
k2 factor:	--n/a--	0	--n/a--	--n/a--	0
use?:	--n/a--	YES	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	Co2286	--n/a--	--n/a--	Co2286
k1 factor:	--n/a--	-.00079	--n/a--	--n/a--	-.00045
k2 factor:	--n/a--	0	--n/a--	--n/a--	0
use?:	--n/a--	YES	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	Cu3247	--n/a--	--n/a--	--n/a--
k1 factor:	--n/a--	-.00091	--n/a--	--n/a--	--n/a--
k2 factor:	--n/a--	0	--n/a--	--n/a--	--n/a--
use?:	--n/a--	YES	--n/a--	--n/a--	--n/a--

Method : MIX Element Information Wed 10-28-98 11:57:21 PM

Element:	As	Cr	Fe	Se	[illegible]
Wavelength:	193.696	267.716	324.754	271.441	[illegible]
Element Name:	CeAsBe	CrD677	FeD327	Fe2714	[illegible]
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	5	5	5	5	5
Timing Group No.:	1	1	1	1	1
Print Limit Low:	0	0	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	5	5	5	4	5
Print Units:	ppb	ppb	ppb	PPM	PPM
BKG Low SS Offset:	NONE	-10	NONE	NONE	-10
BKG High SS Offset:	20	NONE	20	20	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	Multiple	Multiple	Multiple	Multiple	Multiple
Std #1 (High) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #2 (Low) Name:	S1B	S1B	S1B	S1	S1B
Conc/Sig:	500	500	500	10	5
Std #3 Name:	S1	S1	S1	S2	S1
Conc:	1000	1000	1000	50	10
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	.400933	-.928214	-5.26955	.002994	-.00622
Slope:	383.383	812.232	555.915	10.8281	1.09303
Date Standardized:	10/28/98	10/28/98	10/28/98	10/28/98	10/28/98
Time Standardized:	08:21	08:21	08:21	08:29	08:21
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n):	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	3	3	4	1	1

Method: MI% Element Information Wed [illegible]

Affecting Element:	Ti3349	Fe2714	[illegible]	V-2924	[illegible]
k1 factor:	.000216	.0211	.014035	.010433	[illegible]
k2 factor:	0	0	0	0	0
use?:	YES	YES	YES	YES	[illegible]

Affecting Element:	Cr2677	Mn2576	Al3082	--n/a--	--n/a--
k1 factor:	.000169	.259164	.00035	--n/a--	n/a
k2 factor:	0	0	0	--n/a--	--n/a--
use?:	YES	YES	YES	--n/a--	n/a

Affecting Element:	Mo2020	V-2924	V-2924	--n/a--	--n/a--
k1 factor:	-.00268	.021713	-.19771	--n/a--	--n/a--
k2 factor:	0	0	0	--n/a--	--n/a--
use?:	YES	YES	YES	--n/a--	--n/a--

Affecting Element:	--n/a--	--n/a--	Ti3349	--n/a--	--n/a--
k1 factor:	--n/a--	--n/a--	.000216	--n/a--	n/a
k2 factor:	--n/a--	--n/a--	0	--n/a--	--n/a--
use?:	--n/a--	--n/a--	YES	--n/a--	--n/a--

Method: MI... Element Information ...

Element:	K	Li	Ca	Mg	Mn
Wavelength:	766.491	670.783	317.933	285.213	257.610
Element Name:	K-766.4	Li-670.7	Ca-3179	Mg-2852	Mn-257.
Calib Switch Conc:	0	0	0	0	0
Peak BS Offset:	0	0	5	5	5
Timing Group No.:	1	1	1	1	1
Print Limit Low:	0	0	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	5	5	4	5	4
Print Units:	ppb	ppb	PPM	PPM	PPM
BKG Low SS Offset:	-15	NONE	NONE	-10	-10
BKG High SS Offset:	NONE	20	20	NONE	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	Multiple	Multiple	Multiple	Multiple	2pt Uncalib
Std #1 (High) Name:	S0	S0	S0	S0	S2
Conc/Sig:	0	0	0	0	10
Std #2 (Low) Name:	S1B	S1B	S1	S1B	S0
Conc/Sig:	5000	4000	8	4	0
Std #3 Name:	S1	S1	S2	S1	--n/a--
Conc:	10000	8000	50	8	--n/a--
Std #4 Name:	S2	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	100000	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	n/a	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	-79.9937	-.478521	-.00055	-.000301	-.000167
Slope:	1289.49	29.4652	5.67724	.07087	.469151
Date Standardized:	10/2 /98	10/28/98	10/28/98	10/28/98	10/28/98
Time Standardized:	08:29	08:21	08:29	08:21	08:37
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n):	1	1	1	1	1
Max. Inflect ...:	NONE	NONE	NONE	NONE	NONE
Date of Fit	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit					
Use IECs:	YES	NO	NO	NO	YES
Number of ...s:	1	0	0	0.	4

Method: MIX Element Information Wed 12-28-95 2:35:32 PM

Affecting Element:	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	.000007	n/a	n/a	n/a	.000014
[illegible]	0	n/a	n/a	n/a	0
use?:	YES	n/a	n/a	n/a	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	--n/a--	MgZ790
k1 factor:	--n/a--	--n/a--	--n/a--	--n/a--	.000014
k2 factor:	--n/a--	--n/a--	--n/a--	--n/a--	0
use?:	--n/a--	--n/a--	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	--n/a--	Al3082
k1 factor:	--n/a--	--n/a--	--n/a--	--n/a--	.000006
k2 factor:	--n/a--	--n/a--	--n/a--	--n/a--	0
use?:	--n/a--	--n/a--	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	--n/a--	V-2924
k1 factor:	--n/a--	--n/a--	--n/a--	--n/a--	.000039
k2 factor:	--n/a--	--n/a--	--n/a--	--n/a--	0
use?:	--n/a--	--n/a--	--n/a--	--n/a--	YES

Method: MIX Element Information Wed 10 28 98 01:55:39 PM

Element: / Wavelength:	Mo 202.030	Na 586.995	Fe 271.604/2	Pb 220.351	Fe 259.940
Element Name:	Mo2020	Na5889	Fe2716	2203/1	2203/2
Line Switch Conc.:	0	0	0	0	0
Peak SS Offset:	5			10	-10
Timing Group No.:	1	1	1	1	1
Print Limit Low:	0	0	0	-100	-100
Print Limit High:	0	0	0	0	0
Significant Figrs:	5	5	5	5	5
Print Units:	ppb	ppb	ppb	ppb	ppb
BKG Low SS Offset:	NONE	NONE	-15	-10	NONE
BKG High SS Offset:	20	20	NONE	NONE	10
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	Multiple	Multiple	Multiple	Multiple	Multiple
Std #1 (High) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #2 (Low) Name:	S1B	S1B	S1B	S1B	S1B
Conc/Sig:	500	5000	500	500	500
Std #3 Name:	S1	S1	S1	S1	S1
Conc:	1000	10000	1000	1000	1000
Std #4 Name:	n/a	S2	--n/a--	S2	S2
Conc:	n/a	50000	--n/a--	20000	20000
Std #5 Name:	n/a	n/a	n/a	n/a	n/a
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	-.605023	-54.5809	.177838	-9.54602	1.37781
Slope:	159.55	191.743	379.458	232.059	346.258
Date Standardized:	10/28/98	10/28/98	10/28/98	10/28/98	10/28/98
Time Standardized:	08:21	08:29	08:21	08:29	08:[illegible]
Offset (A):	0	0	0	0	0
Gain (A):	1	1	1	1	1
Curvature (f):	0	0	0	0	0
Exponent :	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	YES	NO	NO	YES	YES
Number of IECs:	3	0	0	8	6

Method: MTX Element Information

Affecting Element:	[illegible]	n/a	[illegible]	[illegible]	[illegible]
k1 factor:	.37[illegible]6	n/a	[illegible]	.155757	[illegible]
k2 factor:	0	n/a	n/a	0	0
use?:	YES	n/a	n/a	YES	YES

Affecting Element:	Fe2599	--n/a--	--n/a--	Fe2714	Fe2714
k1 factor:	-.30502	--n/a--	--n/a--	.114419	.030870
k2 factor:	0	--n/a--	--n/a--	0	0
use?:	YES	--n/a--	--n/a--	YES	YES

Affecting Element:	Cr2677	--n/a--	--n/a--	Mg2790	Mg2790
k1 factor:	-.00008	--n/a--	--n/a--	-.04952	.019134
k2 factor:	0	--n/a--	--n/a--	0	0
use?:	YES	--n/a--	--n/a--	YES	YES

Affecting Element:	--n/a--	--n/a--	--n/a--	V-2924	V-2924
k1 factor:	--n/a--	--n/a--	--n/a--	.023051	.17425
k2 factor:	--n/a--	--n/a--	--n/a--	0	0
use?:	--n/a--	--n/a--	--n/a--	YES	YES

Affecting Element:	--n/a--	--n/a--	--n/a--	Ti3349	Ti3349
k1 factor:	--n/a--	--n/a--	--n/a--	.000024	-.00051
k2 factor:	--n/a--	--n/a--	--n/a--	0	0
use?:	--n/a--	--n/a--	--n/a--	YES	YES

Affecting Element:	n/a	n/a	n/a	Mn2933	Mn2933
k1 factor:	--n/a--	--n/a--	--n/a--	-.00097	.013062
k2 factor:	--n/a--	--n/a--	--n/a--	0	0
use?:	--n/a--	--n/a--	--n/a--	YES	YES

Affecting Element:	--n/a--	--n/a--	--n/a--	Co2286	--n/a--
k1 factor:	--n/a--	--n/a--	--n/a--	-.0015	--n/a--
k2 factor:	--n/a--	--n/a--	--n/a--	0	--n/a--
use?:	--n/a--	--n/a--	--n/a--	YES	--n/a--

Affecting Element:	--n/a--	--n/a--	--n/a--	Si2881	--n/a--
k1 factor:	--n/a--	--n/a--	--n/a--	-.00005	--n/a--
k2 factor:	--n/a--	--n/a--	--n/a--	0	--n/a--
use?:	--n/a--	--n/a--	--n/a--	YES	--n/a--

Method: MTA Element Information

Element:	C	C	[illegible]	Cd	[illegible]
Wavelength:	220.353	196.026	206.838	226.831	[illegible]
Element Name:	Pb2203	Se1960	Sb2068	Cd228/1	[illegible]
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	0	0	0	-10	10
Timing Group No.:	1	1	1	1	1
Print Limit Low:	-100	-100	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	5	5	5	5	5
Print Units:	ppb	ppb	ppb	ppb	ppb
BKG Low SS Offset:	NONE	NONE	NONE	NONE	-10
BKG High SS Offset:	NONE	NONE	NONE	10	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	2pt Uncalib	2pt Uncalib	2pt Uncalib	Multiple	Multiple
Std #1 (High) Name:	NONE	NONE	NONE	S0	S0
Conc/Sig:	0	0	0	0	0
Std #2 (Low) Name:	NONE	NONE	NONE	S16	S16
Conc/Sig:	0	0	0	500	500
Std #3 Name:	--n/a--	--n/a--	--n/a--	S1	S1
Conc:	--n/a--	--n/a--	--n/a--	1000	1000
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	0	0	0	2.40693	-4.55422
Slope:	1	1	1	352.65	671.017
Date Standardized:	NOT	NOT	NOT	10/28/96	10/28/96
Time Standardized:	STDIZED	STDIZED	STDIZED	08:21	08:21
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n):	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	2	2	2	8	5

Method: MI3 Element Information

Affecting Element:	2203/2	1900/2	5065.2	V=2934	V 2934
k1 factor:	-.0067	-.0067	.0067	-3.289e	.002327
k2 factor:	0	0	0	0	0
use?:	YES	YES	YES	YES	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	Cr2677	Cr2677
k1 factor:	--n/a--	--n/a--	--n/a--	.005389	.001319
k2 factor:	--n/a--	--n/a--	--n/a--	0	0
use?:	--n/a--	--n/a--	--n/a--	YES	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	Al3082	Mo2020
k1 factor:	--n/a--	--n/a--	--n/a--	.003809	.00977
k2 factor:	--n/a--	--n/a--	--n/a--	0	0
use?:	--n/a--	--n/a--	--n/a--	YES	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	Mo2020	Al3082
k1 factor:	--n/a--	--n/a--	--n/a--	-.00065	.000906
k2 factor:	--n/a--	--n/a--	--n/a--	0	0
use?:	--n/a--	--n/a--	--n/a--	YES	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	Ti3347	--n/a--
k1 factor:	--n/a--	--n/a--	--n/a--	.000283	--n/a--
k2 factor:	--n/a--	--n/a--	--n/a--	0	--n/a--
use?:	--n/a--	--n/a--	--n/a--	YES	--n/a--
Affecting Element:	--n/a--	--n/a--	--n/a--	Ni2316	--n/a--
k1 factor:	--n/a--	--n/a--	--n/a--	-.00196	--n/a--
k2 factor:	--n/a--	--n/a--	--n/a--	0	--n/a--
use?:	--n/a--	--n/a--	--n/a--	YES	--n/a--
Affecting Element:	--n/a--	--n/a--	--n/a--	Sn1899	--n/a--
k1 factor:	--n/a--	--n/a--	--n/a--	-.01254	--n/a--
k2 factor:	--n/a--	--n/a--	--n/a--	0	--n/a--
use?:	--n/a--	--n/a--	--n/a--	YES	--n/a--

Method: MIX Element Information Wed 10-28-98 01:55 PM

Element:	Cu	Se	Si	Sn	
Wavelength:	196.073	196.032/2	288.158	189.989	
Element Name:	196/1	196/2	Si7881	Sn1899	
Line Switch Conc:	0	0		0	
Peak SS Offset:	10	-10	5	5	0
Timing Group No.:	1	1	1	1	1
Print Limit Low:	-100	-100	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	5	5	5	5	5
Print Units:	ppb	ppb	ppb	ppb	ppb
BKG Low SS Offset:	-10	NONE	-10	-10	-10
BKG High SS Offset:	NONE	10	NONE	NONE	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	Multiple	Multiple	Multiple	Multiple	Multiple
Std #1 (High) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #2 (Low) Name:	S1B	S1B	S1B	S1B	S1B
Conc/Sig:	500	500	500	500	500
Std #3 Name:	S1	S1	S1	S1	S1
Conc:	1000	1000	1000	1000	1000
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	n/a	n/a	n/a	n/a	n/a
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	13.9901	-5.21658	-136.826	-2.41806	-.573956
Slope:	751.252	660.412	9488.41	503.568	35.516
Date Standardized:	10/28/98	10/28/98	10/28/98	10/28/98	10/28/98
Time Standardized:	08:21	08:21	08:21	08:21	08:21
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n):	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	5	5	5	4	1

Method: MTX Element Information

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	0	0	0	0	0
use?:	YES	YES	YES	YES	[illegible]
Affecting Element:	Mn2576	Mn2576	V 2924	V 2924	[illegible]
k1 factor:	.016676	.545075	.787764	.090139	[illegible]
k2 factor:	0	0	0	0	--n/a--
use?:	YES	YES	YES	YES	--n/a--
Affecting Element:	V 2924	Cr2677	Al3082	Cr2677	--n/a--
k1 factor:	.132099	--------	.037659	-.00014	--n/a--
k2 factor:	0	0	0	0	--n/a--
use?:	YES	YES	YES	YES	--n/a--
Affecting Element:	Co2286	Co2286	Ti3349	Ti3349	--n/a--
k1 factor:	.000275	-.0006	.008791	.001248	--n/a--
k2 factor:	0	0	0	0	--n/a--
use?:	YES	YES	YES	YES	--n/a--
Affecting Element:	Al3082	Al3082	Mg2790	--n/a--	--n/a--
k1 factor:	.003351	.00513	-.05381	--n/a--	--n/a--
k2 factor:	0	0	0	--n/a--	--n/a--
use?:	YES	YES	YES	--n/a--	--n/a--

Method: MT Flame Int[illegible]

Element:	T	T		
Wavelength:	334.941	190.8[illegible]	[illegible]	313.[illegible]
Element Name:	Ti334	Ti1908	[illegible]224	Zn213
Line Switch Conc.:	0	0		
Peak SS Offset:	5	0		0
Timing Grp. No.:	1	1	1	1
Print Limit Low:	0	-100	0	0
Print Limit High:	0	0	0	0
Significant Figrs:	5	5	4	5
Print Units:	ppb	ppb	PPM	ppb
BKG Low SS Offset:	NONE	NONE	NONE	NONE
BKG High SS Offset:	20	20	20	10
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	Multiple	Multiple	2pt Uncalib	Multiple
Std #1 (High) Name:	S0	S0	S0	S0
Conc/Sig:	0	0	10	0
Std #2 (Low) Name:	S1B	S1B	S0	S1B
Conc/Sig:	500	500	0	500
Std #3 Name:	S1	S1	--n/a--	S1
Conc:	1000	1000	--n/a--	1000
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	.318286	8.16799	.00052	.038708
Slope:	10.841	532.811	1.79937	972.296
Date Standardi	10/28/98	10/28/98	10/28/98	10/28/98
Time Standardi	08:21	08:21	08:37	08:21
Offset (A0)	0	0	0	0
Gain (A1)	1	1	1	1
Curvature (A2	0	0	0	0
Exponent (n	1	1	1	1
Max. Inflecti	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:				
Use IEC	YES	YES	YES	YES
Number of I	3	5	2	5

Method: MIX Element Information

Affecting Element:	Mg2790	[illegible]	[illegible]	[illegible]
k1 factor:	.00004	.11133	[illegible]	.001222
k2 factor:	0	0	0	0
use?:	YES	YES	YES	YES

Affecting Element:	Cr2677	V 2924	Mo3020	Fe2714
k1 factor:	.000093	1.45607	-.00001	.113136
k2 factor:	0	0	0	0
use?:	YES	YES	YES	YES

Affecting Element:	Ca3179	Cr2677	--n/a--	Cu3247
k1 factor:	-.00526	.000333	--n/a--	.001774
k2 factor:	0	0	--n/a--	0
use?:	YES	YES	--n/a--	YES

Affecting Element:	--n/a--	Ti3349	--n/a--	Ni2316
k1 factor:	--n/a--	.000998	--n/a--	.004928
k2 factor:	--n/a--	0	--n/a--	0
use?:	--n/a--	YES	--n/a--	YES

Affecting Element:	--n/a--	Co2286	--n/a--	Mg2790
k1 factor:	--n/a--	.002492	--n/a--	.034951
k2 factor:	--n/a--	0	--n/a--	0
use?:	--n/a--	YES	--n/a--	YES

Affecting Element:	--n/a--	Mo3020	--n/a--	--n/a--
k1 factor:	--n/a--	-.01113	--n/a--	--n/a--
k2 factor:	--n/a--	0	--n/a--	--n/a--
use?:	--n/a--	YES	--n/a--	--n/a--

Affecting Element:	--n/a--	Al3082	--n/a--	--n/a--
k1 factor:	--n/a--	-.00582	--n/a--	--n/a--
k2 factor:	--n/a--	0	--n/a--	--n/a--
use?:	--n/a--	YES	--n/a--	--n/a--

Affecting Element:	--n/a--	Mn2576	--n/a--	--n/a--
k1 factor:	--n/a--	.582742	--n/a--	--n/a--
k2 factor:	--n/a--	0	--n/a--	--n/a--
use?:	--n/a--	YES	--n/a--	--n/a--

Mercury

H.D LITTLE } seeds
MSDEC }

*** Standard: 1 Rep: 1 Seq: 0 11:49:02 22 Oct 1998 HG

Hg .000 ppb -"
Ave. Int. = -" S. D. = 0

*** Standard: 2 Rep: 1 Seq: 1 11:51:20 22 Oct 1998 HG

Hg .200 ppb 6001
Ave. Int. = 6001 S. D. = 0

*** Standard: 3 Rep: 1 Seq: 2 11:53:38 22 Oct 1998 HG

Hg 1.00 ppb 29169
Ave. Int. = 29169 S. D. = 0

HG102212
HG1.2
10/22/98
Jeffrey Uebel
98C0504-CRA, MBI, LCI
9810L067-001, R, S
012
9810L062-002, R, S
004
006
008
010

2 copies

updated

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Standard: 4 Rep: 1 Seq: 3 11:56:00 22 Oct 1998 HG

Hg 2.00 ppb 59328
Ave. Int. = 59328 S. D. = 0

*** Standard: 5 Rep: 1 Seq: 4 11:58:29 22 Oct 1998 HG

Hg 5.00 ppb 143810
Ave. Int. = 143810 S. D. = 0

*** Standard: 6 Rep: 1 Seq: 5 12:01:07 22 Oct 1998 HG

Hg 10.0 ppb 283324
Ave. Int. = 283324 S. D. = 0

Protocol: HGNORM

Rev: 3.000 Time: 12:01:14 22 Oct 1998

Folder: HG102212 Seq: 6 Print: On

User: Batch: Id: Std6Repl Cup: 1 04 Gas: 0.25 LPM

State: Idle Macro AUTO40 71: F3 Print Xmit: Off Autosampler: On

CALIBRATION: Line Calibration

Line: Hg

	Conc.	Calc.	Dev.
S1	.000	-.037	-.037
S2	.200	.175	-.025
S3	1.00	.993	-.007
S4	2.00	2.06	.058
S5	5.00	5.04	.042
S6	10.0	9.97	-.032
A	.0000000	r	.999945
B	3.53107e-5	C	-3.64877e-2

Accepted

LiNear

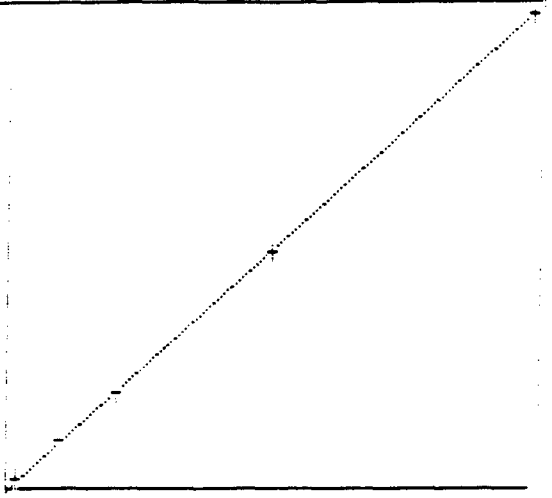
Quadratic

WtdLinear

Accept

StdAdd

Calibration



Relative Absorbance

	Mean	%RSD	
S1	-7	0	-7
S2	6001	0	6001
S3	29169	0	29169
S4	59328	0	59328
S5	143810	0	143810
S6	283324	0	283324

New calibration coefficients stored

Line Conc. Units SD/RSD 1 2 3 4 5

*** Check Standard: 3 Ck3 ICV Seq: 6 12:03:45 22 Oct 1998 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		102.	2.56	2.50	ppb	.000

*** Check Standard: 1 Ck1 ICB Seq: 7 12:06:12 22 Oct 1998 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.049	.200	ppb	.000

*** Check Standard: 2 Ck2 CCV Seq: 8 12:08:28 22 Oct 1998 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		103.	5.13	5.00	ppb	.000

*** Check Standard: 1 Ck1 CCB Seq: 9 12:11:05 22 Oct 1998 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.051	.200	ppb	.000

*** Sample ID: 98C0504-CRA Seq: 10 12:13:20 22 Oct 1998 HG

Hg	.174	ppb	.000	.174

*** Sample ID: 98C0504-MB1 Seq: 11 12:15:33 22 Oct 1998 HG

Hg	-.022	ppb	.000	-.022

*** Sample ID: 98C0504-LC1 Seq: 12 12:17:46 22 Oct 1998 HG

Hg	3.88	ppb	.000	3.88

*** Sample ID: 9810L067-001 Seq: 13 12:20:15 22 Oct 1998 HG

Hg	-.049	ppb	.000	-.049

*** Sample ID: 9810L067-001R Seq: 14 12:22:28 22 Oct 1998 HG

Hg	-.035	ppb	.000	-.035

*** Sample ID: 9810L067-001S Seq: 15 12:24:42 22 Oct 1998 HG

Hg	.935	ppb	.000	.935

*** Sample ID: 9810L067-002 Seq: 16 12:27:01 22 Oct 1998 HG

Hg	-.045	ppb	.000	-.045

*** Sample ID: 9810L067-003 Seq: 17 12:29:15 22 Oct 1998 HG

Hg	-.038	ppb	.000	-.038

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: Seq: 18 12:31:29 22 Oct 1998 HG
9810L067-004

Hg	-.021	ppb	.000	-.021	

*** Sample ID: Seq: 19 12:33:43 22 Oct 1998 HG
9810L067-005

Hg	-.024	ppb	.000	-.024	

*** Check Standard: 2 Ck2 CCV Seq: 20 12:35:58 22 Oct 1998 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		102.	5.11	5.00	ppb	.000

*** Check Standard: 1 Ck1 CCB Seq: 21 12:38:30 22 Oct 1998 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.050	.200	ppb	.000

*** Sample ID: Seq: 22 12:40:45 22 Oct 1998 HG
9810L067-006

Hg	-.032	ppb	.000	-.032	

*** Sample ID: Seq: 23 12:42:58 22 Oct 1998 HG
9810L067-007

Hg	-.036	ppb	.000	-.036	

*** Sample ID: Seq: 24 12:45:11 22 Oct 1998 HG
9810L067-008

Hg	-.031	ppb	.000	-.031	

*** Sample ID: Seq: 25 12:47:24 22 Oct 1998 HG
9810L067-009

Hg	-.023	ppb	.000	-.023	

*** Sample ID: Seq: 26 12:49:37 22 Oct 1998 HG
9810L067-010

Hg	-.035	ppb	.000	-.035	

*** Sample ID: Seq: 27 12:51:50 22 Oct 1998 HG
9810L067-011

Hg	-.040	ppb	.000	-.040	

*** Sample ID: Seq: 28 12:54:03 22 Oct 1998 HG
9810L067-012

Hg	-.034	ppb	.000	-.034	

*** Sample ID: Seq: 29 12:56:18 22 Oct 1998 HG
9810L002-002

Hg	.177	ppb	.000	.177	

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: Seq: 30 12:58:32 22 Oct 1998 HG
9810L002-002R
Hg .161 ppb .000 .161

*** Sample ID: Seq: 31 13:00:46 22 Oct 1998 HG
9810L002-002S
Hg 1.18 ppb .000 1.18

*** Check Standard: 2 Ck2 CCV Seq: 32 13:03:08 22 Oct 1998 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		102.	5.11	5.00	ppb	.000

*** Check Standard: 1 Ck1 CCB Seq: 33 13:05:38 22 Oct 1998 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.054	.200	ppb	.000

*** Sample ID: Seq: 34 13:07:53 22 Oct 1998 HG
9810L002-004
Hg .090 ppb .000 .090

*** Sample ID: Seq: 35 13:10:07 22 Oct 1998 HG
9810L002-006
Hg .108 ppb .000 .108

*** Sample ID: Seq: 36 13:12:21 22 Oct 1998 HG
9810L002-008
Hg .013 ppb .000 .013

*** Sample ID: Seq: 37 13:14:35 22 Oct 1998 HG
9810L002-010
Hg 1.09 ppb .000 1.09

*** Check Standard: 2 Ck2 CCV Seq: 38 13:16:53 22 Oct 1998 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		102.	5.12	5.00	ppb	.000

*** Check Standard: 1 Ck1 CCB Seq: 39 13:19:24 22 Oct 1998 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.050	.200	ppb	.000

Cyanide

Recra LabNet Philadelphia

CYANIDE ANALYSIS LOG

Logbook #: L0036

Analyst/Date: TMurray 10-14-98
Distillation Date(s): 10-14-98
Method: OP 21-15L-0335.4 Rev. 00
OP 21-15L-0335.2 Rev. 05
OP 21-15N-9010A.1, Rev.

Distillation Logbook #: L0533
Circle one : Leeman AP200 / PE L[illegible] 3
Correlation Coefficient: 0.997
Run Batch: 981C160
Worksheet: CD1014

#/Standard	QC R,S,T	Absorbance @ 578 nm	Final Results (Fg/L or mg/kg)	Time HH:MM	Comments
2	Curve	0.000	-1.319 ug/L	1034	
5		0.008	4.276	1035	
10		0.017	10.571	1036	
20		0.034	22.461	1037	
50		0.074	50.498	1038	
100		0.148	102.196	1039	
150		0.204	141.304	1040	
200		0.295	205.012	1041	
ICV		0.135	93.104	1114 tm 10-14-98	
ICB		0.000	<10.0	1115	
CCV		0.136	93.803	1116	
CCB		0.000	<10.0	1117	
98101991-008		-0.001	<10.0	1118	
-009		-0.002	<10.0	1119	% Solids
98101036-001		-0.001	<0.579 mg/kg	1120	86.36
-002		-0.001	<1.104	1121	45.27
-003		0.001	<1.115	1122	44.85
-004		-0.003	<1.226	1123	40.77
-005		-0.002	<1.489	1124	33.58
-005	R	-0.004	<1.489	1125	1

"S" = matrix [illegible], "T" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b [illegible] Y = instrument reading
m = slope = 0.00142
b = intercept = 0.00188
X = concentration (mg/L)

final result = ug/L x dilution factor

Standard:	ID	Prep Date	Expir Date
ICAL	L0036-102-15	10-14-98	10-15-98
ICV/CCV	.35		
LCS			
MS			

Reviewed By/Date: 10/14/98

RFW 21-21L-016/E-06/97

Page # 033

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Recra LabNet Philadelphia

CYANIDE ANALYSIS LOG

Logbook #: L6036

Analyst/Date: TMurray 10-14-98
Distillation Date(s): 10-14-98
Method: OP 21-15L-0335.4 Rev. 00
OP 21-15L-0335.2 Rev. 05
OP 21-15N-9010A.1, Rev.

Distillation Logbook #: L6033
Circle one : Leeman AP200 / PE Lamba 3
Correlation Coefficient: 0.997
Run Batch: 981C1100
Worksheet: CD1014

RFW #/Standard	QC R,S,T	Absorbance @ 578 nm	Final Results (Fg/L or mg/kg)	Time HH:MM	Comments
9810L036-005	S	0.137	14.071 mg/kg	1126	9858
CCV TM 10-14-98		0.136	93.803 ug/L	1127	
CCB TM 10-14-98		0.001	<10.0	1128	
9810L036-006 TM 10-14-98		0.004	<0.572 mg/kg	1129	87.45
-007		0.009	<0.568	1130	88.07
-008		-0.001	<0.972	1131	51.43
9810L040-012		-0.003	<0.537	1132	93.18
9810L067-001		-0.003	<0.540	1133	92.61
-002		0.008	<0.560	1134	89.31
981C1100-LC1		0.068	19.624 ug/L	1135	
-MB		-0.002	<5.0	1136	
-LC2		0.275	95.512	1137	
9810L004-001		-0.001	<0.136 mg/kg	1138	55.79
CCV		0.136	93.803	1139	
CCB		0.001	<10.0	1140	
			TMurray 10/14/98		

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b; where Y = instrument reading
m = slope =
b = intercept =
X = concentration (mg/L)

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final result = mg/L x dilution factor

Standard:	ID	Prep Date	Expir Date
ICAL			
ICV/CCV			
LCS			
MS			

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Reviewed By/Date: 10/16/98

RFW 21-21L-016/E-08/97

Page# 034 .301

Recra LabNet Philadelphia

CYANIDE ANALYSIS LOG

Logbook #: 16036

Analyst/Date: J. Murray 10-15-98

Distillation Date(s): 10-15-98

Method: OP 21-15L-0335.4 Rev. 00
OP 21-15L-0335.2 Rev. 05
OP 21-15N-9010A.1 Rev

Distillation Logbook #: 16633

Circle one : Leeman AP200 / PE

Correlation Coefficient: 0.998

Run Batch: 981C161

Worksheet: C11015

Field #/Standard	QC R,S,T	Absorbance @ 578 nm	Final Results (Fg/L or mg/kg)	Time HH:MM	Comments
	Curve	0.000	-2.110 ug/L	1131	
		0.009	3.817	1132	
10		0.018	9.744	1133	
20		0.036	21.599	1134	
50		0.081	51.294	1135	
100		0.155 ~~0.155~~	99.968	1136	
150		0.238	154.629	1137	
200		0.301	196.118	1138	
ICV		0.140	90.089	1202	
ICB		0.000	<10.0	1203	
CCV		0.140	90.089	1204	
CCB		0.000	<10.0	1205	
9810L029-001		0.112	35.825	1206	
9810L030-001		0.134	43.069	1207	
-001	R	0.133	42.748	1208	
-001	S	0.216	70.070	1209	
-002		0.112	35.825	1210	% Solids
9810LC 8-001		-0.001	<0.080 mg/kg	1211	95.23
9810LC e7-003		0.001	<0.633	1212	93.89
-004		-0.001	<0.531	1213	94.24

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Example calculation:
Y = mX where Y = instrument reading
m = slope = 0.00131
b = intercept = 0.00380
X = concentration (mg/L)

final result = mg/L x dilution factor

Standard	ID	Prep Date	Expir Date
ICAL	16036-102-116	10-15-98	10-116-98
ICV/C	936		
LCS			
MS			

Reviewed By/Date: 10/16/98

RFW 21-21L-016/E-06/97

Recra LabNet Philadelphia

CYANIDE ANALYSIS LOG

Logbook #: L0030

Analyst/Date: TMurray 10-15-98

Distillation Date(s): 10-15-98

Method: OP 21-15L-0335.4 Rev. 00
OP 21-15L-0335.2 Rev. 05
OP 21-15N-9010A.1, Rev.

Distillation Logbook #: L0533

Circle one : Leeman AP200 / PE Lamba 3

Correlation Coefficient: 0.998

Run Batch: 98LC1101

Worksheet: C01015

RFW #/Standard	QC R,S,T	Absorbance @ 578 nm	Final Results (Fg/L or mg/kg)	Time HH:MM	Comments
CCV		0.139	89.431 ug/L	1214	
CCB		0.000	<10.0	1215	% Solids
9810L0107-005		-0.002	<0.591 mg/kg	1216	84.140
-006		0.002	<0.527	1217	94.90
-007		-0.002	<0.521	1218	96.02
-008		-0.002	<0.525	1219	95.29
-009		0.000	<0.537	1220	93.40
-010		-0.002	<0.519	1221	96.28
-011		-0.002	<0.538	1222	92.96
-012		0.001	<0.524	1223	95.43
98LC1101-LCS		0.0610	17.385 ug/L	1224	
-MB		0.001	<5.0	1225	
-LCS2		0.291	94.7166	1226	
TM 10-15-98 98let CCV		0.140	90.089	1227	
CCB		-0.001	<10.0	1228	

TMurray 10/15/98

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b; where Y = instrument reading
m = slope = Page 35
b = intercept =
X = concentration (mg/L)

final result = mg/L x dilution factor

Standard:	ID	Prep Date	Expir Date
ICAL			
ICV/CCV			
LCS			
MS			

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Reviewed By/Date: 10/16/98

RFW 21-21L-016/E-06/97

Digestion Log

Recra LabNet Philadelphia

SAMPLE DIGESTION RECORD

Date/Time Initiated: 10/15/98 1330
Date/Time Completed: 10/15/98 15:00
Analyst: [signature]
Spike Witnessed By: N/A

Digestion Batch #: 98L1314
Type of Prep.[a]: ICP
Parameters: Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Mo, Ni, Se, Ag, Zn, U- ADLittle

Matrix (circle): (Soil) H_2O Other ____
Method (circle): (CLP) SW846 Other
OP/Method: 21-15L-3050
Balance #: 320
Balance Calibrated: (circle) Yes NA

Teflon Beakers Used

RFW #	Spike Info.	Initial WT/Vol.	Final Vol.	%Solids	pH<2	Total/ Soluble	Texture	Color/Appearance	Artifacts	Turbidity
98L0067 -001		1.04g	200ml	N/A	N/A	tot.	fine	tan	Rocks	N/A
-001R		1.02								
-001S	2ml ICP ms1-4	1.03								
-002	+ 1ml U-	1.04								
-003		1.10								
-004		1.03								
-005		1.14								
-006		1.16								
-007		1.04								
-008		1.29								
-009		1.07								
-010		1.13								
-011		1.16								
-012		1.19								
98L1314 -MB		1.00					N/A	clear	N/A	
-LC	2ml ICV1-4 + 1ml U-	1.00								

10/15/98

Reagent/Standard & Lot Expiration & Preparation information on Page 001

Reviewed By/Date [signature] 10-15-98

[a] for SW-846 ICP/FLAA batches, specify method 3005 or 3010
[b] include date/time of transfer

IC131401 Updated

LOG BOOK # 6637

Recra LabNet Philadelphia

CONTINUED FROM BOOK # 6587
USED FROM 10/1/98 TO ____

AA/ICP ACID VENDOR	ACID LOT #
Mallinckrodt	2612 KXAE 10/1/94
Baker	~~M 14025~~ M24025

ICP Stock	Std. Lot#	Prep Date	Exp. Date
ICP M.S. 1	MMEB58062	9-13-98	3-99
ICP M.S. 2	NMEB76123		
ICP M.S. 3	MMEB58044		
ICP M.S. 4	8DB079		10-99
ICP ICV 1	8IK006	9-17-98	3-00
ICP ICV 2	8IB002		
ICP ICV 3	001		
ICP ICV 4	003		

AA Stock	Std. Lot#	Prep Date	Exp. Date
AA M.S.	NMEB77097	7-17-98	2-99
AA LCS	805006	10-7-98	3-99

AA/ICP ACID VENDOR	ACID LOT #
Mallinckrodt	
Baker	

ICP Stock	Std. Lot#	Prep Date	Exp. Date	Prep Date	Exp. Date
ICP M.S. 1	MMEB58062	10-12-98	3-1-99	11/2/98	3-1-99
ICP M.S. 2	NMEB76123				
ICP M.S. 3	MMEB58044				
ICP M.S. 4	~~8DB079~~ 8DB079 10/12/98		10-99		10-99
ICP ICV 1	8IK006	10-15-98	3-00		
ICP ICV 2	8IB002				
ICP ICV 3	001				
ICP ICV 4	003				

AA Stock	Std. Lot#	Prep Date	Exp. Date
AA M.S.			
AA LCS			

ICP MS \AA MS\ LCS MS\ Intermediate Prep in Logbook : 4813

966

: Lot # 8FB044
Exp: 01-00

Recra LabNet Philadelphia

MERCURY PREPARATION

Logbook # 6657

Analyst: [signature]
Date 10/21/98
Start Time/Temp: 1630/95°C
End Time/Temp: 1703/95°C
pH < 2 for Liquids? __ Yes N/A No (If no; designate affected samples in Comments column, and initiate an SDR)

Instrument ID HG1.2
Balance #: 329 /NA
Pipette Calibration (Daily) (Y)__

Prep Batch: 98C0524
Worksheet: HG102212
OP No. L-ME-7470A, Rev 00
L-ME-245.1CLP-M, Rev.00

Recra Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	391			10ml	50ml	
0.2 µg/l	414	0.100				
1.0 µg/l	HH	0.500				
2.0 µg/l	45	1.000				
5.0 µg/l	106	2.500				
10.0 µg/l	7F	5.000				
ICV	HG	0.126	2.5			
CCV	91F	0.250	5.0			
ICB/CCB	871					% solids
MB1	92			0.10gm		PBS104 100.00
LC1	JJ	*	*	0.20gm		LCSS104 "
9810L067-001	557			0.10gm		92.61
001R	1590			0.11gm		"
001S	HR	0.500	1.0	0.10gm		"
002	A14			"		89.31
003	011			"		93.89
004	HO			"		94.24
005	AB7			"		84.66
006	944			"		94.90
007	25			"		96.02
008	N7			"		95.29
009	AH2			0.12gm		93.06
010	2011			0.11gm		96.28
011	JK			0.10gm		92.90
012	384			"	"	94.43

Standard:	ID	Prep Date/Time
ICAL/MS	Hach Purity	10/21 0915
ICV/CCV/LCS	Inorg. Ventures	"

Reviewed By/Date: M. Doughty 10/22/98

see book # 4527 for std traceability information

Soil LCS = ERA Metals in soil; True Value =1.16mg/Kg
Catalogue # 540, Lot # 235

Water Matrix Spiking Solution Concentration= 0.1µg/ml
Water LCS Spiking Concentration: 1.0µg/ml

L-WI-18/H-05/98

Recra LabNet Philadelphia

MERCURY PREPARATION

Logbook # 6657

Analyst: [signature]
Date 10/21/98
Start Time/Temp: See pg 004
End Time/Temp: See pg 004

Instrument ID HG1.2
Balance #: B29 /NA
Pipette Calibration (Daily) ✓

Prep Batch: 981C0504
Worksheet: HG102212
OP No. L-ME-7470A, Rev 00
L-ME-245.1CLP-M, Rev.00

pH < 2 for Liquids? __ Yes N/A No (If no; designate affected samples in Comments column, and initiate an SDR)

Recra Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
9810L002-002	LO			0.10gm	50 ml	78.99
002R	186			↓	↓	↓
0025	A46	0.500	1.0			↓
004	88					80.24
006	62C					88.99
008	KK					90.90
010	16			↓	↓	83.06

MW 10/21/98

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page 004	

Reviewed By/Date: M. Dowdell 10/28/98

see book # 4527 for std traceability information

Soil LCS = ERA Metals in soil; True Value =1.16mg/Kg
Catalogue # 540, Lot # 236

Water Matrix Spiking Solution Concentration= 0.1µg/ml
Water LCS Spiking Concentration: 1.0µg/ml

L-WI-19/H-05/98

Recra LabNet Philadelphia

CYANIDE DISTILLATION

Logbook #: 10533

Analyst: T. Murray
Start Date: 10-14-98
Start Time: 0830 End Time: 0930

Analysis Logbook #: 10836
Prep Batch: 98LC1100
Macro / Midi Note:
Midi Distillation = Leeman P1214
Method Number: 21-15L-0335.2, Rev.
21-15N-9010A.1, Rev

RFW #/Standard	QC: R,S,T	Flask #	Initial Vol or Wt (mL or g)	Final Volume (mL)	pH >12 (Y/N)	Res Cl /Sulf (Y/N)	Comments
98101991-008		1	250 mL	250	Y	N	
-009		2	〃	〃	〃	〃	
98101036-001		3	5g/500mL		NA	NA	
-002		4					
-003		6					
-004		7					
-005		8					
-005	R	9					
-005	S	10					2.5 mL 10ppm
-006		11					
-007		12					
-008		13					
98101046-012		14					
98101067-001		15					
-002		16	〃				
98LC1100-LCS		17	500mL				1.0 mL 10ppm
-MB		18					
-LCS2		19	〃				5.0 mL 10ppm
98101004-001		80	5g/500mL	〃	〃	〃	
			TMurray 10/14/98				

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Standard:	ID	Prep Date	Expir Date
LCS	10836-10H-03	10-12-98	10-19-98
MS	〃	〃	〃

Reviewed By/Date: 10/14/98

RFW 21-21L-018/A12/96

Recra LabNet Philadelphia

CYANIDE DISTILLATION

Logbook #: L633

Analyst: TMurray
Start Date: 10-15-98
Start Time: 1000 End Time: 1100

Analysis Logbook #: L0630
Prep Batch: 98LC1101
Macro / Midi Note:
Midi Distillation = Leeman P1214
Method Number: 21-15L-0335.2, Rev.
–
21-15N-9010A.1, Rev

#/Standard	QC: R,S,T	Flask #	Initial Vol or Wt (mL or g)	Final Volume (mL)	pH >12 (Y/N)	Res Cl /Sulf (Y/N)	Comments
98101L029-001		1	500ml	250	Y	n	
98101L030-001		2					8g sulfamic acid to distillation flask
-001	R	3					50mg lead carbonate to abs. tube
-001	S	4					25 mL 10ppm
-002		6					
98101L058-001		7	5g/500ml		NA	NA	
98101L067-003		8					
-004		9					
-005		10					
-006		11					
-007		12					
-008		13					
-009		14					
-010		15					
-011		16					
2		17					
98LC1101		18	500mL				1.0 mL 10ppm
RB		19					
LC2		80					5.0 mL 10ppm

TMurray 10/15/98

"S" = matrix s "T" = matrix spike duplicate, "R" = replicate

Standard:		Prep Date	Expir Date
LCS	L0630-104-03	10-12-98	10-19-98
MS	↓	↓	↓

Reviewed By/Date: Lists 10/16/98 ab

RFW 21-21L-018/A12/96

% SOLID/% MOISTURE ANALYSIS RECORD

RECRA LABNET PHILADELPHIA

Analyst: JMJ/mmy
Start Date/Time/Temp: 10-12-98 1100 106°
End Date/Time/Temp: 10-13-98 0915 106°
Balance ID: B5

Logbook #: 10648
Method: STD
Work Sheet: XSL1012
Prep Batch: 98L705202

Sample ID (RFW # or Std)	Container wt (g)	Initial wt (g) (Sample & Container)	Final wt (g) (Sample & Container)	% Solid	% Moisture
9810L016-025	1.283	11.194	9.542	89.33	
-026	1.286	11.151	2.847	15.82	
9810L016-001	1.286	9.104	8.352	89.69	
-002	1.293	7.538	6.691	86.44	
-003	1.290	7.428	6.874	90.97	
-004	1.286	9.810	9.492	96.27	
-005	1.299	11.779	11.406	96.44	
-006	1.285	8.228	7.748	93.09	
-007	1.296	11.342	9.971	86.35	
-008	1.293	9.937	8.846	87.36	
-009	1.291	8.580	8.069	92.99	
-010	1.300	11.418	10.961	94.89	
-011	1.293	10.361	9.873	94.72	
-012	1.294	10.004	9.410	93.18	
-012R	1.292	11.332	10.641	93.12	
9810L067-001	1.289	10.031	9.385	92.16	
-002	1.293	11.378	10.300	89.31	
-003	1.288	9.162	8.681	93.89	
-004	1.285	11.377	10.796	94.24	
-005	1.292	7.799	6.801	84.16	
-006	1.297	9.611	9.187	94.90	
-007	1.299	11.295	10.897	96.02	
-008	1.295	11.263	10.794	95.29	

wt. = weight

Example Calculations: % solids = $\frac{\text{Pan and dry sample wt. (g) - pan wt. (g)}}{\text{Pan and wet sample wt. (g) - pan wt. (g)}} \times 100$

% Moisture = 100% - % solids result

Reviewed By/Date: 10/16/98

RFW 21-21L-016/H-05/96

Page # 062

% SOLID/% MOISTURE ANALYSIS RECORD

RECRA LABNET PHILADELPHIA

Analyst: JMurray
S[ate]/Time/Temp: 10-12-98 1100 106°
E[xp]te/Time/Temp: 10-13-98 0915 106°
B[a]e ID: B5

Logbook #: 20648
Method: STD
Work Sheet: XSL102
Prep Batch: 981909202

[S]mple ID ([ ]/ # or Std)	Container wt (g)	Initial wt (g) (Sample & Container)	Final wt (g) (Sample & Container)	% Solid	% Moisture
9810[ ]27-009	1.298	9.275	8.721	93.06	
-010	1.294	8.387	8.123	96.28	
-011	1.289	11.149	10.449	92.90	
-012	1.299	10.233	9.825	95.43	

JMurray 10/12/98

wt. = [W]ght
Exam[ple] Calculations: % solids = Pan and dry sample wt. (g) - pan wt. (g) x 100
Pan and wet sample wt. (g) - pan wt. (g)

% Moisture = 100% - % solids result

Reviewed By/Date: [illegible] 10/16/98

RFW 21-21L-016/H-05/96

Page # 003

Recra LabNet Philadelphia

ICP RUN LOG

Date: 10-27-98
Analyst: MR
Instrument ID: ICI

Logbook#: 6478
Peak Profile: 0
Spectral Shift: Units: 031 @ Time: 11:05

Data File	Digest Batch	Client	Batch Number	# of SPLS	Method File	File Trans. to LIMS	Repro-File (Y/N)	Comments
IC1027A	98L1314	A.D. Little	9810L067-	001 ✓ 012	UONLY	IC1027A	Y	
~~IC1027B~~	~~98L1340~~	~~(Kaiser Hill~~	~~9809L769-~~	2,3,4	UONLY	IC1027B	Y	
					→ Data Not Used			
					See	IC1028A		

Standard	ID	Prep Date	Exp Date
ICAL	6499-74	10/27/98	Prepared Daily
ICV/CCV	6499-74		

Reviewed by/Date [signature] 11/3/98

Page # 0052 B

L-WI-020/D-09/97

(page A=L-WI-010/V)

Recra LabNet Philadelphia

ICP RUN LOG

Date: 10-30-98
Analyst: MOE/DAN
Instrument ID: IC3

Logbook#: 6479
Peak Profile: 1004
Spectral Shift: Units: 541 @ Time: 08:

Data File	Digest Batch	Client	Batch Number	# of SPLS	Method File	File Trans. to LIMS	Repro-File (Y/N)	Comment
1030A	98L1314	AD LHK	9810L067-	001-012	TCLP	PS1030A	Y	Ag only
P 030B	98L1314	AD LHK	9810L067-	11,12	TCLP	PS1030B	Y	Ag only

Standard	ID	Prep Date	Exp Date
L	6499-77	10/30/98	Prepared
CCV	6499-77		Daily

Reviewed by/Date 10/30/98

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L-WI-020/D-09/97

(page A=L-WI-010/V)

Recra LabNet Philadelphia

ICP RUN LOG

Date: 10/28/98
Analyst: BMP
Instrument ID: TR1

Logbook#: 6598
Peak Profile: -0.003641
Spectral Shift: Units: 123 @ Time: 8:00

Data File	Digest Batch	Client	Batch Number	# of SPLS	Method File	File Trans. to LIMS	Repro-File (Y/N)	Comments
TA1028A	98L1314	A.D. Little	9810L067	2QC 001,R,S ↓ 012	MIX	TA1028A (TR1.1)	(Y)	
TA1028B	98L1330	RFW Gauldner	9809L901	2QC 007,008 009,R,S,T ↓ 012	MIX	TA1028B (TR1.2)	(Y)	
	98L1321	RFW Gauldner	9809L901	001,R,S,T ↓ 006			⊛	
TA1028C	98L1357	M2E	9810L192	2QC 001,002	MIX1	TA1028C (TR1.3)	(Y)	
				003,R,S ↓ 007				
			9810L127	001 → 004				
			9810L202	001 → 004				
	NONE	AMP BROD-BECKS	9810L486	001,R,S ↓ 008				
					⊛Not run. Wrong auto-sampler table name in method files. It was SDay in method files instead of SW. only 98L1330 batch was run			
			Project 10-28-98				PMP 10-29-98	

Standard	ID	Prep Date	Exp Date
ICAL	6565-09801	10/28/98	Prepared
ICV/CCV	6565-09802		Daily

Reviewed by/Date 11/2/98

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L-WI-020/D-09/97

(page A=L-WI-010/V)

Recra LabNet Philadelphia

LEEMAN PS200 MERCURY ANALYSIS LOG

Date/Analyst 10/22/98 [signature]
Wavelength 253.7 nm
Instrument ID HG1

Logbook # 6632
Prep Logbook # 6657
Stds. Logbook # 4527

Data File	Digestion File	Client	RFW #	# of Samples	Method*	Comments
HG102211	98C0503	A.D. LITTLE	9810L066	1,RS-12	CLP	
HG102212	98C0504	〃	9810L067	1,RS-12	〃	
〃	〃	NYSDEC	9810L072	2,RS,3,4,6,8,10	〃	
HG102213	98C0505	LMITCO	9810L970	13-16,S,T,	SW846	
	〃	〃	〃	17-21,S,T,	〃	
	〃	〃	〃	22	〃	

S...846, CLP, DW, Other

Maintenance	OK	Changed	Other/Comments
Check tubing for wear (daily)	✓		
Insert clean magnesium perchlorate drying tube		✓	
Check level of 10% HCl in rinse tank		✓	
Check level of 10% stannous chloride in bottle		✓	

Reviewed by/Date: [signature] 11/3/98

L-WI-20/J-10/97

Page# 0015

Recra LabNet Philadelphia

Logbook #: 6499

Daily ICP Standard Solution Preparation Log

Note: The Daily Standards prepared in this logbook expire every 24 hours.

Acid Lot# Nitric (HNO_3): M14025 Hydrochloric (HCl): 2612 KVXL

	Standard Name or Receipt ID	Prep Date	Initial Volume (include units)	Final Volume	Matrix (Reagent used)	Analyst	Parent Expiration Date
6499-74 01 STD1	6072-12-12 07-15 014-9	10/27/98	1 mL 1 mL 1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl	MWL	8-99 1-99 9-99
STD2	011-6		1 mL 1 mL 1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		6-99
6499-74 02 CCV	6072-16-1 15-5 15-9 15-13		2 mL 2 mL 2 mL	200 mL	5.0 mL conc. HNO_3 10.0 mL conc. HCl		9-00
ISA	6072-16-5	10/27/98	10 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		1-00
ISB	6072-16-5 09-3 12-7 12-8		10 mL 1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		1-00 3-99 8-99
CRI	consists of 4 mL of the CCV solution 6072-16-13		4 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		

Comments: Multi-point calibration consists of 1 mL, 0.5 mL, and 0.25 mL of STD1 and STD2.

Recra LabNet Philadelphia

Logbook #: 6499

Daily ICP Standard Solution Preparation Log

Note: The Daily Standards prepared in this logbook expire every 24 hours.

Acid Lot# Nitric (HNO3): 111025 Hydrochloric (HCl): 2612 KVRG

	Standard Name or Receipt ID	Prep Date	Initial Volume (include units)	Final Volume	Matrix (Reagent used)	Analyst	Parent Expiration Date
6499-77-01 STD1	6072-12-12 -07-15 -014-09 -011-06	10/30/95	1 mL 1 mL 1 mL 1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl	MDL	8-99 1-99 9-99
STD2			1 mL 1 mL 1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		6-99
6499-77-02 CCV	6072-16-1 -15-5 -15-9 -15-13		2 mL 2 mL 2 mL	200 mL	5.0 mL conc. HNO_3 10.0 mL conc. HCl		3-00
ISA	6072-16-5		10 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		1-00
ISB	6072-16-5 -09-3 -12-7 -12-8		10 mL 1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		1-00 3-99 8-99
CRI	consists of 4 mL of the CCV solution 6072-16-13		4 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		

Comments: Multi-point calibration consists of 1 mL, 0.5 mL, and 0.25 mL of STD1 and STD2.

I-WI-0008 I-11-97

Reviewed by/Date: 10/30/95 10-30-95

Page#: 0077

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Recra LabNet Philadelphia

Logbook #: 6565

Daily Trace ICP Standard Solution Preparation Log

Note: The Daily Standards prepared in this logbook expire every 24 hours.

Acid Lot# Nitric (HNO_3): M14025 Hydrochloric (HCl): 2612 KXDN

	Standard Name or Receipt ID	Prep Date	Initial Volume (include units)	Final Volume (include units)	Matrix (Reagent used)	Analyst	Parent Expiration Date
6565-098-01 STD1	6072-004-11	10/28/98	1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl	Pmp	11/1/98
	-13		1 mL				
	-16		1 mL				
STD2	6072-004-12		1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		
	-14		1 mL				
	-15		1 mL				
STD3	6072-006-04						01/01/99
6565-098-02 CCV	6072-014-09		2 mL	200 mL	5.0 mL conc. HNO_3 10.0 mL conc. HCl		10/99
	-14		2 mL				11/99
	-021-08		2 mL				
ISA	6072-016-05		10 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		9/2000
ISB	6072-016-05		10 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		9/2000
	6072-009-03		1 mL				3/99
	6072-012-07		1 ml				8/99
	-08		1 ml				
CRI	consists of 4 mL of the CCV solution		4 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		10/99
							11/99
Internal Std	Yttrium —		—	1000 ml			—
	Cesium 6072-018-08		50 ml				5/2000

Comments: Multi-point calibration consists of 1 mL, 0.5 mL, and 0.25 mL of STD1 and STD2.

Reviewed by/Date: 10/31/98

End of Data Package

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L066

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
WGSB1-7						
SILVER, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
SILVER, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
SILVER, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
COPPER, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
COPPER, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
COPPER, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
MERCURY, TOTAL	001	S	98C0503	09/23/98	10/21/98	10/22/98
MERCURY, TOTAL	001 REP	S	98C0503	09/23/98	10/21/98	10/22/98
MERCURY, TOTAL	001 MS	S	98C0503	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
MANGANESE, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # : 0L066

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
MOLYBDENUM, TOTAL	001	S	98L1312	09/23/98	10/15/9	10/27/98
MOLYBDENUM, TOTAL	001 REP	S	98L1312	09/23/98	10/15/	10/27/98
MOLYBDENUM, TOTAL	001 MS	S	98L1312	09/23/98	10/15/	10/27/98
NICKEL, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
NICKEL, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
NICKEL, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/23/98
URANIUM, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/23/98
URANIUM, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/23/98
ZINC, TOTAL	001	S	98L1312	09/23/98	10/15/98	10/27/98
ZINC, TOTAL	001 REP	S	98L1312	09/23/98	10/15/98	10/27/98
ZINC, TOTAL	001 MS	S	98L1312	09/23/98	10/15/98	10/27/98
WGSB1-12						
SILVER, TOTAL	002	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL	002	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	002	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	002	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL	002	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	002	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	002	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL	002	S	98L1312	09/23/98	10/15/98	0/27/98
COPPER, TOTAL	002	S	98L1312	09/23/98	10/15/98	/27/98
IRON, TOTAL	002	S	98L1312	09/23/98	10/15/98	27/98
MERCURY, TOTAL	002	S	98C0503	09/23/98	10/21/98	2/98
MANGANESE, TOTAL	002	S	98L1312	09/23/98	10/15/98	7/98
MOLYBDENUM, TOTAL	002	S	98L1312	09/23/98	10/15/98	1 7/98
NICKEL, TOTAL	002	S	98L1312	09/23/98	10/15/98	10 /98
LEAD, TOTAL	002	S	98L1312	09/23/98	10/15/98	10/ '98
SELENIUM, TOTAL	002	S	98L1312	09/23/98	10/15/98	10/. '98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L066

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
URANIUM, TOTAL	002	S	98L1312	09/23/98	10/15/98	10/23/98
ZINC, TOTAL	002	S	98L1312	09/23/98	10/15/98	10/27/98
WGSB1-20						
SILVER, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
COPPER, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
MERCURY, TOTAL	003	S	98C0503	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
MOLYBDENUM, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
NICKEL, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/23/98
ZINC, TOTAL	003	S	98L1312	09/23/98	10/15/98	10/27/98
WGSB1-30						
SILVER, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
COPPER, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
MERCURY, TOTAL	004	S	98C0503	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L066

CLIENT ID ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MOLYBDENUM, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
NICKEL, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/23/98
ZINC, TOTAL	004	S	98L1312	09/23/98	10/15/98	10/27/98
WGSB1-40						
SILVER, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
COPPER, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
MERCURY, TOTAL	005	S	98C0503	09/23/98	10/21/98	10/22/98
ANGANESE, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
LYBDENUM, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
ICKEL, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/23/98
ZINC, TOTAL	005	S	98L1312	09/23/98	10/15/98	10/27/98
WGSB2-7						
SILVER, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L066

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
MERCURY, TOTAL	006	S	98C0503	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
MOLYBDENUM, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
NICKEL, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/23/98
ZINC, TOTAL	006	S	98L1312	09/23/98	10/15/98	10/27/98
WGSB2-10						
SILVER, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
COPPER, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
MERCURY, TOTAL	007	S	98C0503	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
MOLYBDENUM, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
NICKEL, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/23/98
ZINC, TOTAL	007	S	98L1312	09/23/98	10/15/98	10/27/98
WGSB2-20						
SILVER, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED:)/09/98 RFW LOT # :98..L066

CLIENT ID /ANAL	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	008	S	98L1312	09/23/98	10/15/9[illegible]	10/27/98
CHROMIUM, TOTAL	008	S	98L1312	09/23/98	10/15/9[illegible]	10/27/98
COPPER, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
MERCURY, TOTAL	008	S	98C0503	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
MOLYBDENUM, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
NICKEL, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/23/98
ZINC, TOTAL	008	S	98L1312	09/23/98	10/15/98	10/27/98
WGSB2-30						
SILVER, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
COPPER, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
MERCURY, TOTAL	009	S	98C0503	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
MOLYBDENUM, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
NICKEL, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/23/98
ZINC, TOTAL	009	S	98L1312	09/23/98	10/15/98	10/27/98
WGSB2-42						
SILVER, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L066

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ALUMINUM, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
COPPER, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
MERCURY, TOTAL	010	S	98C0503	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
MOLYBDENUM, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
NICKEL, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/23/98
ZINC, TOTAL	010	S	98L1312	09/23/98	10/15/98	10/27/98
GSB3-7						
SILVER, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
COPPER, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
MERCURY, TOTAL	011	S	98C0503	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
MOLYBDENUM, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
NICKEL, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/23/98
ZINC, TOTAL	011	S	98L1312	09/23/98	10/15/98	10/27/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEI D: 10/09/98 RFW LOT # :9810L066

CLIENT ID	LYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
WGSB3-10							
SILVER, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
ALUMINUM, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
ARSENIC, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
BORON, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
BARIUM, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
CADMIUM, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
COBALT, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
CHROMIUM, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
COPPER, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
IRON, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
MERCURY, TOTAL		012	S	98C0503	09/23/98	10/21/98	10/22/98
MANGANESE, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
MOLYBDENUM, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
NICKEL, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
LEAD, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
SELENIUM, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
URANIUM, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/23/98
ZINC, TOTAL		012	S	98L1312	09/23/98	10/15/98	10/27/98
LAB QC:							
SILVER LABORATO		LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
SILVER, TOTAL		MB1	S	98L1312	N/A	10/15/98	10/27/98
ALUMINUM LABO		LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
ALUMINUM, TO		MB1	S	98L1312	N/A	10/15/98	10/27/98
ARSENIC LABO Y		LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
ARSENIC, TOT		MB1	S	98L1312	N/A	10/15/98	10/27/98
BORON LABOR		LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
BORON, TOTA		MB1	S	98L1312	N/A	10/15/98	10/27/98
BARIUM LABO ORY		LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
BARIUM, TO		MB1	S	98L1312	N/A	10/15/98	10/27/98
CADMIUM LA ATORY		LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
CADMIUM,		MB1	S	98L1312	N/A	10/15/98	10/27/98
COBALT LA ATORY		LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
COBALT, T		MB1	S	98L1312	N/A	10/15/98	10/27/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L066

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM LABORATORY	LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
CHROMIUM, TOTAL	MB1	S	98L1312	N/A	10/15/98	10/27/98
COPPER LABORATORY	LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
COPPER, TOTAL	MB1	S	98L1312	N/A	10/15/98	10/27/98
IRON LABORATORY	LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
IRON, TOTAL	MB1	S	98L1312	N/A	10/15/98	10/27/98
MERCURY LABORATORY	LC1 BS	S	98C0503	N/A	10/21/98	10/22/98
MERCURY, TOTAL	MB1	S	98C0503	N/A	10/21/98	10/22/98
MANGANESE LABORATORY	LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
MANGANESE, TOTAL	MB1	S	98L1312	N/A	10/15/98	10/27/98
MOLYBDENUM LABORATOR	LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
MOLYBDENUM, TOTAL	MB1	S	98L1312	N/A	10/15/98	10/27/98
NICKEL LABORATORY	LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
NICKEL, TOTAL	MB1	S	98L1312	N/A	10/15/98	10/27/98
LEAD LABORATORY	LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
LEAD, TOTAL	MB1	S	98L1312	N/A	10/15/98	10/27/98
SELENIUM LABORATORY	LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
SELENIUM, TOTAL	MB1	S	98L1312	N/A	10/15/98	10/27/98
URANIUM LABORATORY	LC1 BS	S	98L1312	N/A	10/15/98	10/23/98
URANIUM, TOTAL	MB1	S	98L1312	N/A	10/15/98	10/23/98
ZINC LABORATORY	LC1 BS	S	98L1312	N/A	10/15/98	10/27/98
ZINC, TOTAL	MB1	S	98L1312	N/A	10/15/98	10/27/98

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Chain of Custody

RECRA LabNet Use Only

98101 066

Custody Transfer Record/Lab Work Request Page of

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client A.D. LITTLE

Est. Final Proj. Sampling Date

Project # 00038-022-001-0001-00

Project Contact/Phone #

RECRA Project Manager DT

QC CLP Del CLP TAT 21 DAYS

Date Rec'd 10/9/98 Date Due 10/30/98

Account # DIANEPM

Refrigerator #

#/Type Container	Liquid																			
	Solid																			
Volume	Liquid																			
	Solid																			
Preservatives																				

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN, Cl, SO4, NO3-N, F, TOC; TPH; PH

RECRA LabNet Use Only

MATRIX CODES	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Metals (1)	ICNTD	IPHC	IPH	ICCL ICSO4	ICFL ICNO3	ISOB
S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish	001	WGSB1-7			S	9-23-98	0840	✓	✓	✓	✓	✓	✓	✓
	002	12					0910	↓	↓	↓	↓	↓	↓	↓
	003	20					0930							
	004	30					1020							
	005	40					1100							
	006	WGSB2-7					1245							
	007	10					1300							
	008	20					1330							
	009	30					1400							
	010	42					1445							

Special Instructions:

DATE/REVISIONS:

1. Metals (1) = Al, As, Ba, B, Cd,
2. Cr, Co, Cu, Fe, Pb, MN, Mo,
3. Ni, Se, Ag, ZN, Hg, U
4. CLC'd 125ml EA
5. See attached methods + DL
6.

012

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	10-9-98	1000

Relinquished by	Received by	Date	Time

RECRA LabNet Use Only

Samples were: 1) [illegible] or Hand Deli.

Airbill # See Below

2) Ambient or Chilled

3) Received in Good Condition (Y) or N

4) Labels Indicate Properly Preserved (Y) or N

5) Received Within Holding Times (Y) or N

COC Tape was: 1) Present on Outer Package (Y) or N

2) Unbroken on Outer Package (Y) or N

3) Present on Sample Y or (N)

4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't (Y) or N

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES: 807460269538

3

RECRA Lab Use Only

9810L066

Custody Transfer Record/Lab Work Request Page of

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: AD LITTLE

Est. Final Proj. Sampling Date:

Project #:

Project Contact/Phone #:

RECRA Project Manager:

QC: Del: TAT: 5d

Date Rec'd: Date Due:

Account #:

Refrigerator #

#/Type Container: Liquid / Solid

Volume: Liquid / Solid

Preservatives

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN

RECRA LabNet Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Metals Q	IGNTO	IPHC	IPH	ICCL ICSOH	ICFL ICN3	ISUB
011	WGSB3-7			S	9-23-98	1510	✓	✓	✓	✓	✓	✓	✓
012	1 1 10			L	A	1515	✓	✓	✓	✓	✓	✓	✓

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

013

Relinquished by	Received by	Date	Time
Ted Ec	V Hennig	10-9-98	1000

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RECRA LabNet Use Only

Samples were:
1) Shipped or Hand Delivered
Airbill #
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rect Y or N
Cooler Temp °C

Sample Custody Transfer Record

RFW BATCH #: 9810L066

CLIENT: ADL Little

Page ___ of ___

LF = Locked Refrigerator

SAMPLE SIGN-OUT:						SAMPLE RETURN:					
Item/Reason (e.g., "all VOA water," "001-004, Extraction")	Total # /Matrix (e.g., 4 W)	Relinquished By	Received By	Date	Time	Total # /Matrix (e.g., 4 W)	Relinquished By	Received By	Date	Time	Comments (e.g., "volume depleted," "kept #002")
001-011 Cn: WaSol	11S	LF	Tm	10-12-98	0810	11S	Tm	LF	10 12 98	1200	
012 WaSol	1S	LF	Tm	10-12-98	0930	1S	1	1	1	1	
012 Cn:	1S	LF	Tm	10-13-98	1430	1S	Tm	LF	10 13 98	1505	
Met. 1-12	12S	LF	IB	10-14-98	1405		IB	LF	11-5-98	300	
PHC	12S	LF	ADD	10/17/98	1200	12S	ADD	LF	10/21/98	13:30	
008, 9, 11, 12 Ic	4S	LF	MC	11/2/98	1000						1->7+10 M.S.'s

Case Narrative

Recra LabNet Philadelphia
Analytical Report

Client D. LITTLE-NEW MEXICO
RFW# 810L066

W.O.# : 60038-022-001-0001-00
Date Received: 10-09-98

CLP/ILM 0 METALS

1. Th rative covers the analyses of 12 soil samples.

2. The samples were prepared and analyzed in accordance with CLP/ILM04.0 protocol.

3. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures and High Purity.

4. All analyses were performed within the required holding times.

5. The cooler temperature has been recorded on the Chain of Custody.

6. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within control limits.

7. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits.

8. All preparation/method blanks were below reporting limits. Refer to form 3.

9. All ICP Interference Check Samples (ICSA and ICSAB) were within control limits.

10. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to form 7

11. All se lilution percent differences were within CLP control limits. Refer to form 9.

12. All rix spike (MS) recoveries were within the 75-125% control limits (exception allo when sample concentration exceeds the spike added concentration by a factor of 4 or e). MS analyses are not required for Calcium, Magnesium, Sodium and Potass m in w and soils. Also, not required for Aluminum and Iron in soils. Refer to form 5A.

13. A uplicate analyses were within the method criteria. Refer to form 6.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 240 pages.

14. All sample IDs were changed to accommodate the EPA naming convention which allows a maximum of 6 characters on all CLP Forms. Refer to the comment section on the form 1.

15. Recoveries on the Laboratory Summary Report and CLP forms will vary depending on the number of significant figures used in the recovery calculation.

Pat E.

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

11-10-98
Date

alm\m10-066

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra L[illegible]: 9801066

Leachin[illegible]ocedure: __1310 __1311 __1312 __Other:_____

CLP Me[illegible] /__Digestion and /__Analysis Methods: __ILM03.0 /__ILM04.0

Metals Di[illegible]tion Methods: __3005A __3010A __3015 __3020A __3050A __3051 __200. __SS17 __Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	__6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	__6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	__6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	__6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	__6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	__6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	__7470A [3]	__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	[illegible]010B		__200.7				__99
Potassium	[illegible]010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	[illegible]010B [1]		__200.7 [1]			__1620	__99
Selenium	6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	__6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ **Method:_____**

018

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

B = Indicates that the parameter was between the Instrument Detection Limit (IDL) and the Contract Required Detection Limit (CRDL)

Q QUALIFIERS

E = The reported value is estimated because of the presence of interference.

M = Duplicate injection precision not met.

N = Spiked sample recovery not within control limits.

S = The reported value was determined by the Method of Standard Additions (MSA).

W = Post Digestion spike for Furnace AA analysis is out of control limits (85 -115 %), while sample absorbance is less than 50% of spike absorbance.

* = Duplicate analysis not within control limits.

+ = Correlation coefficient for the MSA is less than 0.995.

ABBREVIATIONS

PB = Method or Preparation Blank.
S = Matrix Spike.
T = Matrix Spike Duplicate.
R or D = Sample Replicate

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).
4. Flame AA
5. Graphite Furnace AA

WET CHEMISTRY
METHODS GLOSSARY FOR ANALYSIS OF SOIL/SOLID SAMPLES

	ASTM	SW846	OTHER
%Ash	__ D2216-80		
%Moisture	__ D2216-80		__ ILMO4.0 (e)
%Solids			__ ILMO4.0 (e)
%Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Corrosivity __by coupon __by pH		__ 1110 (mod)__ 9045	
Cyanide, Total		__ 9010	__ ILMO4.0 (e)
Cyanide, Reactive		__ Sec 7.3	
Density			__ b
Halides, Extractable Organic			__ EPA 600/4/84-008 (mod)
Halides, Total			__ EPA 600/4/84-008 (mod)
EP-Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Carbon, Total Organic (by LOI)			__ c
Oil and Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87 (mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071	__ EPA 418.1 (mod)
pH, Soil		__ 9045B	
Sulfide, Reactive		__ Sec 7.3	
Specific Gravity	__ D1429-76C		
Sulfur, Total		__ 9056	
TCLP		__ 1311	
TCLV		__ 1311	
Synthetic Precipitation Leach		__ 1312	
Chlorine, T		__ 9056	
Paint Filte		__ 9095	

Other: _____ _____ Method: _____

RECRA

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed., (1989).

b. Standard Methods for the Examination of Water and Waste, 17 ed., (1983)

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd. Ed. (1986)

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965)

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Inorganic Analysis Data Package

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.:GSB112

OW No.: ILM04.0

EPA Sample No.	Lab Sample ID
_GSB112_____	_9810L066-002___
_GSB120_____	_9810L066-003___
_GSB130_____	_9810L066-004___
_GSB140_____	_9810L066-005___
_GSB210_____	_9810L066-007___
_GSB220_____	_9810L066-008___
_GSB230_____	_9810L066-009___
_GSB242_____	_9810L066-010___
_GSB310_____	_9810L066-012___
_WGSB17_____	_9810L066-001___
_WGSB17D_____	_9810L066-001D__
_WGSB17S_____	_9810L066-001S__
_WGSB27_____	_9810L066-006___
_WGSB37_____	_9810L066-011___
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

ICP interelement corrections applied ? Yes/No YES

re ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO_

mments:

_____

_____

_____

_____

certify that this data package is in compliance with the terms and nditions of the contract, both technically and for completeness, for ther than the conditions detailed above. Release of the data contained this hardcopy data package and in the computer-readable data submitted floppy diskette has been authorized by the Laboratory Manager or the nager's designee, as verified by the following signature.

gnature: Pat E. Feldman Name: PATRICIA E Feldman

te: 11-9/10-98 Title: Data Mgt Supervisor

11/10/98

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB112

ab Name: RECRA_LABNET Contract: 60038-22

ab Code: RECRA Case No.: SAS No.: SDG No.: GSB112

atrix (soil/water): SOIL Lab Sample ID: 9810[illegible]66-002

evel (low/med): LOW Date Received: 10/09/98

Solids: 86.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2920			P
7440-38-2	Arsenic	5.5			P
7440-39-3	Barium	455			P
7440-43-9	Cadmium	0.09	B		P
7440-47-3	Chromium	2.5			P
7440-48-4	Cobalt	1.6	B		P
7440-50-8	Copper	3.4	B		P
7439-89-6	Iron	1700			P
7439-92-1	Lead	1.3			P
7439-96-5	Manganese	42.9			P
7439-97-6	Mercury	0.06	U		AV
7440-02-0	Nickel	5.1	B		P
7782-49-2	Selenium	0.78	U		P
7440-22-4	Silver	0.11	U		P
7440-66-6	Zinc	4.9			P
7439-98-7	Molybdenu	0.38	B		P
7440-42-8	Boron	9.7	B		P
7440-61-1	Uranium	13.1	U		P
5955-70-0	Cyanide	0.29	U		C

lor Before: Clarity Before: Texture:

lor After: Clarity After: Artifacts:

mments:
WGSB1-12
TAN, COARSE

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB120

ıb Name: RECRA_LABNET_____ Contract: 60038-22__

ıb Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

.trix (soil/water): SOIL_ Lab Sample ID: 9810L066-003

:vel (low/med): LOW__ Date Received: 10/09/98

Solids: _91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	1420	_	_____	P_
7440-38-2	Arsenic__	3.7	_	_____	P_
7440-39-3	Barium___	219	_	_____	P_
7440-43-9	Cadmium__	0.07	U	_____	P_
7440-47-3	Chromium_	1.8	_	_____	P_
7440-48-4	Cobalt___	1.0	B	_____	P_
7440-50-8	Copper___	2.9	B	_____	P_
7439-89-6	Iron_____	1090	_	_____	P_
7439-92-1	Lead_____	0.99	_	_____	P_
7439-96-5	Manganese	17.9	_	_____	P_
7439-97-6	Mercury__	0.05	U	_____	AV
7440-02-0	Nickel___	2.0	B	_____	P_
7782-49-2	Selenium_	0.65	U	_____	P_
7440-22-4	Silver___	0.09	U	_____	P_
7440-66-6	Zinc_____	3.6	_	_____	P_
7439-98-7	Molybdenu	0.35	B	_____	P_
7440-42-8	Boron____	4.0	B	_____	P_
7440-61-1	Uranium__	10.9	U	_____	P_
5955-70-0	Cyanide__	0.27	U	_____	C_
_____	_____	_____	_	_____	__
_____	_____	_____	_	_____	__
_____	_____	_____	_	_____	__
_____	_____	_____	_	_____	__
_____	_____	_____	_	_____	__
_____	_____	_____	_	_____	__

lor Before: _____ Clarity Before: _____ Texture: _____

lor After: _____ Clarity After: _____ Artifacts: _____

mments:
WGSB1-20_____
TAN,_COARSE_____
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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB 30

ab Name: CR LABNET Contract: 60038-22

ab Code: CR Case No.: SAS No.: SDG No GSB112

atrix (so w r): SOIL Lab Sample ID: 10 66-004

evel (low/ d) LOW Date Received: 0/09/98

Solids: 96.3

Conce cation Units (ug/L or mg/kg dry weight): MG/ G

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	683			P
7440-38-2	Arsenic	1.3	B		P
7440-39-3	Barium	24.0	B		P
7440-43-9	Cadmium	0.07	U		P
7440-47-3	Chromium	1.3	B		P
7440-48-4	Cobalt	0.49	B		P
7440-50-8	Copper	0.88	B		P
7439-89-6	Iron	796			P
7439-92-1	Lead	1.4			P
7439-96-5	Manganese	10.5			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.87	B		P
7782-49-2	Selenium	0.67	U		P
7440-22-4	Silver	0.09	U		P
7440-66-6	Zinc	2.1	B		P
7439-98-7	Molybdenu	0.26	B		P
7440-42-8	Boron	1.3	B		P
7440-61-1	Uranium	11.3	U		P
5955-70-0	Cyanide	0.26	U		C

olor Before: Clarity Before: Texture:

olor After: Clarity After: rtifacts:

omments:
WGSB1-30
TAN, COARSE

FORM I - IN ILM04.0

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB140

ab Name: RECRA_LABNET Contract: 60038-22

ab Code: RECRA Case No.: SAS No.: SDG No.: GSB112

atrix (soil/water): SOIL Lab Sample ID: 9810L066-005

evel (low/med): LOW Date Received: 10/09/98

Solids: 96.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	718			P
7440-38-2	Arsenic	0.98	B		P
7440-39-3	Barium	9.6	B		P
7440-43-9	Cadmium	0.08	U		P
7440-47-3	Chromium	1.7	B		P
7440-48-4	Cobalt	0.63	B		P
7440-50-8	Copper	0.97	B		P
7439-89-6	Iron	998			P
7439-92-1	Lead	1.5			P
7439-96-5	Manganese	16.3			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.96	B		P
7782-49-2	Selenium	0.70	U		P
7440-22-4	Silver	0.10	U		P
7440-66-6	Zinc	2.9	B		P
7439-98-7	Molybdenu	0.26	B		P
7440-42-8	Boron	1.2	B		P
7440-61-1	Uranium	11.8	U		P
5955-70-0	Cyanide	0.26	U		C

lor Before: Clarity Before: Texture:

lor After: Clarity After: Artifacts:

mments:
WGSB1-40
TAN, COARSE

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB210

ab Name: REC LABNET Contract: 60038-22

ab Code: ECF Case No.: SAS No.: SDG No.: GSB112

atrix (s /w er): SOIL Lab Sample ID: 9810 66-007

evel (low, ed, LOW Date Received: 10/0 /98

Solids: 86.4

Conc ration Units (ug/L or mg/kg dry weight): MG/KG

C	Analyte	Concentration	C	Q	M
74 -5	Aluminum	2240			P
744 -2	Arsenic	5.5			P
744 -3	Barium	474			P
744 -9	Cadmium	0.10	B		P
7440 -3	Chromium	1.8	B		P
7440-48-4	Cobalt	1.5	B		P
7440-50-8	Copper	3.1	B		P
7439-89-6	Iron	1500			P
7439-92-1	Lead	1.0			P
7439-96-5	Manganese	35.8			P
7439-97-6	Mercury	0.06	U		AV
7440-02-0	Nickel	4.1	B		P
7782-49-2	Selenium	0.85	B		P
7440-22-4	Silver	0.11	U		P
7440-66-6	Zinc	4.4	B		P
7439-98-7	Molybdenu	0.57	B		P
7440-42-8	Boron	5.9	B		P
7440-61-1	Uranium	13.9	U		P
5955-70-0	Cyanide	0.29	U		C

lor Before: Clarity Before: Texture:

lor After: Clarity After: Artifacts:

mments:
WGSB2-10
TAN, COARSE

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB220

ab Name: RECRA_LABNET Contract: 60038-22

ab Code: RECRA Case No.: SAS No.: SDG No.: GSB112

atrix (soil/water): SOIL Lab Sample ID: 9810L066-008

evel (low/med): LOW Date Received: 10/09/98

Solids: 87.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1250			P
7440-38-2	Arsenic	3.0			P
7440-39-3	Barium	196			P
7440-43-9	Cadmium	0.07	U		P
7440-47-3	Chromium	1.3	B		P
7440-48-4	Cobalt	0.71	B		P
7440-50-8	Copper	2.6	B		P
7439-89-6	Iron	1010			P
7439-92-1	Lead	0.91			P
7439-96-5	Manganese	15.2			P
7439-97-6	Mercury	0.06	U		AV
7440-02-0	Nickel	1.3	B		P
7782-49-2	Selenium	0.64	U		P
7440-22-4	Silver	0.09	U		P
7440-66-6	Zinc	3.5	B		P
7439-98-7	Molybdenu	0.16	U		P
7440-42-8	Boron	2.8	B		P
7440-61-1	Uranium	10.8	U		P
5955-70-0	Cyanide	0.29	U		C

lor Before: Clarity Before: Texture:

lor After: Clarity After: Artifacts:

mments:
WGSB2-20
TAN, COARSE

FORM I - IN ILM04.0

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB230

Lab Name: RECRA_LABNET Contract: 60038-22

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GB112

Matrix (soil/water): SOIL_ Lab Sample ID: 981066-009

Level (low/med): LOW_ Date Received: 10/ /98

% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1700			P
7440-38-2	Arsenic	1.4	B		P
7440-39-3	Barium	8.9	B		P
7440-43-9	Cadmium	0.07	U		P
7440-47-3	Chromium	2.2			P
7440-48-4	Cobalt	0.71	B		P
7440-50-8	Copper	1.1	B		P
7439-89-6	Iron	1720			P
7439-92-1	Lead	1.4			P
7439-96-5	Manganese	15.4			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	1.6	B		P
7782-49-2	Selenium	0.65	U		P
7440-22-4	Silver	0.09	U		P
7440-66-6	Zinc	3.5	B		P
7439-98-7	Molybdenu	0.37	B		P
7440-42-8	Boron	2.0	B		P
7440-61-1	Uranium	10.9	U		P
5955-70-0	Cyanide	0.27	U		C

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

WGSB2-30

TAN, COARSE

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB242

ab Name: RECRA_LABNET Contract: 60038-22

ab Code: RECRA Case No.: SAS No.: SDG No.: GSB112

atrix (soil/water): SOIL Lab Sample ID: 9810L066-010

evel (low/med): LOW Date Received: 10/09/98

Solids: 94.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1190			P
7440-38-2	Arsenic	0.73	B		P
7440-39-3	Barium	8.1	B		P
7440-43-9	Cadmium	0.08	U		P
7440-47-3	Chromium	2.5			P
7440-48-4	Cobalt	0.76	B		P
7440-50-8	Copper	0.98	B		P
7439-89-6	Iron	1690			P
7439-92-1	Lead	1.1			P
7439-96-5	Manganese	18.1			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	1.3	B		P
7782-49-2	Selenium	0.68	U		P
7440-22-4	Silver	0.09	U		P
7440-66-6	Zinc	3.5	B		P
7439-98-7	Molybdenu	0.37	B		P
7440-42-8	Boron	1.4	B		P
7440-61-1	Uranium	11.4	U		P
5955-70-0	Cyanide	0.26	U		C

lor Before: Clarity Before: Texture:

lor After: Clarity After: Artifacts:

mments:
WGSB2-42
TAN, COARSE

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

GSB310

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: SB112

atrix (soil/water): SOIL_ Lab Sample ID: 98 .066-012

evel (low/med): LOW__ Date Received: 1C 3/98

Solids: _93.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	5170	_		P_
7440-38-2	Arsenic__	4.9	_		P_
7440-39-3	Barium___	348			P_
7440-43-9	Cadmium__	0.08	B		P_
7440-47-3	Chromium_	4.2			P_
7440-48-4	Cobalt___	2.0	B		P_
7440-50-8	Copper___	2.7	B		P_
7439-89-6	Iron_____	3370			P_
7439-92-1	Lead_____	2.3	_		P_
7439-96-5	Manganese	41.1			P_
7439-97-6	Mercury__	0.05	U		AV
7440-02-0	Nickel___	6.4	B		P_
7782-49-2	Selenium_	0.71	U		P_
7440-22-4	Silver___	0.10	U		P_
7440-66-6	Zinc_____	8.9			P_
7439-98-7	Molybdenu	0.71	B		P_
7440-42-8	Boron____	12.9	B		P_
7440-61-1	Uranium__	11.9	U		P_
5955-70-0	Cyanide__	0.27	U		C_

olor Before: _____ Clarity Before: _____ Texture: _____

olor After: _____ Clarity After: _____ Artifacts: _____

omments:

WGSB3-10_____

TAN,_COARSE_____

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

WGSB17

ab Name: RECRA_LABNET Contract: 60038-22

ab Code: RECRA Case No.: SAS No.: SDG No.: GSB112

atrix (soil/water): SOIL Lab Sample ID: 9810L066-001

evel (low/med): LOW Date Received: 10/09/98

Solids: 89.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2400			P
7440-38-2	Arsenic	6.8			P
7440-39-3	Barium	707			P
7440-43-9	Cadmium	0.09	U		P
7440-47-3	Chromium	1.5	B		P
7440-48-4	Cobalt	1.3	B		P
7440-50-8	Copper	2.7	B		P
7439-89-6	Iron	1420			P
7439-92-1	Lead	1.1			P
7439-96-5	Manganese	17.3			P
7439-97-6	Mercury	0.06	U		AV
7440-02-0	Nickel	5.0	B		P
7782-49-2	Selenium	0.80	U		P
7440-22-4	Silver	0.11	U		P
7440-66-6	Zinc	5.2			P
7439-98-7	Molybdenu	0.37	B		P
7440-42-8	Boron	13.5	B		P
7440-61-1	Uranium	13.5	U		P
5955-70-0	Cyanide	0.28	U		C

olor Before: Clarity Before: Texture:

olor After: Clarity After: Artifacts:

omments:

WGSB1-7

TAN, COARSE

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

WGSB27

ab Name: RECRA_LABNET Contract: 60038-22

ab Code: RECRA Case No.: SAS No.: SDG No.: GSB112

atrix (soil/water): SOIL Lab Sample ID: 9810L066-006

evel (low/med): LOW Date Received: 10/09/98

Solids: 93.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2170			P
7440-38-2	Arsenic	5.2			P
7440-39-3	Barium	310			P
7440-43-9	Cadmium	0.09	B		P
7440-47-3	Chromium	1.6	B		P
7440-48-4	Cobalt	1.6	B		P
7440-50-8	Copper	2.7	B		P
7439-89-6	Iron	1390			P
7439-92-1	Lead	1.6			P
7439-96-5	Manganese	20.4			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	4.1	B		P
7782-49-2	Selenium	0.72	U		P
7440-22-4	Silver	0.10	U		P
7440-66-6	Zinc	4.6			P
7439-98-7	Molybdenu	0.32	B		P
7440-42-8	Boron	4.6	B		P
7440-61-1	Uranium	12.1	U		P
5955-70-0	Cyanide	0.27	U		C

lor Before: Clarity Before: Texture:

lor After: Clarity After: Artif ts:

mments:
WGSB2-7
TAN, COARSE

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

WGSB37

ab Name: RECRA_LABNET Contract: 60038-22

ab Code: RECRA Case No.: SAS No.: SDG No.: GSB112

atrix (soil/water): SOIL Lab Sample ID: 9810L066-011

evel (low/med): LOW Date Received: 10/09/98

Solids: 94.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1960			P
7440-38-2	Arsenic	3.9			P
7440-39-3	Barium	142			P
7440-43-9	Cadmium	0.06	U		P
7440-47-3	Chromium	1.9			P
7440-48-4	Cobalt	1.5	B		P
7440-50-8	Copper	0.83	B		P
7439-89-6	Iron	1550			P
7439-92-1	Lead	1.5			P
7439-96-5	Manganese	17.8			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	2.8	B		P
7782-49-2	Selenium	0.51	U		P
7440-22-4	Silver	0.54	B		P
7440-66-6	Zinc	4.7			P
7439-98-7	Molybdenu	0.35	B		P
7440-42-8	Boron	5.0	B		P
7440-61-1	Uranium	8.6	U		P
5955-70-0	Cyanide	0.26	U		C

lor Before: Clarity Before: Texture:

lor After: Clarity After: Artifacts:

mments:
WGSB3-7
TAN, COARSE

FORM I - IN ILM04.0

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG o.: GSB112

nitial Calibration Source: IV_____

ontinuing Calibration Source: IV_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum	3750.0	3760.71	100.3	5000.0	4979.23	99.6	4984.40	99.7	P
Arsenic	375.0	371.04	98.9	500.0	482.95	96.6	489.89	98.0	P
Barium	375.0	373.01	99.5	500.0	493.24	98.6	490.28	98.1	P
Cadmium	375.0	375.52	100.1	500.0	493.27	98.7	499.62	99.9	P
Chromium	375.0	372.05	99.2	500.0	490.21	98.0	492.40	98.5	P
Cobalt	375.0	374.20	99.8	500.0	491.19	98.2	495.48	99.1	P
Copper	375.0	371.94	99.2	500.0	495.90	99.2	493.09	98.6	P
Iron	3750.0	3711.44	99.0	5000.0	4920.59	98.4	4950.50	99.0	P
Lead	375.0	378.83	101.0	500.0	496.30	99.3	504.20	100.8	P
Manganese	3750.0	3794.55	101.2	5000.0	5011.30	100.2	5041.59	100.8	P
Mercury	2.5	2.58	103.2	5.0	4.98	99.6	5.19	103.8	AV
Nickel	375.0	369.84	98.6	500.0	479.64	95.9	484.17	96.8	P
Selenium	375.0	368.14	98.2	500.0	483.57	96.7	493.16	98.6	P
Silver	375.0	370.22	98.7	500.0	483.72	96.7	484.09	96.8	P
Zinc	375.0	393.57	105.0	500.0	491.24	98.2	491.74	98.3	P
Molybdenu	375.0	366.44	97.7	500.0	482.90	96.6	483.64	96.7	P
Boron	375.0	367.27	97.9	500.0	488.35	97.7	487.62	97.5	P
Uranium	7500.0	7570.60	100.9	10000.0	9861.46	98.6	9985.44	99.9	P
Cyanide	100.0	108.10	108.1	100.0	108.10	108.1	108.10	108.1	C

1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

nitial Calibration Source: IV_____

ontinuing Calibration Source: IV_____

Concentration Units: ug/L

nalyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
luminum				5000.0	5122.78	102.5	5099.58	102.0	P
rsenic				500.0	490.31	98.1	483.54	96.7	P
arium				500.0	509.71	101.9	508.15	101.6	P
admium				500.0	521.49	104.3	516.70	103.3	P
hromium				500.0	499.66	99.9	493.74	98.7	P
obalt				500.0	499.83	100.0	492.58	98.5	P
opper				500.0	482.05	96.4	473.54	94.7	P
ron				5000.0	4992.54	99.9	4917.13	98.3	P
ad				500.0	499.88	100.0	491.27	98.3	P
nganese				5000.0	5090.59	101.8	5020.93	100.4	P
ercury				5.0	5.31	106.2			AV
ickel				500.0	506.87	101.4	503.38	100.7	P
elenium				500.0	490.48	98.1	482.25	96.4	P
ilver				500.0	492.89	98.6	487.62	97.5	P
inc				500.0	504.72	100.9	496.41	99.3	P
olybdenu				500.0	483.39	96.7	474.73	94.9	P
oron				500.0	499.51	99.9	499.10	99.8	P
ranium				10000.0	9764.76	97.6	9857.13	98.6	P
yanide				100.0	108.10	108.1			C

.) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATIO!

ab Name: RECRA_LABNET_____ Contract: 60038-22_

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

nitial Calibration Source: IV_____

ontinuing Calibration Source: IV_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum_									NR
Arsenic__									NR
Barium___									NR
Cadmium__									NR
Chromium_									NR
Cobalt___									NR
Copper___									NR
Iron____									NR
Lead____									NR
Manganese									NR
Mercury__									NR
Nickel___									NR
Selenium_									NR
Silver___									NR
Zinc____									NR
Molybdenu									NR
Boron____									NR
Uranium__									NR
Cyanide__	100.0	93.10	93.1	100.0	93.80	93.8	93.80	93.8	C_

.) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

Initial Calibration Source: IV_____

Continuing Calibration Source: IV_____

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum									NR
Arsenic									NR
Barium									NR
Cadmium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Manganese									NR
Mercury									NR
Nickel									NR
Selenium									NR
Silver									NR
Zinc									NR
Molybdenu									NR
Boron									NR
Uranium									NR
Cyanide				100.0	93.80	93.8			C

1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2B
CRDL STANDARD FOR AA AND ICP

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

A CRDL Standard Source: HIGH PURITY_

CP CRDL Standard Source: HIGH PURITY_

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	Initial True	Initial Found	Initial %R	Final Found	Final %R
Aluminum								
Arsenic				20.0	19.97	99.8	18.02	90.1
Barium								
Cadmium				10.0	9.98	99.8	10.33	103.3
Chromium				20.0	19.69	98.4	18.94	94.7
Cobalt				100.0	99.99	100.0	99.96	100.0
Copper				50.0	50.89	101.8	47.68	95.4
Iron				200.0	198.26	99.1	198.05	99.0
Lead				6.0	6.08	101.3	4.98	83.0
Manganese				30.0	30.43	101.4	30.45	101.5
Mercury	0.2	0.22	110.0					
Nickel				80.0	78.41	98.0	80.53	100.7
Selenium				10.0	11.99	119.9	11.48	114.8
Silver				20.0	19.15	95.8	18.75	93.8
Zinc				40.0	39.21	98.0	39.61	99.0
Molybdenu				200.0	196.69	98.3	193.73	96.9
Boron				200.0	194.07	97.0	197.66	98.8
Uranium								
Cyanide								

ontrol Limits: no limits have been established by EPA at this time

U.S. EPA - CLP

2B
CRDL STANDARD FOR AA AND ICP

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

A CRDL Standard Source: HIGH PURITY_

CP CRDL Standard Source: HIGH PURITY_

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum_								
Arsenic__								
Barium___								
Cadmium__								
Chromium_								
Cobalt___								
Copper___								
Iron____								
ad_____								
ganese								
Mercury__								
Nickel___								
Selenium_								
Silver___								
Zinc____								
Molybdenu								
Boron____								
Uranium__				400.0	400.69	100.2	394.99	98.7
Cyanide__								

ontrol Limits: no limits have been established by EPA at this time

3
BLANKS

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No. GSB112

Preparation Blank Matrix (soil/water): SOIL_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	14.2	U	14.2	U	14.2	U	31.9	B	2.840	U	P
Arsenic	2.8	U	2.8	U	2.8	U	2.8	U	0.560	U	P
Barium	0.3	U	0.3	B	0.3	U	0.4	B	0.060	U	P
Cadmium	0.4	U	0.4	U	0.4	U	0.4	U	0.080	U	P
Chromium	-0.7	B	0.6	U	0.6	U	0.6	U	0.120	U	P
Cobalt	0.7	U	0.7	U	0.7	U	0.8	B	0.140	U	P
Copper	1.2	B	1.6	B	1.1	B	0.8	U	0.179	B	P
Iron	13.9	U	13.9	U	13.9	U	13.9	U	2.780	U	P
Lead	1.7	U	1.7	U	1.7	U	1.7	U	0.340	U	P
Manganese	0.2	B	0.1	B	0.2	B	0.1	U	0.028	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.050	U	AV
Nickel	1.5	U	1.5	U	1.5	U	1.5	U	0.607	B	P
Selenium	3.6	U	3.6	U	3.6	U	3.6	U	0.720	U	P
Silver	-0.9	B	-1.2	B	0.5	U	-1.1	B	0.100	U	P
Zinc	0.6	U	0.6	U	0.6	U	0.6	U	0.120	U	P
Molybdenu	0.9	U	0.9	U	0.9	U	1.0	B	0.180	U	P
Boron	2.3	U	3.5	B	3.8	B	4.0	B	0.460	U	P
Uranium	60.6	U	60.6	U	60.6	U	60.6	U	12.120	U	P
Cyanide	5.0	U	5.0	U	5.0	U	5.0	U	0.250	U	C

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

reparation Blank Matrix (soil/water): SOIL_

reparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prep-aration Blank	C	M
Aluminum			34.9	B							P
Arsenic			2.8	U							P
Barium			0.3	U							P
Cadmium			0.4	U							P
Chromium			0.6	U							P
Cobalt			0.7	U							P
Copper			-0.9	B							P
Iron			13.9	U							P
Lead			1.7	U							P
Manganese			0.2	B							P
Mercury				U							NR
Nickel			1.5	U							P
Selenium			3.6	U							P
Silver			-0.6	B							P
Zinc			0.6	U							P
Molybdenu			0.9	U							P
Boron			3.9	B							P
Uranium			60.6	U							P
Cyanide	5.0	U	5.0	U	5.0	U	5.0	U	0.250	U	C

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4

ICP INTERFERENCE CHECK SAMPLE

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No: _____ SDG No.: GSB112

CP ID Number: IC1_____ ICS Source: IV_____

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum								
Arsenic								
Barium								
Cadmium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Manganese								
Mercury								
Nickel								
Selenium								
Silver								
Zinc								
Molybdenu								
Boron								
Uranium	0	5000	-33	4712.2	94.2	-72	4726.6	94.5
Cyanide								

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No: _____ SDG No.: GSB112

CP ID Number: TR_____ ICS Source: IV_____

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial %R	Final Found Sol. A	Final Found Sol. AB	Final %R
Aluminum	500000	500000	462191	462702.4	92.5	468069	469988.0	94.0
Arsenic	0	100	2	92.1	92.1	3	91.5	91.5
Barium	0	500	-2	467.0	93.4	-2	482.9	96.6
Cadmium	0	1000	1	827.9	82.8	0	871.5	87.2
Chromium	0	500	-1	438.3	87.7	-1	442.0	88.4
Cobalt	0	500	1	418.7	83.7	1	420.7	84.1
Copper	0	500	2	470.4	94.1	0	445.5	89.1
Iron	200000	200000	173181	173053.1	86.5	172797	173446.6	86.7
Lead	0	50	-1	42.2	84.4	-1	40.8	81.6
Manganese	0	500	1	454.6	90.9	-2	453.0	90.6
Mercury								
Nickel	0	1000	1	802.4	80.2	1	846.5	84.6
Selenium	0	50	1	44.9	89.8	-2	41.2	82.4
Silver	0	200	-1	191.2	95.6	-1	192.4	96.2
Zinc	0	1000	-1	874.9	87.5	-1	889.7	89.0
Molybdenu	0	1000	12	904.8	90.5	23	903.6	90.4
Boron	0	1000	2	940.3	94.0	1	959.2	95.9
Uranium								
Cyanide								

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

WGSB17S

Lab Name: RECRA_LABNET Contract: 60038-22

Lab Code: RECRA Case No.: _____ SAS No.: _____ SDG No.: GSB112

Matrix (soil/water): SOIL Level (low/med : LOW

Solids for Sample: 89.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Arsenic	75-125	381.9593		6.8375		437.19	85.8		P
Barium	75-125	1154.1566		706.7625		437.19	102.3		P
Cadmium	75-125	8.8622		0.0892	U	10.93	81.1		P
Chromium	75-125	38.0567		1.5324	B	43.72	83.5		P
Cobalt	75-125	89.5010		1.3097	B	109.30	80.7		P
Copper	75-125	49.5672		2.7320	B	54.65	85.7		P
Iron									NR
Lead	75-125	89.6690		1.1445		109.30	81.0		P
Manganese	75-125	110.7876		17.2531		109.30	85.6		P
Mercury	75-125	0.5964		0.0557	U	0.56	106.5		AV
Nickel	75-125	90.2708		4.9864	B	109.30	78.0		P
Selenium	75-125	371.9938		0.8027	U	437.19	85.1		P
Silver	75-125	10.3187		0.1115	U	10.93	94.4		P
Zinc	75-125	96.6579		5.1652		109.30	83.7		P
Molybdenu	75-125	183.9638		0.3706	B	218.59	84.0		P
Boron	75-125	188.1114		13.5119	B	218.59	79.9		P
Uranium	75-125	989.4065		13.5117	U	1092.97	90.5		P
Cyanide	75-125	5.5640		0.2787	U	5.57	99.9		C

Comments:
WGSB1-7
TAN, COARSE

6
DUPLICATES

EPA SAMPLE NO.

WGSB17D

ab Name: RECRA_LABNET Contract: 60038-22

ab Code: RECRA Case No.: SAS No.: SDG No.: GSB112

atrix (soil/water): SOIL Level (low/med): LOW

Solids for Sample: 89.7 % Solids for Duplicate: 89.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		2395.7503		2344.1137		2.2		P
Arsenic	2.2297	6.8375		6.4716		5.5		P
Barium		706.7625		708.9645		0.3		P
Cadmium		0.0892	U	0.0892	U			P
Chromium		1.5324	B	1.8870	B	20.7		P
Cobalt		1.3097	B	1.1106	B	16.5		P
Copper		2.7320	B	2.4798	B	9.7		P
Iron		1416.1918		1404.1494		0.9		P
Lead	0.6689	1.1445		1.2060		5.2		P
Manganese	3.3445	17.2531		14.8919		14.7		P
Mercury		0.0557	U	0.0557	U			AV
Nickel		4.9864	B	4.3249	B	14.2		P
Selenium		0.8027	U	0.9295	B	200.0		P
Silver		0.1115	U	0.1115	U			P
Zinc	4.4593	5.1652		5.6968		9.8		P
Molybdenu		0.3706	B	0.3101	B	17.8		P
Boron		13.5119	B	10.1233	B	28.7		P
Uranium		13.5117	U	13.5117	U			P
Cyanide		0.2787	U	0.2787	U			C

7

LABORATORY CONTROL SAMPLE

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No. GSB112

Solid LCS Source: IV_____

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum				1000.0	1004.7		800.0	1200.0	100.5
Arsenic				2000.0	1906.6		1600.0	2400.0	95.3
Barium				1000.0	987.4		800.0	1200.0	98.7
Cadmium				50.0	48.2		40.0	60.0	96.4
Chromium				100.0	96.5		80.0	120.0	96.5
Cobalt				500.0	480.3		400.0	600.0	96.1
Copper				250.0	243.2		200.0	300.0	97.3
Iron				1000.0	967.4		800.0	1200.0	96.7
Lead				500.0	480.4		400.0	600.0	96.1
Manganese				150.0	148.7		120.0	180.0	99.1
Mercury									
Nickel				400.0	377.7		320.0	480.0	94.4
Selenium				2000.0	1872.7		1600.0	2400.0	93.6
Silver				100.0	85.1		80.0	120.0	85.1
Zinc				200.0	191.0		160.0	240.0	95.5
Molybdenu				1000.0	976.1		800.0	1200.0	97.6
Boron				1000.0	928.3		800.0	1200.0	92.8
Uranium				1000.0	994.6		800.0	1200.0	99.5
Cyanide									

7
LABORATORY CONTROL SAMPLE

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

olid LCS Source: IV_____

queous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Arsenic									
Barium									
Cadmium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
nganese									
cury									
Nickel									
Selenium									
Silver									
Zinc									
Molybdenu									
Boron									
Uranium									
Cyanide				10.0	10.5		8.0	12.0	105.0

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7

LABORATORY CONTROL SAMPLE

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG : GSB112

olid LCS Source: IV_____

queous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Arsenic									
Barium									
Cadmium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Manganese									
Mercury									
Nickel									
Selenium									
Silver									
Zinc									
Molybdenu									
Boron									
Uranium									
Cyanide				10.0	9.6		8.0	12.0	96.0

7

LABORATORY CONTROL SAMPLE

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

olid LCS Source: IV_____

queous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Arsenic									
Barium									
Cadmium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Manganese									
Mercury				1.16	1.175		0.928	1.392	101.3
Nickel									
Selenium									
Silver									
Zinc									
Molybdenu									
Boron									
Uranium									
Cyanide									

U.S. EPA - CLP

9

ICP SERIAL DILUTION

EPA SAMPLE NO.

WGSB17L

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No. GSB112

Matrix (soil/water): SOIL_ Level (low/mec : LOW__

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	10744.94		11434.70		6.4		P
Arsenic	30.67		34.58	B	12.7		P
Barium	3169.83		3307.41		4.3		P
Cadmium	0.40	U	2.00	U			P
Chromium	6.87	B	5.04	B	26.6		P
Cobalt	5.87	B	7.20	B	22.7		P
Copper	12.25	B	10.74	B	12.3		P
Iron	6351.62		6899.60		8.6		P
Lead	5.13		8.50	U	100.0		P
Manganese	77.38		82.80		7.0		P
Mercury							NR
Nickel	22.36	B	23.94	B	7.1		P
Selenium	3.60	U	18.00	U			P
Silver	0.50	U	2.50	U			P
Zinc	23.17		23.62	B	1.9		P
Molybdenu	1.66	B	4.50	U	100.0		P
Boron	60.60	B	82.52	B	36.2		P
Uranium	60.60	U	303.00	U			P
Cyanide							NR

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10

Instrument Detection Limits (Quarterly)

Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

CP ID Number: IC1_____ Date: 10/01/98

lame AA ID Number : _____

urnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Arsenic			10		NR
Barium			200		NR
Cadmium			5		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Selenium			5		NR
Silver			10		NR
Zinc			20		NR
Molybdenu			100		NR
Boron			100		NR
Uranium	367.00			60.6	P
Cyanide			10		NR

omments:

10

Instrument Detection Limits (Quarterly)

ab Name: RECRA_LABNET Contract: 60038-22

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG ! .: GSB112

CP ID Number: _____ Date: 10/01/98

lame AA ID Number : CN1

urnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Arsenic			10		NR
Barium			200		NR
Cadmium			5		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Manganese			15		NR
Mercury			0.2		NR
Nickel			40		NR
Selenium			5		NR
Silver			10		NR
Zinc			20		NR
Molybdenu			100		NR
Boron			100		NR
Uranium					NR
Cyanide			10	5.0	C

omments:

10

Instrument Detection Limits (Quarterly)

Name: RECRA_LABNET Contract: 60038-22

Lab Code: RECRA Case No.: SAS No.: SDG No.: GSB112

CP ID Number: Date: 10/01/98

lame AA ID Number : HG1

urnace AA ID Number :

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Arsenic			10		NR
Barium			200		NR
Cadmium			5		NR
Chromium			10		NR
Cobalt			50		NR
Copper			25		NR
Iron			100		NR
Lead			3		NR
Manganese			15		NR
Mercury	253.70		0.2	0.1	AV
Nickel			40		NR
Selenium			5		NR
Silver			10		NR
Zinc			20		NR
Molybdenu			100		NR
Boron			100		NR
Uranium					NR
Cyanide			10		NR

omments:

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10

Instrument Detection Limits (Quarterly)

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG N .: B112

CP ID Number: TR_____ Date: 10/01/98

lame AA ID Number : _____

urnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.20		200	14.2	P
Arsenic	189.00		10	2.8	P
Barium	493.40		200	0.3	P
Cadmium	226.50		5	0.4	P
Chromium	267.70		10	0.6	P
Cobalt	228.60		50	0.7	P
Copper	324.70		25	0.8	P
Iron	271.40		100	13.9	P
Lead	220.30		3	1.7	P
Manganese	257.60		15	0.1	P
Mercury			0.2		NR
Nickel	231.60		40	1.5	P
Selenium	196.00		5	3.6	P
Silver	328.00		10	0.5	P
Zinc	213.80		20	0.6	P
Molybdenu	202.00		100	0.9	P
Boron	249.60		100	2.3	P
Uranium					NR
Cyanide			10		NR

omments:

U.S. EPA - CLP

11A

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

CP ID Number: IC1_____ Date: 01/01/98

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	AG_
Aluminum_						
Arsenic__						
Barium___						
Cadmium__						
Chromium_						
Cobalt___						
Copper___						
Iron_____						
Lead_____						
Manganese						
Mercury__						
Nickel___						
Selenium_						
Silver___						
Zinc_____						
Molybdenu						
Boron____						
Uranium__	367.00	0.0001660	0.0000000	0.0028000	0.0000000	0.0000000
Cyanide__						

Comments:

FORM XI (Part 1) - IN ILM04.0

U.S. EPA - CLP

11B

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-22_

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

ICP ID Number: IC1_____ Date: 01/01/98

Analyte	Wave-length (nm)	Interelement Correction Factors for : AS_	B__	BA_	CO_	MN_
Aluminum_						
Arsenic__						
Barium___						
Cadmium__						
Chromium_						
Cobalt___						
Copper___						
Iron_____						
Lead_____						
Manganese						
Mercury__						
Nickel___						
Selenium_						
Silver___						
Zinc_____						
Molybdenu						
Boron____						
Uranium__	367.00	0.0000000	0.0004900	0.0000000	0.0012400	-0.0009400
Cyanide__						

Comments:

FORM XI (Part 2) - IN ILM04.0

U.S. EPA - CLP

11B

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

CP ID Number: IC1_____ Date: 01/01/98

Analyte	Wave-length (nm)	Interelement Correction Factors for : MO_	NI_	PB_	SB_	TI_
Aluminum_						
Arsenic__						
Barium___						
Cadmium__						
Chromium_						
Cobalt___						
Copper___						
Iron____						
Lead____						
Manganese						
Mercury__						
Nickel___						
[illegible]lenium_						
[illegible]ver___						
Zinc____						
Molybdenu						
Boron____						
Uranium__	367.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cyanide__						

Comments:

FORM XI (Part 2) - IN ILM04.0

U.S. EPA - CLP

11B
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: :B112

CP ID Number: IC1_____ Date: 01/01/98

Analyte	Wave-length (nm)	Interelement Correction Factors for : TL_	U__	V__	ZN_	___
Aluminum_						
Arsenic__						
Barium___						
Cadmium__						
Chromium_						
Cobalt___						
Copper___						
Iron____						
Lead____						
Manganese						
Mercury__						
Nickel___						
Selenium_						
Silver___						
Zinc____						
Molybdenu						
Boron____						
Uranium__	367.00	0.0000000	0.0000000	-0.0080200	0.0000000	
Cyanide__						

Comments:

U.S. EPA - CLP

11A

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

CP ID Number: TR_____ Date: 01/01/98

Analyte	Wave-length (nm)	Interelement Correction Factors for : Al	Ca	Fe	Mg	CR_
Aluminum	308.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Arsenic	189.00	0.0000000	0.0000000	-0.0057060	0.0000000	-0.0018440
Barium	493.40	0.0000000	0.0000000	0.0100100	0.0000000	0.0000000
Cadmium	226.50	-0.0023100	0.0000000	0.3095520	0.0000000	0.0000000
Chromium	267.70	0.0000000	0.0000000	-0.0230680	0.0000000	0.0000000
Cobalt	228.60	0.0000000	0.0000000	0.0036730	0.0000000	0.0000000
Copper	324.70	0.0031930	0.0000000	0.0061410	0.0000000	0.0000000
Iron	271.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.30	-0.2198400	0.0000000	0.0638520	0.0125620	0.0000000
Manganese	257.60	0.0000000	0.0000000	-0.0000560	0.0000190	0.0000000
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
[illegible]lenium	196.00	0.0000000	0.0000000	-0.3394540	0.0000000	0.0000000
[illegible]ver	328.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Zinc	213.80	0.0014000	0.0000000	0.1168450	0.0000000	0.0000000
Molybdenu	202.00	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Boron	249.60	0.0000000	0.0000000	-0.0135640	0.0000000	0.0002530
Uranium		0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cyanide						

omments:

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U.S. EPA - CLP

11B

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: SB112

ICP ID Number: TR_____ Date: 01/01/98

Analyte	Wavelength (nm)	Interelement Correction Factors for : MN_	TI_	TL_	V__	___
Aluminum_	308.20	0.0000000	0.0000000	0.0000000	0.0472660	
Arsenic__	189.00	0.0000000	0.0000000	0.0000000	0.0000000	
Barium___	493.40	0.0000000	0.0000000	0.0000000	0.0000000	
Cadmium__	226.50	0.0000000	0.0000910	0.0000000	0.0000000	
Chromium_	267.70	0.0884200	0.0000000	0.0000000	0.1003470	
Cobalt___	228.60	0.0000000	0.0007460	0.0000000	0.0537750	
Copper___	324.70	0.0000000	0.0000000	0.0000000	-0.0172240	
Iron____	271.40	0.0000000	0.0000000	0.0000000	0.1544880	
Lead____	220.30	0.0000000	-0.0005440	0.0000000	-0.3906210	
Manganese	257.60	0.0000000	0.0000000	0.0000000	0.0000000	
Mercury__						
Nickel___	231.60	0.0000000	0.0000000	0.0000000	0.0000000	
Selenium_	196.00	0.2921430	0.0000000	0.0000000	0.0000000	
Silver___	328.00	0.0000000	0.0000000	0.0000000	0.0369210	
Zinc____	213.80	0.0000000	0.0000000	0.0000000	0.0266840	
Molybdenu	202.00	0.0000000	0.0000000	0.0000000	-0.2394460	
Boron___	249.60	0.0000000	0.0000000	0.0000000	0.0000000	
Uranium__		0.0000000	0.0000000	0.0000000	0.0000000	
Cyanide__						

Comments:

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_____

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_____

U.S. EPA - CLP

12
ICP LINEAR RANGES (QUARTERLY)

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

CP ID Number: IC1_____ Date: 10/01/98

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum_			NR
Arsenic__			NR
Barium___			NR
Cadmium__			NR
Chromium_			NR
Cobalt___			NR
Copper___			NR
Iron_____			NR
Lead_____			NR
Manganese			NR
Mercury__			NR
Nickel___			NR
Selenium_			NR
Silver___			NR
Zinc_____			NR
Molybdenu			NR
Boron____			NR
Uranium__	3.30	50000.0	P
Cyanide__			

mments:

U.S. EPA - CLP

12
ICP LINEAR RANGES (QUARTERLY)

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

CP ID Number: TR_____ Date: 10/01/98

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum	15.00	1000000.0	P
Arsenic	15.00	100000.0	P
Barium	15.00	100000.0	P
Cadmium	15.00	100000.0	P
Chromium	15.00	50000.0	P
Cobalt	15.00	50000.0	P
Copper	15.00	100000.0	P
Iron	15.00	500000.0	P
Lead	15.00	400000.0	P
Manganese	15.00	20000.0	P
Mercury			NR
Nickel	15.00	100000.0	P
Selenium	15.00	100000.0	P
Silver	15.00	10000.0	P
Zinc	15.00	10000.0	P
Molybdenu	15.00	100000.0	P
Boron	15.00	100000.0	P
Uranium	15.00		P
Cyanide			

omments:

_____
_____
_____
_____

13
PREPARATION LOG

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.:_____ SAS No.: _____ SDG No.:GSB112

ethod: P_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
GSB112	10/15/98	1.07	200
GSB120	10/15/98	1.22	200
GSB130	10/15/98	1.11	200
GSB140	10/15/98	1.07	200
GSB210	10/15/98	1.01	200
GSB220	10/15/98	1.28	200
GSB230	10/15/98	1.20	200
GSB242	10/15/98	1.12	200
GSB310	10/15/98	1.09	200
LCSS112	10/15/98	1.00	200
PBS112	10/15/98	1.00	200
WGSB17	10/15/98	1.00	200
WGSB17D	10/15/98	1.00	200
WGSB17S	10/15/98	1.02	200
WGSB27	10/15/98	1.08	200
WGSB37	10/15/98	1.49	200

13
PREPARATION LOG

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.:_____ SAS No.: _____ SDG No.: B112

ethod: AV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
GSB112	10/21/98	0.10	50
GSB120	10/21/98	0.10	50
GSB130	10/21/98	0.10	50
GSB140	10/21/98	0.10	50
GSB210	10/21/98	0.10	50
GSB220	10/21/98	0.10	50
GSB230	10/21/98	0.10	50
GSB242	10/21/98	0.10	50
GSB310	10/21/98	0.10	50
LCSS103	10/21/98	0.20	50
PBS103	10/21/98	0.10	50
WGSB17	10/21/98	0.10	50
WGSB17D	10/21/98	0.10	50
WGSB17S	10/21/98	0.10	50
WGSB27	10/21/98	0.10	50
WGSB37	10/21/98	0.11	50

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PREPARATION LOG

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.:_____ SAS No.: _____ SDG No.:GSB112

ethod: C_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
GSB112	10/12/98	5.00	250
GSB120	10/12/98	5.00	250
GSB130	10/12/98	5.00	250
GSB140	10/12/98	5.00	250
GSB210	10/12/98	5.00	250
GSB220	10/12/98	5.00	250
GSB230	10/12/98	5.00	250
GSB242	10/12/98	5.00	250
LCSS258	10/12/98	5.00	250
PBS158	10/12/98	5.00	250
WGSB17	10/12/98	5.00	250
WGSB17D	10/12/98	5.00	250
WGSB17S	10/12/98	5.00	250
WGSB27	10/12/98	5.00	250
WGSB37	10/12/98	5.00	250

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PREPARATION LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.:_____ SAS No.: _____ SDG No.:GSB112

Method: C_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
GSB310	10/14/98	5.00	250
LCSS260	10/14/98	5.00	250
PBS160	10/14/98	5.00	250

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ANALYSIS RUN LOG

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.:GSB112

nstrument ID Number: IC1_____ Method: P_

tart Date: 10/23/98 End Date: 10/23/98

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN								
S0	1.00	1221		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
S2	1.00	1227		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
ICV	1.00	1230		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
ICB	1.00	1233		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
CRI	1.00	1236		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
ICSA	1.00	1240		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
ICSAB	1.00	1244		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
CCV	1.00	1248		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
CCB	1.00	1252		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
PBS112	1.00	1255		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
LCSS112	1.00	1258		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
WGSB17	1.00	1302		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
WGSB17L	5.00	1306		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
B17D	1.00	1310		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
SB17S	1.00	1313		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
ZZZZZZ	1.00	1317		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
GSB112	1.00	1321		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
GSB120	1.00	1324		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
GSB130	1.00	1328		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
CCV	1.00	1332		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
CCB	1.00	1336		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
GSB140	1.00	1338		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
WGSB27	1.00	1342		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
GSB210	1.00	1346		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
GSB220	1.00	1349		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
GSB230	1.00	1353		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
GSB242	1.00	1357		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
WGSB37	1.00	1400		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
GSB310	1.00	1404		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
CCV	1.00	1409		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
CCB	1.00	1412		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
CRI	1.00	1415		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-			
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			

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ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.:GSB112

Instrument ID Number: IC1_____ Method: P_

Start Date: 10/23/98 End Date: 10/23/98

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
ICSA	1.00	1419																			X						
ICSAB	1.00	1422																			X						
CCV	1.00	1426																			X						
CCB	1.00	1430																			X						

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ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.:GSB112

Instrument ID Number: CN1_____ Method: C_

Start Date: 10/12/98 End Date: 10/12/98

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
S0	1.00	1354																				X					
S5	1.00	1355																				X					
S10	1.00	1356																				X					
S20	1.00	1357																				X					
S50	1.00	1358																				X					
S100	1.00	1359																				X					
S150	1.00	1400																				X					
S200	1.00	1401																				X					
ICV	1.00	1402																				X					
ICB	1.00	1403																				X					
CCV	1.00	1404																				X					
CCB	1.00	1405																				X					
ZZZZZZ	1.00	1406																									
ZZZZZ	1.00	1407																									
ZZZZZZ	1.00	1408																									
WGSB17	1.00	1409																				X					
WGSB17D	1.00	1410																				X					
WGSB17S	1.00	1411																				X					
GSB112	1.00	1412																				X					
GSB120	1.00	1413																				X					
GSB130	1.00	1414																				X					
CCV	1.00	1415																				X					
CCB	1.00	1416																				X					
ZZZZZZ	1.00	1417																									
PBS158	1.00	1418																				X					
LCSS258	1.00	1419																				X					
GSB140	1.00	1420																				X					
WGSB27	1.00	1421																				X					
GSB210	1.00	1422																				X					
GSB220	1.00	1423																				X					
GSB230	1.00	1424																				X					
GSB242	1.00	1425																				X					

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ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038- __

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ DG No.:GSB112

Instrument ID Number: CN1_____ Method: C_

Start Date: 10/12/98 End Date: 10/12/98

EPA Sample No.	D/F	Time	% R	Analyte																							
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
WGSB37	1.00	1426																				X					
CCV	1.00	1427																				X					
CCB	1.00	1428																				X					

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ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.:GSB112

Instrument ID Number: CN1_____ Method: C_

Start Date: 10/14/98 End Date: 10/14/98

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
S0	1.00	1034																				X					
S5	1.00	1035																				X					
S10	1.00	1036																				X					
S20	1.00	1037																				X					
S50	1.00	1038																				X					
S100	1.00	1039																				X					
S150	1.00	1040																				X					
S200	1.00	1041																				X					
ICV	1.00	1114																				X					
ICB	1.00	1115																				X					
CCV	1.00	1116																				X					
CCB	1.00	1117																				X					
ZZZZZZ	1.00	1118																									
ZZZZZ	1.00	1119																									
ZZZZZZ	1.00	1120																									
ZZZZZZ	1.00	1121																									
ZZZZZZ	1.00	1122																									
ZZZZZZ	1.00	1123																									
ZZZZZZ	1.00	1124																									
ZZZZZZ	1.00	1125																									
ZZZZZZ	1.00	1126																									
CCV	1.00	1127																				X					
CCB	1.00	1128																				X					
ZZZZZZ	1.00	1129																									
ZZZZZZ	1.00	1130																									
ZZZZZZ	1.00	1131																									
GSB310	1.00	1132																				X					
ZZZZZZ	1.00	1133																									
ZZZZZZ	1.00	1134																									
ZZZZZZ	1.00	1135																									
PBS160	1.00	1136																				X					
LCSS260	1.00	1137																				X					

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ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.:GSB112

Instrument ID Number: CN1_____ Method: C_

Start Date: 10/14/98 End Date: 10/14/98

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
ZZZZZZ	1.00	1138																									
CCV	1.00	1139																				X					
CCB	1.00	1140																				X					

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ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.:GSB112

Instrument ID Number: HG1_____ Method: AV

Start Date: 10/22/98 End Date: 10/22/98

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN					
S0	1.00	1000												X													
S0.2	1.00	1002												X													
S1	1.00	1005												X													
S2	1.00	1007												X													
S5	1.00	1010												X													
S10	1.00	1012												X													
ICV	1.00	1015												X													
ICB	1.00	1018												X													
CCV	1.00	1020												X													
CCB	1.00	1023												X													
CRA	1.00	1025												X													
PBS103	1.00	1027												X													
LCSS103	1.00	1029												X													
GSB17	1.00	1032												X													
WGSB17D	1.00	1034												X													
WGSB17S	1.00	1036												X													
GSB112	1.00	1038												X													
GSB120	1.00	1041												X													
GSB130	1.00	1043												X													
GSB140	1.00	1045												X													
CCV	1.00	1047												X													
CCB	1.00	1050												X													
WGSB27	1.00	1052												X													
GSB210	1.00	1055												X													
GSB220	1.00	1057												X													
GSB230	1.00	1059												X													
GSB242	1.00	1101												X													
WGSB37	1.00	1103												X													
GSB310	1.00	1106												X													
CCV	1.00	1108												X													
CCB	1.00	1110												X													

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ANALYSIS RUN LOG

Lab Name: RECRA_LABNET_____ Contract: 60038-22__

Lab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.: GSB112

Instrument ID Number: TR_____ Method: P_

Start Date: 10/27/98 End Date: 10/27/98

EPA Sample No.	D/F	Time	% R	Analytes																						
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN				
S0	1.00	1406		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
S1B	1.00	1413		X	X	X	X	X	X	X	X	X	_	_	X	X	X	X	X	X	_	_	_	_	_	_	_
S1	1.00	1421		X	X	X	X	X	X	X	X	X	_	_	X	X	X	X	X	X	_	_	_	_	_	_	_
S2	1.00	1429		X	_	_	_	_	_	_	X	X	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
S3	1.00	1437											X														
ICV	1.00	1444		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
ICB	1.00	1454		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
CRI	1.00	1500		_	X	_	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
ICSA	1.00	1507		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
ICSAB	1.00	1514		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
CCV	1.00	1522		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
CCB	1.00	1531		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
PBS112	1.00	1538		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
LCSS112	1.00	1545		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
WGSB17	1.00	1554		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
WGSB17L	5.00	1602		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
WGSB17D	1.00	1610		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
WGSB17S	1.00	1618		_	X	X	X	X	X	X	_	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
ZZZZZZ	1.00	1626		_							_			_							_	_	_	_	_	_	_
GSB112	1.00	1634		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
GSB120	1.00	1642		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
GSB130	1.00	1650		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
CCV	1.00	1701		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
CCB	1.00	1710		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
GSB140	1.00	1717		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
WGSB27	1.00	1725		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
GSB210	1.00	1733		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
GSB220	1.00	1741		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
GSB230	1.00	1749		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
GSB242	1.00	1757		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
WGSB37	1.00	1806		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
GSB310	1.00	1814		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_
				_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_

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ANALYSIS RUN LOG

ab Name: RECRA_LABNET_____ Contract: 60038-22__

ab Code: RECRA_ Case No.: _____ SAS No.: _____ SDG No.:GSB112

nstrument ID Number: TR_____ Method: P_

tart Date: 10/27/98 End Date: 10/27/98

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	AS	BA	CD	CR	CO	CU	FE	PB	MN	HG	NI	SE	AG	ZN	MO	B	U	CN						
ICV	1.00	1824		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_	
ICB	1.00	1833		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_	
CRI	1.00	1840			X		X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_	
CSA	1.00	1847		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_	
CSAB	1.00	1853		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_	
CCV	1.00	1902		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_	
CCB	1.00	1911		X	X	X	X	X	X	X	X	X	X	_	X	X	X	X	X	X	_	_	_	_	_	_	_	

FORM XIV - IN ILM04.0

077

Raw Data

Metals by ICP

Method: UONLY Standard: S0

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2:	-2496
Avge	-.0572	.0005	.0021	.0000	.0457	.00(	0001
SDev	.0023	.0008	.0006	.0000	.0308	.00(	.0001
%RSD	4.032	151.6	27.06	.0000	67.54	346	173.2
#1	-.0548	-.0002	.0028	.0000	.0798	-.)2	.0000
#2	-.0574	.0004	.0018	.0000	.0198	.(2	.0000
#3	-.0594	.0014	.0018	.0000	.0374	.)2	.0002

Elem	Ca3179
Avge	.0011
SDev	.0015
%RSD	140.7
#1	.0028
#2	.0002
#3	.0002

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IC1023A

AP Little 984312

9810L066-1,4R5,4C42

Sent returned Updated lims

Method: UONLY Standard: S1

Elem	Al3082	Co2286	Fe2599	Mn2576	V-2924	Ca3179
Avge	2.676	1.718	2.278	.0709	1.420	12.28
SDev	.004	.004	.006	.0005	.003	.03
%RSD	.1426	.2217	.2635	.6518	.1912	.2696
#1	2.672	1.721	2.276	.0706	1.420	12.25
#2	2.676	1.714	2.272	.0706	1.418	12.27
#3	2.679	1.718	2.284	.0714	1.423	12.32

Method: UONLY Standard 02

Elem	U-36	B-2496
Avge	42	.4067
SDev	03	.0011
%RSD	.21	.2708
#1	41	.4062
#2	39	.4060
#3	8.463	.4080

Method: UONLY Sample Name: ICV Operator: MDL
Run Time: 10/23/98 12:30:17
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3733.	1916.	3827.	519.3	7571.	1871.	3666.
SDev	14.	11.	6.	6.5	58.	2.	13.
%RSD	.3882	.5692	.1491	1.245	.7720	.0992	.3542
#1	3717.	1907.	3827.	512.2	7636.	1871.	3656.
#2	3745.	1928.	3833.	520.7	7551.	1872.	3681.
#3	3737.	1912.	3822.	524.9	7524.	1869.	3661.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	3750.	1875.	3750.	562.5	7500.	1875.	3750.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Ca3179
Units	ppb
Avge	19130.
SDev	28.
%RSD	.1476
#1	19130.
#2	19160.
#3	19100.
Errors	QC Pass
Value	18750.
Range	10.00

Method: UONLY Sample Name: ICB Operator: MDL
Run Time: 10/23/98 12:33:59
Comment:
Mode: CONC Corr. Factor: 1

Elem	[illegible]3082	Ca[illegible]	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	[illegible]b	ppb	ppb	ppb	ppb	ppb	ppb
Avge	[illegible]483	.2000	-5.854	-.0002	27.78	2.062	4.919
SDev	[illegible]390	3.552	1.532	.0000	53.07	1.056	7.514
%RSD	[illegible]0	1776.	26.17	16.04	191.0	51.18	152.8
#1	[illegible]40	-1.547	-4.975	-.0002	27.15	2.05[illegible]	H13.11
#2	[illegible]9	4.287	-4.964	-.0003	H81.15	3.12	3.285
#3	-[illegible]344	-2.140	-7.624	-.0002	-24.97	1.009	-1.644
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	61.20	10.20	13.80	7.500	7[illegible].20	6.900	11.10
Low	-61.20	-10.20	-13.80	-7.500	-71.20	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	-12.26
SDev	.43
%RSD	3.483
#1	-12.27
#2	-11.83
#3	-12.69
Errors	LC Pass
High	39.00
Low	-39.00

Method: UONLY Sample Name: CRI Operator: MDL
Run Time: 10/23/98 12:36:47
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	184.8	104.1	203.5	29.63	400.7	101.4	201.6
SDev	2.4	1.5	1.8	.00	30.2	1.7	7.5
%RSD	1.325	1.403	.8613	.0004	7.526	1.720	3.722
#1	185.8	103.9	203.5	29.63	385.3	102.3	199.9
#2	186.6	105.7	205.3	29.63	381.3	99.44	209.8
#3	182.0	102.8	201.8	29.63	435.4	102.6	195.0
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	200.0	100.0	200.0	30.00	400.0	100.0	200.0
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Elem	Ca3179
Units	ppb
Avge	1026.
SDev	5.
%RSD	.4606
#1	1031.
#2	1025.
#3	1021.
Errors	QC Pass
Value	1000.
Range	50.00

Method: UONLY Sample Name: ISA Operator: MDL
Run Time: 10/23/98 12:40:49
Comment:
Mode: CON Corr. Factor: 1

Elem	[illegible]3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	[illegible]-2496
Units	[illegible]	ppb	ppb	ppb	ppb	ppb	pb
Avge	5[illegible]00.	-.1960	184400.	3.871	-33.27	3.491	35.36
SDev	[illegible]93.	3.7298	204.	.004	41.75	1.642	17.35
%RSD	.2[illegible]	1903.	.1108	.1101	125.5	47.04	49.06
#1	50[illegible]	1.362	184400.	3.872	4.324	5.378	-33.69
#2	500[illegible]	-4.452	184100.	3.866	-25.94	2.387	-53.48
#3	5023[illegible]	2.503	184500.	3.875	-78.20	2.708	-18.91
Errors	QC Pass	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	500000.		200000.				
Range	20.00		20.00				

Elem	Ca3179
Units	ppb
Avge	481900.
SDev	182.
%RSD	.0377
#1	481900.
#2	482100.
#3	481700.
Errors	QC Pass
Value	500000.
Range	20.00

Method: UONLY Sample Name: ISB Operator: MDL
Run Time: 10/23/98 12:44:48
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	493900.	440.4	178700.	405.9	4712.	459.1	904.5
SDev	8797.	7.6	2590.	7.4	75.	8.6	20.9
%RSD	1.781	1.723	1.450	1.820	1.592	1.883	2.310
#1	487400.	436.1	176900.	401.6	4745.	452.2	882.4
#2	490400.	436.0	177500.	401.6	4626.	456.3	907.2
#3	503900.	449.2	181700.	414.4	4765.	468.8	923.9
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500000.	500.0	200000.	500.0	5000.	500.0	1000.
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Elem	Ca3179
Units	ppb
Avge	464200.
SDev	5674.
%RSD	1.222
#1	460200.
#2	461800.
#3	470700.
Errors	QC Pass
Value	500000.
Range	20.00

Method: UONLY Sample Name: CCV Operator: MDL
Run Time: 10/23/98 12:48:40
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	[illegible]-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4952.	2432.	4936.	Q663.2	9861.	2400.	4786.
SDev	34.	25.	41.	8.8	61.	24.	47.
%RSD	.6880	1.032	.8221	1.329	.6173	1.006	.9871
#1	4933.	2410.	4909.	Q656.1	9857.	2385.	4777.
#2	4932.	2428.	4917.	Q660.4	9803.	2387.	4743.
#3	4991.	2460.	4983.	Q673.1	9925.	2428.	4836.
Errors	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass	QC Pass
Value	5000.	2500.	5000.	750.0	10000.	2500.	5000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Ca3179
Units	ppb
Avge	24480.
SDev	180.
%RSD	.7349
#1	24360.
#2	24390.
#3	24690.
Errors	QC Pass
Value	25000.
Range	10.00

Method: UONLY Sample Name: CCB Operator: MDL
Run Time: 10/23/98 12:52:40
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-23.47	-1.551	-2.342	-.0002	8.999	1.703	3.280
SDev	6.50	1.755	2.333	.0001	40.83	.816	.006
%RSD	27.68	113.2	99.60	56.92	453.7	47.90	.1967
#1	-16.97	.2038	-1.454	-.0001	48.57	.7913	3.286
#2	-23.49	-1.551	-.5843	-.0001	11.41	1.953	3.282
#3	-29.97	-3.307	-4.989	-.0002	-32.99	2.364	3.273
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	61.20	10.20	13.80	7.500	71.20	6.900	11.10
Low	-61.20	-10.20	-13.80	-7.500	-71.20	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	1.702
SDev	4.658
%RSD	273.6
#1	1.749
#2	6.337
#3	-2.979
Errors	LC Pass
High	39.00
Low	-39.00

Method: UONLY Sample Name: 98L1312-MB1 Operator: MDL
Run Time: 10/23/98 12:55:17
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-12.98	-1.941	-1.173	-.0002	2.670	2.130	1.642
SDev	5.37	.345	3.085	.0001	44.33	2.503	2.845
%RSD	41.42	17.77	263.1	57.35	1660.	117.	173.3
#1	-19.08	-2.139	2.043	-.0002	-17.04	4.5[illegible]1	3.278
#2	-10.89	-2.141	-4.108	-.0001	-28.38	-.4223	-1.643
#3	-8.957	-1.542	-1.454	-.0002	53.43	2.232	3.290
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	61.20	10.20	13.80	7.500	71.20	6.900	11.10
Low	-61.20	-10.20	-13.80	-7.500	-71.20	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	3.280
SDev	2.363
%RSD	72.06
#1	1.221
#2	2.758
#3	5.861
Errors	LC Pass
High	39.00
Low	-39.00

Method: UONLY Sample Name: 98L1312-LC1 Operator: MDL
Run Time: 10/23/98 12:58:59
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4889.	2445.	4945.	671.6	4973.	2410.	4762.
SDev	22.	15.	19.	6.5	30.	13.	21.
%RSD	.4588	.6190	.3829	.9627	.6053	.5327	.4496
#1	4867.	2430.	4926.	664.6	5003.	2397.	4737.
#2	4887.	2445.	4944.	673.1	4974.	2409.	4771.
#3	4912.	2460.	4964.	677.3	4943.	2423.	4776.
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	6000.	3000.	6000.	900.0	6000.	3000.	6000.
Low	4000.	2000.	4000.	600.0	4000.	2000.	4000.

Elem	Ca3179
Units	ppb
Avge	24540.
SDev	144.
%RSD	.5858
#1	24380.
#2	24590.
#3	24660.
Errors	LC Pass
High	30000.
Low	20000.

Method: UONLY Sample Name: 9810L066-001 Operator: MDL
Run Time: 10/23/98 13:02:41
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	pb	ppb
Avge	11210.	8.339	6623.	59.39	2.163	190.7	48.96
SDev	102.	2.881	62.	.00	25.94	1.7	10.22
%RSD	.9137	34.55	.9395	.0020	1199.	.8861	20.88
#1	11100.	10.29	6565.	59.39	29.86	188.8	45.66
#2	11220.	9.698	6615.	59.39	-1.822	191.4	60.42
#3	11310.	5.030	6689.	59.39	-21.55	191.9	40.80
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	5 000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	H1025000.
SDev	9901.
%RSD	.9656
#1	H1015000.
#2	H1025000.
#3	H1035000.
Errors	LC High
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-001L Operator: MDL
Run Time: 10/23/98 13:06:23
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2273.	-1.628	1427.	18.37	55.31	43.18	18.70
SDev	13.	.008	9.	2.44	37.52	1.30	.00
%RSD	.5825	.4833	.6044	13.30	67.85	3.008	.0251
#1	2258.	-1.625	1430.	16.96	68.85	43.04	18.71
#2	2277.	-1.621	1417.	21.19	84.18	44.55	18.71
#3	2284.	-1.637	1434.	16.96	12.89	41.96	18.70
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	216800.
SDev	859.
%RSD	.3961
#1	216700.
#2	215900.
#3	217700.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-001R Operator: N L
Run Time: 10/23/98 13:10:04
Comment:
Mode: CONC orr. Factor: 1

Elem	Al3 2	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	109	6.995	6437.	59.39	21.29	155.9	40.68
SDev	6	1.786	6.	.00	33.94	1.3	.00
%RSD	.555	25.53	.0951	.0002	159.5	.8579	.0038
#1	1083(	8.553	6432.	59.39	44.00	156.	40.68
#2	1093(	5.046	6444.	59.39	-17.73	156.	40.68
#3	10950.	7.387	6434.	59.39	37.59	154.3	40.68
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	952000.
SDev	1866.
%RSD	.1961
#1	950300.
#2	954000.
#3	951600.
Errors	LC Pass
High	1000000
Low	-39.00

Method: UONLY Sample Name: 9810L066-001S Operator: MDL
Run Time: 10/23/98 13:13:46
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	12040.	419.3	6335.	448.8	4526.	587.3	853.7
SDev	92.	2.6	40.	8.5	38.	2.4	25.2
%RSD	.7603	.6275	.6277	1.887	.8376	.4086	2.955
#1	11950.	416.5	6298.	440.4	4498.	584.5	832.4
#2	12050.	419.5	6330.	448.8	4511.	588.8	881.6
#3	12130.	421.8	6377.	457.3	4569.	588.5	847.2
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	917300.
SDev	5160.
%RSD	.5625
#1	912200.
#2	917000.
#3	922600.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-001A Operator: MDL
Run Time: 10/23/98 13:17:27
Comment:
Mode: CONC Corr. Factor: 1

Elem	[illegible]13082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	[illegible]b	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.240.	6.589	6551.	59.39	944.5	188.7	39.28
SDev	96.	.886	72.	.00	14.9	2.2	2.87
%RSD	.[illegible]510	13.45	1.106	.0024	1.573	1.156	7.296
#1	11[illegible]0.	6.403	6474.	59.39	961.3	187.2	35.97
#2	11[illegible]0.	5.811	6561.	59.39	939.1	187.7	40.93
#3	11340.	7.553	6618.	59.39	933.1	191.2	40.95
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	H1007000.
SDev	9407.
%RSD	.9338
#1	997300.
#2	H1009000.
#3	H1016000.
Errors	LC High
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-002 Operator: MDL
Run Time: 10/23/98 13:21:08
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	14150.	6.499	8152.	186.4	-3.628	215.6	31.65
SDev	46.	1.468	24.	.0	38.195	.8	8.52
%RSD	.3279	22.59	.2970	.0002	1053.	.3830	26.93
#1	14130.	6.701	8154.	186.4	36.51	215.4	26.74
#2	14110.	4.940	8127.	186.4	-39.52	214.9	26.71
#3	14200.	7.856	8175.	186.4	-7.873	216.5	41.49
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	713400.
SDev	2250.
%RSD	.3154
#1	712800.
#2	711500.
#3	715900.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-003 Operator: MDL
Run Time: 10/23/98 13:24:49
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	pb
Avge	8314.	5.253	6284.	79.14	.9560	154.6	4.22
SDev	43.	1.224	40.	17.11	51.09	.7	7.28
%RSD	.5198	23.29	.6302	21.62	5344.	.4641	71.33
#1	8318.	6.234	6282.	39.02	53.49	155.1	40.62
#2	8269.	5.643	6244.	59.39	-2.062	154.8	6.178
#3	8356.	3.882	6324.	89.02	-48.56	153.8	25.87
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	H1025000.
SDev	5187.
%RSD	.5060
#1	H1023000.
#2	H1021000.
#3	H1031000.
Errors	LC High
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-004 Operator: MDL
Run Time: 10/23/98 13:28:31
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3737.	4.015	4357.	52.30	27.13	67.61	13.50
SDev	27.	1.740	27.	2.44	34.14	.96	11.36
%RSD	.7105	43.33	.6099	4.672	125.8	1.425	84.12
#1	3706.	2.274	4326.	55.12	49.82	68.70	20.05
#2	3755.	5.754	4371.	50.89	-12.13	66.88	.3874
#3	3748.	4.017	4372.	50.89	43.70	67.25	20.07
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	792200.
SDev	4860.
%RSD	.6135
#1	786600.
#2	794500.
#3	795400.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: CCV Operator: MDL
Run Time: 10/23/98 13:32:26
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	pb
Avge	4910.	2481.	4984.	681.5	9985.	2431.	830.
SDev	4.	8.	7.	.0	32.	2.	38.
%RSD	.0838	.3297	.1501	.0000	.3162	.0713	.7777
#1	4906.	2481.	4992.	681.5	10020.	2432.	4871.
#2	4911.	2474.	4977.	681.5	9966.	2432.	4822.
#3	4914.	2490.	4985.	681.5	9969.	2429.	4797.
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5000.	2500.	5000.	750.0	1 000.	2500.	5000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Ca3179
Units	ppb
Avge	24970.
SDev	15.
%RSD	.0606
#1	24970.
#2	24980.
#3	24950.
Errors	QC Pass
Value	25000.
Range	10.00

Method: UONLY Sample Name: CCB Operator: MDL
Run Time: 10/23/98 13:36:08
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-37.16	1.750	-6.150	-.0002	13.43	1.732	4.913
SDev	5.52	2.047	2.217	.0001	23.53	1.112	7.513
%RSD	14.86	116.9	36.05	28.77	175.3	64.18	152.9
#1	-32.37	3.696	-4.095	-.0003	34.36	2.810	H13.11
#2	-35.92	-.3844	-5.855	-.0002	17.97	.5890	3.279
#3	-43.20	1.939	-8.500	-.0003	-12.05	1.799	-1.648
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	61.20	10.20	13.80	7.500	71.20	6.900	11.10
Low	-61.20	-10.20	-13.80	-7.500	-71.20	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	31.60
SDev	4.63
%RSD	14.65
#1	36.66
#2	27.57
#3	30.58
Errors	LC Pass
High	39.00
Low	-39.00

Method: UONLY Sample Name: 9810L066-005 Operator: MDL
Run Time: [illegible]/23/98 13:38:45
Comment:
Mode: CONC Corr. Factor: 1

Elem	A[illegible]82	Co2286	Fe2599	Mn2576	U-3670	V-2[illegible]	E-2496
Units	pp[illegible]	ppb	ppb	ppb	ppb	ppb	ppb
Avge	37[illegible]	2.603	5159.	67.84	4.993	30[illegible]	.7627
SDev	[illegible]	.342	44.	.00	26.46	1[illegible]5	.0170
%RSD	.84	13.14	.8520	.0014	529.9	5[illegible]8	2.232
#1	3714	2.796	5147.	67.84	-6.366	[illegible].82	.7543
#2	3764.	2.209	5208.	67.84	-13.89	.17	.7823
#3	3705.	2.806	5123.	67.84	35.23	[illegible].92	.7515
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	[illegible]C Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-51.20	-10.20	-13.80	-[illegible].500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	477100.
SDev	3469.
%RSD	.7271
#1	475500.
#2	481100.
#3	474800.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-006 Operator: MDL
Run Time: 10/23/98 13:42:26
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	11480.	8.502	7204.	94.69	17.88	54.85	16.46
SDev	46.	2.099	55.	2.44	12.35	1.30	8.54
%RSD	.4000	24.69	.7660	2.582	69.09	2.364	51.89
#1	11430.	6.755	7143.	93.28	3.616	53.35	6.597
#2	11480.	7.920	7217.	93.28	25.09	55.60	21.38
#3	11520.	10.83	7251.	97.51	24.94	55.59	21.39
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	H1023000.
SDev	7549.
%RSD	.7380
#1	H1015000.
#2	H1024000.
#3	H1030000.
Errors	LC High
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-007 Operator: MDL
Run Time: 10/23/98 13:46:08
Comment:
Mode: CC[illegible] Corr. Factor: 1

Elem	[illegible]3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	-2496
Units	[illegible]b	ppb	ppb	ppb	ppb	ppb	pb
Avge	120.	6.977	6724.	148.3	17.33	209.6	2.79
SDev	12.	1.687	23.	.0	44.00	.6	2.83
%RSD	[illegible]82	24.18	.3392	.0003	253.9	.2690	12.43
#1	1[illegible]0.	7.946	6704.	148.3	2.320	209.0	21.14
#2	1[illegible]0.	5.029	6719.	148.3	-17.20	209.6	26.06
#3	10[illegible]0.	7.956	6749.	148.3	66.86	210.1	21.17
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	649900.
SDev	2045.
%RSD	.3147
#1	648100.
#2	649500.
#3	652200.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-008 Operator: MDL
Run Time: 10/23/98 13:49:50
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	7360.	2.954	5865.	59.38	26.89	126.3	9.289
SDev	6.	2.420	5.	.00	28.12	1.0	5.681
%RSD	.0794	81.91	.0931	.0002	104.6	.7933	61.16
#1	7363.	1.016	5864.	59.38	43.37	127.2	15.85
#2	7353.	5.665	5861.	59.38	-5.578	125.2	5.999
#3	7364.	2.180	5872.	59.38	42.88	126.5	6.019
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	H1210000.
SDev	3636.
%RSD	.3004
#1	H1207000.
#2	H1209000.
#3	H1214000.
Errors	LC High
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-009 Operator: MDL
Run Time: 10/. /98 13:53:32
Comment:
Mode: CON((:r. Factor: 1

Elem	08	Co2286	Fe2599	Mn2576	U-3670	V-2924	-2496
Units		ppb	ppb	ppb	ppb	ppb	pb
Avge	8.	2.890	10150.	67.94	20.37	155.0	2.92
SDev	3.	3.208	87.	.00	20.69	1.0	8.48
%RSD	. 03	111.0	.8580	.0027	101.5	.6563	5.65
#1	9763.	-.4063	10130.	67.94	38.33	154.0	17.84
#2	9749.	6.002	10060.	67.93	25.04	156.0	17.80
#3	9881.	.074	10240.	67.94	-2.246	155.1	3.127
Errors	LC Pass	Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	296600.
SDev	2529.
%RSD	.8526
#1	295000.
#2	295400.
#3	299500.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-010 Operator: MDL
n Time: 10/23/98 13:57:14
omment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	6370.	1.189	9378.	69.34	20.37	52.31	17.48
SDev	28.	2.345	61.	2.44	43.38	.38	8.54
%RSD	.4368	197.3	.6470	3.526	212.9	.7260	48.84
#1	6339.	.8088	9308.	67.93	41.88	51.99	7.622
#2	6392.	-.9435	9415.	67.93	48.79	52.73	22.42
#3	6379.	3.701	9411.	72.16	-29.56	52.22	22.40
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	204000.
SDev	918.
%RSD	.4500
#1	202900.
#2	204500.
#3	204500.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-011 Operator: MDL
Run Time: 10/23/98 14:00:56
Comment:
Mode: CONC Corr. Factor: 1

Elem	[illegible]3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	[illegible]b	ppb	ppb	ppb	ppb	ppb	ppb
Avge	510.	10.96	11360.	114.5	-43.91	58.75	36.41
SDev	243.	1.79	154.	0	45.25	1.64	7.44
%RSD	[illegible]78	16.38	1.354	.0028	103.1	2.79[illegible]	20.45
#1	[illegible]0.	12.92	11190.	114.5	-9.590	58.[illegible]	42.88
#2	[illegible]380.	9.392	11410.	114.5	-95.20	57.[illegible]	38.06
#3	14710.	10.57	11490.	114.5	-26.95	60.49	28.27
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	5 000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	H1509000.
SDev	17313.
%RSD	1.147
#1	H1490000.
#2	H1514000.
#3	H1524000.

Errors	LC High
High	1000000.
Low	-39.00

Method: UONLY Sample Name: 9810L066-012 Operator: MDL
Run Time: 10/23/98 14:04:38
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	27040.	9.254	17240.	192.3	-4.841	107.0	62.10
SDev	342.	1.452	178.	2.4	81.406	1.9	2.78
%RSD	1.264	15.69	1.032	1.272	1681.	1.791	4.470
#1	26680.	7.923	17050.	190.9	79.77	105.0	65.30
#2	27100.	10.80	17290.	195.1	-11.69	107.2	60.47
#3	27350.	9.035	17390.	190.9	-82.61	108.9	60.51
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	1000000.	25000.	1000000.	75000.	50000.	25000.	50000.
Low	-61.20	-10.20	-13.80	-7.500	-106.8	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	671200.
SDev	6927.
%RSD	1.032
#1	663400.
#2	673600.
#3	676600.
Errors	LC Pass
High	1000000.
Low	-39.00

Method: U[illegible]LY Sample Name: CCV Operator: MDL
Run Time: 10/23/98 14:09:00
Comment:
Mode: CON Corr. Factor: 1

Elem	[illegible]082	Co2286	Fe2599	Mn2576	U-3670	V- [illegible]24	B-2496
Units		ppb	ppb	ppb	ppb	pp	ppb
Avge	[illegible]1.	2387.	4839	Q674.5	9765.	2 .	4717.
SDev	[illegible]0.	24.	51.	21.7	89.	9.	65.
%RSD	1 [illegible]0	1.001	1.044	3.221	.9108	1 .44	1.384
#1	48[illegible]	2369.	4808.	Q656.1	9717.	.44.	4679.
#2	48[illegible]	2377.	4812.	698.5	9710.	339.	4679.
#3	492[illegible]	2414.	4897.	Q668.8	9867.	392.	4792.
Errors	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass	QC Pass
Value	5000.	2500.	5000.	750.0	10000.	2500.	5000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Ca3179
Units	ppb
Avge	24070.
SDev	278.
%RSD	1.156
#1	23890.
#2	23930.
#3	24390.
Errors	QC Pass
Value	25000.
Range	10.00

Method: UONLY Sample Name: CCB Operator: MDL
Run Time: 10/23/98 14:12:42
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-55.63	-1.165	-3.809	-.0001	-2.524	.9225	-.0005
SDev	7.56	1.783	3.557	.0001	26.191	.4807	2.8392
%RSD	13.60	153.1	93.41	54.50	1038.	52.11	527000.
#1	-59.25	-2.720	-3.224	-.0001	-10.19	.4022	3.278
#2	-60.70	-1.557	-7.622	-.0002	-24.03	1.015	-1.645
#3	-46.94	.7819	-.5796	-.0001	26.64	1.350	-1.635
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	61.20	10.20	13.80	7.500	71.20	6.900	11.10
Low	-61.20	-10.20	-13.80	-7.500	-71.20	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	28.76
SDev	4.00
%RSD	13.92
#1	32.23
#2	29.67
#3	24.38
Errors	LC Pass
High	39.00
Low	-39.00

Method: UONLY Sample Name: CRI Operator: MDL
Run Time: 10/23/98 14:15:18
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	pb
Avge	147.4	100.4	200.6	29.63	395.0	97.18	04.9
SDev	10.6	.6	1.3	.00	25.7	2.54	8.5
%RSD	7.169	.5815	.6666	.0006	6.503	2.618	1.154
#1	138.3	100.4	199.1	29.63	423.2	97.60	195.0
#2	144.9	101.0	200.9	29.63	388.9	99.49	209.8
#3	159.0	99.85	201.7	29.63	372.9	94.45	209.8
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	200.0	100.0	200.0	30.00	400.0	100.0	200.0
Range	50.00	50.00	50.00	50.00	50.00	50.00	50.00

Elem	Ca3179
Units	ppb
Avge	1017.
SDev	13.
%RSD	1.251
#1	1002.
#2	1022.
#3	1026.
Errors	QC Pass
Value	1000.
Range	50.00

Method: UONLY Sample Name: ISA Operator: MDL
Run Time: 10/23/98 14:19:00
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	504000.	.8388	183200.	3.846	-72.01	5.691	-26.10
SDev	4283.	1.635	1578.	.033	39.82	.984	6.18
%RSD	.8498	194.9	.8615	.8619	55.30	17.29	23.67
#1	506500.	.2287	183800.	3.859	-27.11	6.637	-29.08
#2	499100.	2.691	181400.	3.808	-85.88	5.764	-30.21
#3	506400.	-.4031	184300.	3.871	-103.0	4.673	-18.99
Errors	QC Pass	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value	500000.		200000.				
Range	20.00		20.00				

Elem	Ca3179
Units	ppb
Avge	476100.
SDev	3156.
%RSD	.6630
#1	476900.
#2	472600.
#3	478800.
Errors	QC Pass
Value	500000.
Range	20.00

Method: UONLY Sample Name: ISB Operator: MDL
Run Time: 10/23/98 14:22:41
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	494100.	445.8	179600.	415.8	4727.	460.5	913.1
SDev	4747.	3.2	1272.	2.5	65.	2.7	13.6
%RSD	.9609	.7116	.7084	.5939	1.371	.5930	1.488
#1	491900.	442.9	179300.	414.4	4799.	461.5	908.1
#2	490800.	445.3	178500.	414.4	4706.	457.4	902.8
#3	499500.	449.2	181000.	418.6	4674.	462.	928.5
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500000.	500.0	200000.	500.0	5000.	500.0	1000.
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Elem	Ca3179
Units	ppb
Avge	466700.
SDev	2762.
%RSD	.5919
#1	465700.
#2	464600.
#3	469800.
Errors	QC Pass
Value	500000.
Range	20.00

Method: UONLY Sample Name: CCV Operator: MDL
Run Time: 10/23/98 14:26:23
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4930.	2418.	4910.	Q666.0	9857.	2382.	4738.
SDev	19.	16.	30.	6.5	61.	16.	52.
%RSD	.3877	.6430	.6209	.9709	.6159	.6622	1.098
#1	4919.	2401.	4889.	Q66[illegible]	9863.	2373.	4699.
#2	4918.	2420.	4896.	Q660.4	9794.	2373.	4718.
#3	4952.	2432.	4945.	Q673.1	9915.	2400.	4797.
Errors	QC Pass	QC Pass	QC Pass	QC Fail	QC Pass	QC Pass	QC Pass
Value	5000.	2500.	5000.	750.0	10000.	2500.	5000.
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Ca3179
Units	ppb
Avge	24280.
SDev	123.
%RSD	.5049
#1	24210.
#2	24200.
#3	24420.
Errors	QC Pass
Value	25000.
Range	10.00

Method: UONL Sample Name: CCB Operator: MDL
Run Time: 10 3 14:30:06
Comment:
Mode: CONC Factor: 1

Elem	13(	Co2286	Fe2599	Mn2576	U-3670	V-2924	B-2496
Units		ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.	.3805	.8703	-.0000	-39.08	.9145	5.547
SDev	2.	1.782	1.832	.0001	16.85	2.619	10.24
%RSD	28.6	468.2	210.5	385.9	43.10	286.4	156.4
#1	-49.0	.7719	2.924	-.0000	-22.46	1.729	H18.02
#2	-28.5	1.934	.2821	-.0002	-38.64	3.030	3.267
#3	-50.3	-1.564	-.5956	.0001	-56.15	-2.015	-1.648
Errors	LC Pas	Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	61.20	20	13.80	7.500	7..20	6.900	11.10
Low	-61.20	.20	-13.80	-7.500	-71.20	-6.900	-11.10

Elem	Ca3179
Units	ppb
Avge	1.859
SDev	3.393
%RSD	182.5
#1	5.251
#2	1.862
#3	-1.536
Errors	LC Pass
High	39.00
Low	-39.00

STATUS INFORMATION **

Version: 49.0
Date Created: 04/01/96 03:26 Date Last Updated: 10/23/98 12:20

Number of elements: 8 Number of lines: 8

# of lines calibrated: 0
# of lines standardized: 8 10/23/98 12:27 - 10/23/98 12:27

Data collection mode: Spectrum Shifter <6 positions>

Approx. time for analysis 2.2 mins.

Protection status: Un-protected

METHOD INFORMATION **

Sample Introduction Device: Normal
Calibration Mode: Concentration

Default Setup:

Number of Repeats : 3	Auto-store Analysis Data? Yes
Flush Time (sec) : 45.0	Auto-store Stdzn Data? Yes
Auto-Increment Sample Names? No	Store Individual Repeats? Yes
	Auto-print Analysis Data? Yes
	Auto-print Stdzn Report : None
	Condensed Print Format? No

Default File Names:

Analysis Data File	: IC1023A	Autosampler Table	: IC1023A
		Sample Limits Table	: LR
Calibration Data File	: IC1023A	Blank Limits Table	: MB846
Calibration Stds Table	: IC1023A	QC Check Table	: CCV

INTERNAL STANDARDS INFORMATION **

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
1	Time		0	5.0	Yes

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
2	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
3	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
4	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
5	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
6	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
7	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

** OUTPUT INFORMATION **

Output Mode:	Concentration
Override Print Limits?	Yes
Override Significant Figures?	No
Apply Background Correction?	Yes
Apply Blank Subtraction?	No
Limits Table: LR Check?	No
Correction Factor:	1

Report to:

Screen	Avgs
Printer	Avgs, Stats, Reps, Errs, Units

Element:	Al	Co	Fe	Mn	U
Wavelength:	308.215	228.616	259.940	257.610	367.007
Element Name:	Al3082	Co2286	Fe2599	Mn2576	U-3670
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	0	0	0	0	0
Timing Group No.:	1	1	1	1	1
Print Limit Low:	0	0	0	0	0
Print Limit High:	0	0	0	0	0
Significant Digrs:	4	4	4	4	4
Print Units	ppb	ppb	ppb	ppb	ppb
BKG Low SS Offset:	-16	-16	-18	NONE	-24
BKG High SS Offset:	NONE	NONE	NONE	18	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	2pt Uncalib	2pt Uncalib	2pt Uncalib	2pt Uncalib	2pt Uncalib
Std #1 (High) Name:	S1	S1	S1	S1	S2
Conc/Sig:	10000	5000	10000	1500	20000
Std #2 (Low) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #3 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	209.309	-1.5531	-9.37509	0	-108.995
Slope:	3659.25	2912.06	4394.57	21166.5	2386.76
Date Standardized:	10/23/98	10/23/98	10/23/98	10/23/98	10/23/98
Time Standardized:	12:27	12:27	12:27	12:27	12:27
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (A3):	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit					
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	10	4	6	4	7

Affecting Element:	Mo2020	Ni2316	U-3670	U-3670	Al3082
k1 factor:	.00706	.000437	-.00023	0	-.00012
k2 factor:	0	0	0	0	0
use?:	NO	NO	YES	NO	YES

Affecting Element:	V-2924	Fe2599	Mn2576	V-2924	B-2496
k1 factor:	.022673	.00006	-.00669	.000061	-.00045
k2 factor:	0	0	0	0	0
use?:	YES	YES	YES	YES	YES

Affecting Element:	Ti3349	Ti3349	V-2924	Mo2020	Co2286
k1 factor:	0	.0017	.000897	-.0002	.00124
k2 factor:	0	0	0	0	0
use?:	NO	NO	YES	NO	NO

Affecting Element:	Pb2203	U-3670	Mo2020	Fe2599	Fe2599
k1 factor:	-.00016	-.0002	.00015	-.00002	-.0071
k2 factor:	0	0	0	0	0
use?:	NO	YES	NO	YES	YES

Affecting Element:	Fe2599	--n/a--	Al3082	--n/a--	Mn2576
k1 factor:	-.00012	--n/a--	.000033	--n/a--	-.00004
k2 factor:	0	--n/a--	0	--n/a--	0
use?:	YES	--n/a--	YES	--n/a--	YES

Affecting Element:	Ni2316	--n/a--	Ca3179	--n/a--	V-2924
k1 factor:	-.00024	--n/a--	.000011	--n/a--	-.06254
k2 factor:	0	--n/a--	0	--n/a--	0
use?:	NO	--n/a--	YES	--n/a--	YES

Affecting Element:	Co2286	--n/a--	--n/a--	--n/a--	Ca3179
k1 factor:	.004243	--n/a--	--n/a--	--n/a--	.000073
k2 factor:	0	--n/a--	--n/a--	--n/a--	0
use?:	YES	--n/a--	--n/a--	--n/a--	YES

Affecting Element:	Mn2576	--n/a--	--n/a--	--n/a--	--n/a--
k1 factor:	.001243	--n/a--	--n/a--	--n/a--	--n/a--
k2 factor:	0	--n/a--	--n/a--	--n/a--	--n/a--
use?:	YES	--n/a--	--n/a--	--n/a--	--n/a--

Affecting Element:	U-3670	--n/a--	--n/a--	--n/a--	--n/a--
k1 factor:	.00244	--n/a--	--n/a--	--n/a--	--n/a--
k2 factor:	0	--n/a--	- n/a--	--n/a--	--n/a--
use?:	YES	--n/a--	--n/a--	--n/a--	--n/a--

Affecting Element:	Ca3179	--n/a--	--n/a--	--n/a--	--n/a--
k1 factor:	.00003	--n/a--	--n/a--	--n/a--	--n/a--
k2 factor:	0	--n/a--	--n/a--	--n/a--	--n/a--
use?:	YES	--n/a--	--n/a--	--n/a--	--n/a--

Element:	V	B	Ca
Wavelength:	292.402	249.678/2	317.933
Element Name:	V-2924	B-2496	Ca3179
Line Switch Conc:	0	0	0
Peak SS Offset:	0	0	0
Timing Group No.:	1	1	1
Print Limit Low:	0	0	0
Print Limit High:	0	0	0
Significant Figrs:	4	4	4
Print Units:	ppb	ppb	ppb
BKG Low SS Offset:	-12	NONE	NONE
BKG High SS Offset:	NONE	18	18
BKG Element Name:	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--
Stdz. Method:	2pt Uncalib	2pt Uncalib	2pt Uncalib
Std #1 (High) Name:	S1	S2	S1
Conc/Sig:	5000	10000	50000
Std #2 (Low) Name:	S0	S0	S0
Conc/Sig:	0	0	0
Std #3 Name:	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--
Std #4 Name:	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--
Conc:	-- /a--	--n/a--	--n/a--

Y - intercept:	-.234698	-1.63869	-4.34369
[redacted]ope:	3520.47	24580.3	4072.21
Date Standardized:	10/23/98	10/23/98	10/23/98
Time Standardized:	12:27	12:27	12:27
Offset (A0):	0	0	0
Gain (A1):	1	1	1
Curvature (A2):	0	0	0
Exponent (n):	1	1	1
Max. Inflection:	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT
Time of Fit:			
Use IECs:	YES	YES	YES
Number of IECs:	6	6	2
Affecting Element:	Th3180	Ba4934	Al3082
k1 factor:	.002	.000618	.000046
k2 factor:	0	0	0
use?:	NO	NO	YES
Affecting Element:	Fe2599	Co2286	U-3670
[redacted] factor:	.000092	.001494	-.00806
[redacted] factor:	0	0	0
use?:	YES	YES	YES
Affecting Element:	Mn2576	Fe2599	--n/a--
k1 factor:	-.00015	-.00047	--n/a--
k2 factor:	0	0	--n/a--
use?:	NO	YES	--n/a--
Affecting Element:	Mo2020	Mo2020	--n/a--
k1 factor:	-.0055	-.0004	--n/a--
k2 factor:	0	0	--n/a--
use?:	NO	NO	--n/a--
Affecting Element:	Ti3349	U-3670	--n/a--
k1 factor:	.00045	-.0002	--n/a--
k2 factor:	0	0	--n/a--
use?:	NO	YES	--n/a--
Affecting Element:	U-3670	Ca3179	--n/a--
k1 factor:	-.00662	.000073	--n/a--
k2 factor:	0	0	--n/a--
[redacted]e?:	YES	NO	--n/a--

Method: MIX Standard: SO

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Avge	.00184	.0164	-.00288	.0145	.01396	.00618	.0021
SDev	.00241	.0003	.00183	.0001	.00119	.00067	.0075
%RSD	130.84	2.000	63.678	.7945	8.4964	10.917	353.5
#1	.0045	.0166	-.00483	.0145	.01267	.00540	.0056
#2	.0013	.0167	-.00260	.0147	.01420	.00660	-.0025
#3	-.00013	.0161	-.00120	.0145	.01500	.00653	-.0095

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Avge	.0005	.28211	.00469	-.00093	.00162	.00867	.0003
SDev	.0001	.00085	.00989	.00072	.00033	.00080	.0004
%RSD	12.50	.30109	210.96	98.974	20.272	9.2308	137.8
#1	.0006	.28253	.01607	-.00200	.00200	.00787	.0008
#2	.0005	.28113	-.00187	-.00040	.00147	.00947	.0001
#3	.0005	.28267	-.00013	-.00040	.00140	.00867	.0000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Avge	.00429	.05149	.01042	-.0001	.01089	.0005	.00464
SDev	.00054	.02623	.00196	.0004	.00235	.0001	.00073
%RSD	12.564	50.945	18.784	312.2	21.571	27.15	15.811
#1	.00487	.07960	.00867	-.0006	.01280	.0007	.00460
#2	.00380	.04720	.01007	.0000	.01160	.0004	.00540
#3	.00420	.02767	.01253	.0002	.00827	.0005	.00393

Pb Sb S

Elem	Na5889	Ni2316	2203/1	2203/2	2068/1	2068/2	1960/1
Avge	.48318	.00080	.04459	-.00591	-.00527	.00691	-.00536
SDev	.01091	.00547	.01828	.00080	.01596	.01158	.00597
%RSD	2.2583	683.79	40.720	13.455	303.01	167.51	111.05
#1	.47100	.00660	.06387	-.00567	-.02367	.01787	.00140
#2	.48647	.00007	.04340	-.00527	.00480	.00807	-.00987
#3	.49207	-.00427	.02740	-.00680	.00307	-.00520	-.00767

Elem	1960/2	Si2881	Sn1899	Sr4215	Ti3349	Tl1908	V-2924
Avge	-.00016	.01333	.00776	.01738	-.00140	-.01678	-.0004
SDev	.00418	.00024	.00044	.00044	.00048	.00367	.0003
%RSD	2688.9	1.8028	6.0378	2.5253	34.339	21.895	76.38
#1	-.00233	.01360	.00820	.01747	-.00153	-.02080	-.0001
#2	.00067	.01327	.00727	.01720	-.00087	-.01593	-.0003
#3	-.00280	.01313	.00780	.01807	-.00180	-.01360	-.0007

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Elem	Zr3438
Avge	.0044
SDev	.0015
%RSD	34.641
#1	.00027
#2	.00053
#3	.00053

A.D. Little CUP

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Retrieved Updated PMP 10-28-98

TA1027B TR1.2

98L1312-MB1, LC1

9810L066-001, R.S ↓012

PMP 10-27-98

IntStd Mode	1 Time	2 NOTUSED	3 NOTUSED	4 NOTUSED	5 NOTUSED	6 NOTUSED	7 NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Method: MIX Standard: SID

Elem	[illegible]280	Al3082	As1890	B-249[illegible]	Ba4934	Be [illegible]0	Bi2230
Avge	.[illegible]180	.9314	1.0397	.9386	3.5090	17 [illegible]9	.7337
SDev	.[illegible]482	.0015	.0043	.00[illegible]7	.0017	[illegible]54	.0198
%RSD	.[illegible]148	.1585	.41357	.712[illegible]	.04959	.3 48	2.702
#1	.[illegible]07	.9331	1.0401	.9380	3.5104	1 89	.7529
#2	.[illegible]60	.9303	1.0437	.9323	3.5071	1 285	.7133
#3	.7 73	.9307	1.0352	.9456	3.5096	314	.7348

Elem	Ca[illegible]3	Cd2265	Co2286	Cr[illegible]677	Cu3247	.2599	K-7664
Avge	125 .8	15.340	1.6004	.74549	.94131	.3520	4.1327
SDev	.58	.026	.0051	.00434	.00121	.0213	.0669
%RSD	.460[illegible]0	.16935	.31967	.58274	.12853	.39860	1.6194
#1	126.41	15.319	1.6057	.75000	.94180	5.3766	4.1945
#2	125.64	15.333	1.5955	.74133	.94220	5.3381	4.0616
#3	125.28	15.369	1.5999	.74513	.93993	5.3415	4.1421

Elem	Li6707	Mg2852	Mo2020	Na3889	Ni2316	2203/1	2203/2
Avge	181.79	61.502	3.6344	30.115	1.6108	3.0321	1.8876
SDev	.35	.203	.0038	.009	.0029	.1014	.0341
%RSD	.19515	.32940	.10431	.02952	.17928	3.3431	1.8053
#1	181.50	61.735	3.6375	30.107	1.6133	3.1489	1.8498
#2	182.18	61.408	3.6302	30.125	1.6077	2.9800	1.9159
#3	181.69	61.364	3.6355	30.113	1.6115	2.9674	1.8971

Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Avge	1.5868	.85398	.82160	.91449	.07111	1.2891	14.396
SDev	.0655	.02294	.03671	.01791	.00051	.0[illegible]95	.028
%RSD	4.1302	2.6864	4.4679	1.9587	.71603	.73805	.19371
#1	1.5111	.88047	.86347	.89407	.07167	1.2974	14.428
#2	1.6270	.8[illegible]053	.80640	.92753	.07057	1.2787	14.380
#3	1.6221	.84093	.79493	.92187	.07100	1.2913	14.380

Elem	Ti3349	[illegible]06	Zn2138
Avge	3.8054	.02	.61196
SDev	.0062	062	.00054
%RSD	.16408	5975	.08806
#1	3.8114	.1032	.61253
#2	3.7989	..1123	.61187
#3	3.8058	1.1151	.61147

StStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Standardization Rpt.

Method: MIX Standard: S1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Avge	1.5002	1.851	2.0744	1.8[illegible]	6.893[illegible]	34.721	1.457
SDev	.0051	.010[illegible]	.0247	.[illegible]20	.0[illegible]09	.184	[illegible]
%RSD	.[illegible]3998	.5158	1.2025	1.093	.88326	.52851	.371
#1	[illegible].003	1.850	2.0884	1.8[illegible]	6.9446	34.730	.472
#2	1 [illegible]951	1.841	2.0456	1.845	6.8262	34.533	.434
#3	1 [illegible]53	1.860	2.0892	1.886	6.9101	34.900	1.465

Elem	Ca[illegible]9	Ca3968	Cd2265	Co[illegible]86	Cr2677	Cu3247	Fe2714
Avge	.5[illegible]7	254.60	30.103	3.1869	1.482[illegible]	1.8523	1.156
SDev	.00[illegible]	1.78	.315	.0158	.0096	.0113	.005
%RSD	.6803	.69721	1.0479	.49484	.64513	.61221	.4329
#1	.5586	255.31	30.221	3.1842	1.4803	1.8607	1.156
#2	.5549	252.59	29.745	3.1726	1.4735	1.8394	1.151
[illegible]	.5625	255.92	30.341	3.2038	1.4924	1.8567	1.161

[illegible]lem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mo2020	Na5889
Avge	10.683	8.5509	359.22	1.888	126.15	7.3047	60.182
SDev	.055	.0828	4.10	.014	.79	.0231	.509
%RSD	.51539	.96882	1.1416	.7667	.62457	.31579	.84612
#1	10.678	8.5761	358.69	1.880	126.01	7.3007	60.235
#2	10.631	8.4583	355.42	1.879	125.44	7.2839	59.649
#3	10.741	8.6181	363.57	1.904	127.00	7.3295	60.664

Elem	Ni2316	2203/1	2203/2	2068/1	2068/2	1960/1	1960/2
Avge	3.1482	5.9110	3.7395	3.[illegible]38	1.6987	1.6336	1.8330
SDev	.0286	.0786	.0458	.0541	.0086	.0216	.0182
%RSD	.90887	1.3293	1.2252	1.6927	.50825	1.3234	.99149
#1	3.1594	5.8353	3.7903	3.2561	1.6901	1.6172	1.8515
#2	3.1157	5.9056	3.7013	3.[illegible]59	1.6986	1.6256	1.8151
#3	3.1696	5.9921	3.7269	3.[illegible]94	1.7073	1.6581	1.8324

Elem	Si288[illegible]	Sn1899	Sr4215	Ti[illegible]349	Tl1908	Zn2138
Avge	.12[illegible]	2.5605	28.386	7.6123	2.2113	1.2051
SDev	.00[illegible]	.0173	.230	.0376	.0234	.0102
%RSD	.38[illegible]	.67645	.81191	.49415	1.0590	.84395
#1	.12[illegible]	2.5549	28.542	7.6274	2.2191	1.2098
#2	.11[illegible]	2.5467	28.121	7.5695	2.1850	1.1935
#3	.1[illegible]3	2.5799	28.494	7.6400	2.2299	1.2121

Int.Std	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Standardization Rpt. Tue · 27 98 02:3o:08 PM Page

Method: MIX Standard: S2

Elem	Al308	Ca3179	Fe2714	K-7664	Mg2790	Na5889	2[illegible]1
Avge	17.73	6.659	5.448	81.484	11.24	288.66	109.3[illegible]
SDev	.07	.046	.019	.246	.05	1.68	.3[illegible]
%RSD	.3876	.6949	.[illegible]574	.30240	.4187	.58179	.[illegible]579
#1	17.76	6.692	5.455	81.764	11.[illegible]7	290.50	[illegible]9.02
#2	17.77	6.680	5.462	81.303	11.26	288.2[illegible]	109.67
#3	17.65	6.606	5.425	81.384	11.18	287.2[illegible]	109.28

Elem	2203/?	V-2924
Avge	70.465	6.236
SDev	.158	.026
%RSD	.22352	4225
#1	70.644	6.249
#2	70.404	6.253
#3	70.348	6.205

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000		--		--	--	--

Standardization Rpt. Tue 10-27-95 02:1[illegible] PM [illegible]

Method: MIX Standard: S3

Elem	Mn2576
Avge	24.43
SDev	.15
%RSD	.6160
#1	24.49
#2	24.26
#3	24.54

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Method: MIX Sample Name: ICV Operator: PMF
Run Time: 10/27/98 14:44:36
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	[illegible]2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	370.2160	3.760713	371.0345	367.2704	373.0095	369.8520	386.0112
SDev	2.3151	.027742	4.3433	4.6112	2.3822	2.4552	6.9098
%RSD	.6253295	.7376887	1.170589	1.255542	.6386556	.6638285	1.790047
#1	371.8314	3.772330	371.7425	365.0715	373.8491	370.8793	388.0643
#2	371.2530	3.780759	374.9803	372.5695	374.8584	371.6266	391.6618
#3	367.5638	3.729051	366.3807	364.1701	370.3212	367.0500	378.3076
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	375.0000	3.750000	375.0000	375.0000	375.0000	375.0000	375.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	1.526998	1.472907	375.5207	374.1972	372.0500	371.9390	3.833629
SDev	.015596	.007388	4.1818	2.2675	2.9274	1.7768	.034633
%RSD	1.021339	.5015820	1.113598	.6059715	.7868266	.4777151	.9033916
#1	1.534496	1.471461	377.0316	374.8260	373.3204	370.9338	3.830570
#2	1.537429	1.480911	378.7371	376.0840	374.1275	373.9905	3.869690
#3	1.509069	1.466349	370.7934	371.6816	368.7020	370.8926	3.800611
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	1.500000	1.500000	375.0000	375.0000	375.0000	375.0000	3.750000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	3.711447	3641.931	3008.159	2.996523	2.901911	3.794557	366.4351
SDev	.021859	56.397	32.439	.026829	.020423	.021398	2.2760
%RSD	.5889601	1.548554	1.078366	.8953451	.7037655	.5639076	.6211312
#1	3.719657	3653.456	3008.012	2.995519	2.911487	3.802634	366.1446
#2	3.728013	3691.674	3040.672	3.022282	2.915785	3.810740	368.8424
#3	3.686672	3580.661	2975.794	2.968738	2.878459	3.7702	364.3182
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	3.750000	3750.000	3000.000	3.000000	3.000000	3.750000	375.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3681.986	369.8453	378.9210	378.7849	378.8310	368.1367	362.1703
SDev	37.200	4.1120	4.7418	2.2712	.4430	2.2103	2.0809
%RSD	1.010329	1.111816	1.251388	.5996128	.1169429	.6004032	.5745735
#1	3688.631	370.9971	383.7976	376.2083	378.7364	370.4931	362.63
#2	3715.416	373.2587	378.6389	379.6497	379.3137	367.8076	359.8979
#3	3641.912	365.2803	374.3266	380.4968	378.4429	366.1094	363.9828
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value	3750.000	375.0000			375.0000	375.0000	375.0000

Range	10.00000	10.00000			10.00000	10.00000	10.00000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	357.4704	364.5160	366.1868	369.1093	365.1233	367.6361	367.9423
SDev	.3104	3.2737	9.1238	2.9088	8.3436	4.5961	2.4363
%RSD	.0868411	.8980988	2.491567	.7880694	2.285150	1.250170	.6621200
#1	357.3594	365.2611	376.2625	367.6119	364.1461	368.6156	368.8260
#2	357.8211	360.9339	358.4836	372.4618	373.9124	371.6635	369.8133
#3	357.2308	367.3529	363.8143	367.2543	357.3113	362.6292	365.1875
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value					375.0000	375.0000	375.0000
Range					10.00000	10.00000	10.00000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	368.9029	375.9844	3.834542	393.5737
SDev	2.7709	5.9268	.022087	2.9713
%RSD	.7511269	1.576341	.5760020	.7549557
#1	370.2834	369.6834	3.843056	393.7714
#2	370.7123	381.4479	3.851106	396.4412
#3	365.7129	376.8219	3.809466	390.5085
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	375.0000	375.0000	3.750000	375.0000
Range	10.00000	10.00000	10.00000	10.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Blank Sample Tue 10-27-98 03:00:33 PM Page

Method: MIX Sample Name: ICB Operator: SMP
Run Time: 10/27/98 14:54:03
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be313	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-.875893	-.002353	.6822214	1.540271	.1852219	.067 4	.222566
SDev	.715688	.008466	.3013259	.869927	.1250696	.022 73	.292571
%RSD	81.70946	359.8480	44.16834	56.47882	67.52423	33.(33	247.4973
#1	-.208843	-.010938	.8481820	.5708783	.1788583	.0(555	-.010374
#2	-1.63190	-.002108	.3344013	2.273090	.0634555	.0 413	-.418892
#3	-.786936	.0059881	.8640810	1.768845	.3133518	.(334	1.996036
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.00000	.2000000	10.00000	100.0000	100.0000	100.0000	100.0000
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-100.000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0007750	.0013335	.0856796	.4334116	-.709837	1.171804	.0057600
SDev	.0005646	.0000899	.1940207	.6153607	.263205	1.447327	.0075177
%RSD	72.85435	6.742612	226.4490	141.9807	37.07968	123.5127	130.5145
#1	.0001230	.0014341	.1337726	.0373372	-.515362	-.086416	-.000967
#2	.0011010	.0013054	-.127864	.1205549	-1.00934	.8483311	.0043722
#3	.0011010	.0012610	.2511307	1.142343	-.604809	2.753499	.0138748
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.000000	5.000000	5.000000	50.00000	10.00000	25.00000	.1000000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-25.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	-.000747	25.61957	.3427966	-.002886	.0003988	.0001641	.5197949
SDev	.000406	15.89370	.0245627	.004863	.0001700	.0001914	.0624186
%RSD	54.32654	62.0373	7.165377	168.5341	42.62947	116.6809	12.00832
#1	-.000352	15.03045	.3708374	-.007130	.0005943	.0003640	.5411196
#2	-.001163	17.93289	.3250867	-.003947	.0002860	.0001458	.4495086
#3	-.000727	43.89537	.3324658	.0024206	.0003160	-.000018	.5687568
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1000000	5000.000	100.0000	5.000000	5.000000	.0150000	100.0000
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.015000	-100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	b2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ob
Avge	-.293791	.5648471	-1.54160	.9794006	.1405509	1.813962	.051112
SDev	3.175527	.6857313	1.90375	1.000773	1.218287	.436094	1.334023
%RSD	1080.880	121.4012	123.4918	102.1822	866.7943	24.04097	126.9154
#1	-3.72930	.0134114	.6558974	1.827962	1.438465	1.960975	-.468
#2	.3140311	.3484610	-2.69058	.124221	-.978286	2.157550	1.591
#3	2.533893	1.332669	-2.59012	1.234461	-.038526	1.323360	2.030506
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5000.000	40.00000			3.000000	5.000000	60.00000

Low	-5000.00	-40.0000			-3.00000	-5.00000	-60.0000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.102428	.5254426	-6.44924	5.938600	-3.06128	-.544057	-.007636
SDev	2.864626	.5944698	3.11106	1.763586	2.65732	1.029580	.020400
%RSD	136.2532	113.1370	48.23917	29.69699	86.80415	189.2413	267.1414
#1	-1.19830	-.104572	-3.18343	4.528519	.0071260	.2469237	.0094910
#2	3.565743	.6044288	-9.37811	7.916035	-4.59393	-1.70818	-.002195
#3	3.939840	1.076471	-6.78617	5.371246	-4.59705	-.170913	-.030205
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100.0000	100.0000	100.0000
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	.1985665	2.458805	.0007901	.1771799
SDev	.2231218	2.507274	.0004045	.1410990
%RSD	112.3663	101.9712	51.19661	79.63599
#1	.0526076	-.316618	.0003272	.3294461
#2	.0876837	3.132939	.0009675	.0508456
#3	.4554083	4.560094	.0010757	.1512480
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100.0000	10.00000	.0500000	20.00000
Low	-100.000	-10.0000	-.050000	-20.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard Tue 1[illegible]

Method: MTX Sample Name: CRI Operator: PMF
Run Time: 10/27/98 15:00:39
Comment:
Mode: CONC Corr Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	[illegible]3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	b	ppb
Avge	19.14639	.2009699	19.97313	194.[illegible]734	196.5083	.804189	1.369017
SDev	1.78119	.0067587	1.82592	.6070	.4451	.018082	.983697
%RSD	9.303002	3.363026	9.141882	.3127768	.2265211	.1844349	71.85426
#1	20.73241	.1980224	20.30199	194.7694	196.6685	9.799272	1.506715
#2	19.48742	.2087018	21.61228	193.6535	196.8511	9.789073	2.276610
#3	17.21935	.1961855	18.00513	193.7973	196.0052	9.824221	.3237258
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	NOCHECK
Value	20.00000	.2000000	20.00000	200.0000	200.0000	10.00000	
Range	50.00000	50.00000	50.00000	50.00000	50.00000	50.00000	

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0009380	.0015080	9.983968	99.98833	10.69388	50.88926	.2171694
SDev	.0007469	.0000370	.238752	.12559	1.25766	.69810	.0131160
%RSD	79.63007	2.452632	2.391351	.1256072	6.386031	1.371810	6.039541
#1	.0011010	.0015439	10.01385	100.0136	20.95137	50.29034	.2046579
#2	.0015899	.0015101	10.20637	100.0994	19.69420	51.65597	.2308391
#3	.0001230	.0014700	9.731683	99.85201	18.43606	50.72147	.2159815
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	NOCHECK
Value			10.00000	100.0000	20.00000	50.00000	
Range			50.00000	50.00000	50.00000	50.00000	

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	.1982656	18.38654	197.5227	.0002276	.0002518	.0304338	196.6935
SDev	.0008140	32.33873	.7910	.0001881	.0003624	.0000827	.9679
%RSD	.4105618	175.8827	.4004361	143.1150	143.9415	.2718141	.4921030
#1	.1990347	49.26719	196.6884	.0004206	.0005857	.0305241	196.0989
#2	.1983491	21.12815	198.2616	.0053148	.0003031	.0303617	196.1713
#3	.1974131	-15.2357	197.6182	-.001053	-.000134	.0304156	197.8104
Errors	QC Pass	NOCHECK	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass
Value	.2000000		200.0000			.0300000	200.0000
Range	50.00000		50.00000			50.00000	50.00000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.17056	78.40803	7.341994	5.451274	6.081528	11.98576	116.6265
SDev	1.3848	1.08454	6.468820	2.820803	1.309416	.92747	2.3765
%RSD	811.88[illegible]	1.383200	88.10712	51.74575	21.53104	7.738111	2.037732
#1	-.354195	79.42017	13.56415	2.200172	5.985043	11.70593	114.60[illegible]
#2	1.741086	78.54065	7.809917	7.249097	7.436517	11.23042	119.2439
#3	-.875182	77.26328	.6519176	6.904554	4.823023	13.02092	116.0318
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value		80.00000			6.000000	10.00000	120.0000

Range		50.00000			50.00000	50.00000	50.00000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn189	Sr40.3
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	115.5100	117.1831	7.206906	14.37080	191.0270	193.8704	190.5328
SDev	7.9330	3.1718	4.318469	2.73134	5.8713	2.2778	.3535
%RSD	6.867772	2.706739	59.92126	19.00618	3.073554	1.174933	.1855405
#1	106.4182	118.6896	12.15916	11.47885	197.7325	193.6270	190.4869
#2	119.0881	119.3209	4.225241	14.72696	188.5402	196.2602	190.9070
#3	121.0237	113.5387	5.236319	16.90659	186.8083	191.7240	190.2044
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	QC Pass
Value					200.0000		200.0000
Range					50.00000		50.00000

Elem	Ti3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	196.4793	22.49396	.1006048	39.20933
SDev	.4453	.22441	.0007482	.09754
%RSD	.2266637	.9976590	.7437010	.2487750
#1	196.8032	22.56348	.1013462	39.09684
#2	195.9715	22.24301	.0998500	39.26071
#3	196.6634	22.67539	.1006183	39.27044
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	200.0000	20.00000	.1000000	40.00000
Range	50.00000	50.00000	50.00000	50.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard Tue [illegible] 03:13:48 PM Page

Method: MIX Sample Name: ISA Operator: PMP
Run Time: 10/27/98 15:07:15
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-.931847	462.1905	2.439817	2.057495	-1.984	.0922711	7.845933
SDev	.756788	1.6443	1.567182	.865588	.20[illegible]1	.0298940	4.212736
%RSD	81.21370	.3557547	64.23361	42.06999	10.2[illegible]4	32.39805	53.69324
#1	-.089275	460.3303	3.621278	3.032093	-1.9[illegible]25	.1263406	11.29503
#2	-1.55384	462.7917	.6620004	1.76219	-1.8[illegible]26	.0800434	3.150702
#3	-1.15243	463.4497	3.036173	1.378202	-2.20695	.0704294	9.092073
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value		500.0000					
Range		20.00000					

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	421.3717	51.733112	1.373702	1.435283	-.829757	1.997383	173.1812
SDev	2.6461	.061024	.204006	.054277	.419190	.156986	.5596
%RSD	.6279630	3.521073	14.85084	3.781607	50.51958	7.859570	.3231241
#1	418.5509	51.666039	1.533526	1.425482	-.423603	2.126507	172.5624
#2	421.7653	51.747943	1.143921	1.386574	-1.26087	2.043001	173.3293
#3	423.7989	51.785353	1.443661	1.493792	-.804801	1.822640	173.65[illegible]
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	500.0000						200.[illegible]000
Range	20.00000						20.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	163.3048	11.40182	.5705661	464.0800	529.58134	.0010178	11.69428
SDev	.4564	6.57157	.0929224	1.6907	.00955	.0002091	.9810[illegible]
%RSD	.2794569	57.63618	16.28601	.3643150	.0322832	20.54737	8.389226
#1	162.8000	18.98087	.6527205	462.2430	529.57055	.0012226	10.77914
#2	163.4263	7.934873	.5892599	464.4264	529.58870	.0010261	11.57356
#3	163.6882	7.289715	.4697179	465.5707	529.58478	.0008046	12.73011
Errors	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value				500.0000			
Range				20.00000			

Elem	[illegible]5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	[illegible]pb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-1.07905	1.060441	6.686636	-4.35063	-.674529	1.113722	.4940788
SDev	.82118	.302010	.375501	2.38071	1.585712	1.287136	2.240976
%RSD	76.10215	28.47962	5.615694	54.72105	235.0842	115.5707	453.5664
#1	-.263592	1.144204	7.059463	-3.08374	.2946134	-.347356	2.372[illegible]
#2	-1.06772	.[illegible]853917	6.308517	-2.87125	.1862817	1.608338	1.096444
#3	-1.90584	1.[illegible]211729	6.691925	-7.09689	-2.50448	2.080182	-1.98652
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							

nge

Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	S-42.6
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.5475357	.4665909	-6.37002	4.849083	24.08420	5.03265	15.0271
SDev	3.930838	2.271694	6.04086	3.457961	1.25897	1.70509	.10350
%RSD	717.9145	486.8705	94.83262	71.31166	5.227355	33.88050	.6887265
#1	.9995194	3.056875	-5.60285	2.275551	22.66209	-4.32861	14.94214
#2	4.232844	-.470205	-12.7578	8.779747	25.05640	-3.79233	14.99634
#3	-3.58976	-1.18690	-.749397	3.491951	24.53411	-6.97702	15.14238
Errors Value Range	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	-2.12020	3.828385	-.001068	-.769786
SDev	.12899	1.355005	.000285	.188701
%RSD	6.083758	35.39365	26.72672	23.89264
#1	-1.97461	2.337311	-.000855	-.604198
#2	-2.22023	4.163360	-.001392	-.981453
#3	-2.16575	4.984486	-.000955	-.783707
Errors Value Range	NOCHECK	NOCHECK	NOCHECK	NOCHECK

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	-	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard Tue 10 [illegible]98 03:20:[illegible] PM Page: 1

Method: MIX Sample Name: ISB Operator: PMP
Run Time: 10/27/98 15:14:00
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be313[illegible]	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	191.1562	462.7024	92.12525	940.2908	467.0022	459.6[illegible]0	914.7703
SDev	.7358	1.1588	1.34396	1.2404	.6809	1.4[illegible]83	3.7295
%RSD	.3849035	.2504405	1.458840	.1319115	.1458085	.315[illegible]311	.4076979
#1	191.9132	464.0118	92.70818	940.7447	467.5222	46[illegible]2478	917.8309
#2	191.1116	462.2862	90.58825	941.2403	467.2530	45[illegible].3450	910.6163
#3	190.4436	461.8092	93.07934	938.8574	466.2314	458.4050	915.8636
Errors	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	200.0000	500.0000	100.0000		500.0000	500.0000	
Range	20.00000	20.00000	20.00000		20.00000	20.00000	

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	419.8683	S1.658073	827.9133	418.7273	438.2510	470.3663	173.0531
SDev	1.6649	.060663	1.9206	1.0696	1.6842	1.0639	.2901
%RSD	.3965316	3.658665	.2319841	.2554471	.3843051	.2261858	.1676429
#1	421.6230	S1.725399	829.9294	419.6790	439.7843	469.1638	173.3501
#2	419.6711	S1.641156	827.7054	418.9332	438.5202	470.7500	173.0388
#3	418.3108	S1.607663	826.1051	417.5696	436.4483	471.1851	172.770[illegible]
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000		1000.000	500.0000	500.0000	500.0000	200.0000
Range	20.00000		20.00000	20.00000	20.00000	20.00000	20.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn257[illegible]	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	162.8441	21.18003	906.3367	461.4943	S29.55485	.4546393	904.7609
SDev	.3559	19.37217	.9142	1.0579	.02215	.0006904	1.5281
%RSD	.2185756	91.46432	.1008690	.2292325	.0749500	.1518578	.1688959
#1	163.2244	43.51373	905.4070	462.[illegible]164	S29.58043	.4553966	904.4841
#2	162.7887	8.924458	906.3771	461.5625	S29.54205	.4544764	906.4085
#3	162.5190	11.10190	907.2300	460.4039	S29.54209	.4540449	903.3901
Errors	NOC[illegible]ECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	QC Pass	NOCHECK
Value				500.0000		.5000000	
Range				20.00000		20.00000	

Elem	[illegible]889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units		ppb	ppb	ppb	ppb	ppb	ppb
Avge	78548	802.4013	50.17563	38.21629	42.19942	44.90342	561.0869
SDev	59720	2.3325	.17929	.70734	.46898	2.19365	3.6342
%RSD	[illegible].43979	.2906850	.3573259	1.850884	1.111334	4.885262	.6477047
#1	-2.10970	804.2371	49.97418	38.49113	42.31565	47.09781	562.32[illegible]
#2	-3.00444	803.1901	50.23503	37.41278	41.68325	42.71051	563.9390
#3	-3.24229	Q799.7767	50.31769	38.74496	42.59935	44.90193	556.9951
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value		1000.000			50.00000	50.00000	600.0000

Range		20.00000			20.00000	20.00000	20.00000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	567.3564	557.9561	39.41671	47.64185	917.7610	844.2131	924.8096
SDev	2.6879	4.8472	6.77348	3.77587	3.2060	1.2137	.6997
%RSD	.4737498	.8687476	17.18428	7.925527	.3493305	.1437633	.0887428
#1	565.3746	560.8044	38.20647	51.33601	919.3346	844.3217	925.4765
#2	570.4159	560.7045	33.32993	47.39296	919.8762	845.3689	925.0378
#3	566.2789	552.3592	46.71373	43.79659	914.0723	842.9488	923.8874
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	-2.31498	88.02512	.4618333	874.8749
SDev	.09805	2.68615	.0019402	.6779
%RSD	4.235578	3.051573	.4201020	.0774842
#1	-2.26207	86.88256	.4638924	874.9823
#2	-2.25474	91.09366	.4615682	875.4927
#3	-2.42812	86.09913	.4600393	874.1497
Errors	NOCHECK	QC Pass	QC Pass	QC Pass
Value		100.0000	.5000000	1000.000
Range		20.00000	20.00000	20.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard ue 10 27-98 05:29:00 PM Page

Method: MI> Sample Name: CCV Operator: PMP
Run Time: 10/ 7/98 15:22:28
Comment:
Mode: CONC rr. Factor: 1

Elem	Ag3[illegible]	Al3082	As1890	B-2496	Ba4934	Be3130	[illegible]2230
Units	[illegible]b	PPM	ppb	ppb	ppb	ppb	[illegible]b
Avge	4.3. 22	4.979231	482.9459	488.3466	493.2373	490.6078	2.1226
SDev	.[illegible]42	.007468	2.2268	2.1854	1.4442	.3570	2.2912
%RSD	.1104[illegible]7	.1499797	.4610909	.4475166	.2928013	.0727676	.4473867
#1	484.24	4.985862	480.3765	485.9066	493.8558	490.4479	510.1226
#2	483.17[illegible]	4.971142	484.3167	490.1241	494.2692	490.3587	511.6226
#3	483.7518	4.980690	484.1445	489.0090	491.5868	491.0168	514.6224
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	5.000000	500.0000	500.0000	500.0000	500.0000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	2.011400	2.003660	493.2668	491.1861	490.2065	495.9033	5.060892
SDev	.007580	.010875	2.6114	2.2013	.7771	2.1932	.036885
%RSD	.3768652	.5427467	.5294023	.4481594	.1585198	.4422605	.7288197
#1	2.020038	2.015463	490.8117	489.1490	489.7580	493.7222	5.030811
#2	2.008303	2.001472	492.9782	490.8880	489.7577	495.8791	5.049820
#3	2.005858	1.994046	496.0105	493.5212	491.1038	498.1084	5.10204[illegible]
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000000	2.000000	500.0000	500.0000	500.0000	500.0000	5.000000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	4.920595	4813.744	3871.321	3.970439	3.927727	5.011304	482.9037
SDev	.006187	39.836	46.172	.025385	.011510	.006585	1.5481
%RSD	.1257417	.827548	1.192667	.6393604	.2930465	.1313933	.3205876
#1	4.915605	4795.925	3827.802	3.957704	3.940144	5.006172	481.2106
#2	4.918662	4785.927	3866.409	3.953941	3.925625	5.009011	483.2536
#3	4.927518	4859.379	3919.753	3.999671	3.917413	5.018728	484.2470
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.000000	5000.000	4000.000	4.000000	4.000000	5.000000	500.0000
Range	1 00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	[illegible]889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	[illegible]b	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4902.855	479.6369	493.3673	497.7646	496.3010	483.5690	475.7561
SDev	33.639	.4204	2.0079	5.7801	4.4212	2.2620	5.6689
%RSD	.6861025	.0876479	.4069797	1.161209	.8908282	.4677806	1.191549
#1	4869.361	479.2390	492.0780	491.5543	491.7295	481.0481	471.16[illegible]
#2	4902.568	480.0767	492.3430	498.7524	496.6189	485.4217	474.0065
#3	4936.637	479.5950	495.6807	502.9871	500.5547	484.2372	482.0935
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value	5000.000	500.0000			500.0000	500.0000	500.0000

Range	10.00000	10.00000			10.00000	10.00000	10.00000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	472.2427	477.5095	473.9449	488.3730	470.1202	480.4126	493.4195
SDev	11.2968	2.9778	3.5206	3.5491	5.1588	5.0195	.8504
%RSD	2.392170	.6236019	.7428237	.7267231	1.097332	1.044828	.1723418
#1	464.2820	474.6054	474.3378	484.3975	467.4305	478.2749	493.5034
#2	467.2737	477.3671	477.2525	489.4993	466.8622	476.8159	494.2249
#3	485.1723	480.5559	470.2443	491.2224	476.0680	486.1471	492.5303
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value					500.0000	500.0000	500.0000
Range					10.00000	10.00000	10.00000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	485.5858	498.9048	5.060545	491.2371
SDev	.7882	6.4565	.002575	2.1107
%RSD	.1623148	1.294138	.0508885	.4296746
#1	486.3740	491.6338	5.059100	488.8665
#2	485.5858	501.1134	5.059017	491.9324
#3	484.7976	503.9672	5.063518	492.9125
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	500.0000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
RSD	.0000000	--	--	-	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	-	--	--

Analysis Report Blank Sample Tue ..-27-98 03:55:23 PM Page: 1

Method: MID Sample name: QCB Operator: JMP
Run Time: 10/27/98 15:31:53
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3280	Al3082	As1890	B-2496	Ba4934	Be313	.2230
Units	p..	PPM	ppb	ppb	ppb	ppb	ob
Avge	-..24647	-.003087	1.152470	3.4[illegible].422	.3005577	.Ooe[illegible]1	.100403
SDev	.70363	.005423	1.234353	.156631	.1526730	.050 74	..16791e
%RSD	56.44980	175.6658	107.1050	4.477189	50.79655	75.)25	37.66982
#1	-.475630	-.007257	1.089079	3.4[illegible]6365	.2172458	.0 .817	1.810116
#2	-1.40951	.0030439	-.048966	3.390788	.4767[illegible]25	.(3696	3.405842
#3	-1.85426	-.005049	2.417297	3.678114	.2076649	.00[illegible]7180	4.085250
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.00000	.2000000	10.00000	100.0000	100.0000	100.0000	100.0000
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-100.000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0037088	.0042306	.2421427	.2110971	-.545123	1.567217	.0053670
SDev	.0018512	.0009675	.0913753	.4464855	.221602	.972623	.0116408
%RSD	49.91387	22.86894	37.73612	211.5072	40.65169	62.06053	216.8947
#1	.0045237	.0052094	.1812242	.0[illegible]2554	-.220583	.6324388	.0067560
#2	.0050127	.0042078	.3472086	.7028710	-.649715	2.573715	.0162510
#3	.0015899	.0032748	.1979955	-.168835	-.695072	1.495498	-.00690
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.000000	5.000000	5.000000	50.00000	10.00000	25.00000	1.000000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-25.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	.0001885	27.74289	.2409649	.0078065	.0027436	.0001455	.5810232
SDev	.0004765	12.29843	.0801172	.0059055	.0009344	.0001792	.6340051
%RSD	252.7828	44.33003	37.24854	210.4245	34.05708	122.9259	109.1187
#1	.0007084	23.33526	.3044251	.0041571	.0035913	.0003369	.3765684
#2	.0000843	41.63776	.2675294	.0079197	.0028977	.0001189	.0744723
#3	-.000227	18.25564	.1509390	-.003657	.0017417	-.000018	1.292029
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1000000	5000.000	100.0000	5.000000	5.000000	.0150000	100.0000
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.015000	-100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.9860289	.6137086	-2.83589	.9791023	-.290557	1.291390	1.097538
SDev	1.899043	.2584560	2.27474	2.253978	.829341	1.491321	2.294913
%RSD	192.5950	42.11379	80.21268	230.2086	285.4314	115.4818	209.0965
#1	-.807231	.3275204	-.213554	-1.51886	-1.08313	3.011795	2.7546
#2	2.975603	.8300947	-4.27735	1.595196	-.359760	.4959388	-1.52185
#3	.7897143	.6835105	-4.01677	2.8[illegible]0973	.5712171	.3664364	2.059792
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5000.000	40.00000			3.000000	5.000000	60.00000

[redacted]	-5000.00	-40.0000			-3.00000	-5.00000	60.0000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4.581877	-.642820	-6.82707	5.343735	-3.25201	-1.46490	.0187714
SDev	4.477864	5.140932	5.82119	.676744	1.84841	1.32925	.0315516
%RSD	97.72992	799.7473	85.26626	12.66424	56.83908	90.73998	168.0835
#1	-.588703	4.423058	-.105510	4.567310	-1.14313	-2.67251	.0491024
#2	7.157157	-5.85565	-10.1467	5.808471	-4.02171	-.040631	.0210851
#3	7.177176	-.495863	-10.2290	5.655423	-4.59120	-1.68155	-.013873
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100.0000	100.0000	100.0000
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	.1518669	1.478698	.0005058	.1577728
SDev	.2978913	2.451542	.0004884	.0926691
%RSD	196.1529	165.7906	96.56333	58.73576
#1	.1401726	-1.21027	.0002182	.0508138
#2	.4554332	2.056938	.0010697	.2085362
#3	-.140005	3.589430	.0002294	.2139685
[redacted]rors	LC Pass	LC Pass	LC Pass	LC Pass
High	100.0000	10.00000	.0500000	20.00000
Low	-100.000	-10.0000	-.050000	-20.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Tue 10-27-98 03:45:10 PM Page:

Method: MIX Sample Name: 98L1312-MB1 Operator: PMP
Run Time: 10/27/98 15:38:37
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	.2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	pb
Avge	-.268109	.0123708	-.474481	1.395915	.1947624	-.076230	.161393
SDev	.846518	.0029750	2.371476	1.544699	.0777188	.027024	.288921
%RSD	315.7366	24.04832	499.8040	110.6585	39.90442	35.45006	27.0950
#1	-.208809	.0140908	-.703433	1.840105	.2652627	-.077671	2.265327
#2	.5471996	.0140860	2.003167	2.66985	.1114239	-.048515	10.13699
#3	-1.14272	.0089356	-2.72318	-.322213	.2076008	-.102505	.0818625
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.00000	.2000000	10.00000	100.0000	100.0000	100.0000	100.0000
Low	-10.0000	-.200000	-10.0000	-100.00	-100.000	-100.000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0126731	.0130780	.2005802	.4056182	-.006062	.8960896	.0053696
SDev	.0005646	.0002327	.2008080	.5544645	.331185	.4394051	.0104594
%RSD	4.455165	1.779575	100.1136	136.6962	5463.658	49.03585	194.7891
#1	.0123472	.0133119	.4281080	.7246109	.2483914	1.279578	-.000366
#2	.0123472	.0130755	.1255095	.7268647	.1139439	.4166316	.0174422
#3	.0133251	.0128465	.0481230	-.234621	-.380520	.9920587	-.0009
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.000000	5.000000	5.000000	50.00000	10.00000	25.00000	.1000000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-25.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	.0028709	45.15881	-.157509	.0033853	.0031289	.0001457	.5420682
SDev	.0012100	22.41930	.007379	.0029563	.0002469	.0000989	.6393902
%RSD	42.14530	49.64547	4.684905	87.32687	7.890348	67.85126	117.9538
#1	.0022682	61.97239	-.150130	.0021312	.0032145	.0001181	.0013991
#2	.0042639	51.15208	-.164888	.0067620	.0033216	.0002554	1.247808
#3	.0020808	20.35196	-.157509	.0012629	.0028506	.0000635	.3769977
Errors	LC Pass	C Pass	LC Pass	LC Pass	LC Pass	LC Pass	C Pass
High	.1000000	000.000	100.0000	5.000000	5.000000	.0150000	00.0000
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.015000	100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	52068
Units	ppb	ppb	ppb	ppb	ppb	ppb	pb
Avge	2.62450	3.035838	1.475956	1.048782	1.191830	1.522179	1.763448
SDev	.69254	.916694	2.095203	1.107129	.180320	1.917201	.462325
%RSD	26.3878.	30.19577	141.9557	105.5633	15.12964	125.9511	26.21712
#1	2.318703	3.887422	3.845407	-.103151	1.212549	3.173253	2.0254
#2	2.137487	3.154501	-.131702	2.104876	1.360896	3.029055	1.229631
#3	3.417314	2.065590	.7140742	1.144620	1.002046	-.635771	2.035276
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5000.000	40.00000			3.000000	5.000000	60.00000

Low	-5000.00	-40.0000			-3.00000	-5.00000	
Elem	2068/1	2068/2	1960/1	1960/2	Si3881	Sn1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-1.33073	3.307416	-9.51304	7.030716	7.482030	5.581352	.0622016
SDev	1.84045	.403532	2.51377	2.106777	4.471456	.511163	.0316993
%RSD	138.3038	12.20083	26.42445	29.96532	60.02992	9.158442	50.96221
#1	.3794890	2.846378	-10.7147	8.606780	10.35982	6.059687	.0816579
#2	-3.27836	3.479447	-6.62397	7.847530	9.779701	5.641660	.0793237
#3	-1.09331	3.596424	-11.2004	4.637840	2.306569	5.042708	.0256232
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100.0000	100.0000	100.0000
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	.1606202	.2087568	.0002559	-.034407
SDev	.2452337	.4403470	.0005452	.079388
%RSD	152.6792	210.9378	213.0774	145.9141
#1	-.087499	.3313203	-.000321	.0328833
#2	.4028633	-.279888	.0007631	.073810
#3	.1664959	.5748380	.0003253	-.122296
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100.0000	10.00000	.0500000	20.00000
Low	-100.000	-10.0000	-.050000	-20.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000		--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Tue 10-[illegible]-98 03:51:52 Pm Page

Method: MTX Sample Name: 98L1312-1C1 Operator: PNP
Run Time: 10/27/98 15:45:21
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	425.6658	5.023291	9533.210	4641.690	4937.079	242.3561	L 4.40857
SDev	.9931	.031810	34.484	19.237	6.278	.8934	5.77883
%RSD	.2333102	.6332592	.3617256	.4144389	.1271511	.3686348	131.0818
							NIR
#1	424.8657	4.987154	9493.544	4619.824	4934.596	241.3261	L.7151089
#2	426.7773	5.035657	9550.025	4656.010	4944.218	242.8218	L-3.26827
#3	425.3543	5.047061	9556.060	4649.235	4932.422	242.9205	L-10.6726
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Low
High	600.0000	6.000000	12000.00	6000.000	6000.000	300.0000	6000.000
Low	400.0000	4.000000	8000.000	4000.000	4000.000	200.0000	4000.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	24.63370	H31.45556	241.2475	2401.516	482.5036	1216.048	5.083782
SDev	.12514	.07031	.9496	11.119	1.4375	1.690	.041090
%RSD	.5080214	.2235068	.3936286	.4629856	.2979327	.1389819	.8082603
#1	24.48994	H31.39435	240.1537	2388.687	481.0813	1214.600	5.037179
#2	24.69286	H31.53234	241.7271	2407.481	483.9559	1217.905	5.099367
#3	24.71829	H31.43997	241.8616	2408.378	482.4737	1215.640	5.1148[illegible]
Errors	LC Pass	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	30.00000	30.00000	300.0000	3000.000	600.0000	1500.000	6.000000
Low	20.00000	20.00000	200.0000	2000.000	400.0000	1000.000	4.000000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn257e	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	4.837079	25275.16	4643.725	24.34037	25.64706	.7433031	4880.28e
SDev	.017507	39.89	30.855	.15418	.15010	.0030077	19.052
%RSD	.3619277	.1578235	.6644424	.6334253	.5852568	.4046435	.3903826
#1	4.817143	25237.03	4608.252	24.16076	25.48082	.7398381	4858.328
#2	4.84414e	25316.60	4658.584	24.41861	25.68771	.7448307	4890.111
#3	4.849947	25271.85	4664.337	24.43974	25.77265	.7452405	4892.420
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	6.0000	30000.00	6000.000	30.00000	30.00000	.9000000	6000.000
Low	4.000[illegible]	20000.00	4000.000	20.00000	20.00000	.6000000	4000.000

Elem	Na58[illegible]	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2422[illegible]96	1888.346	2365.101	2420.703	2402.189	9363.501	2844.404
SDev	6[illegible]99	4.974	2.203	13.264	8.900	29.596	2.033
%RSD	.2806356	.2634307	.0931664	.5479320	.3704981	.3160805	.0714803
#1	24151.64	1882.824	2366.379	2407.704	2393.943	9352.203	2842.[illegible]
#2	24282.07	1892.478	2362.537	2420.190	2400.999	9341.218	2845.973
#3	24250.17	1889.735	2366.368	2434.217	2411.624	9397.082	2845.132
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	30000.00	2400.000			3000.000	12000.00	3600.000

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[illegible]w	20000.00	1600.000			2000.000	8000.000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/..	Si2881	Sn1899	[illegible]
Units	ppb	ppb	ppb	pp.	ppb	ppb	ppb
Avge	2906.747	2813.278	9298.220	9396.091	4627.453	4784.702	4910.276
SDev	9.064	5.910	3.303	45.277	24.120	23.922	7.569
%RSD	.3118384	.2100847	.0355268	.4818708	.5212436	.4999694	.1480570
#1	2906.535	2809.940	9301.935	9377.299	4599.602	4757.276	4906.261
#2	2897.790	2820.102	9297.110	9363.236	4641.392	4795.562	4918.679
#3	2915.915	2809.793	9295.613	9447.738	4641.366	4801.267	4905.870
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					6000.000	6000.000	6000.000
Low					4000.000	4000.000	4000.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	4978.601	9577.127	2.525408	955.2447
SDev	13.170	41.203	.010365	2.9846
%RSD	.2645398	.4302188	.4104142	.3124412
#1	4963.487	9529.555	2.513457	951.8072
#2	4984.695	9601.453	2.530835	957.1757
#3	4987.620	9600.374	2.531932	956.7515
[illegible]rors	LC Pass	LC Pass	LC Pass	LC Pass
High	6000.000	12000.00	3.000000	1200.000
Low	4000.000	8000.000	2.000000	800.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report [illegible] 10-27-98 04:01:15 PM [illegible]

Method: MI> Sample Name: 9810L0[illegible]-001 Operator: PMP
Run Time: 10/27/98 15:54:43
Comment:
Mode: CONC Corr. Factor: 1

Elem	A[illegible]3280	Al3082	As1890	B-2496	Ba4934	Be3)	Bi2230
Units	[illegible]b	PPM	ppb	ppb	ppb	ppt	ppb
Avge	- .75047	10.74495	30.66589	60.60088	3169.830	.4' ,896	-2.74945
SDev	.42417	.01715	2.02772	4.96307	6.653	.0 9500	2.10310
%RSD	24.23155	.1596220	6.612295	8.139771	.2098821	6 0445	76.49152
#1	-1.30583	10.72606	28.37070	66 13808	3162.179	7511	-5.10114
#2	-2.15066	10.75955	31.41262	56.55295	3174.252	57885	-1.04902
#3	-1.79492	10.74924	32.21437	59.11162	3173.059	56293	-2.09820
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H879.6947	S-5.14805	.3044922	5.874500	6.873357	12.25277	6.425602
SDev	.6467	.04337	.1768887	.208417	.294242	.76856	.019966
%RSD	.0735183	.8425116	58.09302	3.547831	4.280909	6.272549	.3107254
#1	H878.9624	S-5.13092	.2404314	5.859413	7.142425	11.3o629	6.402639
#2	H880.1877	S-5.19737	.1685590	6.090052	6.559156	12.65995	6.43886
#3	H879.9340	S-5.11586	.5044863	5.674037	6.918489	12.73207	6.43530
Errors	LC High	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	6.351627	2064.506	198.3733	107.5129	S67.38886	.0773868	1.662190
SDev	.012187	8.496	.5011	.1731	59.41014	.0000940	.582405
%RSD	.1918780	.41150(	.2526116	.1o10063	88.16019	.1215187	35.03842
#1	6.339899	2059.641	197.7953	107.3137	S33.08782	.07 39	.9901241
#2	6.364227	2059.561	198.6394	107.5974	H135.9898	.07 53	1.977223
#3	6.350753	2074.31	198.6852	107.6275	S33.08897	.07 0	2.019223
Errors	LC Pass	LC Pas	LC Pass	LC Pass	LC High	LC Pa	LC Pass
High	50.00000	10000( )	100000.0	500.0000	20.00000	20.00( )	30000.00
Low	-.100000	-500( )0	-100.000	-5.00000	-5.00000	-.010(	-100.000

Elem	Na5889	Ni2	2203/1	2203/2	Pb2203.	Se1960	[illegible]068
Units	ppb	ppb	ppb	ppb	ppb	ppb	pp
Avge	4931.566	22.[illegible]401	4.443757	5.475767	5.132685	1.6279	-1.03085
SDev	12.584	.[illegible]949	3.472426	1.385713	.370351	1.8610(	.59775
%RSD	.2551641	3.6 [illegible]21	78.14168	25.30628	7.215550	114.31	57.98598
#1	4917.462	21.43564	8.307407	4.112300	5.509870	1.10580	-.4103[illegible]
#2	4941.643	22.92243	1.583547	.882703	5.118617	3.694337	-1.60290
#3	4935.595	22.73396	3.440316	5.432299	4.769568	.0837688	-1.07928
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

150

Low	-5000.00	-40.0000			-3.00000	-5.00000	60.0000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3.458446	-3.27296	-6.68883	5.779138	2846.602	1.045763	2388.988
SDev	2.474700	2.04960	3.80956	2.826121	1.146	1.521611	5.024
%RSD	71.55526	62.62229	56.95401	48.90212	.0402675	145.5025	.2103071
#1	.6184615	-.924792	-2.99230	3.150991	2847.744	-.204552	2383.240
#2	4.604567	-4.70288	-6.47203	8.768500	2845.452	.6018848	2391.185
#3	5.152312	-4.19121	-10.6022	5.417922	2846.608	2.739955	2392.540
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb ✓
Avge	148.1667	5.081554	.1922141	23.16565
SDev	.3737	2.433929	.0004517	.14155
%RSD	.2522157	47.89733	.2349757	.6110466
#1	147.8709	2.276303	.1917075	23.12623
#2	148.5866	6.632276	.1923603	23.04799
#3	148.0424	6.336084	.1925746	23.32273
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MTX Sample Name: 9810LC66-001 Operator: PAP
Run Time: 10/27/98 16:02:50
Comment:
Mode: CONC Corr. Factor: 1

Elem	A 3280	Al3082	As1890	B-249[illegible]	Ba4934	Be3130	[illegible]230
Units	p[illegible]	PPM	ppb	ppb	ppb	ppb	pb
Avge	[illegible]13036	2.286948	6.917479	16[illegible].494	661.4818	.0065898	.268597
SDev	.334776	.006292	.746142	1.72048	.2075	.0082615	.113363
%RSD	20[illegible].1072	.2751144	10.78632	10.42403	.0313722	22.57873	3.15729
#1	.3281853	2.294185	6.309875	18.47579	661.2445	.0309007	.8280241
#2	-.249986	2.282778	7.750280	15.73595	661.6[illegible]93	.032803	1.283050
#3	-1.31731	2.283882	6.692281	15.30307	661.5717	.0460656	4.694717

Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	206.8105	5.138915	.1156175	1.440755	1.006744	2.147228	1.411912
SDev	.3584	.007154	.1431921	.384601	.337456	.508655	.015099
%RSD	.1732998	.1392150	123.8498	26.69442	33.51957	23.68891	1.069412
#1	207.1507	5.147173	-.041104	1.741024	1.351457	2.734201	1.428343
#2	206.8446	5.134969	.2396165	1.573988	.9917288	1.835674	1.408745
#3	206.4363	5.134602	.1483396	1.007253	.6770456	1.871808	1.398641

Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	1.379927	350.3807	42.28434	23.23515	H24.69434	.0165612	.3602441
SDev	.002140	5.0900	.04959	.02654	.06972	.0000961	.8829044
%RSD	.1550955	1.452713	.[illegible]172745	.114210[illegible]	.2823301	.5802355	245.0850
#1	1.382214	354.3046	42.23269	23.26380	H24.76975	.0166617	.9287891
#2	1.379594	352.2083	42.28877	23.23023	H24.68107	.0164702	.8088340
#3	1.377972	344.6292	42.33157	23.21142	H24.63222	.0165513	-.656891

Errors	LC [illegible]ass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	5[illegible]0000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-[illegible]00000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	100.000

Elem	[illegible]889	Ni2316	2203/1	2203/2	Pb2203	Se1960	b2068
Units	[illegible]	ppb	ppb	ppb	ppb	ppb	ppb
Avge	[illegible]4.4989	4.787867	1.157474	1.494382	1.383103	2.689079	.3069367
SDev	.6143	.163551	1.618019	2.082841	1.173450	3.635084	.4021131
%RSD	.0664492	3.415954	139.7888	139.3781	84.84184	135.1796	131.0085
#1	924.2762	4.976333	1.497181	-.705792	.0285980	-.669812	.704271
#2	924.0270	4.683165	2.578669	1.753246	2.029179	2.188564	-.099791
#3	925.1935	4.704105	-.603427	3.436690	2.091531	6.548484	.3163307

Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

[redacted]	-5000.00	-40.0000			-3.00000	-5.00000	-50.0000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	[illegible]4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.188031	.5532498	-4.64785	6.351210	603.7504	1.269718	497.6253
SDev	.814168	.1965161	1.17047	5.041469	3.1667	.837195	.1667
%RSD	432.9972	35.52033	25.18310	79.37809	.5245086	65.93549	.0335035
#1	.6095842	.7507430	-4.87620	1.429430	605.8590	2.216382	497.4961
#2	-1.01780	.3577255	-5.68732	6.119801	605.2833	.6267806	497.8183
#3	-.155877	.5512809	-3.38003	11.50440	600.1089	.9659925	497.5703
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	31.25699	2.061023	.0410355	4.722609
SDev	.14417	.544312	.0001911	.051056
%RSD	.4612472	26.40979	.4656062	1.081107
#1	31.36966	1.433017	.0412559	4.772861
#2	31.30679	2.353074	.0409341	4.724183
#3	31.09452	2.396977	.0409100	4.670784
[redacted]rors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Tue 10-27-98 04:16:57 PM PAGE

Method: MIX Sample Name: 9810L066-001F Operator: PMP
Run Time: 10/27/98 16:10:28
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	[illegible]2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-.948548	10.51336	29.02542	45.40274	3179.706	.4274710	.0937318
SDev	.335715	.02992	1.14510	1.25065	8.461	.0167319	.448268
%RSD	35.39257	.2845710	3.945158	2.754564	.2660792	3.914160	478.741
#1	-1.30429	10.53519	29.43070	46.56816	3180.087	.4166629	3.415279
#2	-.637301	10.52562	29.91278	45.55859	3187.970	.4190062	1.825978
#3	-.904050	10.47926	27.73280	44.08147	3171.062	.4467439	-4.96006
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.00	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H842.2916	S-4.46402	.2270858	4.980794	8.463347	11.12232	6.394056
SDev	2.3445	.05018	.2046584	.230782	.376607	.23109	.004162
%RSD	.2783485	1.124153	90.12383	4.633447	4.449857	2.077738	.0650982
#1	H843.9334	S-4.40819	-.005133	4.772930	8.268775	11.21810	6.397028
#2	H843.3349	S-4.47849	.3052369	5.229138	8.897441	11.29012	6.389299
#3	H839.6066	S-4.50538	.3811536	4.940315	8.223827	10.85873	6.39584
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	6.297619	2100.664	184.4016	90.16151	H111.6801	.0667968	1.390698
SDev	.010256	5.034	.5461	.20475	.2017	.0001171	.302040
%RSD	.1628629	.2396153	.2961336	.2270873	.1806307	.1752414	21.71861
#1	6.301362	2101.964	184.4065	90.23590	H111.7482	.0667139	1.736667
#2	6.305478	2101.900	184.9452	90.31867	H111.8391	.0669307	1.179524
#3	6.286016	2095.128	183.8531	89.92998	H111.1532	.0667458	1.255905
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	.010000	100.000

Elem	[illegible]5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	[illegible]2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4624.240	19.39743	4.463609	5.880134	5.409098	4.169334	.0887241
SDev	15.232	.93751	2.875124	1.551265	1.990405	1.938192	1.522751
%RSD	.3293974	4.833149	64.41254	26.38146	36.79735	46.48683	1716.275
#1	4631.972	19.27876	5.614820	6.360142	6.112616	2.943659	1.7558
#2	4634.055	18.52490	6.584738	7.134658	6.952201	3.160483	-1.22884
#3	4606.692	20.38862	1.191270	4.145600	3.162475	6.403861	-.260851
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	40.0000			-5.00000	-5.00000	-5.00

Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Y-371
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.086139	-.909252	-3.98016	8.237174	2827.174	3.500900	2220.707
SDev	2.669271	2.606219	3.71013	1.081436	6.817	2.008986	6.107
%RSD	127.9527	286.6332	93.21547	13.12873	.2411261	57.38482	.2750398
#1	1.200811	2.032176	-5.93694	7.376502	2830.819	3.379104	2221.277
#2	-.027983	-1.82917	-6.30228	7.883969	2831.394	5.568013	2226.874
#3	5.085589	-2.93076	.2987275	9.451052	2819.309	1.555584	2214.553
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	140.0067	1.120367	.1603886	25.54994
SDev	.6613	.676433	.0004888	.05797
%RSD	.4723170	60.37606	.3047908	.2269047
#1	140.0855	1.601323	.1602858	25.49248
#2	140.6251	1.412873	.1609207	25.54891
#3	139.3096	.3469039	.1597593	25.60842
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Tue 10-27-98 04:24:39 PM

Method: MTX Sample Name: 9810L066-0015 Operator: PMP
Run Time: 10/27/98 16:18:06
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be [illegible]0	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	pr	ppb
Avge	47.20468	11.65368	1747.349	860.5530	5279.920	47 8210	2.042257
SDev	.70921	.01846	1.311	5.0189	17.138	07074	3.573047
%RSD	1.502425	.1583856	.0750139	.5832192	.3245955	.45736	174.9558
#1	47.54561	11.65196	1748.015	854 9547	5260.777	.95548	6.116917
#2	47.67905	11.63614	1745.839	864.6495	52[illegible]3.147	.92854	.5657515
#3	46.38938	11.67294	1748.193	862.0549	5293.836	43.06229	-.555898
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-[illegible]0.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H817.6321	S-4.23475	40.54155	409.4399	174.0983	226.7552	6.354223
SDev	.7016	.04754	.15108	.2900	.3741	.1242	.006739
%RSD	.0858082	1.122511	.3726626	.0708251	.2148622	.0547566	.1060537
#1	H817.1596	S-4.21536	40.49811	409.1086	173.6790	226.6835	6.349473
#2	H817.2985	S-4.19998	40.41694	409.6479	174.3978	226.6834	6.351266
#3	H818.4383	S-4.28892	40.70959	409.5631	174.2180	226.8985	6.36193
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	6.260487	29040.27	1039.439	118.4821	532.96971	.5068240	841.5794
SDev	.011531	106.52	2.852	.1079	.00350	.0005685	1.2123
%RSD	.1841875	.3667962	.2743391	.0910364	.0106197	.11217 3	.1440453
#1	6.255892	28933.06	1036.613	118 4375	532.97063	.50 5515	841.5902
#2	6.251962	29041.66	1039.389	118.4036	532.97266	.5064430	840.3618
#3	6.273607	29146.08	1042.315	118.6051	532.96584	.507[illegible]775	842.7862
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC P[illegible]	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00 [illegible]	50000.00
Low	- 100000	-5000.00	-100.000	-5.00000	-5.00000	-.0100	-100.000

Elem	[illegible] 5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	[illegible] 2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	[illegible]
Avge	28595.94	412.9620	408.3004	411.1614	410.2094	1701.76	342.9957
SDev	58.87	.9739	1.6144	3.3658	2.0537	.7	.8555
%RSD	.2058549	.2358386	.3953924	.8136094	.5006488	.04580	.2494078
#1	28535.16	412.9830	409.9831	408.0615	408.7022	1702.31[illegible]	342.173[illegible]
#2	28599.97	411.9778	406.7643	410.6811	409.3776	1702.09[illegible]	342.9329
#3	28652.69	413.9253	408.1538	414.7415	412.5486	1700.870	343.8808
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

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Low	-5000.00	-40.0000			-3.00000	-3.00000	-2.00000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	345.6115	341.6889	1689.183	1708.039	5584.294	810.9163	3135.706
SDev	.2565	1.3888	2.319	1.558	4.455	3.4707	4.753
%RSD	.0742122	.4064604	.1372906	.0912016	.0797725	.4279959	.1514643
#1	345.7172	340.4033	1687.266	1709.833	5582.960	806.9472	3135.376
#2	345.7984	341.5015	1691.761	1707.249	5580.659	812.4210	3138.515
#3	345.3191	343.1619	1688.522	1707.034	5589.264	813.3807	3142.710
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	989.2933	1640.933	.6192326	442.1810
SDev	1.9936	4.970	.0008307	1.2110
%RSD	.2015141	.3028707	.1341463	.2738588
#1	988.1905	1635.382	.6190546	440.8100
#2	988.0949	1642.448	.6185053	442.6285
#3	991.5947	1644.969	.6201378	443.1046
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Tue 10-27-98 04:32:38 PM PAGE

Method: MTA Sample Name: 9810106-0016 Operator: PMP
Run Time: 10/27/98 16:26:03
Comment:
Mode: CONC Corr. Factor: 1

(BLK) Not Needed PMP 10-28-98

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	43.3333	19.83239	477.1458	51.23888	3574.331	431.2605	452.7672
SDev	1.6789	.07517	.4334	1.61349	4.881	1.3619	4.1538
%RSD	.3786982	.3790493	.0908217	3.148948	.1365701	.3157986	.9174166
#1	443.7186	19.74652	477.4239	52.58274	3573.799	429.6982	450.5095
#2	444.7860	19.88636	477.3669	51.68448	3579.457	432.1974	457.5609
#3	441.4952	19.86428	476.6465	49.44942	3569.738	431.8859	450.2313
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H879.1492	S-5.44307	415.9959	417.5186	428.3275	449.6599	15.23228
SDev	2.3238	.05752	.9351	.8478	1.4674	1.8007	.04368
%RSD	.2643212	1.056790	.2247785	.2030654	.3425805	.4004504	.2867906
#1	H876.4701	S-5.37783	415.7426	416.6959	426.6349	450.3195	15.18240
#2	H880.6185	S-5.48648	417.0315	418.3896	429.1065	451.0378	15.26375
#3	H880.3589	S-5.46490	415.2135	417.4703	429.2411	447.6225	15.2506
Errors	LC High	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	14.94757	13983.23	638.9890	116.3418	S32.98708	.5170531	445.3965
SDev	.04119	48.11	1.2418	.3606	.00447	.0016205	1.0263
%RSD	.2755336	.344081	.1943320	.3099606	.0135525	.3134044	.2304158
#1	14.90001	13975.90	639.2242	115.9256	S32.99209	.5151830	444.2800
#2	14.97187	14034.59	640.0964	116.5383	S32.98347	.5180432	446.2987
#3	14.97081	13939.21	637.6465	116.5614	S32.98569	.5179331	445.6110
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	15270.30	421.9804	423.1060	426.7195	425.5171	443.1488	447.9651
SDev	35.06	2.1621	1.9699	3.1556	1.5108	3.6043	2.6248
%RSD	.2295894	.5123673	.4655794	.7394968	.3550459	.8133448	.5859382
#1	15271.75	422.2806	421.6369	427.9207	425.8290	440.8311	445.1
#2	15304.62	423.9768	422.3366	429.0981	426.8476	441.3140	450.3
#3	15234.54	419.6840	425.3445	423.1397	423.8747	447.3014	447.3966
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-3.00000	-5.00000	-60.0000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	456.6381	443.6344	434.3396	447.5460	2855.969	5.202004	2813.567
SDev	1.1773	3.3521	9.5245	1.9080	13.343	1.970288	4.178
%RSD	.2578243	.7556013	2.192876	.4263348	.4671925	37.87556	.1484642
#1	455.4432	440.0124	425.4161	448.5262	2843.685	7.218743	2814.326
#2	457.7970	446.6275	433.2341	445.3471	2854.058	5.105561	2817.795
#3	456.6741	444.2632	444.3687	448.7647	2870.164	3.281709	2809.478
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	146.7911	427.3124	.6510144	455.1872
SDev	.3142	1.1007	.0017266	1.0638
%RSD	.2140213	.2575901	.2652169	.2336956
#1	146.4619	428.3325	.6492199	454.4721
#2	147.0877	427.4590	.6526640	456.4096
#3	146.8236	426.1457	.6511592	454.6799
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

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Method: MIA — Sample Name: 9810L0[illegible]-007 — Operator: PSD
Run Time: 10/27/98 16:34:36
Comment:
Mode: CONC — Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-249[illegible]	Ba4934	Be313	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-.46436	13.50771	25.23360	44.[illegible]371	2102.508	.5751[illegible]9	1.191353
SDev	.35943	.04577	1.35469	.83361	4.105	.001[illegible]97	2.960217
%RSD	24.54531	.3388212	5.368586	1.860615	.1952480	.32[illegible]031	248.4751
#1	-1.07895	13.52440	24.93447	44.[illegible]8593	2099.405	.5[illegible]387	3.496448
#2	-1.52369	13.45594	26.71285	44.35782	2100.[illegible]55	.5[illegible]2778	-2.14701
#3	-1.79043	13.54279	24.05347	45.76438	2107.162	.5 2432	2.224621
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H633.5055	S-1.34153	.4203974	7.288469	11.50064	15.72247	7.956829
SDev	1.1131	.00427	.0523665	.463235	.16186	.47535	.013424
%RSD	.1756998	.3181124	12.45643	6.355724	1.407358	3.023360	.1687149
#1	H634.2094	S-1.33907	.3825649	6.733e30	11.45560	15.90224	7.9532e7
#2	H632.2222	S-1.34645	.4801643	7.547931	11.68024	15.18346	7.945545
#3	H634.0848	S-1.33906	.3984629	7.5e3826	11.36607	16.08172	7.9716
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100.00 0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	7.839141	2414.857	148.1179	154.3515	S125.8804	.1983126	1.760822
SDev	.016265	6.450	.3578	.3508	80.7701	.0005267	.579268
%RSD	.2074791	.2671159	.2415881	.2272460	64.16418	.2655840	32.89756
#1	7.841303	2412.143	147.8459	154.5062	H172.4982	.1985012	2.002531
#2	7.821904	2410.208	147.9846	153.9500	S32.61509	.19771[illegible]6	2.180092
#3	7.854217	2422.221	148.5233	154.5983	H172.5278	.19871	1.099844
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.0000[illegible]	50000.00
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.01000[illegible]	-100.000

Elem	a5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	b2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	pb
Avge	5314.229	23.38312	8.478331	4.452022	5.793383	1.088389	.162442
SDev	13.067	.27223	2.973139	1.886932	.593420	1.661113	.219438
%RSD	.2458871	1.164208	35.06751	42.38372	10.24307	152.6212	70.18114
#1	5305.202	23.11089	11.80221	2.830619	5.818760	2.988017	2.863[illegible]
#2	5308.271	23.38312	7.560309	4.002[illegible]45	5.187681	-.091328	5.516177
#3	5329.213	23.65535	6.072471	6.528200	6.373707	.3684783	1.107593
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

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Low	-5000.00	-40.0000			-3.00000	-5.00000	-[illegible]

Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5.096579	2.196023	-9.49047	6.369091	2598.228	2.62e477	2265.652
SDev	5.837334	4.938026	4.21387	7.115903	8.334	1.720865	5.369
%RSD	114.5344	224.8622	44.40103	33.22144	.3207711	65.51991	.2457722
#1	-1.19256	4.887773	-6.11652	7.532659	2603.603	.8715434	2262.150
#2	6.141262	5.203303	-8.14117	3.926761	2588.627	2.696767	2263.150
#3	10.34103	-3.50301	-14.2137	7.647851	2602.453	4.311121	2270.257
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	205.6680	3.947703	.2191330	22.52660
SDev	.4738	2.540566	.0003015	.13325
%RSD	.2303709	64.35556	.1376116	.5915176
#1	205.6455	6.182826	.2189578	22.39440
#2	205.2059	1.184649	.2189600	22.52454
#3	206.1527	4.475635	.2194812	22.66087
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

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Method: MIX Sample Name: 9810L0[illegible]-003 Operator: PMP
Run Time: 10/27/98 16:42:41
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	[illegible]2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ob
Avge	-1.24582	7.889118	20.35187	22.29567	1216.904	.4563905	.3432[illegible]8
SDev	.45644	.024572	.77823	1.59142	2.436	.0189035	.079202
%RSD	36.63737	.3114650	3.823866	7.137787	.2001482	4.14196[illegible]	24.0854
#1	-1.74987	7.861519	19.51710	23.38805	1215.037	.4364503	6.252997
#2	-1.12717	7.897215	21.05737	23.02927	1216.016	.4586705	2.663216
#3	-.860430	7.908619	20.48115	20.46978	1219.659	.4740506	-1.88656
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.00	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H872.5465	S-5.46848	.3839091	5.549619	10.08151	15.85530	6.125616
SDev	2.4093	.00317	.2124775	.420243	.57790	.49785	.021254
%RSD	.2761219	.0579134	55.34578	7.572470	5.732237	3.139974	.3469655
#1	H869.7649	S-5.47074	.6269459	5.104427	9.422301	15.56808	6.101865
#2	H873.9789	S-5.46486	.2914857	5.939420	10.32139	16.43017	6.142845
#3	H873.8957	S-5.46984	.2332957	5.605009	10.50083	15.56766	6.13214
Errors	LC High	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn257[illegible]	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	[illegible].024814	1390.647	39.50979	[illegible]1.63096	H73.54153	.0992541	1.920878
SDev	.021593	18.934	.05076	.22941	.26721	.0004155	.706527
%RSD	.3584008	1.361498	.1284776	.3722237	.3633466	.4185784	36.78148
#1	5.999945	14[illegible]1.396	39.46699	[illegible]1.37038	H73.[illegible]3335	.0987746	1.107463
#2	6.035688	1386.239	39.49650	[illegible]1.72001	H73.68256	.0994811	2.381913
#3	6.038807	1374.306	39.56587	[illegible]1.80249	H73.70869	.0995066	2.273254
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	[illegible]6889	Ni2316	2203/1	2203/2	Pb2203	Se1960	[illegible]b2068
Units	[illegible]pb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	[illegible]03.014	10.84668	5.878338	5.283698	5.482313	1.539655	.2021598
SDev	4.799	1.14128	1.410343	.587319	.378041	1.591686	.5477681
%RSD	.1653157	10.52192	23.99219	11.11568	6.895655	103.3794	270.9580
#1	2899.707	11.15381	7.469154	4.980505	5.809825	1.436551	.22659[illegible]
#2	2900.817	11.80297	5.384667	4.909938	5.068623	3.180386	-.357415
#3	2908.518	9.583264	4.781194	5.960650	5.568492	.0020275	.7773040
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-5.00000	-5.00000	-5.000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn189	Y 211
Units	ppb	ppb	ppb	pp	ppb	ppb	ppb
Avge	3.036942	-1.21391	-5.82070	5.213515	1647.626	2.533876	3341.604
SDev	.969858	1.06894	1.15613	2.718442	3.654	1.825595	7.651
%RSD	31.93534	88.05770	19.86243	52.14231	.2252426	72.04752	.2289735
#1	1.954592	-.636915	-6.94220	5.618845	1639.379	.4414390	3335.979
#2	3.827141	-2.44736	-5.88710	7.706532	1656.636	3.3585e1	3339 095
#3	3.329091	-.557446	-4.63280	2.715167	1646.863	3.801627	3350.514
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	159.6998	2.091262	.1561583	20.00440
SDev	.7655	1.555158	.0008090	.02316
%RSD	.4793089	74.36459	.5180602	.1157601
#1	158.8184	.8041389	.1553650	19.97838
#2	160.0839	1.e50387	.1561280	20.01208
#3	160.1972	3.819260	.1569821	20.02275
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	
Avge	15000	--	--	--	--	--	
SDev	.0000000	--	--	--	--	--	
%RSD	.0000000	-	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Tue 10-27-98 04:57:2[illegible] Page

Method: MIX Sample Name: 98101Qc6-004 Operator:
Run Time: 10/27/98 16:50:54
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-249[illegible]	Ba4934	Be313[illegible]	Bi2230
Units	ppb ✓	PPM ✓	ppb ✓	ppb ✓	ppb ✓	ppb	ppb
Avge	-1.55958	3.651096	7.157914	7.018420	128.194[illegible]	.2644[illegible]	-.693131
SDev	.47131	.003703	.510555	.940687	.2090	.0145[illegible]2	2.015478
%RSD	30.22053	.1014347	7.132729	13.40312	.1630111	5.49[illegible]38	290.7789
#1	-2.06356	3.647662	7.723524	6.923576	128.4190	.270[illegible]646	.3060132
#2	-1.48550	3.655020	7.019087	6.129323	128.0055	.2478519	.6275819
#3	-1.12970	3.650607	6.731130	8.003760	128.1593	.2748461	-3.01299
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-[illegible]0.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb ✓	ppb ✓	ppb ✓	ppb ✓	PPM
Avge	H707.1301	S-2.66045	.1900318	2.611339	6.702318	4.710443	4.317439
SDev	.4748	.02664	.1203734	.477529	.134651	.349237	.004498
%RSD NIR	.0671436	1.001253	63.34383	18.28673	2.009017	7.414108	.1041776
#1	H706.5831	S-2.63466	.1021913	2.063163	6.567698	4.662617	4.322588
#2	H707.3713	S-2.65882	.1406632	2.937014	6.702258	5.093997	4.315455
#3	H707.4358	S-2.68787	.3272408	2.833839	6.836999	4.410816	4.314277
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599 ✓	K-7664	Li6707	Mg2790	Mg2852	Mn2576 ✓	Mo2020 ✓
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	4.256865	616.3943	9.432419	16.15176	17.54119	.0561627	1.388773
SDev	.004041	17.2619	.021740	.00772	.02644	.0001133	.318104
%RSD	.0949284	2.800470	.2304850	.0477834	.1507547	.2016670	22.90540
#1	4.252353	631.9000	9.436847	16.14708	17.53954	.0560357	1.659096
#2	4.258091	597.7957	9.408806	16.15437	17.56843	.0561989	1.038241
#3	4.260150	619.4852	9.451605	16.15784	17.51562	.056257	1.468982
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.0000	50000.00
Low	-[illegible]00000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	N[illegible]889	Ni2316	2203/1	2203/2	Pb2203	Se1960	[illegible]b2068
Units	[illegible]pb	ppb ✓	ppb	ppb	ppb	ppb	[illegible]pb
Avge	471.9258	4.641284	.6067485	10.54195	7.23413[illegible]	.9445035	[illegible]0425440
SDev	.6204	1.011021	1.227546	.16438	.341987	1.263522	.636495
%RSD	.1314578	21.78322	202.3155	1.559264	4.727405	133.7763	[illegible]846.594
#1	472.5790	5.583610	-.691470	10.60761	6.845619	-.101811	1.05662[illegible]
#2	471.3444	3.573313	.7630669	10.66335	7.367157	.5870886	.9163885
#3	471.8541	4.766927	1.748648	10.35490	7.489615	2.348233	-1.84538
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-3.00000	-5.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Cl2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	3.523093	-1.69592	-11.4570	7.135147	1262.177	2.686210	1020.256
SDev	1.170453	3.01289	2.1861	.871732	.995	1.175092	.807
%RSD	33.22233	177.6548	19.08135	12.21744	.0788208	43.74534	.0791343
#1	3.201411	-.014958	-13.6293	6.671007	1261.603	3.503102	1021.162
#2	2.547117	.1014472	-11.4843	6.612936	1263.326	3.216036	1019.887
#3	4.820750	-5.17425	-9.25729	8.111497	1261.602	1.339491	1019.666
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	92.85577	3.558634	.0677311	11.10978
SDev	.19715	1.848053	.0003823	.08703
%RSD	.2123236	51.93151	.5644229	.7833604
#1	92.62817	5.656339	.0676274	11.08676
#2	92.97379	2.848934	.0681546	11.20601
#3	92.96536	2.170630	.0674114	11.03658
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard ...e 1(27-9(35:07:54 PM

Method: MIX Sample Name: CCV Operator: PMP
Run Time: 10/27/98 17:01:21
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	pb
Avge	484.0917	4.984402	489.8871	487.6150	490.2793	494.6741	12.6403
SDev	2.6829	.042778	4.0268	5.3109	2.7600	3.8370	5.5077
%RSD	.5542034	.8582473	.8219916	1.089161	.5629435	.7756595	.074386
#1	481.0846	4.935533	487.6583	481 5102	487.4725	490.310	506.2815
#2	486.2399	5.015070	494.5356	490 1629	492.9900	497.520	515.9155
#3	484.9507	5.002605	487.4674	491.1718	490.3752	496.191	515.7239
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	5.000000	500.0000	500.0000	500.0000	500.0000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	2.035685	2.003510	499.6195	495.4836	492.4001	493.0911	5.098859
SDev	.008963	.007683	4.4227	4.0992	4.2868	3.5936	.058060
%RSD	.4402806	.3834840	.8852118	.8273169	.8705901	.7287974	1.150446
#1	2.027862	2.001909	494.5601	490.7558	487.5597	489.0095	5.031619
#2	2.045464	2.011868	502.7508	498.0458	495.7173	495.7797	5.139551
#3	2.033729	1.996754	501.5477	497.6493	493.9231	494.4840	5.125400
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000000	2.000000	500.0000	500.0000	500.0000	500.0000	5.000000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	4.950507	4821.665	3937.856	4.017904	3.921760	5.041595	483.6386
SDev	.039423	32.285	49.764	.046534	.030597	.039127	4.9311
%RSD	.7963348	.669587	1.263721	1.158176	.7801806	.7760746	1.019576
#1	4.905508	4793.432	3880.928	3.964361	3.886548	4.996840	478.0497
#2	4.978961	4856.865	3959.553	4.048583	3.941864	5.069322	487.3755
#3	4.967051	48 4.699	3973.088	4.040769	3.936868	5.058624	485.4906
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.000000	5000.000	4000.000	4.000000	4.000000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	pb
Avge	4871.464	484.1671	502.5717	505.0122	504.2001	493.1604	77.6775
SDev	46.834	5.0504	2.6240	3.4895	3.1242	1.9025	1.7890
%RSD	.9614007	1.043111	.5221074	.6909814	.6196398	.3857804	.3745240
#1	4817.534	478.4223	499.6096	501.1429	500.6329	491.1426	476.50
#2	4894.946	487.9085	504.6047	505.9730	505.5180	494.9215	476.7903
#3	4901.912	486.1703	503.5007	507.9206	506.4494	493.4171	478.7367
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value	5000.000	500.0000			500.0000	500.0000	500.0000

Range	10.00000	10.00000			10.00000	10.00000	10.00000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	467.3457	482.8348	489.6758	494.8992	477.9543	484.9356	490.4214
SDev	5.5179	1.2083	3.2221	4.0630	1.2020	2.7760	3.0004
%RSD	1.180697	.2502523	.6580037	.8209840	.2514830	.5724372	.6118069
#1	466.3567	481.5714	492.9719	490.2284	478.4055	481.7476	487.1685
#2	462.3891	483.9792	489.5224	497.6163	478.8655	486.2412	493.0806
#3	473.2913	482.9538	486.5332	496.8530	476.5920	486.8181	491.0150
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value					500.0000	500.0000	500.0000
Range					10.00000	10.00000	10.00000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	486.5343	495.3916	5.084108	491.7452
SDev	3.4903	3.7103	.039752	3.5043
%RSD	.7173789	.7489607	.7818872	.7126208
#1	482.6879	491.8126	5.038642	487.8900
#2	489.4995	495.1415	5.112304	494.7374
#3	487.4157	499.2206	5.101378	492.6080
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	500.0000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Blank Sample Tue 10 27 98 05:17:13 PM Page

Method: Mix Sample Name: CCB Operator: PMP
Run Time: 10/27/98 17:10:42
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-249[illegible]	Ba4934	Be31	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	119918	-.001860	-.277057	3.7[illegible]219	.1211271	.0[illegible]300	2.144615
SDev	.480995	.002123	.988654	1.924985	.1546980	.0[illegible]714	3.981177
%RSD	401.1042	114.1280	356.8418	50.84187	127.7154	7[illegible]3194	185.6360
#1	-.520130	-.000636	.5759736	5.[illegible]08696	.2653175	[illegible]53838	5.134008
#2	-.253322	-.000633	-.046540	4.290748	.1403[illegible]63	[illegible]78397	-2.37455
#3	.4136987	-.004311	-1.36060	1.659214	-.042282	[illegible]203166	3.674388
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.00000	.2000000	10.00000	100.0000	100.0000	100.0000	100.0000
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-100.000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0037088	.0048861	.2301394	.4462427	-.021262	1.052059	-.004136
SDev	.0017172	.0013118	.2092772	.6614729	.442270	1.532043	.013080
%RSD	46.30073	26.84696	90.93497	148.2316	2080.060	145.6233	316.2795
#1	.0055016	.0062701	.3526194	1.[illegible]57467	-.315168	2.645774	.0085302
#2	.0035458	.0047271	.3493042	.5373044	.3381431	.9201906	-.005347
#3	.0020789	.0036611	-.011500	-.256043	.1132381	-.409788	-.01750
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.000000	5.000000	5.000000	50.00000	10.00000	25.00000	.1000000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-25.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	-.000602	33.17193	.1942300	-.[illegible]02210	.0006728	.0002363	.0496528
SDev	.000286	23.90642	.1522469	.[illegible]02297	.0001033	.0000882	.3288682
%RSD	47.48004	72.06823	7[illegible].38586	103.9367	15.35721	37.31836	662.3351
#1	-.000290	53.24836	.3413208	-.[illegible]00474	.0007869	.000[illegible]370	-.227869
#2	-.000664	39.54164	.2040688	-.001342	.0006456	.0001[illegible]27	.4128923
#3	-.000851	6.725797	.0373003	-.004815	.0005857	.0001[illegible]3	-.036065
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.1000000	5000.000	100.0000	5.000000	5.000000	.015000	100.0000
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.01500[illegible]	-100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.437252	.5927680	.6555034	.6234752	.6347628	2.983429	.085757
SDev	1.088126	.5655254	3.787610	1.473015	1.244908	1.146853	.470125
%RSD	248.8555	95.40418	577.8171	236.2588	196.1217	38.44075	2.53980
#1	.3480041	1.165144	-2.23980	2.[illegible]45691	.7526214	3.228755	2.4008[illegible]
#2	.0195593	.5788075	-.735662	-.630146	-.664883	1.733765	1.545389
#3	-1.67932	.0343520	4.941976	.2551808	1.816550	3.987768	2.310999
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5000.000	40.00000			3.000000	5.000000	60.00000

ow	-5000.00	-40.0000			-3.00000	-5.00000	
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.6909679	2.781307	-.160429	4.552202	2.690670	-1.066440	.0631200
SDev	4.085303	1.814042	3.254290	1.519980	2.717041	2.16810	.0165147
%RSD	591.2435	65.22266	2028.467	33.39000	100.9801	130.2634	26.63932
#1	5.371892	.9168059	-2.73766	6.206691	.5811567	-4.13224	.0677602
#2	-1.14312	2.886831	-1.24011	3.217671	5.756590	-.065860	.0771274
#3	-2.15586	4.540283	3.496479	1.232244	1.734263	-.795083	.0444724
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100.0000	100.0000	100.0000
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	.0671744	1.709280	.0003926	-.023138
SDev	.1589148	1.384092	.0005363	.170177
%RSD	236.5705	80.97515	136.5921	735.4764
#1	.1314422	.6540157	.0009593	.0980043
#2	.1838900	1.197430	.0003257	.0502810
#3	-.113809	3.276396	-.000107	-.217700
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100.0000	10.00000	.0500000	20.00000
Low	-100.000	-10.0000	.050000	20.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Tue 0-27-98 05:24:01 PM Pag

Method: MIX Sample Name: 9810L0[illegible]-005 Operator: PMP
Run Time: 10/27/98 17:17:24
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	[illegible]2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-1.61363	3.702294	5.029332	6.096627	49.40513	.2658522	.674762
SDev	.73207	.004952	1.315519	.920015	.16002	.0117413	1.941760
%RSD	45.36812	.1337576	26.15693	15.09055	.3238856	4.416473	435.9700
#1	-2.45857	3.703769	5.445344	5.312505	49.28974	.2582842	2.722090
#2	-1.21341	3.706341	6.086549	6.88950[illegible]	49.33784	.2598944	-2.37367
#3	-1.16892	3.696772	3.556102	[illegible].087869	49.58780	.2793780	-2.37271
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.0[illegible]	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	451.7136	S1.311308	.0556454	3.231926	8.736332	4.989579	5.213767
SDev	.6943	.016730	.1390989	.578418	.119055	.598680	.008610
%RSD	.1536974	1.275810	249.9737	17.89699	1.362752	11.99862	.1651307
#1	452.4650	S1.300606	.2069789	3.575284	8.601348	4.318498	5.205061
#2	451.5800	S1.302731	.0265847	3.665997	8.781273	5.181400	5.213962
#3	451.0959	S1.330587	-.066627	3.454498	8.826374	5.468840	5 [illegible]222
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	5.147995	963.3250	6.554063	6.519116	6.720336	.0838348	1.348865
SDev	.010233	12.8286	.033665	.004370	.020704	.0001656	.991633
%RSD	.1987828	1 331698	.5136509	.0670372	.3080827	.1974778	73.51606
#1	5.159805	9[illegible].6503	6.533894	6.523168	6.743271	.0840253	.3050206
#2	5.142401	952.8970	6.535369	6.514485	6.714710	.0837529	2.278374
#3	5.141777	959.4279	6.592927	6.519695	6.703026	.0837261	1.463202
Errors	LC Pass	L[illegible]Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00000	[illegible]000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.100000	000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	Na5889	[illegible]2316	2203/1	2203/2	Pb2203	Se1960	[illegible]b2068
Units	ppb	pb	ppb	ppb	ppb	ppb	ppb
Avge	341.2709	.934452	2.086634	10.35517	7.602816	1.641816	1.258882
SDev	2.3518	.158098	2.202587	1.57333	1.033591	1.773567	1.951705
%RSD	.6891203	[illegible].203963	105.5570	15.19368	13.59485	108.0247	155.0348
#1	338.6962	4.955393	4.227600	8.877317	7.330048	.0729256	.9857[illegible]
#2	341.8108	5.081036	2.204984	12.00916	8.745435	3.566207	3.332778
#3	343.3058	4.766927	-.172742	10.17904	6.732964	1.286316	-.541853
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-3.00000	-5.00000	
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	
Units	ppb	ppb	ppb	ppb	ppb	ppb	
Avge	4.916094	-.567782	-13.3964	9.148876	1780.502	1.883311	374.3903
SDev	1.704311	2.077896	2.5533	2.025846	3.829	.054550	1.1674
%RSD	34.66800	365.9671	19.05916	22.14311	.2150463	34.75527	.3118049
#1	4.547570	-.793333	-13.5320	6.864372	1784.911	2.604537	373.1144
#2	6.774518	1.613688	-10.7781	10.72683	1778.011	1.718430	374.6534
#3	3.426193	-2.52370	-15.8792	9.855429	1778.584	1.326966	375.4046
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	95.03148	3.859825	.0302640	14.97733
SDev	.15396	1.605386	.0005376	.03094
%RSD	.1620139	41.59218	1.776279	.2065476
#1	95.08215	2.015259	.0296458	14.96086
#2	94.85857	4.622594	.0305246	15.01302
#3	95.15372	4.941623	.0306216	14.95811
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Tue 10 [illegible] 05:[illegible] PM

Method: MIX Sample Name: 9810106[illegible] Operator: PMP
Run Time: 10/27/98 17:25:3[illegible]
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B [illegible]	Ba4934	Be3130	[illegible]i2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-1.16296	10.88958	26.02983	23.24391	1556.035	.8162058	7511774
SDev	.51286	.01771	2.70626	2.06960	2.307	.0188357	3.703350
%RSD	44.09920	.1626549	10.39677	8.903857	.1482570	2.307718	493.0061
#1	-1.11848	10.90406	29.05205	22.63152	1558.083	.8008126	4.648151
#2	-.673798	10.86983	25.20682	25.55061	1553.536	.8372092	-2.72210
#3	-1.69661	10.89486	23.83062	21.54061	1556.487	.8105956	.3274865
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-[illegible]00.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H884.7447	S-5.81091	.4521574	7.892944	8.231628	13.45642	7.093309
SDev	.1057	.00408	.2002658	.231158	.273226	.20020	.008017
%RSD	.0119500	.0702891	44.29116	2.928666	3.319226	1.487769	.1130188
#1	H884.7145	S-5.81145	.2303698	7.781724	8.366549	13.24066	7.101423
#2	H884.8622	S-5.80658	.6197440	8.158689	7.917186	13.49243	7.093118
#3	H884.6573	S-5.81470	.5063584	7.738419	8.411149	13.63617	7.0853[illegible]
Errors	LC High	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn257[illegible]	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	7.000743	2521.848	222.9321	50.39461	H59.40300	.1023495	1.618487
SDev	.002995	12.667	.2676	.02100	.07643	.0000473	.436535
%RSD	.0427746	.5022852	.1200340	.0416758	.1286653	.0461894	26.97179
#1	7.000743	2529.9[illegible]2	223.2371	50.41043	H59.38787	.1023769	1.670510
#2	6.997748	2528.299	222.8223	50.40261	H59.33526	.1022949	2.026679
#3	7.003737	2[illegible].254	222.7367	50.37078	H59.48586	.1023767	1.158271
Errors	LC Pass	Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.00000	0000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.100000	5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	Na5889	[illegible]i2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	892.4354	20.58406	6.869460	8.825573	8.174743	2.763137	-1.07808
SDev	1.2178	1.18316	1.598720	2.090688	1.508037	.621968	1.22900
%RSD	.1364588	5.747939	23.27286	23.68898	18.44752	22.50948	113.9989
#1	893.7983	21.66599	5.238736	7.628224	6.833124	2.351996	-2.492[illegible]
#2	891.4539	20.76554	6.935515	11.23967	9.806916	3.478674	-.475769
#3	892.0541	19.32064	8.434128	7.608830	7.884187	2.458740	-.286422
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

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Low	-5000.00	-40.0000			-3.00000	-5.00000	-[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Sr2881	Sn1899	Sr421[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.657897	-1.28866	-3.58408	5.931154	1870.537	3.230337	1665.471
SDev	.304354	1.72155	2.66702	2.226439	5.341	2.085474	1.910
%RSD	46.26162	133.5922	74.41305	37.53804	.2855487	64.55903	.1148011
#1	-.959579	-3.25794	-2.85468	4.950632	1868.046	5.098146	1665.148
#2	-.350940	-.538890	-6.53992	8.479560	1866.897	3.612741	1661.392
#3	-.663172	-.069143	-1.35764	4.373260	1876.669	.9801233	1663.872
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	119.5376	2.959097	.0534736	23.06766
SDev	.1284	2.434535	.0003894	.11263
%RSD	.1074175	82.27290	.7281400	.4882538
#1	119.5637	5.717024	.0537948	22.95145
#2	119.3982	1.108602	.0535854	23.17633
#3	119.6510	2.051666	.0530405	23.07520
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Method: MIX Sample Name: 9810L06-007 Operator: MP
Run Time: 10/27/98 17:33:33
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-.69155	9.793370	24.14577	25.90679	2068.344	.4706040	3.087941
SDev	.41322	.041799	.79233	.60955	1.147	.0239895	1.394352
%RSD	24.42862	.4268136	3.281463	2.352870	.0554405	5.097593	66.78120
#1	-1.97328	9.747737	24.54520	25.74963	2069.636	.4865822	3.617864
#2	-1.88419	9.829802	24.65889	25.39121	2067.447	.4822112	1.757401
#3	-1.21718	9.802572	23.23322	26.57953	2067.949	.4430185	.8885591
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H590.4253	S-.650196	.4483923	6.520089	7.695833	13.70853	6.660950
SDev	2.0786	.010019	.3388713	.429206	.259683	.43922	.025848
%RSD	.3520526	1.540915	75.57474	6.582817	3.374338	3.204006	.3880515
#1	H588.1812	S-.661764	.0694658	6.568884	7.395976	13.80489	6.634620
#2	H592.2845	S-.644302	.5533285	6.922812	7.845923	14.09158	6.686287
#3	H590.8103	S-.644521	.7223826	6.068572	7.845599	13.22913	6.66194
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	6.538173	1514.286	135.6201	139.1340	S120.5539	.1563458	2.473604
SDev	.023857	16.197	.0387	.6591	76.0080	.0006470	.575940
%RSD	.3648818	1.06961	.0285403	.4737301	63.04899	.4138190	23.28342
#1	6.513679	1498.698	135.5788	138.4122	H164.1231	.1556999	1.837549
#2	6.561337	1513.130	135.6555	139.7039	H164.7506	.1569939	2.959805
#3	6.539504	1531.030	135.6260	139.2859	S32.78816	.1563437	2.623457
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.00000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1232.958	17.94554	5.430999	4.058670	4.516300	3.715170	.1636815
SDev	.895	.42315	1.834015	.689821	.150673	3.350087	1.702506
%RSD	.0725695	2.357981	33.76938	16.99624	3.336204	90.17320	1040.134
#1	1232.271	17.45693	3.461524	4.803974	4.357805	5.182503	2.03085
#2	1233.970	18.18985	5.741581	3.929421	4.533403	6.081226	-.237209
#3	1232.633	18.18985	7.089892	3.442615	4.657691	-.118220	-1.30260
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

	-5000.00	-40.0000			-3.00000	-5.00000	-60.0000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5.114434	-2.30878	-7.63718	9.382001	2215.793	1.956436	2217.782
SDev	6.133906	1.52348	2.25328	3.899045	3.484	.623415	.939
%RSD	119.9332	65.98615	29.50414	41.55877	.1572476	31.86482	.0423420
#1	9.854920	-1.87611	-6.54542	11.03677	2212.504	1.827465	2218.847
#2	7.301673	-4.00180	-6.13774	12.18075	2215.432	1.407595	2217.424
#3	-1.81329	-1.04844	-10.2284	4.928482	2219.444	2.634250	2217.074
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	186.6678	3.417768	.2179137	19.12810
SDev	.8234	1.114162	.0005603	.23302
%RSD	.4411243	32.59911	.2571008	1.218217
#1	185.8854	2.239306	.2175857	19.39636
#2	187.5269	4.453964	.2185606	19.01209
#3	186.5910	3.560034	.2175948	18.97586
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Tue 10-27-98 05:40:07 PM Page

Method: MTX Sample Name: 9810L066-005 Dup Sample:
Run Time: 10/27/98 17:41:30
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-.01670	6.975694	16.66219	15.[illegible]475	1096.008	.38034	3.467412
SDev	.42415	.017557	.51184	.92108	3.719	.01187	.705581
%RSD	21.03207	.2516948	3.071894	5.917721	.3393187	3.126	20.34892
#1	-1.97222	6.990537	16.43300	14.93204	1093.210	.370 7	4.195172
#2	-1.61654	6.956313	17.24858	15.26346	1094.385	.37 6	3.420737
#3	-2.46134	6.980232	16.30499	16.59874	1100.228	.39 7	2.786328
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H1012.686	S-7.88824	.2537707	3.959357	7.037347	14.72077	5.710142
SDev	1.786	.01617	.1592748	.864558	.233815	.61855	.021974
%RSD	.1764078	.2049275	62.76327	21.83582	3.322489	4.201875	.3848313
#1	H1013.519	S-7.89593	.2554479	3.742390	7.172169	14.92443	5.714299
#2	H1010.635	S-7.89912	.0936639	3.223947	6.767361	14.02607	5.68638
#3	H1013.903	S-7.86967	.4122003	4.911733	7.172511	15.21181	5.72974
Errors	LC High	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	5.635057	1327.067	23.75188	45.35736	H53.15660	.0852856	.7495633
SDev	.011274	12.510	.09747	.07056	.10190	.0001248	.4484266
%RSD	.2000602	.9426668	.4103467	.1555747	.1917047	.14[illegible]303	59.82505
#1	5.645703	1334.807	23.74795	45.41003	H53.26757	.0[illegible]12	.2612214
#2	5.623247	1312.635	23.65645	45.27718	H53.06723	.08 2	1.142825
#3	5.636221	1333.759	23.85126	45.38485	H53.13500	.08 3	.8446434
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC P[illegible]	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00)	50000.00
Low	-100000	-5000.00	-100.000	-5.00000	-5.00000	-.010( )	-100.000

Elem	[illegible]3889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	1138.161	7.496185	1.360896	6.974161	5.105610	.74721	.1985276
SDev	7.323	.634239	2.505101	1.265683	.561741	1.433[illegible]	1.027640
%RSD	.6433663	8.460820	184.0773	18.14818	11.00243	191.8	517.6307
#1	1133.521	8.222126	3.989490	5.558782	5.036874	.9075	-.843235
#2	1134.359	7.049452	1.092258	7.997254	5.698557	-.759	1.211437
#3	1146.602	7.216977	-.999060	7.366448	4.581400	2.093	.2273811
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pa	LC Pass
High	100000.0	100000.0			400000.0	10000	100000.0

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Low	5000.00	-40.0000			-3.00000	-5.00000	-60.00

Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4.753980	-2.07658	-10.5072	6.365185	921.8199	2.295047	3681.666
SDev	3.526170	.85333	3.6253	1.807521	3.2678	1.434935	10.311
%RSD	74.17301	41.09277	34.50294	28.39699	.3544936	62.52313	.2800612
#1	.6824025	-1.60571	-6.91674	4.813021	918.1805	1.278455	3674.399
#2	6.765915	-1.56244	-14.1663	5.932872	924.5024	1.670230	3677.068
#3	6.813622	-3.06160	-10.4385	7.349664	922.7767	3.936456	3693.442
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	142.0282	1.502228	.1255750	19.44611
SDev	.3066	3.112714	.0003236	.20178
%RSD	.2158810	207.2065	.2576920	1.037643
#1	142.0443	-2.06235	.1256404	19.22019
#2	141.7139	2.885335	.1252237	19.50975
#3	142.3265	3.683695	.1258610	19.60841
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report [illegible]

Method: MIX Sample Name: [illegible] Operator: [illegible]
Run Time: 10/27/98 17:49:47
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be313C	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-.980026	9.469410	7.824272	11.0165[illegible]	49.60747	.3966 [illegible]	3.729[illegible]
SDev	.711569	.023689	2.062375	1.62118	.10122	.025[illegible] [illegible]9	2.503181
%RSD	72.60712	.2501635	26.35869	14.71583	.2040512	6.55[illegible] 15	67.11925
#1	-.980097	9.444387	9.797803	[illegible]2.48118	49.71047	.41 [illegible]14	6.580961
#2	-.268422	9.491489	7.991749	[illegible]1.2938[illegible]	49.60382	.36 3164	2.713074
#3	-1.69156	9.472353	5.683265	9.274601	49.50812	.4057334	1.894322
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.00[illegible]	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	279.4789	S4.147052	.0865649	3.977365	12.46799	5.919384	9.782614
SDev	.9239	.040073	.1921542	.352638	.65303	.475510	.027021
%RSD	.3305732	.9662994	221.9770	8.866110	5.237627	8.033098	.2762193
#1	278.4125	S4.103676	.2877790	4.103537	11.83857	6.099480	9.755495
#2	280.0368	S4.154784	.0669389	4.249561	13.14230	6.278540	9.809537
#3	279.9874	S4.182695	-.095023	3.578998	12.42309	5.380133	9.78281[illegible]
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	300.00[illegible]
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	9.605488	1470.873	12.62463	36.72863	H40.63780	.0862024	2.044163
SDev	.018201	19.731	.04857	.07771	.15172	.0002133	.589824
%RSD	.1894880	1.341423	.3847144	.2115878	.3733513	.2474246	28.85406
#1	9.590391	14[illegible]3.560	12.68072	[illegible]6.65058	H40.50603	.0860658	2.045615
#2	9.625099	1489.121	12.59659	36.80600	H40.80367	.0864481	2.633261
#3	9.600372	1449.936	12.59659	36.72930	H40.60370	.0860932	1.453615
Errors	L[illegible] Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	5[illegible].00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	[illegible]00000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	100.000

Elem	[illegible]889	Ni2316	2203/1	2203/2	Pb2203	Se1960	b2068
Units	[illegible]b	ppb	ppb	ppb	ppb	ppb	ppb
Avge	7[illegible]7.0479	8.[illegible]03760	7.143881	8.050938	7.749487	.4829569	.9834489
SDev	.6235	1.203129	1.50968[illegible]	1.377627	.527418	1.275088	3.507698
%RSD	.0857627	13.82309	21.13258	17.11139	6.805841	264.0169	356.6731
#1	727.2178	9.143512	5.557702	9.639398	8.280793	1.947357	5.0049[illegible]
#2	727.5689	9.625147	8.563213	7.330545	7.741624	-.381524	-.609819
#3	726.3571	7.342620	7.31071[illegible]	7.182869	7.226046	-.116962	-1.44483
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-3.00000	-5.00000	-2.000
Elem	2068/1	2068/2	1960/1	1960/2	Si3381	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.669354	1.807812	-5.89427	3.665990	806.1917	2.126645	414.4553
SDev	6.685028	2.967621	5.34991	4.500457	3.6518	1.851495	.4959
%RSD	998.7279	164.1554	90.76460	122.7624	.4529736	87.06181	.1196555
#1	6.355781	4.329817	-11.3490	8.584748	801.9749	.7373797	414.5824
#2	-6.95234	2.555886	-.655687	-.245448	808.3016	4.228577	413.9081
#3	-1.41151	-1.46227	-5.67816	2.678669	808.2986	1.413978	414.8752
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	150.6039	2.522073	.1570315	19.19792
SDev	.3373	1.763659	.0005667	.12883
%RSD	.2239936	69.92893	.3608698	.6675958
#1	150.2160	1.290931	.1563905	19.28269
#2	150.8286	4.542532	.1574658	19.43369
#3	150.7671	1.732757	.1572382	19.17738
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	-	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Tue 10-27-98 05:04:xx PM Page

Method: MTX Sample Name: 981027cc-01C Oper: PMP
Run Time: 10/27/98 17:57:55
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be 30	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	pp	ppb
Avge	-1.71844	6.309276	3.865675	7.591054	42.92362	.08029	.0639019
SDev	.68065	.012659	.672959	.605315	.11867	.26576	2.218268
%RSD	39.60863	.2006454	17.40857	8.069731	.2764772	3.68143	3471.367
#1	-1.46646	6.304492	4.558997	7.813302	42.82438	.309326	-2.48414
#2	-2.48916	6.323630	3.822910	7.886485	42.89141	.618179	1.564438
#3	-1.19972	6.299705	3.215119	6.803375	43.05508	.2176581	1.111412
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-10.0.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	198.5126	55.390021	-.045661	4.040396	13.39772	5.190487	9.153274
SDev	.4921	.016235	.025756	.378491	.32367	.468970	.021341
%RSD	.2479013	.3012011	56.40712	9.367678	2.415863	9.035186	.2331478
#1	197.9855	55.371994	-.075372	3.735920	13.12815	5.562034	9.149511
#2	198.9600	55.403487	-.029680	4.464160	13.30832	5.345884	9.176245
#3	198.5923	55.394583	-.031929	3.921107	13.75670	4.663542	9.13406
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn257o	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	8.993190	1373.021	8.057932	9.952855	10.23705	.0961916	1.947744
SDev	.017846	12.178	.024445	.022426	.03269	.0001760	.392956
%RSD	.1984384	.8869421	.3033o10	.2253256	.3193028	.1830076	20.17496
#1	8.985788	1369.41	8.083513	9.976048	10.22882	.0960643	2.400374
#2	9.013546	1363.049	8.055471	9.978325	10.27306	.0963925	1.748982
#3	8.980236	1386.593	8.034810	9.944173	10.20926	.0961179	1.693874
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	2.00000	50000.00
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.0000	-100.000

Elem	.45889	Ni2316	2203/1	2203/2	Pb2203	Se 60	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	pp	ppb
Avge	739.2874	6.979650	.3613299	8.543433	5.819526	.82703	.1965125
SDev	2.1274	.356811	2.924974	1.345778	1.618565	.75585	1.063319
%RSD	.2877616	5.112154	809.5023	15.75219	27.81266	8.16929	541.0947
#1	736.9468	6.567819	.7104185	9.956284	6.884947	.049385	-.6985
#2	739.8122	7.175096	-2.72252	7.220954	3.956999	1.231827	-.083807
#3	741.1033	7.196037	3.096094	8.373061	6.616632	1.259046	1.371908
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	180 Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-5.00000	5.00000	-50.0000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn189?	Sr421?
Units	ppb	ppb	ppb	ppt	ppb	ppb	ppb
Avge	6.216375	-2.80971	-12.4852	7.484684	565.0167	2.194364	100.5198
SDev	3.045851	2.33941	6.2910	4.118389	1.0588	2.462829	.2917
%RSD	48.99722	83.26177	50.38803	55.02316	.2935793	112.7481	.2902196
#1	4.155994	-3.12300	-5.95277	2.903419	565.9755	-.604377	100.2759
#2	9.715033	-4.97668	-18.5033	11.08378	563.1013	3.096326	100.4404
#3	4.778099	-.329434	-12.9995	8.376848	565.9733	4.061144	100.8430
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	T11908	V--2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	91.54797	3.933407	.0532328	18.52009
SDev	.13356	1.496375	.0003843	.08092
%RSD	.1458884	38.04271	.7219824	.4369068
#1	91.42263	5.644846	.0531314	18.43091
#2	91.53281	2.871850	.0529094	18.58881
#3	91.68845	3.283524	.0536577	18.54056
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MTX Sample Name: 9810L066-011 Operator: PMP
Run Time: 10/27/98 18:06:01
Comment:
Mode: CONC Corr. Factor: 1

Elem	A[illegible]280	Al3082	As1890	B-2496	Ba4934	Be3130	[illegible]2230
Units	[illegible]	PPM	ppb	ppb	ppb	ppb	ppb
Avge	[illegible]02865	13.86111	27.32953	35.06414	1003.493	.7322887	.179258
SDev	[illegible]95885	.03722	1.86045	.41042	1.499	.0063447	4.422422
%RSD	[illegible]03977	.2685452	6.807484	1.170480	.1493692	.8664147	375.0174
#1	4.366188	13.86884	25.33366	35.52111	1005.166	.7346463	5.494272
#2	3.610105	13.82063	27.63921	34.72692	1003.042	.7251028	1.386770
#3	3.432304	13.89387	29.01570	34.94437	1002.272	.7371171	-3.34327
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H1241.720	S-10.8713	.2941618	10.51589	13.62500	5.869741	11.06053
SDev	2.736	.0317	.0352591	.19860	.34312	.791954	.01826
%RSD	NIR 2203452	.2915944	11.98630	1.888536	2.518346	13.49214	.1650798
#1	H1240.770	S-10.9079	.2627655	10.31396	13.92473	5.054791	11.07281
#2	H1239.585	S-10.8538	.3323079	10.71098	13.69953	5.917935	11.03955
#3	H1244.804	S-10.8523	.2874120	10.52271	13.25073	6.636496	11.0692[illegible]
Errors	LC High	LC Low	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	10.96965	3498.801	37.93951	20.83408	H23.79964	.1252471	2.475168
SDev	.02686	3.425	.07799	.04888	.06060	.0003690	.245026
%RSD	.2448947	.097882	.2055738	.2346191	.2546080	.2946084	9.899363
#1	10.96534	3501.891	38.02953	20.82829	H23.80766	.1252205	2.251215
#2	10.94519	3495.119	37.89228	20.78835	H23.73543	.1248921	2.437405
#3	10.998[illegible]	3[illegible]9.392	37.89671	20.88560	H23.85582	.1256287	2.736883
Errors	LC Pa[illegible]	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.0[illegible]00	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.10[illegible]00	-5000.00	-100.000	-5.00000	-5.00000	-.010000	-100.000

Elem	Na5[illegible]	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	352[illegible]025	19.91396	8.036892	11.98826	10.67310	1.795693	1.405058
SDev	[illegible]328	.22194	2.061397	2.18041	1.02750	1.583735	.251758
%RSD	.16[illegible]343	1.114510	25.64918	18.18788	9.627032	88.19633	17.91797
#1	353[illegible].284	19.94886	9.040297	12.64094	11.44252	-.033047	1.68516[illegible]
#2	3518.754	20.11639	9.404479	[illegible].556045	9.506240	2.710474	1.332384
#3	3523.036	19.67663	5.665900	13.76779	11.07052	2.709651	1.197631
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	10000[illegible]			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-3.00000	-5.00000	-0.3000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.8776265	1.667579	-4.67393	5.024856	2053.252	2.680672	3615.891
SDev	2.286972	.847685	3.72378	1.715322	3.915	1.384604	4.203
%RSD	260.5860	50.83327	79.67118	34.13673	.1906693	51.65137	.1162461
#1	3.404318	.8260697	-7.66928	3.778547	2057.662	3.262852	3620.731
#2	-1.05063	2.521308	-.504662	4.314832	2050.185	1.100036	3613.791
#3	.2791966	1.655361	-5.84785	6.981189	2051.909	3.679127	3613.152
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	144.4313	1.362674	.0576294	33.16970
SDev	.3429	1.113649	.0004045	.33359
%RSD	.2374057	81.72531	.7018766	1.005716
#1	144.2453	2.006197	.0579116	32.87698
#2	144.2215	2.005083	.0571660	33.09922
#3	144.8270	.0767424	.0578106	33.53291
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	-	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report

Method: MTX Sample Name: [illegible] Operator: [illegible]
Run Time: 10/27/98 18:14.00
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-249[illegible]	Ba4934	Be3130	[illegible]
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	.430241	26.26058	24.75041	65.[illegible]229	1768.778	1.407800	.016272
SDev	1.146119	.01544	1.73372	2.14726	4.712	.024861	.412564
%RSD	266.3901	.0587961	7.004823	3.277649	.2663867	1.765920	13.67795
#1	-1.66048	26.27212	23.51138	67.30808	1763.568	1.387282	2.954462
#2	-.237588	26.26659	26.73169	63.56338	1770.028	1.435446	2.638100
#3	.6073428	26.24304	24.00817	65.17540	1772.739	1.400672	3.456254
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10000.00	1000.000	50000.00	100000.0	50000.00	50000.00	100000.0
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-5.00000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	H643.0101	S-.370362	.4211792	10.07919	21.10283	13.81150	17.39309
SDev	.1347	.011031	.1999241	.18000	.24702	.45014	.02351
%RSD	.0209420	2.978472	47.46772	1.785900	1.170563	3.259143	.1351593
#1	H642.8934	S-.361365	.4935702	10.11455	20.86375	14.27846	17.42021
#2	H643.1575	S-.382669	.5748240	9.884128	21.35709	13.77572	17.37[illegible]
#3	H642.9795	S-.367051	.1951435	10.23889	21.08765	13.38032	17.380[illegible]
Errors	LC High	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	500.0000	10.00000	50000.00	100000.0	50000.00	100000.0	500.0000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-20.0000	-.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	17.11250	7580.542	300.4169	59.73136	H69.70771	.2088337	3.586043
SDev	.01598	17.242	.5435	.02605	.01266	.0002629	.170567
%RSD	.0933595	.2274542	.1809180	.0436097	.0181595	.1258946	4.756425
#1	17.12206	7585.166	299.8266	59.75742	H69.71413	.2091166	3.768864
#2	17.12138	7595.002	300.8966	59.73136	H69.69313	.2087874	3.558079
#3	17.09406	7561.460	300.5276	59.70532	H69.71587	.2085970	3.431185
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC High	LC Pass	LC Pass
High	50.00000	100000.0	100000.0	500.0000	20.00000	20.00000	50000.00
Low	-.100000	-5000.00	-100.000	-5.00000	-5.00000	-.010000	100.000

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	[illegible]b2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5003.270	32.68773	10.16807	12.31184	11.59876	.0129505	2.376012
SDev	11.953	.59831	3.32205	2.61148	.65007	2.779380	1.924339
%RSD	.2389066	1.830366	32.67138	21.21117	5.604642	21461.50	80.99029
#1	4990.435	32.42946	6.472421	15.12374	12.24365	1.173755	.45156[illegible]
#2	5014.083	32.26193	11.12560	11.84914	11.60900	-3.15866	2.376222
#3	5005.294	33.37178	12.90620	9.962025	10.94364	2.023754	4.300245
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0			400000.0	100000.0	100000.0

Low	-5000.00	-40.0000			-3.00000	-5.00000	-60.0000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.0187867	3.552058	-9.39130	4.707227	2359.315	3.690494	2429.008
SDev	3.929916	4.726381	5.82351	4.520493	3.828	1.148088	6.231
%RSD	20918.60	133.0604	62.00959	96.03303	.1622458	31.11476	.2565180
#1	4.546248	-1.59350	-14.9636	9.229549	2356.058	3.290437	2422.090
#2	-1.97884	4.549690	-9.86476	.1885662	2363.532	2.795747	2430.847
#3	-2.51104	7.699985	-3.34552	1.703566	2358.356	4.985297	2434.146
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100000.0	100000.0	50000.00
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	169.2497	3.415355	.1133889	45.00969
SDev	.0819	2.478509	.0001220	.17989
%RSD	.0484107	72.56959	.1075992	.3996676
#1	169.2257	1.645071	.1133195	44.87826
#2	169.3409	2.353043	.1133176	45.21470
#3	169.1823	6.247951	.1135298	44.93609
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100000.0	100000.0	200.0000	10000.00
Low	-100.000	-10.0000	-.050000	-50.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard Tue 10-27-98 06:30:44 PM Page

Method: MIX Sample Name: CCV Operator: PMP
Run Time: 10/27/98 18:24:14
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	492.8915	5.122781	490.3121	499.5083	509.7075	507.006-	528.52.8
SDev	1.2716	.017055	2.7270	1.4281	.8505	.84[illegible]	2.7881
%RSD	.2579918	.3329283	.5561690	.2859105	.1668521	.16752[illegible]	.5275218
#1	494.2853	5.103813	490.8129	498.7740	510.3614	506.0[illegible]	531.1279
#2	491.7946	5.127677	487.3695	498.596[illegible]	508.7460	507.4[illegible]	528.8556
#3	492.5946	5.136852	492.7540	501.1542	510.0150	507.5805	525.5819
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	5.000000	500.0000	500.0000	500.0000	500.0000	500.0000
Range	10.00000	10.00000	10.00000	10.0000	10.00000	10.00000	10.00000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	2.170965	2.002362	521.4934	499.8264	499.6630	482.0475	5.138687
SDev	.002509	.011558	2.1105	2.0795	.6636	.4707	.034390
%RSD	.1155740	.5772028	.4047075	.4160431	.1328092	.0976376	.6692451
#1	2.171617	2.015513	519.0565	497.4295	499.3504	481.5547	5.101970
#2	2.173084	1.997749	522.7280	501.1499	499.2135	482.0954	5.170145
#3	2.168194	1.993822	522.6957	500.8997	500.4252	482.4924	5.14394[illegible]
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000000	2.000000	500.0000	500.0000	500.0000	500.0000	5.000000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	4.992547	4871.782	3940.157	4.073378	3.980122	5.090594	483.3872
SDev	.009383	15.639	25.657	.024032	.005880	.008008	1.8008
%RSD	.1879316	.3210061	.6511734	.5899669	.1477443	.1573138	.3725309
#1	4.982176	48[illegible].658	3910.563	4.045689	3.973800	5.081406	481.3137
#2	4.995021	4860.628	3953.750	4.085630	3.981139	5.094288	484.2892
#3	5.000445	4865.060	3956.157	4.088813	3.985429	5.096088	484.5587
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.000000	5000.000	4000.000	4.000000	4.000000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Na58[illegible]	Ni2316	2203/1	2203/2	Pb2203	Se1960	[illegible]2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	5194 22	50[illegible].8666	471.2256	514.1766	499.8746	490.4796	457.0417
SDev	19 [illegible]73	.6965	2.9488	2.3264	.5715	1.9909	1.0390
%RSD	.3749036	.1374175	.6257772	.4524432	.1143364	.4059103	.2273360
#1	5171.942	506.6084	474.5052	511.5651	499.2247	489.0723	458.01[illegible]
#2	5202.013	506.3361	470.3791	514.9377	500.1004	489.6089	455.9510
#3	5208.412	507.6554	468.79[illegible]7	516.0272	500.2988	492.7575	457.1542
Errors	QC Pass	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value	5000.000	500.0000			500.0000	500.0000	500.0000

Range	10.00000	10.00000			10.00000	10.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	451.9815	459.5672	469.7379	500.8340	483.0642	483.4161	508.[illegible]
SDev	8.5643	5.8257	5.4083	4.2755	3.8394	2.3906	.[illegible]
%RSD	1.894837	1.267643	1.151349	.8536776	.7947957	.4979522	.1230622
#1	443.3045	465.3657	475.1281	496.0331	487.2928	482.0715	508.6123
#2	460.4285	453.7148	464.3116	502.2378	482.1030	486.7340	507.5106
#3	452.2116	459.6211	469.7740	504.2311	479.7967	481.4427	508.5750
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value					500.0000	500.0000	500.0000
Range					10.00000	10.00000	10.00000

Elem	Ti3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	506.0170	492.5427	5.195074	504.7183
SDev	.4453	6.2745	.009633	.8775
%RSD	.0879935	1.273891	.1854333	.1738592
#1	505.5150	487.2380	5.184502	503.7915
#2	506.1717	499.4687	5.197365	504.8269
#3	506.3643	490.9214	5.203355	505.5364
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	500.0000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000		--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Blank Sample Tue 10 [illegible]

Method: MTX Sample Name: CCB Op ref: [illegible]
Run Time: 10/27/98 18:33:34
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	[illegible] 130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb		ppb
Avge	-1.05379	.0318731	.7417875	4.014770	.3741652	.241688	-.221712
SDev	.74281	.0058642	1.793807	.577474	.1698646	.028981	2.977950
%RSD	70.48958	18.39873	241.8222	14.38374	45.39852	1.99112	1343.160
#1	-1.85426	.0383690	1.183513	3.462940	.4862496	-.208224	-3.55584
#2	-.386709	.0269693	-1.23162	3.966511	.1187233	.258394	.7167392
#3	-.920404	.0302810	2.273467	4.614859	.4575168	-.258446	2.173964
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.00000	.2000000	10.00000	100.0000	100.0000	100.0000	100.0000
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-100.000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0051757	.0052094	.1308441	.7617738	-.380455	.4408930	.0029865
SDev	.0031814	.0011706	.1924810	.6867228	.691444	1.010044	.0149023
%RSD	61.46851	22.47023	147.1072	90.14786	181.7416	229.0904	498.9854
#1	.0084354	.0064738	-.039242	1.499759	-.964148	1.495402	.0186145
#2	.0050127	.0049909	.2677325	.6440202	.3831672	-.517867	.0014100
#3	.0020789	.0041635	.2140412	.1415418	-.560383	.3451441	-.011006
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.000000	5.000000	5.000000	50.00000	10.00000	25.00000	.1000000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-25.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	-.000228	19.67986	.2188271	.0025170	.0007384	.0000818	1.011488
SDev	.000660	11.74931	.1217982	.0092631	.0002393	.0001351	.589202
%RSD	290.1945	59.70222	55.65957	368.0152	32.40922	165.2525	58.25101
#1	-.000478	6.241367	.3590307	.0171293	.0006200	.0001460	1.539951
#2	.0005213	24.78657	.1583182	-.001631	.0010139	.0000728	1.118341
#3	-.000726	28.01170	.1391324	-.003947	.0005814	-.0000973	.3761716
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.10000	5000.000	100.0000	5.000000	5.000000	.015000	100.0000
Low	-.100	-5000.00	-100.000	-5.00000	-5.00000	-.015000	-100.000

Elem	Na58	Ni2316	2203/1	2203/2	Pb2203	Se196	[illegible]2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	[illegible]
Avge	4.7[illegible]07	.1599956	-4.02931	1.753128	-.171757	1.9470[illegible]	[illegible]150909
SDev	1.0[illegible]332	.4203796	4.02294	2.687456	.595682	1.971[illegible]	[illegible]36698
%RSD	21.3[illegible]191	262.7445	99.84188	153.2949	346.8161	101.[illegible]	[illegible].32133
#1	5.954294	-.279757	-8.61814	4.842554	.3608098	4.15	1.85797[illegible]
#2	4.164812	.2018768	-1.10957	.4614129	-.061057	1.30	.6229371
#3	4.210115	.5578669	-2.36022	-.044583	-.815025	.3738	.9718162
Errors	LC Pass	LC Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5000.000	40.00000			3.000000	5.000000	60.00000

Low	-5000.00	-40.0000			-5.00000	-5.00000	
Elem	2068/1	2068/2	1960/1	1960/2	5i2881	5ui899	5i4013
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	4.950528	-.746852	-8.64963	7.23o647	2.07712	-1.48219	.1087795
SDev	8.301177	3.233044	4.51910	4.361863	1.60308	1.76539	.0535311
%RSD	168.6947	432.8897	52.24619	60.27465	62.12201	119.1072	48.7o275
#1	13.74878	-4.07931	-11.7666	12.10796	-4.59747	-2.75151	.0513753
#2	-2.89132	2.376634	-3.46684	3.692571	-1.71707	.5338575	.1214531
#3	3.994129	-.537874	-10.7154	5.909411	-1.71681	-2.22891	.1o65111
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100.0000	100.0000	100.0000
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	.0993219	3.405254	.0009386	.1255785
SDev	.2865278	1.286534	.0011482	.1660536
%RSD	288.4839	37.78086	122.3296	132.2310
#1	.4292119	4.122751	.0022633	.2703486
#2	-.043769	1.919976	.0002272	-.055687
#3	-.087478	4.173035	.0003254	.1620743
Errors	LC Pass	LC Pass	LC Pass	LC Pass
High	100.0000	10.00000	.0500000	20.00000
Low	-100.000	-10.0000	-.050000	-20.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

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Method: MTX Sample Name: CRI Operator: PNP
Run Time: 10/27/98 18:40:17
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	18.74603	.2350648	18.02241	197.6650	203.3114	9.684715	.618215
SDev	1.15987	.0036307	1.79871	1.2838	.6100	.047134	.546918
%RSD	6.187308	1.544554	9.980415	.6494904	.3000547	.4866883	35.4913
#1	20.06525	.2326112	18.15250	198.8776	202.9076	9.666860	4.583794
#2	18.28652	.2333477	19.75255	197.7973	203.0133	9.649117	-3.83468
#3	17.88631	.2392356	16.16219	196.3202	204.0131	9.738169	-2.60376
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	NOCHECK
Value	20.00000	.2000000	20.00000	200.0000	200.0000	10.00000	
Range	50.00000	50.00000	50.00000	50.00000	50.00000	50.00000	

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0017529	.0024016	10.33200	99.96500	18.94494	47.67673	.2078431
SDev	.0002823	.0003477	.25718	.23130	.85950	.86373	.0136791
%RSD	16.10487	14.47793	2.489178	.2313779	4.536821	1.811634	6.581441
#1	.0015899	.0027830	10.62025	99.74043	19.73820	46.83808	.1927950
#2	.0015899	.0023196	10.24973	99.95207	19.06485	48.56353	.2112098
#3	.0020789	.0021022	10.12602	100.2025	18.03179	47.62857	.219524
Errors	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	NOCHECK
Value			10.00000	100.0000	20.00000	50.00000	
Range			50.00000	50.00000	50.00000	50.00000	

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	.1980569	12.04314	196.9511	-.001245	.0002018	.0304513	193.7270
SDev	.0006611	27.23615	.8143	.004794	.0003601	.0001499	.6010
%RSD	.3338118	226.154	.4134506	384.8916	178.4166	.4921349	.3102253
#1	.1986599	39.91386	196.1069	-.006262	.0006157	.0306052	193.1046
#2	.1973499	10.72622	197.0145	.0032888	.0000291	.0303058	193.7726
#3	.1981608	-11.5107	197.7318	-.000763	-.000039	.030[illegible]427	194.3040
Errors	QC Pass	NOCHECK	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass
Value	.2000000		200.0000			.030[illegible]0	200.0000
Range	50.00000		50.00000			50.00[illegible]0	50.00000

Elem	N 889	Ni2316	2203/1	2203/2	Pb2203	Se196[illegible]	[illegible]2068
Units	p[illegible]	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.10735	80.53001	4.060853	5.443033	4.983365	11.485[illegible]	109.9722
SDev	2.372822	.81668	2.655678	2.592180	.845339	.560	2.1841
%RSD	1125.974	1.014137	65.39704	47.62382	16.96321	4.8809[illegible]	1.986010
#1	-2.92516	81.34669	6.918324	2.626167	4.055989	10.83775	107.664
#2	1.469266	79.71333	1.668392	7.728021	5.710828	11.81241	110.2444
#3	.8236924	80.53001	3.595842	5.974911	5.183278	11.80496	112.0074
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value		80.00000			6.000000	10.00000	120.0000

Range		50.00000			50.00000	50.00000	50.00000
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	110.7386	109.5889	3.885541	15.27829	196.7149	190.5949	195.8335
SDev	9.4679	2.9042	5.157274	3.21977	6.9059	2.5864	.4390
%RSD	8.549768	2.650055	132.7299	21.07413	3.510627	1.357010	.2244518
#1	100.1070	111.4374	8.027897	12.03977	203.4226	192.4978	195.5939
#2	118.2607	106.2415	-1.89079	18.65293	189.6265	187.6500	195.5659
#3	113.8480	111.0877	5.519514	14.94217	197.0955	191.6368	196.3409
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	QC Pass
Value					200.0000		200.0000
Range					50.00000		50.00000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	203.3706	19.62464	.1025650	39.60836
SDev	.3558	.56616	.0000617	.16897
%RSD	.1749628	2.884942	.0601486	.4265906
#1	203.4668	19.01138	.1025934	39.42447
#2	202.9765	19.73513	.1024942	39.75677
#3	203.6684	20.12741	.1026074	39.64383
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	200.0000	20.00000	.1000000	40.00000
Range	50.00000	50.00000	50.00000	50.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	-	--	--

Analysis Report QC Standard Tue 10-27-98 06:52:30 PM Page

Method: MIX Sample Name: ISA Operator:
Run Time: 10/27/98 18:47:05
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-249o	Ba4934	Be313C	Bi2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	-.948172	468.0691	3.211366	.89[illegible]395	-1.73623	-.258 [illegible]	5.258394
SDev	1.332821	.5534	1.130667	1.060179	.04433	.001 [illegible]	2.852939
%RSD	140.5674	.1182340	35.20829	118.4307	2.553200	.704 1	54.25496
#1	-2.04584	467.4696	4.484821	1.[illegible]08884	-1.77991	-.2 15	8.287775
#2	-1.33355	468.1773	2.325354	1.399713	-1.73.50	-.[illegible] 56	4.864597
#3	.5348745	468.5604	2.823923	-.323029	-1.69127	-. 19	2.622810
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	NO CK	NOCHECK
Value		500.0000					
Range		20.00000					

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	447.9007	52.519700	.1984049	1.354402	-.672422	.1315808	172.7971
SDev	.7767	.006765	.3008611	.294654	.347222	.2712262	.1955
%RSD	.1734192	.2684918	151.6399	21.75528	51.63749	206.1291	.113135o
#1	447.0341	52.527170	.1373901	1.079902	-1.05102	.1465750	172.598o
#2	448.1337	52.517945	.5250969	1.[illegible]65745	-.597394	.3949988	172.803
#3	448.5342	52.513986	-.067272	1.317560	-.368848	-.146832	172.989
Errors	QC Pass	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value	500.0000						500.0000
Range	20.00000						2[illegible].00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	163.0639	11.50931	.3462403	46[illegible].8670	529.91487	-.001869	23.13919
SDev	.0815	17.45435	.0768187	.4748	.01334	.000232	1.60626
%RSD	.0499548	151.6542	2[illegible].18653	.1016963	.0446029	12.43238	6.941721
#1	162.9701	28.25297	.4210156	466.3259	529.92820	-.001604	21.8o359
#2	163.1166	12.85301	.3501758	467.0613	529.91491	-.00196[illegible]	22.61094
#3	163.1050	-6.57806	.2675294	467.2138	529.90151	-.0020[illegible]	24.94305
Errors	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK
Value				500.0000			
Range				20.00000			

Elem	[illegible]8[illegible]	Ni2316	2203/1	2203/2	Pb2203	Se1960	[illegible]2068
Units	[illegible]	ppb	ppb	ppb	ppb	ppb	[illegible]b
Avge	[illegible]41 05	1.109303	-1.93828	-.490262	-.971809	-2.15067	969819
SDev	[illegible]69 00	.619195	3.33846	3.184579	2.237018	2.70838	116191
%RSD	[illegible]83. 22	55.81842	172.2379	649.5662	230.1911	125.9317	5o.66464
#1	[illegible].05640	.5159858	-3.80264	-3.38865	-3.52591	-5.26583	3.24405[illegible]
#2	[illegible]977116	1.060441	-3.92816	2.918793	.6394236	-.354073	1.165017
#3	-2.21163	[illegible]751481	1.915955	-1.00093	-.028941	-.832107	1.500381
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							

Range

Elem	2068/1	2068/2	1960/1	1960/2	S12881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	2.590537	1.659125	-6.76919	.1542956	23.80777	-6.89514	15.15540
SDev	1.992704	2.236491	3.95845	2.279919	6.43144	2.47349	.03716
%RSD	76.92243	134.7994	58.47745	477.631	27.01405	35.87304	.2404842
#1	1.440718	4.143578	-11.2098	-2.29919	16.50152	-9.38575	15.41102
#2	1.439381	1.027242	-5.48689	2.207687	26.30869	-6.86053	15.48016
#3	4.891514	-.197443	-3.61086	5543861	28.61308	-4.43912	15.46922
Errors Value Range	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	-2.03016	4.676169	-.000105	-1.11234
SDev	.07704	2.665070	.000352	.16914
%RSD	3.795024	56.99260	335.5394	15.20583
#1	-2.06973	3.459305	.0000253	-1.30701
#2	-1.94137	2.836739	-.000503	-1.02864
#3	-2.07937	7.732463	.0001633	-1.00137
Errors Value Range	NOCHECK	NOCHECK	NOCHECK	NOCHECK

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard Tue [illegible] 27-98 07:00:10 PM Page:

Method: MIX Sample Name: ISB
Run Time: 10/27/98 18:53:41
Comment:
Mode: CONC Corr. Factor: 1
Operator: DMP

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	[illegible]
Units	ppb	PPM	ppb	ppb	ppb	ppb	ppb
Avge	192.4319	469.9880	91.47618	959.1730	482.8711	471.8549	37.0[illegible]
SDev	.5351	1.8765	.71160	6.1162	.6068	1.4579	1.4202
%RSD	.2780632	.3992582	.7779080	.6376538	.1256732	.3089758	.1515714
#1	192.9336	468.2209	91.69652	953.1798	482.2361	470.3915	936.2667
#2	191.8688	469.7857	90.68047	958.934	483.4452	471.8660	938.6418
#3	192.4934	471.9574	92.05155	965.4052	482.9318	473.3073	936.1052
Errors	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass	QC Pass	NOCHECK
Value	200.0000	500.0000	100.0000		500.0000	500.0000	
Range	20.00000	20.00000	20.00000		20.00000	20.00000	

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	452.1108	52.502211	871.5394	420.7053	442.0329	445.4829	173.4466
SDev	1.3840	.001432	.5937	1.3198	1.7459	.5333	.6140
%RSD	.3061267	.0572194	.0681174	.3136999	.3949706	.1197024	.3540236
#1	450.7013	52.502491	870.9703	419.6664	440.3580	444.8689	172.8243
#2	452.1633	52.503481	872.1549	420.2591	441.8985	445.8300	173.4638
#3	453.4679	52.500659	871.4932	422.1902	443.8420	445.7498	174.052[illegible]
Errors	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000		1000.000	500.0000	500.0000	500.0000	200.0000
Range	20.00000		20.00000	20.00000	20.00000	20.00000	20.00000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	163.2994	1.449558	905.5963	468.2087	529.90574	.4529562	903.6361
SDev	.4525	17.96988	.8682	1.4501	.00192	.0015044	3.8643
%RSD	.2770924	1239.680	.0958661	.3160844	.0064305	.3321264	.4276404
#1	162.8430	19.43562	904.5942	466.7860	529.90782	.4515999	899.9444
#2	163.3073	3.277471	906.0745	468.2737	529.90537	.4526945	903.3113
#3	163.7478	-17.3644	906.1202	469.7463	529.90402	.4545743	907.6525
Errors	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	QC Pass	NOCHECK
Value				500.0000		.5000000	
Range				20.00000		20.00000	

Elem	Na5889	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	-.735499	846.4743	41.36265	40.45926	40.76089	41.19046	518.8981
SDev	.516703	1.0495	3.80647	3.17569	1.35703	3.06004	1.8351
%RSD	70.25204	.1239890	9.202674	7.849112	3.329256	7.428989	.3536552
#1	-.139005	847.5632	44.39447	36.83488	Q39.35303	Q38.17630	517.01[illegible]
#2	-1.04507	846.3906	42.60269	41.78880	42.06063	41.10070	520.6868
#3	-1.02242	845.4691	37.09079	42.75410	40.86902	44.29440	518.9878
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value		1000.000			50.00000	50.00000	600.0000

[redacted]		20.00000			20.00000	20.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sr1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	516.6251	520.0322	35.65670	43.85237	936.2653	844.9886	950.8517
SDev	3.1535	1.5920	2.18099	4.25495	1.5098	4.0295	1.0990
%RSD	.6104114	.3062912	6.116632	9.6508829	.1612592	.5472109	.1156484
#1	514.6665	518.1940	35.96580	39.27909	937.3556	839.9236	949.6709
#2	520.2629	520.8975	33.33765	44.97561	934.5420	846.0396	951.8594
#3	514.9459	521.0049	37.66665	47.30240	936.8982	849.0025	951.0173
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem	Ti3349	T11908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb ✓
Avge	-2.08999	85.13788	.4724333	889.6976
SDev	.06868	.67990	.0016143	1.6177
%RSD	3.286099	.7985878	.3417032	.1818255
#1	-2.10898	85.03992	.4716500	888.1097
#2	-2.01381	85.86144	.4713601	891.3436
#3	-2.14717	84.51227	.4742899	889.6394
[redacted]rors	NOCHECK	QC Pass	QC Pass	QC Pass
Value		100.0000	.5000000	1000.000
Range		20.00000	20.00000	20.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report QC Standard Tue 10/27/98 07:09:05 PM [illegible]

Method: MTX Sample Name: CCV Operator: [illegible]
Run Time: 10/27/98 19:02.33
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	Ca3179
Units	ppb	PPM	ppb	ppb	ppb	ppb	PPM
Avge	487.6167	5.099588	483.5423	499.0974	508.1472	501.355	523.4794
SDev	.4622	.007297	5.2092	3.4088	3.5518	1.316	3.0749
%RSD	.0947911	.1430816	1.077294	.6829869	.6989695	.26264	.5874045
#1	487.8843	5.092298	477.9667	49[illegible].4928	505.2280	500.0[illegible]	526.0015
#2	487.8829	5.106891	484.3758	502.2689	513.1016	502.63[illegible]	524.3827
#3	487.0830	5.099576	488.2845	499.5306	507.1121	501.4253	520.0540
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	5.000000	500.0000	500.0000	500.0000	500.0000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714	Fe2599
Units	PPM	ppb	ppb	ppb	ppb	PPM	PPM
Avge	1.942682	516.6956	492.5797	493.7359	473.5425	5.056884	4.917131
SDev	.011648	3.2128	1.7633	.5750	3.1600	.017741	.012020
%RSD	.5996065	.6218022	.3579794	.1164559	.6673011	.3508207	.2444517
#1	1.944325	513.0135	490.7092	493.0805	470.0048	5.03962[illegible]	4.905785
#2	1.953421	518.1446	492.8184	493.9719	476.0853	5.05595[illegible]	4.929727
#3	1.930299	518.9287	494.2116	494.1554	474.5374	5.07507[illegible]	4.915883
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000000	[illegible].000000	500.0000	500.0000	500.0000	5.000000	5.000000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020	Na5889
Units	ppb	ppb	PPM	PPM	PPM	ppb	ppb
Avge	4816.864	3890.673	4.012694	3.946360	5.020932	474.7337	5160.110
SDev	29.938	38.832	.013285	.009043	.012933	2.4653	47.524
%RSD	.6215194	.9980776	.3310831	.2291406	.2575770	.5192970	.9209844
#1	4821.757	3846.176	4.[illegible]4280	3.948056	5.007697	472.0474	5105.290
#2	4784.770	3908.445	4.005169	3.954435	5.033540	475.2611	5189.645
#3	4844.035	3917.439	4.028034	3.936590	5.021560	476.8926	5185.398
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	5.000000	5000.000	4000.000	4.000000	4.000000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000	10.00000

Elem	Ni2316	2203/1	2203/2	Pb2203	Se1960	Sb2068
Units	ppb	ppb	ppb	ppb	ppb	ppb
Avge	503.3835	458.9491	507.4094	491.2731	482.2543	Q445.4534
SDev	3.3749	8.2645	7.6987	2.4033	2.5399	1.9739
%RSD	.6704494	1.800738	1.517261	.4892081	.5266730	.4431304
#1	499.5095	468.3135	498.5738	488.4982	480.6723	Q444.23[illegible]
#2	504.9540	455.8586	510.9788	492.6248	480.9066	Q444.3918
#3	505.6870	452.6753	512.6757	492.6962	485.1840	Q447.7310
Errors	QC Pass	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Fail
Value	500.0000			500.0000	500.0000	500.0000

Range	10.00000	10.00000			10.00000	10.00000	[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	[illegible]
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	442.3357	447.0091	461.2806	492.7246	479.4931	476.8209	506.0640
SDev	12.6398	4.6884	10.3907	7.5492	1.6793	1.9076	3.2308
%RSD	2.857524	1.048842	2.252578	1.537071	.3502338	.3984035	.6403877
#1	428.1243	452.2812	473.2753	484.3644	480.4775	476.6350	503.3857
#2	446.5618	443.3076	455.0353	493.6219	477.5540	479.6782	509.6586
#3	452.3210	445.4386	455.5311	497.9875	480.4477	480.1494	505.1677
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	QC Pass	QC Pass	QC Pass
Value					500.0000	500.0000	500.0000
Range					10.00000	10.00000	10.00000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	502.5440	485.7289	5.141019	496.4128
SDev	1.4563	8.9150	.014654	3.6348
%RSD	.2897826	1.835385	.2850467	.7322085
#1	500.9796	477.4643	5.125165	492.5407
#2	503.8603	484.5461	5.154068	499.7512
#3	502.7921	495.1762	5.143825	496.9465
Errors	QC Pass	QC Pass	QC Pass	QC Pass
Value	500.0000	500.0000	5.000000	500.0000
Range	10.00000	10.00000	10.00000	10.00000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Analysis Report Blank Sample Run 10-27-98 07:18:20 PM Page 1

Method: MTX Sample Name: CCB Operator: PMP
Run Time: 10/27/98 19:11:57
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1890	B-2496	Ba4934	Be3130	C2230
Units	ppb	PPM	ppb	ppb	ppb	ppb	pb
Avge	-.579427	.0349441	-1.18004	3.882244	.2491877	-.332254	.443481
SDev	.943661	.0046298	2.06283	1.196036	.1502783	.029771	.195592
%RSD	162.8610	13.24902	174.8105	30.80784	60.30728	8.960330	32.82702
#1	.5026324	.0398501	-2.27224	5.263150	.1113764	-.31052.	2.308387
#2	-1.00930	.0343302	1.199253	3.173739	.4094148	-.320055	.0791513
#3	-1.23161	.0306519	-2.46712	3.209843	.2267718	-.366187	1.942905
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	10.00000	.2000000	10.00000	100.0000	100.0000	100.0000	100.0000
Low	-10.0000	-.200000	-10.0000	-100.000	-100.000	-100.000	-100.000

Elem	Ca3179	Ca3968	Cd2265	Co2286	Cr2677	Cu3247	Fe2714
Units	PPM	PPM	ppb	ppb	ppb	ppb	PPM
Avge	.0022419	.0035942	.0882492	-.019368	-.290782	-.889262	-.004924
SDev	.0005646	.0007890	.1355361	.362227	.823213	.485504	.009095
%RSD	25.18462	21.95175	153.5834	1870.239	283.1030	54.59624	184.7266
#1	.0025678	.0044347	.2387858	.3903368	.6073738	-.877088	-.015222
#2	.0025678	.0034785	-.024088	-.151318	-1.00943	-.409960	-.001552
#3	.0015899	.0028695	.0500496	-.297123	-.470293	-1.38074	.002009
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	5.000000	5.000000	5.000000	50.00000	10.00000	25.00000	.1000000
Low	-5.00000	-5.00000	-5.00000	-50.0000	-10.0000	-25.0000	-.100000

Elem	Fe2599	K-7664	Li6707	Mg2790	Mg2852	Mn2576	Mo2020
Units	PPM	ppb	ppb	PPM	PPM	PPM	ppb
Avge	.0001887	23.41595	.1268339	.0007805	.0025823	.0001724	-.105966
SDev	.0006247	20.28399	.0863748	.0007284	.0009662	.0001655	.181531
%RSD	331.0847	86.624[illegible]	68.10075	93.32163	37.41519	96.02232	171.3099
#1	.000895[illegible]	.99198	.1996414	.0015523	.0036598	.0003628	-.310132
#2	-.00004[illegible]	.53001	.1494632	.0006840	.0022940	.0000634	-.044999
#3	-.00028[illegible]	.[illegible]25861	.0313970	.0001052	.0017931	.0000909	.0372327
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.10000[illegible]	5000.000	100.0000	5.000000	5.000000	.0150000	00.0000
Low	-.000[illegible]	-5000.00	-100.000	-5.00000	-5.00000	-.015000	100.000

Elem	[illegible]8	Ni2316	2203/1	2203/2	Pb2203	Se1960	[illegible]b2068
Units		ppb	ppb	ppb	ppb	ppb	ppb
Avge	.39[illegible]95	-.056391	1.778511	.8242183	1.142887	2.210842	1.484442
SDev	[illegible]11 8	1.408842	3.206099	2.875265	.850016	1.979658	3.576073
%RSD	[illegible] 1	2498.362	180.2688	348.8475	74.37448	89.54314	240.9035
#1	-1.2[illegible]	1.542075	5.218822	-2.25035	.2379537	.1047726	5.4915[illegible]
#2	1.03[illegible]	-.593866	1.242525	1.276403	1.266188	4.033551	-1.38252
#3	-.81[illegible]	-1.11738	-1.12582	3.446599	1.924518	2.494204	.3442739
Errors	LC Pass	[illegible] Pass	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High	5000.0[illegible]	.00000			3.000000	5.000000	60.00000

[redacted]	-5000.00	-40.0000			-3.00000	-3.00000	-0.0[illegible]
Elem	2068/1	2068/2	1960/1	1960/2	Si2881	Sn1899	Sr4215
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avge	.3314006	2.059299	-6.36900	6.493532	-1.13983	-.812531	.0802600
SDev	4.544917	7.604404	1.73351	3.247834	7.47562	.428792	.0303659
%RSD	1371.427	369.2715	27.21793	50.01644	655.8525	52.77240	37.83435
#1	-4.90624	10.68189	-5.24984	2.777263	7.485898	-.325693	.1098207
#2	3.235879	-3.68906	-5.49134	8.788056	-5.16556	-.977820	.0818110
#3	2.664564	-.814931	-8.36582	7.915776	-5.73983	-1.13408	.0491484
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	LC Pass	LC Pass	LC Pass
High					100.0000	100.0000	100.0000
Low					-100.000	-100.000	-100.000

Elem	Ti3349	Tl1908	V-2924	Zn2138
Units	ppb	ppb	PPM	ppb
Avge	-.259708	2.037112	-.000001	.0383330
SDev	.036524	2.246268	.000281	.1429600
%RSD	14.06357	110.2673	23477.77	372.9425
#1	-.288977	1.308248	.0002103	-.115007
#2	-.218777	4.557301	.0001064	.1679441
#3	-.271369	.2457881	-.000320	.0620e13

[redacted]rors	LC Pass	LC Pass	LC Pass	LC Pass
High	100.0000	10.00000	.0500000	20.00000
Low	-100.000	-10.0000	-.050000	-20.0000

IntStd	1	2	3	4	5	6	7
Mode	Time	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	--	--	--	--	--	--	--
Wavlen	--	--	--	--	--	--	--
Avge	15000	--	--	--	--	--	--
SDev	.0000000	--	--	--	--	--	--
%RSD	.0000000	--	--	--	--	--	--
#1	15000	--	--	--	--	--	--
#2	15000	--	--	--	--	--	--
#3	15000	--	--	--	--	--	--

Method: MIX Method Report [illegible]

STATUS INFORMATION **

Version: 24.0
Date Created 09/06/94 03:13 Date Last Updated: 10/27/98 0[illegible]

Number of elements: 31 Number of lines: 79

# of lines calculated: 0
# of lines standardized: 36 10/27/98 02:21 - 10/27/98 02:3[illegible]

Data collection mode: Spectrum Shifter 40 positions

Approx. time for analysis 6.0 mins.

Protection status: Un-protected

METHOD INFORMATION **

Sample Introduction Device: Normal
Calibration Mode: Concentration

Default Setup:

Number of Repeats : 3	Auto-Store Analysis Data? Yes
Flush Time (sec) : 70.0	Auto-Store Stdzn Data? Yes
Auto-Increment Sample Names? No	Store Individual Repeats? Yes
	Auto-print Analysis Data? Yes
	Auto-print Stdzn Report : None
	Condensed Print Format? No

Default File Names:

Analysis Data File : TA1027B	Autosampler Table : A1027A
	Sample Limits Table :
Calibration Data File : TA1027B	Blank Limits Table :
Calibration Stds Table : TA1027B	QC Check Table :

INTERNAL STANDARDS INFORMATION

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
1	Time		1.0	15.0	Yes

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
2	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: .06667

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
3	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
4	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
5	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
6	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

#	Elem Symbol	Wavelength	Pre-integration	Integration	Used?
7	Time		0	5.0	No

Ratio Constant/Intensity Multiplication Factor: 1

Method: MIX Method Report Wed 05-98 07:03:13 AM P1

OUTPUT INFORMATION **

Output Mode:	Concentratio
Override Print Limits?	Yes
Override Significant Figures?	Yes
Apply Background Correction?	Yes
Apply Blank Subtraction?	No
Limits Table: LR Check?	No
Correction Factor:	1

Report to:
Screen Avgs
Printer Avgs, Stats, Reps, Errs, Units, Int.Stds

PLASMA INFORMATION **

Gas Flow
Torch gas : High Flow
Auxiliary gas flow : Low (.5 L/min)
Nebulizer Press. (PSI): 30

Power
Approximate RF Power (W): 950

Peristaltic Pump Parameters
Analysis Pump Rate (RPM): 130
Flush Pump Rate (RPM): 130
Relaxation Time (sec): 0
Pump Tubing type : Tygon Orange

Element:	Ag	Al	Ca	Fe	Mg
Wavelength:	328.068	308.215	183.942/2	249.075/2	279.553
Element Name:	Ag3280	Al3082	Ca1890	Fe2490	Mg2790
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	5	5	0	0	0
Timing Group No.:	1	1	1	1	1
Print Limit Low:	0	0	-100	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	5	4	5	4	5
Print Units:	ppb	PPM	ppb	ppb	ppb
BKG Low SS Offset:	-10	NONE	-10	-15	NONE
BKG High SS Offset:	NONE	20	10	NONE	10
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	Multiple	Multiple	Multiple	Multiple	Multiple
Std #1 (High) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #2 (Low) Name:	S1B	S1B	S1B	S1B	S1B
Conc/Sig:	500	5	500	500	500
Std #3 Name:	S1	S1	S1	S1	S1
Conc:	1000	10	1000	1000	1000
Std #4 Name:	--n/a--	S2	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	100	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--		--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
r - intercept:	-1.23164	-.021534	1.37808	-7.85468	-2.03231
Slope:	667.053	5.52036	480.499	540.607	144.207
Date Standardized:	10/27/98	10/27/98	10/27/98	10/27/98	10/27/98
Time Standardized:	14:21	14:29	14:21	14:21	14:21
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n):	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	2	1	2	3	2

Method: MIX Element Information Wed 10-25-95 07:08:10 AM

Affecting Element:	V 2924	V 2924	Fe2714	Fe2714	[illegible]
K1 factor:	.049464	.004411	-.00781	-.04442	.005543
K2 factor:	0	0	0	0	0
Use?:	YES	YES	YES	YES	YES
Affecting Element:	Fe2714	--n/a--	Cr2677	Cr2677	Mg 790
K1 factor:	-.00378	--n/a--	-.00261	.000194	.0 1938
K2 factor:	0	--n/a--	0	0	0
Use?:	YES	--n/a--	YES	YES	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	Al3082	--n/a--
K1 factor:	--n/a--	--n/a--	--n/a--	.002712	--n/a--
K2 factor:	--n/a--	--n/a--	--n/a--	0	--n/a--
Use?:	--n/a--	--n/a--	--n/a--	YES	--n/a--

Element:	Be	Bi	Ca	Ca	Cd
Wavelength:	313.041	223.061/2	317.933	396.847	226.502/2
Element Name:	Be3130	Bi2230	Ca3179	Ca3968	Cd2265
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	5	0	5	0	0
Timing Group No.:	1	1	1	1	1
Print Limit Low:	0	0	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	5	4	4	5	5
Print Units:	ppb	ppb	PPM	PPM	ppb
BKG Low SS Offset:	NONE	-15	NONE	10	15
BKG High SS Offset:	20	NONE	20	NONE	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	Multiple	Multiple	Multiple	Multiple	Multiple
Std #1 (High) Nam :	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #2 (Low) Name:	S1B	S1B	S1	S1B	S1B
Conc/Sig:	500	500	4	2	500
Std #3 Name:	S1	S1	S2	S1	S1
Con :	1000	1000	50	4	1000
Std #4 Nam :	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Con :	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--

Method: MIX Element Information Wed 10 [illegible]

Y Intercept:	-.175667	1.4451	.004767	.0044	[illegible]
Slope:	28.8347	682.47	7.33445	.015831	[illegible]
Date Standardized:	10/27/98	10/27/98	10/27/98	10/27/98	10/27/98
Time Standardized:	14:21:-	14:21	14:22	14:21	14:21
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n):	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	YES	YES	NO	NO	YES
Number of IECs:	2	5	0	0	4
Affecting Element:	V-2924	Fe2714	--n/a--	--n/a--	Fe2714
K1 factor:	.12059	.058369	--n/a--	--n/a--	.110234
K2 factor:	0	0	--n/a--	--n/a--	0
Use?:	YES	YES	--n/a--	--n/a--	YES
Affecting Element:	Ti3349	Ti3349	--n/a--	--n/a--	Al3082
K1 factor:	-.00092	-.00464	--n/a--	--n/a--	-.00264
K2 factor:	0	0	--n/a--	--n/a--	0
Use?:	YES	YES	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	Cr2077	--n/a--	--n/a--	Ti3349
K1 factor:	--n/a--	.000398	--n/a--	--n/a--	.000071
K2 factor:	--n/a--	0	--n/a--	--n/a--	0
Use?:	--n/a--	YES	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	Co2286	--n/a--	--n/a--	Co2286
K1 factor:	--n/a--	-.00079	--n/a--	--n/a--	-.00045
K2 factor:	--n/a--	0	--n/a--	--n/a--	0
Use?:	--n/a--	YES	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	Cu3247	--n/a--	--n/a--	--n/a--
K1 factor:	--n/a--	-.00091	--n/a--	--n/a--	--n/a--
K2 factor:	--n/a--	0	--n/a--	--n/a--	--n/a--
Use?:	--n/a--	YES	--n/a--	--n/a--	--n/a--

Method: MIX Element Information Wed 10-28-98 07:09.12 (M) Page 1

Element:	Co	Cr	Cu	Fe	Fe
Wavelength:	228.616	267.716	324.754	271.441	259.940
Element Name:	Co2286	Cr2677	Cu3247	Fe2714	Fe2599
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	5	5	0	5	5
Timing Group No.:	1	1	1	1	1
Print Limit Low:	0	0	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	5	5	5	4	5
Print Units:	ppb	ppb	ppb	PPM	PPM
BKG Low SS Offset:	NONE	-10	NONE	NONE	-10
BKG High SS Offset:	20	NONE	20	20	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	Multiple	Multiple	Multiple	Multiple	Multiple
Std #1 (High) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #2 (Low) Name:	S1B	S1B	S1B	S1	S1B
Conc/Sig:	500	500	500	10	5
Std #3 Name:	S1	S1	S1	S2	S1
Conc:	1000	1000	1000	50	10
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y = intercept:	.286296	-1.09922	-4.68812	-.005122	-.004032
Slope:	312.969	673.82	539.254	8.90987	.935695
Date Standardized:	10/27/98	10/27/98	10/27/98	10/27/98	10/27/98
Time Standardized:	14:21	14:21	14:21	14:29	14:21
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n):	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit:	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit:					
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	3	3	4	1	1

Method: MIX Element Information Wed 10-29-98 07:09:10 AM

Affecting Element:	Ti3349	Fe2714	Fe2714	V-2924	V-2924
k1 factor:	.000250	-.0211	.014005	.010433	.000[illegible]
k2 factor:	0	0	0	0	0
use?:	YES	YES	YES	YES	YES

Affecting Element:	Cr2677	Mn2576	Al3082	--n/a--	--n/a--
k1 factor:	.000169	.259164	.00033	--n/a--	--n/a--
k2 factor:	0	0	0	--n/a--	--n/a--
use?:	YES	YES	YES	--n/a--	--n/a--

Affecting Element:	Mo2020	V-2924	V-2924	--n/a--	--n/a--
k1 factor:	-.00268	.021713	-.19771	--n/a--	--n/a--
k2 factor:	0	0	0	--n/a--	--n/a--
use?:	YES	YES	YES	--n/a--	--n/a--

Affecting Element:	--n/a--	--n/a--	Ti3349	--n/a--	--n/a--
k1 factor:	--n/a--	--n/a--	.000216	--n/a--	--n/a--
k2 factor:	--n/a--	--n/a--	0	--n/a--	--n/a--
use?:	--n/a--	--n/a--	YES	--n/a--	--n/a--

Method: MIX Element Information Wed 1[illegible] 08-28-98 07:08 1[illegible] PM [illegible]

Element:	K	Li	Mg	Mg	Mn
Wavelength:	766.491	670.781	279.078	285.213	257.[illegible]
Element Name:	K-7664	Li6707	Mg2790	Mg2852	Mn2576
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	0	0	5	5	5
Timing Group No.:	1	1		1	1
Print Limit Low:	0	0	0	0	
Print Limit High:	0	0	0	0	
Significant Figrs:	5	5	4	3	4
Print Units:	ppb	ppb	PPM	PPM	PPM
BKG Low SS Offset:	-15	NONE	NONE	-10	-10
BKG High SS Offset:	NONE	20	20	NONE	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	Multiple	Multiple	Multiple	Multiple	2pt Uncalib
Std #1 (High) Name:	S0	S0	S0	S0	S3
Conc/Sig:	0	0	0	0	10
Std #2 (Low) Name:	S1B	S1B	S1	S1B	S0
Conc/Sig:	5000	4000	3	4	0
Std #3 Name:	S1	S1	S2	S1	--n/a--
Conc:	10000	8000	50	8	--n/a--
Std #4 Name:	S2	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	100000	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	-62.2926	-.350842	.001053	-.000446	-.000209
Slope:	1209.43	22.1374	4.34138	.064222	.409341
Date Standardized:	10/27/98	10/27/98	10/27/98	10/27/98	10/27/98
Time Standardized:	14:29	14:21	14:29	14:21	14:37
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (n):	1	1	1	1	1
Max. Inflectior	NONE	NONE	NONE	NONE	NONE
Date of F[illegible] :	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of F[illegible]					
Use IECs:	YES	NO	NO	NO	YES
Number of IEC	1	0	0	0	4

Method: MIX Element Information Wed 10-28-98 07:02:12 AM

Affecting Element:	V-2924	--n/a--	--n/a--	--n/a--	[illegible]
[illegible] factor:	.302327	--n/a--	--n/a--	--n/a--	.000035
[illegible] factor:	0	--n/a--	--n/a--	--n/a--	0
Use?:	YES	--n/a--	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	--n/a--	Mg2790
A1 factor:	--n/a--	--n/a--	--n/a--	--n/a--	.000014
A2 factor:	--n/a--	--n/a--	--n/a--	--n/a--	0
Use?:	--n/a--	--n/a--	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	--n/a--	Al3082
A1 factor:	--n/a--	--n/a--	--n/a--	--n/a--	.000006
A2 factor:	--n/a--	--n/a--	--n/a--	--n/a--	0
Use?:	--n/a--	--n/a--	--n/a--	--n/a--	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	--n/a--	V-2924
A1 factor:	--n/a--	--n/a--	--n/a--	--n/a--	.000039
A2 factor:	--n/a--	--n/a--	--n/a--	--n/a--	0
Use?:	--n/a--	--n/a--	--n/a--	--n/a--	YES

Element:	Mo	Na	Ni	Pb	Sb
Wavelength:	202.030	588.995	231.604/2	220.351	206.833/2
Element Name:	Mo2020	Na5889	Ni2 16	2203/1	20 3
Line Switch Conc	0	0	0	0	
Peak SS Offset:	5	0	0	10	1
Timing Group No..	1	1	1	1	
Print Limit Low:		0	0	-100	-100
Print Limit High:		0	0	0	0
Significant Figrs:		5	5	5	5
Print Units:	ppb	ppb	ppb	ppb	ppb
IKG Low SS Offset:	NONE	NONE	-15	-10	NONE
IKG High SS Offset:	20	20	NONE	NONE	10
IKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
IKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
tdz. Method:	Multiple	Multiple	Multiple	Multiple	Multiple
td #1 (High) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
td #2 (Low) Name:	S16	S16	S16	S16	S16
Conc/Sig:	500	5000	500	500	500
td #3 Name:	S1	S1	S1	S1	S1
Conc:	1000	10000	1000	1000	1000
td #4 Name:	--n/a--	S2	--n/a--	S2	S2
Conc:	--n/a--	50000	--n/a--	20000	20000
td #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
intercept:	-.631036	-82.6704	-.279757	-7.99762	1.43176
lope:	137.365	169.888	314.109	173.404	271.392
ate Standardized:	10/27/98	10/27/98	10/27/98	10/27/98	10/27/98
ime Standardized:	14:21	14:29	14.21	14:29	14:29
ffset (A0):	0	0	0	0	0
ain (A1):	1	1	1	1	1
urvature (A2):	0	0	0	0	0
xponen' (n):	1	1	1	1	1
ax. Inflection:	NON	NONE	NONE	NONE	NONE
ate of Fit:	NO IT	NO FIT	NO FIT	NO FIT	O FIT
ime of Fit:					
se IECs:	Y	NO	NO	YES	S
umber of IECs:	3	0	0	8	

Metho.. MIX Element Information Wed [illegible]

Affecting Element:	V 2924	--n/a--	[illegible]	[illegible]	[illegible]
[illegible] factor:	.370e-5	--n/a--	--n/a--	.5e-127	[illegible]
[illegible] factor:	0	--n/a--	--n/a--	0	0
use?:	YES	--n/a--	--n/a--	YES	YES
Affecting Element:	Fe2599	--n/a--	--n/a--	Fe2714	Fe2714
x1 factor:	-.28919	--n/a--	--n/a--	.1037e-9	.0035560
x2 factor:	0	--n/a--	--n/a--	0	0
use?:	YES	--n/a--	--n/a--	YES	YES
Affecting Element:	Cr2677	--n/a--	--n/a--	Mg2790	Mg2790
x1 factor:	-.00008	--n/a--	--n/a--	-.04952	.019134
x2 factor:	0	--n/a--	--n/a--	0	0
use?:	YES	--n/a--	--n/a--	YES	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	V-2924	V-2924
x1 factor:	--n/a--	--n/a--	--n/a--	.023051	.17495
x2 factor:	--n/a--	--n/a--	--n/a--	0	0
use?:	--n/a--	--n/a--	--n/a--	YES	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	Ti3349	Ti3349
x1 factor:	--n/a--	--n/a--	--n/a--	.000024	-.00051
x2 factor:	--n/a--	--n/a--	--n/a--	0	0
use?:	--n/a--	--n/a--	--n/a--	YES	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	Mo2550	Mo2550
x1 factor:	--n/a--	--n/a--	--n/a--	-.00097	-.00052
x2 factor:	--n/a--	--n/a--	--n/a--	0	0
use?:	--n/a--	--n/a--	--n/a--	YES	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	Co2286	--n/a--
x1 factor:	--n/a--	--n/a--	--n/a--	-.0015	--n/a--
x2 factor:	--n/a--	--n/a--	--n/a--	0	--n/a--
use?:	--n/a--	--n/a--	--n/a--	YES	--n/a--
Affecting Element:	--n/a--	--n/a--	--n/a--	Si2881	--n/a--
x1 factor:	--n/a--	--n/a--	--n/a--	-.00005	--n/a--
x2 factor:	--n/a--	--n/a--	--n/a--	0	--n/a--
use?:	--n/a--	--n/a--	--n/a--	YES	--n/a--

Method: MIX Element Information Wed [illegible]

Element:	S	S	S	Sb	Sb
Wavelength:	220.353	196.026	206.836	206.831	206.833
Element Name:	Pb2203	Se1960	Sb2068	2068/1	2068/2
Line Switch Conc.:	0	0	0	0	0
Peak SS Offset:	0	0	0	-10	10
Timing Group No.:	1	1	1	1	1
Print Limit Low:	-100	-100	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	5	5	5	5	5
Print Units:	ppb	ppb	ppb	ppb	ppb
BKG Low SS Offset:	NONE	NONE	NONE	NONE	-10
BKG High SS Offset:	NONE	NONE	NONE	10	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	2pt Uncalib	2pt Uncalib	2pt Uncalib	Multiple	Multiple
Std #1 (High) Name:	NONE	NONE	NONE	S0	S0
Conc/Sig:	0	0	0	0	0
Std #2 (Low) Name:	NONE	NONE	NONE	S16	S16
Conc/Sig:	0	0	0	500	500
Std #3 Name:	--n/a--	--n/a--	--n/a--	S1	S1
Conc:	--n/a--	--n/a--	--n/a--	1000	1000
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y-intercept:	0	0	0	1.65605	-4.08407
Slope:	1	1	1	313.323	590.688
Date Standardized:	NOT	NOT	NOT	10/27/98	10/27/98
Time Standardized:	STDIZED	STDIZED	STDIZED	14:21	14:21
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (P):	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit					
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	2	2	2	8	5

Method: MIX Element Information

Affecting Element:	2203/2	1960/2	[illegible]	[illegible]4	[illegible]
k1 factor:	-.333	-.333	-.333	.03243	[illegible]
k2 factor:	0	0	0	0	0
use?:	YES	YES	YES	YES	YES

Affecting Element:	2203/2	1960/2	2646/2	V 2314	[illegible]
k1 factor:	-.667	-.667	-.667	-3.2096	[illegible]
k2 factor:	0	0	0	0	0
use?:	YES	YES	YES	YES	YES

Affecting Element:	--n/a--	--n/a--	--n/a--	Cr2677	Cr2677
k1 factor:	--n/a--	--n/a--	--n/a--	.005389	.001319
k2 factor:	--n/a--	--n/a--	--n/a--	0	0
use?:	--n/a--	--n/a--	--n/a--	YES	YES

Affecting Element:	--n/a--	--n/a--	--n/a--	Al3082	Mo2020
k1 factor:	--n/a--	--n/a--	--n/a--	.003869	-.00077
k2 factor:	--n/a--	--n/a--	--n/a--	0	0
use?:	--n/a--	--n/a--	--n/a--	YES	YES

Affecting Element:	--n/a--	--n/a--	--n/a--	Mo2020	Al3082
k1 factor:	--n/a--	--n/a--	--n/a--	-.00055	.000699
k2 factor:	--n/a--	--n/a--	--n/a--	0	0
use?:	--n/a--	--n/a--	--n/a--	YES	YES

Affecting Element:	--n/a--	--n/a--	--n/a--	Ti3349	[illegible]
k1 factor:	--n/a--	--n/a--	--n/a--	.000283	--n/a--
k2 factor:	--n/a--	--n/a--	--n/a--	0	--n/a--
use?:	--n/a--	--n/a--	--n/a--	YES	--n/a--

Affecting Element:	--n/a--	--n/a--	--n/a--	Ni2316	--n/a--
k1 factor:	--n/a--	--n/a--	--n/a--	-.00196	--n/a--
k2 factor:	--n/a--	--n/a--	--n/a--	0	--n/a--
use?:	--n/a--	--n/a--	--n/a--	YES	--n/a--

Affecting Element:	--n/a--	--n/a--	--n/a--	Sn1899	--n/a--
k1 factor:	--n/a--	--n/a--	--n/a--	-.01254	--n/a--
k2 factor:	--n/a--	--n/a--	--n/a--	0	--n/a--
use?:	--n/a--	--n/a--	--n/a--	YES	--n/a--

Method: MTX Element Information Wed 10-28-98 07:02:12 PM Page 11

Element:	As	Se	Cd	Sn	Sb
Wavelength:	193.021	196.022/2	228.138	189.98	231.[illegible]
Element Name:	1960/1	1960/2	Cd2881	Sn1899	Sb2311
Line Switch Conc:	0	0	0	0	0
Peak SS Offset:	10	-10	5	5	0
Timing Group No.:	1	1	1	1	1
Print Limit Low:	-100	-100	0	0	0
Print Limit High:	0	0	0	0	0
Significant Figrs:	5	5	5	5	5
Print Units:	ppb	ppb	ppb	ppb	ppb
BKG Low SS Offset:	-10	NONE	-10	-10	-10
BKG High SS Offset:	NONE	10	NONE	NONE	NONE
BKG Element Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
BKG Factor:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Stdz. Method:	Multiple	Multiple	Multiple	Multiple	Multiple
Std #1 (High) Name:	S0	S0	S0	S0	S0
Conc/Sig:	0	0	0	0	0
Std #2 (Low) Name:	S1B	S1B	S1B	S1B	S1B
Conc/Sig:	500	500	500	500	500
Std #3 Name:	S1	S1	S1	S1	S1
Conc:	1000	1000	1000	1000	1000
Std #4 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Std #5 Name:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Conc:	--n/a--	--n/a--	--n/a--	--n/a--	--n/a--
Y - intercept:	3.25494	.087582	-114.999	-3.03708	-.632395
Slope:	607.363	546.081	8625.54	390.971	35.0121
Date Standardized:	10/27/98	10/27/98	10/27/98	10/27/98	10/27/98
Time Standardized:	14:21	14:21	14:21	14:21	14:21
Offset (A0):	0	0	0	0	0
Gain (A1):	1	1	1	1	1
Curvature (A2):	0	0	0	0	0
Exponent (P	1	1	1	1	1
Max. Inflection:	NONE	NONE	NONE	NONE	NONE
Date of Fit	NO FIT	NO FIT	NO FIT	NO FIT	NO FIT
Time of Fit					
Use IECs:	YES	YES	YES	YES	ES
Number of IECs:	5	5	5	4	

Method: MIX Element Information Wed 10-28-98 07:09:13 AM Pg 1

Affecting Element:	Fe2714	Fe2714	Fe2714	Fe2714	Fe2714
X1 factor:	-.078609	-.299664	.009196	.014749	.015407
X2 factor:	0	0	0	0	0
Use?:	YES	YES	YES	YES	YES
Affecting Element:	Mn2576	Mn2576	V-2924	V-2924	--n/a--
X1 factor:	.016676	.545926	.737764	.090139	--n/a--
X2 factor:	0	0	0	0	--n/a--
Use?:	YES	YES	YES	YES	--n/a--
Affecting Element:	V-2924	Cr2677	Al3082	Cr2677	--n/a--
X1 factor:	.132099	-------	.007659	-.00014	--n/a--
X2 factor:	0	0	0	0	--n/a--
Use?:	YES	YES	YES	YES	--n/a--
Affecting Element:	Co2286	Co2286	Ti3349	Ti3349	--n/a--
X1 factor:	.000275	-.0006	.008791	.001248	--n/a--
X2 factor:	0	0	0	0	--n/a--
Use?:	YES	YES	YES	YES	--n/a--
Affecting Element:	Al3082	Al3082	Mg3790	--n/a--	--n/a--
X1 factor:	.003351	-.00512	-.053381	--n/a--	--n/a--
X2 factor:	0	0	0	--n/a--	--n/a--
Use?:	YES	YES	YES	--n/a--	--n/a--

Mercury

H.D. LITTLE - Nerl

10:00:41 22 Oct 1998 Folder: HG102211 Page 1
Protocol: HGNORM

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Standard: 1 Rep: 1 Seq: 0 10:00:41 22 Oct 1998 HG

Hg .000 ppb -61
Ave. Int. = -61 S. D. = 0

*** Standard: 2 Rep: 1 Seq: 1 10:02:59 22 Oct 1998 HG

Hg .200 ppb 5618
Ave. Int. = 5618 S. D. = 0

*** Standard: 3 Rep: 1 Seq: 2 10:05:17 22 Oct 1998 HG

Hg 1.00 ppb 27388
Ave. Int. = 27388 S. D. = 0

*** Standard: 4 Rep: 1 Seq: 3 10:07:41 22 Oct 1998 HG

Hg 2.00 ppb 53948
Ave. Int. = 53948 S. D. = 0

*** Standard: 5 Rep: 1 Seq: 4 10:10:12 22 Oct 1998 HG

Hg 5.00 ppb 132525
Ave. Int. = 132525 S. D. = 0

*** Standard: 6 Rep: 1 Seq: 5 10:12:50 22 Oct 1998 HG

Hg 10.0 ppb 272436
Ave. Int. = 272436 S. D. = 0

HG102211
HG1.1
10/22/98
J. Jeffrey Uhrich
960503-CRA,MD1,LC1
9810L046-001,RS
012

updated

1 copy

Protocol: HGNORM

Rev: 3.000 Time: 10:12:57 22 Oct 1998

Folder: HG102211 Seq: 6 Print: On

User: Batch: Id: Std6Rep1 Cup: Gas: 0.25 M

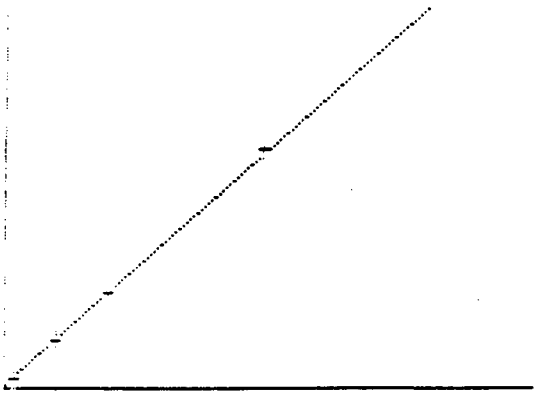
State: Idle Macro AUTO40 71: F3 Print Xmit: Off Autosampler

CALIBRATION: Line Calibration

Line: Hg	Conc.	Calc.	Dev.	Accepted LiNear
S1	.000	.012	.012	Quadratic
S2	.200	.221	.021	WtdLinear
S3	1.00	1.02	.023	
S4	2.00	2.00	.001	Accept
S5	5.00	4.90	-.105	
S6	10.0	10.0	.048	StdAdd

A .0000000 r .999904

B 3.68306e-5 C 1.41234e-2



Relative Absorbance

	Mean	%RSD	
S1	-61	0	-61
S2	5618	0	5618
S3	27388	0	27388
S4	53948	0	53948
S5	132525	0	132525
S6	272436	0	272436

New calibration coefficients stored

Line Conc. Units SD/RSD 1 2 3 4 5

*** Check Standard: 3 Ck3 ICV Seq: 6 10:15:37 22 Oct 1998 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg 103. 2.58 2.50 ppb .000

*** Check Standard: 1 Ck1 ICB Seq: 7 10:18:07 22 Oct 1998 HG
Line Flag Found Range(+/-) Units SD/RSD
Hg .080 .200 ppb .000

*** Check Standard: 2 Ck2 CCV Seq: 8 10:20:23 22 Oct 1998 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg 99.5 4.98 5.00 ppb .000

*** Check Standard: 1 Ck1 CCB Seq: 9 10:23:00 22 Oct 1998 HG
Line Flag Found Range(+/-) Units SD/RSD
Hg .081 .200 ppb .000

*** Sample ID: 98C0503-CRA Seq: 10 10:25:15 22 Oct 1998 HG
Hg .222 ppb .000 .222

*** Sample ID: 98C0503-MB1 Seq: 11 10:27:28 22 Oct 1998 HG
Hg .010 ppb .000 .010

*** Sample ID: 98C0503-LC1 Seq: 12 10:29:41 22 Oct 1998 HG
Hg 4.70 ppb .000 4.70

*** Sample ID: 9810L066-001 Seq: 13 10:32:14 22 Oct 1998 HG
Hg .009 ppb .000 .009

*** Sample ID: 9810L066-001R Seq: 14 10:34:27 22 Oct 1998 HG
Hg .023 ppb .000 .023

*** Sample ID: 9810L066-001S Seq: 15 10:36:40 22 Oct 1998 HG
Hg 1.07 ppb .000 1.07

*** Sample ID: 9810L066-002 Seq: 16 10:38:59 22 Oct 1998 HG
Hg .013 ppb .000 .013

*** Sample ID: 9810L066-003 Seq: 17 10:41:13 22 Oct 1998 HG
Hg .021 ppb .000 .021

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: Seq: 18 10:43:27 22 Oct 199 HG
9810L066-004
Hg .021 ppb .000 .021

*** Sample ID: Seq: 19 10:45:41 22 Oct 19 HG
9810L066-005
Hg .015 ppb .000 .015

*** Check Standard: 2 Ck2 CCV Seq: 20 10:47:56 22 Oct 1998 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		104.	5.19	5.00	ppb	.000

*** Check Standard: 1 Ck1 CCB Seq: 21 10:50:32 22 Oct 1998 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		.081	.200	ppb	.000

*** Sample ID: Seq: 22 10:52:47 22 Oct 1998 HG
9810L066-006
Hg .033 ppb .000 .033

*** Sample ID: Seq: 23 10:55:00 22 Oct 1998 HG
9810L066-007
Hg .020 ppb .000 .020

*** Sample ID: Seq: 24 10:57:12 22 Oct 1998 HG
9810L066-008
Hg .016 ppb .000 .016

*** Sample ID: Seq: 25 10:59:25 22 Oct 1998 HG
9810L066-009
Hg .014 ppb .000 .014

*** Sample ID: Seq: 26 11:01:38 22 Oct 1998 HG
9810L066-010
Hg .013 ppb .000 .013

*** Sample ID: Seq: 27 11:03:51 22 Oct 1998 HG
9810L066-011
Hg .027 ppb .000 .027

*** Sample ID: Seq: 28 11:06:05 22 Oct 1998 HG
9810L066-012
Hg .022 ppb .000 .022

*** Check Standard: 2 Ck2 CCV Seq: 29 11:08:20 22 Oct 1998 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		106.	5.31	5.00	ppb	.000

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 1 Ck1 CCB Seq: 30 11:10:52 22 Oct 1998 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		.077	.200	ppb	.000

Cyanide

Recra LabNet Philadelphia

CYANIDE ANALYSIS LOG

Logbook #: 10896

Analyst/Date: JMurray 10-12-98

Distillation Logbook #: 10633

Distillation Date(s): 10-12-98

Circle one : Leeman AP200 / PE Lamba

Method: OP 21-15L-0335.4 Rev. 00

Correlation Coefficient: 0.999

OP 21-15L-0335.2 Rev. 05

Run Batch: 98LC158

OP 21-15N-9010A.1, Rev.

Worksheet: CN1012

RFW #/Standard	QC R,S,T	Absorbance @ 578 nm	Final Results (Fg/L or mg/kg)	Time HH:MM	Comments
0		0.000	0.425 ug/L	1354	
5		0.006	4.943	1355	
10		0.012	9.460	1356	
20		0.025	19.249	1357	
50		0.067	50.874	1358	
100		0.134	101.324	1359	
150		0.196	148.008	1400	
200		0.266	200.717	1401	
ICV		0.143	108.101	1402	
ICB		0.000	<10.0	1403	
CCV		0.143	108.101	1404	
CCB		0.000	<10.0	1405	% Solids
9810L908-001		0.011	<0.579 mg/kg	1406	Done 86.36
-002		0.010	<0.617	1407	81.09
-005		0.003	<0.581	1408	85.99
9810L0606-001		0.000	<0.557	1409	89.69
-001	R	-0.000	<0.567	1410	
-001	S	0.132	5.565	1411	
-002		-0.002	<0.578	1412	86.44
-003		-0.001	<0.560	1413	90.97

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Example Calculation:

Y = mX + b; where Y = instrument reading

m = slope = 0.00132

b = intercept = -0.000604

X = concentration (mg/L)

final result = mg/L x dilution factor

Standard:	ID	Prep Date	Expir Date
ICAL	10896-102-13	10-12-98	10-13-98
ICV/CCV	33		
LCS			
MS			

Reviewed By/Date: 10/14/98

RFW 21-21L-016/E-06/97

Recra LabNet Philadelphia

CYANIDE ANALYSIS LOG

Logbook #: LabLo

Analyst/Date: T.Murray 10-12-98

Distillation Logbook #: L6533

Distillation Date(s): 10-12-98

Circle one : Leeman AP200 / PE Lamb

Method: OP 21-15L-0335.4 Rev. 00
OP 21-15L-0335.2 Rev. 05
OP 21-15N-9010A.1, Rev.

Correlation Coefficient: 0.999

Run Batch: 98LC158

Worksheet: CN1012

RFW #/Standard	QC R,S,T	Absorbance @ 578 nm	Final Results (Fg/L or mg/kg)	Time HH:MM	Comments % Solids
9810LQ1d0-004		-0.001	<0.542 mg/kg	1414	91e.27
CCV		0.143	108.101 ug/L	1415	
CCB		-0.001	<10.0	1416	
98LC158-LCS		0.056	2.130 mg/kg	1417	
-MB		0.001	<0.5	1418	
-LCS2		0.279	10.525	1419	
9810LQ1d0-005		-0.001	<0.618	1420	91e.44
-006		-0.001	<0.537	1421	93.09
-007		-0.000	<0.579	1422	91e.35
-008		-0.001	<0.572	1423	87.38
-009		-0.001	<0.538	1424	92.99
-010		-0.002	<0.527	1425	94.89
-011		-0.001	<0.528	1426	94.72
CCV		0.143	108.101 ug/L	1427	
CCB		0.001	<10.0	1428	
			T.Murray 10/12/98		

"S" = matrix spike, "D" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b; where Y = instrument reading
m = slope = Page 29
b = intercept =
X = concentration (mg/L)

final result = m x dilution factor

Standard:		Prep Date	Expir Date
ICAL			
ICV/CCV	Page 29		
LCS			
MS			

Reviewed By/Date: 10/16/98

RFW 21-21L-016/E-06/97

Récra LabNet Philadelphia

CYANIDE ANALYSIS LOG

Logbook #: L0836

Analyst/Date: J.Murray 10-14-98
Distillation Date(s): 10-14-98
Method: OP 21-15L-0335.4 Rev. 00
OP 21-15L-0335.2 Rev. 05
OP 21-15N-9010A.1, Rev.

Distillation Logbook #: L0833
Circle one : Leeman AP200 / PE Lamba 3
Correlation Coefficient: 0.997
Run Batch: 981C160
Worksheet: CN1014

RFW #/Standard	QC R,S,T	Absorbance @ 578 nm	Final Results (Fg/L or mg/kg)	Time HH:MM	Comments
0	Curve	0.000	-1.319 ug/L	1034	
5		0.008	4.276	1035	
10		0.017	10.571	1036	
20		0.034	22.461	1037	
50		0.074	50.498	1038	
100		0.148	102.196	1039	
150		0.204	141.364	1040	
200		0.295	205.012	1041	
ICV		0.135	93.104	1114 Tm 10-14-98	
ICB		0.000	<10.0	1115	
CCV		0.136	93.803	1116	
CCB		0.000	<10.0	1117	
98101991-008		-0.001	<10.0	1118	
-009		-0.002	<10.0	1119	% Solids
98101036-001		-0.001	<0.579 mg/kg	1120	84.36
-002		-0.001	<1.104	1121	45.27
-003		0.001	<1.115	1122	44.85
-004		-0.003	<1.226	1123	40.77
-005		-0.002	<1.489	1124	33.58
-005	R	-0.004	<1.489	1125	1

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b; where Y = instrument reading
m = slope = 0.00142
b = intercept = 0.00188
X = concentration (mg/L)

final result = mg/L x dilution factor

Standard:	ID	Prep Date	Expir Date
ICAL	L0836-102-15	10-14-98	10-15-98
ICV/CCV	.95		
LCS			
MS			

Reviewed By/Date: 10/14/98

RFW 21-21L-016/E-06/97

Recra LabNet Philadelphia

CYANIDE ANALYSIS LOG

Logbook #: LA036

Analyst/Date: TMurray 10-14-98

Distillation Date(s): 10-14-98

Method: OP 21-15L-0335.4 Rev. 00
OP 21-15L-0335.2 Rev. 05
OP 21-15N-9010A.1. Rev.

Distillation Logbook #: LA 3

Circle one : Lachat AP200 / PE Lambda

Correlation Coefficient: C .97

Run Batch: 98 1100

Worksheet: C 14

RFW #	Standard	QC R,S,T	Absorbance @ 578 nm	Final Results (Fg/L or mg/kg)	Time HH:MM	Comments
9810L03	005	S	0.137	14.071 mg/kg	1126	9858
CCV	010		0.136	93.803 ug/L	1127	
CCB	007		0.001	<10.0	1128	
9810L036-001	008		0.004	<0.572 mg/kg	1129	97.45
-007			0.003	<0.568	1130	88.07
-008			-0.001	<0.972	1131	51.43
9810L040-012			-0.003	<0.537	1132	93.18
9810L047-001			-0.003	<0.540	1133	92.61
-002			0.008	<0.560	1134	89.31
98LC1100-LC1			0.058	19.624 ug/L	1135	
-MB1			-0.002	<5.0	1136	
-LC2			0.275	95.512	1137	
9810L004-001			-0.001	<0.136 mg/kg	1138	55.79
CCV			0.136	93.803	1139	
CCB			0.001	<10.0	1140	

TMurray 10/14/98

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b where Y = instrument reading
m = slope = Page 33
b = intercept =
X = concentration (mg/L)

final result = mg/L x dilution factor

Standard:	ID	Prep Date	Expir Date
ICAL			
ICV/CCV			
LCS			
MS			

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Reviewed By/Date: Initl 10/16/98

RFW 21-21L-016/E-06/97

Digestion Log

Recra LabNet Philadelphia

SAMPLE DIGESTION RECORD

Date/Time Initiated 10/15/98 10:30
Date/Time Completed 10/15/98 12:00
Analyst: EL
Spike Witnessed By: N/A

Digestion Batch #: 98L1312
Type of Prep.[a]: ICP
Parameters: Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Mg, Ni, Se, Ag, Tl, U- A.D. Little

Matrix (circle): (Soil) H_2O Other ____
Method (circle): (CLP) SW846 Other
OP/Method: 2-ISL-3050-1
Balance #: B-20
Balance Cal: * Tel (Stakers) Used

RFW #	Spike Info.	Initial WT/Vol.	Final Vol.	%Solids	pH<2	Total/ Soluble	Texture	Color/Appearance	Artifacts	Turbidity
98/0LOGG - 001		1.00g	200ml	N/A	N/A	Total	Coarse	Tan	N/A	N/A
-001R		1.00g								
-001S	2ml ICPMS 1-4 + 1ml U-	1.02g								
-002		1.07g								
-003		1.22g								
-004		1.11g								
-005		1.07g								
-00C		1.08g								
-007		1.01g								
-008		1.28g								
-009		1.20g								
-010		1.12g								
-011		1.49g								
-012		1.09g								
98L1312-MB-1		1.00g					N/A	Clear		
-LC-1	2ml ICV 1-4 + 1ml U-	1.00g								

10/15/98

Reagent/Standard & [illegible]ration & Preparation information on Page 001

Reviewed By/Date Rec'd 10/15/98

[a] for SW-846 ICP/FLAA batches, specify method 3005 or 3010
[b] include date/time of transfer

IC131201 Updated

827 RC 10/23/98

Recra LabNet Philadelphia

CONTINUED FROM BOOK # 6587
USED FROM 10/1/98 TO ____

AA/ICP ACID VENDOR	ACID LOT #
Mallinckrodt	2612 KXAE 10/1/98
Baker	~~M 14025~~ M24025

ICP Stock	Std. Lot#	Prep Date	Exp. Date
ICP M.S. 1	MMEB58062	9-13-98	3-99
ICP M.S. 2	NMEB76123		
ICP M.S. 3	MMEB58044		
ICP M.S. 4	8DB079		10-99
ICP ICV 1	8IK006	9-17-98	3-00
ICP ICV 2	8IB002		
ICP ICV 3	001		
ICP ICV 4	003		

AA Stock	Std. Lot#	Prep Date	Exp. Date
AA M.S.	NMEB77097	7-17-98	2-99
AA LCS	8D5006	10-7-98	3-99

AA/ICP ACID VENDOR	ACID LOT #
Mallinckrodt	
Baker	

ICP Stock	Std. Lot#	Prep Date	Exp. Date	Prep Date	Exp. Date
ICP M.S. 1	MMEB58062	10-12-98	3-1-99	11/2/98	3-1-99
ICP M.S. 2	NMEB76123				
ICP M.S. 3	MMEB58044				
ICP M.S. 4	~~8DB079~~ 8DB079 DR 10/12/98		10-99		10-99
ICP ICV 1	8IK006	10-15-98	3-00		
ICP ICV 2	8IB002				
ICP ICV 3	001				
ICP ICV 4	003				

AA Stock	Std. Lot#	Prep Date	Exp. Date
AA M.S.			
AA LCS			

ICP MS \AA MS\ LCS MS\ Intermediate Prep in Logbook : 4813

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UT : Lot # 8FB044
EXP: 01-00

Recra LabNet Philadelphia

MERCURY PREPARATION

Logbook # 6657

Analyst: [signature]
Date 10/21/98
Start Time/Temp: 1630/25°C
End Time/Temp: 1700/25°C

Instrument ID HG1.1
Balance #: B29 /NA
Pipette Calibration (Daily) (Y)

Prep Batch: 98C0503
Worksheet: HG102211
OP No. L-ME-7470A, Rev 00
L-ME-245.1CLP-M, Rev.00

pH < 2 for Liquids? __ Yes N/A No (If no; designate affected samples in Comments column, and initiate an SDR)

Recra Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
blank	391			10 ml	50 ml	
0.2 ug/l	414	0.100				
1.0 ug/l	HH	0.500				
2.0 ug/l	45	1.000				
5.0 ug/l	106	2.500				
10.0 ug/l	7F	5.000				
ICV	H6	0.126	2.5			
CCV	91F	0.250	5.0			
ICB/CCB	871					% solids
MB1	161			0.11gm		PBS103 100.00
LC1	210	*	*	0.20gm		LCSS103 "
9810L066-001	933			0.10gm		89.69
001R	ED					"
001S	DX	0.500	1.0			"
002	96					86.44
003	95					90.97
004	6466					96.27
005	DBB					96.44
006	1101					93.09
007	910					86.35
008	K9					87.38
009	WB					92.99
010	17			"		94.89
011	134			0.11gm		94.72
012	365			0.10gm	"	93.18

Standard:	ID	Prep Date/Time
ICAL/MS	High Purity	10/21/98 1015
ICV/CCV/LCS	Analyt. Vendors	"

Reviewed By/Date: M. Douglas 10/21/98

see book # 4527 for std traceability information

X Soil LCS = ERA Metals in soil; True Value =1.16mg/Kg
Catalogue # 540, Lot # 235

Water Matrix Spiking Solution Concentration= 0.1µg/ml
Water LCS Spiking Concentration: 1.0µg/ml

Recra LabNet Philadelphia

CYANIDE DISTILLATION

Logbook #: L6533

Analyst: J.Murray
Start Date: 10-12-98
Start Time 1010 End Time: 1140

Analysis Logbook #: L6340
Prep Batch: 98LC158
Macro / Midi Note:
Midi Distillation = Leeman P1214
Method Number: 21-15L-0335.2, Rev.
21-15N-9010A.1, Rev

RFW #/Standard	QC: R,S,T	Flask #	Initial Vol or Wt (mL or g)	Final Volume (mL)	pH >12 (Y/N)	Res Cl /Sulf (Y/N)	Comments
98101 9108-001		1	5g/500mL	250	NA	NA	CNAM
-002		2	"	"	"	"	"
-005		3	"	"	"	"	"
98101 L6340-001		4	"	"	"	"	
-001	R	6	"	"	"	"	
-001	S	7	"	"	"	"	2.5 mL 10ppm
-002		8	"	"	"	"	
-003		9	"	"	"	"	
-004		10	"	"	"	"	
98LC158-LC1		11	500mL				1.0 mL 10ppm
-MB		12	"				
-LC2		13	"				5.0 mL 10ppm
98101 L6340-005		14	5g/500mL				
-006		15	"	"	"	"	
-007		16	"	"	"	"	
-008		17	"	"	"	"	
-009		18	"	"	"	"	
-010		19	"	"	"	"	
-011		20	"	"	"	"	
			JMurray 10/12/98				

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Standard:	ID	Prep Date	Expir Date
LCS	L6340-104-03	10-12-98	10-19-98
MS	"	"	"

Reviewed By/Date: 10/16/98

RFW 21-21L-018/A12/96

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Recra LabNet Philadelphia

CYANIDE DISTILLATION

Logbook #: 10533

Analyst: TMurray
Start Date: 10-14-98
Start Time 0830 End Time: 0930

Analysis Logbook #: 10836
Prep Batch: 981C1100
Macro / Midi Note:
Midi Distillation = Leeman F 14
Method Number: 21-15I 335.2, Rev.
21-15I 010A.1, Rev

RFW #/Standard	QC: R,S,T	Flask #	Initial Vol or Wt (mL or g)	Final Volume (mL)	pH >12 (Y/N)	Res C /Sulf (Y/N	Comments
98101991-008		1	250 mL	250	Y	N	
-009		2	"	"	"	"	
98101036-001		3	5g/500mL		NA	NA	
-002		4					
-003		6					
-004		7					
-005		8					
-005	R	9					
-006	S	10					2.5 mL 10ppm
-006		11					
-007		12					
-008		13					
98101016-012		14					
98101067-001		15					
-002		16	"				
981C1100-LC		17	500mL				1.0 mL 10ppm
-MB		18	"				
-LC2		19	"				5.0 mL 10ppm
98101 -001		20	5g/500mL	"	"	"	
				TMurray 10/14/98			

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Standard:	ID	Prep Date	Expir Date
LCS	10836-10H-03	10-12-98	10-19-98
MS	"	"	"

Reviewed By/Date: 10/14/98

RFW 21-21L-018/A12/96

% SOLID/% MOISTURE ANALYSIS RECORD

RECRA LABNET PHILADELPHIA

Analyst: JM Jimmy
Start Date/Time/Temp: 10-12-98 1100 106°
End Date/Time/Temp: 10-13-98 0815 106°
Balance ID: B5

Logbook #: LB48
Method: STD
Work Sheet: XSL1012
Prep Batch: 9810S202

Sample ID (RFW # or Std)	Container wt (g)	Initial wt (g) (Sample & Container)	Final wt (g) (Sample & Container)	% Solid	% Moisture
9810L0101-025	1.283	11.194	9.542	89.33	
-026	1.286	11.151	2.847	15.82	
9810L0106-001	1.286	9.104	8.352	89.69	
-002	1.293	7.538	6.091	86.44	
-003	1.290	7.428	6.874	90.97	
-004	1.286	9.810	9.492	96.27	
-005	1.299	11.779	11.406	96.44	
-006	1.285	8.228	7.748	93.09	
-007	1.296	11.342	9.971	86.35	
-008	1.293	9.937	8.846	87.35	
-009	1.291	8.580	8.069	92.99	
-010	1.300	11.418	10.901	94.89	
-011	1.293	10.351	9.873	94.72	
-012	1.294	10.004	9.410	93.18	
-012R	1.292	11.332	10.641	93.12	
9810L0107-001	1.289	10.031	9.385	92.16	
-002	1.293	11.378	10.300	89.31	
-003	1.288	9.102	8.681	93.89	
-004	1.285	11.377	10.796	94.24	
-005	1.292	7.799	6.801	84.16	
-006	1.297	9.611	9.187	94.90	
-007	1.299	11.295	10.897	96.02	
-008	1.295	11.263	10.794	95.29	

wt. = weight

Example Calculations: % solids = $\frac{\text{Pan and dry sample wt. (g) - pan wt. (g)}}{\text{Pan and wet sample wt. (g) - pan wt. (g)}} \times 100$

% Moisture = 100% - % solids result

Reviewed By/Date: LTB 10/16/98

RFW 21-21L-016/H-05/96

Page # 002

Recra LabNet Philadelphia

ICP RUN LOG

Date: 10/23/98
Analyst: MM
Instrument ID: IC1

Logbook#: 6417
Peak Profile: -0.143
Spectral Shift: Units: [illegible] @ Time: 1145

Data File	Digest Batch	Client	Batch Number	# of SPLS	Method File	Trans. LIMS	Repro-File (Y/N)	Comments
IC1023A	9812312	AD Little	9810L066	1,4,RSI A,2-12	UONLY	IC1023A	Y	U-only

MM 10/23/98

Standard	ID	Prep Date	Exp Date
ICAL	6499-7-01	10/23/98	Prepared
ICV/CCV	1 -02		Daily

Reviewed by/Date [signature] 11/3/98

Page # 0051 B

L-WI-020/D-09/97

(page A=L-WI-010/V)

Recra LabNet Philadelphia

ICP RUN LOG

Date: 10/27/98
Analyst: PMP
Instrument ID: TR1

Logbook#: 6598 PMP 10-27-98
Peak Profile: -0.037056
Spectral Shift: Units: 127 @ Time: ~~8:~~ 7:15

Data File	Digest Batch	Client	Batch Number	# of SPLS	Method File	File Trans. to LIMS	Repro-File (Y/N)	Comments
TA1027A	9811300	NYSDEC	9809L831	2QC 001,002 004,005	MIX	TA1027A (TR1.1)	(Y)	for Dilutions 2X IN: PB102798
			9810L002	002,003 006,008	H,R,S 010			
TA1027B	9811312	A.D. Little	9810L066	2QC 001,R,S ↓ 012	MIX	TA1027B (TR1.2)	(Y)	
TA1027C	9811356	I.T. Corp	9810L101	3QC 019 ↓ 034,H,S 035,036	MIX1	TA1027C (TR1.3)	(Y)	
			Phenol 10-27-98					

Standard	ID	Prep Date	Exp Date
ICAL	6565-09701	10/27/98	Prepared
ICV/CCV	6565-09702	1	Daily

Reviewed by/Date MJL 11/2/98

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L-WI-020/D-09/97

(page A=L-WI-010/V)

Recra LabNet Philadelphia

LEEMAN PS200 MERCURY ANALYSIS LOG

Date/Analyst 10/22/98 [signature]
Wavelength 253.7 nm
Instrument ID HG1

Logbook # 6632
Prep Logbook # 6657
Stds. Logbook # 4527

Data File	Digestion File	Client	RFW #	# of Samples	Method*	Comments
HG102211	98C0503	A.D. LITTLE	9810L066	1,RS-12	CLP	
HG102212	98C0504	〃	9810L067	1,RS-12	〃	
〃	〃	NYSDEC	9810L082	2,RS,4,6,8,10	〃	
HG102213	98C0505	LMITCO	9810L970	13-16,S,T,	SW846	
	〃	〃	〃	17-21,S,T,	〃	
	〃	〃	〃	22	〃	

11/3/98

SW846, CLP, OW, Other

Maintenance	OK	Changed	Other/Comments
Check tubing for wear (daily)	✓		
Insert clean magnesium perchlorate drying tube		✓	
Check level of 10% HCl in rinse tank		✓	
Check level of 10% stannous chloride in bottle		✓	

Reviewed by/Date: [signature] 11/3/98

Recra LabNet Philadelphia

Logbook #: 6499

Daily ICP Standard Solution Preparation Log

Note: The Daily Standards prepared in this logbook expire every 24 hours.

Acid Lot# Nitric (HNO_3): M14025 Hydrochloric (HCl): 2612 KVXL

	Standard Name or Receipt ID	Prep Date	Initial Volume (include units)	Final Volume	Matrix (Reagent used)	Analyst	Parent Expiration Date
6499-73-01 STD1	6072-12-12 -007-15 -014-9	10/25/98	1 mL 1 mL 1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		8-99 1-99 9-99
STD2	6072-011-16		1 mL 1 mL 1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		6-99
6499-73-02 CCV	6072-16-1 -15-5 -15-9 -15-13		2 mL 2 mL 2 mL	200 mL	5.0 mL conc. HNO_3 10.0 mL conc. HCl		3-00
ISA	6072-16-06		10 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		1-00
ISB	6072-16-06 -09-03 -12-07 -12-08		10 mL 1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		1-00 3-99 8-99 8-99
CRI	consists of 4 mL of the CCV solution		4 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		

Comments: Multi-point calibration consists of 1 mL, 0.5 mL, and 0.25 mL of STD1 and STD2.

Reviewed by/Date 10/26/98

See front page for U additions

6499

* u⁻ was added to S2; 10,000 ppb of 6072-011-01 was added; exp: 4-1-99
** u⁻ was added to the CCV; 10,000 ppb of 6072-012-11 was added; exp: 01-00
u⁻ was added to the ISB; 5,000 ppb of 6072-012-11 was added; exp: 01-00

} Two sets of standards were prepared; only one set contained the u⁻ additions

Recra LabNet Philadelphia

Logbook #: 6565

Daily Trace ICP Standard Solution Preparation Log

Note: The Daily Standards prepared in this logbook expire every 24 hours.

Acid Lot# Nitric (HNO_3): M114025 Hydrochloric (HCl): 2612 KXDN

	Standard Name or Receipt ID	Prep Date	Initial Volume (include units)	Final Volume (include units)	Matrix (Reagent used)	Analyst	Parent Expiration Date
6565-091-01 STD1	6072-004-11	10/27/98	1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl	PMP	11/1/98
	-13		1 mL				
	-16		1 mL				
STD2	6072-004-12		1 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		
	-14		1 mL				
	-15		1 mL				
STD3	6072-006-04						01/01/99
6565-091-02 CCV	6072-014-09		2 mL	200 mL	5.0 mL conc. HNO_3 10.0 mL conc. HCl		10/99
	-14		2 mL				11/99
	-021-08		2 mL				
ISA	6072-016-05		10 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		9/2000
ISB	6072-016-05		10 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		9/2000
	6072-009-03		1 mL				3/99
	6072-012-07		1 ml				8/99
	-08		1 ml				
CRI	consists of 4 mL of the CCV solution		4 mL	100 mL	2.5 mL conc. HNO_3 5.0 mL conc. HCl		11/1/98
Internal Std	Yttrium —		—	1000 ml			—
	Cesium 6072-018-07		50 ml				5/2000

Comments: Multi-point calibration consists of 1 mL, 0.5 mL, and 0.25 mL of STD1 and STD2.

L-WI-018/S-11/97

Reviewed by/Date: 11/3/98

End of Data Package

RECRA Environmental, Inc.

AD Little

STANDARD LEVEL IV
REPORT OF ANALYSIS

TNU WORK ORDER #98-10172-OR

November 12, 1998

THERMO NUTECH/OAK RIDGE LABORATORY
OAK RIDGE, TN

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Thermo NUtechOak Ridge

LABORATORY DATA SUPPORT CHECKLIST

Thermo NUtech Batch # _____

Thermo NUtech Work Order #(s) 98 10172

The items listed must be initialed by appropriate staff upon completion.

DATE FOR PARTIAL	INITIALS	DATE COMPLETE	INITIALS	CHECKLIST ITEMS
		10/29/98	KAB	Sample Log-In (Manual & MAC)
		11/11/98		Data Compilation
		11/12/98	MK	Technical Data Review
		11/12/98		Data Entry/Create Electronic Deliverable
		11/12/98		Generate Case Narrative Letter
		11/12/98	KBS	Proof Electronic Deliverable against PDR and COC
		11/12/98		QA/QC Review
				Invoiced by Laboratory

Data package approved by: _____ 11/12/98
Laboratory Manager Date

UPON QA/QC REVIEW THE FOLLOWING MUST BE COMPLETED:

TECHNICAL/CLERICAL CORRECTIONS, SIGNATURES NEEDED, ETC.	DATE & INITIAL WHEN COMPLETED

CHKLST.LAB

00003

SECTION I

CHAIN OF CUSTODY

RECRA LabNet

OFF-LOAD / SUBCONTRACT FORM (side 1)

Client Name: A.D.Little-New Mexico
Today's Date: 10-27-98
Lab Project Manager: Dianne Therry
Total No. Samples in Shipment: 24
Date Rec'd/Expected: At RECRA: 10-09-98
(circle one)
RECRA Project No.: 60038-003-001-0001-00

RECRA Batch #	Date of Collection	Quant.	Matrix	Parameter	Due Date	Unit Cost	QC Required	Del.	Detect. Limits	Analyte List	Hold Time Sample/Ext.	Method Ref.
9810L066 9810L067	10-23-98 10-24-98	12 12	S S	Radium 226, 228	11-11-98	[redacted]	CLP-like requirement	2 CLP + 2 QC Summary Packages	per method	per method	per method	903/904

Other special requirements/certifications:

Hazard/Safety: Yes/No/Unknown = Radiation High Hazard High PCBs/Dioxins Other none anticipated
(please circle and indicate)

Laboratory Sign-Off: Dianne S Therry
Date: 10-27-98

RFW 21-21-007/B-10/97

20007

Received by: K. Bannister 10/29/98 0900

RECEIVED
OCT 29 1998
RMA Shipping

RECRA LabNet **OFF-LOAD / SUBCONTRACT FORM** (side 2)

REASON FOR SUBCONTRACTING: analysis not performed at RECRA

Subcontract Laboratory: Thermo NUtech

Laboratory Address: 601 Scarboro Road, Oak Ridge, TN 37683

Point of Contact: Kathy Shalis, backup Doug McDougall

Phone Number: 423-481-0683

Purchase Order No.: to follow

CHECKLIST FOR SUBCONTRACTED SAMPLES (to be completed at time of shipment):

REQUIRED	SENT	
YES	YES/NO	RECRA / CLIENT (← circle) CHAIN-OF-CUSTODY (attach copy to this checklist as record of applicable samples)
YES/NO	YES/NO	COVER LETTER
YES/NO	YES/NO	OFF-LOAD/SUBCONTRACT FORM (side 1 only)
YES/NO	YES/NO	BLUE ICE
YES/NO	YES/NO	SHIPPING BILLABLE (If yes, notify Shipping Unit)

COMMENTS:

80000

SHIPPED VIA: FED EX / UPS / EMERY / OTHER: _____ SHIPMENT PACKED BY/DATE: _____

RFW 21-21-007[illegible]/97 REVIEWED BY/DATE: _____

ThermoNUtech
OAK RIDGE
Internal Chain of Custody
QCP-001-1

Work Order Number: 98-10172	Storage Location: QQ1.2
Analysis: Ra226 - Level 4	Sample Matrix: SO
Comments:	Comments:
	Lab Deadline: Thu 11/05/98

Initial and Date	Sample Location
Received By: A Miller 10/29/98	Accepted From Sample Storage
Relinquished By: A Miller 10/30/98	To prep
Received By: Lou Bernard 10/30/98	from rough prep
Relinquished By: Lou Bernard 10/30/98	to sep
Received By: [illegible] 10/30/98	from prep lab
Relinquished By: [illegible] 11/2/98	to count room
Received By: [illegible] 11-2-98	CR
Relinquished By: Fisher Sign 11-2-98	Supervisor
Received By:	
Relinquished By:	
Received By:	
Relinquished By:	
Received By:	

QCP-001
Rev: 2
Date: 6 February 1995

ThermoNUtech
OAK RIDGE
Internal Chain of Custody
QCP-001-1

Work Order Number: 98-10172	Storage Location: QQ1.2
Analysis: Ra228 - Level 4	Sample Matrix: SO
Comments:	Comments:
REANALYSIS 31 11/6/98!!!	Lab Deadline: Thu 11 5/98

Initial and Date		Sample Location
Received By:	Jay Bayard 11/6/98	Accepted From Sample Storage
Relinquished By:	Jay Bayard 11/6/98	to sep
Received By:	11/6/98	from prep lab
Relinquished By:	11/9/98	to countroom
Received By:	11/9/98	On
Relinquished By:	11/9/98	Seperate
Received By:	11/10/98	from countroom
Relinquished By:	11/11/98 11/11/98 COS	to countroom
Received By:	11/11/98	On
Relinquished By:	11/11/98	Morgue
Received By:		
Relinquished By:		
Received By:		

SECTION II

SAMPLE ACKNOWLEDGEMENT

Thermo NUtech
Oak Ridge, TN 37830
(615) 481-0683

98-10172	Client Sample ID	Company Code	PO	Work Order	Project	Matrix	Date Received	TAT Days	Actual DL	Lab DL	Sample Date
98-10172-04	WGSB1-7	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10172-05	WGSB1-12	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10172-06	WGSB1-20	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10172-07	WGSB1-30	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10172-08	WGSB1-40	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10172-09	WGSB2-7	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10172-10	WGSB2-10	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10172-11	WGSB2-20	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10172-12	WGSB2-30	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10172-13	WGSB2-42	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10172-14	WGSB3-7	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00
98-10172-15	WGSB3-10	RECRA			AD-Little	SO	10/29/98	11	11/09/98	11/05/98	09/23/98 00:00

Client Information

Contact: Dianne Therry
Voice: (610) 280-3000
Fax: (610) 280-3041

Address: Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

Report Address: Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

Invoice Address: RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

00012

Thermo NU
Oak Ridge, [redacted]7830
(615) 481-0683

98-10172	Client Sample ID	Cs137	Gamma	Am241	CuISO	Np237	Po210	PuISO	Ra226	Th227	ThISO	UU236	UUISO	C0014	Ca045	CsPMo	Fe055	GaGbD	GaGbS	GaGbT	H0003	I0129	I0131	Ni063	Pb210	Pm147	Pu241	Ra228	Rn222	Ru106	Sr090	Sr890	SrTOT	Tc099	TTACT	TUKPA	RaTOT
98-10172-04	WGSB1-7								X																			X									
98-10172-05	WGSB1-12								X																			X									
98-10172-06	WGSB1-20								X																			X									
98-10172-07	WGSB1-30								X																			X									
98-10172-08	WGSB1-40								X																			X									
98-10172-09	WGSB2-7								X																			X									
98-10172-10	WGSB2-10								X																			X									
98-10172-11	WGSB2-20								X																			X									
98-10172-12	WGSB2-30								X																			X									
98-10172-13	WGSB2-42								X																			X									
98-10172-14	WGSB3-7								X																			X									
98-10172-15	WGSB3-10								X																			X									
									12																			12									

Client Information

Contact: Dianne Therry
Voice: (610) 280-3000
Fax: (610) 280-3041

Address: Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

Report Address: Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

Invoice Address: RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

00013

Thermo NUtech
Oak Ridge, TN 37830
(615) 481-0683

98-10172	Client Sample ID	DS	Holding Period	Storage Location	Sample Coordinate	Depth	Depth Units	Comments
98-10172-04	WGSB1-7	R	180	QQ1.2				
98-10172-05	WGSB1-12	R	180	QQ1.2				
98-10172-06	WGSB1-20	R	180	QQ1.2				
98-10172-07	WGSB1-30	R	180	QQ1.2				
98-10172-08	WGSB1-40	R	180	QQ1.2				
98-10172-09	WGSB2-7	R	180	QQ1.2				
98-10172-10	WGSB2-10	R	180	QQ1.2				
98-10172-11	WGSB2-20	R	180	QQ1.2				
98-10172-12	WGSB2-30	R	180	QQ1.2				
98-10172-13	WGSB2-42	R	180	QQ1.2				
98-10172-14	WGSB3-7	R	180	QQ1.2				
98-10172-15	WGSB3-10	R	180	QQ1.2				

Client Information

Contact: Dianne Therry
Voice: (610) 280-3000
Fax: (610) 280-3041

Address: Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

Report Address: Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Rd.
Lionville, PA 19341-1313

Invoice Address: RECRA Environ
208 Welsh Pool Rd.
Lionville, PA 19341-1313

00014

THERMO NUTECH - OAK RIDGE
SAMPLE RECEIPT CHECKLIST

QCP-002-2

WORK ORDER # 98 10172

SAMPLE MATRIX/MATRICES: (CIRCLE ONE OR BOTH)

AQUEOUS (NON-AQUEOUS)

WERE SAMPLES: (CIRCLE EITHER YES, NO, OR N/A)

1) RECEIVED IN GOOD CONDITION? (Y) OR N
2) IF AQUEOUS, PROPERLY PRESERVED? Y OR N (N/A)

WERE CHAIN OF CUSTODY SEALS:

1) PRESENT ON OUTSIDE OF PACKAGE? (Y) OR N
2) UNBROKEN ON OUTSIDE OF PACKAGE? (Y) OR N
3) PRESENT ON SAMPLES? (Y) OR N
4) UNBROKEN ON SAMPLES? (Y) OR N

WAS CHAIN OF CUSTODY PRESENT UPON SAMPLE RECEIPT? (Y) OR N

IF ANY OF THE ABOVE ARE CIRCLED "NO", A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: _____

SIGNATURE: K. Bannister DATE: 10/29/98

Copy No. _____

"quality nuclear services"

00015

SECTION III

CASE NARRATIVE

Thermo NUtech
50 Seaboard Road
Oak Ridge TN 37830
423 481-0683
FAX 423 483-4620
FAX 423 481-0125

TNU-OR-9152

November 12, 1998

Ms. Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341

CASE NARRATIVE
Work Order #98-10172-OR
South Carolina DHEC Lab ID #84013001

SAMPLE RECEIPT

This work order contains twelve soil samples received 10/29/98. These samples were analyzed for Radium-226/228.

CLIENT ID	RFW #	LAB ID
WGSB1-7	9810L066-001	98-10172-04
WGSB1-12	9810L066-002	98-10172-05
WGSB1-20	9810L066-003	98-10172-06
WGSB1-30	9810L066-004	98-10172-07
WGSB1-40	9810L066-005	98-10172-08
WGSB2-7	9810L066-006	98-10172-09
WGSB2-10	9810L066-007	98-10172-10
WGSB2-20	9810L066-008	98-10172-11
WGSB2-30	9810L066-009	98-10172-12
WGSB2-42	9810L066-010	98-10172-13
WGSB3-7	9810L066-011	98-10172-14
WGSB3-10	9810L066-012	98-10172-15

ANALYTICAL METHODS

Radium-226 was analyzed using EPA Method 903.0 modified. Radium-228 was analyzed using EPA Method 904.0 modified.

SPECIAL PROBLEMS OR UNUSUAL CIRCUMSTANCES

RADIUM-226

Samples demonstrated background equivalent results for Radium-226 activity. Results for the replicate demonstrated an acceptable normalized difference. Results for the laboratory control sample demonstrated an acceptable normalized difference. No significant problems were noted during the analysis process.

RADIUM-228

Samples demonstrated background equivalent results for Radium-228 activity. Results for the replicate demonstrated an acceptable normalized difference. Results for the laboratory control sample demonstrated an acceptable normalized difference. No significant problems were noted during the analysis process.

A Subsidiary of Thermo Remediation

00017

CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package and in the electronic data submitted on diskette has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.

M. R. McDougall
Laboratory Manager

Date: 11/12/98

00018

SECTION IV

ANALYTICAL RESULTS SUMMARY

Ms. Dianne Therry
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341-1313

SDG: 9810172
Matrix: Soil

Final Report of Analysis
Date of Report: 11/12/98

Lab ID		Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
98-10172-01	K	KNOWN	10/29/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	11.16	0.51		PCI/G
98-10172-01	S	SPIKE	10/29/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	11.70	1.31	0.13	PCI/G
98-10172-02	B	BLANK	10/29/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.00	0.04	0.14	PCI/G
98-10172-03	D	WGSB1-7	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.32	0.21	0.18	PCI/G
98-10172-04		WGSB1-7	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.20	0.17	0.24	PCI/G
98-10172-05		WGSB1-12	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.42	0.25	0.30	PCI/G
98-10172-06		WGSB1-20	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.15	0.16	0.29	PCI/G
98-10172-07		WGSB1-30	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.13	0.15	0.26	PCI/G
98-10172-08		WGSB1-40	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.06	0.12	0.29	PCI/G
98-10172-09		WGSB2-7	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.61	0.35	0.40	PCI/G
98-10172-10		WGSB2-10	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.10	0.19	0.43	PCI/G
98-10172-11		WGSB2-20	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.38	0.24	0.27	PCI/G
98-10172-12		WGSB2-30	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.16	0.19	0.39	PCI/G
98-10172-13		WGSB2-42	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.27	0.19	0.26	PCI/G
98-10172-14		WGSB3-7	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.49	0.30	0.30	PCI/G
98-10172-15		WGSB3-10	09/23/98	10/29/98	11/02/98	9810172	Radium-226	EPA 903.0 Modified	0.37	0.25	0.25	PCI/G
98-10172-01	K	KNOWN	10/29/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	12.04	0.15		PCI/G
98-10172-01	S	SPIKE	10/29/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	11.30	1.18	1.19	PCI/G
98-10172-02	B	BLANK	10/29/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	0.09	0.42	1.04	PCI/G
98-10172-03	D	WGSB1-12	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	0.56	1.00	2.38	PCI/G
98-10172-04		WGSB1-7	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	-1.21	0.82	2.41	PCI/G
98-10172-05		WGSB1-12	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	0.46	0.93	2.24	PCI/G
98-10172-06		WGSB1-20	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	1.22	0.80	1.68	PCI/G
98-10172-07		WGSB1-30	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	1.23	0.87	1.85	PCI/G
98-10172-08		WGSB1-40	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	1.26	0.79	1.63	PCI/G

0e030

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Approved by: _____ 11/12/98
M.R. McDougall, Laboratory Manager

SECTION V

ANALYTICAL STANDARD

Ms. Dia[redacted] Therry
RECRA Environmental, Inc.
208 Welsh Pool Road
Lionville, PA 19341-1313

SDG: 9[redacted]172
Matrix: Soil

Final Report of A[redacted]ysis
Date of Report: 11/12/98

Lab ID	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	Error	MDA	Units
98-10172-09	WGSB2-7	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	-0.53	0.86	2.34	PCI/G
98-10172-10	WGSB2-10	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	1.02	0.84	1.83	PCI/G
98-10172-11	WGSB2-20	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	0.94	1.03	2.36	PCI/G
98-10172-12	WGSB2-30	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	-1.06	0.89	2.53	PCI/G
98-10172-13	WGSB2-42	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	0.14	0.81	2.00	PCI/G
98-10172-14	WGSB3-7	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	1.58	0.90	1.82	PCI/G
98-10172-15	WGSB3-10	09/23/98	10/29/98	11/11/98	9810172	Radium-228	EPA 904.0 Modified	0.68	0.68	1.52	PCI/G

Approved by: [signature] 11/12/98
M.R. McDougall, Laboratory Manager

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

U. S. Department of Commerce
Malcolm Baldrige
Secretary

National Bureau of Standards
Ernest Ambler, Director

QA/QC REVIEWED
Date 10/20/91 Initials LK

Ba-5.

National Bureau of Standards

Certificate

Standard Reference Material 4251B

Radioactivity Standard

Radionuclide	Barium-133
Source identification	4251B-47
Source description	Liquid in NBS borosilicate-glass ampoule (1)*
Solution composition	Approximately 118 μg $BaCl_2$ per gram of 1 molar hydrochloric acid (2)
Mass	5.00482 grams
Radioactivity concentration	4.524×10^5 Bq g^{-1} ($s^{-1}g^{-1}$)
Reference time	1400 EST June 10, 1981
Random uncertainty	0.06 percent (3)
Systematic uncertainty	1.38 percent (4)
Total uncertainty (Random plus systematic)	1.44 percent
Photon-emitting impurities	None observed (5)
Half life	10.48 ± 0.04 years (6)
Measuring instrument	NBS pressurized "4π"γ ionization chamber calibrated by 4π(e,x)-γ coincidence and anti-coincidence efficiency-extrapolation technique

This Standard Reference Material was prepared in the Center for Radiation Research, Nuclear Radiation Division, Radioactivity Group, Dale D. Hoppes, Group Leader.

Washington, D.C. 20234
December, 1981

George A. Uriano, Chief
Office of Standard Reference Materials

00023

*Notes on back

Ba Sa

RADIOACTIVE REFERENCE STANDARDS

SOLUTION

Principal Radionuclide: Barium-133

Half-Life: 10.48 ± 0 years

Radionuclide: ^{133}Ba

Activity: 135,851 dpm/ml

Volume:

Solution Number: SRM 2518-47

Activity Date: 6/10/81

~~NA~~ Ampoule/Solution Empty Ampoule

Chemical Composition of Solution: $BaCl_2$ in 1M HCl

Dilution Instruction: Dilute 25 ml to 1l use Ba-5 for mother solution

Dilution Solution Used: 1M HCl

Calculations: $\frac{\text{Activity/ml} \times \text{Volume (ml)} \times \text{decay factor}}{\text{Final Volume (ml)}}$

$$\frac{(25\text{ml})(135{,}851\text{ dpm/ml})}{1000\text{ ml}} = 3{,}396.3\text{ dpm/ml @ 6/10/81}$$

Decay correction: See decay sheet to Activity Date: See decay sheet

Final Activity See decay sheet per ml 1000 Total Volume

Expiration Date 6/17/96 New Solution Number N A

Diluted by William L. Mathews Date 6/17/96

Approved by [signature] Date 6/17/96

QC-009
Rev: 0
Date: 18 March 1992

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Ra-5

QA/QC REVIEWED
Date 2/8/94 Initials MT

Radionuclide:	Ra-226	Customer:	TMA EBERLINE
Half Life:	1600 ± 7 years	P.O.No.:	VH1888
Catalog No.:	7226	Reference Date:	February 1 1994 12:00 PST.
Source No.:	453-26	Contained Radioactivity: (Ra-226)	1.001 μCi.
		Contained Radioactivity: (Ra-226)	37.0 kBq.

Description of Solution

a. Mass of solution:	5.1864 g (in a 5 ml Flame Sealed Ampoule)	
b. Chemical form:	$Ra(NO_3)_2$ in 1 N HNO_3	
c. Carrier content:	None added	
d. Density:	1.0318	g/ml @ 20°C.

Radioimpurities: None detected(other than daughters)

Radioactive Daughters
Rn-222, Po-218, At-218, Pb-214, Bi-214, Po-214, Tl-210, Pb-210, Bi-210, Po-210 and Tl-206.

Radionuclide Concentration

(Ra-226) 0.1929 μCi/g.

Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry:
Energy peak(s) integrated under: 186 keV.
Branching ratio(s) used: 0.0351 gamma rays per decay.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	±3.4%
b. Random uncertainty in assay:	±3.1%
c. Random uncertainty in weighing(s):	±0.2%
d. Total uncertainty at the 99% confidence level:	±4.6%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).

Anna U. Klein
QUALITY CONTROL

Feb. 3, 1994
Date Signed

ISOTOPE PRODUCTS LABORATORIES
1800 North Keystone Street
Burbank, California 91504
(818) 843 - 7000

00025

Ra-56

RADIOACTIVE REFERENCE STANDARDS

SOLUTION

Principal Radionuclide: Radium-226

Half-Life: 1600 ± 7 years

Radionuclide: ^{226}Ra
Activity: 2222.22 dpm/ml
Volume:

Solution Number: Ra-5
Activity Date: 2 February 1994

~~NA~~ Ampoule/Solution
~~NA~~ Empty Ampoule

Chemical Composition of Solution

$Ra(NO_3)_2$ in HNO_3

Dilution Instruction: Dilute 20 ml of Ra-5 to 1 l with 1N HNO_3

Dilution Solution Used: 1 N HNO_3

Calculations: $\frac{\text{Activity/ml} \times \text{Volume (ml)} \times \text{decay factor}}{\text{Final Volume (ml)}}$

$$\frac{2222.22 \text{ dpm/ml} \times 20 \text{ ml}}{1000 \text{ ml}} = 44.44 \text{ dpm/ml}$$

Decay correction: See decay sheet to Activity Date: - NA -
Final Activity See decay sheet per ml NA Total Volume
Expiration Date 6/4/99 New Solution Number NA

Diluted by William L McDonald Date 6/4/94 Um 6/4/96

Approved by M P Mason Jr Date 6/4/96

Ra-8

National Institute of Standards & Technology

Certificate

QA/QC REVIEWED
Date 5/4/98 Initials UT

Standard Reference Material 4339A
Radium-228 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive radium-228 nitrate, non-radioactive barium nitrate, and nitric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of alpha-particle and gamma-ray counting instruments and for the monitoring of radiochemical procedures.

Radiological Hazard

The SRM ampoule contains radium-228 with a total activity of approximately 1 kBq. Radium-228 decays by beta-particle emission. The progeny of radium-228 have a total activity of approximately 7 kBq and decay by alpha- and beta-particle emission. None of the alpha or beta particles escape from the SRM ampoule. During the decay process X-rays and gamma rays with energies from 8 keV to 3 MeV are also emitted. Most of these photons escape from the SRM ampoule and can represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]*. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard

The SRM ampoule contains nitric acid (HNO_3) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least April 2004.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899
August 1995

Thomas E. Gills, Chief
Standard Reference Materials Program

*Notes and references are on pages 5 and 6.

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Ra-8

Recommended Procedure for Opening the SRM Ampoule

1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.

2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood. In addition to the radioactive material, the solution contains strong acid and is corrosive.

3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.

4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.

5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.

6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.

7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.

8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.

9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]*.

*Notes and references are on pages 5 and 6.

EVALUATION OF THE UNCERTAINTY OF THE MASSIC ACTIVITY [e]*

Input Quantity x_i, the source of uncertainty	Method Used To Evaluate $u(x_i)$, the standard uncertainty of x_i	Relative Uncertainty Of Input Quantity, $u(x_i)/x_i$, (%) [h]	Relative Sensitivity Factor, $\lvert \partial y/\partial x_i \rvert \cdot (x_i/y)$ [i]	Relative Uncertainty Of Output Quantity, $u_i(y)/y$, (%) [j]
Uncertainties Evaluated By Statistical Methods				
Massic photon emission rate	Standard deviation of the mean for 17 sets of gamma-ray spectrometer measurements	0.26	1.0	0.26
Uncertainties Evaluated By Other Means				
Mass calibration of the balance	Estimated from manufacturer's data	0.05	1.0	0.05
Decay correction for radium-228	Standard uncertainty of the half life	0.52 [m]	1.33 [n]	0.69
Decay-scheme data	Standard uncertainty of the photon emission probabilities	0.61	1.0	0.61
Live-time [p]	Estimated	0.10	1.0	0.10
Photon detection efficiency	Estimated	0.50	1.0	0.50
Source geometry	Estimated	0.20	1.0	0.20
Photon-emitting impurities	Estimated [q] Limit of detection [r]	10. 100.	0.001 0.0001	0.01 0.01
Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$, (%)				1.10
Coverage Factor, k				x 2
Relative Expanded Uncertainty of the Output Quantity, U/y, (%)				2.20

02000

*Notes and references are on pages 5 and 6.

05/04/1998 11:41 5057615416 THERMO NUTECH PAGE 05

PROPERTIES OF SRM 4339A
(Certified values are shown in bold type)

Source identification number	NIST SRM 4339A		
Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter Wall Thickness Barium content Lead-oxide content Other heavy elements	(16.5 ± 0.5) mm (0.60 ± 0.04) mm Less than 2.5% Less than 0.02% Trace quantities	
Solution density	**(1.031 ± 0.002) $g \cdot mL^{-1}$ at 22.8 °C [b]***		
Solution mass	**(5.162 ± 0.002) g [b]**		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration ($mol \cdot L^{-1}$)	Mass Fraction ($g \cdot g^{-1}$)
	H_2O HNO_3 $Ba(NO_3)_2$ $Ra(NO_3)_2$	54 1.0 3×10^{-4} 1×10^{-10}	0.94 0.06 8×10^{-5} 3×10^{-11}
Radiological Properties:			
Radionuclide	**Radium-228**		
Reference time	**1200 EST, 12 April 1994 [c]**		
Mass activity of the solution [d]	**214.5 $Bq \cdot g^{-1}$**		
Relative expanded uncertainty (k=2)	**2.20%** [e]		
Photon-emitting impurities	Radium-226: (1.3 ± 0.3) $Bq \cdot g^{-1}$ [b,f]		
Half lives used	Radium-228: (5.75 ± 0.03) a [g] Actinium-228: (6.13) h Thorium-228: (1.913 ± 0.002) y Radium-224: (3.66 ± 0.04) d Radon-220: (55.6 ± 0.1) s Polonium-216: (145 241 2) ms Lead-216: (10.64 ± 0.01) h Bismuth-212: (60.55 ± 0.06) m Polonium-212: (298 ± 3) ns Thallium-208: (3.035 ± 0.004) m		
Measuring instruments	Calibrated germanium spectrometer systems		

*Notes and references are on pages 5 and 6.

Ra-8

QA/QC REVIEWED
Date 5/4/98 Initials WT

TMA/Eberline
Albuquerque Laboratory

RADIOACTIVE REFERENCE STANDARDS

SOLUTION

Principal Radionuclide	Half-Life
Radium-228	5.75 years

Radionuclide Radium-228
Activity 214.5 Bq/gm
Volume ~5 gms

Solution Number 4339A
Activity Date 4-12-94

105.7271 gms FLASK ~~Ampoule~~/Solution
100.6274 gms Empty ~~Ampoule~~ FLASK
5.0997 gms Volume

Chemical Composition of Solution
1M HNO_3

Dilution Instruction: Diluted contents of ampoule to 250 mls with 1M HNO_3

Dilution Solution Used: 1M HNO_3

Calculations: $\frac{\text{Activity/mL} \times \text{Volume (mL)} \times \text{Decay Factor}}{\text{Final Volume (mL)}}$

$\frac{214.5\ Bq}{gm} \times 5.0997\ gm = 1093.88\ Bq \times 60\ dpm = 65633.14\ dpm \div 250\ ml$

$= 262.53\ \frac{Bq}{ml} \times 0.7551 = 198.24\ \frac{dpm}{ml}$

Decay Correction: 0.7551 to Activity Date: 8-12-96
Final Activity: 198.24 dpm per mL 250 ml Total Volume.
Expiration Date: 8-5-99 New Solution Number F-103

Diluted by: Nick Valdez Date: 8-5-96
Approved by: Kathy Burnham Date: 9-20-96

REV 2 11/03/94 QC-01-6

00031

Ra-8

THERMO NUTECH - OAK RIDGE LABORATORY

RADIOACTIVE REFERENCE STANDARD SOLUTIONS

QCP-009-1

Principal Radionuclide	Half-Life
Radium-228	5.75 years

Radionuclide: 228 Radium
Activity: 160.986 dpm/ml
Volume: 106.179 ml

Solution Number: NIST 4339A (F103)
Activity Date: 5/4/98

Chemical Composition of Solution: $Ra(NO_3)_2$

~~NA~~ Ampule/Solution
Empty Ampule

106.179 ml transferred from Albuquerque. Added 222 ml of 1M HNO_3 to reach total volume of 328.179 ml.

Dilution Instruction: Transfer total volume to 1l jar and add 222 ml of 1M HNO_3

Dilution Solution Used: 1M HNO_3

Calculations: Activity/ml x Volume (ml) x decay factor / Final Volume (ml)

$$\frac{106.179\text{ml} \times 160.986\ \text{dpm/ml}}{(106.179 + 222)\text{ml}} = 52.085\ \text{dpm/ml @ 5/4/98}$$

Decay correction: NA to Activity Date: 5/4/98
Final Activity 52.085 dpm per ml 328.18 ml Total Volume
Expiration Date 5/4/99 New Solution Number NA

Diluted by William L. McDonald Date 5/4/98

Approved by W.A. Templeton Date 5/4/98

Copy No. 02

"quality nuclear services"

SECTION VI

QUALITY CONTROL SAMPLE RESULTS SUMMARY

Thermo NUtech
Oak Ridge Laboratory
Calculation of LCS Normalized Difference
Version 1.0 (12/14/96)

DATE:	11/12/98
WO#:	98-10-172
Associated WO#s:	
Analyte:	Ra-226

LCS measured:	104.88%	**Normalized Difference**	0.82
LCS expected:	100.00%		
C.U. Measured:	11.20%	@ 2 Sigma	
C.U. Expected:	4.60%	@ 3 Sigma	

Ra-226, dpm/ml:	44.35		
ml, Added:	0.5584		
Certified Error%	4.60%		
Known, pCi	11.16	Result	11.7
Known Error, pCi:	0.51	Error	1.31

Calculated By: _____ Date: 11/12/98

Reviewed By: _____ Date: 11/12/98

Remarks:

Calculation is based on ***one sigma*** counting uncertainty and expected uncertainty as required in the

00034

Thermo NUtech
Oak Ridge Laboratory
Calculation of Replicate Normalized Difference
Version 1.0 (2/11/97)

DATE:	11/12/98
WO#:	98-10-172
Associated WO#s:	
Analyte:	Ra-226

Rep. Measurement	0.320		**Normalized Difference**	0.86
Orig. Measurement:	0.200			
C.U. Replicate:	0.210	@ 2 Sigma		
C.U. Original:	0.174	@ 3 Sigma	**R. P. Difference:**	46.15%

Calculated By: _____ Date: 11/12/98

Reviewed By: _____ Date: 11/12/98

Remarks:

Calculation is based on ***one sigma*** counting uncertainty and expected uncertainty as required in the

00035

Thermo NUtech
Oak Ridge Laboratory
Calculation of LCS Normalized Difference
Version 1.0 (12/14/96)

DATE:	11/12/98
WO#:	9810-172
Associated WO#s:	
Analyte:	Ra-228

LCS measured:	93.72%	**Normalized Difference**	-1.17
LCS expected:	100.00%		
C.U. Measured:	10.44%	@ 2 Sigma	
C.U. Expected:	1.20%	@ 3 Sigma	

Ra-228, dpm/ml:	48.98		
ml, Added:	0.5465		
Certified Error%	1.20%		
Known, pCi	12.06	Result	11.3
Known Error, pCi:	0.14	Error	1.18

Calculated By: _____ Date: 11/12/98

Reviewed By: _____ Date: 11/12/98

Remarks:

Calculation is based on ***one sigma*** counting uncertainty and expected uncertainty as required in the September 9, 1996 Analytical Support Services agreement.

00036

Thermo NUtech
Oak Ridge Laboratory
Calculation of Replicate Normalized Difference
Version 1.0 (2/11/97)

DATE:	11/12/98
WO#:	98-10-172
Associated WO#s:	
Analyte:	Ra-228

Rep. Measurement	0.556		**Normalized Difference**	0.14
Orig. Measurement:	0.460			
C.U. Replicate:	0.999	@ 2 Sigma		
C.U. Original:	0.934	@ 3 Sigma	**R. P. Difference:**	18.90%

Calculated By: _____ Date: 11/12/98

Reviewed By: _____ Date: 11/12/98

Remarks:

Calculation is based on ***one sigma*** counting uncertainty and expected uncertainty as required in the September 9, 1996 Analytical Support Services agreement.

00037

SECTION VII

LABORATORY TECHNICIAN'S NOTES

RA-226 NOTES

98-10-097 (RK) LL
Aliquoted - Added appropriate spikes + tracers - Put samples on hot plate to dry down - Wet - Dissolved w/ HNO3 + H2O2 - Evaporated to near dryness - Repeated - Ready for seperations
10/30/98 Jay Ward

98-10-189 RA 226/228
Aliquoted - Added appropriate spikes + tracers - Put samples on stir hot plates + pH to 2.8-3.0 - Added 1.5 mls of 1mg/ml Ba Carrier, + 2mls of 1mg/ml Pb Carrier, + 20mls of 200mg/ml $(NH_4)_2SO_4$ - Let samples Stir - Let precip settle
10/30/98 Jay Ward

98-10-172 RA 226/228
Aliquoted - Added appropriate spikes + tracers - Added 20mls of .25M EDTA, a couple of drops of Phenolphthalein, + 3 drops of NH4OH - Vortexed + Put samples in a hot H2O bath - Vortexed + Centrifuged - Transferred supernate to a Clean Tube Added 5mls of .75 M EDTA to Precip - Vortexed + Centrifuged - Transferred, Supernate to Previous one - Submitted to seperations Discarded insolubles

* Added 1.5mls of 1mg/ml Ba Carrier at beginning - t
10/30/98 Jay Ward

TITLE Rep Radium Book No WC709-14

From Page No.	Sample #	Client	Matrix	Aliquot	Ba^{133} $BaSA$	Ra^{226} $RaSB$	Ra^{228} $Ra\#8$	Comp By	Rcd By	Remarks
	98-10-189-6	MKF	H_2O	0.4L	1.0130	LA	LA			
	7	↓	↓	↓	1.0123	↓	↓			
	2ND LCS 8	↓	↓	1L	1.0145	0.5161	0.545			
	98-10-172-1	RECRA	Soil	1g	1.0148	0.5584	0.5482	10/30/98 KB	10/31/98	
	2	↓	↓	↓	1.0163	LA	LA	B	COS	
	3			.5020	1.0162					
	4			.5116	1.0158					
	5			.5031	0.9862					
	6			.5038	1.0148					
	7			.5036	1.0133					
	8			.5254	1.0127					
	9			.5075	1.0125					
	10			.5052	1.0114					
	11			.5008	1.0116					
	12			.5200	1.0120					
	13			.5790	1.0100					
	14	↓	↓	.5181	1.0116	↓	↓	↓	↓	
	15			.5018	1.0137					
	98-10-173-1	RECRA	Soil	1g	1.0162	0.5633	0.543			
	2	↓	↓	↓	1.0158	LA	LA			
	3				1.0147					
	4				1.0149					
	5				1.0146					
	6				1.0141					
	7				1.0140					
	8				1.0133					
	9				1.0120					
	10				1.0134					
	11				1.0127					
	12				1.0128					
	13				1.0124					
	14	↓	↓		1.0126	↓	↓			
	15				1.0155					
						LA 01301 KB				

To Page No. 4

Witnessed & Understood by me,	Date	Invented by LA KB	Date LA	Recorded by

DATE	SAMPLE#	CLIENT	LOAD TIME	CT. TIME	ANALYSIS	TECH
10-27-98	9810106A(1-15)	BJC	1443	2'50	Th	
10/27/98	9810106A(1-15)	BJC	1827	2150	U	
10-28-98	DAILY PULSER	LAB	0439	10 min	NA	JDP
10-28-98	9810106A(1-15)	BJC	0526	2HR. 50min	Am	JDP
10-28-98	9810133A(1-5)	AWCU	1405	2'50	Th	
10-28-98	9810084A(1-4,6)	BJC	1405	2150	Pu NP	
10-28-98	9809188A(1-5)	ENE	1405	2150	Pu	
10-28-98	9810105A(1-2)	BJC	1716	2'50	Th	
10-28-98	9810112B(1-3)	PCC	1716	2'50	Th	
10-29-98	DAILY PULSER	LAB	0440	10 min.	NA	JDP
10-29-98	9810105A(1-12)	BJC	0533	2HR 50min.	Am	JDP
10-29-98	9809188A(1-3)	DOE	0533	2HR. 50min.	Am	JDP
10-29-98	9810132A(1-4)	RECRA	0921	2HR. 50min	Ra	JDP
10-29-98	9809188A(4,5)	DOE	0921	2HR. 50min.	Am	JDP
10-29-98	9810134A(1-14)	UCB	1357	2'50	Th	
10/29/98	9810135A(1-14)	UCB	1752	2'50	U	
10/29/98	9810156A(1)	UCB	1752	2'50	Th	
10-30-98	DAILY PULSER	LAB	0434	10 min.	NA	JDP
10-30-98	9810158A(1-8)	CKY	0517	2HR 50min.	U U	JDP
10-30-98	9810156A(1-4)	ICF	0517	2HR 50min.	U U	JDP
10-30-98	9810156A(2-4)	ICF	0517	2HR. 50min	Th	JDP
10-30-98	9810158A(1-8)	CKY	0833	2HR 50min	Th	JDP
10-30-98	9810159A(1-5)	WESTON-APS	0953	2HR. 50min.	U U	JDP
10-30-98	Calibrations	YAK	1854	4 hr	Gas	
10/30/98	Backgrounds	YAK	1727	1640 11	Gas	
10-31-98	DAILY PULSER	LAB	1110	10 min	NA	JDP
10-31-98	9810053A(5,10,12,13,15,16)	THERMO POWER	1219	2HR 50min	Am	JDP
10-31-98	9810132A(1-4)	RECRA	1219	2HR 50min.	Am/Cm	JDP
10-31-98	9810132A(1-4)	RECRA	1219	2HR 50min	Pu NP	JDP
11-2-98	DAILY PULSER	LAB	0437	10 min	NA	JDP
11-2-98	9810172A(1-15)	RECRA	0901	2HR. 50min.	Ra	JDP

RA-228 NOTES

98-10-187 Th, RA
Decanted samples - transferred to a 50ml C-Tube - Centrifuged - Discarded Supernate as waste - Submitted RA Precip to seperations - Added 20mls of .25M EDTA to Th's - Put samples in a hot H2O bath - Added .200mls of 10M KOH + .100mls of titaneous Chloride - Put samples back in the hot H2O bath - Vortexed + Centrifuged - Added 30mls of 8M HNO3 to the Precip - Vortexed until samples went into Solution - Submitted to seperations
11/6/98 Jay Barnard

98-11-022 Th, RA 224
Aliquoted
Added appropriate Standards
11/6/98
to RA's - Put samples on stir plates + Pd - Added 1-5mls of 1mg/ml Ba Carrier, 2mls of 10mg/ml Pb Carrier + 20mls of 200mg/ml (NH4)2SO4 - Let samples stir Let Precip Settle
11/6/98 Jay Barnard

98-10-172 RA 228 (PR)
Aliquoted - Added appropriate Standards - Added 1.5mls of 1mg/ml Ba Carrier - Added Precipitation + 3 drops of Methyl Red - Vortexed + Put samples in a hot H2O bath - Vortexed + Centrifuged - Transferred Supernate to a Clean C-Tube - Added 5mls of .25M EDTA to precip - Vortexed + Centrifuged - Transferred Supernate to previous one Submitted to seperations - Discarded insolubles 11/6/98
Jay Barnard

TITLE Prep Radium

Project No. NA

Book No. QC 209-14

From Page No. 45

Sample #	client	Matrix	aliquot	BA 133 BASA	RA 226 RA-58	RA 228 RA-8	comp By	Recd By	Remarks
98-11-021 -1	Recra-tion	Soil	1g	0.9641	0.5184	0.4956			
-2			1g	0.9052	NA	NA			
-3			1.0521	0.9090					
-4			1.0710	0.9079					
-5			1.0206	0.9015					
-6			1.0085	0.8898					
-7			1.0347	0.8919					
98-10-172-1	RECRA	Soil	1g	1.0230	LA	0.5466 LA	11/6/98 B	11/9/98 CDJ	RR
2				1.0155					
dups 3			.5051	1.0170					
4			.5169	1.0187					
5			.5047	1.0148					
6			.5467	1.0140					
7			.5380	1.0155					
8			.5437	1.0112					
9			.5125	1.0156					
10			.5434	1.0080					
11			.5684	1.0088					
12			.5458	1.0084					
13			.5634	1.0064					
14			.5463	1.0105					
15			.6068	1.0087					
98-10-138-1	Maxim	Liquid	1L	1.0082	0.5635 LA	0.5482 LA	11/9/98 B	11/9/98 CDJ	RR
2			1	1.0016					
3			0.2L	1.0020					
4			1	0.9999					
98-11-022-1	RRA	LH20	1L	1.0153	0.5627 LA	LA	11/9/98 B	11/9/98 CDJ	
2			1	1.0047					
3			0.5L	1.0018					
4				1.0084					
5				1.0049					
6				1.0049					
7				1.005					
8				1.0023					
				LA 11/6/98 B					

To Page No. 47

Witnessed & Understood by me,	Date	Invented by NA	Date NA
		Recorded by	

98-11-007 Ra226

Followed procedure QAP-006 Rev.2 Steps 8.1 to 8.8. Recorded T_0 time of 0700 hrs. Sent filters to Countroom.

11/6/98

~~98-10-173~~ Ra228
COC 98-11-002
11/6/98 Followed procedure QAP-007 Rev.2 Steps 8.1 to 8.5.

11/6/98

98-10-187 Total Radium

Followed procedure QAP-006 Rev.2 Steps 8.1 to 8.8. Recorded T_0 time of 1155. Sent filters to Countroom.

11/6/98

98-10-151 Ra228

Followed procedure QAP-007 Rev.2 Steps 8.6 to 8.11. Recorded T_3 time of 1223 hrs. Sent filters to Countroom.

11/6/98

98-10-172 Ra228 B 98-11-008 Ra226

Followed procedure QAP-006 Rev.2 Steps 8.1 to 8.8. Recorded T_0 time of 0711 hrs. Sent filters to Countroom.

11/9/98

98-11-002 Ra^{228}

Followed procedure QAP007 Rev.2 steps 8.6 to 8.11. Recorded T_3 time of 1330 hrs. Sent filters to Countroom.

11/9/98

98-10-172 Ra^{228} B

Filters were returned from Countroom. They were placed into c-tubes with EDTA.

11/10/98

98-10-173 Ra^{228} (1-8)

Followed procedure QAP-007 Rev.2 steps 8.6 to 8.11. Recorded T_3 time of 1235 hrs. Sent filters to the Countroom.

11/10/98

98-10-173 (9-15) Ra^{228}

Followed procedure QAP-007 Rev.2 steps 8.6 to 8.11. Recorded T_3 time of 1335 hrs. Sent filters to the Countroom.

11/10/98

98-11-019, 020, 021 Ra^{226}

Followed procedure QAP-006 Rev.2 steps 8.1 to 8.8. Recorded T_0 time of 0810 hrs. Sent filters to the Countroom.

11/10/98

98-10-151 Ra228 Run B

Followed procedure QAP-006 Rev. 2 steps 8.1 to 8.8. Recorded T_0 time of 0953 hrs. Sent filters to the countroom.

11/10/98

98-10-151 Ra228 B

Filters were returned from countroom. They were placed into c-tubes with EDTA.

11/11/98

98-10-172 B Ra228

Followed procedure QAP-007 Rev. 2 steps 8.1 to 8.5.

11/11/98

98-10-172 Ra228 B (1-8)

Followed procedure QAP-007 Rev. 2 steps 8.6 to 8.11. Recorded T_3 time of 1230 hrs. Sent filters to the countroom.

11/11/98

98-10-172 Ra228 B (9-15)

Followed procedure QAP-007 Rev. 2 steps 8.6 to 8.11. Recorded T_3 time 1338 hrs. Sent filters to countroom.

11/11/98

Project No. NA

TITLE Radium Separations Book No. QC 216-15

From Page No. 44

Sam #	T_0/T_2	Tech	Tare wt	Final wt	Rec by	T_3	Tare wt	Final wt	Net wt	Tech	Rec by	Remarks
98-11-007-8	0700 11/6/98	CDJ	0.0222	0.0271	JD 11-6-98							Ra226
-9			0.0222	0.0265								
-10			0.0220	0.0269								
-11			0.0219	0.0264						11/6/98		
-12			0.0221	0.0268		NA		CDJ				
-13			0.0222	0.0277								
-14			0.0220	0.0272								
-15			0.0220	0.0281								
-16			0.0220	0.0269								
98-11-015-1	0700 11/6/98	CDJ	0.0219	0.0259	JD 11-6-98							Ra226
-2			0.0221	0.0265		NA		CDJ		11/6/98		
-3			0.0221	0.0271								
-4			0.0221	0.0269								
-5			0.0220	0.0266								
-6			0.0223	0.0275								
98-10-187-1	1155 11/6/98	CDJ	0.0977	0.1045	AWD 11-12							Tot Ra
-2			0.0972	0.1060								
-3			0.0979	0.1077						11/6/98		
-4			0.0988	0.1070		NA		CDJ				
-5			0.0985	0.1045								
-6			0.0986	0.1037								
98-10-172-1	0711 11/9/98	CDJ			AWD 11-9	1230 11/11/98	0.0960	0.1509	0.0549	CDJ		Ra228 B
-2							0.0965	0.1525	0.0560			
-3							0.0962	0.1514	0.0552			
-4							0.0969	0.1506	0.0537			
-5			NA				0.0972	0.1519	0.0547			
-6							0.0966	0.1538	0.0572			
-7							0.0958	0.1502	0.0544			
-8							0.0964	0.1522	0.0558			
-9						1338 11/11/98	0.0967	0.1533	0.0566			
-10			CDJ 11/9/98				0.0968	0.1528	0.0560			
-11							0.0978	0.1536	0.0558			
-12							0.0975	0.1501	0.0526			
-13							0.0977	0.1521	0.0544			
-14							0.0972	0.1529	0.0557			
-15							0.0975	0.1533	0.0558			

To Pg No.

Witnessed & Understood by me, | Date | Invented by NA | Date

Recorded by CDJ

00049

DATE	SAMPLE #	CLIENT	LOAD TIME	CT - TIME	ANALYSIS	TECH
11-11-98	DAILY BKGD	LABS	0535	1HR	BKGD	JDP
↓	QC	↓	0645	30 MIN.	Sr-90	JDP
11-11-98	9811048AB (1,2,6)	MKF	0730	30 MIN.	α/β	JDP
11-11-98	9811004ABB (1-4)	ATAS	0745	2½HR	α/β	JDP
11-11-98	9810164AB (1-4)	RECRA	0810	1½HR	α/β	JDP
11-11-98	9810132AB (1-4)	RECRA	0950	1½ HR	α/β	JDP
11-11-98	9810144AB (1-4)	RECRA	1032	1½HR	α/β	JDP
11-11-98	9810163AB (1-8)	RECRA	1210	1½ HR	α/β	JDP
11-11-98	9810172B (1-8)	RECRA	1357	1 HR	Ra-228	[illegible]
11-11-98	9810172B (9-15)	RECRA	1459	1 HR	Ra-228	[illegible]

SECTION VIII

ANALYTICAL DATA (RADIUM-226)

Analysis Sheet, Version 1.0 [951028]

98-10172-Ra226-SO-A	Lab Deadline: Thu 11/05/98	Lab ID	CLIENT ID	Sample Descrip	Sample Date	Aliquot (g)		Tracer Aliq (g)	Witness	Ba%		
Sample Matrix	Soil/Solid	✓ 01	Spike	LCS	10/30/98	1.0000		1.0148		100		
Reporting Units	pCi/g	✓ 02	Blank	MBL	10/30/98	1.0000		1.0163		100		
Client	RECRA	✓ 03	WGSB1-7	DUP	09/23/98	0.5020		1.0162		89.5		
PO		✓ 04	WGSB1-7	DO	09/23/98	0.5116		1.0158		88.8		
Job #	AD-Little	✓ 05	WGSB1-12	TRG	09/23/98	0.5031		0.9862		97.2		
MDA Required	6.00E-02	✓ 06	WGSB1-20	TRG	09/23/98	0.5638		1.0148		97.5		
Dup. Sample ID	04	✓ 07	WGSB1-30	TRG	09/23/98	0.5036		1.0133		100		
MS ID		✓ 08	WGSB1-40	TRG	09/23/98	0.5254		1.0127		95.3		
MS Original ID		✓ 09	WGSB2-7	TRG	09/23/98	0.5075		1.0125		76.5		
MS Dup ID		✓ 10	WGSB2-10	TRG	09/23/98	0.5052		1.0114		99.8		
Tracer ID	BSA-5a	✓ 11	WGSB2-20	TRG	09/23/98	0.5008		1.0116		97.2		
Tracer Ref Date	10/30/98	✓ 12	WGSB2-30	TRG	09/23/98	0.5200		1.0120		100		
Tracer T1/2	3.83E+03	✓ 13	WGSB2-42	TRG	09/23/98	0.5790		1.0100		100		
Tracer Initial ACT	1.08E+03	✓ 14	WGSB3-7	TRG	09/23/98	0.5181		1.0126		92.2		
Carrier		✓ 15	WGSB3-10	TRG	09/23/98	0.5018		1.0137		100		
Carrier Concentration												
Procedure Used												
Count Duration (mins)												

00052

Data Entry: [signature] Date: 11/2/98

98-10172-Ra226-SO-A	Lab Deadline: Thu 11/05/98	Lab ID	Wet Wt. (g)	Dry Wt. (g)	Tare Wt. (g)	Final Wt. (g)	Recovery (dec.)	SAF (dec.)	Analyst Comments
Sample Matrix	Soil/Solid	01			0.0221	0.0262		1.1319	
Reporting Units	pCi/g	02			0.0220	0.0266		1.1816	
Client	RECRA	03			0.0220	0.0265		1.1705	
PO		04			0.0222	0.0269		1.1934	
Job #	AD-Little	05			0.0223	0.0272		1.2187	
MDA Required	6.00E-02	06			0.0222	0.0268		1.1816	
Dup. Sample ID	04	07			0.0222	0.0271		1.2187	
MS ID		08			0.0219	0.0273		1.2916	
MS Original ID		09			0.0220	0.0263		1.1499	
MS Dup ID		10			0.0220	0.0269		1.2187	
Tracer ID	BSA-5a	11			0.0221	0.0275		1.2916	
Tracer Ref Date	10/30/98	12			0.0220	0.0267		1.1934	
Tracer T1/2	3.83E+03	13			0.0220	0.0273		1.2759	
Tracer Initial ACT	1.08E+03	14			0.0222	0.0278		1.3243	
Carrier		15			0.0224	0.0271		1.1934	
Carrier Concentration									
Procedure Used									
Count Duration (mins)									

00053

Data Entry: _____ Date: 11/2/98

98-10172-Ra226-SO-A	Lab Deadline: Thu 11/05/98	Lab ID	Rough Prep Date/Time	By	Prep Date/Time	By	Chemistry Date/Time	By	Count Date/Time	By	P	PID	S
Sample Matrix	Soil/Solid	01	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
Reporting Units	pCi/g	02	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
Client	RECRA	03	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
PO		04	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
Job #	AD-Little	05	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
MDA Required	6.00E-02	06	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
Dup. Sample ID	04	07	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
MS ID		08	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
MS Original ID		09	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
MS Dup ID		10	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
Tracer ID	BSA-5a	11	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
Tracer Ref Date	10/30/98	12	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
Tracer T1/2	3.83E+03	13	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
Tracer Initial ACT	1.08E+03	14	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
Carrier		15	Fri 10/30/98 00:00	TM	Fri 10/30/98 00:00	JB	Fri 10/30/98 12:53	CDJ					
Carrier Concentration													
Procedure Used													
Count Duration (mins)													

0005

Data Entry: _____ Date: 11/2/98

Thermo NUtech
Spike & Tracer Worksheet

BATCH ID:	98-10-172			ANALYSIS	Ra-226 & Ra-228				DATE	10/30/98 8:54
	Isotope	Sol #	Activity dpm/ml	Solution Date	Volume Used, ml	Date	Technician	Known pCi	Error Estimate	Witness
SPIKE	Ra-226	Ra-5b	44.349	10/30/98	0.5584	10/30/98	JB	11.16	0.513	EEL
SPIKE	Ra-228	Ra-8	49.096	10/30/98	0.5482	10/30/98	JB	12.12	0.145	EEL
TRACER	Ba-133	Ba-5a	1075.328	10/30/98	BELOW	10/30/98	JB			EEL

PASTE PRINT OUT FROM BALANCE BELOW

ADD APPROXIMATE STANDARD ADDITIONS AS BELOW
Ra-5b ~ 0.5000 g
Ra-8 ~ 0.5000 g Ba-5a ~ 1.0000g
FOR THE MATRIX SPIKE SEE LAB MANAGER OR COUNT ROOM SUPERVISOR

LCS

RA5b 0.5584 g
RA8 0.5482 g

MATRIX SPIKE

BA5A

SS0055

Thermo NUtech
Version 1.0 10/97 MRM

10/30/98 8:54 AM

Thermo NUtech - Oak Ridge Laboratory
ROUGH SAMPLE PREPARATION, LOG BOOK
Version 1.0, 9/98

WORK ORDER NUMBER: 98-10-172

LIMS FACTION	CLIENT IDENTIFICATION	CLIENT	PAN TARE WEIGHT, g	GROSS WET WEIGHT, g	GROSS FINAL DRY WEIGHT, g	NET WET WEIGHT, g	NET DRY WEIGHT, g	PERCENT LIQUID	PERCENT SOLIDS	DATE REC'D PREPARATION	Gamma DRY WEIGHT, g	DATE SEALED	DATE RETURNED TO STORAGE	TECH's Initials
04	WGSB1-7	RECRA	13.35	117.15	105.33	103.80	91.98	11.39%	88.61%	10/29/98	NA	NA	11/2/98	TM
05	WGSB1-12	RECRA	13.31	81.28	71.64	67.97	58.33	14.18%	85.82%	10/29/98	NA	NA	11/2/98	TM
06	WGSB1-20	RECRA	13.38	101.09	93.03	87.71	79.65	9.19%	90.81%	10/29/98	NA	NA	11/2/98	TM
07	WGSB1-30	RECRA	13.32	119.98	118.26	106.66	102.94	3.49%	96.51%	10/29/98	NA	NA	11/2/98	TM
08	WGSB1-40	RECRA	13.25	137.42	132.54	124.17	119.29	3.93%	96.07%	10/29/98	NA	NA	11/2/98	TM
09	WGSB2-7	RECRA	13.29	38.06	36.63	24.80	23.37	5.77%	94.23%	10/29/98	NA	NA	11/2/98	TM
10	WGSB2-10	RECRA	13.27	84.60	74.51	71.33	61.24	14.15%	85.85%	10/29/98	NA	NA	11/2/98	TM
11	WGSB2-20	RECRA	13.24	149.16	132.43	135.91	119.19	12.30%	87.70%	10/29/98	NA	NA	11/2/98	TM
12	WGSB2-30	RECRA	13.23	138.17	128.94	124.94	115.71	7.39%	92.61%	10/29/98	NA	NA	11/2/98	TM
13	WGSB2-42	RECRA	13.22	132.19	126.17	118.97	112.95	5.06%	94.94%	10/29/98	NA	NA	11/2/98	TM
14	WGSB3-7	RECRA	13.24	93.36	89.19	80.12	75.95	5.20%	94.80%	10/29/98	NA	NA	11/2/98	TM
15	WGSB3-10	RECRA	13.26	114.51	107.04	101.23	93.76	7.38%	92.62%	10/29/98	NA	NA	11/2/98	TM
16														
17														
18														
19														
20														

COMMENTS

Samples were received, weighed and dried. Then pulverized for chemistry using procedural guidelines.

PAGE # 065

ENTERED BY: [signature] DATE: 10/30/98

Th[illegible]no NUtech
Oak Ridge Laboratory
Dryness Confirmation Data Sheet
Version 1.1 4/29/98

1st Weighing Time	7:30:00 AM					
DATE & TIME:	10/30/98	Technician:	TSM		WO #	98-10-172
Fraction	1st Weight	Time	2nd Weight	Time	3rd Weight	Time
04	105.33	7:30 AM	105.33	8:00 AM	105.33	8:30 AM
05	71.64	7:30 AM	71.64	8:00 AM	71.64	8:30 AM
06	93.03	7:30 AM	93.03	8:00 AM	93.03	8:30 AM
07	116.26	7:30 AM	116.26	8:00 AM	116.26	8:30 AM
08	132.54	7:30 AM	132.54	8:00 AM	132.54	8:30 AM
09	36.63	7:30 AM	36.63	8:00 AM	36.63	8:30 AM
10	74.51	7:30 AM	74.51	8:00 AM	74.51	8:30 AM
11	132.43	7:30 AM	132.43	8:00 AM	132.43	8:30 AM
12	128.94	7:30 AM	128.94	8:00 AM	128.94	8:30 AM
13	126.17	7:30 AM	126.17	8:00 AM	126.17	8:30 AM
14	89.19	7:30 AM	89.19	8:00 AM	89.19	8:30 AM
15	107.04	7:30 AM	107.04	8:00 AM	107.04	8:30 AM
16						
17						
18						
19						
20						

All samples must be removed from the drying oven at three (3) seperate times and weighed to confirm consistent dryness if the sample(s). Remove sample(s) and document dryness at 1/2 hour increments. Place a copy of this information within the data package.

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:37:31

Spectral File: ND_AMS_ARCHIVE_C:C_9810172A-RA$01_RA.CNF

BATCH ID:	9810172A-RA	SAMPLE ID:	01
SAMPLE DATE:	2-NOV-1998 00:00	ALIQUOT: 1.000E+00	gram
SAMPLE TITLE:	SPIKE	DETECTOR NUMBER:	017
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	21.1%
ELAPSED LIVE TIME:	10192.	RECOVERY:	100.00%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_017_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.13

NUCLIDE ACTIVITY SUMMARY

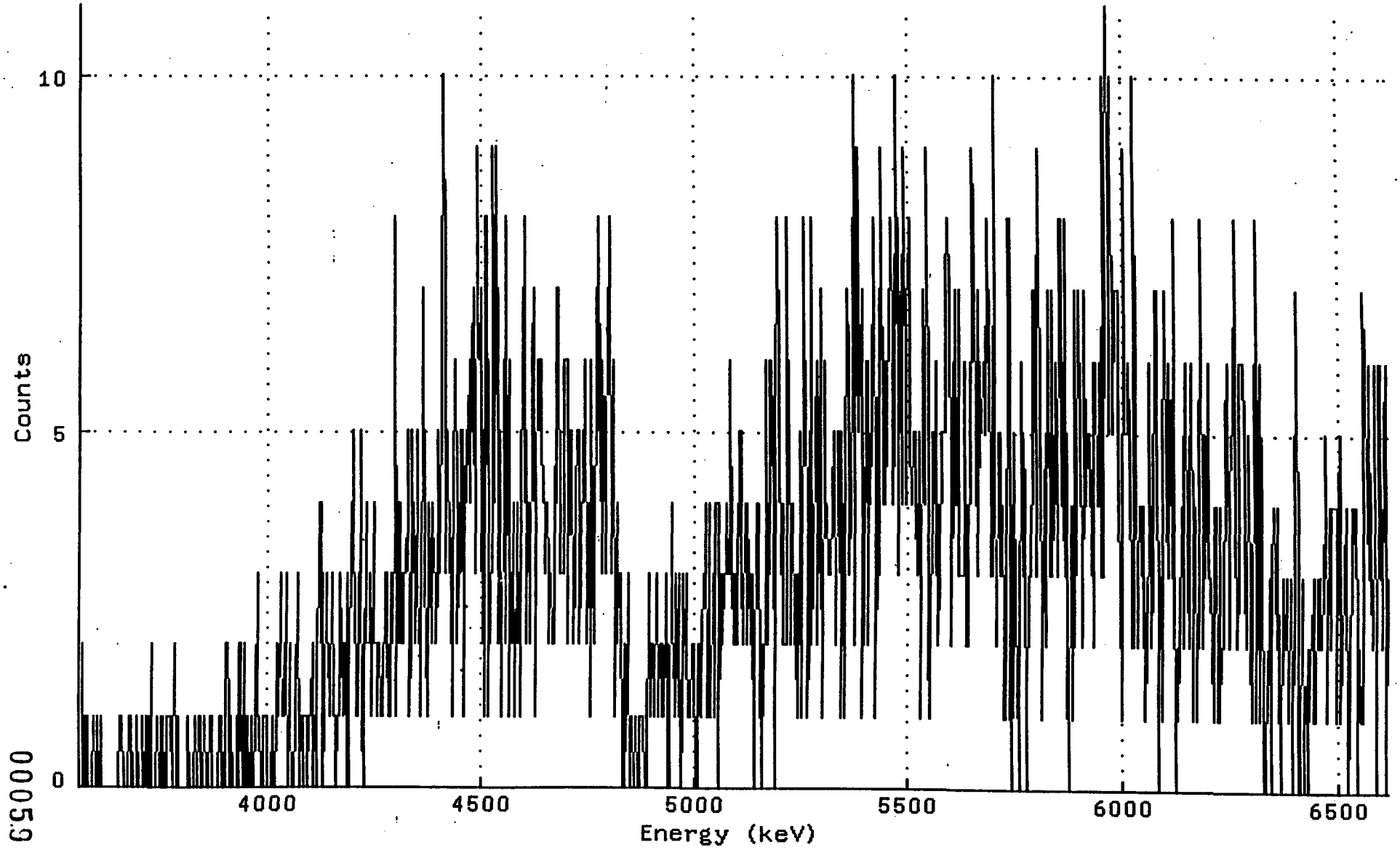
NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	766.12	3.57	100.0	9.621E+00	1.123E+00	1.632E-
RN-222	5490.0	766.86	1.70	99.9	9.636E+00	1.124E+00	1.246E-01
RA-226	4785.0	931.78	2.04	100.0	1.170E+01	1.311E+00	1.327E-01

Analyst _____ Date 11-2-98

Reviewer _____ Date 11/3/98

00058

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.C]C_9810172A-RA$01_RA.CNF;1
Title : 017
Sample Title: SPIKE
Start Time: 2-NOV-1998 09:01: Sample Time: 2-NOV-1998 00:00: Energy Offset: 3.54826E+03
Real Time : 0 02:49:44.99 Sample ID : 01 Energy Slope : 2.68853E+00
Live Time : 0 02:49:51.99 Sample Type: RA Energy Quad : 2.96155E-04



Channel Contents for ND_AMS_ARCHIVE_C:C_9810172A-RA$01_RA

Channel

1:	0	0	0	0	0	0	2	0
9:	1	0	1	0	0	0	0	1
17:	0	0	0	1	0	1	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	1	1
41:	1	0	0	0	0	0	1	0
49:	1	0	0	0	0	1	0	0
57:	0	0	1	0	0	1	0	1
65:	0	2	0	0	0	0	1	1
73:	0	1	0	0	1	0	0	1
81:	1	1	1	0	0	2	0	0
89:	1	0	0	0	0	0	0	0
97:	0	1	0	0	0	0	1	1
105:	0	0	1	0	1	0	0	1
113:	0	0	0	1	1	1	0	0
121:	0	0	0	1	1	0	1	0
129:	0	2	2	1	0	0	1	0
137:	0	0	0	2	0	1	2	0
145:	0	2	0	1	0	0	1	0
153:	0	0	1	3	1	1	0	0
161:	0	1	1	1	0	0	0	0
169:	1	0	0	1	2	1	3	2
177:	1	2	1	3	2	0	2	1
185:	0	0	0	1	1	3	0	[redacted]
193:	1	0	1	1	1	0	1	[redacted]
201:	1	2	0	1	0	1	4	2
209:	4	2	0	1	3	2	2	1
217:	1	3	1	1	1	0	1	1
225:	3	2	1	2	2	0	3	0
233:	2	3	5	3	3	1	1	1
241:	5	3	1	0	1	4	2	2
249:	2	3	1	4	2	2	2	1
257:	2	2	1	2	1	3	3	2
265:	1	3	1	3	3	8	1	4
273:	2	2	4	2	2	3	3	4
281:	5	1	2	5	3	3	2	5
289:	3	2	2	1	7	3	3	2
297:	1	4	3	2	4	3	3	2
305:	3	5	3	6	6	10	7	3
313:	5	3	4	3	1	4	6	4
321:	2	3	5	3	5	1	4	5
329:	4	5	6	4	6	7	6	3
337:	9	7	6	7	4	2	8	1
345:	8	4	1	3	3	9	4	7
353:	9	2	7	3	1	2	4	8
361:	2	5	6	1	3	2	4	1
369:	4	2	3	1	3	7	4	8
377:	2	4	4	2	6	6	7	1
385:	4	6	6	5	6	5	4	[redacted]
393:	3	4	3	2	3	2	2	[redacted]
401:	7	4	7	3	3	3	3	6
409:	6	6	2	5	4	5	2	3
417:	4	5	5	2	3	5	4	6
425:	2	3	4	1	6	3	2	2

433:	7	5	8	5	3	6	5	3
441:	4	7	6	8	3	5	6	1
449:	4	2	3	3	3	0	2	0
457:	1	3	2	0	1	1	0	1
[redacted]65:	1	0	0	1	1	1	1	0
[redacted]73:	1	0	3	1	2	2	1	1
481:	3	1	1	2	1	2	1	3
489:	0	2	0	4	2	2	1	3
497:	2	1	3	0	1	3	2	3
505:	2	1	1	1	2	1	2	0
513:	2	0	2	1	2	3	3	4
521:	1	4	1	1	3	1	4	4
529:	4	0	3	3	2	3	3	4
537:	3	3	6	3	2	3	2	4
545:	2	5	5	3	2	4	2	4
553:	3	2	3	3	0	1	4	4
561:	4	1	2	0	2	2	6	2
569:	6	3	6	5	0	5	8	6
577:	5	3	4	2	2	2	8	4
585:	4	2	4	2	3	2	1	5
593:	3	1	8	5	6	3	1	2
601:	8	2	3	5	6	2	4	7
609:	4	1	6	4	4	3	3	3
617:	4	5	5	2	5	5	5	1
625:	5	3	1	4	7	6	3	4
633:	6	10	2	9	9	5	6	7
641:	1	3	6	2	6	4	5	5
649:	8	3	1	4	7	3	9	4
657:	6	4	5	7	6	8	6	4
[redacted]65:	5	10	3	8	6	4	6	9
[redacted]73:	4	7	7	8	5	4	5	5
681:	4	3	5	5	1	7	5	4
689:	9	4	2	1	5	5	5	3
697:	6	2	3	5	5	5	5	7
705:	8	7	4	2	5	7	4	4
713:	7	3	3	3	3	6	2	2
721:	2	6	6	9	8	4	7	3
729:	6	5	5	6	5	8	6	7
737:	3	5	3	10	5	2	5	3
745:	5	3	3	1	1	8	1	8
753:	0	2	5	2	2	0	1	6
761:	3	5	4	0	1	3	3	5
769:	7	7	3	6	9	4	3	1
777:	4	5	2	7	3	7	3	4
785:	6	5	3	8	4	8	4	3
793:	8	2	0	4	4	1	7	2
801:	4	7	4	6	2	5	7	4
809:	5	4	5	4	2	6	6	4
817:	4	6	3	10	3	8	11	8
825:	5	10	5	7	7	7	7	4
833:	3	1	9	5	5	5	6	5
841:	2	2	10	5	2	3	4	4
849:	2	4	1	2	4	6	2	3
857:	3	7	7	0	2	3	1	4
[redacted]65:	7	4	3	6	5	3	8	4
[redacted]73:	0	2	1	2	4	2	4	6
881:	3	2	4	6	3	1	4	1
889:	3	3	8	2	5	3	4	6
897:	3	3	2	1	4	4	1	4
905:	1	2	2	2	5	6	2	4

913:	5	5	8	4	2	3	6	6
921:	6	5	3	2	5	2	2	1
929:	6	1	8	3	1	6	4	0
937:	0	1	1	3	0	3	4	3
945:	2	4	1	1	0	3	2	2
953:	3	1	3	1	0	3	7	2
961:	0	0	3	0	1	1	2	0
969:	2	2	3	1	1	3	2	3
977:	2	3	4	5	1	4	2	4
985:	4	4	4	1	4	5	1	2
993:	3	4	4	0	1	4	3	4
1001:	4	2	0	2	1	1	7	6
1009:	4	3	6	3	2	4	6	0
1017:	6	3	6	2	5	6	0	3

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Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:37:15.30

Detector ID: 17 Acquisition Start: 2-NOV-1998 09:01:48.01
Live Time: 0 02:49:51.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 01
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4533.34	825	0478.01	352.70	230	227	8.09E-02	3.5		
2	0	5306.46	679	0371.76	612.62	518	168	6.66E-02	3.8		
3	0	5816.68	680	0378.14	777.20	703	147	6.67E-02	3.8		

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:37:24.16

Acquisition Start: 30-OCT-1998 17:27:36.01
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4505.27	12	0564.59	343.00	230	227	2.00E-04	28.9		
2	0	5272.56	10	0 2.69	601.50	518	168	1.67E-04	31.6		
3	0	5812.90	21	0110.23	776.00	703	147	3.51E-04	21.8		

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:37:25.62

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4533.34*	932	0478.01	352.70	230	227	9.14E-02	3.5		
2	0	5306.46*	767	0371.76	612.62	518	168	7.52E-02	3.8		
3	0	5816.68*	766	0378.14	777.20	703	147	7.52E-02	3.9		

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:37:28

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: SPIKE		
Sample date	: 2-NOV-1998 00:00:00	Acquisition date	: 2-NOV-1998 09:01:48
Sample ID	: 01	Sample quantity	: 1.0000 gram
Sample type	: RA	Sample geometry	:
Detector name	: 017	Detector geometry	:
Elapsed live time	: 0 02:49:51.99	Elapsed real time	: 0 02:49:44.99 0.1%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4533.34*	932478.01	352.70	230	227		7.0		RA-226	11.7
0	5306.46*	767371.76	612.62	518	168		7.7		RN-222	9.64
0	5816.68*	766378.14	777.20	703	147		7.7		PO-218	9.62

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ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:38:49

****

Spectral File: ND_AMS_ARCHIVE_R:R_9810172A-RA$02_RA.CNF

****

BATCH ID:	9810172A-RA	SAMPLE ID:	02
SAMPLE DATE:	2-NOV-1998 00:00	ALIQUOT:	1.000E+00 gram
SAMPLE TITLE:	BLANK	DETECTOR NUMBER:	018
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	19.3%
ELAPSED LIVE TIME:	10186.	RECOVERY:	100.00%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_018_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.18

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	0.98	4.93	100.0	1.346E-02	7.699E-02	2.117E-01
RN-222	5490.0	4.05	0.68	99.9	5.573E-02	6.595E-02	1.064E-01
RA-226	4785.0	-0.35	1.53	100.0	-4.796E-03	3.543E-02	1.374E-01

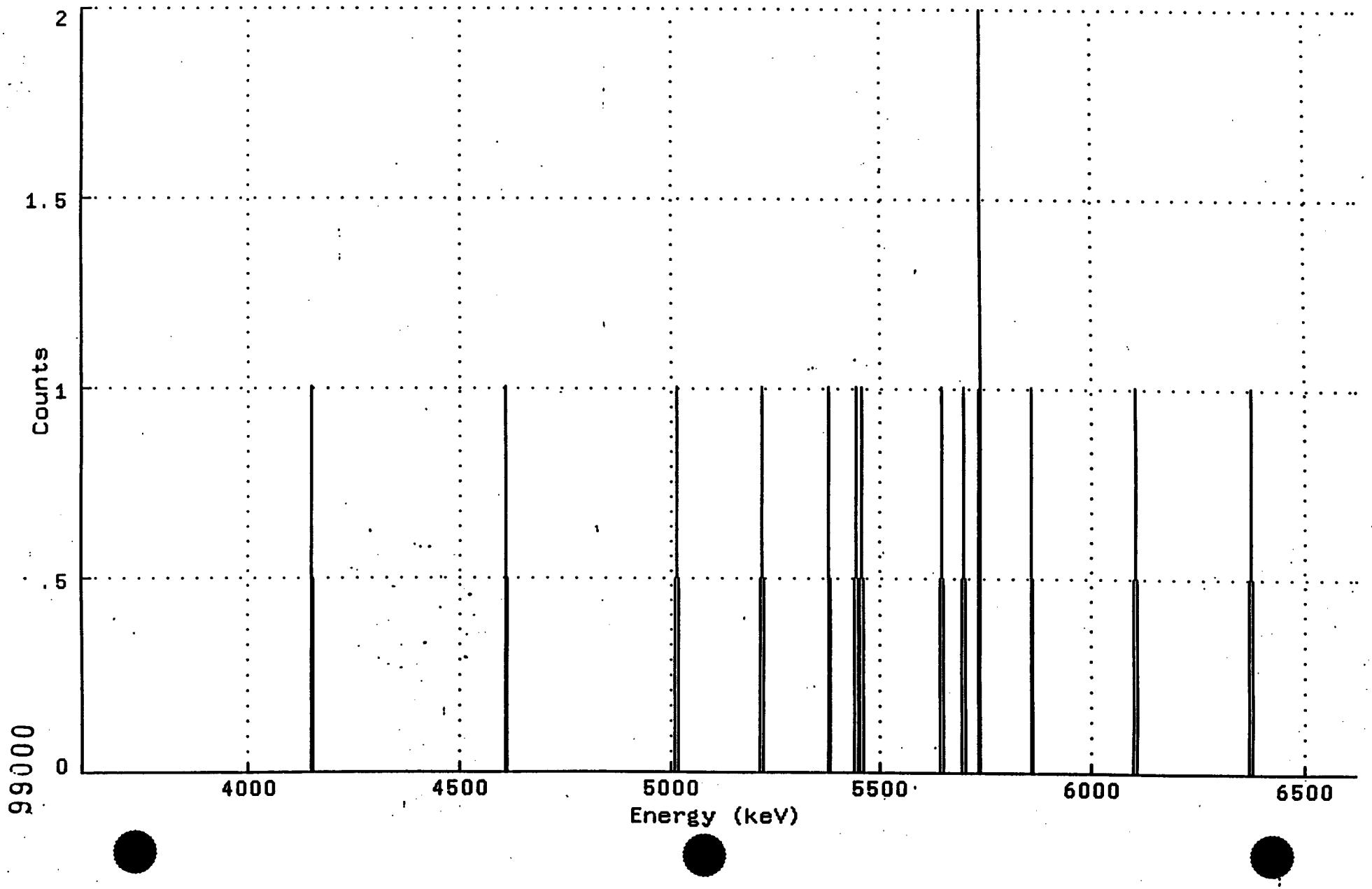
****

Analyst _____ Date 11/2/98

Reviewer _____ Date 11/3/98

00065

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.R]R_9810172A-RA$02_RA.CNF;1
Title : 018
Sample Title: BLANK
Start Time: 2-NOV-1998 09:01: Sample Time: 2-NOV-1998 00:00: Energy Offset: 3.59286E+03
Real Time : 0 02:49:44.99 Sample ID : 02 Energy Slope : 2.66001E+00
Live Time : 0 02:49:45.99 Sample Type: RA Energy Quad : 2.86659E-04



99000

Channel Contents for ND_AMS_ARCHIVE_R:R_9810172A-RA$02_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	1	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	1	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	1	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	1	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	1	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	1	0	0	0	1	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	1	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	1	0	0	0	0
737:	0	0	0	0	0	0	0	2
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	1
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	1	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
45:	0	0	0	1	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

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Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:38:31.70

Detector ID: 18 Acquisition Start: 2-NOV-1998 09:01:48
Live Time: 0 02:49:45.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 02
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4607.70	1	0	2.66	367.00	216	231	9.82E-05	100.0	
2	0	5370.36	4	0	12.80	626.00	509	170	3.93E-04	50.0	
3	0	5729.97	5	0	2.66	743.80	696	149	4.91E-04	44.7	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:38:42.46

Acquisition Start: 30-OCT-1998 17:27:36.02
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4504.73	9	0	0.00	331.00	216	231	1.50E-04	33.3	
2	0	5272.55	4	0	47.38	593.50	509	170	6.68E-05	50.0	
3	0	5811.03	29	0	54.53	770.00	696	149	4.84E-04	18.6	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:38:43.83

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4607.70*	0	0	2.66	367.00	216	231	-3.42E-05	369.3	
2	0	5370.36*	4	0	12.80	626.00	509	170	3.97E-04	59.0	
3	0	5729.97*	1	0	2.66	743.80	696	149	9.60E-05	286.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:38:46

Configuration : MCA0:[ALPHA]ALPHA8C97$1
Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2
Sample title : BLANK
Sample date : 2-NOV-1998 00:00:00 Acquisition date : 2-NOV-1998 09:01:48
Sample ID : 02 Sample quantity : 1.0000 gram
Sample type : RA Sample geometry :
Detector name : 018 Detector geometry:
Elapsed live time: 0 02:49:45.99 Elapsed real time: 0 02:49:44.99 0.0%
Energy tolerance : 0.00 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Average value Efficiencies at : Peak Energy
Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4607.70*	0	2.66	367.00	216	231738.5			RA-226	-4.796E-03
0	5370.36*	4212.80		626.00	509	170118.0			RN-222	5.573E-02
0	5729.97*	1	2.66	743.80	696	149572.1			PO-218	1.346E-02

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ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:39:42

Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$03_RA.CNF

BATCH ID:	9810172A-RA	SAMPLE ID:	03
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT: 5.020E-01	gram
SAMPLE TITLE:	WGSB1-7	DETECTOR NUMBER:	019
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	21.0%
ELAPSED LIVE TIME:	10185.	RECOVERY:	89.50%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_019_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.17

NUCLIDE ACTIVITY SUMMARY

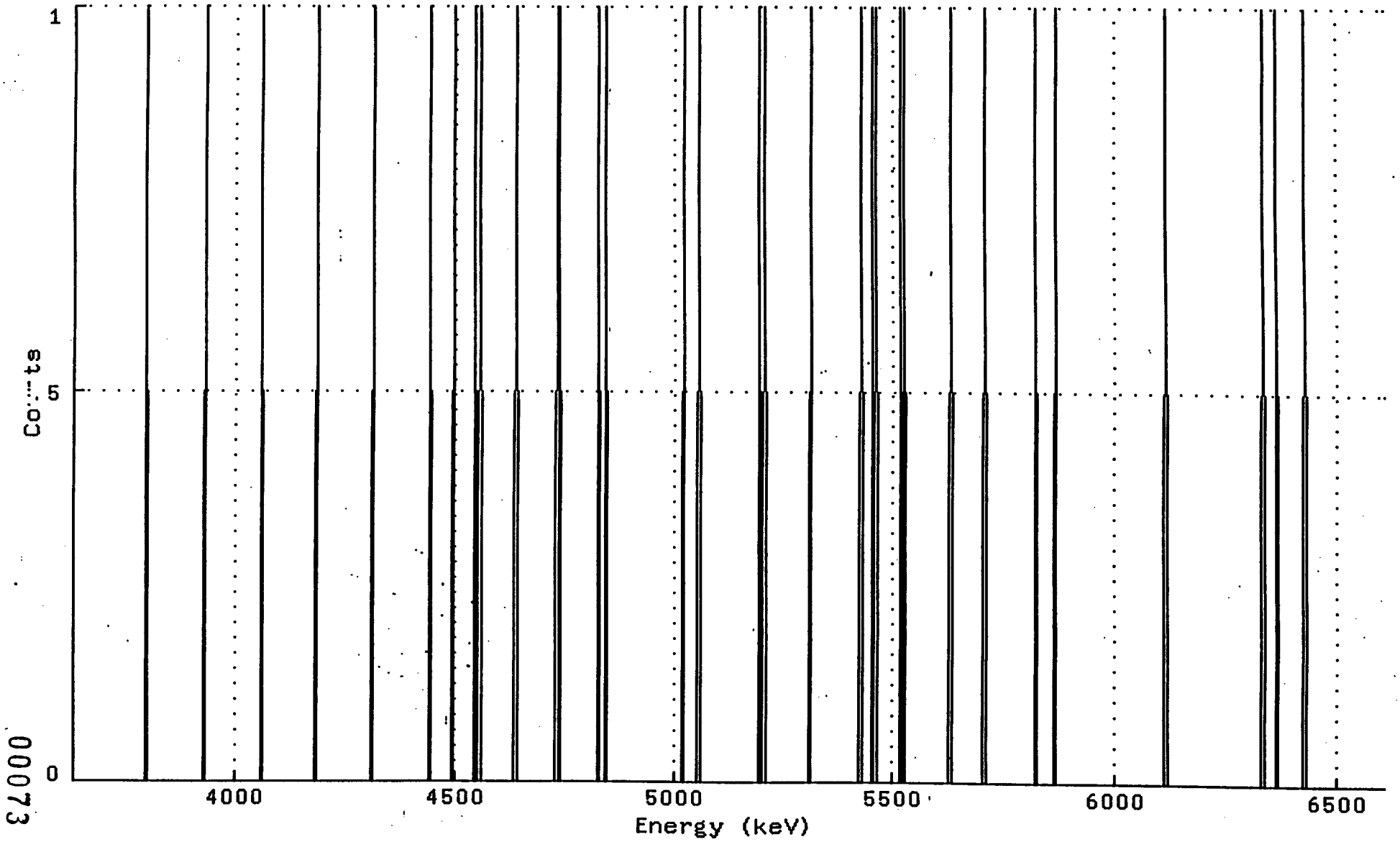
NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	0.77	3.91	100.0	2.173E-02	1.396E-01	3.920E-0
RN-222	5490.0	9.51	1.02	99.9	2.680E-01	2.003E-01	2.440E-01
RA-226	4785.0	11.37	0.34	100.0	3.198E-01	2.102E-01	1.785E-01

Analyst _____ Date 11/2/98

Reviewer _____ Date 11/3/98

00072

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_[redacted]0172A-RA$03_RA.CNF;1
Title : 019
Sample Title: WGSB1-7
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.62045E+03
Real Time : 0 02:49:44.99 Sample ID : 03 Energy Slope : 2.54691E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 3.55418E-04



00073

Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$03_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	1	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	1	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	1
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	1	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	1	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	1	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	1
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	1	0	0	0	1	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	1	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	1	0	1	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	1	0	0	0
449:	0	0	1	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	1
513:	0	0	0	0	0	0	0	0
521:	0	0	0	1	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	1	0	0	0	1	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	1	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	1	0	0	0	0	0	0	0
657:	0	1	0	1	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	1	0
681:	0	1	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	1	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	1	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	1	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	1	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	1
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	1	0	0	0	0
945:	0	0	0	0	0	1	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	1	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:39:26.19

Detector ID: 19 Acquisition Start: 2-NOV-1998 09:01:48.03
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 03
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4544.23	10	0588.34	346.00		214	236	9.82E-04	31.6	
2	0	5345.46	9	0404.96	623.11		513	172	8.84E-04	33.3	
3	0	5752.91	4	0198.66	757.25		702	149	3.93E-04	50.0	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:39:34.89

Acquisition Start: 30-OCT-1998 17:27:36.03
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4503.81	2	0 12.73	331.50		214	236	3.34E-05	70.7	
2	0	5272.09	6	0338.74	598.50		513	172	1.00E-04	40.8	
3	0	5810.88	23	0122.25	776.00		702	149	3.84E-04	20.9	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:39:36.38

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4544.23*	11	0588.34	346.00		214	236	1.12E-03	32.6	
2	0	5345.46*	10	0404.96	623.11		513	172	9.34E-04	37.2	
3	0	5752.91*	1	0198.66	757.25		702	149	7.58E-05	321.1	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:39:38

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB1-7		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 2-NOV-1998 09:0[redacted]8
Sample ID	: 03	Sample quantity	: 0.50200 gram
Sample type	: RA	Sample geometry	:
Detector name	: 019	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4544.23*	11588.34	346.00	214	236	65.3			RA-226	0.286
0	5345.46*	10404.96	623.11	513	172	74.3			RN-222	0.240
0	5752.91*	1198.66	757.25	702	149	642.1			PO-218	1.945E-02

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:40:30

****

Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$04_RA.CNF

****

BATCH ID:	9810172A-RA	SAMPLE ID:	04
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT: 5.116E-01	gram
SAMPLE TITLE:	WGSB1-7	DETECTOR NUMBER:	020
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	21.4%
ELAPSED LIVE TIME:	10186.	RECOVERY:	88.80%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_020_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.19

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	3.76	3.40	100.0	1.025E-01	1.648E-01	3.660E-01
RN-222	5490.0	-1.02	2.21	99.9	-2.773E-02	7.321E-02	3.123E-01
RA-226	4785.0	7.33	1.02	100.0	1.998E-01	1.742E-01	2.402E-01

****

Ashu Sagar
Analyst

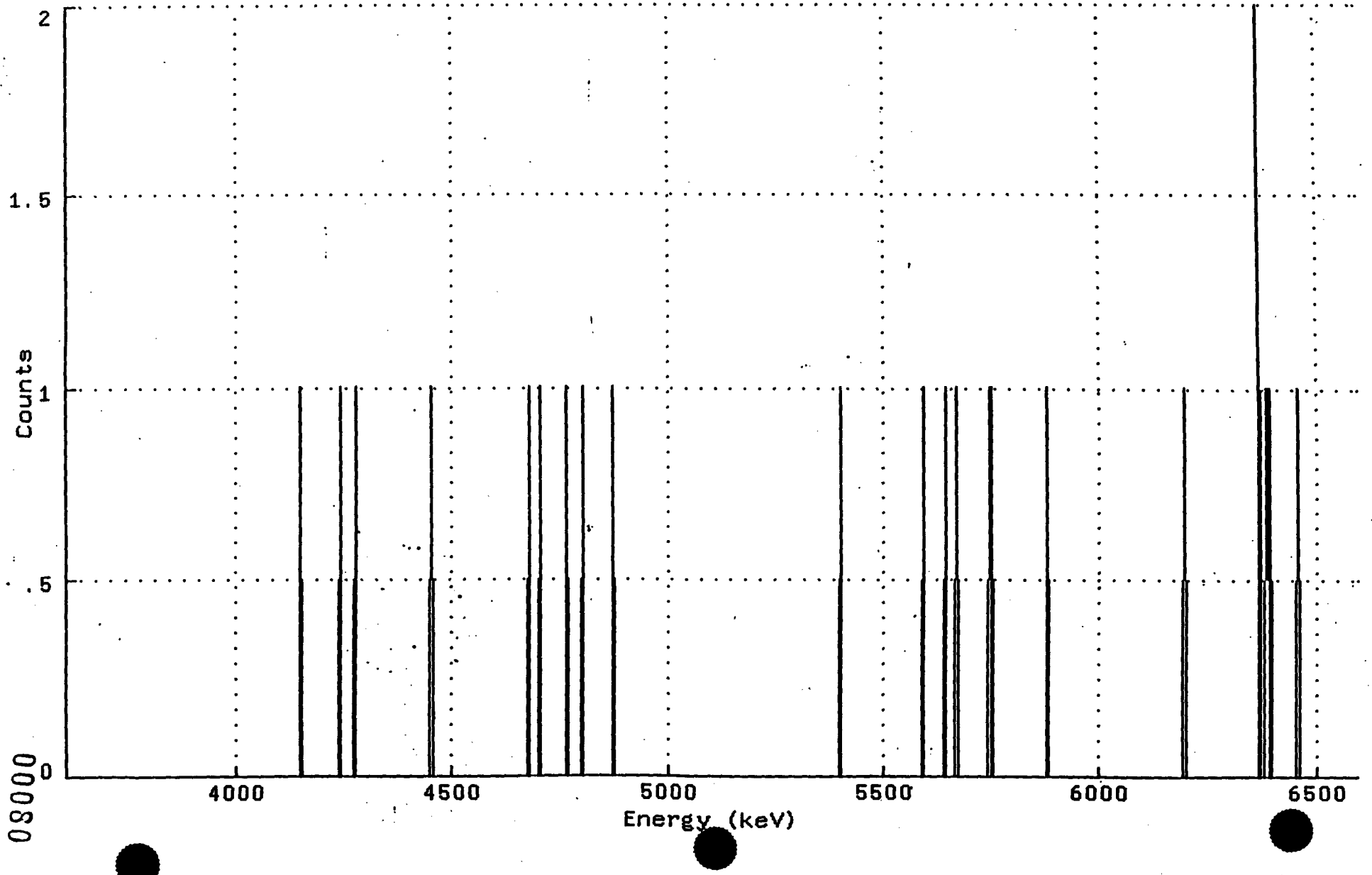
11-2-98
Date

Alan Brezley
Reviewer

11/3/98
Date

00079

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810172A-RA$04_RA.CNF;1
Title : 020
Sample Title: WGSB1-7
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.60048E+03
Real Time : 0 02:49:44.99 Sample ID : 04 Energy Slope : 2.66540E+00
Live Time : 0 02:49:45.99 Sample Type: RA Energy Quad : 2.49072E-04



08000

Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$04_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	1	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	1	0	0	0	0
241:	0	0	0	0	0	0	0	1
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	1	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	1	0	0
393:	0	0	0	0	0	0	1	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	1	0	0	0
425:	0	0	0	0	0	0	0	0

433:	1	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	1	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	1	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	1	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	1	0	0
721:	0	0	0	0	0	0	1	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	1
753:	0	1	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	1	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	1	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	2	0	0	0	0	1	1	0
961:	1	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	1	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:40:11.00

Detector ID: 20
Live Time: 0 02:49:45.99
Batch Id: 9810172A-RA
Sample Type: RA

Acquisition Start: 2-NOV-1998 09:01:48
Real Time: 0 02:49:45.99
Sample Id: 04

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.02	7	0	527.75	348.29	214	232	6.87E-04	37.8	
2	0	5399.41	1	0	2.67	637.00	508	173	9.82E-05	100.0	
3	0	5713.32	6	0	255.88	741.33	699	151	5.32E-04	40.8	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:40:23.10

Live Time: 0 16:38:32.99

Acquisition Start: 30-OCT-1998 17:27:36.04
Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4505.78	6	0	277.20	329.50	214	232	1.00E-04	40.8	
2	0	5271.61	13	0	2.67	594.00	508	173	2.17E-04	27.7	
3	0	5812.72	20	0	21.21	774.00	699	151	3.34E-04	22.4	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:40:24

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.02*	7	0	527.75	348.29	214	232	7.20E-04	43.4	
2	0	5399.41*	-1	0	2.67	637.00	508	173	-9.98E-05	131.9	
3	0	5713.32*	4	0	255.88	741.33	699	151	3.69E-04	80.3	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:40:26

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB1-7		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 2-NOV-1998 09:01:48
Sample ID	: 04	Sample quantity	: 51160 gram
Sample type	: RA	Sample geometry	:
Detector name	: 020	Detector geometry	:
Elapsed live time	: 0 02:49:45.99	Elapsed real time	: 0 02:49:44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4559.02*	7527.75	348.29		214	232	86.9		RA-226	0.177
0	5399.41*	-1 2.67	637.00		508	173263	9.9		RN-222	-2.462E-02
0	5713.32*	4255.88	741.33		699	151160	7.7		PO-218	9.100E-02

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ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:43:13

Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$05_RA.CNF

BATCH ID:	9810172A-RA	SAMPLE ID:	05
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT:	5.0 E-01 gram
SAMPLE TITLE:	WGSB1-12	DETECTOR NUMBER:	021
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY	19.8%
ELAPSED LIVE TIME:	10185.	RECOVERY:	97.20%
TRACER ID:	NONE	TRACER FWHM (kev)	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_021_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.21

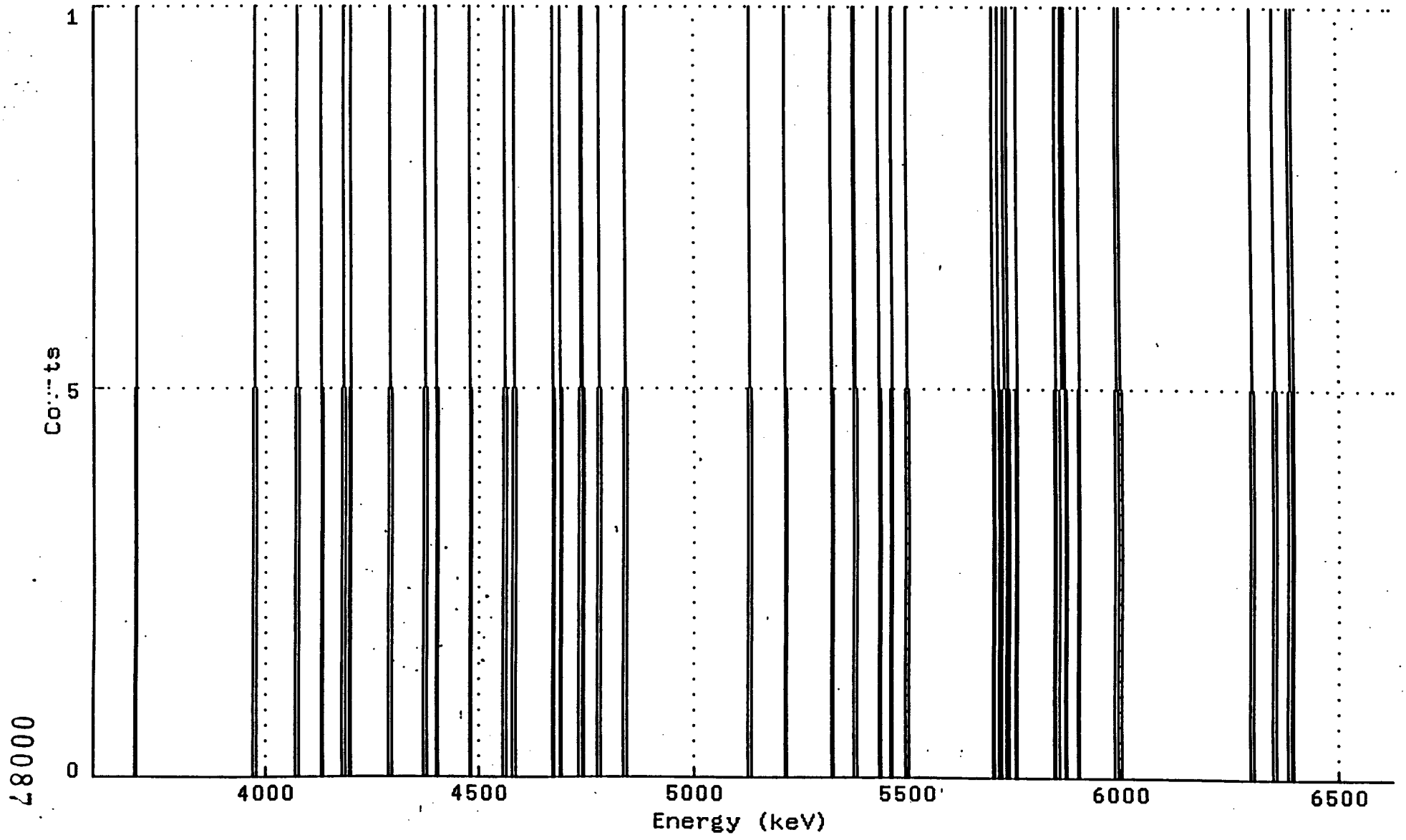
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	10.03	4.59	100.0	2.750E-01	2.374E-01	4.202E-0
RN-222	5490.0	6.86	2.89	99.9	1.881E-01	1.935E-01	3.522E-01
RA-226	4785.0	15.19	1.87	100.0	4.163E-01	2.539E-01	3.007E-01

Analyst _____ Date 11-2-98

Reviewer _____ Date 11/3/98

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810172A-RA$05_RA.CNF;1
Title : 021
Sample Title: WGSB1-12
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.58948E+03
Real Time : 0 02:49:44.99 Sample ID : 05 Energy Slope : 2.64760E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 3.06675E-04



Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$05_RA

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	1
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	1	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	1	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	[redacted]
201:	0	0	0	0	0	0	0	[redacted]
209:	0	0	0	0	0	0	0	0
217:	0	1	0	0	0	0	0	1
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	1	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	1	0	0
289:	0	0	0	0	0	0	0	1
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	1	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	1	1
353:	0	0	0	0	0	0	1	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	1	0
393:	0	0	0	0	1	0	0	[redacted]
401:	0	0	0	0	0	0	0	[redacted]
409:	0	0	0	0	1	0	1	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	1	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	1	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	1	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	1	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	1	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	1	1	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	1
649:	0	0	0	0	0	0	0	0
657:	1	0	0	0	0	0	0	0
665:	0	0	0	0	1	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	1	0	0
737:	0	1	0	0	0	1	0	0
745:	1	0	0	0	0	0	1	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	1	0	0	0	0
785:	1	1	0	1	0	0	0	0
793:	0	0	0	0	0	1	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	1	0	0	1	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	1	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	1	0	0	0	0
945:	0	0	0	0	0	0	1	0
953:	1	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

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Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:42:53.21

Detector ID: 21 Acquisition Start: 2-NOV-1998 09:01:48.05
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 05
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4514.92	14	0	0.00	336.43	218	231	1.37E-03	26.7	
2	0	5350.39	8	0	325.66	620.50	510	170	7.85E-04	35.4	
3	0	5826.09	12	0	254.17	775.17	697	148	1.18E-03	28.9	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:43:06.32

Acquisition Start: 30-OCT-1998 17:27:36.05
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4505.14	11	0	550.70	333.00	218	231	1.84E-04	30.2	
2	0	5271.87	17	0	3.89	594.50	510	170	2.84E-04	24.3	
3	0	5811.52	27	0	123.11	770.50	697	148	4.51E-04	19.2	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:43:07.71

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4514.92*	15	0	0.00	336.43	218	231	1.49E-03	30.2	
2	0	5350.39*	7	0	325.66	620.50	510	170	6.74E-04	51.3	
3	0	5826.09*	10	0	254.17	775.17	697	148	9.85E-04	43.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:43:10

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB1-12		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 2-NOV-1998 09:01
Sample ID	: 05	Sample quantity	: 0.50310 gram
Sample type	: RA	Sample geometry	:
Detector name	: 021	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:54.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4514.92*	15	0.00	336.43	218	231	60.5		RA-226	0.405
0	5350.39*	7325.66		620.50	510	170	102.6		RN-222	0.183
0	5826.09*	10254.17		775.17	697	148	86.0		PO-218	0.267

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:43:57

****

Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$06_RA.CNF

****

BATCH ID:	9810172A-RA	SAMPLE ID:	06
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT: 5.638E-01	gram
SAMPLE TITLE:	WGSB1-20	DETECTOR NUMBER:	022
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	20.6%
ELAPSED LIVE TIME:	10186.	RECOVERY:	97.50%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_022_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.18

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
-218	6003.0	6.22	3.23	100.0	1.457E-01	1.608E-01	3.059E-01
RN-222	5490.0	9.94	3.06	99.9	2.329E-01	1.876E-01	2.999E-01
RA-226	4785.0	6.56	2.89	100.0	1.537E-01	1.604E-01	2.933E-01

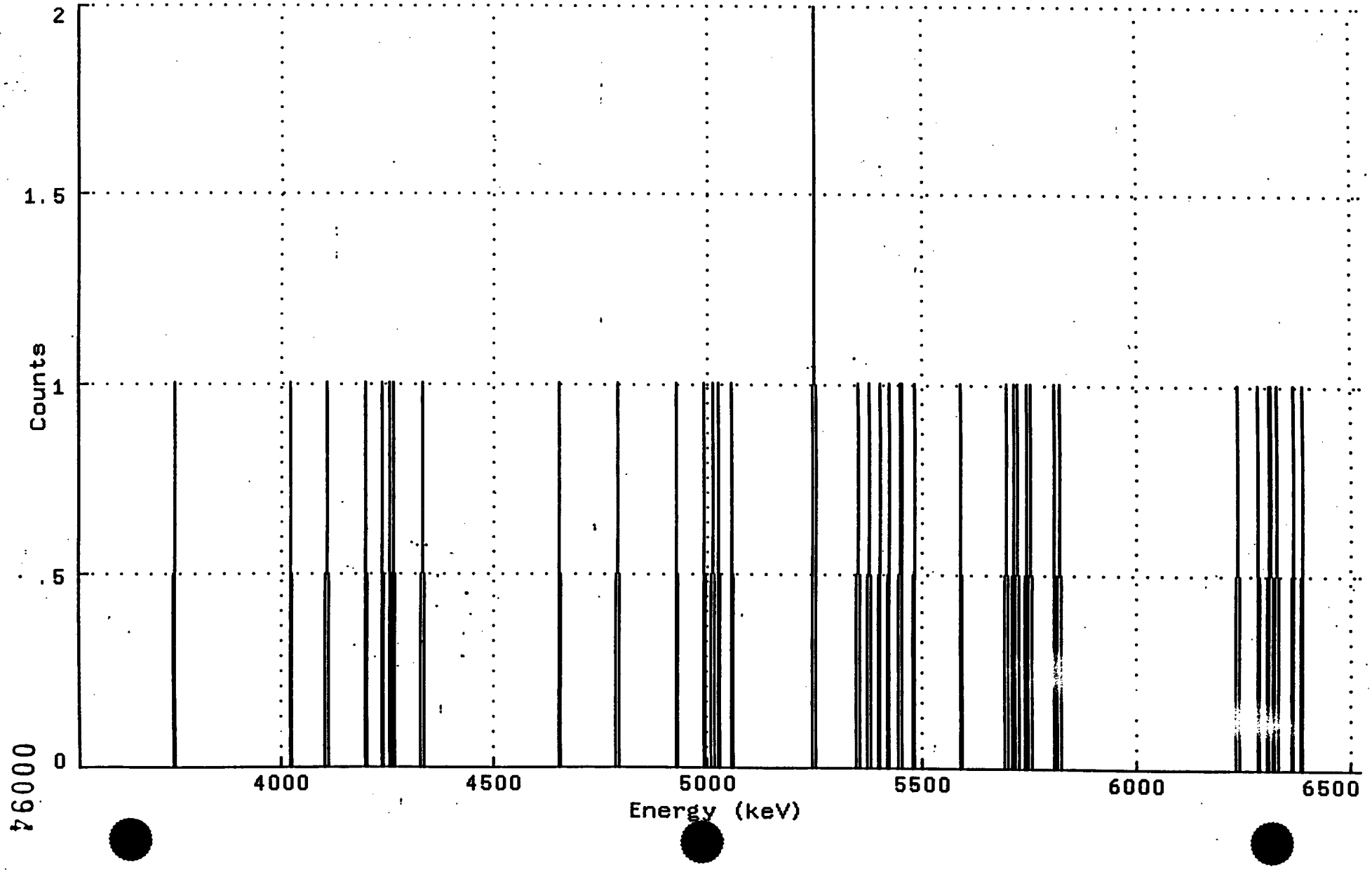
****

Analyst _____ Date 11-2-98

Reviewer _____ Date 11/3/98

00093

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810172A-RA$06_RA.CNF;1
Title : 022
Sample Title: WGSB1-20
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.51859E+03
Real Time : 0 02:49:44.99 Sample ID : 06 Energy Slope : 2.72955E+00
Live Time : 0 02:49:45.99 Sample Type: RA Energy Quad : 1.92197E-04



Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$06_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	1	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	1	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	1	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	1	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	1	0	0	0	0	0
265:	1	0	0	1	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	1	1	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	1	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	1	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	1	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	1
521:	0	0	0	0	0	0	1	0
529:	0	0	0	1	0	0	0	0
537:	0	0	0	0	0	1	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	2	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	1	0	0	0	0	0	0	0
649:	0	1	0	0	0	0	0	0
657:	0	1	0	0	0	0	0	0
665:	1	0	0	0	0	0	0	0
673:	0	1	1	0	0	0	0	0
681:	0	0	0	0	1	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	1	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	1	0	0	0
761:	0	1	0	0	1	0	0	0
769:	0	0	0	1	0	0	1	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	1	0	0	0	1	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	1	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	1	0	0	0
953:	0	0	0	1	0	1	0	0
961:	0	1	0	0	0	0	0	0
969:	0	0	0	0	0	1	0	0
977:	0	0	0	0	1	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:43:39.57

Detector ID: 22 Acquisition Start: 2-NOV-1998 09:01:48.06
Live Time: 0 02:49:45.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 06
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4381.44	8	0	5.02	309.38	239	229	7.85E-04	35.4	
2	0	5316.11	11	0	2.73	630.55	530	173	1.08E-03	30.2	
3	0	5728.62	8	0	210.18	768.13	720	152	7.85E-04	35.4	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:43:50.33

Acquisition Start: 30-OCT-1998 17:27:36.06
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.07	17	0	2.73	353.00	239	229	2.84E-04	24.3	
2	0	5272.92	18	0	2.73	616.00	530	173	3.00E-04	23.6	
3	0	5811.57	19	0	382.14	795.50	720	152	3.17E-04	22.9	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:43:51.69

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4381.44*	7	0	5.02	309.38	239	229	6.44E-04	52.0	
2	0	5316.11*	10	0	2.73	630.55	530	173	9.76E-04	40.1	
3	0	5728.62*	6	0	210.18	768.13	720	152	6.11E-04	55.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:43:54

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB1-20		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 2-NOV-1998 09:01:[illegible]
Sample ID	: 06	Sample quantity	: 0.56380 gram
Sample type	: RA	Sample geometry	:
Detector name	: 022	Detector geometry	:
Elapsed live time	: 0 02:49:45.99	Elapsed real time	: 0 02:49:[illegible]4.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4381.44*	7565.02	309.38		239	229104.1			RA-226	0.150
0	5316.11*	10 2.73	630.55		530	173	80.2		RN-222	0.227
0	5728.62*	6210.18	768.13		720	152110.0			PO-218	0.142

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:44:36

****

Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$07_RA.CNF

****

BATCH ID:	9810172A-RA	SAMPLE ID:	07
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT: 5.036E-01	gram
SAMPLE TITLE:	WGSB1-30	DETECTOR NUMBER:	023
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	19.8%
ELAPSED LIVE TIME:	10185.	RECOVERY:	100.00%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_023_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.21

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	4.45	4.08	100.0	1.184E-01	1.774E-01	3.894E-01
RN-222	5490.0	2.52	3.57	99.9	6.715E-02	1.510E-01	3.701E-01
RA-226	4785.0	4.73	1.36	100.0	1.259E-01	1.476E-01	2.616E-01

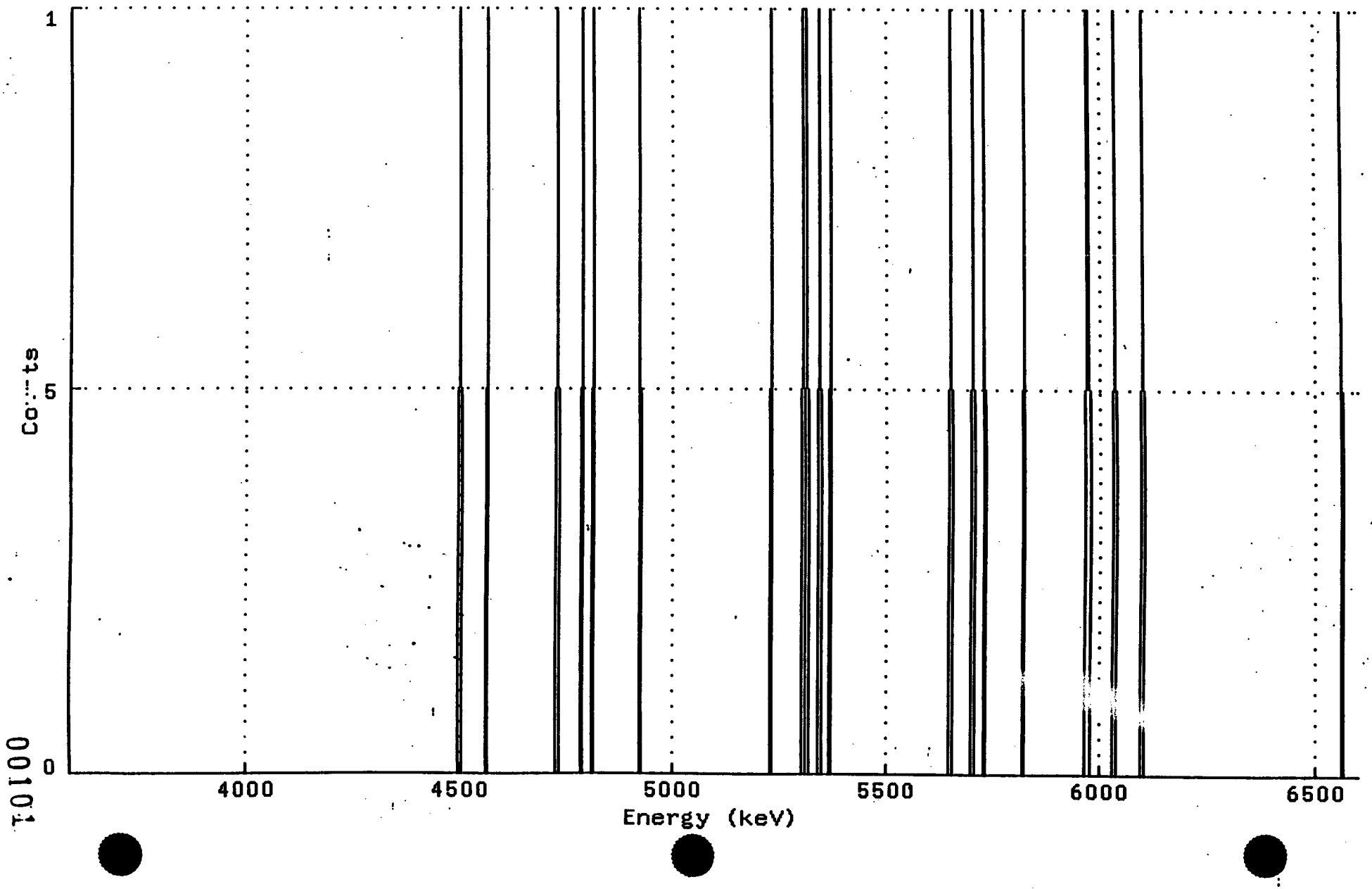
****

Analyst _____ Date 11/2/98

Reviewer _____ Date 11/3/98

00100

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810172A-RA$07_RA.CNF;1
Title : 023
Sample Title: WGSB1-30
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.57792E+03
Real Time : 0 02:49:44.99 Sample ID : 07 Energy Slope : 2.76514E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 1.76774E-04



Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$07_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	1	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	1	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	1	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	1	0	0	0	0	0	0	0

433:	0	1	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	1
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	1
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	1	0	0	1	0	0	0	0
609:	0	0	0	0	0	1	0	0
617:	0	0	0	0	0	1	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	1	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	1	0	0	0
737:	0	0	0	0	0	1	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	1	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	1	1	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	1	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	1	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	1	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:44:12.41

Detector ID: 23 Acquisition Start: 2-NOV-1998 09:01:48
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 07
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4676.25	5		0301.40	387.60	215	228	4.91E-04	44.7	
2	0	5310.77	5		0129.96	603.40	505	172	4.91E-04	44.7	
3	0	5837.07	7		0351.17	778.29	695	152	6.87E-04	37.8	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:44:28.71

Acquisition Start: 30-OCT-1998 17:27:36.07
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4505.35	8		0591.74	328.50	215	228	1.34E-04	35.4	
2	0	5272.38	21		0453.48	590.50	505	172	3.51E-04	21.8	
3	0	5813.41	24		0 0.00	770.50	695	152	4.01E-04	20.4	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:44:30.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4676.25*	5		0301.40	387.60	215	228	4.65E-04	58.5	
2	0	5310.77*	3		0129.96	603.40	505	172	2.48E-04	112.3	
3	0	5837.07*	4		0351.17	778.29	695	152	4.37E-04	74.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:44:32

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB1-30		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 2-NOV-1998 09:01:48
Sample ID	: 07	Sample quantity	: 0.50360 gram
Sample type	: RA	Sample geometry	:
Detector name	: 023	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4676.25*	5301.40	387.60		215	228116.9			RA-226	0.126
0	5310.77*	3129.96	603.40		505	172224.6			RN-222	6.715E-02
0	5837.07*	4351.17	778.29		695	152149.6			PO-218	0.118

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:45:12

Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$08_RA.CNF

BATCH ID:	9810172A-RA	SAMPLE ID:	08
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT:	5.254E- gram
SAMPLE TITLE:	WGSB1-40	DETECTOR NUMBER:	024
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	19.7%
ELAPSED LIVE TIME:	10185.	RECOVERY:	95.30%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_024_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.29

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	6.01	5.61	100.0	1.619E-01	2.155E-01	4.766E-0
RN-222	5490.0	-0.48	3.06	99.9	-1.284E-02	1.058E-01	3.768E-01
RA-226	4785.0	2.34	1.53	100.0	6.312E-02	1.236E-01	2.938E-01

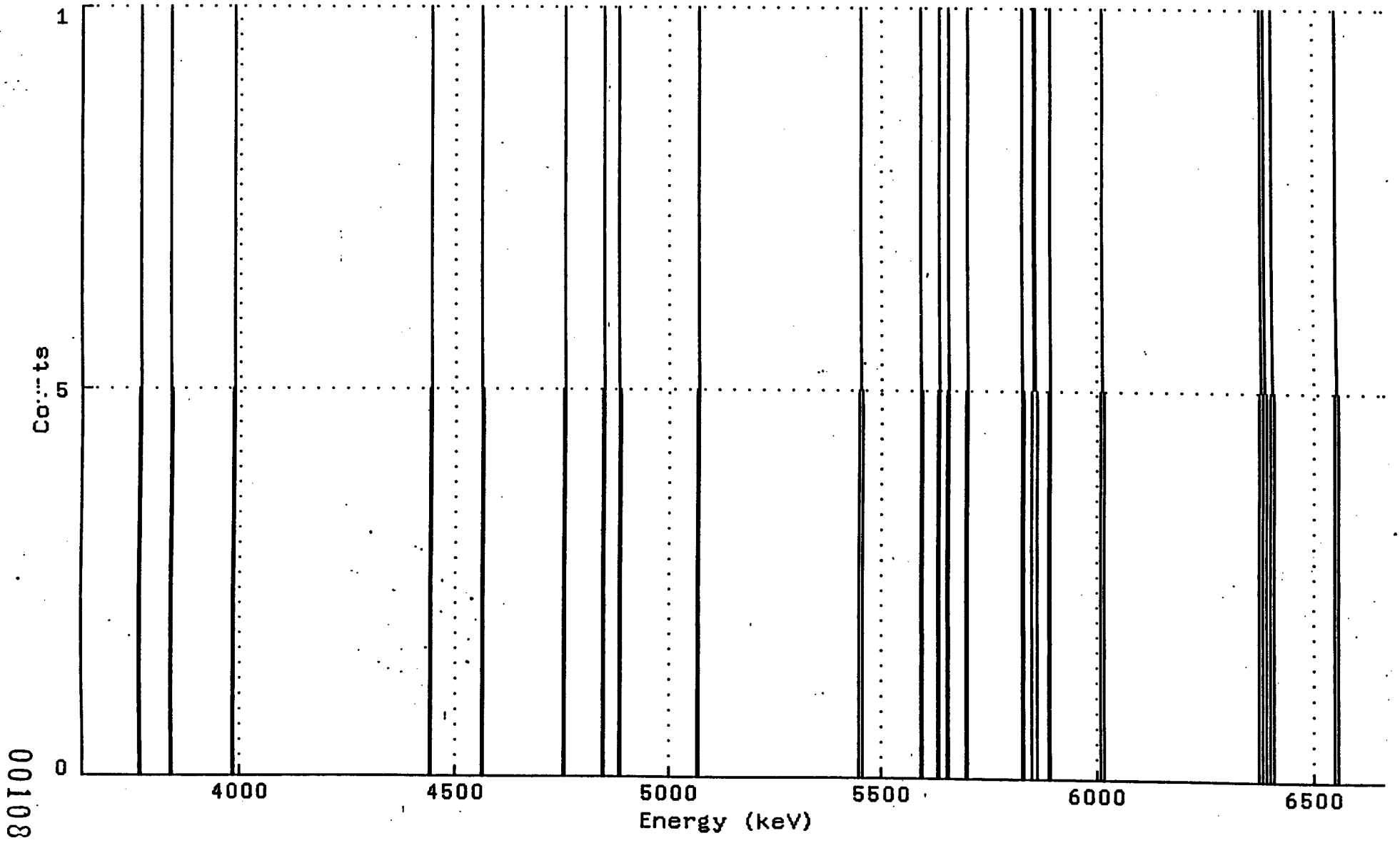
Ashi Sqn
Analyst

11-2-98
Date

Alan Gregory
Reviewer

11/3/98
Date

Spectru[redacted] : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_[redacted]10172A-RA$08_RA.CNF;1
Title : 024
Sample Title: WGSB1-40
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.61690E+03
Real Time : 0 02:49:44.99 Sample ID : 08 Energy Slope : 2.62657E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 3.32604E-04



Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$08_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	1	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	1	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	1	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	1	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	1	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	1	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	1	0	0	0	0	0
449:	0	0	0	0	0	0	0	1
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	1	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	1	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	1	0	0	0	0	0
697:	0	0	0	0	0	0	0	1
705:	0	0	0	0	0	0	1	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	1	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	1	0	0
769:	0	0	0	0	0	1	1	0
777:	0	0	0	0	0	0	0	0
785:	0	1	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	1	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	1	0	0	1	0	0	0
945:	0	1	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:44:53.4

Detector ID: 24 Acquisition Start: 2-NOV-1998 09:01:48.08
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 08
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4586.48	3	0288.92	353.33	210	231	2.95E-04	57.7		
2	0	5256.72	2	0336.20	581.50	502	170	1.96E-04	70.7		
3	0	5776.35	9	0354.59	750.78	689	147	8.84E-04	33.3		

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:45:05.19

Acquisition Start: 30-OCT-1998 17:27:36.08
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4505.67	9	0493.80	325.00	210	231	1.50E-04	33.3		
2	0	5271.79	18	0111.63	586.50	502	170	3.00E-04	23.6		
3	0	5811.47	33	0143.15	762.00	689	147	5.51E-04	17.4		

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:45:06.64

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4586.48*	2	0288.92	353.33	210	231	2.30E-04	97.9		
2	0	5256.72*	0	0336.20	581.50	502	170	-4.68E-05	411.9		
3	0	5776.35*	6	0354.59	750.78	689	147	5.91E-04	66.4		

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:45:09

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.		
Sample title	: WGSB1-40		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 2-NOV 998 09:01
Sample ID	: 08	Sample quantity	: 0.525 gram
Sample type	: RA	Sample geometry	:
Detector name	: 024	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02: :44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 0
Errors propagated	: Yes	Systematic Error	: 00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4586.48*	2288.92	353.33		210	231195.7			RA-226	6.015E-02
0	5256.72*	0336.20	581.50		502	170823.9			RN-222	-1.224E-02
0	5776.35*	6354.59	750.78		689	147132.9			PO-218	0.154

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ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:45:59

****

Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$09_RA.CNF

****

BATCH ID:	9810172A-RA	SAMPLE ID:	09
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT: 5.075E-01	gram
SAMPLE TITLE:	WGSB2-7	DETECTOR NUMBER:	025
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	18.3%
ELAPSED LIVE TIME:	10185.	RECOVERY:	76.50%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_025_30OCT98	BKG ELAPSED TIME:	59914.
		SAF:	1.14

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
-218	6003.0	0.82	4.93	100.0	3.060E-02	2.038E-01	5.546E-01
RN-222	5490.0	3.37	2.38	99.9	1.259E-01	1.980E-01	4.208E-01
RA-226	4785.0	16.36	2.04	100.0	6.105E-01	3.485E-01	3.978E-01

****

Analyst

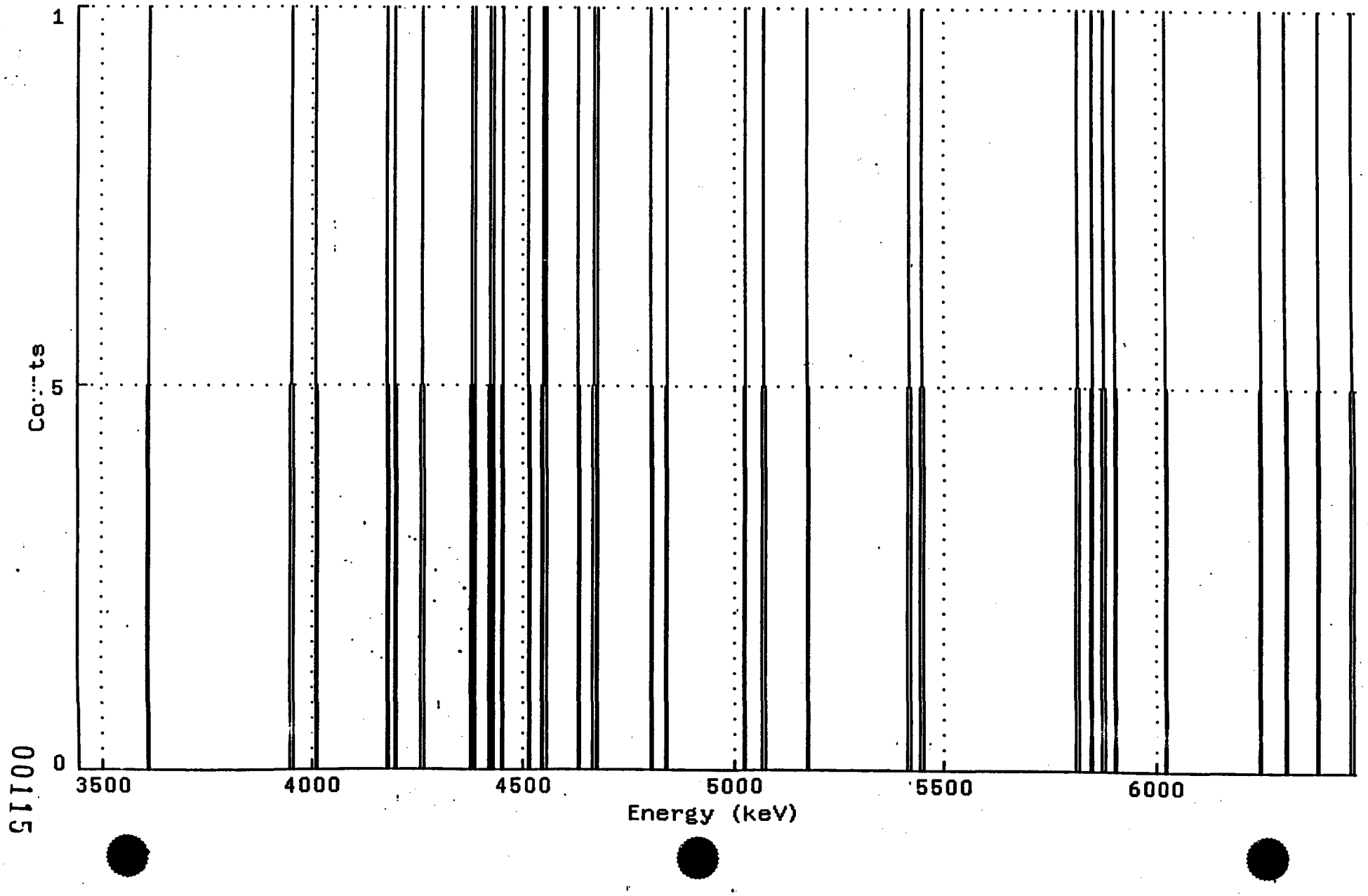
11-2-98
Date

Reviewer

11/3/98
Date

00114

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810172A-RA$09_RA.CNF;1
Title : 025
Sample Title: WGSB2-7
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.43345E+03
Real Time : 0 02:49:44.99 Sample ID : 09 Energy Slope : 2.78750E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 1.68151E-04



Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$09_RA

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	1	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	1
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	1	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	1	0
265:	0	0	0	0	1	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	1	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	1	0	0	1	0	0
337:	0	0	0	0	0	0	0	0
345:	0	1	0	0	1	0	0	0
353:	0	0	0	1	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	1	0	0	0	0	0	0
385:	0	0	0	0	1	0	1	1
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	1	0	0	0	0	0	0
425:	0	0	0	0	0	0	1	0

433:	1	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	1	0	0	0
481:	0	0	0	0	0	0	0	0
489:	1	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	1
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	1	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	1	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	1	0	0	0	0	0	0
689:	0	0	0	1	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	1	0	0	0
817:	0	0	0	0	0	0	0	1
825:	0	0	0	0	0	0	0	0
833:	1	0	0	0	0	0	0	0
841:	0	1	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	1	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	1	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	1	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	1	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	1	0	0	0

Thermo NUtech
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Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:45:29.13

Detector ID: 25 Acquisition Start: 2-NOV-1998 09:01:48
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 09
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4515.89	16	0	0.00	379.63	264	226	1.57E-03	5.0	
2	0	5223.34	5	0393.04		619.00	551	170	4.91E-04	4.7	
3	0	5889.30	5	0192.34		838.60	739	151	4.91E-04	4.7	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:45:52.41

Acquisition Start: 30-OCT-1998 17:27:36.09
Live Time: 0 16:38:34.00 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.78	12	0	2.79	376.50	264	226	2.00E-04	28.9	
2	0	5272.82	14	0	4.09	635.50	551	170	2.34E-04	26.7	
3	0	5813.89	29	0248.09		814.00	739	151	4.84E-04	18.6	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:45:53.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4515.89*	16	0	0.00	379.63	264	226	1.61E-03	28.3	
2	0	5223.34*	3	0393.04		619.00	551	170	3.31E-04	78.6	
3	0	5889.30*	1	0192.34		838.60	739	151	8.05E-05	333.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:45:56

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB2-7		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 2-NOV-1998 09:01:48
Sample ID	: 09	Sample quantity	: 0.50750 gram
Sample type	: RA	Sample geometry	:
Detector name	: 025	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:44.99 0.0
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4515.89*	16	0.00	379.63	264	226	56.7		RA-226	0.467
0	5223.34*	3393.04		619.00	551	170157.2			RN-222	9.628E-02
0	5889.30*	1192.34		838.60	739	151665.9			PO-218	2.341E-02

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:46:34

Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$10_RA.CNF

BATCH ID:	9810172A-RA	SAMPLE ID:	10
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT:	5.052E-01 gram
SAMPLE TITLE:	WGSB2-10	DETECTOR NUMBER:	026
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	17.6%
ELAPSED LIVE TIME:	10185.	RECOVERY:	90.80%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_026_30OCT98	BKG ELAPSED TIME:	59914.
		SAF:	1.21

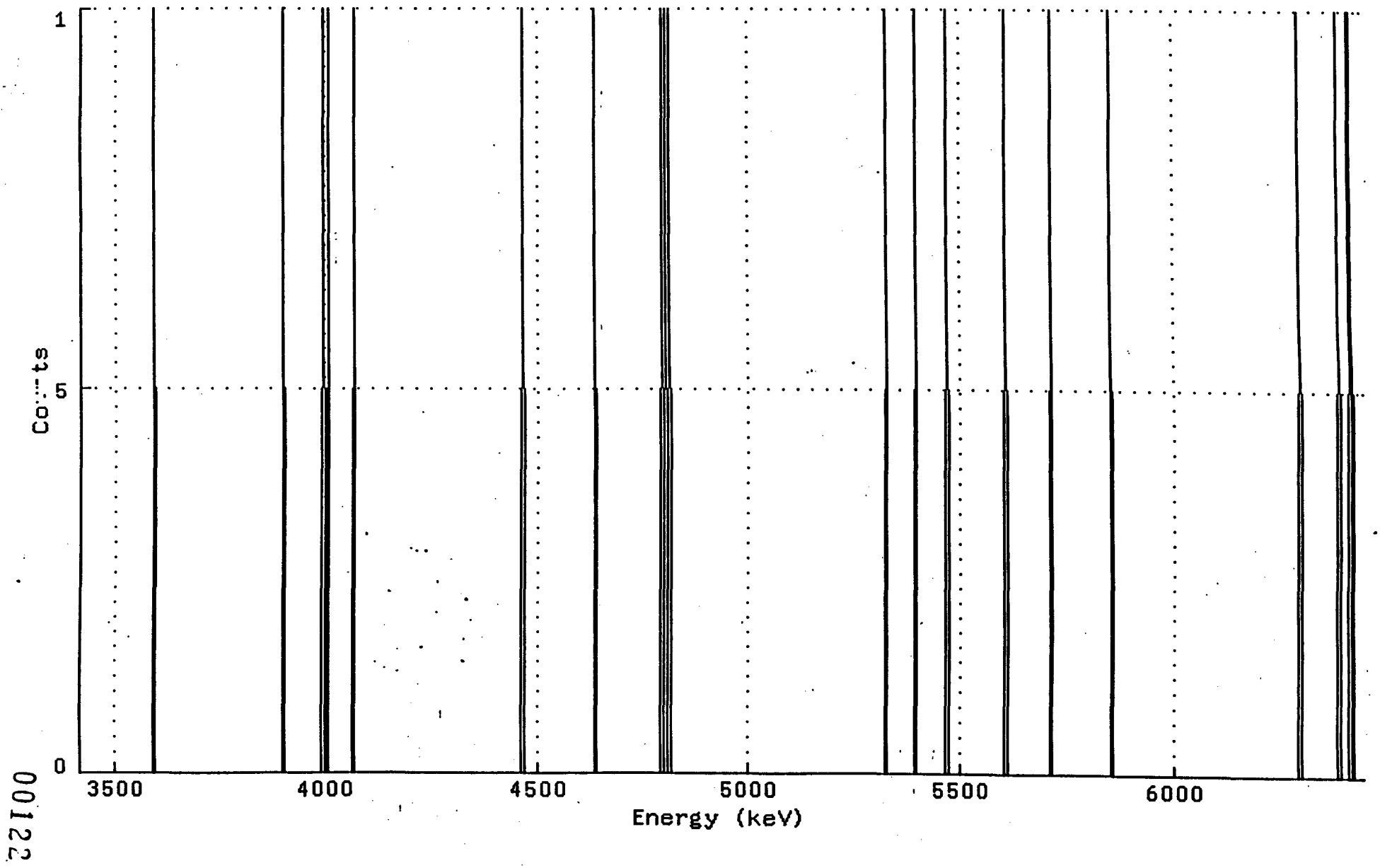
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	-0.25	3.91	100.0	-8.354E-03	1.490E-01	4.742E-01
RN-222	5490.0	1.11	2.55	99.9	3.644E-02	1.457E-01	4.040E-01
RA-226	4785.0	3.03	3.06	100.0	9.985E-02	1.858E-01	4.319E-01

Analyst _____ Date 11-2-98

Reviewer _____ Date 11/3/98

Spectru[redacted] : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_[redacted]0172A-RA$10_RA.CNF;1
Title : 026
Sample Title: WGSB2-10
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.41144E+03
Real Time : 0 02:49:44.99 Sample ID : 10 Energy Slope : 2.79687E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 1.55100E-04



00122

Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$10_RA

Channel

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	1	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	1	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	[redacted]
201:	0	0	0	0	0	1	0	0
209:	0	1	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	1	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	1	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	[redacted]
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	1	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	1	0	0	1	0	0	1	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	1	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	1	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	1	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	1	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	1	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	1	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	1	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	1	0	0
1009:	0	0	0	0	0	1	0	1
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:46:17.21

Detector ID: 26 Acquisition Start: 2-NOV-1998 09:01:48.10
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 10
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4700.26	5	0332.83	449.60	271	226		4.91E-04	44.7	
2	0	5393.05	3	0137.05	682.67	558	170		2.95E-04	57.7	
3	0	5722.83	3	0229.34	791.67	746	151		2.95E-04	57.7	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:46:27.29

Acquisition Start: 30-OCT-1998 17:27:36.10
Live Time: 0 16:38:34.00 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.85	18	0623.70	383.50	271	226		3.00E-04	23.6	
2	0	5272.45	15	0 2.80	642.50	558	170		2.50E-04	25.8	
3	0	5812.21	23	0285.28	821.00	746	151		3.84E-04	20.9	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:46:28.65

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4700.26*	3	0332.83	449.60	271	226		2.98E-04	92.9	
2	0	5393.05*	1	0137.05	682.67	558	170		1.09E-04	199.9	
3	0	5722.83*	0	0229.34	791.67	746	151		-2.49E-05	891.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:46:30

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB2-10		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 2-NOV-1998 09:01:18
Sample ID	: 10	Sample quantity	: 0.50520 gram
Sample type	: RA	Sample geometry	:
Detector name	: 026	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4700.26*	3332.83	449.60	271	226	185.8			RA-226	9.067E-02
0	5393.05*	1137.05	682.67	558	170	399.8			RN-222	3.309E-02
0	5722.83*	0229.34	791.67	746	151	*****			PO-218	-7.586E-03

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:47:09

****

Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$11_RA.CNF

****

BATCH ID:	9810172A-RA	SAMPLE ID:	11
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT: 5.008E-01	gram
SAMPLE TITLE:	WGSB2-20	DETECTOR NUMBER:	027
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	20.4%
ELAPSED LIVE TIME:	10185.	RECOVERY:	97.20%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE: 30-OCT-1998	12:54
BKG FILENAME:	B_027_30OCT98	BKG ELAPSED TIME:	59914.
		SAF:	1.29

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	1.73	7.31	100.0	4.618E-02	1.918E-01	5.257E-01
RN-222	5490.0	7.54	4.08	99.9	2.013E-01	2.119E-01	4.166E-01
RA-226	4785.0	14.31	1.19	100.0	3.816E-01	2.411E-01	2.677E-01

****

Ashu Sagar
Analyst

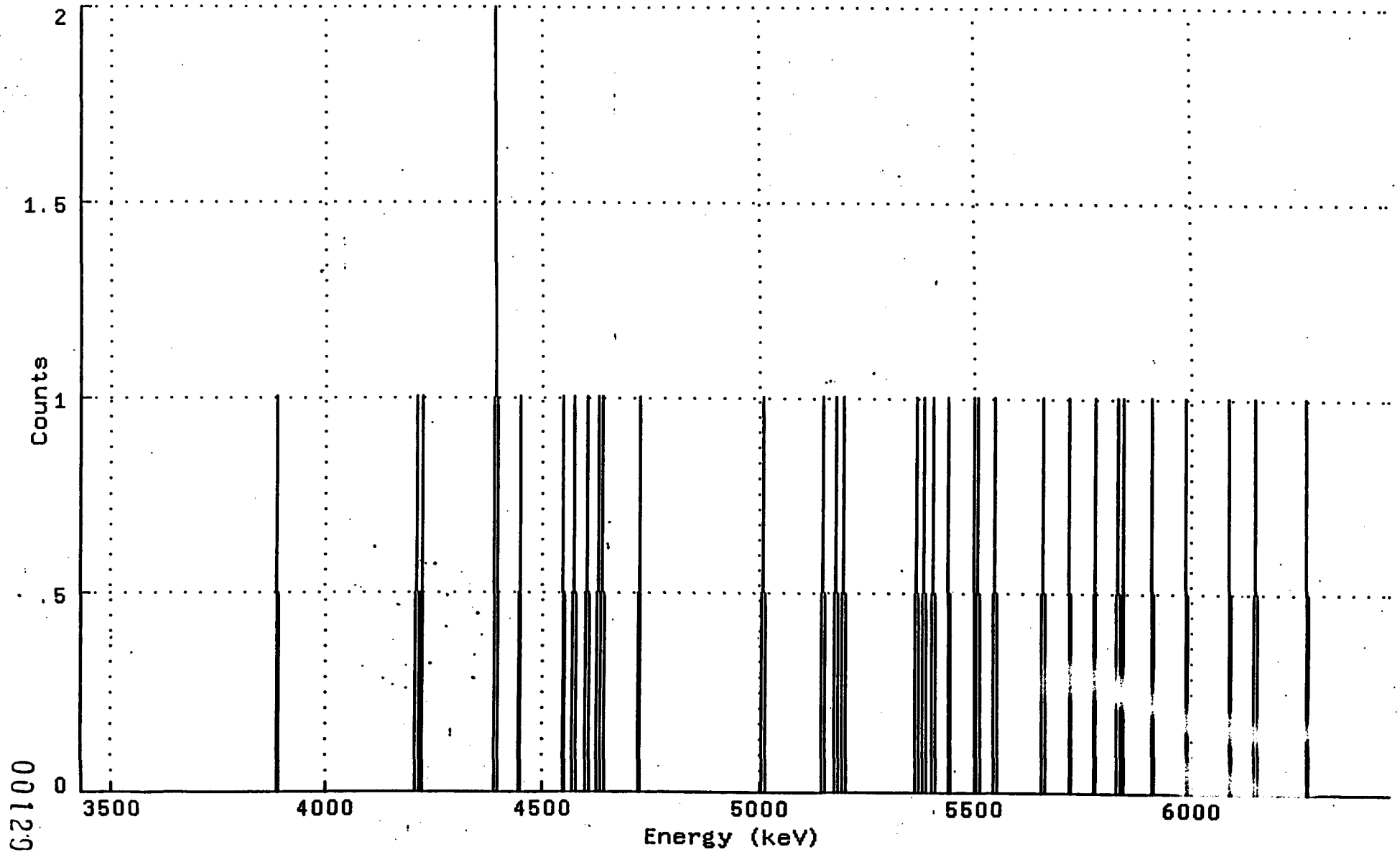
11-2-98
Date

Alan Bradley
Reviewer

11/3/98
Date

00128

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810172A-RA$11_RA.CNF;1
Title : 027
Sample Title: WGSB2-20
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.42406E+03
Real Time : 0 02:49:44.99 Sample ID : 11 Energy Slope : 2.76085E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 1.90019E-04



00120

Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$11_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	1	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	1	0
281:	0	0	1	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	2	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	1	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	1	0	0	0	0
401:	0	0	0	1	1	0	0	0
409:	0	0	0	0	0	0	1	0
417:	0	0	0	0	0	0	0	1
425:	0	0	1	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	1
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	[illegible]
481:	0	0	0	0	0	0	0	[illegible]
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	1	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	1	0
601:	0	0	0	0	0	0	0	0
609:	1	0	0	0	0	0	1	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	1	0
673:	0	0	0	0	1	0	0	[illegible]
681:	0	0	0	1	0	0	0	[illegible]
689:	0	0	0	0	0	0	0	1
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	1	0	1	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	1	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	1
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	1	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	1	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	1
825:	0	0	0	1	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	1	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	1	0	0	0	0	[illegible]
881:	0	0	0	0	0	0	0	[illegible]
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	1	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	1	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	1	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 2-NOV-199 12:46:52.33

Detector ID: 27 Acquisition Start: 2-NOV-199 09:01:48
Live Time: 0 02:49:44.99 Real Time: 0 02:49:4 99
Batch Id: 9810172A-RA Sample Id: 11
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/S	%Err	Fit
1	0	4494.33	12	0	2.76	377.83	270	226	1.18E 3	28.9	
2	0	5344.06	9	0331.30		665.00	557	170	8.84E 4	33.3	
3	0	5815.73	7	0298.17		820.00	744	151	6.87 04	37.8	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:47:02.01

Acquisition Start: 30-OCT-1998 17:27:36.11
Live Time: 0 16:38:34.00 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4507.89	7	0488.67		382.50	270	226	1.17E-04	37.8	
2	0	5273.34	24	0336.82		641.50	557	170	4.01E-04	20.4	
3	0	5812.65	43	0154.54		819.00	744	151	7.18E-04	15.2	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:47:03 8

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4494.33*	14	0	2.76	377.83	270	226	1.40E-03	31.4	
2	0	5344.06*	8	0331.30		665.00	557	170	7.41E-04	52.5	
3	0	5815.73*	2	0298.17		820.00	744	151	1.70E-04	207.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:47:05

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB2-20		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 2-NOV-1998 09:01:48
Sample ID	: 11	Sample quantity	: 0.50080 gram
Sample type	: RA	Sample geometry	:
Detector name	: 027	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4494.33*	14	2.76	377.83	270	226	62.9		RA-226	0.371
0	5344.06*	8331.30	665.00	557	170	105.1			RN-222	0.196
0	5815.73*	2298.17	820.00	744	151	415.2			PO-218	4.489E-02

Thermo NUtech
Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:47:39

****

Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$12_RA.CNF

****

BATCH ID:	9810172A-RA	SAMPLE ID:	12
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT:	5.200E-01 gram
SAMPLE TITLE:	WGSB2-30	DETECTOR NUMBER:	028
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	18.3%
ELAPSED LIVE TIME:	10185.	RECOVERY:	100.00%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_028_30OCT98	BKG ELAPSED TIME:	59914.
		SAF:	1.19

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	1.20	3.57	100.0	3.351E-02	1.398E-01	3.809E-0
RN-222	5490.0	5.12	3.23	99.9	1.427E-01	1.809E-01	3.669E-01
RA-226	4785.0	5.81	3.74	100.0	1.617E-01	1.934E-01	3.876E-01

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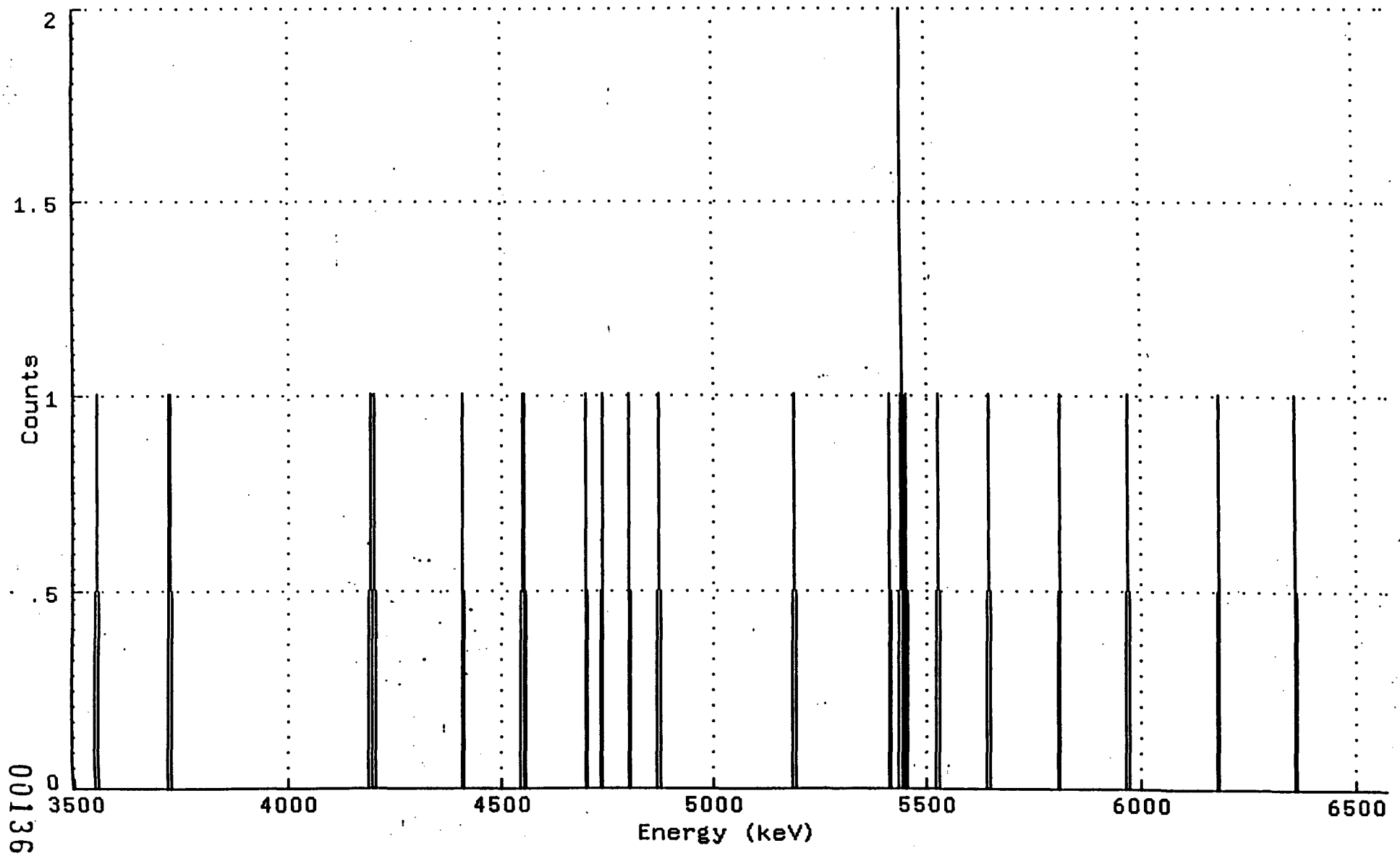
Analyst _____ Date 11-2-98

Reviewer _____ Date 11/3/98

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9[redacted]0172A-RA$12_RA.CNF;1
Title : 028
Sample Title: WGSB2-30
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.48535E+03
Real Time : 0 02:49:44.99 Sample ID : 12 Energy Slope : 2.83276E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 1.69824E-04



00136

Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$12_RA

Channel

1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	1	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	1	1	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	1	0	0
249:	1	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	1
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	1	0
369:	1	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	1	0	0	0	0	0	0
425:	0	0	0	0	0	1	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	1	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	1	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	1	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	1	0	0
657:	0	0	0	0	0	1	0	2
665:	0	0	1	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	1	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	1	1	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	1	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	1	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	1	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	1	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
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Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:47:22.97

Detector ID: 28 Acquisition Start: 2-NOV-1998 09:01:48.12
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 12
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4516.44	8	0586.38	356.38		242	223	7.85E-04	35.4	
2	0	5412.36	7	0 2.83	654.57		525	168	6.87E-04	37.8	
3	0	5764.17	4	0299.92	769.00		711	149	3.93E-04	50.0	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:47:32.68

Acquisition Start: 30-OCT-1998 17:27:36.12
Live Time: 0 16:38:34.00 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.48	22	0144.47	353.00		242	223	3.67E-04	21.3	
2	0	5271.97	19	0 65.15	608.50		525	168	3.17E-04	22.9	
3	0	5813.72	21	0115.44	785.00		711	149	3.51E-04	21.8	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:47:34.04

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4516.44*	6	0586.38	356.38		242	223	5.70E-04	59.7	
2	0	5412.36*	5	0 2.83	654.57		525	168	5.03E-04	63.3	
3	0	5764.17*	1	0299.92	769.00		711	149	1.18E-04	208.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:47:36

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB2-30		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 2-NOV-1998 09:01
Sample ID	: 12	Sample quantity	: 0.52000 gram
Sample type	: RA	Sample geometry	:
Detector name	: 028	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4516.44*	6586.38	356.38		242	223119.4			RA-226	0.162
0	5412.36*	5 2.83	654.57		525	168126.6			RN-222	0.143
0	5764.17*	1299.92	769.00		711	149417.2			PO-218	3.351E-02

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Oak Ridge Laboratory

ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:48:16

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Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$13_RA.CNF

****

BATCH ID:	9810172A-RA	SAMPLE ID:	13
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT:	5.790E-01 gram
SAMPLE TITLE:	WGSB2-42	DETECTOR NUMBER:	029
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	19.2%
ELAPSED LIVE TIME:	10185.	RECOVERY:	100.00%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_029_30OCT98	BKG ELAPSED TIME:	59914.
		SAF:	1.27

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	2.72	2.38	100.0	6.488E-02	1.254E-01	2.990E-01
RN-222	5490.0	2.30	1.53	99.9	5.477E-02	1.082E-01	2.561E-01
RA-226	4785.0	11.23	1.53	100.0	2.674E-01	1.945E-01	2.559E-01

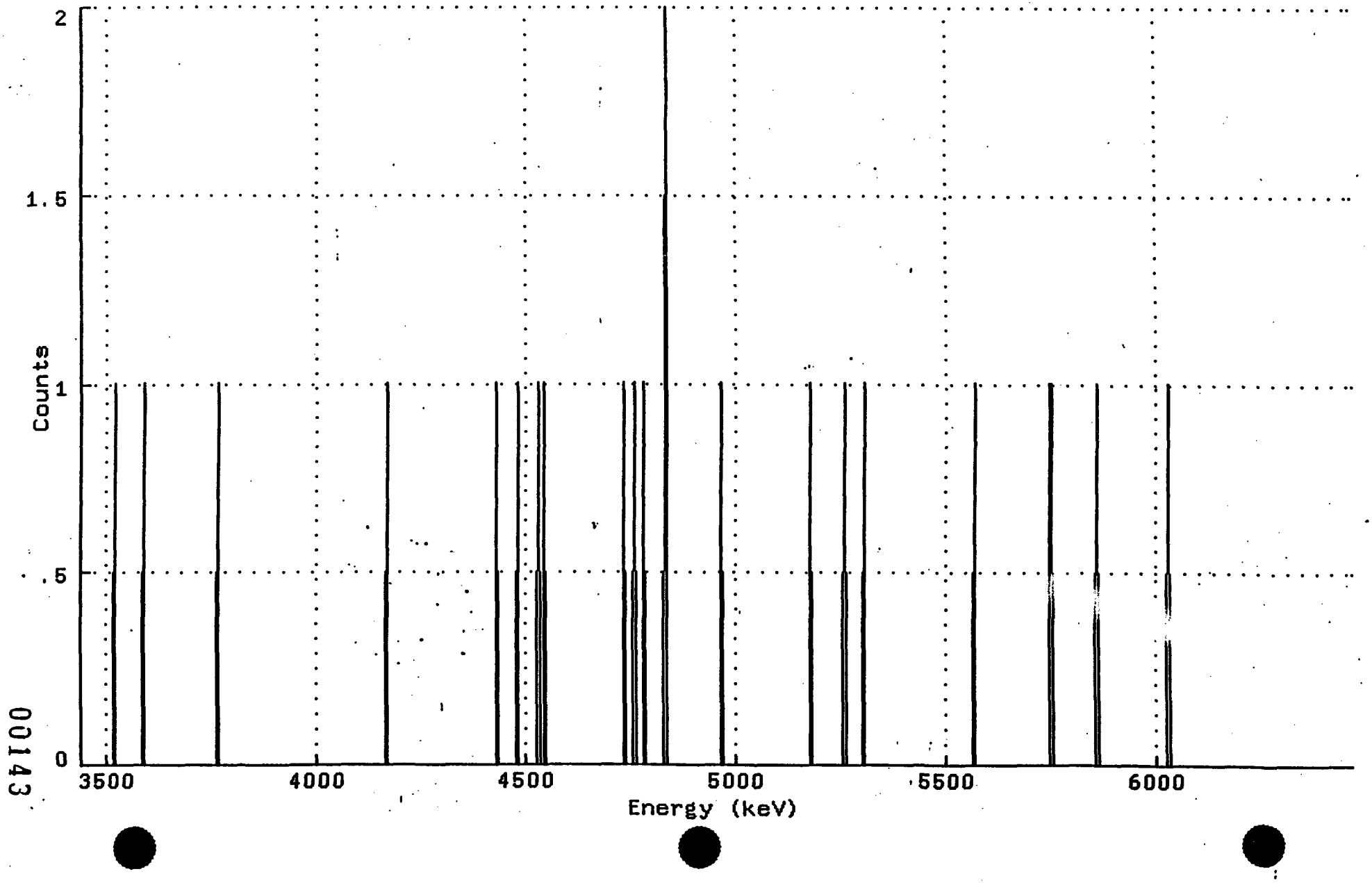
****

Analyst _____ Date 11/2/98

Reviewer _____ Date 11/3/98

00142

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810172A-RA$13_RA.CNF;1
Title : 029
Sample Title: WGSB2-42
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.43197E+03
Real Time : 0 02:49:44.99 Sample ID : 13 Energy Slope : 2.74642E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 2.02402E-04



Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$13_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	1
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	1	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	1	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	1	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	1	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	1	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	0	1	0	0	0	0
393:	1	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	1	0	0	0	0	0	0
465:	0	1	0	0	0	0	0	0
473:	0	1	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	1	2	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	1	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	1
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	1	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	1	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	1	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	1	1	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	1
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	1	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:47:54.74

Detector ID: 29 Acquisition Start: 2-NOV-1998 09:01:48.
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 13
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4673.44	10	0	4.03	437.90	268	226	9.82E-04	3[illegible].6	
2	0	5245.56	3	0	118.10	631.00	555	171	2.95E-04	57.7	
3	0	5844.01	4	0	249.58	827.75	743	150	3.93E-04	50.0	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:48:09.52

Acquisition Start: 30-OCT-1998 17:27:36.13
Live Time: 0 16:38:34.00 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.29	9	0	2.75	380.50	268	226	1.50E-04	33.3	
2	0	5272.59	9	0	4.03	640.00	555	171	1.50E-04	33.3	
3	0	5812.44	14	0	145.56	817.50	743	150	2.34E-04	26.7	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:48:10.86

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4673.44*	11	0	4.03	437.90	268	226	1.10E-03	36.2	
2	0	5245.56*	2	0	118.10	631.00	555	171	2.26E-04	98.7	
3	0	5844.01*	3	0	249.58	827.75	743	150	2.67E-04	96.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:48:13

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2		
Sample title	: WGSB2-42		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 2-NOV-1998 09:01:48
Sample ID	: 13	Sample quantity	: 0.57900 gram
Sample type	: RA	Sample geometry	:
Detector name	: 029	Detector geometry	:
Elapsed live time	: 0 02:49:44.99	Elapsed real time	: 0 02:49:44.99 0.0%
Energy tolerance	: 0.00 keV	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 0.00 %
Efficiency type	: Average value	Efficiencies at	: Peak Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4673.44*	11	4.03	437.90	268	226	72.4		RA-226	0.267
0	5245.56*	2118.10	631.00	555	171197.4				RN-222	5.477E-02
0	5844.01*	3249.58	827.75	743	150193.1				PO-218	6.488E-02

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ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:51:02

Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$14_RA.CNF

BATCH ID:	9810172A-RA	SAMPLE ID:	14
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT:	5.181E-01 gram
SAMPLE TITLE:	WGSB3-7	DETECTOR NUMBER:	031
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	17.1%
ELAPSED LIVE TIME:	10178.	RECOVERY:	92.20%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_031_30OCT98	BKG ELAPSED TIME:	59834.
		SAF:	1.32

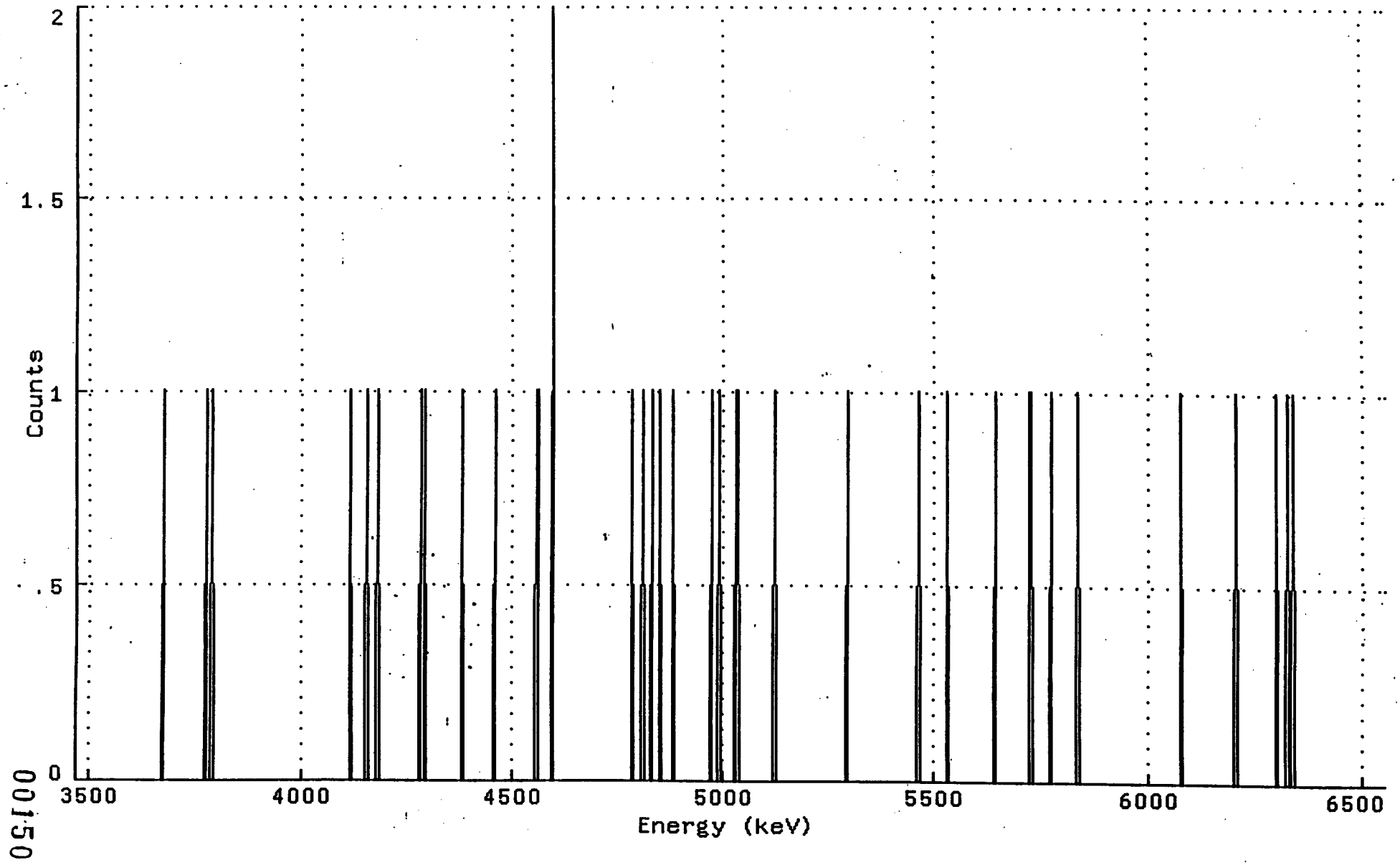
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PO-218	6003.0	4.58	2.04	100.0	1.485E-01	1.961E-01	4.004E-01
RN-222	5490.0	6.58	1.36	99.9	2.137E-01	2.133E-01	3.484E-01
RA-226	4785.0	15.04	0.85	100.0	4.877E-01	3.003E-01	2.995E-01

Analyst _____ Date 11-7-98

Reviewer _____ Date 11/13/98

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_[illegible]0172A-RA$14_RA.CNF;1
Title : 031
Sample Title: WGSB3-7
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.45945E+03
Real Time : 0 02:49:44.99 Sample ID : 14 Energy Slope : 2.84862E+00
Live Time : 0 02:49:37.99 Sample Type: RA Energy Quad : 1.64699E-04



Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$14_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	1	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	1	0	0
113:	0	0	1	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	1	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	1	0	0	0	0	0	0	0
249:	0	1	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	1	0	0	0	1
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	1	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	1
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	1	1	0	0	0	0	0	0
385:	0	0	0	0	0	2	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	1	0	0	0
457:	0	0	0	0	1	0	0	0
465:	0	0	0	1	0	0	0	0
473:	0	0	1	0	0	0	0	0
481:	0	0	0	0	1	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	1	0	0	0	0	0
521:	1	0	0	0	0	0	0	0
529:	0	0	0	0	0	1	0	1
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	1	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	1	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	1	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	1	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	1	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	1	1	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	1	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	1	0	0	0
801:	0	0	0	0	0	0	0	0
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	1	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	1	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	1
945:	0	0	0	0	0	0	0	1
953:	0	0	0	1	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

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Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:50:46.87

Detector ID: 31 Acquisition Start: 2-NOV-1998 09:01:48.15
Live Time: 0 02:49:37.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 14
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4526.33	12	0	2.85	366.75	250	221	1.18E-03	28.9	
2	0	5243.14	6	0	0.00	605.00	531	168	5.90E-04	40.8	
3	0	5738.75	5	0	182.31	766.20	716	149	4.91E-04	44.7	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:50:56.10

Acquisition Start: 30-OCT-1998 17:27:36.15
Live Time: 0 16:37:14.00 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.29	5	0	338.99	360.00	250	221	8.36E-05	44.7	
2	0	5272.11	8	0	376.02	614.50	531	168	1.34E-04	35.4	
3	0	5812.64	12	0	4.18	790.00	716	149	2.01E-04	28.9	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:50:57.44

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4526.33*	15	0	2.85	366.75	250	221	1.48E-03	30.6	
2	0	5243.14*	7	0	0.00	605.00	531	168	6.47E-04	49.8	
3	0	5738.75*	5	0	182.31	766.20	716	149	4.50E-04	65.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:50:59

Configuration	: MCA0:[ALPHA]ALPHA8C97$1		
Analyses by	: ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.[illegible]		
Sample title	: WGSB3-7		
Sample date	: 23-SEP-1998 00:00:00	Acquisition date	: 2-NO[illegible] 1998 09:01:[illegible]
Sample ID	: 14	Sample quantity	: 0.51[illegible]0 gram
Sample type	: RA	Sample geometry	:
Detector name	: 031	Detector geometry	:
Elapsed live time	: 0 02:49:37.99	Elapsed real time	: 0 0[illegible]:9:44.99 0.1%
Energy tolerance	: 0.00 keV	Half life ratio	: .00
Errors propagated	: Yes	Systematic Error	: [illegible].00 %
Efficiency type	: Average value	Efficiencies at	: Pe[illegible] Energy
Abundance limit	: 75.00		

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4526.33*	15	2.85	366.75	250	221	61.2		RA-226	0.450
0	5243.14*	7	0.00	605.00	531	168	99.6		RN-222	0.197
0	5738.75*	5182.31		766.20	716	149	31.8		PO-218	0.137

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ALPHA SPECTROSCOPY REPORT
2-NOV-1998 12:51:33

****

Spectral File: ND_AMS_ARCHIVE_S:S_9810172A-RA$15_RA.CNF

****

BATCH ID:	9810172A-RA	SAMPLE ID:	15
SAMPLE DATE:	23-SEP-1998 00:00	ALIQUOT:	5.018E-01 gram
SAMPLE TITLE:	WGSB3-10	DETECTOR NUMBER:	032
ACQ DATE:	2-NOV-1998 09:01	AVERAGE EFFICIENCY:	16.2%
ELAPSED LIVE TIME:	10185.	RECOVERY:	100.00%
TRACER ID:	NONE	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE LEVEL:	4.65
SAMPLE MATRIX:	SOIL	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-OCT-1998 12:54	EFF CAL DATE:	30-OCT-1998 12:54
BKG FILENAME:	B_032_30OCT98	BKG ELAPSED TIME:	59913.
		SAF:	1.19

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
-218	6003.0	2.91	3.06	100.0	9.503E-02	1.809E-01	4.218E-01
RN-222	5490.0	4.61	1.36	99.9	1.507E-01	1.778E-01	3.166E-01
RA-226	4785.0	11.25	0.68	100.0	3.678E-01	2.492E-01	2.545E-01

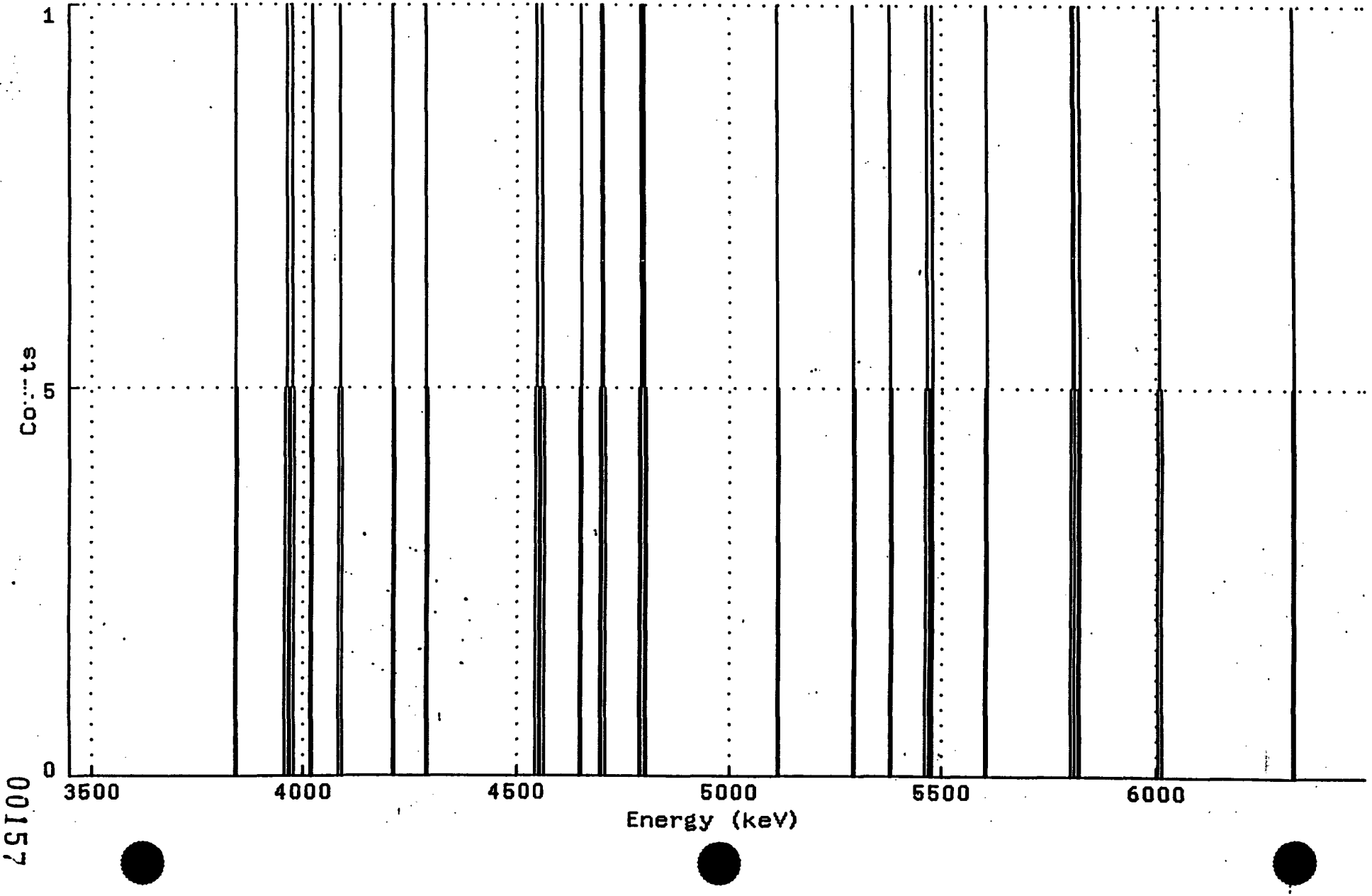
****

Analyst _____ Date 11/2/98

Reviewer _____ Date 11/3/98

00156

Spectrum : DKA200:[ALPHA.ALUSR.ARCHIVE.S]S_9810172A-RA$15_RA.CNF;1
Title : 032
Sample Title: WGSB3-10
Start Time: 2-NOV-1998 09:01: Sample Time: 23-SEP-1998 00:00 Energy Offset: 3.43920E+03
Real Time : 0 02:49:44.99 Sample ID : 15 Energy Slope : 2.79559E+00
Live Time : 0 02:49:44.99 Sample Type: RA Energy Quad : 1.73429E-04



00157

Channel Contents for ND_AMS_ARCHIVE_S:S_9810172A-RA$15_RA

Channel								
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	1	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	1
185:	0	0	0	0	1	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	1	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	1	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	1	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	1	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0
369:	0	0	0	0	0	0	0	0
377:	0	0	0	0	0	0	0	0
385:	0	0	1	0	0	0	1	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	1	0	0
425:	0	0	0	0	0	0	0	0

433:	0	0	0	0	0	1	0	1
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	1	0	1	0
473:	1	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	1	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	1	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	1	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	1	0	0
697:	0	1	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	1	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0
801:	0	0	0	0	1	1	0	0
809:	0	1	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	1	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0

913:	0	0	0	0	0	0	0	(
921:	0	0	0	0	0	0	0	(
929:	0	0	0	0	0	0	0	(
937:	0	0	0	0	0	0	0	(
945:	0	0	0	0	0	0	0	(
953:	0	0	0	0	0	0	0	(
961:	0	0	0	0	0	0	0	(
969:	0	0	1	0	0	0	0	(
977:	0	0	0	0	0	0	0	(
985:	0	0	0	0	0	0	0	(
993:	0	0	0	0	0	0	0	(
1001:	0	0	0	0	0	0	0	(
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

Thermo NUtech
Oak Ridge Laboratory

Gross Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:51:17.91

Detector ID: 32 Acquisition Start: 2-NOV-1998 09:01:48
Live Time: 0 02:49:44.99 Real Time: 0 02:49:44.99
Batch Id: 9810172A-RA Sample Id: 15
Sample Type: RA

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4602.80	10		0567.51	406.00	261	225	9.82E-04	31.6	
2	0	5343.51	5		0338.27	654.60	547	169	4.91E-04	44.7	
3	0	5805.73	5		0371.81	806.20	734	150	4.91E-04	44.7	

Background Counts Within Peak Regions Generated: 2-NOV-1998 12:51:26.62

Acquisition Start: 30-OCT-1998 17:27:36.16
Live Time: 0 16:38:32.99 Real Time: 0 16:38:32.99

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4506.09	4		0556.32	373.00	261	225	6.68E-05	50.0	
2	0	5272.27	8		0 2.80	631.00	547	169	1.34E-04	35.4	
3	0	5812.81	18		0103.44	808.50	734	150	3.00E-04	23.6	

Net Sample Counts Within Peak Regions Generated: 2-NOV-1998 12:51:27.94

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4602.80*	11		0567.51	406.00	261	225	1.10E-03	33.7	
2	0	5343.51*	5		0338.27	654.60	547	169	4.52E-04	58.9	
3	0	5805.73*	3		0371.81	806.20	734	150	2.85E-04	95.1	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V2.9 Generated 2-NOV-1998 12:51:30

Configuration : MCA0:[ALPHA]ALPHA8C97$1
Analyses by : ROIPEAK V1.2,PEAKEFF V2.2,ENBACK V1.5,NID V3.2
Sample title : WGSB3-10
Sample date : 23-SEP-1998 00:00:00 Acquisition date : 2-NOV-1998 09:01:48
Sample ID : 15 Sample quantity : 0.50180 gram
Sample type : RA Sample geometry :
Detector name : 032 Detector geometry:
Elapsed live time: 0 02:49:44.99 Elapsed real time: 0 02:49:44.99 0.0%
Energy tolerance : 0.00 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type : Average value Efficiencies at : Peak Energy
Abundance limit : 75.00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity pCi/gram
0	4602.80*	11567.51	406.00	261	225	67.3			RA-226	0.368
0	5343.51*	5338.27	654.60	547	169	117.7			RN-222	0.151
0	5805.73*	3371.81	806.20	734	150	190.2			PO-218	9.503E-02

TMA/Eberline, Oak Ridge Laboratory

ANALYSIS: BA-133 DATE: 11/02/98

CLIENT: recra

SAM #: 98-10-172A

ASSOCIATION:

SAM#	SAM FRACTION	BA 133 ACTIVITY	AMOUNT ADDED	INITIAL AMOUNT	ACTUAL AMOUNT	%BA133 RECOVERY
01	SPIKE	1075.328	1.0148	491.551	530.4	107.9
02	BLANK	1075.328	1.0163	492.277	530.7	107.8
03	WGSB1-7	1075.328	1.0162	492.229	440.4	89.5
04	WGSB1-7	1075.328	1.0158	492.035	437	88.8
05	WGSB1-12	1075.328	0.9862	477.698	464.3	97.2
06	WGSB1-20	1075.328	1.0148	491.551	479.4	97.5
07	WGSB1-30	1075.328	1.0133	490.824	516.5	105.2
08	WGSB1-40	1075.328	1.0127	490.534	467.7	95.3
09	WGSB2-7	1075.328	1.0126	490.437	375.3	76.5
10	WGSB2-10	1075.328	1.0114	489.904	444.6	90.8
11	WGSB2-20	1075.328	1.0116	490.001	476.2	97.2
12	WGSB2-30	1075.328	1.012	490.195	538.5	109.9
13	WGSB2-42	1075.328	1.01	489.226	491.5	100.5
14	WGSB3-7	1075.328	1.0126	490.485	452.2	92.2
15	WGSB3-10	1075.328	1.0137	491.018	503.4	102.5
		1075.328		0		#DIV/0!
		1075.328		0		#DIV/0!
		1075.328		0		#DIV/0!
		1075.328		0		#DIV/0!
		1075.328		0		#DIV/0!

Calculated by: [signature] 11-2-98

JDK
11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 07:55:10.72

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017201_GE3_BAFIL_45130.CI
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : SPIKE
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 07:49:53
Sample ID : 9810172-01 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE3 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.34 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.19	33	42	1.61	62.63	60	6	1.10E-01	35.5	
2	0	81.32	272	28	1.47	81.72	77	10	9.06E-01	7.1	
3	0	113.16	55	46	2.07	113.50	108	12	1.82E-01	28.6	
4	0	149.22	12	15	3.00	149.50	145	7	4.03E-02	62.8	
5	0	239.18	11	12	2.11	239.31	237	5	3.65E-02	56.7	
6	0	277.47	22	14	1.63	277.54	274	9	7.31E-02	37.1	
7	0	303.15	62	9	1.22	303.18	299	7	2.08E-01	14.9	
8	0	334.34	29	7	2.35	334.31	330	10	9.65E-02	25.6	
9	0	356.48	174	15	1.37	356.41	353	7	5.78E-01	8.5	
10	3	386.62	32	0	1.99	386.51	381	14	1.07E-01	25.6	5.22E+00
11	3	391.62	12	0	2.00	391.50	381	14	3.87E-02	35.5	
12	0	511.81	8	4	1.53	511.49	508	6	2.54E-02	56.8	

00164

Summary of Nuclide Activity
Sample ID : 9810172-01

Page :
Acquisition date : 2-NOV-1998 07:49:53

Total number of lines in spectrum 12
Number of unidentified lines 8
Number of lines tentatively identified by NID 4 33.33%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	5.303E+02	5.304E+02	1.386E+02	26.14	
	Total Activity :		5.303E+02	5.304E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	5.856E+02	5.856E+02	4.546E+02	77.62	
	Total Activity :		5.856E+02	5.856E+02			

Grand Total Activity : 1.116E+03 1.116E+03

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.427E+01	5.202E+02	5.202E+02	35.27	OK
	302.84	17.80	6.018E+00	5.254E+02	5.254E+02	69.52	OK
	356.01	60.00	4.710E+00	5.531E+02	5.532E+02	46.92	OK

Final Mean for 3 Valid Peaks = 5.304E+02+/- 1.386E+02 (26.14%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.330E+01	5.856E+02	5.856E+02	77.62	OK

Final Mean for 1 Valid Peaks = 5.856E+02+/- 4.546E+02 (77.62%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-01

Acquisition date : 2-NOV-1998 07:49:53

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	6.	122.06	1.0806E+01
CD-109	17.	88.03	3.7051E+02
PA-231	0.	9.28	7.8412E+01
PA-234	0.	21.72	8.3033E+00
NP-237	13.	86.50	9.8111E+01
AM-241	20.	59.54	4.5490E+01

JoP
11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:02:57.84

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017202_GE3_BAFIL_45133.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : BLANK
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 07:57:35
Sample ID : 9810172-02 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE3 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.35 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	61.84	37	35	1.76	62.27	59	7	1.24E-01	30.6	
2	0	81.34	263	13	1.44	81.74	79	8	8.75E-01	6.7	
3	0	93.58	9	35	1.45	93.96	90	9	3.07E-02	118.8	
4	0	111.83	36	18	1.76	112.18	108	7	1.21E-01	25.3	
5	0	143.26	9	8	1.87	143.56	141	6	3.09E-02	57.4	
6	0	178.30	9	8	1.66	178.54	175	6	3.08E-02	57.6	
7	0	185.84	8	19	1.05	186.06	184	6	2.65E-02	94.4	
8	0	276.59	25	4	1.32	276.66	273	8	8.33E-02	24.3	
9	0	284.12	9	4	1.83	284.18	281	7	2.83E-02	50.1	
10	0	303.24	44	11	1.69	303.26	299	7	1.47E-01	19.5	
11	0	335.39	16	14	3.93	335.36	331	9	5.23E-02	51.5	
12	0	356.36	189	5	1.71	356.30	351	10	6.30E-01	7.6	
13	1	384.14	31	6	1.64	384.04	382	9	1.02E-01	22.8	1.45E+01
14	1	387.26	45	14	1.65	387.15	382	9	1.51E-01	17.6	
15	0	416.30	10	6	1.48	416.14	411	9	3.40E-02	54.8	
16	0	437.05	19	3	1.61	436.86	434	6	6.45E-02	26.6	

Sample ID : 9810172-02 Acquisition date : 2-NOV-1998 07:57:35

Total number of lines in spectrum	16	
Number of unidentified lines	11	
Number of lines tentatively identified by NID	5	31.25%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	5.307E+02	5.307E+02	1.485E+02	27.98	
Total Activity :			5.307E+02	5.307E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
PA-231	3.28E+04Y	1.00	7.272E+02	7.272E+02	8.397E+02	115.47	
TH-234	4.47E+09Y	1.00	6.665E+02	6.665E+02	4.590E+02	68.86	
Total Activity :			1.394E+03	1.394E+03			
Grand Total Activity :			1.924E+03	1.924E+03			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

lide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.427E+01	5.024E+02	5.024E+02	34.93	OK
	302.84	17.80	6.016E+00	3.700E+02	3.701E+02	73.91	<<WM Interf
	356.01	60.00	4.713E+00	6.022E+02	6.022E+02	46.30	OK

Final Mean for 2 Valid Peaks = 5.307E+02+/- 1.485E+02 (27.98%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
PA-231	9.28	42.00*	7.394E-01	----- Line Out Of Range ----			Absent
	10.11	20.20	9.216E-01	----- Line Out Of Range ----			Absent
	283.67	1.60	6.582E+00	7.272E+02	7.272E+02	115.47	OK
	302.67	2.30	6.016E+00	2.864E+03	2.864E+03	73.22	<<WM Interf

Final Mean for 1 Valid Peaks = 7.272E+02+/- 8.397E+02 (115.47%)

TH-234	63.29	3.80*	1.327E+01	6.665E+02	6.665E+02	68.86	OK

Final Mean for 1 Valid Peaks = 6.665E+02+/- 4.590E+02 (68.86%)

Flag: "*" = Keyline

Sample ID : 9810172-02
Acquisition date : 2-NOV-1998 07:57:35

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	9.	122.06	1.3173E+01
CD-109	7.	88.03	2.5220E+02
PA-234	0.	21.72	8.3033E+00
NP-237	9.	86.50	8.1789E+01
AM-241	25.	59.54	4.9757E+01

JDL 11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:08:41.19

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017203_GE3_BAFIL_45136.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB1-7
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 08:03:21
Sample ID : 9810172-03 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE3 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.36 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	5	61.88	36	42	1.89	62.32	58	13	1.22E-01	34.6	1.60E+0(
2	5	66.40	14	46	1.91	66.82	58	13	4.83E-02	77.5	
3	1	81.48	217	7	1.33	81.88	78	11	7.22E-01	7.3	1.54E+0
4	1	85.49	8	6	1.33	85.88	78	11	2.75E-02	60.6	
5	0	92.48	17	19	1.62	92.86	89	9	5.67E-02	51.4	
6	0	112.48	30	25	2.18	112.82	110	8	1.00E-01	33.8	
7	0	173.78	22	7	4.87	174.02	171	7	7.23E-02	29.6	
8	0	276.65	28	6	1.67	276.72	272	8	9.28E-02	24.4	
9	2	303.24	51	3	1.74	303.26	299	15	1.71E-01	14.6	2.48E+0(
10	2	307.68	8	3	1.74	307.70	299	15	2.74E-02	51.9	
11	0	333.79	19	5	1.93	333.76	330	7	6.24E-02	30.8	
12	0	356.30	162	8	1.36	356.24	352	8	5.41E-01	8.4	
13	0	376.39	6	7	2.04	376.30	372	8	1.97E-02	90.9	
14	4	384.28	32	6	2.19	384.17	380	10	1.07E-01	26.2	7.49E+0(
15	4	387.51	25	7	1.79	387.39	380	10	8.42E-02	26.3	
16	0	416.80	22	5	5.01	416.64	411	10	7.17E-02	28.9	
17	0	437.07	22	2	1.28	436.88	433	8	7.33E-02	24.1	
18	0	512.21	6	2	2.66	511.89	509	6	2.13E-02	50.2	

Total number of lines in spectrum 18
Number of unidentified lines 13
Number of lines tentatively identified by NID 5 27.78%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	Sigma %Error	Flags
BA-133	10.50Y	1.00	4.403E+02	4.404E+02	1.157E+02	26.28	
NP-237	2.14E+06Y	1.00	4.119E+01	4.119E+01	5.136E+01	124.67	
	Total Activity :		4.815E+02	4.816E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	6.512E+02	6.512E+02	4.956E+02	76.10	
	Total Activity :		6.512E+02	6.512E+02			
	Grand Total Activity :		1.133E+03	1.133E+03			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.427E+01	4.143E+02	4.143E+02	35.42	OK
	302.84	17.80	6.016E+00	4.319E+02	4.320E+02	69.26	OK
	356.01	60.00	4.714E+00	5.168E+02	5.168E+02	46.84	OK
	Final Mean for 3 Valid Peaks = 4.404E+02+/- 1.157E+02 (26.28%)						
NP-237	86.50	12.60*	1.432E+01	4.119E+01	4.119E+01	124.67	OK
	Final Mean for 1 Valid Peaks = 4.119E+01+/- 5.136E+01 (124.67%)						

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.327E+01	6.512E+02	6.512E+02	76.10	OK
	Final Mean for 1 Valid Peaks = 6.512E+02+/- 4.956E+02 (76.10%)						

Flag: "*" = Keyline

Sample ID : 9810172-03
Acquisition date : 2-NOV-1998 08:03:21

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	14.	122.06	1.5715E+01
CD-109	9.	88.03	2.7708E+02
PA-231	0.	9.28	7.8412E+01
PA-234	0.	21.72	8.3033E+00
AM-241	34.	59.54	5.7588E+01

JDL
11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:15:03.20

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017204_GE3_BAFIL_45139.CI
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB1-7
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 08:09:42.
Sample ID : 9810172-04 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE3 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.32 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.29	33	48	1.60	62.73	59	7	1.11E-01	38.4	
2	0	81.28	225	24	1.55	81.68	77	10	7.50E-01	7.8	
3	6	111.81	36	6	1.84	112.16	109	13	1.21E-01	21.4	1.98E+00
4	6	116.38	14	2	2.22	116.72	109	13	4.71E-02	51.6	
5	0	160.92	16	20	3.85	161.19	157	8	5.33E-02	54.5	
6	0	192.71	13	15	2.44	192.92	190	6	4.33E-02	54.7	
7	1	276.96	26	8	1.56	277.03	273	13	8.71E-02	24.0	1.08E+00
8	1	282.94	4	5	1.56	283.00	273	13	1.48E-02	91.4	
9	0	303.33	48	12	1.34	303.35	300	7	1.59E-01	18.9	
10	0	334.18	14	5	1.06	334.15	331	5	4.66E-02	36.0	
11	0	356.44	141	15	1.53	356.38	352	9	4.71E-01	9.8	
[illegible]	2	384.42	23	3	1.60	384.31	383	7	7.79E-02	22.3	9.92E+00
[illegible]	2	387.33	19	5	1.81	387.21	383	7	6.21E-02	33.2	
14	0	437.74	17	2	1.87	437.54	435	7	5.60E-02	28.0	
15	0	512.31	10	0	2.88	512.00	508	8	3.33E-02	31.6	

Summary of Nuclide Activity
Sample ID : 9810172-04

Page :
Acquisition date : 2-NOV-1998 08:09:42

Total number of lines in spectrum 15
Number of unidentified lines 10
Number of lines tentatively identified by NID 5 33.33%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.370E+02	4.370E+02	1.256E+02	28.73	
	Total Activity :		4.370E+02	4.370E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
PA-231	3.28E+04Y	1.00	3.765E+02	3.765E+02	7.214E+02	191.61	
TH-234	4.47E+09Y	1.00	5.938E+02	5.938E+02	4.927E+02	82.98	
	Total Activity :		9.703E+02	9.703E+02			
	Grand Total Activity :		1.407E+03	1.407E+03			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

00177

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.427E+01	4.303E+02	4.304E+02	35.88	OK
	302.84	17.80	6.013E+00	4.011E+02	4.011E+02	73.33	<<WM Interf
	356.01	60.00	4.711E+00	4.500E+02	4.500E+02	47.93	OK

Final Mean for 2 Valid Peaks = 4.370E+02+/- 1.256E+02 (28.73%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
PA-231	9.28	42.00*	7.394E-01	----- Line Out Of Range ----			Absent
	10.11	20.20	9.216E-01	----- Line Out Of Range ----			Absent
	283.67	1.60	6.618E+00	3.765E+02	3.765E+02	191.61	OK
	302.67	2.30	6.013E+00	3.104E+03	3.104E+03	72.63	<<WM Interf

Final Mean for 1 Valid Peaks = 3.765E+02+/- 7.214E+02 (191.61%)

TH-234	63.29	3.80*	1.331E+01	5.938E+02	5.938E+02	82.98	OK

Final Mean for 1 Valid Peaks = 5.938E+02+/- 4.927E+02 (82.98%)

Flag: "*" = Keyline

Sample ID : 9810172-04
Acquisition date : 2-NOV-1998 08:09:42

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	6.	122.06	1.1071E+01
CD-109	9.	88.03	2.8433E+02
PA-234	0.	21.72	8.3033E+00
NP-237	9.	86.50	8.4599E+01
AM-241	23.	59.54	4.7906E+01

JoP
11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:21:48.52

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017205_GE3_BAFIL_45142.CI
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB1-12
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 08:16:28.
Sample ID : 9810172-05 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE3 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.34 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	61.68	26	19	1.29	62.12	58	13	8.64E-02	32.3	1.87E+00
2	1	66.46	12	24	1.30	66.88	58	13	4.07E-02	61.9	
3	0	81.23	274	44	1.35	81.63	78	8	9.12E-01	7.4	
4	0	92.84	20	16	1.51	93.22	90	7	6.69E-02	39.8	
5	0	112.78	29	26	1.84	113.12	109	7	9.54E-02	35.1	
6	0	126.76	14	7	2.24	127.09	124	6	4.74E-02	40.0	
7	0	276.94	12	17	1.76	277.01	274	7	4.09E-02	61.4	
8	0	303.17	36	16	1.10	303.19	299	8	1.20E-01	25.5	
9	0	334.53	10	1	1.26	334.51	332	5	3.29E-02	35.9	
10	0	356.48	164	16	1.52	356.42	352	9	5.48E-01	8.9	
11	1	384.03	46	6	1.64	383.92	379	12	1.53E-01	16.9	4.28E+00
12	1	387.26	29	13	1.65	387.15	379	12	9.55E-02	25.9	
13	0	437.58	15	5	1.02	437.38	434	6	4.83E-02	35.0	
14	0	511.89	13	4	2.44	511.58	508	8	4.33E-02	38.5	

00180

Sample ID : 9810172-05 Acquisition date : 2-NOV-1998 08:16:28

Total number of lines in spectrum	14	
Number of unidentified lines	10	
Number of lines tentatively identified by NID	4	28.57%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.643E+02	4.643E+02	1.270E+02	27.36	
	Total Activity :		4.643E+02	4.643E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	4.636E+02	4.636E+02	3.333E+02	71.90	
	Total Activity :		4.636E+02	4.636E+02			
Grand Total Activity :			9.279E+02	9.279E+02			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.426E+01	5.236E+02	5.236E+02	35.47	OK
	302.84	17.80	6.017E+00	3.028E+02	3.028E+02	80.87	OK
	356.01	60.00	4.710E+00	5.239E+02	5.240E+02	47.26	OK

Final Mean for 3 Valid Peaks = 4.643E+02+/- 1.270E+02 (27.36%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.325E+01	4.636E+02	4.636E+02	71.90	OK

Final Mean for 1 Valid Peaks = 4.636E+02+/- 3.333E+02 (71.90%)

Flag: "*" = Keyline

Sample ID : 9810172-05
Acquisition date : 2-NOV-1998 08:16:28

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	15.	122.06	1.5916E+01
CD-109	14.	88.03	3.3941E+02
PA-231	0.	9.28	7.8412E+01
PA-234	0.	21.72	8.3033E+00
NP-237	19.	86.50	1.1471E+02
AM-241	24.	59.54	4.8862E+01

JOP
11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 07:57:25.85

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017206_GE4_BAFIL_45131.CI
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB1-7
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 07:52:02.
Sample ID : 9810172-06 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.74 0.2%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.26	128	36	1.28	35.04	34	5	4.26E-01	12.3	
2	6	52.73	16	24	2.28	52.50	47	22	5.39E-02	54.2	1.92E+00
3	6	62.04	48	23	2.31	61.81	47	22	1.60E-01	23.7	
4	6	65.73	17	21	2.32	65.50	47	22	5.82E-02	62.9	
5	0	80.99	240	25	1.26	80.76	77	8	8.00E-01	7.4	
6	0	112.19	29	23	1.84	111.95	108	7	9.64E-02	33.1	
7	0	218.13	7	12	2.72	217.86	213	7	2.39E-02	88.5	
8	0	276.89	29	10	1.18	276.60	273	7	9.62E-02	26.2	
9	0	302.90	54	1	1.74	302.60	300	6	1.79E-01	14.1	
10	0	308.17	8	0	1.47	307.88	306	6	2.67E-02	35.4	
11	3	333.48	13	4	2.17	333.18	329	13	4.18E-02	39.2	4.69E-01
12	3	337.85	6	1	2.17	337.54	329	13	1.88E-02	79.4	
13	0	356.11	129	6	1.35	355.80	352	7	4.32E-01	9.3	
14	6	383.83	21	1	1.56	383.51	382	8	6.92E-02	22.2	6.76E+00
15	6	386.99	20	5	2.31	386.68	382	8	6.65E-02	36.2	
16	0	415.43	5	3	1.62	415.10	411	6	1.67E-02	70.7	
17	0	437.16	12	0	1.36	436.83	434	6	4.00E-02	28.9	

Total number of lines in spectrum 17
Number of unidentified lines 13
Number of lines tentatively identified by NID 4 23.53%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.793E+02	4.794E+02	1.268E+02	26.45	
	Total Activity :		4.793E+02	4.794E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	2.773E+02	2.773E+02	1.342E+02	48.41	
	Total Activity :		2.773E+02	2.773E+02			

Grand Total Activity : 7.566E+02 7.567E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.436E+01	4.563E+02	4.563E+02	34.51	OK
	302.84	17.80	3.061E+00	8.884E+02	8.884E+02	117.94	OK
	356.01	60.00	3.842E+00	5.060E+02	5.060E+02	43.17	OK

Final Mean for 3 Valid Peaks = 4.794E+02+/- 1.268E+02 (26.45%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.095E+01	2.773E+02	2.773E+02	48.41	OK

Final Mean for 1 Valid Peaks = 2.773E+02+/- 1.342E+02 (48.41%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-06
Acquisition date : 2-NOV-1998 07:52:02

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	13.	122.06	4.4226E+01
CD-109	13.	88.03	4.3561E+02
PA-231	0.	9.28	6.2703E-07
PA-234	41.	21.72	1.6129E-02
NP-237	11.	86.50	1.1416E+02
AM-241	35.	59.54	1.5485E+01

JDF
11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:04:10.00

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017207_GE4_BAFIL_45134.CN
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB1-30
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 07:58:27.
Sample ID : 9810172-07 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.26 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.33	111	37	1.18	35.11	34	5	3.71E-01	13.5	
2	0	52.80	16	8	1.18	52.58	50	5	5.44E-02	35.4	
3	6	61.63	37	18	2.31	61.40	58	15	1.25E-01	27.0	8.53E-01
4	6	65.76	19	23	2.32	65.53	58	15	6.22E-02	55.9	
5	0	81.02	253	27	1.27	80.79	77	8	8.42E-01	7.3	
6	2	111.96	26	9	1.68	111.72	107	13	8.75E-02	28.8	1.59E+00
7	2	116.54	10	10	1.69	116.29	107	13	3.42E-02	57.7	
8	0	229.54	10	5	0.95	229.27	227	5	3.27E-02	48.7	
9	0	262.41	4	3	2.25	262.13	258	6	1.33E-02	84.8	
10	0	277.88	14	16	1.48	277.59	273	8	4.54E-02	57.8	
11	3	302.96	49	1	2.00	302.67	299	11	1.63E-01	15.7	2.57E+00
12	3	307.20	14	3	2.14	306.90	299	11	4.69E-02	32.0	
13	0	333.50	13	2	2.18	333.19	329	8	4.36E-02	33.4	
14	2	352.44	9	0	1.99	352.13	350	9	2.84E-02	35.2	1.47E+00
15	2	356.12	147	1	1.48	355.81	350	9	4.90E-01	8.2	
16	0	385.72	43	14	4.41	385.41	382	8	1.42E-01	21.1	
17	0	437.77	8	3	1.85	437.44	433	7	2.58E-02	53.6	

Total number of lines in spectrum 17
Number of unidentified lines 13
Number of lines tentatively identified by NID 4 23.53%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	5.165E+02	5.165E+02	1.354E+02	5.21	
Total Activity :			5.165E+02	5.165E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	2.103E+02	2.103E+02	1.152E+02	54.78	
Total Activity :			2.103E+02	2.103E+02			

Grand Total Activity : 7.268E+02 7.268E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.434E+01	4.810E+02	4.811E+02	34.40	OK
	302.84	17.80	3.061E+00	8.088E+02	8.089E+02	118.67	OK
	356.01	60.00	3.842E+00	5.740E+02	5.741E+02	42.29	OK

Final Mean for 3 Valid Peaks = 5.165E+02+/- 1.354E+02 (26.21%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.216E+01	2.103E+02	2.103E+02	54.78	OK

Final Mean for 1 Valid Peaks = 2.103E+02+/- 1.152E+02 (54.78%)

Flag: "*" = Keyline

Sample ID : 9810172-07 Acquisition date : 2-NOV-1998 07:58:27

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	13.	122.06	4.4232E+01
CD-109	12.	88.03	4.1220E+02
PA-231	0.	9.28	6.2703E-07
PA-234	36.	21.72	1.5084E-02
NP-237	13.	86.50	1.2209E+02
AM-241	29.	59.54	1.4067E+01

JOP
11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:10:09.66

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017208_GE4_BAFIL_45137.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB1-40
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 08:04:5C
Sample ID : 9810172-08 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.25 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.25	116	38	1.33	35.03	34	5	3.85E-01	13.8	
2	0	53.84	22	19	1.08	53.61	50	7	7.43E-02	38.8	
3	3	61.80	22	16	1.74	61.57	58	11	7.22E-02	40.4	1.50E+0
4	3	65.66	10	23	1.74	65.43	58	11	3.28E-02	81.5	
5	0	81.01	244	25	1.17	80.78	77	7	8.13E-01	7.2	
6	0	110.83	43	10	1.81	110.59	106	8	1.44E-01	19.8	
7	1	177.41	9	5	1.62	177.15	174	12	3.09E-02	50.8	1.93E-0
8	1	183.13	9	5	1.63	182.86	174	12	3.11E-02	49.4	
9	0	195.55	18	19	4.70	195.29	189	12	5.86E-02	56.9	
10	0	276.46	18	5	1.37	276.17	273	6	6.15E-02	29.6	
11	0	282.70	11	2	3.02	282.41	280	6	3.62E-02	38.6	
12	0	303.48	40	16	1.28	303.19	299	8	1.32E-01	23.7	
13	0	333.23	13	0	1.75	332.92	330	7	4.33E-02	27.7	
14	0	356.12	121	9	1.44	355.81	352	7	4.03E-01	10.0	
15	0	386.17	64	2	4.67	385.85	382	11	2.14E-01	13.4	
16	0	436.97	14	0	1.92	436.64	434	6	4.67E-02	26.7	
17	0	512.57	5	4	2.49	512.22	507	7	1.50E-02	83.5	

00192

Sample ID : 9810172-08 Acquisition date : 2-NOV-1998 08:04:50

Total number of lines in spectrum 17
Number of unidentified lines 12
Number of lines tentatively identified by NID 5 29.41%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.677E+02	4.677E+02	1.265E+02	27.04	
	Total Activity :		4.677E+02	4.677E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
PA-231	3.28E+04Y	1.00	2.139E+03	2.139E+03	3.125E+03	146.11	
TH-234	4.47E+09Y	1.00	1.233E+02	1.233E+02	1.002E+02	81.29	
	Total Activity :		2.262E+03	2.262E+03			
	Grand Total Activity :		2.729E+03	2.730E+03			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.434E+01	4.645E+02	4.645E+02	34.38	OK
	302.84	17.80	3.067E+00	6.542E+02	6.542E+02	123.02	<<WM Interf
	356.01	60.00	3.842E+00	4.730E+02	4.730E+02	43.78	OK

Final Mean for 2 Valid Peaks = 4.677E+02+/- 1.265E+02 (27.04%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
PA-231	9.28	42.00*	9.246E+07	----- Line Out Of Range ----			Absent
	10.11	20.20	3.648E+07	----- Line Out Of Range ----			Absent
	283.67	1.60	2.856E+00	2.139E+03	2.139E+03	146.11	OK
	302.67	2.30	3.067E+00	5.063E+03	5.063E+03	122.61	<<WM Interf

Final Mean for 1 Valid Peaks = 2.139E+03+/- 3.125E+03 (146.11%)

TH-234	63.29	3.80*	4.165E+01	1.233E+02	1.233E+02	81.29	OK

Final Mean for 1 Valid Peaks = 1.233E+02+/- 1.002E+02 (81.29%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-08

Acquisition date : 2-NOV-1998 08:04:50

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	16.	122.06	4.8191E+01
CD-109	18.	88.03	4.9621E+02
PA-234	31.	21.72	1.4181E-02
NP-237	12.	86.50	1.1699E+02
AM-241	26.	59.54	1.3489E+01

JDV
11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:16:19.54

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017209_GE4_BAFIL_45140.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB2-7
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 08:10:58
Sample ID : 9810172-09 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.35 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.27	109	26	1.21	35.05	34	5	3.62E-01	12.9	
2	0	52.80	33	7	1.57	52.57	49	8	1.09E-01	22.9	
3	0	61.90	31	33	2.19	61.67	57	9	1.02E-01	37.8	
4	0	69.39	30	34	7.52	69.16	65	11	1.01E-01	41.1	
5	0	81.05	178	19	1.17	80.82	77	7	5.92E-01	8.5	
6	1	112.10	19	11	1.53	111.86	106	28	6.20E-02	39.2	2.58E+0(
7	1	115.38	8	11	1.53	115.14	106	28	2.78E-02	64.6	
8	1	121.39	7	12	1.54	121.14	106	28	2.27E-02	77.7	
9	0	149.87	13	11	1.46	149.61	146	8	4.24E-02	54.5	
10	0	183.62	11	5	1.87	183.35	181	6	3.71E-02	42.9	
11	0	276.37	10	2	1.56	276.09	272	7	3.39E-02	38.2	
12	0	290.72	8	1	1.25	290.42	287	6	2.54E-02	44.1	
13	0	303.40	30	9	1.26	303.10	299	7	1.01E-01	24.4	
14	0	356.14	119	3	1.46	355.83	353	6	3.96E-01	9.5	
15	0	384.82	45	3	4.13	384.50	378	11	1.50E-01	16.6	

Total number of lines in spectrum 15
Number of unidentified lines 10
Number of lines tentatively identified by NID 5 33 33%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	1.00	1.531E+01	1.532E+01	2.706E-01	176.58	
BA-133	10.50Y	1.00	3.753E+02	3.753E+02	1.02E+02	27.17	
	Total Activity :		3.906E+02	3.907E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	1.761E+02	1.761E+02	1.343E+02	76.24	
	Total Activity :		1.761E+02	1.761E+02			

Grand Total Activity : 5.668E+02 5.668E+02

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
CO-57	122.06	85.51*	4.694E+00	1.531E+01	1.532E+01	176.58	OK
	136.48	10.60	3.777E+00	----- Line Not Found		-----	Absent
	Final Mean for 1 Valid Peaks = 1.532E+01+/- 2.706E+01 (176.58%)						
BA-133	81.00	33.00*	1.432E+01	3.387E+02	3.387E+02	35.59	OK
	302.84	17.80	3.066E+00	4.990E+02	4.990E+02	123.71	OK
	356.01	60.00	3.842E+00	4.643E+02	4.643E+02	43.34	OK
	Final Mean for 3 Valid Peaks = 3.753E+02+/- 1.020E+02 (27.17%)						

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.135E+01	1.761E+02	1.761E+02	76.24	OK
	Final Mean for 1 Valid Peaks = 1.761E+02+/- 1.343E+02 (76.24%)						

Flag: "*" = Keyline

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CD-109	12.	88.03	4.1840E+02
PA-231	0.	9.28	6.2703E-07
PA-234	23.	21.72	1.2347E-02
NP-237	13.	86.50	1.1928E+02
AM-241	29.	59.54	1.4219E+01

JOP
11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:22:46.63

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017210_GE4_BAFIL_45143.CN
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB2-10
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 08:17:24.
Sample ID : 9810172-10 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.29 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.32	132	19	1.26	35.10	34	4	4.39E-01	10.4	
2	0	53.18	23	19	1.60	52.96	50	7	7.73E-02	37.5	
3	0	61.50	35	32	1.75	61.27	58	7	1.17E-01	31.5	
4	0	66.98	16	30	1.12	66.75	65	6	5.33E-02	60.4	
5	0	81.06	213	18	1.34	80.82	77	8	7.09E-01	7.7	
6	1	92.36	12	9	1.49	92.12	88	19	4.10E-02	47.4	1.81E+00
7	1	102.24	9	14	1.51	102.00	88	19	2.96E-02	64.3	
8	0	112.17	13	28	2.26	111.93	111	3	4.29E-02	58.5	
9	0	162.49	13	23	1.21	162.23	158	8	4.43E-02	69.0	
10	0	276.10	16	0	1.45	275.81	273	7	5.33E-02	25.0	
11	0	302.82	31	9	1.84	302.52	299	8	1.03E-01	24.2	
12	3	333.34	15	4	2.17	333.03	327	14	5.03E-02	36.3	3.44E-01
13	3	337.50	8	4	2.17	337.20	327	14	2.70E-02	61.9	
14	0	356.22	138	5	1.38	355.91	353	7	4.60E-01	8.9	
15	1	384.15	20	4	1.84	383.83	381	9	6.50E-02	32.4	2.08E+00
16	1	387.15	16	9	1.84	386.83	381	9	5.35E-02	42.3	
17	0	511.24	6	2	2.66	510.89	508	6	2.13E-02	50.2	

Summary of Nuclide Activity
Sample ID : 9810172-10

Acquisition date : 2-NOV-1998 08:17:24

Total number of lines in spectrum 17
Number of unidentified lines 13
Number of lines tentatively identified by NID 4 23.53%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.446E+02	4.446E+02	1.185E+02	26.66	
	Total Activity :		4.446E+02	4.446E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	1.952E+02	1.952E+02	1.246E+02	63.81	
AM-241	432.20Y	1.00	2.066E+01	2.066E+01	1.319E+01	63.81	
	Total Activity :		2.159E+02	2.159E+02			
	Grand Total Activity :		6.604E+02	6.605E+02			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.432E+01	4.058E+02	4.058E+02	34.85	OK
	302.84	17.80	3.060E+00	5.112E+02	5.112E+02	124.45	OK
	356.01	60.00	3.844E+00	5.393E+02	5.393E+02	42.87	OK

Final Mean for 3 Valid Peaks = 4.446E+02+/- 1.185E+02 (26.66%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.254E+01	1.952E+02	1.952E+02	63.81	OK

Final Mean for 1 Valid Peaks = 1.952E+02+/- 1.246E+02 (63.81%)

AM-241	59.54	35.90*	4.254E+01	2.066E+01	2.066E+01	63.81	OK

Final Mean for 1 Valid Peaks = 2.066E+01+/- 1.319E+01 (63.81%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-10

Acquisition date : 2-NOV-1998 08:17:24

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	13.	122.06	4.4228E+01
CD-109	10.	88.03	3.9150E+02
PA-231	0.	9.28	6.2703E-07
PA-234	34.	21.72	1.4864E-02
NP-237	8.	86.50	9.6293E+01

JDK
11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:01:24.76

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017211_GE1_BAFIL_45132.CN
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB2-20
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 07:56:06.
Sample ID : 9810172-11 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE1 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.12 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	30.95	673	47	1.53	31.04	26	14	2.24E+00	4.1	2.32E+00
2	3	35.23	185	34	1.93	35.32	26	14	6.18E-01	11.1	
3	0	60.68	62	82	1.77	60.80	56	10	2.07E-01	30.2	
4	0	81.03	247	53	1.49	81.18	76	10	8.25E-01	8.4	
5	0	112.94	24	48	1.12	113.13	108	9	7.86E-02	56.6	
6	0	243.21	19	11	3.02	243.55	238	13	6.18E-02	45.9	
7	0	257.98	5	10	2.88	258.33	254	8	1.50E-02	129.6	
8	0	276.61	29	17	1.85	276.98	271	11	9.50E-02	33.4	
9	0	302.99	46	6	1.32	303.39	299	8	1.53E-01	17.4	
10	0	355.69	171	10	1.89	356.15	350	10	5.70E-01	8.4	
11	5	384.98	60	6	3.85	385.46	379	17	2.00E-01	16.8	3.24E+00
[illegible]	5	391.30	23	5	3.07	391.79	379	17	7.53E-02	34.6	
[illegible]	0	437.53	23	2	1.83	438.06	433	11	7.54E-02	25.2	

Total number of lines in spectrum 13
Number of unidentified lines 9
Number of lines tentatively identified by NID 4 30.77%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.761E+02	4.762E+02	1.277E+02	2[illegible].81	
	Total Activity :		4.761E+02	4.762E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AM-241	432.20Y	1.00	1.035E+02	1.035E+02	0.710E+02	68.58	
	Total Activity :		1.035E+02	1.035E+02			

Grand Total Activity : 5.797E+02 5.797E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.407E+01	4.803E+02	4.803E+02	40.92	OK
	302.84	17.80	6.040E+00	3.852E+02	3.852E+02	89.50	OK
	356.01	60.00	5.131E+00	5.004E+02	5.005E+02	38.41	OK

Final Mean for 3 Valid Peaks = 4.762E+02+/- 1.277E+02 (26.81%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
AM-241	59.54	35.90*	1.504E+01	1.035E+02	1.035E+02	68.58	OK

Final Mean for 1 Valid Peaks = 1.035E+02+/- 7.099E+01 (68.58%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-11

Acquisition date : 2-NOV-1998 07:56:06

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	24.	122.06	2.2712E+01
CD-109	27.	88.03	4.7469E+02
PA-231	319.	9.28	2.2348E+02
PA-234	119.	21.72	5.4877E+01
TH-234	113.	63.29	8.2887E+02
NP-237	27.	86.50	1.3896E+02

JDP
11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:07:30.52

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017212_GE1_BAFIL_45135.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB2-30
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 08:02:13
Sample ID : 9810172-12 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE1 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.12 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	30.93	707	41	1.51	31.02	25	14	2.36E+00	4.0	2.90E+0(
2	4	35.25	173	29	1.93	35.34	25	14	5.77E-01	11.7	
3	0	52.86	44	26	2.15	52.97	50	7	1.46E-01	25.2	
4	6	61.00	78	18	3.80	61.12	57	12	2.60E-01	15.0	2.02E+0(
5	6	65.97	30	22	1.87	66.10	57	12	1.00E-01	31.8	
6	6	80.87	340	11	2.33	81.03	76	12	1.13E+00	5.4	1.67E+01
7	6	84.58	12	14	2.37	84.74	76	12	4.09E-02	138.8	
8	2	111.66	61	27	2.67	111.85	107	12	2.03E-01	19.9	9.25E-01
9	2	115.78	21	9	2.23	115.98	107	12	7.07E-02	34.4	
10	3	173.52	18	12	3.00	173.79	171	32	5.93E-02	34.4	1.69E+0(
11	3	182.20	11	17	2.74	182.48	171	32	3.82E-02	67.5	
12	3	187.72	12	14	2.27	188.00	171	32	4.08E-02	59.1	
13	3	198.95	13	11	3.03	199.25	171	32	4.29E-02	54.7	
14	0	224.96	8	9	2.64	225.28	222	7	2.60E-02	72.9	
15	0	276.41	18	17	1.68	276.78	272	10	5.99E-02	49.4	
16	0	302.93	65	6	1.41	303.33	298	12	2.17E-01	14.5	
17	0	333.87	24	6	1.63	334.31	330	7	8.15E-02	25.6	
18	0	355.77	163	0	1.82	356.23	351	9	5.43E-01	7.8	
19	9	384.00	44	11	4.13	384.49	379	11	1.48E-01	24.9	7.48E+00
20	9	386.69	23	9	2.37	387.18	379	11	7.73E-02	34.2	
21	0	390.97	13	5	1.18	391.46	390	6	4.22E-02	42.7	
22	0	437.11	22	2	1.96	437.65	434	7	7.42E-02	23.4	

Sample ID : 9810172-12 Acquisition date : 2-NOV-1998 08:02:13

Total number of lines in spectrum 22
Number of unidentified lines 17
Number of lines tentatively identified by NID 5 22.73%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2 -gma rror	Flags
BA-133	10.50Y	1.00	5.385E+02	5.385E+02	1.410E+02	.19	
NP-237	2.14E+06Y	1.00	6.316E+01	6.316E+01	17.67E+01	.79	
	Total Activity :		6.016E+02	6.016E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AM-241	432.20Y	1.00	1.304E+02	1.304E+02	0.579E+02	44.36	
	Total Activity :		1.304E+02	1.304E+02			

Grand Total Activity : 7.321E+02 7.321E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.408E+01	6.602E+02	6.603E+02	38.83	OK
	302.84	17.80	6.042E+00	5.445E+02	5.446E+02	87.46	OK
	356.01	60.00	5.129E+00	4.771E+02	4.772E+02	37.85	OK
	Final Mean for 3 Valid Peaks = 5.385E+02+/- 1.410E+02 (26.19%)						
NP-237	86.50	12.60*	1.388E+01	6.316E+01	6.316E+01	279.79	OK
	Final Mean for 1 Valid Peaks = 6.316E+01+/- 1.767E+02 (279.79%)						

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
AM-241	59.54	35.90*	1.503E+01	1.304E+02	1.304E+02	44.36	OK
	Final Mean for 1 Valid Peaks = 1.304E+02+/- 5.787E+01 (44.36%)						

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-12

Acquisition date : 2-NOV-1998 08:02:13

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	25.	122.06	2.3197E+01
CD-109	21.	88.03	4.2570E+02
PA-231	335.	9.28	2.2894E+02
PA-234	96.	21.72	4.9594E+01
TH-234	108.	63.29	8.1059E+02

JDP 11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:13:51.58

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017213_GE1_BAFIL_45138.CI
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB2-42
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 08:08:31.
Sample ID : 9810172-13 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE1 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.12 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	30.94	654	39	1.50	31.03	27	13	2.18E+00	4.2	3.61E+00
2	4	35.32	156	43	2.00	35.42	27	13	5.19E-01	12.6	
3	5	60.33	24	50	2.59	60.45	58	16	7.92E-02	49.2	4.82E+00
4	5	65.43	20	65	3.46	65.56	58	16	6.71E-02	85.0	
5	1	76.07	17	19	2.38	76.22	74	13	5.81E-02	44.9	1.73E+01
6	1	81.07	277	19	2.10	81.22	74	13	9.23E-01	6.2	
7	0	111.87	41	40	1.38	112.06	109	7	1.37E-01	29.7	
8	0	247.06	9	8	1.30	247.41	244	7	3.12E-02	60.8	
9	0	276.84	23	20	1.87	277.22	272	11	7.77E-02	42.0	
10	0	303.16	40	16	1.47	303.57	299	8	1.34E-01	23.4	
11	0	333.71	13	10	2.55	334.14	330	8	4.18E-02	52.3	
12	0	355.90	174	8	1.80	356.36	351	10	5.81E-01	8.1	
13	8	383.93	26	19	2.81	384.42	378	18	8.63E-02	37.3	3.78E+00
14	8	386.79	17	17	2.50	387.28	378	18	5.56E-02	61.7	
15	8	391.56	12	16	3.43	392.05	378	18	4.08E-02	67.8	
16	0	436.37	20	0	1.95	436.90	432	8	6.67E-02	22.4	

Sample ID : 9810172-13 Acquisition date : 2-NOV-1998 08:08:31

Total number of lines in spectrum 16
Number of unidentified lines 12
Number of lines tentatively identified by NID 4 25.0

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.915E+02	4.915E+02	1.303E+ 2	26.51	
	Total Activity :		4.915E+02	4.915E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AM-241	432.20Y	1.00	3.963E+01	3.963E+01	4.107E+01	103.65	
	Total Activity :		3.963E+01	3.963E+01			

Grand Total Activity : 5.311E+02 5.311E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.407E+01	5.372E+02	5.373E+02	39.30	OK
	302.84	17.80	6.037E+00	3.359E+02	3.360E+02	94.71	OK
	356.01	60.00	5.127E+00	5.106E+02	5.107E+02	37.97	OK

Final Mean for 3 Valid Peaks = 4.915E+02+/- 1.303E+02 (26.51%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
AM-241	59.54	35.90*	1.505E+01	3.963E+01	3.963E+01	103.65	OK

Final Mean for 1 Valid Peaks = 3.963E+01+/- 4.107E+01 (103.65%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-13

Acquisition date : 2-NOV-1998 08:08:31

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	22.	122.06	2.1793E+01
CD-109	24.	88.03	4.4746E+02
PA-231	353.	9.28	2.3481E+02
PA-234	105.	21.72	5.1749E+01
TH-234	91.	63.29	7.4819E+02
NP-237	27.	86.50	1.3954E+02

JOK
11-2-99

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:21:02.71

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017214_GE1_BAFIL_45141.CN
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB3-7
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 08:15:45.
Sample ID : 9810172-14 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE1 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.12 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	30.95	697	45	1.55	31.04	25	15	2.32E+00	4.1	2.47E+00
2	3	35.29	176	31	1.90	35.39	25	15	5.86E-01	9.6	
3	0	60.09	43	108	1.22	60.21	56	10	1.44E-01	47.5	
4	0	81.06	248	47	1.54	81.21	77	9	8.28E-01	8.1	
5	0	93.17	14	34	2.07	93.33	89	8	4.60E-02	78.1	
6	4	111.47	44	20	2.43	111.66	107	18	1.47E-01	22.7	1.26E+00
7	4	115.79	23	8	2.29	115.98	107	18	7.66E-02	36.8	
8	4	119.64	15	5	3.24	119.84	107	18	5.07E-02	66.5	
9	0	128.55	19	8	1.80	128.75	125	8	6.28E-02	34.8	
10	0	169.87	8	39	1.68	170.13	165	9	2.79E-02	138.0	
11	0	276.46	21	3	1.49	276.84	273	9	7.15E-02	25.1	
12	0	302.58	38	17	1.25	302.98	298	10	1.25E-01	26.4	
13	0	334.51	18	20	1.89	334.94	329	9	5.87E-02	51.9	
14	0	355.81	162	10	1.62	356.27	351	10	5.40E-01	8.7	
15	1	383.52	34	10	2.63	384.00	380	16	1.13E-01	26.6	1.93E+00
16	1	386.75	50	6	2.28	387.24	380	16	1.67E-01	18.3	
17	1	391.66	16	5	2.63	392.15	380	16	5.42E-02	42.6	
18	0	418.69	7	5	2.19	419.20	416	6	2.44E-02	62.5	
19	0	437.57	16	6	1.63	438.11	433	8	5.31E-02	36.6	
20	0	510.82	8	4	2.86	511.42	507	8	2.72E-02	54.8	

Acquisition date : 2-NOV-1998 08:15:45

Total number of lines in spectrum 20
Number of unidentified lines 16
Number of lines tentatively identified by NID 4 20.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.522E+02	4.522E+02	1.227E+02	27.13	
	Total Activity :		4.522E+02	4.522E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AM-241	432.20Y	1.00	7.182E+01	7.182E+01	7.216E+01	100.48	
	Total Activity :		7.182E+01	7.182E+01			
	Grand Total Activity :		5.240E+02	5.240E+02			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

00217

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.407E+01	4.821E+02	4.821E+02	40.66	OK
	302.84	17.80	6.048E+00	3.149E+02	3.150E+02	97.95	OK
	356.01	60.00	5.129E+00	4.743E+02	4.743E+02	38.53	OK

Final Mean for 3 Valid Peaks = 4.522E+02+/- 1.227E+02 (27.13%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
AM-241	59.54	35.90*	1.506E+01	7.182E+01	7.182E+01	100.48	OK

Final Mean for 1 Valid Peaks = 7.182E+01+/- 7.216E+01 (100.48%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-14

Acquisition date : 2-NOV-1998 08:15:45

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	16.	122.06	1.8807E+01
CD-109	28.	88.03	4.8067E+02
PA-231	308.	9.28	2.2000E+02
PA-234	100.	21.72	5.0636E+01
TH-234	122.	63.29	8.5878E+02
NP-237	27.	86.50	1.3929E+02

JDP
11-2-98

VAX/VMS Peak Search Report Generated 2-NOV-1998 08:27:13.59

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017215_GE1_BAFIL_45144.CN
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB3-10
Deposition Date :
Sample Date : 2-NOV-1998 00:00:00. Acquisition date : 2-NOV-1998 08:21:52.
Sample ID : 9810172-15 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE1 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.12 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	30.88	744	36	1.74	30.97	26	13	2.48E+00	3.8	9.78E+00
2	3	35.16	190	17	1.88	35.25	26	13	6.34E-01	10.4	
3	6	61.81	102	33	3.80	61.94	50	24	3.39E-01	16.1	3.01E+00
4	6	66.70	29	14	2.32	66.83	50	24	9.53E-02	38.6	
5	6	70.73	14	10	2.67	70.87	50	24	4.81E-02	51.4	
6	0	80.86	281	37	1.46	81.01	76	10	9.36E-01	7.2	
7	0	92.46	28	25	5.04	92.63	88	9	9.20E-02	37.8	
8	0	111.86	33	33	1.50	112.04	108	7	1.10E-01	33.7	
9	0	116.59	24	10	1.71	116.79	115	5	8.14E-02	28.9	
10	3	136.04	16	37	2.96	136.26	132	33	5.45E-02	63.2	2.10E+00
11	3	161.01	13	16	2.99	161.26	132	33	4.28E-02	67.8	
12	0	277.34	12	10	1.55	277.72	274	6	4.04E-02	50.7	
13	0	303.43	48	19	1.61	303.83	299	10	1.58E-01	22.8	
14	0	333.41	21	4	1.17	333.84	329	8	6.95E-02	27.6	
15	0	355.74	171	5	1.73	356.19	352	9	5.68E-01	8.0	
16	3	383.28	64	3	2.63	383.76	380	16	2.13E-01	13.2	1.15E+01
17	3	386.78	35	2	2.65	387.26	380	16	1.18E-01	25.9	
18	3	391.51	15	0	2.39	392.00	380	16	5.08E-02	37.2	
19	0	437.21	16	7	1.43	437.74	432	9	5.36E-02	38.4	
20	0	511.09	16	0	1.20	511.69	507	10	5.33E-02	25.0	

Sample ID : 9810172-15 Acquisition date : 2-NOV-1998 08:21:52

Total number of lines in spectrum 20
Number of unidentified lines 15
Number of lines tentatively identified by NID 5 25.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	5.033E+02	5.034E+02	1.33E+02	26.55	
	Total Activity :		5.033E+02	5.034E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	1.607E+03	1.607E+03	0.738E+03	45.90	
	Total Activity :		1.607E+03	1.607E+03			
	Grand Total Activity :		2.110E+03	2.110E+03			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.408E+01	5.443E+02	5.444E+02	40.01	OK
	302.84	17.80	6.032E+00	3.989E+02	3.989E+02	93.89	OK
	356.01	60.00	5.130E+00	4.991E+02	4.991E+02	38.01	OK

Final Mean for 3 Valid Peaks = 5.034E+02+/- 1.336E+02 (26.55%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.499E+01	1.607E+03	1.607E+03	45.90	OK

Final Mean for 1 Valid Peaks = 1.607E+03+/- 7.375E+02 (45.90%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-15

Acquisition date : 2-NOV-1998 08:21:52

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	15.	122.06	1.8545E+01
CD-109	22.	88.03	4.3084E+02
PA-231	381.	9.28	2.4357E+02
PA-234	121.	21.72	5.5286E+01
NP-237	23.	86.50	1.2953E+02
AM-241	116.	59.54	8.7816E+01

SECTION IX

ANALYTICAL DATA (RADIUM-228)

98-10172-Ra228-SO-B	Lab Deadline: Thu 11/05/98	Lab ID	CLIENT ID	Sample Descrip	Sample Date	Aliquot (g)	Ba-133 ACT from Gamma	Tracer Aliq (g)	Witness	Carrier Aliq		
Sample Matrix	Soil/Solid	01	Spike	LCS	11/06/98	1.0000	549.3000	1.0230		2.0		
Reporting Units	pCi/g	02	Blank	MBL	11/06/98	1.0000	462.8000	1.0155		2.0		
Client	RECRA	03	WGSB1-12	DUP	09/23/98	0.5051	481.6000	1.0170		2.0		
PO		04	WGSB1-7	TRG	09/23/98	0.5169	530.7000	1.0187		2.0		
Job #	AD-Little	05	WGSB1-12	DO	09/23/98	0.5047	526.5000	1.0148		2.0		
MDA Required	6.00E-02	06	WGSB1-20	TRG	09/23/98	0.5462	498.3000	1.0140		2.0		
Dup. Sample ID	05	07	WGSB1-30	TRG	09/23/98	0.5380	443.7000	1.0155		2.0		
MS ID		08	WGSB1-40	TRG	09/23/98	0.5432	482.8000	1.0112		2.0		
MS Original ID		09	WGSB2-7	TRG	09/23/98	0.5125	502.7000	1.0156		2.0		
MS Dup ID		10	WGSB2-10	TRG	09/23/98	0.5434	516.9000	1.0080		2.0		
Tracer ID	BA-5A	11	WGSB2-20	TRG	09/23/98	0.5684	423.4000	1.0088		2.0		
Tracer Ref Date	11/06/98	12	WGSB2-30	TRG	09/23/98	0.5458	457.0000	1.0084		2.0		
Tracer T1/2	3.83E+03	13	WGSB2-42	TRG	09/23/98	0.5634	535.2000	1.0066		2.0		
Tracer Initial ACT	1.07E+03	14	WGSB3-7	TRG	09/23/98	0.5663	427.0000	1.0105		2.0		
Carrier	Yttrium	15	WGSB3-10	TRG	09/23/98	0.6068	463.3000	1.0087		2.0		
Carrier Concentration	2.75E+01											
Procedure Used												
Count Duration (mins)												

00225

Data Entry: _____ Date: 11/11/98

98-10172-Ra228-SO-B	Lab Deadline: Thu 11/05/98	Lab ID	Wet Wt. (g)	Dry Wt. (g)	Tare Wt. (g)	Final Wt. (g)	Total R (dec.)	SAF (dec.)	Analyst Comments
Sample Matrix	Soil/Solid	01			0.0960	0.1509	1.1079	1.1285	
Reporting Units	pCi/g	02			0.0965	0.1525	0.9592	1.1329	
Client	RECRA	03			0.0962	0.1514	0.9825	1.1297	
PO		04			0.0969	0.1506	1.0514	1.1239	
Job #	AD-Little	05			0.0972	0.1519	1.0666	1.1278	
MDA Required	6.00E-02	06			0.0966	0.1538	1.0565	1.1377	
Dup. Sample ID	05	07			0.0958	0.1502	0.8933	1.1266	
MS ID		08			0.0964	0.1522	1.0013	1.1321	
MS Original ID		09			0.0967	0.1533	1.0530	1.1353	
MS Dup ID		10			0.0968	0.1528	1.0793	1.1329	
Tracer ID	BA-5A	11			0.0978	0.1536	0.8802	1.1321	
Tracer Ref Date	11/06/98	12			0.0975	0.1501	0.8959	1.1197	
Tracer T1/2	3.83E+03	13			0.0977	0.1521	1.0871	1.1266	
Tracer Initial ACT	1.07E+03	14			0.0972	0.1529	0.8846	1.1317	
Carrier	Yttrium	15			0.0975	0.1533	0.9633	1.1321	
Carrier Concentration	2.75E+01								
Procedure Used									
Count Duration (mins)	[redacted]								
		[redacted]							

00226

Data Entry: _____ Date: 11/11/98

98-10172-Ra228-SO-B	Lab Deadline: Thu 11/05/98	Lab ID	Rough Prep Date/Time	By	Prep Date/Time	By	Chemistry Date/Time	By	Count Date/Time	By	P	PID	S
Sample Matrix	Soil/Solid	01	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 12:30	CDJ					
Reporting Units	pCi/g	02	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 12:30	CDJ					
Client	RECRA	03	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 12:30	CDJ					
PO		04	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 12:30	CDJ					
Job #	AD-Little	05	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 12:30	CDJ					
MDA Required	6.00E-02	06	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 12:30	CDJ					
Dup. Sample ID	05	07	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 12:30	CDJ					
MS ID		08	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 12:30	CDJ					
MS Original ID		09	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 13:38	CDJ					
MS Dup ID		10	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 13:38	CDJ					
Tracer ID	BA-5A	11	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 13:38	CDJ					
Tracer Ref Date	11/06/98	12	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 13:38	CDJ					
Tracer T1/2	3.83E+03	13	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 13:38	CDJ					
Tracer Initial ACT	1.07E+03	14	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 13:38	CDJ					
Carrier	Yttrium	15	NA	NA	Fri 11/06/98 00:00	JB	Wed 11/11/98 13:38	CDJ					
Carrier Concentration	2.75E+01												
Procedure Used													
Count Duration (mins)													

Data Entry: _____ Date: 11/11/98

Thermo NUtech
Spike & Tracer Worksheet

BATCH ID:	98-10-172			ANALYSIS	Ra-226 & Ra-228			DATE	11/6/98 11:50	
	Isotope	Sol #	Activity dpm/ml	Solution Date	Volume Used, ml	Date	Technician	Known pCi	Error Estimate	Witness
SPIKE	Ra-226	Ra-5b	44.348	11/6/98		11/6/98		0.00	0.000	
SPIKE	Ra-228	Ra-8	48.980	11/6/98	0.5465	11/6/98	JB	12.06	0.145	EEL
TRACER	Ba-133	Ba-5a	1073.942	11/6/98	BELOW	11/6/98	JB			EEL

PASTE PRINT OUT FROM BALANCE BELOW

ADD APPROXIMATE STANDARD ADDITIONS AS BELOW
Ra-5b ~ 0.5000 g
Ra-8 ~ 0.5000 g Ba-5a ~ 1.0000g
FOR THE MATRIX SPIKE SEE LAB MANAGER OR COUNT ROOM SUPERVISOR

LCS

Ra-8 + 0.5465 g

TRACER

Aliquot 3 Burs

+ 0.5051 g
+ 0.5169 g
+ 0.5047 g
+ 0.5462 g
+ 0.5380 g
+ 0.5482 g
+ 0.5125 g
+ 0.5434 g
+ 0.5684 g
+ 0.5459 g
+ 0.5634 g
+ 0.5663 g
+ 0.5568 g

MATRIX SPIKE

Ba-5a

+ 1.0135 g
+ 1.0170 g
+ 1.0187 g
+ 1.0149 g
+ 1.0140 g
+ 1.0155 g
+ 1.0112 g
+ 1.0156 g
+ 1.0080 g
+ 1.0089 g
+ 1.0084 g
+ 1.0086 g
+ 1.0105 g
+ 1.0087 g

00228

Lab ID	Client ID	Sample Desc.	Nuclide	Activity Units	Result	Error 2s	MDA (0.06)	Eff%	LCS/MS Known	LCS/MS R%	Dup RPD (20)
98-10172-01	Spike	LCS	Ra228	pCi/g	1.13E+01	1.18E+00	1.19E+00	41.90	12.04	93.89	
98-10172-02	Blank	MBL	Ra228	pCi/g	8.67E-02	4.16E-01	1.04E+00	41.20			
98-10172-03	WGSB1-12	DUP	Ra228	pCi/g	5.56E-01	9.99E-01	2.38E+00	41.30			18.90
98-10172-04	WGSB1-7	TRG	Ra228	pCi/g	-1.21E+00	8.23E-01	2.41E+00	43.40			
98-10172-05	WGSB1-12	DO	Ra228	pCi/g	4.60E-01	9.34E-01	2.24E+00	44.10			
98-10172-06	WGSB1-20	TRG	Ra228	pCi/g	1.22E+00	8.05E-01	1.68E+00	44.60			
98-10172-07	WGSB1-30	TRG	Ra228	pCi/g	1.23E+00	8.70E-01	1.85E+00	46.10			
98-10172-08	WGSB1-40	TRG	Ra228	pCi/g	1.26E+00	7.89E-01	1.63E+00	45.20			
98-10172-09	WGSB2-7	TRG	Ra228	pCi/g	-5.32E-01	8.61E-01	2.34E+00	41.90			
98-10172-10	WGSB2-10	TRG	Ra228	pCi/g	1.02E+00	8.42E-01	1.83E+00	41.20			
98-10172-11	WGSB2-20	TRG	Ra228	pCi/g	9.38E-01	1.03E+00	2.36E+00	41.30			
98-10172-12	WGSB2-30	TRG	Ra228	pCi/g	-1.06E+00	8.90E-01	2.53E+00	43.40			
98-10172-13	WGSB2-42	TRG	Ra228	pCi/g	1.37E-01	8.06E-01	2.00E+00	44.10			
98-10172-14	WGSB3-7	TRG	Ra228	pCi/g	1.58E+00	9.00E-01	1.82E+00	44.60			
98-10172-15	WGSB3-10	TRG	Ra228	pCi/g	6.77E-01	6.79E-01	1.52E+00	46.10			

THERMO NUCLEAR SERVICES

Comments:

Thermo Nuclear Services
GPC/Radium-228 Calculations; Version 1.0 [950920]

Printed: 11/11/98 16:24
Page 2 of 2

Lab ID	MDA Test	LCS Test	Blk MDA Test	RPD Test	Dup Sigma	MS Test	Drawer Test	S Test		Analysis Number	Detect	% Solid	% Moist	F/UF	W/D
98-10172-01	INV	OK					#######	INV		98-10172-Ra228-SO-B	######				
98-10172-02	INV		OK				#######	INV		98-10172-Ra228-SO-B	######				
98-10172-03	INV			OK	OK		#######	INV		98-10172-Ra228-SO-B	######				
98-10172-04	INV						#######	INV		98-10172-Ra228-SO-B	######				
98-10172-05	INV						#######	INV		98-10172-Ra228-SO-B	######				
98-10172-06	INV						#######	INV		98-10172-Ra228-SO-B	######				
98-10172-07	INV						#######	INV		98-10172-Ra228-SO-B	######				
98-10172-08	INV						#######	INV		98-10172-Ra228-SO-B	######				
98-10172-09	INV						#######	INV		98-10172-Ra228-SO-B	######				
98-10172-10	INV						#######	INV		98-10172-Ra228-SO-B	######				
98-10172-11	INV						#######	INV		98-10172-Ra228-SO-B	######				
98-10172-12	INV						#######	INV		98-10172-Ra228-SO-B	######				
98-10172-13	INV						#######	INV		98-10172-Ra228-SO-B	######				
98-10172-14	INV						#######	INV		98-10172-Ra228-SO-B	######				
98-10172-15	INV						#######	INV		98-10172-Ra228-SO-B	######				

THERMO NUCLEAR SERVICES

Reviewed by: Marc Gregelin Date: 11/11/98

00229

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage	TOD
A1	9810172-01	26	494	60	1410	11/11/98 14:57
A2	9810172-02	0	54	60	1410	11/11/98 14:57
A3	9810172-03	6	84	60	1410	11/11/98 14:57
A4	9810172-04	3	69	60	1410	11/11/98 14:57
B1	9810172-05	4	87	60	1410	11/11/98 14:57
B2	9810172-06	2	76	60	1410	11/11/98 14:57
B3	9810172-07	4	75	60	1410	11/11/98 14:57
B4	9810172-08	3	75	60	1410	11/11/98 14:57

11-11-98

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage,	TOD
A1	9810172-09	2	68	60	1410	11/11/98 16:05
A2	9810172-10	4	71	60	1410	11/11/98 16:05
A3	9810172-11	7	91	60	1410	11/11/98 16:05
A4	9810172-12	1	73	60	1410	11/11/98 16:05
B1	9810172-13	2	81	60	1410	11/11/98 16:05
B2	9810172-14	5	81	60	1410	11/11/98 16:05
B3	9810172-15	5	67	60	1410	11/11/98 16:05

00231

JOP
11-11-98

Detector ID	Sample ID	Alpha	Beta	Guard	Count Count Time	Event	Voltage	TOD
A1	BKGD	8	78	32758	60	0	1470	36110.28
A2	BKGD	2	51	32758	60	0	1470	36110.28
A3	BKGD	5	74	32758	60	0	1470	36110.28
A4	BKGD	2	93	32754	60	0	1470	36110.28
B1	BKGD	8	78	33149	60	0	1410	36110.28
B2	BKGD	3	50	33151	60	0	1410	36110.28
B3	BKGD	3	51	33150	60	0	1410	36110.28
B4	BKGD	0	48	33149	60	0	1410	36110.28

00232

TMA/Eberline, Oak Ridge Laboratory

ANALYSIS: BA-133 DATE: 11/02/98

CLIENT: recra

SAM #: 98-10-172B

ASSOCIATION:

SAM#	SAM FRACTION	BA 133 ACTIVITY	AMOUNT ADDED	INITIAL AMOUNT	ACTUAL AMOUNT	%BA133 RECOVERY
01	SPIKE	1073.942	1.023	494.884	549.3	111.0
02	BLANK	1073.942	1.0155	491.256	462.8	94.2
03	WGSB1-7	1073.942	1.017	491.982	481.6	97.9
04	WGSB1-7	1073.942	1.0187	492.804	530.7	107.7
05	WGSB1-12	1073.942	1.0148	490.917	526.5	107.2
06	WGSB1-20	1073.942	1.014	490.53	498.3	101.6
07	WGSB1-30	1073.942	1.0155	491.256	443.7	90.3
08	WGSB1-40	1073.942	1.0112	489.176	482.8	98.7
09	WGSB2-7	1073.942	1.0156	491.304	502.7	102.3
10	WGSB2-10	1073.942	1.008	487.628	516.9	106.0
11	WGSB2-20	1073.942	1.0088	488.015	423.4	86.8
12	WGSB2-30	1073.942	1.0084	487.821	457	93.7
13	WGSB2-42	1073.942	1.0066	486.95	535.2	109.9
14	WGSB3-7	1073.942	1.0105	488.837	427	87.4
15	WGSB3-10	1073.942	1.0087	487.966	463.3	94.9
		1073.942		0		#DIV/0!
		1073.942		0		#DIV/0!
		1073.942		0		#DIV/0!
		1073.942		0		#DIV/0!
		1073.942		0		#DIV/0!

Calculated by: Asher Zon 11/9/98

00233

Ams 11/9/98

VAX/VMS Peak Search Report Generated 9-NOV-1998 16:39:13.81

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017201_GE3_BAFIL_45497.CN
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : SPIKE
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 16:33:51.
Sample ID : 9810172-01 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE3 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.32 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	7	62.26	49	23	2.29	62.70	59	11	1.62E-01	23.4	3.69E+00
2	7	65.37	11	12	1.43	65.79	59	11	3.64E-02	69.1	
3	0	81.27	293	33	1.38	81.67	78	7	9.76E-01	6.7	
4	0	112.54	25	45	1.29	112.89	110	7	8.30E-02	49.6	
5	0	144.18	6	16	1.72	144.48	142	7	1.88E-02	128.7	
6	0	276.49	26	6	1.12	276.56	273	8	8.61E-02	25.7	
7	1	303.12	55	6	1.58	303.14	298	14	1.84E-01	15.4	1.27E+00
8	1	307.84	5	9	1.58	307.86	298	14	1.55E-02	107.0	
9	0	334.68	13	7	1.95	334.65	332	5	4.46E-02	39.4	
10	2	352.25	5	0	1.78	352.19	351	9	1.53E-02	48.8	1.75E+02
11	2	356.27	185	0	1.64	356.21	351	9	6.15E-01	6.9	
12	1	384.14	29	12	1.64	384.04	381	10	9.74E-02	27.3	3.54E+00
13	1	386.99	33	13	1.65	386.88	381	10	1.10E-01	28.9	
14	0	416.08	13	0	3.94	415.92	412	8	4.33E-02	27.7	
15	0	437.48	15	2	1.77	437.29	434	7	5.04E-02	29.6	

Total number of lines in spectrum 15
Number of unidentified lines 11
Number of lines tentatively identified by NID 4 26.67%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	Sigma %Error	Flags
BA-133	10.50Y	1.00	5.492E+02	5.493E+02	1.423E+02	25.91	
	Total Activity :		5.492E+02	5.493E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	8.658E+02	8.658E+02	4.891E+02	56.50	
	Total Activity :		8.658E+02	8.658E+02			

Grand Total Activity : 1.415E+03 1.415E+03

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.427E+01	5.602E+02	5.602E+02	34.94	OK
	302.84	17.80	6.019E+00	4.636E+02	4.636E+02	69.96	OK
	356.01	60.00	4.715E+00	5.877E+02	5.877E+02	45.86	OK

Final Mean for 3 Valid Peaks = 5.493E+02+/- 1.423E+02 (25.91%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.331E+01	8.658E+02	8.658E+02	56.50	OK

Final Mean for 1 Valid Peaks = 8.658E+02+/- 4.891E+02 (56.50%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-01

Acquisition date : 9-NOV-1998 16:33:51

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	12.	122.06	1.4843E+01
CD-109	17.	88.03	3.6991E+02
PA-231	0.	9.28	7.8412E+01
PA-234	0.	21.72	8.3033E+00
NP-237	15.	86.50	1.0326E+02
AM-241	25.	59.54	5.0233E+01

Arno 11/9/98

VAX/VMS Peak Search Report Generated 9-NOV-1998 16:44:41.13

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017202_GE3_BAFIL_45501.CI
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : BLANK
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 16:39:21.
Sample ID : 9810172-02 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE3 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.30 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	61.84	34	27	1.41	62.27	60	5	1.15E-01	28.2	
2	0	81.37	242	34	1.50	81.77	77	10	8.08E-01	7.9	
3	0	111.38	40	42	1.91	111.73	107	11	1.34E-01	34.7	
4	0	161.91	8	16	1.67	162.17	158	7	2.83E-02	84.7	
5	1	182.91	6	7	1.46	183.13	181	8	1.99E-02	73.1	8.26E-01
6	1	185.80	12	5	1.47	186.02	181	8	4.11E-02	42.9	
7	0	249.70	7	5	2.55	249.81	246	6	2.17E-02	64.8	
8	0	277.33	23	8	1.16	277.39	274	7	7.70E-02	29.5	
9	0	303.50	46	22	1.38	303.52	300	8	1.54E-01	22.5	
10	0	356.43	159	2	1.84	356.36	353	8	5.29E-01	8.1	
11	1	384.26	16	8	1.64	384.15	381	9	5.41E-02	39.4	3.80E+00
[illegible]	1	387.13	27	9	1.65	387.01	381	9	9.16E-02	27.2	
[illegible]	0	437.60	11	3	1.64	437.41	434	6	3.69E-02	38.8	

00238

Total number of lines in spectrum	13	
Number of unidentified lines	9	
Number of lines tentatively identified by NID	4	30.77%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.627E+02	4.628E+02	1.239E+02	6.78	
	Total Activity :		4.627E+02	4.628E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	6.143E+02	6.143E+02	3.969E+02	64.60	
	Total Activity :		6.143E+02	6.143E+02			
	Grand Total Activity :		1.077E+03	1.077E+03			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.427E+01	4.636E+02	4.637E+02	35.90	OK
	302.84	17.80	6.008E+00	3.898E+02	3.899E+02	77.17	OK
	356.01	60.00	4.711E+00	5.057E+02	5.058E+02	46.64	OK

Final Mean for 3 Valid Peaks = 4.628E+02+/- 1.239E+02 (26.78%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.327E+01	6.143E+02	6.143E+02	64.60	OK

Final Mean for 1 Valid Peaks = 6.143E+02+/- 3.969E+02 (64.60%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-02

Acquisition date : 9-NOV-1998 16:39:21

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	14.	122.06	1.5622E+01
CD-109	13.	88.03	3.2847E+02
PA-231	0.	9.28	7.8412E+01
PA-234	0.	21.72	8.3033E+00
NP-237	12.	86.50	9.3250E+01
AM-241	20.	59.54	4.5042E+01

Cms 11/9/98

VAX/VMS Peak Search Report Generated 9-NOV-1998 16:51:07.26

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017203_GE3_BAFIL_45503.CN
Analyses by : PEAK V16.6 PEAKEFF V2.2
[redacted]ent ID : WGSB1-12
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 16:45:49.
Sample ID : 9810172-03 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE3 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.33 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.09	38	48	2.23	62.52	59	7	1.26E-01	34.5	
2	0	81.35	242	44	1.36	81.75	78	8	8.07E-01	8.0	
3	0	112.73	46	27	2.03	113.07	108	11	1.54E-01	26.4	
4	0	188.17	18	37	9.38	188.38	181	14	6.11E-02	75.2	
5	0	224.08	19	4	4.80	224.24	221	8	6.33E-02	29.3	
6	0	277.50	13	14	2.23	277.56	272	8	4.36E-02	56.7	
7	0	303.66	72	18	1.50	303.69	299	10	2.39E-01	16.1	
8	3	334.06	16	3	1.94	334.03	329	13	5.40E-02	31.8	4.48E-01
9	3	338.16	8	3	1.95	338.13	329	13	2.62E-02	61.7	
10	0	356.62	151	10	1.77	356.56	352	8	5.03E-01	8.9	
11	1	384.12	32	8	1.64	384.01	381	9	1.06E-01	22.3	4.53E+00
12	1	387.22	34	6	1.65	387.10	381	9	1.14E-01	21.7	
[redacted]	0	391.59	13	1	1.86	391.47	390	4	4.21E-02	31.6	
14	0	437.14	20	7	1.22	436.95	433	7	6.67E-02	31.3	
15	0	511.43	11	2	2.70	511.12	508	6	3.50E-02	36.0	

00242

Total number of lines in spectrum 15
Number of unidentified lines 11
Number of lines tentatively identified by NID 4 26.67%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.816E+02	4.816E+02	1.283E+02	26.64	
	Total Activity :		4.816E+02	4.816E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	6.719E+02	6.719E+02	5.095E+02	75.84	
	Total Activity :		6.719E+02	6.719E+02			
	Grand Total Activity :		1.153E+03	1.153E+03			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.427E+01	4.630E+02	4.630E+02	36.05	OK
	302.84	17.80	6.004E+00	6.051E+02	6.052E+02	70.50	OK
	356.01	60.00	4.707E+00	4.810E+02	4.811E+02	47.27	OK

Final Mean for 3 Valid Peaks = 4.816E+02+/- 1.283E+02 (26.64%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.329E+01	6.719E+02	6.719E+02	75.84	OK

Final Mean for 1 Valid Peaks = 6.719E+02+/- 5.095E+02 (75.84%)

Flag: "*" = Keyline

00244

Minimum Detectable Activity Report
Sample ID : 9810172-03

Acquisition date : 9-NOV-1998 16:45:49

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	9.	122.06	1.3188E+01
CD-109	9.	88.03	2.8745E+02
PA-231	0.	9.28	7.8412E+01
PA-234	0.	21.72	8.3033E+00
NP-237	11.	86.50	8.9588E+01
AM-241	29.	59.54	5.3097E+01

Anal 11/9/98

VAX/VMS Peak Search Report Generated 9-NOV-1998 16:58:14.66

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017204_GE3_BAFIL_45507.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB1-7
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 16:52:54.
Sample ID : 9810172-04 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE3 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.33 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	61.44	26	46	1.78	61.88	60	6	8.63E-02	45.2	
2	0	81.18	288	40	1.50	81.58	77	10	9.58E-01	7.2	
3	4	112.07	25	20	1.83	112.42	108	17	8.27E-02	35.8	1.71E+00
4	4	117.43	7	24	1.84	117.77	108	17	2.48E-02	110.9	
5	0	161.74	13	14	1.19	162.00	159	7	4.33E-02	55.2	
6	0	264.54	13	2	3.35	264.63	261	7	4.42E-02	32.0	
7	0	277.08	20	8	1.16	277.15	273	8	6.67E-02	33.2	
8	1	303.12	51	10	1.58	303.14	300	12	1.70E-01	16.8	4.03E+00
9	1	307.84	11	12	1.58	307.86	300	12	3.79E-02	50.9	
10	0	316.17	10	2	2.65	316.18	314	6	3.36E-02	37.4	
11	0	356.49	179	2	1.93	356.43	354	7	5.95E-01	7.7	
12	1	384.15	50	5	1.64	384.04	382	9	1.66E-01	15.8	1.00E+01
13	1	387.26	44	12	1.65	387.15	382	9	1.48E-01	17.8	
14	0	437.67	19	3	1.93	437.47	434	6	6.33E-02	27.1	
15	0	511.77	10	2	1.58	511.45	508	7	3.47E-02	37.3	

00246

Summary of Nuclide Activity
Sample ID : 9810172-04

Acquisition date : 9-NOV-1998 16:52:54

Total number of lines in spectrum	15	
Number of unidentified lines	11	
Number of lines tentatively identified by NID	4	26.67%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	5.306E+02	5.307E+02	1.395E+02	26.29	
	Total Activity :		5.306E+02	5.307E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	4.640E+02	4.640E+02	4.448E+02	95.87	
AM-241	432.20Y	1.00	4.911E+01	4.911E+01	4.709E+01	95.87	
	Total Activity :		5.131E+02	5.131E+02			
	Grand Total Activity :		1.044E+03	1.044E+03			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

00247

Nuclide Line Activity Report
Sample ID : 9810172-04

Acquisition date : 9-NOV-1998 16:52:54

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.426E+01	5.503E+02	5.504E+02	35.38	OK
	302.84	17.80	6.019E+00	4.298E+02	4.299E+02	71.24	OK
	356.01	60.00	4.710E+00	5.693E+02	5.694E+02	46.36	OK

Final Mean for 3 Valid Peaks = 5.307E+02+/- 1.395E+02 (26.29%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.323E+01	4.640E+02	4.640E+02	95.87	OK

Final Mean for 1 Valid Peaks = 4.640E+02+/- 4.448E+02 (95.87%)

AM-241	59.54	35.90*	1.323E+01	4.911E+01	4.911E+01	95.87	OK

Final Mean for 1 Valid Peaks = 4.911E+01+/- 4.709E+01 (95.87%)

Flag: "*" = Keyline

00248

Minimum Detectable Activity Report
Sample ID : 9810172-04

Page :
Acquisition date : 9-NOV-1998 16:52:54

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER
CO-57	12.	122.06	1.4430E+01
CD-109	11.	88.03	3.0256E+02
PA-231	0.	9.28	7.8412E+0
PA-234	0.	21.72	8.3033E+0
NP-237	8.	86.50	7.9606E+0

Ams 11/9/98

VAX/VMS Peak Search Report Generated 9-NOV-1998 17:12:11.95

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017205_GE3_BAFIL_45511.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB1-12
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 17:06:54
Sample ID : 9810172-05 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE3 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.31 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	61.81	28	23	1.42	62.25	58	17	9.43E-02	31.4	2.16E+0
2	2	65.32	13	24	1.43	65.75	58	17	4.44E-02	66.3	
3	0	81.22	315	31	1.40	81.62	78	8	1.05E+00	6.4	
4	0	94.76	11	20	3.32	95.14	92	7	3.60E-02	76.3	
5	0	111.96	47	36	1.96	112.31	108	10	1.56E-01	28.4	
6	0	206.75	13	10	4.52	206.93	203	8	4.45E-02	49.1	
7	0	276.65	33	2	1.67	276.71	273	7	1.11E-01	18.6	
8	0	303.44	43	8	1.37	303.46	300	6	1.44E-01	18.2	
9	0	334.74	14	6	1.20	334.71	331	6	4.67E-02	38.5	
10	0	356.51	177	4	1.79	356.45	353	8	5.90E-01	7.8	
11	10	384.38	30	8	2.60	384.27	381	10	1.00E-01	26.8	2.16E+0
12	10	387.83	28	13	1.89	387.72	381	10	9.45E-02	29.0	
13	0	415.44	5	4	0.89	415.28	412	5	1.80E-02	68.7	
14	0	437.04	14	2	1.13	436.85	433	7	4.79E-02	30.4	

00250

Summary of Nuclide Activity
Sample ID : 9810172-05

Acquisition date : 9-NOV-1998 17:06:54

Total number of lines in spectrum	14	
Number of unidentified lines	10	
Number of lines tentatively identified by NID	4	28.57%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	5.264E+02	5.265E+02	1.392E+02	26.45	
	Total Activity :		5.264E+02	5.265E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	5.056E+02	5.056E+02	3.556E+02	70.34	
	Total Activity :		5.056E+02	5.056E+02			
	Grand Total Activity :		1.032E+03	1.032E+03			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.426E+01	6.036E+02	6.036E+02	34.73	OK
	302.84	17.80	6.010E+00	3.647E+02	3.647E+02	72.58	OK
	356.01	60.00	4.710E+00	5.643E+02	5.644E+02	46.43	OK

Final Mean for 3 Valid Peaks = 5.265E+02+/- 1.392E+02 (26.45%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.327E+01	5.056E+02	5.056E+02	70.34	OK

Final Mean for 1 Valid Peaks = 5.056E+02+/- 3.556E+02 (70.34%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-05 Acquisition date : 9-NOV-1998 17:06:54

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	7.	122.06	1.1541E+01
CD-109	14.	88.03	3.3716E+02
PA-231	0.	9.28	7.8412E+01
PA-234	0.	21.72	8.3033E+00
NP-237	12.	86.50	9.4972E+01
AM-241	22.	59.54	4.6959E+01

VAX/VMS Peak Search Report Generated 9-NOV-1998 16:50:15.14

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017206_GE2_BAFIL_45502.CN
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB1-20
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 16:44:56.
Sample ID : 9810172-06 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE2 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.05 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	77.52	15	4	1.72	77.00	76	13	4.89E-02	13.5	3.30E+00
2	3	81.08	237	19	1.76	80.56	76	13	7.91E-01	7.0	
3	0	161.48	11	12	2.67	161.00	158	6	3.59E-02	59.4	
4	0	248.40	8	3	2.82	247.96	245	6	2.58E-02	50.9	
5	0	276.53	38	4	1.48	276.11	272	9	1.27E-01	18.9	
6	0	302.90	96	3	2.16	302.49	298	10	3.21E-01	10.7	
7	0	355.98	293	15	2.02	355.59	350	10	9.77E-01	6.3	
8	0	383.82	51	7	2.03	383.44	379	9	1.71E-01	16.7	
9	0	436.57	27	0	1.91	436.22	431	9	9.00E-02	19.2	
10	0	597.77	6	0	1.16	597.50	595	5	2.00E-02	40.8	

Sample ID : 9810172-06 Acquisition date : 9-NOV-1998 16:44:56

Total number of lines in spectrum 10
Number of unidentified lines 7
Number of lines tentatively identified by NID 3 30.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.982E+02	4.983E+02	1.031E+02	20.69	
	Total Activity :		4.982E+02	4.983E+02			
	Grand Total Activity :		4.982E+02	4.983E+02			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Line Activity Report
Sample ID : 9810172-06

Page :
Acquisition date : 9-NOV-1998 16:44:56

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.177E+01	5.507E+02	5.507E+02	39.01	OK
	302.84	17.80	1.201E+01	4.057E+02	4.058E+02	45.02	OK
	356.01	60.00	8.196E+00	5.368E+02	5.369E+02	28.58	OK

Final Mean for 3 Valid Peaks = 4.983E+02+/- 1.031E+02 (20.69%)

Flag: "*" = Keyline

00256

Minimum Detectable Activity Report
Sample ID : 9810172-06

Acquisition date : 9-NOV-1998 16:44:56

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	18.	122.06	1.0927E+01
CD-109	17.	88.03	3.8380E+02
PA-231	0.	9.28	9.6993E+05
PA-234	0.	21.72	8.6624E+02
TH-234	23.	63.29	9.3645E+02
NP-237	16.	86.50	1.1283E+02
AM-241	21.	59.54	1.1633E+02

VAX/VMS Peak Search Report Generated 9-NOV-1998 17:51:04.33

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017207_GE2_BAFIL_45506.CN
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB1-30
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 16:52:06.
Sample ID : 9810172-07 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE2 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.04 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.84	198	31	2.04	80.32	74	10	6.61E-01	8.7	
2	0	215.04	14	5	1.27	214.58	211	8	4.81E-02	38.6	
3	0	238.98	10	6	2.14	238.53	236	7	3.30E-02	50.7	
4	0	276.57	37	9	1.44	276.14	272	7	1.24E-01	21.1	
5	0	302.95	83	8	2.01	302.54	300	9	2.78E-01	12.4	
6	5	355.95	274	4	1.79	355.56	350	13	9.14E-01	6.1	4.75E-01
7	5	359.24	10	8	2.70	358.86	350	13	3.28E-02	172.2	
8	0	384.15	54	5	1.88	383.78	378	11	1.79E-01	16.1	
9	0	436.65	24	2	1.30	436.30	433	7	8.14E-02	22.1	

Summary of Nuclide Activity
Sample ID : 9810172-07

Acquisition date : 9-NOV-1998 16:52:06

Total number of lines in spectrum	9	
Number of unidentified lines	6	
Number of lines tentatively identified by NID	3	33.33%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.437E+02	4.437E+02	0.934E+02	21.06	
	Total Activity :		4.437E+02	4.437E+02			
	Grand Total Activity :		4.437E+02	4.437E+02			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.169E+01	4.632E+02	4.633E+02	40.57	OK
	302.84	17.80	1.200E+01	3.515E+02	3.515E+02	46.72	OK
	356.01	60.00	8.197E+00	5.020E+02	5.021E+02	28.41	OK

Final Mean for 3 Valid Peaks = 4.437E+02+/- 9.344E+01 (21.06%)

Flag: "*" = Keyline

m Detectable Activity Report Acquisition date : 9-NOV-199

ID : 9810172-07

de	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
7	20.	122.06	1.1421E+01
09	19.	88.03	4.0561E+02
231	0.	9.28	9.6993E+05
234	0.	21.72	8.6624E+0
234	24.	63.29	9.6566E+0
-237	16.	86.50	1.1222E+0
-241	15.	59.54	1.0040E+

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Dms 11/9/98

VAX/VMS Peak Search Report Generated 9-NOV-1998 17:11:32.67

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017208_GE2_BAFIL_45510.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB1-40
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 17:06:13
Sample ID : 9810172-08 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE2 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.05 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	61.18	5	39	2.59	60.65	54	8	1.73E-02	211.4	
2	0	81.16	234	20	1.97	80.64	76	11	7.80E-01	7.6	
3	0	246.04	14	5	2.76	245.60	243	7	4.74E-02	37.4	
4	0	277.07	38	9	2.12	276.64	272	10	1.26E-01	22.5	
5	0	303.05	90	15	1.95	302.64	298	10	3.00E-01	13.3	
6	0	356.08	286	11	2.01	355.69	351	11	9.53E-01	6.3	
7	0	383.90	46	5	1.74	383.53	379	9	1.52E-01	17.0	
8	0	436.66	15	2	1.28	436.31	433	7	5.15E-02	29.0	
9	0	512.07	6	2	1.42	511.76	508	7	2.15E-02	51.7	

Summary of Nuclide Activity
Sample ID : 9810172-08

Page :
Acquisition date : 9-NOV-1998 17:06:13

Total number of lines in spectrum	9	
Number of unidentified lines	5	
Number of lines tentatively identified by NID	4	44.44%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.828E+02	4.828E+02	1.0[illegible]E+02	21.03	
	Total Activity :		4.828E+02	4.828E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AM-241	432.20Y	1.00	2.291E+01	2.291E+01	9.819E+01	428.61	
	Total Activity :		2.291E+01	2.291E+01			

Grand Total Activity : 5.057E+02 5.058E+02

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.179E+01	5.415E+02	5.415E+02	39.42	OK
	302.84	17.80	1.199E+01	3.798E+02	3.798E+02	47.69	OK
	356.01	60.00	8.190E+00	5.244E+02	5.244E+02	28.57	OK

Final Mean for 3 Valid Peaks = 4.828E+02+/- 1.015E+02 (21.03%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
AM-241	59.54	35.90*	5.676E+00	2.291E+01	2.291E+01	428.61	OK

Final Mean for 1 Valid Peaks = 2.291E+01+/- 9.819E+01 (428.61%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-08

Acquisition date : 9-NOV-1998 17:06:13

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	16.	122.06	1.0406E+01
CD-109	10.	88.03	3.0781E+02
PA-231	0.	9.28	9.6993E+05
PA-234	0.	21.72	8.6624E+02
TH-234	19.	63.29	8.7316E+02
NP-237	11.	86.50	9.6717E+0[illegible]

Amo 11/9/98

VAX/VMS Peak Search Report Generated 9-NOV-1998 17:18:52.24

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017209_GE2_BAFIL_45514.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB2-7
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 17:13:32
Sample ID : 9810172-09 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE2 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.04 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.81	227	45	1.99	80.28	74	12	7.57E-01	8.9	
2	0	276.77	28	12	1.21	276.35	273	7	9.31E-02	28.1	
3	0	302.92	104	5	1.91	302.50	300	9	3.45E-01	10.5	
4	2	355.97	288	4	2.11	355.59	351	11	9.60E-01	5.8	7.61E+0(
5	2	359.81	6	0	2.45	359.43	351	11	1.90E-02	105.4	
6	0	383.42	47	6	2.20	383.04	377	10	1.58E-01	17.1	
7	0	436.33	22	2	1.74	435.99	431	9	7.32E-02	24.6	

Total number of lines in spectrum 7
Number of unidentified lines 4
Number of lines tentatively identified by NID 3 42.86%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	5.026E+02	5.027E+02	1.037E+02	20.63	
	Total Activity :		5.026E+02	5.027E+02			
	Grand Total Activity :		5.026E+02	5.027E+02			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.168E+01	5.304E+02	5.305E+02	40.76	OK
	302.84	17.80	1.201E+01	4.363E+02	4.364E+02	44.87	OK
	356.01	60.00	8.196E+00	5.276E+02	5.277E+02	28.11	OK

Final Mean for 3 Valid Peaks = 5.027E+02+/- 1.037E+02 (20.63%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-09

Acquisition date : 9-NOV-1998 17:13:32

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	14.	122.06	9.9300E+00
CD-109	21.	88.03	4.2210E+02
PA-231	0.	9.28	9.6993E+05
PA-234	0.	21.72	8.6624E+02
TH-234	23.	63.29	9.3633E+02
NP-237	19.	86.50	1.2221E+02
AM-241	19.	59.54	1.1160E+02

Ams 11/9/98

VAX/VMS Peak Search Report Generated 9-NOV-1998 17:25:54.75

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017210_GE2_BAFIL_45517.CN
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB2-10
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 17:20:26.
Sample ID : 9810172-10 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE2 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.04 0.0%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.29	222	30	1.95	80.77	76	11	7.39E-01	8.4	
2	0	276.37	38	6	1.78	275.95	271	8	1.28E-01	19.5	
3	0	302.94	105	11	2.05	302.52	297	11	3.50E-01	11.5	
4	2	355.96	308	0	2.25	355.57	351	14	1.03E+00	5.4	1.45E+01
5	2	359.81	8	0	2.45	359.43	351	14	2.59E-02	163.0	
6	0	384.38	49	6	1.81	384.01	380	8	1.64E-01	16.7	
7	0	436.85	16	2	1.71	436.50	433	6	5.46E-02	27.5	

00270

Acquisition date : 9-NOV-1998 17:20:26

Total number of lines in spectrum 7
Number of unidentified lines 4
Number of lines tentatively identified by NID 3 42.86%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma Error %	Flags
BA-133	10.50Y	1.00	5.168E+02	5.169E+02	1.061E+02	20.53	
Total Activity :			5.168E+02	5.169E+02			
Grand Total Activity :			5.168E+02	5.169E+02			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide Line Activity Report
Sample ID : 9810172-10

Acquisition date : 9-NOV-1998 17:20:26

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.183E+01	5.113E+02	5.113E+02	39.94	OK
	302.84	17.80	1.200E+01	4.427E+02	4.428E+02	45.85	OK
	356.01	60.00	8.197E+00	5.644E+02	5.644E+02	27.82	OK

Final Mean for 3 Valid Peaks = 5.169E+02+/- 1.061E+02 (20.53%)

Flag: "*" = Keyline

m Detectable Activity Report Acquisition date : 9-NOV-19

e ID : 9810172-10

lde	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
7	21.	122.06	1.1738E+01
09	15.	88.03	3.6052E+02
231	0.	9.28	9.6993E+05
234	0.	21.72	8.6624E+02
-234	25.	63.29	9.8283E+02
-237	18.	86.50	1.2017E+02
-241	28.	59.54	1.3234E+02

Amm 11/98

VAX/VMS Peak Search Report Generated 9-NOV-1998 16:58:56.69

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017211_GE4_BAFIL_45508.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB2-20
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 16:53:41
Sample ID : 9810172-11 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.17 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.17	95	33	1.28	34.95	34	5	3.16E-01	15.0	
2	0	53.53	17	25	1.04	53.30	50	7	5.69E-02	54.0	
3	0	62.63	53	36	2.45	62.40	57	12	1.77E-01	27.1	
4	0	81.00	208	32	1.20	80.77	77	8	6.94E-01	8.4	
5	0	113.23	16	24	1.39	112.98	109	8	5.42E-02	59.0	
6	0	233.24	9	1	2.37	232.97	230	6	2.88E-02	40.5	
7	0	276.75	20	2	1.85	276.46	273	8	6.78E-02	25.1	
8	3	302.86	41	0	1.73	302.57	300	10	1.38E-01	16.4	4.45E+00
9	3	307.22	10	0	2.14	306.92	300	10	3.31E-02	31.9	
10	0	356.10	118	2	1.31	355.79	352	7	3.95E-01	9.4	
11	0	511.06	7	0	2.15	510.71	508	6	2.33E-02	37.8	
12	0	748.24	6	0	1.98	747.83	745	6	2.00E-02	40.8	

Summary of Nuclide Activity
Sample ID : 9810172-11

Acquisition date : 9-NOV-1998 16:53:41

Total number of lines in spectrum 12
Number of unidentified lines 8
Number of lines tentatively identified by NID 4 33.33%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.233E+02	4.234E+02	1.137E+02	26.86	
	Total Activity :		4.233E+02	4.234E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	3.199E+02	3.199E+02	1.763E+02	55.12	
	Total Activity :		3.199E+02	3.199E+02			

Grand Total Activity : 7.432E+02 7.433E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.435E+01	3.963E+02	3.963E+02	35.38	OK
	302.84	17.80	3.060E+00	6.852E+02	6.853E+02	119.18	OK
	356.01	60.00	3.842E+00	4.627E+02	4.628E+02	43.26	OK

Final Mean for 3 Valid Peaks = 4.234E+02+/- 1.137E+02 (26.86%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	3.928E+01	3.199E+02	3.199E+02	55.12	OK

Final Mean for 1 Valid Peaks = 3.199E+02+/- 1.763E+02 (55.12%)

Flag: "*" = Keyline

Sample ID : 9810172-11
Acquisition date : 9-NOV-1998 16:53:41

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	11.	122.06	4.0626E+01
CD-109	16.	88.03	4.7165E+02
PA-231	0.	9.28	6.2703E-0[illegible]
PA-234	28.	21.72	1.3633E-0[illegible]
NP-237	17.	86.50	1.3410E+0[illegible]
AM-241	34.	59.54	1.5178E+ 1

VAX/VMS Peak Search Report Generated 9-NOV-1998 17:12:55.93

ams 11/9/98

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017212_GE4_BAFIL_45512.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB2-30
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 17:07:39
Sample ID : 9810172-12 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.18 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.39	120	20	1.23	35.17	34	5	4.00E-01	11.6	
2	3	53.16	14	13	1.71	52.93	49	22	4.63E-02	49.7	1.31E+0(
3	3	57.65	8	13	1.72	57.43	49	22	2.63E-02	80.8	
4	3	61.42	31	13	1.73	61.20	49	22	1.05E-01	28.5	
5	3	66.10	9	10	1.44	65.87	49	22	2.98E-02	64.2	
6	0	81.02	217	24	1.14	80.79	77	8	7.22E-01	7.9	
7	0	105.69	16	18	2.22	105.45	102	7	5.17E-02	51.5	
8	0	111.52	26	11	1.83	111.28	109	5	8.64E-02	27.6	
9	0	116.85	9	14	1.24	116.61	115	6	3.14E-02	71.5	
10	0	186.63	9	11	1.84	186.37	183	7	3.08E-02	69.6	
11	1	277.15	15	7	1.74	276.86	273	14	4.87E-02	34.8	1.38E+0(
12	1	281.26	5	6	1.74	280.97	273	14	1.62E-02	81.6	
13	0	303.22	28	8	1.52	302.92	299	7	9.31E-02	25.6	
14	0	356.15	151	6	1.39	355.84	352	8	5.05E-01	8.6	
15	5	383.94	34	0	1.55	383.63	382	8	1.12E-01	16.5	3.77E+0(
16	5	386.93	25	0	2.54	386.61	382	8	8.49E-02	26.9	
17	0	437.97	11	3	2.89	437.63	434	8	3.64E-02	42.9	

Summary of Nuclide Activity
Sample ID : 9810172-12

Page :
Acquisition date : 9-NOV-1998 17:07:39

Total number of lines in spectrum 17
Number of unidentified lines 13
Number of lines tentatively identified by NID 4 23.53%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.570E+02	4.570E+02	1.223E+02	26.77	
	Total Activity :		4.570E+02	4.570E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	1.743E+02	1.743E+02	1.009E+02	57.87	
AM-241	432.20Y	1.00	1.845E+01	1.845E+01	1.068E+01	57.87	
	Total Activity :		1.928E+02	1.928E+02			
	Grand Total Activity :		6.497E+02	6.498E+02			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

00279

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.434E+01	4.126E+02	4.126E+02	34.96	OK
	302.84	17.80	3.064E+00	4.616E+02	4.616E+02	125.00	OK
	356.01	60.00	3.843E+00	5.915E+02	5.916E+02	42.60	OK

Final Mean for 3 Valid Peaks = 4.570E+02+/- 1.223E+02 (26.77%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.278E+01	1.743E+02	1.743E+02	57.87	OK

Final Mean for 1 Valid Peaks = 1.743E+02+/- 1.009E+02 (57.87%)

AM-241	59.54	35.90*	4.278E+01	1.845E+01	1.845E+01	57.87	OK

Final Mean for 1 Valid Peaks = 1.845E+01+/- 1.068E+01 (57.87%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-12

Page :
Acquisition date : 9-NOV-1998 17:07:39

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	9.	122.06	3.7602E+01
CD-109	17.	88.03	4.8965E+02
PA-231	0.	9.28	6.2703E-07
PA-234	35.	21.72	1.4898E-02
NP-237	14.	86.50	1.2338E+02

00281

Ans 11/9/98

VAX/VMS Peak Search Report Generated 9-NOV-1998 17:19:35.78

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017213_GE3_BAFIL_45515.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB2-42
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 17:14:10
Sample ID : 9810172-13 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE3 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.32 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.02	85	49	2.26	63.45	57	12	2.82E-01	20.0	
2	0	81.27	274	30	1.25	81.67	78	8	9.14E-01	7.0	
3	0	93.39	26	14	1.56	93.76	90	9	8.50E-02	32.7	
4	0	111.65	61	22	2.05	112.00	108	8	2.04E-01	18.4	
5	0	276.88	18	12	1.22	276.94	273	8	6.00E-02	40.8	
6	0	303.09	54	7	1.17	303.12	300	6	1.78E-01	15.9	
7	0	334.18	17	5	1.32	334.15	331	6	5.58E-02	33.3	
8	0	356.47	199	9	1.64	356.40	352	9	6.64E-01	7.6	
9	1	384.09	41	8	1.64	383.98	380	11	1.37E-01	18.5	4.81E+00
10	1	387.26	38	9	1.65	387.15	380	11	1.26E-01	20.9	
11	0	437.76	16	3	1.13	437.56	434	6	5.30E-02	30.5	

00282

Acquisition date : 9-NOV-1998 17:14:10

Total number of lines in spectrum 11
Number of unidentified lines 7
Number of lines tentatively identified by NID 4 36.36%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	5.351E+02	5.352E+02	1.401E+02	26.18	
	Total Activity :		5.351E+02	5.352E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	1.501E+03	1.501E+03	0.763E+03	50.83	
	Total Activity :		1.501E+03	1.501E+03			

Grand Total Activity : 2.036E+03 2.037E+03

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.427E+01	5.247E+02	5.248E+02	35.14	OK
	302.84	17.80	6.020E+00	4.499E+02	4.499E+02	70.42	OK
	356.01	60.00	4.711E+00	6.349E+02	6.350E+02	46.30	OK

Final Mean for 3 Valid Peaks = 5.352E+02+/- 1.401E+02 (26.18%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.337E+01	1.501E+03	1.501E+03	50.83	OK

Final Mean for 1 Valid Peaks = 1.501E+03+/- 7.632E+02 (50.83%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-13

Acquisition date : 9-NOV-1998 17:14:10

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	8.	122.06	1.2658E+01
CD-109	8.	88.03	2.7299E+02
PA-231	0.	9.28	7.8412E+01
PA-234	0.	21.72	8.3033E+00
NP-237	11.	86.50	8.8835E+01
AM-241	36.	59.54	5.9160E+01

Ams 11/9/98

VAX/VMS Peak Search Report Generated 9-NOV-1998 17:20:19.97

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017214_GE4_BAFIL_45516.C
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB3-7
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 17:14:52
Sample ID : 9810172-14 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE4 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.21 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	35.29	133	38	1.23	35.07	34	5	4.44E-01	12.0	
2	0	53.42	20	23	1.25	53.19	50	7	6.56E-02	46.3	
3	5	61.65	20	29	2.10	61.42	58	14	6.69E-02	48.2	1.46E+0(
4	5	66.03	21	26	2.11	65.80	58	14	7.08E-02	46.2	
5	0	81.05	210	48	1.32	80.81	77	8	7.00E-01	9.0	
6	0	111.53	28	22	1.95	111.29	108	7	9.43E-02	32.9	
7	0	276.84	17	10	1.22	276.55	273	8	5.69E-02	41.8	
8	0	303.25	42	12	1.42	302.95	299	9	1.40E-01	21.3	
9	0	333.38	13	4	1.61	333.08	329	8	4.31E-02	38.6	
10	0	356.10	119	1	1.35	355.79	353	6	3.95E-01	9.3	
11	0	384.95	47	4	1.72	384.63	381	8	1.57E-01	16.3	
12	0	437.18	8	2	1.25	436.85	435	6	2.65E-02	44.0	
13	0	510.61	9	1	1.99	510.26	507	6	2.85E-02	40.9	

00286

Summary of Nuclide Activity
Sample ID : 9810172-14

Acquisition date : 9-NOV-1998 17:14:52

Total number of lines in spectrum	13	
Number of unidentified lines	9	
Number of lines tentatively identified by NID	4	30.77%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.270E+02	4.270E+02	1.159E+02	27.13	
	Total Activity :		4.270E+02	4.270E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	1.130E+02	1.130E+02	1.094E+02	96.90	
	Total Activity :		1.130E+02	1.130E+02			
	Grand Total Activity :		5.399E+02	5.400E+02			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

00287

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.432E+01	4.003E+02	4.003E+02	36.00	OK
	302.84	17.80	3.064E+00	6.918E+02	6.919E+02	121.62	OK
	356.01	60.00	3.842E+00	4.636E+02	4.637E+02	43.22	OK

Final Mean for 3 Valid Peaks = 4.270E+02+/- 1.159E+02 (27.13%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	4.210E+01	1.130E+02	1.130E+02	96.90	OK

Final Mean for 1 Valid Peaks = 1.130E+02+/- 1.094E+02 (96.90%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-14
Acquisition date : 9-NOV-1998 17:14:52

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	14.	122.06	4.5408E+01
CD-109	16.	88.03	4.7185E+02
PA-231	0.	9.28	6.2703E-07
PA-234	38.	21.72	1.5514E-02
NP-237	16.	86.50	1.3089E+02
AM-241	30.	59.54	1.4346E+01

Ams 11/9/98

VAX/VMS Peak Search Report Generated 9-NOV-1998 17:26:45.70

Configuration : DKA200:[GAMMA.SCUSR.ARCHIVE]SMP_981017215_GE3_BAFIL_45518.CI
Analyses by : PEAK V16.6 PEAKEFF V2.2
Client ID : WGSB3-10
Deposition Date :
Sample Date : 9-NOV-1998 00:00:00. Acquisition date : 9-NOV-1998 17:21:15.
Sample ID : 9810172-15 Sample Quantity : 1.00000E+00 FILTER
Sample type : FILTER Sample Geometry :
Detector name : GE3 Detector Geometry: BAFIL
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.32 0.1%
Start channel : 25 End channel : 4096
Sensitivity : 3.00000 Gaussian : 10.00000
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	61.64	33	11	1.42	62.07	58	13	1.09E-01	26.6	2.66E+00
2	2	66.33	18	16	1.43	66.75	58	13	6.03E-02	40.2	
3	0	81.27	265	34	1.29	81.67	78	8	8.83E-01	7.2	
4	0	112.76	51	38	2.00	113.11	107	12	1.70E-01	28.2	
5	1	273.93	5	1	1.41	274.00	273	8	1.74E-02	40.6	1.86E+00
6	1	276.86	24	3	1.56	276.93	273	8	8.15E-02	22.8	
7	2	303.24	39	5	1.74	303.27	298	15	1.29E-01	19.2	1.77E+00
8	2	307.68	9	5	1.74	307.70	298	15	2.98E-02	52.7	
9	0	334.08	20	3	1.11	334.05	331	6	6.67E-02	26.2	
10	0	356.48	165	9	1.48	356.42	352	9	5.51E-01	8.4	
11	2	384.05	31	6	1.81	383.95	380	15	1.03E-01	21.6	3.78E+00
12	2	387.41	38	3	1.81	387.29	380	15	1.27E-01	20.9	
13	2	390.97	8	1	1.65	390.85	380	15	2.58E-02	71.6	
14	0	415.74	19	0	3.01	415.58	411	10	6.33E-02	22.9	
15	0	437.82	12	1	1.91	437.63	435	6	3.92E-02	33.2	
16	0	512.13	7	3	1.19	511.82	508	6	2.37E-02	53.6	

Acquisition date : 9-NOV-1998 17:21:15

Total number of lines in spectrum 16
Number of unidentified lines 12
Number of lines tentatively identified by NID 4 25.00%

Nuclide Type : FISSION

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
BA-133	10.50Y	1.00	4.632E+02	4.633E+02	1.241E+02	26.79	
	Total Activity :		4.632E+02	4.633E+02			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Wtd Mean Uncorrected pCi/FILTER	Wtd Mean Decay Corr pCi/FILTER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	5.864E+02	5.864E+02	3.630E+02	61.90	
	Total Activity :		5.864E+02	5.864E+02			

Grand Total Activity : 1.050E+03 1.050E+03

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Nuclide Type: FISSION

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
BA-133	81.00	33.00*	1.427E+01	5.068E+02	5.069E+02	35.36	OK
	302.84	17.80	6.016E+00	3.255E+02	3.256E+02	73.63	OK
	356.01	60.00	4.710E+00	5.265E+02	5.266E+02	46.89	OK

Final Mean for 3 Valid Peaks = 4.633E+02+/- 1.241E+02 (26.79%)

Nuclide Type: NATURAL

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/FILTER	Decay Corr pCi/FILTER	2-Sigma %Error	Status
TH-234	63.29	3.80*	1.325E+01	5.864E+02	5.864E+02	61.90	OK

Final Mean for 1 Valid Peaks = 5.864E+02+/- 3.630E+02 (61.90%)

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 9810172-15

Acquisition date : 9-NOV-1998 17:21:15

Nuclide	Bckgnd Sum	Energy (KEV)	MDA (pCi/FILTER)
CO-57	11.	122.06	1.3885E+01
CD-109	12.	88.03	3.1733E+02
PA-231	0.	9.28	7.8412E+01
PA-234	0.	21.72	8.3033E+00
NP-237	14.	86.50	9.9549E+01
AM-241	31.	59.54	5.5382E+01

RECRA LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

Recra LabNet Philadelphia
Analytical Report

Client : A.D. LITTLE-NEW MEXICO
RFW# : 9810L067

W.O. # : 60038-003-001-0001-00
Date Received: 10-09-98

INORGANIC CASE NARRATIVE

1. This narrative covers the analyses of 12 soil samples.

2. The samples were prepared and analyzed in accordance with the methods indicated on the attached glossary.

3. Sample holding times as required by the method and/or contract were met.

4. The cooler temperature was recorded on the chain-of-custody.

5. The method blanks were within method criteria with the exception of 98LHC096-MB1 and 98LHC097-MB1 for Petroleum Hydrocarbons (PHC) which were less than 10 times the reporting limit.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS for PHC was within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recoveries were within the 75-125% control limits.

8. The replicate analyses were within the 20% RPD control limit.

9. Results for solid samples are reported on a dry weight basis.

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

11-17-98
Date

njp\i10-067

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 166 pages.

001

WET CHEMISTRY
METHODS GLOSSARY FOR ANALYSIS OF SOIL/SOLID SAMPLES

	ASTM	SW846	OTHER
%Ash	__ D2216-80		
%Moisture	__ D2216-80		__ ILMO4.0 (e)
%Solids			✓ ILMO4.0 (e)
%Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Corrosivity __by coupon __by pH		__ 1110 (mod)__ 9045	
Cyanide, Total		__ 9010	__ ILMO4.0 (e)
Cyanide, Reactive		__ Sec 7.3	
Density			__ b
Halides, Extractable Organic			__ EPA 600/4/84-008 (mod)
Halides, Total			__ EPA 600/4/84-008 (mod)
EP-Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Carbon, Total Organic (by LOI)			__ c
Oil and Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87 (mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		✓ 9071	✓ EPA 418.1 (mod)
pH, Soil		✓ 9045B	
Sulfide, Reactive		__ Sec 7.3	
Specific Gravity	__ D1429-76C		
Sulfur, Total		__ 9056	
TCLP		__ 1311	
TCLV		__ 1311	
Synthetic Precipitation Leach		__ 1312	
Chlorine, Total		__ 9056	
Paint Filter		__ 9095	

Other: Fluoride, Chloride, Nitrate, Sulfate by IC Method: SW9056

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed., (1989).

b. Standard Methods for the Examination of Water and Waste, 17 ed., (1983)

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd. Ed. (1986)

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965)

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO

RECRA LOT #: 9810L067

WORK ORDER: 60038-002-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	WGSB3-24	% Solids	92.6		%	0.01	1.0
		Chloride by IC	9.7		MG/KG	1.4	1.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrate by IC	1.7		MG/KG	1.4	1.0
		Sulfate by IC	24.1		MG/KG	1.4	1.0
		pH	9.4		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	10.5		MG/KG	3.6	1.0
-002	WGSB3-30	% Solids	89.3		%	0.01	1.0
		Chloride by IC	4.6		MG/KG	1.4	1.0
		Fluoride by IC	2.8	u	MG/KG	2.8	1.0
		Nitrate by IC	1.6		MG/KG	1.4	1.0
		Sulfate by IC	13.3		MG/KG	1.4	1.0
		pH	9.6		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	3.7	u	MG/KG	3.7	1.0
-003	WGSB3-40	% Solids	93.9		%	0.01	1.0
		Chloride by IC	3.6		MG/KG	1.3	1.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrate by IC	1.3		MG/KG	1.3	1.0
		Sulfate by IC	8.7		MG/KG	1.3	1.0
		pH	9.8		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	8.9		MG/KG	3.6	1.0
-004	WGSB4-5	% Solids	94.2		%	0.01	1.0
		Chloride by IC	76.7		MG/KG	5.3	4.0
		Fluoride by IC	2.8		MG/KG	2.7	1.0
		Nitrate by IC	2.0		MG/KG	1.3	1.0
		Sulfate by IC	124		MG/KG	5.3	4.0
		pH	9.7		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	7.4		MG/KG	3.5	1.0
-005	WGSB4-14	% Solids	84.7		%	0.01	1.0
		Chloride by IC	679		MG/KG	29.5	20.0
		Fluoride by IC	3.0	u	MG/KG	3.0	1.0
		Nitrate by IC	1.9		MG/KG	1.5	1.0
		Sulfate by IC	481		MG/KG	29.5	20.0
		pH	8.9		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	3.9	u	MG/KG	3.9	1.0
-006	WGSB4-30	% Solids	94.9		%	0.01	1.0

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INORGANICS DATA SUMMARY REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO
RECRA LOT #: 9810L067
WORK ORDER: 60038-002-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	WGSB4-30	Chloride by IC	4.3		MG/KG	1.3	1.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrate by IC	1.3	u	MG/KG	1.3	1.0
		Sulfate by IC	20.7		MG/KG	1.3	1.0
		pH	9.6		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	9.2		MG/KG	3.5	1.0

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INORGANICS DATA SUMMARY REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO RECRA LOT #: 9810L067

WORK ORDER: 60038-002-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	WGSB4-40	% Solids	96.0		%	0.01	1.0
		Chloride by IC	2.4		MG/KG	1.3	1.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrate by IC	1.3	u	MG/KG	1.3	1.0
		Sulfate by IC	7.1		MG/KG	1.3	1.0
		pH	9.8		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	5.5		MG/KG	3.5	1.0
-008	WGSB5-7	% Solids	95.3		%	0.01	1.0
		Chloride by IC	75.5		MG/KG	2.6	2.0
		Fluoride by IC	4.3		MG/KG	2.6	1.0
		Nitrate by IC	1.9		MG/KG	1.3	1.0
		Sulfate by IC	122		MG/KG	6.6	5.0
		pH	9.3		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	6.2		MG/KG	3.5	1.0
-009	WGSB5-14	% Solids	93.1		%	0.01	1.0
		Chloride by IC	217		MG/KG	13.4	10.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrate by IC	1.3	u	MG/KG	1.3	1.0
		Sulfate by IC	236		MG/KG	13.4	10.0
		pH	9.4		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	42.6		MG/KG	3.6	1.0
-010	WGSB5-22	% Solids	96.3		%	0.01	1.0
		Chloride by IC	153		MG/KG	13.0	10.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrate by IC	1.4		MG/KG	1.3	1.0
		Sulfate by IC	146		MG/KG	13.0	10.0
		pH	8.8		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	14.1		MG/KG	3.5	1.0
-011	WGSB5-32	% Solids	92.9		%	0.01	1.0
		Chloride by IC	5.3		MG/KG	1.3	1.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrate by IC	1.7		MG/KG	1.3	1.0
		Sulfate by IC	18.4		MG/KG	1.3	1.0
		pH	9.6		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	6.4		MG/KG	3.6	1.0
-012	WGSB5-40	% Solids	95.4		%	0.01	1.0

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INORGANICS DATA SUMMARY REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO

RECRA LOT #: 9810L067

WORK ORDER: 60038-002-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-012	WGSB5-40	Chloride by IC	4.6		MG/KG	1.3	1.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrate by IC	2.0		MG/KG	1.3	1.0
		Sulfate by IC	10		MG/KG	1.3	1.0
		pH	9.5		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	5.9		MG/KG	3.5	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO RECRA LOT #: 9810L067

WORK ORDER: 60038-002-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	98LIC090-MB1	Chloride by IC	1.2	u	MG/KG	1.2	1.0
		Fluoride by IC	2.5	u	MG/KG	2.5	1.0
		Nitrate by IC	1.2	u	MG/KG	1.2	1.0
		Sulfate by IC	1.2	u	MG/KG	1.2	1.0
BLANK10	98LHC096-MB1	Petroleum Hydrocarbons	4.9		MG/KG	3.3	1.0
BLANK10	98LHC097-MB1	Petroleum Hydrocarbons	3.5		MG/KG	3.3	1.0

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INORGANICS ACCURACY REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO RECRA LOT #: 9810L067

WORK ORDER: 60038-002-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	WGSB3-24	Chloride by IC	38.2	9.7	27.0	105.6	1.0
		Fluoride by IC	57.5	1.1	54.0	104.6	1.0
		Nitrate by IC	28	1.7	27	98.4	1.0
		Sulfate by IC	53.7	24.1	27.0	109.7	1.0
BLANK10	98LIC090-MB1	Chloride by IC	23.5	1.2 u	25.0	93.9	1.0
		Fluoride by IC	27.8	2.5 u	25.0	111.0	1.0
		Nitrate by IC	24	1.2 u	25	94.4	1.0
		Sulfate by IC	23.9	1.2 u	25.0	95.8	1.0
BLANK10	98LHC096-MB1	Petroleum Hydrocarbons	132	4.9	140	90.7	1.0
		Petroleum Hydrocarbons	126	4.9	140	86.3	1.0
BLANK10	98LHC097-MB1	Petroleum Hydrocarbons	123	3.5	140	85.0	1.0

Recra LabNet - Lionville

INORGANICS DUPLICATE SPIKE REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO RECRA LOT #: 9810L067

WORK ORDER: 60038-002-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	98LHC096-MB1	Petroleum Hydrocarbons	90.7	86.3	5.0

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INORGANICS PRECISION REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO RECRA LOT #: 9810L067

WORK ORDER: 60038-002-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	WGSB3-24	Chloride by IC	9.7	9.6	0.51	1.0
		Fluoride by IC	2.7 u	2.7 u	NC	1.0
		Nitrate by IC	1.7	1.8	3.4	1.0
		Sulfate by IC	24.1	24.0	0.18	1.0
-011REP	WGSB5-32	pH	9.6	9.6	0.1	1.0
-012REP	WGSB5-40	pH	9.5	9.4	0.2	1.0
		Petroleum Hydrocarbons	5.9	5.5	6.4	1.0

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
WGSB3-24						
% SOLIDS	001	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	001	S	98LIC090	09/23/98	11/14/98	11/14/98
CHLORIDE BY IC	001 REP	S	98LIC090	09/23/98	11/14/98	11/14/98
CHLORIDE BY IC	001 MS	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	001	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	001 REP	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	001 MS	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	001	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	001 REP	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	001 MS	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	001	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	001 REP	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	001 MS	S	98LIC090	09/23/98	11/14/98	11/14/98
PH	001	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	001	S	98LHC096	09/23/98	10/19/98	10/20/98
SUB-OUT TEST FOR SUB	001	S		09/23/98		
WGSB3-30						
% SOLIDS	002	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	002	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	002	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	002	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	002	S	98LIC090	09/23/98	11/14/98	11/14/98
PH	002	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	002	S	98LHC096	09/23/98	10/19/98	10/20/98
SUB-OUT TEST FOR SUB	002	S		09/23/98		
WGSB3-40						
% SOLIDS	003	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	003	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	003	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	003	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	003	S	98LIC090	09/23/98	11/14/98	11/14/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PH	003	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	003	S	98LHC096	09/23/98	10/19/98	10/20/98
SUB-OUT TEST FOR SUB	003	S		09/23/98		
WGSB4-5						
% SOLIDS	004	S	98L%S202	09/24/98	10/12/98	10/13/98
CHLORIDE BY IC	004	S	98LIC090	09/24/98	11/14/98	11/14/98
FLUORIDE BY IC	004	S	98LIC090	09/24/98	11/14/98	11/14/98
NITRATE BY IC	004	S	98LIC090	09/24/98	11/14/98	11/14/98
SULFATE BY IC	004	S	98LIC090	09/24/98	11/14/98	11/14/98
PH	004	S	98LPH110	09/24/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	004	S	98LHC097	09/24/98	10/21/98	10/21/98
SUB-OUT TEST FOR SUB	004	S		09/24/98		
WGSB4-14						
% SOLIDS	005	S	98L%S202	09/24/98	10/12/98	10/13/98
CHLORIDE BY IC	005	S	98LIC090	09/24/98	11/14/98	11/14/98
FLUORIDE BY IC	005	S	98LIC090	09/24/98	11/14/98	11/14/98
NITRATE BY IC	005	S	98LIC090	09/24/98	11/14/98	11/14/98
SULFATE BY IC	005	S	98LIC090	09/24/98	11/14/98	11/14/98
PH	005	S	98LPH110	09/24/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	005	S	98LHC097	09/24/98	10/21/98	10/21/98
SUB-OUT TEST FOR SUB	005	S		09/24/98		
WGSB4-30						
% SOLIDS	006	S	98L%S202	09/24/98	10/12/98	10/13/98
CHLORIDE BY IC	006	S	98LIC090	09/24/98	11/14/98	11/14/98
FLUORIDE BY IC	006	S	98LIC090	09/24/98	11/14/98	11/14/98
NITRATE BY IC	006	S	98LIC090	09/24/98	11/14/98	11/14/98
SULFATE BY IC	006	S	98LIC090	09/24/98	11/14/98	11/14/98
PH	006	S	98LPH110	09/24/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	006	S	98LHC097	09/24/98	10/21/98	10/21/98
SUB-OUT TEST FOR SUB	006	S		09/24/98		
WGSB4-40						
% SOLIDS	007	S	98L%S202	09/24/98	10/12/98	10/13/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHLORIDE BY IC	007	S	98LIC090	09/24/98	11/14/98	11/14/98
FLUORIDE BY IC	007	S	98LIC090	09/24/98	11/14/98	11/14/98
NITRATE BY IC	007	S	98LIC090	09/24/98	11/14/98	11/14/98
SULFATE BY IC	007	S	98LIC090	09/24/98	11/14/98	11/14/98
PH	007	S	98LPH110	09/24/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	007	S	98LHC097	09/24/98	10/21/98	10/21/98
SUB-OUT TEST FOR SUB	007	S		09/24/98		
WGSB5-7						
% SOLIDS	008	S	98L%S202	09/24/98	10/12/98	10/13/98
CHLORIDE BY IC	008	S	98LIC090	09/24/98	11/14/98	11/14/98
FLUORIDE BY IC	008	S	98LIC090	09/24/98	11/14/98	11/14/98
NITRATE BY IC	008	S	98LIC090	09/24/98	11/14/98	11/14/98
SULFATE BY IC	008	S	98LIC090	09/24/98	11/14/98	11/14/98
PH	008	S	98LPH110	09/24/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	008	S	98LHC097	09/24/98	10/21/98	10/21/98
SUB-OUT TEST FOR SUB	008	S		09/24/98		
WGSB5-14						
% SOLIDS	009	S	98L%S202	09/24/98	10/12/98	10/13/98
CHLORIDE BY IC	009	S	98LIC090	09/24/98	11/14/98	11/14/98
FLUORIDE BY IC	009	S	98LIC090	09/24/98	11/14/98	11/14/98
NITRATE BY IC	009	S	98LIC090	09/24/98	11/14/98	11/14/98
SULFATE BY IC	009	S	98LIC090	09/24/98	11/14/98	11/14/98
PH	009	S	98LPH110	09/24/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	009	S	98LHC097	09/24/98	10/21/98	10/21/98
SUB-OUT TEST FOR SUB	009	S		09/24/98		
WGSB5-22						
% SOLIDS	010	S	98L%S202	09/24/98	10/12/98	10/13/98
CHLORIDE BY IC	010	S	98LIC090	09/24/98	11/14/98	11/14/98
FLUORIDE BY IC	010	S	98LIC090	09/24/98	11/14/98	11/14/98
NITRATE BY IC	010	S	98LIC090	09/24/98	11/14/98	11/14/98
SULFATE BY IC	010	S	98LIC090	09/24/98	11/14/98	11/14/98
PH	010	S	98LPH112	09/24/98	11/13/98	11/13/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PETROLEUM HYDROCARBO	010	S	98LHC097	09/24/98	10/21/98	10/21/98
SUB-OUT TEST FOR SUB	010	S		09/24/98		
WGSB5-32						
% SOLIDS	011	S	98L%S202	09/24/98	10/12/98	10/13/98
CHLORIDE BY IC	011	S	98LIC090	09/24/98	11/14/98	11/14/98
FLUORIDE BY IC	011	S	98LIC090	09/24/98	11/14/98	11/14/98
NITRATE BY IC	011	S	98LIC090	09/24/98	11/14/98	11/14/98
SULFATE BY IC	011	S	98LIC090	09/24/98	11/14/98	11/14/98
PH	011	S	98LPH110	09/24/98	10/21/98	10/21/98
PH	011 REP	S	98LPH110	09/24/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	011	S	98LHC097	09/24/98	10/21/98	10/21/98
SUB-OUT TEST FOR SUB	011	S		09/24/98		
WGSB5-40						
% SOLIDS	012	S	98L%S202	09/24/98	10/12/98	10/13/98
CHLORIDE BY IC	012	S	98LIC090	09/24/98	11/14/98	11/14/98
FLUORIDE BY IC	012	S	98LIC090	09/24/98	11/14/98	11/14/98
NITRATE BY IC	012	S	98LIC090	09/24/98	11/14/98	11/14/98
SULFATE BY IC	012	S	98LIC090	09/24/98	11/14/98	11/14/98
PH	012	S	98LPH110	09/24/98	10/21/98	10/21/98
PH	012 REP	S	98LPH110	09/24/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	012	S	98LHC097	09/24/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	012 REP	S	98LHC097	09/24/98	10/21/98	10/21/98
SUB-OUT TEST FOR SUB	012	S		09/24/98		

LAB QC:

CHLORIDE BY IC	MB1	S	98LIC090	N/A	11/14/98	11/14/98
CHLORIDE BY IC	MB1 BS	S	98LIC090	N/A	11/14/98	11/14/98
FLUORIDE BY IC	MB1	S	98LIC090	N/A	11/14/98	11/14/98
FLUORIDE BY IC	MB1 BS	S	98LIC090	N/A	11/14/98	11/14/98
NITRATE BY IC	MB1	S	98LIC090	N/A	11/14/98	11/14/98
NITRATE BY IC	MB1 BS	S	98LIC090	N/A	11/14/98	11/14/98
SULFATE BY IC	MB1	S	98LIC090	N/A	11/14/98	11/14/98
SULFATE BY IC	MB1 BS	S	98LIC090	N/A	11/14/98	11/14/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L067

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PETROLEUM HYDROCARBO	MB1	S	98LHC096	N/A	10/19/98	10/20/98
PETROLEUM HYDROCARBO	MB1 BS	S	98LHC096	N/A	10/19/98	10/20/98
PETROLEUM HYDROCARBO	MB1 BSD	S	98LHC096	N/A	10/19/98	10/20/98
PETROLEUM HYDROCARBO	MB1	S	98LHC097	N/A	10/21/98	10/21/98
PETROLEUM HYDROCARBO	MB1 BS	S	98LHC097	N/A	10/21/98	10/21/98

RECRA LabNet Use Only

98101067

Custody Transfer Record/Lab Work Request

Page 1 of 2

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: AD Little - New Mexico
Est. Final Proj. Sampling Date:
Project #: 60038-002-001-0001-00
Project Contact/Phone #:
RECRA Project Manager: DST
QC: CLP Del: CLP TAT: 21 days
Date Rec'd: 10/9/98 Date Due: 10/30/98
Account #: DIANEPM

Refrigerator #

#/Type Container	Liquid																		
	Solid																		
Volume	Liquid																		
	Solid																		
Preservatives																			

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN

RECRA LabNet Use Only

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	metals (1)	HNTO	IPHC	IPH	ICAL ICAV	ICAL ICWB	ISUB
001	WGSB3-24			S	9-23-98	1545	✓	✓	✓	✓	✓	✓	✓
002	" 30					1605							
003	" 40					1625							
004	WGSB4-5				9-24-98	0810							
005	" 14					0830							
006	" 30					0925							
007	" 40					0945							
008	WGSB5-7					1045							
009	" 14					1105							
010	" 22					1120							

Special Instructions:

DATE/REVISIONS:

#010 1. Prioritize: METALS, ANIONS, TPH, RAD
012 2. Rec'd 1EA 125ML Broken Zip.
3. Metals (1) = Al, As, Ba, B, Cd, Cr, Co, Cu, Fe,
4. Pb, Mn, Mo, Ni, Se, Ag, Zn, Hg, U
5. See attached methods + DL.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	10-9-98	1000

Relinquished by	Received by	Date	Time

RECRA LabNet Use Only

Samples were: 1) Shipped / or Hand Delivered; Airbill # Surburban; 2) Ambient or (Chilled); 3) Received in Good Condition Y or (N); 4) Labels Indicate Properly Preserved (Y) or N; 5) Received Within Holding Times (Y) or N

COC Tape was: 1) Present on Outer Package (Y) or N; 2) Unbroken on Outer Package (Y) or N; 3) Present on Sample Y or (N); 4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp 3° C

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES: 807460269538

9810L007

Custody Transfer Record/Lab Work Request

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client AD Little

Est. Final Proj. Sampling Date

Project #

Project Contact/Phone #

RECRA Project Manager

QC Del TAT

Date Rec'd See page 1 Date Due

Account #

| | | |

Cooler Number 1 of 1

Arthur D. Little, Inc.

9810L066 CHAIN OF CUSTODY RECORD

PROJ. NO: 38051 | PROJECT NAME: Shell Westgate

SAMPLERS (Signature): Tsomides

Analyses: Metals; Cl,SO4,NO3-N,F,CN; Total Uranium; Radium 226/228; TPH by 418.1; PH; # of Jars

	SAMPLE/STATION NUMBER	DATE	TIME	COMP	GRAB	STATION LOCATION	PRESERVATION	Metals	Cl,SO4,NO3-N,F,CN	Total Uranium	Radium 226/228	TPH by 418.1	PH	# of Jars	SAMPLE CONDITION UPON RECEIPT
1	W6SB1-7	9/23/98	0840	-	S	-	Cooled	X	X	X	X	X	X	2	Good
2	W6SB1-12		0900	-		-								2	
3	W6SB1-20		0930	-		-								2	
4	W6SB1-30		1020	-		-								2	
5	W6SB1-40		1100	-		-								2	
6	W6SB2-7		1245	-		-								2	
7	W6SB2-10		1300	-		-								2	
8	W6SB2-20		1320	-		-								3	
9	W6SB2-30		1400	-		-								3	
10	W6SB2-42		1415	-		-								3	
11	W6SB3-7		1510	-		-								3	
12	W6SB3-10		1515	-		-								3	
10L 1	W6SB3-24		1545	-		-								3	
2	W6SB3-30		1605	-		-								3	
3	W6SB3-40		1625	-		-								3	

Relinquished by (Signature): Craig Smith — Date/Time: 10-8-98 1400

Received by (Signature): Jane E Rice

Relinquished by (Signature): Jane E Rice — Date/Time: 10/8/98 4:50

Received by (Signature):

Relinquished by (Signature): — Date/Time:

Received for Laboratory by (Signature):

Shipped to: Dianne Therry, RECRA Labnet, 208 Welsh Pool Rd, Lionville, PA 19341

Date/Time:

Carrier: FEDEX

807460269538

Distribution: Original Accompanies Shipment, Yellow Copy to Case Manager, Pink Copy for Field Files

Arthur D. Little, 25 Acorn Park, Cambridge, MA 02140 (617) 498-5000
Telex 921436 Tel-Fax (617) 498-7200

*Letter denotes sample matrix
W - Water S - Soil LW - Liquid Waste SW - Solid Waste

Cooler Number [redacted] of 1

Arthur D. [redacted], Inc.

98106067 CHAIN OF CUSTODY RECORD

Page [redacted] of 2

PROJ. NO. 38051

PROJECT NAME Shell Westgate

SAMPLERS (Signature) Tsomides

SAMPLE / STATION NUMBER	DATE	TIME	•COMP	•GRAB	STATION LOCATION	PRESERVATION	Analyses: Metals	Cl, SO4, NO3-N, F, CN	Total Uranium	Radium 226/228	TPH by 418.1	pH	# of Jars	Remarks	SAMPLE CONDITION UPON RECEIPT
WGSB4-5	9/24/98	0810	–	5	–	Cooled	X	X	X	X	X	X	3		good
WGSB4-14		0830	–		–								2		
WGSB4-30		0925	–		–								3		
WGSB4-40		0945	–		–								3		
WGSB5-7		1045	–		–								3		
WGSB5-14		1105	–		–								3		
WGSB5-22		1120	–		–								1	Prioritize: Metals, Anions, TPH, Rad	
WGSB5-32		1140	–		–								3		
WGSB5-40		1200	–		–								3		

Relinquished by (Signature): Craig Smith — Date/Time: 10-8-98 1400 — Received by (Signature): Anne E Rice

Relinquished by (Signature): Anne E Rice — Date/Time: 10/8/98 450 — Received by (Signature):

Relinquished by (Signature): — Date/Time: — Received for Laboratory by (Signature):

Shipped to:
Dianne Thery
RECRA Labnet
2098 Welsh Pool Rd
Lionville, PA 19341

Date/Time:

Carrier: 807460269538

Distribution: Original Accompanies Shipment; Yellow Copy to Case Manager; Pink Copy for Field Files

Arthur D. Little, Inc. 25 Acorn Park, Cambridge, MA 02140 (617) 498-5000

*Letter denotes sample matrix
W - Water S - Soil LW - Liquid Waste SW - Solid Waste

% SOLID/% MOISTURE ANALYSIS RECORD

RECRA LABNET PHILADELPHIA

Analyst: J.M.Imay
Start Date/Time/Temp: 10-12-98 1100 104°
End Date/Time/Temp: 10-13-98 0815 104°
Balance ID: B5

Logbook #: 14648
Method: STD
Work Sheet: XSL1012
Prep Batch: 9810s5202

Sample ID (RFW # or Std)	Container wt (g)	Initial wt (g) (Sample & Container)	Final wt (g) (Sample & Container)	% Solid	% Moisture
9810L061-025	1.283	11.194	9.542	89.33	
-026	1.286	11.151	2.847	15.82	
9810L064-001	1.286	9.164	8.352	89.69	
-002	1.293	7.538	6.691	86.44	
-003	1.290	7.428	6.874	90.97	
-004	1.286	9.810	9.492	96.27	
-005	1.299	11.779	11.406	96.44	
-006	1.285	8.228	7.748	93.09	
-007	1.296	11.342	9.971	86.35	
-008	1.293	9.937	8.846	87.36	
-009	1.291	8.580	8.009	92.99	
-010	1.300	11.418	10.901	94.89	
-011	1.293	10.361	9.873	94.72	
-012	1.294	10.004	9.410	93.18	
-012R	1.292	11.332	10.641	93.12	
9810L067-001	1.289	10.031	9.385	92.16	
-002	1.293	11.378	10.300	89.31	
-003	1.288	9.162	8.681	93.89	
-004	1.285	11.377	10.796	94.24	
-005	1.292	7.799	6.801	84.16	
-006	1.297	9.611	9.187	94.90	
-007	1.299	11.295	10.897	96.02	
-008	1.295	11.263	10.794	95.29	

wt. = weight

Example Calculations: % solids = $\frac{\text{Pan and dry sample wt. (g) - pan wt. (g)}}{\text{Pan and wet sample wt. (g) - pan wt. (g)}} \times 100$

% Moisture = 100% - % solids result

Reviewed By/Date: LTB 10/16/98

RFW 21-21L-016/H-05/96

Page # 012

% SOLID/% MOISTURE ANALYSIS RECORD

RECRA LABNET PHILADELPHIA

Analyst: J.Mccay
Start Date/Time/Temp: 10-12-98 1100 106°
End Date/Time/Temp: 10-13-98 0915 106°
Balance ID: BS

Logbook #: 16648
Method: STD
Work Sheet: 251012
Prep Batch: 981709202

Sample ID (RFW # or Std)	Container wt (g)	Initial wt (g) (Sample & Container)	Final wt (g) (Sample & Container)	% Solid	% Moisture
981012067-009	1.298	9.275	8.721	93.00	
-010	1.294	8.387	8.123	96.28	
-011	1.289	11.149	10.449	92.90	
-012	1.299	10.233	9.825	95.43	

J.Mccay 10/12/98

wt. = weight

Example Calculations: % solids = $\frac{\text{Pan and dry sample wt. (g) - pan wt. (g)}}{\text{Pan and wet sample wt. (g) - pan wt. (g)}} \times 100$

% Moisture = 100% - % solids result

Reviewed By/Date: [illegible] 10/16/98

RFW 21-21L-016/H-05/96

Page # 003

Date of Prep: 10/12/98
Date of Analysis: 10/13/98
Worksheet: XSL1012
Computer #: SKL
Directory: INORGANICS
Run Batch: 98LIS202
Method: STD
Analyst: TM
Instrument: B-5

CALIB DATA
SLOPE: 0.00
INTERCEPT: 0.00
REG. COEF: 0

RFW SAMPLE ID	TEST	PAN WT.	PAN & WET WT.	PAN & DRY WT.	C/D	FINAL RESULT	DETECTION LIMIT	UNITS	REPLICATE ORIG SAMPLE RESULT	REPLICATE REP % DIFF	SPIKE SPIKE LEVEL ?	SPIKE SAMPLE SPIKE AMOUNT	SPIKE % RECOV	LCS AMT LCS ?	LCS % RECOV	SOILS PREP BATCH	SOILS PREP INITIAL SAMPLE WT.	SOILS PREP FINAL SAMPLE WT.	SOILS PREP % SOLIDS
9810L058-001	IISOL	1.287	9.048	8.678		95.23	0.01	%								98LIS202	7.761	7.[illegible]	
9810L058-003	IISOL	1.290	8.688	7.935		89.92	0.01	%								98LIS202	7.398	6.[illegible]	
9810L058-005	IISOL	1.284	8.631	8.265		95.82	0.01	%								98LIS202	7.347	6.981	
9810L061-001	IISOL	1.287	10.977	9.771		87.55	0.01	%								98LIS202	9.690	8.484	
9810L061-002	IISOL	1.285	9.596	8.822		81.86	0.01	%								98LIS202	8.311	6.[illegible]	
9810L061-003	IISOL	1.293	8.919	6.864		73.85	0.01	%								98LIS202	7.626	5.[illegible]	
9810L061-004	IISOL	1.282	10.991	2.667		14.27	0.01	%								98LIS202	9.709	1.[illegible]	
9810L061-005	IISOL	1.299	11.689	8.563		69.91	0.01	%								98LIS202	10.[illegible]	7.[illegible]	
9810L061-006	IISOL	1.294	10.767	8.688		77.97	0.01	%								98LIS202	9.473	7.[illegible]	
9810L061-007	IISOL	1.295	9.444	2.256		11.79	0.01	%								98LIS202	8.149	0.[illegible]	
9810L061-008	IISOL	1.292	11.839	7.522		59.87	0.01	%								98LIS202	10.547	6.[illegible]	
9810L061-009	IISOL	1.297	9.977	2.075		18.18	0.01	%								98LIS202	8.680	1.[illegible]	
9810L061-010	IISOL	1.285	8.516	6.614		73.78	0.01	%								98LIS202	7.231	5.[illegible]	
9810L061-011	IISOL	1.290	7.525	2.131		13.49	0.01	%								98LIS202	6.235	0.[illegible]	
9810L061-012	IISOL	1.286	8.434	7.193		82.64	0.01	%								98LIS202	7.148	5.[illegible]	
9810L061-013	IISOL	1.279	9.924	8.315		81.39	0.01	%								98LIS202	8.645	7.[illegible]	
9810L061-013	IISOLR	1.281	13.394	11.388		82.78	0.01	%	81.388	1.7						98LIS202	12.114	10.[illegible]	
9810L061-014	IISOL	1.287	12.217	7.911		60.68	0.01	%								98LIS202	10.930	6.[illegible]	
9810L061-015	IISOL	1.290	10.900	9.328		83.64	0.01	%								98LIS202	9.610	8.[illegible]	
9810L061-016	IISOL	1.283	10.285	9.602		92.41	0.01	%								98LIS202	9.002	8.[illegible]	
9810L061-017	IISOL	1.282	10.634	9.668		89.67	0.01	%								98LIS202	9.352	8.[illegible]	
9810L061-018	IISOL	1.281	9.696	8.469		85.42	0.01	%								98LIS202	8.415	7.[illegible]	
9810L061-019	IISOL	1.279	12.231	10.832		87.23	0.01	%								98LIS202	10.952	9.[illegible]	
9810L061-025	IISOL	1.283	11.194	9.542		83.33	0.01	%								98LIS202	9.911	8.[illegible]	
9810L061-026	IISOL	1.286	11.151	2.047		15.82	0.01	%								98LIS202	9.065	1.[illegible]	
9810L066-001	IISOL	1.286	9.164	8.352		89.69	0.01	%								98LIS202	7.878	7.[illegible]	
9810L066-002	IISOL	1.293	7.538	6.691		86.44	0.01	%								98LIS202	6.245	5.[illegible]	
9810L066-003	IISOL	1.290	7.428	6.874		90.97	0.01	%								98LIS202	6.138	5.[illegible]	
9810L066-004	IISOL	1.286	9.810	9.492		96.27	0.01	%								98LIS202	8.524	8.[illegible]	
9810L066-005	IISOL	1.299	11.779	11.486		96.44	0.01	%								98LIS202	10.488	10.[illegible]	
9810L066-006	IISOL	1.285	8.228	7.748		93.89	0.01	%								98LIS202	6.943	6.[illegible]	
9810L066-007	IISOL	1.296	11.342	9.971		86.35	0.01	%								98LIS202	10.046	8.[illegible]	
9810L066-008	IISOL	1.293	9.937	8.846		87.38	0.01	%								98LIS202	8.644	7.[illegible]	
9810L066-009	IISOL	1.291	8.388	8.869		92.99	0.01	%								98LIS202	7.287	6.[illegible]	
9810L066-010	IISOL	1.300	11.418	10.981		94.89	0.01	%								98LIS202	10.118	9.[illegible]	
9810L066-011	IISOL	1.293	10.351	9.873		94.72	0.01	%								98LIS202	9.058	8.[illegible]	
9810L066-012	IISOL	1.294	10.004	9.410		93.18	0.01	%								98LIS202	8.710	8.[illegible]	
9810L066-012	IISOLR	1.292	11.332	10.641		93.12	0.01	%	93.188	0.1						98LIS202	10.048	9.[illegible]	
9810L067-001	IISOL	1.289	10.031	9.385		92.61	0.01	%								98LIS202	8.742	8.[illegible]	
9810L067-002	IISOL	1.293	11.378	10.388		89.31	0.01	%								98LIS202	10.085	9.[illegible]	
9810L067-003	IISOL	1.288	9.162	8.681		93.89	0.01	%								98LIS202	7.874	7.[illegible]	
9810L067-004	IISOL	1.285	11.377	10.796		94.24	0.01	%								98LIS202	10.092	9.[illegible]	
9810L067-005	IISOL	1.292	7.799	6.881		84.66	0.01	%								98LIS202	6.587	5.[illegible]	
9810L067-006	IISOL	1.297	9.611	9.187		94.98	0.01	%								98LIS202	8.314	7.[illegible]	
9810L067-007	IISOL	1.299	11.295	10.897		96.82	0.01	%								98LIS202	9.996	9.[illegible]	
9810L067-008	IISOL	1.295	11.263	10.794		95.29	0.01	%								98LIS202	9.968	9.[illegible]	
9810L067-009	IISOL	1.298	9.275	8.721		93.86	0.01	%								98LIS202	7.977	7.[illegible]	
9810L067-010	IISOL	1.294	8.387	8.123		96.28	0.01	%								98LIS202	7.893	6.[illegible]	
9810L067-011	IISOL	1.289	11.149	10.449		92.98	0.01	%								98LIS202	9.[illegible]	9.[illegible]	
9810L067-012	IISOL	1.299	10.233	9.825		95.43	0.01	%								98LIS202	8.[illegible]	8.[illegible]	

Recra LabNet Philadelphia **IC PREPARATION LOG** Logbook # Misc

Test: Ic Anions Method #: 21-15L-0300.0/ 03A Analysis Logbook #: 6570

Prep Date: 11/14/98 Instrument: Dionex-2020i Prep Batch: 98LICD56

Analyst: M. Carney Start Time: _____ End Time: _____

RFW #	Prep. Wt/Vol.	Dilution	Spike Amount	QC	Comm.
9810L066-001	6g→30mL	1,20,100	NA.	SPEC CCP	
002		1,20,50			
003		1,20			
004		1			
005		1			
005R		1			
005S		1	150µl→30mL		5ppm
006		1,10	NA.		
007		1,2,20			
008		1,10,20			
009		1,2,5			
010		1,5			
011		1,10			
012		1,10			
9810L067-001		1			
001R		1			
001S		1	150µl→30mL		5ppm
002		1	NA.		
003		1			
004		1,4			
005		1,20,50			
006		1			
007		1,2 ~~mL~~	11-16-98		
008		1,2			
009		1,10			
010		1,10			

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Standard:	ID	Prep Date	Expir Date
MS	4954-47-06	12-12-97	1-1-99

Reviewed By/Date: H Slater 11/16/98

L-WI-018/R-08/98

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Recra LabNet Philadelphia **IC PREPARATION LOG** Logbook # 6570

Test: Ic Anions Method #: 21-15L-0300.0/ 03A Analysis Logbook #: 6570

Prep Date: 11/14/98 Instrument: Dionex-2020i Prep Batch: 98L1C090

Analyst: M. Carney Start Time: _____ End Time: _____

RFW #	Prep. Wt/Vol.	Dilution	Spike Amount	QC	Comments
9810L067-011	6g → 30mL	1	NA	CCP	
012	1	1	NA.	1	

11.14.98

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Standard:	ID	Prep Date	Expir Date
MB	4954-4706	10-13-97	1-1-99

Reviewed By/Date: [signature] 11/16/98

L-WI-018/R-08/98

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Recra La[redacted]t Philadelphia

IC ANALYSIS SUMMARY: INORGANIC ANIONS

OP#: 21-15L-0300.0, Rev. 03
Analyst: Mark Carney
Date: 11-14-98

Instrument: Dionex-2020i
Prep. Logbook #: 661665

Logbook: 6570
Prep Batch: 98LIC090
Worksheet: IC1114

Anion→	F-			Cl-			NO3			SO4								Sample Info		Comments
Sample ID#↓	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	% Sol	Prep. w/vol	/Notes
98LIC090-ICV	5.550			4.693			4.719			4.788									6g→30ml	extraction applies to samples only JMK 11-14-98
98LIC090-ICB	0			0			0			0										
98LIC066-001	0		1	100.489		20	0.363		1	384.322		100								
066-002	0.291		1	129.151		20	0.494		1	124.881		20						89.7		
066-003	0.304		1	82.466		20	1.980		1	54.124		20						86.4		
066-004	0.417		1	3.085		1	0.211		1	9.118		1						91.0		
066-005	0.118		1	0.995		1	0.235		1	1.791		1						96.3		
CCV	9.912		1	4.756		1	4.805		1	4.799		1						96.4		
CCB	0		1	~~0.138~~ 0 JMK 11-16-98		1	0		1	0		1						100	NA	
066005R	0.133		1	0.964		1	0.232		1	1.800		1						100		
066005S	11.033		1	6.033		1	5.105		1	6.881		1						96.4		
066-006	0.891		1	1.564		1	6.456		1	38.537		10						96.4		
																			93.1	

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b; where Y = instrument reading
m = slope = NA
b = intercept =
X = concentration (mg/L)

final result = mg/L x dilution factor

Standard:	ID	Prep Date	Expir Date
ICV/CCVDUP/LCS	6128-108-27	11-14-98	11-15-98
ICAL/CCV	6128-108-27	↓	↓
MS	4954-97-16	12-17-97	1-1-99

Comments/Notes: see lotus spreadsheet for final mg/kg results

Reviewed By/Date: [signature] 11/16/98

Recra LabNet Philadelphia

IC ANALYSIS SUMMARY: INORGANIC ANIONS

OP#: 21-15L-0300.0, Rev. 03
Analyst: Mark Carney
Date: 11-14-98

Instrument: Dionex-2020i
Prep. Logbook #: 6dde5

Logbook: 6570
Prep Batch: 98LIC096
Worksheet: IC1114

Anion→	F-			Cl-			NO_3			SO_4							Sample Info		Comments
Sample ID#↓	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil	% Sol	Prep. w/vol	/Notes
98IDLDde-007	0.694		1	12.095		2	4.567		1	88.549		20							86.4	6g→30mL	
Dd6-008	0.551		1	33.268		10	0.841		1	76.383		10							87.4	⊥	
CC-V	10.481		1	4.703		1	4.759		1	4.808		1							100		
CCB	0		1	0.144		1	0		1	0		1							100		
98IDLDde-009	0.220		1	29.144		5	0.922		1	11.663		2							93.0	6g→30mL	
Dde010	0.120		1	25.102		5	0.252		1	7.794		1							94.9		
Dd6-011	1.449		1	44.011		10	0.556		1	35.082		10							94.7		
C'de012	0.681		1	32.471		10	0.419		1	34.319		10							93.2		
98IDLDd7-001	0.198		1	1.794		1	0.320		1	4.459		1							92.6		
CCV	10.632		1	4.798		1	4.812		1	4.814		1							100		
CCB	0		1	0.144		1	0		1	0		1							100		
98IDLDd7-003	0.197		1	1.794		1	0.331		1	4.451		1							92.6	6g→30mL	

"S" = matrix spike, "D" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b; where Y = instrument reading
m = slope = 1.785
b = intercept = NA
X = concentration (mg/L)

final result = mg/L x dilution factor

Standard:	ID	Prep Date	Expir Date
ICV/CCVDUP/LCS			
ICAL/CCV		See	Page 79
MS			

Comments/Notes: final mg/kg results on Lotus spreadsheet

Reviewed By/Date: 11/14 98

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RFW 21-21L-021U-07/97

Recra [redacted]let Philadelphia

IC ANALYSIS SU[redacted]ARY: INORGANIC ANIONS

OP#: 21-15L-0300.0, Rev. 03
Analyst: Mark Carney
Date: 11-14-98

Instrument: Dionex-2020i
Prep. Logbook #: 66665

Logbook: 6570
Prep Batch: 98L1C090
Worksheet: IC1114

Anion→	F-		Cl-		NO3		SO4						Sample Info		Comments
Sample ID#↓	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	% Sol	Prep. wt/vol	/Notes
98VOL067-001S	10.658	1	7.072	1	5.238	1	9.962	1					92.6	6g→30mL	
067-002	0	1	0.826	1	0.284	1	2.383	1					89.8		
067-003	0	1	0.684	1	0.241	1	1.641	1					93.9		
067-004	0.521	1	14.444	4	0.375	1	23.290	4					94.2		
067-005	0.302	1	115.080	20	0.328	1	81.499	20					84.7		
067-006	0.008	1	0.819	1	0.244	1	3.938	1					94.9		
CCV	10.456	1	4.790	1	4.803	1	4.827	1					100		
CCB	0	1	0	1	0	1	0	1					100		
98VOL067-007	0	1	0.455	1	0.235	1	1.361	1					96.0	6g→30mL	
067-008	0.820	1	14.386	2	0.357	1	23.283	5					95.3		
067-009	0.319	1	40.390	10	0.234	1	43.986	10					93.1		
067-010	0.376	1	29.560	10	0.275	1	28.194	10					96.3		

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b; where Y = instrument reading
m = slope = NA
b = intercept =
X = concentration (mg/L)

final result = mg/L x dilution factor

Comments/Notes: final mg/kg results on Optics spreadsheet

Standard:	ID	Prep Date	Expir Date
ICV/CCV/DUP/LCS	See p 10		
ICAL/CCV			
MS	~~4/5/47-10~~	~~11-11-97~~	~~1-1-98~~ 11/14/98

Reviewed By/Date: 11/14/98

Recra LabNet Philadelphia

IC ANALYSIS SUMMARY: INORGANIC ANIONS

OP#: 21-15L-0300.0, Rev. 03
Analyst: Mark Carney
Date: 11-14-98

Instrument: Dionex-2020i
Prep. Logbook #: 66665

Logbook: 6570
Prep Batch: 98LIC090
Worksheet: ~~450~~ IC1114

029

Anion→	F-			Cl-			NO3			SO4							Sample Info		Comments
Sample ID#↓	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	% Sol	Prep. wt/vol	/Notes
98101067-011	0.173		1	0.991		1	0.322		1	3.410		1							92.9	1.0g→3mL	
LC67-012	0		1	0.881		1	0.378		1	1.900		1							95.4	1	
CCV	10.071		1	4.788		1	4.840		1	4.862		1							100		
CCB	0		1	0		1	0		1	0		1							100		

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b; where Y = instrument reading
m = slope = N/A
b = intercept =
X = concentration (mg/L)

final result = mg/L x dilution factor

Standard:	ID	Prep Date	Expir Date
ICV/CCVDUP/LCS			
ICAL/CCV		See Page 19	
MS			

Comments/Notes: final mg/kg results on Qstus spreadsheet

Reviewed By/Date: [illegible] 11/16/98

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RFW 21-21L-021U-07/97

Date of Prep: 11/14/98
Date of Analysis: 11/14/98
Worksheet: [redacted]4
Computer ID: [redacted]
Directory: INORGANICS

Run Batch: 98LIC898
Method: EPA300.0
Analyst: MC
Instrument: DIONEX

CALIB DATA
SLOPE: 1.00
INTERCEPT: 0.00
CORRELATION COEFF.: 1

RFW SAMPLE ID	TEST	INST. ABS	INITIAL RESULT	DILUTION FACTOR	C/D	FINAL RESULT	DETECTION LIMIT 0.25	UNITS	REPLICATE ORIG SAMPLE RESULT	REP % DIFF	SPIKE LEVEL ?	SPIKE SAMPLE AMOUNT	% RECOV	LCS AMT LCS ?	LCS % RECOV	SOILS PREP PREP BATCH	INITIAL SAMPLE WT.	FINAL VOL.	% SOLIDS	ANAL TIME	DATE PREP
98LIC898-MB1	ICN03S	4.719	4.719	1	5.0000	23.595	1.250	MG/KG	0.000		5	25.000	94.4			98LIC898	6	30	100.00		
98LIC898-MB1	ICN03	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG								98LIC898	6	30	100.00		
9818L866-001	ICN03	0.363	0.363	1	5.5741	2.023	1.394	MG/KG								98LIC898	6	30	89.70		
9818L866-002	ICN03	0.494	0.494	1	5.7870	2.859	1.447	MG/KG								98LIC898	6	30	86.40		
9818L866-003	ICN03	1.980	1.980	1	5.4945	10.879	1.374	MG/KG								98LIC898	6	30	91.00		
9818L866-004	ICN03	0.211	0.211	1	5.1921	1.096 u	1.298	MG/KG								98LIC898	6	30	96.30		
9818L866-005	ICN03	0.235	0.235	1	5.1867	1.219 u	1.297	MG/KG								98LIC898	6	30	96.40		
CCV	ICN03S	4.805	4.805	1	5.0000	24.025	1.250	MG/KG								98LIC898	6	30	100.00		
CCB	ICN03	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	96.1			98LIC898	6	30	100.00		
9818L866-005	ICN03R	0.232	0.232	1	5.1867	1.203 u	1.297	MG/KG								98LIC898	6	30	96.40		
9818L866-005	ICN03S	5.185	5.185	1	5.1867	26.470	1.297	MG/KG	1.219	1.3						98LIC898	6	30	93.10		
9818L866-006	ICN03	6.456	6.456	1	5.3786	34.672	1.343	MG/KG	1.219		5	25.934	97.4			98LIC898	6	30	86.40		
9818L866-007	ICN03	4.567	4.567	1	5.7870	26.429	1.447	MG/KG								98LIC898	6	30	87.40		
9818L866-008	ICN03	0.841	0.841	1	5.7208	4.811	1.430	MG/KG								98LIC898	6	30	100.00		
CCV	ICN03S	4.759	4.759	1	5.0000	23.795	1.250	MG/KG								98LIC898	6	30	96.40		
CCB	ICN03	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	95.2			98LIC898	6	30	100.00		
9818L866-009	ICN03	0.922	0.922	1	5.3763	4.957	1.344	MG/KG								98LIC898	6	30	100.00		
9818L866-010	ICN03	0.252	0.252	1	5.2687	1.328	1.317	MG/KG								98LIC898	6	30	93.00		
9818L866-011	ICN03	0.556	0.556	1	5.2798	2.936	1.320	MG/KG								98LIC898	6	30	94.90		
9818L866-012	ICN03	0.419	0.419	1	5.3648	2.248	1.341	MG/KG								98LIC898	6	30	94.70		
9818L867-001	ICN03	0.328	0.328	1	5.3996	1.728	1.350	MG/KG								98LIC898	6	30	93.20		
CCV	ICN03S	4.812	4.812	1	5.0000	24.060	1.250	MG/KG								98LIC898	6	30	92.60		
CCB	ICN03	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	96.2			98LIC898	6	30	100.00		
9818L867-001	ICN03R	0.331	0.331	1	5.3996	1.787	1.350	MG/KG								98LIC898	6	30	100.00		
9818L867-001	ICN03S	5.238	5.238	1	5.3996	28.283	1.359	MG/KG	1.728	3.4						98LIC898	6	30	92.60		
9818L867-002	ICN03	0.284	0.284	1	5.3991	1.598	1.480	MG/KG	1.728		5	26.998	98.4			98LIC898	6	30	92.60		
9818L867-003	ICN03	0.251	0.251	1	5.3248	1.337	1.331	MG/KG								98LIC898	6	30	89.30		
9818L867-004	ICN03	0.375	0.375	1	5.3979	1.998	1.327	MG/KG								98LIC898	6	30	93.90		
9818L867-005	ICN03	0.328	0.328	1	5.9832	1.936	1.476	MG/KG								98LIC898	6	30	94.20		
9818L867-006	ICN03	0.244	0.244	1	5.2687	1.286 u	1.317	MG/KG								98LIC898	6	30	84.70		
CCV	ICN03S	4.803	4.803	1	5.0000	24.015	1.250	MG/KG								98LIC898	6	30	94.90		
CCB	ICN03	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	96.1			98LIC898	6	30	100.00		
9818L867-007	ICN03	0.235	0.235	1	5.2083	1.224 u	1.302	MG/KG								98LIC898	6	30	100.00		
9818L867-008	ICN03	0.357	0.357	1	5.2466	1.873	1.312	MG/KG								98LIC898	6	30	96.00		
9818L867-009	ICN03	0.234	0.234	1	5.3786	1.257 u	1.343	MG/KG								98LIC898	6	30	95.30		
9818L867-010	ICN03	0.275	0.275	1	5.1921	1.428	1.298	MG/KG								98LIC898	6	30	93.10		
9818L867-011	ICN03	0.322	0.322	1	5.3821	1.733	1.346	MG/KG								98LIC898	6	30	96.30		
9818L867-012	ICN03	0.378	0.378	1	5.2411	1.981	1.310	MG/KG								98LIC898	6	30	92.90		
CCV	ICN03S	4.840	4.840	1	5.0000	24.200	1.250	MG/KG								98LIC898	6	30	95.40		
CCB	ICN03	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	96.8			98LIC898	6	30	100.00		
98LIC898-MB1	ICS04S	4.788	4.788	1	5.0000	23.940	1.250	MG/KG								98LIC898	6	30	100.00		
98LIC898-MB1	ICS04	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	95.8			98LIC898	6	30	100.00		
9818L866-001	ICS04	384.322	384.322	100	5.5741	2142.263	139.353	MG/KG								98LIC898	6	30	100.00		
9818L866-002	ICS04	124.881	124.881	20	5.7870	722.691	28.935	MG/KG								98LIC898	6	30	89.70		
9818L866-003	ICS04	54.124	54.124	20	5.4945	297.385	27.473	MG/KG								98LIC898	6	30	86.40		
9818L866-004	ICS04	9.118	9.118	1	5.1921	47.342	1.298	MG/KG								98LIC898	6	30	91.00		
9818L866-005	ICS04	1.791	1.791	1	5.1867	9.289	1.297	MG/KG								98LIC898	6	30	96.30		
CCV	ICS04S	4.799	4.799	1	5.0000	23.995	1.250	MG/KG								98LIC898	6	30	96.40		
CCB	ICS04	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	96.0			98LIC898	6	30	100.00		
																98LIC898	6	30	100.00		

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9810L866-003	ICS04	54.124	54.124	20	5.7879	722.691	28.935 MG/KG					98LIC090	6	30	89.70
9810L866-004	ICS04	9.118	9.118	20	5.4945	297.385	27.473 MG/KG					98LIC090	6	30	86.40
9810L866-005	ICS04	1.791	1.791	1	5.1921	47.342	1.298 MG/KG					98LIC090	6	30	91.80
CCV	ICS04S	4.799	4.799	1	5.1867	9.289	1.297 MG/KG					98LIC090	6	30	96.30
CCB	ICS04	0.000	0.000	1	5.0000	23.995	1.250 MG/KG	0.000		5	25.000 96.0	98LIC090	6	30	96.40
9810L866-005	ICS04R	1.800	1.800	1	5.0000	0.000 u	1.250 MG/KG					98LIC090	6	30	100.00
9810L866-005	ICS04S	6.881	6.881	1	5.1867	9.336	1.297 MG/KG	9.289	0.5			98LIC090	6	30	100.00
9810L866-006	ICS04	38.537	38.537	10	5.3706	35.698	1.297 MG/KG	9.289		5	25.934 101.8	98LIC090	6	30	96.40
9810L866-007	ICS04	80.569	80.569	20	5.7878	286.966	13.426 MG/KG					98LIC090	6	30	96.40
9810L866-008	ICS04	76.383	76.383	10	5.7208	512.552	28.935 MG/KG					98LIC090	6	30	93.10
CCV	ICS04S	4.808	4.808	1	5.7208	436.974	14.392 MG/KG					98LIC090	6	30	86.40
CCB	ICS04	0.000	0.000	1	5.0000	24.040	1.250 MG/KG					98LIC090	6	30	87.40
9810L866-009	ICS04	11.663	11.663	2	5.0000	0.000 u	1.250 MG/KG	0.000		5	25.000 96.2	98LIC090	6	30	100.00
9810L866-010	ICS04	7.794	7.794	1	5.3763	62.704	2.608 MG/KG					98LIC090	6	30	100.00
9810L866-011	ICS04	35.002	35.002	10	5.2687	41.864	1.317 MG/KG					98LIC090	6	30	93.60
9810L866-012	ICS04	34.319	34.319	10	5.2798	185.227	13.206 MG/KG					98LIC090	6	30	94.90
9810L867-001	ICS04	4.459	4.459	1	5.3648	184.115	13.412 MG/KG					98LIC090	6	30	94.70
CCV	ICS04S	4.814	4.814	1	5.3996	24.077	1.350 MG/KG					98LIC090	6	30	93.20
CCB	ICS04	0.000	0.000	1	5.0000	24.070	1.250 MG/KG					98LIC090	6	30	92.60
9810L867-001	ICS04R	4.451	4.451	1	5.0000	0.000 u	1.250 MG/KG	0.000		5	25.000 96.3	98LIC090	6	30	100.00
9810L867-001	ICS04S	9.942	9.942	1	5.3996	24.033	1.350 MG/KG					98LIC090	6	30	100.00
9810L867-002	ICS04	2.383	2.383	1	5.3996	53.683	1.350 MG/KG	24.077	0.2			98LIC090	6	30	92.60
9810L867-003	ICS04	1.641	1.641	1	5.3991	13.343	1.400 MG/KG	24.077		5	26.998 109.7	98LIC090	6	30	92.60
9810L867-004	ICS04	23.298	23.298	4	5.3248	8.738	1.331 MG/KG					98LIC090	6	30	89.30
9810L867-005	ICS04	81.499	81.499	20	5.3879	123.628	5.388 MG/KG					98LIC090	6	30	93.90
9810L867-006	ICS04	3.938	3.938	1	5.9832	481.184	29.516 MG/KG					98LIC090	6	30	94.20
CCV	ICS04S	4.827	4.827	1	5.2687	20.748	1.317 MG/KG					98LIC090	6	30	84.70
CCB	ICS04	0.000	0.000	1	5.0000	24.135	1.250 MG/KG					98LIC090	6	30	94.90
9810L867-007	ICS04	1.361	1.361	1	5.0000	0.000 u	1.250 MG/KG	0.000		5	25.000 96.5	98LIC090	6	30	100.00
9810L867-008	ICS04	23.283	23.283	5	5.2883	7.009	1.302 MG/KG					98LIC090	6	30	100.00
9810L867-009	ICS04	43.986	43.986	10	5.2466	122.156	6.358 MG/KG					98LIC090	6	30	96.00
9810L867-010	ICS04	28.194	28.194	10	5.3706	236.230	13.426 MG/KG					98LIC090	6	30	95.30
9810L867-011	ICS04	3.410	3.410	1	5.1921	146.386	12.988 MG/KG					98LIC090	6	30	93.10
9810L867-012	ICS04	1.900	1.900	1	5.3821	18.353	1.346 MG/KG					98LIC090	6	30	96.30
CCV	ICS04S	4.862	4.862	1	5.2411	9.958	1.319 MG/KG					98LIC090	6	30	92.90
CCB	ICS04	0.000	0.000	1	5.0000	24.310	1.250 MG/KG					98LIC090	6	30	95.40
					5.0000	0.000 u	1.250 MG/KG	0.000		5	25.000 97.2	98LIC090	6	30	100.00
												98LIC090	6	30	100.00

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Date of Prep: 11/14/98
Date of Analysis: 11/14/98
Worksheet: [redacted]114
Computer ID: ESL
Directory: INORGANICS
Run Batch: 98LIC898
Method: EPA300.0
Analyst: MC
Instrument: DIONEX

CALIB DATA
SLOPE: 1.00
INTERCEPT: 0.00
CORRELATION COEFF.: 1

RFW SAMPLE ID	TEST	INST. ABS	INITIAL RESULT	DILUTION FACTOR	C/D	FINAL RESULT	DETECTION LIMIT 0.50	UNITS	REPLICATE ORIG SAMPLE RESULT	REP % DIFF	SPIKE ?	SPIKE LEVEL AMOUNT	SAMPLE SPIKE % RECOV	LCS ?	AMT LCS % RECOV	SOILS PREP PREP BATCH	INITIAL SAMPLE WT.	FINAL VOL.	% SOLIDS	ANAL TIME	DATE PREP
98LIC898-MB1	ICFL-S	5.550	5.550	1	5.0000	27.750	2.500	MG/KG	0.000		S	25.000	111.0			98LIC898	6	30	100.00		
98LIC898-MB1	ICFL	0.000	0.000	1	5.0000	0.000 u	2.500	MG/KG								98LIC898	6	30	100.00		
9810L866-001	ICFL	0.000	0.000	1	5.5741	0.000 u	2.787	MG/KG								98LIC898	6	30	89.70		
9810L866-002	ICFL	0.291	0.291	1	5.7870	1.684 u	2.894	MG/KG								98LIC898	6	30	86.40		
9810L866-003	ICFL	0.304	0.304	1	5.4945	1.670 u	2.747	MG/KG								98LIC898	6	30	91.00		
9810L866-004	ICFL	0.417	0.417	1	5.1921	2.165 u	2.596	MG/KG								98LIC898	6	30	96.30		
9810L866-005	ICFL	0.118	0.118	1	5.1867	0.612 u	2.593	MG/KG								98LIC898	6	30	96.40		
CCV	ICFL-S	9.912	9.912	1	5.0000	49.560	2.500	MG/KG								98LIC898	6	30	100.00		
CCB	ICFL	0.000	0.000	1	5.0000	0.000 u	2.500	MG/KG	0.000		10	50.000	99.1			98LIC898	6	30	100.00		
9810L866-005	ICFL-R	0.133	0.133	1	5.1867	0.690 u	2.593	MG/KG								98LIC898	6	30	96.40		
9810L866-005	ICFL-S	11.633	11.633	1	5.1867	57.225	2.593	MG/KG	0.612	12.0						98LIC898	6	30	96.40		
9810L866-006	ICFL	0.891	0.891	1	5.3706	4.785	2.685	MG/KG	0.612		10	51.867	109.2			98LIC898	6	30	93.10		
9810L866-007	ICFL	0.694	0.694	1	5.7870	4.016	2.894	MG/KG								98LIC898	6	30	86.40		
9810L866-008	ICFL	0.551	0.551	1	5.7208	3.152	2.860	MG/KG								98LIC898	6	30	87.40		
CCV	ICFL-S	10.481	10.481	1	5.0000	52.405	2.500	MG/KG								98LIC898	6	30	100.00		
CCB	ICFL	0.000	0.000	1	5.0000	0.000 u	2.500	MG/KG	0.000		10	50.000	104.8			98LIC898	6	30	100.00		
9810L866-009	ICFL	0.220	0.220	1	5.3763	1.183 u	2.688	MG/KG								98LIC898	6	30	93.00		
9810L866-010	ICFL	0.120	0.120	1	5.2687	0.632 u	2.634	MG/KG								98LIC898	6	30	94.90		
9810L866-011	ICFL	1.449	1.449	1	5.2798	7.650	2.640	MG/KG								98LIC898	6	30	94.70		
9810L866-012	ICFL	0.681	0.681	1	5.3648	3.653	2.682	MG/KG								98LIC898	6	30	93.20		
9810L867-001	ICFL	0.198	0.198	1	5.3996	1.069 u	2.700	MG/KG								98LIC898	6	30	92.60		
CCV	ICFL-S	10.632	10.632	1	5.0000	53.160	2.500	MG/KG								98LIC898	6	30	100.00		
CCB	ICFL	0.000	0.000	1	5.0000	0.000 u	2.500	MG/KG	0.000		10	50.000	106.3			98LIC898	6	30	100.00		
9810L867-001	ICFL-R	0.197	0.197	1	5.3996	1.064 u	2.700	MG/KG								98LIC898	6	30	92.60		
9810L867-001	ICFL-S	10.638	10.638	1	5.3996	57.549	2.700	MG/KG	1.069	0.5						98LIC898	6	30	92.60		
9810L867-002	ICFL	0.000	0.000	1	5.5991	0.000 u	2.800	MG/KG	1.069		10	53.996	104.6			98LIC898	6	30	89.30		
9810L867-003	ICFL	0.000	0.000	1	5.3248	0.000 u	2.662	MG/KG								98LIC898	6	30	93.90		
9810L867-004	ICFL	0.521	0.521	1	5.3079	2.765	2.654	MG/KG								98LIC898	6	30	94.20		
9810L867-005	ICFL	0.382	0.382	1	5.9032	1.783 u	2.952	MG/KG								98LIC898	6	30	84.70		
9810L867-006	ICFL	0.000	0.000	1	5.2687	0.842 u	2.634	MG/KG								98LIC898	6	30	94.90		
CCV	ICFL-S	10.456	10.456	1	5.0000	52.280	2.500	MG/KG								98LIC898	6	30	100.00		
CCB	ICFL	0.000	0.000	1	5.0000	0.000 u	2.500	MG/KG	0.000		10	50.000	104.6			98LIC898	6	30	100.00		
9810L867-007	ICFL	0.000	0.000	1	5.2883	0.000 u	2.644	MG/KG								98LIC898	6	30	96.00		
9810L867-008	ICFL	0.820	0.820	1	5.2466	4.382	2.623	MG/KG								98LIC898	6	30	95.30		
9810L867-009	ICFL	0.319	0.319	1	5.3706	1.713 u	2.685	MG/KG								98LIC898	6	30	93.10		
9810L867-010	ICFL	0.376	0.376	1	5.1921	1.952 u	2.596	MG/KG								98LIC898	6	30	96.30		
9810L867-011	ICFL	0.173	0.173	1	5.3821	0.931 u	2.691	MG/KG								98LIC898	6	30	92.90		
9810L867-012	ICFL	0.000	0.000	1	5.2411	0.000 u	2.621	MG/KG								98LIC898	6	30	95.40		
CCV	ICFL-S	10.071	10.071	1	5.0000	50.355	2.500	MG/KG								98LIC898	6	30	100.00		
CCB	ICFL	0.000	0.000	1	5.0000	0.000 u	2.500	MG/KG	0.000		10	50.000	100.7			98LIC898	6	30	100.00		
98LIC898-MB1	ICCL-S	4.693	4.693	1	5.0000	23.465	1.250	MG/KG								98LIC898	6	30	100.00		
98LIC898-MB1	ICCL	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		S	25.000	93.9			98LIC898	6	30	100.00		
9810L866-001	ICCL	100.489	100.489	20	5.5741	560.139	27.871	MG/KG								98LIC898	6	30	100.00		
9810L866-002	ICCL	129.151	129.151	20	5.7870	747.402	28.935	MG/KG								98LIC898	6	30	89.70		
9810L866-003	ICCL	82.466	82.466	10	5.4945	453.110	13.736	MG/KG								98LIC898	6	30	86.40		
9810L866-004	ICCL	3.085	3.085	1	5.1921	16.018	1.298	MG/KG								98LIC898	6	30	91.00		
9810L866-005	ICCL	0.995	0.995	1	5.1867	5.161	1.297	MG/KG								98LIC898	6	30	96.30		
CCV	ICCL-S	4.756	4.756	1	5.0000	23.780	1.250	MG/KG								98LIC898	6	30	96.40		
CCB	ICCL	0.158	0.158	1	5.0000	0.790 u	1.250	MG/KG	0.000		S	25.000	95.1			98LIC898	6	30	100.00		

9818L866-005	ICCL-R	0.964	0.964	1	5.0000	0.790 u	1.250 MG/KG				5	25.000	95.1	98LIC090	6	30 100.00
9818L866-005	ICCL-S	6.033	6.033	1	5.1867	5.000	1.297 MG/KG	5.161	3.2					98LIC090	6	30 100.00
9818L866-006	ICCL	1.564	1.564	1	5.1867	31.291	1.297 MG/KG	5.161			5	25.934	100.8	98LIC090	6	30 96.40
9818L866-007	ICCL	12.095	12.095	2	5.3706	8.400	1.343 MG/KG							98LIC090	6	30 96.40
9818L866-008	ICCL	33.268	33.268	10	5.7870	69.994	2.894 MG/KG							98LIC090	6	30 93.10
CCV	ICCL-S	4.703	4.703	1	5.7208	190.320	14.302 MG/KG							98LIC090	6	30 86.40
CCB	ICCL	0.144	0.144	1	5.0000	23.515	1.250 MG/KG	0.000						98LIC090	6	30 87.40
9818L866-009	ICCL	29.144	29.144	5	5.0000	0.720 u	1.250 MG/KG				5	25.000	94.1	98LIC090	6	30 100.00
9818L866-010	ICCL	25.102	25.102	5	5.3763	156.688	6.720 MG/KG							98LIC090	6	30 100.00
9818L866-011	ICCL	44.011	44.011	10	5.2687	132.255	6.586 MG/KG							98LIC090	6	30 93.00
9818L866-012	ICCL	32.471	32.471	10	5.2798	232.371	13.200 MG/KG							98LIC090	6	30 94.90
9818L867-001	ICCL	1.794	1.794	1	5.3648	174.201	13.412 MG/KG							98LIC090	6	30 94.70
CCV	ICCL-S	4.798	4.798	1	5.3996	9.687	1.350 MG/KG							98LIC090	6	30 93.20
CCB	ICCL	0.144	0.144	1	5.0000	23.990	1.250 MG/KG	0.000						98LIC090	6	30 92.60
9818L867-001	ICCL-R	1.785	1.785	1	5.0000	0.720 u	1.250 MG/KG				5	25.000	96.5	98LIC090	6	30 100.00
9818L867-001	ICCL-S	7.072	7.072	1	5.3996	9.638	1.350 MG/KG							98LIC090	6	30 100.00
9818L867-002	ICCL	0.826	0.826	1	5.3996	38.186	1.350 MG/KG	9.687	0.5					98LIC090	6	30 92.60
9818L867-003	ICCL	0.684	0.684	1	5.5991	4.625	1.400 MG/KG	9.687			5	26.990	105.6	98LIC090	6	30 92.60
9818L867-004	ICCL	14.444	14.444	4	5.3248	3.642	1.331 MG/KG							98LIC090	6	30 89.30
9818L867-005	ICCL	115.000	115.000	20	5.3079	76.667	5.308 MG/KG							98LIC090	6	30 93.90
9818L867-006	ICCL	0.819	0.819	1	5.9932	679.339	29.516 MG/KG							98LIC090	6	30 94.20
CCV	ICCL-S	4.790	4.790	1	5.2687	4.315	1.317 MG/KG							98LIC090	6	30 84.70
CCB	ICCL	0.000	0.000	1	5.0000	23.950	1.250 MG/KG	0.000						98LIC090	6	30 94.90
9818L867-007	ICCL	0.455	0.455	1	5.0000	0.000 u	1.250 MG/KG				5	25.000	95.8	98LIC090	6	30 100.00
9818L867-008	ICCL	14.386	14.386	2	5.2883	2.378	1.302 MG/KG							98LIC090	6	30 100.00
9818L867-009	ICCL	40.390	40.390	10	5.2466	75.477	2.623 MG/KG							98LIC090	6	30 96.00
9818L867-010	ICCL	29.560	29.560	10	5.3706	216.917	13.426 MG/KG							98LIC090	6	30 95.30
9818L867-011	ICCL	0.991	0.991	1	5.1921	153.479	12.980 MG/KG							98LIC090	6	30 93.10
9818L867-012	ICCL	0.881	0.881	1	5.3821	5.334	1.346 MG/KG							98LIC090	6	30 96.30
CCV	ICCL-S	4.788	4.788	1	5.2411	4.617	1.319 MG/KG							98LIC090	6	30 92.90
CCB	ICCL	0.000	0.000	1	5.0000	23.940	1.250 MG/KG	0.000						98LIC090	6	30 95.40
					5.0000	0.000 u	1.250 MG/KG				5	25.000	95.8	98LIC090	6	30 100.00
														98LIC090	6	30 100.00

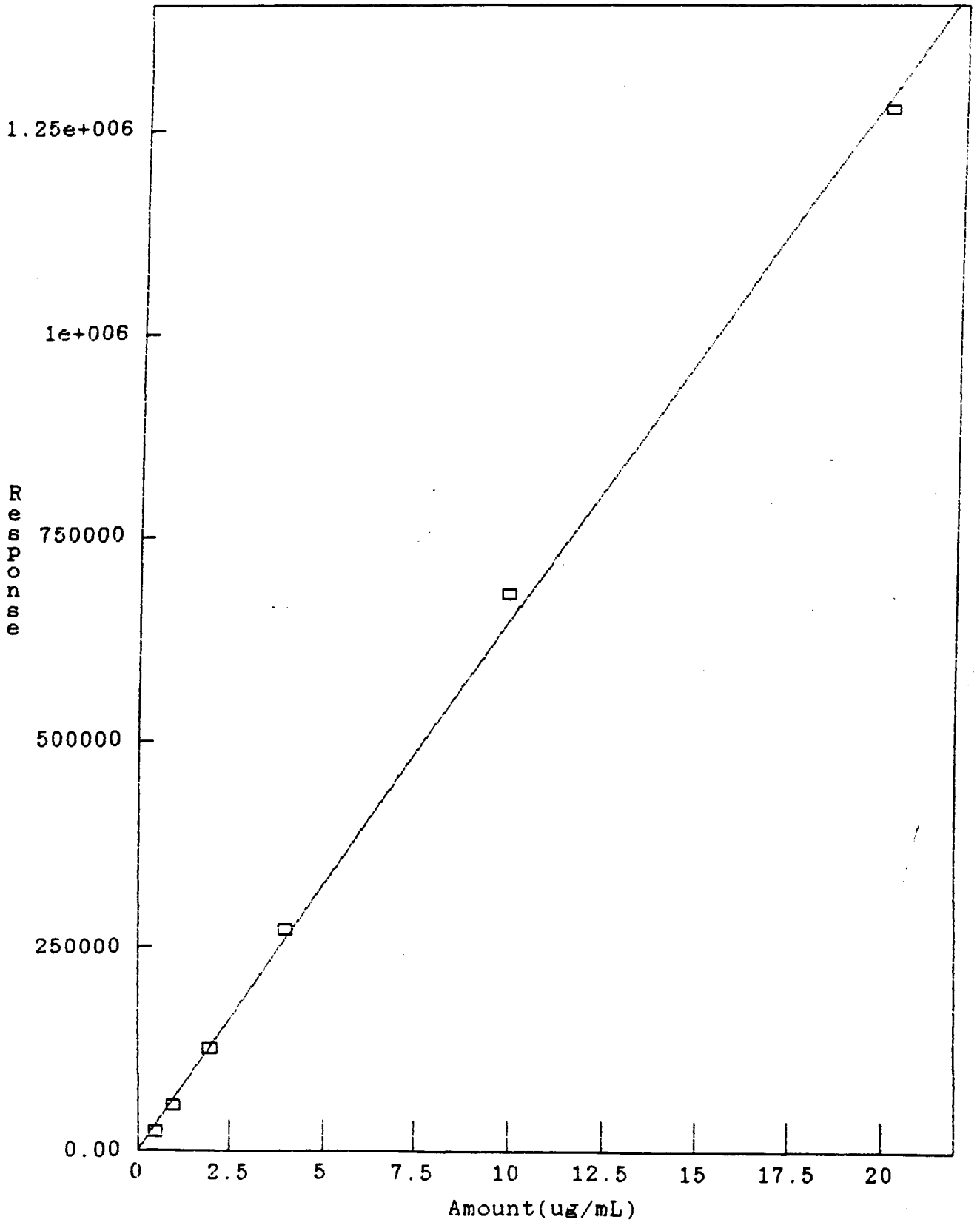
DIONEX SCHEDULE - C:\DX\SCHEDULE\111498.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.St
1	BLANK	..\AS4A300.	..\RAWDATA1	1	1	1
2	AUTOCAL1	..\AS4A300.	..\RAWDATA1	1	1	1
3	AUTOCAL2	..\AS4A300.	..\RAWDATA1	1	1	1
4	AUTOCAL3	..\AS4A300.	..\RAWDATA1	1	1	1
5	AUTOCAL4	..\AS4A300.	..\RAWDATA1	1	1	1
6	AUTOCAL5	..\AS4A300.	..\RAWDATA1	1	1	1
7	AUTOCAL6	..\AS4A300.	..\RAWDATA1	1	1	1
8	98LIC090-ICV	..\AS4A300.	..\RAWDATA1	1	1	1
9	98LIC090-ICB	..\AS4A300.	..\RAWDATA1	1	1	1
10	9810L066-001	..\AS4A300.	..\RAWDATA1	1	1	1
11	9810L066-001	..\AS4A300.	..\RAWDATA1	1	20	1
12	9810L066-001	..\AS4A300.	..\RAWDATA1	1	100	1
13	9810L066-002	..\AS4A300.	..\RAWDATA1	1	1	1
14	9810L066-002	..\AS4A300.	..\RAWDATA1	1	20	1
15	9810L066-002	..\AS4A300.	..\RAWDATA1	1	50	1
16	9810L066-003	..\AS4A300.	..\RAWDATA1	1	1	1
17	9810L066-003	..\AS4A300.	..\RAWDATA1	1	20	1
18	9810L066-004	..\AS4A300.	..\RAWDATA1	1	1	1
19	9810L066-005	..\AS4A300.	..\RAWDATA1	1	1	1
20	CCV	..\AS4A300.	..\RAWDATA1	1	1	1
21	CCB	..\AS4A300.	..\RAWDATA1	1	1	1
22	9810L066-005R	..\AS4A300.	..\RAWDATA1	1	1	1
23	9810L066-005S	..\AS4A300.	..\RAWDATA1	1	1	1
24	9810L066-006	..\AS4A300.	..\RAWDATA1	1	10	1
25	9810L066-006	..\AS4A300.	..\RAWDATA1	1	1	1
26	9810L066-007	..\AS4A300.	..\RAWDATA1	1	2	1
27	9810L066-007	..\AS4A300.	..\RAWDATA1	1	20	1
28	9810L066-007	..\AS4A300.	..\RAWDATA1	1	1	1
29	9810L066-008	..\AS4A300.	..\RAWDATA1	1	10	1
30	9810L066-008	..\AS4A300.	..\RAWDATA1	1	20	1
31	9810L066-008	..\AS4A300.	..\RAWDATA1	1	1	1
32	CCV	..\AS4A300.	..\RAWDATA1	1	1	1
33	CCB	..\AS4A300.	..\RAWDATA1	1	1	1
34	9810L066-009	..\AS4A300.	..\RAWDATA1	1	2	1
35	9810L066-009	..\AS4A300.	..\RAWDATA1	1	5	1
36	9810L066-009	..\AS4A300.	..\RAWDATA1	1	1	1
37	9810L066-010	..\AS4A300.	..\RAWDATA1	1	5	1
38	9810L066-010	..\AS4A300.	..\RAWDATA1	1	1	1
39	9810L066-011	..\AS4A300.	..\RAWDATA1	1	10	1
40	9810L066-011	..\AS4A300.	..\RAWDATA1	1	1	1
41	9810L066-012	..\AS4A300.	..\RAWDATA1	1	10	1
42	9810L066-012	..\AS4A300.	..\RAWDATA1	1	1	1
43	9810L067-001	..\AS4A300.	..\RAWDATA1	1	1	1
44	CCV	..\AS4A300.	..\RAWDATA1	1	1	1
45	CCB	..\AS4A300.	..\RAWDATA1	1	1	1
46	9810L067-001S	..\AS4A300.	..\RAWDATA1	1	1	1
47	9810L067-001T	..\AS4A300.	..\RAWDATA1	1	1	1
48	9810L067-002	..\AS4A300.	..\RAWDATA1	1	1	1
49	9810L067-003	..\AS4A300.	..\RAWDATA1	1	1	1
50	9810L067-004	..\AS4A300.	..\RAWDATA1	1	4	1
51	9810L067-004	..\AS4A300.	..\RAWDATA1	1	1	1
52	9810L067-005	..\AS4A300.	..\RAWDATA1	1	20	1
53	9810L067-005	..\AS4A300.	..\RAWDATA1	1	50	1
54	9810L067-005	..\AS4A300.	..\RAWDATA1	1	1	1
55	9810L067-006	..\AS4A300.	..\RAWDATA1	1	1	1
56	CCV	..\AS4A300.	..\RAWDATA1	1	1	1
57	CCB	..\AS4A300.	..\RAWDATA1	1	1	1
58	9810L067-007	..\AS4A300.	..\RAWDATA1	1	1	1
59	9810L067-008	..\AS4A300.	..\RAWDATA1	1	1	1
60	9810L067-008	..\AS4A300.	..\RAWDATA1	1	2	1

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Inj.Sc
62	9810L067-009	..\AS4A300.	..\RAWDATA1	1	1	1
63	9810L067-009	..\AS4A300.	..\RAWDATA1	1	10	1
64	9810L067-010	..\AS4A300.	..\RAWDATA1	1	1	1
65	9810L067-010	..\AS4A300.	..\RAWDATA1	1	10	1
66	9810L067-011	..\AS4A300.	..\RAWDATA1	1	1	1
67	9810L067-012	..\AS4A300.	..\RAWDATA1	1	1	1
68	CCV	..\AS4A300.	..\RAWDATA1	1	1	1
69	CCB	..\AS4A300.	..\RAWDATA1	1	1	1
70	9811L402-001	..\AS4A300.	..\RAWDATA1	1	1	1
71	9811L402-002	..\AS4A300.	..\RAWDATA1	1	1	1
72	9811L402-003	..\AS4A300.	..\RAWDATA1	1	1	1
73	9811L405-001	..\AS4A300.	..\RAWDATA1	1	1	1
74	9811L405-002	..\AS4A300.	..\RAWDATA1	1	1	1
75	9811L405-003	..\AS4A300.	..\RAWDATA1	1	1	1
76	9811L405-004	..\AS4A300.	..\RAWDATA1	1	1	1
77	9811L405-005	..\AS4A300.	..\RAWDATA1	1	1	1
78	9811L405-006	..\AS4A300.	..\RAWDATA1	1	1	1
79	9811L405-007	..\AS4A300.	..\RAWDATA1	1	1	1
80	9811L405-008	..\AS4A300.	..\RAWDATA1	1	1	1
81	CCV	..\AS4A300.	..\RAWDATA1	1	1	1
82	CCB	..\AS4A300.	..\RAWDATA1	1	1	1
83	HALT	..\HALT.met	..\RAWDATA1	1	1	1

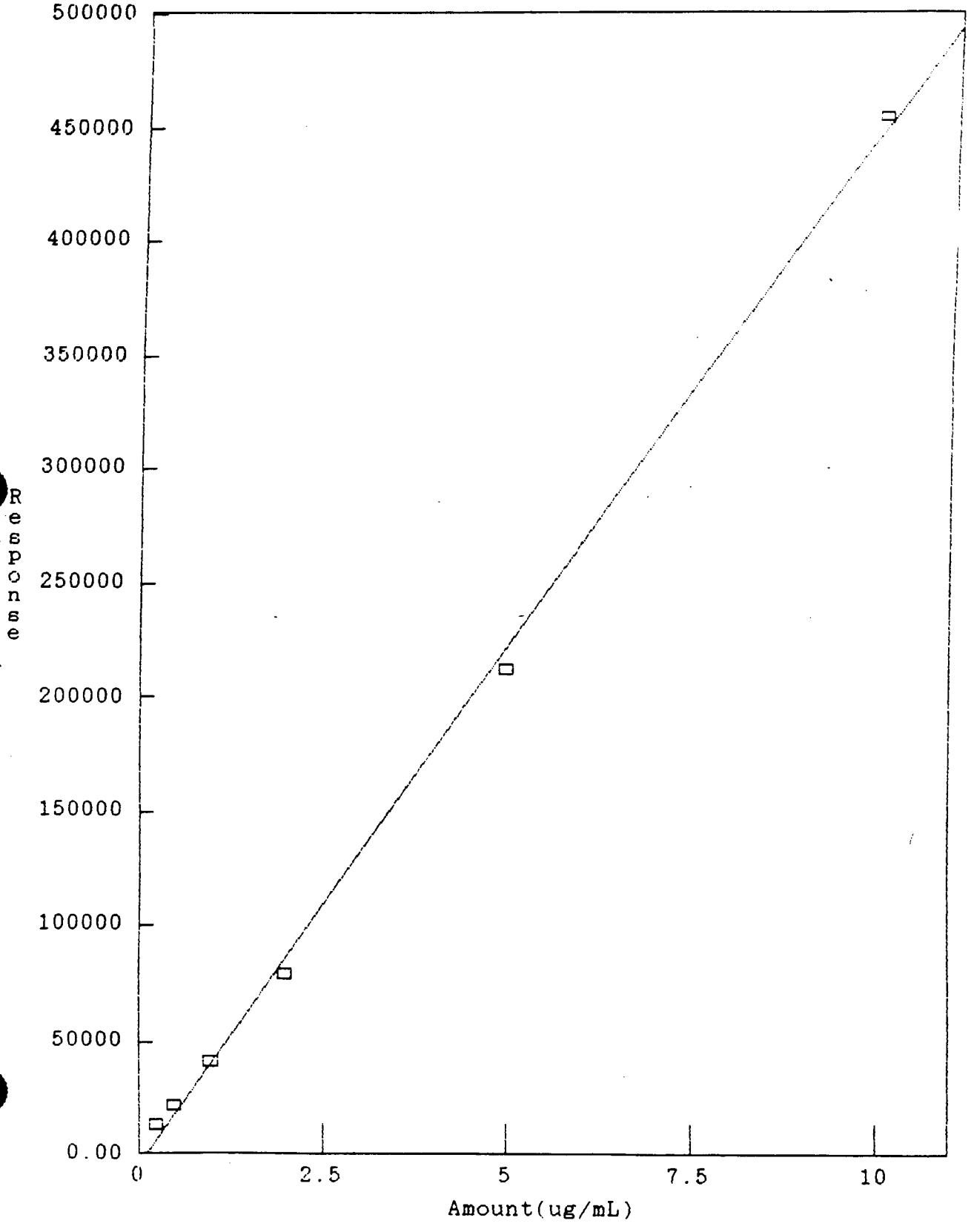
Method: A54A300.MET -Method Updated: 16:32 on 14 NOV 96

Component: FLUORIDE
Fit Type: Linear
r^2: 0.998526
Amt = Resp * 1.549e-005 + -0.04338
Resp = Amt * 6.455e+004 + 2800
Standardization: External
Calibration: Area

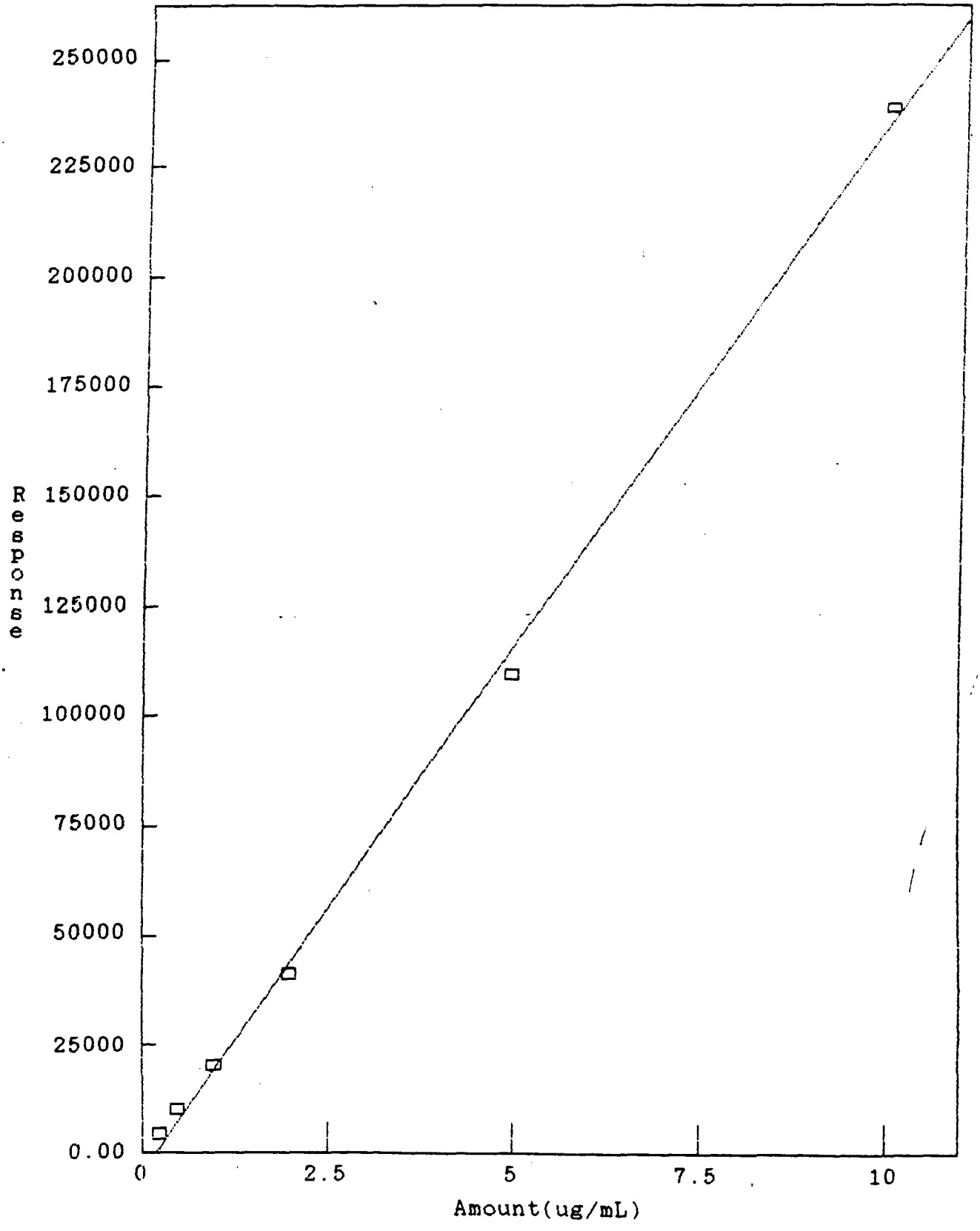


Method: C:\DX\METHOD\AS4A505.MET

Component: CHLORIDE
Fit Type: Linear
r^2: 0.998333
Amt = Resp * 2.199e-005 + 0.1094
Resp = Amt * 4.547e+004 + -4973
Standardization: External
Calibration: Area

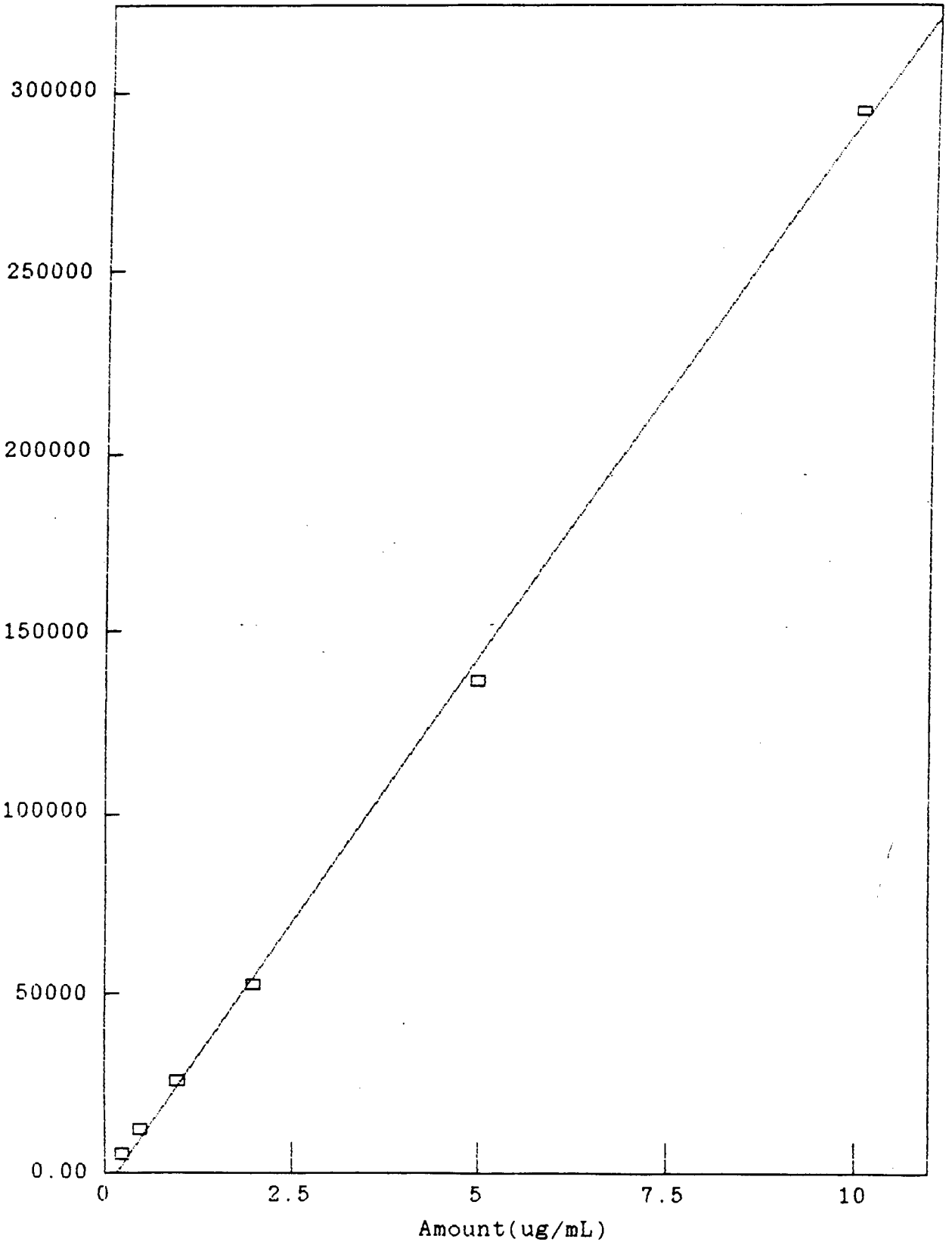


Component: NITRATE
Fit Type: Linear
r^2: 0.998397
Amt = Resp * 4.171e-005 + 0.1778
Resp = Amt * 2.398e+004 + -4262
Standardization: External
Calibration: Area



Method: C:\DA\METHOD\[illegible].ME

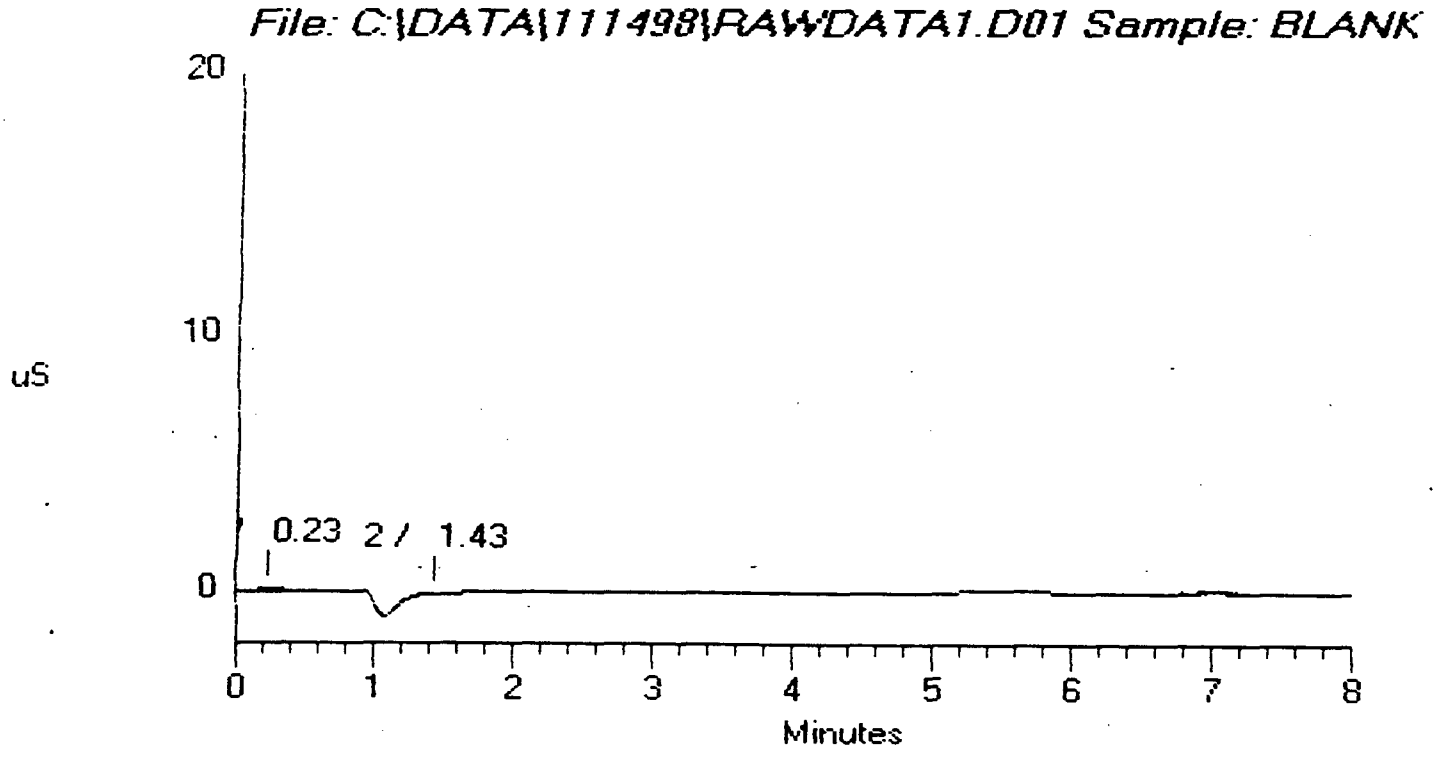
Component: SULFATE
Fit Type: Linear
r^2: 0.998831
Amt = Resp * 3.384e-005 + 0.15
Resp = Amt * 2.955e+004 + -4432
Standardization: External
Calibration: Area



Sample Name: BLANK Date: Sat Nov 14 15:34:54 1998
Data File : C:\DATA\111498\RAWDATA1.D01
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 1 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	0.23		0.000	130	1148	1	
2	1.43		0.000	80	640	1	
		Totals	0.000	210	1788		



********** AUTOMATIC CALIBRATION UPDATE **********

Sample Name: AUTOCAL1 Date: Sat Nov 14 15:44:27 1998
Raw File : C:\DATA\111498\RAWDATA1.D02
Method : C:\DX\METHOD\AS4A300.met Calibration Level: 1
ACI Address: 1 System : 1 Inject#: 2 Detector: CDM-1

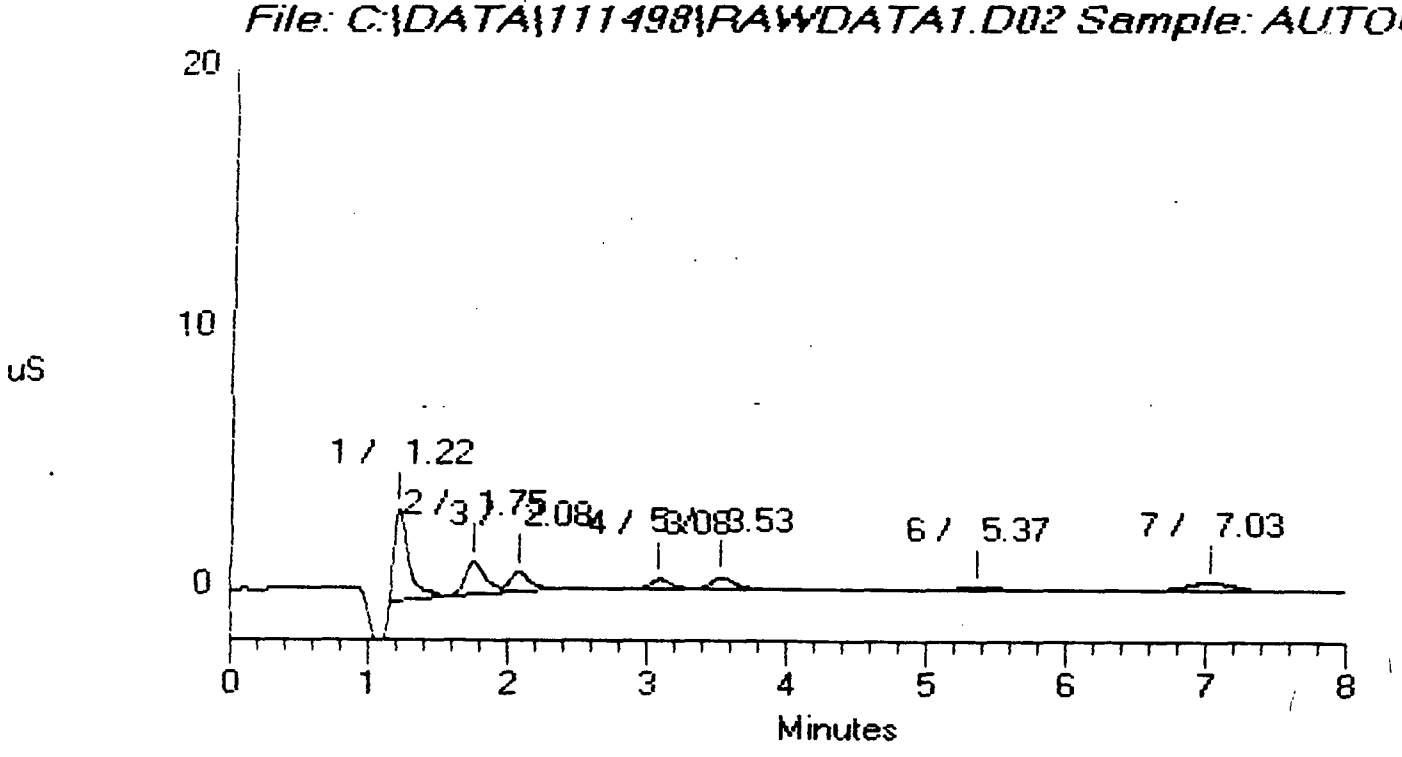
********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD AREA	MEASURED AREA	NEW AREA
1	FLUORIDE	1.23	1.22	1.22	2.377e+004	2.519e+004	2.519e+004
2	CHLORIDE	1.78	1.75	1.75	1.275e+004	1.317e+004	1.317e+004
3	NITRITE	2.08	2.08	2.08	6.752e+003	7.217e+003	7.217e+003
4	BROMIDE	3.03	3.08	3.08	3.574e+003	3.408e+003	3.408e+003
5	NITRATE	3.40	3.53	3.53	4.895e+003	4.598e+003	4.598e+003
6	PHOSPHATE	5.22	5.37	5.37	1.247e+003	9.530e+002	9.530e+002
7	SULFATE	6.77	7.03	7.03	6.214e+003	5.822e+003	5.822e+003

Sample Name: AUTOCAL1 Date: Sat Nov 14 15:44:27 1998
Data File : C:\DATA\111498\RAWDATA1.D02
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 2 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.500	3473	25188	1	0.00
2	1.75	CHLORIDE	0.250	1287	13165	2	0.00
3	2.08	NITRITE	0.250	738	7217	2	0.00
4	3.08	BROMIDE	0.250	360	3408	2	0.00
5	3.53	NITRATE	0.250	433	4598	2	0.00
6	5.37	PHOSPHATE	0.250	65	953	1	0.00
7	7.03	SULFATE	0.250	290	5822	1	0.00
		Totals	2.000	6646	60351		

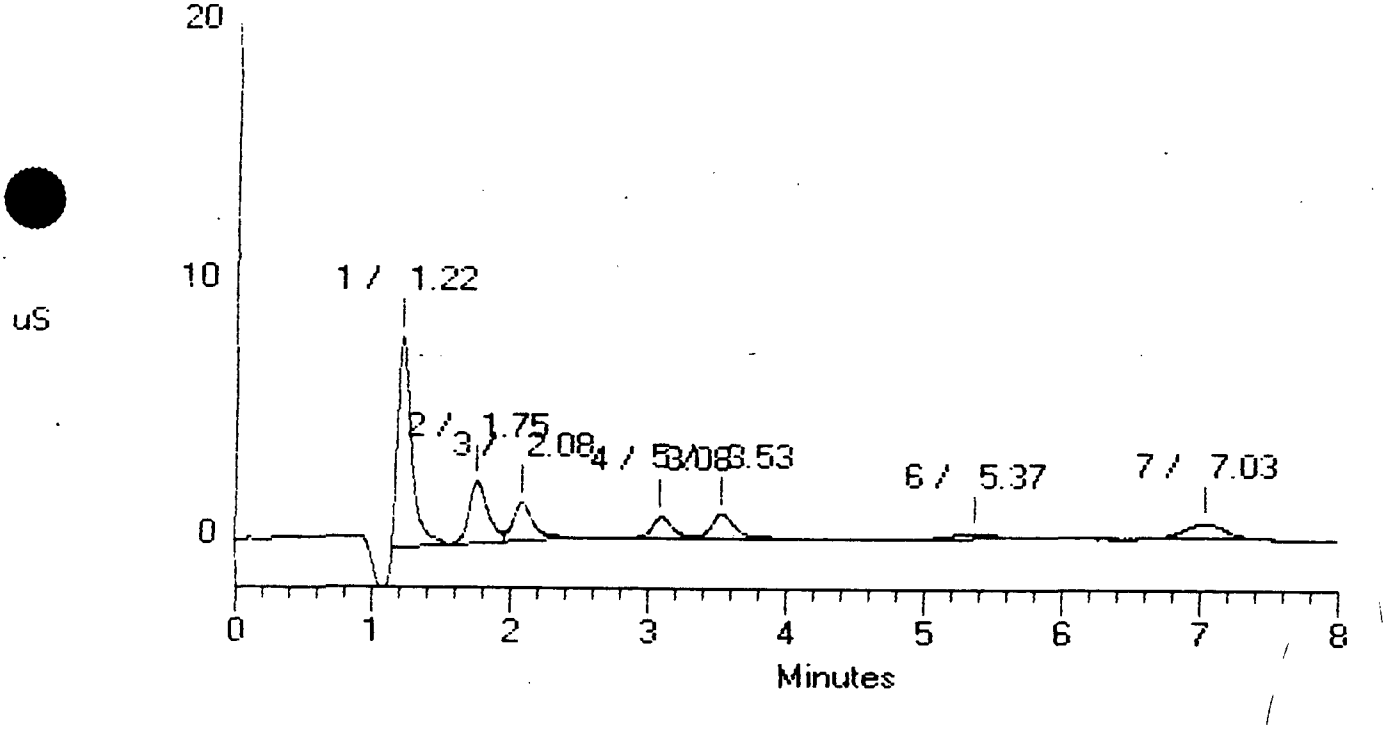


Sample Name: AUTOCAL2 Date: Sat Nov 14 15:54:08 1998
Data File : C:\DATA\111498\RAWDATA1.D03
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 3 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	1.000	8149	57237	1	0.00
2	1.75	CHLORIDE	0.500	2351	22134	2	0.00
3	2.08	NITRITE	0.500	1441	13894	2	0.00
4	3.08	BROMIDE	0.500	758	7721	2	0.00
5	3.53	NITRATE	0.500	894	10060	2	0.00
6	5.37	PHOSPHATE	0.500	190	3474	1	0.00
7	7.03	SULFATE	0.500	595	12361	1	0.00
		Totals	4.000	14377	126881		

File: C:\DATA\111498\RAWDATA1.D03 Sample: AUTOCAL2



********** AUTOMATIC CALIBRATION UPDATE **********

Sample Name: AUTOCAL3 Date: Sat Nov 14 16:03:42 1998
Raw File : C:\DATA\111498\RAWDATA1.D04
Method : C:\DX\METHOD\AS4A300.met Calibration Level: 3
ACI Address: 1 System : 1 Inject#: 4 Detector: CDM-1

********** COMPONENTS FOUND IN THIS RUN **********

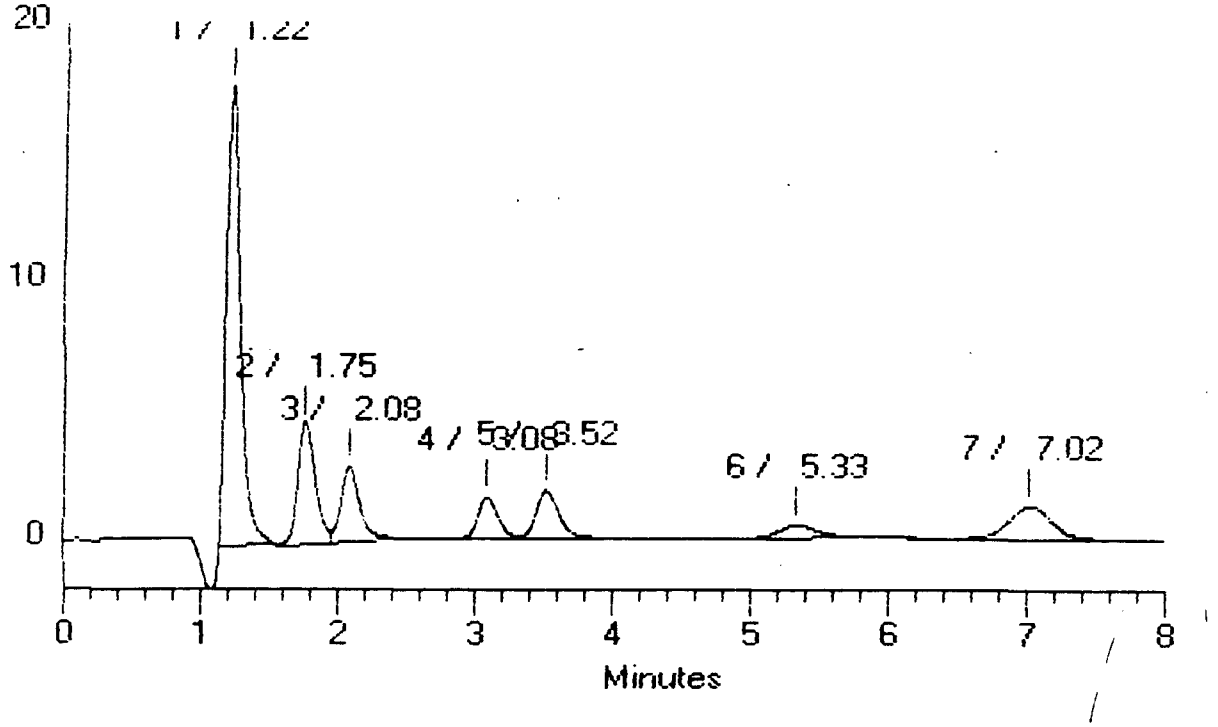
COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD AREA	MEASURED AREA	NEW AREA
1	FLUORIDE	1.22	1.22	1.22	1.300e+005	1.276e+005	1.276e+005
2	CHLORIDE	1.75	1.75	1.75	3.986e+004	4.091e+004	4.091e+004
3	NITRITE	2.08	2.08	2.08	2.658e+004	2.610e+004	2.610e+004
4	BROMIDE	3.08	3.08	3.08	1.536e+004	1.542e+004	1.542e+004
5	NITRATE	3.53	3.52	3.52	2.011e+004	2.012e+004	2.012e+004
6	PHOSPHATE	5.37	5.33	5.33	8.774e+003	9.606e+003	9.606e+003
7	SULFATE	7.03	7.02	7.02	2.548e+004	2.598e+004	2.598e+004

Sample Name: AUTOCAL3 Date: Sat Nov 14 16:03:42 1998
Data File : C:\DATA\111498\RAWDATA1.D04
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 4 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	2.000	17871	127565	1	0.00
2	1.75	CHLORIDE	1.000	4581	40906	2	0.00
3	2.08	NITRITE	1.000	2833	26100	2	0.00
4	3.08	BROMIDE	1.000	1578	15419	2	0.00
5	3.52	NITRATE	1.000	1794	20115	2	0.00
6	5.33	PHOSPHATE	1.000	479	9606	1	0.00
7	7.02	SULFATE	1.000	1205	25984	1	0.00
		Totals	8.000	30341	265694		

File: C:\DATA\111498\RAWDATA1.D04 Sample: AUTOCAL3



********** AUTOMATIC CALIBRATION UPDATE **********

Sample Name: AUTOCAL4 Date: Sat Nov 14 16:13:18 1998
Raw File : C:\DATA\111498\RAWDATA1.D05
Method : C:\DX\METHOD\AS4A300.met Calibration Level: 4
ACI Address: 1 System : 1 Inject#: 5 Detector: CDM-1

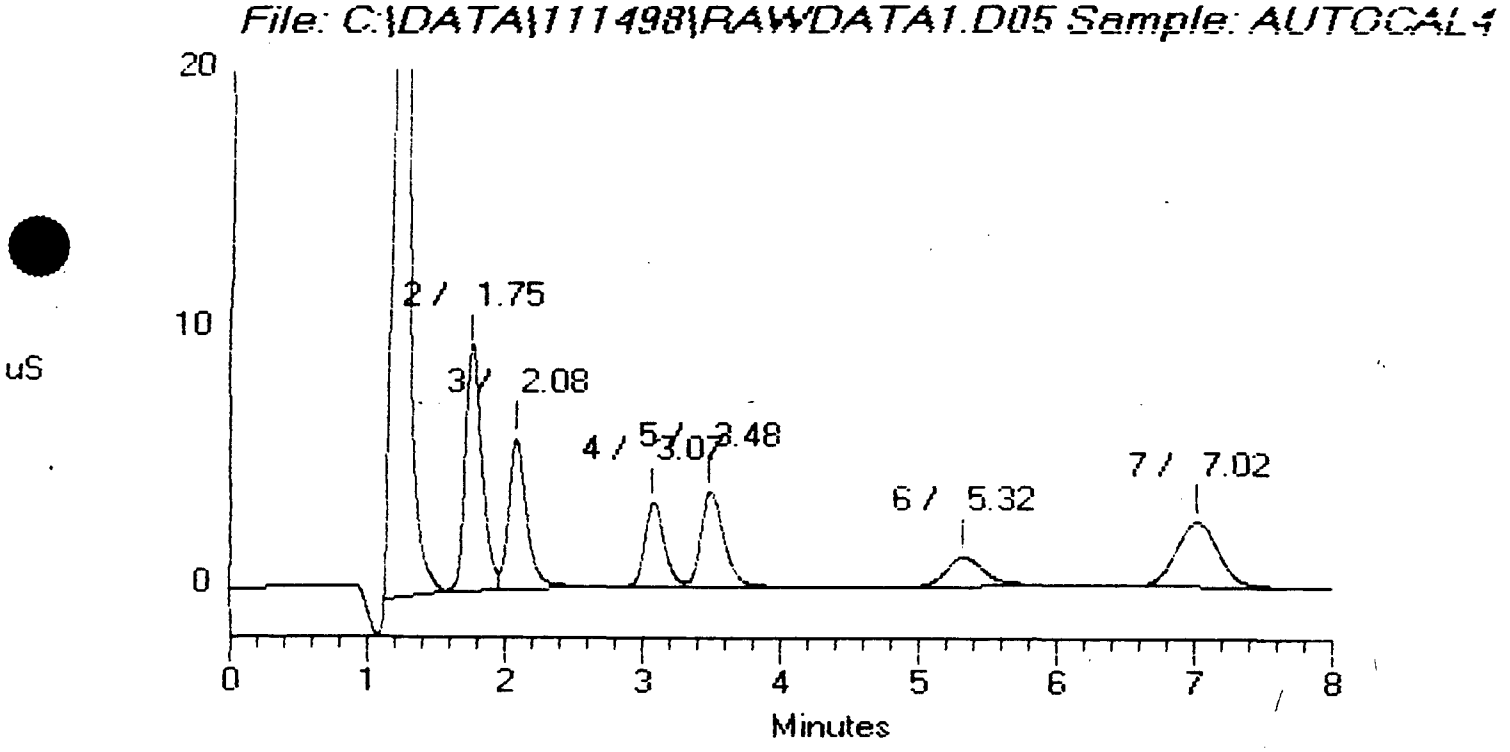
********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD AREA	MEASURED AREA	NEW AREA
1	FLUORIDE	1.22	1.22	1.22	2.714e+005	2.710e+005	2.710e+005
2	CHLORIDE	1.75	1.75	1.75	7.954e+004	7.913e+004	7.913e+004
3	NITRITE	2.08	2.08	2.08	5.195e+004	5.214e+004	5.214e+004
4	BROMIDE	3.08	3.07	3.07	3.130e+004	3.110e+004	3.110e+004
5	NITRATE	3.52	3.48	3.48	4.094e+004	4.108e+004	4.108e+004
6	PHOSPHATE	5.33	5.32	5.32	2.004e+004	2.131e+004	2.131e+004
7	SULFATE	7.02	7.02	7.02	5.222e+004	5.223e+004	5.223e+004

Sample Name: AUTOCAL4 Date: Sat Nov 14 16:13:18 1998
Data File : C:\DATA\111498\RAWDATA1.D05
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 5 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	4.000	37256	270991	1	0.00
2	1.75	CHLORIDE	2.000	9211	79128	2	0.00
3	2.08	NITRITE	2.000	5745	52143	2	0.00
4	3.07	BROMIDE	2.000	3136	31104	2	0.00
5	3.48	NITRATE	2.000	3578	41085	2	0.00
6	5.32	PHOSPHATE	2.000	1085	21313	1	0.00
7	7.02	SULFATE	2.000	2455	52231	1	0.00
		Totals	16.000	62466	547994		



********** AUTOMATIC CALIBRATION UPDATE **********

Sample Name:	AUTOCAL5	Date:	Sat Nov 14 16:22:57 1998
Raw File :	C:\DATA\111498\RAWDATA1.D06		
Method :	C:\DX\METHOD\AS4A300.met	Calibration Level:	5
ACI Address:	1 System : 1 Inject#: 6	Detector:	CDM-1

********** COMPONENTS FOUND IN THIS RUN **********

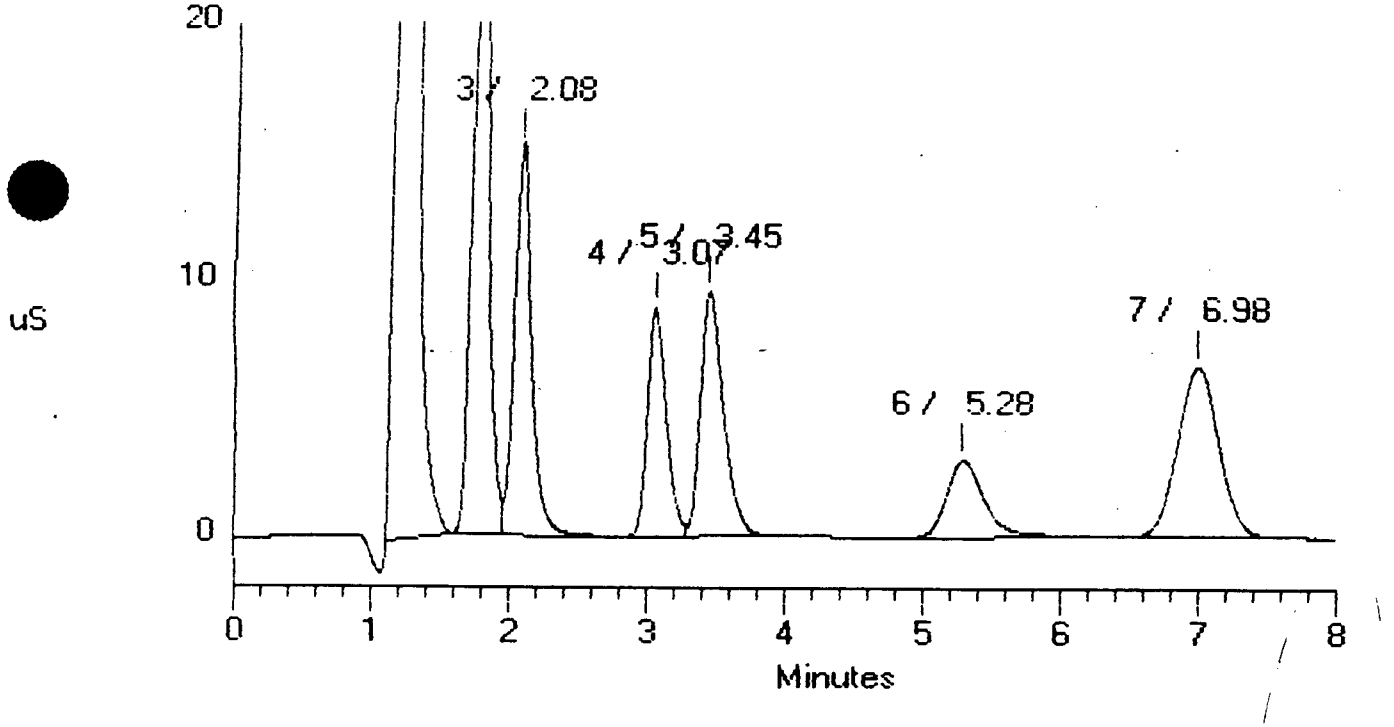
COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD AREA	MEASURED AREA	NEW AREA
1	FLUORIDE	1.22	1.22	1.22	6.814e+005	6.814e+005	6.814e+005
2	CHLORIDE	1.75	1.77	1.77	2.143e+005	2.121e+005	2.121e+005
3	NITRITE	2.08	2.08	2.08	1.321e+005	1.313e+005	1.313e+005
4	BROMIDE	3.07	3.07	3.07	8.372e+004	8.417e+004	8.417e+004
5	NITRATE	3.48	3.45	3.45	1.101e+005	1.096e+005	1.096e+005
6	PHOSPHATE	5.32	5.28	5.28	5.767e+004	5.653e+004	5.653e+004
7	SULFATE	7.02	6.98	6.98	1.389e+005	1.367e+005	1.367e+005

Sample Name: AUTOCAL5 Date: Sat Nov 14 16:22:57 1998
Data File : C:\DATA\111498\RAWDATA1.D06
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 6 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	10.000	84884	681393	1	0.00
2	1.77	CHLORIDE	5.000	25931	212117	2	0.00
3	2.08	NITRITE	5.000	15052	131271	2	0.00
4	3.07	BROMIDE	5.000	8840	84165	2	0.00
5	3.45	NITRATE	5.000	9432	109596	2	0.00
6	5.28	PHOSPHATE	5.000	2949	56534	1	0.00
7	6.98	SULFATE	5.000	6560	136716	1	0.00
		Totals	40.000	153648	1411794		

File: C:\DATA\111498\RAWDATA1.D06 Sample: AUTOCAL5



********** AUTOMATIC CALIBRATION UPDATE **********

Sample Name: AUTOCAL6 Date: Sat Nov 14 16:32:38 1998
Raw File : C:\DATA\111498\RAWDATA1.D07
Method : C:\DX\METHOD\AS4A300.met Calibration Level: 6
ACI Address: 1 System : 1 Inject#: 7 Detector: CDM-1

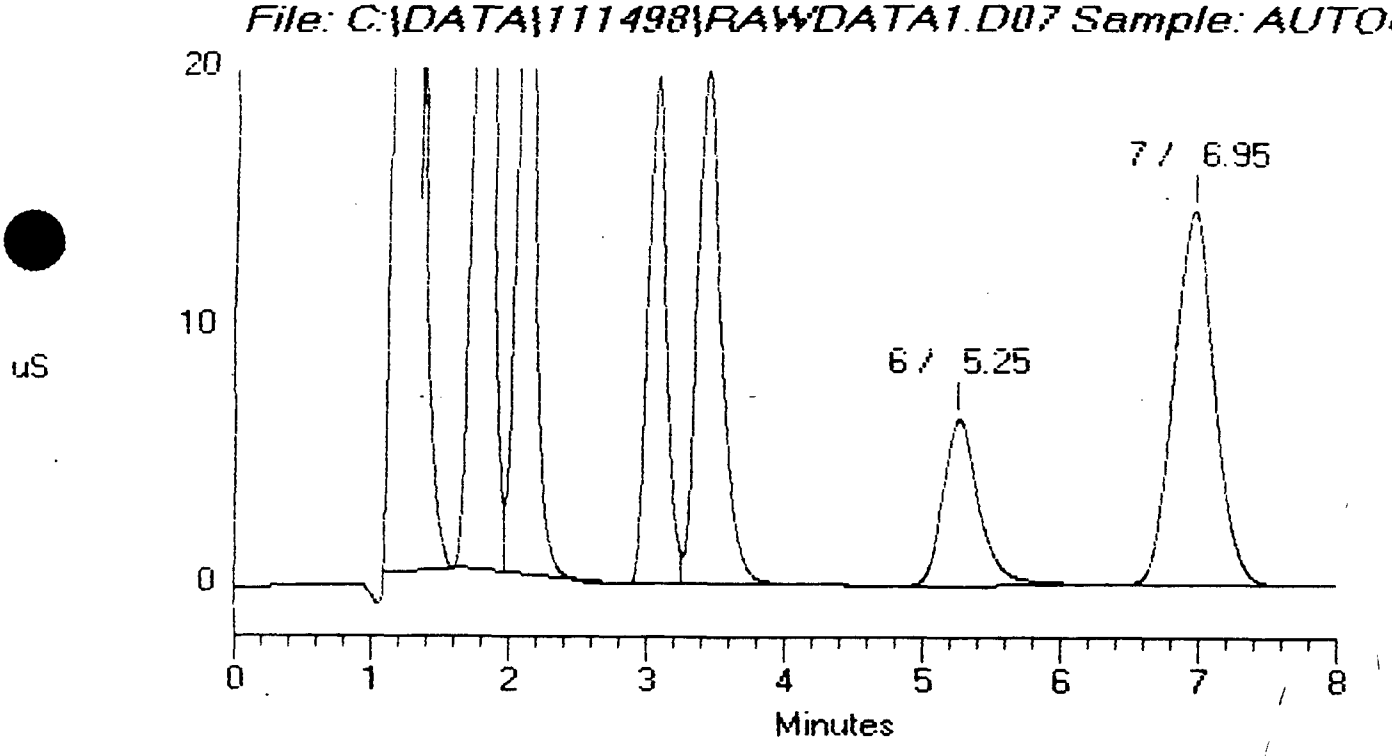
********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD AREA	MEASURED AREA	NEW AREA
1	FLUORIDE	1.22	1.23	1.23	1.298e+006	1.275e+006	1.275e+006
2	CHLORIDE	1.77	1.78	1.78	4.582e+005	4.552e+005	4.552e+005
3	NITRITE	2.08	2.10	2.10	2.734e+005	2.691e+005	2.691e+005
4	BROMIDE	3.07	3.05	3.05	1.823e+005	1.804e+005	1.804e+005
5	NITRATE	3.45	3.42	3.42	2.383e+005	2.385e+005	2.385e+005
6	PHOSPHATE	5.28	5.25	5.25	1.188e+005	1.158e+005	1.158e+005
7	SULFATE	6.98	6.95	6.95	2.989e+005	2.943e+005	2.943e+005

Sample Name: AUTOCAL6 Date: Sat Nov 14 16:32:38 1998
Data File : C:\DATA\111498\RAWDATA1.D07
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 7 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.23	FLUORIDE	20.000	137535	1275133	1	0.00
2	1.78	CHLORIDE	10.000	54856	455206	2	0.00
3	2.10	NITRITE	10.000	31422	269147	2	0.00
4	3.05	BROMIDE	10.000	19572	180401	2	0.00
5	3.42	NITRATE	10.000	19859	238533	2	0.00
6	5.25	PHOSPHATE	10.000	6349	115762	1	0.00
7	6.95	SULFATE	10.000	14347	294335	1	0.00
		Totals	80.000	283940	2828516		

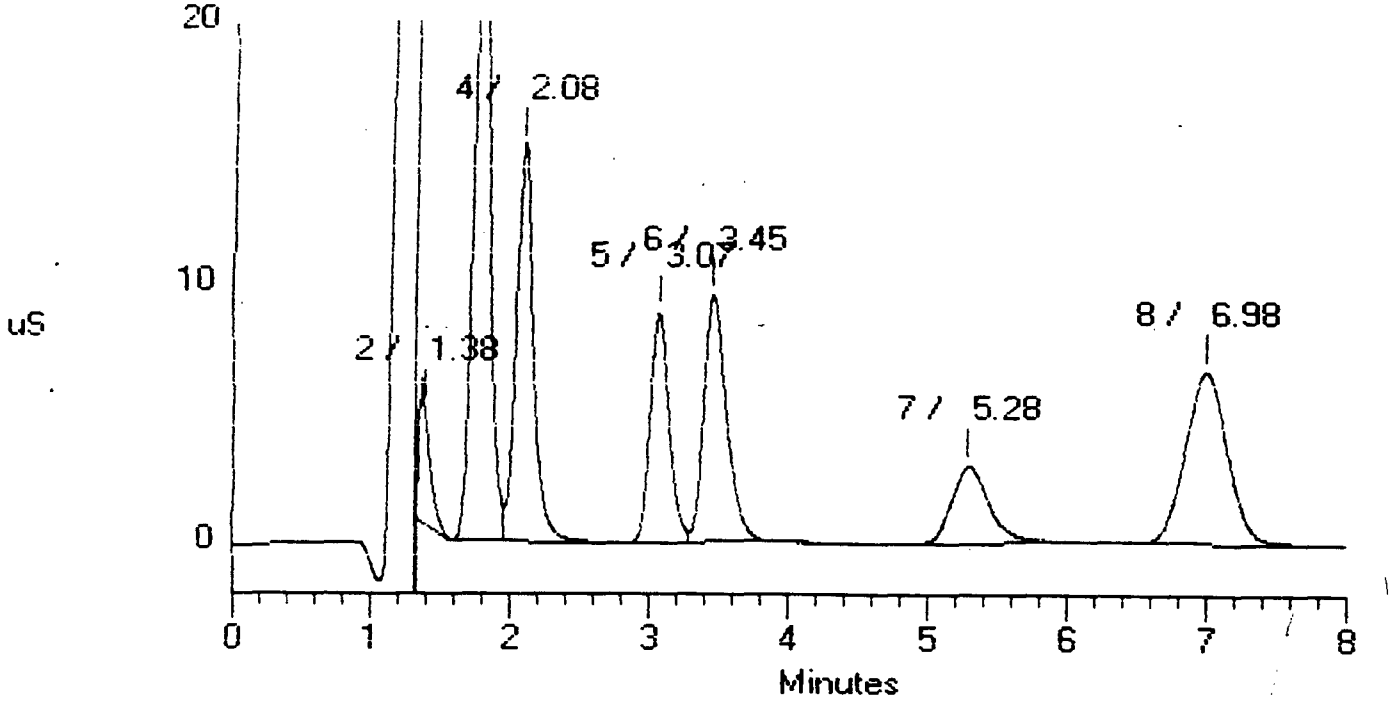


Sample Name: 98LIC090-ICV Date: Sat Nov 14 16:42:23 1998
Data File : C:\DATA\111498\RAWDATA1.D08
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 8 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	5.550	55920	361080	1	0.00
2	1.38		0.000	4450	27554	1	
3	1.77	CHLORIDE	4.693	26050	208418	2	0.00
4	2.08	NITRITE	4.908	15171	131175	2	0.00
5	3.07	BROMIDE	4.792	8836	83962	2	0.00
6	3.45	NITRATE	4.719	9455	108882	2	0.00
7	5.28	PHOSPHATE	4.916	2944	55724	1	0.00
8	6.98	SULFATE	4.788	6564	137034	1	0.00
		Totals	34.366	129390	1113829		

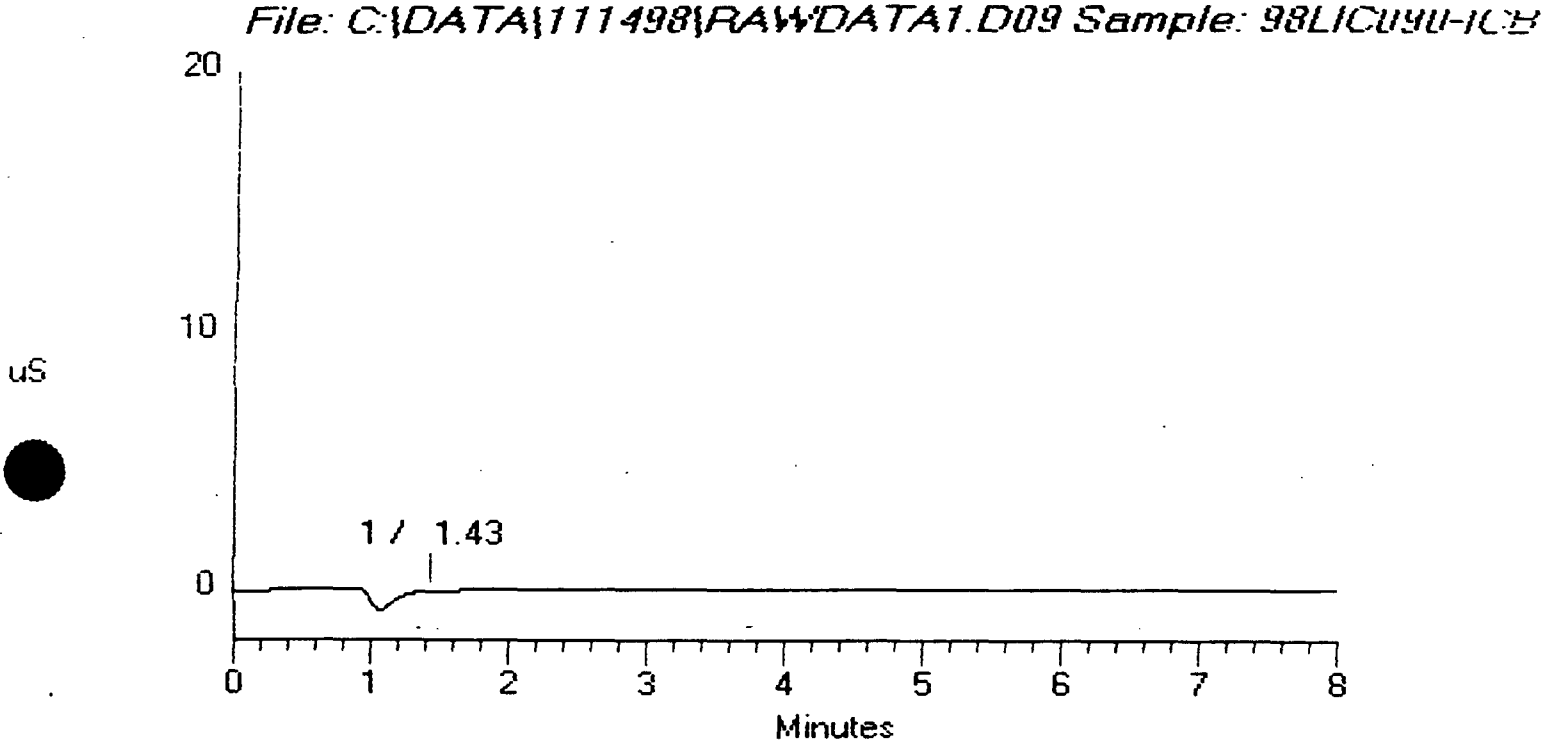
File: C:\DATA\111498\RAWDATA1.D08 Sample: 98LIC090-ICV



Sample Name: 98LIC090-ICB Date: Sat Nov 14 16:52:03 1998
Data File : C:\DATA\111498\RAWDATA1.D09
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 9 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

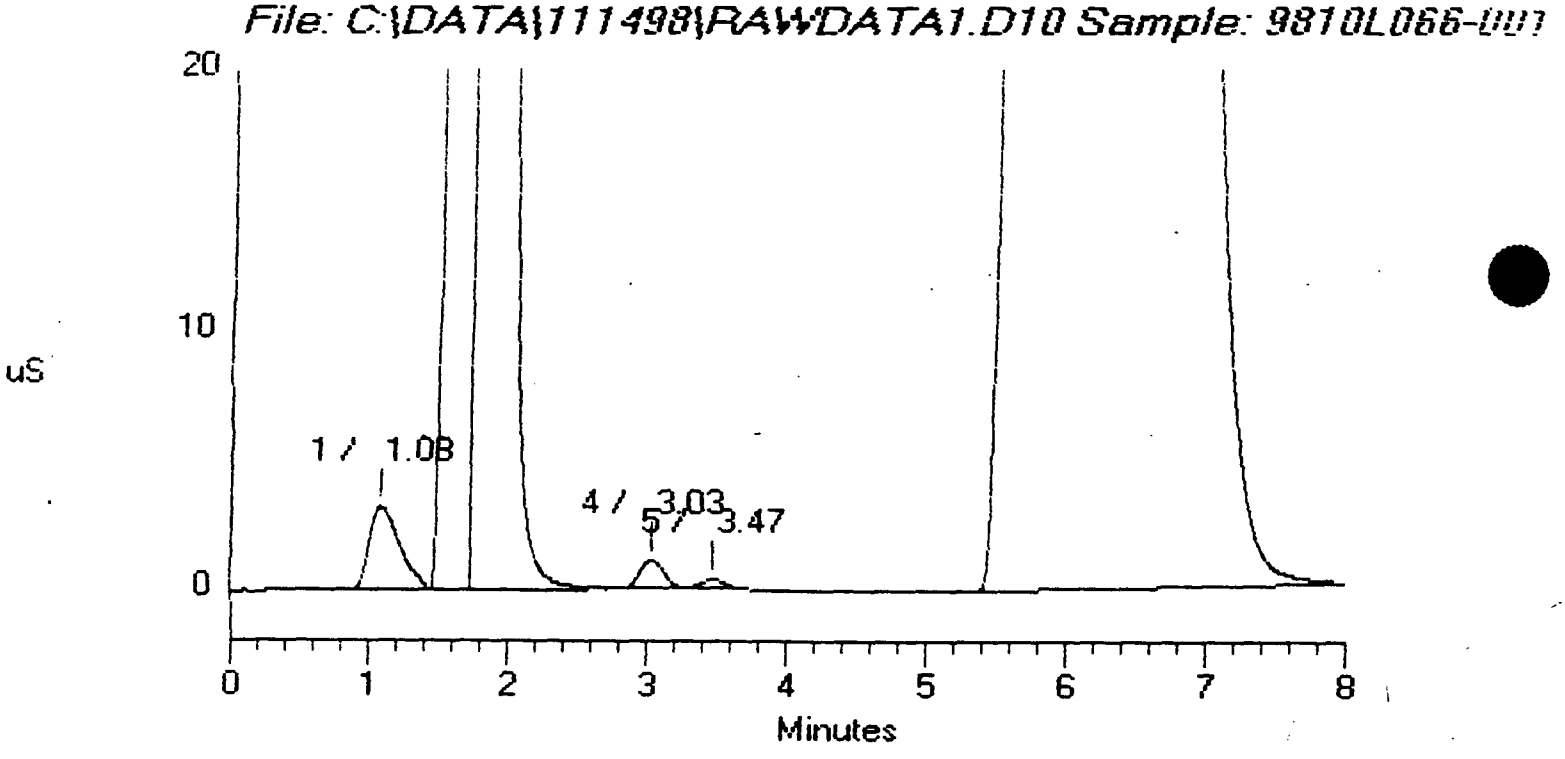
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
Totals			0.000	0	0		



Sample Name: 9810L066-001 Date: Sat Nov 14 17:01:33 1998
Data File : C:\DATA\111498\RAWDATA1.D10
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 10 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

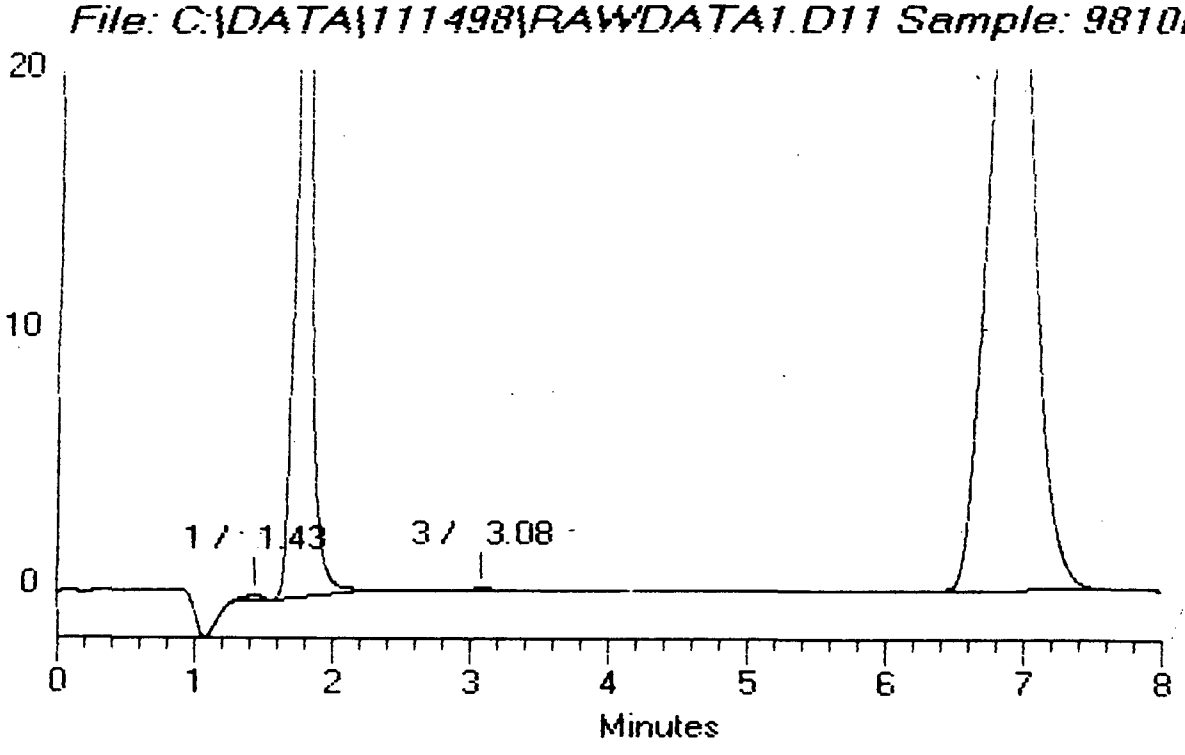
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.08		0.000	3142	46668	1	
2	1.70		0.000	196087	1996126	2	
3	1.88	CHLORIDE	74.183	296085	3367877	2	0.00
4	3.03	BROMIDE	0.887	1106	13074	2	0.00
5	3.47	NITRATE	0.363	362	4434	2	0.00
6	5.77	PHOSPHATE	1386.128	335042	16341445	1	0.04
		Totals	1461.561	831825	21769625		



Sample Name: 9810L066-001 Date: Sat Nov 14 17:11:06 1998
Data File : C:\DATA\111498\RAWDATA1.D11
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 11 Detector: CDM-1

PORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	20	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.43		0.000	210	2020	1	
2	1.75	CHLORIDE	100.489	26253	223470	1	0.00
4	6.85	SULFATE	445.821	31312	654244	1	0.00
		Totals	546.310	57775	879734		

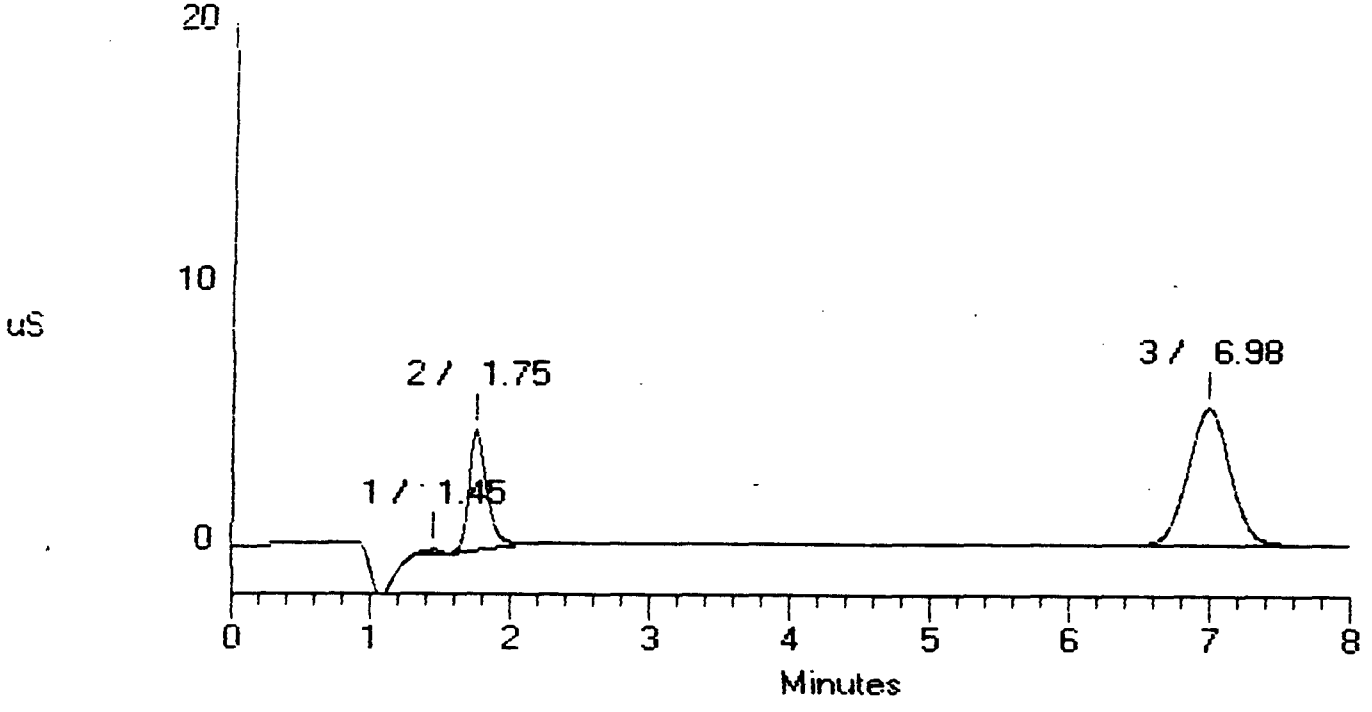


Sample Name: 9810L066-001 Date: Sat Nov 14 17:20:39 1998
Data File : C:\DATA\111498\RAWDATA1.D12
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 12 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	100	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	170	1308	1	
2	1.75	CHLORIDE	100.928	4583	40915	1	0.00
3	6.98	SULFATE	384.322	5221	109131	1	0.00
		Totals	485.250	9974	151354		

File: C:\DATA\111498\RAWDATA1.D12 Sample: 9810L066-001

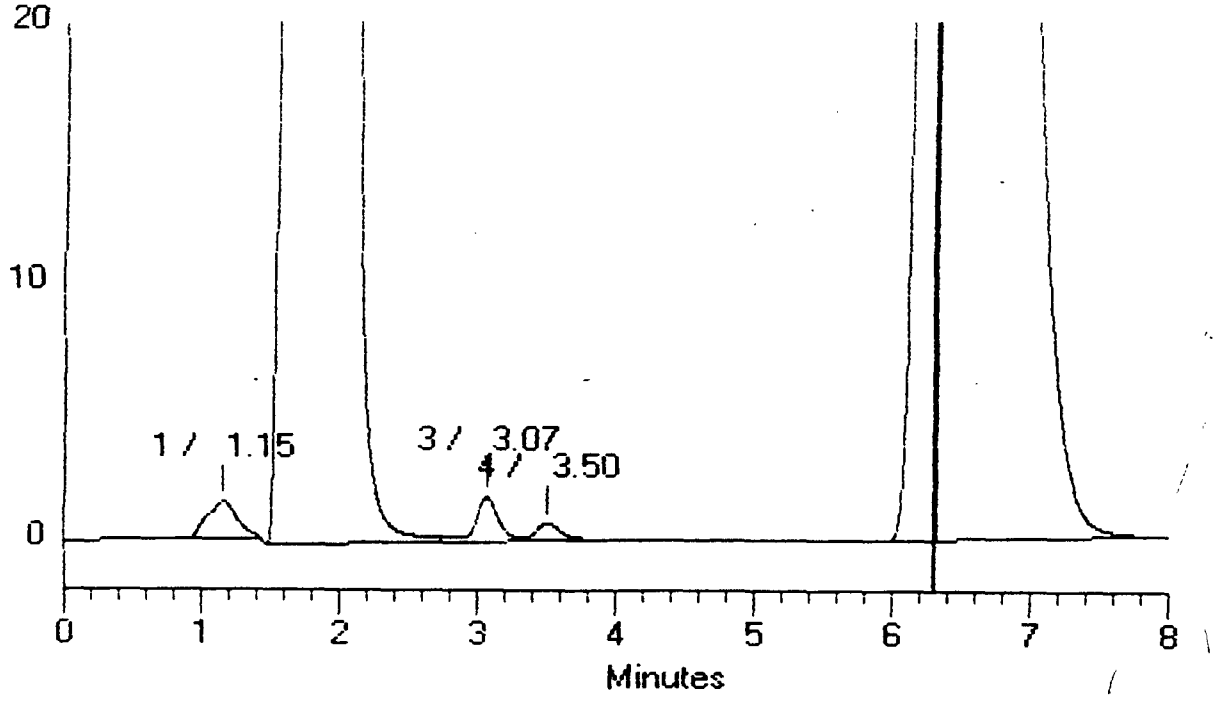


Sample Name: 9810L066-002 Date: Sat Nov 14 17:30:10 1998
Data File : C:\DATA\111498\RAWDATA1.D13
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 13 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.15	FLUORIDE	0.290	1397	21521	1	0.00
2	1.97	NITRITE	259.875	351257	6976752	2	0.00
3	3.07	BROMIDE	1.164	1667	18105	2	0.00
4	3.50	NITRATE	0.494	637	7590	2	0.00
5	6.27		0.000	146074	907838	2	
6	6.38		0.000	149064	3863026	2	
		Totals	261.823	650096	11794832		

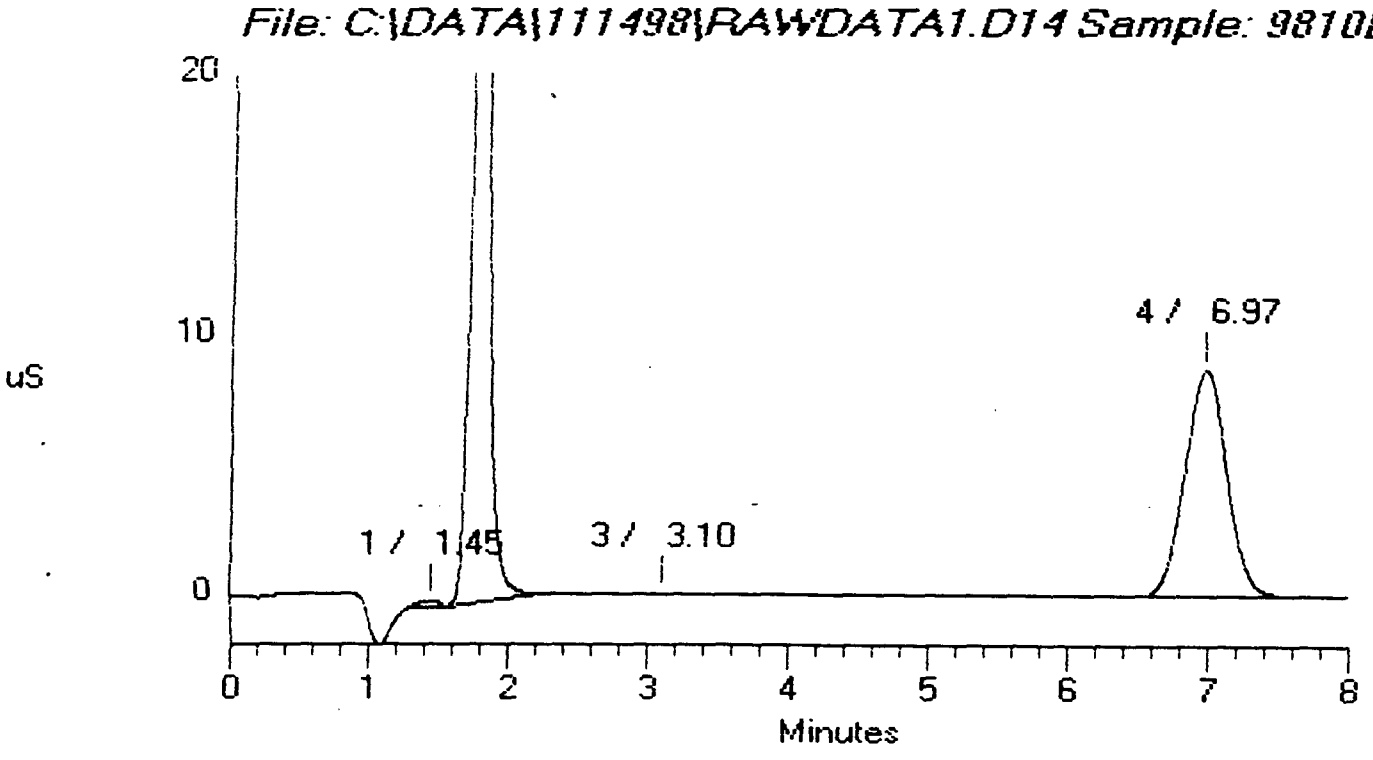
File: C:\DATA\111498\RAWDATA1.D13 Sample: 9810L066-002



Sample Name: 9810L066-002 Date: Sat Nov 14 17:39:43 1998
Data File : C:\DATA\111498\RAWDATA1.D14
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 14 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	20	2400	5Hz	0.00	8.00	600

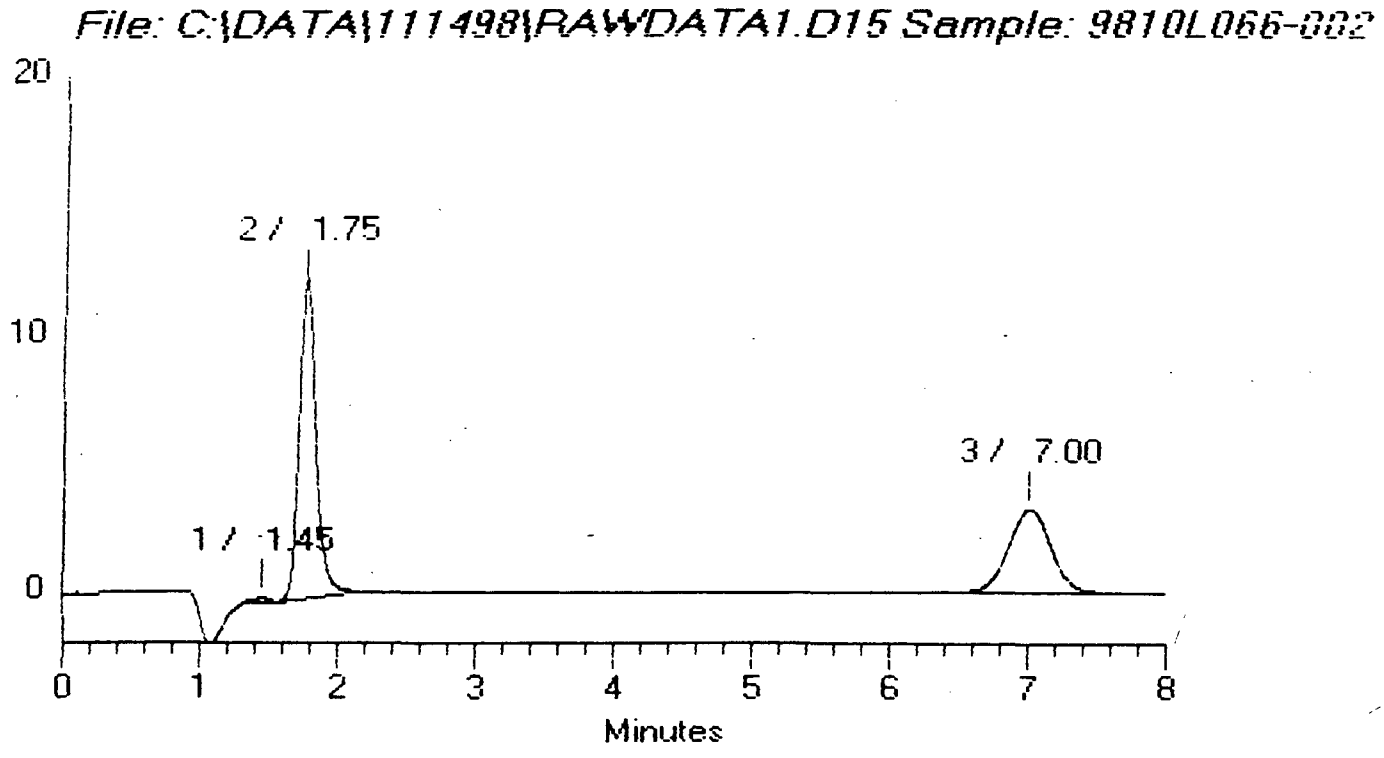
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	200	1748	1	
2	1.77	CHLORIDE	129.151	35488	288629	1	0.00
3	3.10	BROMIDE	4.059	68	665	1	0.00
4	6.97	SULFATE	124.881	8724	180072	1	0.00
		Totals	258.091	44479	471114		



Sample Name: 9810L066-002 Date: Sat Nov 14 17:49:15 1998
Data File : C:\DATA\111498\RAWDATA1.D15
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 15 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	50	2400	5Hz	0.00	8.00	600

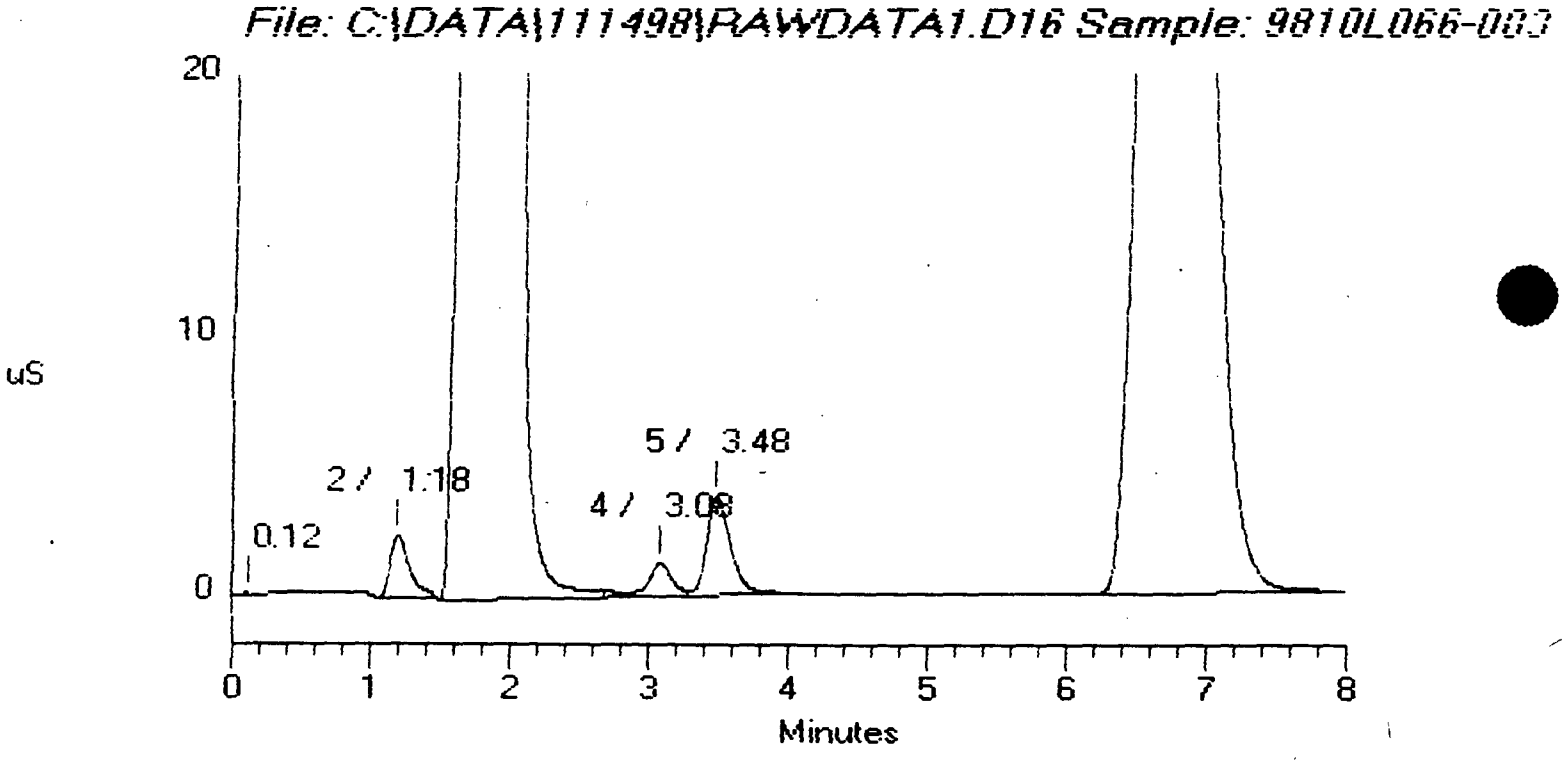
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	170	1312	1	
2	1.75	CHLORIDE	120.211	12103	104338	1	0.00
3	7.00	SULFATE	121.149	3191	67164	1	0.00
		Totals	241.360	15464	172814		



Sample Name: 9810L066-003 Date: Sat Nov 14 17:58:53 1998
Data File : C:\DATA\111498\RAWDATA1.D16
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 16 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
2	1.18	FLUORIDE	0.304	2332	22409	1	0.00
3	1.92	CHLORIDE	101.306	287404	4601069	2	0.00
4	3.08	BROMIDE	0.941	1245	14065	2	0.00
5	3.48	NITRATE	1.980	3720	43213	2	0.00
6	6.65	SULFATE	68.650	80184	2024102	1	0.00
		Totals	173.181	374886	6704858		

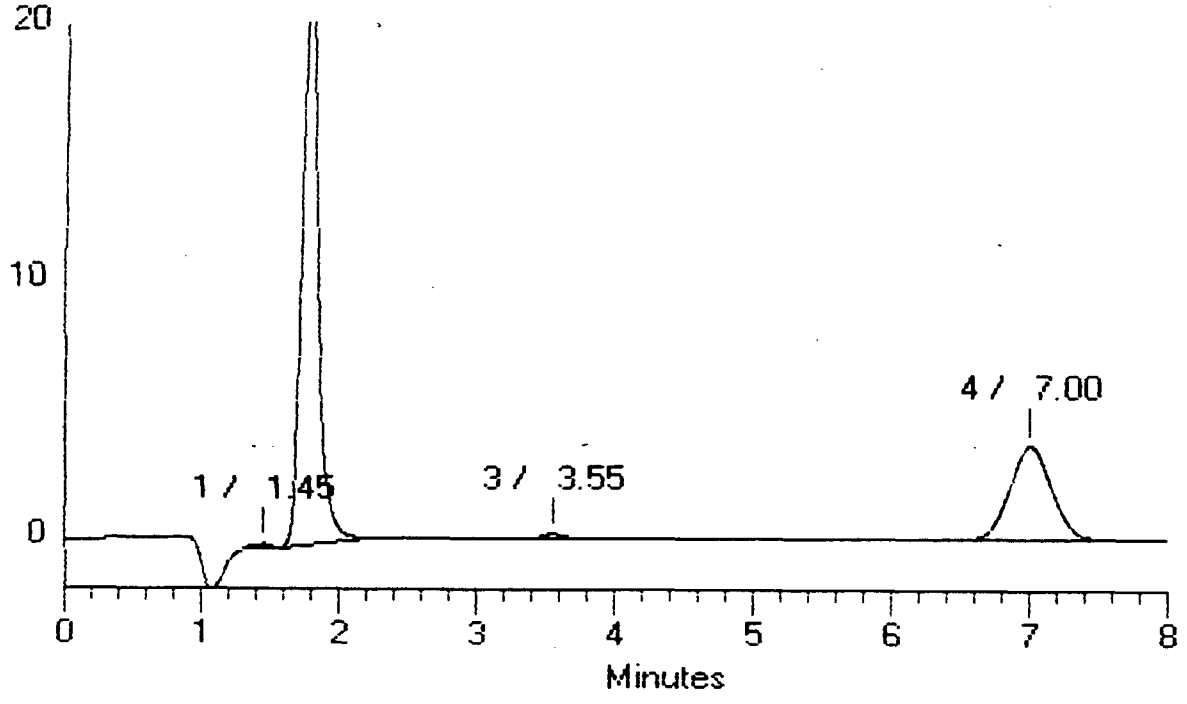


Sample Name: 9810L066-003 Date: Sat Nov 14 18:08:25 1998
Data File : C:\DATA\111498\RAWDATA1.D17
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 17 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	20	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	190	1610	1	
2	1.77	CHLORIDE	82.466	22745	182498	1	0.00
3	3.55	NITRATE	4.965	168	1690	1	0.00
4	7.00	SULFATE	54.124	3592	75532	1	0.00
		Totals	141.554	26695	261330		

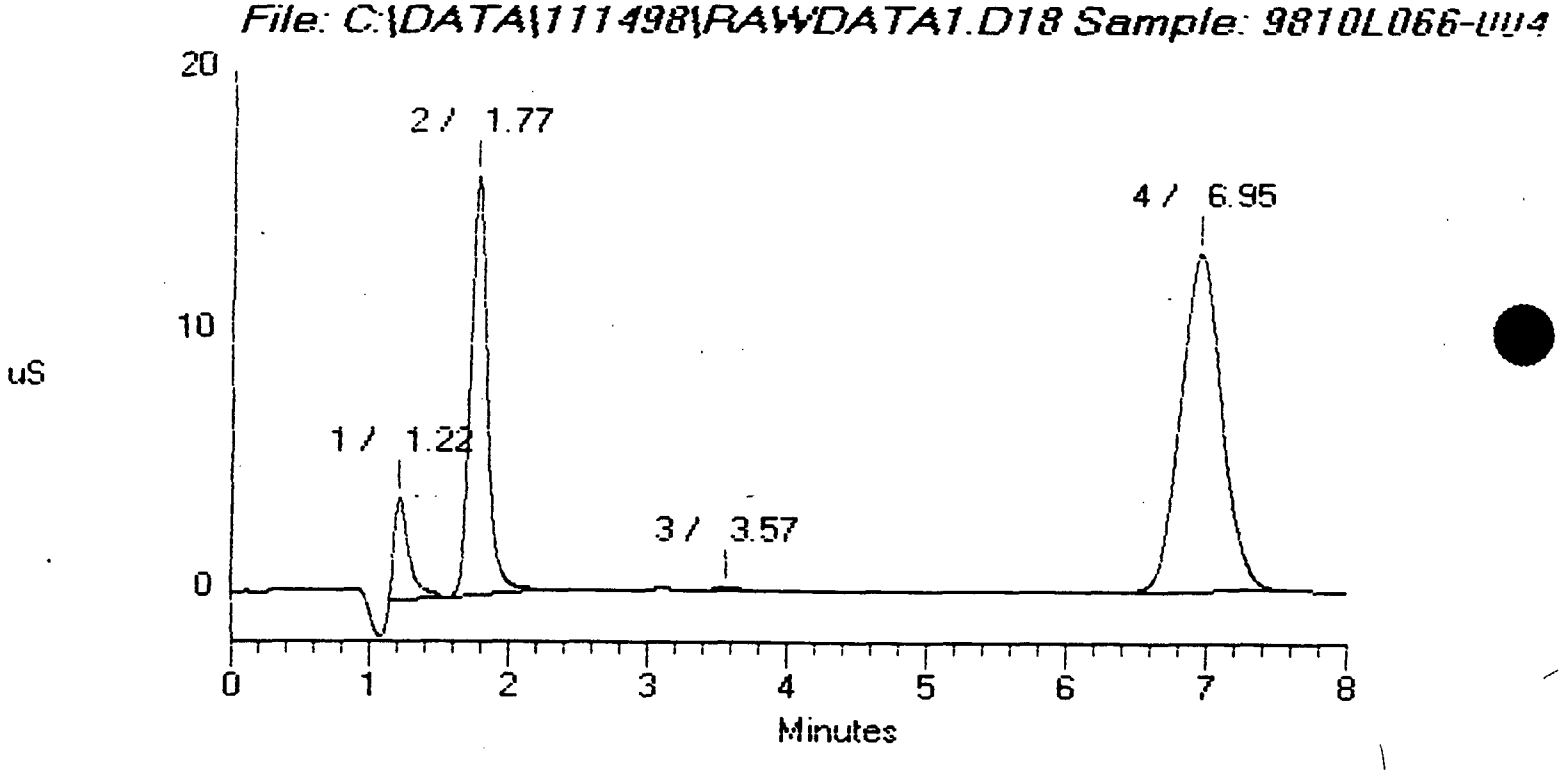
File: C:\DATA\111498\RAWDATA1.D17 Sample: 9810L066-003



Sample Name: 9810L066-004 Date: Sat Nov 14 18:17:57 1998
Data File : C:\DATA\111498\RAWDATA1.D18
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 18 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.417	3899	29722	1	0.00
2	1.77	CHLORIDE	3.085	16054	135290	1	0.00
3	3.57	NITRATE	0.211	80	798	1	0.00
4	6.95	SULFATE	9.118	12893	264998	1	0.00
		Totals	12.831	32926	430808		

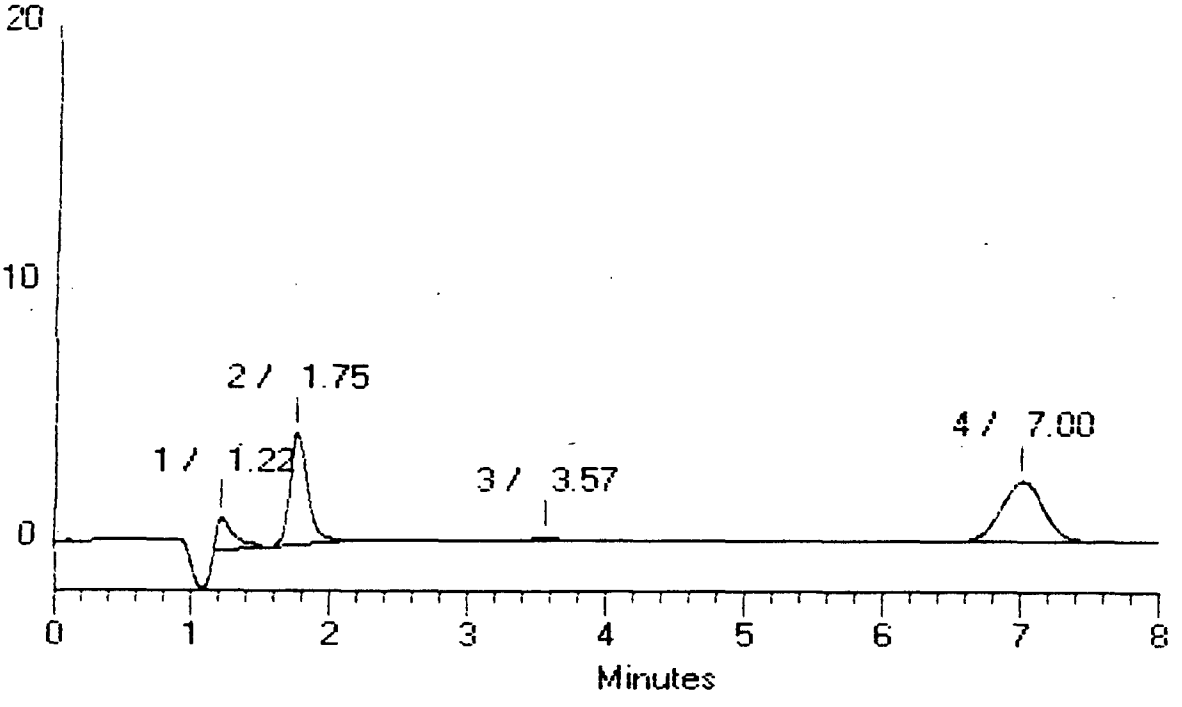


Sample Name: 9810L066-005 Date: Sat Nov 14 18:27:29 1998
Data File : C:\DATA\111498\RAWDATA1.D19
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 19 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.118	1207	10428	1	0.00
2	1.75	CHLORIDE	0.995	4317	40267	1	0.00
3	3.57	NITRATE	0.235	132	1370	1	0.00
4	7.00	SULFATE	1.791	2306	48480	1	0.00
		Totals	3.139	7962	100544		

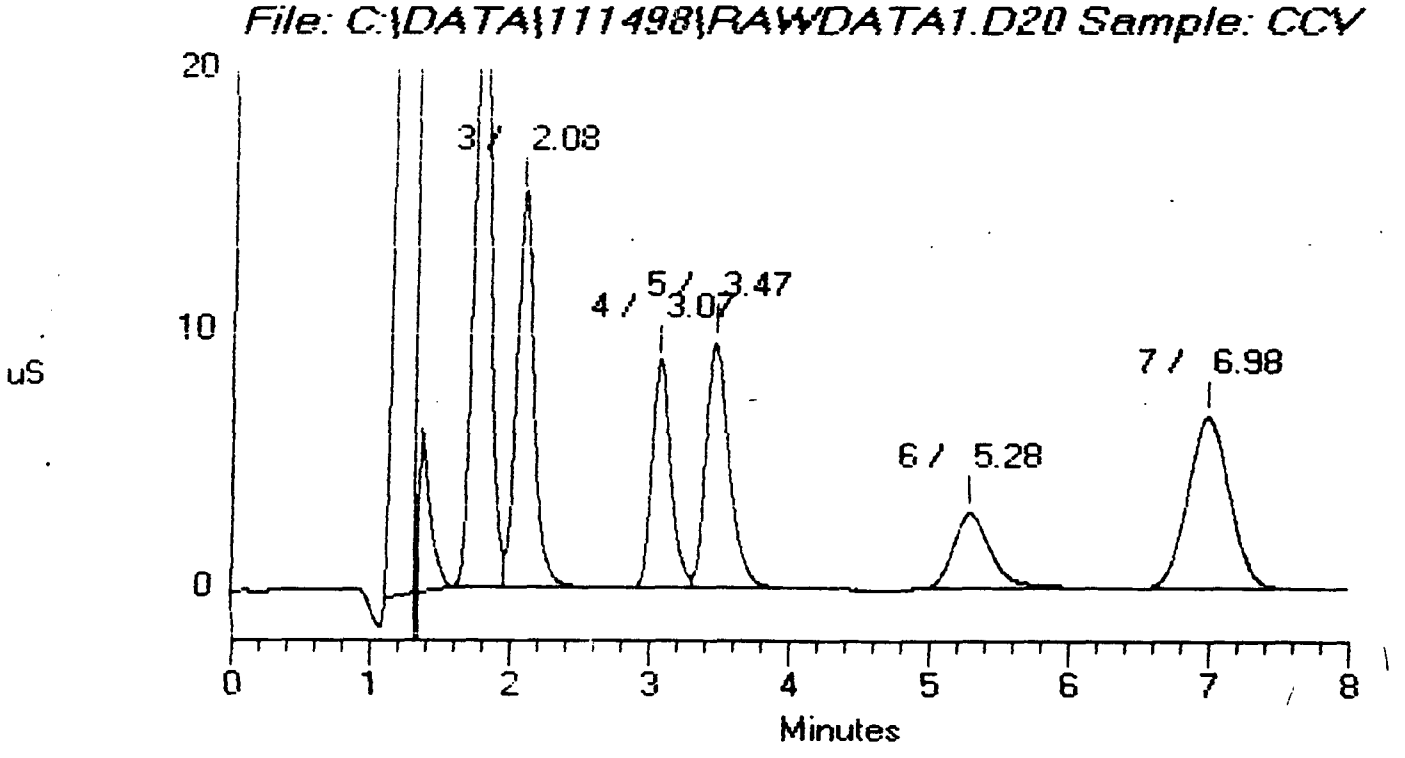
File: C:\DATA\111498\RAWDATA1.D19 Sample: 9810L066-005



Sample Name: CCV Date: Sat Nov 14 18:37:00 1998
Data File : C:\DATA\111498\RAWDATA1.D20
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 20 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

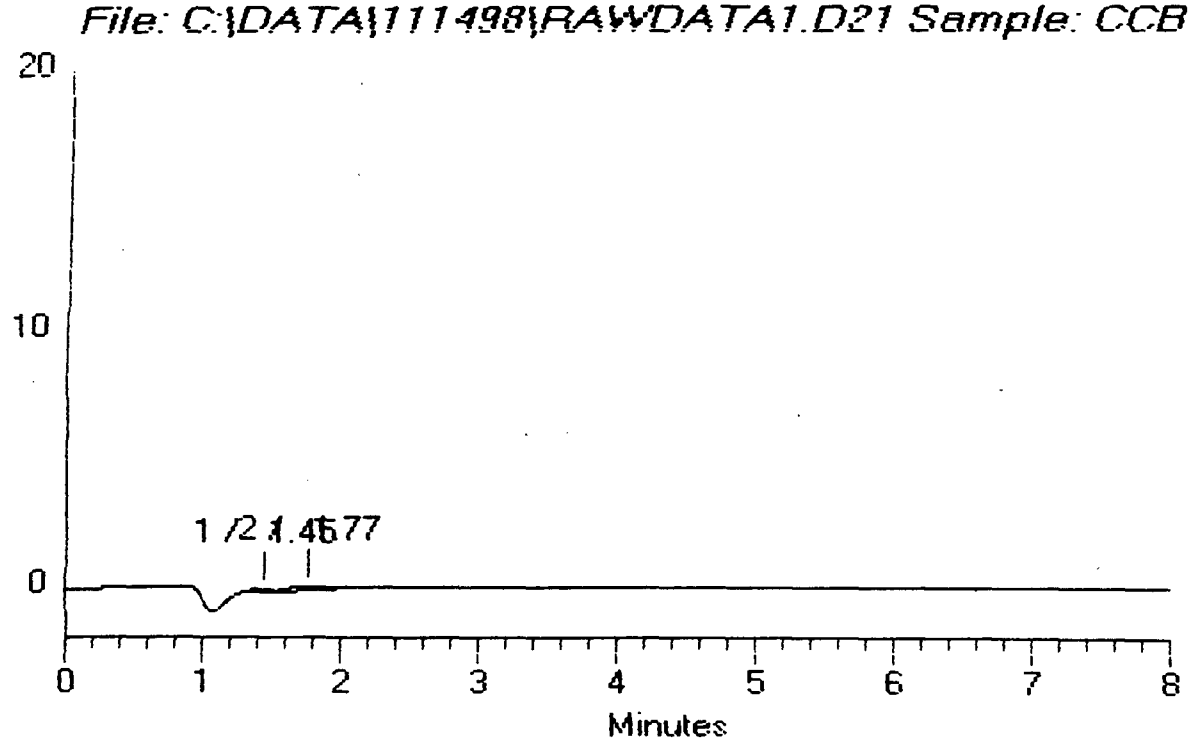
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	9.912	84549	642636	1	0.00
2	1.77	CHLORIDE	4.756	26027	211286	2	0.00
3	2.08	NITRITE	4.999	15043	133604	2	0.00
4	3.07	BROMIDE	4.757	8698	83322	2	0.00
5	3.47	NITRATE	4.805	9475	110935	2	0.00
6	5.28	PHOSPHATE	4.852	2910	54968	1	0.00
7	6.98	SULFATE	4.799	6604	137359	1	0.00
		Totals	38.879	153306	1374110		



Sample Name: CCB Date: Sat Nov 14 18:46:34 1998
Data File : C:\DATA\111498\RAWDATA1.D21
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 21 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

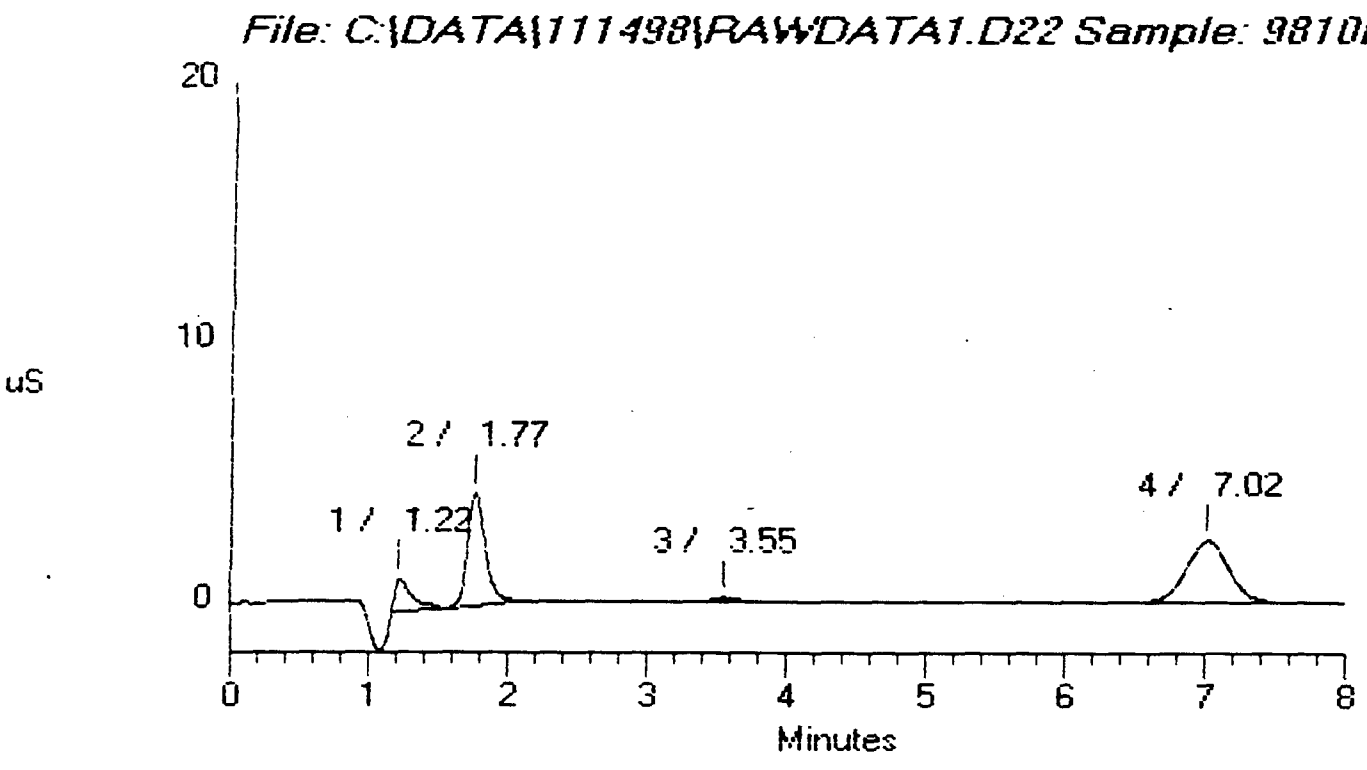
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
2	1.77	CHLORIDE	0.158	116	2232	1	0.00
		Totals	0.158	116	2232		



Sample Name: 9810L066-005R Date: Sat Nov 14 18:56:10 1998
Data File : C:\DATA\111498\RAWDATA1.D22
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 22 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.133	1265	11380	1	0.00
2	1.77	CHLORIDE	0.964	4321	38864	1	0.00
3	3.55	NITRATE	0.232	136	1291	1	0.00
4	7.02	SULFATE	1.800	2320	48744	1	0.00
		Totals	3.128	8043	100278		

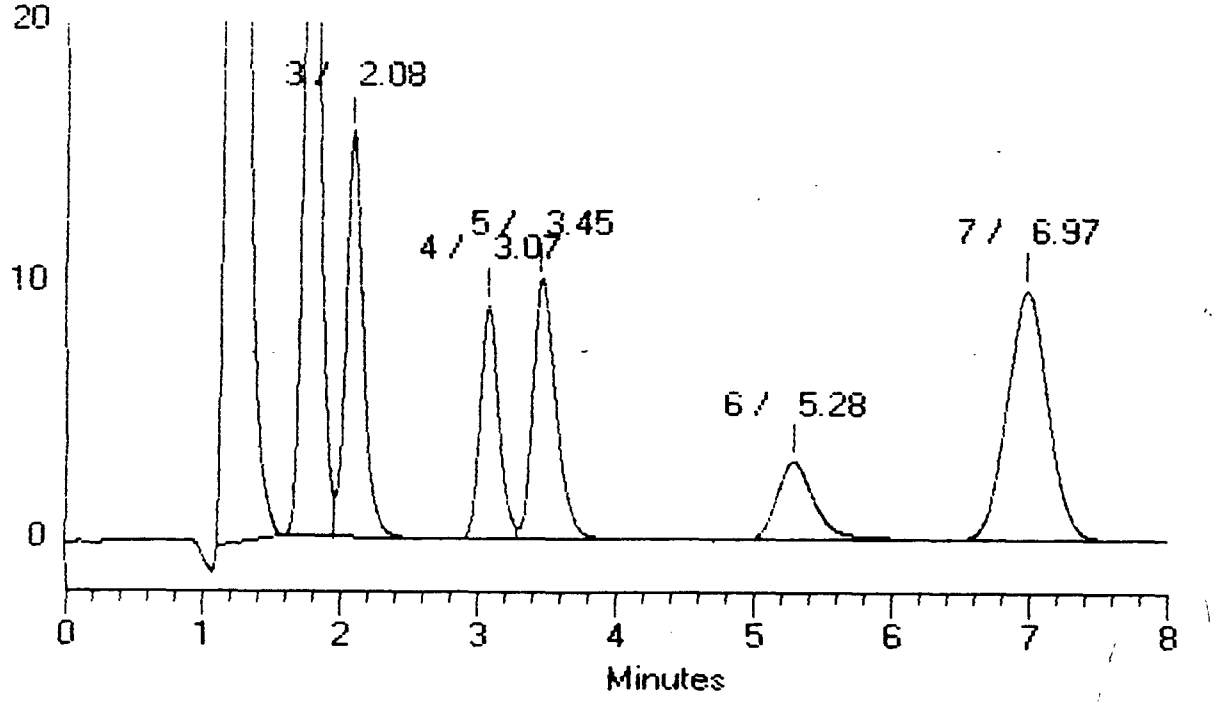


Sample Name: 9810L066-005S Date: Sat Nov 14 19:05:42 1998
Data File : C:\DATA\111498\RAWDATA1.D23
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 23 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	11.033	86921	715001	1	0.00
2	1.77	CHLORIDE	6.033	33068	269332	2	0.00
3	2.08	NITRITE	5.106	15603	136473	2	0.00
4	3.07	BROMIDE	4.891	9057	85761	2	0.00
5	3.45	NITRATE	5.105	9969	118140	2	0.00
6	5.28	PHOSPHATE	5.061	3028	57435	1	0.00
7	6.97	SULFATE	6.881	9640	198906	1	0.00
		Totals	44.110	167285	1581048		

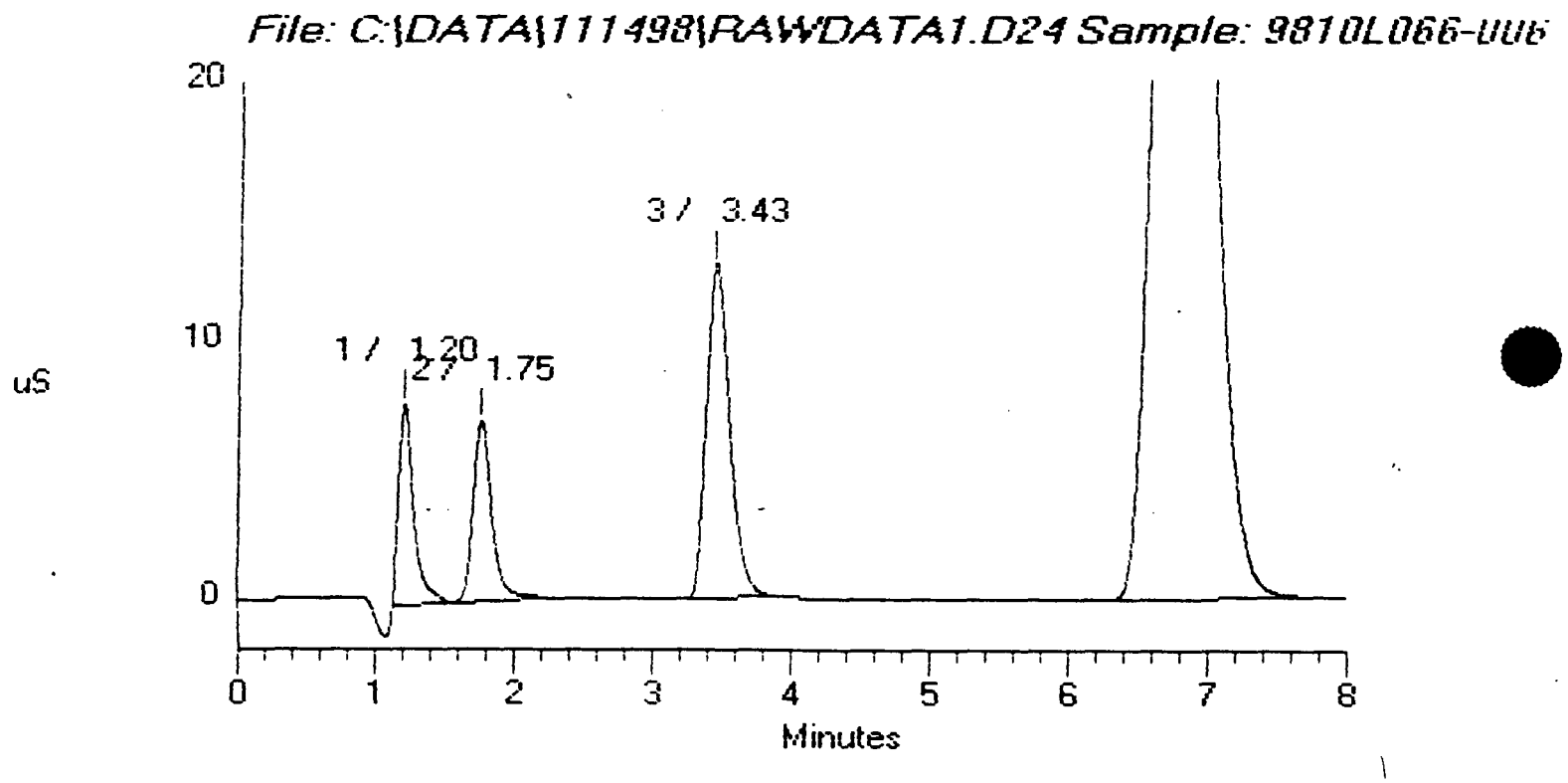
File: C:\DATA\111498\RAWDATA1.D23 Sample: 9810L066-005S



Sample Name: 9810L066-006 Date: Sat Nov 14 19:15:17 1998
Data File : C:\DATA\111498\RAWDATA1.D24
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 24 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.891	7693	60339	1	0.00
2	1.75	CHLORIDE	1.564	6852	66150	1	0.00
3	3.43	NITRATE	6.456	12703	150536	1	0.00
4	6.73	SULFATE	47.040	59992	1385562	1	0.00
		Totals	55.952	87240	1662586		

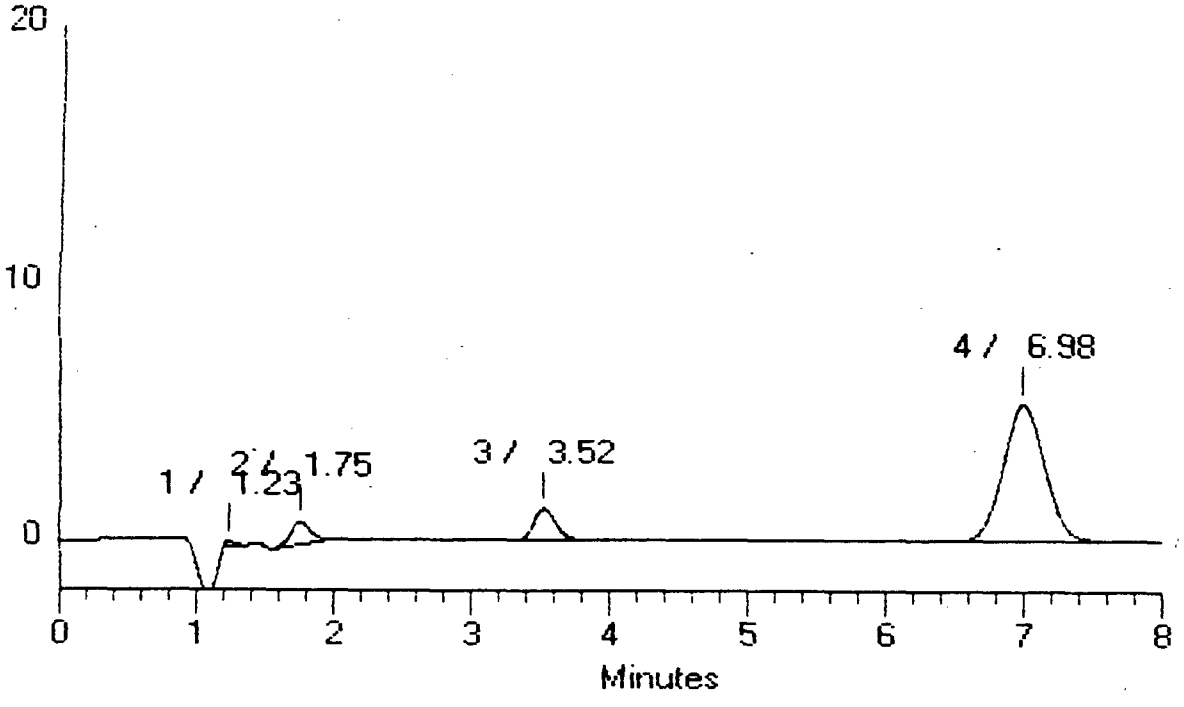


Sample Name: 9810L066-006 Date: Sat Nov 14 19:24:48 1998
Data File : C:\DATA\111498\RAWDATA1.D25
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 25 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	10	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.23	FLUORIDE	-0.319	193	739	1	0.00
2	1.75	CHLORIDE	3.064	888	8956	1	0.00
3	3.52	NITRATE	7.373	1202	13416	1	0.00
4	6.98	SULFATE	38.537	5252	109440	1	0.00
		Totals	48.654	7535	132551		

File: C:\DATA\111498\RAWDATA1.D25 Sample: 9810L066-006

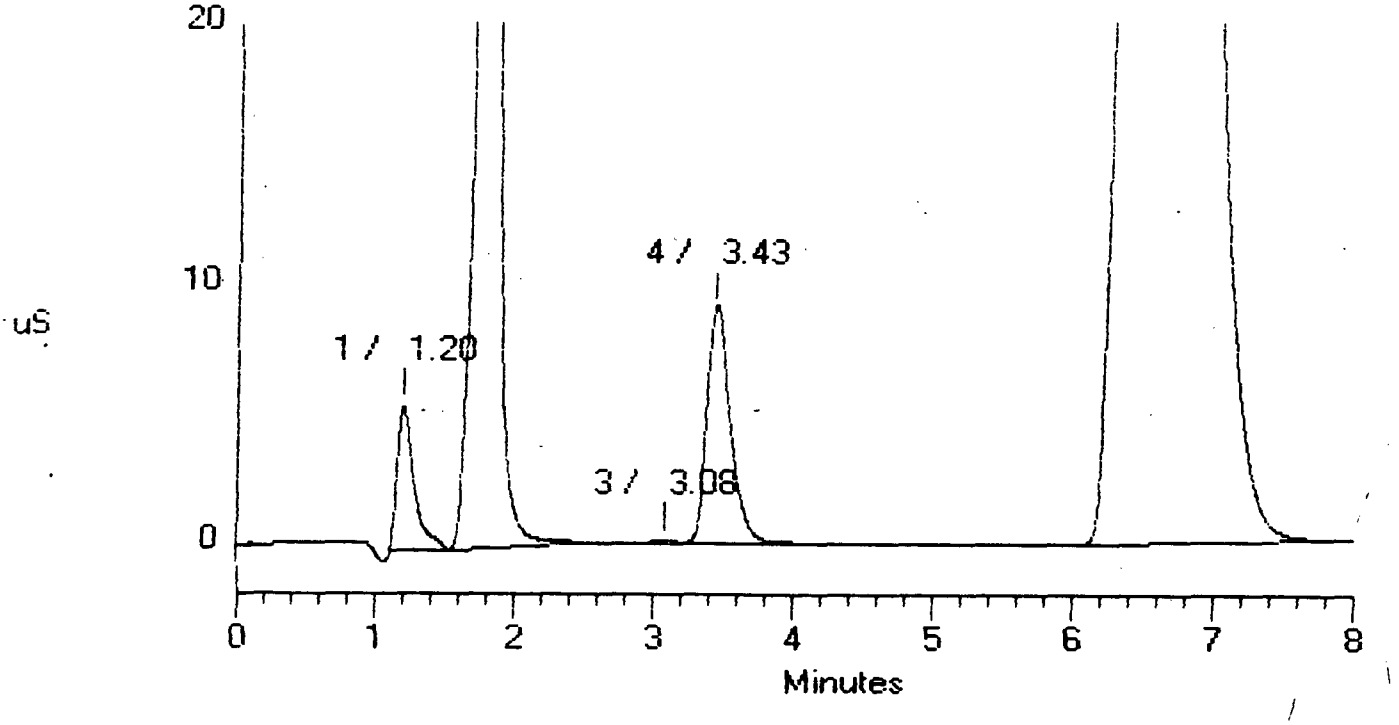


Sample Name: 9810L066-007 Date: Sat Nov 14 19:34:19 1998
Data File : C:\DATA\111498\RAWDATA1.D26
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 26 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.694	5542	47594	1	0.00
2	1.77	CHLORIDE	12.715	59646	573143	1	0.00
3	3.08	BROMIDE	0.199	67	602	2	0.00
4	3.43	NITRATE	4.567	8921	105228	2	0.00
5	6.48	SULFATE	118.007	119060	3482531	1	0.00
		Totals	136.182	193235	4209097		

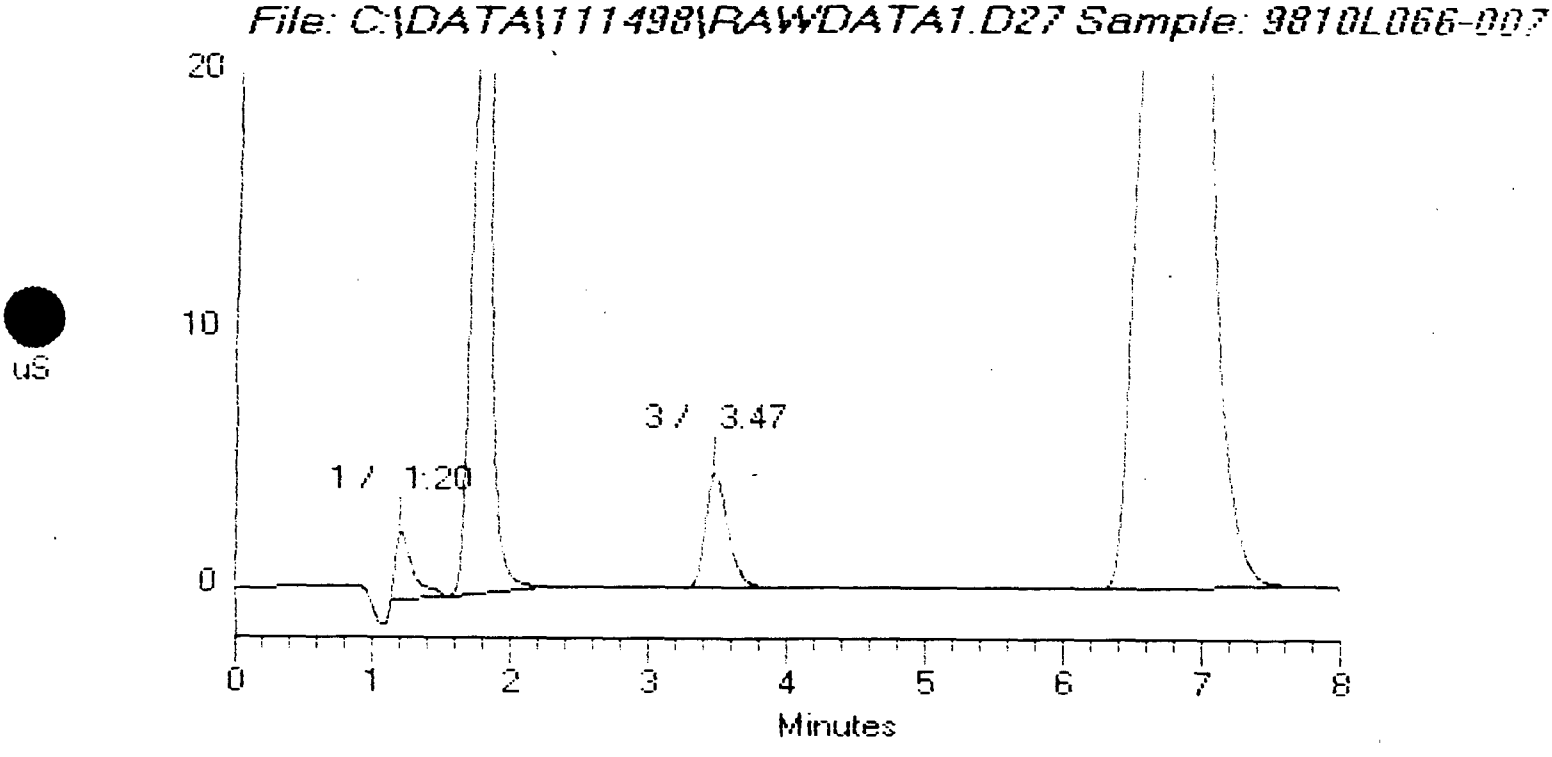
File: C:\DATA\111498\RAWDATA1.D26 Sample: 9810L066-007



Sample Name: 9810L066-007 Date: Sat Nov 14 19:43:52 1998
Data File : C:\DATA\111498\RAWDATA1.D27
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 27 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	2	2400	5Hz	0.00	8.00	600

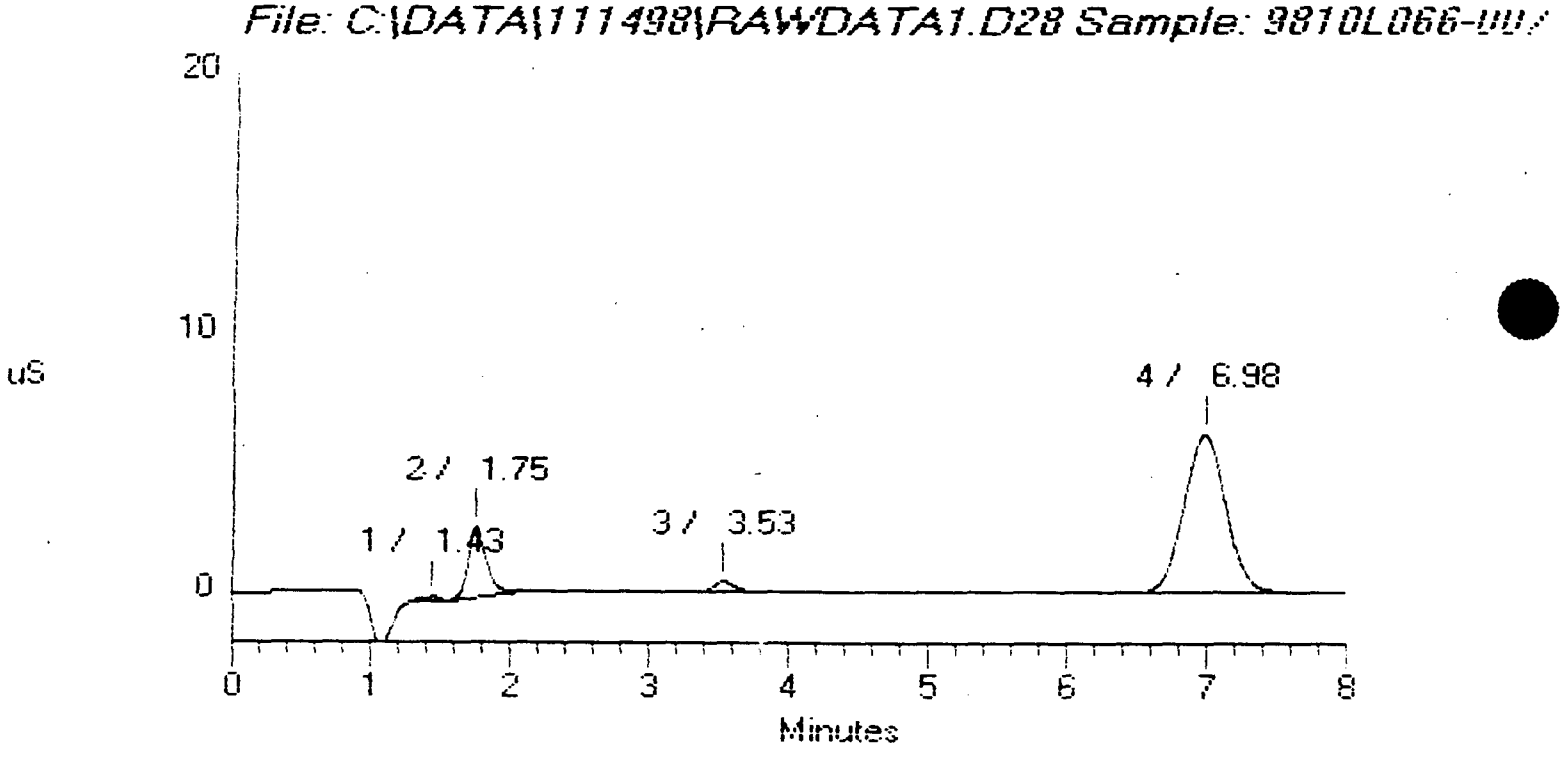
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.614	2488	22615	1	0.00
2	1.77	CHLORIDE	12.095	30924	269977	1	0.00
3	3.47	NITRATE	4.506	4376	49754	1	0.00
4	6.68	SULFATE	111.098	68133	1636976	1	0.00
		Totals	128.312	105921	1979323		



Sample Name: 9810L066-007 Date: Sat Nov 14 19:53:24 1998
Data File : C:\DATA\111498\RAWDATA1.D28
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 28 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	20	2400	5Hz	0.00	8.00	600

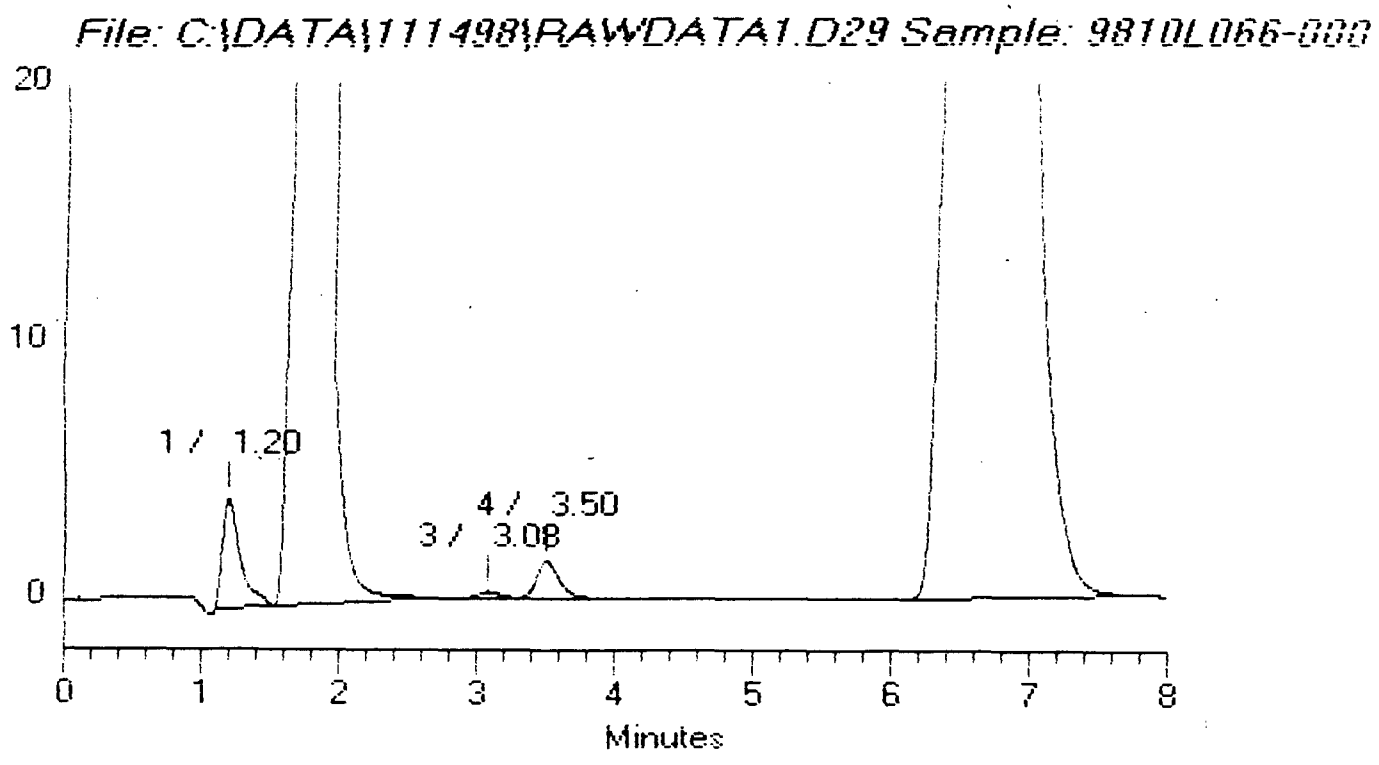
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.43		0.000	160	1542	1	
2	1.75	CHLORIDE	13.539	2748	25805	1	0.00
3	3.53	NITRATE	7.196	408	4365	1	0.00
4	6.98	SULFATE	88.596	6117	126463	1	0.00
		Totals	109.331	9433	158175		



Sample Name: 9810L066-008 Date: Sat Nov 14 20:02:55 1998
Data File : C:\DATA\111498\RAWDATA1.D29
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 29 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

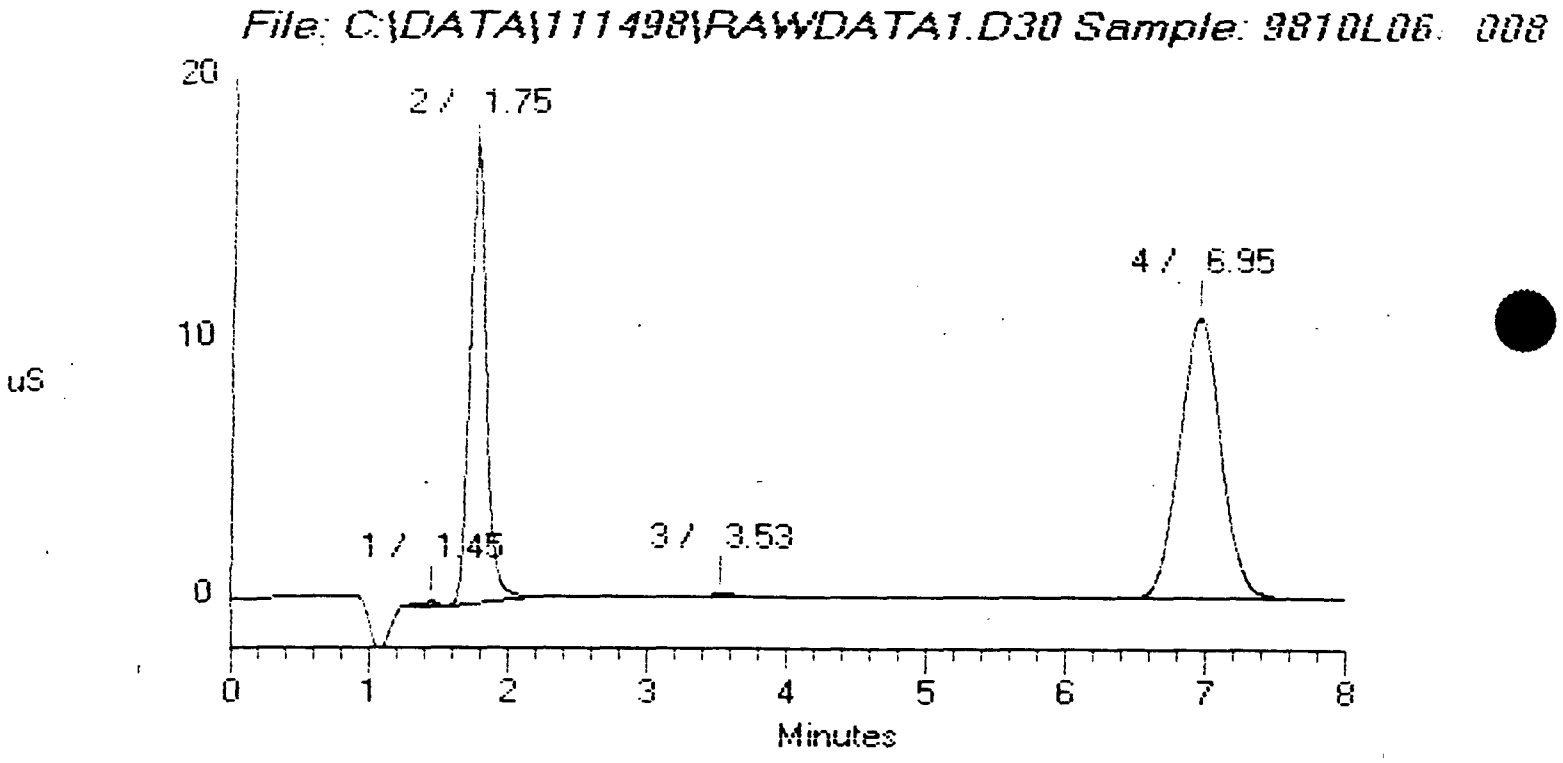
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.551	4243	38362	1	0.00
2	1.83	CHLORIDE	38.705	163362	1754790	1	0.00
3	3.08	BROMIDE	0.293	238	2300	2	0.00
4	3.50	NITRATE	0.841	1414	15913	2	0.00
5	6.55	SULFATE	95.759	102069	2825135	1	0.00
		Totals	136.149	271326	4636500		



Sample Name: 9810L066-008 Date: Sat Nov 14 20:12:28 1998
Data File : C:\DATA\111498\RAWDATA1.D30
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 30 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	10	2400	5Hz	0.00	8.00	600

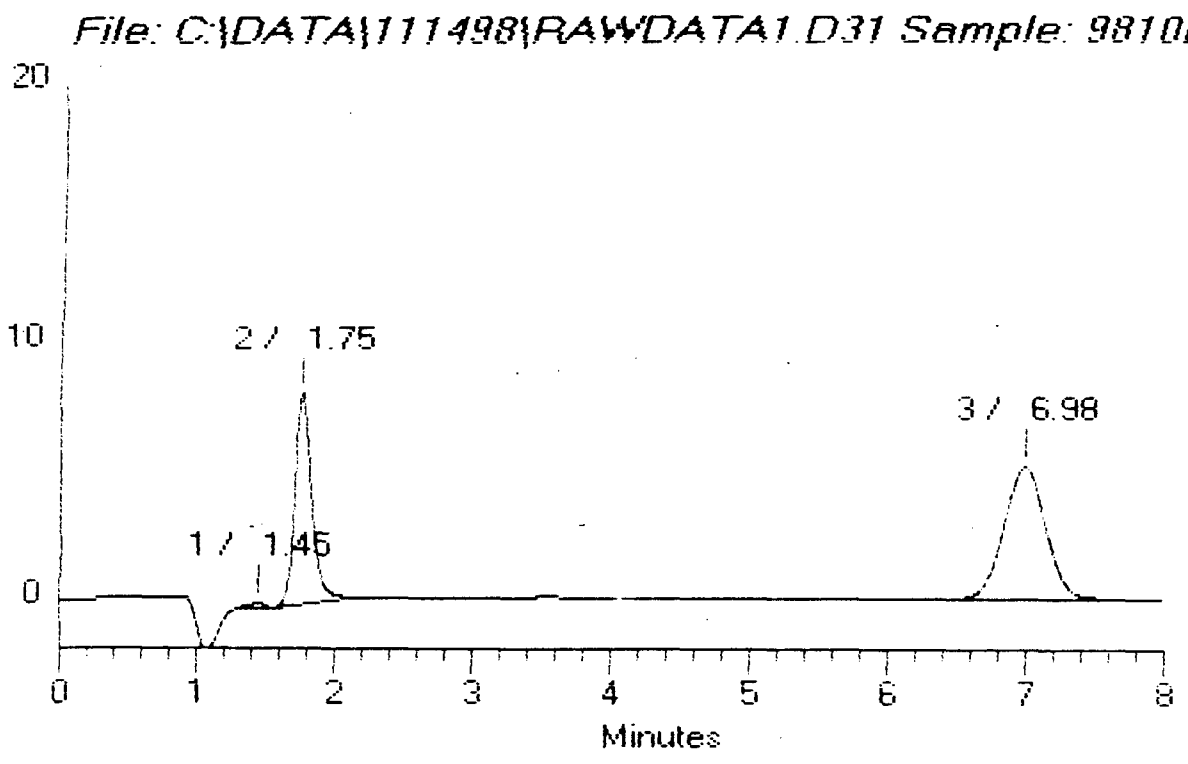
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	190	2168	1	
2	1.75	CHLORIDE	33.268	17153	146282	1	0.00
3	3.53	NITRATE	2.306	138	1267	1	0.00
4	6.95	SULFATE	76.383	10832	221272	1	0.00
		Totals	111.957	28313	370990		



Sample Name: 9810L066-008 Date: Sat Nov 14 20:21:59 1998
Data File : C:\DATA\111498\RAWDATA1.D31
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 31 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	20	2400	5Hz	0.00	8.00	600

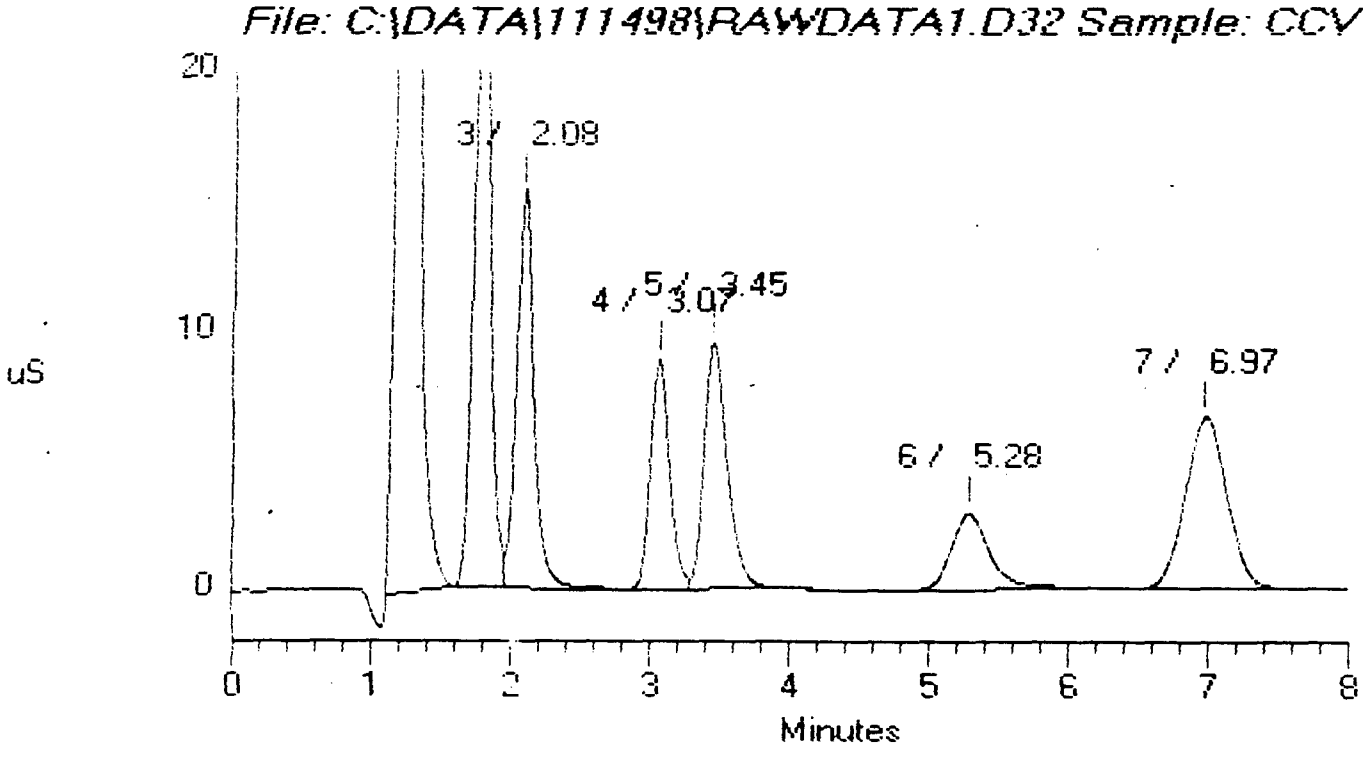
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	170	1516	1	
2	1.75	CHLORIDE	32.484	8069	68874	1	0.00
3	6.98	SULFATE	73.748	5031	104526	1	0.00
		Totals	106.232	13270	174916		



Sample Name: CCV Date: Sat Nov 14 20:31:30 1998
Data File : C:\DATA\111498\RAWDATA1.D32
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 32 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

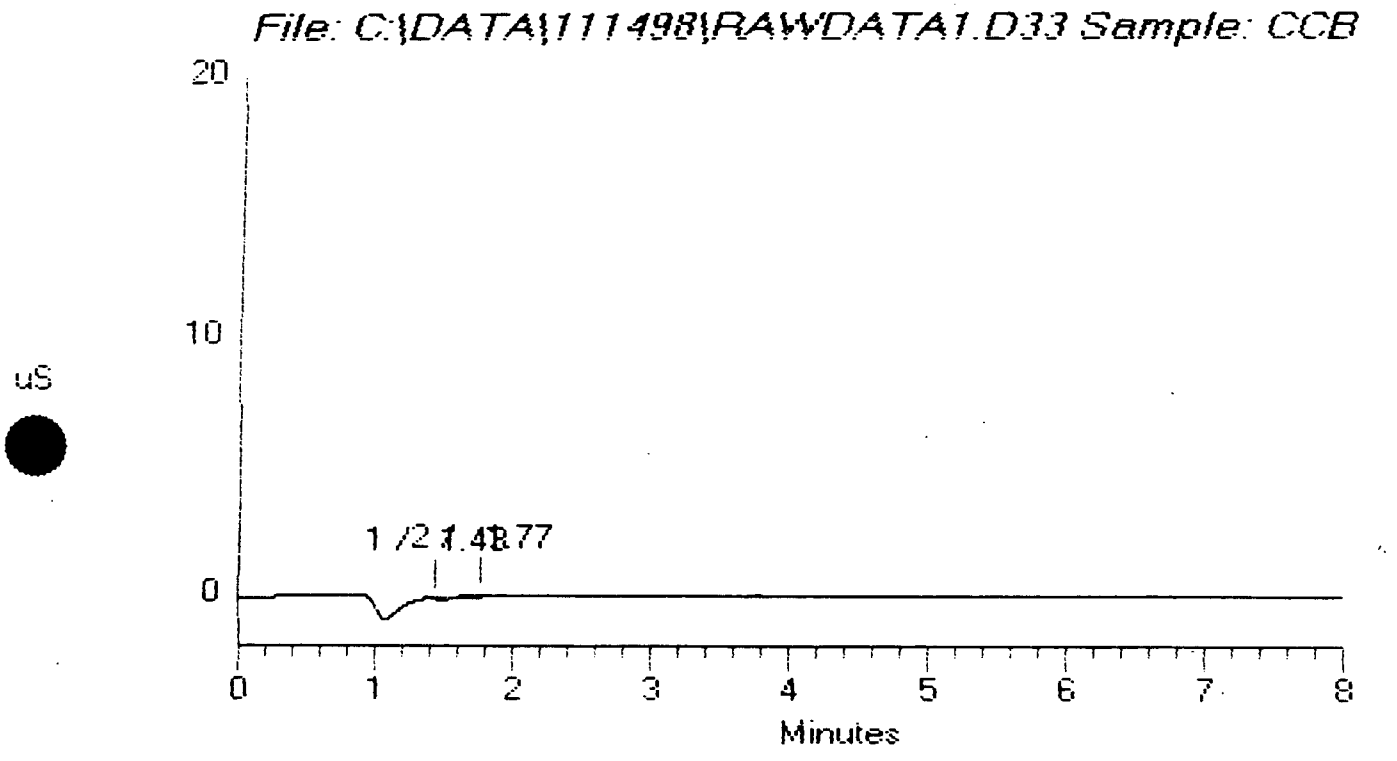
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	10.481	79344	679347	1	0.00
2	1.77	CHLORIDE	4.703	26221	208851	2	0.00
3	2.08	NITRITE	4.931	15245	131789	2	0.00
4	3.07	BROMIDE	4.816	8874	84400	2	0.00
5	3.45	NITRATE	4.759	9514	109834	2	0.00
6	5.28	PHOSPHATE	4.863	2925	55100	1	0.00
7	6.97	SULFATE	4.808	6628	137644	1	0.00
		Totals	39.361	148752	1406966		



Sample Name: CCB Date: Sat Nov 14 20:41:12 1998
Data File : C:\DATA\111498\RAWDATA1.D33
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 33 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

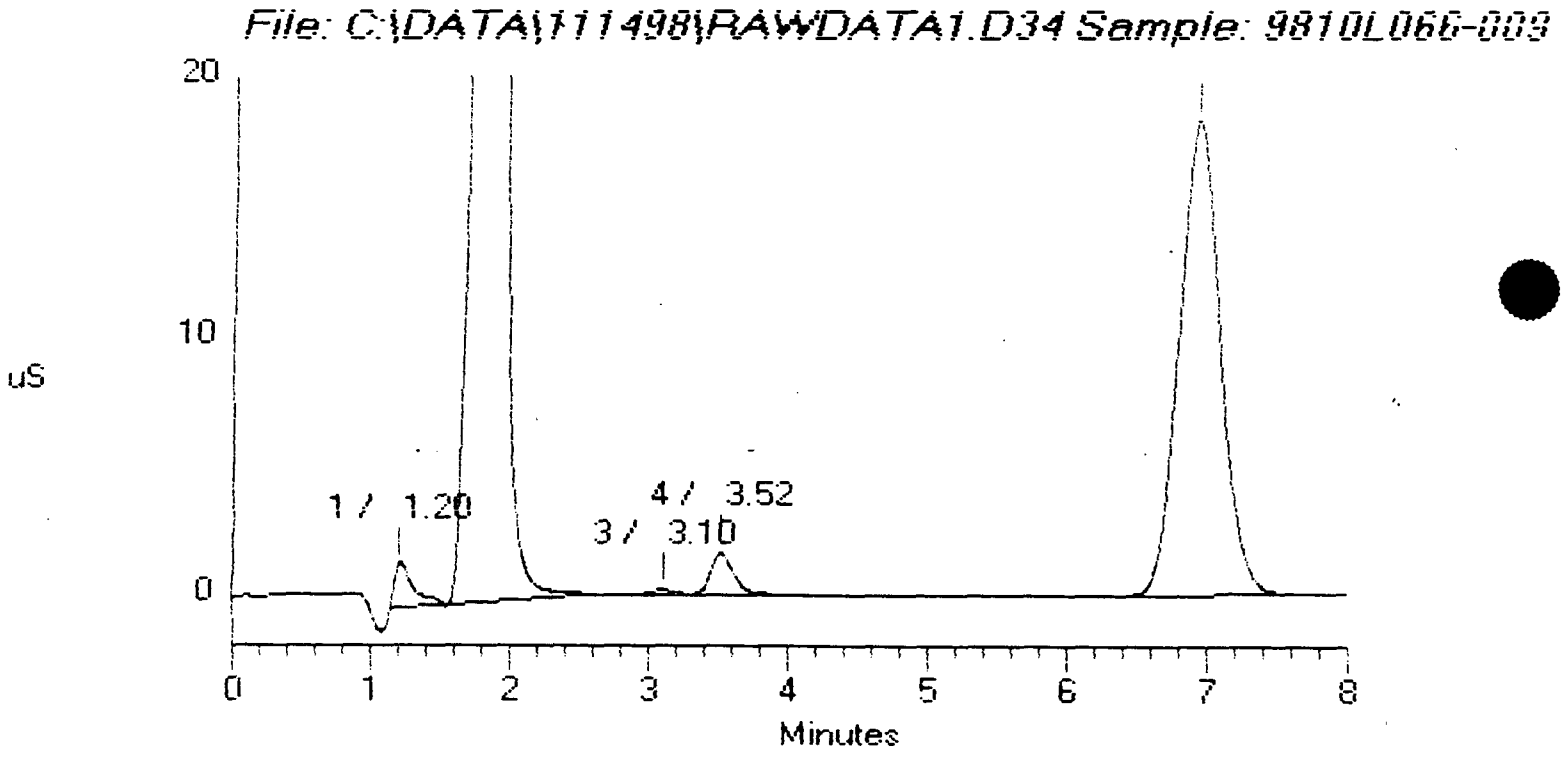
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
2	1.77	CHLORIDE	0.144	93	1594	1	0.00
		Totals	0.144	93	1594		



Sample Name: 9810L066-009 Date: Sat Nov 14 20:50:49 1998
Data File : C:\DATA\111498\RAWDATA1.D34
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 34 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

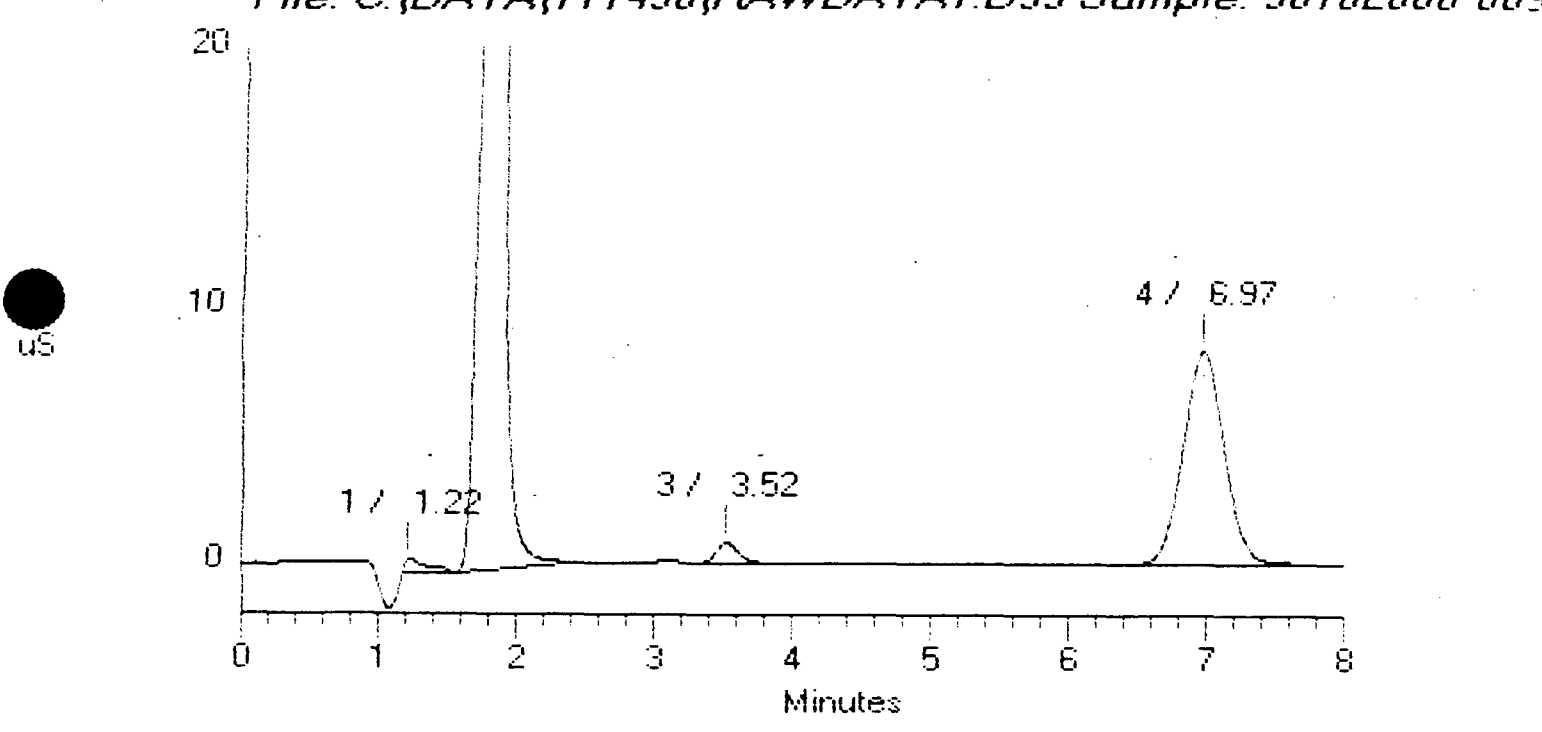
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.220	1697	17008	1	0.00
2	1.83	CHLORIDE	33.452	146445	1515978	1	0.00
3	3.10	BROMIDE	0.255	158	1608	2	0.00
4	3.52	NITRATE	0.922	1604	17841	2	0.00
5	6.92	SULFATE	12.716	18184	371321	1	0.00
		Totals	47.565	168087	1923756		



Sample Name: 9810L066-009 Date: Sat Nov 14 21:00:21 1998
Data File : C:\DATA\111498\RAWDATA1.D35
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 35 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	2	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.119	542	6628	1	0.00
2	1.80	CHLORIDE	31.460	84939	710216	1	0.00
3	3.52	NITRATE	1.087	800	8764	1	0.00
4	6.97	SULFATE	11.663	8152	167886	1	0.00
		Totals	44.329	94433	893493		

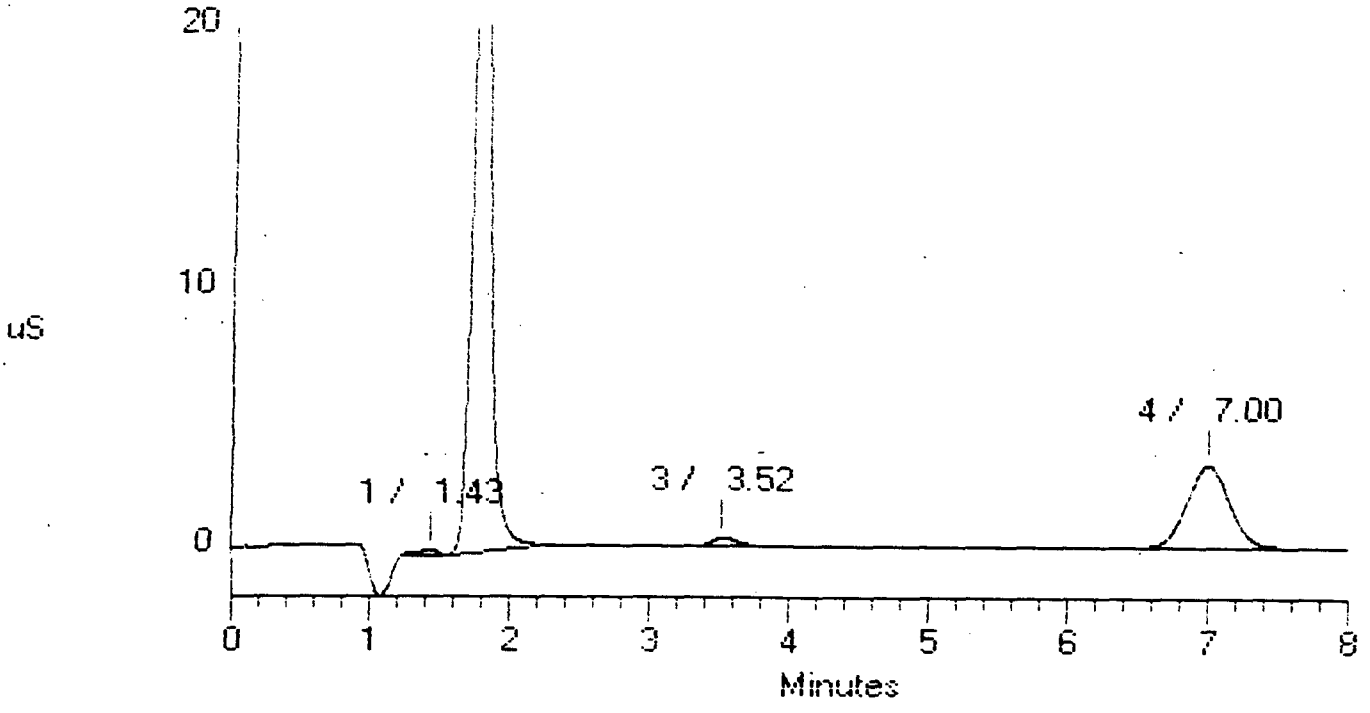


Sample Name: 9810L066-009 Date: Sat Nov 14 21:09:51 1998
Data File : C:\DATA\111498\RAWDATA1.D36
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 36 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	5	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.43		0.000	200	2378	1	
2	1.77	CHLORIDE	29.144	32713	260040	1	0.00
3	3.52	NITRATE	1.556	306	3198	1	0.00
4	7.00	SULFATE	11.864	3120	65680	1	0.00
		Totals	42.563	36339	331296		

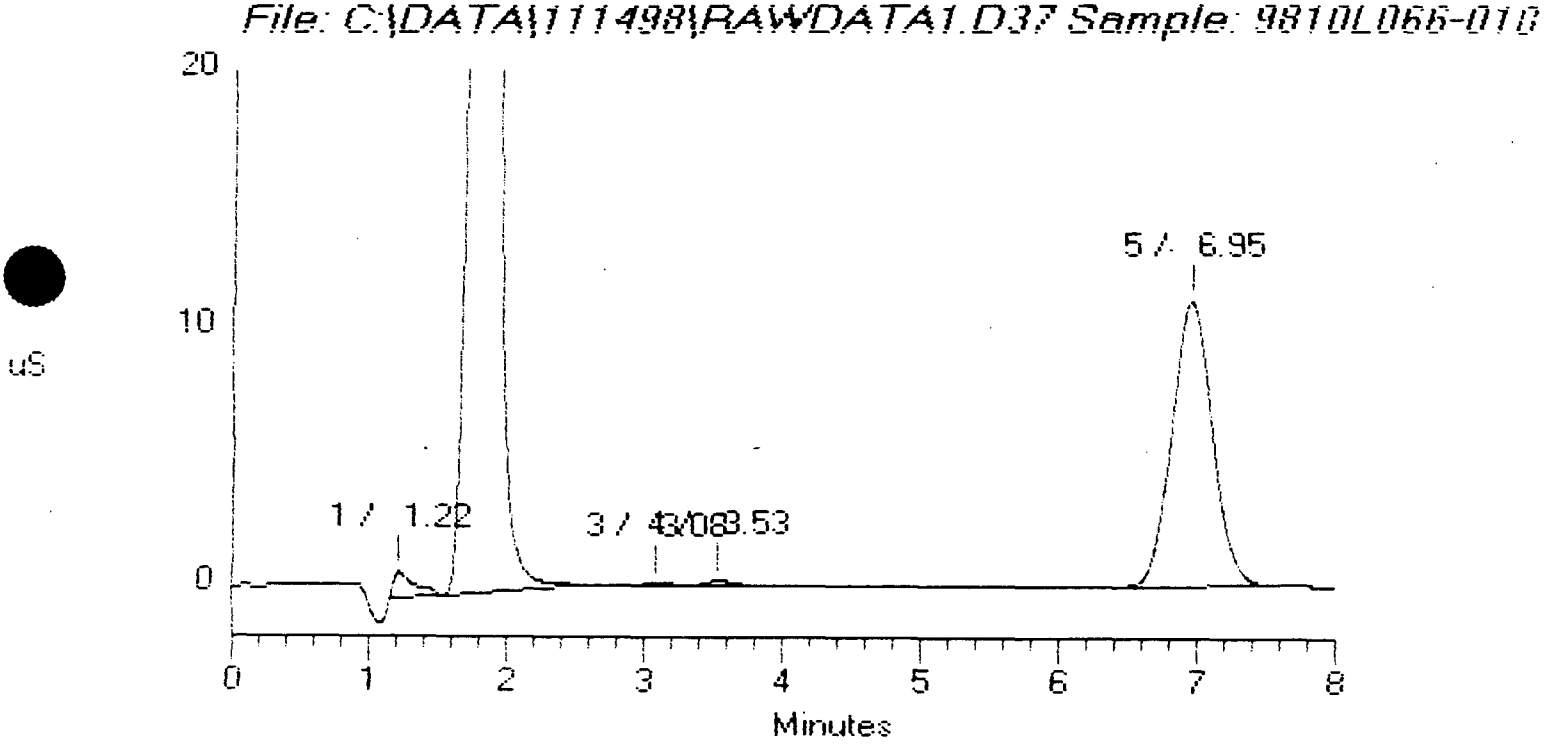
File: C:\DATA\111498\RAWDATA1.D36 Sample: 9810L066-009



Sample Name: 9810L066-010 Date: Sat Nov 14 21:19:23 1998
Data File : C:\DATA\111498\RAWDATA1.D37
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 37 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

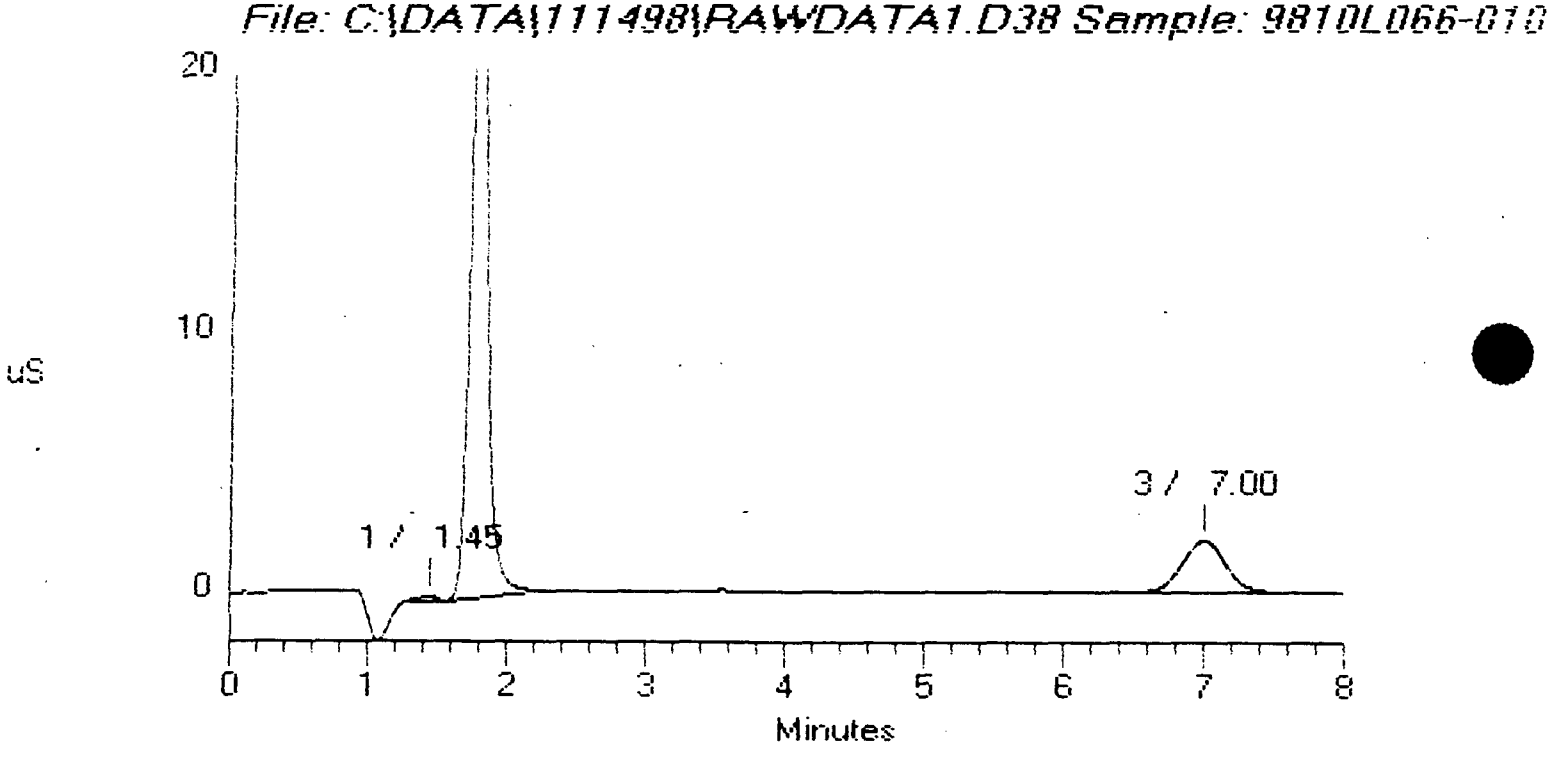
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.120	956	10569	1	0.00
2	1.83	CHLORIDE	28.486	136433	1290176	1	0.00
3	3.08	BROMIDE	0.219	98	962	2	0.00
4	3.53	NITRATE	0.252	173	1783	2	0.00
5	6.95	SULFATE	7.794	10991	225863	1	0.00
		Totals	36.871	148650	1529352		



Sample Name: 9810L066-010 Date: Sat Nov 14 21:28:56 1998
Data File : C:\DATA\111498\RAWDATA1.D38
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 38 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	5	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	180	1778	1	
2	1.77	CHLORIDE	25.102	27808	223283	1	0.00
3	7.00	SULFATE	7.739	1960	41306	1	0.00
		Totals	32.841	29948	266367		

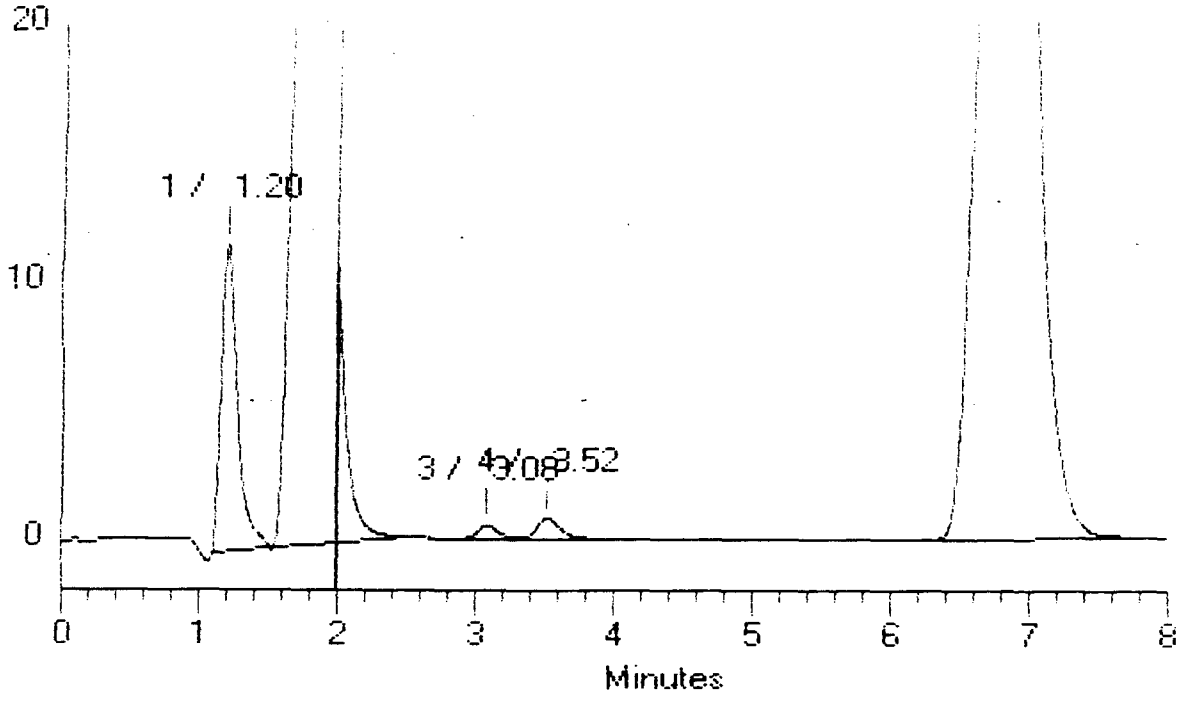


Sample Name: 9810L066-011 Date: Sat Nov 14 21:38:34 1998
Data File : C:\DATA\111498\RAWDATA1.D39
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 39 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	1.449	11879	96368	1	0.00
2	1.87	CHLORIDE	51.217	199355	2323703	1	0.00
3	3.08	BROMIDE	0.453	530	5200	2	0.00
4	3.52	NITRATE	0.556	810	9058	2	0.00
5	6.75	SULFATE	42.601	55282	1254391	1	0.00
		Totals	96.277	267856	3688720		

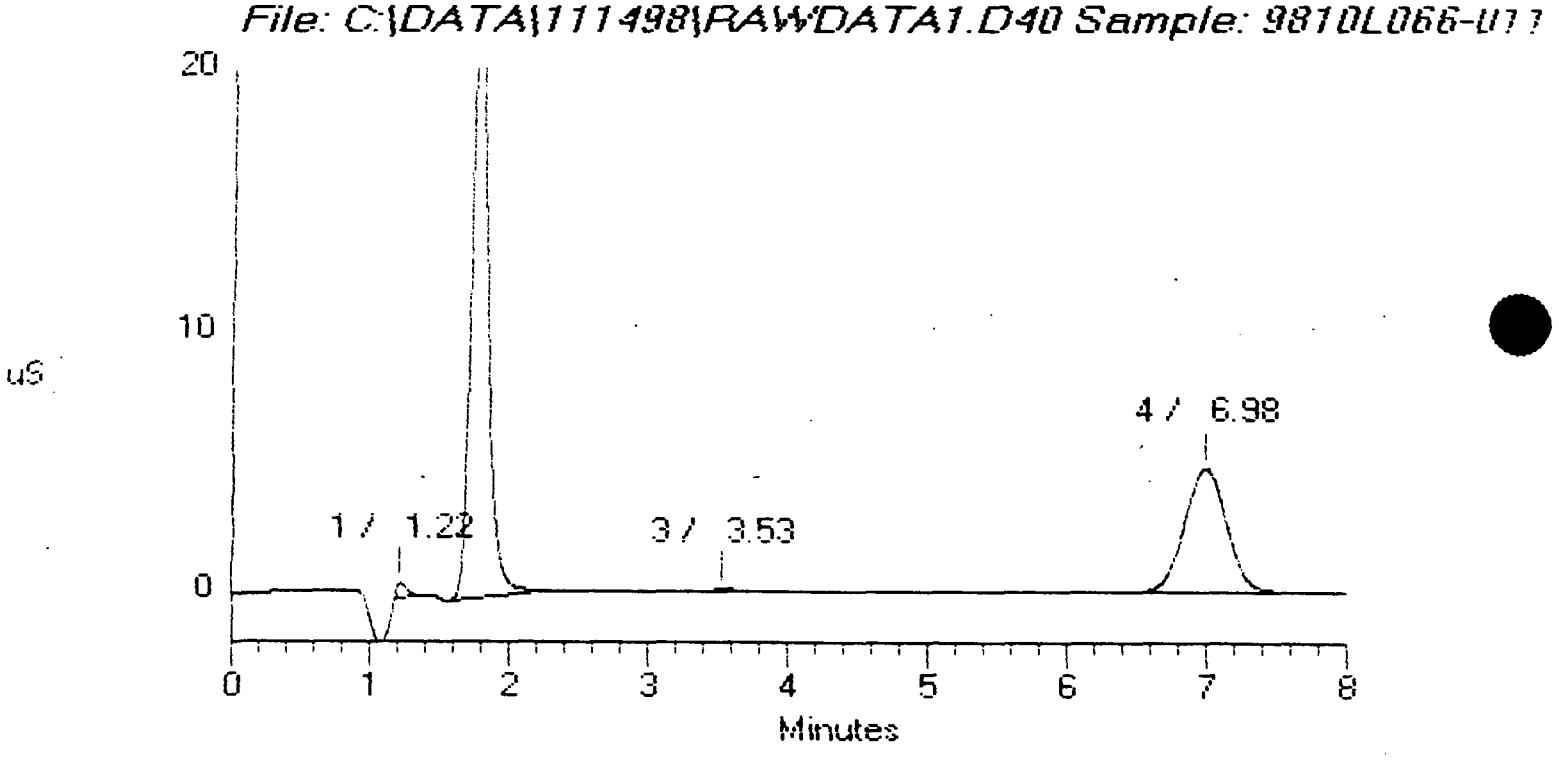
File: C:\DATA\111498\RAWDATA1.D39 Sample: 9810L066-011



Sample Name: 9810L066-011 Date: Sat Nov 14 21:48:05 1998
Data File : C:\DATA\111498\RAWDATA1.D40
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 40 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	10	2400	5Hz	0.00	8.00	600

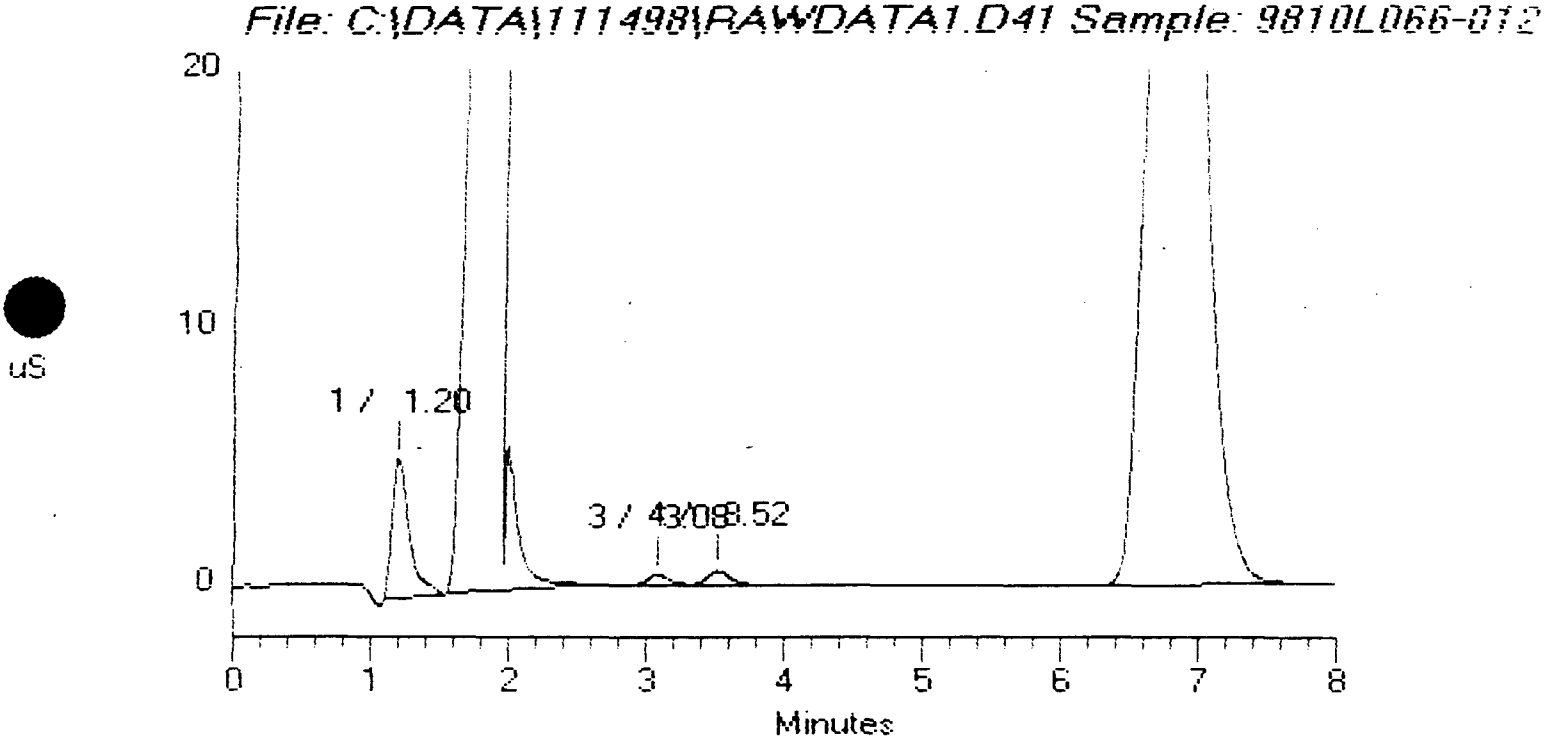
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	-0.013	524	2713	1	0.00
2	1.77	CHLORIDE	44.011	24134	195129	1	0.00
3	3.53	NITRATE	2.103	72	779	1	0.00
4	6.98	SULFATE	35.082	4767	99232	1	0.00
		Totals	81.182	29496	297853		



Sample Name: 9810L066-012 Date: Sat Nov 14 21:57:37 1998
Data File : C:\DATA\111498\RAWDATA1.D41
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 41 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

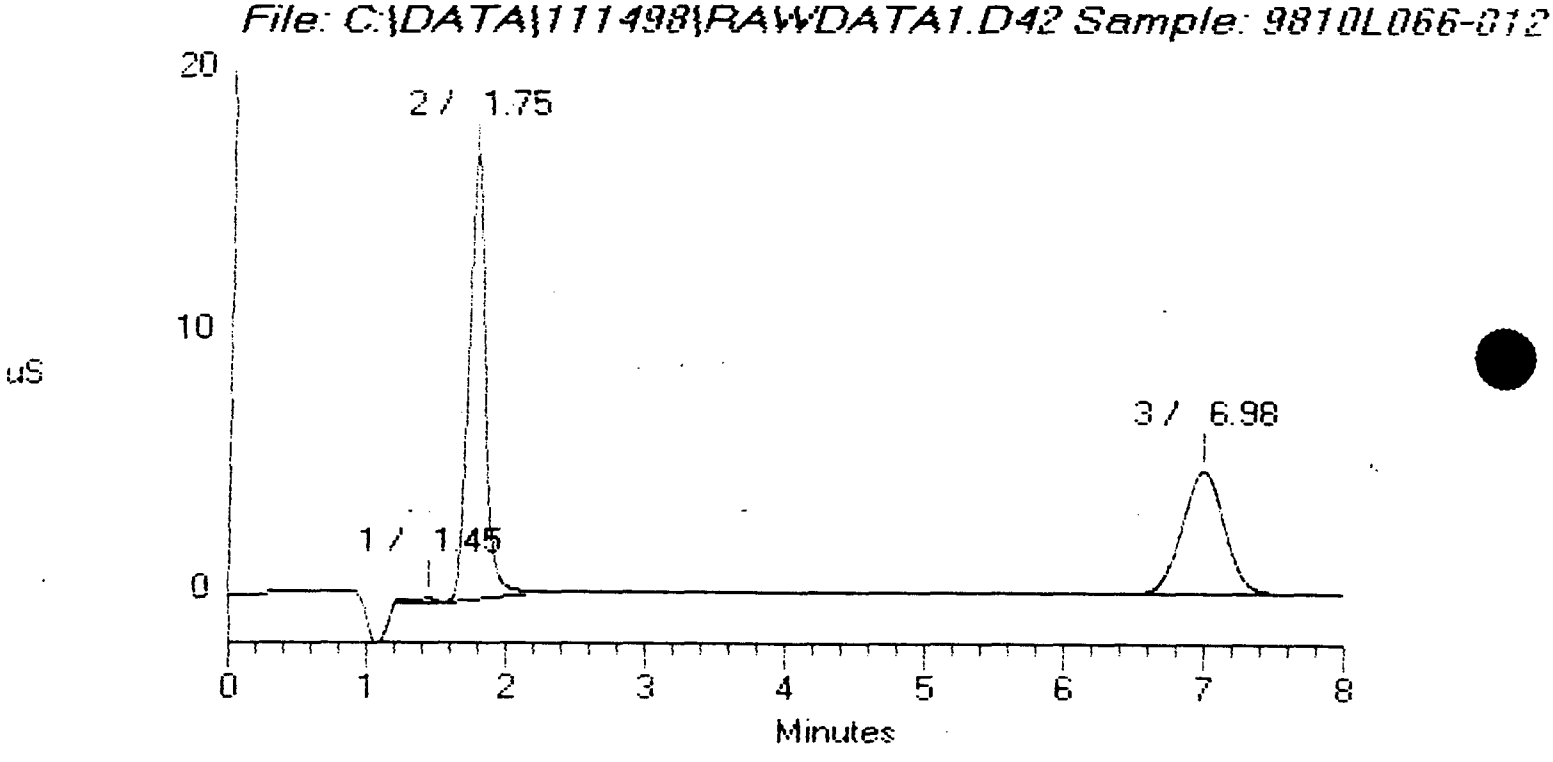
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.681	5326	46735	1	0.00
2	1.83	CHLORIDE	37.365	157368	1693901	1	0.00
3	3.08	BROMIDE	0.385	408	3967	2	0.00
4	3.52	NITRATE	0.419	543	5792	2	0.00
5	6.75	SULFATE	41.175	53879	1212242	1	0.00
		Totals	80.025	217525	2962637		



Sample Name: 9810L066-012 Date: Sat Nov 14 22:07:09 1998
Data File : C:\DATA\111498\RAWDATA1.D42
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 42 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	10	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	183	2717	1	
2	1.75	CHLORIDE	32.471	16840	142659	1	0.00
3	6.98	SULFATE	34.319	4672	96975	1	0.00
		Totals	66.789	21694	242352		

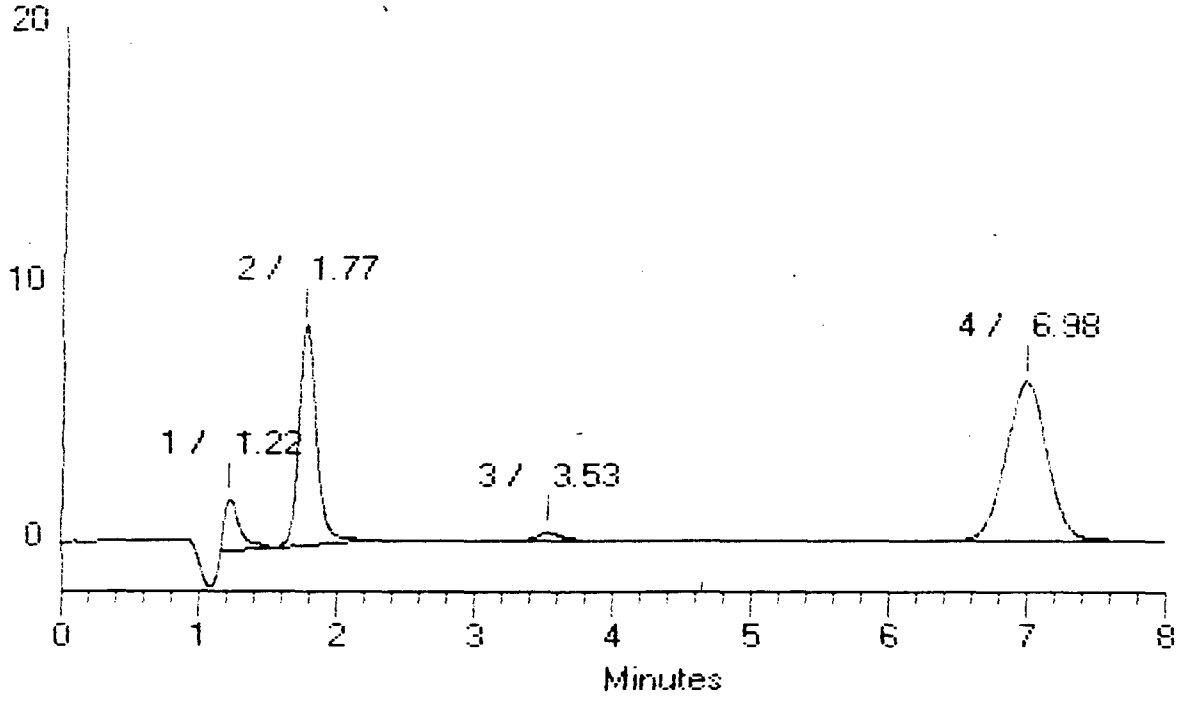


Sample Name: 9810L067-001 Date: Sat Nov 14 22:16:47 1998
Data File : C:\DATA\111498\RAWDATA1.D43
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 43 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.198	1992	15562	1	0.00
2	1.77	CHLORIDE	1.794	8519	76613	1	0.00
3	3.53	NITRATE	0.320	320	3404	1	0.00
4	6.98	SULFATE	4.459	6151	127324	1	0.00
		Totals	6.771	16983	222903		

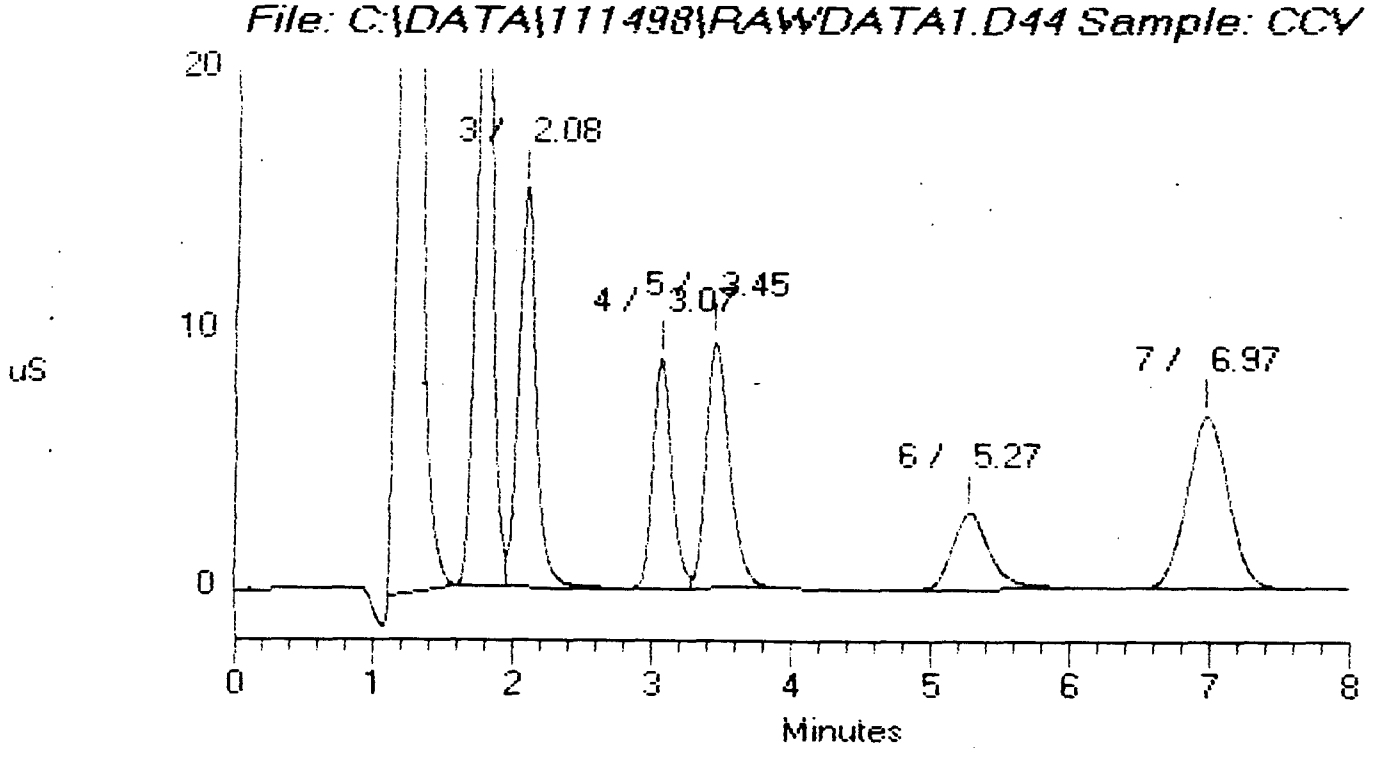
File: C:\DATA\111498\RAWDATA1.D43 Sample: 9810L067-001



Sample Name: CCV Date: Sat Nov 14 22:26:18 1998
Data File : C:\DATA\111498\RAWDATA1.D44
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 44 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	10.632	84028	689103	1	0.00
2	1.77	CHLORIDE	4.798	26330	213181	2	0.00
3	2.08	NITRITE	5.021	15352	134200	2	0.00
4	3.07	BROMIDE	4.772	8895	83599	2	0.00
5	3.45	NITRATE	4.812	9524	111103	2	0.00
6	5.27	PHOSPHATE	4.935	2959	55954	1	0.00
7	6.97	SULFATE	4.814	6650	137830	1	0.00
		Totals	39.784	153738	1424970		

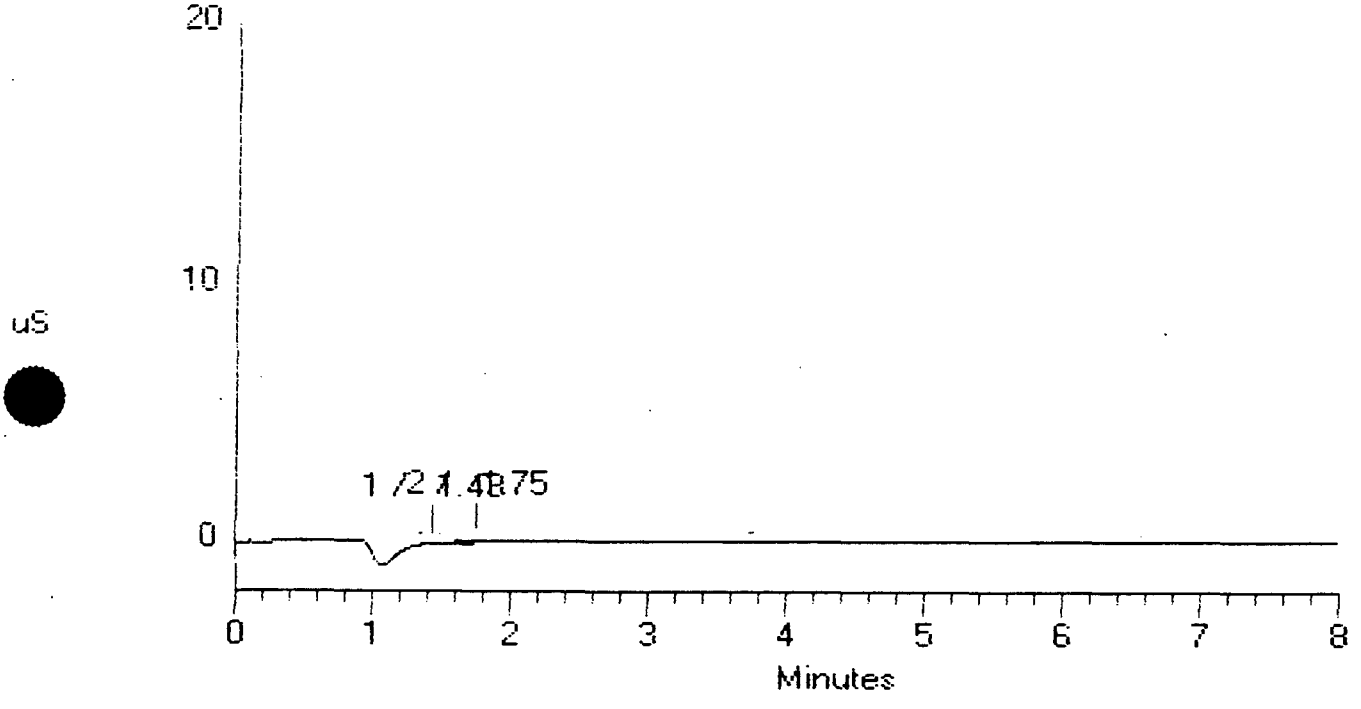


Sample Name: CCB Date: Sat Nov 14 22:36:00 1998
Data File : C:\DATA\111498\RAWDATA1.D45
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 45 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
2	1.75	CHLORIDE	0.144	102	1583	1	0.00
		Totals	0.144	102	1583		

File: C:\DATA\111498\RAWDATA1.D45 Sample: CCB



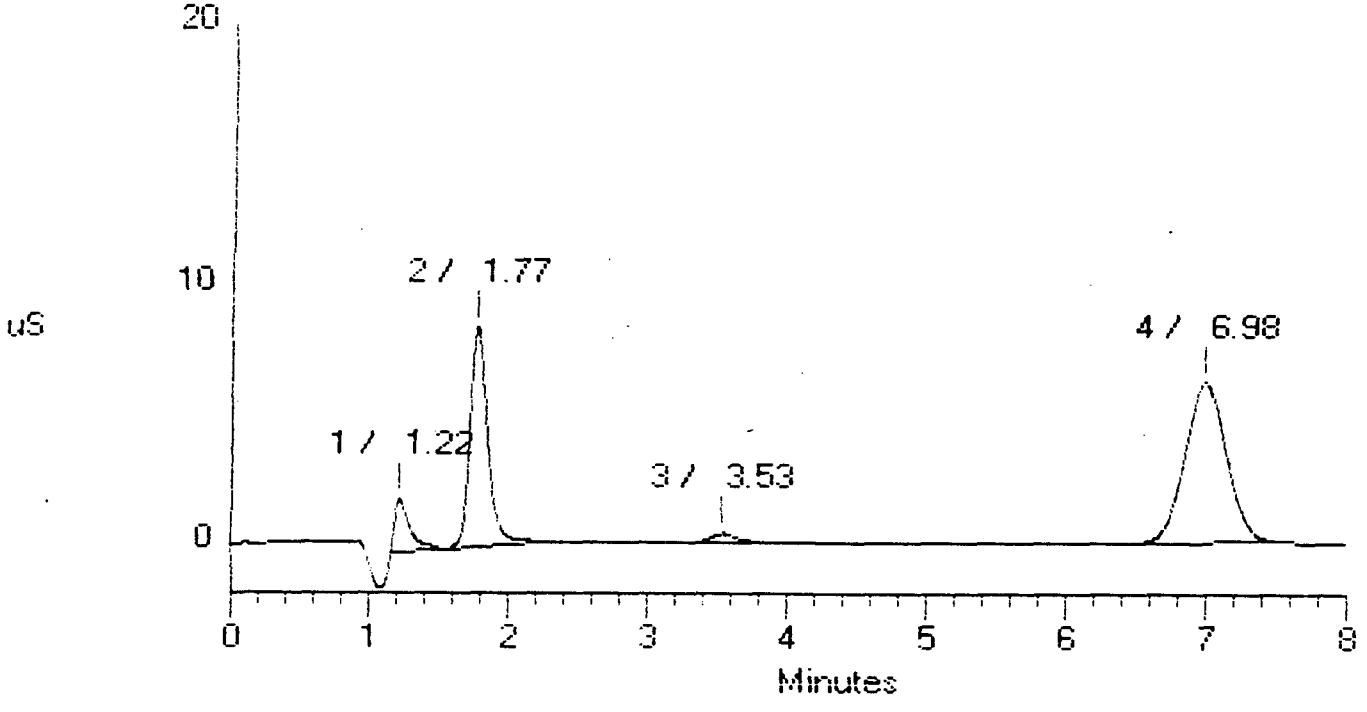
11-16-98

Sample Name: 9810L067-0018 R Date: Sat Nov 14 22:45:37 1998
Data File : C:\DATA\111498\RAWDATA1.D46
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 46 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.197	2002	15540	1	0.00
2	1.77	CHLORIDE	1.785	8458	76192	1	0.00
3	3.53	NITRATE	0.331	330	3676	1	0.00
4	6.98	SULFATE	4.451	6131	127098	1	0.00
		Totals	6.765	16922	222507		

File: C:\DATA\111498\RAWDATA1.D46 Sample: 9810L067-0018

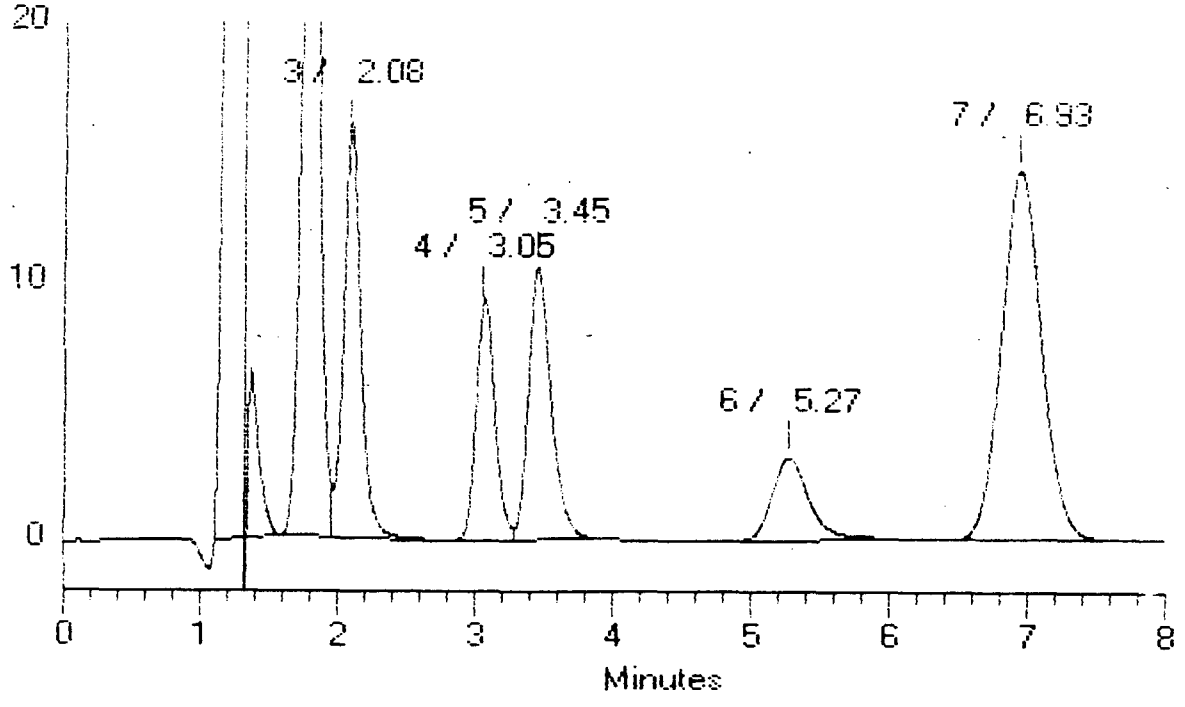


Sample Name: 9810L067-001T Date: Sat Nov 14 22:55:09 1998
Data File : C:\DATA\111498\RAWDATA1.D47
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 47 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	10.658	88075	690791	1	0.00
2	1.78	CHLORIDE	7.072	39474	316585	2	0.00
3	2.08	NITRITE	5.178	15814	138405	2	0.00
4	3.05	BROMIDE	5.057	9117	88762	2	0.00
5	3.45	NITRATE	5.238	10489	121320	2	0.00
6	5.27	PHOSPHATE	5.248	3176	59636	1	0.00
7	6.93	SULFATE	9.942	14159	289351	1	0.00
		Totals	48.392	180304	1704850		

File: C:\DATA\111498\RAWDATA1.D47 Sample: 9810L067-001T

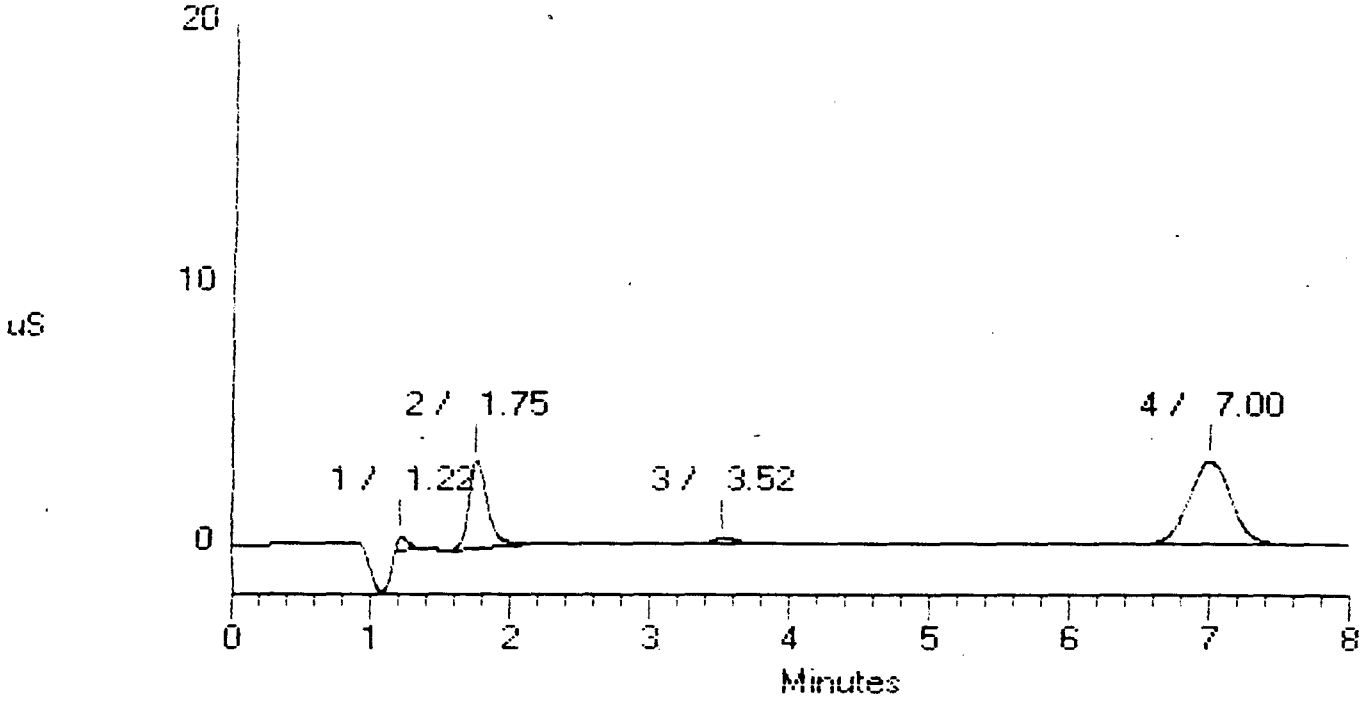


Sample Name: 9810L067-002 Date: Sat Nov 14 23:04:44 1998
Data File : C:\DATA\111498\RAWDATA1.D48
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 48 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	-0.001	518	2740	1	0.00
2	1.75	CHLORIDE	0.826	3352	32601	1	0.00
3	3.52	NITRATE	0.284	228	2553	1	0.00
4	7.00	SULFATE	2.383	3157	65996	1	0.00
		Totals	3.493	7256	103890		

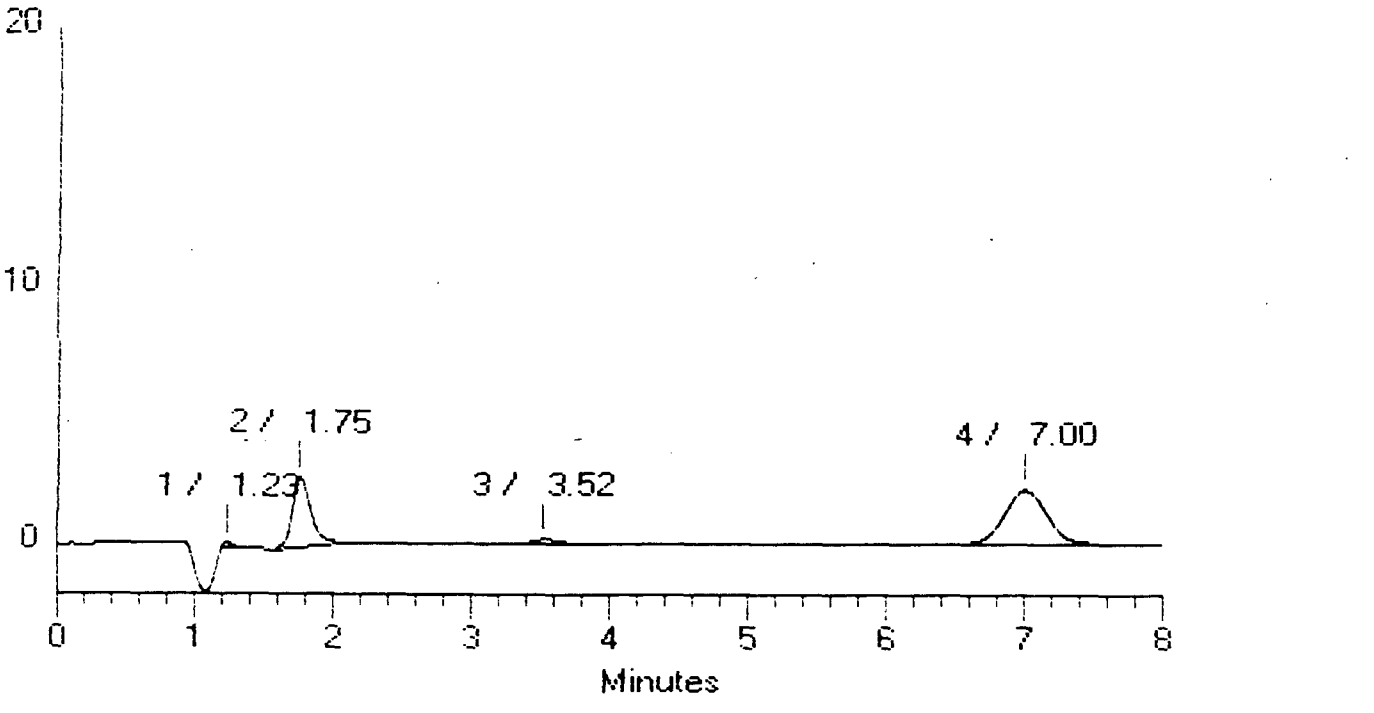
File: C:\DATA\111498\RAWDATA1.D48 Sample: 9810L067-002



Sample Name: 9810L067-003 Date: Sat Nov 14 23:14:14 1998
Data File : C:\DATA\111498\RAWDATA1.D49
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 49 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.23	FLUORIDE	-0.026	269	1152	1	0.00
2	1.75	CHLORIDE	0.684	2728	26122	1	0.00
3	3.52	NITRATE	0.241	140	1516	1	0.00
4	7.00	SULFATE	1.641	2085	44062	1	0.00
		Totals	2.541	5222	72852		

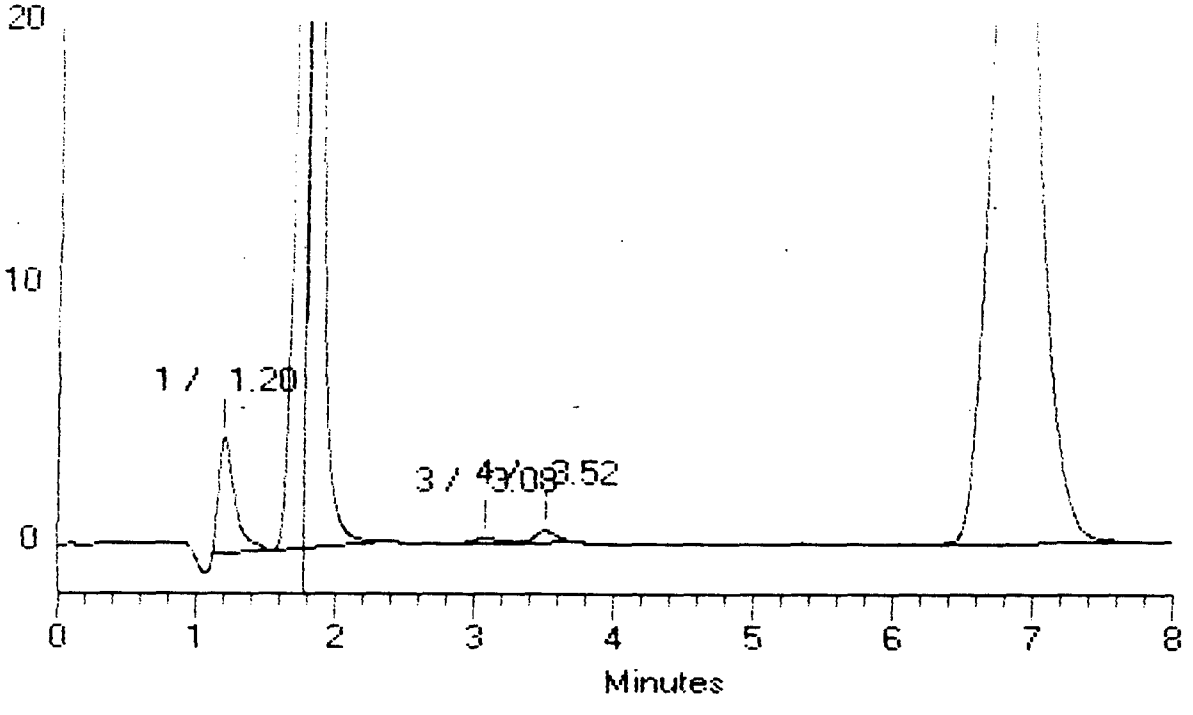


Sample Name: 9810L067-004 Date: Sat Nov 14 23:23:45 1998
Data File : C:\DATA\111498\RAWDATA1.D50
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 50 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.521	4417	36406	1	0.00
2	1.77	CHLORIDE	14.812	73876	668494	1	0.00
3	3.08	BROMIDE	0.257	170	1648	1	0.00
4	3.52	NITRATE	0.375	446	4724	1	0.00
5	6.82	SULFATE	25.889	36062	760553	1	0.00
		Totals	41.854	114972	1471825		

File: C:\DATA\111498\RAWDATA1.D50 Sample: 9810L067-004

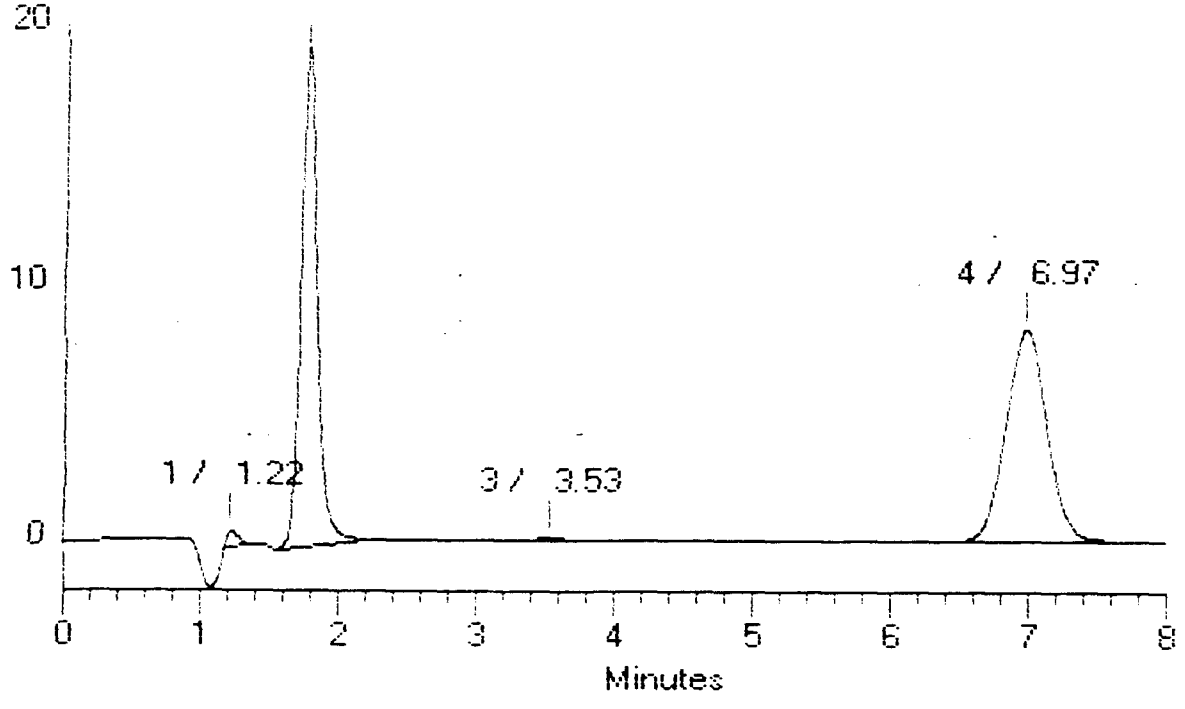


Sample Name: 9810L067-004 Date: Sat Nov 14 23:33:17 1998
Data File : C:\DATA\111498\RAWDATA1.D51
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 51 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	4	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.035	617	3371	1	0.00
2	1.75	CHLORIDE	14.444	18715	159210	1	0.00
3	3.53	NITRATE	0.866	106	928	1	0.00
4	6.97	SULFATE	23.290	8157	167616	1	0.00
		Totals	38.636	27595	331125		

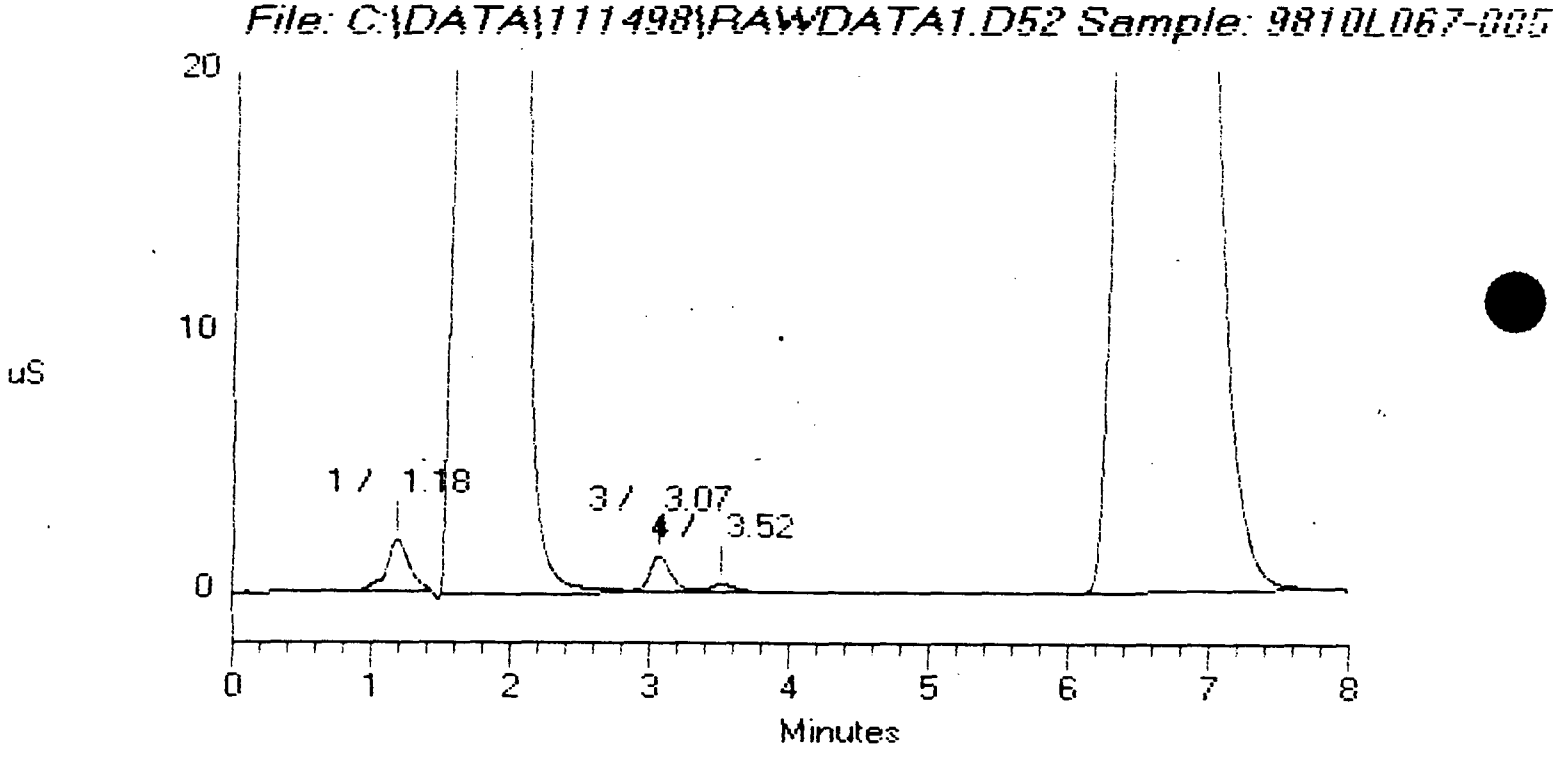
File: C:\DATA\111498\RAWDATA1.D51 Sample: 9810L067-004



Sample Name: 9810L067-005 Date: Sat Nov 14 23:42:49 1998
Data File : C:\DATA\111498\RAWDATA1.D52
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 52 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

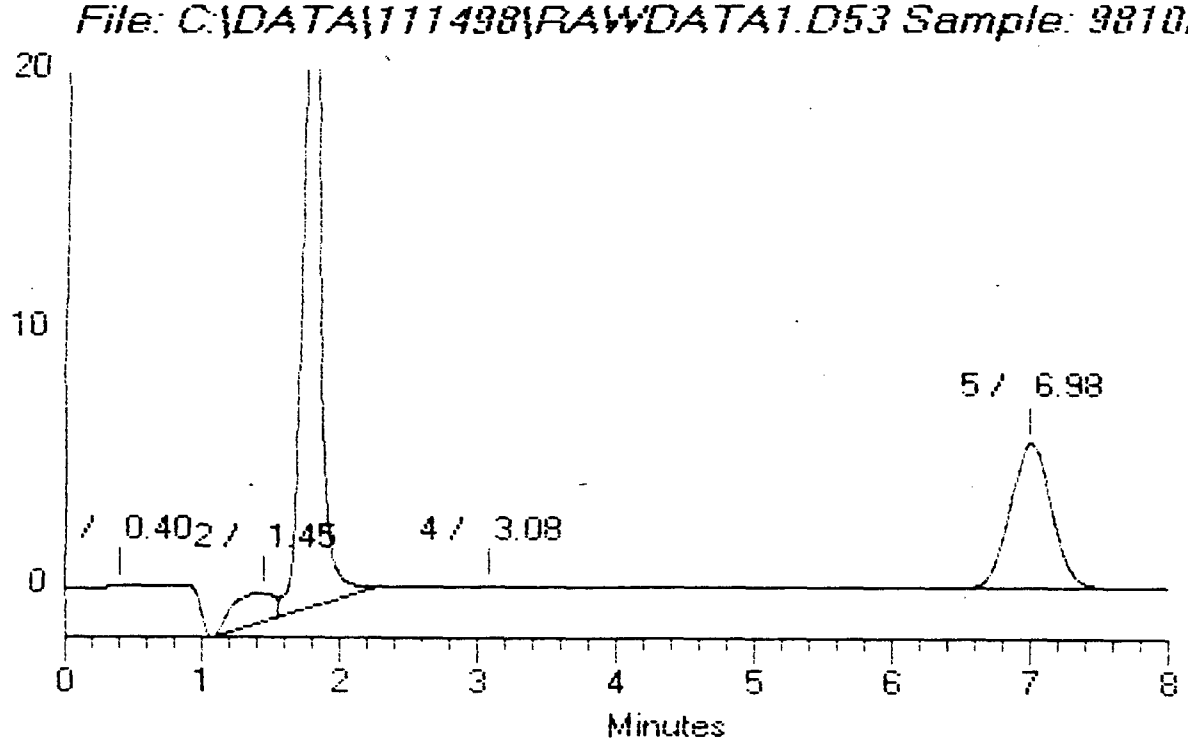
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.18	FLUORIDE	0.302	1967	22281	1	0.00
2	1.95	NITRITE	219.507	323213	5892912	2	0.00
3	3.07	BROMIDE	1.001	1415	15142	2	0.00
4	3.52	NITRATE	0.328	307	3598	2	0.00
5	6.52	SULFATE	106.426	110070	3140350	1	0.00
		Totals	327.564	436973	9074283		



Sample Name: 9810L067-005 Date: Sat Nov 14 23:52:21 1998
Data File : C:\DATA\111498\RAWDATA1.D53
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 53 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	20	2400	5Hz	0.00	8.00	600

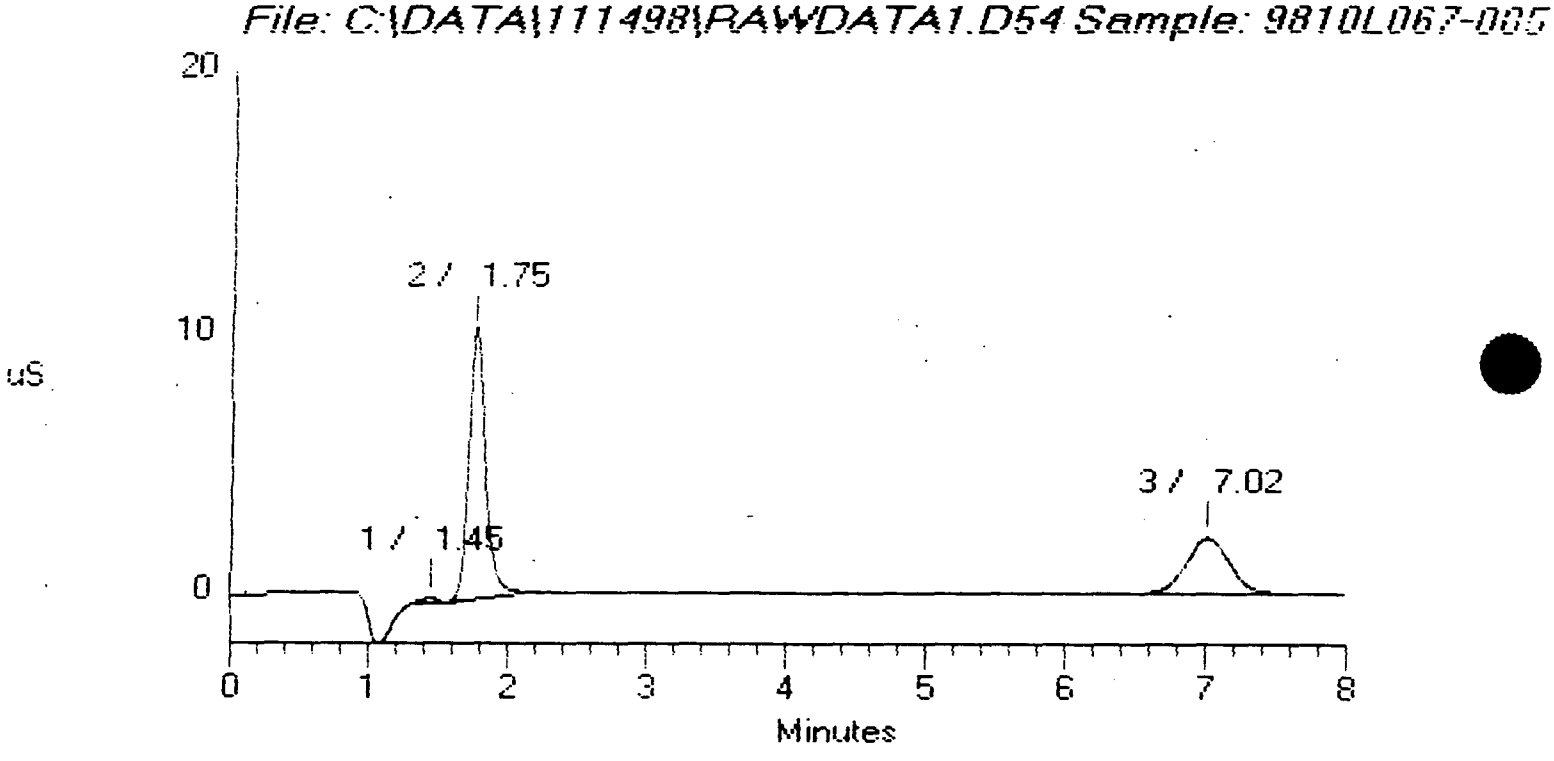
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
2	1.45		0.000	1139	25823	2	
3	1.77	CHLORIDE	115.080	30622	256640	2	0.00
4	3.08	BROMIDE	3.991	62	603	1	0.00
5	6.98	SULFATE	81.499	5563	115978	1	0.00
		Totals	200.570	37386	399044		



Sample Name: 9810L067-005 Date: Sun Nov 15 00:01:53 1998
Data File : C:\DATA\111498\RAWDATA1.D54
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 54 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	50	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	176	1431	1	
2	1.75	CHLORIDE	101.071	10258	86933	1	0.00
3	7.02	SULFATE	82.487	2100	44316	1	0.00
		Totals	183.558	12534	132680		

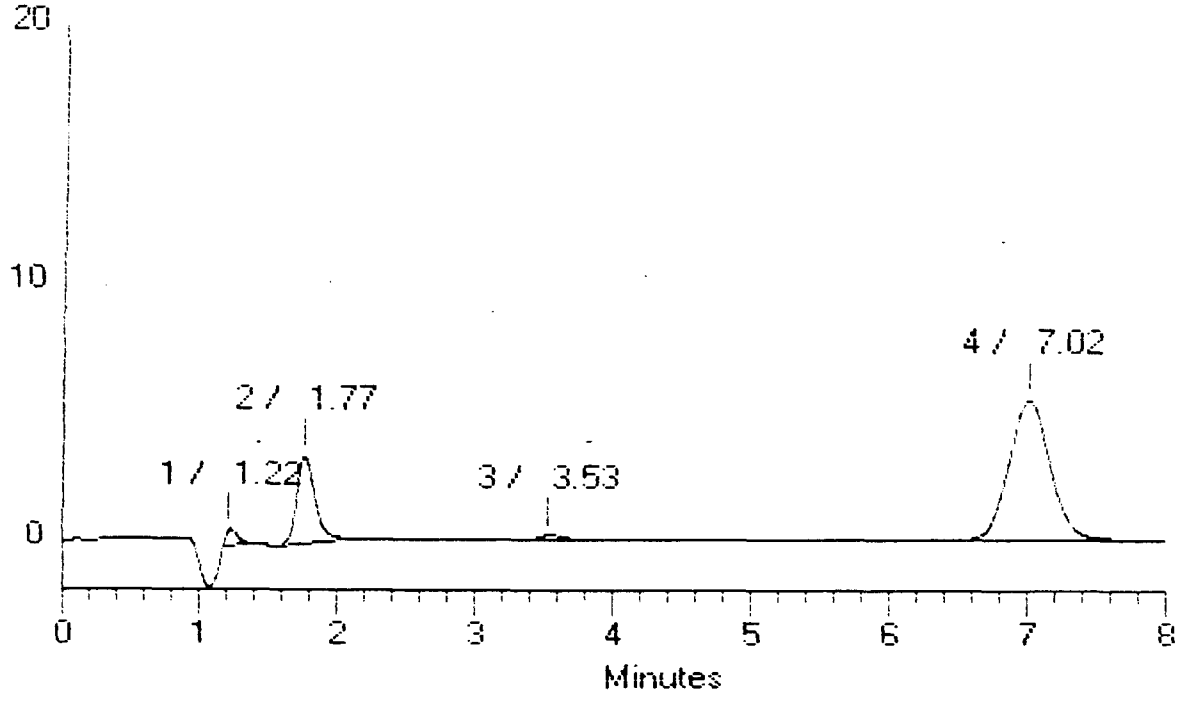


Sample Name: 9810L067-006 Date: Sun Nov 15 00:11:30 1998
Data File : C:\DATA\111498\RAWDATA1.D55
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 55 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.008	605	3343	1	0.00
2	1.77	CHLORIDE	0.819	3438	32272	1	0.00
3	3.53	NITRATE	0.244	157	1591	1	0.00
4	7.02	SULFATE	3.938	5391	111920	1	0.00
		Totals	5.009	9592	149126		

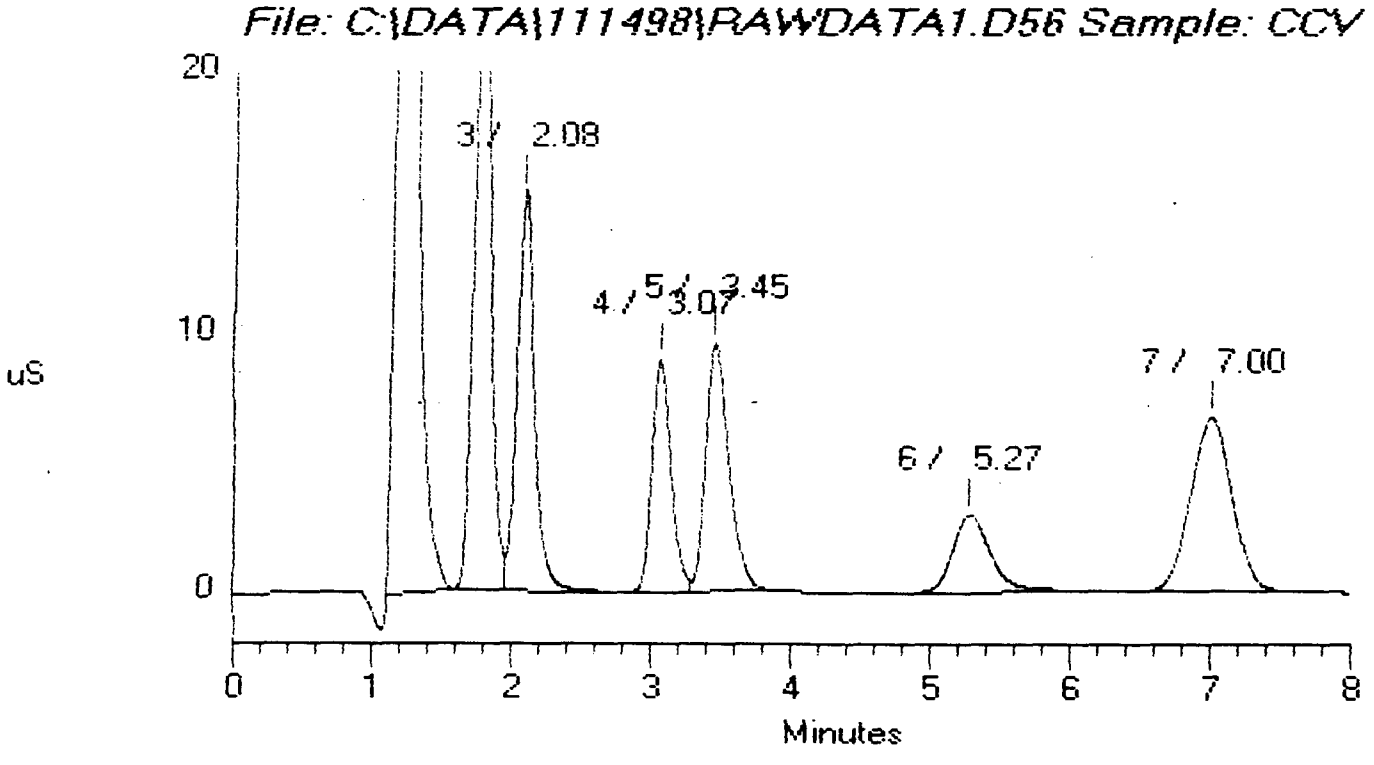
File: C:\DATA\111498\RAWDATA1.D55 Sample: 9810L067-006



Sample Name: CCV Date: Sun Nov 15 00:21:02 1998
Data File : C:\DATA\111498\RAWDATA1.D56
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 56 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	10.456	85200	677773	1	0.00
2	1.77	CHLORIDE	4.790	26130	212823	2	0.00
3	2.08	NITRITE	4.950	15252	132307	2	0.00
4	3.07	BROMIDE	4.354	8927	85090	2	0.00
5	3.45	NITRATE	4.803	9510	110894	2	0.00
6	5.27	PHOSPHATE	4.993	2980	56638	1	0.00
7	7.00	SULFATE	4.827	6680	138188	1	0.00
		Totals	39.674	154678	1413713		

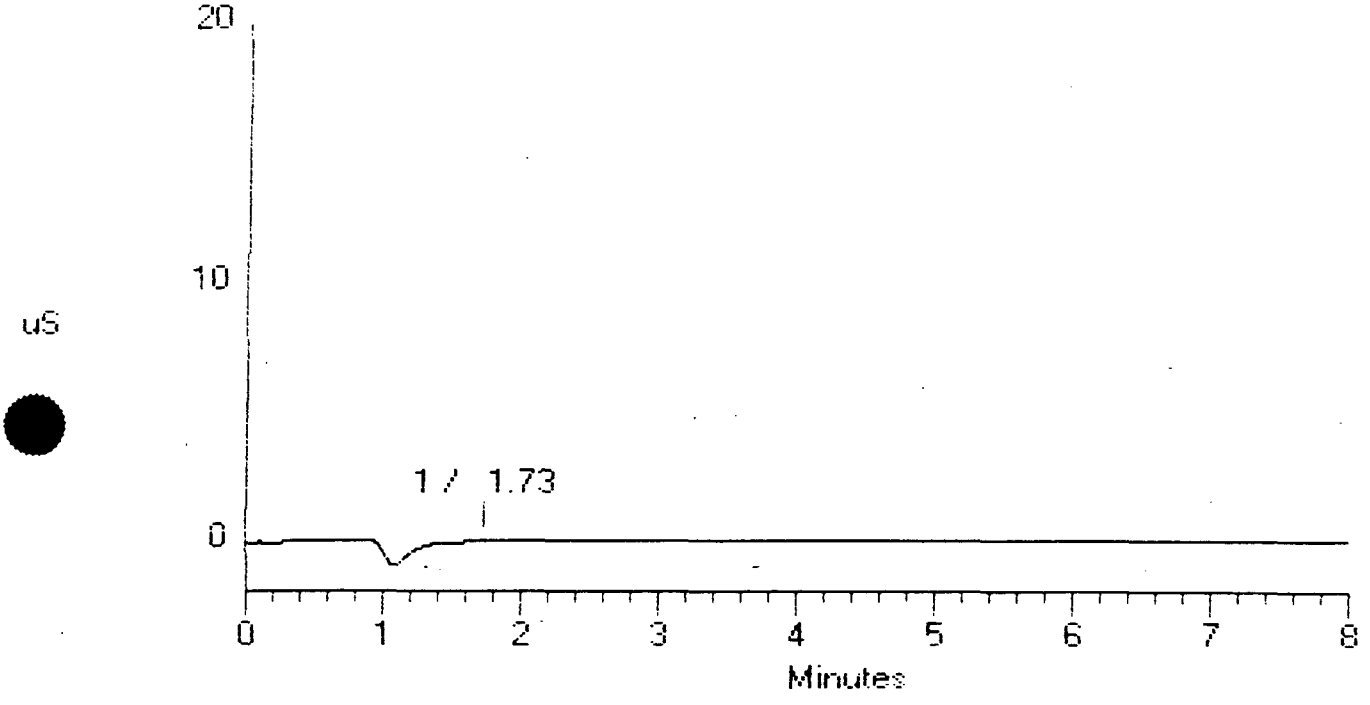


Sample Name: CCB Date: Sun Nov 15 00:30:36 1998
Data File : C:\DATA\111498\RAWDATA1.D57
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 57 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
Totals			0.000	0	0		

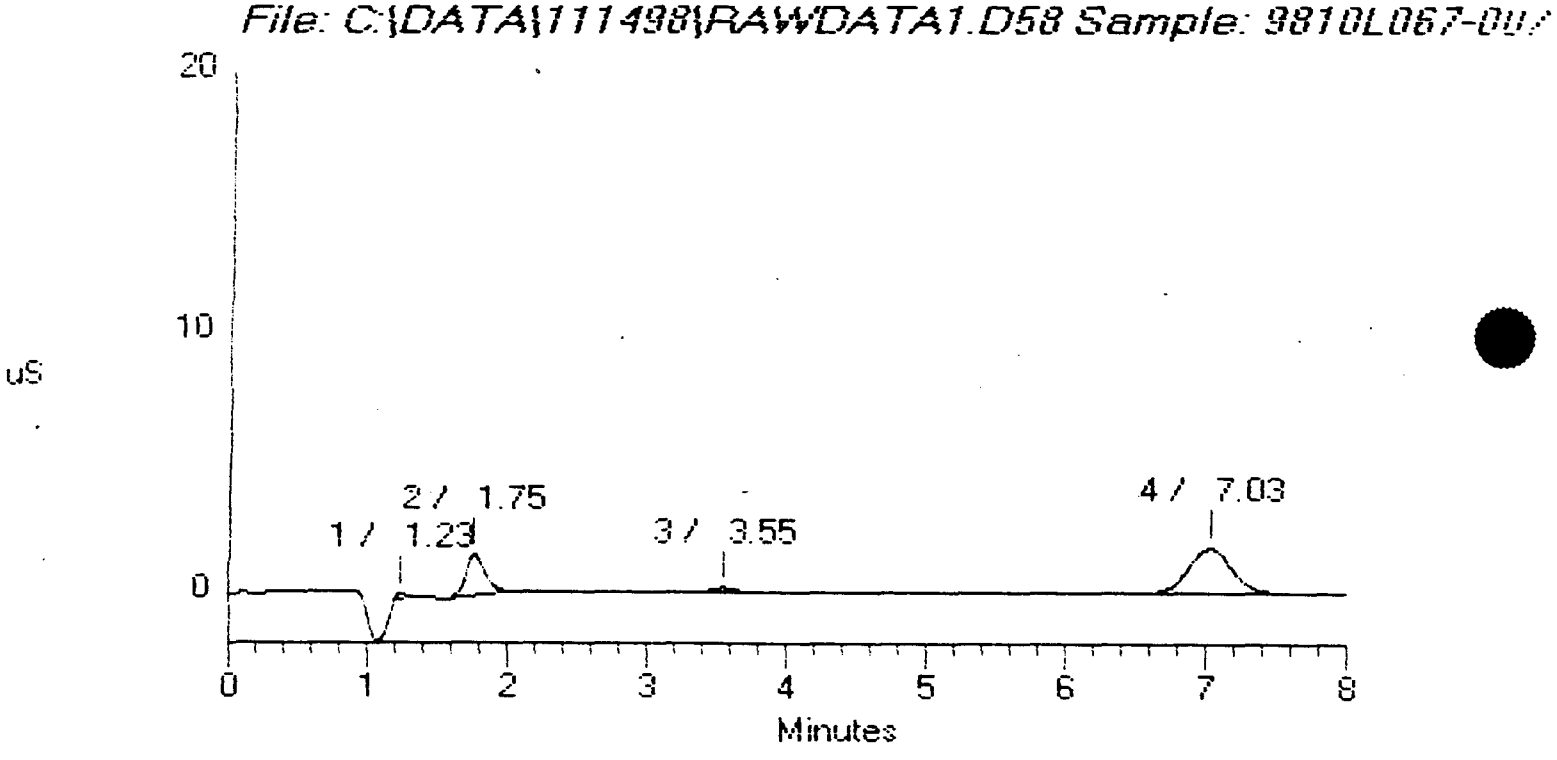
File: C:\DATA\111498\RAWDATA1.D57 Sample: CCB



Sample Name: 9810L067-007 Date: Sun Nov 15 00:40:13 1998
Data File : C:\DATA\111498\RAWDATA1.D58
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 58 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

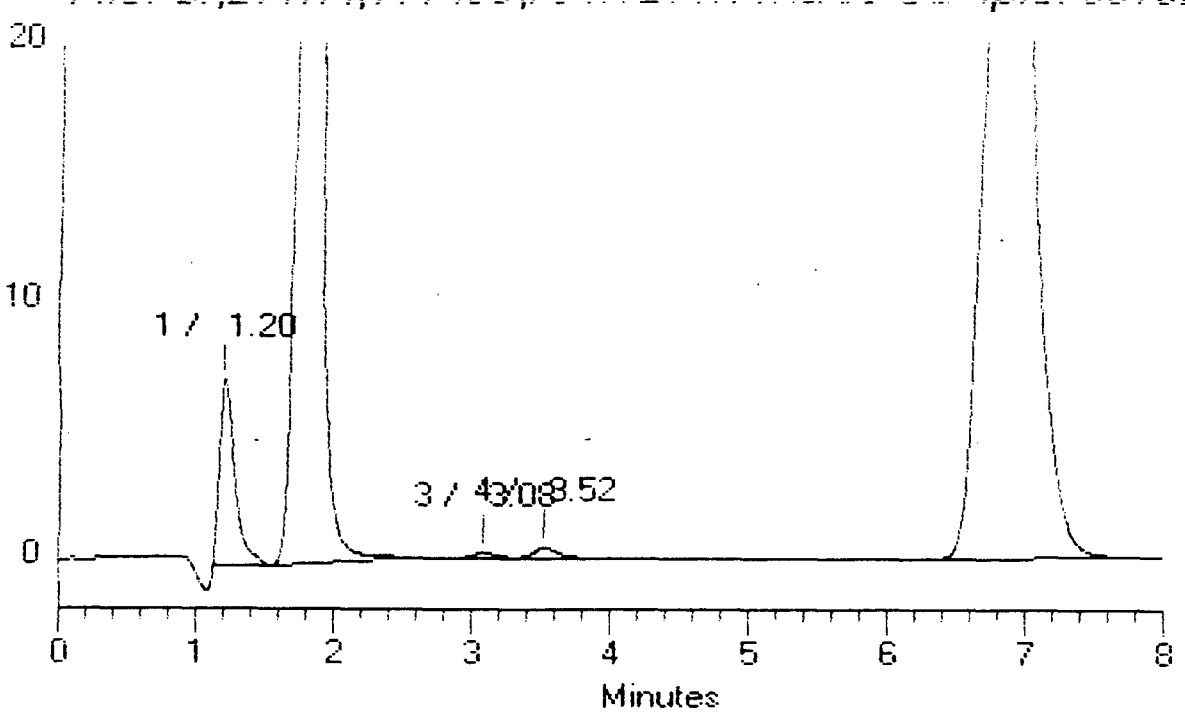
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.23	FLUORIDE	-0.032	173	703	1	0.00
2	1.75	CHLORIDE	0.455	1585	15721	1	0.00
3	3.55	NITRATE	0.235	142	1384	1	0.00
4	7.03	SULFATE	1.361	1710	35788	1	0.00
		Totals	2.019	3610	53596		



Sample Name: 9810L067-008 Date: Sun Nov 15 00:49:44 1998
Data File : C:\DATA\111498\RAWDATA1.D59
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 59 Detector: CDM-1

PORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

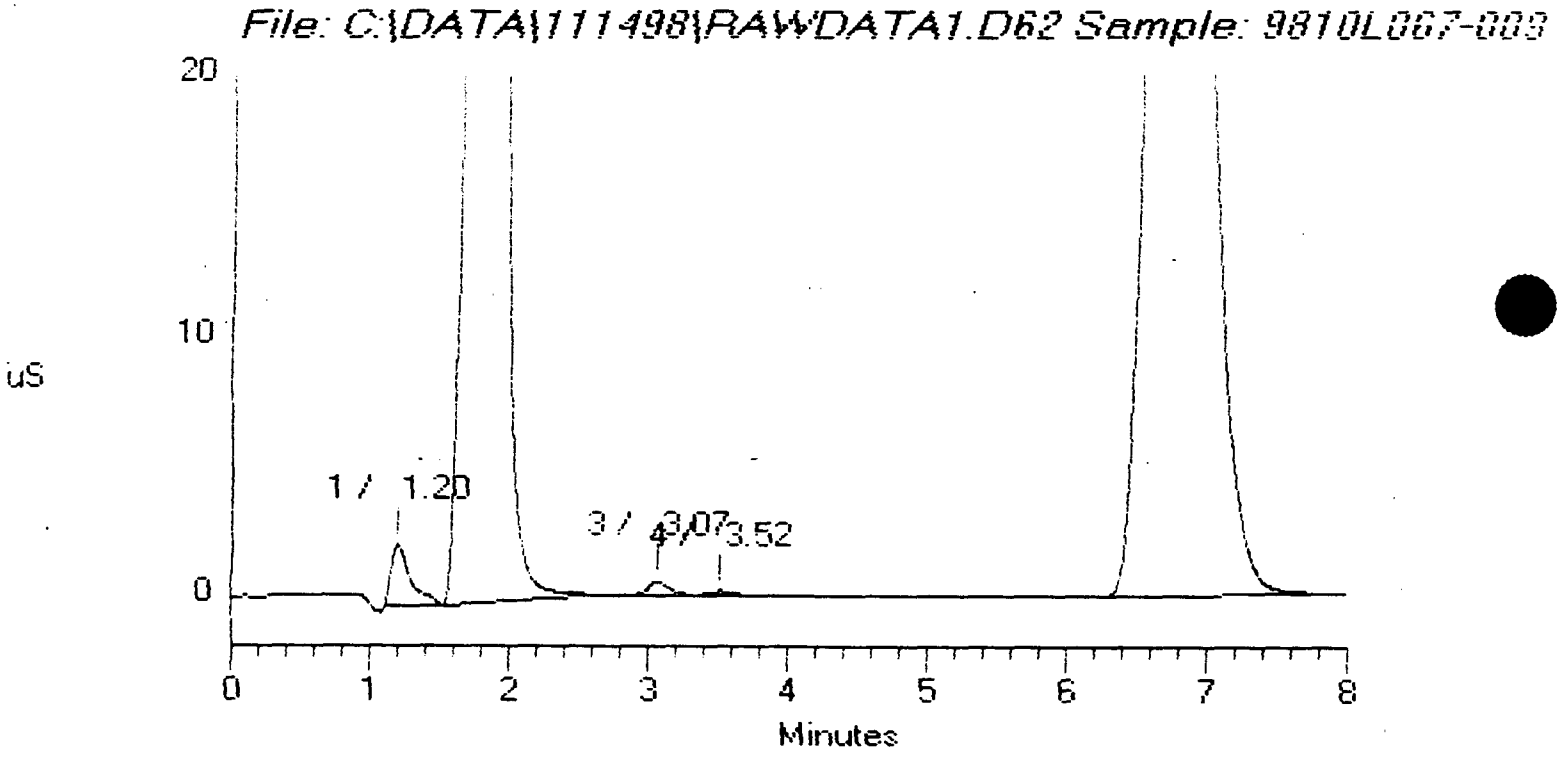
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.820	7118	55738	1	0.00
2	1.80	CHLORIDE	15.516	80957	700481	1	0.00
3	3.08	BROMIDE	0.259	170	1680	2	0.00
4	3.52	NITRATE	0.357	390	4302	2	0.00
5	6.82	SULFATE	28.817	39477	847089	1	0.00
		Totals	45.769	128113	1609290		



Sample Name: 9810L067-009 Date: Sun Nov 15 01:18:19 1998
Data File : C:\DATA\111498\RAWDATA1.D62
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 62 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

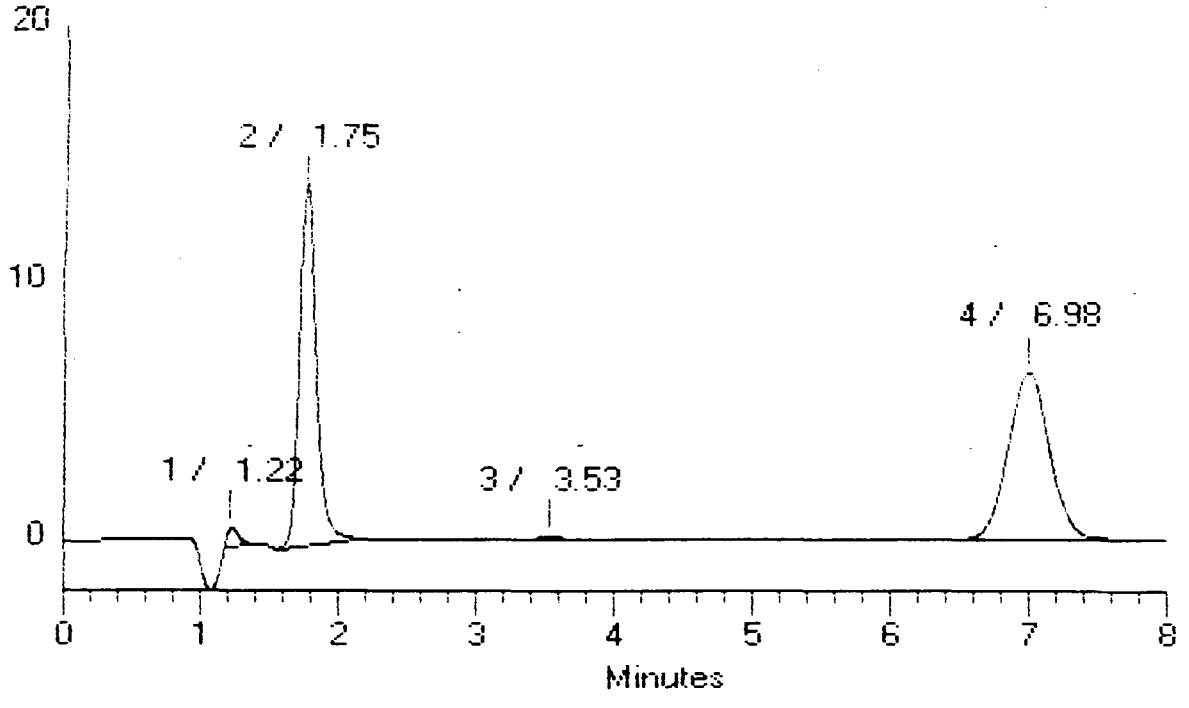
Pk. Num	Ret Time	Component Name	Concentration ug,mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.319	2377	23378	1	0.00
2	1.85	CHLORIDE	46.624	185397	2114857	1	0.00
3	3.07	BROMIDE	0.452	520	5180	2	0.00
4	3.52	NITRATE	0.234	130	1354	2	0.00
5	6.70	SULFATE	54.252	66689	1598654	1	0.00
		Totals	101.881	255114	3743423		



Sample Name: 9810L067-008 Date: Sun Nov 15 01:08:48 1998
Data File : C:\DATA\111498\RAWDATA1.D61
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 61 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	5	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.091	695	3970	1	0.00
2	1.75	CHLORIDE	13.642	13695	119075	1	0.00
3	3.53	NITRATE	1.038	81	717	1	0.00
4	6.98	SULFATE	23.283	6421	133166	1	0.00
		Totals	38.054	20893	256929		

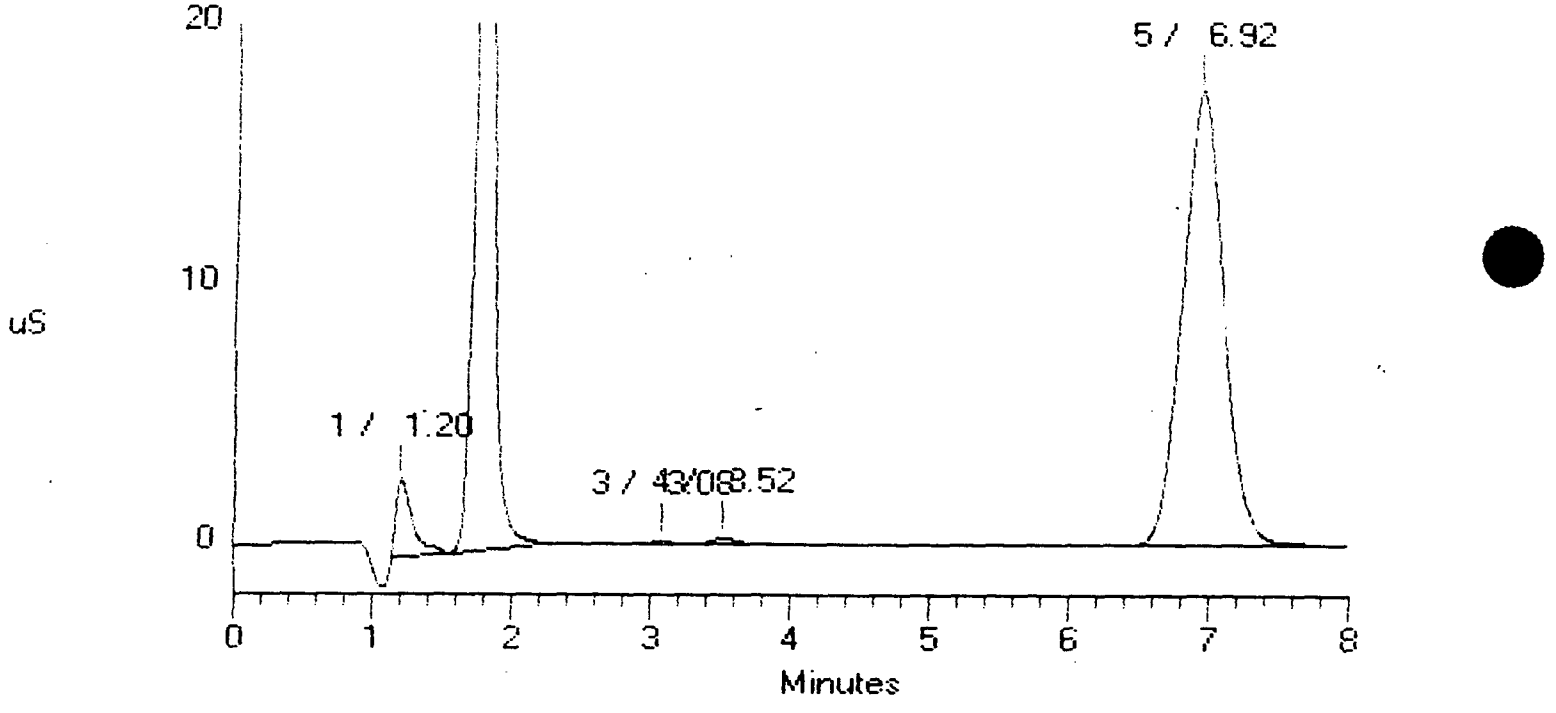


Sample Name: 9810L067-008 Date: Sun Nov 15 00:59:16 1998
Data File : C:\DATA\111498\RAWDATA1.D60
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 60 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	2	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.653	2837	23873	1	0.00
2	1.77	CHLORIDE	14.386	38600	322060	1	0.00
3	3.08	BROMIDE	0.409	77	695	1	0.00
4	3.52	NITRATE	0.536	212	2168	1	0.00
5	6.92	SULFATE	24.310	17303	354733	1	0.00
		Totals	40.294	59029	703529		

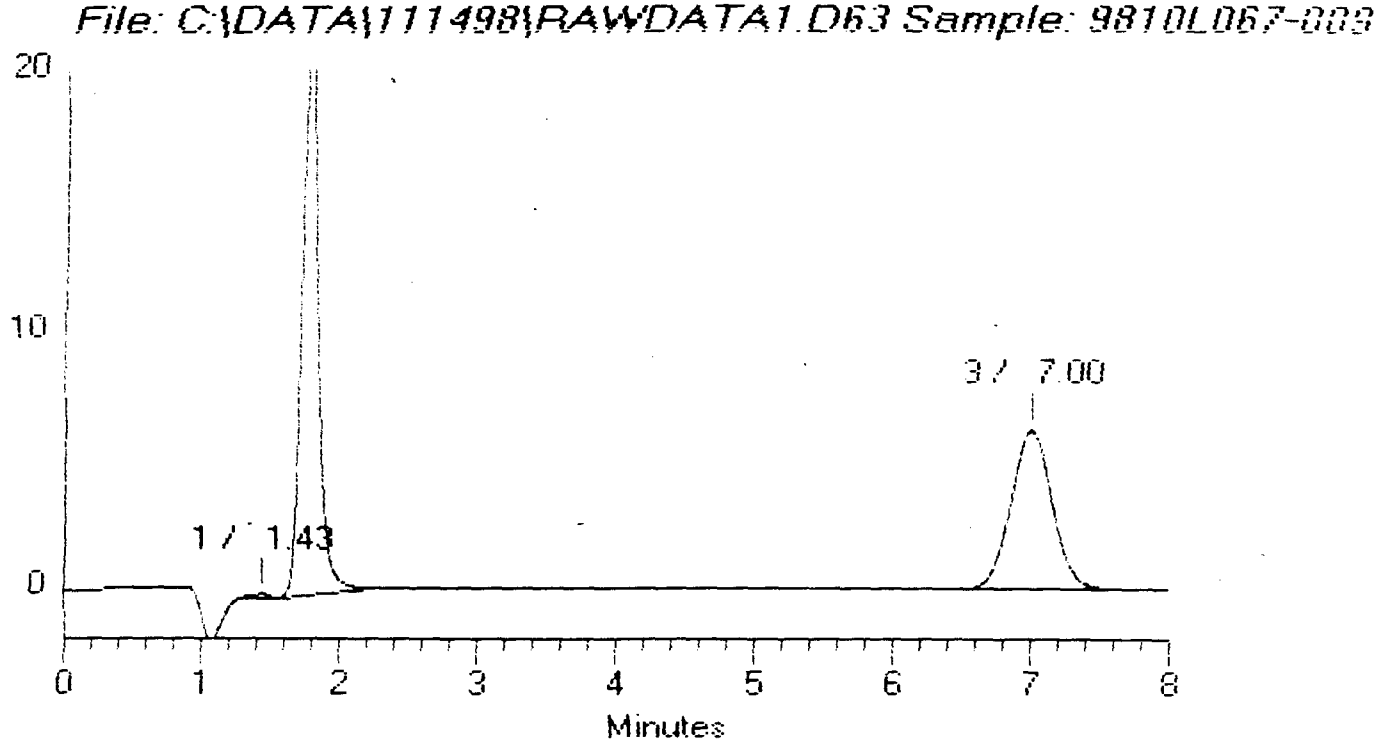
File: C:\DATA\111498\RAWDATA1.D60 Sample: 9810L067-008



Sample Name: 9810L067-009 Date: Sun Nov 15 01:27:51 1998
Data File : C:\DATA\111498\RAWDATA1.D63
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 63 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	10	2400	5Hz	0.00	8.00	600

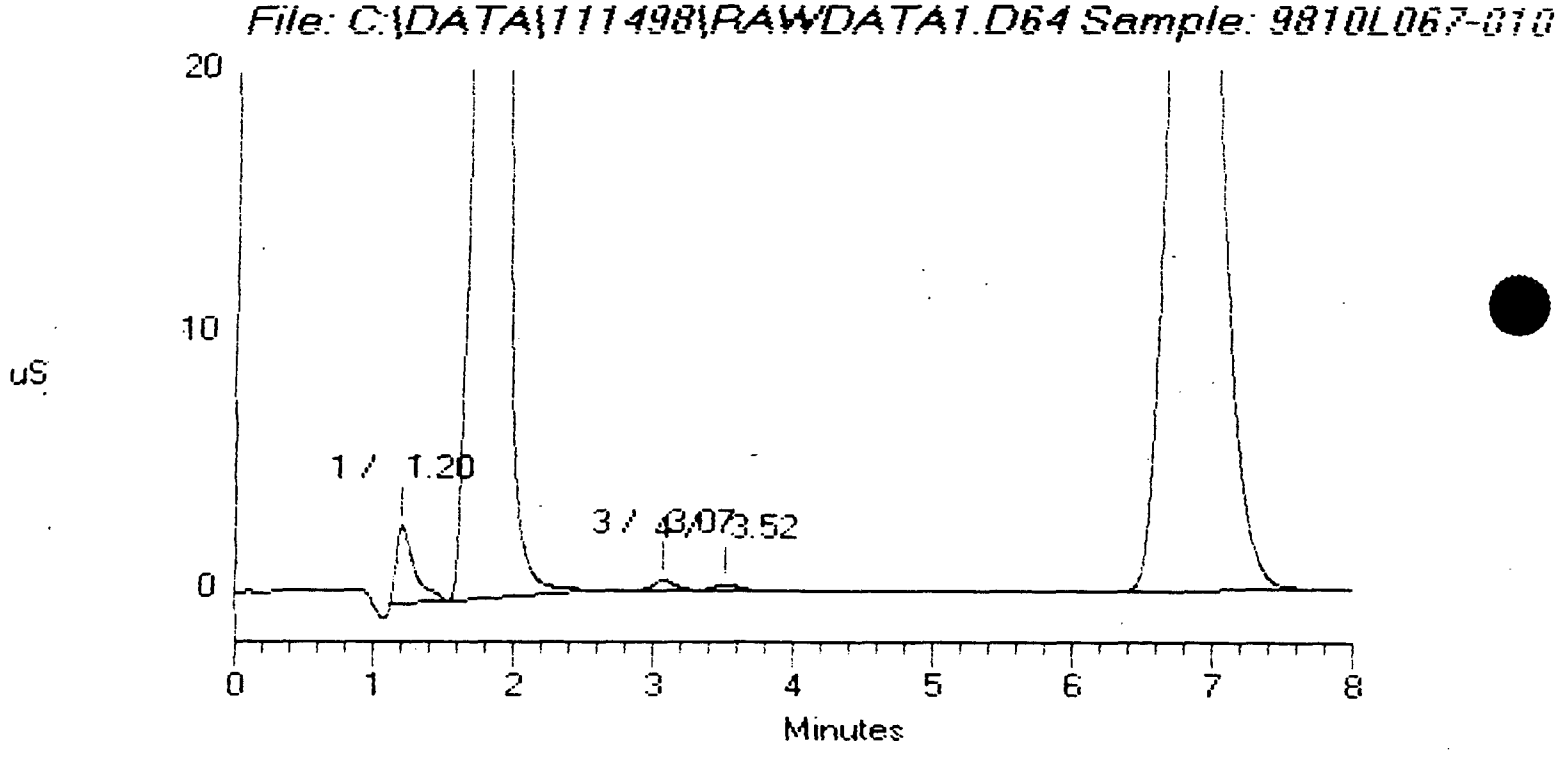
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.43		0.000	180	1776	1	
2	1.75	CHLORIDE	40.390	21058	178667	1	0.00
3	7.00	SULFATE	43.986	6087	125542	1	0.00
		Totals	84.376	27326	305985		



Sample Name: 9810L067-010 Date: Sun Nov 15 01:37:22 1998
Data File : C:\DATA\111498\RAWDATA1.D64
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 64 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.376	2951	27085	1	0.00
2	1.83	CHLORIDE	34.458	153404	1561726	1	0.00
3	3.07	BROMIDE	0.375	390	3782	2	0.00
4	3.52	NITRATE	0.275	220	2332	2	0.00
5	6.80	SULFATE	33.276	44784	978823	1	0.00
		Totals	68.760	201748	2573748		

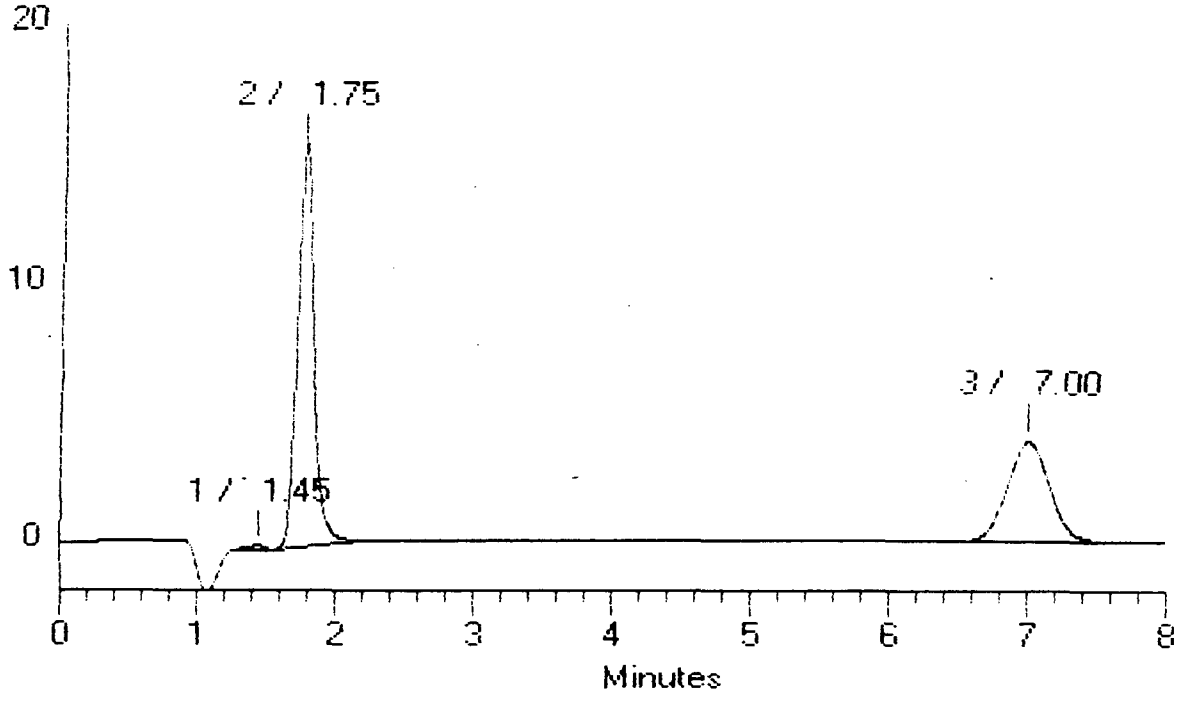


```
Sample Name: 9810L067-010                    Date: Sun Nov 15 01:46:54 1998
Data File  : C:\DATA\111498\RAWDATA1.D65
Method     : C:\DX\METHOD\AS4A300.met
ACI Address: 1       System : 1       Inject#:  65  Detector: CDM-1
```

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	10	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	170	1560	1	
2	1.75	CHLORIDE	29.560	15337	129425	1	0.00
3	7.00	SULFATE	28.194	3786	78877	1	0.00
		Totals	57.754	19293	209862		

File: C:\DATA\111498\RAWDATA1.D65 Sample: 9810L067-010

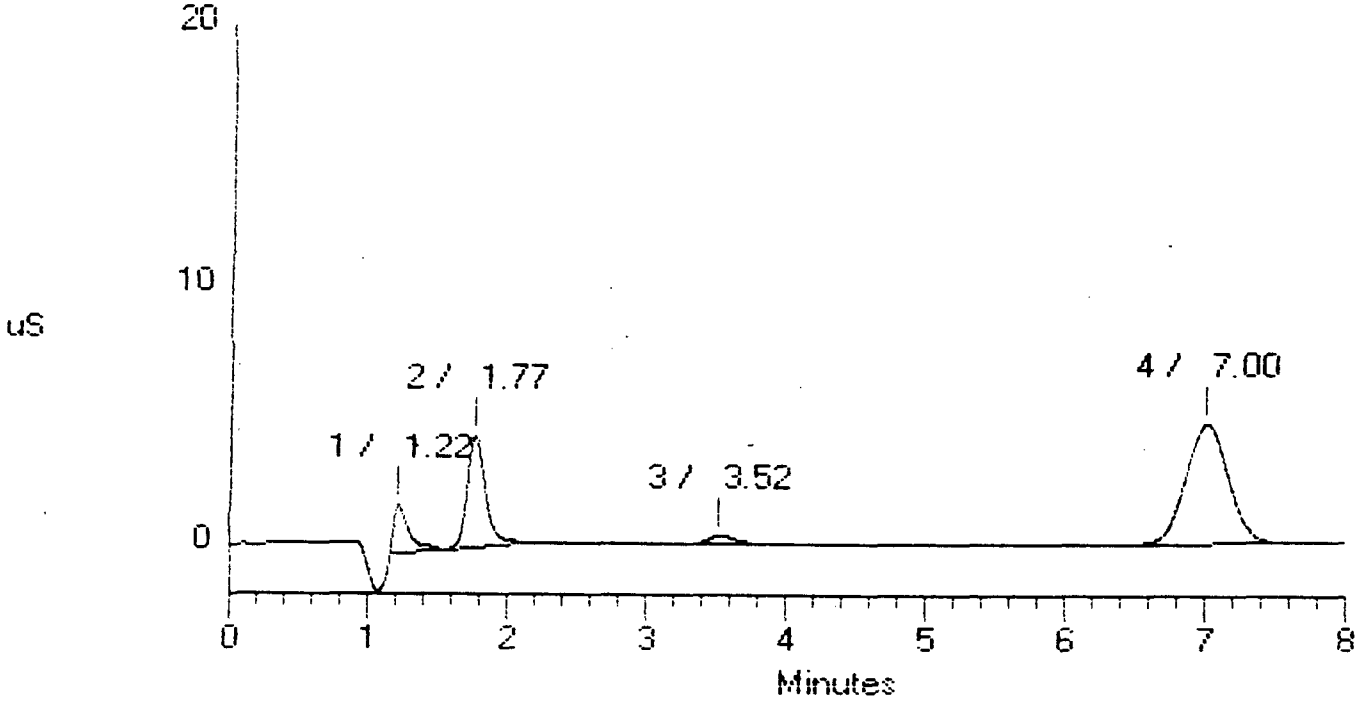


Sample Name: 9810L067-011 Date: Sun Nov 15 01:56:24 1998
Data File : C:\DATA\111498\RAWDATA1.D66
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 66 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.173	1803	13995	1	0.00
2	1.77	CHLORIDE	0.991	4357	40070	1	0.00
3	3.52	NITRATE	0.322	310	3446	1	0.00
4	7.00	SULFATE	3.410	4592	96342	1	0.00
		Totals	4.896	11062	153853		

File: C:\DATA\111498\RAWDATA1.D66 Sample: 9810L067-011

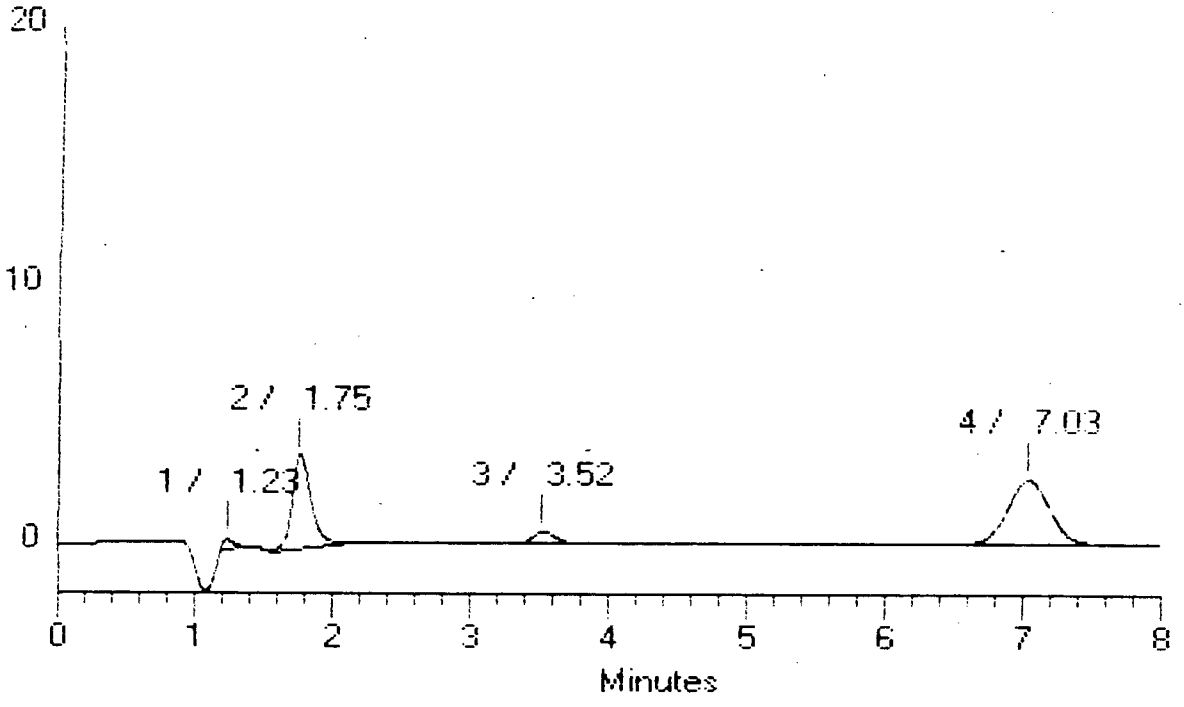


Sample Name: 9810L067-012 Date: Sun Nov 15 02:05:55 1998
Data File : C:\DATA\111498\RAWDATA1.D67
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 67 Detector: CDM-1

PORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.23	FLUORIDE	-0.015	331	1842	1	0.00
2	1.75	CHLORIDE	0.881	3585	35066	1	0.00
3	3.52	NITRATE	0.378	444	4790	1	0.00
4	7.03	SULFATE	1.900	2461	51721	1	0.00
		Totals	3.144	6821	93419		

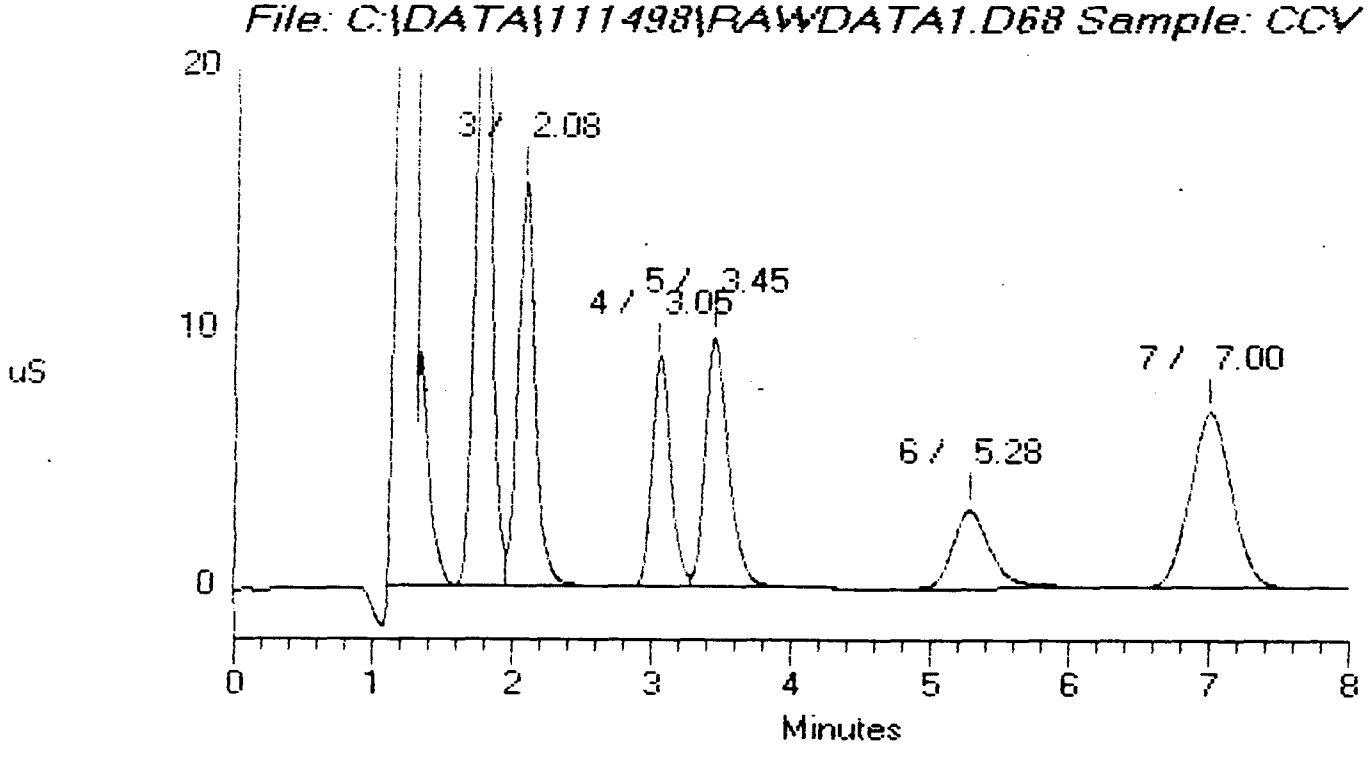
File: C:\DATA\111498\RAWDATA1.D67 Sample: 9810L067-012



Sample Name: CCV Date: Sun Nov 15 02:15:26 1998
Data File : C:\DATA\111498\RAWDATA1.D68
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 68 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	10.071	80163	652875	1	0.00
2	1.77	CHLORIDE	4.788	26510	212740	2	0.00
3	2.08	NITRITE	5.024	15432	134291	2	0.00
4	3.05	BROMIDE	4.819	8738	84449	2	0.00
5	3.45	NITRATE	4.840	9645	111779	2	0.00
6	5.28	PHOSPHATE	4.952	3015	56154	1	0.00
7	7.00	SULFATE	4.862	6724	139244	1	0.00
		Totals	39.357	150228	1391532		

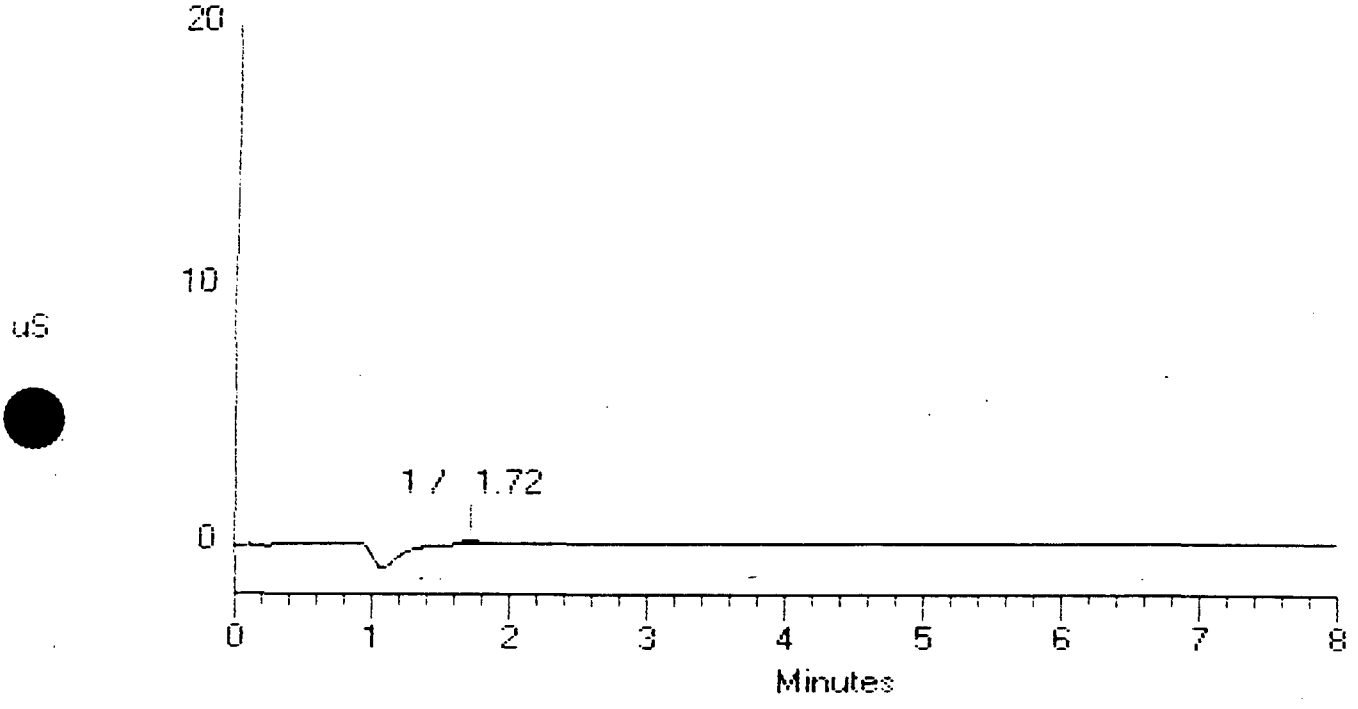


Sample Name: CCB Date: Sun Nov 15 02:25:08 1998
Data File : C:\DATA\111498\RAWDATA1.D69
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 69 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
Totals			0.000	0	0		

File: C:\DATA\111498\RAWDATA1.D69 Sample: CCB



Recra LabNet
Philadelphia

pH (Electrometric)
(Aqueous pH, Soil pH, Corrosivity by pH)

Analyst: [signature]
Date: 10-21-98 (10-21-98)
pH Meter ID#: Orion 520A
Slope: 98.9

Method (circle one):
21-15-0150.1 Rev. (water)
21-15-9045 Rev. (soil)

Logbook #: 61622
Prep Batch: 98LPA1120
Worksheet: PA1021

RFW #/Standard	pH Reading 1	pH Reading 2	pH (average)	Solid Prep/ Comments	Temp °C	Time
4 Buffer check			QuikCal			645 PM
7						648
10			401 (10-21-98)			700
4			7.4.01 (10-21-98)			702
7			7.02			705
10			10.03			711
9810L074-001			5.71	Water	25°C	713
002			5.33			716
CCV Buffer check			4.03			719
9810L066-001	8.33	8.32	8.33	10g:10mL		722
002	8.92	8.93	8.93			725
003	9.31	9.27	9.29			730
004	9.66	9.64	9.65			732
005	9.85	9.83	9.84			736
006	9.09	9.07	9.08			738
007	9.14	9.12	9.13			740
008	9.49	9.47	9.48			745
009	9.36	9.44	9.40			747
010	9.37	9.37	9.37			751
Buffer check			10.03			753
9810L066-0011	9.36	9.32	9.34			755
012	9.30	9.30	9.30			758
012 Rep	9.30	9.30	9.30			802
9810L-067-001	9.44	9.44	9.44			804
002	9.60	9.54	9.60			810

"R" = replicate Note: Sample pH is measured at 25°± 0.5°C

Standard:	ID	Prep Date	Expir Date
10 Buffers	4954-448-1.23	9.24.98	10.24.98
20 Buffers	4954-448-456	"	"

Reviewed By/Date: T Murray 10/23/98

RFW 21-21L-016/F-07/97

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Recra LabNet
Philadelphia

pH (Electrometric)
(Aqueous pH, Soil pH, Corrosivity by pH)

Analyst: JH
Date: 10-21-98
pH Meter ID#: ORION 520A
Slope: 98.9

Method (circle one):
21-15-0150.1 Rev. (water)
21-15-9045 Rev. (Soil)

Logbook #: 6622
Prep Batch: 98LPA110
Worksheet: PN1021

RFW #/Standard	pH Reading 1	pH Reading 2	pH (average)	Solid Prep/ Comments	Temp °C	Time
9810067-003	9.83	9.79	9.81	10g : 10ml	25	8:15
004	9.70	9.69	9.70			8:19
005	8.92	8.90	8.91			8:19
006	9.60	9.60	9.60			8:21
007	9.78	9.72	9.75			8:23
Buffer check			10.04			8:25
9810067-008	9.30	9.30	9.30			8:30
009	9.38	9.37	9.38			8:33
~~010~~ 011	9.56	9.55	9.56			8:36
011 Rep	9.57	9.57	9.57			8:40
012	9.48	9.46	9.47			8:42
012 Rep	9.45	9.44	9.45			8:44
9810092-001	10.30	10.28	10.29			8:57
002	9.30	9.28	9.29			8:53
004	9.08	9.03	9.06			8:55
005	8.99	8.95	8.97			9:00
CCV Buffer check			10.03			9:03
006	8.68	8.65	8.67			9:05
131-001	12.38	12.38	12.38			9:10
001 Rep	12.35	12.37	12.36			9:15
92-003	9.07	9.07	9.07			9:18
CCV			10.03			9:19
			JH 10-21-98			

"R" = replicate Note: Sample pH is measured at 25°± 0.5°C

Standard:	ID	Prep Date	Expir Date
10 Buffers			
20 Buffers			

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Reviewed By/Date: T Murray 10/23/98

RFW 21-21L-016/F-07/97

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SAMPLE
TAL
9811
9811
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TEST

116

DN 10-21-98

WESTON Analytics Inorganics Section

Date of Prep: 10/21/98
Date of Analysis: 10/21/98
Worksheet: PH1021
Computer #: SHL
Directory: INORGANICS
Run Batch: 98LPH110
Method: STB
Analyst: JH
Instrument: METER

CALIB DATA
SLOPE: 0.00
INTERCEPT: 0.00
CORRELATION COEFF.: 0

REW SAMPLE ID	TEST	INST. ABS	INITIAL RESULT	DILUTION FACTOR	C/D	FINAL RESULT	DETECTION LIMIT 0.01	UNITS	REPLICATE ORIG SAMPLE. RESULT	REP % DIFF	SPIKE SPIKE LEVEL ?	SPIKE SAMPLE SPIKE AMOUNT	% RECOV	LCS AMT LCS ?	% RECOV	SAMPLE PREP PREP MATRX	REQUIRED SAMPLE VOL.	ACTUAL SAMPLE VOL.	% SOLIDS	ANAL TIME	DATE PREP
		N/A	N/A	N/A	N/A																
CCV4	IPH	.				4.01	0.01	SOIL PH								98LPH110					
CCV7	IPH	.				4.02	0.01	SOIL PH								98LPH110				18:00	10/21/98
CCV10	IPH	.				10.03	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-001	IPH	.				8.33	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-002	IPH	.				8.93	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-003	IPH	.				9.29	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-004	IPH	.				9.65	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-005	IPH	.				9.84	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-006	IPH	.				9.08	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-007	IPH	.				9.13	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-008	IPH	.				9.48	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L166-009	IPH	.				9.40	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-010	IPH	.				9.37	0.01	SOIL PH								98LPH110				18:00	10/21/98
CCV10	IPH	.				10.03	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-011	IPH	.				9.34	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-012	IPH	.				9.30	0.01	SOIL PH								98LPH110				19:00	10/21/98
9810L066-012	IPH-R	.				9.39	0.01	SOIL PH	9.380	0.0						98LPH110				18:00	10/21/98
9810L067-001	IPH	.				9.44	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-002	IPH	.				9.60	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-003	IPH	.				9.81	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-004	IPH	.				9.70	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-005	IPH	.				8.91	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-006	IPH	.				9.60	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-007	IPH	.				9.75	0.01	SOIL PH								98LPH110				18:00	10/21/98
CCV10	IPH	.				10.04	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-008	IPH	.				9.30	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-009	IPH	.				9.38	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-011	IPH	.				9.56	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-011	IPH-R	.				9.57	0.01	SOIL PH	9.560	0.1						98LPH110				18:00	10/21/98
9810L067-012	IPH	.				9.47	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-012	IPH-R	.				9.45	0.01	SOIL PH	9.470	0.2						98LPH110				18:00	10/21/98
9810L072-001	IPH	.				10.29	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L072-002	IPH	.				9.29	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L072-004	IPH	.				9.06	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L072-005	IPH	.				8.97	0.01	SOIL PH								98LPH110				18:00	10/21/98
CCV10	IPH	.				10.03	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L072-006	IPH	.				8.67	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L131-001	IPH	.				12.38	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L131-001	IPH-R	.				12.36	0.01	SOIL PH	12.380	0.2						98LPH110				18:00	10/21/98
9810L072-003	IPH	.				9.07	0.01	SOIL PH								98LPH110				18:00	10/21/98
CCV10	IPH	.				10.03	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L094-001	IPH	.				5.71	0.01	PH UNITS								98LPH110				18:00	10/21/98
9810L094-002	IPH	.				5.33	0.01	PH UNITS								98LPH110				18:00	10/21/98
CCV4	IPH	.				4.03	0.01	PH UNITS								98LPH110				18:00	10/21/98

Recra LabNet
Philadelphia

pH (Electrometric)
(Aqueous pH, Soil pH, Corrosivity by pH)

Analyst: K RPatW
Date: 11/13/98
pH Meter ID#: 520A
Slope: 98.0

Method (circle one):
21-15-0150.1 Rev. (water)
21-15-9045 Rev. (soil)

Logbook #: 6622
Prep Batch: 98LPH ~~113~~ 112
Worksheet: PH 11/3

RFW #/Standard	pH Reading 1	pH Reading 2	pH (average)	Solid Prep/ Comments	Temp °C	Time
4			auto cal		22°C	1133
7						1135
10						1137
4	4.00		4.0		23°C	11:40
7	6.96		6.96			11:43
10	10.00		10.0			11:46
98L02259-001	6.71	6.70	6.705			11:49
-002	6.36	6.34	6.35			11:51
7	6.97		6.97			11:53
10	9.98		9.98			11:55
10	9.99		9.99			12:20
9811L345-001	9.59	9.58	9.585			12:24
345-001R	9.57	9.58	9.575			12.27
9809L529-001	7.87	7.86	7.865	20g → 20mL		12:30
9810L67-D010	8.80	8.85	8.825	20mL → 20g		12 30
CCV 4.	4.01		4.01			12:33
7	6.96		6.96			12:40
10	9.99		9.99			12:42

"R" = replicate Note: Sample pH is measured at 25°± 0.5°C

Standard:	ID	Prep Date	Expir Date
10 Buffers	4954-46, 456	11-2-98	12-2-98
20 Buffers	4954-46, 749	↓	↓

Reviewed By/Date: AM 11/16/98

RFW 21-21L-016/F-07/97

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WESTON Analytics Inorganics Section

Date of Prep: 11/13/98
Date of Analysis: 11/13/98
Worksheet: PH1113
Computer #: DARWIN
Directory: INORGANICS
Run Batch: 98LPH112
Method: 9040/150.1
Analyst: KP
Instrument: METER

CALIB DATA
SLOPE: 0.00
INTERCEPT: 0.00
CORRELATION COEFF.: 0

RFW SAMPLE ID	TEST	INST. ABS	INITIAL RESULT	DILUTION FACTOR	C/D	FINAL RESULT	DETECTION LIMIT ?	UNITS	REPLICATE ORIG SAMPLE RESULT	REPLICATE REP % DIFF	SPIKE SPIKE LEVEL ?	SPIKE SAMPLE SPIKE AMOUNT	SPIKE % RECOV	LCS AMT LCS ?	LCS % RECOV	SAMPLE PREP PREP BATCH	SAMPLE PREP REQUIRED SAMPLE VOL.	SAMPLE PREP ACTUAL SAMPLE VOL.
CCV4	IPH	.	N/A	N/A	N/A	4.000	0.01	PH UNIT								98LPH112		
CCV7	IPH	.				6.960	0.01	PH UNIT								98LPH112		
CCV10	IPH	.				10.000	0.01	PH UNIT								98LPH112		
9810L259-001	IPH	.				6.705	0.01	PH UNIT								98LPH112		
9810L259-002	IPH	.				6.350	0.01	PH UNIT								98LPH112		
CCV6	IPH	.				6.970	0.01	PH UNIT								98LPH112		
CCV10	IPH	.				9.980	0.01	PH UNIT								98LPH112		
CCV10	IPH	.				9.990	0.01	PH UNIT								98LPH112		
9811L345-001	IPH	.				9.585	0.01	PH UNIT								98LPH112		
9811L345-001	IPH-R	.				9.575	0.01	PH UNIT	9.585	0.1						98LPH112		
9809L529-001	IPH	.				7.865	0.01	SOIL PH								98LPH112		
9810L967-010	IPH	.				8.825	0.01	SOIL PH								98LPH112		
CCV4	IPH	.				4.010	0.01	SOIL PH								98LPH112		
CCV7	IPH	.				6.960	0.01	SOIL PH								98LPH112		
CCV10	IPH	.				9.990	0.01	SOIL PH								98LPH112		

Recra LabNet
Philadelphia

PETROLEUM HYDROCARBON PREP

Extracted By: AJM
Extraction Date: 10.19.98
Start Time/End Time: 11:02 : 15:00
Method #: 21-15-0418.1 (W) Rev. 00A
21-15-9071 (S) Rev. 02

Logbook #: 1575
Prep Batch: 98LLHC096
Analysis Log: 6506

RFW #	pH<2	Weight/Volume	Final Volume	Spiking Info./Comments
98LLHC096-MB1		75gm	0.5mL	
-LCS				0.25mL LCS
-LCSD				0.25mL LCS2
-20,02 666-008				
-009				
-010				
-011				
-012				
067-001				
-002				
-003				
				AJM 10/19/98 10/19/98

"R"= replicate, "S" = matrix spike, "T" = matrix spike duplicate

Standard:	ID	Prep Date	Expir Date
LCS	6506-101-13	10.19.98	10.23.98
MS	-14	"	"

Reviewed by/Date: 11/16/98

RFW 21-21L-018/O-07/97

Recra LabNet

Philadelphia

Petroleum Hydrocarbon or Oil/Grease by IR

EXTRACTION:
Extracted By: AJP
Extraction Date: 10.19.98
Start Time: 11:00
End Time: 15:00

ANALYSIS:
Analyzed By: AJP
Analysis Date: 10.20.98
Start Time: 13:50
End Time: 15:29

Logbook #: G50C
Prep Batch: 98LHC096
Worksheet: TPH1020A
Method #: 21-15-0418.1 rev. (W)
21-15-9071.1 rev. (S)
21-15-0413.2 rev. (W)

RFW #	pH <2	Initial Wt or Vol (g/mL)	% Solids	Final Vol (mL)	Dil	Absorbance (cm^{-1}) O/G	Absorbance (cm^{-1}) HCIR	Final Result	Comments, % Rec.
C.100							C.C13		
C.420							C.C44		
2.100							C.201		
4.200							C.393		
8.400							0.815		
ICV	<2	1.5gm	100	25ml	NONE	NA	C.212	73.368	mg/Kg
ICB							C.CC9	3.121	
CCV							0.206	71.292	
98LHC096-MB1							0.014	4.851	
-LC1							C.381	131.849	
-LC2							0.363	125.621	
98106066-008			87.38				0.039	15.452	
-009			92.99				0.028	10.426	
-010			94.89				0.048	17.511	
-011			94.72				0.042	15.351	
~~-010H~~	Aborted								
-012			93.18				0.039	14.490	
CCV							0.197	68.177	

"R" = Replicate, "S" = Matrix Spike, "T" = Matrix Spike Duplicate
Example Calculation: Concentrations (mg/L) = $\frac{R \times D}{V} \times FV$

Standard:	ID	Prep Date	Expir Date
ICAL	6506.102.15	10-20-98	10-21-98
ICV/CCV	.35		
LCS	.75		
MS			

Where:

R = concentration of Petroleum Hydrocarbons as determined from the calibration curve (mg/100 mL).
D = extract dilution factor, if used.
V = volume of sample, in L.
FV = final volume of extract, mL.

Reviewed By/Date: [signature] 11/6/98

RFW 21-21L-004/R-06/97

Recra LabNet

Philadelphia

Petroleum Hydrocarbon or Oil/Grease by IR

EXTRACTION:
Extracted By: AJM
Extraction Date: 10/9/98
Start Time: 11:00
End Time: 15:00

ANALYSIS:
Analyzed By: AJM
Analysis Date: 10/10/98
Start Time: 13:30
End Time: 15:29

Logbook #: 6506
Prep Batch: 98HC09X6
Worksheet: 98H10204
Method #: 21-15-0418.1 rev. (W)
21-15-9071.1 rev. (S)
21-15-0413.2 rev. (W)

RFW #	pH <2	Initial Wt or Vol (g/mL)	% Solids	Final Vol (mL)	Dil	Absorbance (cm^{-1}) O/G	Absorbance (cm^{-1}) HCIR	Final Result	Comments, % Rec.
CCB		1.54	100	25	NA	NA	0.010	3.467	MS/MSD
9810L067-001			92.61				0.028	10.469	
067-002			84.31				0.002	0.782	
067-003			93.89				0.024	8.852	
CCV			100				0.202	69.907	
CCB							0.012	4.159	

AJM 10/20/98

"R" = Replicate, "S" = Matrix Spike, "T" = Matrix Spike Duplicate
Example Calculation: Concentrations (mg/L) = $\frac{R \times D}{V} \times FV$

Standard:	ID	Prep Date	Expir Date
ICAL			
ICV/CCV			
LCS	Page 48		
MS			

Where:

R = concentration of Petroleum Hydrocarbons as determined from the calibration curve (mg/100 mL).
D = extract dilution factor, if used.
V = volume of sample, in L.
FV = final volume of extract, mL.

Reviewed By/Date: [illegible] 11/6/98.

RFW 21-21L-004/R-06/97

AJP
10.26.98

FRONTIER ANALYTICS Inorganics Section

Date of Prep: 10/19/98
Date of Analysis: 10/20/98
Worksheet: TPHI020A
Computer #: SKL
Directory: INORGANICS
Run Batch: 98LHC096
Method: 9071.1 REV.2
Analyst: AJP
Instrument: FT-IR

CALIB DATA
SLOPE: 0.10
INTERCEPT: 0.00
CORRELATION COEFF.: 0.9995

RFW SAMPLE ID	TEST	INST. ABS	INITIAL RESULT	DILUTION FACTOR	C/D	FINAL RESULT	DETECTION LIMIT 1.00	UNITS	REPLICATE ORIG SAMPLE RESULT	REP SAMPLE RESULT	% DIFF	SPIKE LEVEL 4.20	SPIKE SAMPLE AMOUNT	% RECOV	LCS AMT LCS ?	% RECOV	SOILS PREP PREP BATCH	INITIAL SAMPLE WT.	FINAL VOL.	% SOLIDS	ANAL TIME	DATE PREP
ICV	IPHC-S	0.212	2.201	1	33.3333	73.360	3.333	MG/KG	-													
ICB	IPHC	0.009	0.094	1	33.3333	3.121 u	3.333	MG/KG				2.1	70.000	104.8			98LHC096	7.50	25.00	100.00		
ICV DUP	IPHC-S	0.206	2.139	1	33.3333	71.292	3.333	MG/KG	3.121								98LHC096	7.50	25.00	100.00		
98LHC096-MB1	IPHC	0.014	0.146	1	33.3333	4.851	3.333	MG/KG				2.1	70.000	97.4			98LHC096	7.50	25.00	100.00		
98LHC096-MB1	IPHC-S	0.381	3.955	1	33.3333	131.849	3.333	MG/KG	4.851								98LHC096	7.50	25.00	100.00		
98LHC096-MB1	IPHC-T	0.363	3.769	1	33.3333	125.621	3.333	MG/KG				4.2	140.000	90.7			98LHC096	7.50	25.00	100.00		
9810L066-008	IPHC	0.039	0.405	1	38.1476	13.452	3.815	MG/KG	4.851	5.0		4.2	140.000	86.3			98LHC096	7.50	25.00	100.00		
9810L066-009	IPHC	0.028	0.291	1	35.8461	10.426	3.585	MG/KG									98LHC096	7.50	25.00	87.38		
9810L066-010	IPHC	0.048	0.498	1	35.1284	17.511	3.513	MG/KG									98LHC096	7.50	25.00	92.99		
9810L066-011	IPHC	0.042	0.436	1	35.1914	15.351	3.519	MG/KG									98LHC096	7.50	25.00	94.89		
9810L066-012	IPHC	0.039	0.405	1	35.7731	14.498	3.577	MG/KG									98LHC096	7.50	25.00	94.72		
CCV	IPHC-S	0.197	2.045	1	33.3333	68.177	3.333	MG/KG									98LHC096	7.50	25.00	93.18		
CCB	IPHC	0.010	0.104	1	33.3333	3.467	3.333	MG/KG	0.000			2.1	70.000	97.4			98LHC096	7.50	25.00	100.00		
9810L067-001	IPHC	0.028	0.291	1	35.9932	10.469	3.599	MG/KG									98LHC096	7.50	25.00	100.00		
9810L067-002	IPHC	0.002	0.021	1	37.3232	0.782 u	3.732	MG/KG									98LHC096	7.50	25.00	92.61		
9810L067-003	IPHC	0.024	0.249	1	35.5025	8.852	3.550	MG/KG									98LHC096	7.50	25.00	89.31		
CCV	IPHC-S	0.202	2.097	1	33.3333	69.987	3.333	MG/KG									98LHC096	7.50	25.00	93.89		
CCB	IPHC	0.012	0.125	1	33.3333	4.159	3.333	MG/KG	0.000			2.1	70.000	99.9			98LHC096	7.50	25.00	100.00		
																	98LHC096	7.50	25.00	100.00		

[redacted]

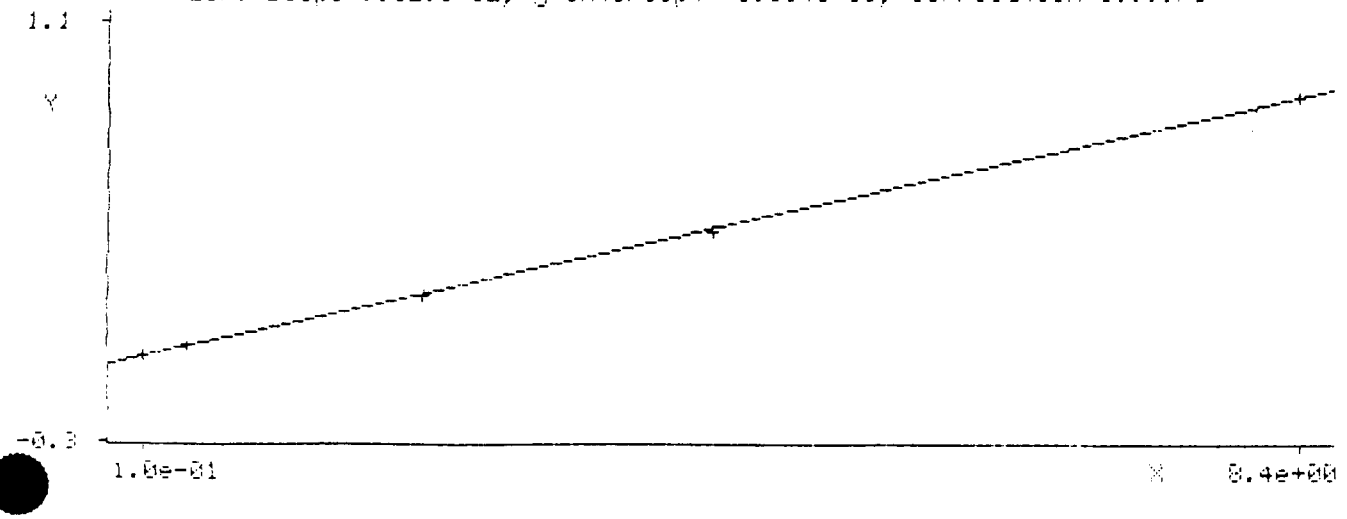
98/10/21 17:50

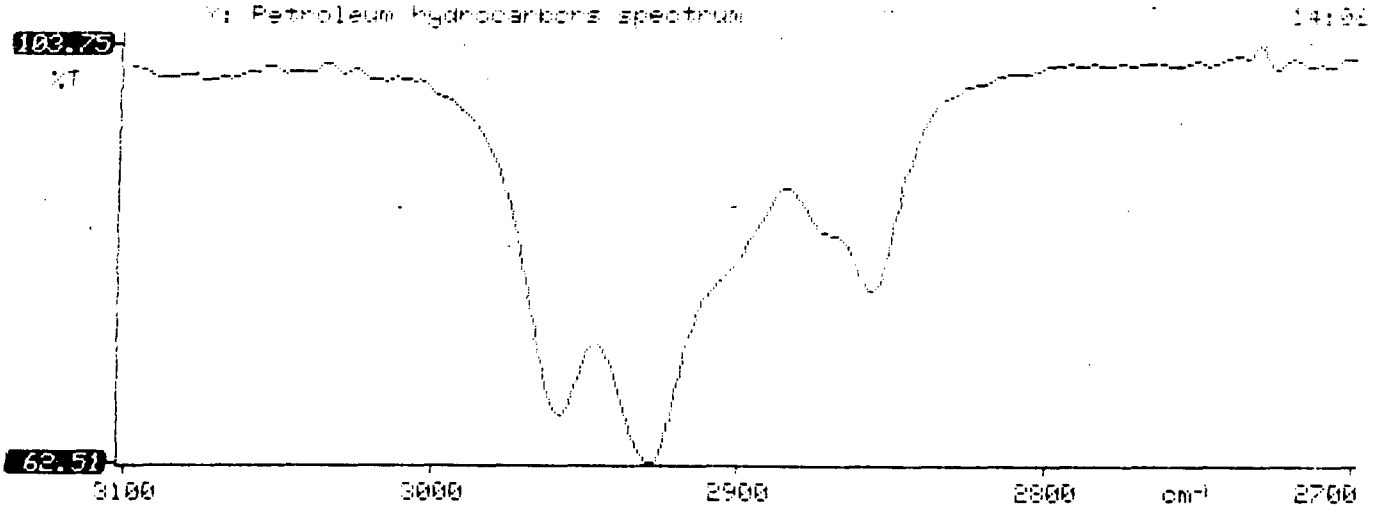
9 8LHC096
DJP
10.20.98

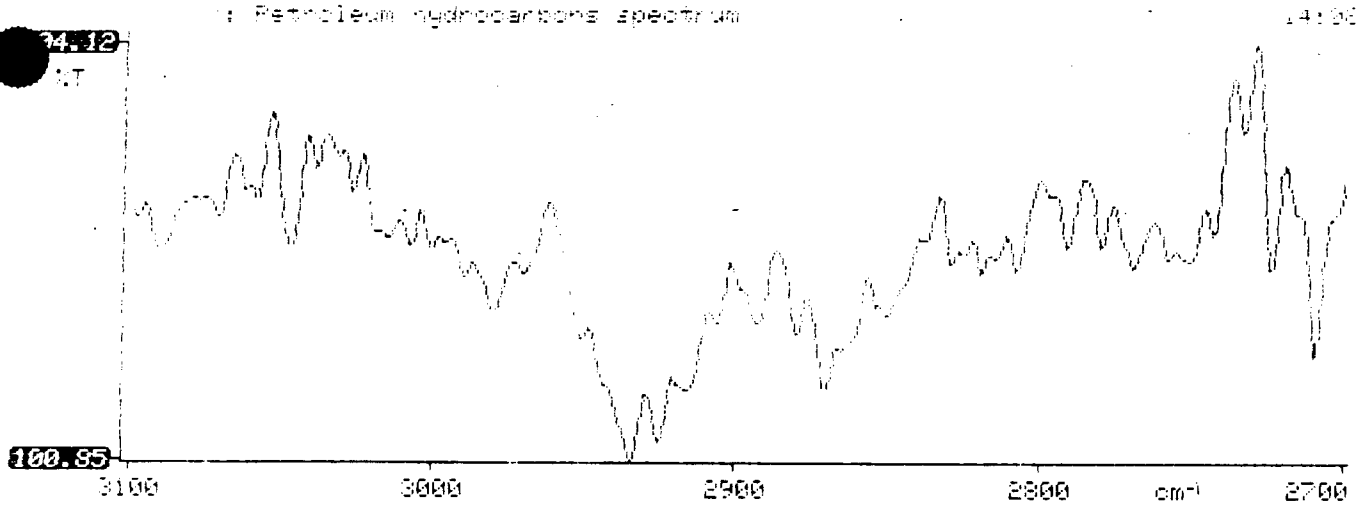
Concentration of standards, mg 120 ml
0.100
0.420
2.100
4.200
8.400

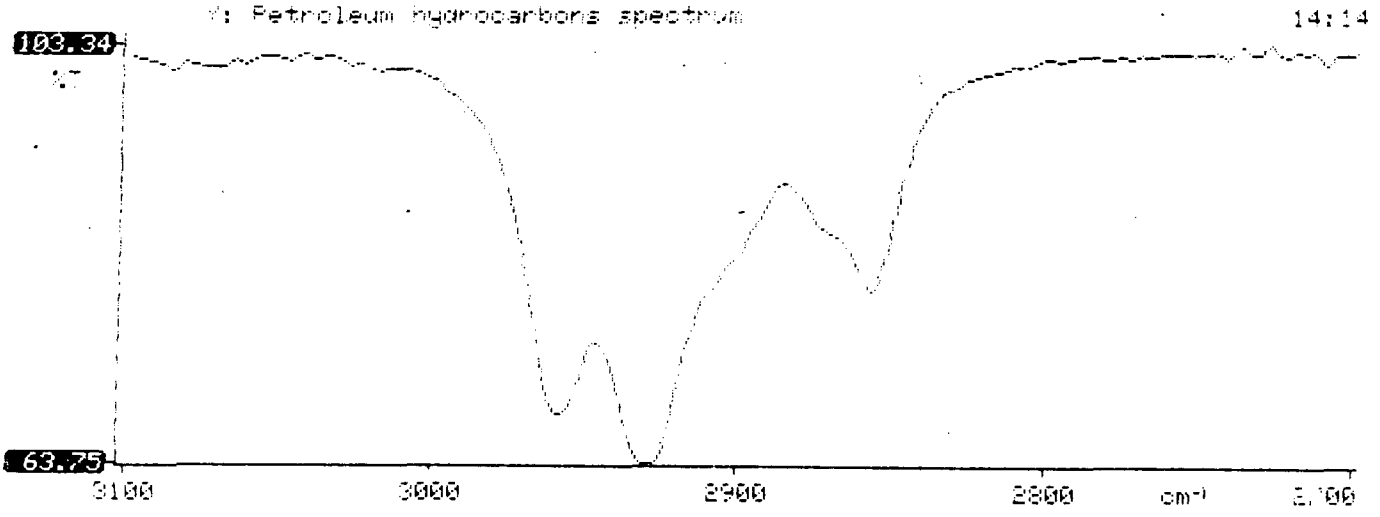
Net absorbance of standards
0.013
0.044
0.201
0.393
0.815

LSF: slope 9.629e-02; y-intercept -3.614e-05; correlation 0.99978




Y: Petroleum hydrocarbons spectrum
103.75
%T
62.51
3100
3000
2900
2800
cm-1
2700


Petroleum hydrocarbons spectrum
94.12
%T
100.85
3100
3000
2900
2800
cm-1
2700


Y: Petroleum hydrocarbons spectrum
14:14
103.34
%T
63.75
3100
3000
2900
2800
cm-1
2700

[redacted]

Perkin-Elmer Model [redacted]

Analysis Report

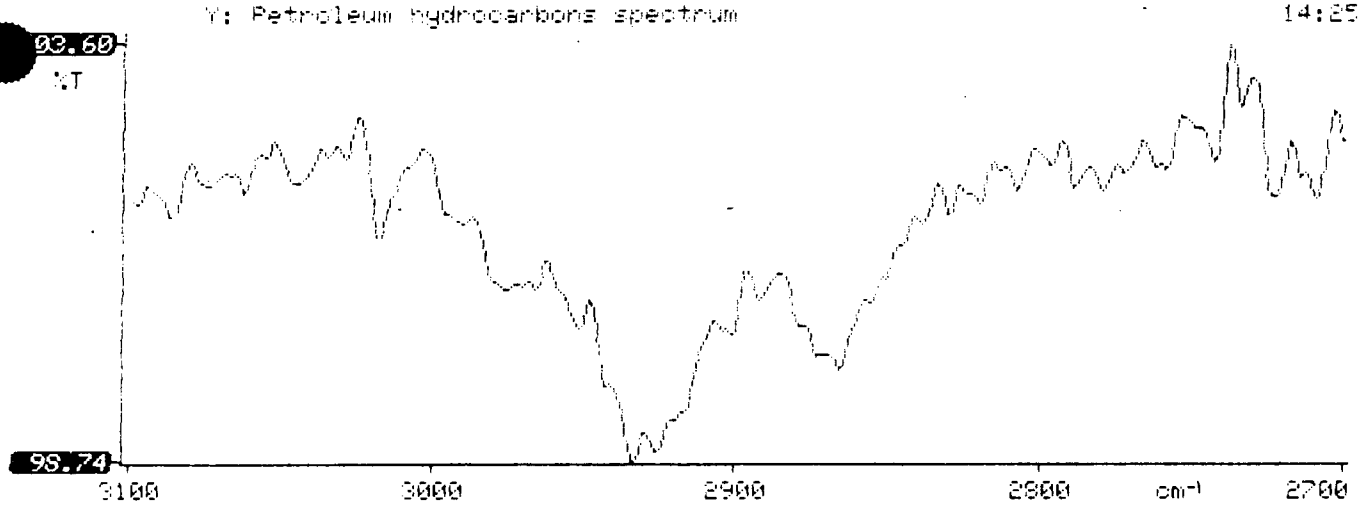
99/10/20 14:25

Sample identification

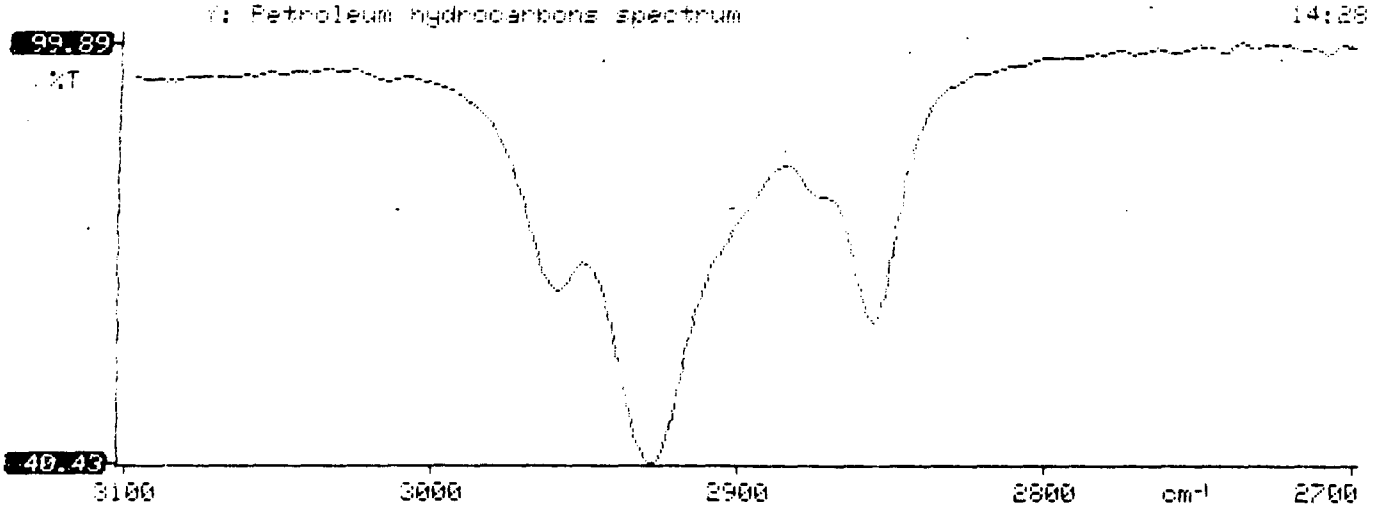
98LHD096-MB1

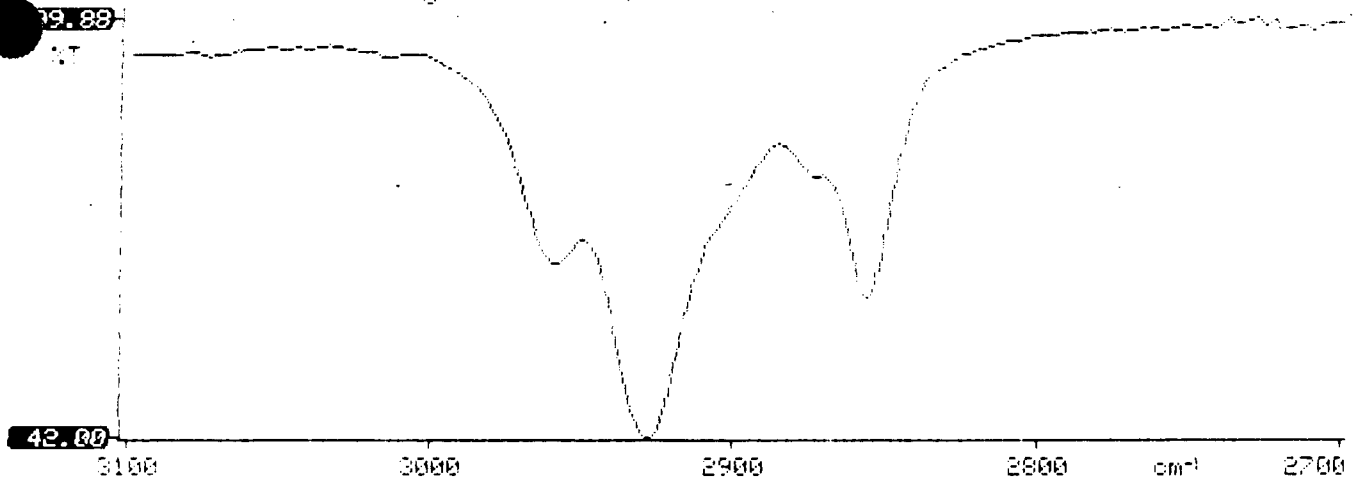
Net absorbance at hydrocarbons (2930 cm-1)

0.014



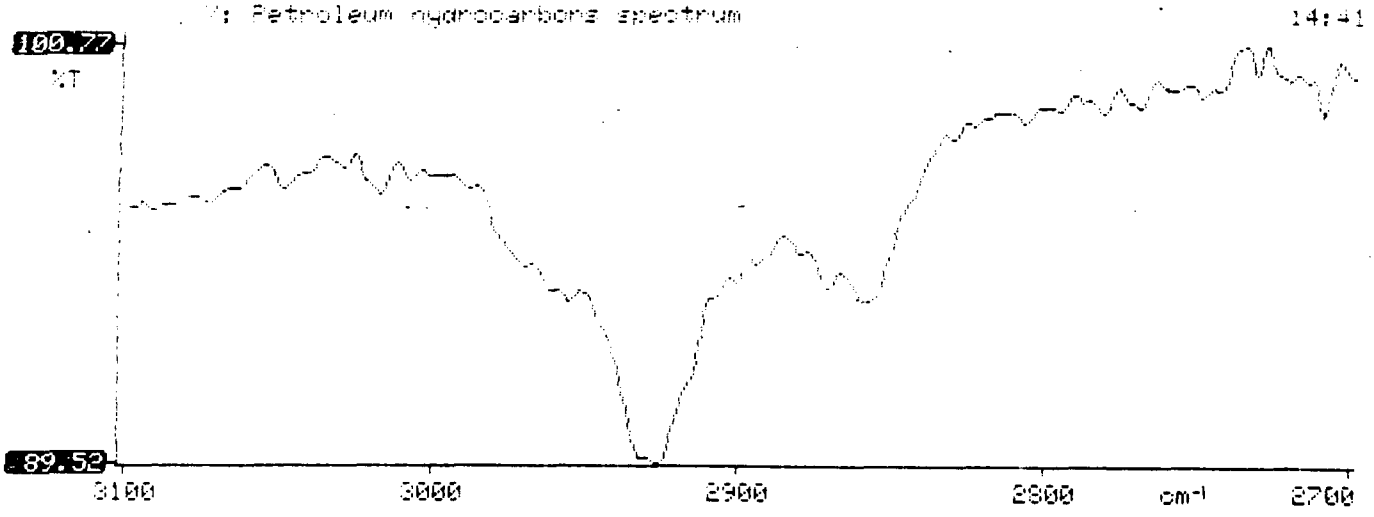
```
*****************************************************************
*                                                               *
*      Oil and Grease and Petroleum Hydrocarbons in Water       *
*                                                               *
*                Perkin-Elmer Model 1600 FT-IR                  *
*                     Analysis Report                           *
*****************************************************************
*
 98/10/20   14:17
*
*   Sample identification
 "SLHC096-LC1
*   Net absorbance of hydrocarbons (2930 cm-1):
 0.381
*
*
*
```



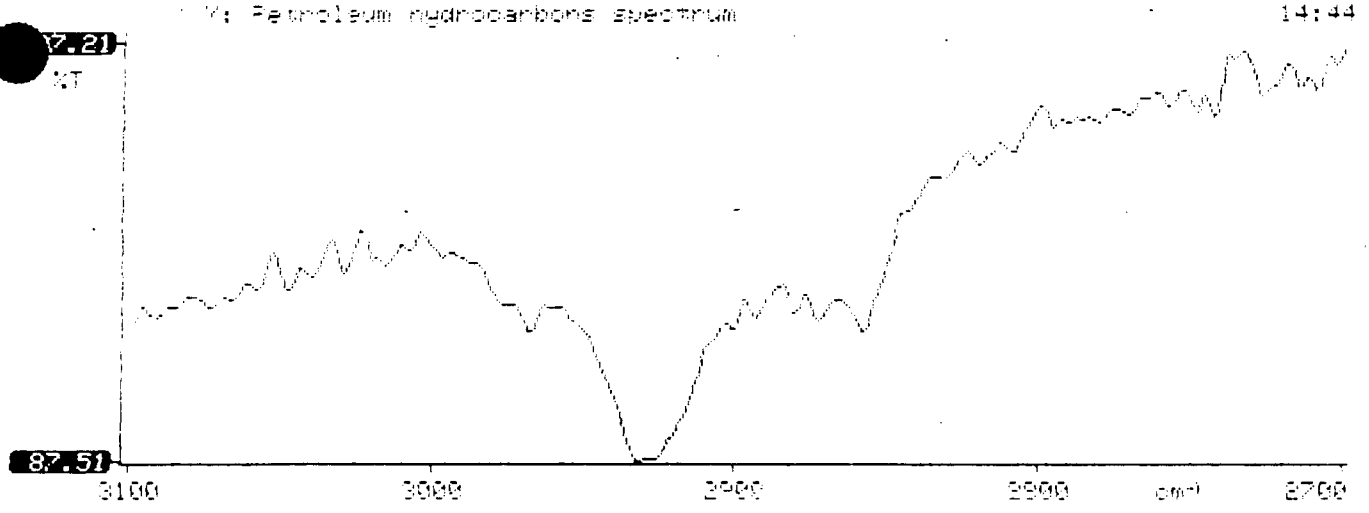

A: Petroleum hydrocarbons spectrum
99.88
%T
42.00
3100
3000
2900
2800
cm-1
2700

```
*****************************************************************
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*****************************************************************
```

```
 Sample identification
 9810L08-008
 Net absorbance of hydrocarbons (2930 cm-1)
 0.035
```



```
*****************************************************************
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*****************************************************************
*
 Fr ..-Jv  14:44
*
* Sample identification
 Petroleum
*  Int. Absorbance of Hydrocarbons (2930 cm-1)
 0.022
*
*
*
```



[redacted]

Analysis Report

[redacted]

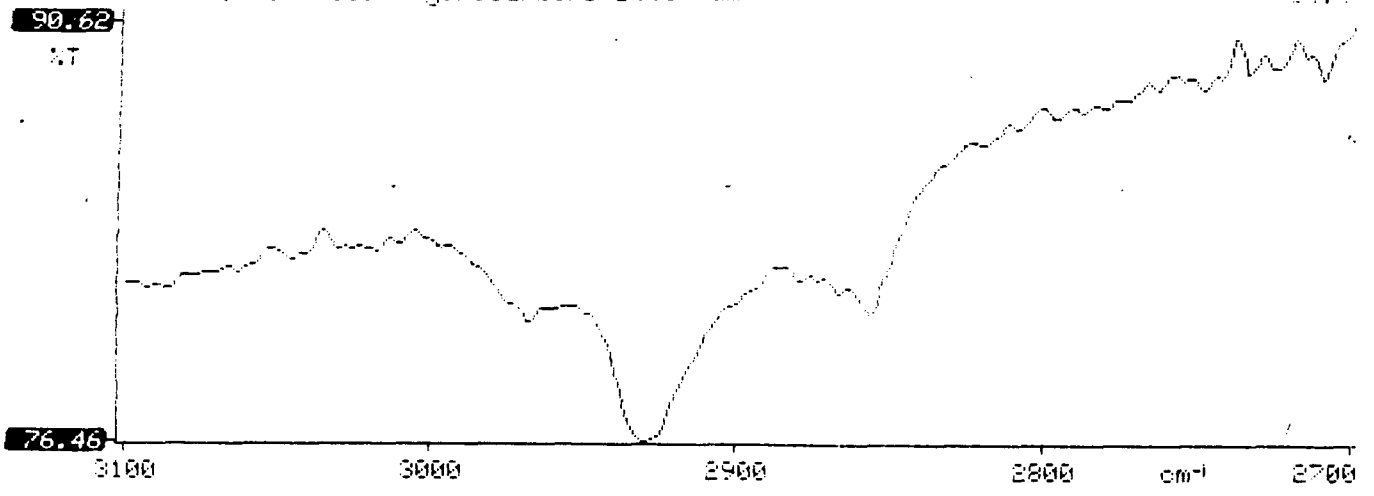
Sample Identification

[redacted]

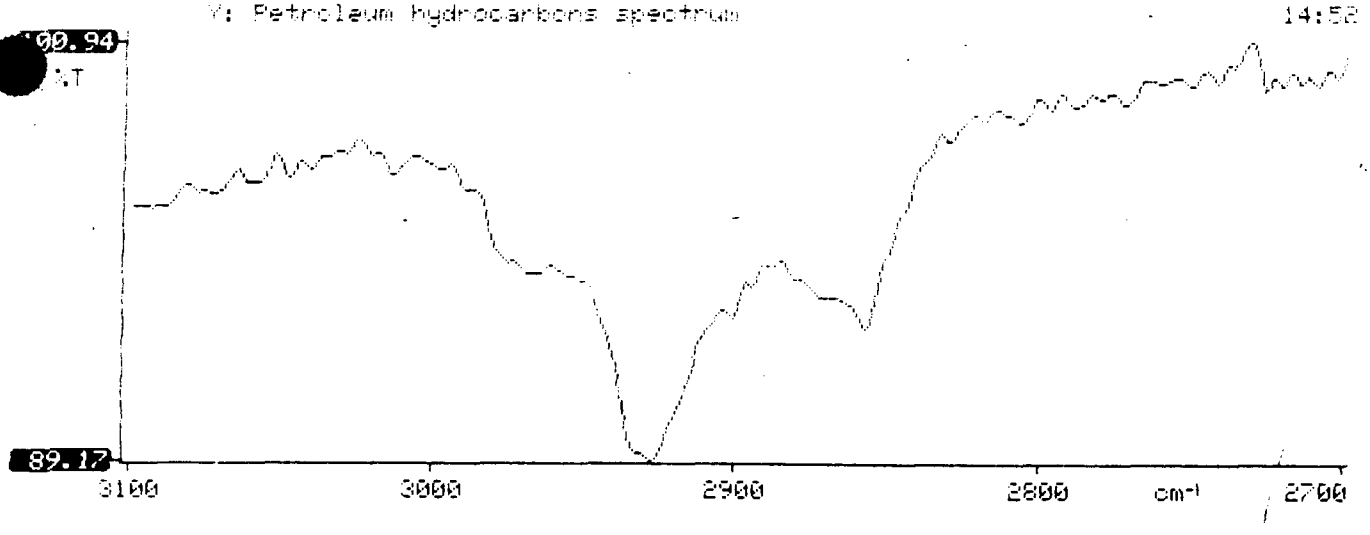
[redacted]

0.049

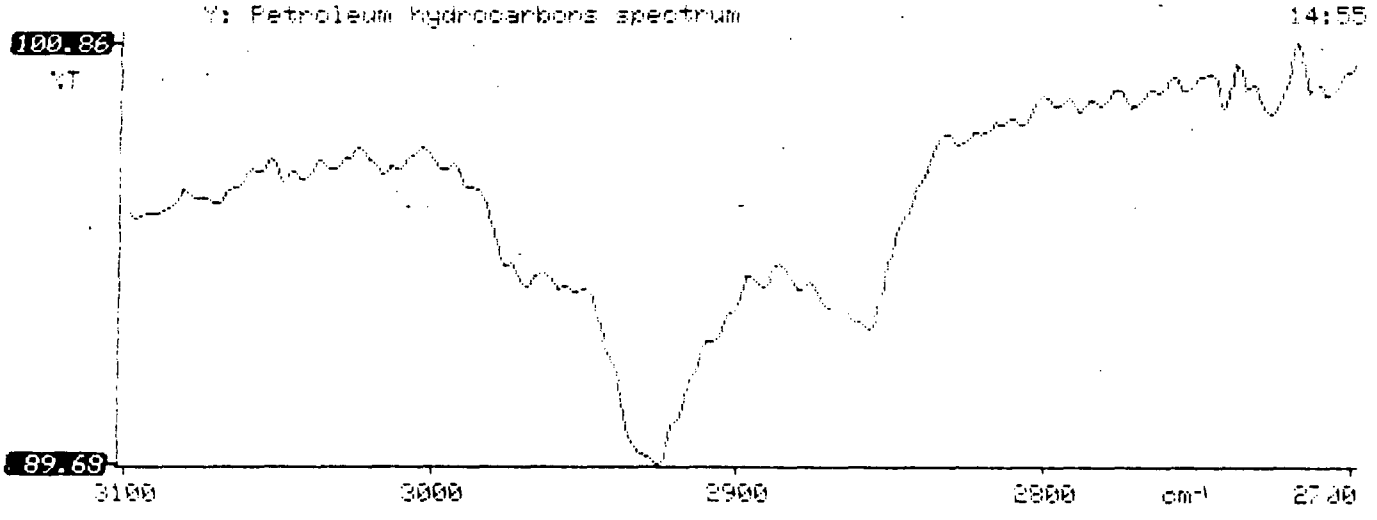
V: Petroleum hydrocarbons spectrum 14:47



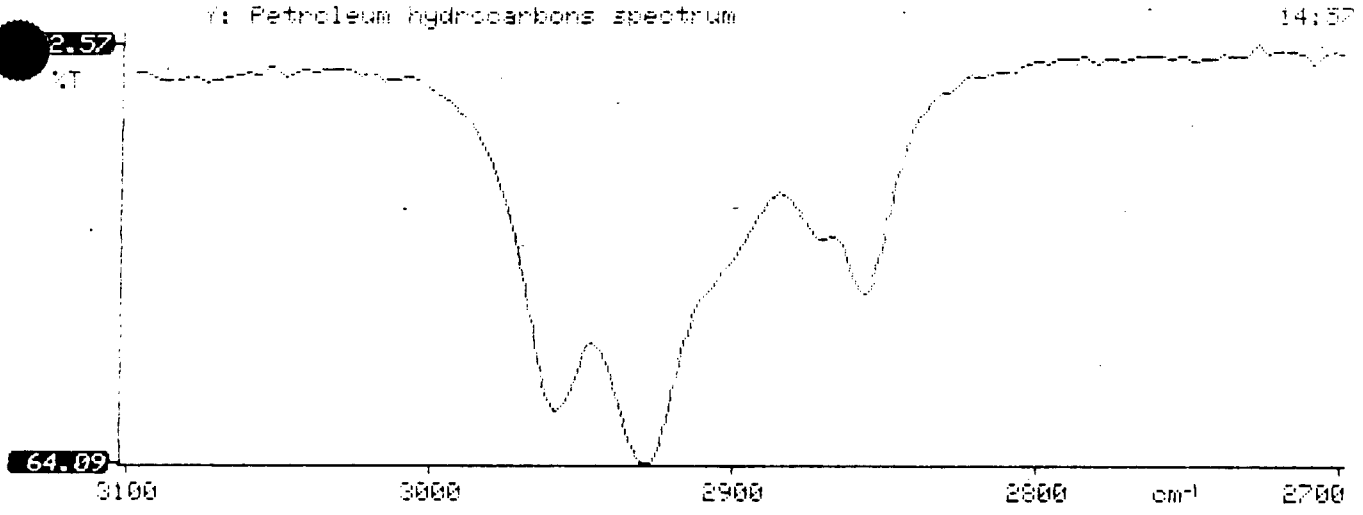
```
*****************************************************************
*                                                               *
*                    Test Method for                            *
*       Oil and Grease and Petroleum Hydrocarbons               *
*                  in Water and Soil                            *
*                                                               *
*              Perkin-Elmer Model 1600 FT-IR                    *
*                    Analysis Report                            *
*****************************************************************
*
 98/10/26   14:52
*
*   Sample identification
 4510L066-011
*   Net absorbance of Hydrocarbons (2930 cm-1):
 0.042
*
*
*
```



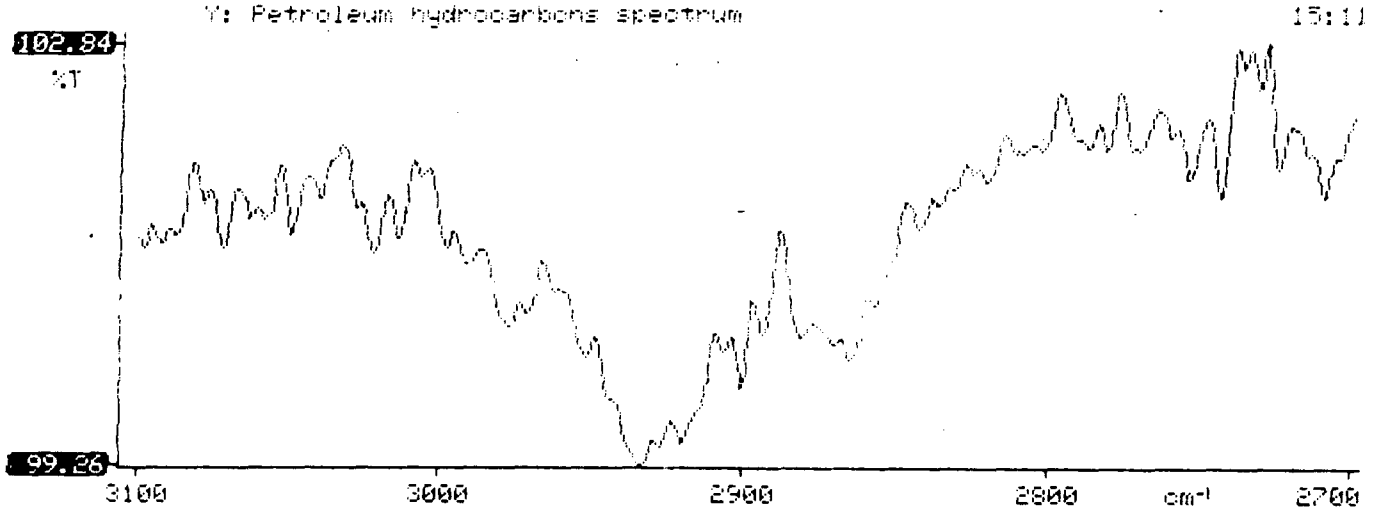
```
**********************************************************
*                                                        *
*                                                        *
*                Perkin-Elmer Model 1600 FT-IR           *
*                    Analysis Report                     *
*                                                        *
**********************************************************
*
 09/11/20   14:55
*
*  Sample identification
 9810L066-012
*  Net absorbance of hydrocarbons (2930 cm-1)
 0.035
*
*
*
```



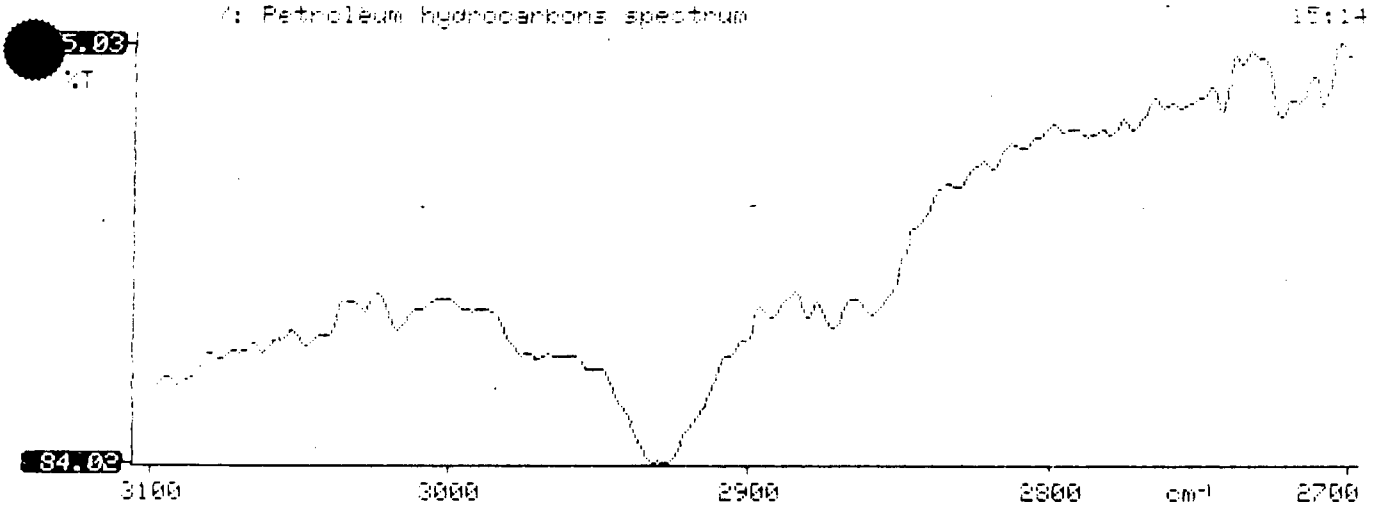
```
*****************************************************************
*                                                               *
*       Oil and Grease and Petroleum Hydrocarbons               *
*                  in Water by IR Oil                           *
*                                                               *
*              Perkin-Elmer Model 1600 FT-IR                    *
*                    Analysis Report                            *
*                                                               *
*****************************************************************
*
 98/10/21  14:57
*
*  Sample identification
 EDV
*  Net absorbance of hydrocarbons (2930 cm-1
 0.197
*
*
*
```

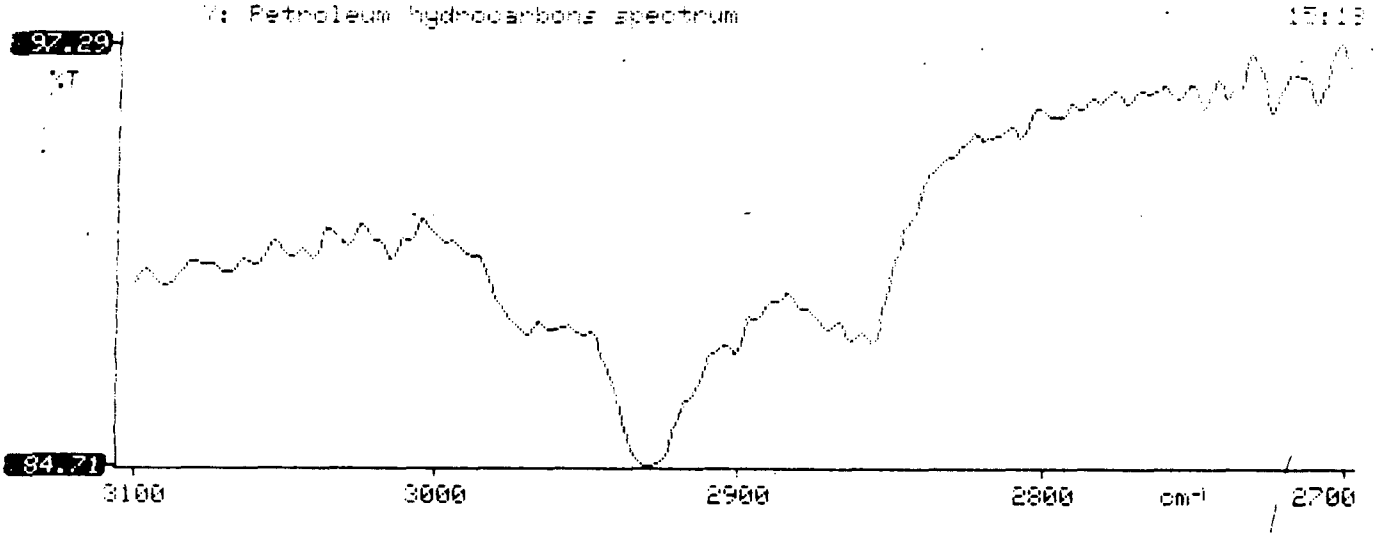


```
*****************************************************************
*                                                               *
*      Oil and Grease and Petroleum Hydrocarbons                *
*                  in Water and Soil                            *
*                                                               *
*            Perkin-Elmer Model 1600 FT-IR                      *
*                 Analysis Report                               *
*****************************************************************
*
 08/10/90  15:11
*
*  Sample identification
 DCB
*  Net absorbance of hydrocarbons (2930 cm-1
 0.010
*
*
*
```

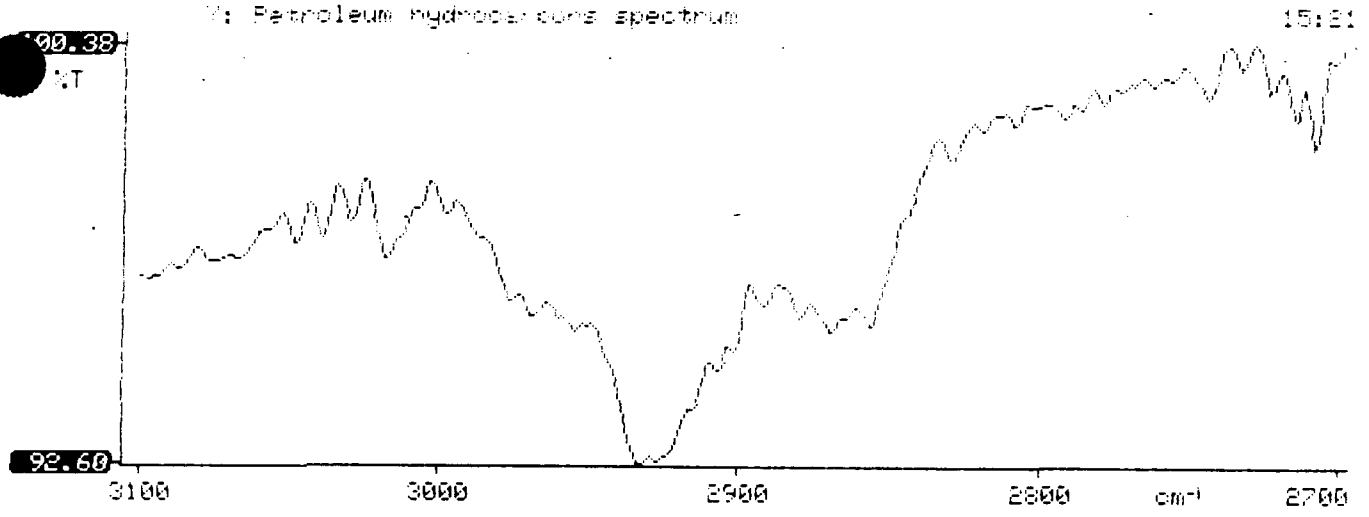


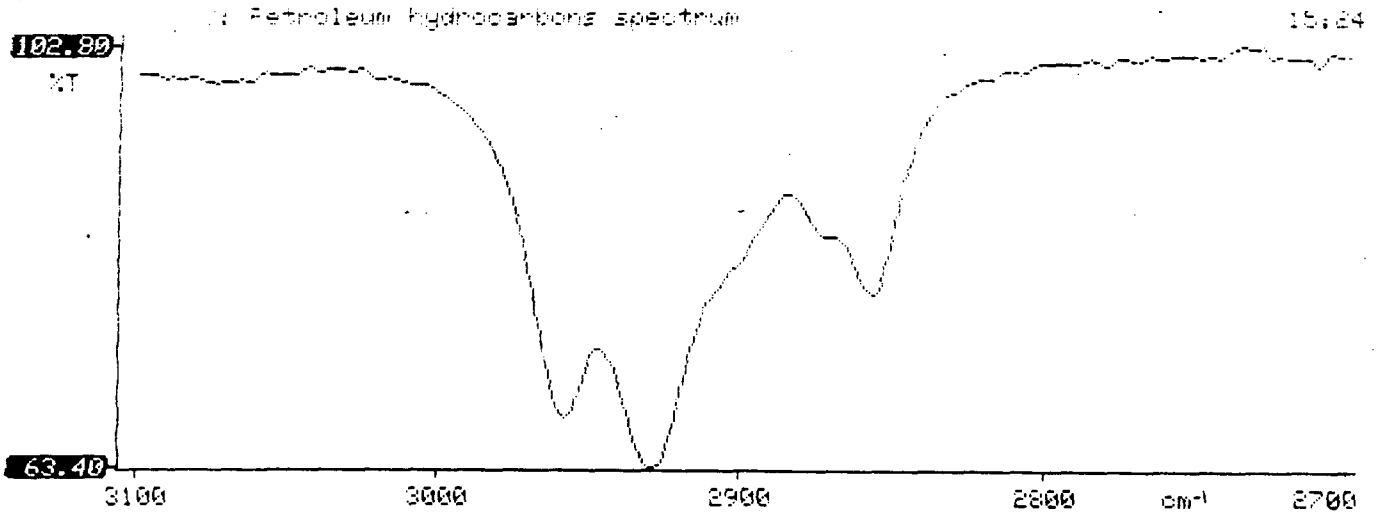
```
**********************************************************************
*                                                                    *
*                                                                    *
*                                                                    *
*                                                                    *
*                                                                    *
**********************************************************************
*
 98/10/20   15:14
*
*   Sample identification
 CP10L0e7-001
*   Net absorbance of hydrocarbons (2970 cm-1)
 0.005
*
*
*
```




Y: Petroleum hydrocarbons spectrum
97.29
%T
84.71
3100
3000
2900
2800
cm-1
2700

```
*****************************************************************
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*****************************************************************
*
 09/10/20   15:21
*
*  Sample identification
 9810057-003
*  Net absorbance of hydrocarbons (2930 cm-1)
 1.074
*
*
*
```




Petroleum hydrocarbons spectrum
15:24
102.80
%T
63.40
3100
3000
2900
2800
cm-1
2700

```
*****************************************************************
*                                                               *
*                                                               *
*                                                               *
```

Recra LabNet
Philadelphia

PETROLEUM HYDROCARBON PREP

Extracted By: AJM
Extraction Date: 10.21.98
Start Time/End Time: 9:50 13:00
Method #: 21-15-0418.1 (W) Rev. 00A
21-15-9071 (S) Rev. 02

Logbook #: 6575
Prep Batch: 98L14C097
Analysis Log: 6576

RFW #	pH<2	Weight/Volume	Final Volume	Spiking Info./Comments
98L14C097-MB1		7.5gm	25mL	
-LC1				0.25mL 6LC1
98L206?-004	<2			
-005				
-006				
-007				
-008				
-009				
-010				
-011				
-012				
-012	R	L	L	
				AJM 10/21/98

"R"= replicate, "S" = matrix spike, "T" = matrix spike duplicate

Standard:	ID	Prep Date	Expir Date
LCS	6506101.13	10.4.98	10.23.98
MS	-14	L	L

Reviewed by/Date: 11/16/98

RFW 21-21L-018/O-07/97

Recra LabNet
Philadelphia

Petroleum Hydrocarbon or Oil/Grease by IR

EXTRACTION:
Extracted By: AJP
Extraction Date: 10.21.98
Start Time: ~~8:00~~ 8:00
End Time: ~~8:12~~ 12:00 CV
10/21/98

ANALYSIS:
Analyzed By: AJP
Analysis Date: 10.21.98
Start Time: 13:37
End Time: 13:38

Logbook #: 6506
Prep Batch: 98LHC097
Worksheet: TPH1021
Method #: 21-15-0418.1 rev. (W)
21-15-9071.1 rev. (S)
21-15-0413.2 rev. (W)

RFW #	pH <2	Initial Wt or Vol (g/mL)	% Solids	Final Vol (mL)	Dil	Absorbance (cm^{-1}) O/G	Absorbance (cm^{-1}) HCIR	Final Result	Comments, % Rec.
0.100							0.022		
0.420							0.044		
2.100							0.198		
4.200							0.402		
8.400							0.815		
ICV		7.59gm	100			None	0.198	67.384	Mg/kg
ICB							0.005	0.399	
CCV			4				0.198	67.384	
98LHC097-MB1				25ml	None		0.014	3.523	
-LCS							0.357	122.569	
98LC067-~~LCS~~ 004			94.24				0.024	7.421	
-005			84.66				0.009	2.111	
-006			94.90				0.029	9.198	
-007			96.02				~~0.019~~ 0.019	5.476	
-008			95.29				0.021	6.246	
-009			93.86				0.118	42.573	
CCV			101				0.203	69.119	

"R" = Replicate, "S" = Matrix Spike, "T" = Matrix Spike Duplicate
Example Calculation: Concentrations (mg/L) = R x D x FV / V

Where:

R = concentration of Petroleum Hydrocarbons as determined from the calibration curve (mg/100 mL).
D = extract dilution factor, if used.
V = volume of sample, in L.
FV = final volume of extract, mL.

Standard:	ID	Prep Date	Expir Date
ICAL	6506-10215	10.20.98	10.21.98
ICV/CCV	35	"	"
LCS	35	"	"
MS			

Reviewed By/Date: [signature] 11/16/98

RFW 21-21L-004/R-06/97

Recra LabNet

Philadelphia

Petroleum Hydrocarbon or Oil/Grease by IR

EXTRACTION:
Extracted By: AJP
Extraction Date: 10.21.98
Start Time: 8:00
End Time: 12:00

ANALYSIS:
Analyzed By: AJP
Analysis Date: 10.21.98
Start Time: 13:37
End Time: 13:56

Logbook #: 6526
Prep Batch: 98LHCC97
Worksheet: TPHIC21
Method #: 21-15-0418.1 rev. (W)
21-15-9071.1 rev. (S)
21-15-0413.2 rev. (W)

RFW #	pH <2	Initial Wt or Vol (g/mL)	% Solids	Final Vol (mL)	Dil	Absorbance (cm^{-1}) O/G	Absorbance (cm^{-1}) HCIR	Final Result	Comments, % Rec.
CC13			102				0.009	1.787	mg/Kg
9810C067-010	5	7.5g	96.2%	25mL	NONE		0.243	14.113	
-011			92.90				0.021	6.407	
-012			95.43				0.020	5.873	
12R							0.019	5.510	
CCV							0.200	68.078	
CCB							0.003	0.295	

AJP 10/21/98

"R" = Replicate, "S" = Matrix Spike, "T" = Matrix Spike Duplicate
Example Calculation: Concentrations (mg/L) = R x D x FV / V

Where:

R = concentration of Petroleum Hydrocarbons as determined from the calibration curve (mg/100 mL).
D = extract dilution factor, if used.
V = volume of sample, in L.
FV = final volume of extract, mL.

Standard:	ID	Prep Date	Expir Date
ICAL			
ICV/CCV			
LCS	Page 50		
MS			

Reviewed By/Date: [illegible] 11/16/98

RFW 21-21L-004/R-06/97

MESTON Analytics Inorganics Section

10-26-98

Date of Prep: 10/21/98
Date of Analysis: 10/21/98
Worksheet: TPH1021
Computer 0: SKL
Directory: INORGANICS

Run Batch: 98LHC097
Method: 9071.1 REV.2
Analyst: AJP
Instrument: FT-IR

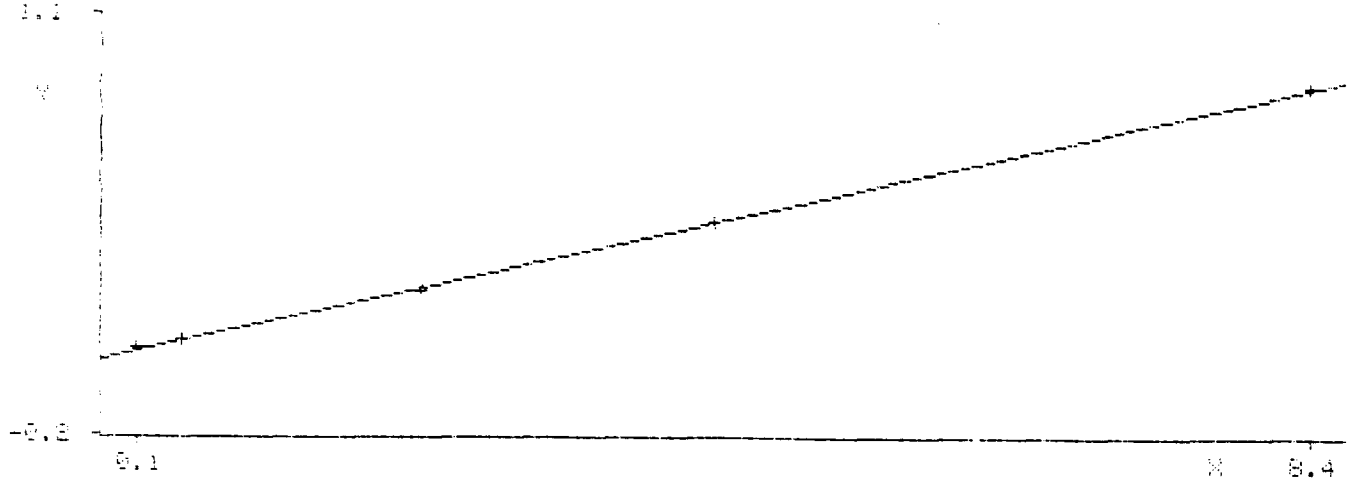
CALIB DATA
SLOPE: 0.10
INTERCEPT: 0.00
CORRELATION COEFF.: 0.9995

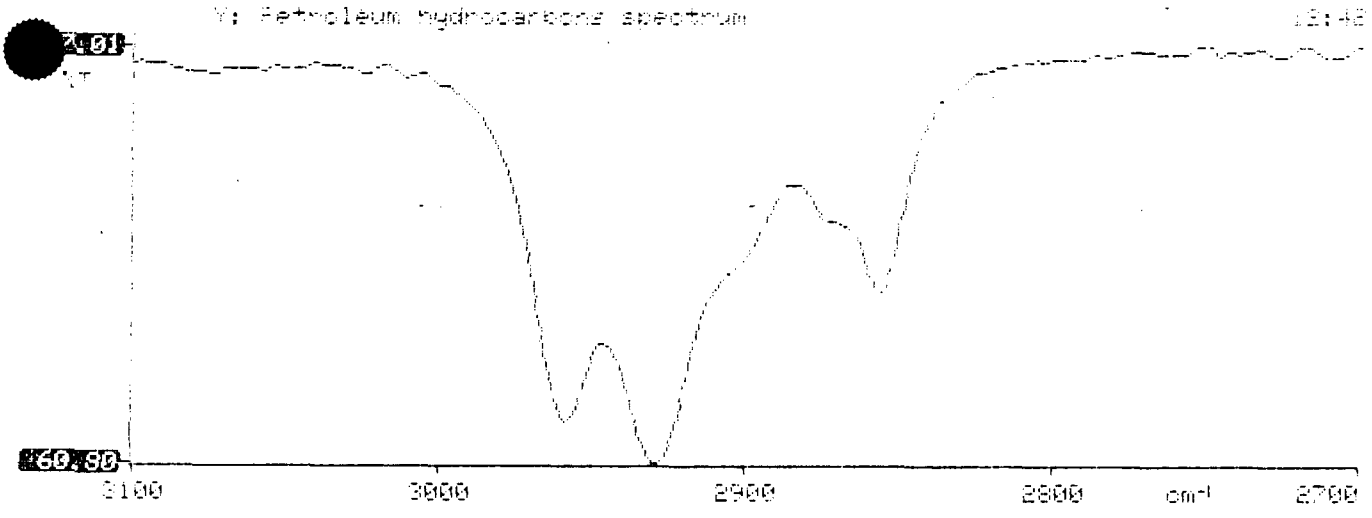
RFW SAMPLE ID	TEST	INST. ABS	INITIAL RESULT	DILUTION FACTOR	C/D	FINAL RESULT	DETECTION LIMIT 1.00	UNITS	REPLICATE ORIG SAMPLE RESULT	REP % DIFF	SPIKE SPIKE LEVEL 4.20	SAMPLE SPIKE AMOUNT	% RECOV	LCS AMT LCS ?	% RECOV	SOILS PREP PREP BATCH	INITIAL SAMPLE WT.	FINAL VOL.	% SOLIDS	ANAL TIME	DATE PREP
ICV	IPHC-S	0.198	2.022	1	33.3333	67.384	3.333	MG/KG	0.399		2.1	70.000	95.7			98LHC097	7.50	25.00	100.00		
ICB	IPHC	0.005	0.012	1	33.3333	0.399 u	3.333	MG/KG								98LHC097	7.50	25.00	100.00		
ICV DUP	IPHC-S	0.198	2.022	1	33.3333	67.384	3.333	MG/KG	0.399		2.1	70.000	95.7			98LHC097	7.50	25.00	100.00		
98LHC097-MB1	IPHC	0.014	0.186	1	33.3333	3.523	3.333	MG/KG								98LHC097	7.50	25.00	100.00		
98LHC097-MB1	IPHC-S	0.357	3.677	1	33.3333	122.569	3.333	MG/KG	3.523		4.2	140.000	85.0			98LHC097	7.50	25.00	100.00		
9810L067-004	IPHC	0.024	0.210	1	35.3707	7.421	3.537	MG/KG								98LHC097	7.50	25.00	100.00		
9810L067-005	IPHC	0.009	0.054	1	39.3732	2.111 u	3.937	MG/KG								98LHC097	7.50	25.00	94.24		
9810L067-006	IPHC	0.029	0.262	1	35.1247	9.198	3.512	MG/KG								98LHC097	7.50	25.00	84.66		
9810L067-007	IPHC	0.019	0.158	1	34.7158	5.476	3.471	MG/KG								98LHC097	7.50	25.00	94.90		
9810L067-008	IPHC	0.021	0.179	1	34.9889	6.246	3.498	MG/KG								98LHC097	7.50	25.00	96.02		
9810L067-009	IPHC	0.118	1.189	1	35.8192	42.573	3.582	MG/KG								98LHC097	7.50	25.00	95.29		
CCV	IPHC-S	0.203	2.074	1	33.3333	69.119	3.333	MG/KG	0.000		2.1	70.000	98.7			98LHC097	7.50	25.00	93.06		
CCB	IPHC	0.009	0.054	1	33.3333	1.787 u	3.333	MG/KG								98LHC097	7.50	25.00	100.00		
9810L067-010	IPHC	0.043	0.408	1	34.6212	14.113	3.462	MG/KG								98LHC097	7.50	25.00	100.00		
9810L067-011	IPHC	0.021	0.179	1	35.8889	6.467	3.588	MG/KG								98LHC097	7.50	25.00	96.28		
9810L067-012	IPHC	0.020	0.168	1	34.9296	5.873	3.493	MG/KG								98LHC097	7.50	25.00	92.90		
9810L067-012	IPHC-R	0.019	0.158	1	34.9296	5.510	3.493	MG/KG	5.873	6.4						98LHC097	7.50	25.00	95.43		
CCV	IPHC-S	0.200	2.042	1	33.3333	68.078	3.333	MG/KG	0.000		2.1	70.000	97.3			98LHC097	7.50	25.00	95.43		
CCB	IPHC	0.003	-0.009	1	33.3333	-0.295 u	3.333	MG/KG								98LHC097	7.50	25.00	100.00		

Perkin-Elmer Model 1600 FT-IR
Calibration Report

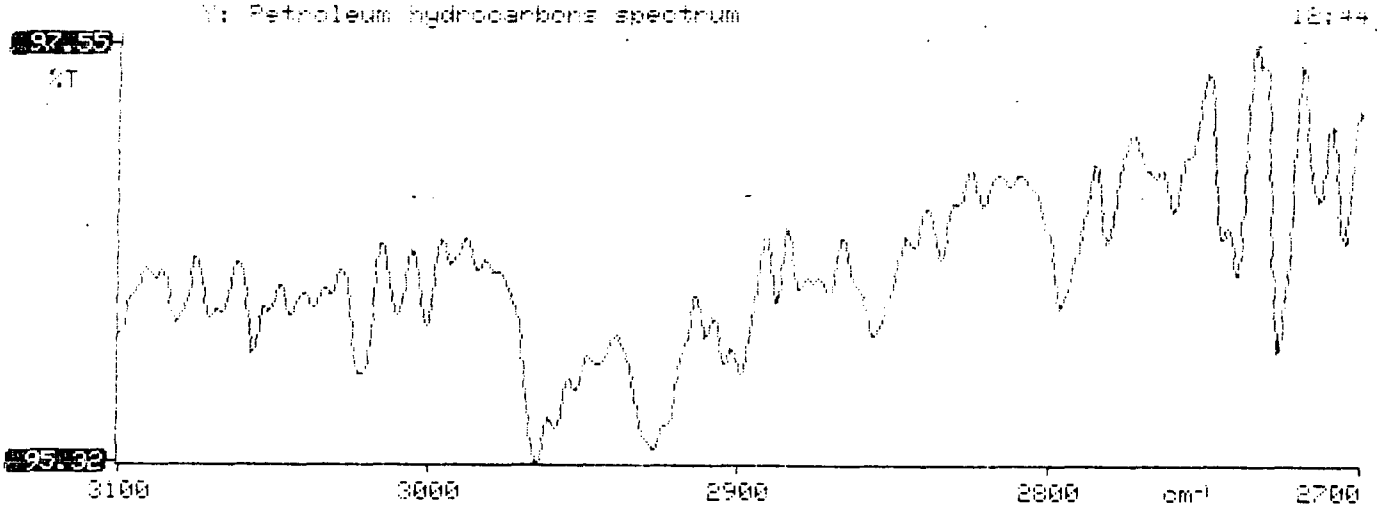
98LHC097
10-21-98
AJP

Net absorbance of standards
0.022
0.044
0.198

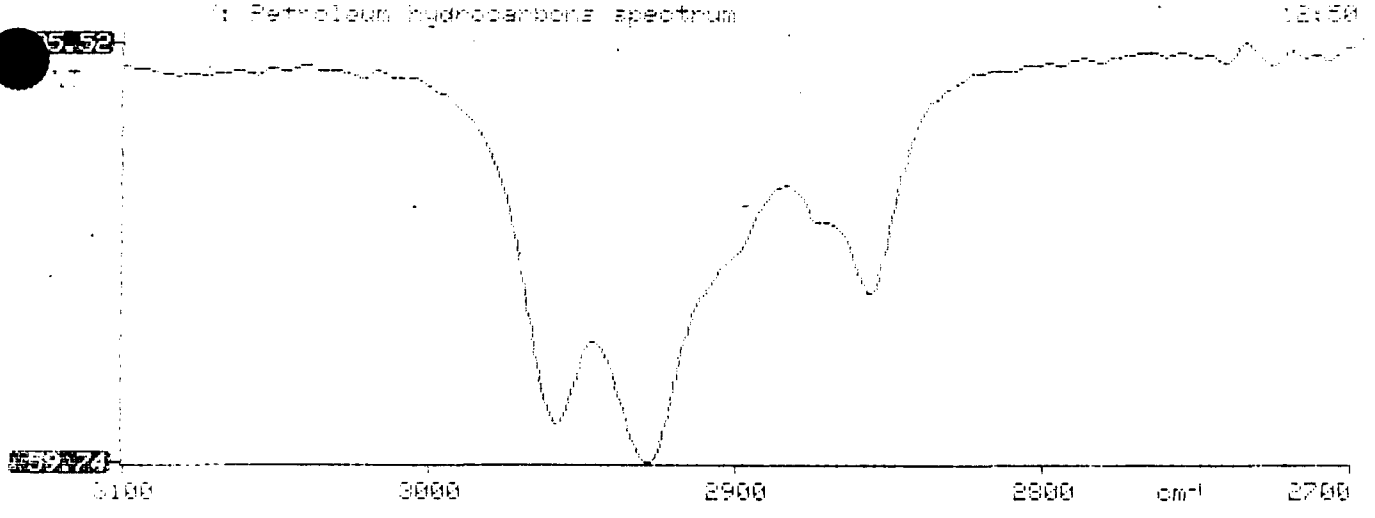



Y: Petroleum hydrocarbons spectrum
100.00
60.90
3100
3000
2900
2800
cm-1
2700

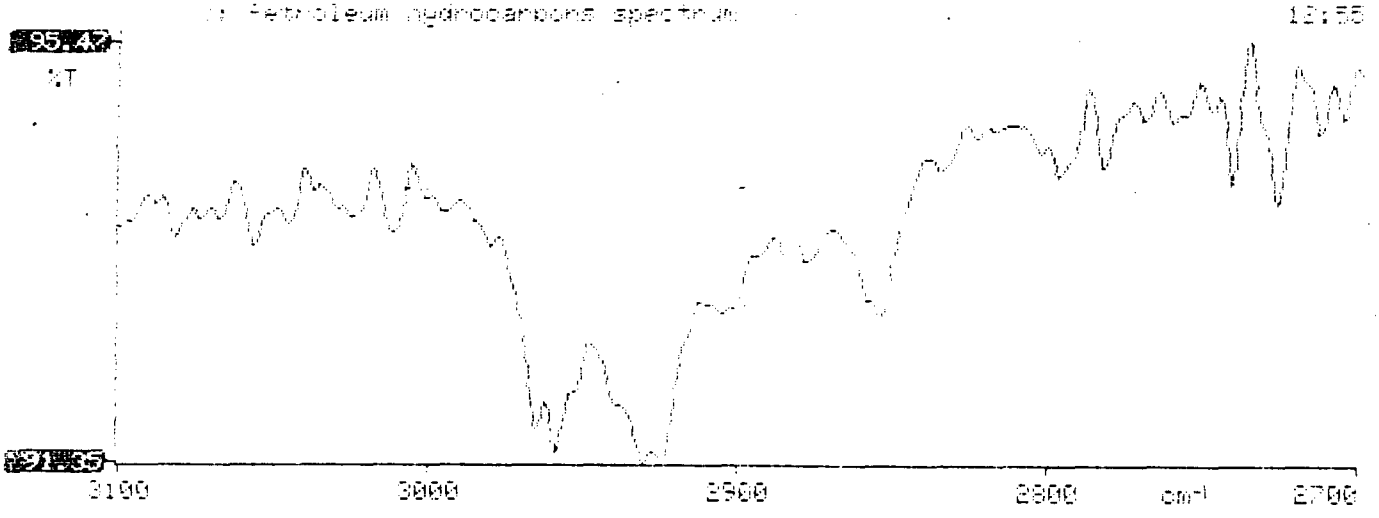
```
*****************************************************************
*                                                               *
*                    Test Report for                            *
*       Oil and Grease and Petroleum Hydrocarbons               *
*                  in Water and Soil                            *
*                                                               *
*              Perkin-Elmer Model 1600 FT-IR                    *
*                    Analysis Report                            *
*****************************************************************
*
 98/10/21   12:44
*
*   Sample identification
 DCB
*   Net absorbance of hydrocarbons (2930 cm-1,
   .1005
*
*
*
```

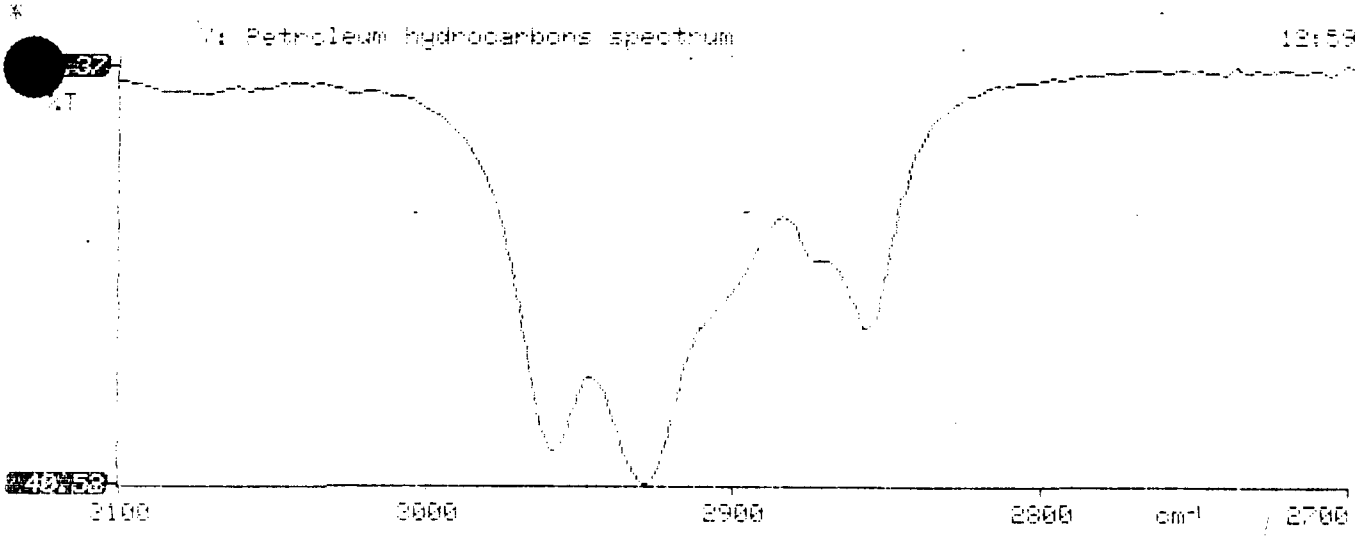


Perkin-Elmer Model 1600 FT-IR
Analysis Report



```
*****************************************************************
*                        Test Method for                        *
*          Oil and Grease and Petroleum Hydrocarbons            *
*                    in Water and Soil                          *
*                                                               *
*                  Perkin-Elmer Model 1600 FT-IR                *
*                        Analysis Report                        *
*****************************************************************
*
  98/10/21    10:55
*
*   Sample Identification
  FB_HCON97-MB1
*   Det. absorbance = Hydrocarbons (2930 cm-1)
  0.014
*
*
*
```



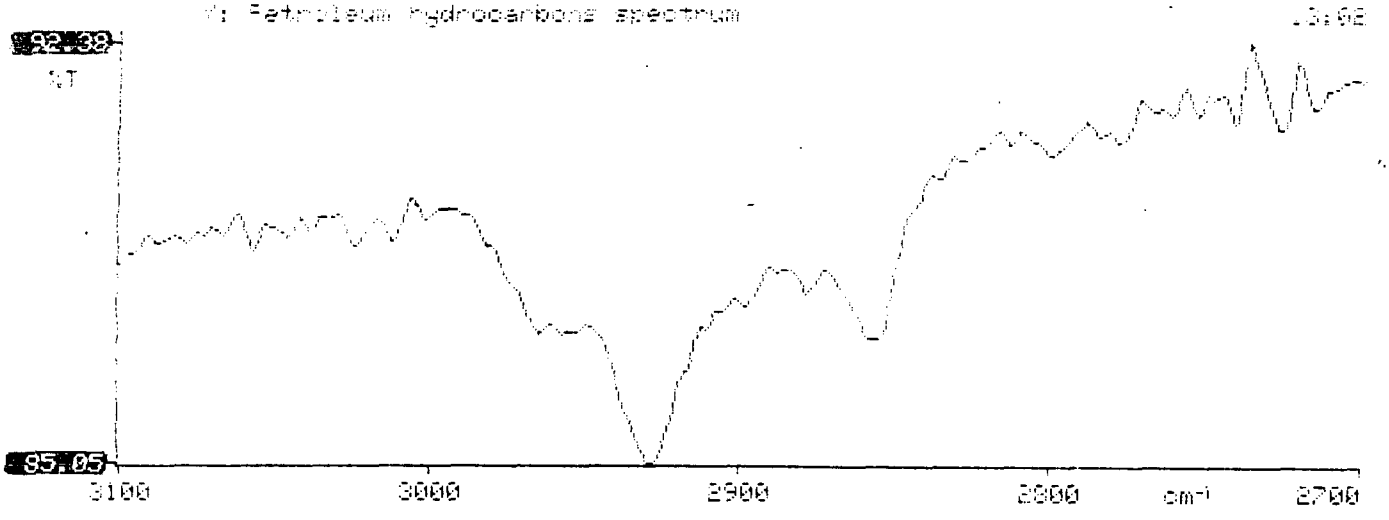

% Petroleum hydrocarbons spectrum
12:59
%T
100
3100
3000
2900
2800
cm-1
2700

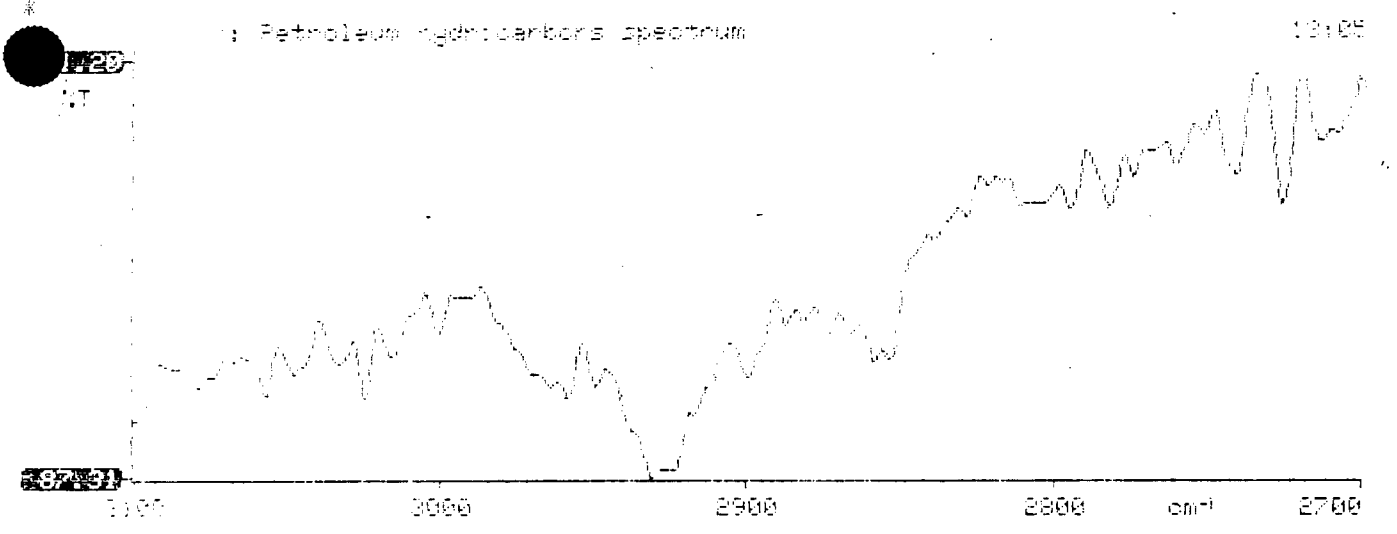
Perkin-Elmer Model 1600 FT-IR
Analysis Report

98/10/21 17:02

0.024

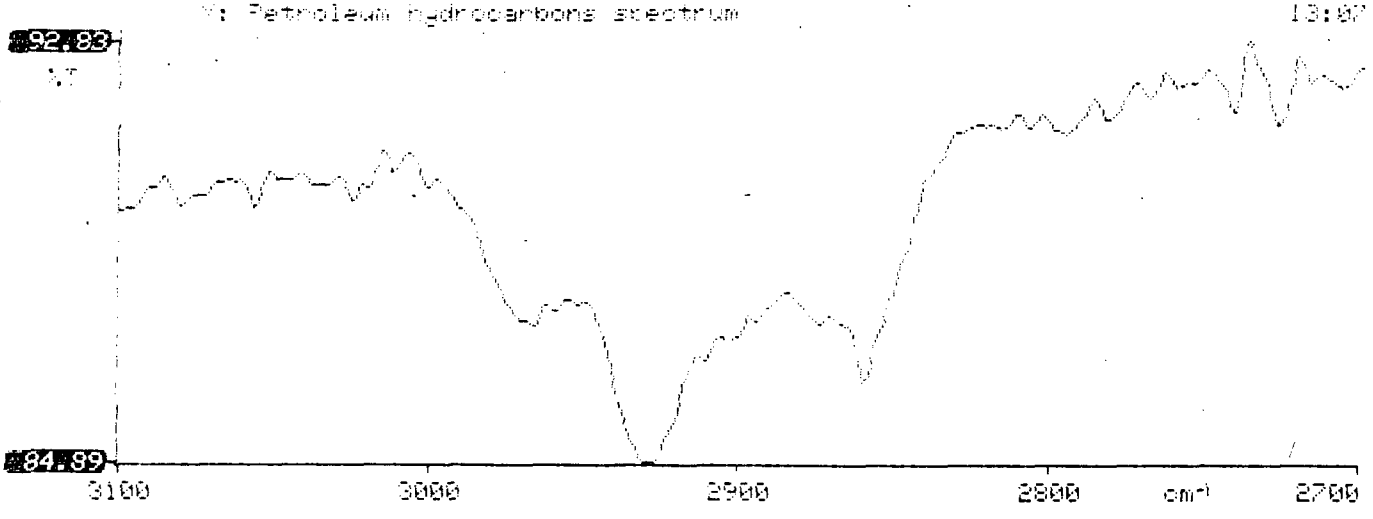
Petroleum hydrocarbons spectrum

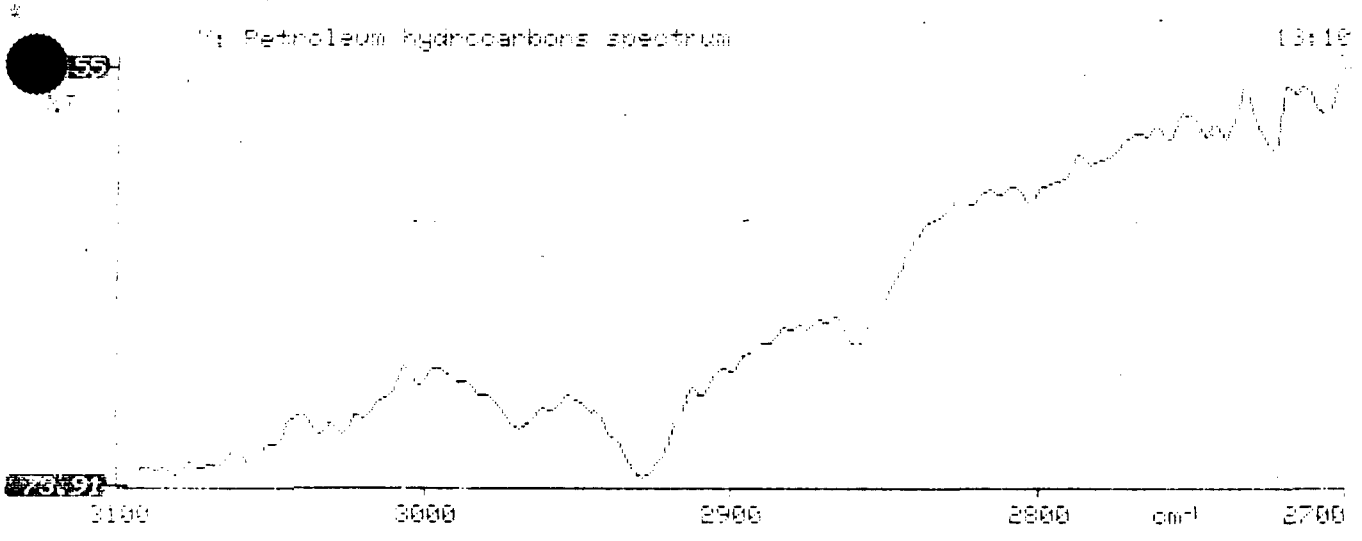



: Petroleum naphthenic spectrum
3000
2900
2800
cm-1
2700

```
*********************************************************************
*                                                                   *
*                                                                   *
*                                                                   *
*                                                                   *
*                  Perkin-Elmer Model 1600 FT-IR                    *
*                        Analysis Report                            *
*                                                                   *
*********************************************************************
*
 98/10/21   13:07
*
*   Sample Identification
 #810L06Y-004
*   Ve  Absorbance of Hydrocarbons (2930 cm-1)
 0.029
*
*
*
```

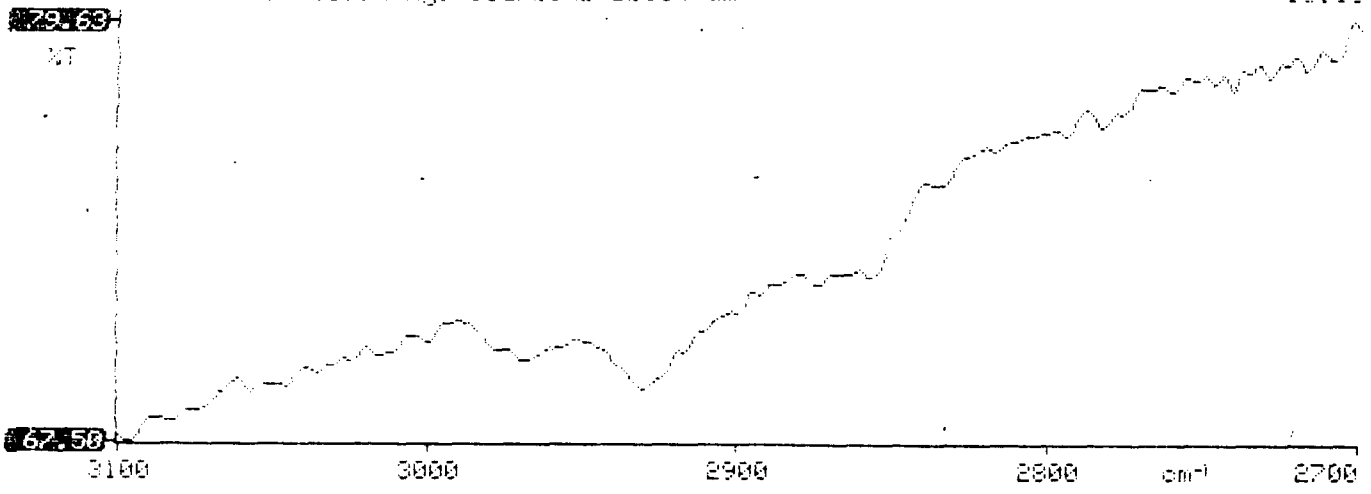
Y: Petroleum Hydrocarbons Spectrum 13:07



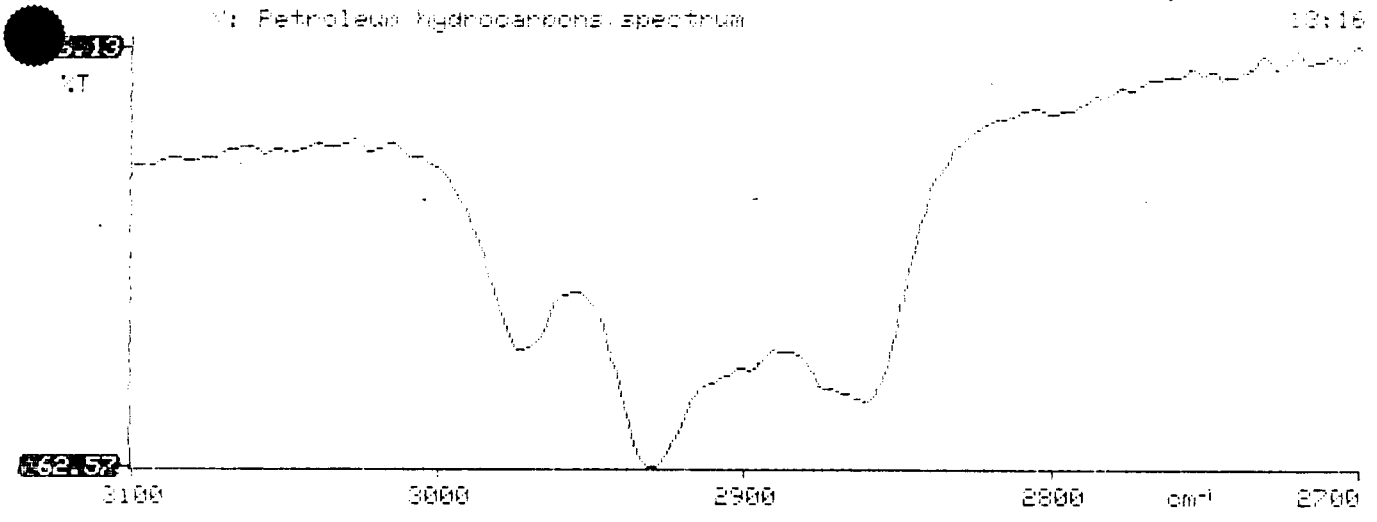

Petroleum hydrocarbons spectrum
13:19
3100
3000
2900
2800
cm-1
2700

```
**********************************************************************
*                          Test Method #1                            *
*       Oil and Grease and Petroleum Hydrocarbons                    *
*                    in Water and Soil                               *
*                                                                    *
*              Perkin-Elmer Model 1600 FT-IR                         *
*                    Analysis Report                                 *
**********************************************************************

 98/10/01   13:13

*  Sample identification
 9810L067-005
*  Net absorbance of hydrocarbons (2930 cm-1)
 0.021
*
*
*
```

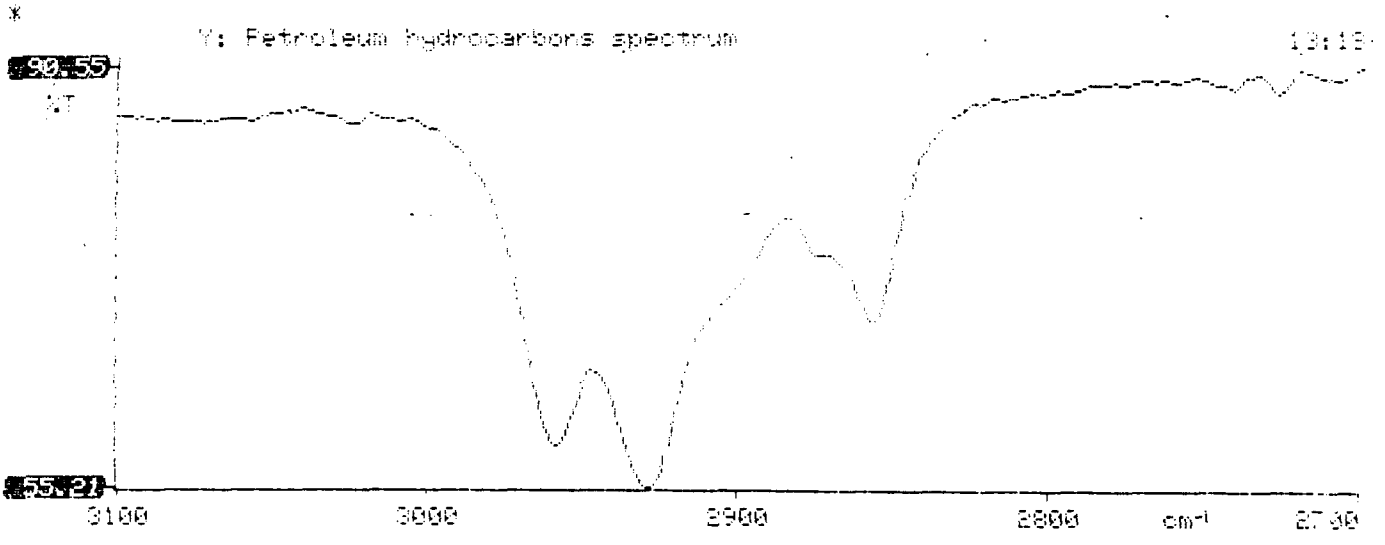
Y: Petroleum hydrocarbons spectrum 13:13



```
*****************************************************************
*                                                               *
*                    Oil and Grease and Petroleum               *
*                        Hydrocarbons                           *
*                                                               *
*                 Perkin-Elmer Model 1600 FT-IR                 *
*                      Analysis Report                          *
*                                                               *
*****************************************************************

 09/10/21   13:15

 Sample identification:
 0211\67-005
 Wet absorbance of hydrocarbons (2930 cm-1)
 0.116
```



```
*****************************************************************
*                                                               *
*                                                               *
*                  Perkin-Elmer Model [illegible]               *
*                      Analysis Report                          *
*                                                               *
*****************************************************************

 93/10/21   13:18

 Sample identification
 CCV
 Net absorbance of hydrocarbons (2930 cm-1):
 0.000
```



[illegible]

Perkin-Elmer Model 1600 FT-IR

[illegible]

92/10/21 13:20

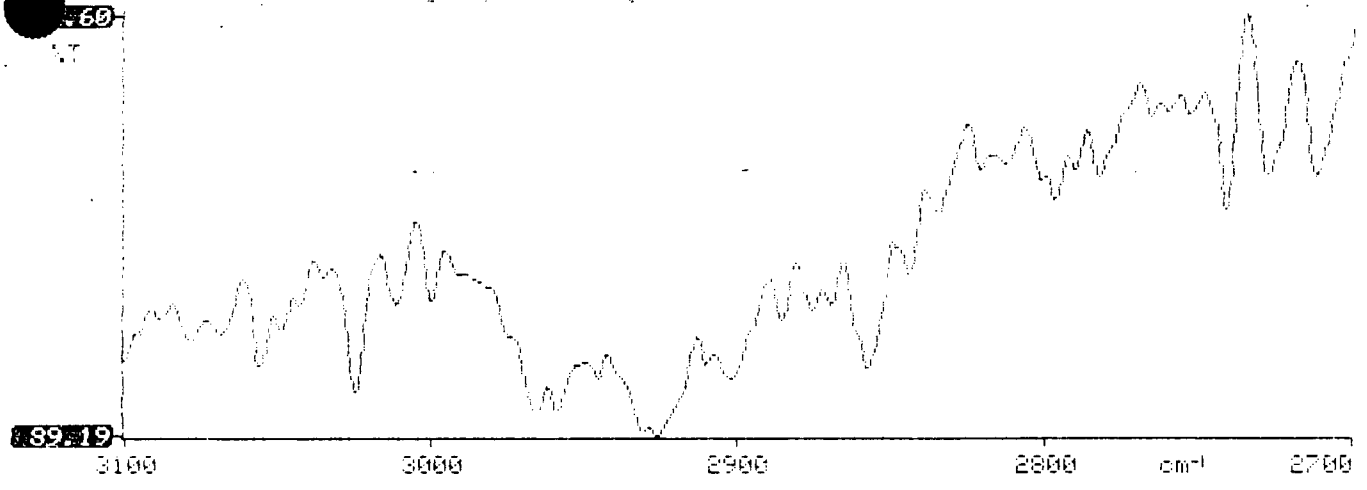
Sample identification

CCB

Net absorbance of hydrocarbons (2930 cm-1)

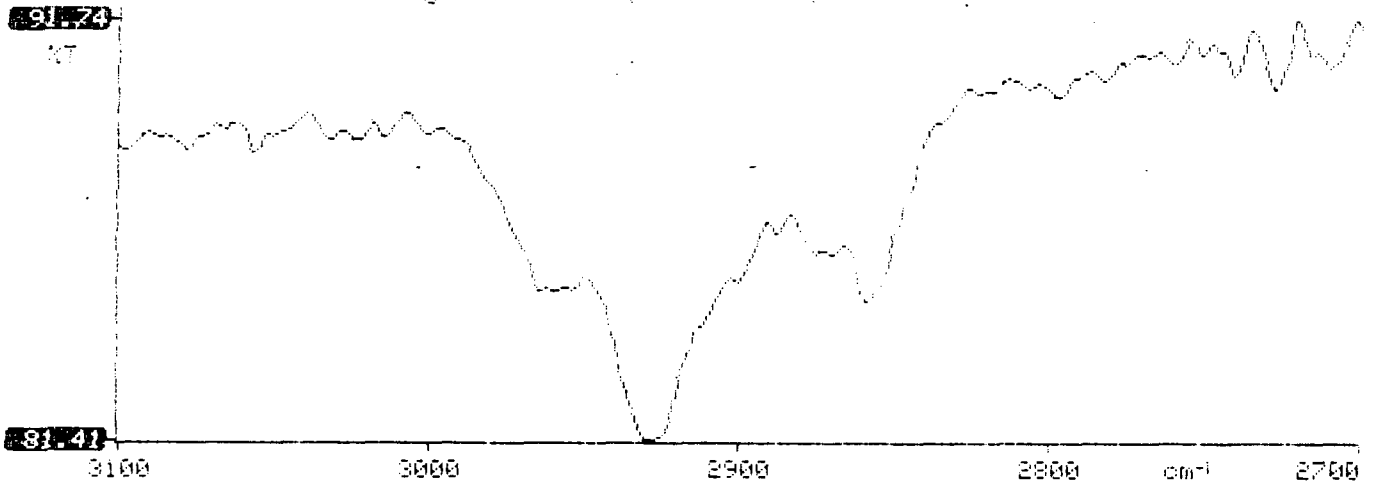
0.009

Y: Petroleum hydrocarbons spectrum 13:31



```
*****************************************************************
*                        Test Method for                        *
*       Oil and Grease and Petroleum Hydrocarbons               *
*                    in Water and Soil                          *
*                                                               *
*              Perkin-Elmer Model 1600 FT-IR                    *
*                      Analysis Report                          *
*****************************************************************
*
 96/10/21   13:23
*
*   Sample Identification
 9610L067-010
*   Net Absorbance of Hydrocarbons (2930 cm-1)
 0.043
*
*
*
```

Y: Petroleum hydrocarbons spectrum 13:23



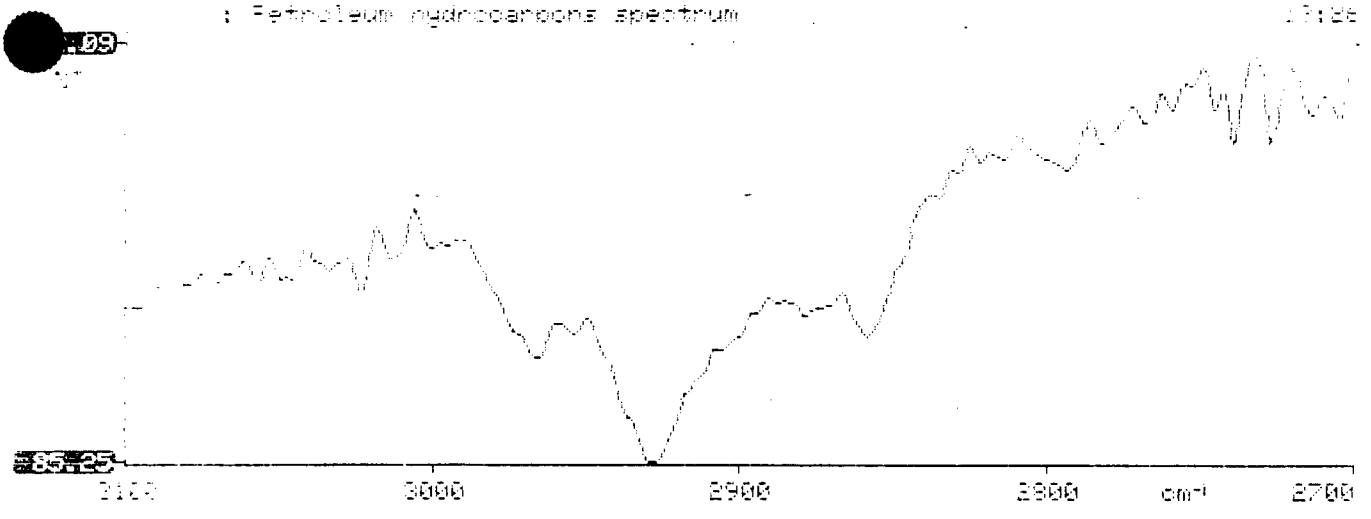
Perkin-Elmer Model 1600 FT-IR

Analysis Report

98/10/21 17:26

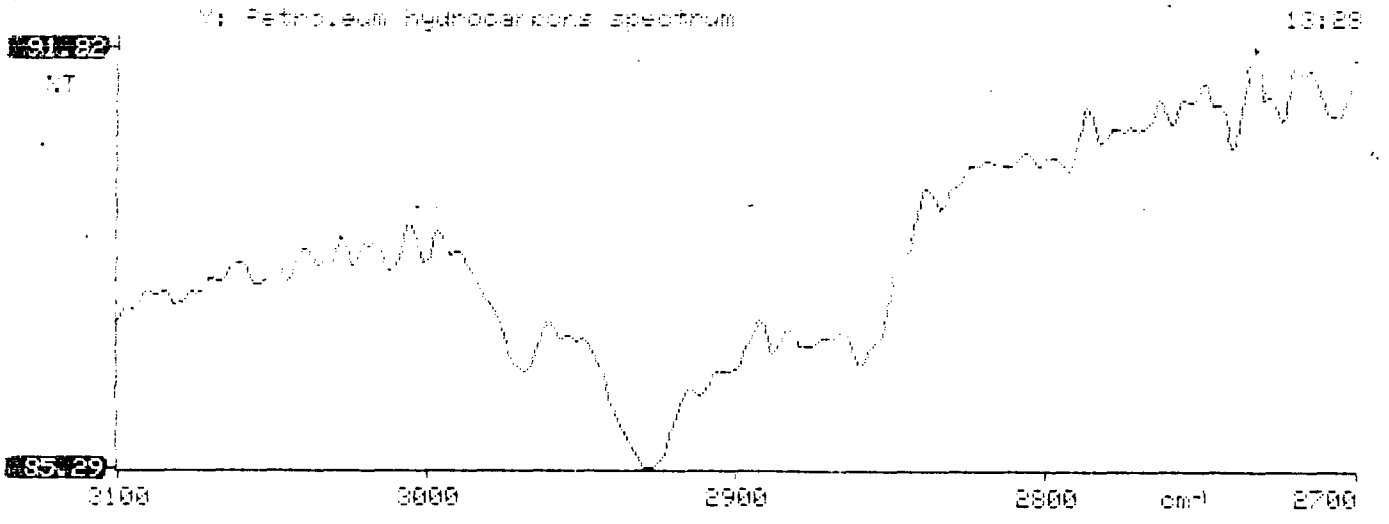
Sample ID: Petroleum Hydrocarbons (2930 cm-1)

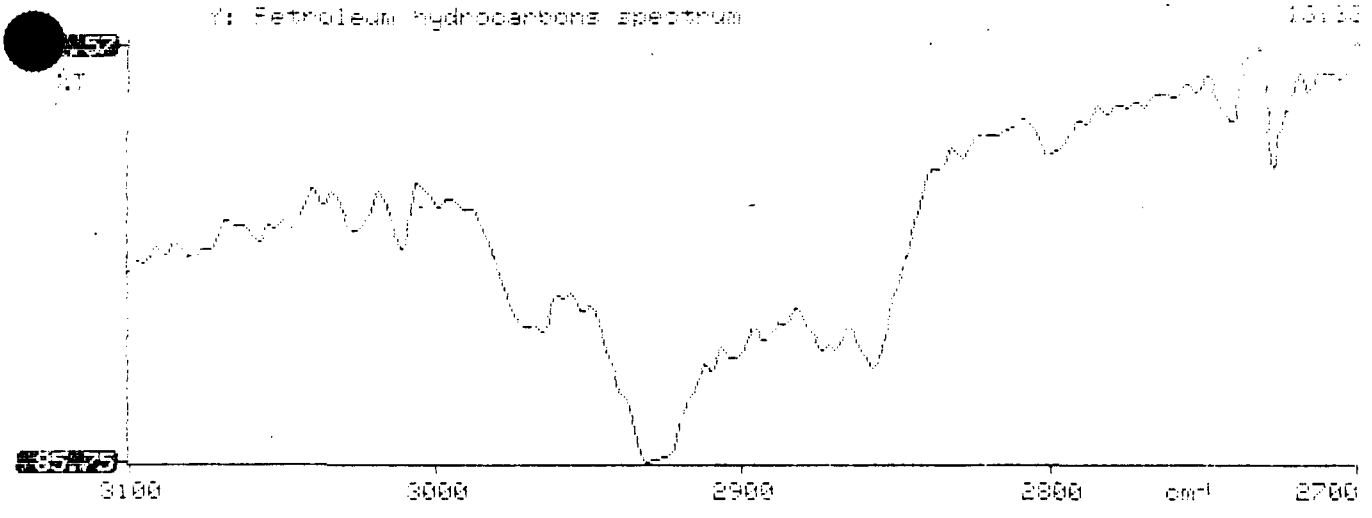
; Petroleum hydrocarbons spectrum



```
*****************************************************************
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                  Perkin-Elmer Model 1600 FT-IR                *
*                        Analysis Report                        *
*****************************************************************
*
 99/12/21   13:28
*
*
*
*
*
*
*
```

Y: Petroleum hydrocarbons spectrum



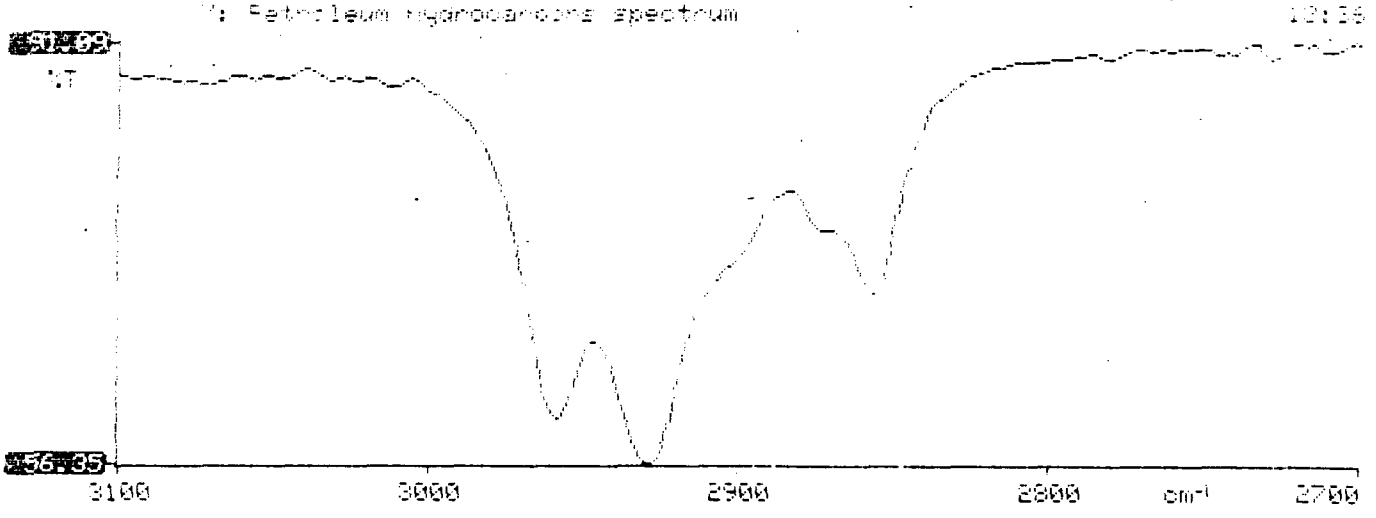

Petroleum hydrocarbons spectrum
3100
3000
2900
2800
cm-1
2700

Test Method for
Oil and Grease and Petroleum Hydrocarbons
in Water and Soil

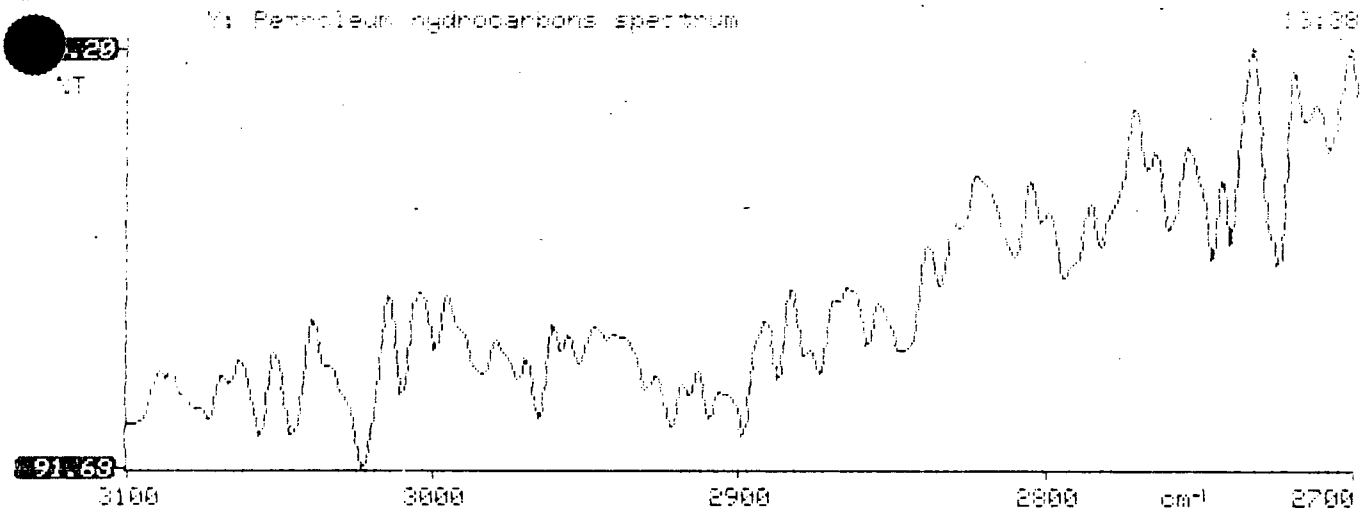
Perkin-Elmer Model 1600 FT-IR
Analysis Report

08-10-21 13:36

Sample identification
Inf
Net absorbance of hydrocarbons (2930 cm-1)
0.200



```
*****************************************************************
*                        Test Method ***                        *
*       Oil and Grease and Petroleum Hydrocarbons               *
*                  in Water and Soil.                           *
*                                                               *
*              Perkin-Elmer Model 1600 FT-IR                    *
*                      Analysis Report                          *
*****************************************************************
*
 09/10/01   13:02
*
*  Sample identification
 CCF
*  Net absorbance of hydrocarbons (2930 cm-1)
 0.007
*
*
*
```



END OF PACKAGE

Arthur D Little

Dow Cogburn – Shell Westgate Site Investigation

Semivolatile Organic Compounds in Soil

Final Laboratory Report

Report to:
Mr. James Rice
Arthur D. Little, Inc.

November 18, 1998

Environmental Monitoring and Analysis

Arthur D. Little, Inc.
Acorn Park
Cambridge, Massachusetts
02140-2390

Reference No.: 38051-01

ARTHUR D. LITTLE
Environmental Monitoring and Analysis Unit
Project Narrative

Entered By:	Richard Purdy	Date:	November 18, 1998
Client:	Dow Cogburn	Package Number:	1429, 1449
Project Name:	Shell Westgate	Project Number:	38051-01

Semivolatile Organic Compounds in Soil and Water Blank Samples

Sample Receipt

Arthur D. Little, Inc. received twenty-four (24) soil samples and two (2) water blank samples on September 25, 1998 on behalf of Dow Cogburn. All samples were received intact and in good condition. Pertinent sample receipt information is noted on the chain of custody records included as part of this deliverable. Data for the following samples are reported in this package:

WG-SB1-7	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7
WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42	WG-SB3-7	WG-SB3-10
WG-SB3-24	WG-SB3-30	WG-SB3-40	WG-SB4-5	WG-SB4-14	WG-SB4-30
WG-SB4-40	WG-SB5-7	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40

Laboratory Methods

The sediment samples were prepared for analysis by ultrasonic extraction using acetone and methylene chloride. The extracts were concentrated to a known volume and fortified with internal standard compounds for GC/MS analysis.

The samples were analyzed for the Appendix IX semivolatile organic compounds in accordance with laboratory standard operating procedures and EPA Method 8270, "Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS); Capillary Column Technique" (USEPA SW846, *Test Methods for Evaluating Solid Waste*).

Quality control samples include preparation blanks, laboratory control samples (BS), matrix spike and matrix spike duplicate samples.

Quality Assurance/Quality Control

Quality assurance and quality control procedures for the analyses are documented in the laboratory quality assurance plan and standard operating procedures (SOPs). The mass

Approved By: _____ Date: 11/18/98

spectrometer tune is verified using DFTPP at the start of each analytical sequence. Continuing calibration standards are analyzed every twelve hours. Target compounds are quantified from the average response factor (RRF) of the calibration curve.

Quality assurance audits were performed on all data generated as part of this deliverable. Please note the following:

- The initial calibration met quality control requirements with the exception of 2,4-dinitrophenol, 1-naphthylamine, 2-naphthylamine, 4,6-dinitro-2-methylphenol, 1,3,5-trimethylbenzene and 4-nitroquinoline-1-oxide. Because of their poor responses at low levels, they are quantified using a three-point calibration.
- The continuing calibration verifications met quality control requirements with the exception of the %D for disulfoton (SQW222, 11/09/98), 4-nitroquinoline-1-oxide (SQW224, 11/12/98) and several o,o,o-triethyl phosphorothioate standards. These compounds behave poorly in GC/MS analyses and were not detected in the samples.
- Hexachlorophene is not analyzable by this method and is reported as "NA" on the data tables. N-nitroso-diphenylamine decomposes in the GC system and can not be separated from diphenylamine. Accordingly, n-nitroso-diphenylamine is reported as "ND" and diphenylamine is reported as a summed value of the two compounds.
- The recoveries for the surrogate and matrix spike compounds met control limit requirements. Matrix spike duplicate analyses met precision requirements.

The final report includes the following components:

- Narrative – includes project discussion, sample listing, report qualifiers
- Chain of Custody – includes all signed chain of custody records and observation forms for the reported field samples.
- Data Tables – includes data summary, surrogate recovery summary and quality control results

The minimum reporting limits (MRL) were adjusted for sample size and dilution amounts. The minimum reporting limits (MRL) were calculated based on the low calibration standard (10 µg/mL) with the exception of the compounds quantified from the three-point curve, as discussed above. The MRL for those compounds is based on the 50µg/mL standard. The MRL for o,o,o-triethyl phosphorothioate is based on the mid-level 100µg/mL standard.

Qualifiers used in the reporting of the analytical data are described in the table of Report Qualifiers.

Approved By: _____ Date: 11/18/98

Report Qualifiers

Qualifier	Explanation
J	Concentration between the adjusted minimum reporting limit (MRL) and the adjusted method detection limit (MDL)
ND	Concentration below MDL
D	Concentration quantitated from dilution analysis
B	Detected in the associated procedural blank
DO	Diluted out; result could not be measured

Additional qualifiers may be used as defined in the individual data reports or project narrative

Cooler Nu 1 of 1

Arth lttle, Inc.

CHAIN OF CUSTODY RECORD

Page ____ of 1

PROJ. NO.	PROJECT NAME
38051	SHELL WESTGATE

SAMPLERS: *(Signature)* Henry Foil

SAMPLE/ STATION NUMBER	DATE	TIME	*COMP	*GRAB	STATION LOCATION	PRESERVATION	Analyses: TO BE DETERMINED — # JARS 2-oz	# JARS 4-oz	Remarks: ADL LAB ID	SAMPLE CONDITION UPON RECEIPT
WG-SB2-10	9/23/98	1300		S			1	3	98D3036	
WG-SB2-20		1320					1	3	98D3037	
WG-SB2-30		1400					1	3	98D3038	
WG-SB2-42		1415					1	3	98D3039	
WG-SB3-7		1510					1	3	98D3040	
WG-SB3-10		1515					1	3	98D3041	
WG-SB3-24		1545					1	3	98D3042	
WG-SB3-30		1605					1	3	98D3043	
WG-SB3-40		1625					1	3	98D3044	

Does COC match samples? Y or N
Broken container: Y or N
Received within holding time? (Y) or N
COC seal intact: (Y) or N / Not
Any other problems: Y or (N)
If problems, Client contacted: Y or N
Date contacted:
Temperature (°C): 1.3 / 1.3

Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
Henry Foil	9/24/98 1700	
Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date/Time	Received for Laboratory by: *(Signature)* Linh T. Le 9/25/98 10:00

Shipped to:
Arthur D. Little, Inc.
20 Acorn Park
Cambridge, MA 02140
ATTN: Henry Camp

Date/Time

Carrier:
Fedex Airbill
#5160853916

Distribution: Original Accompanies Shipment; Yellow Copy to Case Manager; Pink Copy for Field Files

Arthur D. Little, Inc. 25 Acorn Park, Cambridge, MA 02140 (617) 498-5000
Telex 921428 Tel-Fax (617) 498-7000

*Letter denotes sample matrix
W - Water S - Soil LW - Liquid Waste SW - Solid Waste

Cooler Num[redacted] 1 of 1

Arthur [redacted]le, Inc.

CHAIN OF CUSTODY RECORD

Page [redacted] of 1

PROJ. NO.	PROJECT NAME
38051	SHELL WESTGATE

SAMPLERS: *(Signature)* Henry Bair

SAMPLE/ STATION NUMBER	DATE	TIME	*COMP	*GRAB	STATION LOCATION	PRESERVATION	Analyses: TO BE DETERMINED	# JARS 2-oz	# JARS 4-oz	Remarks: ADL LAB ID	SAMPLE CONDITION UPON RECEIPT
WG-SB4-5	9/24/98	0810		S			X	1	3	98D3021	
WG-SB4-14		0830						1	2	98D3022	
WG-SB4-30		0925						1	3	98D3023	
WG-SB4-40		0945						1	3	98D3024	
WG-SB5-7		1045						1	3	98D3025	
WG-SB5-14		1105						1	3	98D3026	
WG-SB5-22		1120						1	1	98D3027	
WG-SB5-32		1140						1	3	98D3028	
WG-SB5-40	↓	1200						1	3	98D3029	
WG-SB1-7	9/25/98	0840						0	2	98D3030	
WG-SB1-12		0900						0	2	98D3031	
WG-SB1-20		0930						0	2	98D3032	
WG-SB1-30		1020						1	2	98D3033	
WG-SB1-40		1100						1	2	98D3034	
WG-SB2-7	↓	1245		↓			↓	1	2	98D3035	

Does COC match samples? Y or N
Broken container: Y or N
Received within holding time? Y or N
COC seal intact? Y or N / non-
Any other problems: Y or N
If problems: Client contacted: Y or N
Date contacted:
Temperature (°C): 8.7

Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
Henry Bair	9/24/98 1700	
Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date/Time	Received for Laboratory by: *(Signature)*
		Linh T. Le 9/25/98 10:00

Shipped to:
Arthur D. Little, Inc.
20 Acorn Park
Cambridge, MA 02140
ATTN: Henry Camp

Date/Time

Carrier:
Fedex
Airbill #5160753905

Distribution: Original Accompanies Shipment; Yellow Copy to Case Manager; Pink Copy for Field Files

Arthur D. Little, Inc. 25 Acorn Park, Cambridge, MA 02140 (617) 498-5000

*Letter denotes sample matrix
W - Water S - Soil LW - Liquid Waste SW - Solid Waste

Semivolatile Organic Compounds

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB4-5	WG-SB4-14	WG-SB4-30	WG-SB4-40	WG-SB5-7
Lab ID	98D3021	98D3022	98D3023	98D3024	98D3025
Lab Batch	B0179	B0179	B0179	B0179	B0179
File	W4897.D	W4898.D	W4899.D	W4902.D	W4903.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	28.8 g	26 g	28.5 g	28.8 g	28.8 g
Associated Blank	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB
Field Date	09/24/98	09/24/98	09/24/98	09/24/98	09/24/98
Extract Date	10/08/98	10/08/98	10/08/98	10/08/98	10/08/98
Analysis Date	11/10/98	11/10/98	11/10/98	11/10/98	11/10/98
Min Reporting Limit	1.4	1.5	1.4	1.4	1.4
Units	ug/g	ug/g	ug/g	ug/g	ug/g
N-nitrosodimethylamine	ND	ND	ND	ND	ND
Pyridine	ND	ND	ND	ND	ND
2-Picoline	ND	ND	ND	ND	ND
N-Nitrosomethylethylamine	ND	ND	ND	ND	ND
Methyl methanesulfonate	ND	ND	ND	ND	ND
N-Nitrosodiethylamine	ND	ND	ND	ND	ND
Ethylmethanesulfonate	ND	ND	ND	ND	ND
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND
Aniline	ND	ND	ND	ND	ND
Pentachloroethane	ND	ND	ND	ND	ND
Phenol	ND	ND	ND	ND	ND
2-Chlorophenol	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND
Benzyl Alcohol	ND	ND	ND	ND	ND
o-Cresol	ND	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	ND	ND	ND	ND	ND
N-Nitrosopyrolidine	ND	ND	ND	ND	ND
N-Nitrosomorpholine	ND	ND	ND	ND	ND
m,p-Cresol	ND	ND	ND	ND	ND
Hexachloroethane	ND	ND	ND	ND	ND
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND
o-Toluidine	ND	ND	ND	ND	ND
Acetophenone	ND	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND	ND
N-Nitrosopiperidine	ND	ND	ND	ND	ND
Isophorone	ND	ND	ND	ND	ND
2-Nitrophenol	ND	ND	ND	ND	ND
2,4-Dimethylphenol	ND	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND
a,a-dimethylphenethylamine	ND	ND	ND	ND	ND
2,4-Dichlorophenol	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND
2,6-Dichlorophenol	ND	ND	ND	ND	ND
Hexachloropropene	ND	ND	ND	ND	ND
4-Chloroaniline	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND
N-Nitrosodi-n-butylamine	ND	ND	ND	ND	ND
Safrole	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND
Isosafrole	ND	ND	ND	ND	ND
2-Nitroaniline	ND	ND	ND	ND	ND

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB4-5	WG-SB4-14	WG-SB4-30	WG-SB4-40	WG-SB5-7
Lab ID	98D3021	98D3022	98D3023	98D3024	98D3025
Lab Batch	B0179	B0179	B0179	B0179	B0179
File	W4897.D	W4898.D	W4899.D	W4902.D	W4903.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	28.8 g	26 g	28.5 g	28.8 g	28.8 g
Associated Blank	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB
Field Date	09/24/98	09/24/98	09/24/98	09/24/98	09/24/98
Extract Date	10/08/98	10/08/98	10/08/98	10/08/98	10/08/98
Analysis Date	11/10/98	11/10/98	11/10/98	11/10/98	11/10/98
Min Reporting Limit	1.4	1.5	1.4	1.4	1.4
Units	ug/g	ug/g	ug/g	ug/g	ug/g
1,4-Naphthoquinone	ND	ND	ND	ND	ND
1,3-Dinitrobenzene	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND
Dimethylphthalate	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND
3-Nitroaniline	ND	ND	ND	ND	ND
2,4-Dinitrophenol (1)	ND	ND	ND	ND	ND
Pentachlorobenzene	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND
1-Naphthylamine (1)	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND
2-Naphthylamine	ND	ND	ND	ND	ND
5-Nitro-o-toluidine	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND
p-Phenylenediamine	ND	ND	ND	ND	ND
4-Chlorophenyl-phenylether	ND	ND	ND	ND	ND
Diethylphthalate	ND	ND	ND	ND	ND
4-Nitroaniline	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol (1)	ND	ND	ND	ND	ND
n-Nitrosodiphenylamine (2)	ND	ND	ND	ND	ND
Diphenylamine (3)	ND	ND	ND	ND	ND
1,3,5-Trinitrobenzene (1)	ND	ND	ND	ND	ND
Phenacetin	ND	ND	ND	ND	ND
4-Bromophenyl-phenylether	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND
Pentachloronitrobenzene	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	ND	ND
4-Aminobiphenyl	ND	ND	ND	ND	ND
Dinoseb	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND
Di-n-butylphthalate	ND	ND	ND	ND	ND
4-Nitroquinoline-1-oxide (1)	ND	ND	ND	ND	ND
Methapyrilene	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND
p-(Dimethylamino)azobenzene	ND	ND	ND	ND	ND
3,3'-Dimethylbenzidine	ND	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND
2-Acetylaminofluorene	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND	ND
7,12-Dimethylbenz[a]anthracene	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	ND	ND	ND

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB4-5	WG-SB4-14	WG-SB4-30	WG-SB4-40	WG-SB5-7
Lab ID	98D3021	98D3022	98D3023	98D3024	98D3025
Lab Batch	B0179	B0179	B0179	B0179	B0179
File	W4897.D	W4898.D	W4899.D	W4902.D	W4903.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	28.8 g	26 g	28.5 g	28.8 g	28.8 g
Associated Blank	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB
Field Date	09/24/98	09/24/98	09/24/98	09/24/98	09/24/98
Extract Date	10/08/98	10/08/98	10/08/98	10/08/98	10/08/98
Analysis Date	11/10/98	11/10/98	11/10/98	11/10/98	11/10/98
Min Reporting Limit	1.4	1.5	1.4	1.4	1.4
Units	ug/g	ug/g	ug/g	ug/g	ug/g
Benzo[k]fluoranthene	ND	ND	ND	ND	ND
Benzo[a]pyrene	ND	ND	ND	ND	ND
3-Methylcholanthrene	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	ND	ND	ND	ND	ND
Dibenz[a,h]anthracene	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	ND	ND	ND	ND	ND
Hexachlorophene	ND	ND	ND	ND	ND
%2-Fluorophenol	48	46	44	49	52
%Phenol-d5	57	54	56	59	61
%Nitrobenzene-d5	49	46	48	52	54
%2-Fluorobiphenyl	64	55	61	62	67
%2,4,6-Tribromophenol	72	79	73	61	71
%Terphenyl-d14	110	116	119	110	109

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40	WG-SB1-7
Lab ID	98D3026	98D3027	98D3028	98D3029	98D3030
Lab Batch	B0179	B0179	B0179	B0179	B0176
File	W4908.D	W4909.D	W4910.D	W4911.D	W4918.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	26.8 g	28.5 g	28.1 g	28.5 g	26.7 g
Associated Blank	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-61PB
Field Date	09/24/98	09/24/98	09/24/98	09/24/98	09/23/98
Extract Date	10/08/98	10/08/98	10/08/98	10/08/98	10/07/98
Analysis Date	11/10/98	11/10/98	11/10/98	11/10/98	11/11/98
Min Reporting Limit	1.5	1.4	1.4	1.4	1.5
Units	ug/g	ug/g	ug/g	ug/g	ug/g
N-nitrosodimethylamine	ND	ND	ND	ND	ND
Pyridine	ND	ND	ND	ND	ND
2-Picoline	ND	ND	ND	ND	ND
N-Nitrosomethylethylamine	ND	ND	ND	ND	ND
Methyl methanesulfonate	ND	ND	ND	ND	ND
N-Nitrosodiethylamine	ND	ND	ND	ND	ND
Ethylmethanesulfonate	ND	ND	ND	ND	ND
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND
Aniline	ND	ND	ND	ND	ND
Pentachloroethane	ND	ND	ND	ND	ND
Phenol	ND	ND	ND	ND	ND
2-Chlorophenol	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND
Benzyl Alcohol	ND	ND	ND	ND	ND
o-Cresol	ND	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	ND	ND	ND	ND	ND
N-Nitrosopyrolidine	ND	ND	ND	ND	ND
N-Nitrosomorpholine	ND	ND	ND	ND	ND
m,p-Cresol	ND	ND	ND	ND	ND
Hexachloroethane	ND	ND	ND	ND	ND
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND
o-Toluidine	ND	ND	ND	ND	ND
Acetophenone	ND	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND	ND
N-Nitrosopiperidine	ND	ND	ND	ND	ND
Isophorone	ND	ND	ND	ND	ND
2-Nitrophenol	ND	ND	ND	ND	ND
2,4-Dimethylphenol	ND	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND
a,a-dimethylphenethylamine	ND	ND	ND	ND	ND
2,4-Dichlorophenol	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND
2,6-Dichlorophenol	ND	ND	ND	ND	ND
Hexachloropropene	ND	ND	ND	ND	ND
4-Chloroaniline	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND
N-Nitrosodi-n-butylamine	ND	ND	ND	ND	ND
Safrole	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND
Isosafrole	ND	ND	ND	ND	ND
2-Nitroaniline	ND	ND	ND	ND	ND

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40	WG-SB1-7
Lab ID	98D3026	98D3027	98D3028	98D3029	98D3030
Lab Batch	B0179	B0179	B0179	B0179	B0176
File	W4908.D	W4909.D	W4910.D	W4911.D	W4918.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	26.8 g	28.5 g	28.1 g	28.5 g	26.7 g
Associated Blank	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-61PB
Field Date	09/24/98	09/24/98	09/24/98	09/24/98	09/23/98
Extract Date	10/08/98	10/08/98	10/08/98	10/08/98	10/07/98
Analysis Date	11/10/98	11/10/98	11/10/98	11/10/98	11/11/98
Min Reporting Limit	1.5	1.4	1.4	1.4	1.5
Units	ug/g	ug/g	ug/g	ug/g	ug/g
1,4-Naphthoquinone	ND	ND	ND	ND	ND
1,3-Dinitrobenzene	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND
Dimethylphthalate	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND
3-Nitroaniline	ND	ND	ND	ND	ND
2,4-Dinitrophenol (1)	ND	ND	ND	ND	ND
Pentachlorobenzene	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND
1-Naphthylamine (1)	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND
2-Naphthylamine	ND	ND	ND	ND	ND
5-Nitro-o-toluidine	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND
p-Phenylenediamine	ND	ND	ND	ND	ND
4-Chlorophenyl-phenylether	ND	ND	ND	ND	ND
Diethylphthalate	ND	ND	ND	ND	ND
4-Nitroaniline	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol (1)	ND	ND	ND	ND	ND
n-Nitrosodiphenylamine (2)	ND	ND	ND	ND	ND
Diphenylamine (3)	ND	ND	ND	ND	ND
1,3,5-Trinitrobenzene (1)	ND	ND	ND	ND	ND
Phenacetin	ND	ND	ND	ND	ND
4-Bromophenyl-phenylether	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND
Pentachloronitrobenzene	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	ND	ND
4-Aminobiphenyl	ND	ND	ND	ND	ND
Dinoseb	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND
Di-n-butylphthalate	ND	ND	ND	ND	ND
4-Nitroquinoline-1-oxide (1)	ND	ND	ND	ND	ND
Methapyrilene	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND
p-(Dimethylamino)azobenzene	ND	ND	ND	ND	ND
3,3'-Dimethylbenzidine	ND	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND
2-Acetylaminofluorene	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND	ND
7,12-Dimethylbenz[a]anthracene	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	ND	ND	ND

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40	WG-SB1-7
Lab ID	98D3026	98D3027	98D3028	98D3029	98D3030
Lab Batch	B0179	B0179	B0179	B0179	B0176
File	W4908.D	W4909.D	W4910.D	W4911.D	W4918.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	26.8 g	28.5 g	28.1 g	28.5 g	26.7 g
Associated Blank	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-61PB
Field Date	09/24/98	09/24/98	09/24/98	09/24/98	09/23/98
Extract Date	10/08/98	10/08/98	10/08/98	10/08/98	10/07/98
Analysis Date	11/10/98	11/10/98	11/10/98	11/10/98	11/11/98
Min Reporting Limit	1.5	1.4	1.4	1.4	1.5
Units	ug/g	ug/g	ug/g	ug/g	ug/g
Benzo[k]fluoranthene	ND	ND	ND	ND	ND
Benzo[a]pyrene	ND	ND	ND	ND	ND
3-Methylcholanthrene	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	ND	ND	ND	ND	ND
Dibenz[a,h]anthracene	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	ND	ND	ND	ND	ND
Hexachlorophene	ND	ND	ND	ND	ND
%2-Fluorophenol	43	39	49	47	42
%Phenol-d5	51	47	58	56	51
%Nitrobenzene-d5	45	41	51	49	43
%2-Fluorobiphenyl	56	51	59	58	53
%2,4,6-Tribromophenol	82	67	65	67	62
%Terphenyl-d14	117	103	116	111	86

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7
Lab ID	98D3031	98D3032	98D3033	98D3034	98D3035
Lab Batch	B0176	B0176	B0176	B0176	B0176
File	W4922.D	W4923.D	W4924.D	W4927.D	W4928.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	25 g	27.7 g	28.7 g	29.4 g	27.6 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	11/11/98	11/11/98	11/11/98	11/11/98	11/11/98
Min Reporting Limit	1.6	1.4	1.4	1.4	1.4
Units	ug/g	ug/g	ug/g	ug/g	ug/g
N-nitrosodimethylamine	ND	ND	ND	ND	ND
Pyridine	ND	ND	ND	ND	ND
2-Picoline	ND	ND	ND	ND	ND
N-Nitrosomethylethylamine	ND	ND	ND	ND	ND
Methyl methanesulfonate	ND	ND	ND	ND	ND
N-Nitrosodiethylamine	ND	ND	ND	ND	ND
Ethylmethanesulfonate	ND	ND	ND	ND	ND
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND
Aniline	ND	ND	ND	ND	ND
Pentachloroethane	ND	ND	ND	ND	ND
Phenol	ND	ND	ND	ND	ND
2-Chlorophenol	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND
Benzyl Alcohol	ND	ND	ND	ND	ND
o-Cresol	ND	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	ND	ND	ND	ND	ND
N-Nitrosopyrolidine	ND	ND	ND	ND	ND
N-Nitrosomorpholine	ND	ND	ND	ND	ND
m,p-Cresol	ND	ND	ND	ND	ND
Hexachloroethane	ND	ND	ND	ND	ND
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND
o-Toluidine	ND	ND	ND	ND	ND
Acetophenone	ND	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND	ND
N-Nitrosopiperidine	ND	ND	ND	ND	ND
Isophorone	ND	ND	ND	ND	ND
2-Nitrophenol	ND	ND	ND	ND	ND
2,4-Dimethylphenol	ND	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND
a,a-dimethylphenethylamine	ND	ND	ND	ND	ND
2,4-Dichlorophenol	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND
2,6-Dichlorophenol	ND	ND	ND	ND	ND
Hexachloropropene	ND	ND	ND	ND	ND
4-Chloroaniline	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND
N-Nitrosodi-n-butylamine	ND	ND	ND	ND	ND
Safrole	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND
Isosafrole	ND	ND	ND	ND	ND
2-Nitroaniline	ND	ND	ND	ND	ND

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7
Lab ID	98D3031	98D3032	98D3033	98D3034	98D3035
Lab Batch	B0176	B0176	B0176	B0176	B0176
File	W4922.D	W4923.D	W4924.D	W4927.D	W4928.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	25 g	27.7 g	28.7 g	29.4 g	27.6 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	11/11/98	11/11/98	11/11/98	11/11/98	11/11/98
Min Reporting Limit	1.6	1.4	1.4	1.4	1.4
Units	ug/g	ug/g	ug/g	ug/g	ug/g
1,4-Naphthoquinone	ND	ND	ND	ND	ND
1,3-Dinitrobenzene	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND
Dimethylphthalate	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND
3-Nitroaniline	ND	ND	ND	ND	ND
2,4-Dinitrophenol (1)	ND	ND	ND	ND	ND
Pentachlorobenzene	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND
1-Naphthylamine (1)	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND
2-Naphthylamine	ND	ND	ND	ND	ND
5-Nitro-o-toluidine	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND
p-Phenylenediamine	ND	ND	ND	ND	ND
4-Chlorophenyl-phenylether	ND	ND	ND	ND	ND
Diethylphthalate	ND	ND	ND	ND	ND
4-Nitroaniline	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol (1)	ND	ND	ND	ND	ND
n-Nitrosodiphenylamine (2)	ND	ND	ND	ND	ND
Diphenylamine (3)	ND	ND	ND	ND	ND
1,3,5-Trinitrobenzene (1)	ND	ND	ND	ND	ND
Phenacetin	ND	ND	ND	ND	ND
4-Bromophenyl-phenylether	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND
Pentachloronitrobenzene	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	ND	ND
4-Aminobiphenyl	ND	ND	ND	ND	ND
Dinoseb	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND
Di-n-butylphthalate	ND	ND	ND	ND	ND
4-Nitroquinoline-1-oxide (1)	ND	ND	ND	ND	ND
Methapyrilene	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND
p-(Dimethylamino)azobenzene	ND	ND	ND	ND	ND
3,3'-Dimethylbenzidine	ND	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND
2-Acetylaminofluorene	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND	ND
7,12-Dimethylbenz[a]anthracene	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	ND	ND	ND

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7
Lab ID	98D3031	98D3032	98D3033	98D3034	98D3035
Lab Batch	B0176	B0176	B0176	B0176	B0176
File	W4922.D	W4923.D	W4924.D	W4927.D	W4928.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	25 g	27.7 g	28.7 g	29.4 g	27.6 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	11/11/98	11/11/98	11/11/98	11/11/98	11/11/98
Min Reporting Limit	1.6	1.4	1.4	1.4	1.4
Units	ug/g	ug/g	ug/g	ug/g	ug/g
Benzo[k]fluoranthene	ND	ND	ND	ND	ND
Benzo[a]pyrene	ND	ND	ND	ND	ND
3-Methylcholanthrene	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	ND	ND	ND	ND	ND
Dibenz[a,h]anthracene	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	ND	ND	ND	ND	ND
Hexachlorophene	ND	ND	ND	ND	ND
%2-Fluorophenol	40	49	48	53	65
%Phenol-d5	50	54	56	57	71
%Nitrobenzene-d5	42	44	49	51	57
%2-Fluorobiphenyl	53	53	55	59	63
%2,4,6-Tribromophenol	60	69	57	59	74
%Terphenyl-d14	77	89	87	90	79

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42	WG-SB3-7
Lab ID	98D3036	98D3037	98D3038	98D3039	98D3040
Lab Batch	B0176	B0176	B0176	B0176	B0176
File	W4929.D	W4930.D	W4931.D	W4937.D	W4938.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	25.2 g	26.3 g	27.7 g	28.3 g	28.5 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	11/11/98	11/11/98	11/11/98	11/12/98	11/12/98
Min Reporting Limit	1.6	1.5	1.4	1.4	1.4
Units	ug/g	ug/g	ug/g	ug/g	ug/g
N-nitrosodimethylamine	ND	ND	ND	ND	ND
Pyridine	ND	ND	ND	ND	ND
2-Picoline	ND	ND	ND	ND	ND
N-Nitrosomethylethylamine	ND	ND	ND	ND	ND
Methyl methanesulfonate	ND	ND	ND	ND	ND
N-Nitrosodiethylamine	ND	ND	ND	ND	ND
Ethylmethanesulfonate	ND	ND	ND	ND	ND
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND
Aniline	ND	ND	ND	ND	ND
Pentachloroethane	ND	ND	ND	ND	ND
Phenol	ND	ND	ND	ND	ND
2-Chlorophenol	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND
Benzyl Alcohol	ND	ND	ND	ND	ND
o-Cresol	ND	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	ND	ND	ND	ND	ND
N-Nitrosopyrolidine	ND	ND	ND	ND	ND
N-Nitrosomorpholine	ND	ND	ND	ND	ND
m,p-Cresol	ND	ND	ND	ND	ND
Hexachloroethane	ND	ND	ND	ND	ND
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND
o-Toluidine	ND	ND	ND	ND	ND
Acetophenone	ND	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND	ND
N-Nitrosopiperidine	ND	ND	ND	ND	ND
Isophorone	ND	ND	ND	ND	ND
2-Nitrophenol	ND	ND	ND	ND	ND
2,4-Dimethylphenol	ND	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND
a,a-dimethylphenethylamine	ND	ND	ND	ND	ND
2,4-Dichlorophenol	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND
2,6-Dichlorophenol	ND	ND	ND	ND	ND
Hexachloropropene	ND	ND	ND	ND	ND
4-Chloroaniline	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND
N-Nitrosodi-n-butylamine	ND	ND	ND	ND	ND
Safrole	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND
Isosafrole	ND	ND	ND	ND	ND
2-Nitroaniline	ND	ND	ND	ND	ND

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42	WG-SB3-7
Lab ID	98D3036	98D3037	98D3038	98D3039	98D3040
Lab Batch	B0176	B0176	B0176	B0176	B0176
File	W4929.D	W4930.D	W4931.D	W4937.D	W4938.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	25.2 g	26.3 g	27.7 g	28.3 g	28.5 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	11/11/98	11/11/98	11/11/98	11/12/98	11/12/98
Min Reporting Limit	1.6	1.5	1.4	1.4	1.4
Units	ug/g	ug/g	ug/g	ug/g	ug/g
1,4-Naphthoquinone	ND	ND	ND	ND	ND
1,3-Dinitrobenzene	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND
Dimethylphthalate	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND	ND
3-Nitroaniline	ND	ND	ND	ND	ND
2,4-Dinitrophenol (1)	ND	ND	ND	ND	ND
Pentachlorobenzene	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND
1-Naphthylamine (1)	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND
2-Naphthylamine	ND	ND	ND	ND	ND
5-Nitro-o-toluidine	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND
p-Phenylenediamine	ND	ND	ND	ND	ND
4-Chlorophenyl-phenylether	ND	ND	ND	ND	ND
Diethylphthalate	ND	ND	ND	ND	ND
4-Nitroaniline	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol (1)	ND	ND	ND	ND	ND
n-Nitrosodiphenylamine (2)	ND	ND	ND	ND	ND
Diphenylamine (3)	ND	ND	ND	ND	ND
1,3,5-Trinitrobenzene (1)	ND	ND	ND	ND	ND
Phenacetin	ND	ND	ND	ND	ND
4-Bromophenyl-phenylether	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND
Pentachloronitrobenzene	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	ND	ND
4-Aminobiphenyl	ND	ND	ND	ND	ND
Dinoseb	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND
Di-n-butylphthalate	ND	ND	ND	ND	ND
4-Nitroquinoline-1-oxide (1)	ND	ND	ND	ND	ND
Methapyrilene	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND
p-(Dimethylamino)azobenzene	ND	ND	ND	ND	ND
3,3'-Dimethylbenzidine	ND	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND
2-Acetylaminofluorene	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND	ND
7,12-Dimethylbenz[a]anthracene	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	ND	ND	ND

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42	WG-SB3-7
Lab ID	98D3036	98D3037	98D3038	98D3039	98D3040
Lab Batch	B0176	B0176	B0176	B0176	B0176
File	W4929.D	W4930.D	W4931.D	W4937.D	W4938.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	25.2 g	26.3 g	27.7 g	28.3 g	28.5 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	11/11/98	11/11/98	11/11/98	11/12/98	11/12/98
Min Reporting Limit	1.6	1.5	1.4	1.4	1.4
Units	ug/g	ug/g	ug/g	ug/g	ug/g
Benzo[k]fluoranthene	ND	ND	ND	ND	ND
Benzo[a]pyrene	ND	ND	ND	ND	ND
3-Methylcholanthrene	ND	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	ND	ND	ND	ND	ND
Dibenz[a,h]anthracene	ND	ND	ND	ND	ND
Benzo[g,h,i]perylene	ND	ND	ND	ND	ND
Hexachlorophene	ND	ND	ND	ND	ND
%2-Fluorophenol	74	62	66	65	58
%Phenol-d5	88	64	73	72	66
%Nitrobenzene-d5	69	59	62	64	58
%2-Fluorobiphenyl	80	64	68	67	64
%2,4,6-Tribromophenol	93	81	83	72	74
%Terphenyl-d14	101	101	108	105	108

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB3-10	WG-SB3-24	WG-SB3-30	WG-SB3-40
Lab ID	98D3041	98D3042	98D3043	98D3044
Lab Batch	B0176	B0176	B0176	B0176
File	W4939.D	W5024.D	W5025.D	W5026.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL
Sample Size	27.8 g	27.8 g	26.7 g	27.8 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	11/12/98	11/17/98	11/17/98	11/17/98
Min Reporting Limit	1.4	1.4	1.5	1.4
Units	ug/g	ug/g	ug/g	ug/g
N-nitrosodimethylamine	ND	ND	ND	ND
Pyridine	ND	ND	ND	ND
2-Picoline	ND	ND	ND	ND
N-Nitrosomethylethylamine	ND	ND	ND	ND
Methyl methanesulfonate	ND	ND	ND	ND
N-Nitrosodiethylamine	ND	ND	ND	ND
Ethylmethanesulfonate	ND	ND	ND	ND
bis(2-Chloroethyl)ether	ND	ND	ND	ND
Aniline	ND	ND	ND	ND
Pentachloroethane	ND	ND	ND	ND
Phenol	ND	ND	ND	ND
2-Chlorophenol	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND
Benzyl Alcohol	ND	ND	ND	ND
o-Cresol	ND	ND	ND	ND
bis(2-chloroisopropyl)ether	ND	ND	ND	ND
N-Nitrosopyrolidine	ND	ND	ND	ND
N-Nitrosomorpholine	ND	ND	ND	ND
m,p-Cresol	ND	ND	ND	ND
Hexachloroethane	ND	ND	ND	ND
N-Nitroso-di-n-propylamine	ND	ND	ND	ND
o-Toluidine	ND	ND	ND	ND
Acetophenone	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND
N-Nitrosopiperidine	ND	ND	ND	ND
Isophorone	ND	ND	ND	ND
2-Nitrophenol	ND	ND	ND	ND
2,4-Dimethylphenol	ND	ND	ND	ND
bis(2-Chloroethoxy)methane	ND	ND	ND	ND
a,a-dimethylphenethylamine	ND	ND	ND	ND
2,4-Dichlorophenol	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND
2,6-Dichlorophenol	ND	ND	ND	ND
Hexachloropropene	ND	ND	ND	ND
4-Chloroaniline	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND
N-Nitrosodi-n-butylamine	ND	ND	ND	ND
Safrole	ND	ND	ND	ND
4-Chloro-3-methylphenol	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND
Hexachlorocyclopentadiene	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	ND	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND	ND
2,4,5-Trichlorophenol	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND
Isosafrole	ND	ND	ND	ND
2-Nitroaniline	ND	ND	ND	ND

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB3-10	WG-SB3-24	WG-SB3-30	WG-SB3-40
Lab ID	98D3041	98D3042	98D3043	98D3044
Lab Batch	B0176	B0176	B0176	B0176
File	W4939.D	W5024.D	W5025.D	W5026.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL
Sample Size	27.8 g	27.8 g	26.7 g	27.8 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	11/12/98	11/17/98	11/17/98	11/17/98
Min Reporting Limit	1.4	1.4	1.5	1.4
Units	ug/g	ug/g	ug/g	ug/g
1,4-Naphthoquinone	ND	ND	ND	ND
1,3-Dinitrobenzene	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND
Dimethylphthalate	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND
Acenaphthene	ND	ND	ND	ND
3-Nitroaniline	ND	ND	ND	ND
2,4-Dinitrophenol (1)	ND	ND	ND	ND
Pentachlorobenzene	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND
1-Naphthylamine (1)	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND
2-Naphthylamine	ND	ND	ND	ND
5-Nitro-o-toluidine	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND
p-Phenylenediamine	ND	ND	ND	ND
4-Chlorophenyl-phenylether	ND	ND	ND	ND
Diethylphthalate	ND	ND	ND	ND
4-Nitroaniline	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol (1)	ND	ND	ND	ND
n-Nitrosodiphenylamine (2)	ND	ND	ND	ND
Diphenylamine (3)	ND	ND	ND	ND
1,3,5-Trinitrobenzene (1)	ND	ND	ND	ND
Phenacetin	ND	ND	ND	ND
4-Bromophenyl-phenylether	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND
Pentachloronitrobenzene	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	ND
4-Aminobiphenyl	ND	ND	ND	ND
Dinoseb	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND
Di-n-butylphthalate	ND	ND	ND	ND
4-Nitroquinoline-1-oxide (1)	ND	ND	ND	ND
Methapyrilene	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND
p-(Dimethylamino)azobenzene	ND	ND	ND	ND
3,3'-Dimethylbenzidine	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND
2-Acetylaminofluorene	ND	ND	ND	ND
3,3'-Dichlorobenzidine	ND	ND	ND	ND
Benzo[a]anthracene	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND
Di-n-octylphthalate	ND	ND	ND	ND
7,12-Dimethylbenz[a]anthracene	ND	ND	ND	ND
Benzo[b]fluoranthene	ND	ND	ND	ND

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB3-10	WG-SB3-24	WG-SB3-30	WG-SB3-40
Lab ID	98D3041	98D3042	98D3043	98D3044
Lab Batch	B0176	B0176	B0176	B0176
File	W4939.D	W5024.D	W5025.D	W5026.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL
Sample Size	27.8 g	27.8 g	26.7 g	27.8 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	11/12/98	11/17/98	11/17/98	11/17/98
Min Reporting Limit	1.4	1.4	1.5	1.4
Units	ug/g	ug/g	ug/g	ug/g
Benzo[k]fluoranthene	ND	ND	ND	ND
Benzo[a]pyrene	ND	ND	ND	ND
3-Methylcholanthrene	ND	ND	ND	ND
Indeno[1,2,3-cd]pyrene	ND	ND	ND	ND
Dibenz[a,h]anthracene	ND	ND	ND	ND
Benzo[g,h,i]perylene	ND	ND	ND	ND
Hexachlorophene	ND	ND	ND	ND
%2-Fluorophenol	51	48	51	41
%Phenol-d5	59	57	58	51
%Nitrobenzene-d5	50	52	52	42
%2-Fluorobiphenyl	63	58	56	51
%2,4,6-Tribromophenol	75	69	54	57
%Terphenyl-d14	102	97	75	73

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - MS-MSD - Not Surrogate Corrected

Field ID	WG-SB1-30	WG-SB1-30				WG-SB1-30				
Lab ID	98D3033	98D3033MS				98D3033MSD				
Lab Batch	B0176	B0176				B0176				
File	W4924.D	W4925.D				W4926.D				
Sample Type	SAMP	QC				QC				
Weight Basis	DRY	DRY				DRY				
Matrix	SOIL	SOIL				SOIL				
Sample Size	28.7 g	28.7 g				28.8 g				
Associated Blank	BW-S-61PB	BW-S-61PB				BW-S-61PB				
Field Date	09/23/98	09/23/98				09/23/98				
Extract Date	10/07/98	10/07/98				10/07/98				
Analysis Date	11/11/98	11/11/98				11/11/98				
Min Reporting Limit	1.4	1.4				1.4				
Units	ug/g	ug/g	T	%R	Q	ug/g	T	%R	Q RPD	Q
N-nitrosodimethylamine	ND	ND				ND				
Pyridine	ND	ND				ND				
2-Picoline	ND	ND				ND				
N-Nitrosomethylethylamine	ND	ND				ND				
Methyl methanesulfonate	ND	ND				ND				
N-Nitrosodiethylamine	ND	ND				ND				
Ethylmethanesulfonate	ND	ND				ND				
bis(2-Chloroethyl)ether	ND	ND				ND				
Aniline	ND	ND				ND				
Pentachloroethane	ND	ND				ND				
Phenol	ND	4.4	8	55		4.2	8	53	3.7	
2-Chlorophenol	ND	4.6	8	58		4.4	8	55	5.3	
1,3-Dichlorobenzene	ND	ND				ND				
1,4-Dichlorobenzene	ND	2.1	4	53		2	4	50	5.8	
1,2-Dichlorobenzene	ND	ND				ND				
Benzyl Alcohol	ND	ND				ND				
o-Cresol	ND	ND				ND				
bis(2-chloroisopropyl)ether	ND	ND				ND				
N-Nitrosopyrolidine	ND	ND				ND				
N-Nitrosomorpholine	ND	ND				ND				
m,p-Cresol	ND	ND				ND				
Hexachloroethane	ND	ND				ND				
N-Nitroso-di-n-propylamine	ND	1.3 J	4	33		1.3 J	4	33	0	
o-Toluidine	ND	ND				ND				
Acetophenone	ND	ND				ND				
Nitrobenzene	ND	ND				ND				
N-Nitrosopiperidine	ND	ND				ND				
Isophorone	ND	ND				ND				
2-Nitrophenol	ND	ND				ND				
2,4-Dimethylphenol	ND	ND				ND				
bis(2-Chloroethoxy)methane	ND	ND				ND				
a,a-dimethylphenethylamine	ND	ND				ND				
2,4-Dichlorophenol	ND	ND				ND				
1,2,4-Trichlorobenzene	ND	2.1	4	53		2.1	4	53	0	
Naphthalene	ND	ND				ND				
2,6-Dichlorophenol	ND	ND				ND				
Hexachloropropene	ND	ND				ND				
4-Chloroaniline	ND	ND				ND				
Hexachlorobutadiene	ND	ND				ND				
N-Nitrosodi-n-butylamine	ND	ND				ND				
Safrole	ND	ND				ND				
4-Chloro-3-methylphenol	ND	5	8	63		4.7	8	59	6.6	
2-Methylnaphthalene	ND	ND				ND				
Hexachlorocyclopentadiene	ND	ND				ND				
1,2,4,5-Tetrachlorobenzene	ND	ND				ND				
2,4,6-Trichlorophenol	ND	ND				ND				
2,4,5-Trichlorophenol	ND	ND				ND				
2-Chloronaphthalene	ND	ND				ND				
Isosafrole	ND	ND				ND				
2-Nitroaniline	ND	ND				ND				

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - MS-MSD - Not Surrogate Corrected

Field ID	WG-SB1-30	WG-SB1-30				WG-SB1-30				
Lab ID	98D3033	98D3033MS				98D3033MSD				
Lab Batch	B0176	B0176				B0176				
File	W4924.D	W4925.D				W4926.D				
Sample Type	SAMP	QC				QC				
Weight Basis	DRY	DRY				DRY				
Matrix	SOIL	SOIL				SOIL				
Sample Size	28.7 g	28.7 g				28.8 g				
Associated Blank	BW-S-61PB	BW-S-61PB				BW-S-61PB				
Field Date	09/23/98	09/23/98				09/23/98				
Extract Date	10/07/98	10/07/98				10/07/98				
Analysis Date	11/11/98	11/11/98				11/11/98				
Min Reporting Limit	1.4	1.4				1.4				
Units	ug/g	ug/g	T	%R	Q	ug/g	T	%R	Q RPD	Q
1,4-Naphthoquinone	ND	ND				ND				
1,3-Dinitrobenzene	ND	ND				ND				
Acenaphthylene	ND	ND				ND				
Dimethylphthalate	ND	ND				ND				
2,6-Dinitrotoluene	ND	ND				ND				
Acenaphthene	ND	2.6	4	65		2.5	4	63	3.1	
3-Nitroaniline	ND	ND				ND				
2,4-Dinitrophenol	ND	ND				ND				
Pentachlorobenzene	ND	ND				ND				
Dibenzofuran	ND	ND				ND				
1-Naphthylamine	ND	ND				ND				
2,4-Dinitrotoluene	ND	2.6	4	65		2.4	4	60	8.7	
2,3,4,6-Tetrachlorophenol	ND	ND				ND				
4-Nitrophenol	ND	5.6	8	69		5.3	8	66	4.4	
2-Naphthylamine	ND	ND				ND				
5-Nitro-o-toluidine	ND	ND				ND				
Fluorene	ND	ND				ND				
p-Phenylenediamine	ND	ND				ND				
4-Chlorophenyl-phenylether	ND	ND				ND				
Diethylphthalate	ND	ND				ND				
4-Nitroaniline	ND	ND				ND				
4,6-Dinitro-2-methylphenol	ND	ND				ND				
n-Nitrosodiphenylamine (1)	ND	ND				ND				
Diphenylamine (2)	ND	ND				ND				
1,3,5-Trinitrobenzene	ND	ND				ND				
Phenacetin	ND	ND				ND				
4-Bromophenyl-phenylether	ND	ND				ND				
Hexachlorobenzene	ND	ND				ND				
Pentachloronitrobenzene	ND	ND				ND				
Pentachlorophenol	ND	4.9	8	61		4.3	8	54	12	
4-Aminobiphenyl	ND	ND				ND				
Dinoseb	ND	ND				ND				
Phenanthrene	ND	ND				ND				
Anthracene	ND	ND				ND				
Di-n-butylphthalate	ND	ND				ND				
4-Nitroquinoline-1-oxide	ND	ND				ND				
Methapyrilene	ND	ND				ND				
Fluoranthene	ND	ND				ND				
Pyrene	ND	3.1	4	78		2.9	4	73	6.6	
p-(Dimethylamino)azobenzene	ND	ND				ND				
3,3'-Dimethylbenzidine	ND	ND				ND				
Butylbenzylphthalate	ND	ND				ND				
2-Acetylaminofluorene	ND	ND				ND				
3,3'-Dichlorobenzidine	ND	ND				ND				
Benzo[a]anthracene	ND	ND				ND				
Chrysene	ND	ND				ND				
bis(2-Ethylhexyl)phthalate	ND	ND				ND				
Di-n-octylphthalate	ND	ND				ND				
7,12-Dimethylbenz[a]anthracene	ND	ND				ND				
Benzo[b]fluoranthene	ND	ND				ND				

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - MS-MSD - Not Surrogate Corrected

Field ID	WG-SB1-30	WG-SB1-30				WG-SB1-30				
Lab ID	98D3033	98D3033MS				98D3033MSD				
Lab Batch	B0176	B0176				B0176				
File	W4924.D	W4925.D				W4926.D				
Sample Type	SAMP	QC				QC				
Weight Basis	DRY	DRY				DRY				
Matrix	SOIL	SOIL				SOIL				
Sample Size	28.7 g	28.7 g				28.8 g				
Associated Blank	BW-S-61PB	BW-S-61PB				BW-S-61PB				
Field Date	09/23/98	09/23/98				09/23/98				
Extract Date	10/07/98	10/07/98				10/07/98				
Analysis Date	11/11/98	11/11/98				11/11/98				
Min Reporting Limit	1.4	1.4				1.4				
Units	ug/g	ug/g	T	%R	Q	ug/g	T	%R	Q RPD	Q
Benzo[k]fluoranthene	ND	ND				ND				
Benzo[a]pyrene	ND	ND				ND				
3-Methylcholanthrene	ND	ND				ND				
Indeno[1,2,3-cd]pyrene	ND	ND				ND				
Dibenz[a,h]anthracene	ND	ND				ND				
Benzo[g,h,i]perylene	ND	ND				ND				
Hexachlorophene	ND	ND				ND				
%2-Fluorophenol	48	63				62				
%Phenol-d5	56	71				69				
%Nitrobenzene-d5	49	60				59				
%2-Fluorobiphenyl	55	69				67				
%2,4,6-Tribromophenol	57	70				68				
%Terphenyl-d14	87	108				98				

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - MS-MSD - Not Surrogate Corrected

Field ID	WG-SB4-30	WG-SB4-30				WG-SB4-30				
Lab ID	98D3023	98D3023MS				98D3023MSD				
Lab Batch	B0179	B0179				B0179				
File	W4899.D	W4900.D				W4901.D				
Sample Type	SAMP	QC				QC				
Weight Basis	DRY	DRY				DRY				
Matrix	SOIL	SOIL				SOIL				
Sample Size	28.5 g	28.4 g				28.4 g				
Associated Blank	BW-S-70PB	BW-S-70PB				BW-S-70PB				
Field Date	09/24/98	09/24/98				09/24/98				
Extract Date	10/08/98	10/08/98				10/08/98				
Analysis Date	11/10/98	11/10/98				11/10/98				
Min Reporting Limit	1.4	1.4				1.4				
Units	ug/g	ug/g	T	%R	Q	ug/g	T	%R	Q RPD	Q
N-nitrosodimethylamine	ND	ND				ND				
Pyridine	ND	ND				ND				
2-Picoline	ND	ND				ND				
N-Nitrosomethylethylamine	ND	ND				ND				
Methyl methanesulfonate	ND	ND				ND				
N-Nitrosodiethylamine	ND	ND				ND				
Ethylmethanesulfonate	ND	ND				ND				
bis(2-Chloroethyl)ether	ND	ND				ND				
Aniline	ND	ND				ND				
Pentachloroethane	ND	ND				ND				
Phenol	ND	4.1	8	51		4.5	8	56	9.3	
2-Chlorophenol	ND	4.2	8	53		4.8	8	60	12	
1,3-Dichlorobenzene	ND	ND				ND				
1,4-Dichlorobenzene	ND	2	4	50		2.3	4	58	15	
1,2-Dichlorobenzene	ND	ND				ND				
Benzyl Alcohol	ND	ND				ND				
o-Cresol	ND	ND				ND				
bis(2-chloroisopropyl)ether	ND	ND				ND				
N-Nitrosopyrolidine	ND	ND				ND				
N-Nitrosomorpholine	ND	ND				ND				
m,p-Cresol	ND	ND				ND				
Hexachloroethane	ND	ND				ND				
N-Nitroso-di-n-propylamine	ND	1.6	4	40		1.9	4	48	17	
o-Toluidine	ND	ND				ND				
Acetophenone	ND	ND				ND				
Nitrobenzene	ND	ND				ND				
N-Nitrosopiperidine	ND	ND				ND				
Isophorone	ND	ND				ND				
2-Nitrophenol	ND	ND				ND				
2,4-Dimethylphenol	ND	ND				ND				
bis(2-Chloroethoxy)methane	ND	ND				ND				
a,a-dimethylphenethylamine	ND	ND				ND				
2,4-Dichlorophenol	ND	ND				ND				
1,2,4-Trichlorobenzene	ND	2.1	4	53		2.3	4	58	9	
Naphthalene	ND	ND				ND				
2,6-Dichlorophenol	ND	ND				ND				
Hexachloropropene	ND	ND				ND				
4-Chloroaniline	ND	ND				ND				
Hexachlorobutadiene	ND	ND				ND				
N-Nitrosodi-n-butylamine	ND	ND				ND				
Safrole	ND	ND				ND				
4-Chloro-3-methylphenol	ND	5.2	8	65		5.4	8	68	4.5	
2-Methylnaphthalene	ND	ND				ND				
Hexachlorocyclopentadiene	ND	ND				ND				
1,2,4,5-Tetrachlorobenzene	ND	ND				ND				
2,4,6-Trichlorophenol	ND	ND				ND				
2,4,5-Trichlorophenol	ND	ND				ND				
2-Chloronaphthalene	ND	ND				ND				
Isosafrole	ND	ND				ND				
2-Nitroaniline	ND	ND				ND				

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - MS-MSD - Not Surrogate Corrected

Field ID	WG-SB4-30	WG-SB4-30				WG-SB4-30				
Lab ID	98D3023	98D3023MS				98D3023MSD				
Lab Batch	B0179	B0179				B0179				
File	W4899.D	W4900.D				W4901.D				
Sample Type	SAMP	QC				QC				
Weight Basis	DRY	DRY				DRY				
Matrix	SOIL	SOIL				SOIL				
Sample Size	28.5 g	28.4 g				28.4 g				
Associated Blank	BW-S-70PB	BW-S-70PB				BW-S-70PB				
Field Date	09/24/98	09/24/98				09/24/98				
Extract Date	10/08/98	10/08/98				10/08/98				
Analysis Date	11/10/98	11/10/98				11/10/98				
Min Reporting Limit	1.4	1.4				1.4				
Units	ug/g	ug/g	T	%R	Q	ug/g	T	%R	Q RPD	Q
1,4-Naphthoquinone	ND	ND				ND				
1,3-Dinitrobenzene	ND	ND				ND				
Acenaphthylene	ND	ND				ND				
Dimethylphthalate	ND	ND				ND				
2,6-Dinitrotoluene	ND	ND				ND				
Acenaphthene	ND	2.7	4	68		2.8	4	70	2.9	
3-Nitroaniline	ND	ND				ND				
2,4-Dinitrophenol	ND	ND				ND				
Pentachlorobenzene	ND	ND				ND				
Dibenzofuran	ND	ND				ND				
1-Naphthylamine	ND	ND				ND				
2,4-Dinitrotoluene	ND	2.7	4	68		2.8	4	70	2.9	
2,3,4,6-Tetrachlorophenol	ND	ND				ND				
4-Nitrophenol	ND	6.2	8	78		6.2	8	78	0	
2-Naphthylamine	ND	ND				ND				
5-Nitro-o-toluidine	ND	ND				ND				
Fluorene	ND	ND				ND				
p-Phenylenediamine	ND	ND				ND				
4-Chlorophenyl-phenylether	ND	ND				ND				
Diethylphthalate	ND	ND				ND				
4-Nitroaniline	ND	ND				ND				
4,6-Dinitro-2-methylphenol	ND	ND				ND				
n-Nitrosodiphenylamine (1)	ND	ND				ND				
Diphenylamine (2)	ND	ND				ND				
1,3,5-Trinitrobenzene	ND	ND				ND				
Phenacetin	ND	ND				ND				
4-Bromophenyl-phenylether	ND	ND				ND				
Hexachlorobenzene	ND	ND				ND				
Pentachloronitrobenzene	ND	ND				ND				
Pentachlorophenol	ND	4.2	8	53		4.4	8	55	3.7	
4-Aminobiphenyl	ND	ND				ND				
Dinoseb	ND	ND				ND				
Phenanthrene	ND	ND				ND				
Anthracene	ND	ND				ND				
Di-n-butylphthalate	ND	ND				ND				
4-Nitroquinoline-1-oxide	ND	ND				ND				
Methapyrilene	ND	ND				ND				
Fluoranthene	ND	ND				ND				
Pyrene	ND	3.2	4	80		3.3	4	83	3.7	
p-(Dimethylamino)azobenzene	ND	ND				ND				
3,3'-Dimethylbenzidine	ND	ND				ND				
Butylbenzylphthalate	ND	ND				ND				
2-Acetylaminofluorene	ND	ND				ND				
3,3'-Dichlorobenzidine	ND	ND				ND				
Benzo[a]anthracene	ND	ND				ND				
Chrysene	ND	ND				ND				
bis(2-Ethylhexyl)phthalate	ND	ND				ND				
Di-n-octylphthalate	ND	ND				ND				
7,12-Dimethylbenz[a]anthracene	ND	ND				ND				
Benzo[b]fluoranthene	ND	ND				ND				

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - MS-MSD - Not Surrogate Corrected

Field ID	WG-SB4-30	WG-SB4-30				WG-SB4-30				
Lab ID	98D3023	98D3023MS				98D3023MSD				
Lab Batch	B0179	B0179				B0179				
File	W4899.D	W4900.D				W4901.D				
Sample Type	SAMP	QC				QC				
Weight Basis	DRY	DRY				DRY				
Matrix	SOIL	SOIL				SOIL				
Sample Size	28.5 g	28.4 g				28.4 g				
Associated Blank	BW-S-70PB	BW-S-70PB				BW-S-70PB				
Field Date	09/24/98	09/24/98				09/24/98				
Extract Date	10/08/98	10/08/98				10/08/98				
Analysis Date	11/10/98	11/10/98				11/10/98				
Min Reporting Limit	1.4	1.4				1.4				
Units	ug/g	ug/g	T	%R	Q	ug/g	T	%R	Q RPD	Q
Benzo[k]fluoranthene	ND	ND				ND				
Benzo[a]pyrene	ND	ND				ND				
3-Methylcholanthrene	ND	ND				ND				
Indeno[1,2,3-cd]pyrene	ND	ND				ND				
Dibenz[a,h]anthracene	ND	ND				ND				
Benzo[g,h,i]perylene	ND	ND				ND				
Hexachlorophene	ND	ND				ND				
%2-Fluorophenol	44	59				66				
%Phenol-d5	56	69				74				
%Nitrobenzene-d5	48	58				64				
%2-Fluorobiphenyl	61	72				74				
%2,4,6-Tribromophenol	73	83				80				
%Terphenyl-d14	119	109				111				

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - BS-BSD - Not Surrogate Corrected

Field ID	Procedural Blank	Blank Spike			
Lab ID	BW-S-61PB	BW-S-62BS			
Lab Batch	B0176	B0176			
File	W4914.D	W4915.D			
Sample Type	QC	QC			
Weight Basis	DRY	DRY			
Matrix	SOIL	SOIL			
Sample Size	30 g	30 g			
Associated Blank	NA	BW-S-61PB			
Field Date	NA	NA			
Extract Date	10/07/98	10/07/98			
Analysis Date	11/10/98	11/10/98			
Min Reporting Limit	1.3	1.3			
Units	ug/g	ug/g	T	%R	Q
N-nitrosodimethylamine	ND	ND			
Pyridine	ND	ND			
2-Picoline	ND	ND			
N-Nitrosomethylethylamine	ND	ND			
Methyl methanesulfonate	ND	ND			
N-Nitrosodiethylamine	ND	ND			
Ethylmethanesulfonate	ND	ND			
bis(2-Chloroethyl)ether	ND	ND			
Aniline	ND	ND			
Pentachloroethane	ND	ND			
Phenol	ND	4.4	6	73	
2-Chlorophenol	ND	4.9	6	82	
1,3-Dichlorobenzene	ND	ND			
1,4-Dichlorobenzene	ND	2.4	3	80	
1,2-Dichlorobenzene	ND	ND			
Benzyl Alcohol	ND	ND			
o-Cresol	ND	ND			
bis(2-chloroisopropyl)ether	ND	ND			
N-Nitrosopyrolidine	ND	ND			
N-Nitrosomorpholine	ND	ND			
m,p-Cresol	ND	ND			
Hexachloroethane	ND	ND			
N-Nitroso-di-n-propylamine	ND	1.4	3	47	&
o-Toluidine	ND	ND			
Acetophenone	ND	ND			
Nitrobenzene	ND	ND			
N-Nitrosopiperidine	ND	ND			
Isophorone	ND	ND			
2-Nitrophenol	ND	ND			
2,4-Dimethylphenol	ND	ND			
bis(2-Chloroethoxy)methane	ND	ND			
a,a-dimethylphenethylamine	ND	ND			
2,4-Dichlorophenol	ND	ND			
1,2,4-Trichlorobenzene	ND	2.4	3	80	
Naphthalene	ND	ND			
2,6-Dichlorophenol	ND	ND			
Hexachloropropene	ND	ND			
4-Chloroaniline	ND	ND			
Hexachlorobutadiene	ND	ND			
N-Nitrosodi-n-butylamine	ND	ND			
Safrole	ND	ND			
4-Chloro-3-methylphenol	ND	4.7	6	78	
2-Methylnaphthalene	ND	ND			
Hexachlorocyclopentadiene	ND	ND			
1,2,4,5-Tetrachlorobenzene	ND	ND			
2,4,6-Trichlorophenol	ND	ND			
2,4,5-Trichlorophenol	ND	ND			
2-Chloronaphthalene	ND	ND			
Isosafrole	ND	ND			
2-Nitroaniline	ND	ND			

1. Because of analytical difficulties the MRL is 5x higher.
2. Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - BS-BSD - Not Surrogate Corrected

Field ID	Procedural Blank	Blank Spike			
Lab ID	BW-S-61PB	BW-S-62BS			
Lab Batch	B0176	B0176			
File	W4914.D	W4915.D			
Sample Type	QC	QC			
Weight Basis	DRY	DRY			
Matrix	SOIL	SOIL			
Sample Size	30 g	30 g			
Associated Blank	NA	BW-S-61PB			
Field Date	NA	NA			
Extract Date	10/07/98	10/07/98			
Analysis Date	11/10/98	11/10/98			
Min Reporting Limit	1.3	1.3			
Units	ug/g	ug/g	T	%R	Q
1,4-Naphthoquinone	ND	ND			
1,3-Dinitrobenzene	ND	ND			
Acenaphthylene	ND	ND			
Dimethylphthalate	ND	ND			
2,6-Dinitrotoluene	ND	ND			
Acenaphthene	ND	2.5	3	83	
3-Nitroaniline	ND	ND			
2,4-Dinitrophenol (1)	ND	ND			
Pentachlorobenzene	ND	ND			
Dibenzofuran	ND	ND			
1-Naphthylamine (1)	ND	ND			
2,4-Dinitrotoluene	ND	2.3	3	77	
2,3,4,6-Tetrachlorophenol	ND	ND			
4-Nitrophenol	ND	5.1	6	83	
2-Naphthylamine	ND	ND			
5-Nitro-o-toluidine	ND	ND			
Fluorene	ND	ND			
p-Phenylenediamine	ND	ND			
4-Chlorophenyl-phenylether	ND	ND			
Diethylphthalate	ND	ND			
4-Nitroaniline	ND	ND			
4,6-Dinitro-2-methylphenol (1)	ND	ND			
n-Nitrosodiphenylamine (2)	ND	ND			
Diphenylamine (3)	ND	ND			
1,3,5-Trinitrobenzene (1)	ND	ND			
Phenacetin	ND	ND			
4-Bromophenyl-phenylether	ND	ND			
Hexachlorobenzene	ND	ND			
Pentachloronitrobenzene	ND	ND			
Pentachlorophenol	ND	4.9	6	82	
4-Aminobiphenyl	ND	ND			
Dinoseb	ND	ND			
Phenanthrene	ND	ND			
Anthracene	ND	ND			
Di-n-butylphthalate	ND	ND			
4-Nitroquinoline-1-oxide (1)	ND	ND			
Methapyrilene	ND	ND			
Fluoranthene	ND	ND			
Pyrene	ND	2.8	3	93	
p-(Dimethylamino)azobenzene	ND	ND			
3,3'-Dimethylbenzidine	ND	ND			
Butylbenzylphthalate	ND	ND			
2-Acetylaminofluorene	ND	ND			
3,3'-Dichlorobenzidine	ND	ND			
Benzo[a]anthracene	ND	ND			
Chrysene	ND	ND			
bis(2-Ethylhexyl)phthalate	ND	ND			
Di-n-octylphthalate	ND	ND			
7,12-Dimethylbenz[a]anthracene	ND	ND			
Benzo[b]fluoranthene	ND	ND			

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - BS-BSD - Not Surrogate Corrected

Field ID	Procedural Blank	Blank Spike			
Lab ID	BW-S-61PB	BW-S-62BS			
Lab Batch	B0176	B0176			
File	W4914.D	W4915.D			
Sample Type	QC	QC			
Weight Basis	DRY	DRY			
Matrix	SOIL	SOIL			
Sample Size	30 g	30 g			
Associated Blank	NA	BW-S-61PB			
Field Date	NA	NA			
Extract Date	10/07/98	10/07/98			
Analysis Date	11/10/98	11/10/98			
Min Reporting Limit	1.3	1.3			
Units	ug/g	ug/g	T	%R	Q
Benzo[k]fluoranthene	ND	ND			
Benzo[a]pyrene	ND	ND			
3-Methylcholanthrene	ND	ND			
Indeno[1,2,3-cd]pyrene	ND	ND			
Dibenz[a,h]anthracene	ND	ND			
Benzo[g,h,i]perylene	ND	ND			
Hexachlorophene	ND	ND			
%2-Fluorophenol	67	74			
%Phenol-d5	71	77			
%Nitrobenzene-d5	64	66			
%2-Fluorobiphenyl	72	74			
%2,4,6-Tribromophenol	68	72			
%Terphenyl-d14	107	94			

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - BS-BSD - Not Surrogate Corrected

Field ID	Procedural Blank	Blank Spike			
Lab ID	BW-S-70PB	BW-S-71BS			
Lab Batch	B0179	B0179			
File	W4893.D	W4894.D			
Sample Type	QC	QC			
Weight Basis	DRY	DRY			
Matrix	SOIL	SOIL			
Sample Size	30 g	30 g			
Associated Blank	NA	BW-S-70PB			
Field Date	NA	NA			
Extract Date	10/08/98	10/08/98			
Analysis Date	11/09/98	11/09/98			
Min Reporting Limit	1.3	1.3			
Units	ug/g	ug/g	T	%R	Q
N-nitrosodimethylamine	ND	ND			
Pyridine	ND	ND			
2-Picoline	ND	ND			
N-Nitrosomethylethylamine	ND	ND			
Methyl methanesulfonate	ND	ND			
N-Nitrosodiethylamine	ND	ND			
Ethylmethanesulfonate	ND	ND			
bis(2-Chloroethyl)ether	ND	ND			
Aniline	ND	ND			
Pentachloroethane	ND	ND			
Phenol	ND	4.8	6	80	
2-Chlorophenol	ND	5.4	6	90	
1,3-Dichlorobenzene	ND	ND			
1,4-Dichlorobenzene	ND	2.5	3	83	
1,2-Dichlorobenzene	ND	ND			
Benzyl Alcohol	ND	ND			
o-Cresol	ND	ND			
bis(2-chloroisopropyl)ether	ND	ND			
N-Nitrosopyrolidine	ND	ND			
N-Nitrosomorpholine	ND	ND			
m,p-Cresol	ND	ND			
Hexachloroethane	ND	ND			
N-Nitroso-di-n-propylamine	ND	1.9	3	63	
o-Toluidine	ND	ND			
Acetophenone	ND	ND			
Nitrobenzene	ND	ND			
N-Nitrosopiperidine	ND	ND			
Isophorone	ND	ND			
2-Nitrophenol	ND	ND			
2,4-Dimethylphenol	ND	ND			
bis(2-Chloroethoxy)methane	ND	ND			
a,a-dimethylphenethylamine	ND	ND			
2,4-Dichlorophenol	ND	ND			
1,2,4-Trichlorobenzene	ND	2.5	3	83	
Naphthalene	ND	ND			
2,6-Dichlorophenol	ND	ND			
Hexachloropropene	ND	ND			
4-Chloroaniline	ND	ND			
Hexachlorobutadiene	ND	ND			
N-Nitrosodi-n-butylamine	ND	ND			
Safrole	ND	ND			
4-Chloro-3-methylphenol	ND	5.7	6	95	
2-Methylnaphthalene	ND	ND			
Hexachlorocyclopentadiene	ND	ND			
1,2,4,5-Tetrachlorobenzene	ND	ND			
2,4,6-Trichlorophenol	ND	ND			
2,4,5-Trichlorophenol	ND	ND			
2-Chloronaphthalene	ND	ND			
Isosafrole	ND	ND			
2-Nitroaniline	ND	ND			

1. *Because of analytical difficulties the MRL is 5x higher.*
2. Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - BS-BSD - Not Surrogate Corrected

Field ID	Procedural Blank	Blank Spike			
Lab ID	BW-S-70PB	BW-S-71BS			
Lab Batch	B0179	B0179			
File	W4893.D	W4894.D			
Sample Type	QC	QC			
Weight Basis	DRY	DRY			
Matrix	SOIL	SOIL			
Sample Size	30 g	30 g			
Associated Blank	NA	BW-S-70PB			
Field Date	NA	NA			
Extract Date	10/08/98	10/08/98			
Analysis Date	11/09/98	11/09/98			
Min Reporting Limit	1.3	1.3			
Units	ug/g	ug/g	T	%R	Q
1,4-Naphthoquinone	ND	ND			
1,3-Dinitrobenzene	ND	ND			
Acenaphthylene	ND	ND			
Dimethylphthalate	ND	ND			
2,6-Dinitrotoluene	ND	ND			
Acenaphthene	ND	2.9	3	97	
3-Nitroaniline	ND	ND			
2,4-Dinitrophenol (1)	ND	ND			
Pentachlorobenzene	ND	ND			
Dibenzofuran	ND	ND			
1-Naphthylamine (1)	ND	ND			
2,4-Dinitrotoluene	ND	3	3	100	
2,3,4,6-Tetrachlorophenol	ND	ND			
4-Nitrophenol	ND	6.7	6	112	
2-Naphthylamine	ND	ND			
5-Nitro-o-toluidine	ND	ND			
Fluorene	ND	ND			
p-Phenylenediamine	ND	ND			
4-Chlorophenyl-phenylether	ND	ND			
Diethylphthalate	ND	ND			
4-Nitroaniline	ND	ND			
4,6-Dinitro-2-methylphenol (1)	ND	ND			
n-Nitrosodiphenylamine (2)	ND	ND			
Diphenylamine (3)	ND	ND			
1,3,5-Trinitrobenzene (1)	ND	ND			
Phenacetin	ND	ND			
4-Bromophenyl-phenylether	ND	ND			
Hexachlorobenzene	ND	ND			
Pentachloronitrobenzene	ND	ND			
Pentachlorophenol	ND	6.4	6	107	
4-Aminobiphenyl	ND	ND			
Dinoseb	ND	ND			
Phenanthrene	ND	ND			
Anthracene	ND	ND			
Di-n-butylphthalate	ND	ND			
4-Nitroquinoline-1-oxide (1)	ND	ND			
Methapyrilene	ND	ND			
Fluoranthene	ND	ND			
Pyrene	ND	3.3	3	110	
p-(Dimethylamino)azobenzene	ND	ND			
3,3'-Dimethylbenzidine	ND	ND			
Butylbenzylphthalate	ND	ND			
2-Acetylaminofluorene	ND	ND			
3,3'-Dichlorobenzidine	ND	ND			
Benzo[a]anthracene	ND	ND			
Chrysene	ND	ND			
bis(2-Ethylhexyl)phthalate	ND	ND			
Di-n-octylphthalate	ND	ND			
7,12-Dimethylbenz[a]anthracene	ND	ND			
Benzo[b]fluoranthene	ND	ND			

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - BS-BSD - Not Surrogate Corrected

Field ID	Procedural Blank	Blank Spike			
Lab ID	BW-S-70PB	BW-S-71BS			
Lab Batch	B0179	B0179			
File	W4893.D	W4894.D			
Sample Type	QC	QC			
Weight Basis	DRY	DRY			
Matrix	SOIL	SOIL			
Sample Size	30 g	30 g			
Associated Blank	NA	BW-S-70PB			
Field Date	NA	NA			
Extract Date	10/08/98	10/08/98			
Analysis Date	11/09/98	11/09/98			
Min Reporting Limit	1.3	1.3			
Units	ug/g	ug/g	T	%R	Q
Benzo[k]fluoranthene	ND	ND			
Benzo[a]pyrene	ND	ND			
3-Methylcholanthrene	ND	ND			
Indeno[1,2,3-cd]pyrene	ND	ND			
Dibenz[a,h]anthracene	ND	ND			
Benzo[g,h,i]perylene	ND	ND			
Hexachlorophene	ND	ND			
%2-Fluorophenol	78	79			
%Phenol-d5	83	84			
%Nitrobenzene-d5	76	73			
%2-Fluorobiphenyl	83	84			
%2,4,6-Tribromophenol	81	97			
%Terphenyl-d14	118	117			

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - PB - Not Surrogate Corrected

Field ID	Procedural Blank	Procedural Blank
Lab ID	BW-S-61PB	BW-S-70PB
Lab Batch	B0176	B0179
File	W4914.D	W4893.D
Sample Type	QC	QC
Weight Basis	DRY	DRY
Matrix	SOIL	SOIL
Sample Size	30 g	30 g
Associated Blank	NA	NA
Field Date	NA	NA
Extract Date	10/07/98	10/08/98
Analysis Date	11/10/98	11/09/98
Min Reporting Limit	1.3	1.3
Units	ug/g	ug/g
N-nitrosodimethylamine	ND	ND
Pyridine	ND	ND
2-Picoline	ND	ND
N-Nitrosomethylethylamine	ND	ND
Methyl methanesulfonate	ND	ND
N-Nitrosodiethylamine	ND	ND
Ethylmethanesulfonate	ND	ND
bis(2-Chloroethyl)ether	ND	ND
Aniline	ND	ND
Pentachloroethane	ND	ND
Phenol	ND	ND
2-Chlorophenol	ND	ND
1,3-Dichlorobenzene	ND	ND
1,4-Dichlorobenzene	ND	ND
1,2-Dichlorobenzene	ND	ND
Benzyl Alcohol	ND	ND
o-Cresol	ND	ND
bis(2-chloroisopropyl)ether	ND	ND
N-Nitrosopyrolidine	ND	ND
N-Nitrosomorpholine	ND	ND
m,p-Cresol	ND	ND
Hexachloroethane	ND	ND
N-Nitroso-di-n-propylamine	ND	ND
o-Toluidine	ND	ND
Acetophenone	ND	ND
Nitrobenzene	ND	ND
N-Nitrosopiperidine	ND	ND
Isophorone	ND	ND
2-Nitrophenol	ND	ND
2,4-Dimethylphenol	ND	ND
bis(2-Chloroethoxy)methane	ND	ND
a,a-dimethylphenethylamine	ND	ND
2,4-Dichlorophenol	ND	ND
1,2,4-Trichlorobenzene	ND	ND
Naphthalene	ND	ND
2,6-Dichlorophenol	ND	ND
Hexachloropropene	ND	ND
4-Chloroaniline	ND	ND
Hexachlorobutadiene	ND	ND
N-Nitrosodi-n-butylamine	ND	ND
Safrole	ND	ND
4-Chloro-3-methylphenol	ND	ND
2-Methylnaphthalene	ND	ND
Hexachlorocyclopentadiene	ND	ND
1,2,4,5-Tetrachlorobenzene	ND	ND
2,4,6-Trichlorophenol	ND	ND
2,4,5-Trichlorophenol	ND	ND
2-Chloronaphthalene	ND	ND
Isosafrole	ND	ND
2-Nitroaniline	ND	ND

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - PB - Not Surrogate Corrected

Field ID	Procedural Blank	Procedural Blank
Lab ID	BW-S-61PB	BW-S-70PB
Lab Batch	B0176	B0179
File	W4914.D	W4893.D
Sample Type	QC	QC
Weight Basis	DRY	DRY
Matrix	SOIL	SOIL
Sample Size	30 g	30 g
Associated Blank	NA	NA
Field Date	NA	NA
Extract Date	10/07/98	10/08/98
Analysis Date	11/10/98	11/09/98
Min Reporting Limit	1.3	1.3
Units	ug/g	ug/g
1,4-Naphthoquinone	ND	ND
1,3-Dinitrobenzene	ND	ND
Acenaphthylene	ND	ND
Dimethylphthalate	ND	ND
2,6-Dinitrotoluene	ND	ND
Acenaphthene	ND	ND
3-Nitroaniline	ND	ND
2,4-Dinitrophenol (1)	ND	ND
Pentachlorobenzene	ND	ND
Dibenzofuran	ND	ND
1-Naphthylamine (1)	ND	ND
2,4-Dinitrotoluene	ND	ND
2,3,4,6-Tetrachlorophenol	ND	ND
4-Nitrophenol	ND	ND
2-Naphthylamine	ND	ND
5-Nitro-o-toluidine	ND	ND
Fluorene	ND	ND
p-Phenylenediamine	ND	ND
4-Chlorophenyl-phenylether	ND	ND
Diethylphthalate	ND	ND
4-Nitroaniline	ND	ND
4,6-Dinitro-2-methylphenol (1)	ND	ND
n-Nitrosodiphenylamine (2)	ND	ND
Diphenylamine (3)	ND	ND
1,3,5-Trinitrobenzene (1)	ND	ND
Phenacetin	ND	ND
4-Bromophenyl-phenylether	ND	ND
Hexachlorobenzene	ND	ND
Pentachloronitrobenzene	ND	ND
Pentachlorophenol	ND	ND
4-Aminobiphenyl	ND	ND
Dinoseb	ND	ND
Phenanthrene	ND	ND
Anthracene	ND	ND
Di-n-butylphthalate	ND	ND
4-Nitroquinoline-1-oxide (1)	ND	ND
Methapyrilene	ND	ND
Fluoranthene	ND	ND
Pyrene	ND	ND
p-(Dimethylamino)azobenzene	ND	ND
3,3'-Dimethylbenzidine	ND	ND
Butylbenzylphthalate	ND	ND
2-Acetylaminofluorene	ND	ND
3,3'-Dichlorobenzidine	ND	ND
Benzo[a]anthracene	ND	ND
Chrysene	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND
Di-n-octylphthalate	ND	ND
7,12-Dimethylbenz[a]anthracene	ND	ND
Benzo[b]fluoranthene	ND	ND

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - PB - Not Surrogate Corrected

Field ID	Procedural Blank	Procedural Blank
Lab ID	BW-S-61PB	BW-S-70PB
Lab Batch	B0176	B0179
File	W4914.D	W4893.D
Sample Type	QC	QC
Weight Basis	DRY	DRY
Matrix	SOIL	SOIL
Sample Size	30 g	30 g
Associated Blank	NA	NA
Field Date	NA	NA
Extract Date	10/07/98	10/08/98
Analysis Date	11/10/98	11/09/98
Min Reporting Limit	1.3	1.3
Units	ug/g	ug/g
Benzo[k]fluoranthene	ND	ND
Benzo[a]pyrene	ND	ND
3-Methylcholanthrene	ND	ND
Indeno[1,2,3-cd]pyrene	ND	ND
Dibenz[a,h]anthracene	ND	ND
Benzo[g,h,i]perylene	ND	ND
Hexachlorophene [1]	ND	ND
%2-Fluorophenol	67	78
%Phenol-d5	71	83
%Nitrobenzene-d5	64	76
%2-Fluorobiphenyl	72	83
%2,4,6-Tribromophenol	68	81
%Terphenyl-d14	107	118

1. Because of analytical difficulties the MRL is 5x higher.
2.Decomposes in GC inlet and cannot be separated from diphenylamine.
3. Reported as summed value of n-nitrosodiphenylamine and diphenylamine.

Appendix IX Pesticides

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB4-5	WG-SB4-14	WG-SB4-30	WG-SB4-40	WG-SB5-7
Lab ID	98D3021	98D3022	98D3023	98D3024	98D3025
Lab Batch	B0179	B0179	B0179	B0179	B0179
File	W4897.D	W4898.D	W4899.D	W4902.D	W4903.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	28.8 g	26 g	28.5 g	28.8 g	28.8 g
Associated Blank	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB
Field Date	09/24/98	09/24/98	09/24/98	09/24/98	09/24/98
Extract Date	10/08/98	10/08/98	10/08/98	10/08/98	10/08/98
Analysis Date	11/10/98	11/10/98	11/10/98	11/10/98	11/10/98
Min Reporting Limit	2.8	3.1	2.8	2.8	2.8
Units	ug/g	ug/g	ug/g	ug/g	ug/g
O,O,O-Triethyl phosphorothioate (3)	ND	ND	ND	ND	ND
Thionazin	ND	ND	ND	ND	ND
Sulfotepp	ND	ND	ND	ND	ND
Diallate	ND	ND	ND	ND	ND
Phorate	ND	ND	ND	ND	ND
Dimethoate	ND	ND	ND	ND	ND
Pronamide	ND	ND	ND	ND	ND
Disulfoton	ND	ND	ND	ND	ND
Methyl parathion	ND	ND	ND	ND	ND
Ethyl parathion	ND	ND	ND	ND	ND
Isodrin	ND	ND	ND	ND	ND
Aramite	ND	ND	ND	ND	ND
Chlorobenzilate	ND	ND	ND	ND	ND
Famphur	ND	ND	ND	ND	ND
Kepone	ND	ND	ND	ND	ND
%2-Fluorophenol	48	46	44	49	52
%Phenol-d5	57	54	56	59	61
%Nitrobenzene-d5	49	46	48	52	54
%2-Fluorobiphenyl	64	55	61	62	67
%2,4,6-Tribromophenol	72	79	73	61	71
%Terphenyl-d14	110	116	119	110	109

3.Because of analytical difficulties the MRL for this compounds is 5x higher

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB5-14	WG-SB5-22	WG-SB5-32	WG-SB5-40	WG-SB1-7
Lab ID	98D3026	98D3027	98D3028	98D3029	98D3030
Lab Batch	B0179	B0179	B0179	B0179	B0176
File	W4908.D	W4909.D	W4910.D	W4911.D	W4918.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	26.8 g	28.5 g	28.1 g	28.5 g	26.7 g
Associated Blank	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-70PB	BW-S-61PB
Field Date	09/24/98	09/24/98	09/24/98	09/24/98	09/23/98
Extract Date	10/08/98	10/08/98	10/08/98	10/08/98	10/07/98
Analysis Date	11/10/98	11/10/98	11/10/98	11/10/98	11/11/98
Min Reporting Limit	3.0	2.8	2.8	2.8	3.0
Units	ug/g	ug/g	ug/g	ug/g	ug/g
O,O,O-Triethyl phosphorothioate	ND	ND	ND	ND	ND
Thionazin	ND	ND	ND	ND	ND
Sulfotepp	ND	ND	ND	ND	ND
Diallate	ND	ND	ND	ND	ND
Phorate	ND	ND	ND	ND	ND
Dimethoate	ND	ND	ND	ND	ND
Pronamide	ND	ND	ND	ND	ND
Disulfoton	ND	ND	ND	ND	ND
Methyl parathion	ND	ND	ND	ND	ND
Ethyl parathion	ND	ND	ND	ND	ND
Isodrin	ND	ND	ND	ND	ND
Aramite	ND	ND	ND	ND	ND
Chlorobenzilate	ND	ND	ND	ND	ND
Famphur	ND	ND	ND	ND	ND
Kepone	ND	ND	ND	ND	ND
%2-Fluorophenol	43	39	49	47	42
%Phenol-d5	51	47	58	56	51
%Nitrobenzene-d5	45	41	51	49	43
%2-Fluorobiphenyl	56	51	59	58	53
%2,4,6-Tribromophenol	82	67	65	67	62
%Terphenyl-d14	117	103	116	111	86

3.Because of analytical difficulties the MRL for this compounds is 5x higher

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB1-12	WG-SB1-20	WG-SB1-30	WG-SB1-40	WG-SB2-7
Lab ID	98D3031	98D3032	98D3033	98D3034	98D3035
Lab Batch	B0176	B0176	B0176	B0176	B0176
File	W4922.D	W4923.D	W4924.D	W4927.D	W4928.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	25 g	27.7 g	28.7 g	29.4 g	27.6 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	11/11/98	11/11/98	11/11/98	11/11/98	11/11/98
Min Reporting Limit	3.2	2.9	2.8	2.7	2.9
Units	ug/g	ug/g	ug/g	ug/g	ug/g
O,O,O-Triethyl phosphorothioate	ND	ND	ND	ND	ND
Thionazin	ND	ND	ND	ND	ND
Sulfotepp	ND	ND	ND	ND	ND
Diallate	ND	ND	ND	ND	ND
Phorate	ND	ND	ND	ND	ND
Dimethoate	ND	ND	ND	ND	ND
Pronamide	ND	ND	ND	ND	ND
Disulfoton	ND	ND	ND	ND	ND
Methyl parathion	ND	ND	ND	ND	ND
Ethyl parathion	ND	ND	ND	ND	ND
Isodrin	ND	ND	ND	ND	ND
Aramite	ND	ND	ND	ND	ND
Chlorobenzilate	ND	ND	ND	ND	ND
Famphur	ND	ND	ND	ND	ND
Kepone	ND	ND	ND	ND	ND
%2-Fluorophenol	40	49	48	53	65
%Phenol-d5	50	54	56	57	71
%Nitrobenzene-d5	42	44	49	51	57
%2-Fluorobiphenyl	53	53	55	59	63
%2,4,6-Tribromophenol	60	69	57	59	74
%Terphenyl-d14	77	89	87	90	79

3.Because of analytical difficulties the MRL for this compounds is 5x higher

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB2-10	WG-SB2-20	WG-SB2-30	WG-SB2-42	WG-SB3-7
Lab ID	98D3036	98D3037	98D3038	98D3039	98D3040
Lab Batch	B0176	B0176	B0176	B0176	B0176
File	W4929.D	W4930.D	W4931.D	W4937.D	W4938.D
Sample Type	SAMP	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Size	25.2 g	26.3 g	27.7 g	28.3 g	28.5 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	11/11/98	11/11/98	11/11/98	11/12/98	11/12/98
Min Reporting Limit	3.2	3.0	2.9	2.8	2.8
Units	ug/g	ug/g	ug/g	ug/g	ug/g
O,O,O-Triethyl phosphorothioate	ND	ND	ND	ND	ND
Thionazin	ND	ND	ND	ND	ND
Sulfotepp	ND	ND	ND	ND	ND
Diallate	ND	ND	ND	ND	ND
Phorate	ND	ND	ND	ND	ND
Dimethoate	ND	ND	ND	ND	ND
Pronamide	ND	ND	ND	ND	ND
Disulfoton	ND	ND	ND	ND	ND
Methyl parathion	ND	ND	ND	ND	ND
Ethyl parathion	ND	ND	ND	ND	ND
Isodrin	ND	ND	ND	ND	ND
Aramite	ND	ND	ND	ND	ND
Chlorobenzilate	ND	ND	ND	ND	ND
Famphur	ND	ND	ND	ND	ND
Kepone	ND	ND	ND	ND	ND
%2-Fluorophenol	74	62	66	65	58
%Phenol-d5	88	64	73	72	66
%Nitrobenzene-d5	69	59	62	64	58
%2-Fluorobiphenyl	80	64	68	67	64
%2,4,6-Tribromophenol	93	81	83	72	74
%Terphenyl-d14	101	101	108	105	108

3.Because of analytical difficulties the MRL for this compounds is 5x higher

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - Main - Not Surrogate Corrected

Field ID	WG-SB3-10	WG-SB3-24	WG-SB3-30	WG-SB3-40
Lab ID	98D3041	98D3042	98D3043	98D3044
Lab Batch	B0176	B0176	B0176	B0176
File	W4939.D	W5024.D	W5025.D	W5026.D
Sample Type	SAMP	SAMP	SAMP	SAMP
Weight Basis	DRY	DRY	DRY	DRY
Matrix	SOIL	SOIL	SOIL	SOIL
Sample Size	27.8 g	27.8 g	26.7 g	27.8 g
Associated Blank	BW-S-61PB	BW-S-61PB	BW-S-61PB	BW-S-61PB
Field Date	09/23/98	09/23/98	09/23/98	09/23/98
Extract Date	10/07/98	10/07/98	10/07/98	10/07/98
Analysis Date	11/12/98	11/17/98	11/17/98	11/17/98
Min Reporting Limit	2.9	2.9	3.0	2.9
Units	ug/g	ug/g	ug/g	ug/g
O,O,O-Triethyl phosphorothioate	ND	ND	ND	ND
Thionazin	ND	ND	ND	ND
Sulfotepp	ND	ND	ND	ND
Diallate	ND	ND	ND	ND
Phorate	ND	ND	ND	ND
Dimethoate	ND	ND	ND	ND
Pronamide	ND	ND	ND	ND
Disulfoton	ND	ND	ND	ND
Methyl parathion	ND	ND	ND	ND
Ethyl parathion	ND	ND	ND	ND
Isodrin	ND	ND	ND	ND
Aramite	ND	ND	ND	ND
Chlorobenzilate	ND	ND	ND	ND
Famphur	ND	ND	ND	ND
Kepone	ND	ND	ND	ND
%2-Fluorophenol	51	48	51	41
%Phenol-d5	59	57	58	51
%Nitrobenzene-d5	50	52	52	42
%2-Fluorobiphenyl	63	58	56	51
%2,4,6-Tribromophenol	75	69	54	57
%Terphenyl-d14	102	97	75	73

3.Because of analytical difficulties the MRL for this compounds is 5x higher

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - PB - Not Surrogate Corrected

Field ID	Procedural Blank	Procedural Blank
Lab ID	BW-S-61PB	BW-S-70PB
Lab Batch	B0176	B0179
File	W4914.D	W4893.D
Sample Type	QC	QC
Weight Basis	DRY	DRY
Matrix	SOIL	SOIL
Sample Size	30 g	30 g
Associated Blank	NA	NA
Field Date	NA	NA
Extract Date	10/07/98	10/08/98
Analysis Date	11/10/98	11/09/98
Min Reporting Limit	2.7	2.7
Units	ug/g	ug/g
O,O,O-Triethyl phosphorothioate (3)	ND	ND
Thionazin	ND	ND
Sulfotepp	ND	ND
Diallate	ND	ND
Phorate	ND	ND
Dimethoate	ND	ND
Pronamide	ND	ND
Disulfoton	ND	ND
Methyl parathion	ND	ND
Ethyl parathion	ND	ND
Isodrin	ND	ND
Aramite	ND	ND
Chlorobenzilate	ND	ND
Famphur	ND	ND
Kepone	ND	ND
%2-Fluorophenol	67	78
%Phenol-d5	71	83
%Nitrobenzene-d5	64	76
%2-Fluorobiphenyl	72	83
%2,4,6-Tribromophenol	68	81
%Terphenyl-d14	107	118

3.Because of analytical difficulties the MRL for this compounds is 5x higher

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - MS-MSD - Not Surrogate Corrected

Field ID	WG-SB1-30	WG-SB1-30				WG-SB1-30				
Lab ID	98D3033	98D3033MS				98D3033MSD				
Lab Batch	B0176	B0176				B0176				
File	W4924.D	W4925.D				W4926.D				
Sample Type	SAMP	QC				QC				
Weight Basis	DRY	DRY				DRY				
Matrix	SOIL	SOIL				SOIL				
Sample Size	28.7 g	28.7 g				28.8 g				
Associated Blank	BW-S-61PB	BW-S-61PB				BW-S-61PB				
Field Date	09/23/98	09/23/98				09/23/98				
Extract Date	10/07/98	10/07/98				10/07/98				
Analysis Date	11/11/98	11/11/98				11/11/98				
Min Reporting Limit	2.8	2.8				2.8				
Units	ug/g	ug/g	T	%R	Q	ug/g	T	%R	Q RPD	Q
O,O,O-Triethyl phosphorothioate (3)	ND	ND				ND				
Thionazin	ND	ND				ND				
Sulfotepp	ND	ND				ND				
Diallate	ND	ND				ND				
Phorate	ND	ND				ND				
Dimethoate	ND	ND				ND				
Pronamide	ND	ND				ND				
Disulfoton	ND	ND				ND				
Methyl parathion	ND	ND				ND				
Ethyl parathion	ND	ND				ND				
Isodrin	ND	ND				ND				
Aramite	ND	ND				ND				
Chlorobenzilate	ND	ND				ND				
Famphur	ND	ND				ND				
Kepone	ND	ND				ND				
%2-Fluorophenol	48	63				62				
%Phenol-d5	56	71				69				
%Nitrobenzene-d5	49	60				59				
%2-Fluorobiphenyl	55	69				67				
%2,4,6-Tribromophenol	57	70				68				
%Terphenyl-d14	87	108				98				

3.Because of analytical difficulties the MRL for this compounds is 5x higher

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - MS-MSD - Not Surrogate Corrected

Field ID	WG-SB4-30	WG-SB4-30				WG-SB4-30				
Lab ID	98D3023	98D3023MS				98D3023MSD				
Lab Batch	B0179	B0179				B0179				
File	W4899.D	W4900.D				W4901.D				
Sample Type	SAMP	QC				QC				
Weight Basis	DRY	DRY				DRY				
Matrix	SOIL	SOIL				SOIL				
Sample Size	28.5 g	28.4 g				28.4 g				
Associated Blank	BW-S-70PB	BW-S-70PB				BW-S-70PB				
Field Date	09/24/98	09/24/98				09/24/98				
Extract Date	10/08/98	10/08/98				10/08/98				
Analysis Date	11/10/98	11/10/98				11/10/98				
Min Reporting Limit	2.8	2.8				2.8				
Units	ug/g	ug/g	T	%R	Q	ug/g	T	%R	Q RPD	Q
O,O,O-Triethyl phosphorothioate	ND	ND				ND				
Thionazin	ND	ND				ND				
Sulfotepp	ND	ND				ND				
Diallate	ND	ND				ND				
Phorate	ND	ND				ND				
Dimethoate	ND	ND				ND				
Pronamide	ND	ND				ND				
Disulfoton	ND	ND				ND				
Methyl parathion	ND	ND				ND				
Ethyl parathion	ND	ND				ND				
Isodrin	ND	ND				ND				
Aramite	ND	ND				ND				
Chlorobenzilate	ND	ND				ND				
Famphur	ND	ND				ND				
Kepone	ND	ND				ND				
%2-Fluorophenol	44	59				66				
%Phenol-d5	56	69				74				
%Nitrobenzene-d5	48	58				64				
%2-Fluorobiphenyl	61	72				74				
%2,4,6-Tribromophenol	73	83				80				
%Terphenyl-d14	119	109				111				

3.Because of analytical difficulties the MRL for this compounds is 5x higher

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - MS-MSD - Not Surrogate Corrected

Field ID	
Lab ID	
Lab Batch	
File	
Sample Type	
Weight Basis	
Matrix	
Sample Size	
Associated Blank	
Field Date	
Extract Date	
Analysis Date	
Min Reporting Limit	
Units	
O,O,O-Triethyl phosphorothioate	
Thionazin	
Sulfotepp	
Diallate	
Phorate	
Dimethoate	
Pronamide	
Disulfoton	
Methyl parathion	
Ethyl parathion	
Isodrin	
Aramite	
Chlorobenzilate	
Famphur	
Kepone	
%2-Fluorophenol	
%Phenol-d5	
%Nitrobenzene-d5	
%2-Fluorobiphenyl	
%2,4,6-Tribromophenol	
%Terphenyl-d14	

3.Because of analytical difficulties the MRL for this compounds is 5x higher

Arthur D. Little
Environmental Monitoring and Analysis Unit

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - MS-MSD - Not Surrogate Corrected

Field ID
Lab ID
Lab Batch
File
Sample Type
Weight Basis
Matrix
Sample Size
Associated Blank
Field Date
Extract Date
Analysis Date
Min Reporting Limit
Units

O,O,O-Triethyl phosphorothioate
Thionazin
Sulfotepp
Diallate
Phorate
Dimethoate
Pronamide
Disulfoton
Methyl parathion
Ethyl parathion
Isodrin
Aramite
Chlorobenzilate
Famphur
Kepone

%2-Fluorophenol
%Phenol-d5
%Nitrobenzene-d5
%2-Fluorobiphenyl
%2,4,6-Tribromophenol
%Terphenyl-d14

3.Because of analytical difficulties the MRL for this compounds is 5x higher

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - MS-MSD - Not Surrogate Corrected

Field ID	
Lab ID	
Lab Batch	
File	
Sample Type	
Weight Basis	
Matrix	
Sample Size	
Associated Blank	
Field Date	
Extract Date	
Analysis Date	
Min Reporting Limit	
Units	
O,O,O-Triethyl phosphorothioate	
Thionazin	
Sulfotepp	
Diallate	
Phorate	
Dimethoate	
Pronamide	
Disulfoton	
Methyl parathion	
Ethyl parathion	
Isodrin	
Aramite	
Chlorobenzilate	
Famphur	
Kepone	
%2-Fluorophenol	
%Phenol-d5	
%Nitrobenzene-d5	
%2-Fluorobiphenyl	
%2,4,6-Tribromophenol	
%Terphenyl-d14	

3.Because of analytical difficulties the MRL for this compounds is 5x higher

Project Title : Dow Cogburn - Shell Westgate
Data Package: 1429
Data Table: SVOC - BS-BSD - Not Surrogate Corrected

Field ID	Procedural Blank	Blank Spike				Procedural Blank	Blank Spike			
Lab ID	BW-S-61PB	BW-S-62BS				BW-S-70PB	BW-S-71BS			
Lab Batch	B0176	B0176				B0179	B0179			
File	W4914.D	W4915.D				W4893.D	W4894.D			
Sample Type	QC	QC				QC	QC			
Weight Basis	DRY	DRY				DRY	DRY			
Matrix	SOIL	SOIL				SOIL	SOIL			
Sample Size	30 g	30 g				30 g	30 g			
Associated Blank	NA	BW-S-61PB				NA	BW-S-70PB			
Field Date	NA	NA				NA	NA			
Extract Date	10/07/98	10/07/98				10/08/98	10/08/98			
Analysis Date	11/10/98	11/10/98				11/09/98	11/09/98			
Min Reporting Limit	2.7	2.7				2.7	2.7			
Units	ug/g	ug/g	T	%R	Q	ug/g	ug/g	T	%R	Q
O,O,O-Triethyl phosphorothioate (3)	ND	ND				ND	ND			
Thionazin	ND	ND				ND	ND			
Sulfotepp	ND	ND				ND	ND			
Disulfoton	ND	ND				ND	ND			
Phorate	ND	ND				ND	ND			
Dimethoate	ND	ND				ND	ND			
Fenamiphos	ND	ND				ND	ND			
Disulfoton	ND	ND				ND	ND			
Methyl parathion	ND	ND				ND	ND			
Ethyl parathion	ND	ND				ND	ND			
Isodrin	ND	ND				ND	ND			
Aramite	ND	ND				ND	ND			
Chlorobenzilate	ND	ND				ND	ND			
Famphur	ND	ND				ND	ND			
Kepone	ND	ND				ND	ND			
%2-Fluorophenol	67	74				78	79			
%Phenol-d5	71	77				83	84			
%Nitrobenzene-d5	64	66				76	73			
%2-Fluorobiphenyl	72	74				83	84			
%2,4,6-Tribromophenol	68	72				81	97			
%Terphenyl-d14	107	94				118	117			

3.Because of analytical difficulties the MRL for this compounds is 5x higher

RECRA LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

Recra LabNet Philadelphia
Analytical Report

Client : A.D. LITTLE-NEW MEXICO
RFW# : 9810L066

W.O. # : 60038-003-001-0001-00
Date Received: 10-09-98

INORGANIC CASE NARRATIVE

1. This narrative covers the analyses of 12 soil samples.

2. The samples were prepared and analyzed in accordance with the methods indicated on the attached glossary.

3. Sample holding times as required by the method and/or contract were met.

4. The cooler temperature was recorded on the chain-of-custody.

5. The method blanks were within method criteria with the exception of 98LHC095-MB1 and 98LHC096-MB1 for Petroleum Hydrocarbons which were less than 10 times the reporting limit.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS were within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recoveries were within the 75-125% control limits.

8. The replicate analyses were within the 20% RPD control limit.

9. Results for solid samples are reported on a dry weight basis.

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

11-17-98
Date

njp\i10-066

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 163 pages.

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610)-280-3000 • Fax (610) 280-3041

WET CHEMISTRY
METHODS GLOSSARY FOR ANALYSIS OF SOIL/SOLID SAMPLES

	ASTM	SW846	OTHER
%Ash	__ D2216-80		
%Moisture	__ D2216-80		__ ILMO4.0 (e)
%Solids			✓ ILMO4.0 (e)
%Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Corrosivity __by coupon __by pH		__ 1110 (mod)__ 9045	
Cyanide, Total		__ 9010	__ ILMO4.0 (e)
Cyanide, Reactive		__ Sec 7.3	
Density			__ b
Halides, Extractable Organic			__ EPA 600/4/84-008 (mod)
Halides, Total			__ EPA 600/4/84-008 (mod)
EP-Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Carbon, Total Organic (by LOI)			__ c
Oil and Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87 (mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		✓ 9071	✓ EPA 418.1 (mod)
pH, Soil		✓ 9045B	
Sulfide, Reactive		__ Sec 7.3	
Specific Gravity	__ D1429-76C		
Sulfur, Total		__ 9056	
TCLP		__ 1311	
TCLV		__ 1311	
Synthetic Precipitation Leach		__ 1312	
Chlorine, Total		__ 9056	
Paint Filter		__ 9095	

Other: Fluoride, Chloride, Nitrate, Sulfate by IC Method: SW9056

002

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed., (1989).

b. Standard Methods for the Examination of Water and Waste, 17 ed., (1983)

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd. Ed. (1986)

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965)

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO
RECRA LOT #: 9810L066
WORK ORDER: 60038-022-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	WGSB1-7	% Solids	89.7		%	0.01	1.0
		Chloride by IC	560		MG/KG	27.9	20.0
		Fluoride by IC	2.8	u	MG/KG	2.8	1.0
		Nitrate by IC	2.0		MG/KG	1.4	1.0
		Sulfate by IC	2140		MG/KG	139	100
		pH	8.3		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	39.7		MG/KG	3.7	1.0
-002	WGSB1-12	% Solids	86.4		%	0.01	1.0
		Chloride by IC	747		MG/KG	28.9	20.0
		Fluoride by IC	2.9	u	MG/KG	2.9	1.0
		Nitrate by IC	2.9		MG/KG	1.4	1.0
		Sulfate by IC	723		MG/KG	28.9	20.0
		pH	8.9		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	13.2		MG/KG	3.9	1.0
-003	WGSB1-20	% Solids	91.0		%	0.01	1.0
		Chloride by IC	453		MG/KG	13.7	10.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrate by IC	11		MG/KG	1.4	1.0
		Sulfate by IC	297		MG/KG	27.5	20.0
		pH	9.3		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	9.5		MG/KG	3.7	1.0
-004	WGSB1-30	% Solids	96.3		%	0.01	1.0
		Chloride by IC	16.0		MG/KG	1.3	1.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrate by IC	1.3	u	MG/KG	1.3	1.0
		Sulfate by IC	47.3		MG/KG	1.3	1.0
		pH	9.6		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	6.8		MG/KG	3.5	1.0
-005	WGSB1-40	% Solids	96.4		%	0.01	1.0
		Chloride by IC	5.2		MG/KG	1.3	1.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrate by IC	1.3	u	MG/KG	1.3	1.0
		Sulfate by IC	9.3		MG/KG	1.3	1.0
		pH	9.8		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	12.6		MG/KG	3.5	1.0
-006	WGSB2-7	% Solids	93.1		%	0.01	1.0

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INORGANICS DATA SUMMARY REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO
RECRA LOT #: 9810L066
WORK ORDER: 60038-022-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	WGSB2-7	Chloride by IC	8.4	MG/KG	1.3	1.0
		Fluoride by IC	4.8	MG/KG	2.7	1.0
		Nitrate by IC	35	MG/KG	1.3	1.0
		Sulfate by IC	207	MG/KG	13.4	10.0
		pH	9.1	SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	614	MG/KG	89.5	25.0

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO
WORK ORDER: 60038-022-001-0001-00

RECRA LOT #: 9810L066

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	WGSB2-10	% Solids	86.4		%	0.01	1.0
		Chloride by IC	70.0		MG/KG	2.9	2.0
		Fluoride by IC	4.0		MG/KG	2.9	1.0
		Nitrate by IC	26		MG/KG	1.4	1.0
		Sulfate by IC	513		MG/KG	28.9	20.0
		pH	9.1		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	208		MG/KG	19.3	5.0
-008	WGSB2-20	% Solids	87.4		%	0.01	1.0
		Chloride by IC	190		MG/KG	14.3	10.0
		Fluoride by IC	3.2		MG/KG	2.9	1.0
		Nitrate by IC	4.8		MG/KG	1.4	1.0
		Sulfate by IC	437		MG/KG	14.3	10.0
		pH	9.5		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	15.5		MG/KG	3.8	1.0
-009	WGSB2-30	% Solids	93.0		%	0.01	1.0
		Chloride by IC	157		MG/KG	6.7	5.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrate by IC	5.0		MG/KG	1.3	1.0
		Sulfate by IC	62.7		MG/KG	2.7	2.0
		pH	9.4		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	10.4		MG/KG	3.6	1.0
-010	WGSB2-42	% Solids	94.9		%	0.01	1.0
		Chloride by IC	132		MG/KG	6.6	5.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrate by IC	1.3		MG/KG	1.3	1.0
		Sulfate by IC	41.1		MG/KG	1.3	1.0
		pH	9.4		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	17.5		MG/KG	3.5	1.0
-011	WGSB3-7	% Solids	94.7		%	0.01	1.0
		Chloride by IC	232		MG/KG	13.2	10.0
		Fluoride by IC	7.6		MG/KG	2.6	1.0
		Nitrate by IC	2.9		MG/KG	1.3	1.0
		Sulfate by IC	185		MG/KG	13.2	10.0
		pH	9.3		SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	15.4		MG/KG	3.5	1.0
-012	WGSB3-10	% Solids	93.2		%	0.01	1.0

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INORGANICS DATA SUMMARY REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO RECRA LOT #: 9810L066

WORK ORDER: 60038-022-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-012	WGSB3-10	Chloride by IC	174	MG/KG	13.4	10.0
		Fluoride by IC	3.7	MG/KG	2.7	1.0
		Nitrate by IC	2.2	MG/KG	1.3	1.0
		Sulfate by IC	184	MG/KG	13.4	10.0
		pH	9.3	SOIL PH	0.01	1.0
		Petroleum Hydrocarbons	14.5	MG/KG	3.6	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO RECRA LOT #: 9810L066

WORK ORDER: 60038-022-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	98LIC090-MB1	Chloride by IC	1.2	u	MG/KG	1.2	1.0
		Fluoride by IC	2.5	u	MG/KG	2.5	1.0
		Nitrate by IC	1.2	u	MG/KG	1.2	1.0
		Sulfate by IC	1.2	u	MG/KG	1.2	1.0
BLANK10	98LHC095-MB1	Petroleum Hydrocarbons	4.2		MG/KG	3.3	1.0
BLANK10	98LHC096-MB1	Petroleum Hydrocarbons	4.9		MG/KG	3.3	1.0

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INORGANICS ACCURACY REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO RECRA LOT #: 9810L066

WORK ORDER: 60038-022-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-005	WGSB1-40	Chloride by IC	31.3	5.2	25.9	100.8	1.0
		Fluoride by IC	57.2	0.61	51.9	109.2	1.0
		Nitrate by IC	26	1.3 u	26	102.1	1.0
		Sulfate by IC	35.7	9.3	25.9	101.8	1.0
-007	WGSB2-10	Petroleum Hydrocarbons	295	208	81.1	106.3	5.0
BLANK10	98LIC090-MB1	Chloride by IC	23.5	1.2 u	25.0	93.9	1.0
		Fluoride by IC	27.8	2.5 u	25.0	111.0	1.0
		Nitrate by IC	24	1.2 u	25	94.4	1.0
		Sulfate by IC	23.9	1.2 u	25.0	95.8	1.0
BLANK10	98LHC095-MB1	Petroleum Hydrocarbons	139	4.2	140	96.6	1.0
		Petroleum Hydrocarbons	133	4.2	140	92.2	1.0
BLANK10	98LHC096-MB1	Petroleum Hydrocarbons	132	4.9	140	90.7	1.0
		Petroleum Hydrocarbons	126	4.9	140	86.3	1.0

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INORGANICS DUPLICATE SPIKE REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO RECRA LOT #: 9810L066

WORK ORDER: 60038-022-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	98LHC095-MB1	Petroleum Hydrocarbons	96.6	92.2	4.7
BLANK10	98LHC096-MB1	Petroleum Hydrocarbons	90.7	86.3	5.0

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INORGANICS PRECISION REPORT 11/16/98

CLIENT: A.D. LITTLE-NEW MEXICO RECRA LOT #: 9810L066

WORK ORDER: 60038-022-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-005REP	WGSB1-40	Chloride by IC	5.2	5.0	3.2	1.0
		Fluoride by IC	2.6 u	2.6 u	NC	1.0
		Nitrate by IC	1.3 u	1.3 u	NC	1.0
		Sulfate by IC	9.3	9.3	0.50	1.0
-007REP	WGSB2-10	Petroleum Hydrocarbons	208	236	12.6	5.0
-012REP	WGSB3-10	% Solids	93.2	93.1	0.064	1.0
		pH	9.3	9.3	0.0	1.0

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INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ALYSIS
WGSB1-7						
% SOLIDS	001	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	001	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	001	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	001	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	001	S	98LIC090	09/23/98	11/14/98	11/14/98
PH	001	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	001	S	98LHC095	09/23/98	10/17/98	10/20/98
SUB-OUT TEST FOR SUB	001	S		09/23/98		
WGSB1-12						
% SOLIDS	002	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	002	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	002	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	002	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	002	S	98LIC090	09/23/98	11/14/98	11/14/98
PH	002	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	002	S	98LHC095	09/23/98	10/17/98	10/20/98
SUB-OUT TEST FOR SUB	002	S		09/23/98		
WGSB1-20						
% SOLIDS	003	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	003	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	003	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	003	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	003	S	98LIC090	09/23/98	11/14/98	11/14/98
PH	003	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	003	S	98LHC095	09/23/98	10/17/98	10/20/98
SUB-OUT TEST FOR SUB	003	S		09/23/98		
WGSB1-30						
% SOLIDS	004	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	004	S	98LIC090	09/23/98	11/14/98	11/14/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L066

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
FLUORIDE BY IC	004	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	004	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	004	S	98LIC090	09/23/98	11/14/98	11/14/98
PH	004	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	004	S	98LHC095	09/23/98	10/17/98	10/20/98
SUB-OUT TEST FOR SUB	004	S		09/23/98		
WGSB1-40						
% SOLIDS	005	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	005	S	98LIC090	09/23/98	11/14/98	11/14/98
CHLORIDE BY IC	005 REP	S	98LIC090	09/23/98	11/14/98	11/14/98
CHLORIDE BY IC	005 MS	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	005	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	005 REP	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	005 MS	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	005	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	005 REP	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	005 MS	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	005	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	005 REP	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	005 MS	S	98LIC090	09/23/98	11/14/98	11/14/98
PH	005	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	005	S	98LHC095	09/23/98	10/17/98	10/20/98
SUB-OUT TEST FOR SUB	005	S		09/23/98		
WGSB2-7						
% SOLIDS	006	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	006	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	006	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	006	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	006	S	98LIC090	09/23/98	11/14/98	11/14/98
PH	006	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	006	S	98LHC095	09/23/98	10/17/98	10/20/98
SUB-OUT TEST FOR SUB	006	S		09/23/98		
WGSB2-10						
% SOLIDS	007	S	98L%S202	09/23/98	10/12/98	10/13/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L[illegible]6

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHLORIDE BY IC	007	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	007	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	007	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	007	S	98LIC090	09/23/98	11/14/98	11/14/98
PH	007	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	007	S	98LHC095	09/23/98	10/17/98	10/20/98
PETROLEUM HYDROCARBO	007 REP	S	98LHC095	09/23/98	10/17/98	10/20/98
PETROLEUM HYDROCARBO	007 MS	S	98LHC095	09/23/98	10/17/98	10/20/98
SUB-OUT TEST FOR SUB	007	S		09/23/98		
WGSB2-20						
% SOLIDS	008	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	008	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	008	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	008	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	008	S	98LIC090	09/23/98	11/14/98	11/14/98
PH	008	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	008	S	98LHC096	09/23/98	10/19/98	10/20/98
SUB-OUT TEST FOR SUB	008	S		09/23/98		
WGSB2-30						
% SOLIDS	009	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	009	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	009	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	009	S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	009	S	98LIC090	09/23/98	11/14/98	11/14/98
PH	009	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	009	S	98LHC096	09/23/98	10/19/98	10/20/98
SUB-OUT TEST FOR SUB	009	S		09/23/98		
WGSB2-42						
% SOLIDS	010	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	010	S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	010	S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	010	S	98LIC090	09/23/98	11/14/98	11/14/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L066

CLIENT ID /ANALYSIS	RFW #		MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SULFATE BY IC	010		S	98LIC090	09/23/98	11/14/98	11/14/98
PH	010		S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	010		S	98LHC096	09/23/98	10/19/98	10/20/98
SUB-OUT TEST FOR SUB	010		S		09/23/98		
WGSB3-7							
% SOLIDS	011		S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	011		S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	011		S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	011		S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	011		S	98LIC090	09/23/98	11/14/98	11/14/98
PH	011		S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	011		S	98LHC096	09/23/98	10/19/98	10/20/98
SUB-OUT TEST FOR SUB	011		S		09/23/98		
WGSB3-10							
% SOLIDS	012		S	98L%S202	09/23/98	10/12/98	10/13/98
% SOLIDS	012	REP	S	98L%S202	09/23/98	10/12/98	10/13/98
CHLORIDE BY IC	012		S	98LIC090	09/23/98	11/14/98	11/14/98
FLUORIDE BY IC	012		S	98LIC090	09/23/98	11/14/98	11/14/98
NITRATE BY IC	012		S	98LIC090	09/23/98	11/14/98	11/14/98
SULFATE BY IC	012		S	98LIC090	09/23/98	11/14/98	11/14/98
PH	012		S	98LPH110	09/23/98	10/21/98	10/21/98
PH	012	REP	S	98LPH110	09/23/98	10/21/98	10/21/98
PETROLEUM HYDROCARBO	012		S	98LHC096	09/23/98	10/19/98	10/20/98
SUB-OUT TEST FOR SUB	012		S		09/23/98		

LAB QC:

CHLORIDE BY IC	MB1		S	98LIC090	N/A	11/14/98	11/14/98
CHLORIDE BY IC	MB1	BS	S	98LIC090	N/A	11/14/98	11/14/98
FLUORIDE BY IC	MB1		S	98LIC090	N/A	11/14/98	11/14/98
FLUORIDE BY IC	MB1	BS	S	98LIC090	N/A	11/14/98	11/14/98
NITRATE BY IC	MB1		S	98LIC090	N/A	11/14/98	11/14/98
NITRATE BY IC	MB1	BS	S	98LIC090	N/A	11/14/98	11/14/98
SULFATE BY IC	MB1		S	98LIC090	N/A	11/14/98	11/14/98

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
A.D. LITTLE-NEW MEXICO

DATE RECEIVED: 10/09/98 RFW LOT # :9810L066

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYS
SULFATE BY IC	MB1 BS	S	98LIC090	N/A	11/14/98	11/14 8
PETROLEUM HYDROCARBO	MB1	S	98LHC095	N/A	10/17/98	10/2 8
PETROLEUM HYDROCARBO	MB1 BS	S	98LHC095	N/A	10/17/98	10/ 98
PETROLEUM HYDROCARBO	MB1 BSD	S	98LHC095	N/A	10/17/98	10 98
PETROLEUM HYDROCARBO	MB1	S	98LHC096	N/A	10/19/98	10 /98
PETROLEUM HYDROCARBO	MB1 BS	S	98LHC096	N/A	10/19/98	10 9/98
PETROLEUM HYDROCARBO	MB1 BSD	S	98LHC096	N/A	10/19/98	10 20/98

RECRA LabNet Use Only

98101 066

Custody Transfer Record/Lab Work Request

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

017

Client AD LITTLE

Est. Final Proj. Sampling Date

Project # 60038-022-001-0001-00

Project Contact/Phone #

RECRA Project Manager DT

QC CLP Del CLP TAT 21 DAYS

Date Rec'd 10/9/98 Date Due 10/30/98

Account # DIAEPM

Refrigerator #		
#/Type Container	Liquid	
	Solid	
Volume	Liquid	
	Solid	
Preservatives		

ANALYSES REQUESTED →

ORGANIC: VOA | BNA | Pest/PCB | Herb

INORG: Metal | CN | Cl, SO4, NO3-N, F, CN

TPH | PH

RECRA LabNet Use Only

Metals ① | ICNTD | IPHC | IPH | ICCL ICSO4 | ICFL ICNO3 | ISOB

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
001	WGSB1-7			S	9-23-98	0840
002	" 12					0910
003	" 20					0930
004	" 30					1020
005	" 40					1100
006	WGSB2-7					1245
007	" 10					1300
008	" 20					1330
009	" 30					1400
010	" 42					1445

Special Instructions:

DATE/REVISIONS:

1. Metals ①= Al, As, Ba, B, Cd,
2. Cr, Co, Cu, Fe, Pb, MN, Mo,
3. Ni, Se, Ag, ZN, Hg, U
4. UC'd 125ml EA
5. See attached metals + DL
6.

Relinquished by	Received by	Date	Time
		10-9-98	1000

Relinquished by	Received by	Date	Time

RECRA LabNet Use Only

Samples were: 1) Shipped ✓ or Hand Delivered

Airbill # See Below

2) Ambient or (Chilled)

3) Received in Good Condition (Y) or N

4) Labels Indicate Properly Preserved (Y) or N

5) Received Within Holding Times (Y) or N

COC Tape was: 1) Present on Outer Package (Y) or N

2) Unbroken on Outer Package (Y) or N

3) Present on Sample Y or (N)

4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp 3° C

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES

8074602689538

RECRA LabNet Use Only

98101066

Custody Transfer Record/Lab Work Request

Page 2 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: AD LITTLE

Est. Final Proj. Sampling Date:

Project #:

Project Contact/Phone #:

RECRA Project Manager:

QC: Del: TAT: 10 pgd

Date Rec'd: 5pd Date Due:

Account #:

Refrigerator #

#/Type Container: Liquid / Solid

Volume: Liquid / Solid

Preservatives

ANALYSES REQUESTED →

ORGANIC: VOA, BNA, Pest/PCB, Herb

INORG: Metal, CN

RECRA LabNet Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Metals Q	ICNTO	IPHC	IPH	ICLL ICSOH	ICFL ICN3	ISUB
011	WGSB3-7			S	9-28-98	1510	✓	✓	✓	✓	✓	✓	✓
012	" " 10			"	"	1515	✓	✓	✓	✓	✓	✓	✓

Special Instructions:

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	10-9-98	1000

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

RECRA LabNet Use Only

Samples were:
1) Shipped or Hand Delivered
Airbill # [illegible]
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp C

Cooler Number 1 of 1 — 9810L0066

Arthur D. Little, Inc.
CHAIN OF CUSTODY RECORD

Page 1 of 2

PROJ. NO: 38051 | PROJECT NAME: Shell Westgate

SAMPLERS (Signature): Tsomides

	SAMPLE/STATION NUMBER	DATE	TIME	COMP	GRAB	STATION LOCATION	PRESERVATION	Analyses: Metals	Cl, SO4, NO3-N, F, CN	Total Uranium	Radium 226/228	TPH by 418.1	pH	# of Jars	Remarks	SAMPLE CONDITION UPON RECEIPT
01	WGSB1-7	9/23/98	0840	—	S	—	Cooled	X	X	X	X	X	X	X	2		Ufrozi
2	WGSB1-12		0900	—		—									2		
3	WGSB1-20		0930	—		—									2		
4	WGSB1-30		1020	—		—									2		
5	WGSB1-40		1100	—		—									2		
6	WGSB2-7		1245	—		—									2		
7	WGSB2-10		1300	—		—									2		
8	WGSB2-20		1320	—		—									3		
9	WGSB2-30		1400	—		—									3		
10	WGSB2-42		1415	—		—									3		
11	WGSB3-7		1510	—		—									3		
12	WGSB3-10		1515 1545	—		—									3		
10/7-1	WGSB3-24		1545	—		—									3		
2	WGSB3-30		1605	—		—									3		
3	WGSB3-40		1625	—		—									3		

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Shipped to:
Craig Smith	10.8.98 1400	Diane E Rice	Dianne Therry RECRA Labnet 208 Welsh Pool Rd Lionville, PA 19341
Diane E Rice	10/8/98 4:50		
		Received for Laboratory by: (Signature)	Date/Time

Carrier: FEDEX 807460269538

Distribution: Original Accompanies Shipment; Yellow Copy to Case Manager; Pink Copy for Field Files

Arthur D. Little, Inc. 25 Acorn Park, Cambridge, MA 02140 (617) 498-5000
Telex 921436 Tel-Fax (617) 498-7200

*Letter denotes sample matrix
W - Water S - Soil LW - Liquid Waste SW - Solid Waste

% SOLID/% MOISTURE ANALYSIS RECORD

RECRA LABNET PHILADELPHIA

Analyst: J.M.Mooney
Start Date/Time/Temp: 10-12-98 1100 104°
End Date/Time/Temp: 10-13-98 0815 106°
Balance ID: B5

Logbook #: L0648
Method: STD
Work Sheet: XSL1012
Prep Batch: 98L0S202

Sample ID (RFW # or Std)	Container wt (g)	Initial wt (g) (Sample & Container)	Final wt (g) (Sample & Container)	% Solid	% Moisture
9810L0101-025	1.283	11.194	9.542	83.33	
-026	1.286	11.151	2.847	15.82	
9810L0106-001	1.286	9.1104	8.352	89.69	
-002	1.293	7.5386	6.1091	81.44	
-003	1.290	7.428	6.874	90.97	
-004	1.286	9.810	9.492	96.27	
-005	1.299	11.779	11.406	96.44	
-006	1.285	8.228	7.748	93.09	
-007	1.296	11.342	9.971	86.35	
-008	1.293	9.997	8.846	87.38	
-009	1.291	8.580	8.019	92.99	
-010	1.300	11.418	10.901	94.89	
-011	1.293	10.351	9.873	94.72	
-012	1.294	10.004	9.410	93.18	
-012R	1.292	11.332	10.641	93.12	
9810L0107-001	1.289	10.031	9.385	92.16	
-002	1.293	11.378	10.300	89.31	
-003	1.288	9.102	8.681	93.89	
-004	1.285	11.377	10.796	94.24	
-005	1.292	7.799	6.801	84.06	
-006	1.297	9.611	9.187	94.90	
-007	1.299	11.295	10.897	96.02	
-008	1.295	11.263	10.794	95.29	

wt. = weight

Example Calculations: % solids = $\frac{\text{Pan and dry sample wt. (g) - pan wt. (g)}}{\text{Pan and wet sample wt. (g) - pan wt. (g)}} \times 100$

% Moisture = 100% - % solids result

Reviewed By/Date: 10/16/98

RFW 21-21L-016/H-05/96

Page # 002

WESTON Analytics Inorganics Section

Date of Prep: 10/12/98
Date of Analysis: 10/13/98
Worksheet: XSL1012
Computer #: SKL
Directory: INORGANICS
Run Batch: 98LXS202
Method: STD
Analyst: TM
Instrument: B-5

CALIB DATA
SLOPE: 0.00
INTERCEPT: 0.00
REG. COEF: 0

RFW SAMPLE ID	TEST	PAN WT.	PAN & WET WT.	PAN & DRY WT.	C/D	FINAL RESULT	DETECTION LIMIT	UNITS	REPLICATE ORIG SAMPLE RESULT	REPLICATE REP % DIFF	SPIKE SPIKE LEVEL ?	SPIKE SAMPLE SPIKE AMOUNT	SPIKE % RECOV	LCS AMT LCS ?	LCS % RECOV	SOILS PREP PREP BATCH	SOILS PREP INITIAL SAMPLE WT.	SOILS PREP FINAL SAMPLE WT.	SOILS PREP % SOLIDS
9810L058-001	IXSOL	1.287	9.048	8.678		95.23	0.01	%								98LXS202	7.761	7.391	
9810L058-003	IXSOL	1.290	8.680	7.935		89.92	0.01	%								98LXS202	7.390	6.645	
9810L058-005	IXSOL	1.284	8.631	8.265		95.82	0.01	%								98LXS202	7.347	6.981	
9810L061-001	IXSOL	1.287	10.977	9.771		87.55	0.01	%								98LXS202	9.690	8.484	
9810L061-002	IXSOL	1.285	9.596	8.822		81.86	0.01	%								98LXS202	8.311	6.737	
9810L061-003	IXSOL	1.293	8.919	6.864		73.05	0.01	%								98LXS202	7.626	5.577	
9810L061-004	IXSOL	1.282	10.991	2.667		14.27	0.01	%								98LXS202	9.709	1.385	
9810L061-005	IXSOL	1.299	11.689	8.563		69.91	0.01	%								98LXS202	10.390	7.264	
9810L061-006	IXSOL	1.294	10.767	8.688		77.97	0.01	%								98LXS202	9.473	7.394	
9810L061-007	IXSOL	1.295	9.444	2.256		11.79	0.01	%								98LXS202	8.149	0.961	
9810L061-008	IXSOL	1.292	11.839	7.522		59.07	0.01	%								98LXS202	10.547	6.230	
9810L061-009	IXSOL	1.297	9.977	2.875		18.18	0.01	%								98LXS202	8.680	1.578	
9810L061-010	IXSOL	1.285	8.516	6.614		73.78	0.01	%								98LXS202	7.231	5.329	
9810L061-011	IXSOL	1.290	7.525	2.131		13.49	0.01	%								98LXS202	6.235	0.841	
9810L061-012	IXSOL	1.286	8.434	7.193		82.64	0.01	%								98LXS202	7.148	5.907	
9810L061-013	IXSOL	1.279	9.924	8.315		81.39	0.01	%								98LXS202	8.645	7.036	
9810L061-013	IXSOLR	1.281	13.394	11.308		82.78	0.01	%	81.388	1.7						98LXS202	12.113	10.027	
9810L061-014	IXSOL	1.287	12.217	7.911		60.60	0.01	%								98LXS202	10.930	6.624	
9810L061-015	IXSOL	1.290	10.900	9.328		83.64	0.01	%								98LXS202	9.610	8.040	
9810L061-016	IXSOL	1.283	10.285	9.602		92.41	0.01	%								98LXS202	9.002	8.319	
9810L061-017	IXSOL	1.282	10.634	9.668		89.67	0.01	%								98LXS202	9.352	8.386	
9810L061-018	IXSOL	1.281	9.696	8.469		85.42	0.01	%								98LXS202	8.415	7.188	
9810L061-019	IXSOL	1.279	12.231	10.832		87.23	0.01	%								98LXS202	10.952	9.553	
9810L061-025	IXSOL	1.283	11.194	9.542		83.33	0.01	%								98LXS202	9.911	8.457	
9810L061-026	IXSOL	1.286	11.151	2.847		15.82	0.01	%								98LXS202	9.865	1.564	
9810L066-001	IXSOL	1.286	9.164	8.352		89.69	0.01	%								98LXS202	7.878	7.066	
9810L066-002	IXSOL	1.293	7.538	6.691		86.44	0.01	%								98LXS202	6.245	5.398	
9810L066-003	IXSOL	1.290	7.428	6.874		90.97	0.01	%								98LXS202	6.138	5.548	
9810L066-004	IXSOL	1.286	9.810	9.492		96.27	0.01	%								98LXS202	8.524	8.206	
9810L066-005	IXSOL	1.299	11.779	11.486		96.44	0.01	%								98LXS202	10.480	10.187	
9810L066-006	IXSOL	1.285	8.228	7.748		93.09	0.01	%								98LXS202	6.943	6.464	
9810L066-007	IXSOL	1.296	11.342	9.971		86.35	0.01	%								98LXS202	10.046	8.675	
9810L066-008	IXSOL	1.293	9.937	8.846		87.38	0.01	%								98LXS202	8.644	7.553	
9810L066-009	IXSOL	1.291	8.388	8.069		92.99	0.01	%								98LXS202	7.289	6.778	
9810L066-010	IXSOL	1.300	11.418	10.901		94.89	0.01	%								98LXS202	10.118	9.601	
9810L066-011	IXSOL	1.293	10.351	9.873		94.72	0.01	%								98LXS202	9.058	8.580	
9810L066-012	IXSOL	1.294	10.004	9.410		93.18	0.01	%								98LXS202	8.710	8.116	
9810L066-012	IXSOLR	1.292	11.332	10.641		93.12	0.01	%	93.188	0.1						98LXS202	10.040	9.349	
9810L067-001	IXSOL	1.289	10.031	9.385		92.61	0.01	%								98LXS202	8.742	8.096	
9810L067-002	IXSOL	1.293	11.378	10.300		89.31	0.01	%								98LXS202	10.085	9.007	
9810L067-003	IXSOL	1.288	9.162	8.681		93.89	0.01	%								98LXS202	7.074	7.067	
9810L067-004	IXSOL	1.285	11.377	10.796		94.24	0.01	%								98LXS202	10.092	9.511	
9810L067-005	IXSOL	1.292	7.799	6.801		84.66	0.01	%								98LXS202	6.507	5.497	
9810L067-006	IXSOL	1.297	9.611	9.187		94.98	0.01	%								98LXS202	8.314	7.890	
9810L067-007	IXSOL	1.299	11.295	10.897		96.02	0.01	%								98LXS202	9.996	9.598	
9810L067-008	IXSOL	1.295	11.263	10.794		95.29	0.01	%								98LXS202	9.968	9.497	
9810L067 [redacted]	IXSOL	1.298	9.275	8.721		93.86	0.01	%								98LXS202	7.977	7.424	
9810L067 [redacted]	IXSOL	1.294	8.387	8.123		96.28	0.01	%								98LXS202	7.093	6.827	
9810L067-011	IXSOL	1.289	11.149	10.449		92.98	0.01	%								98LXS202	9.860	9.160	
9810L067-012	IXSOL	1.299	10.233	9.825															

Recra LabNet Philadelphia **IC PREPARATION LOG** Logbook #: 6665

Test: Ic Anions Method #: 21-15L-0300.0/ 03A Analysis Logbook #: 6570

Prep Date: 11/14/98 Instrument: Dionex-2020i Prep Batch: 98LICO56

Analyst: M. Carney Start Time: _____ End Time: _____

RFW #	Prep. Wt/Vol.	Dilution	Spike Amount	QC	Comments
9810L066-001	6g→30mL	1, 20, 100	NA.	SPEC CCP	
002		1, 20, 50			
003		1, 20			
004		1			
005		1			
005R		1			
005S		1	150µl→30mL		5ppm
006		1, 10	NA.		
007		1, 2, 20			
008		1, 10, 20			
009		1, 2, 5			
010		1, 5			
011		1, 10			
012		1, 10			
9810L067-001		1			
001R		1			
001S		1	150µl→30mL		5ppm
002		1	NA.		
003		1			
004		1, 4			
005		1, 20, 50			
006		1			
007		1, 2 prep	11-16-98		
008		1, 2			
009		1, 10			
010	↓	1, 10	↓	↓	

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Standard:	ID	Prep Date	Expir Date
MS	4954-47-06	12-18-97	1-1-99

Reviewed By/Date: [signature] 11/16/98

L-WI-018/R-08/98

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022

Recra LabNet Philadelphia **IC PREPARATION LOG** Logbook #: 6605

Test: Ic Anions Method #: 21-15L-0300.0/ 03A Analysis Logbook #: 6570

Prep Date: 11/14/98 Instrument: Dionex-2020i Prep Batch: 98LIC090

Analyst: M. Carney Start Time: _____ End Time: _____

RFW #	Prep. Wt/Vol.	Dilution	Spike Amount	QC	Comments
98104067-011	6g → 30mL	1	NA	CCP	
012	1	1	NA.	1	

11-14-98

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Standard:	ID	Prep Date	Expir Date
MB	4954-4706	11-12-97	1-1-99

Reviewed By/Date: [illegible] 11/16/98

L-WI-018/R-08/98

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023

Recra LabNet Philadelphia

IC ANALYSIS SUMMARY: INORGANIC ANIONS

OP#: 21-15L-0300.0, Rev. 03
Analyst: Mark Carney
Date: 11-14-98

Instrument: Dionex-2020i
Prep. Logbook #: 161605

Logbook: 10
Prep Batch: 98LIC090
Worksheet: IC1114

024

Anion→	F-			Cl-			NO3			SO4							Sample Info		Comments
Sample ID#↓	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	% Sol	Prep. w/vol	/Notes
98LIC090-ICV	5.550			4.693			4.719			4.788										6g→30ml	extraction applies to samples only per 11-14-98
98LIC090-ICB	0			0			0			0											
98LIC090-066-001	0		1	100.489		20	0.363		1	384.322		100							89.7		
066-002	0.291		1	129.151		20	0.494		1	124.881		20							86.4		
066-003	0.304		1	82.466		20	1.980		1	54.124		20							91.0		
066-004	0.417		1	3.085		1	0.211		1	9.118		1							96.3		
066-005	0.118		1	0.995		1	0.235		1	1.791		1							96.4		
CCV	9.912		1	4.756		1	4.805		1	4.799		1							100	NA	
CCB	0		1	0.138 per 11-16-98		1	0		1	0		1							100		
066005R	0.133		1	0.964		1	0.232		1	1.800		1							96.4		
066005S	11.033		1	6.033		1	5.105		1	6.881		1							96.4		
066-006	0.891		1	1.564		1	6.456		1	38.537		10							93.1		

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b; where Y = instrument reading
m = slope = NA
b = intercept =
X = concentration (mg/L)

final result = mg/L x dilution factor

Standard:	ID	Prep Date	Expir Date
ICV/CCVDUP/LCS	6128-108-27	11-14-98	11-15-98
ICAL/CCV	6128-108-07	↓	↓
MS	4954-47-16	12-12-97	1-1-99

Comments/Notes: see lotus spreadsheet for final mg/kg results

Reviewed By/Date: 11/14/98

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RFW 21-21L-021U-07/97

Recra LabNet Philadelphia

IC ANALYSIS SUMMARY: INORGANIC ANIONS

OP#: 21-15L-0300.0, Rev. 03
Analyst: Mark Cagney
Date: 11-14-98

Instrument: Dionex-2020i
Prep. Logbook #: 66065

Logbook: 6570
Prep Batch: 98LIC096
Worksheet: IC1114

025

Anion→	F-			Cl-			NO3			SO4							Sample Info		Comments
Sample ID#↓	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	mg/L	mg/kg	Dil.	% Sol	Prep. w/v/v	/Notes
98IDLO66-007	0.694		1	12.095		2	4.567		1	88.589		20							86.4	6g→30mL	
066-008	0.551		1	33.268		10	0.841		1	76.383		10							87.4	1	
CCV	10.481		1	4.703		1	4.759		1	4.808		1							100		
CCB	0		1	0.144		1	0		1	0		1							100		
98IDLO66-009	0.220		1	29.144		5	0.922		1	11.663		2							93.0	6g→30mL	
066-010	0.120		1	25.102		5	0.252		1	7.794		1							94.9		
066-011	1.449		1	44.011		10	0.556		1	35.082		10							94.7		
066-012	0.681		1	32.471		10	0.419		1	34.319		10							93.2		
98IDLO67-001	0.198		1	1.794		1	0.320		1	4.459		1							92.6		
CCV	10.632		1	4.798		1	4.812		1	4.814		1							100		
CCB	0		1	0.144		1	0		1	0		1							100		
98IDLO67-001S	0.197		1	1.785		1	0.331		1	4.451		1							92.6	6g→30mL	

"S" = matrix spike, "D" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b; where Y = instrument reading
m = slope = NA
b = intercept =
X = concentration (mg/L)

final result = mg/L x dilution factor

Standard:	ID	Prep Date	Expir Date
ICV/CCVDUP/LCS			
ICAL/CCV		See	Q-19
MS			

Comments/Notes: final mg/kg results on Lotus spreadsheet

Reviewed By/Date: 11/14 98

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RFW 21-21L-021U-07/97

Recra LabNet Philadelphia

IC ANALYSIS SUMMARY: INORGANIC ANIONS

OP#: 21-15L-0300.0, Rev. 03
Analyst: Mark Carney
Date: 11-[illegible]-98

Instrument: Dionex-2020i
Prep. Logbook #: 66665

Logbook: 6570
Prep Batch: 98LIC090
Worksheet: IC1114

Anion→	F-		Cl-		NO3		SO4						Sample Info		Comments
Sample ID#↓	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	% Sol	Prep. wt/vol	/Notes
98IXL067-001	10.658	1	7.072	1	5.238	1	9.962	1					92.6	1g→30mL	
067-002	0	1	0.826	1	0.284	1	2.383	1					89.3		
067-003	0	1	0.684	1	0.241	1	1.641	1					93.9		
067-004	0.521	1	14.444	4	0.375	1	23.290	4					94.2		
067-005	0.302	1	115.080	20	0.328	1	81.499	20					84.7		
067-006	0.008	1	0.819	1	0.244	1	3.938	1					94.9		
CCV	10.456	1	4.790	1	4.803	1	4.827	1					100		
CCB	0	1	0	1	0	1	0	1					100		
98IXL067-007	0	1	0.455	1	0.235	1	1.361	1					96.0	1g→30mL	
067-008	0.820	1	14.386	2	0.357	1	23.283	5					95.3		
067-009	0.319	1	40.390	10	0.234	1	43.906	10					93.1		
067-010	0.376	1	29.560	10	0.275	1	28.194	10					96.3		

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b; where Y = instrument reading
m = slope = NA
b = intercept =
X = concentration (mg/L)

final result = mg/L x dilution factor

Comments/Notes: final mg/kg results on Optics spreadsheet

Standard:	ID	Prep Date	Expir Date
ICV/CCV/DUP/LCS	See p 10		
ICAL/CCV			
MS	4954-4740	12-12-97	1-1-98

Reviewed By/Date: 11/14/98

RFW 21-21L-021U-07/97

Recra LabNet Philadelphia

IC ANALYSIS SUMMARY: INORGANIC ANIONS

OP#: 21-15L-0300.0, Rev. 03
Analyst: Mark Carney
Date: 11-14-98

Instrument: Dionex-2020i
Prep. Logbook #: 66605

Logbook: 6570
Prep Batch: 98L1C090
Worksheet: 1C1114

Anion→	F-		Cl-		NO3		SO4						Sample Info		Comments
Sample ID#↓	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	mg/L mg/kg	Dil.	% Sol	Prep. wt/vol	/Notes
9810L067-011	0.173	1	0.991	1	0.322	1	3.410	1					92.9	1g→3mL	
L067-012	0	1	0.881	1	0.378	1	1.900	1					95.4	1	
CCV	10.071	1	4.788	1	4.840	1	4.862	1					100		
CCB	0	1	0	1	0	1	0	1					100		

Acc'd 11-16-98

"S" = matrix spike, "T" = matrix spike duplicate, "R" = replicate

Example Calculation:
Y = mX + b; where Y = instrument reading
m = slope = N/A
b = intercept =
X = concentration (mg/L)

final result = mg/L x dilution factor

Standard:	ID	Prep Date	Expir Date
ICV/CCVDUP/LCS			
ICAL/CCV		Sep 99	
MS			

Comments/Notes: final mg/kg results on Actus spreadsheet

Reviewed By/Date: [illegible] 11/16/98

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RFW 21-21L-021U-07/97

Date of Prep: 11/14/98
Date of Analysis: 11/14/98

Worksheet: IC1114
Computer #: SKL
Directory: INORGANICS

Run Batch: 98LIC090
Method: EPA300.0
Analyst: MC
Instrument: DIONEX

CALIB DATA
SLOPE: 1.00
INTERCEPT: 0.00
CORRELATION COEFF.: 1

RFW SAMPLE ID	TEST	INST. ABS	INITIAL RESULT	DILUTION FACTOR	C/D	FINAL RESULT	DETECTION LIMIT 0.5R	UNITS	REPLICATE ORIG SAMPLE RESULT	REP % DIFF	SPIKE SPIKE LEVEL ?	SAMPLE SPIKE AMOUNT	% RECOV	LCS AMT LCS ?	% RECOV	SOILS PREP PREP BATCH	INITIAL SAMPLE WT.	FINAL VOL.	% SOLIDS	ANAL TIME	DATE PREP
98LIC090-MB1	ICFL-S	5.550	5.550	1	5.0000	27.750	2.500	MG/KG	0.000		5	25.000	111.0			98LIC090	6	30	100.00		
98LIC090-MB1	ICFL	0.000	0.000	1	5.0000	0.000 u	2.500	MG/KG								98LIC090	6	30	100.00		
9810L966-001	ICFL	0.000	0.000	1	5.5741	0.000 u	2.787	MG/KG								98LIC090	6	30	100.00		
9810L966-002	ICFL	0.291	0.291	1	5.7870	1.684 u	2.894	MG/KG								98LIC090	6	30	89.70		
9810L966-003	ICFL	0.304	0.304	1	5.4945	1.670 u	2.747	MG/KG								98LIC090	6	30	86.40		
9810L966-004	ICFL	0.417	0.417	1	5.1921	2.165 u	2.596	MG/KG								98LIC090	6	30	91.00		
9810L966-005	ICFL	0.118	0.118	1	5.1867	0.612 u	2.593	MG/KG								98LIC090	6	30	96.30		
CCV	ICFL-S	9.912	9.912	1	5.0000	49.560	2.500	MG/KG								98LIC090	6	30	96.40		
CCB	ICFL	0.000	0.000	1	5.0000	0.000 u	2.500	MG/KG	0.000		10	50.000	99.1			98LIC090	6	30	100.00		
9810L966-005	ICFL-R	0.133	0.133	1	5.1867	0.690 u	2.593	MG/KG								98LIC090	6	30	100.00		
9810L966-005	ICFL-S	11.633	11.633	1	5.1867	57.225	2.593	MG/KG	0.612	12.0						98LIC090	6	30	96.40		
9810L966-006	ICFL	0.891	0.891	1	5.3786	4.795	2.689	MG/KG	0.612		10	51.867	109.2			98LIC090	6	30	96.40		
9810L966-007	ICFL	0.694	0.694	1	5.7870	4.016	2.894	MG/KG								98LIC090	6	30	93.10		
9810L966-008	ICFL	0.551	0.551	1	5.7208	3.152	2.860	MG/KG								98LIC090	6	30	86.40		
CCV	ICFL-S	10.481	10.481	1	5.0000	52.405	2.500	MG/KG								98LIC090	6	30	87.40		
CCB	ICFL	0.000	0.000	1	5.0000	0.000 u	2.500	MG/KG	0.000		10	50.000	104.8			98LIC090	6	30	100.00		
9810L966-009	ICFL	0.220	0.220	1	5.3763	1.183 u	2.688	MG/KG								98LIC090	6	30	100.00		
9810L966-010	ICFL	0.120	0.120	1	5.2687	0.632 u	2.634	MG/KG								98LIC090	6	30	93.00		
9810L966-011	ICFL	1.449	1.449	1	5.2798	7.650	2.640	MG/KG								98LIC090	6	30	94.90		
9810L966-012	ICFL	0.681	0.681	1	5.3648	3.653	2.682	MG/KG								98LIC090	6	30	94.70		
9810L967-001	ICFL	0.198	0.198	1	5.3996	1.069 u	2.700	MG/KG								98LIC090	6	30	93.20		
CCV	ICFL-S	10.632	10.632	1	5.0000	53.160	2.500	MG/KG								98LIC090	6	30	92.60		
CCB	ICFL	0.000	0.000	1	5.0000	0.000 u	2.500	MG/KG	0.000		10	50.000	106.3			98LIC090	6	30	100.00		
9810L967-001	ICFL-R	0.197	0.197	1	5.3996	1.064 u	2.700	MG/KG								98LIC090	6	30	100.00		
9810L967-001	ICFL-S	10.658	10.658	1	5.3996	57.549	2.700	MG/KG	1.069	0.5						98LIC090	6	30	92.60		
9810L967-002	ICFL	0.000	0.000	1	5.5991	0.000 u	2.800	MG/KG	1.069		10	53.996	104.6			98LIC090	6	30	92.60		
9810L967-003	ICFL	0.000	0.000	1	5.3248	0.000 u	2.662	MG/KG								98LIC090	6	30	89.30		
9810L967-004	ICFL	0.521	0.521	1	5.3079	2.765	2.654	MG/KG								98LIC090	6	30	93.90		
9810L967-005	ICFL	0.382	0.382	1	5.9032	1.783 u	2.952	MG/KG								98LIC090	6	30	94.20		
9810L967-006	ICFL	0.000	0.000	1	5.2687	0.842 u	2.634	MG/KG								98LIC090	6	30	84.70		
CCV	ICFL-S	10.456	10.456	1	5.0000	52.280	2.500	MG/KG								98LIC090	6	30	94.90		
CCB	ICFL	0.000	0.000	1	5.0000	0.000 u	2.500	MG/KG	0.000		10	50.000	104.6			98LIC090	6	30	100.00		
9810L967-007	ICFL	0.000	0.000	1	5.2083	0.000 u	2.604	MG/KG								98LIC090	6	30	100.00		
9810L967-008	ICFL	0.829	0.829	1	5.2466	4.302	2.623	MG/KG								98LIC090	6	30	96.00		
9810L967-009	ICFL	0.319	0.319	1	5.3786	1.713 u	2.689	MG/KG								98LIC090	6	30	95.30		
9810L967-010	ICFL	0.376	0.376	1	5.1921	1.952 u	2.596	MG/KG								98LIC090	6	30	93.10		
9810L967-011	ICFL	0.173	0.173	1	5.3821	0.931 u	2.691	MG/KG								98LIC090	6	30	96.30		
9810L967-012	ICFL	0.000	0.000	1	5.2411	0.000 u	2.621	MG/KG								98LIC090	6	30	92.90		
CCV	ICFL-S	10.071	10.071	1	5.0000	50.355	2.500	MG/KG								98LIC090	6	30	95.40		
CCB	ICFL	0.000	0.000	1	5.0000	0.000 u	2.500	MG/KG	0.000		10	50.000	100.7			98LIC090	6	30	100.00		
																98LIC090	6	30	100.00		
98LIC090-MB1	ICCL-S	4.693	4.693	1	5.0000	23.465	1.250	MG/KG													
98LIC090-MB1	ICCL	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	93.9			98LIC090	6	30	100.00		
9810L966-001	ICCL	108.489	108.489	20	5.5741	560.139	27.871	MG/KG								98LIC090	6	30	100.00		
9810L966-002	ICCL	129.151	129.151	20	5.7870	747.402	28.935	MG/KG								98LIC090	6	30	89.70		
9810L966-003	ICCL	82.466	82.466	10	5.4945	453.110	13.736	MG/KG								98LIC090	6	30	86.40		
9810L966-004	ICCL	3.885	3.885	1	5.1921	16.018	1.298	MG/KG								98LIC090	6	30	91.00		
9810L966-005	ICCL	0.995	0.995	1	5.1867	5.161	1.297	MG/KG								98LIC090	6	30	96.30		
CCV	ICCL-S	4.756	4.756	1	5.0000	23.780	1.250	MG/KG								98LIC090	6	30	96.40		
CCB	ICCL	0.158	0.158	1	5.0000	0.790 u	1.250	MG/KG	0.000		5	25.000	95.1			98LIC090	6	30	100.00		

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9810L866-005	ICCL-R	0.964	0.964	1	5.1867	5.000	1.297 MG/KG							98LICP90	6	30	100.00	
9810L866-005	ICCL-S	6.833	6.833	1	5.1867	31.291	1.297 MG/KG		5.161	3.2				98LICP90	6	30	96.40	
9810L866-006	ICCL	1.564	1.564	1	5.3706	8.400	1.343 MG/KG		5.161		5	25.934	100.8	98LICP90	6	30	96.40	
9810L866-007	ICCL	12.895	12.895	2	5.7870	69.994	2.894 MG/KG							98LICP90	6	30	93.10	
9810L866-008	ICCL	33.268	33.268	10	5.7208	190.320	14.382 MG/KG							98LICP90	6	30	86.40	
CCV	ICCL-S	4.783	4.783	1	5.0000	23.515	1.250 MG/KG							98LICP90	6	30	87.40	
CCB	ICCL	0.144	0.144	1	5.0000	0.720 U	1.250 MG/KG		0.000		5	25.000	94.1	98LICP90	6	30	100.00	
9810L866-009	ICCL	29.144	29.144	5	5.3763	156.688	6.720 MG/KG							98LICP90	6	30	100.00	
9810L866-010	ICCL	25.102	25.102	5	5.2687	132.255	6.586 MG/KG							98LICP90	6	30	93.80	
9810L866-011	ICCL	44.011	44.011	10	5.2798	232.371	13.200 MG/KG							98LICP90	6	30	94.90	
9810L866-012	ICCL	32.471	32.471	10	5.3648	174.201	13.412 MG/KG							98LICP90	6	30	94.70	
9810L867-001	ICCL	1.794	1.794	1	5.3996	9.687	1.350 MG/KG							98LICP90	6	30	93.20	
CCV	ICCL-S	4.798	4.798	1	5.0000	23.998	1.250 MG/KG							98LICP90	6	30	92.60	
CCB	ICCL	0.144	0.144	1	5.0000	0.720 U	1.250 MG/KG		0.000		5	25.000	96.0	98LICP90	6	30	100.00	
9810L867-001	ICCL-R	1.785	1.785	1	5.3996	9.638	1.350 MG/KG							98LICP90	6	30	100.00	
9810L867-001	ICCL-S	7.872	7.872	1	5.3996	38.186	1.350 MG/KG		9.687	0.5				98LICP90	6	30	92.60	
9810L867-002	ICCL	0.826	0.826	1	5.5991	4.625	1.400 MG/KG		9.687		5	26.998	105.6	98LICP90	6	30	92.60	
9810L867-003	ICCL	0.684	0.684	1	5.3248	3.642	1.331 MG/KG							98LICP90	6	30	89.30	
9810L867-004	ICCL	14.444	14.444	4	5.3079	76.667	5.388 MG/KG							98LICP90	6	30	93.90	
9810L867-005	ICCL	115.000	115.000	20	5.9832	679.339	29.516 MG/KG							98LICP90	6	30	94.20	
9810L867-006	ICCL	0.819	0.819	1	5.2687	4.315	1.317 MG/KG							98LICP90	6	30	84.70	
CCV	ICCL-S	4.798	4.798	1	5.0000	23.950	1.250 MG/KG							98LICP90	6	30	94.90	
CCB	ICCL	0.000	0.000	1	5.0000	0.000 U	1.250 MG/KG		0.000		5	25.000	95.8	98LICP90	6	30	100.00	
9810L867-007	ICCL	0.455	0.455	1	5.2883	2.378	1.302 MG/KG							98LICP90	6	30	100.00	
9810L867-008	ICCL	14.386	14.386	2	5.2466	75.477	2.623 MG/KG							98LICP90	6	30	96.80	
9810L867-009	ICCL	40.390	40.390	10	5.3706	216.917	13.426 MG/KG							98LICP90	6	30	95.30	
9810L867-010	ICCL	29.360	29.360	10	5.1921	153.479	12.980 MG/KG							98LICP90	6	30	93.10	
9810L867-011	ICCL	0.991	0.991	1	5.3821	5.334	1.346 MG/KG							98LICP90	6	30	96.30	
9810L867-012	ICCL	0.881	0.881	1	5.2411	4.617	1.310 MG/KG							98LICP90	6	30	92.90	
CCV	ICCL-S	4.788	4.788	1	5.0000	23.940	1.250 MG/KG							98LICP90	6	30	95.40	
CCB	ICCL	0.000	0.000	1	5.0000	0.000 U	1.250 MG/KG		0.000		5	25.000	95.8	98LICP90	6	30	100.00	
														98LICP90	6	30	100.00	

Date of Analysis: 11/14/98
Worksheet: IC1114
Computer 8: SKL
Directory: INORGANICS

Run Batch: 98LIC898
Method: EPA300.0
Analyst: MC
Instrument: DIONEX

CALIB DATA
SLOPE: 1.00
INTERCEPT: 0.00
CORRELATION COEFF.: 1

RFW SAMPLE ID	TEST	INST. ABS	INITIAL RESULT	DILUTION FACTOR	C/D	FINAL RESULT	DETECTION LIMIT 0.25	UNITS	REPLICATE ORIG SAMPLE RESULT	REP % DIFF	SPIKE LEVEL ?	SAMPLE SPIKE AMOUNT	% RECOV	LCS AMT LCS ?	% RECOV	SOILS PREP BATCH	INITIAL SAMPLE WT.	FINAL VOL.	% SOLIDS	ANAL TIME	DATE PREP
98LIC898-MB1	ICN03B	4.719	4.719	1	5.0000	23.595	1.250	MG/KG	0.000		5	25.000	94.4			98LIC898	6	30	100.00		
98LIC898-MB1	ICN03	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG								98LIC898	6	30	100.00		
9818L866-001	ICN03	0.363	0.363	1	5.5741	2.023	1.394	MG/KG								98LIC898	6	30	100.00		
9818L866-002	ICN03	0.494	0.494	1	5.7870	2.859	1.447	MG/KG								98LIC898	6	30	89.70		
9818L866-003	ICN03	1.980	1.980	1	5.4945	10.879	1.374	MG/KG								98LIC898	6	30	86.40		
9818L866-004	ICN03	0.211	0.211	1	5.1921	1.096 u	1.298	MG/KG								98LIC898	6	30	91.00		
9818L866-005	ICN03	0.235	0.235	1	5.1867	1.219 u	1.297	MG/KG								98LIC898	6	30	96.30		
CCV	ICN03B	4.895	4.895	1	5.0000	24.925	1.250	MG/KG								98LIC898	6	30	96.40		
CCB	ICN03	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	96.1			98LIC898	6	30	100.00		
9818L866-005	ICN03R	0.232	0.232	1	5.1867	1.203 u	1.297	MG/KG								98LIC898	6	30	100.00		
9818L866-005	ICN03B	5.185	5.185	1	5.1867	26.678	1.297	MG/KG	1.219	1.3						98LIC898	6	30	96.40		
9818L866-006	ICN03	6.456	6.456	1	5.3706	34.672	1.343	MG/KG	1.219		5	25.934	97.4			98LIC898	6	30	96.40		
9818L866-007	ICN03	4.567	4.567	1	5.7870	26.429	1.447	MG/KG								98LIC898	6	30	93.10		
9818L866-008	ICN03	0.841	0.841	1	5.7208	4.811	1.430	MG/KG								98LIC898	6	30	86.40		
CCV	ICN03B	4.759	4.759	1	5.0000	23.795	1.250	MG/KG								98LIC898	6	30	87.40		
CCB	ICN03	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	95.2			98LIC898	6	30	100.00		
9818L866-009	ICN03	0.922	0.922	1	5.3763	4.957	1.344	MG/KG								98LIC898	6	30	100.00		
9818L866-010	ICN03	0.252	0.252	1	5.2687	1.328	1.317	MG/KG								98LIC898	6	30	93.00		
9818L866-011	ICN03	0.556	0.556	1	5.2798	2.936	1.320	MG/KG								98LIC898	6	30	94.90		
9818L866-012	ICN03	0.419	0.419	1	5.3648	2.248	1.341	MG/KG								98LIC898	6	30	94.70		
9818L867-001	ICN03	0.320	0.320	1	5.3996	1.728	1.350	MG/KG								98LIC898	6	30	93.20		
CCV	ICN03B	4.812	4.812	1	5.0000	24.060	1.250	MG/KG								98LIC898	6	30	92.60		
CCB	ICN03	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	96.2			98LIC898	6	30	100.00		
9818L867-001	ICN03R	0.331	0.331	1	5.3996	1.787	1.350	MG/KG								98LIC898	6	30	100.00		
9818L867-001	ICN03B	5.238	5.238	1	5.3996	28.283	1.350	MG/KG	1.728	3.4						98LIC898	6	30	92.60		
9818L867-002	ICN03	0.284	0.284	1	5.5991	1.590	1.400	MG/KG	1.728		5	26.998	98.4			98LIC898	6	30	92.60		
9818L867-003	ICN03	0.251	0.251	1	5.3248	1.337	1.331	MG/KG								98LIC898	6	30	89.30		
9818L867-004	ICN03	0.375	0.375	1	5.3879	1.999	1.327	MG/KG								98LIC898	6	30	93.90		
9818L867-005	ICN03	0.328	0.328	1	5.9832	1.936	1.476	MG/KG								98LIC898	6	30	94.20		
9818L867-006	ICN03	0.244	0.244	1	5.2687	1.286 u	1.317	MG/KG								98LIC898	6	30	84.70		
CCV	ICN03B	4.863	4.863	1	5.0000	24.315	1.250	MG/KG								98LIC898	6	30	94.90		
CCB	ICN03	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	96.1			98LIC898	6	30	100.00		
9818L867-007	ICN03	0.235	0.235	1	5.2883	1.224 u	1.322	MG/KG								98LIC898	6	30	100.00		
9818L867-008	ICN03	0.357	0.357	1	5.2466	1.873	1.312	MG/KG								98LIC898	6	30	96.00		
9818L867-009	ICN03	0.234	0.234	1	5.3706	1.257 u	1.343	MG/KG								98LIC898	6	30	95.30		
9818L867-010	ICN03	0.275	0.275	1	5.1921	1.428	1.298	MG/KG								98LIC898	6	30	93.10		
9818L867-011	ICN03	0.322	0.322	1	5.3821	1.733	1.346	MG/KG								98LIC898	6	30	96.30		
9818L867-012	ICN03	0.378	0.378	1	5.2411	1.981	1.310	MG/KG								98LIC898	6	30	92.90		
CCV	ICN03B	4.848	4.848	1	5.0000	24.240	1.250	MG/KG								98LIC898	6	30	95.40		
CCB	ICN03	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	96.8			98LIC898	6	30	100.00		
																98LIC898	6	30	100.00		
98LIC898-MB1	IC904B	4.788	4.788	1	5.0000	23.940	1.250	MG/KG													
98LIC898-MB1	IC904	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	95.8			98LIC898	6	30	100.00		
9818L866-001	IC904	384.322	384.322	100	5.5741	2142.263	139.353	MG/KG								98LIC898	6	30	100.00		
9818L866-002	IC904	124.881	124.881	20	5.7870	722.691	28.935	MG/KG								98LIC898	6	30	89.70		
9818L866-003	IC904	54.124	54.124	20	5.4945	297.385	27.473	MG/KG								98LIC898	6	30	86.40		
9818L866-004	IC904	9.118	9.118	1	5.1921	47.342	1.298	MG/KG								98LIC898	6	30	91.00		
9818L866-005	IC904	1.791	1.791	1	5.1867	9.289	1.297	MG/KG								98LIC898	6	30	96.30		
CCV	IC904B	4.799	4.799	1	5.0000	23.995	1.250	MG/KG								98LIC898	6	30	96.40		
CCB	IC904	0.000	0.000	1	5.0000	0.000 u	1.250	MG/KG	0.000		5	25.000	96.0			98LIC898	6	30	100.00		

9810L866-003	ICS04	54.124	54.124	20	5.4945	297.385	27.473 MG/KG							98LIC090	6	30	86.40	
9810L866-004	ICS04	9.118	9.118	1	5.1921	47.342	1.298 MG/KG							98LIC090	6	30	91.00	
9810L866-005	ICS04	1.791	1.791	1	5.1867	9.289	1.297 MG/KG							98LIC090	6	30	96.30	
CCV	ICS04S	4.799	4.799	1	5.0000	23.995	1.250 MG/KG							98LIC090	6	30	96.40	
CCB	ICS04	0.000	0.000	1	5.0000	0.000 u	1.250 MG/KG	0.000		5	25.000	96.0		98LIC090	6	30	100.00	
9810L866-005	ICS04R	1.800	1.800	1	5.1867	9.336	1.297 MG/KG							98LIC090	6	30	100.00	
9810L866-005	ICS04S	6.881	6.881	1	5.1867	35.690	1.297 MG/KG	9.289	0.5					98LIC090	6	30	96.40	
9810L866-006	ICS04	38.537	38.537	10	5.3786	206.966	13.426 MG/KG	9.289		5	25.934	101.0		98LIC090	6	30	96.40	
9810L866-007	ICS04	88.569	88.569	20	5.7870	512.552	28.935 MG/KG							98LIC090	6	30	93.10	
9810L866-008	ICS04	76.383	76.383	10	5.7288	436.974	14.382 MG/KG							98LIC090	6	30	86.40	
CCV	ICS04S	4.808	4.808	1	5.0000	24.040	1.250 MG/KG							98LIC090	6	30	87.40	
CCB	ICS04	0.000	0.000	1	5.0000	0.000 u	1.250 MG/KG	0.000		5	25.000	96.2		98LIC090	6	30	100.00	
9810L866-009	ICS04	11.663	11.663	2	5.3763	62.704	2.688 MG/KG							98LIC090	6	30	100.00	
9810L866-010	ICS04	7.794	7.794	1	5.2687	41.064	1.317 MG/KG							98LIC090	6	30	93.00	
9810L866-011	ICS04	35.882	35.882	10	5.2798	185.227	13.200 MG/KG							98LIC090	6	30	94.90	
9810L866-012	ICS04	34.319	34.319	10	5.3648	184.115	13.412 MG/KG							98LIC090	6	30	94.70	
9810L867-001	ICS04	4.459	4.459	1	5.3996	24.077	1.350 MG/KG							98LIC090	6	30	93.20	
CCV	ICS04S	4.814	4.814	1	5.0000	24.070	1.250 MG/KG							98LIC090	6	30	92.60	
CCB	ICS04	0.000	0.000	1	5.0000	0.000 u	1.250 MG/KG	0.000		5	25.000	96.3		98LIC090	6	30	100.00	
9810L867-001	ICS04R	4.451	4.451	1	5.3996	24.033	1.350 MG/KG							98LIC090	6	30	100.00	
9810L867-001	ICS04S	9.942	9.942	1	5.3996	53.683	1.350 MG/KG	24.077	0.2					98LIC090	6	30	92.60	
9810L867-002	ICS04	2.383	2.383	1	5.5991	13.343	1.400 MG/KG	24.077		5	26.998	109.7		98LIC090	6	30	92.60	
9810L867-003	ICS04	1.641	1.641	1	5.3248	8.738	1.331 MG/KG							98LIC090	6	30	89.30	
9810L867-004	ICS04	23.298	23.298	4	5.3879	123.620	5.388 MG/KG							98LIC090	6	30	93.90	
9810L867-005	ICS04	81.499	81.499	20	5.9832	481.184	29.516 MG/KG							98LIC090	6	30	94.20	
9810L867-006	ICS04	3.938	3.938	1	5.2687	20.748	1.317 MG/KG							98LIC090	6	30	84.70	
CCV	ICS04S	4.827	4.827	1	5.0000	24.135	1.250 MG/KG							98LIC090	6	30	94.90	
CCB	ICS04	0.000	0.000	1	5.0000	0.000 u	1.250 MG/KG	0.000		5	25.000	96.5		98LIC090	6	30	100.00	
9810L867-007	ICS04	1.361	1.361	1	5.2883	7.009	1.302 MG/KG							98LIC090	6	30	100.00	
9810L867-008	ICS04	23.283	23.283	5	5.2466	122.156	6.350 MG/KG							98LIC090	6	30	96.00	
9810L867-009	ICS04	43.986	43.986	10	5.3786	236.230	13.426 MG/KG							98LIC090	6	30	95.30	
9810L867-010	ICS04	28.194	28.194	10	5.1921	146.386	12.980 MG/KG							98LIC090	6	30	93.10	
9810L867-011	ICS04	3.410	3.410	1	5.3821	18.353	1.346 MG/KG							98LIC090	6	30	96.30	
9810L867-012	ICS04	1.900	1.900	1	5.2411	9.958	1.319 MG/KG							98LIC090	6	30	92.90	
CCV	ICS04S	4.862	4.862	1	5.0000	24.310	1.250 MG/KG							98LIC090	6	30	95.40	
CCB	ICS04	0.000	0.000	1	5.0000	0.000 u	1.250 MG/KG	0.000		5	25.000	97.2		98LIC090	6	30	100.00	
														98LIC090	6	30	100.00	

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DIONEX SCHEDULE - C:\DX\SCHEDULE\111498.SCH

Inj#	Sample Name	Method	Data File	Vol.	Dil.	Int.S
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3	AUTOCAL2	..\AS4A300.	..\RAWDATA1	1	1	
4	AUTOCAL3	..\AS4A300.	..\RAWDATA1	1	1	
5	AUTOCAL4	..\AS4A300.	..\RAWDATA1	1	1	
6	AUTOCAL5	..\AS4A300.	..\RAWDATA1	1	1	
7	AUTOCAL6	..\AS4A300.	..\RAWDATA1	1	1	
8	98LIC090-ICV	..\AS4A300.	..\RAWDATA1	1	1	
9	98LIC090-ICB	..\AS4A300.	..\RAWDATA1	1	1	
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12	9810L066-001	..\AS4A300.	..\RAWDATA1	1	100	
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15	9810L066-002	..\AS4A300.	..\RAWDATA1	1	50	
16	9810L066-003	..\AS4A300.	..\RAWDATA1	1	1	
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18	9810L066-004	..\AS4A300.	..\RAWDATA1	1	1	
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21	CCB	..\AS4A300.	..\RAWDATA1	1	1	
22	9810L066-005R	..\AS4A300.	..\RAWDATA1	1	1	
23	9810L066-005S	..\AS4A300.	..\RAWDATA1	1	1	
24	9810L066-006	..\AS4A300.	..\RAWDATA1	1	1	
25	9810L066-006	..\AS4A300.	..\RAWDATA1	1	10	
26	9810L066-007	..\AS4A300.	..\RAWDATA1	1	1	
27	9810L066-007	..\AS4A300.	..\RAWDATA1	1	2	
28	9810L066-007	..\AS4A300.	..\RAWDATA1	1	20	
29	9810L066-008	..\AS4A300.	..\RAWDATA1	1	1	
30	9810L066-008	..\AS4A300.	..\RAWDATA1	1	10	
31	9810L066-008	..\AS4A300.	..\RAWDATA1	1	20	
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35	9810L066-009	..\AS4A300.	..\RAWDATA1	1	2	
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37	9810L066-010	..\AS4A300.	..\RAWDATA1	1	1	
38	9810L066-010	..\AS4A300.	..\RAWDATA1	1	5	
39	9810L066-011	..\AS4A300.	..\RAWDATA1	1	1	
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41	9810L066-012	..\AS4A300.	..\RAWDATA1	1	1	
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45	CCB	..\AS4A300.	..\RAWDATA1	1	1	
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47	9810L067-001T	..\AS4A300.	..\RAWDATA1	1	1	
48	9810L067-002	..\AS4A300.	..\RAWDATA1	1	1	
49	9810L067-003	..\AS4A300.	..\RAWDATA1	1	1	
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52	9810L067-005	..\AS4A300.	..\RAWDATA1	1	1	
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54	9810L067-005	..\AS4A300.	..\RAWDATA1	1	50	
55	9810L067-006	..\AS4A300.	..\RAWDATA1	1	1	
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57	CCB	..\AS4A300.	..\RAWDATA1	1	1	
58	9810L067-007	..\AS4A300.	..\RAWDATA1	1	1	
59	9810L067-008	..\AS4A300.	..\RAWDATA1	1	1	
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64	9810L067-010	..\AS4A300.	..\RAWDATA1	1	1	1
65	9810L067-010	..\AS4A300.	..\RAWDATA1	1	10	1
66	9810L067-011	..\AS4A300.	..\RAWDATA1	1	1	1
67	9810L067-012	..\AS4A300.	..\RAWDATA1	1	1	1
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69	CCB	..\AS4A300.	..\RAWDATA1	1	1	1
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72	9811L402-003	..\AS4A300.	..\RAWDATA1	1	1	1
73	9811L405-001	..\AS4A300.	..\RAWDATA1	1	1	1
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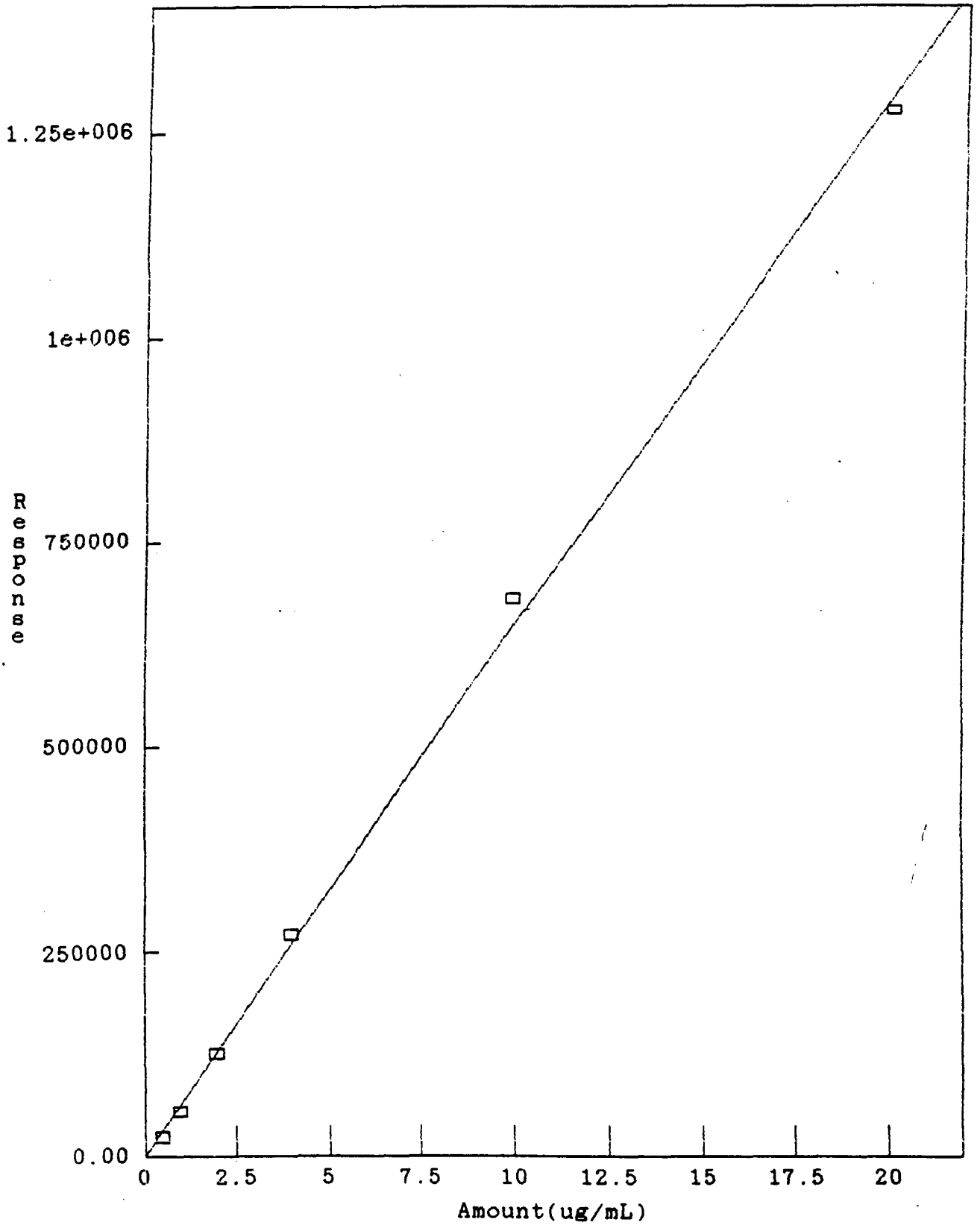
75	9811L405-003	..\AS4A300.	..\RAWDATA1	1	1	1
76	9811L405-004	..\AS4A300.	..\RAWDATA1	1	1	1
77	9811L405-005	..\AS4A300.	..\RAWDATA1	1	1	1
78	9811L405-006	..\AS4A300.	..\RAWDATA1	1	1	1
79	9811L405-007	..\AS4A300.	..\RAWDATA1	1	1	1
80	9811L405-008	..\AS4A300.	..\RAWDATA1	1	1	1
81	CCV	..\AS4A300.	..\RAWDATA1	1	1	1
82	CCB	..\AS4A300.	..\RAWDATA1	1	1	1
83	HALT	..\HALT.met	..\RAWDATA1	1	1	1

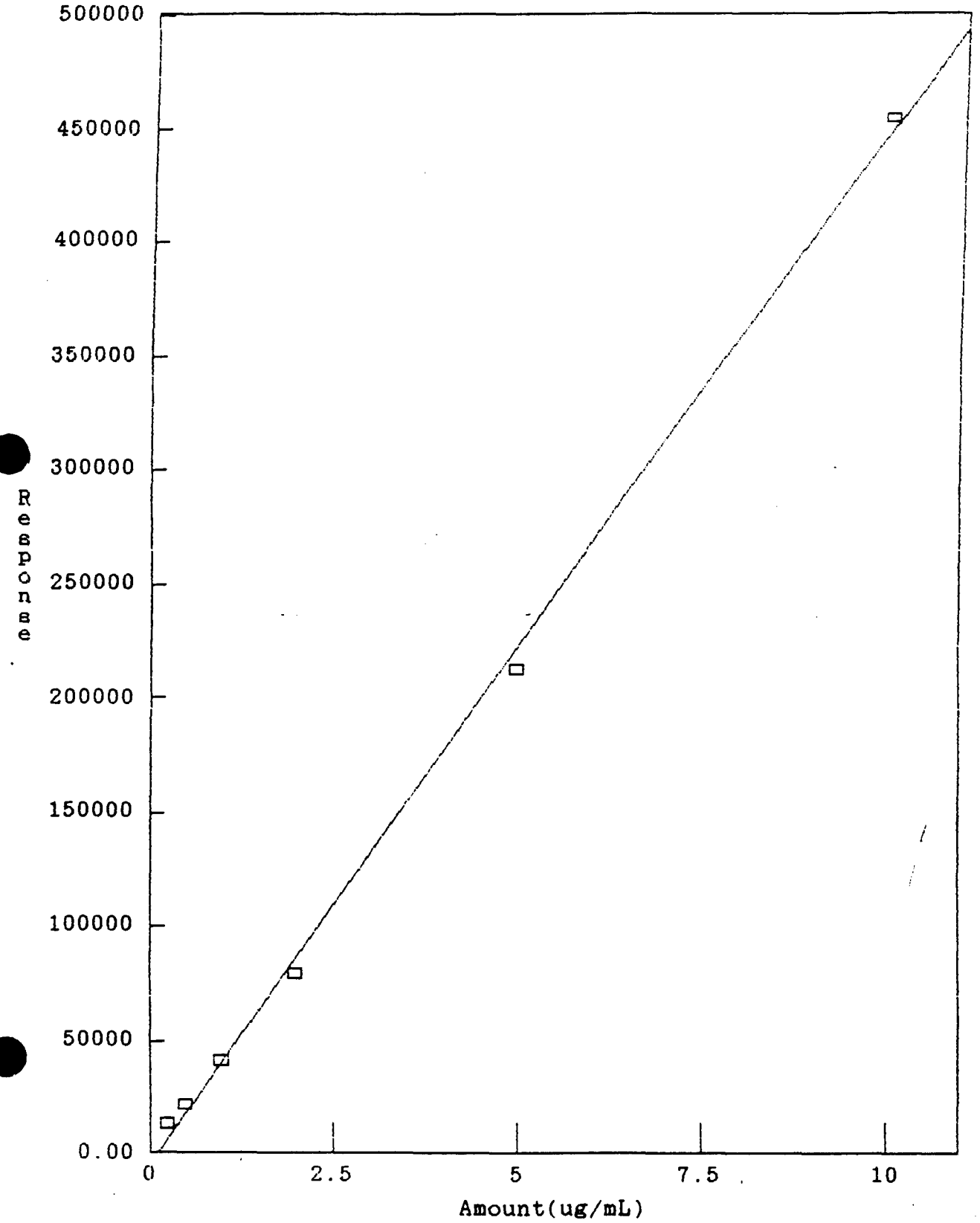
Method: A54A300.MET -Method Updated: 16:52 on 14 Nov 96

Component: FLUORIDE
Fit Type: Linear
r^2: 0.998526
Amt = Resp * 1.549e-005 + -0.04338
Resp = Amt * 6.455e+004 + 2800
Standardization: External
Calibration: Area

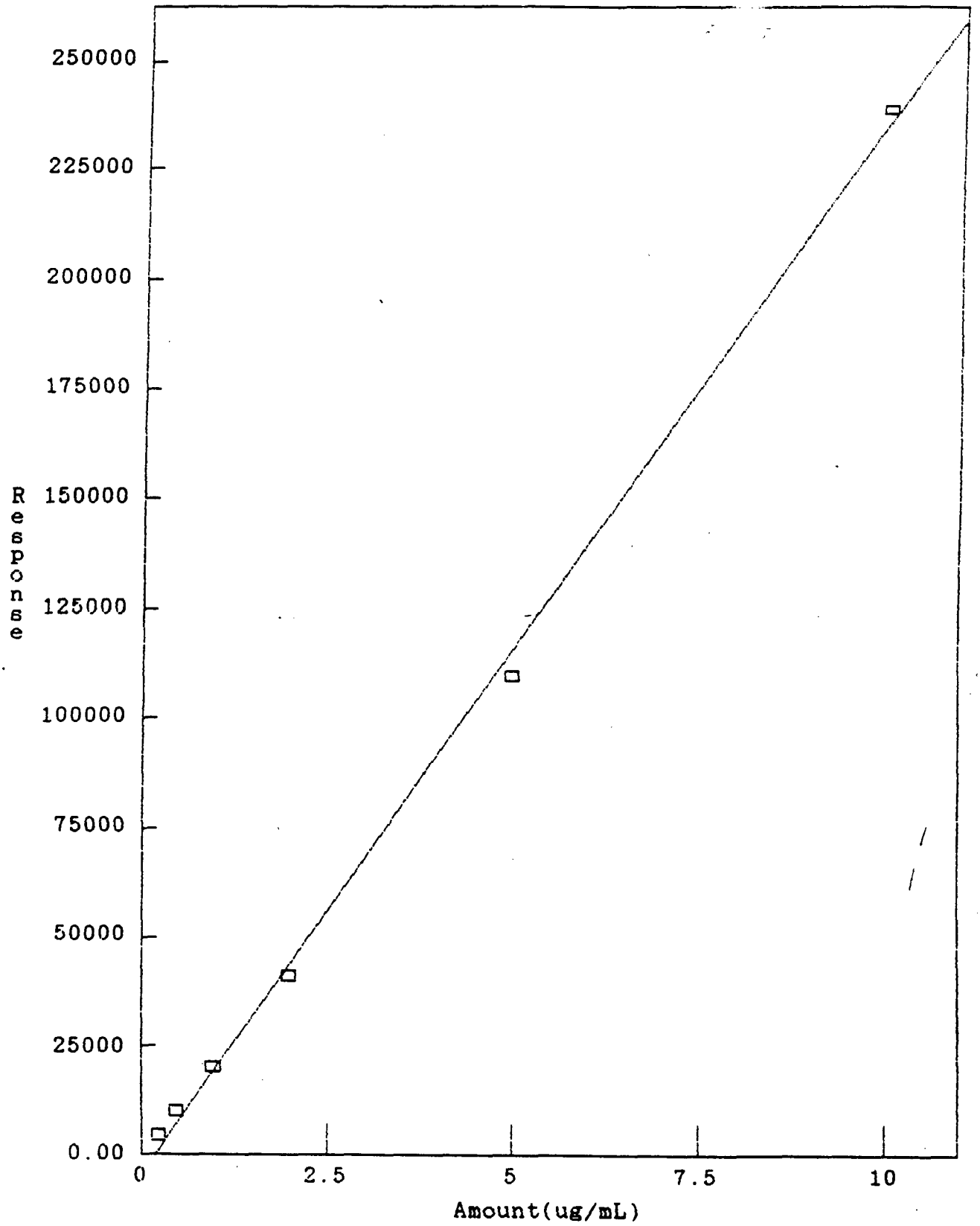


Method: C:\DX\METHOD\AS4A500.MET

Component: CHLORIDE
Fit Type: Linear
r^2: 0.998333
Amt = Resp * 2.199e-005 + 0.1094
Resp = Amt * 4.547e+004 + -4973
Standardization: External
Calibration: Area

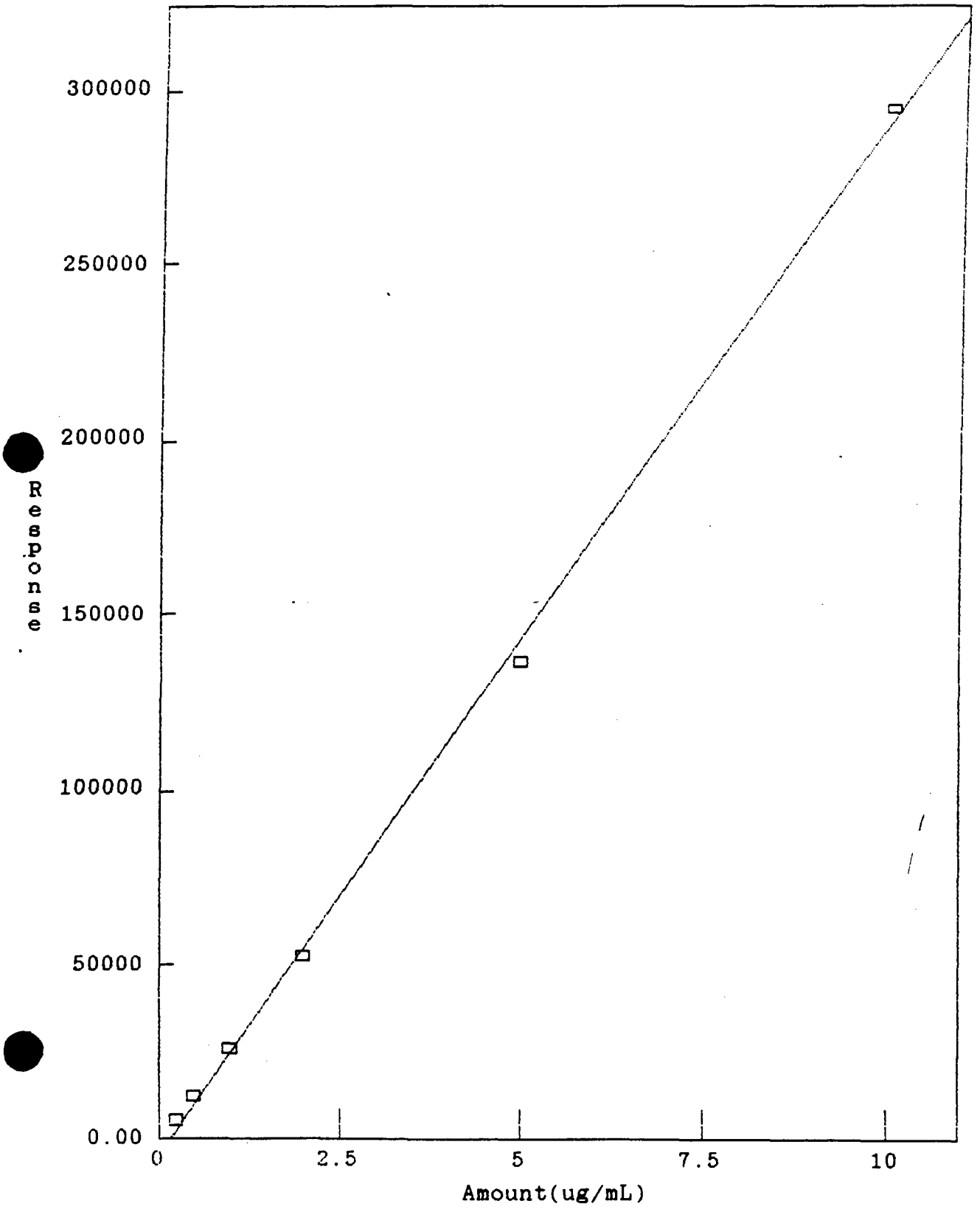


Component: NITRATE
Fit Type: Linear
r^2: 0.998397
Amt = Resp * 4.171e-005 + 0.1778
Resp = Amt * 2.398e+004 + -4262
Standardization: External
Calibration: Area



Method: C:\DX\METHOD\AS4A500.MET

Component: SULFATE
Fit Type: Linear
r^2: 0.998831
Amt = Resp * 3.384e-005 + 0.15
Resp = Amt * 2.955e+004 + -4432
Standardization: External
Calibration: Area

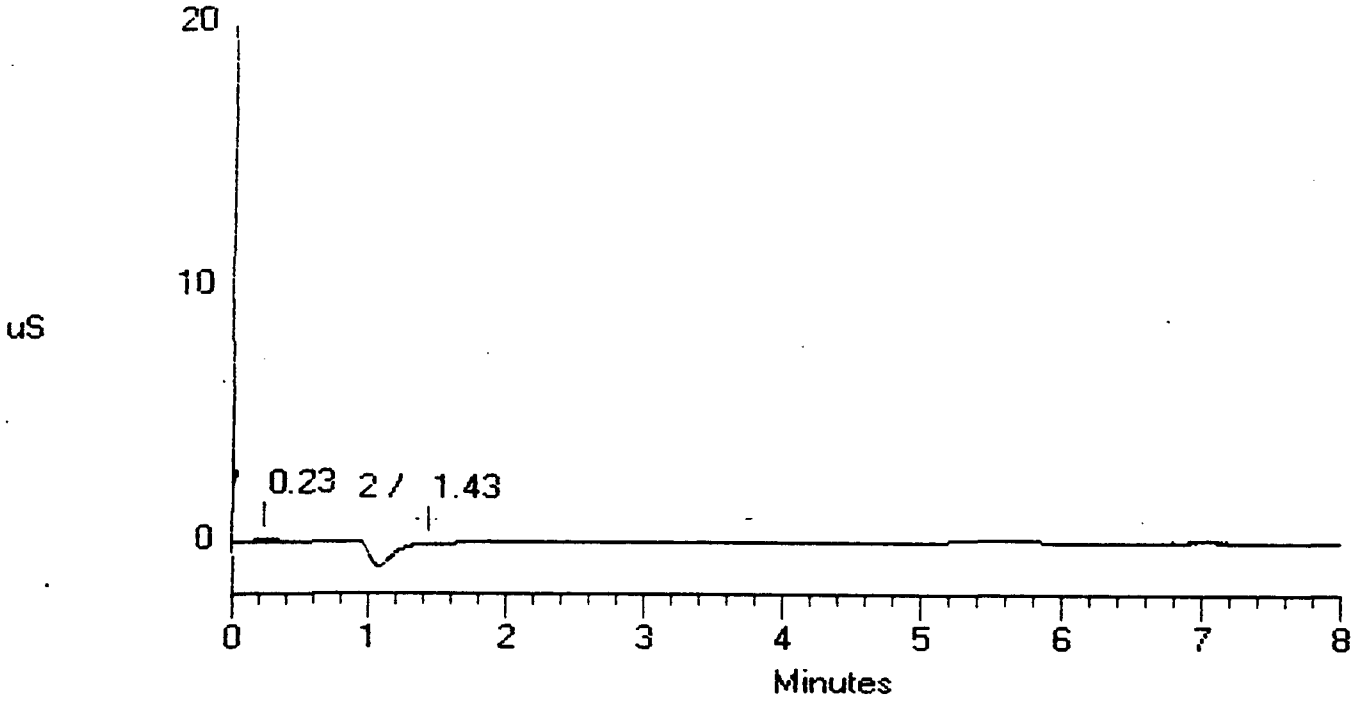


Sample Name: BLANK Date: Sat Nov 14 15:34:54 1998
Data File : C:\DATA\111498\RAWDATA1.D01
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 1 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	0.23		0.000	130	1148	1	
2	1.43		0.000	80	640	1	
		Totals	0.000	210	1788		

File: C:\DATA\111498\RAWDATA1.D01 Sample: BLANK



********** AUTOMATIC CALIBRATION UPDATE **********

Sample Name: AUTOCAL1 Date: Sat Nov 14 15:44:27 1998
Raw File : C:\DATA\111498\RAWDATA1.D02
Method : C:\DX\METHOD\AS4A300.met Calibration Level: 1
ACI Address: 1 System : 1 Inject#: 2 Detector: CDM-1

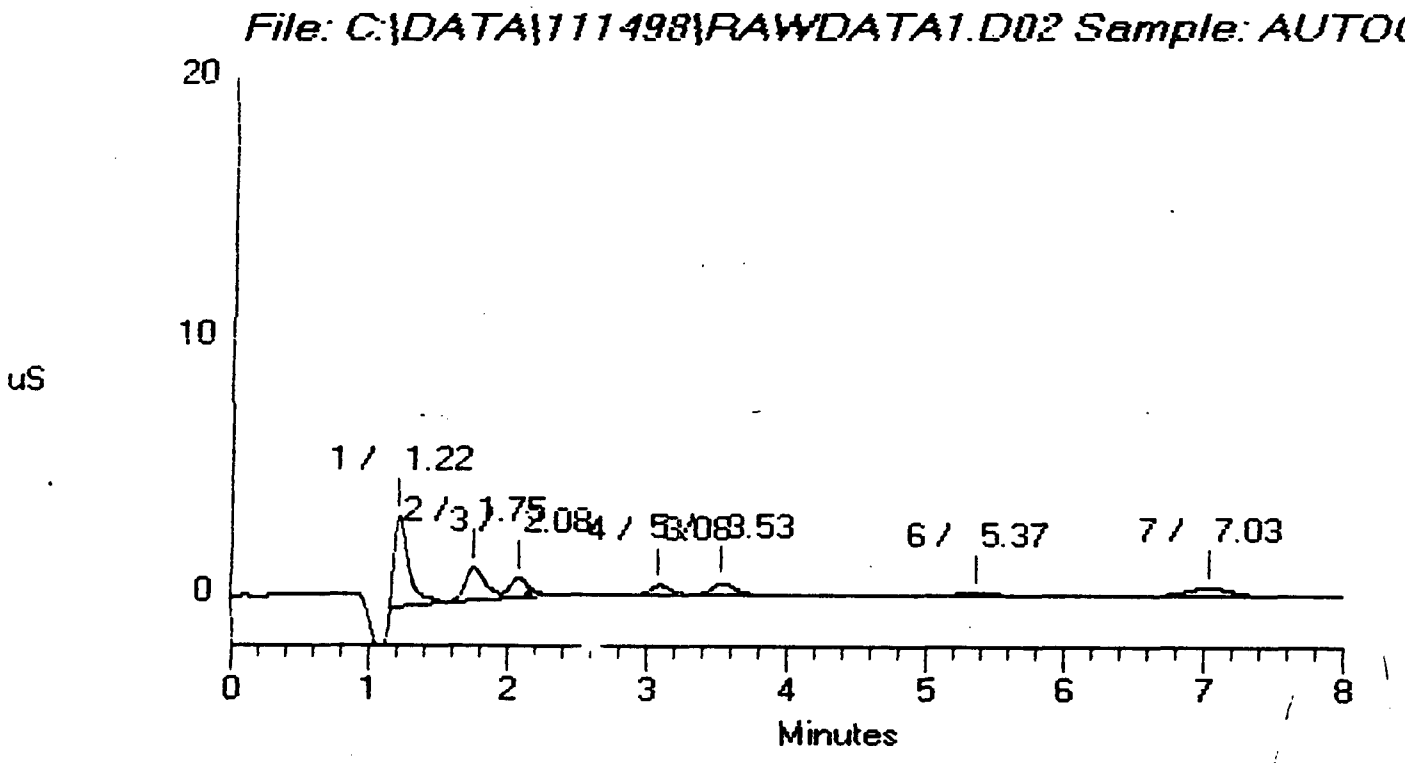
********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD AREA	MEASURED AREA	NEW AREA
1	FLUORIDE	1.23	1.22	1.22	2.377e+004	2.519e+004	2.519e+004
2	CHLORIDE	1.78	1.75	1.75	1.275e+004	1.317e+004	1.317e+004
3	NITRITE	2.08	2.08	2.08	6.752e+003	7.217e+003	7.217e+003
4	BROMIDE	3.03	3.08	3.08	3.574e+003	3.408e+003	3.408e+003
5	NITRATE	3.40	3.53	3.53	4.895e+003	4.598e+003	4.598e+003
6	PHOSPHATE	5.22	5.37	5.37	1.247e+003	9.530e+002	9.530e+002
7	SULFATE	6.77	7.03	7.03	6.214e+003	5.822e+003	5.822e+003

Sample Name: AUTOCAL1 Date: Sat Nov 14 15:44:27 1998
Data File : C:\DATA\111498\RAWDATA1.D02
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 2 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	ARE	REJ
External	1	1	2400	5Hz	0.00	8.00		600

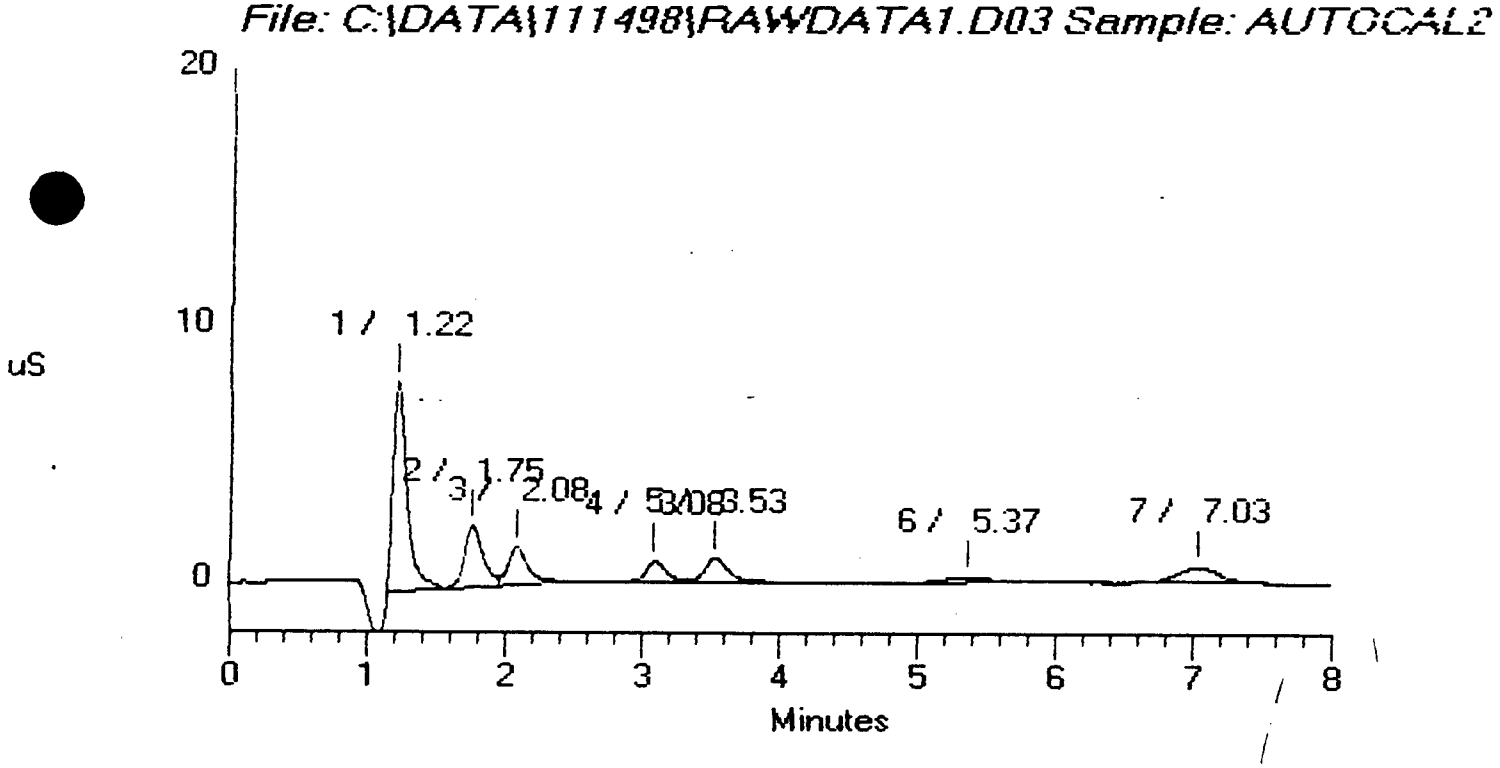
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.500	3473	25188	1	0.00
2	1.75	CHLORIDE	0.250	1287	13165	2	0.00
3	2.08	NITRITE	0.250	738	7217	2	0.00
4	3.08	BROMIDE	0.250	360	3408	2	0.00
5	3.53	NITRATE	0.250	433	4598	2	0.00
6	5.37	PHOSPHATE	0.250	65	953	1	0.00
7	7.03	SULFATE	0.250	290	5822	1	0.00
		Totals	2.000	6646	60351		



Sample Name: AUTOCAL2 Date: Sat Nov 14 15:54:08 1998
Data File : C:\DATA\111498\RAWDATA1.D03
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 3 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	1.000	8149	57237	1	0.00
2	1.75	CHLORIDE	0.500	2351	22134	2	0.00
3	2.08	NITRITE	0.500	1441	13894	2	0.00
4	3.08	BROMIDE	0.500	758	7721	2	0.00
5	3.53	NITRATE	0.500	894	10060	2	0.00
6	5.37	PHOSPHATE	0.500	190	3474	1	0.00
7	7.03	SULFATE	0.500	595	12361	1	0.00
		Totals	4.000	14377	126881		



********** AUTOMATIC CALIBRATION UPDATE **********

Sample Name: AUTOCAL3 Date: Sat Nov 14 16:03:42 1998
Raw File : C:\DATA\111498\RAWDATA1.D04
Method : C:\DX\METHOD\AS4A300.met Calibration Level:
ACI Address: 1 System : 1 Inject#: 4 Detector: CDM-1

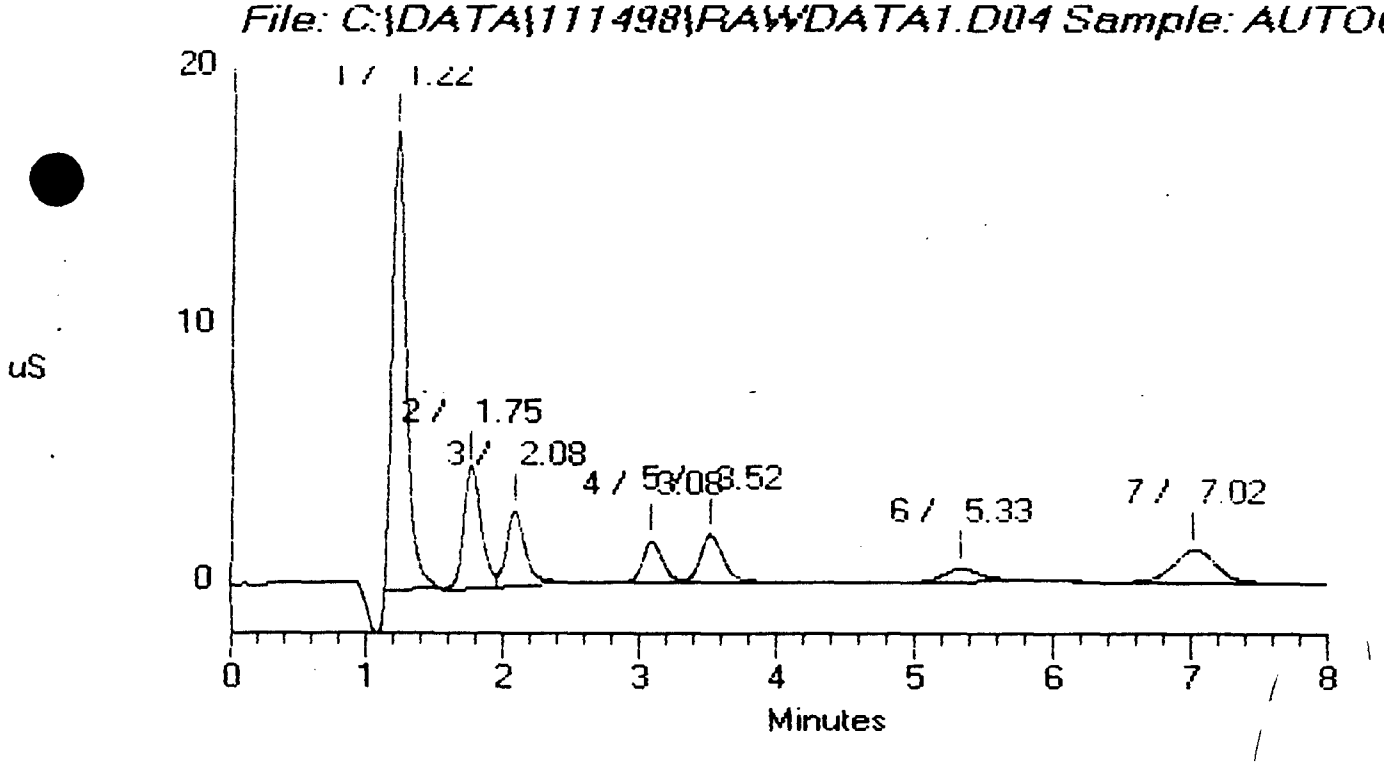
********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD AREA	MEASURED AREA	NEW AREA
1	FLUORIDE	1.22	1.22	1.22	1.300e+005	1.276e+005	1.276e+005
2	CHLORIDE	1.75	1.75	1.75	3.986e+004	4.091e+004	4.091e+004
3	NITRITE	2.08	2.08	2.08	2.658e+004	2.610e+004	2.610e+004
4	BROMIDE	3.08	3.08	3.08	1.536e+004	1.542e+004	1.542e+004
5	NITRATE	3.53	3.52	3.52	2.011e+004	2.012e+004	2.012e+004
6	PHOSPHATE	5.37	5.33	5.33	8.774e+003	9.606e+003	9.606e+003
7	SULFATE	7.03	7.02	7.02	2.548e+004	2.598e+004	2.598e+004

Sample Name: AUTOCAL3 Date: Sat Nov 14 16:03:42 1998
Data File : C:\DATA\111498\RAWDATA1.D04
Method : C:\DX\METHOD\AS4A300.met
[illegible]CI Address: 1 System : 1 Inject#: 4 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	2.000	17871	127565	1	0.00
2	1.75	CHLORIDE	1.000	4581	40906	2	0.00
3	2.08	NITRITE	1.000	2833	26100	2	0.00
4	3.08	BROMIDE	1.000	1578	15419	2	0.00
5	3.52	NITRATE	1.000	1794	20115	2	0.00
6	5.33	PHOSPHATE	1.000	479	9606	1	0.00
7	7.02	SULFATE	1.000	1205	25984	1	0.00
		Totals	8.000	30341	265694		



********** AUTOMATIC CALIBRATION UPDATE **********

Sample Name: AUTOCAL4 Date: Sat Nov 14 16:13:18 1998
Raw File : C:\DATA\111498\RAWDATA1.D05
Method : C:\DX\METHOD\AS4A300.met Calibration Level: 4
ACI Address: 1 System : 1 Inject#: 5 Detector: CDM-1

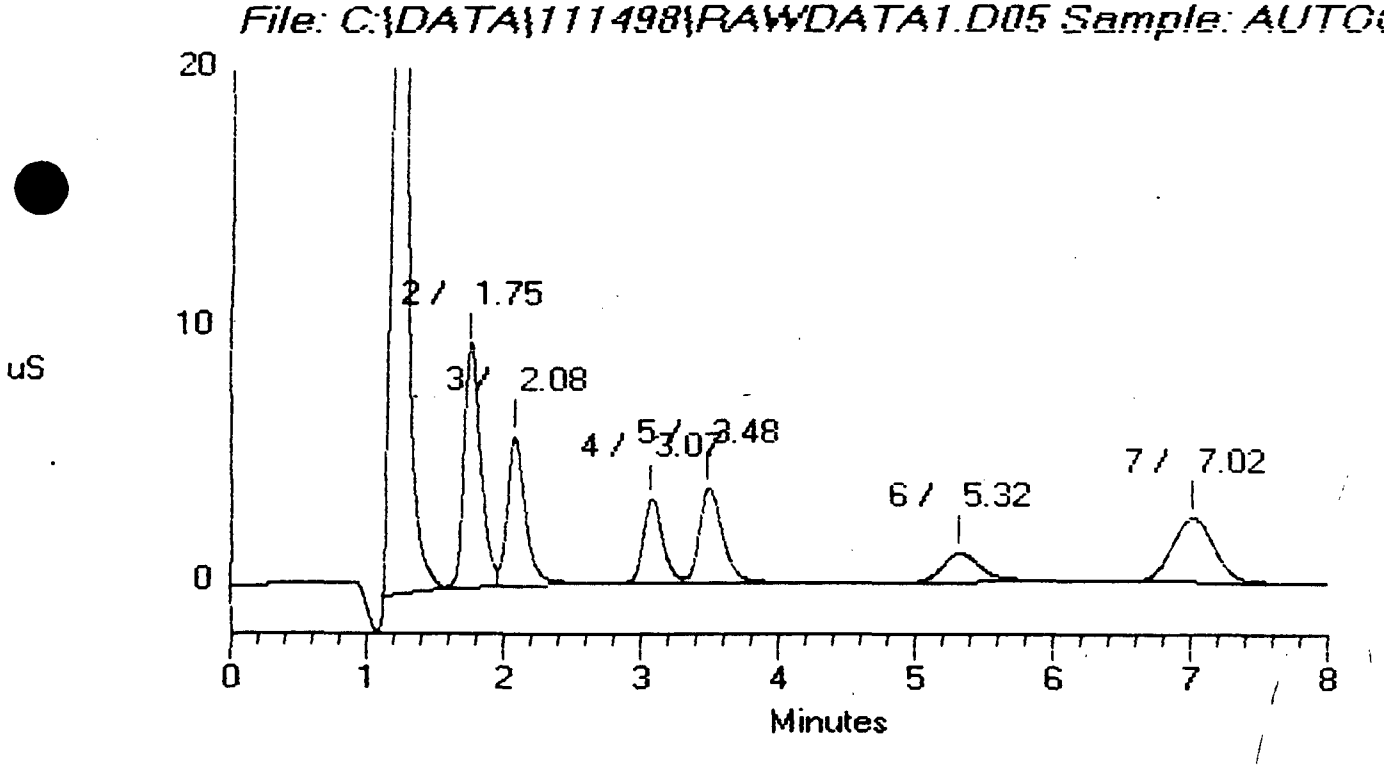
********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD AREA	MEASURED AREA	NEW AREA
1	FLUORIDE	1.22	1.22	1.22	2.714e+005	2.710e+005	2.710e+005
2	CHLORIDE	1.75	1.75	1.75	7.954e+004	7.913e+004	7.913e+004
3	NITRITE	2.08	2.08	2.08	5.195e+004	5.214e+004	5.214e+004
4	BROMIDE	3.08	3.07	3.07	3.130e+004	3.110e+004	3.110e+004
5	NITRATE	3.52	3.48	3.48	4.094e+004	4.108e+004	4.108e+004
6	PHOSPHATE	5.33	5.32	5.32	2.004e+004	2.131e+004	2.131e+004
7	SULFATE	7.02	7.02	7.02	5.222e+004	5.223e+004	5.223e+004

Sample Name: AUTOCAL4 Date: Sat Nov 14 16:13:18 1998
Data File : C:\DATA\111498\RAWDATA1.D05
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 5 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	4.000	37256	270991	1	0.00
2	1.75	CHLORIDE	2.000	9211	79128	2	0.00
3	2.08	NITRITE	2.000	5745	52143	2	0.00
4	3.07	BROMIDE	2.000	3136	31104	2	0.00
5	3.48	NITRATE	2.000	3578	41085	2	0.00
6	5.32	PHOSPHATE	2.000	1085	21313	1	0.00
7	7.02	SULFATE	2.000	2455	52231	1	0.00
		Totals	16.000	62466	547994		



********** AUTOMATIC CALIBRATION UPDATE **********

Sample Name: AUTOCAL5 Date: Sat Nov 14 16:22:57 1998
Raw File : C:\DATA\111498\RAWDATA1.D06
Method : C:\DX\METHOD\AS4A300.met Calibration Level: 5
ACI Address: 1 System : 1 Inject#: 6 Detector: CDM-1

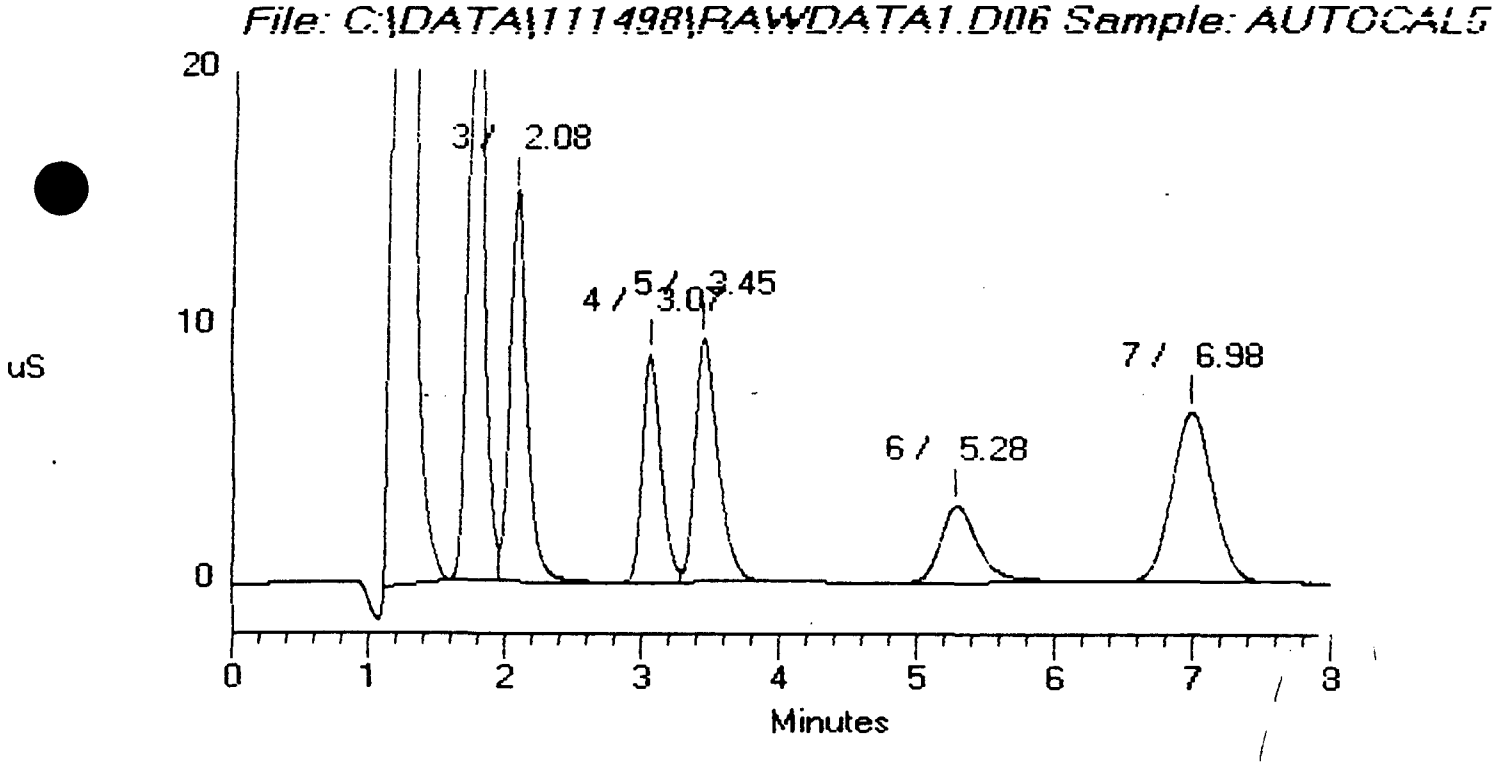
********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD AREA	MEASURED AREA	NEW AREA
1	FLUORIDE	1.22	1.22	1.22	6.814e+005	6.814e+005	6.814e+005
2	CHLORIDE	1.75	1.77	1.77	2.143e+005	2.121e+005	2.121e+005
3	NITRITE	2.08	2.08	2.08	1.321e+005	1.313e+005	1.313e+005
4	BROMIDE	3.07	3.07	3.07	8.372e+004	8.417e+004	8.417e+004
5	NITRATE	3.48	3.45	3.45	1.101e+005	1.096e+005	1.096e+005
6	PHOSPHATE	5.32	5.28	5.28	5.767e+004	5.653e+004	5.653e+004
7	SULFATE	7.02	6.98	6.98	1.389e+005	1.367e+005	1.367e+005

Sample Name: AUTOCAL5 Date: Sat Nov 14 16:22:57 1998
Data File : C:\DATA\111498\RAWDATA1.D06
Method : C:\DX\METHOD\AS4A300.met
GCI Address: 1 System : 1 Inject#: 6 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	10.000	84884	681393	1	0.00
2	1.77	CHLORIDE	5.000	25931	212117	2	0.00
3	2.08	NITRITE	5.000	15052	131271	2	0.00
4	3.07	BROMIDE	5.000	8840	84165	2	0.00
5	3.45	NITRATE	5.000	9432	109596	2	0.00
6	5.28	PHOSPHATE	5.000	2949	56534	1	0.00
7	6.98	SULFATE	5.000	6560	136716	1	0.00
		Totals	40.000	153648	1411794		



********** AUTOMATIC CALIBRATION UPDATE **********

Sample Name: AUTOCAL6 Date: Sat Nov 14 16:32:38 1998
Raw File : C:\DATA\111498\RAWDATA1.D07
Method : C:\DX\METHOD\AS4A300.met Calibration Level:
ACI Address: 1 System : 1 Inject#: 7 Detector: CDM-1

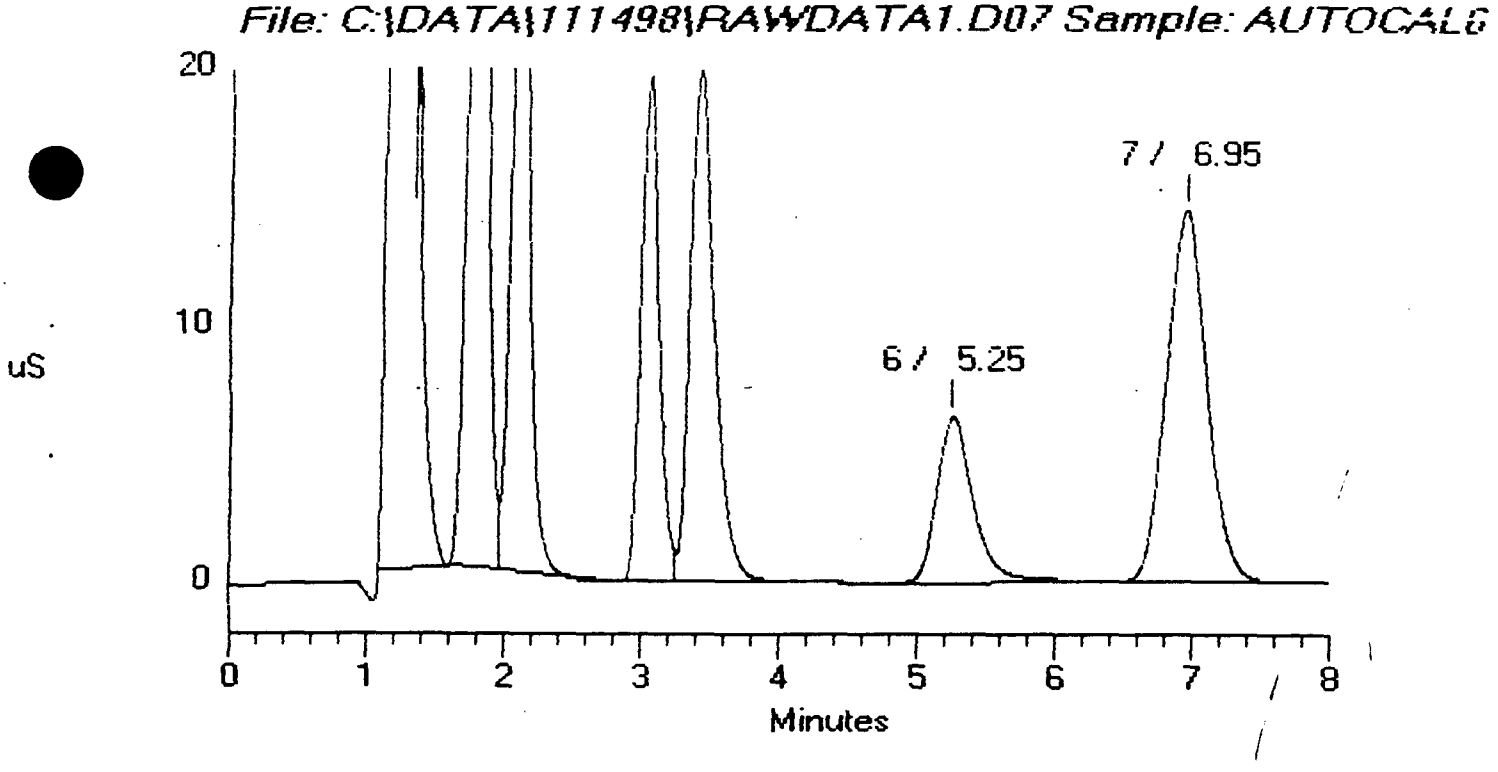
********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD AREA	MEASURED AREA	NEW AREA
1	FLUORIDE	1.22	1.23	1.23	1.298e+006	1.275e+006	1.275e+006
2	CHLORIDE	1.77	1.78	1.78	4.582e+005	4.552e+005	4.552e+005
3	NITRITE	2.08	2.10	2.10	2.734e+005	2.691e+005	2.691e+005
4	BROMIDE	3.07	3.05	3.05	1.823e+005	1.804e+005	1.804e+005
5	NITRATE	3.45	3.42	3.42	2.383e+005	2.385e+005	2.385e+005
6	PHOSPHATE	5.28	5.25	5.25	1.188e+005	1.158e+005	1.158e+005
7	SULFATE	6.98	6.95	6.95	2.989e+005	2.943e+005	2.943e+005

```
Sample Name: AUTOCAL6                          Date: Sat Nov 14 16:32:38 1998
Data File  : C:\DATA\111498\RAWDATA1.D07
Method     : C:\DX\METHOD\AS4A300.met
GPIB Address: 1       System : 1       Inject#:   7  Detector: CDM-1
```

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.23	FLUORIDE	20.000	137535	1275133	1	0.00
2	1.78	CHLORIDE	10.000	54856	455206	2	0.00
3	2.10	NITRITE	10.000	31422	269147	2	0.00
4	3.05	BROMIDE	10.000	19572	180401	2	0.00
5	3.42	NITRATE	10.000	19859	238533	2	0.00
6	5.25	PHOSPHATE	10.000	6349	115762	1	0.00
7	6.95	SULFATE	10.000	14347	294335	1	0.00
		Totals	80.000	283940	2828516		

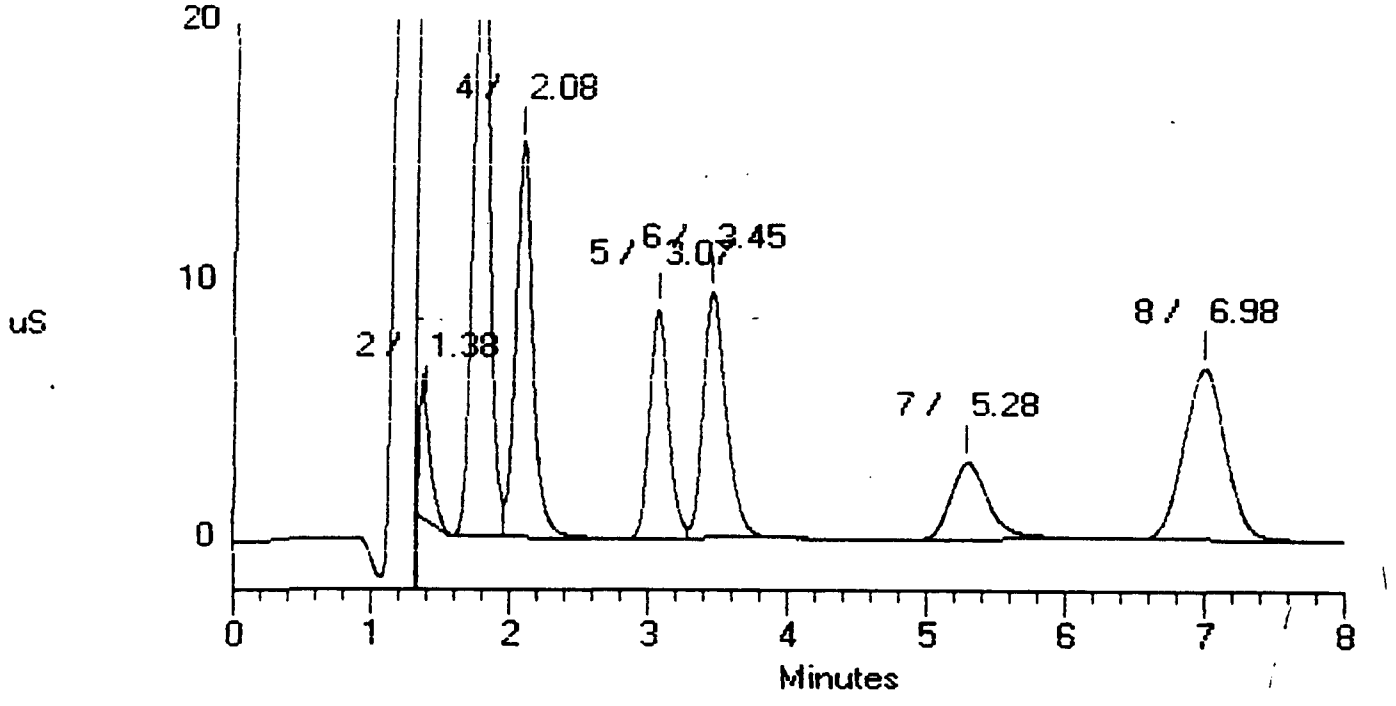


Sample Name: 98LIC090-ICV Date: Sat Nov 14 16:42:23 1998
Data File : C:\DATA\111498\RAWDATA1.D08
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 8 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	5.550	55920	361080	1	0.00
2	1.38		0.000	4450	27554	1	
3	1.77	CHLORIDE	4.693	26050	208418	2	0.00
4	2.08	NITRITE	4.908	15171	131175	2	0.00
5	3.07	BROMIDE	4.792	8836	83962	2	0.00
6	3.45	NITRATE	4.719	9455	108882	2	0.00
7	5.28	PHOSPHATE	4.916	2944	55724	1	0.00
8	6.98	SULFATE	4.788	6564	137034	1	0.00
		Totals	34.366	129390	1113829		

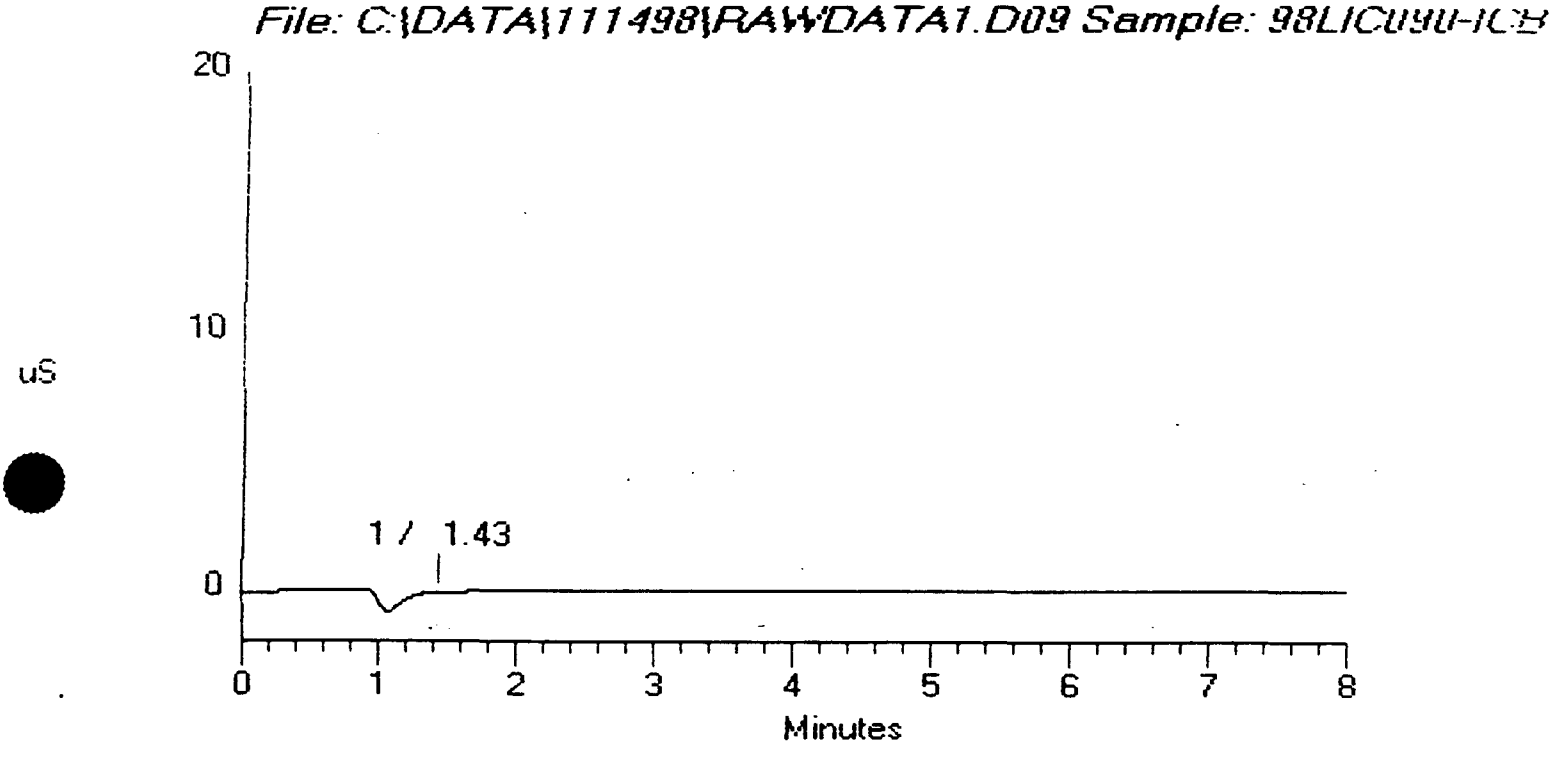
File: C:\DATA\111498\RAWDATA1.D08 Sample: 98LIC090-ICV



Sample Name: 98LIC090-ICB Date: Sat Nov 14 16:52:03 1998
Data File : C:\DATA\111498\RAWDATA1.D09
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 9 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

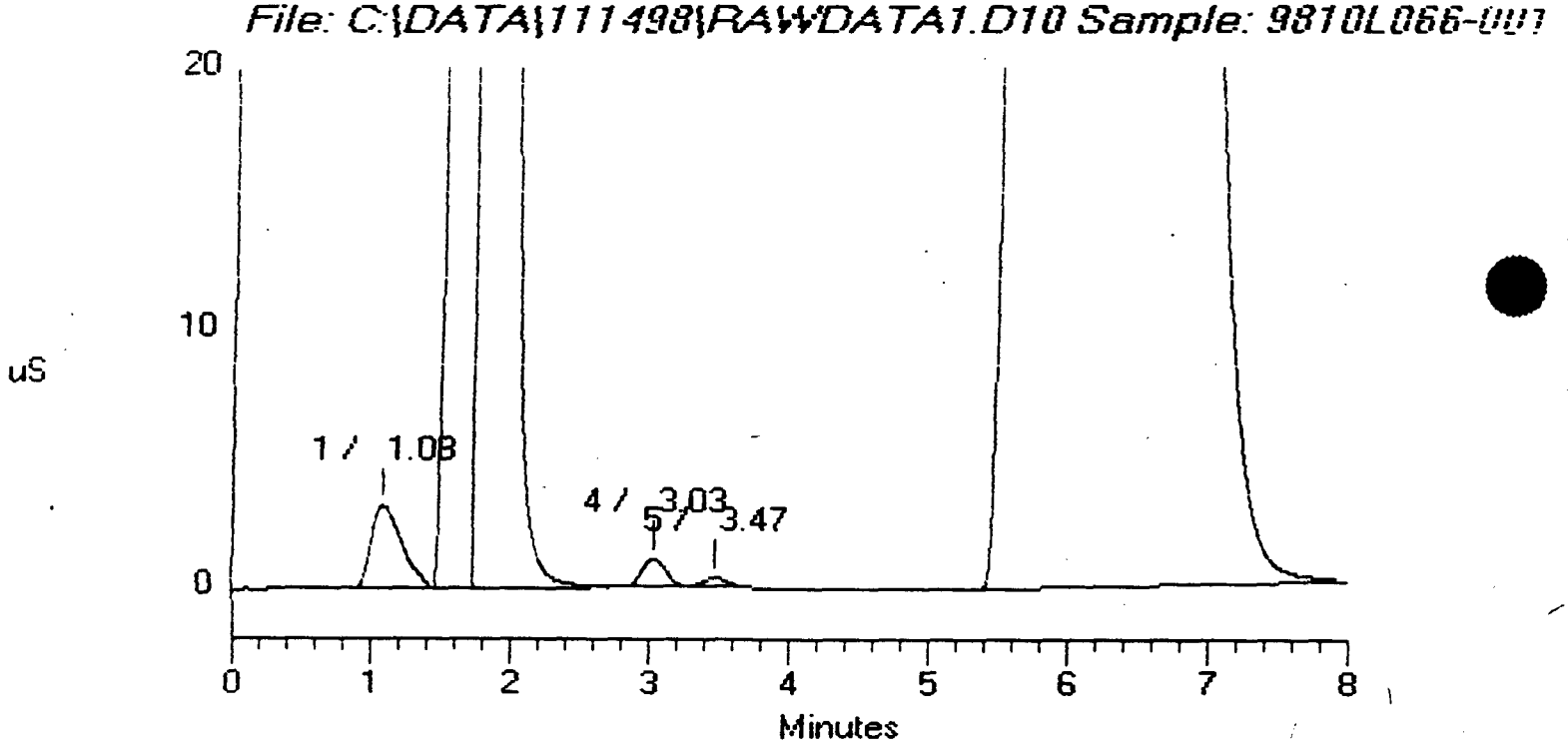
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
Totals			0.000	0	0		



Sample Name: 9810L066-001 Date: Sat Nov 14 17:01:33 1998
Data File : C:\DATA\111498\RAWDATA1.D10
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 10 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.08		0.000	3142	46668	1	
2	1.70		0.000	196087	1996126	2	
3	1.88	CHLORIDE	74.183	296085	3367877	2	0.00
4	3.03	BROMIDE	0.887	1106	13074	2	0.00
5	3.47	NITRATE	0.363	362	4434	2	0.00
6	5.77	PHOSPHATE	1386.128	335042	16341445	1	0.04
		Totals	1461.561	831825	21769625		

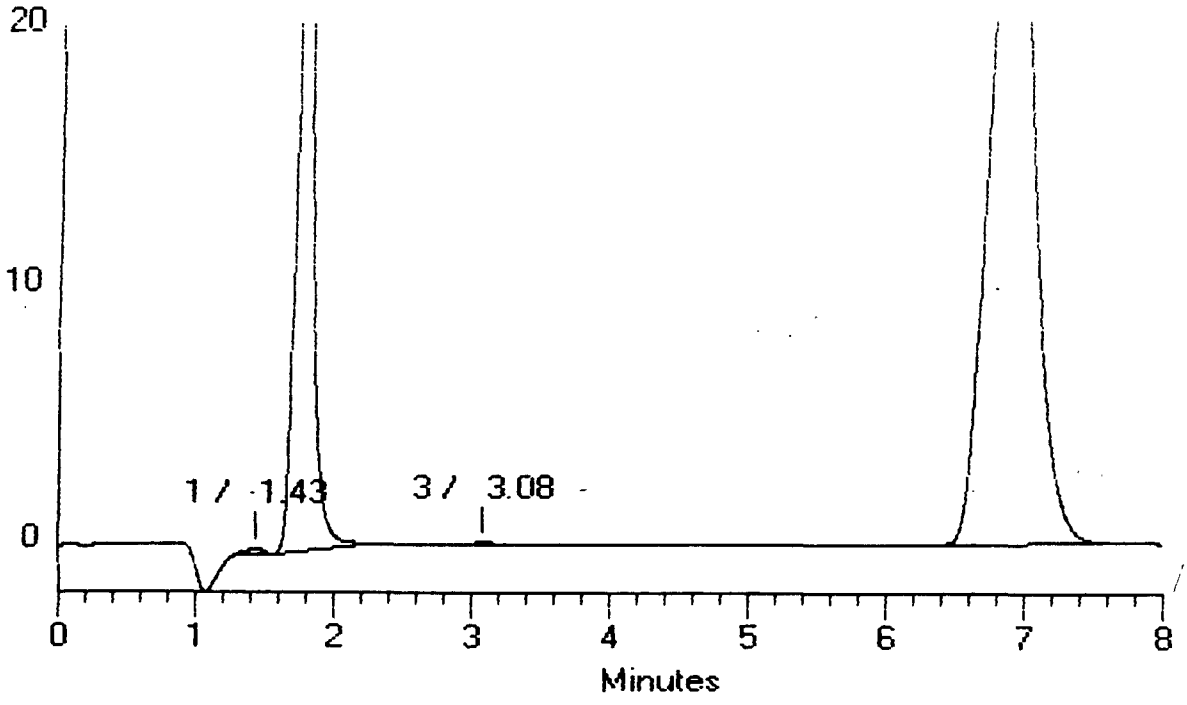


Sample Name: 9810L066-001 Date: Sat Nov 14 17:11:06 1998
Data File : C:\DATA\111498\RAWDATA1.D11
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 11 Detector: CDM-1

PORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	20	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.43		0.000	210	2020	1	
2	1.75	CHLORIDE	100.489	26253	223470	1	0.00
4	6.85	SULFATE	445.821	31312	654244	1	0.00
		Totals	546.310	57775	879734		

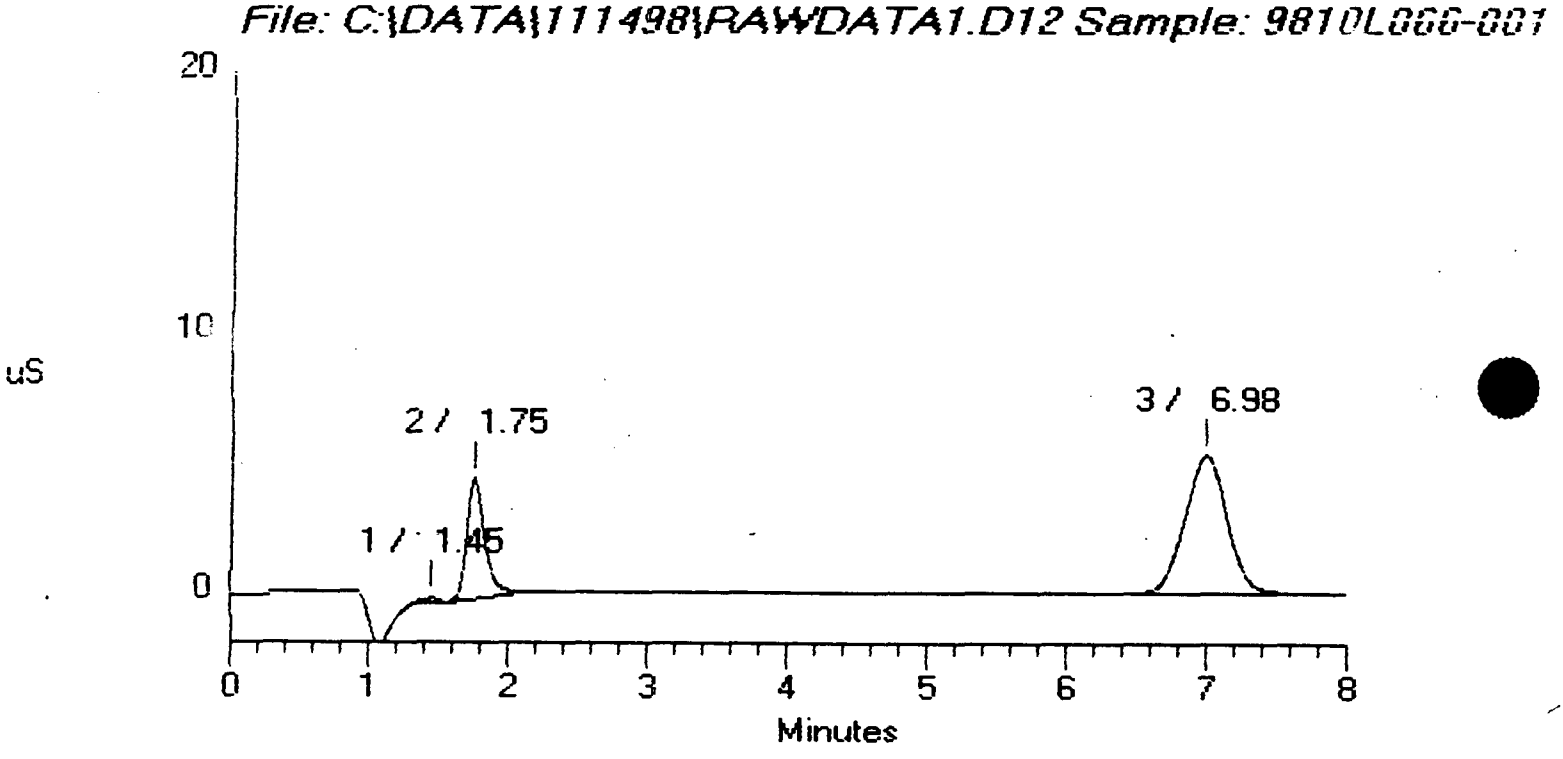
File: C:\DATA\111498\RAWDATA1.D11 Sample: 9810L066-001



Sample Name: 9810L066-001 Date: Sat Nov 14 17:20:39 1998
Data File : C:\DATA\111498\RAWDATA1.D12
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 12 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	100	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	170	1308	1	
2	1.75	CHLORIDE	100.928	4583	40915	1	0.00
3	6.98	SULFATE	384.322	5221	109131	1	0.00
		Totals	485.250	9974	151354		

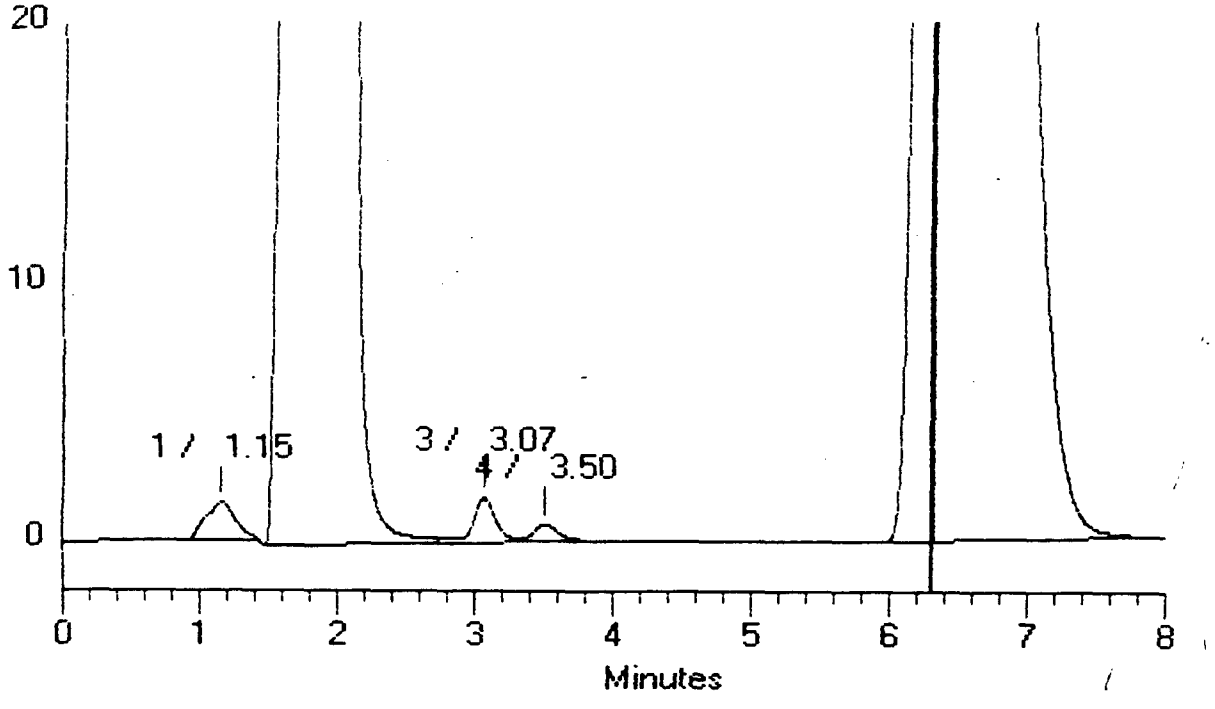


Sample Name: 9810L066-002 Date: Sat Nov 14 17:30:10 1998
Data File : C:\DATA\111498\RAWDATA1.D13
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 13 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.15	FLUORIDE	0.290	1397	21521	1	0.00
2	1.97	NITRITE	259.875	351257	6976752	2	0.00
3	3.07	BROMIDE	1.164	1667	18105	2	0.00
4	3.50	NITRATE	0.494	637	7590	2	0.00
5	6.27		0.000	146074	907838	2	
6	6.38		0.000	149064	3863026	2	
		Totals	261.823	650096	11794832		

File: C:\DATA\111498\RAWDATA1.D13 Sample: 9810L066-002

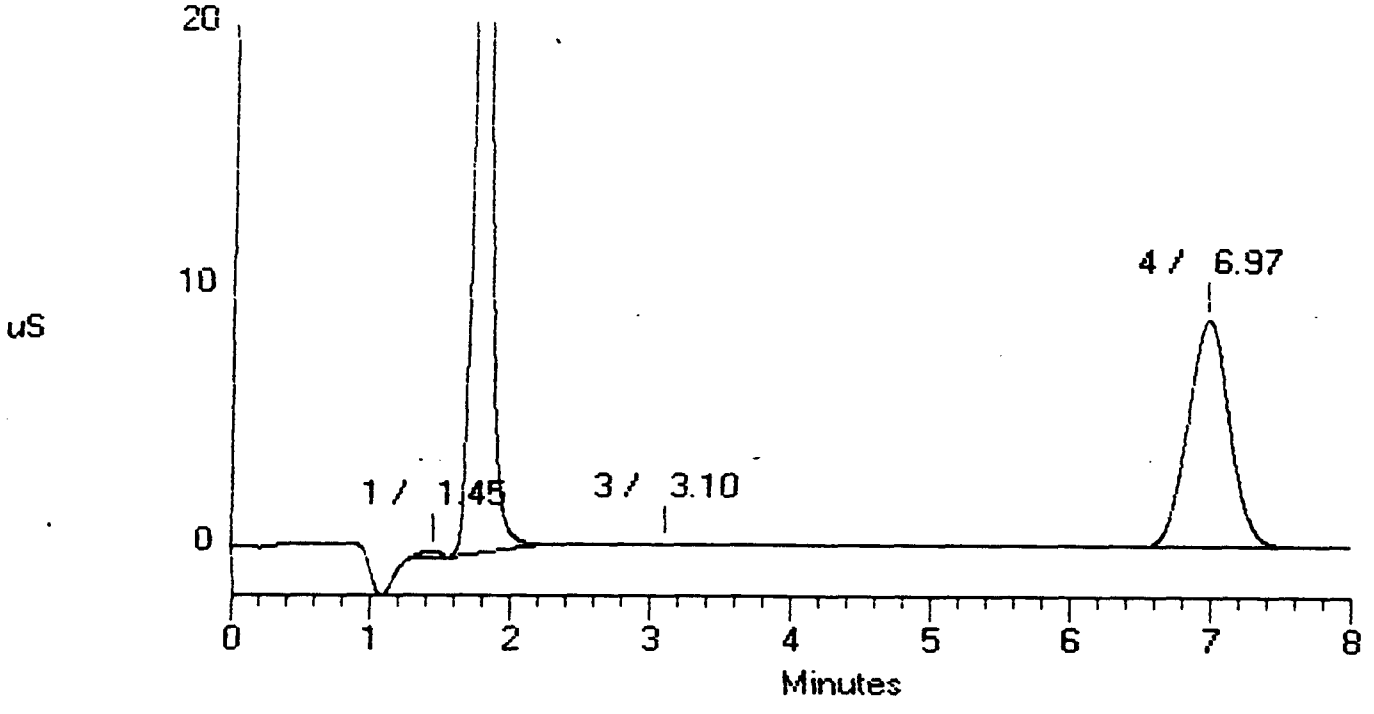


Sample Name: 9810L066-002 Date: Sat Nov 14 17:39:43 1998
Data File : C:\DATA\111498\RAWDATA1.D14
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 14 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	20	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	200	1748	1	
2	1.77	CHLORIDE	129.151	35488	288629	1	0.00
3	3.10	BROMIDE	4.059	68	665	1	0.00
4	6.97	SULFATE	124.881	8724	180072	1	0.00
		Totals	258.091	44479	471114		

File: C:\DATA\111498\RAWDATA1.D14 Sample: 9810L066-002

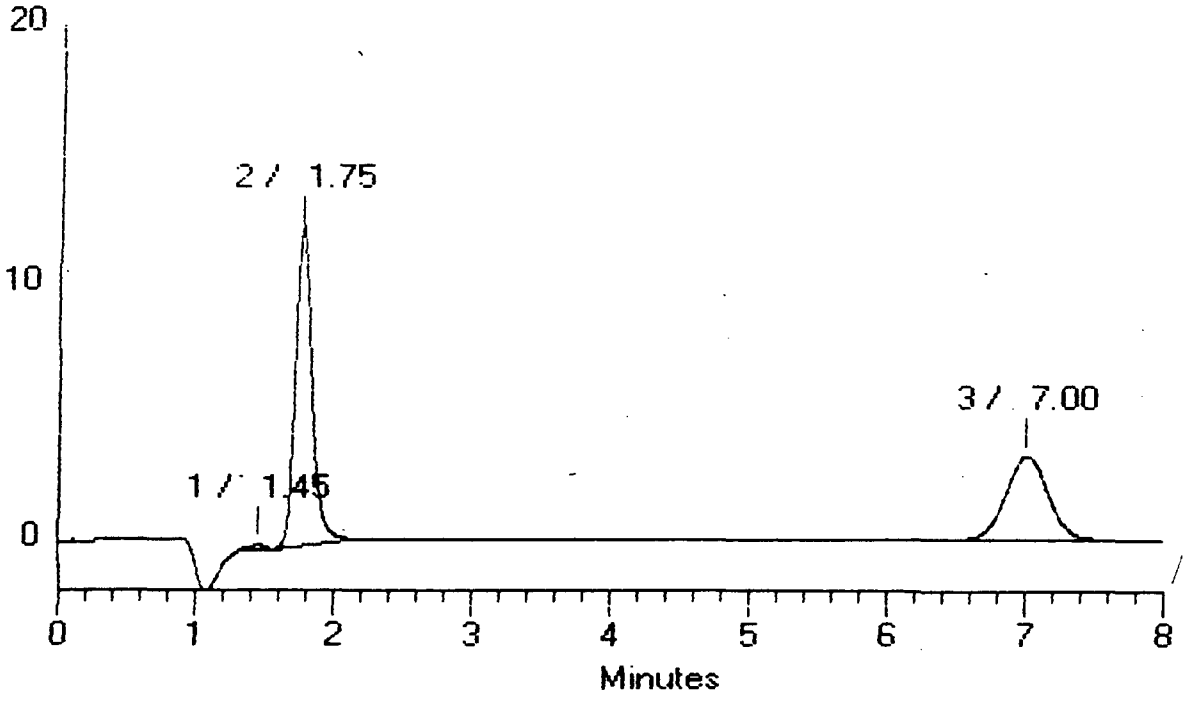


Sample Name: 9810L066-002 Date: Sat Nov 14 17:49:15 1998
Data File : C:\DATA\111498\RAWDATA1.D15
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 15 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	50	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	170	1312	1	
2	1.75	CHLORIDE	120.211	12103	104338	1	0.00
3	7.00	SULFATE	121.149	3191	67164	1	0.00
		Totals	241.360	15464	172814		

File: C:\DATA\111498\RAWDATA1.D15 Sample: 9810L066-002

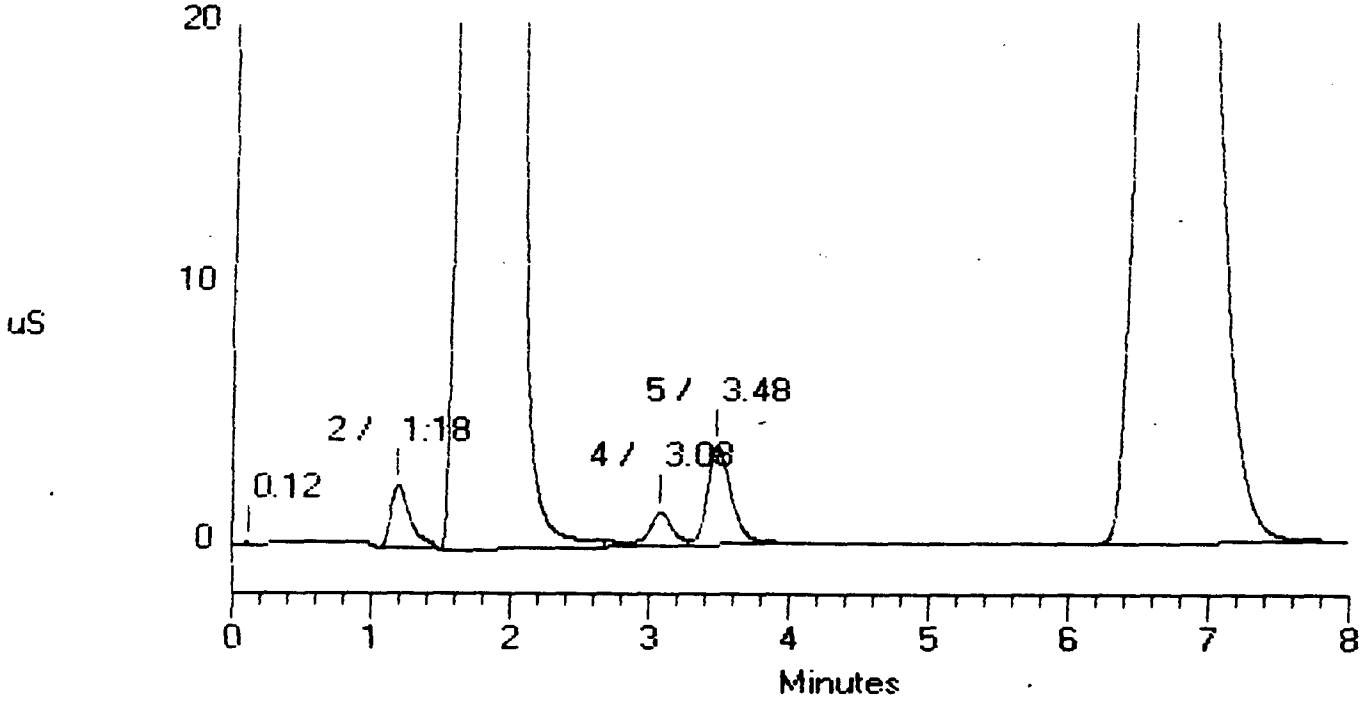


Sample Name: 9810L066-003 Date: Sat Nov 14 17:58:53 1998
Data File : C:\DATA\111498\RAWDATA1.D16
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 16 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
2	1.18	FLUORIDE	0.304	2332	22409	1	0.00
3	1.92	CHLORIDE	101.306	287404	4601069	2	0.00
4	3.08	BROMIDE	0.941	1245	14065	2	0.00
5	3.48	NITRATE	1.980	3720	43213	2	0.00
6	6.65	SULFATE	68.650	80184	2024102	1	0.00
		Totals	173.181	374886	6704858		

File: C:\DATA\111498\RAWDATA1.D16 Sample: 9810L066-003

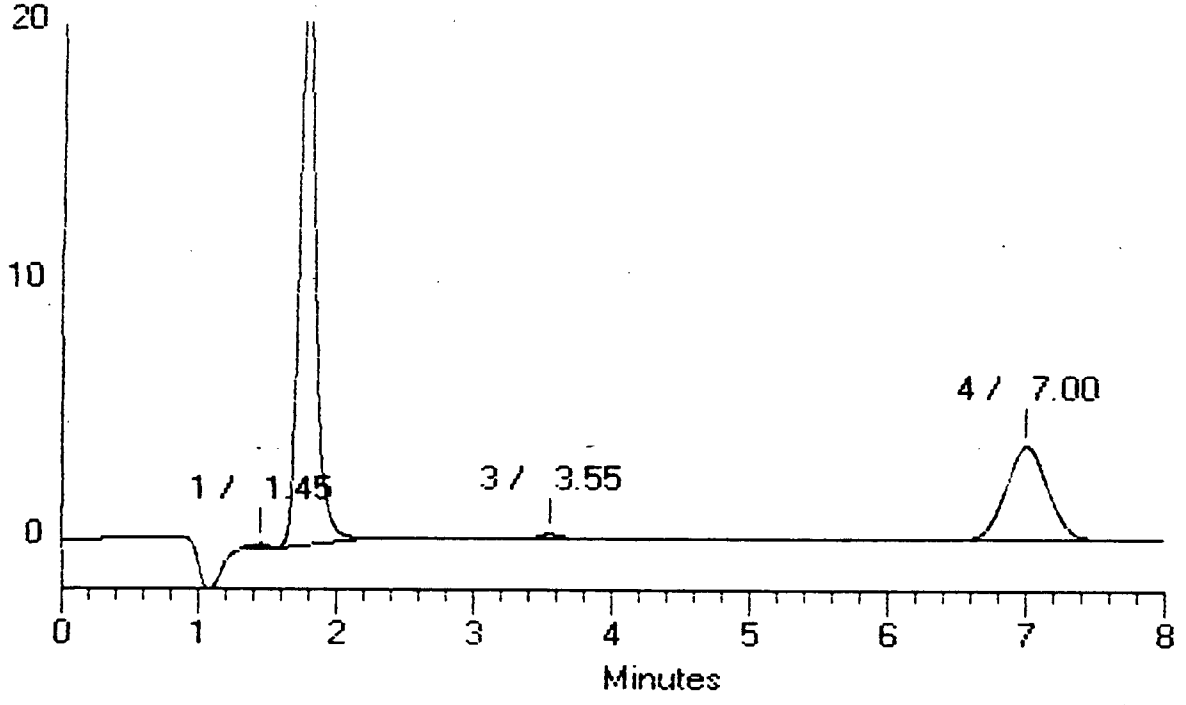


Sample Name: 9810L066-003 Date: Sat Nov 14 18:08:25 1998
Data File : C:\DATA\111498\RAWDATA1.D17
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 17 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	20	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	190	1610	1	
2	1.77	CHLORIDE	82.466	22745	182498	1	0.00
3	3.55	NITRATE	4.965	168	1690	1	0.00
4	7.00	SULFATE	54.124	3592	75532	1	0.00
		Totals	141.554	26695	261330		

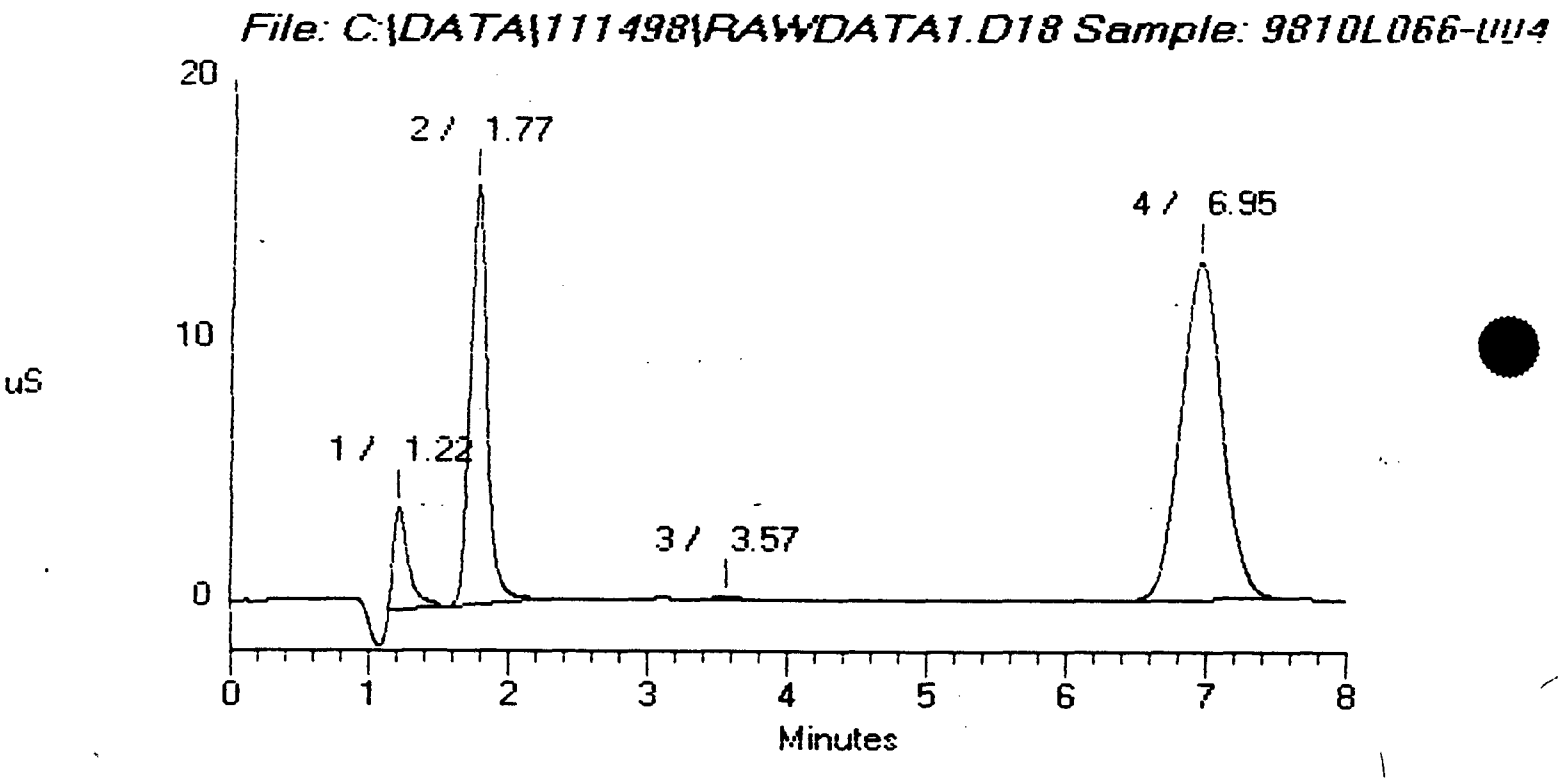
File: C:\DATA\111498\RAWDATA1.D17 Sample: 9810L066-003



Sample Name: 9810L066-004 Date: Sat Nov 14 18:17:57 1998
Data File : C:\DATA\111498\RAWDATA1.D18
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 18 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.417	3899	29722	1	0.00
2	1.77	CHLORIDE	3.085	16054	135290	1	0.00
3	3.57	NITRATE	0.211	80	798	1	0.00
4	6.95	SULFATE	9.118	12893	264998	1	0.00
		Totals	12.831	32926	430808		

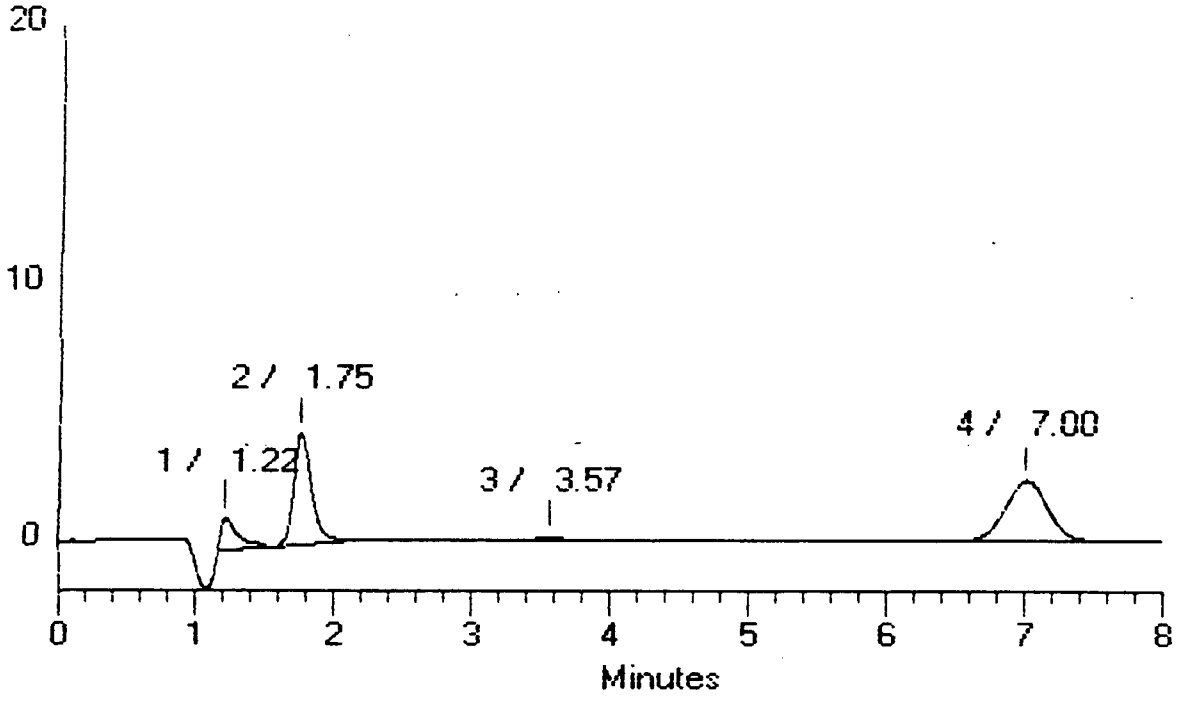


Sample Name: 9810L066-005 Date: Sat Nov 14 18:27:29 1998
Data File : C:\DATA\111498\RAWDATA1.D19
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 19 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.118	1207	10428	1	0.00
2	1.75	CHLORIDE	0.995	4317	40267	1	0.00
3	3.57	NITRATE	0.235	132	1370	1	0.00
4	7.00	SULFATE	1.791	2306	48480	1	0.00
		Totals	3.139	7962	100544		

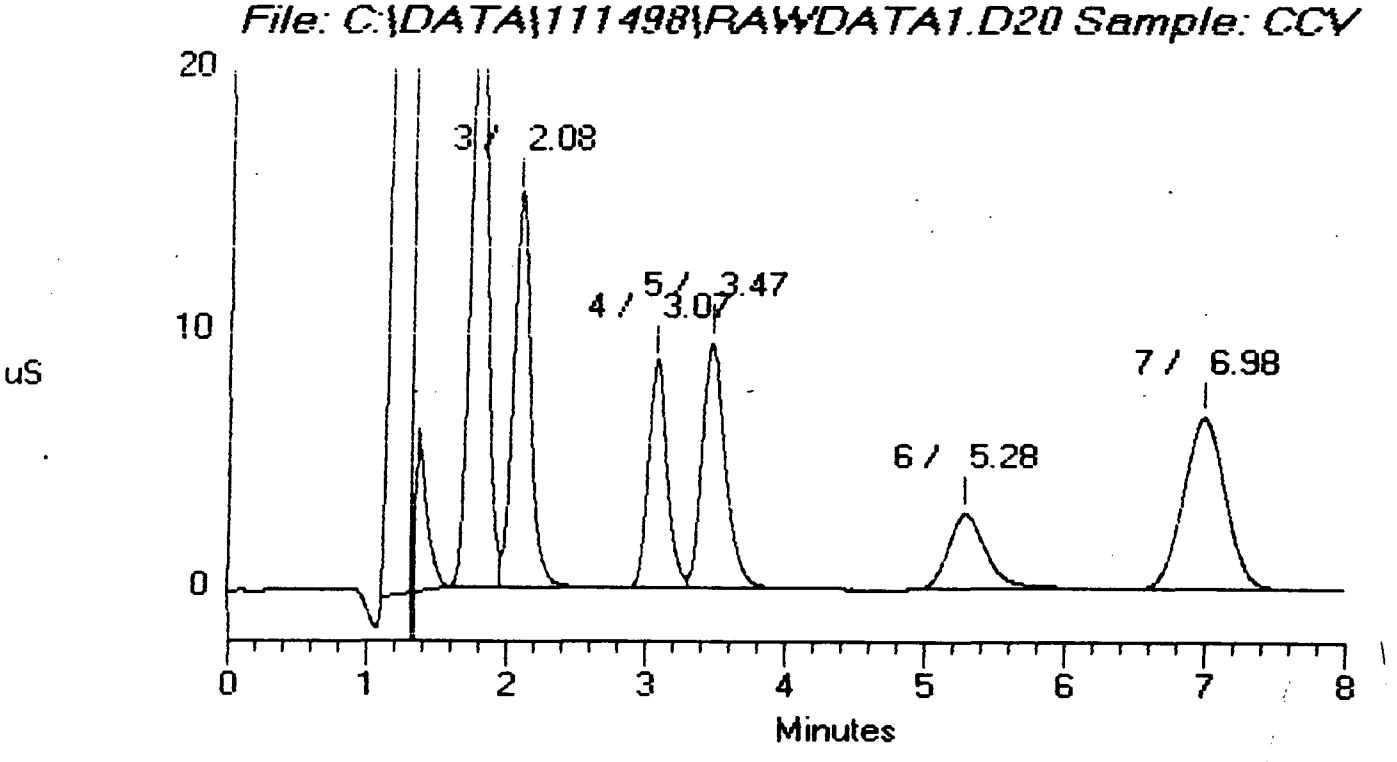
File: C:\DATA\111498\RAWDATA1.D19 Sample: 9810L066-005



Sample Name: CCV Date: Sat Nov 14 18:37:00 1998
Data File : C:\DATA\111498\RAWDATA1.D20
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 20 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

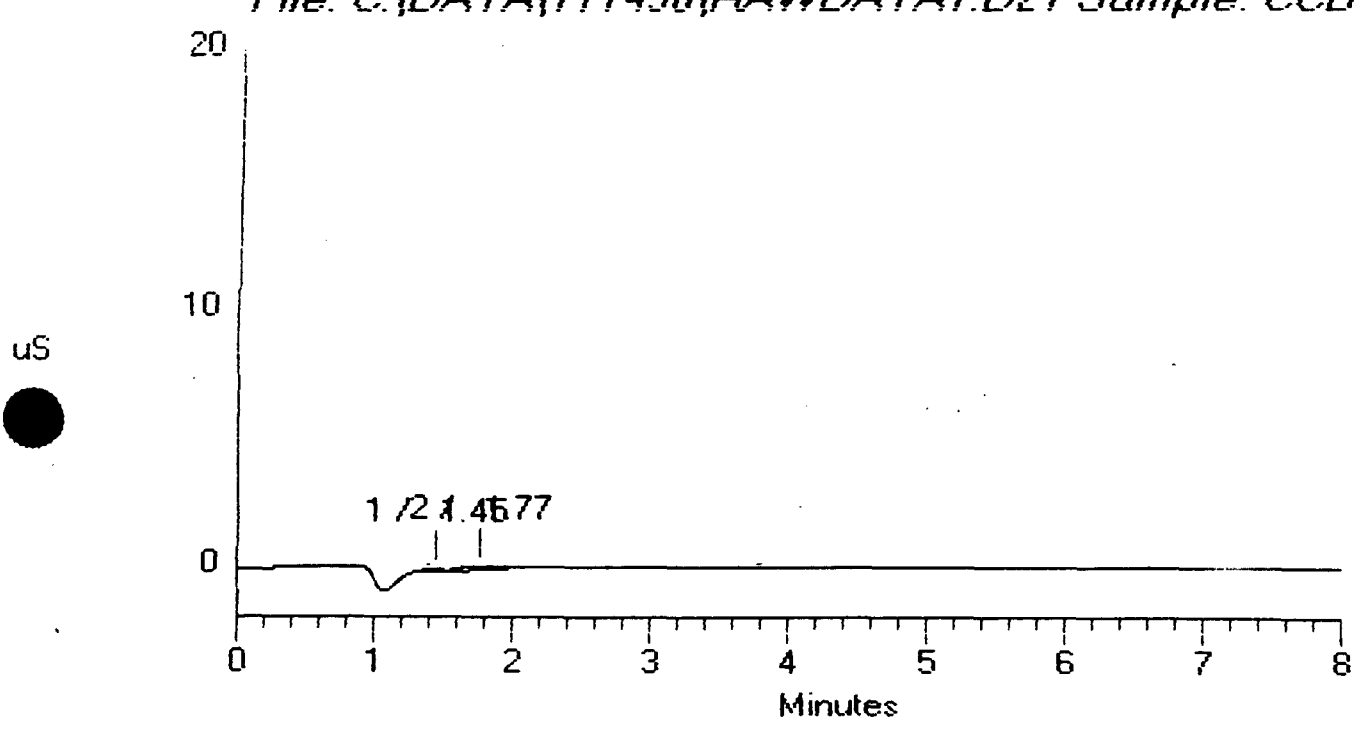
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	9.912	84549	642636	1	0.00
2	1.77	CHLORIDE	4.756	26027	211286	2	0.00
3	2.08	NITRITE	4.999	15043	133604	2	0.00
4	3.07	BROMIDE	4.757	8698	83322	2	0.00
5	3.47	NITRATE	4.805	9475	110935	2	0.00
6	5.28	PHOSPHATE	4.852	2910	54968	1	0.00
7	6.98	SULFATE	4.799	6604	137359	1	0.00
		Totals	38.879	153306	1374110		



Sample Name: CCB Date: Sat Nov 14 18:46:34 1998
Data File : C:\DATA\111498\RAWDATA1.D21
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 21 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

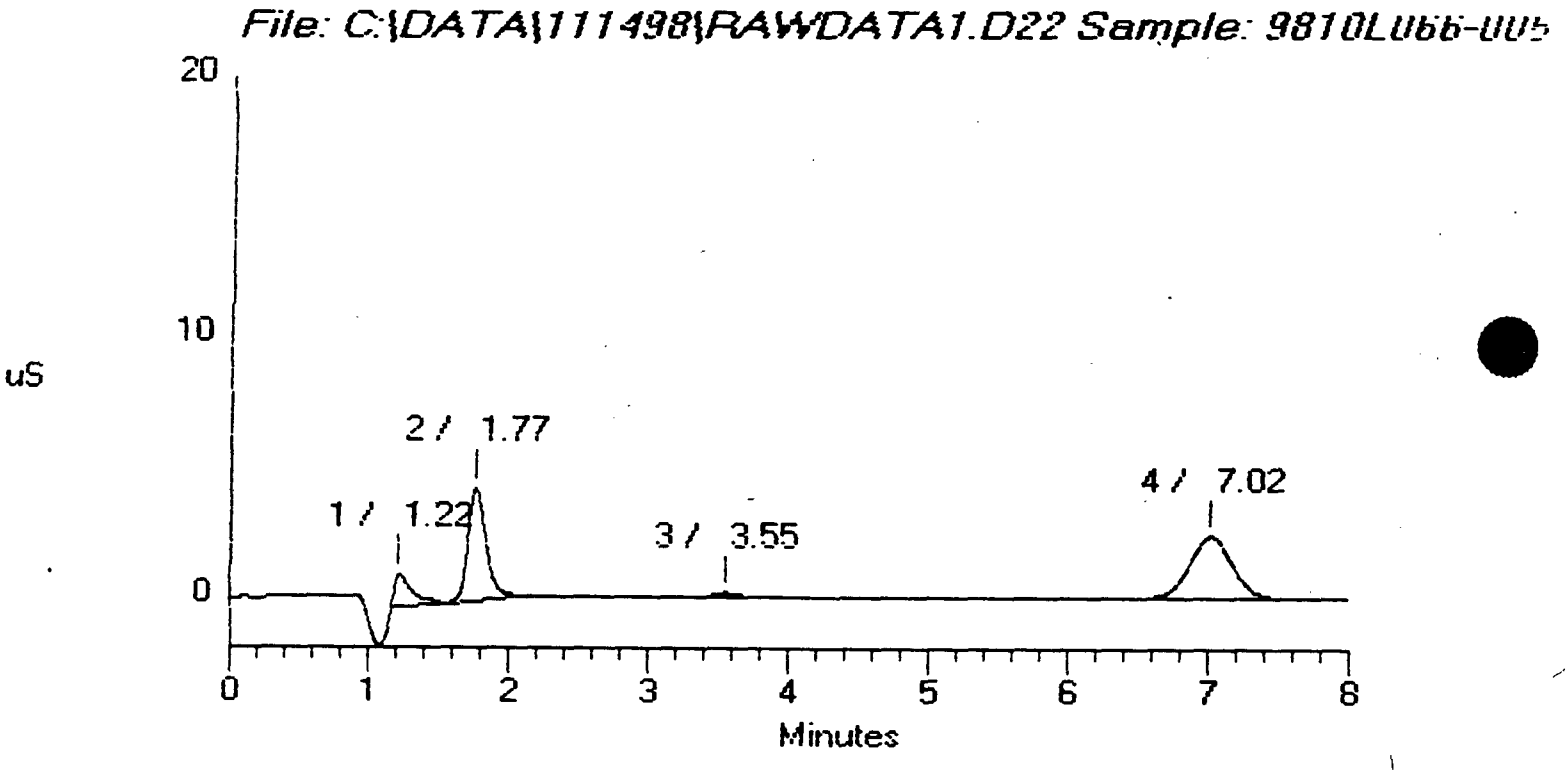
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
2	1.77	CHLORIDE	0.158	116	2232	1	0.00
		Totals	0.158	116	2232		



Sample Name: 9810L066-005R Date: Sat Nov 14 18:56:10 1998
Data File : C:\DATA\111498\RAWDATA1.D22
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 22 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

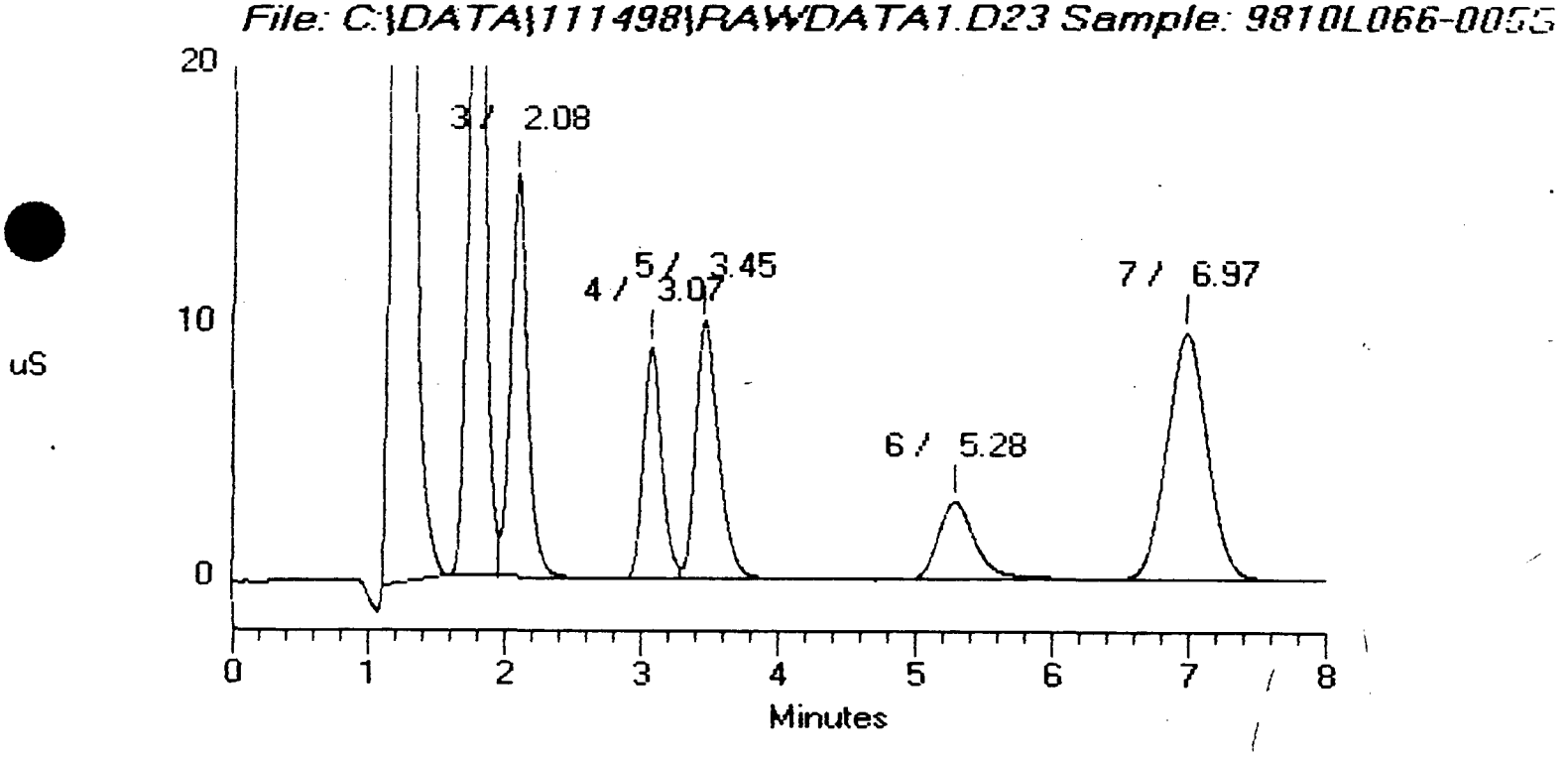
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.133	1265	11380	1	0.00
2	1.77	CHLORIDE	0.964	4321	38864	1	0.00
3	3.55	NITRATE	0.232	136	1291	1	0.00
4	7.02	SULFATE	1.800	2320	48744	1	0.00
		Totals	3.128	8043	100278		



Sample Name: 9810L066-005S Date: Sat Nov 14 19:05:42 1998
Data File : C:\DATA\111498\RAWDATA1.D23
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 23 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	11.033	86921	715001	1	0.00
2	1.77	CHLORIDE	6.033	33068	269332	2	0.00
3	2.08	NITRITE	5.106	15603	136473	2	0.00
4	3.07	BROMIDE	4.891	9057	85761	2	0.00
5	3.45	NITRATE	5.105	9969	118140	2	0.00
6	5.28	PHOSPHATE	5.061	3028	57435	1	0.00
7	6.97	SULFATE	6.881	9640	198906	1	0.00
		Totals	44.110	167285	1581048		

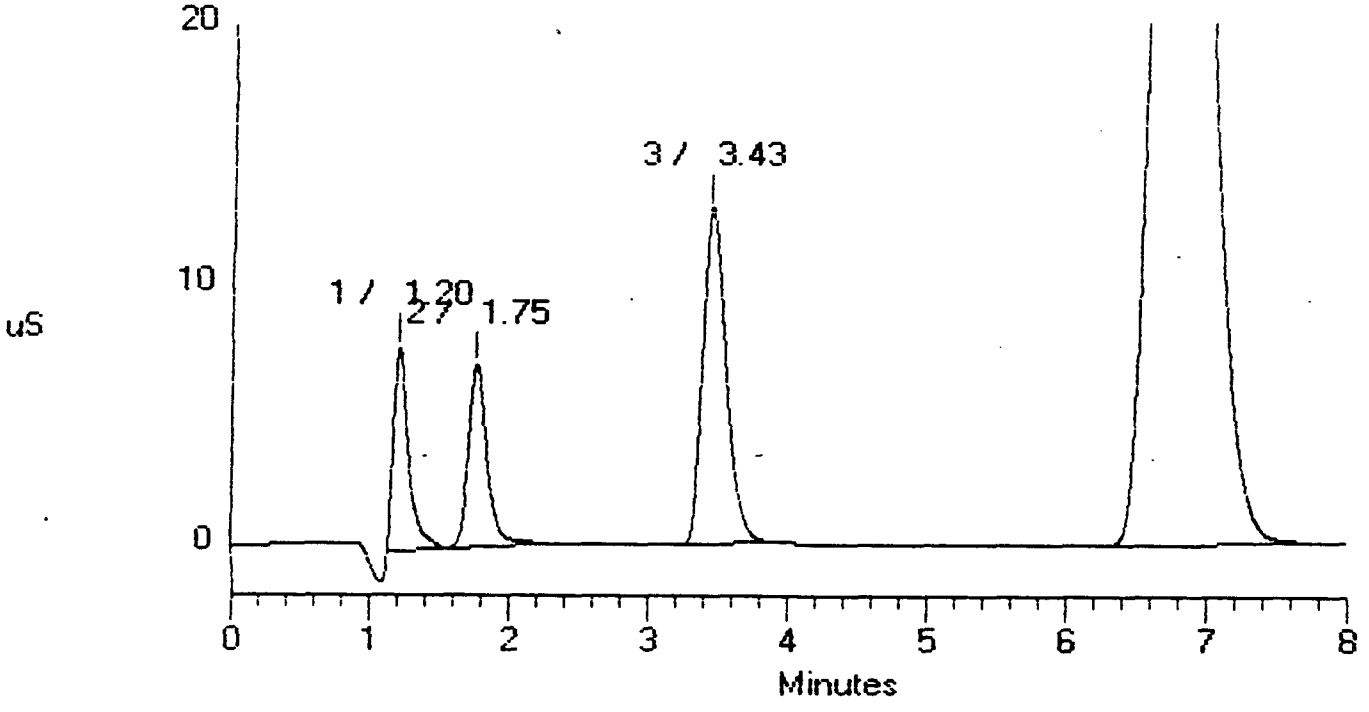


Sample Name: 9810L066-006 Date: Sat Nov 14 19:15:17 1998
Data File : C:\DATA\111498\RAWDATA1.D24
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 24 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.891	7693	60339	1	0.00
2	1.75	CHLORIDE	1.564	6852	66150	1	0.00
3	3.43	NITRATE	6.456	12703	150536	1	0.00
4	6.73	SULFATE	47.040	59992	1385562	1	0.00
		Totals	55.952	87240	1662586		

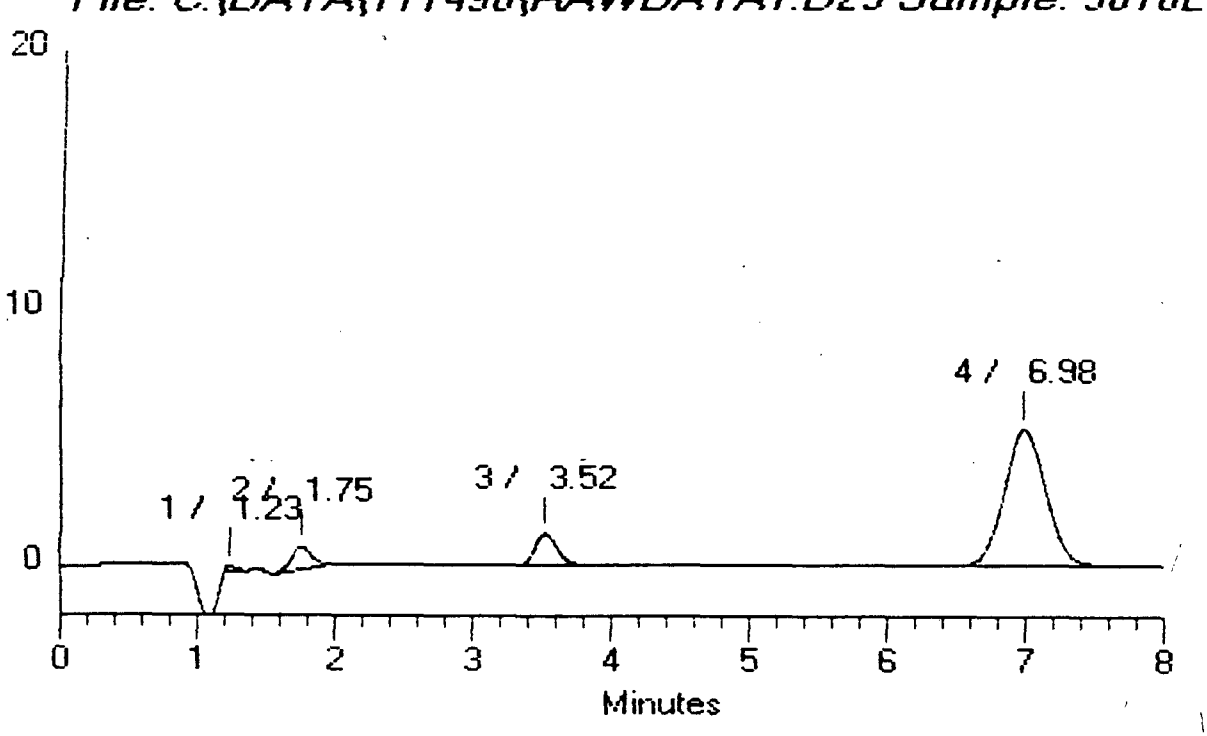
File: C:\DATA\111498\RAWDATA1.D24 Sample: 9810L066-006



Sample Name: 9810L066-006 Date: Sat Nov 14 19:24:48 1998
Data File : C:\DATA\111498\RAWDATA1.D25
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 25 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	10	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.23	FLUORIDE	-0.319	193	739	1	0.00
2	1.75	CHLORIDE	3.064	888	8956	1	0.00
3	3.52	NITRATE	7.373	1202	13416	1	0.00
4	6.98	SULFATE	38.537	5252	109440	1	0.00
		Totals	48.654	7535	132551		

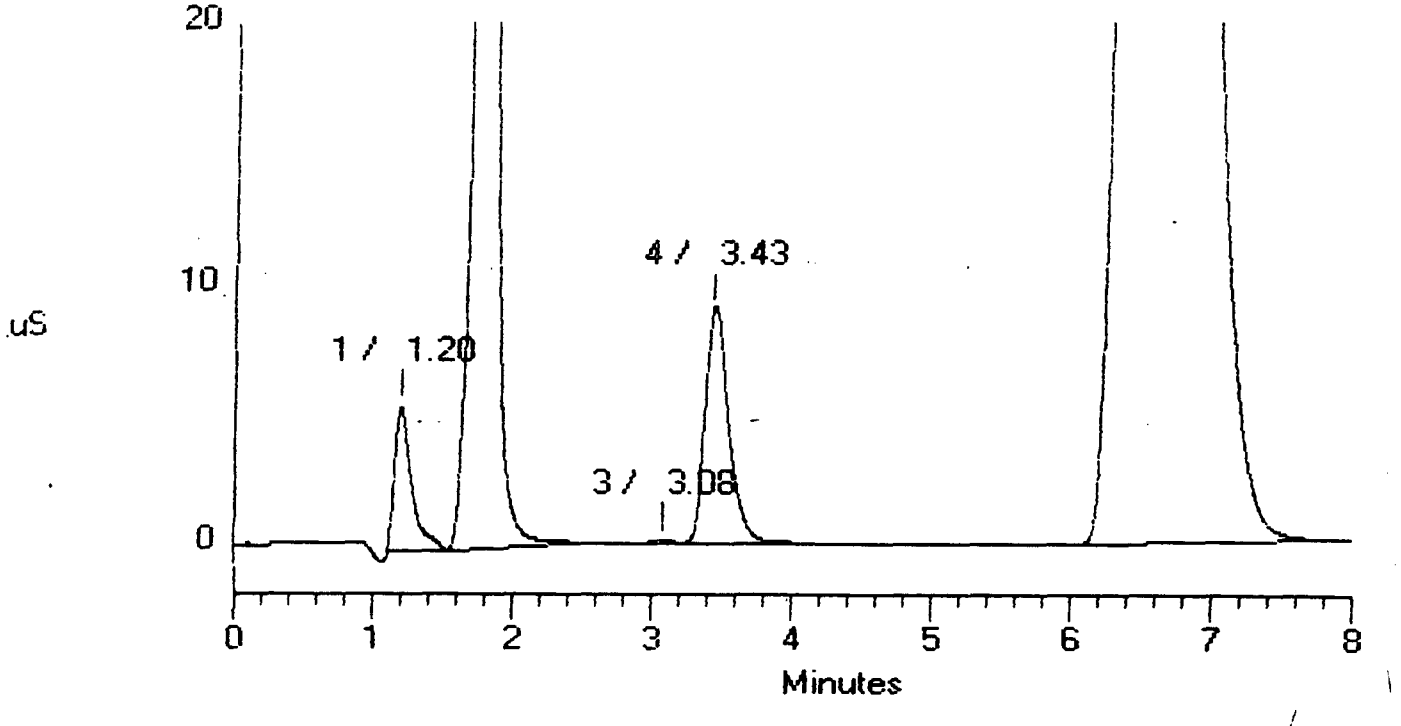


Sample Name: 9810L066-007 Date: Sat Nov 14 19:34:19 1998
Data File : C:\DATA\111498\RAWDATA1.D26
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 26 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.694	5542	47594	1	0.00
2	1.77	CHLORIDE	12.715	59646	573143	1	0.00
3	3.08	BROMIDE	0.199	67	602	2	0.00
4	3.43	NITRATE	4.567	8921	105228	2	0.00
5	6.48	SULFATE	118.007	119060	3482531	1	0.00
		Totals	136.182	193235	4209097		

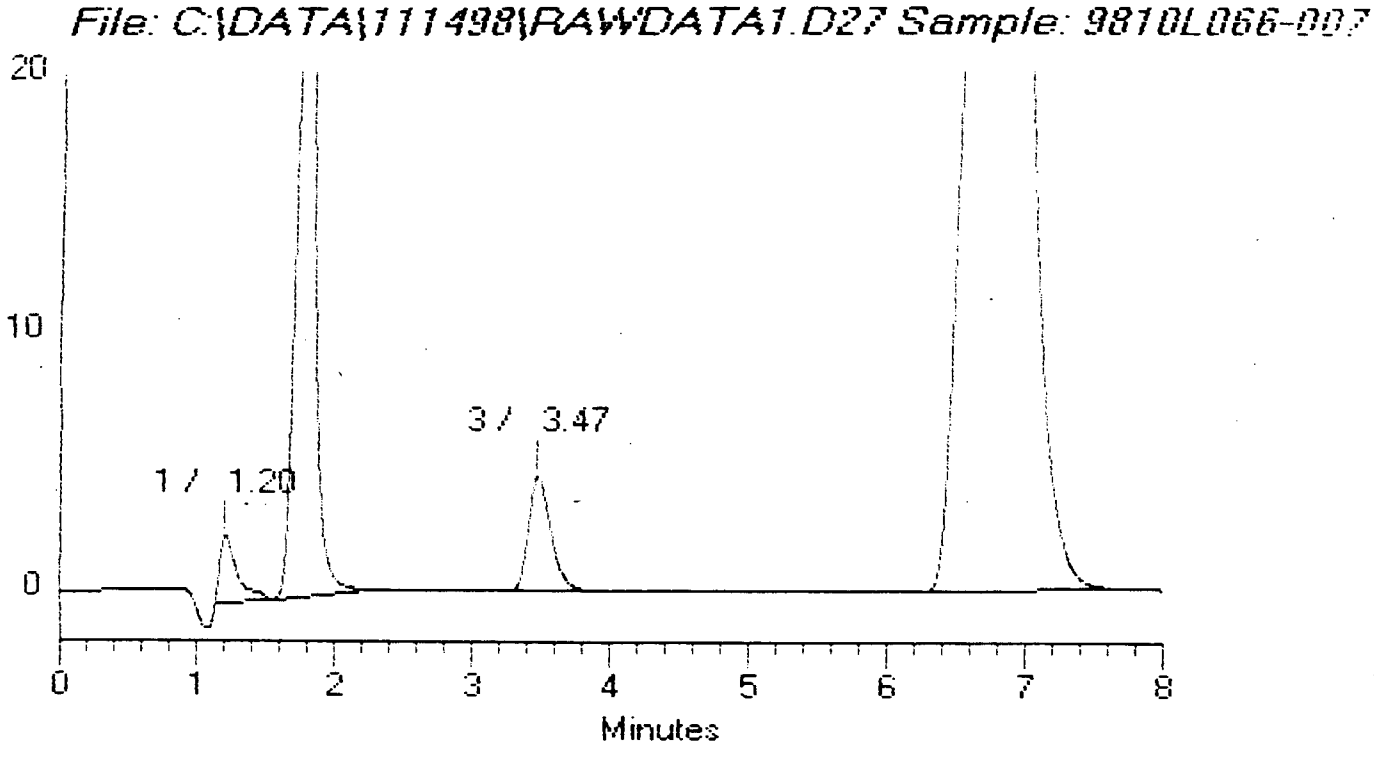
File: C:\DATA\111498\RAWDATA1.D26 Sample: 9810L066-007



Sample Name: 9810L066-007 Date: Sat Nov 14 19:43:52 1998
Data File : C:\DATA\111498\RAWDATA1.D27
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 27 Detector: CDM-1

PORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	2	2400	5Hz	0.00	8.00	600

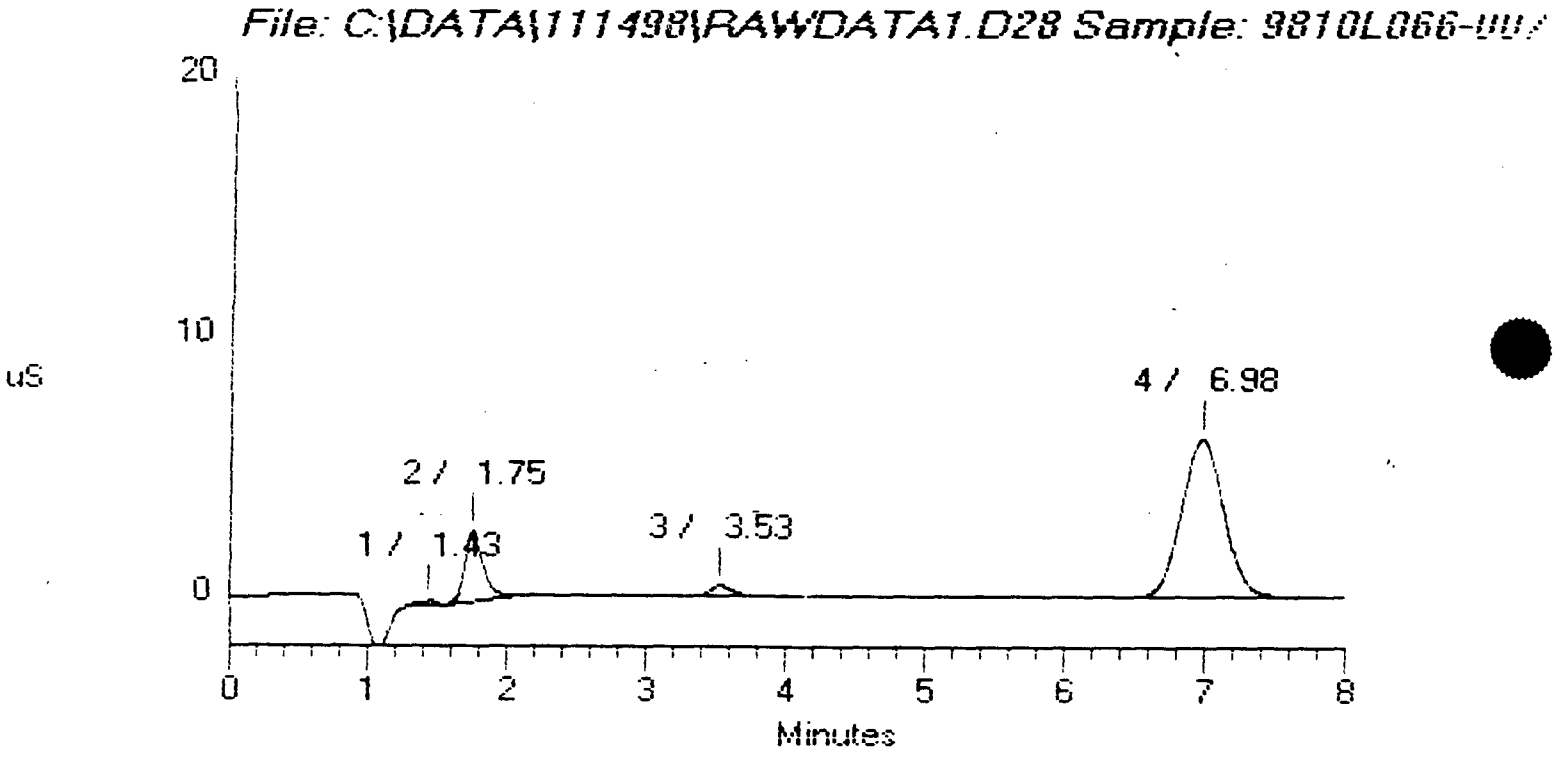
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.614	2488	22615	1	0.00
2	1.77	CHLORIDE	12.095	30924	269977	1	0.00
3	3.47	NITRATE	4.506	4376	49754	1	0.00
4	6.68	SULFATE	111.098	68133	1636976	1	0.00
		Totals	128.312	105921	1979323		



Sample Name: 9810L066-007 Date: Sat Nov 14 19:53:24 1998
Data File : C:\DATA\111498\RAWDATA1.D28
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 28 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	20	2400	5Hz	0.00	8.00	600

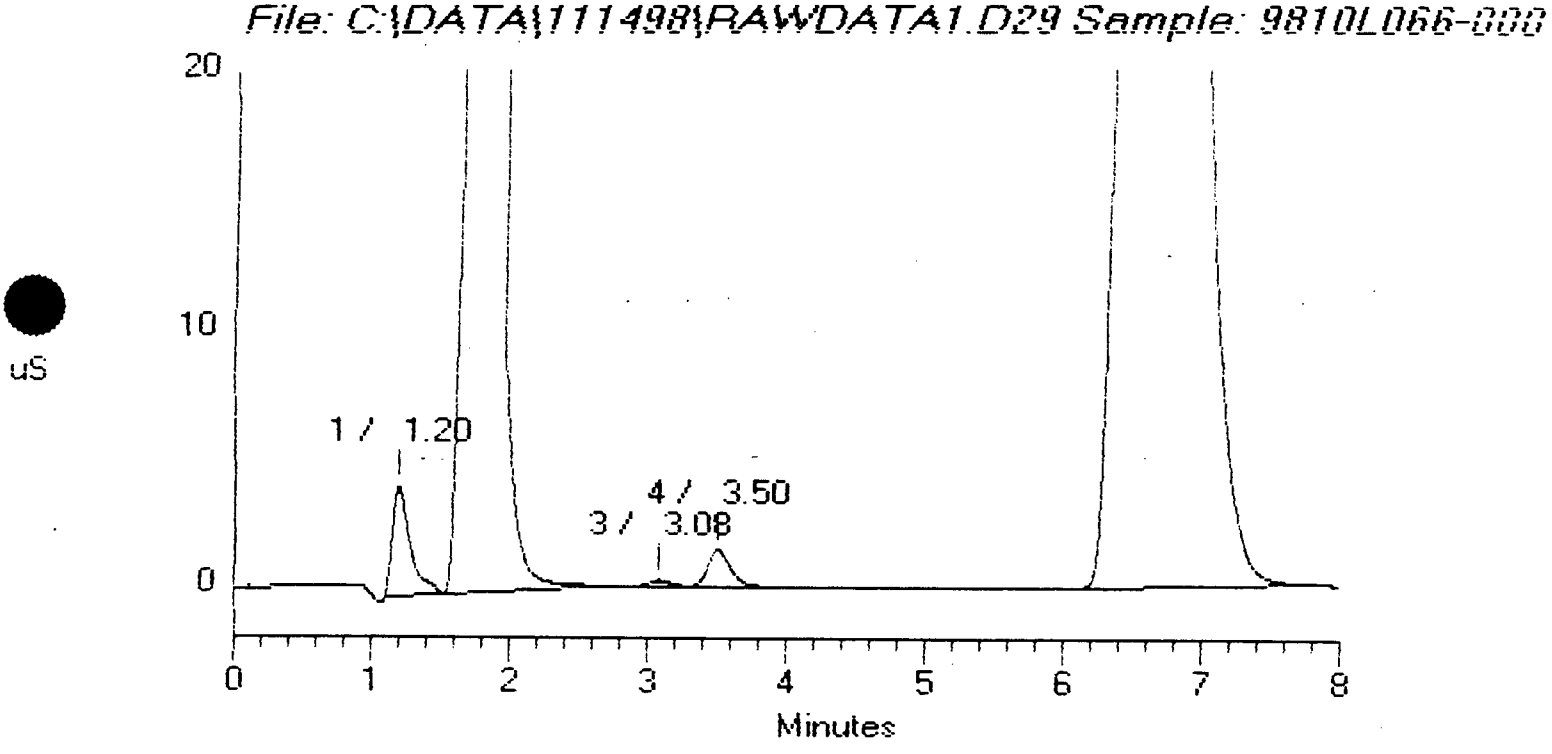
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.43		0.000	160	1542	1	
2	1.75	CHLORIDE	13.539	2748	25805	1	0.00
3	3.53	NITRATE	7.196	408	4365	1	0.00
4	6.98	SULFATE	88.596	6117	126463	1	0.00
		Totals	109.331	9433	158175		



Sample Name: 9810L066-008 Date: Sat Nov 14 20:02:55 1998
Data File : C:\DATA\111498\RAWDATA1.D29
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 29 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

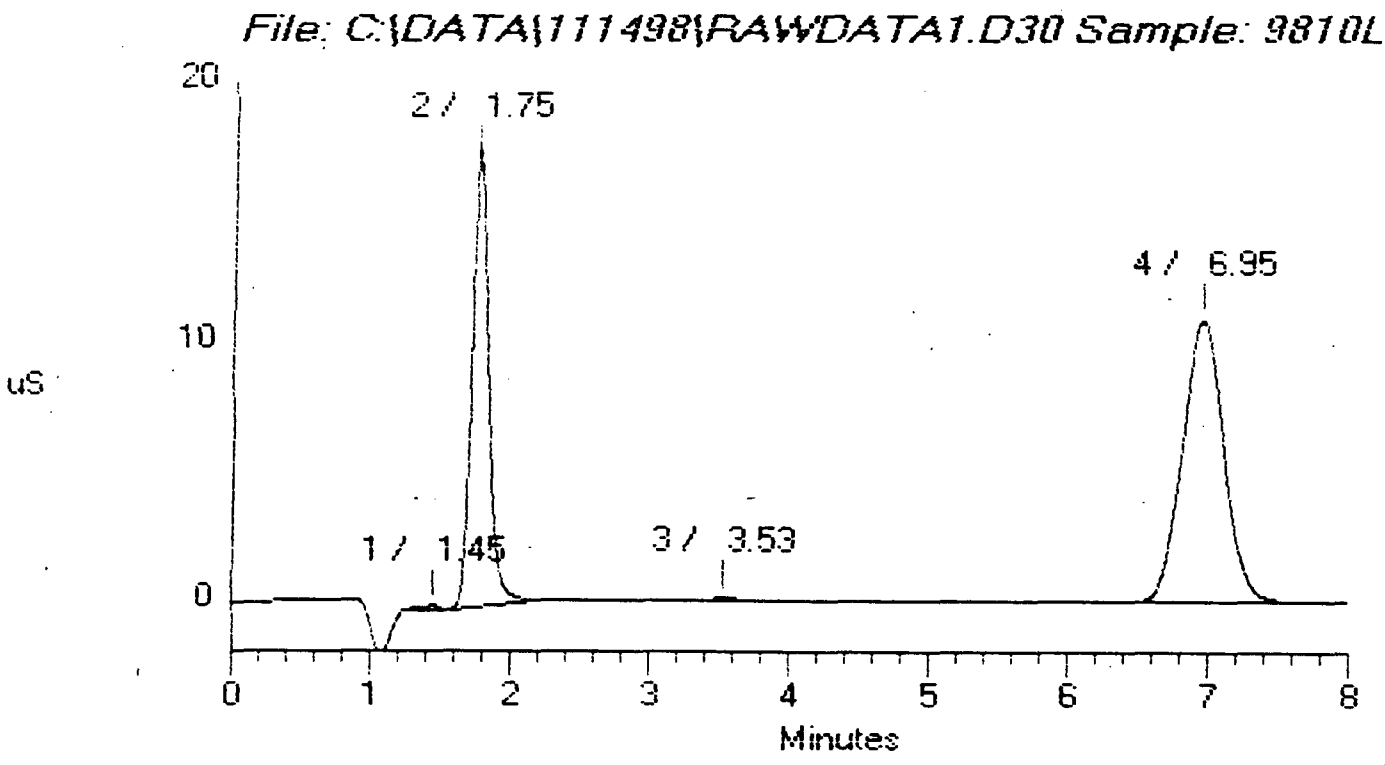
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.551	4243	38362	1	0.00
2	1.83	CHLORIDE	38.705	163362	1754790	1	0.00
3	3.08	BROMIDE	0.293	238	2300	2	0.00
4	3.50	NITRATE	0.841	1414	15913	2	0.00
5	6.55	SULFATE	95.759	102069	2825135	1	0.00
		Totals	136.149	271326	4636500		



Sample Name: 9810L066-008 Date: Sat Nov 14 20:12:28 1998
Data File : C:\DATA\111498\RAWDATA1.D30
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 30 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	10	2400	5Hz	0.00	8.00	600

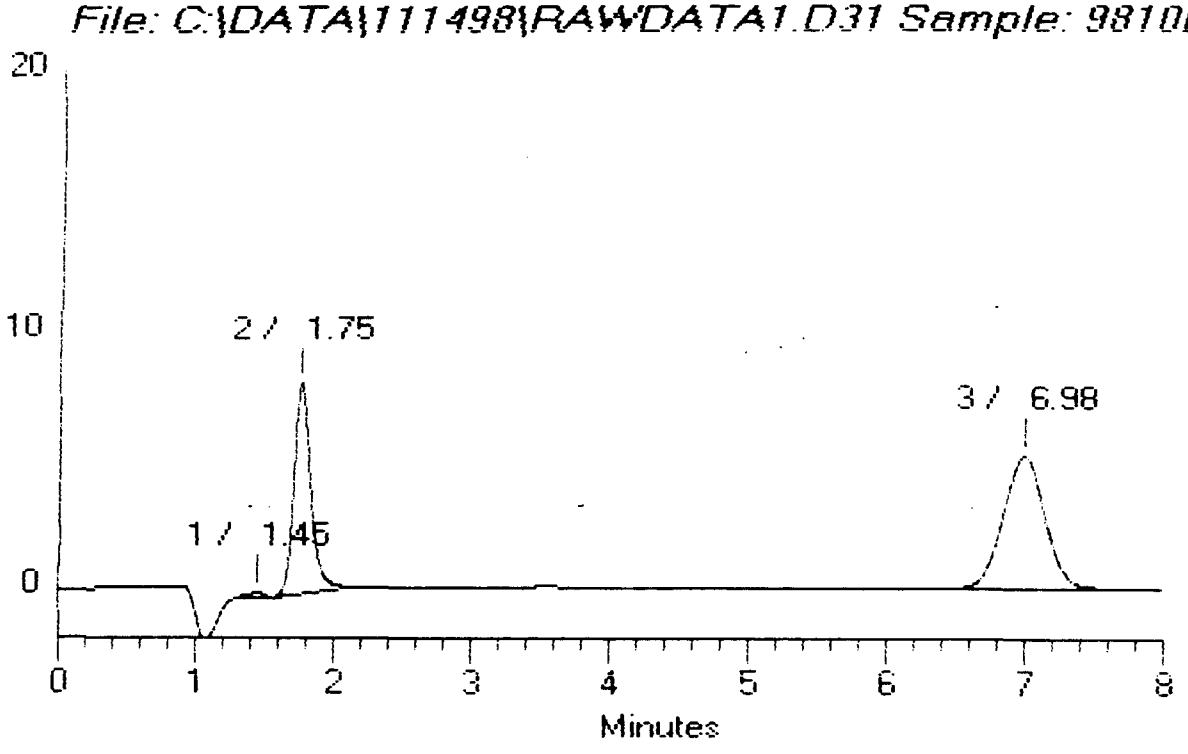
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	190	2168	1	
2	1.75	CHLORIDE	33.268	17153	146282	1	0.00
3	3.53	NITRATE	2.306	138	1267	1	0.00
4	6.95	SULFATE	76.383	10832	221272	1	0.00
		Totals	111.957	28313	370990		



Sample Name: 9810L066-008 Date: Sat Nov 14 20:21:59 1998
Data File : C:\DATA\111498\RAWDATA1.D31
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 31 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	20	2400	5Hz	0.00	8.00	600

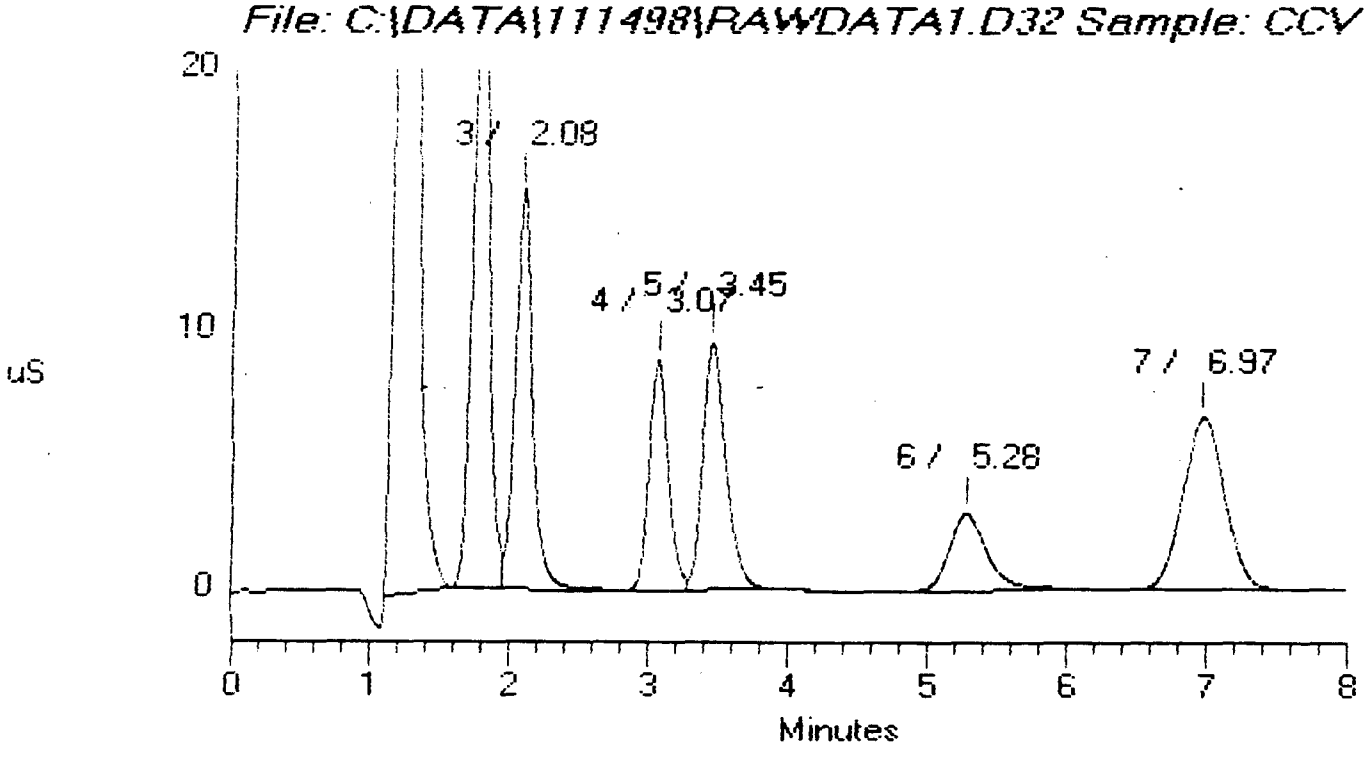
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	170	1516	1	
2	1.75	CHLORIDE	32.484	8069	68874	1	0.00
3	6.98	SULFATE	73.748	5031	104526	1	0.00
		Totals	106.232	13270	174916		



Sample Name: CCV Date: Sat Nov 14 20:31:30 1998
Data File : C:\DATA\111498\RAWDATA1.D32
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 32 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

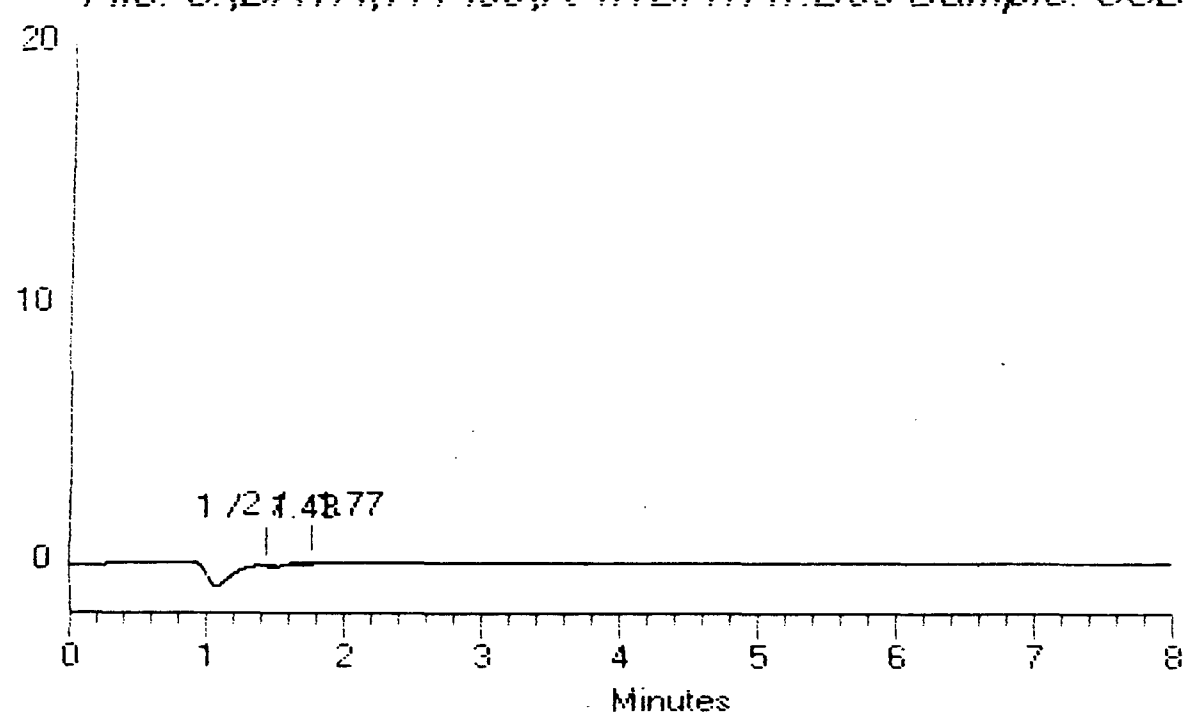
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	10.481	79344	679347	1	0.00
2	1.77	CHLORIDE	4.703	26221	208851	2	0.00
3	2.08	NITRITE	4.931	15245	131789	2	0.00
4	3.07	BROMIDE	4.816	8874	84400	2	0.00
5	3.45	NITRATE	4.759	9514	109834	2	0.00
6	5.28	PHOSPHATE	4.863	2925	55100	1	0.00
7	6.97	SULFATE	4.808	6628	137644	1	0.00
		Totals	39.361	148752	1406966		



Sample Name: CCB Date: Sat Nov 14 20:41:12 1998
Data File : C:\DATA\111498\RAWDATA1.D33
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 33 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
2	1.77	CHLORIDE	0.144	93	1594	1	0.00
		Totals	0.144	93	1594		

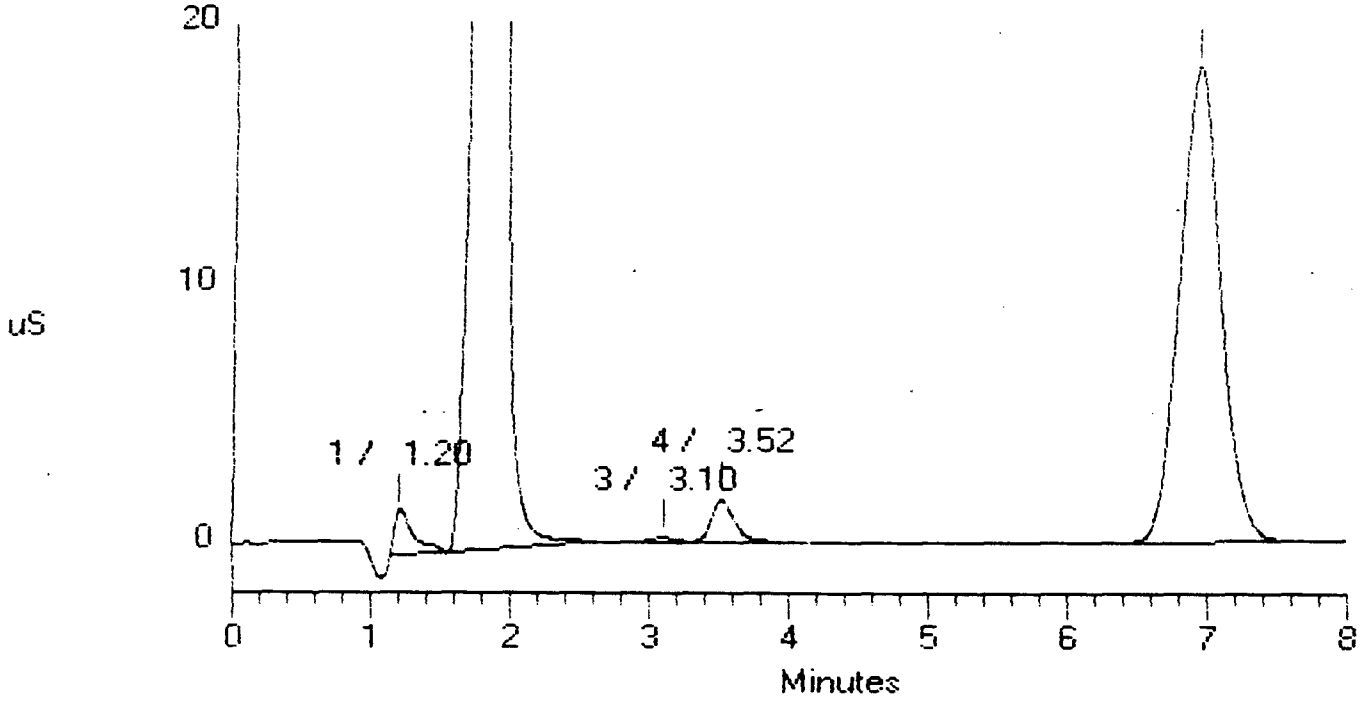


Sample Name: 9810L066-009 Date: Sat Nov 14 20:50:49 1998
Data File : C:\DATA\111498\RAWDATA1.D34
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 34 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.220	1697	17008	1	0.00
2	1.83	CHLORIDE	33.452	146445	1515978	1	0.00
3	3.10	BROMIDE	0.255	158	1608	2	0.00
4	3.52	NITRATE	0.922	1604	17841	2	0.00
5	6.92	SULFATE	12.716	18184	371321	1	0.00
		Totals	47.565	168087	1923756		

File: C:\DATA\111498\RAWDATA1.D34 Sample: 9810L066-009

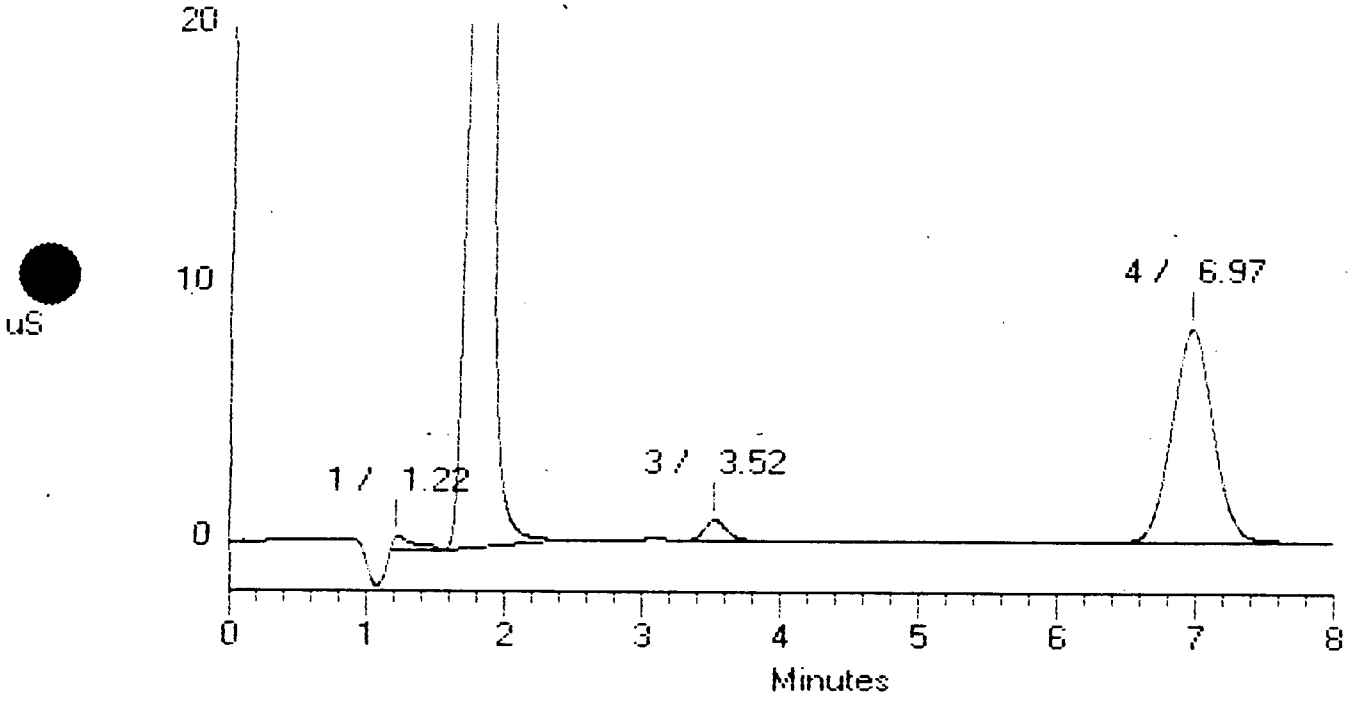


Sample Name: 9810L066-009 Date: Sat Nov 14 21:00:21 1998
Data File : C:\DATA\111498\RAWDATA1.D35
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 35 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	2	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.119	542	6628	1	0.00
2	1.80	CHLORIDE	31.460	84939	710216	1	0.00
3	3.52	NITRATE	1.087	800	8764	1	0.00
4	6.97	SULFATE	11.663	8152	167886	1	0.00
		Totals	44.329	94433	893493		

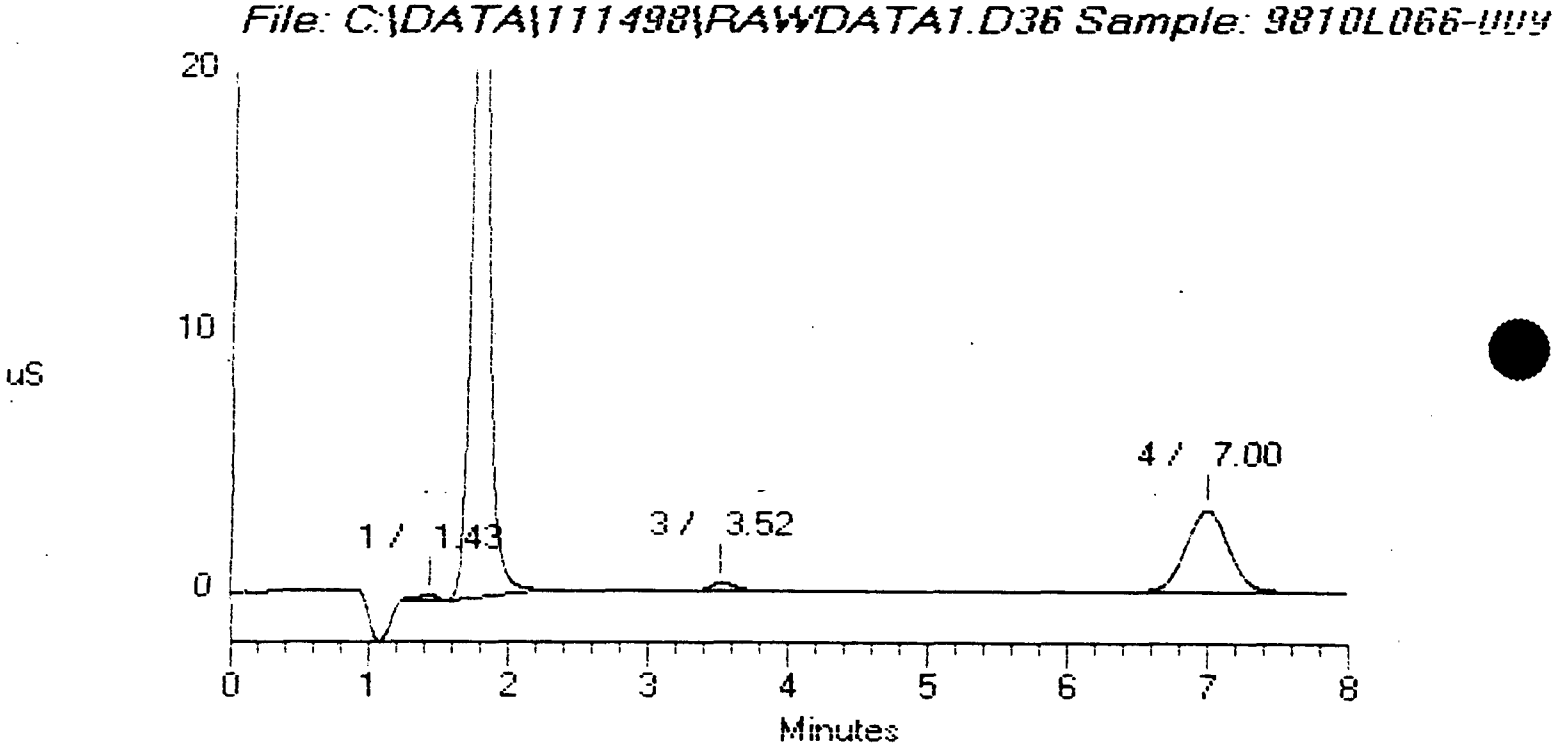
File: C:\DATA\111498\RAWDATA1.D35 Sample: 9810L066-009



Sample Name: 9810L066-009 Date: Sat Nov 14 21:09:51 1998
Data File : C:\DATA\111498\RAWDATA1.D36
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 36 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	5	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.43		0.000	200	2378	1	
2	1.77	CHLORIDE	29.144	32713	260040	1	0.00
3	3.52	NITRATE	1.556	306	3198	1	0.00
4	7.00	SULFATE	11.864	3120	65680	1	0.00
		Totals	42.563	36339	331296		

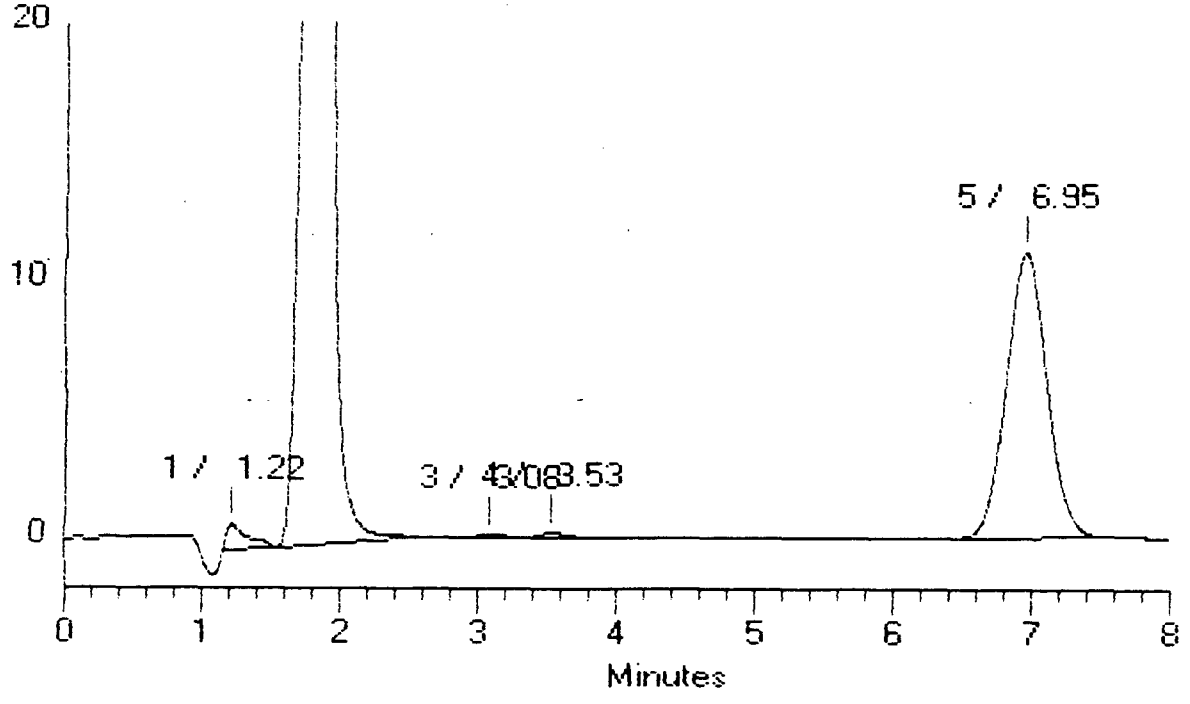


Sample Name: 9810L066-010 Date: Sat Nov 14 21:19:23 1998
Data File : C:\DATA\111498\RAWDATA1.D37
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 37 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.120	956	10569	1	0.00
2	1.83	CHLORIDE	28.486	136433	1290176	1	0.00
3	3.08	BROMIDE	0.219	98	962	2	0.00
4	3.53	NITRATE	0.252	173	1783	2	0.00
5	6.95	SULFATE	7.794	10991	225863	1	0.00
		Totals	36.871	148650	1529352		

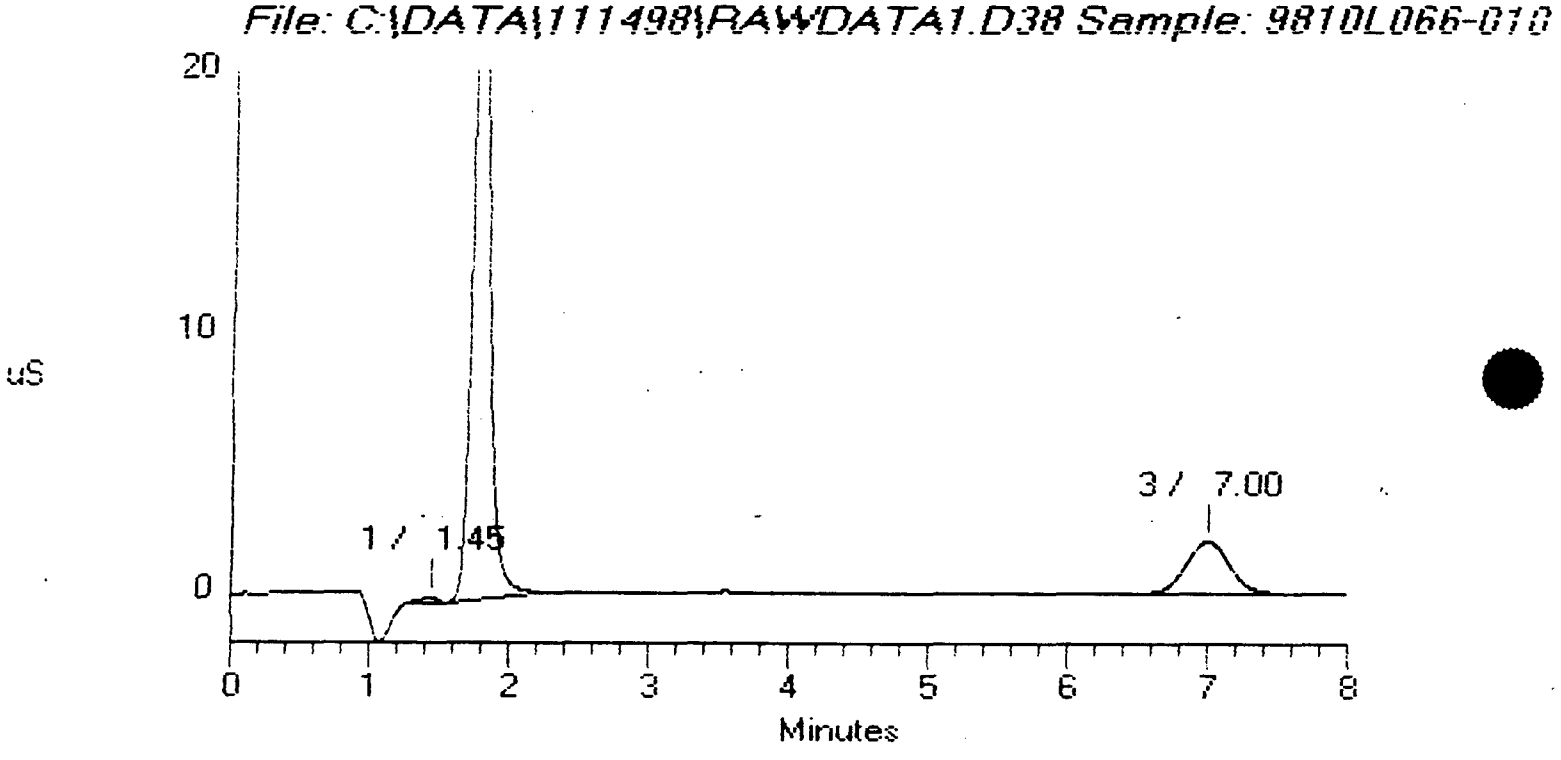
File: C:\DATA\111498\RAWDATA1.D37 Sample: 9810L066-010



Sample Name: 9810L066-010 Date: Sat Nov 14 21:28:56 1998
Data File : C:\DATA\111498\RAWDATA1.D38
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 38 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	5	2400	5Hz	0.00	8.00	600

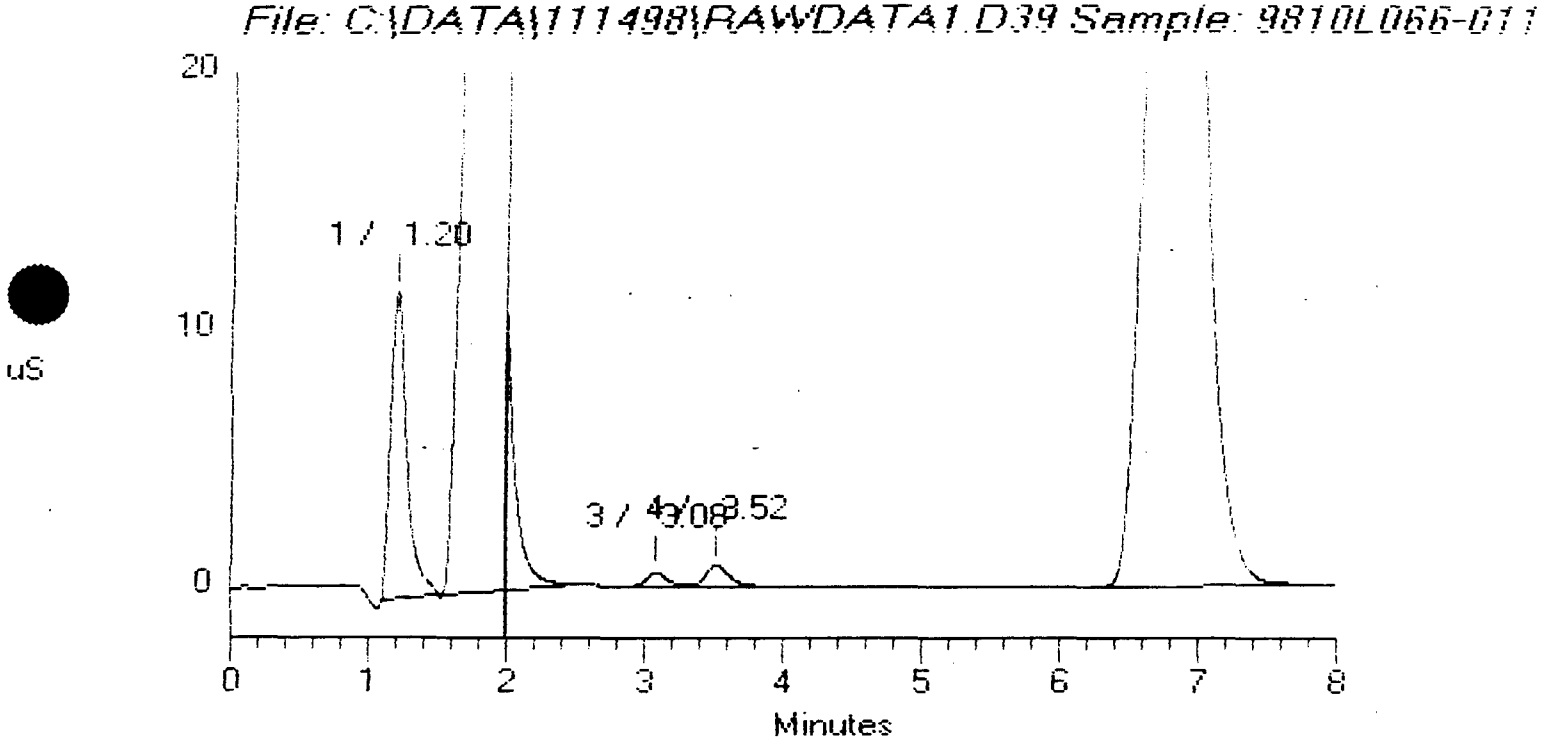
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	180	1778	1	
2	1.77	CHLORIDE	25.102	27808	223283	1	0.00
3	7.00	SULFATE	7.739	1960	41306	1	0.00
		Totals	32.841	29948	266367		



Sample Name: 9810L066-011 Date: Sat Nov 14 21:38:34 1998
Data File : C:\DATA\111498\RAWDATA1.D39
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 39 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

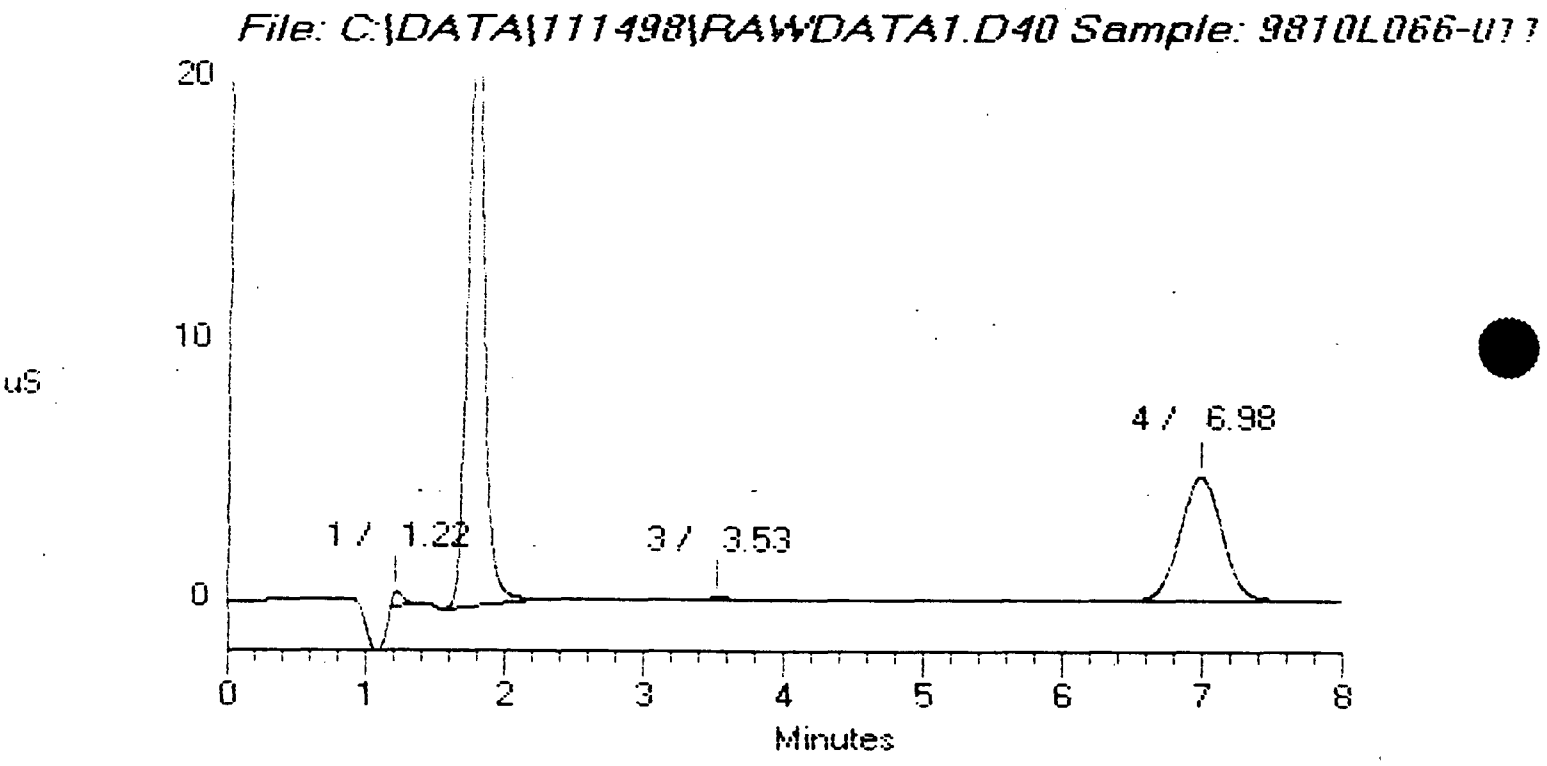
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	1.449	11879	96368	1	0.00
2	1.87	CHLORIDE	51.217	199355	2323703	1	0.00
3	3.08	BROMIDE	0.453	530	5200	2	0.00
4	3.52	NITRATE	0.556	810	9058	2	0.00
5	6.75	SULFATE	42.601	55282	1254391	1	0.00
		Totals	96.277	267856	3688720		



Sample Name: 9810L066-011 Date: Sat Nov 14 21:48:05 1998
Data File : C:\DATA\111498\RAWDATA1.D40
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 40 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	10	2400	5Hz	0.00	8.00	600

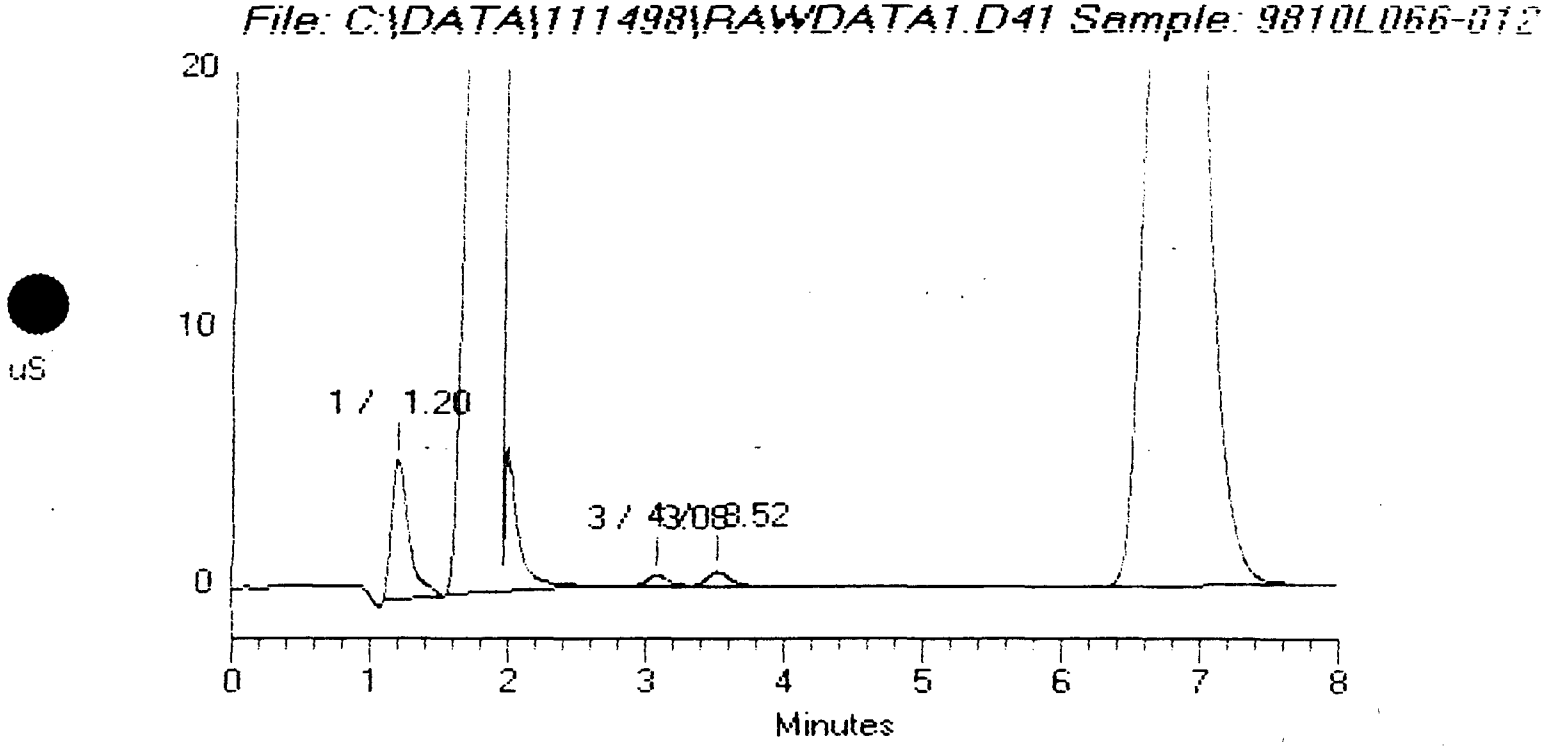
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	-0.013	524	2713	1	0.00
2	1.77	CHLORIDE	44.011	24134	195129	1	0.00
3	3.53	NITRATE	2.103	72	779	1	0.00
4	6.98	SULFATE	35.082	4767	99232	1	0.00
		Totals	81.182	29496	297853		



Sample Name: 9810L066-012 Date: Sat Nov 14 21:57:37 1998
Data File : C:\DATA\111498\RAWDATA1.D41
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 41 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

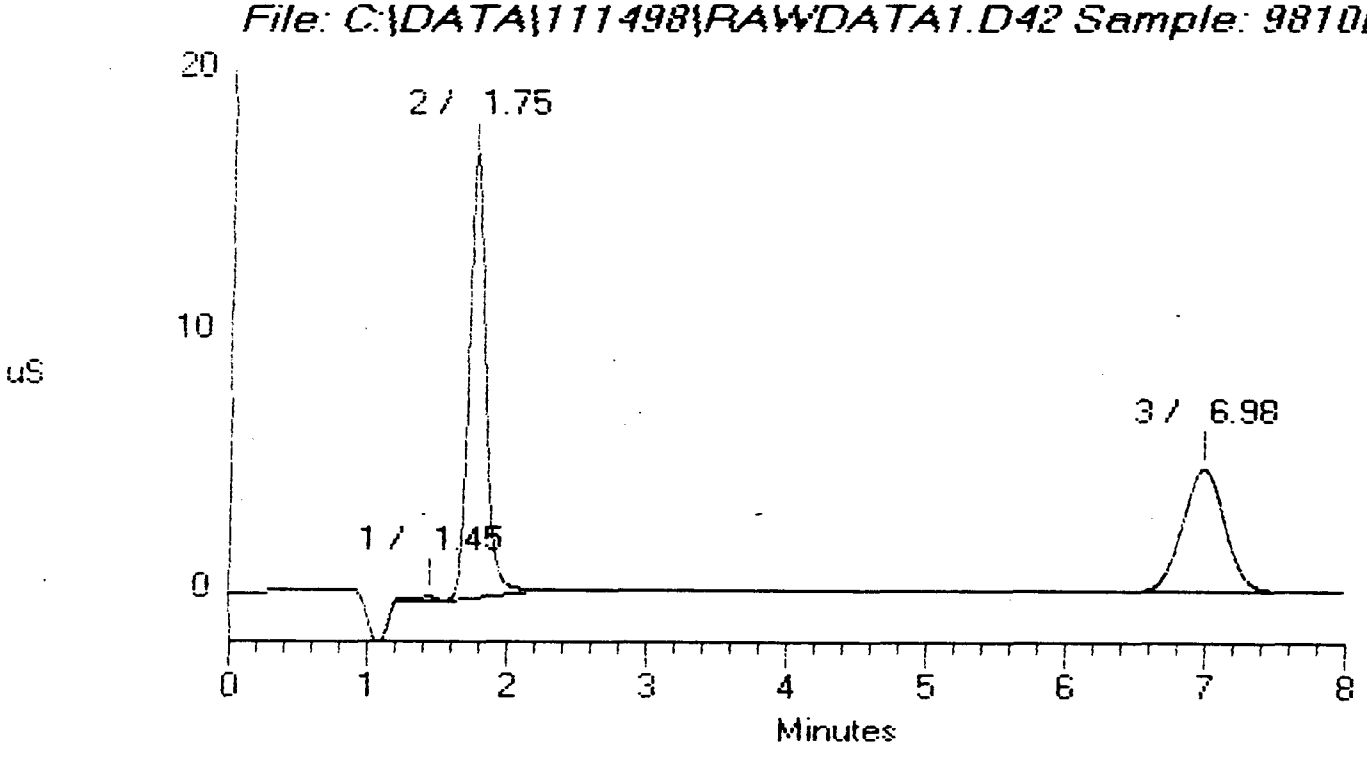
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.681	5326	46735	1	0.00
2	1.83	CHLORIDE	37.365	157368	1693901	1	0.00
3	3.08	BROMIDE	0.385	408	3967	2	0.00
4	3.52	NITRATE	0.419	543	5792	2	0.00
5	6.75	SULFATE	41.175	53879	1212242	1	0.00
		Totals	80.025	217525	2962637		



Sample Name: 9810L066-012 Date: Sat Nov 14 22:07:09 1998
Data File : C:\DATA\111498\RAWDATA1.D42
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 42 Detector: CDM-1

REPO	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
Exter.	1	1	10	2400 5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	183	2717	1	
2	1.75	CHLORIDE	32.471	16840	142659	1	0.00
3	6.98	SULFATE	34.319	4672	96975	1	0.00
		Totals	66.789	21694	242352		

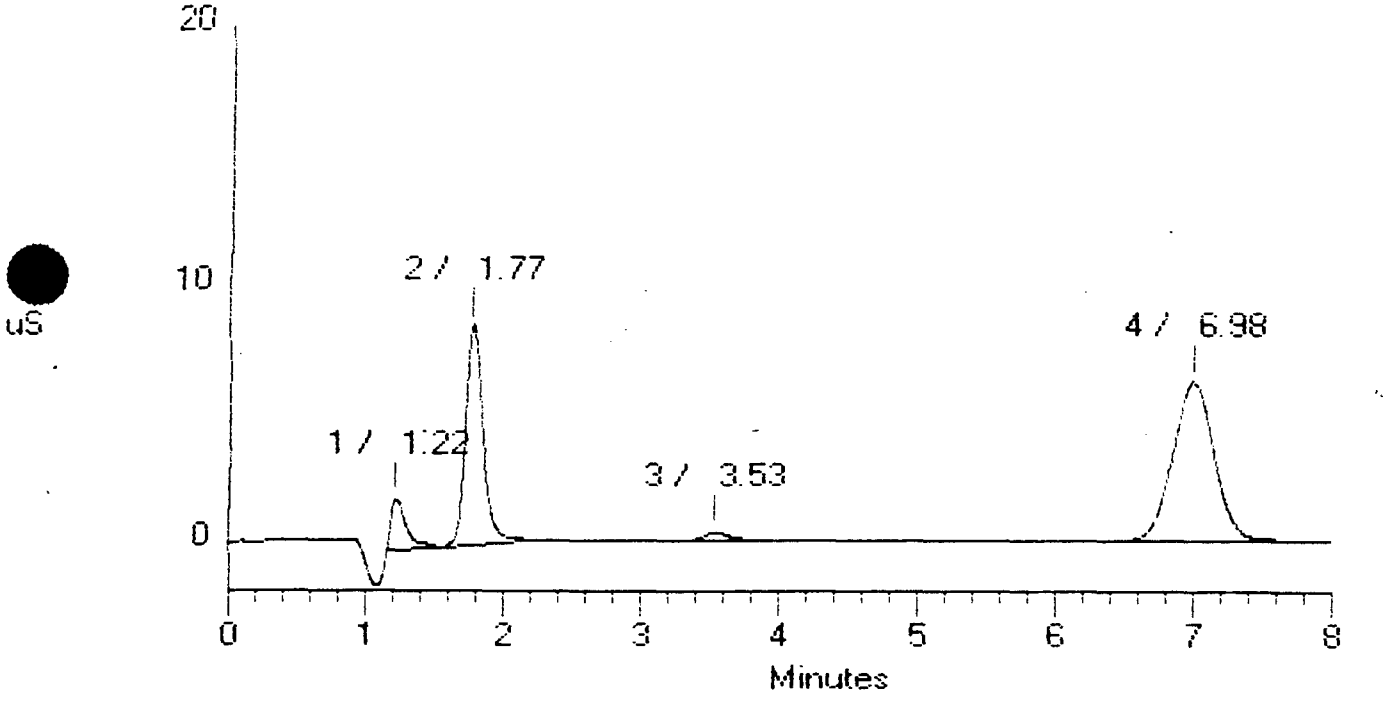


Sample Name: 9810L067-001 Date: Sat Nov 14 22:16:47 1998
Data File : C:\DATA\111498\RAWDATA1.D43
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 43 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.198	1992	15562	1	0.00
2	1.77	CHLORIDE	1.794	8519	76613	1	0.00
3	3.53	NITRATE	0.320	320	3404	1	0.00
4	6.98	SULFATE	4.459	6151	127324	1	0.00
		Totals	6.771	16983	222903		

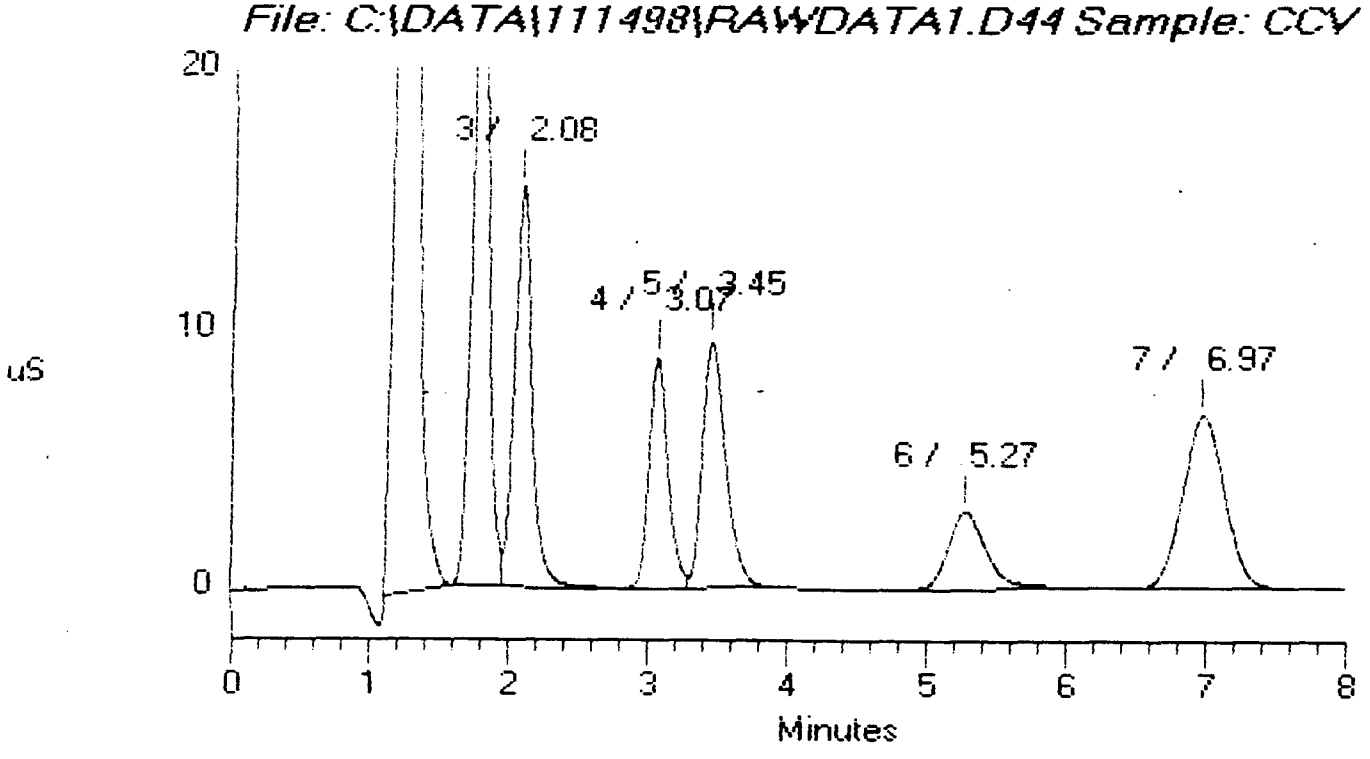
File: C:\DATA\111498\RAWDATA1.D43 Sample: 9810L067-001



Sample Name: CCV Date: Sat Nov 14 22:26:18 1998
Data File : C:\DATA\111498\RAWDATA1.D44
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 44 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

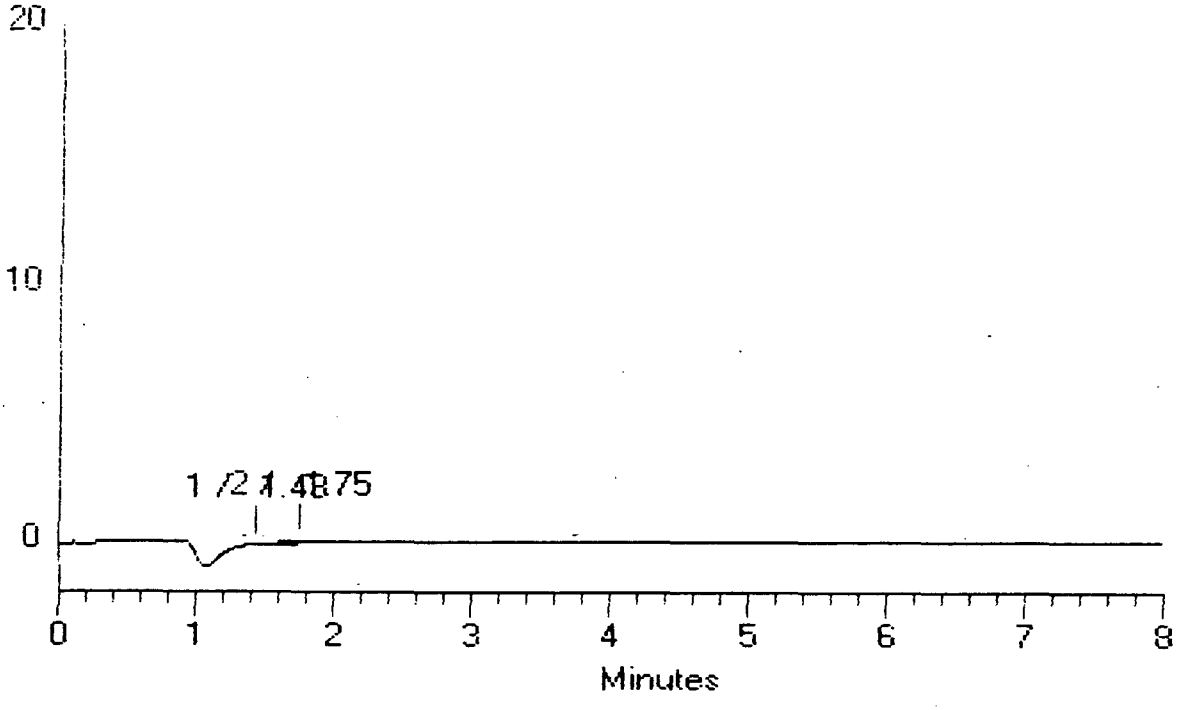
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	10.632	84028	689103	1	0.00
2	1.77	CHLORIDE	4.798	26330	213181	2	0.00
3	2.08	NITRITE	5.021	15352	134200	2	0.00
4	3.07	BROMIDE	4.772	8895	83599	2	0.00
5	3.45	NITRATE	4.812	9524	111103	2	0.00
6	5.27	PHOSPHATE	4.935	2959	55954	1	0.00
7	6.97	SULFATE	4.814	6650	137830	1	0.00
		Totals	39.784	153738	1424970		



Sample Name: CCB Date: Sat Nov 14 22:36:00 1998
Data File : C:\DATA\111498\RAWDATA1.D45
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 45 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
2	1.75	CHLORIDE	0.144	102	1583	1	0.00
		Totals	0.144	102	1583		

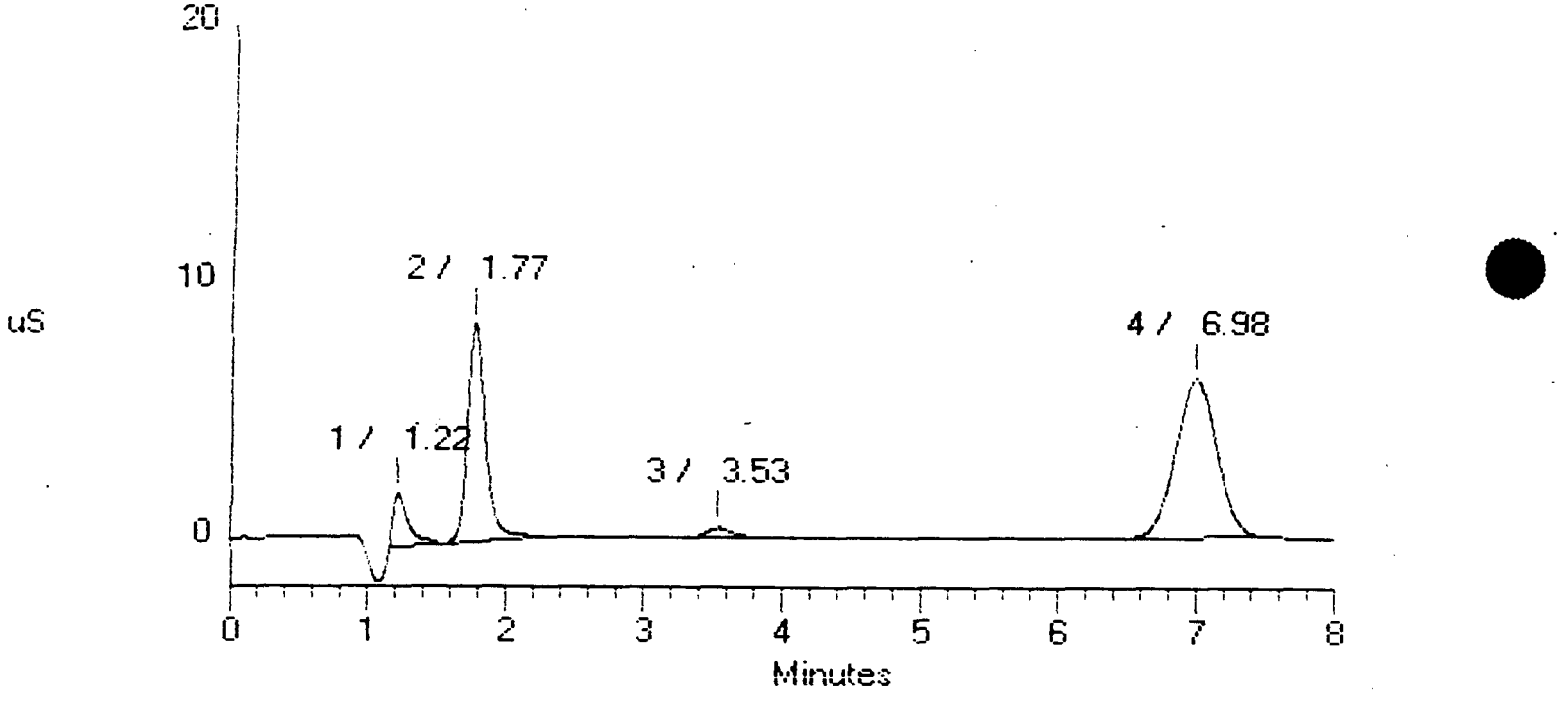


Sample Name: 9810L067-0018 R Date: Sat Nov 14 22:45:37 1998
Data File : C:\DATA\111498\RAWDATA1.D46
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 46 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.197	2002	15540	1	0.00
2	1.77	CHLORIDE	1.785	8458	76192	1	0.00
3	3.53	NITRATE	0.331	330	3676	1	0.00
4	6.98	SULFATE	4.451	6131	127098	1	0.00
		Totals	6.765	16922	222507		

File: C:\DATA\111498\RAWDATA1.D46 Sample: 9810L067-0018

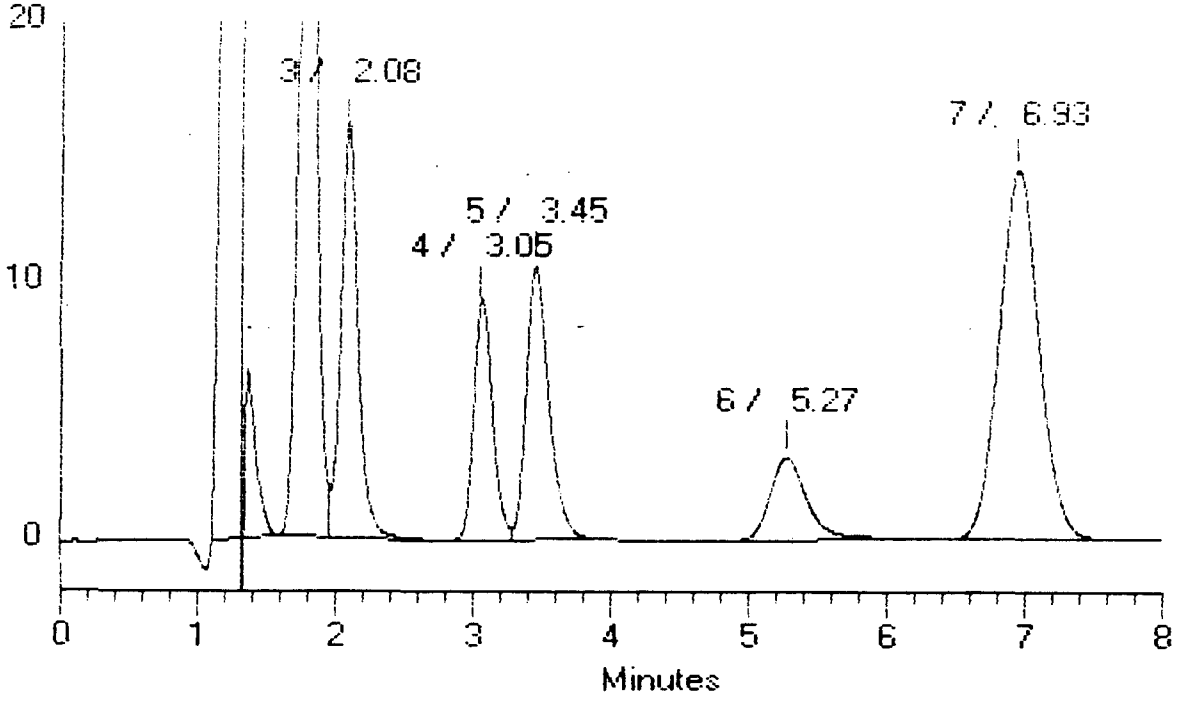


Sample Name: 9810L067-001 11-14-98
Data File : C:\DATA\111498\RAWDATA1.D47
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 47 Detector: CDM-1
Date: Sat Nov 14 22:55:09 1998

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	10.658	88075	690791	1	0.00
2	1.78	CHLORIDE	7.072	39474	316585	2	0.00
3	2.08	NITRITE	5.178	15814	138405	2	0.00
4	3.05	BROMIDE	5.057	9117	88762	2	0.00
5	3.45	NITRATE	5.238	10489	121320	2	0.00
6	5.27	PHOSPHATE	5.248	3176	59636	1	0.00
7	6.93	SULFATE	9.942	14159	289351	1	0.00
		Totals	48.392	180304	1704850		

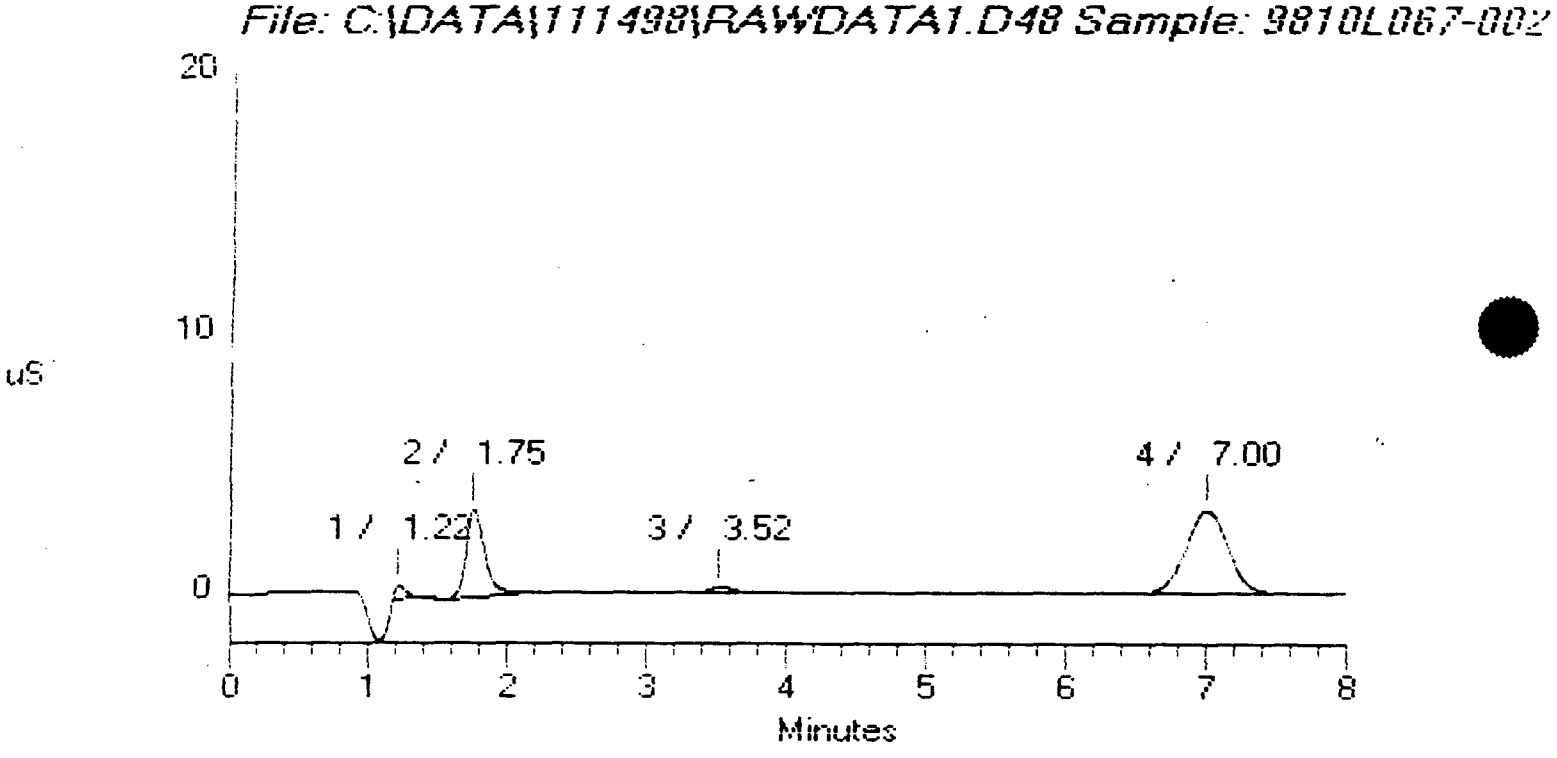
File: C:\DATA\111498\RAWDATA1.D47 Sample: 9810L067-001T



Sample Name: 9810L067-002 Date: Sat Nov 14 23:04:44 1998
Data File : C:\DATA\111498\RAWDATA1.D48
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 48 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

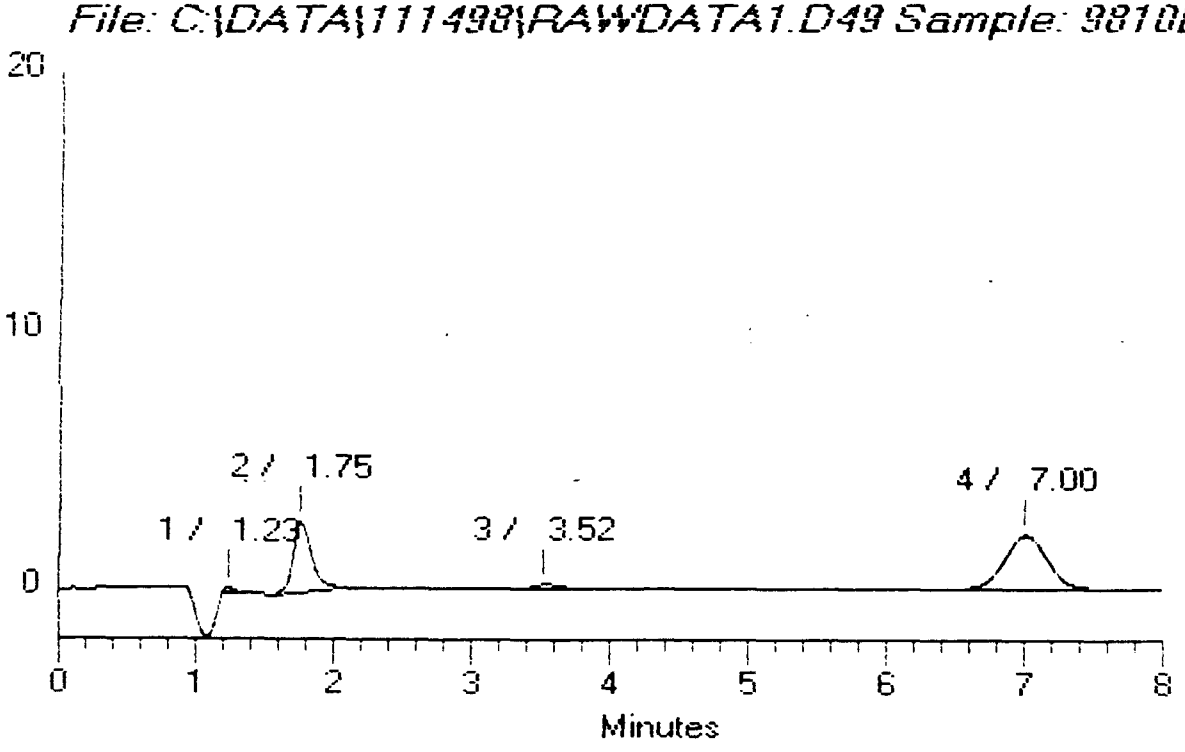
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	-0.001	518	2740	1	0.00
2	1.75	CHLORIDE	0.826	3352	32601	1	0.00
3	3.52	NITRATE	0.284	228	2553	1	0.00
4	7.00	SULFATE	2.383	3157	65996	1	0.00
		Totals	3.493	7256	103890		



Sample Name: 9810L067-003 Date: Sat Nov 14 23:14:14 1998
Data File : C:\DATA\111498\RAWDATA1.D49
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 49 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

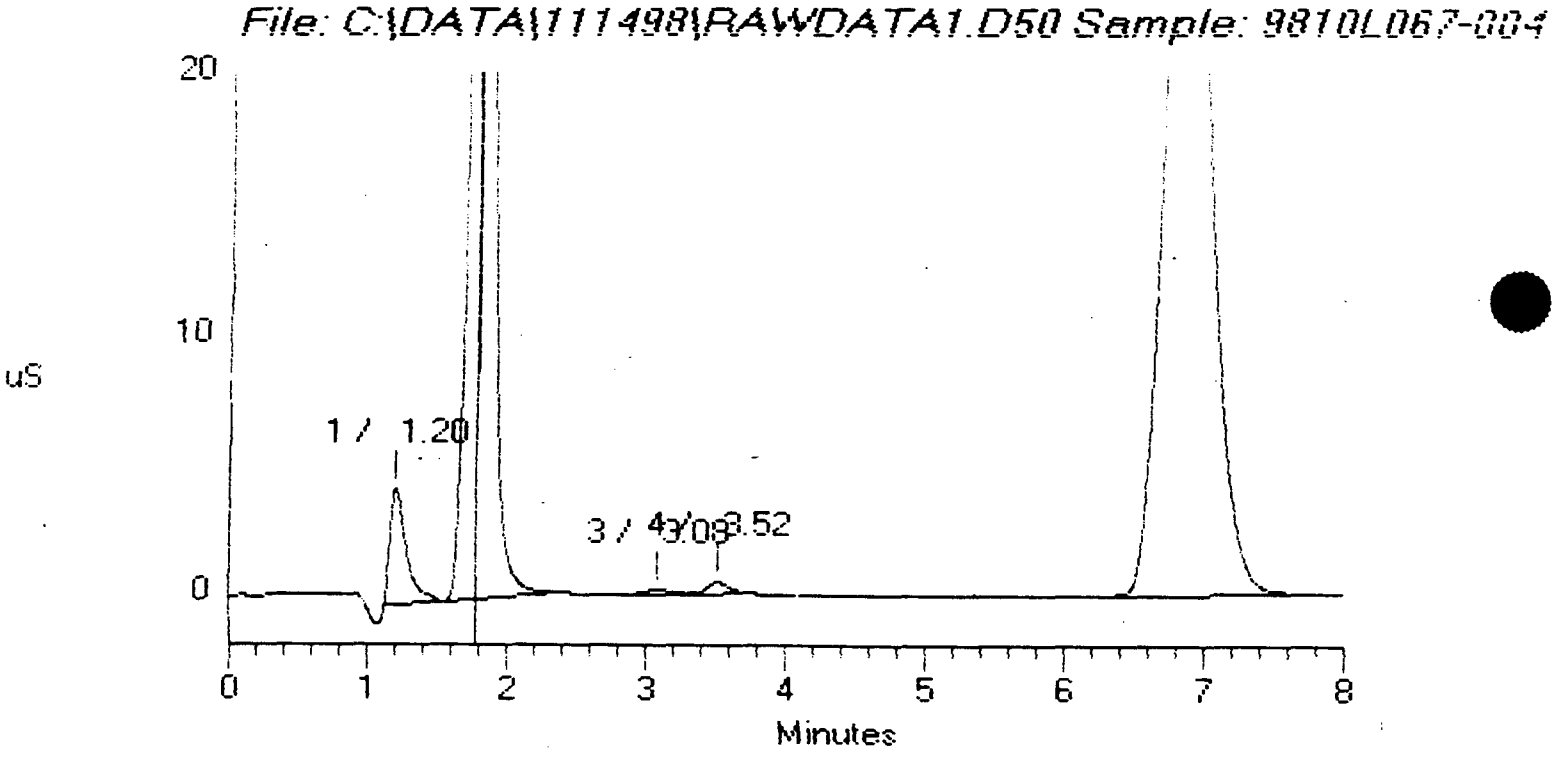
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.23	FLUORIDE	-0.026	269	1152	1	0.00
2	1.75	CHLORIDE	0.684	2728	26122	1	0.00
3	3.52	NITRATE	0.241	140	1516	1	0.00
4	7.00	SULFATE	1.641	2085	44062	1	0.00
		Totals	2.541	5222	72852		



Sample Name: 9810L067-004 Date: Sat Nov 14 23:23:45 1998
Data File : C:\DATA\111498\RAWDATA1.D50
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 50 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.521	4417	36406	1	0.00
2	1.77	CHLORIDE	14.812	73876	668494	1	0.00
3	3.08	BROMIDE	0.257	170	1648	1	0.00
4	3.52	NITRATE	0.375	446	4724	1	0.00
5	6.82	SULFATE	25.889	36062	760553	1	0.00
		Totals	41.854	114972	1471825		

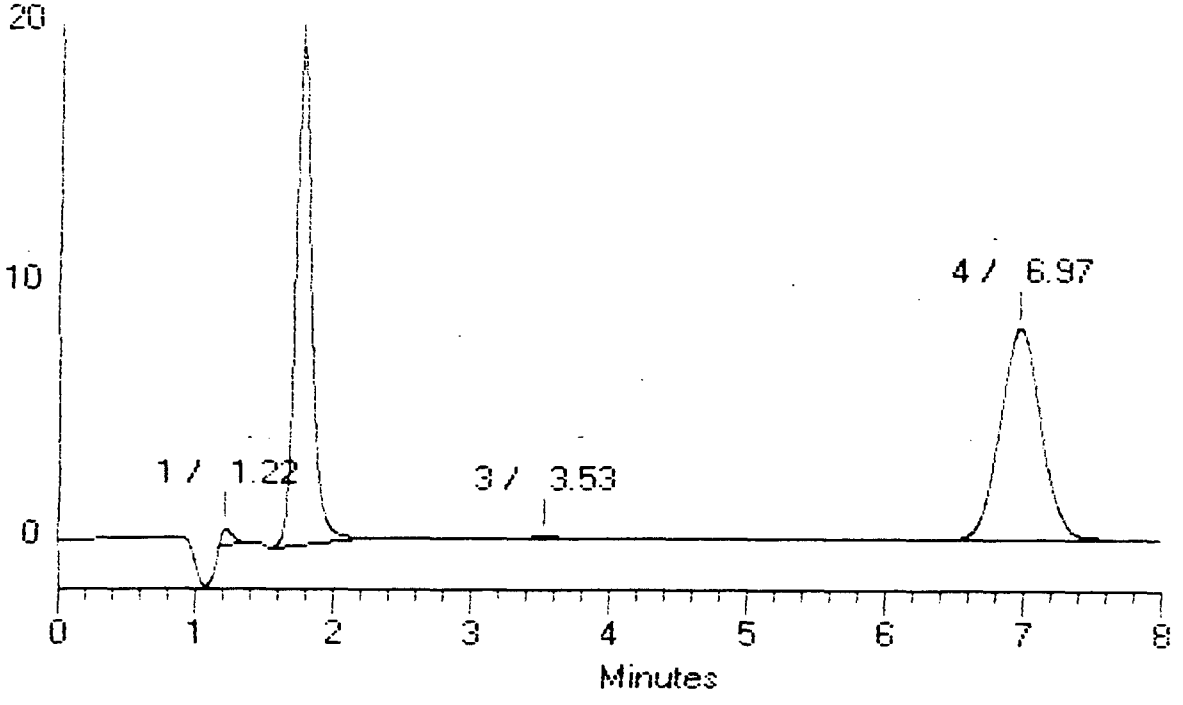


Sample Name: 9810L067-004 Date: Sat Nov 14 23:33:17 1998
Data File : C:\DATA\111498\RAWDATA1.D51
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 51 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	4	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.035	617	3371	1	0.00
2	1.75	CHLORIDE	14.444	18715	159210	1	0.00
3	3.53	NITRATE	0.866	106	928	1	0.00
4	6.97	SULFATE	23.290	8157	167616	1	0.00
		Totals	38.636	27595	331125		

File: C:\DATA\111498\RAWDATA1.D51 Sample: 9810L067-004

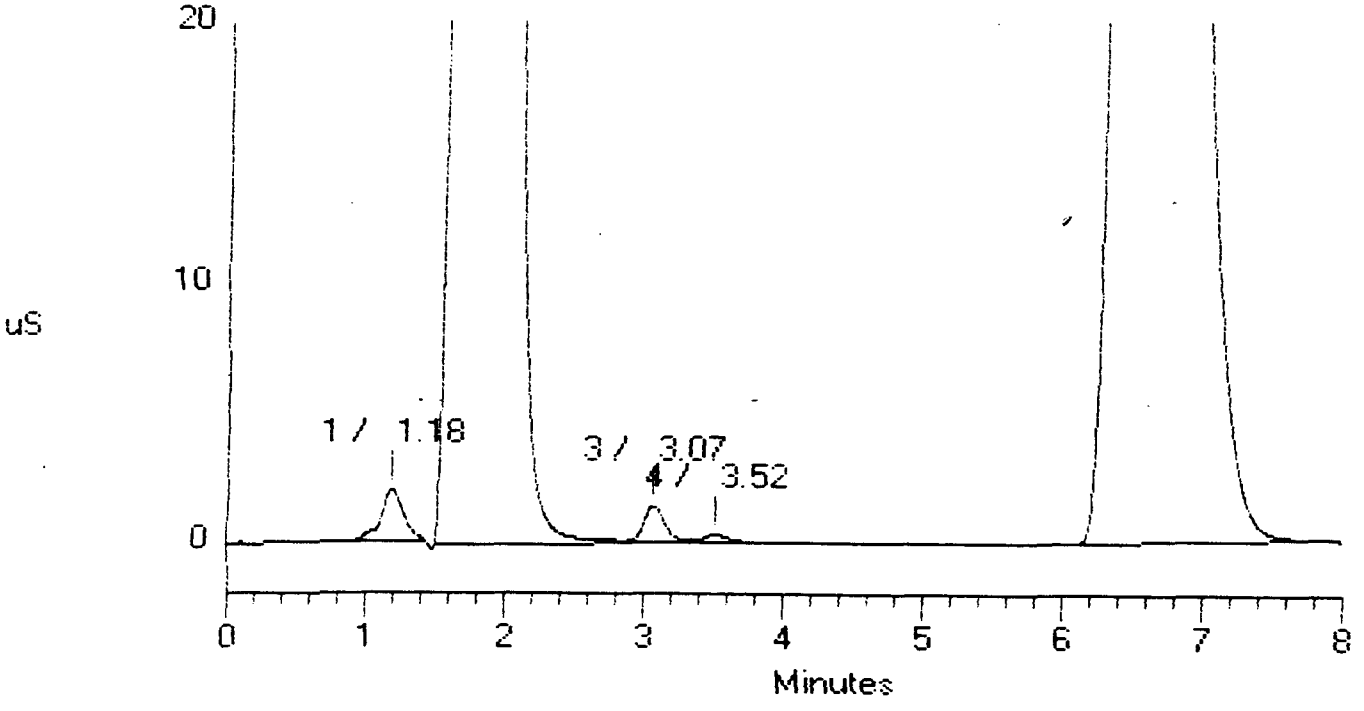


Sample Name: 9810L067-005 Date: Sat Nov 14 23:42:49 1998
Data File : C:\DATA\111498\RAWDATA1.D52
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 52 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.18	FLUORIDE	0.302	1967	22281	1	0.00
2	1.95	NITRITE	219.507	323213	5892912	2	0.00
3	3.07	BROMIDE	1.001	1415	15142	2	0.00
4	3.52	NITRATE	0.328	307	3598	2	0.00
5	6.52	SULFATE	106.426	110070	3140350	1	0.00
		Totals	327.564	436973	9074283		

File: C:\DATA\111498\RAWDATA1.D52 Sample: 9810L067-005

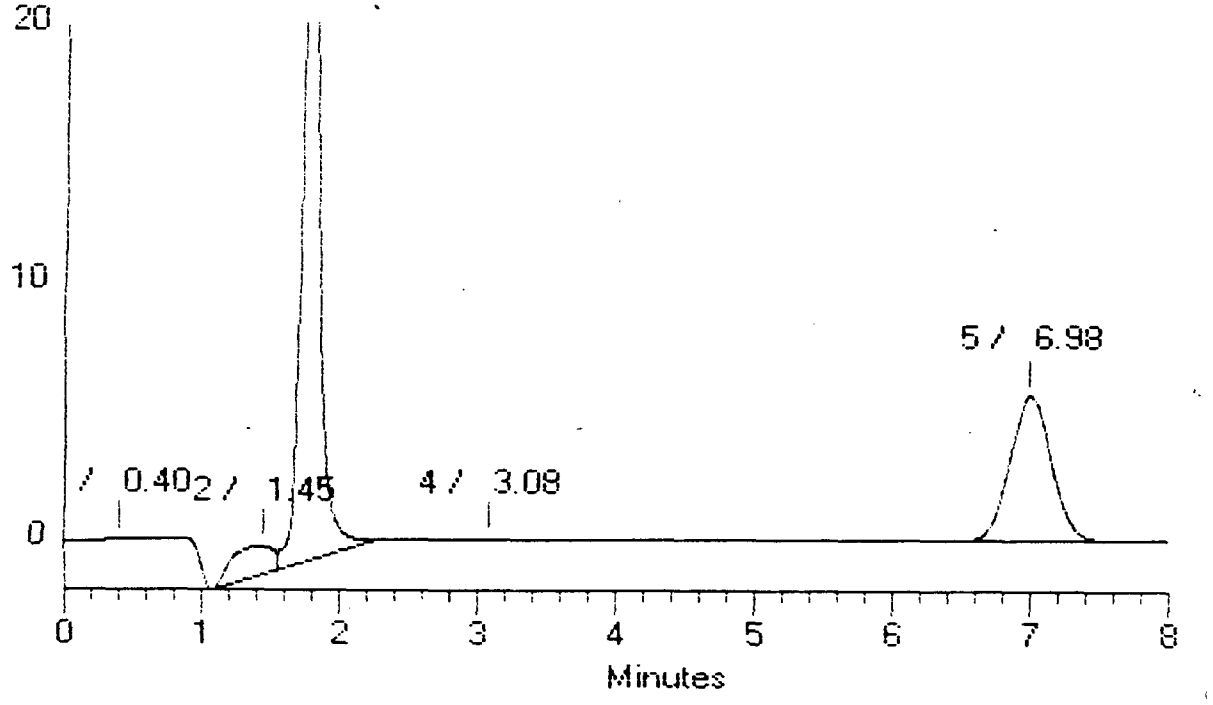


Sample Name: 9810L067-005 Date: Sat Nov 14 23:52:21 1998
Data File : C:\DATA\111498\RAWDATA1.D53
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 53 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	20	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
2	1.45		0.000	1139	25823	2	
3	1.77	CHLORIDE	115.080	30622	256640	2	0.00
4	3.08	BROMIDE	3.991	62	603	1	0.00
5	6.98	SULFATE	81.499	5563	115978	1	0.00
		Totals	200.570	37386	399044		

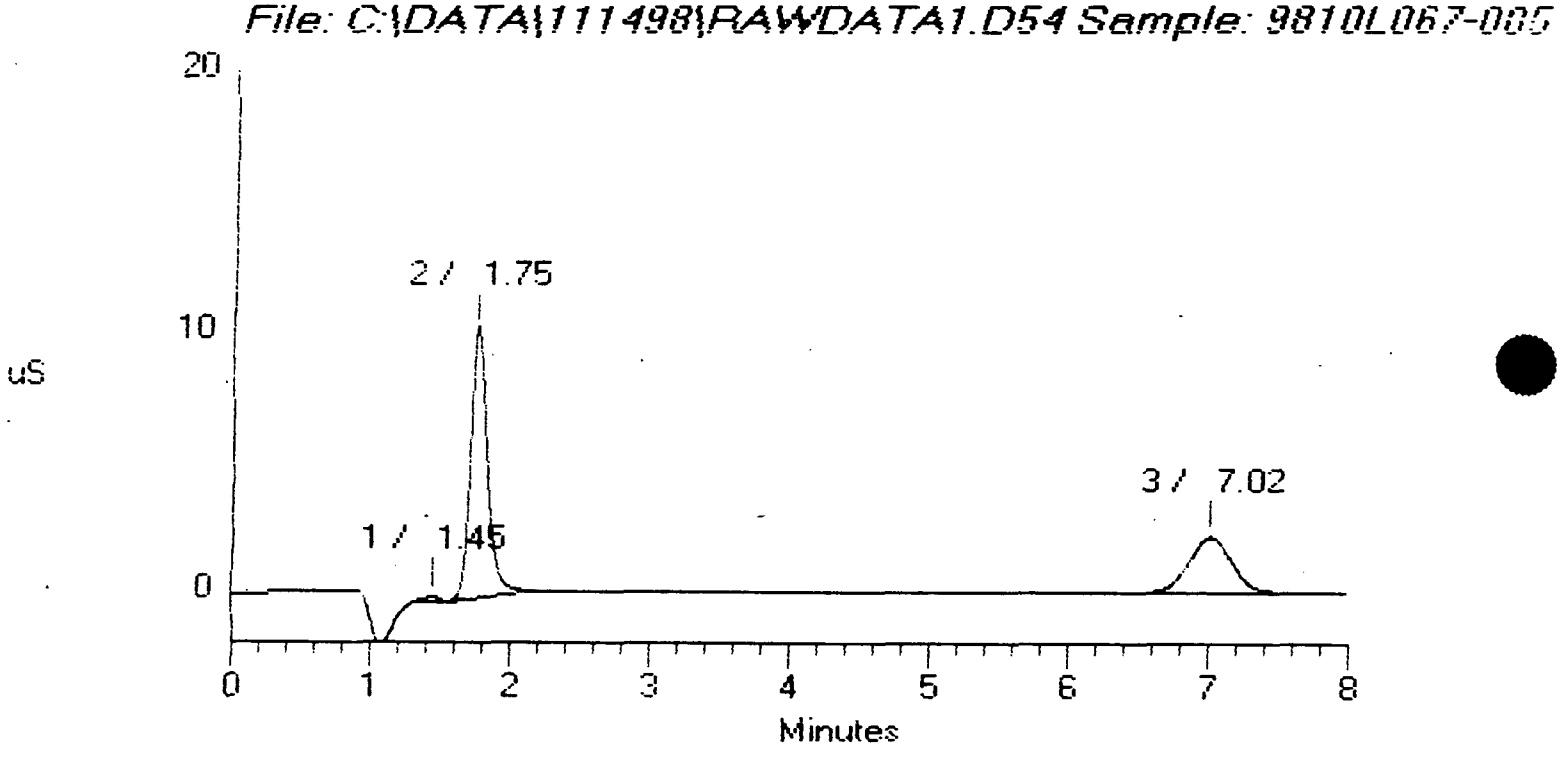
File: C:\DATA\111498\RAWDATA1.D53 Sample: 9810L067-005



Sample Name: 9810L067-005 Date: Sun Nov 15 00:01:53 1998
Data File : C:\DATA\111498\RAWDATA1.D54
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 54 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	50	2400	5Hz	0.00	8.00	600

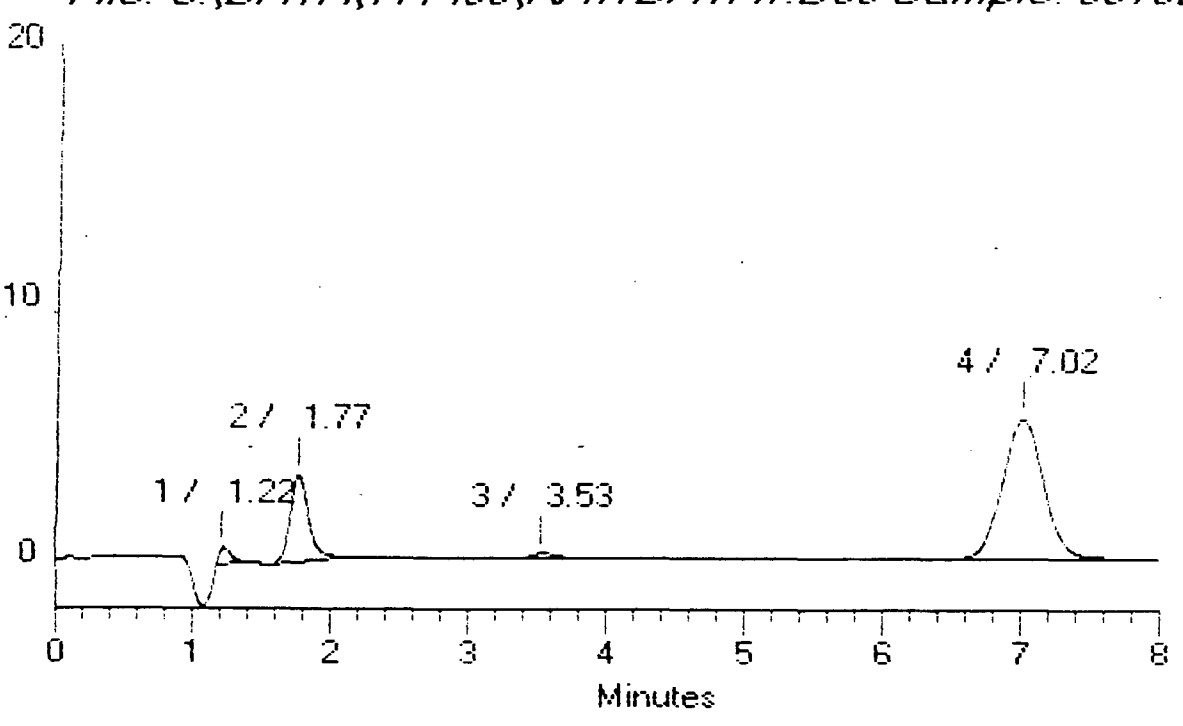
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	176	1431	1	
2	1.75	CHLORIDE	101.071	10258	86933	1	0.00
3	7.02	SULFATE	82.487	2100	44316	1	0.00
		Totals	183.558	12534	132680		



Sample Name: 9810L067-006 Date: Sun Nov 15 00:11:30 1998
Data File : C:\DATA\111498\RAWDATA1.D55
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 55 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

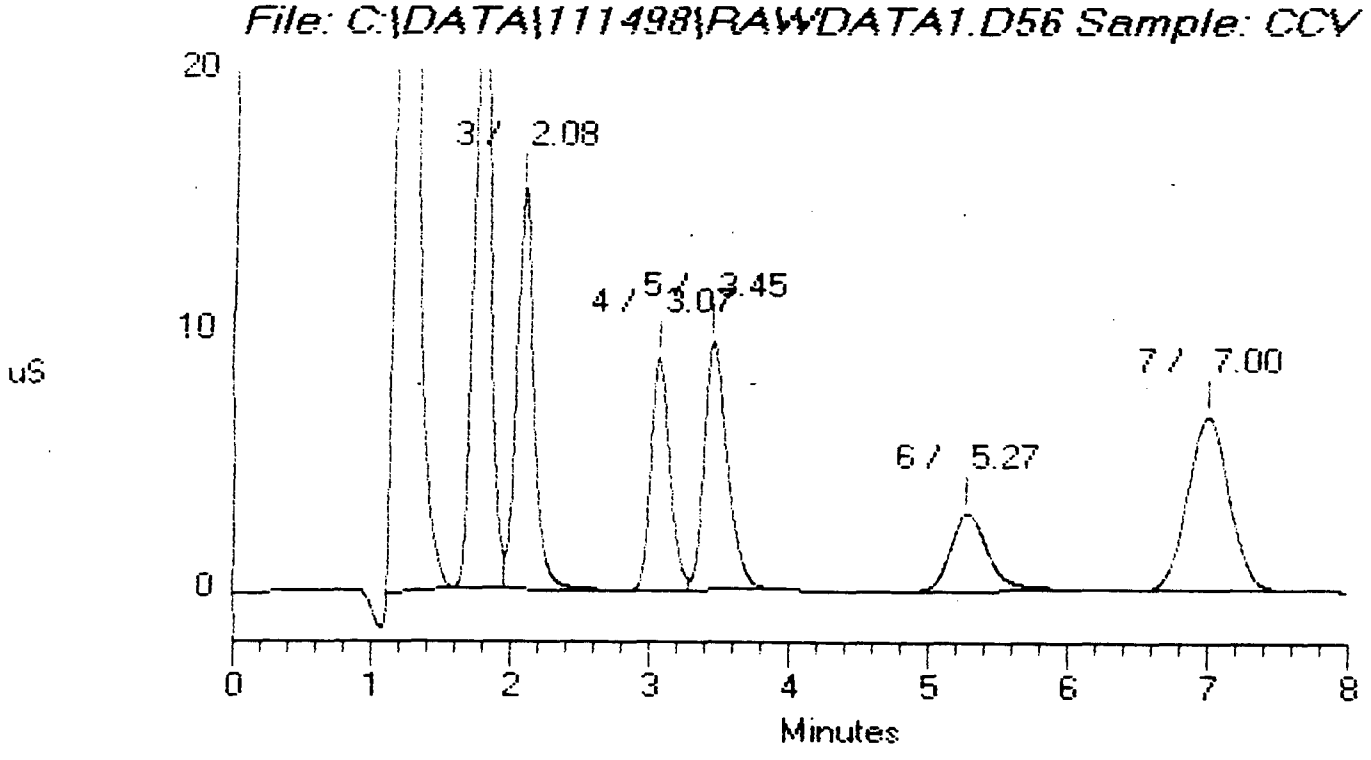
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.008	605	3343	1	0.00
2	1.77	CHLORIDE	0.819	3438	32272	1	0.00
3	3.53	NITRATE	0.244	157	1591	1	0.00
4	7.02	SULFATE	3.938	5391	111920	1	0.00
		Totals	5.009	9592	149126		



Sample Name: CCV Date: Sun Nov 15 00:21:02 1998
Data File : C:\DATA\111498\RAWDATA1.D56
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 56 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

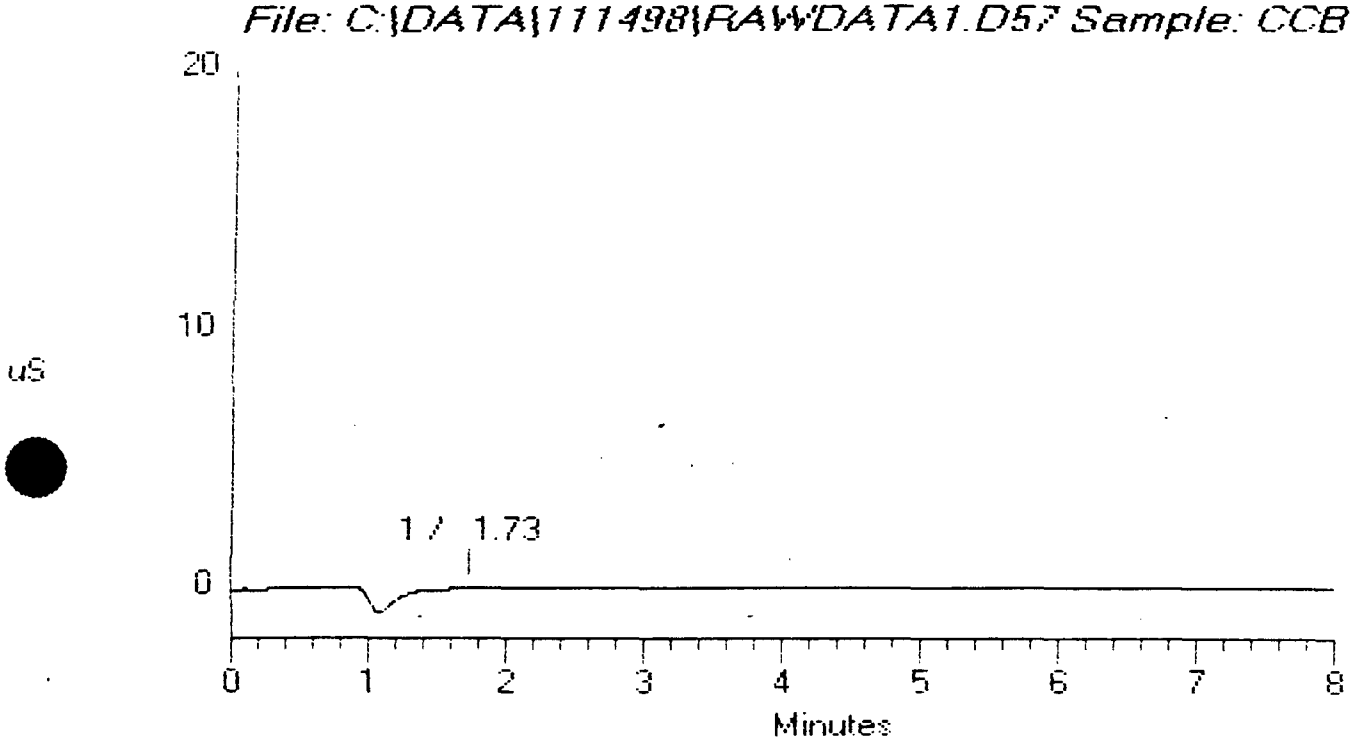
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	10.456	85200	677773	1	0.00
2	1.77	CHLORIDE	4.790	26130	212823	2	0.00
3	2.08	NITRITE	4.950	15252	132307	2	0.00
4	3.07	BROMIDE	4.854	8927	85090	2	0.00
5	3.45	NITRATE	4.803	9510	110894	2	0.00
6	5.27	PHOSPHATE	4.993	2980	56638	1	0.00
7	7.00	SULFATE	4.827	6680	138188	1	0.00
		Totals	39.674	154678	1413713		



Sample Name: CCB Date: Sun Nov 15 00:30:36 1998
Data File : C:\DATA\111498\RAWDATA1.D57
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 57 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

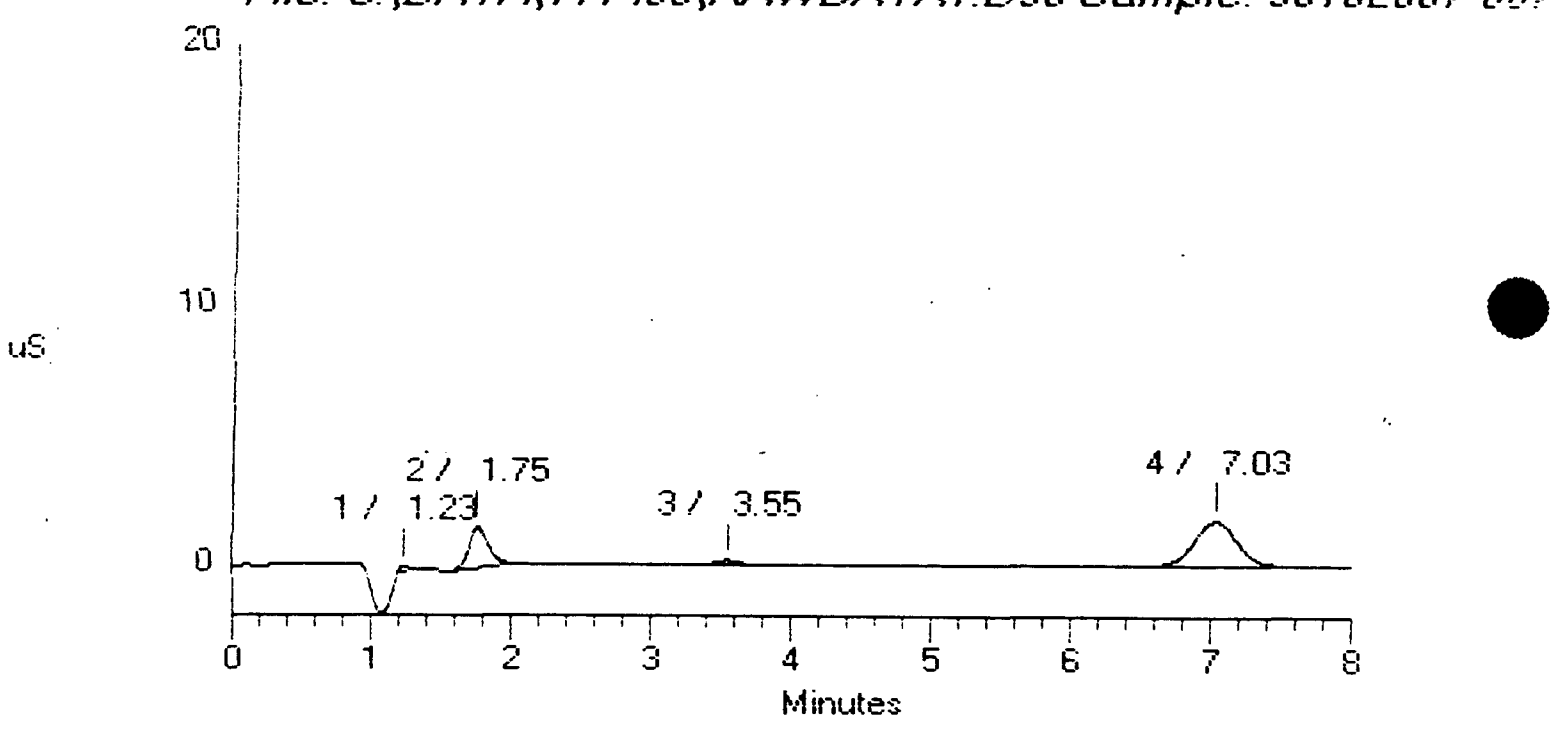
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
Totals			0.000	0	0		



Sample Name: 9810L067-007 Date: Sun Nov 15 00:40:13 1998
Data File : C:\DATA\111498\RAWDATA1.D58
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 58 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

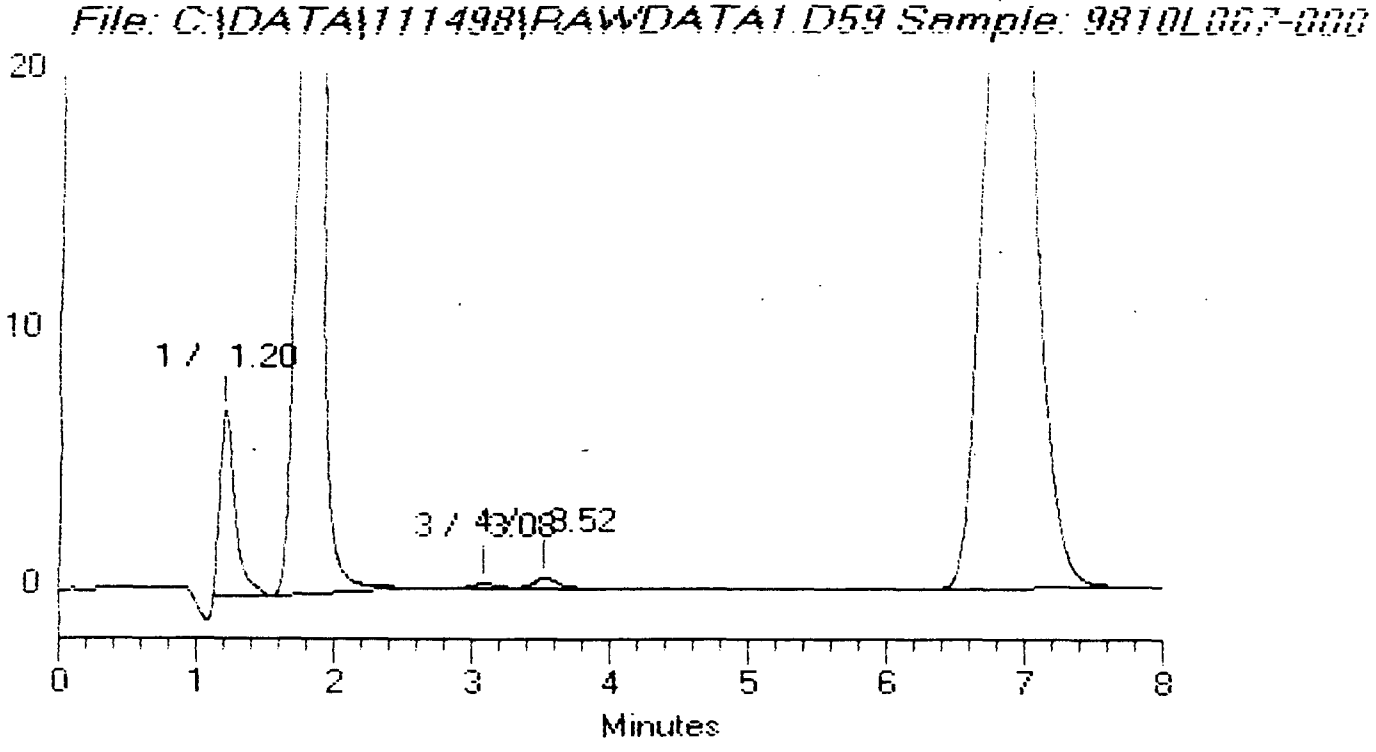
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.23	FLUORIDE	-0.032	173	703	1	0.00
2	1.75	CHLORIDE	0.455	1585	15721	1	0.00
3	3.55	NITRATE	0.235	142	1384	1	0.00
4	7.03	SULFATE	1.361	1710	35788	1	0.00
		Totals	2.019	3610	53596		



Sample Name: 9810L067-008 Date: Sun Nov 15 00:49:44 1998
Data File : C:\DATA\111498\RAWDATA1.D59
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 59 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.820	7118	55738	1	0.00
2	1.80	CHLORIDE	15.516	80957	700481	1	0.00
3	3.08	BROMIDE	0.259	170	1680	2	0.00
4	3.52	NITRATE	0.357	390	4302	2	0.00
5	6.82	SULFATE	28.817	39477	847089	1	0.00
		Totals	45.769	128113	1609290		

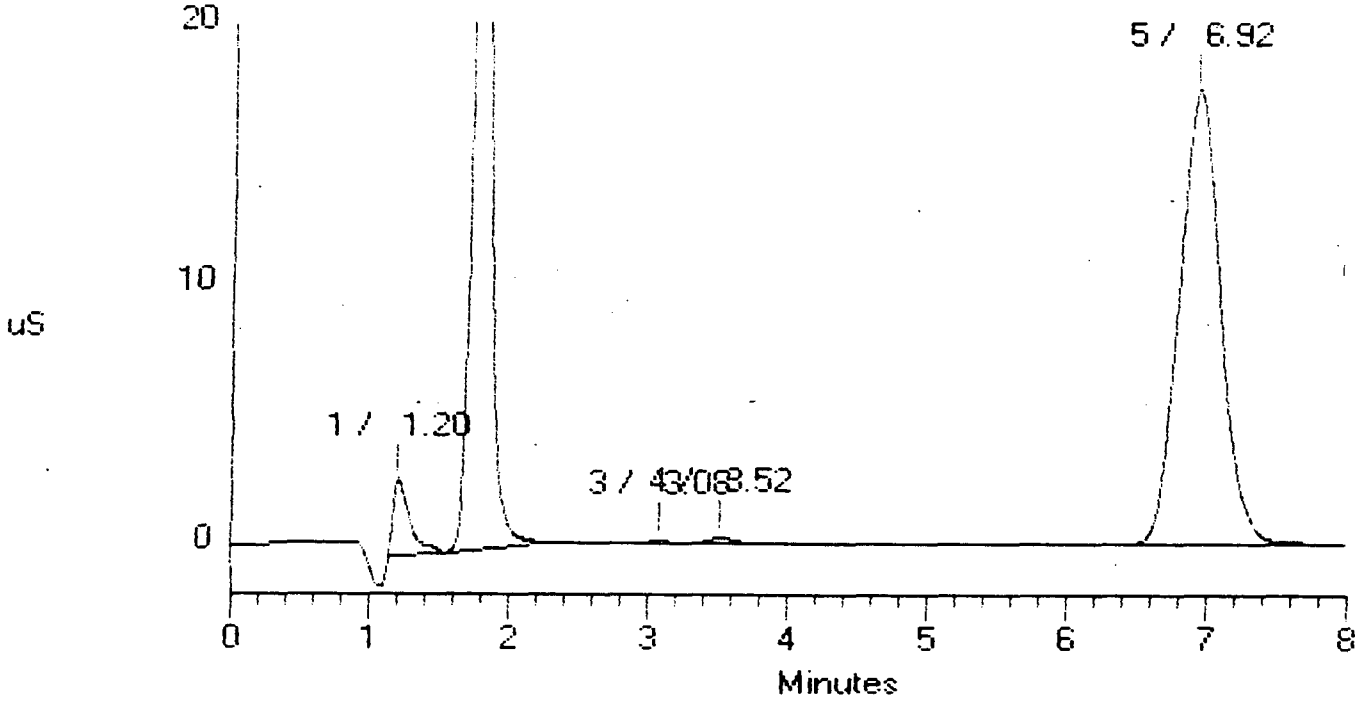


Sample Name: 9810L067-008 Date: Sun Nov 15 00:59:16 1998
Data File : C:\DATA\111498\RAWDATA1.D60
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 60 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	2	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.653	2837	23873	1	0.00
2	1.77	CHLORIDE	14.386	38600	322060	1	0.00
3	3.08	BROMIDE	0.409	77	695	1	0.00
4	3.52	NITRATE	0.536	212	2168	1	0.00
5	6.92	SULFATE	24.310	17303	354733	1	0.00
		Totals	40.294	59029	703529		

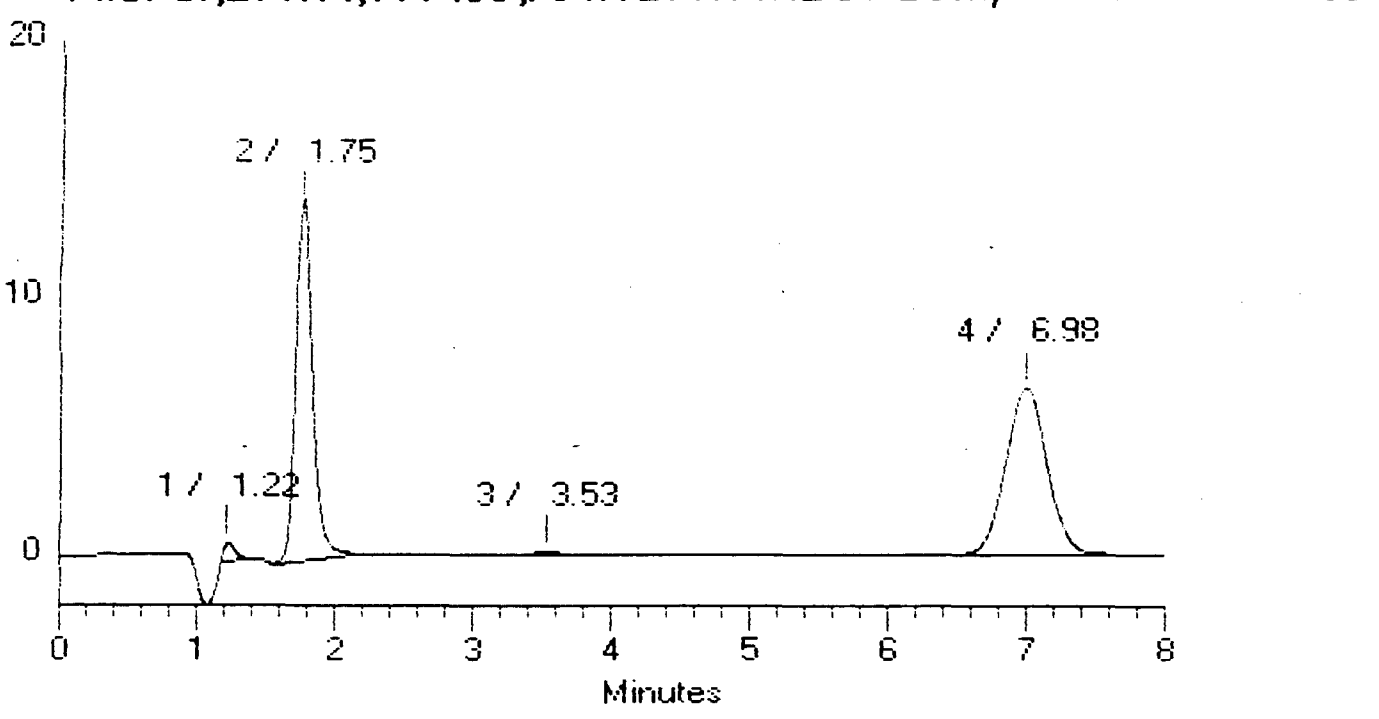
File: C:\DATA\111498\RAWDATA1.D60 Sample: 9810L067-008



Sample Name: 9810L067-008 Date: Sun Nov 15 01:08:48 1998
Data File : C:\DATA\111498\RAWDATA1.D61
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 61 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	5	2400	5Hz	0.00	8.00	600

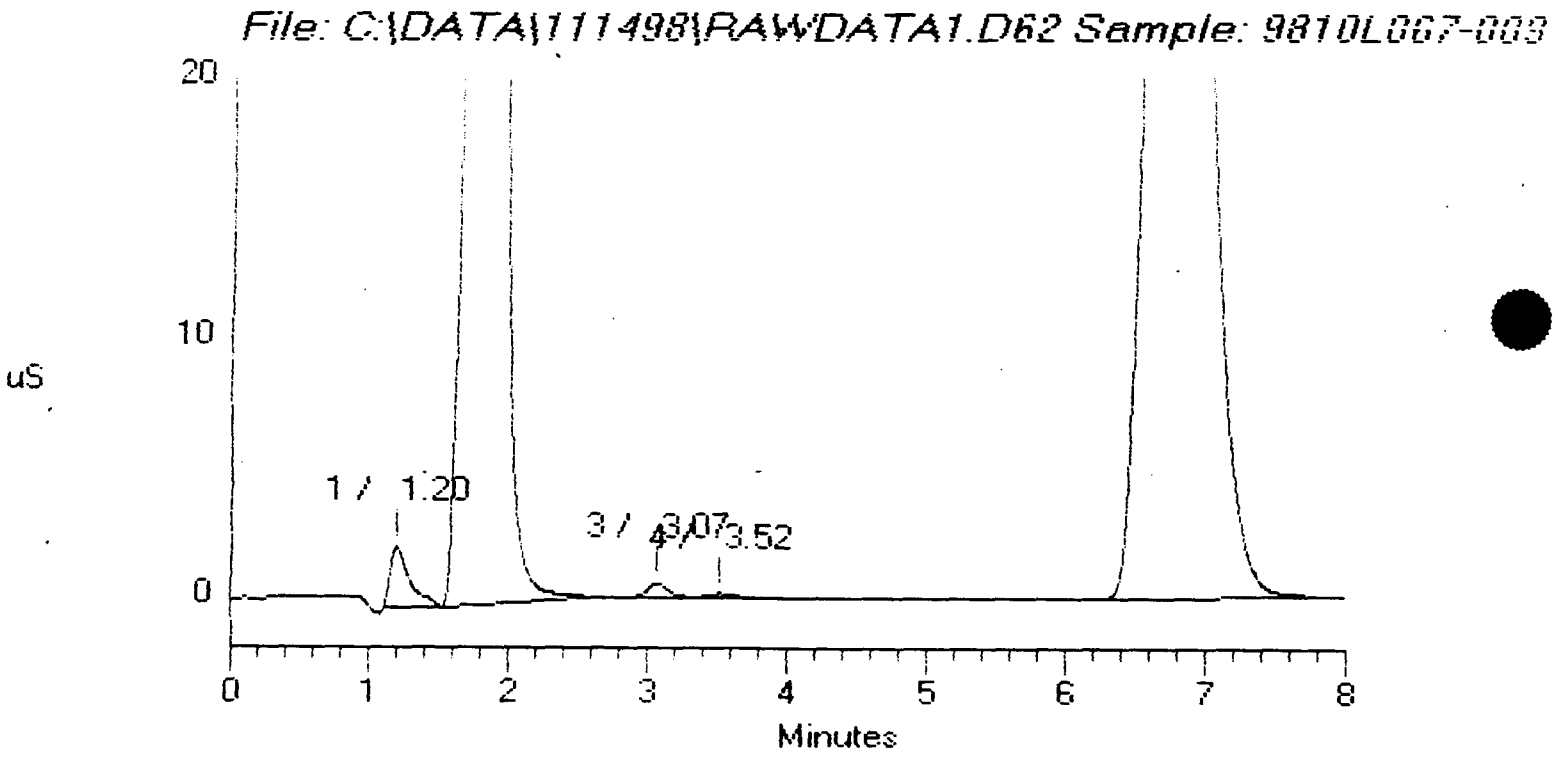
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.091	695	3970	1	0.00
2	1.75	CHLORIDE	13.642	13695	119075	1	0.00
3	3.53	NITRATE	1.038	81	717	1	0.00
4	6.98	SULFATE	23.283	6421	133166	1	0.00
		Totals	38.054	20893	256929		



Sample Name: 9810L067-009 Date: Sun Nov 15 01:18:19 1998
Data File : C:\DATA\111498\RAWDATA1.D62
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 62 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.319	2377	23378	1	0.00
2	1.85	CHLORIDE	46.624	185397	2114857	1	0.00
3	3.07	BROMIDE	0.452	520	5180	2	0.00
4	3.52	NITRATE	0.234	130	1354	2	0.00
5	6.70	SULFATE	54.252	66689	1598654	1	0.00
		Totals	101.881	255114	3743423		

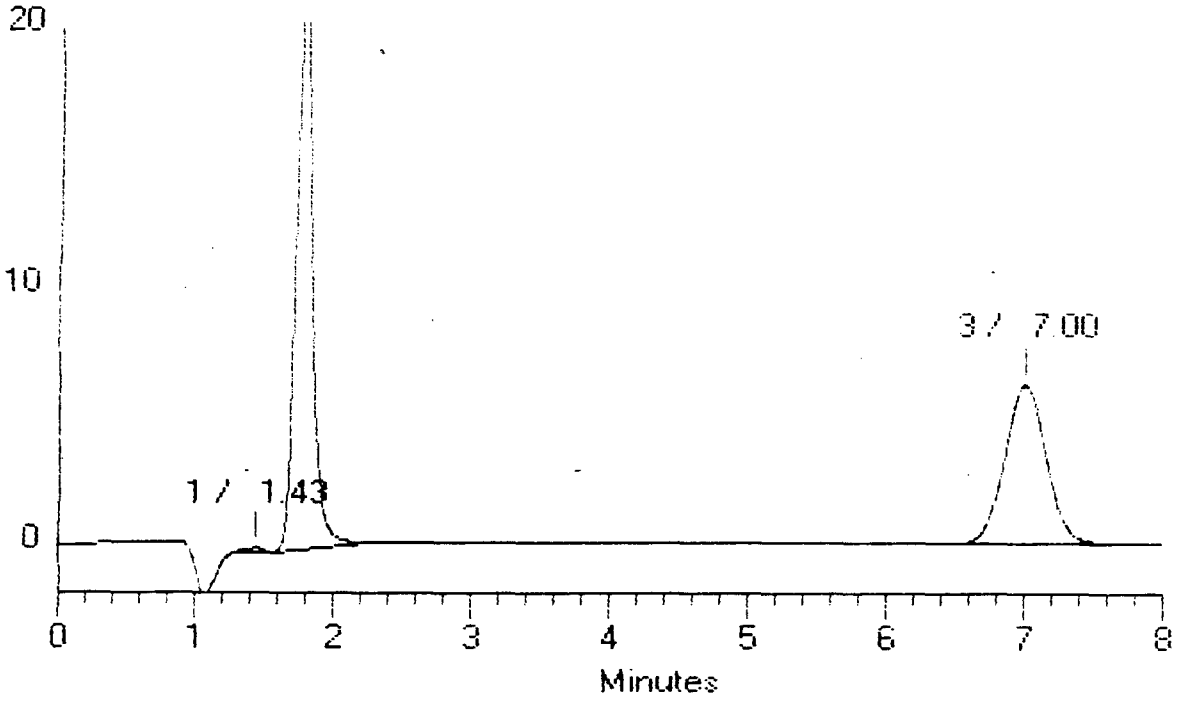


Sample Name: 9810L067-009 Date: Sun Nov 15 01:27:51 1998
Data File : C:\DATA\111498\RAWDATA1.D63
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 63 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	10	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.43		0.000	180	1776	1	
2	1.75	CHLORIDE	40.390	21058	178667	1	0.00
3	7.00	SULFATE	43.986	6087	125542	1	0.00
		Totals	84.376	27326	305985		

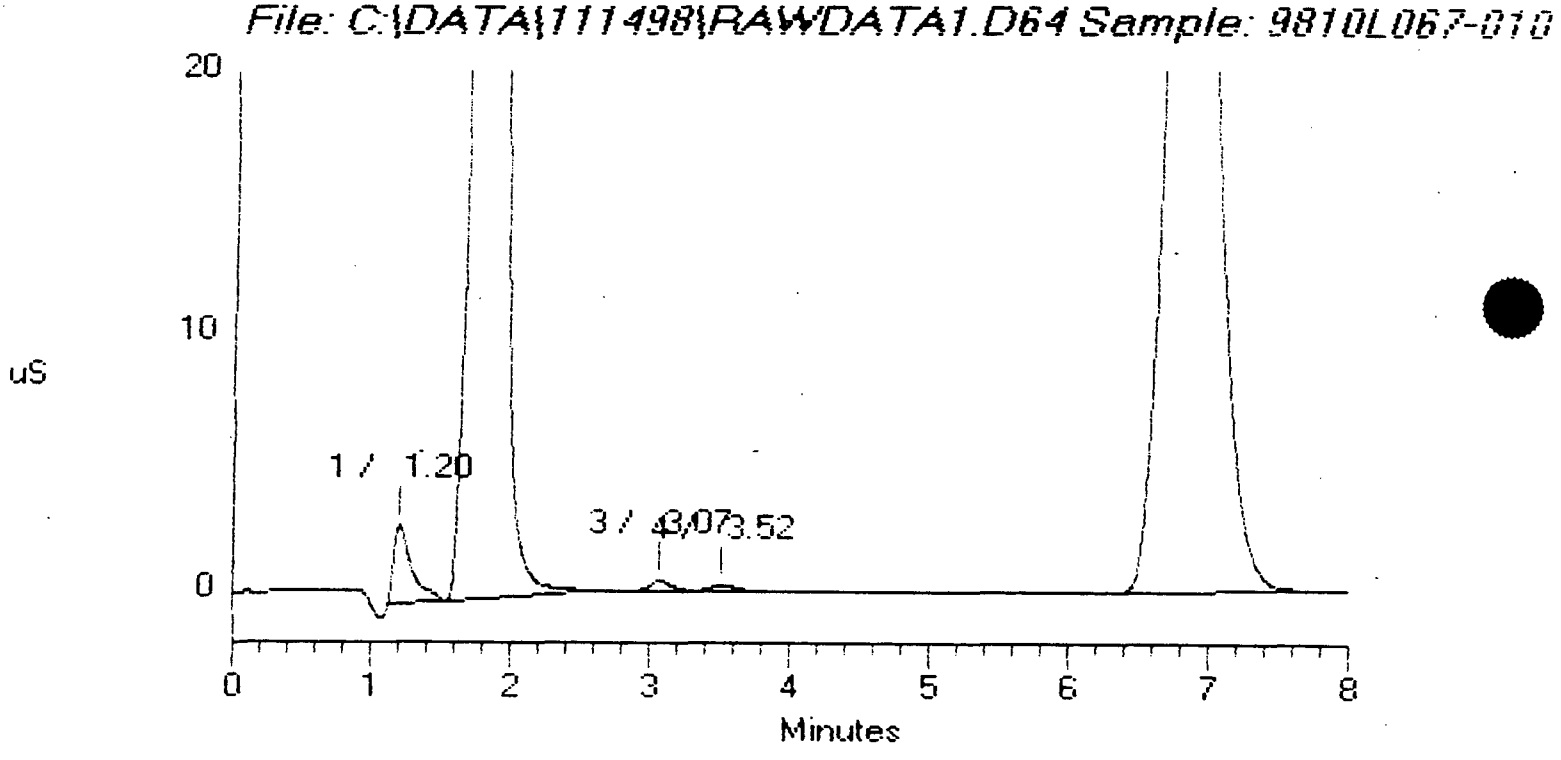
File: C:\DATA\111498\RAWDATA1.D63 Sample: 9810L067-009



Sample Name: 9810L067-010 Date: Sun Nov 15 01:37:22 1998
Data File : C:\DATA\111498\RAWDATA1.D64
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 64 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.20	FLUORIDE	0.376	2951	27085	1	0.00
2	1.83	CHLORIDE	34.458	153404	1561726	1	0.00
3	3.07	BROMIDE	0.375	390	3782	2	0.00
4	3.52	NITRATE	0.275	220	2332	2	0.00
5	6.80	SULFATE	33.276	44784	978823	1	0.00
		Totals	68.760	201748	2573748		

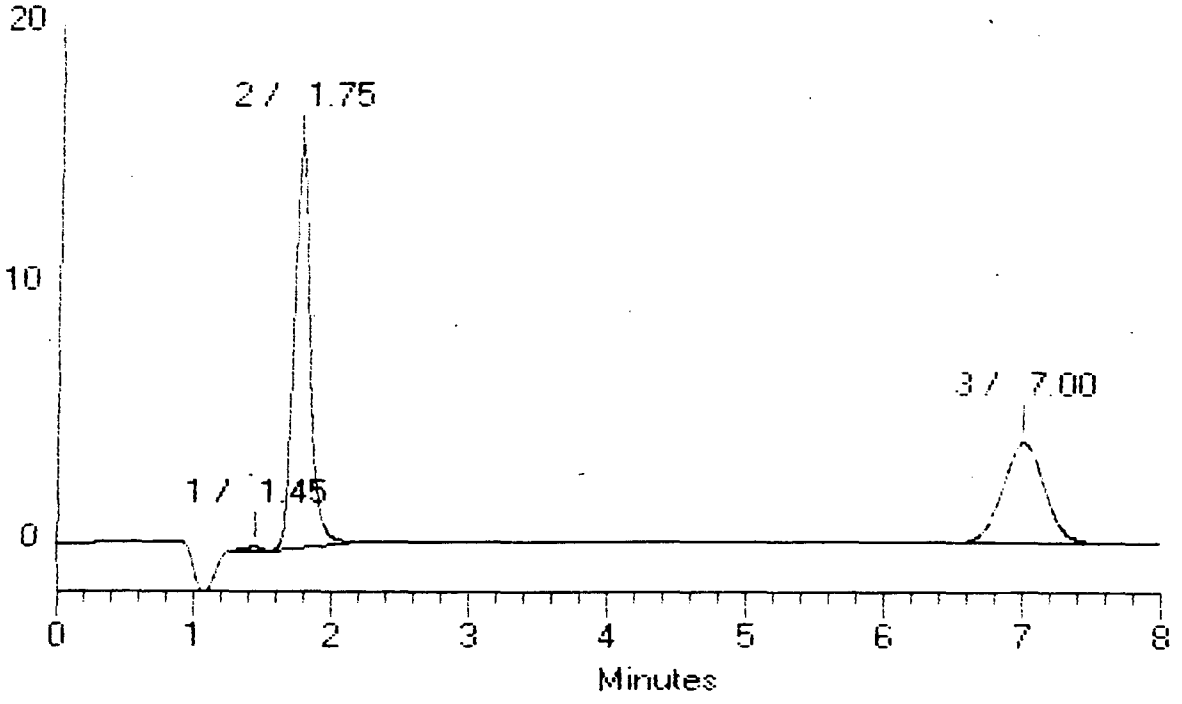


Sample Name: 9810L067-010 Date: Sun Nov 15 01:46:54 1998
Data File : C:\DATA\111498\RAWDATA1.D65
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 65 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	10	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.45		0.000	170	1560	1	
2	1.75	CHLORIDE	29.560	15337	129425	1	0.00
3	7.00	SULFATE	28.194	3786	78877	1	0.00
		Totals	57.754	19293	209862		

File: C:\DATA\111498\RAWDATA1.D65 Sample: 9810L067-010

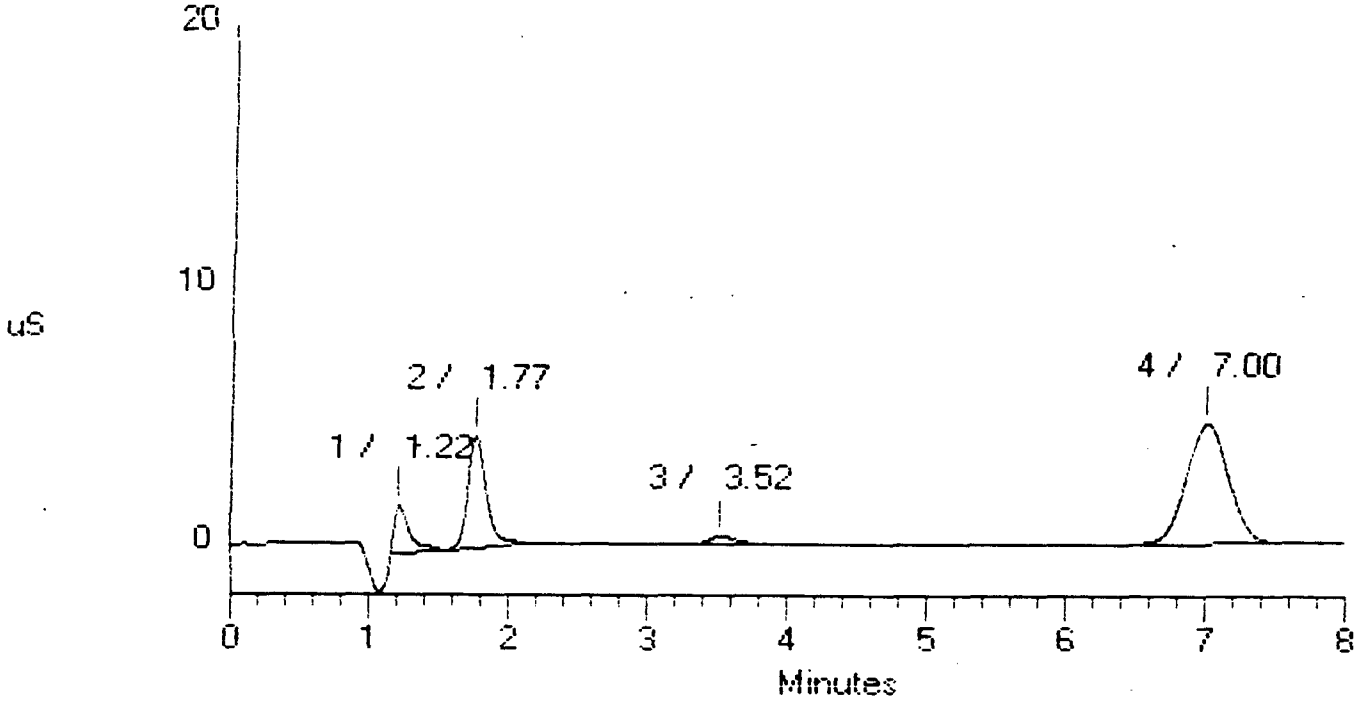


Sample Name: 9810L067-011 Date: Sun Nov 15 01:56:24 1998
Data File : C:\DATA\111498\RAWDATA1.D66
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 66 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	0.173	1803	13995	1	0.00
2	1.77	CHLORIDE	0.991	4357	40070	1	0.00
3	3.52	NITRATE	0.322	310	3446	1	0.00
4	7.00	SULFATE	3.410	4592	96342	1	0.00
		Totals	4.896	11062	153853		

File: C:\DATA\111498\RAWDATA1.D66 Sample: 9810L067-011

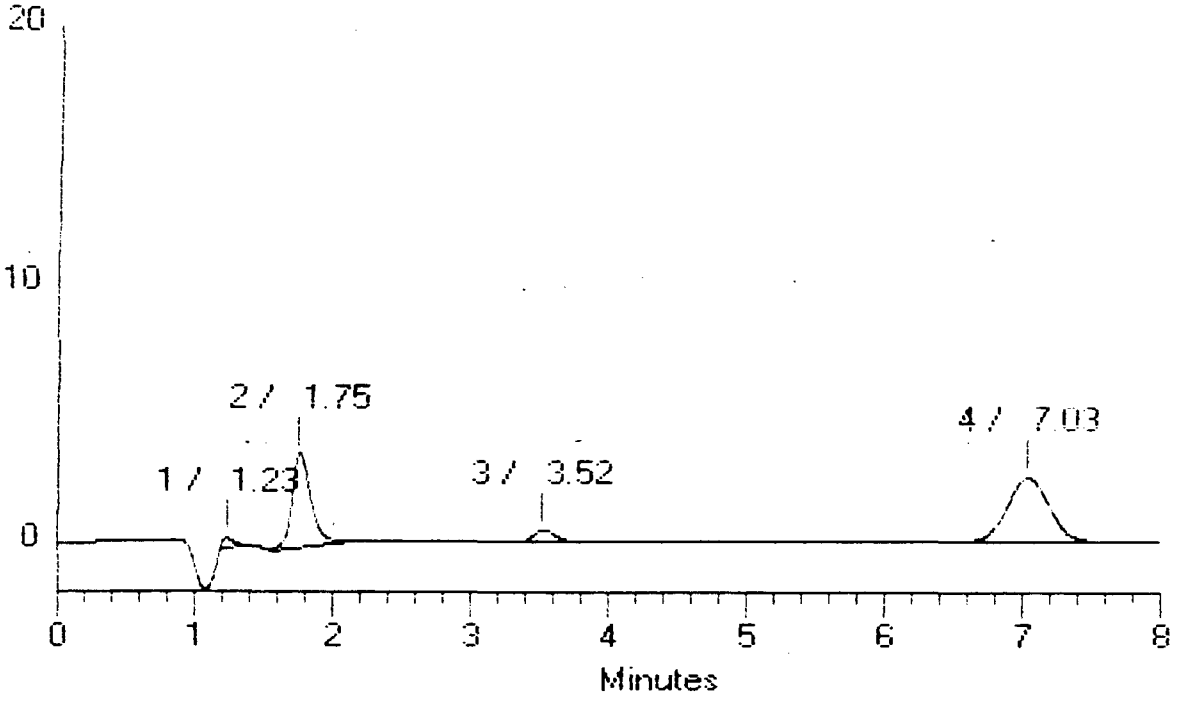


Sample Name: 9810L067-012 Date: Sun Nov 15 02:05:55 1998
Data File : C:\DATA\111498\RAWDATA1.D67
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 67 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.23	FLUORIDE	-0.015	331	1842	1	0.00
2	1.75	CHLORIDE	0.881	3585	35066	1	0.00
3	3.52	NITRATE	0.378	444	4790	1	0.00
4	7.03	SULFATE	1.900	2461	51721	1	0.00
		Totals	3.144	6821	93419		

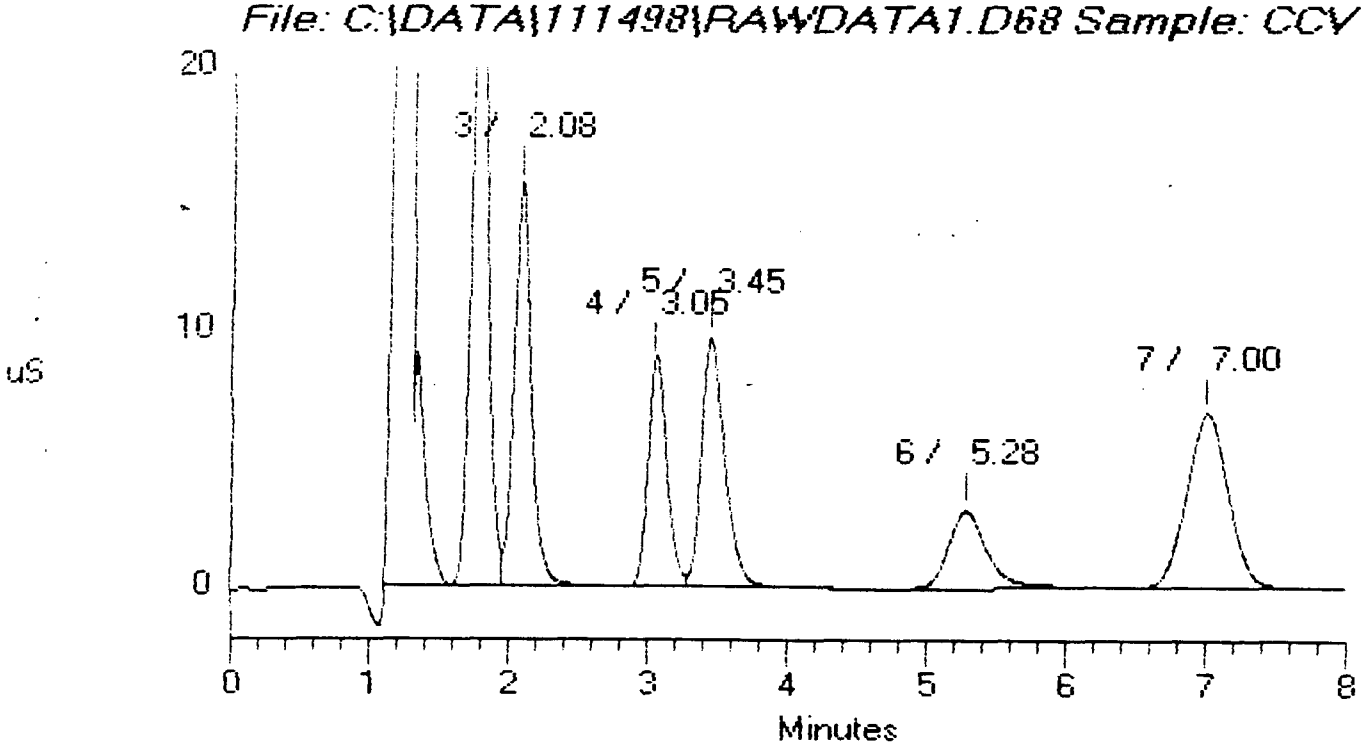
File: C:\DATA\111498\RAWDATA1.D67 Sample: 9810L067-012



Sample Name: CCV Date: Sun Nov 15 02:15:26 1998
Data File : C:\DATA\111498\RAWDATA1.D68
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 68 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

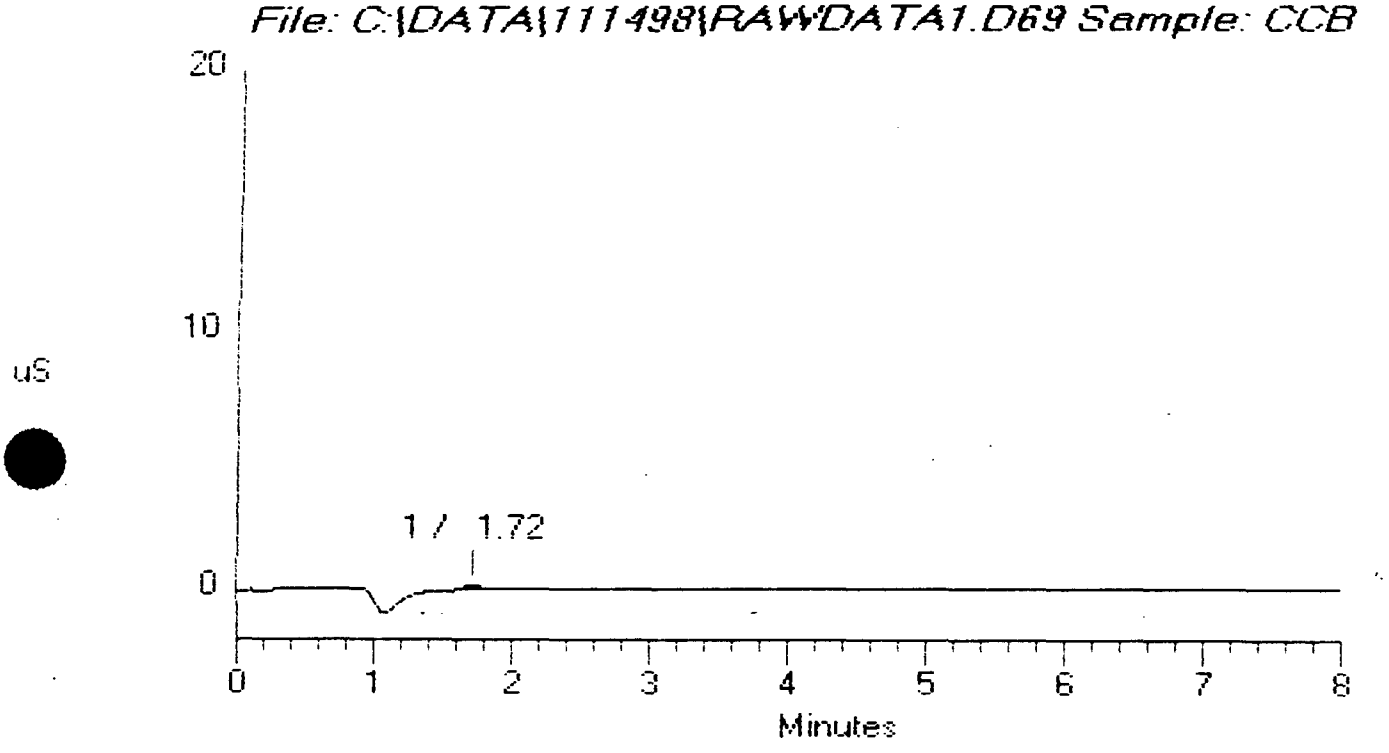
Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
1	1.22	FLUORIDE	10.071	80163	652875	1	0.00
2	1.77	CHLORIDE	4.788	26510	212740	2	0.00
3	2.08	NITRITE	5.024	15432	134291	2	0.00
4	3.05	BROMIDE	4.819	8738	84449	2	0.00
5	3.45	NITRATE	4.840	9645	111779	2	0.00
6	5.28	PHOSPHATE	4.952	3015	56154	1	0.00
7	7.00	SULFATE	4.862	6724	139244	1	0.00
		Totals	39.357	150228	1391532		



Sample Name: CCB Date: Sun Nov 15 02:25:08 1998
Data File : C:\DATA\111498\RAWDATA1.D69
Method : C:\DX\METHOD\AS4A300.met
ACI Address: 1 System : 1 Inject#: 69 Detector: CDM-1

REPORT	VOLUME	DILUTION	POINTS	RATE	START	STOP	AREA REJ
External	1	1	2400	5Hz	0.00	8.00	600

Pk. Num	Ret Time	Component Name	Concentration ug/mL	Height	Area	Bl. Code	%Delta
		Totals	0.000	0	0		



Recra LabNet
Philadelphia

pH (Electrometric)
(Aqueous pH, Soil pH, Corrosivity by pH)

Analyst: [signature]
Date: 6/10-21-98 (SM 10: 21-98)
pH Meter ID#: OR 10A 520A
Slope: 98.9

Method (circle one):
21-15-0150.1 Rev. (water)
21-15-9045 Rev. (soil)

Logbook #: 61677
Prep Batch: 98LPA110
Worksheet: PH1021

RFW #/Standard	pH Reading 1	pH Reading 2	pH (average)	Solid Prep/ Comments	Temp °C	Time
4 Buffer check			QuikCal			645 PM
7						648
10			4.01 SM 10 21-98			700
4			7 4.01 21-98			702
7			7.02			705
10			10.03			710
9810L044-001			5.71	Water	25°C	713
002			5.33			718
CCV Buffer check			7.03			719
9810L066-001	8.33	8.32	8.33	10g:10mL		722
002	8.92	8.93	8.93			725
003	9.31	9.27	9.29			730
004	9.66	9.64	9.65			732
005	9.85	9.83	9.84			736
006	9.09	9.07	9.08			738
007	9.14	9.12	9.13			740
008	9.49	9.47	9.48			745
009	9.36	9.44	9.40			747
010	9.37	9.37	9.37			751
Buffer check			10.03			753
9810L066-011	9.35	9.32	9.34			755
012	9.30	9.30	9.30			758
012 Rep	9.30	9.30	9.30			802
9810L067-001	9.44	9.44	9.44			804
002	9.60	9.59	9.60			810

"R" = replicate Note: Sample pH is measured at 25°± 0.5°C

Standard:	ID	Prep Date	Expir Date
10 Buffers	4954-44A-1,23	9-24-98	10-24-98
20 Buffers	4954-44B 4,5,6	"	"

Reviewed By/Date: T Murray 10/23/98

RFW 21-21L-016/F-07/97

Page # 015

Recra LabNet
Philadelphia

pH (Electrometric)
(Aqueous pH, Soil pH, Corrosivity by pH)

Analyst: JH
Date: 10.21.98
pH Meter ID#: ORION520A
Slope: 98.9

Method (circle one):
21-15-0150.1 Rev. (water)
21-15-9045 Rev. (soil)

Logbook #: 6622
Prep Batch: 98LPA110
Worksheet: PH1021

RFW #/Standard	pH Reading 1	pH Reading 2	pH (average)	Solid Prep/ Comments	Temp °C	Time
9810067-003	9.83	9.78	9.81	10g:10ml	25	8:15
004	9.70	9.69	9.70			8:18
005	8.92	8.90	8.91			8:19
006	9.60	9.60	9.60			8:21
007	9.78	9.72	9.75			8:23
Buffer check			10.04			8:25
9810067-008	9.30	9.30	9.30			8:30
009 NPDES	9.38	9.37	9.38			8:33
010 011	9.56	9.55	9.56			8:36
011 Rep	9.57	9.57	9.57			8:40
012	9.48	9.46	9.47			8:42
012 Rep	9.45	9.44	9.45			8:44
9810092-001	10.30	10.28	10.29			8:57
002	9.30	9.28	9.29			8:53
004	9.08	9.03	9.06			8:55
005	8.99	8.95	8.97			9:00
CCV Buffer check SM1000146			10.03			9:03
006	8.68	8.65	8.67			9:05
131-001	12.38	12.38	12.38			9:10
001 Rep	12.35	12.37	12.36			9:15
92.003	9.07	9.07	9.07			9:18
CCV			10.03			9:19

JH 10-21-98

"R" = replicate Note: Sample pH is measured at 25°± 0.5°C

Standard:	ID	Prep Date	Expir Date
10 Buffers			
20 Buffers			

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Reviewed By/Date: T Murray 10/23/98

RFW 21-21L-016/F-07/97

Page # 016

JN 10-21-98

WESTON Analytics Inorganics Section

Date of Prep: 10/21/98
Date of Analysis: 10/21/98
Worksheet: PH1021
Computer 0: SKL
Directory: INORGANICS
Run Batch: 98LPH110
Method: STD
Analyst: JH
Instrument: METER
CALIB DATA
SLOPE: 0.00
INTERCEPT: 0.00
CORRELATION COEFF.: 0

RFW SAMPLE ID	TEST	INST. ABS	INITIAL RESULT	DILUTION FACTOR	C/D	FINAL RESULT	DETECTION LIMIT		REPLICATE ORIG SAMPLE RESULT	REPLICATE REP % DIFF	SPIKE LEVEL ?	SPIKE SAMPLE AMOUNT	SPIKE % RECOV	LCS AMT LCS ?	LCS % RECOV	SAMPLE PREP PREP BATCH	REQUIRED SAMPLE VOL.	ACTUAL SAMPLE VOL.	% SOLIDS	ANAL TIME	DATE PREP
		N/A	N/A	N/A	N/A																
CCV4	IPH	.				4.01	0.01	SOIL PH								98LPH110					
CCV7	IPH	.				4.02	0.01	SOIL PH								98LPH110				18:00	10/21/98
CCV10	IPH	.				10.03	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-001	IPH	.				8.33	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-002	IPH	.				8.93	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-003	IPH	.				9.29	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-004	IPH	.				9.65	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-005	IPH	.				9.84	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-006	IPH	.				9.08	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-007	IPH	.				9.13	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-008	IPH	.				9.48	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L166-009	IPH	.				9.48	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-010	IPH	.				9.37	0.01	SOIL PH								98LPH110				18:00	10/21/98
CCV10	IPH	.				10.03	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-011	IPH	.				9.34	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-012	IPH	.				9.38	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L066-012	IPH-R	.				9.38	0.01	SOIL PH	9.380	0.0						98LPH110				18:00	10/21/98
9810L067-001	IPH	.				9.44	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-002	IPH	.				9.68	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-003	IPH	.				9.81	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-004	IPH	.				9.70	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-005	IPH	.				8.91	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-006	IPH	.				9.60	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-007	IPH	.				9.75	0.01	SOIL PH								98LPH110				18:00	10/21/98
CCV10	IPH	.				10.04	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-008	IPH	.				9.38	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-009	IPH	.				9.38	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-011	IPH	.				9.56	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-011	IPH-R	.				9.57	0.01	SOIL PH	9.560	0.1						98LPH110				18:00	10/21/98
9810L067-012	IPH	.				9.47	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L067-012	IPH-R	.				9.45	0.01	SOIL PH	9.470	0.2						98LPH110				18:00	10/21/98
9810L072-001	IPH	.				10.29	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L072-002	IPH	.				9.29	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L072-004	IPH	.				9.86	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L072-005	IPH	.				8.97	0.01	SOIL PH								98LPH110				18:00	10/21/98
CCV10	IPH	.				10.03	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L072-006	IPH	.				8.67	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L131-001	IPH	.				12.38	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L131-001	IPH-R	.				12.36	0.01	SOIL PH	12.380	0.2						98LPH110				18:00	10/21/98
9810L072-003	IPH	.				9.07	0.01	SOIL PH								98LPH110				18:00	10/21/98
CCV10	IPH	.				10.03	0.01	SOIL PH								98LPH110				18:00	10/21/98
9810L094-001	IPH	.				5.71	0.01	PH UNITS								98LPH110				18:00	10/21/98
9810L094-002	IPH	.				5.33	0.01	PH UNITS								98LPH110				18:00	10/21/98
CCV4	IPH	.				4.03	0.01	PH UNITS								98LPH110				18:00	10/21/98

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Recra LabNet
Philadelphia

PETROLEUM HYDROCARBON PREP

Extracted By: AJP
Extraction Date: 10 17 98
Start Time/End Time: 13:00 17:00
Method #: 21-15-0418.1 (W) Rev. 00A
21-15-9071 (S) Rev. 02

Logbook #: 6575
Prep Batch: 98LHC095
Analysis Log: 6506

RFW #	pH<2	Weight/Volume	Final Volume	Spiking Info./Comments
98LHC095-MB		7.5gm	25mL	
-LC1				0.25mL of Primary 4.2 MG/mL
-LC2				
9810L066-001				
-002				
-003				
-004				
-005				
-006				
-007				
-007	R			
-007	S			0.25mL @ 4.2 MG/mL
~~-008~~	AJP 10/17/98			
				AJM 10/17/98

"R"= replicate, "S" = matrix spike, "T" = matrix spike duplicate

Standard:	ID	Prep Date	Expir Date
LCS	6506101-13	10.4.98	10.23.98
MS	-14	1	2

Reviewed by/Date: MTB 11/16/98

RFW 21-21L-018/O-07/97

Recra LabNet

Philadelphia

Petroleum Hydrocarbon or Oil/Grease by IR

EXTRACTION:
Extracted By: AJP
Extraction Date: 10.17.98
Start Time: 13 00
End Time: 0:00

ANALYSIS:
Analyzed By: AJP
Analysis Date: 10.20.98
Start Time: 10:59
End Time: 13:48

Logbook #: 6506
Prep Batch: 98LHC095
Worksheet: IPH1020
Method #: 21-15-0418.1 rev. (W)
21-15-9071.1 rev. (S)
21-15-0413.2 rev. (W)

RFW #	pH <2	Initial Wt or Vol (g/mL)	% Solids	Final Vol (mL)	Dil	Absorbance (cm^{-1}) O/G	Absorbance (cm^{-1}) HCIR	Final Result	Comments, % Rec.
0.100							0.013		
0.420							0.044		
2.100							0.201		
4.220							0.393		
8.400							0.815		
ICV		75gm	100	25ml	None	N/A	0.216	74.752	
ICB							0.002	0.698	
CCV							0.208	71.984	
98LHC095-MB1							0.012	4.159	
-LC1							0.403	139.462	
-LC2							0.385	133.234	
98LCL066-001			89.69				0.103	39.747	
-002			86.44				0.033	13.218	
-003			90.97				0.025	9.517	
-004			96.27				0.019	6.836	
-005			96.49				0.035	12.565	
CCV							0.216	74.952	

"R" = Replicate, "S" = Matrix Spike, "T" = Matrix Spike Duplicate

Example Calculation: Concentrations (mg/L) = $\frac{R \times D}{V} \times FV$

Where:

R = concentration of Petroleum Hydrocarbons as determined from the calibration curve (mg/100 mL).
D = extract dilution factor, if used.
V = volume of sample, in L.
FV = final volume of extract, mL.

Standard:	ID	Prep Date	Expir Date
ICAL	6506-102-15	10.20.98	10.21.98
ICV/CCV	-35	↓	↓
LCS	-35	↓	↓
MS			

Reviewed By/Date: [signature] 11/16/98

RFW 21-21L-004/R-06/97

Recra LabNet
Philadelphia

Petroleum Hydrocarbon or Oil/Grease by IR

EXTRACTION:
Extracted By: AM
Extraction Date: 10/17/98
Start Time: 13:00
End Time: 17:00

ANALYSIS:
Analyzed By: AM
Analysis Date: 10-20-98
Start Time: 1059
End Time: 13:40

Logbook #: 6506
Prep Batch: 984C095
Worksheet: TPH1020
Method #: 21-15-0418.1 rev. (W)
21-15-9071.1 rev. (S)
21-15-0413.2 rev. (W)

RFW #	pH <2	Initial Wt or Vol (g/mL)	% Solids	Final Vol (mL)	Dil	Absorbance (cm^{-1}) O/G	Absorbance (cm^{-1}) HCIR	Final Result	Comments, % Rec.
CCB		1.54		25			0.004	1.390	
9810L066-006			93.09			NA	1.505	559.463	N.R
-006			1		25		0.066	613.524	
-007			86.35		5		0.104	268.424	
-007R					5		0.11E	236.477	
-007S					5		0.147	294.585	
CCV							0.215	74.406	
CCB							0.009	3.121	

Dfm 10/20/98

"R" = Replicate, "S" = Matrix Spike, "T" = Matrix Spike Duplicate
Example Calculation: Concentrations (mg/L) = R x D x FV / V

Where:

R = concentration of Petroleum Hydrocarbons as determined from the calibration curve (mg/100 mL).
D = extract dilution factor, if used.
V = volume of sample, in L.
FV = final volume of extract, mL.

Standard:	ID	Prep Date	Expir Date
ICAL			
ICV/CCV			
LCS			
MS			

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Reviewed By/Date: [signature] 11/16/98

RFW 21-21L-004/R-06/97

MESTON Analytics Inorganics Section

10-26-98

Date of Prep: 10/17/98
Date of Analysis: 10/20/98
Worksheet: TPHIR20
Computer 0: SKL
Directory: INORGANICS

Run Batch: 98LHC095
Method: 9071.1 REV.2
Analyst: AJP
Instrument: FT-IR

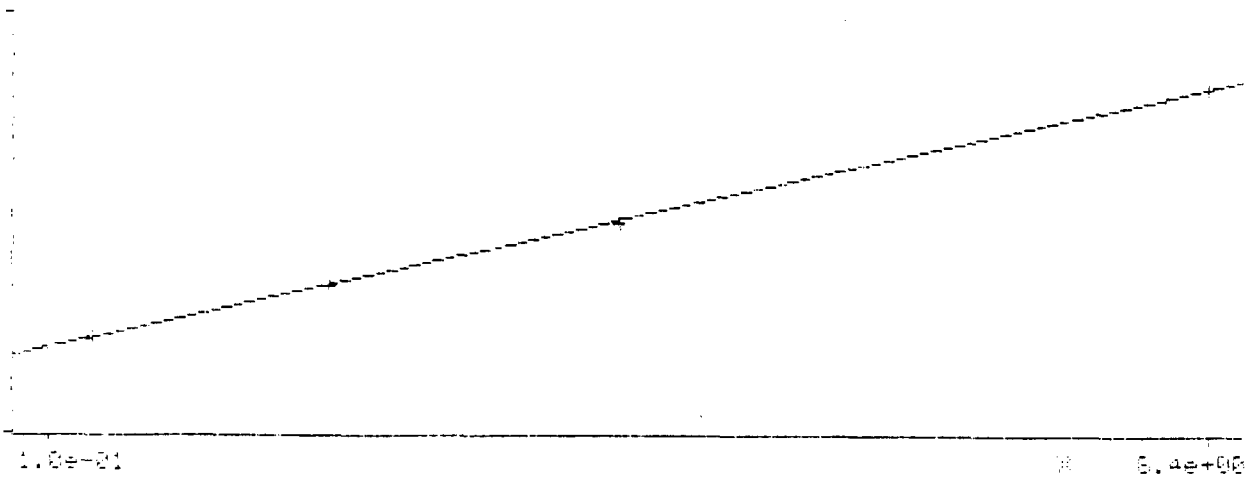
CALIB DATA
SLOPE: 0.10
INTERCEPT: 0.00
CORRELATION COEFF.: 0.9995

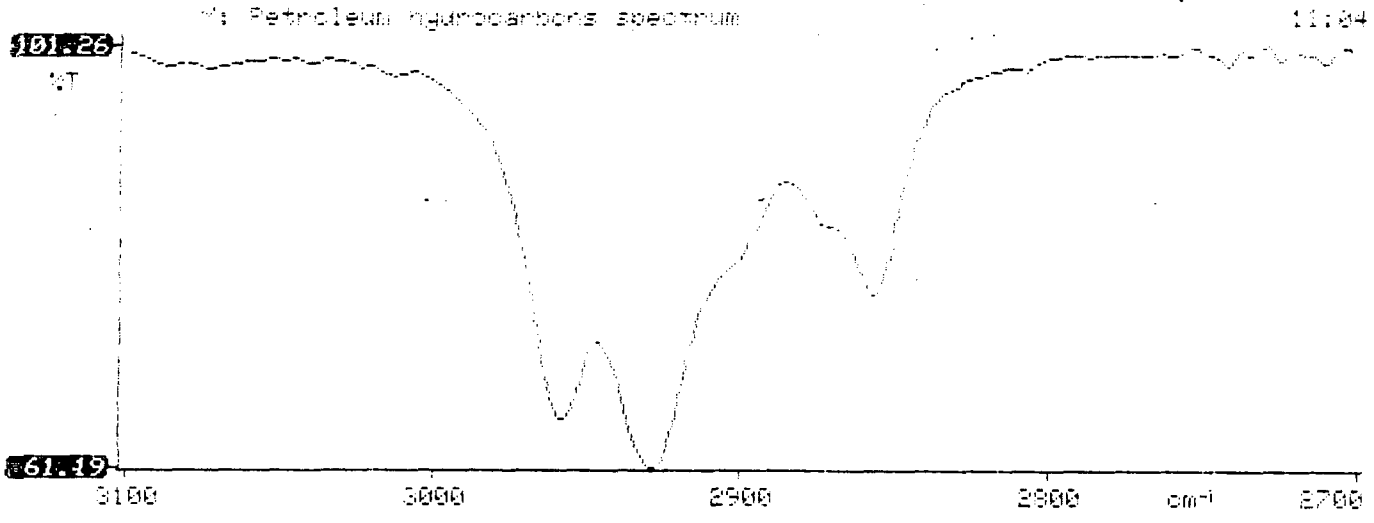
RFW SAMPLE ID	TEST	INST. ABS	INITIAL RESULT	DILUTION FACTOR	C/D	FINAL RESULT	DETECTION LIMIT 1.00	UNITS	REPLICATE ORIG SAMPLE RESULT	REP % DIFF	SPIKE LEVEL 4.20	SPIKE SAMPLE AMOUNT	% RECOV	LCS AMT LCS ?	% RECOV	PREP' INITIA	INITIAL SAMPLE WT.	FINAL VOL.	% SOLIDS	ANAL TIME	DATE PREP
ICV	IPHC-S	0.216	2.243	1	33.3333	74.752	3.333	MG/KG	-		2.1	70.000	106.8			98LHC095	7.50	25.00	100.00		
CCB	IPHC	0.002	0.021	1	33.3333	0.698 u	3.333	MG/KG								98LHC095	7.50	25.00	100.00		
CCV	IPHC-S	0.200	2.160	1	33.3333	71.984	3.333	MG/KG	0.698		2.1	70.000	101.8			98LHC095	7.50	25.00	100.00		
98LHC095-MB1	IPHC	0.012	0.125	1	33.3333	4.159	3.333	MG/KG								98LHC095	7.50	25.00	100.00		
98LHC095-MB1	IPHC-S	0.403	4.184	1	33.3333	139.462	3.333	MG/KG	4.159		4.2	140.000	96.6			98LHC095	7.50	25.00	100.00		
98LHC095-MB1	IPHC-T	0.383	3.997	1	33.3333	133.234	3.333	MG/KG	4.159	4.7	4.2	140.000	92.2			98LHC095	7.50	25.00	100.00		
9810L866-001	IPHC	0.103	1.069	1	37.1650	39.747	3.717	MG/KG								98LHC095	7.50	25.00	89.69		
9810L866-002	IPHC	0.033	0.343	1	38.5624	13.218	3.856	MG/KG								98LHC095	7.50	25.00	86.44		
9810L866-003	IPHC	0.025	0.260	1	36.6421	9.517	3.664	MG/KG								98LHC095	7.50	25.00	90.97		
9810L866-004	IPHC	0.019	0.197	1	34.6248	6.836	3.462	MG/KG								98LHC095	7.50	25.00	96.27		
9810L866-005	IPHC	0.035	0.364	1	34.5638	12.565	3.456	MG/KG								98LHC095	7.50	25.00	96.44		
CCV	IPHC-S	0.216	2.243	1	33.3333	74.752	3.333	MG/KG	1.390		2.1	70.000	104.8			98LHC095	7.50	25.00	100.00		
CCB	IPHC	0.004	0.042	1	33.3333	1.390 u	3.333	MG/KG								98LHC095	7.50	25.00	100.00		
	IPHC	1.505	15.624	1	35.8876	559.463	3.581	MG/KG								98LHC095	7.50	25.00	93.09		
9810L866-006	IPHC	0.066	0.685	25	35.8876	613.524	89.519	MG/KG								98LHC095	7.50	25.00	93.09		
9810L866-007	IPHC	0.104	1.080	5	38.6026	208.424	19.301	MG/KG								98LHC095	7.50	25.00	86.35		
9810L866-007	IPHC-R	0.110	1.225	5	38.6026	236.477	19.301	MG/KG	208.424	12.6						98LHC095	7.50	25.00	86.35		
9810L866-007	IPHC-S	0.147	1.526	5	38.6026	294.585	19.301	MG/KG	208.424		2.1	81.965	106.3			98LHC095	7.50	25.00	100.00		
CCV	IPHC-S	0.215	2.232	1	33.3333	74.486	3.333	MG/KG	0.000		2.1	70.000	106.3			98LHC095	7.50	25.00	100.00		
CCB	IPHC	0.009	0.094	1	33.3333	3.121 u	3.333	MG/KG								98LHC095	7.50	25.00	100.00		

```
*****************************************************************
*                    Test Method xxx                            *
*       Oil and Grease and Petroleum Hydrocarbons               *
*                  in Water and Soil                            *
*                                                               *
*            Perkin-Elmer Model 1600 FT-IR                      *
*                  Calibration Report                           *
*****************************************************************
*
 09/11/20   10:50
*
*  Setup Path:
*
 C:\SPECTRA\
*
*  Concentrations of standards, mg/100 ml
  0.170
  0.420
  0.100
  0.200
  0.400
*
*
*  Net absorbance of standards
  0.013
  0.064
  0.301
  0.747
  0.215
*
*
*
```

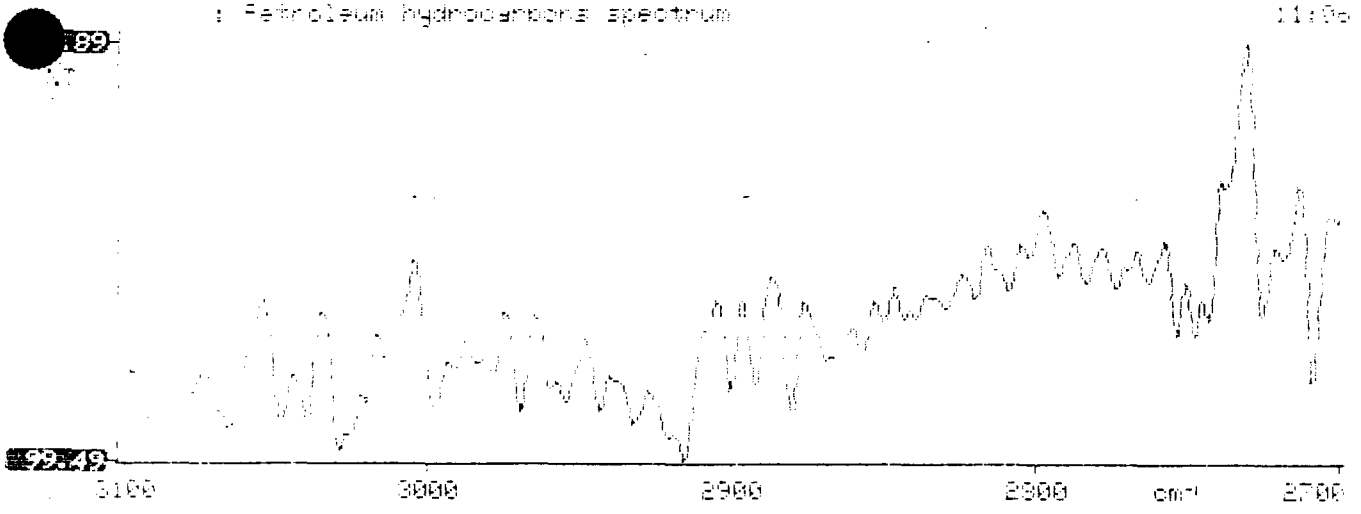
98LITC095
DJP 10/20/98

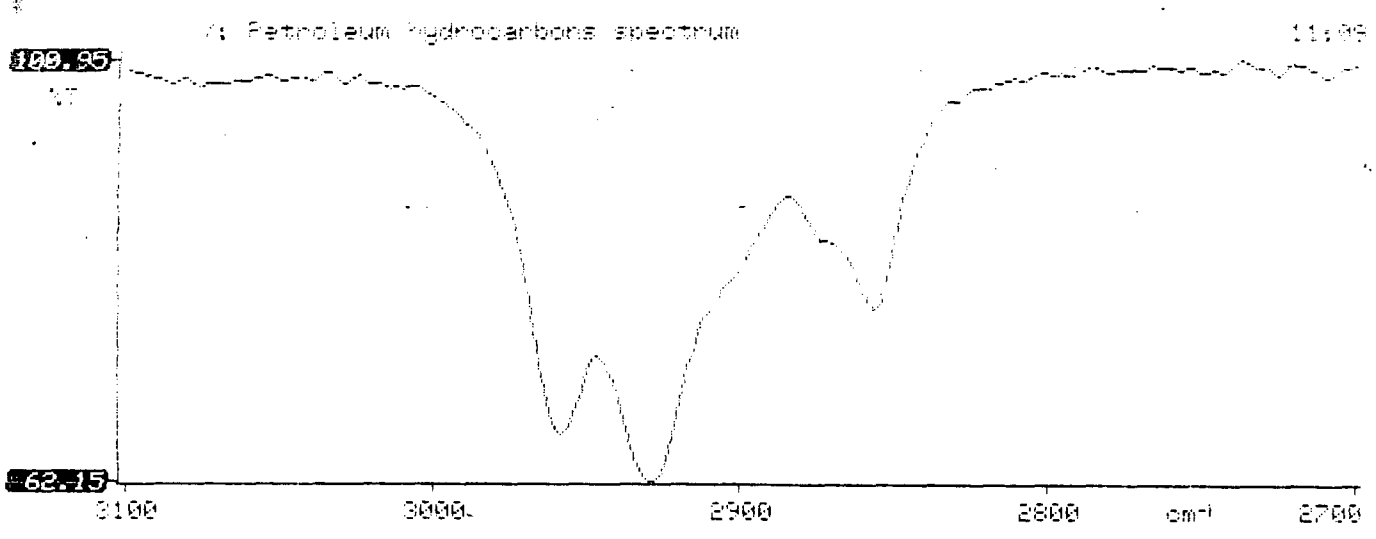
LSF: slope 9.689e-02; y-intercept -3.614e-05; correlation 0.99978

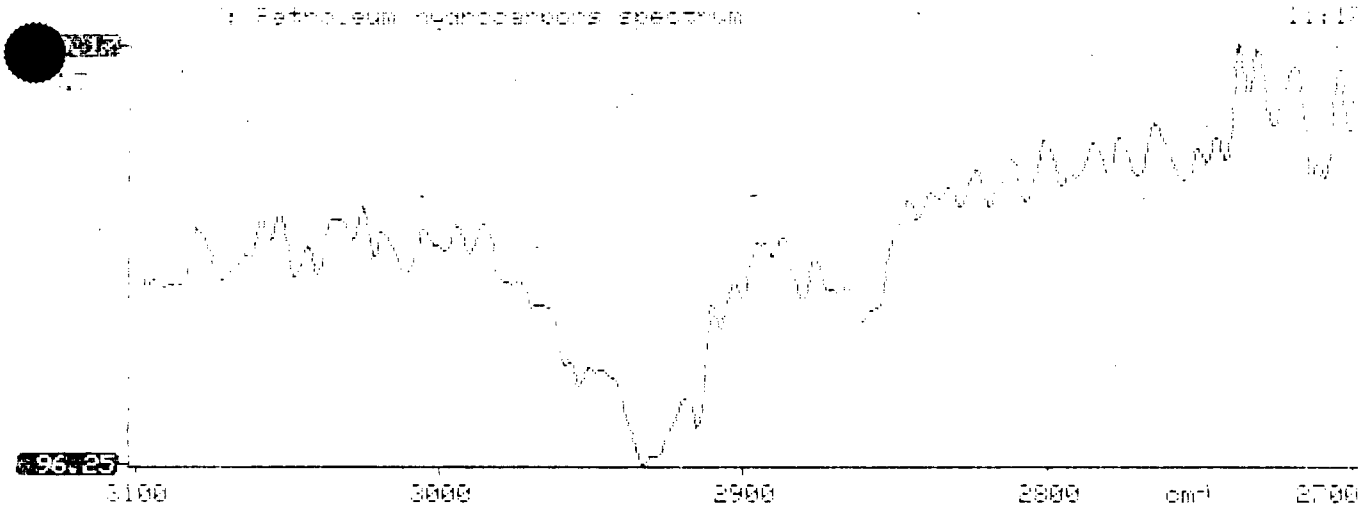


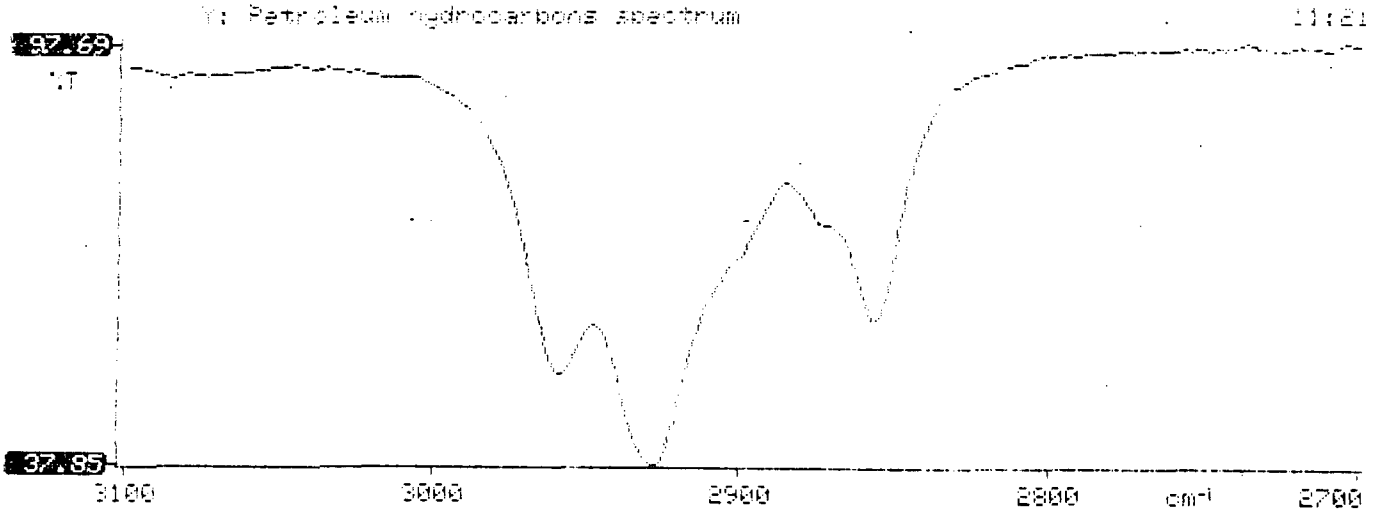

%: Petroleum hydrocarbons spectrum
11:04
101.26
%T
61.19
3100
3000
2900
2800
cm-1
2700

: Petroleum hydrocarbons spectrum

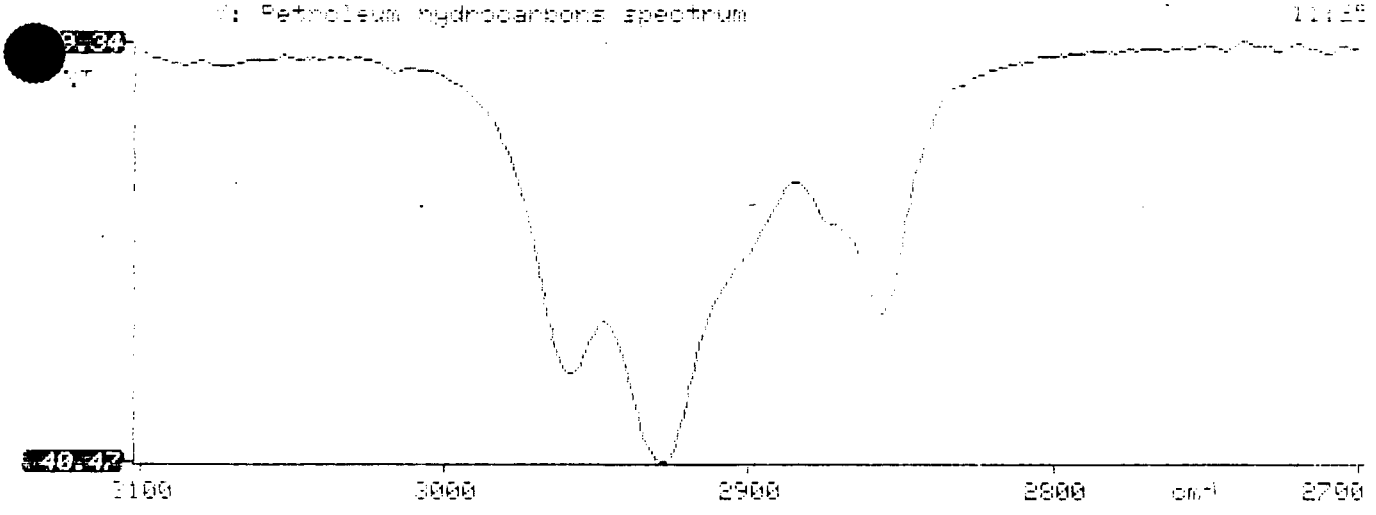



Petroleum hydrocarbons spectrum
11:09
100.95
%T
62.15
3100
3000
2900
2800
cm-1
2700


Petroleum hydrocarbons spectrum
96.25
3100
3000
2900
2800
cm-1
2700

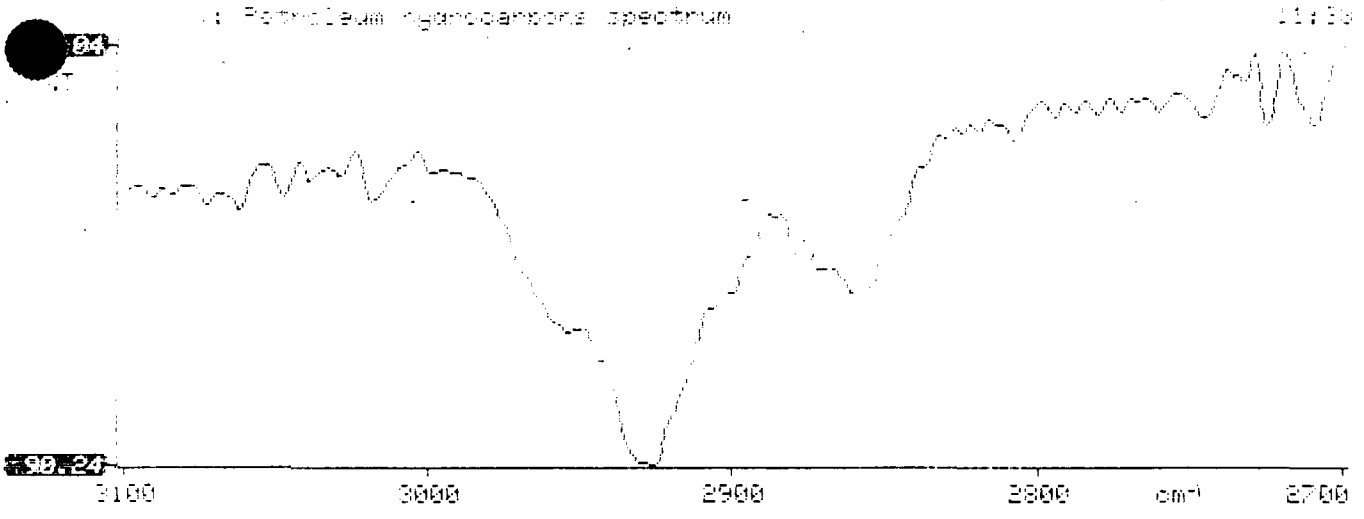

Y: Petroleum hydrocarbons spectrum
97.69
%T
97.85
3100
3000
2900
2800
cm-1
2700

```
*****************************************************************
*                                                               *
*                    Test Method 413.2                          *
*       Oil and Grease and Petroleum Hydrocarbons               *
*                  in Water and Soil                            *
*                                                               *
*              Perkin-Elmer Model 1600 FT-IR                    *
*                    Analysis Report                            *
*****************************************************************

 98/10/20   11:25

*
*   Sample identification
 PBLM-2495-L02
*   Net absorbance of hydrocarbons (2930 cm-1)
 0.365
*
*
*
```



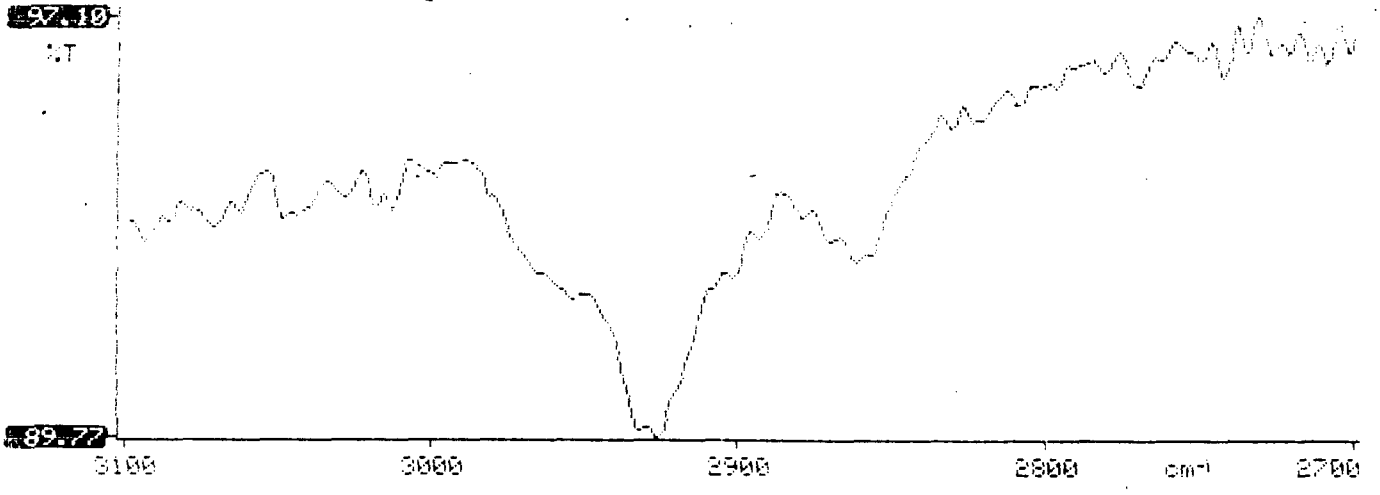
94.28
%T
71.99
3100
3000
2900
2800
cm-1
2700

```
**********************************************************
*                    Test Method for                     *
*      Oil and Grease and Petroleum Hydrocarbons         *
*                  in Water and Soil                     *
*                                                        *
*            Perkin-Elmer Model 1600 FT-IR               *
*                  Analysis Report                       *
**********************************************************
*
 02/10/20   11:33
*
1  Sample identification
 oil_0ee-002
*  Net Absorbance of Hydrocarbons (2930 cm-1)
 0.003
*
*
```

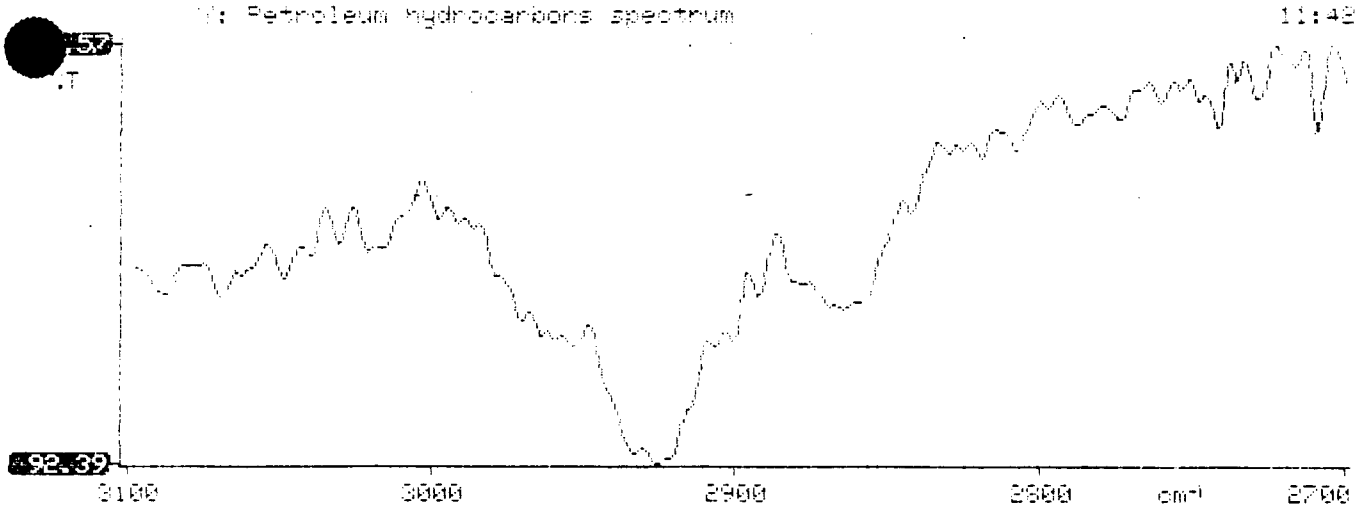


```
*****************************************************************
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*****************************************************************
*
*
*
*
*
*
*
*
*
*
```

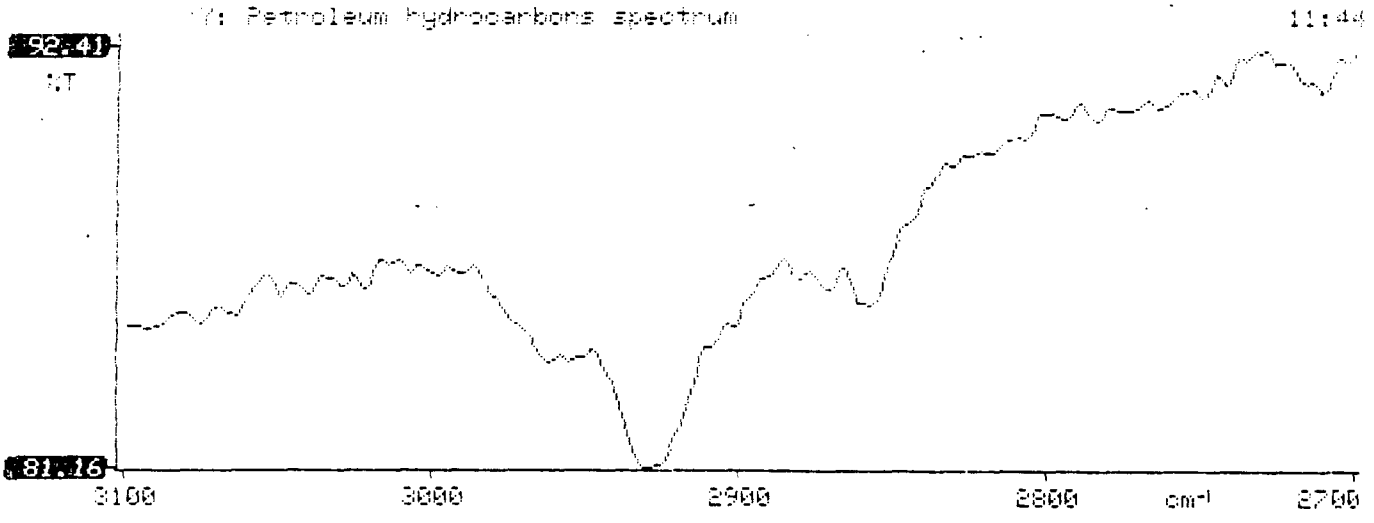
Y: Petroleum hydrocarbons spectrum 11:39

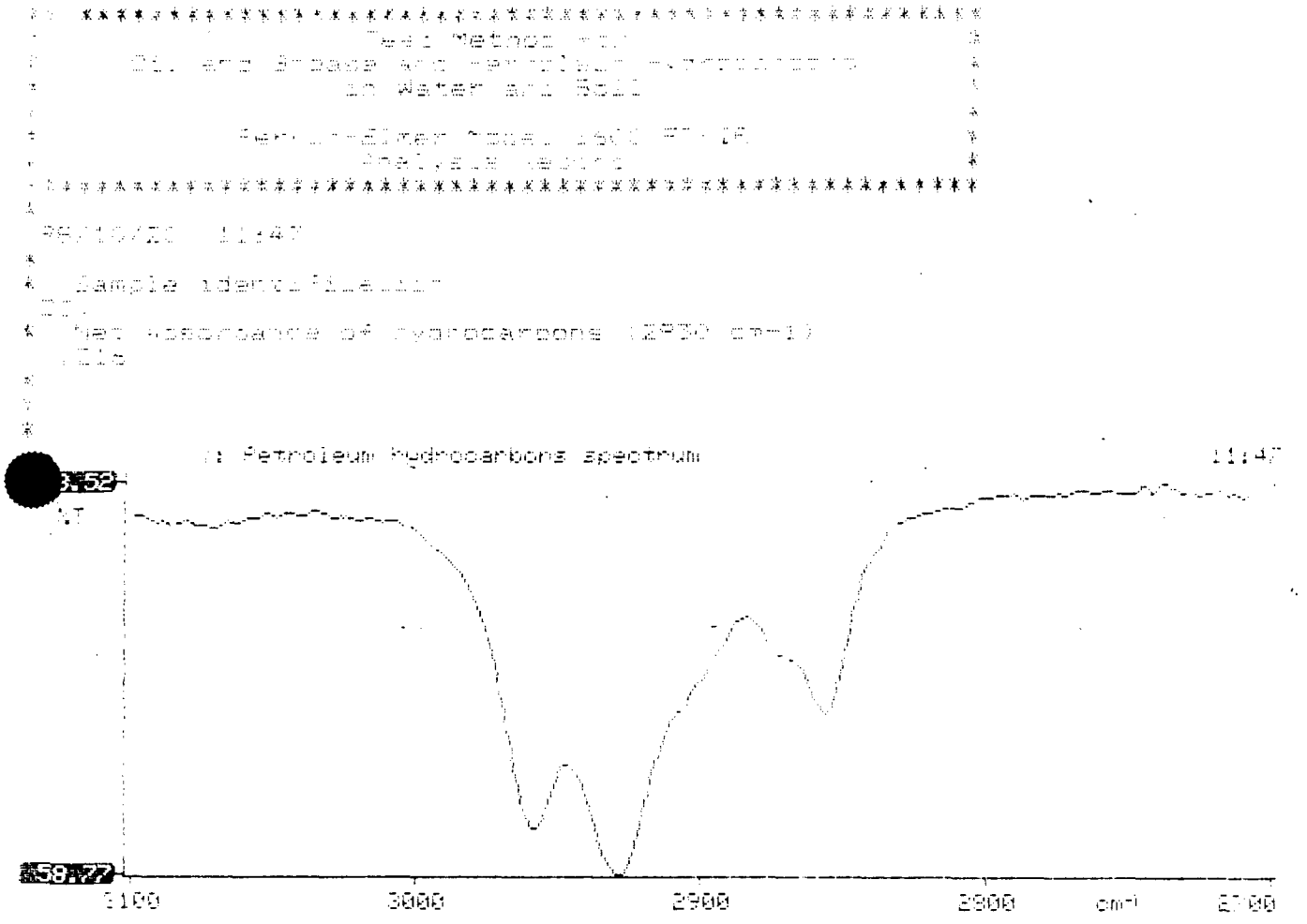


```
*********************************************************************
*                        Test Method for                            *
*       Oil and Grease and Petroleum Hydrocarbons                   *
*                  in Water and Soil                                *
*                                                                   *
*              Perkin-Elmer Model 1420 FT-IR                        *
*                      Analysis Report                              *
*********************************************************************

 08/10/20   11:41

 Sample Identification
 EB10Aug.104
 Net absorbance of hydrocarbons (2930 cm-1)
 0.019
```

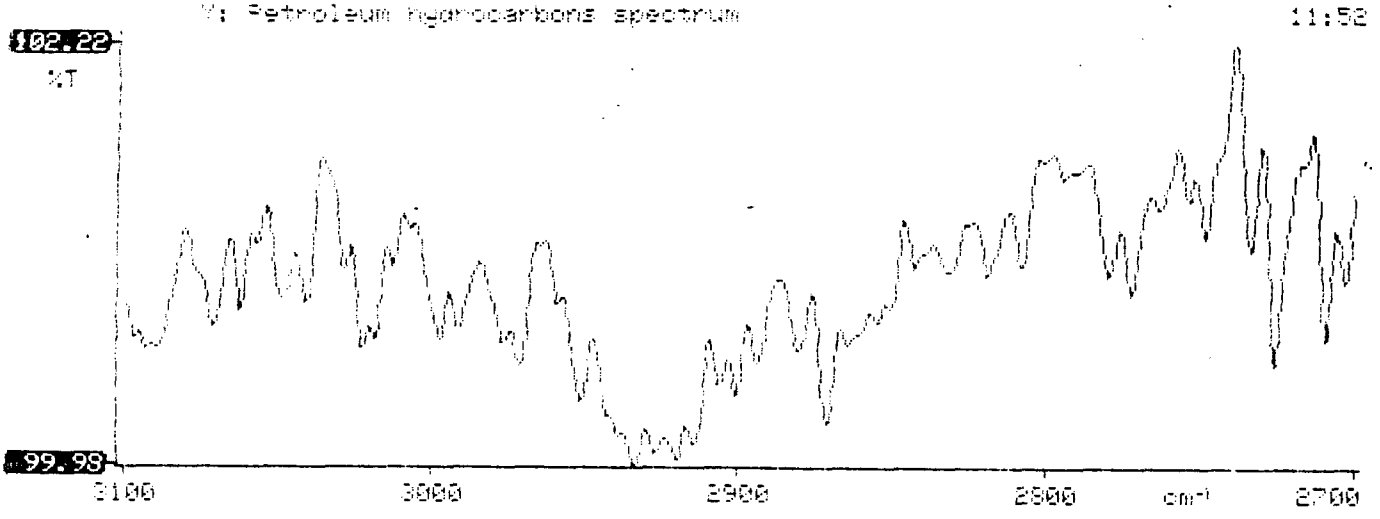


```
*****************************************************************
*                        Test Method for                        *
*      Oil and Grease and Petroleum Hydrocarbons                *
*                     in Water and Soil                         *
*                                                               *
*              Perkin-Elmer Model 1600 FT-IR                    *
*                      Analysis Report                          *
*****************************************************************
*
 98/10/20   11:44
*
*   Sample identification
 9810L066-005
*   Net absorbance of hydrocarbons (2971 cm-1)
 0.035
*
*
*
```

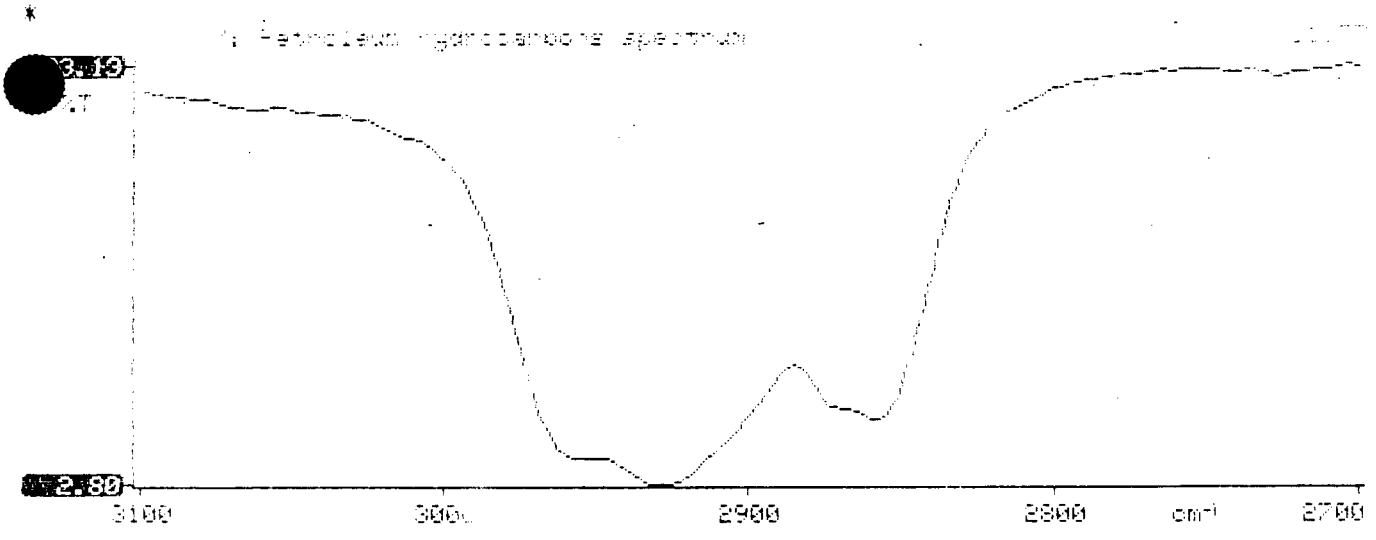


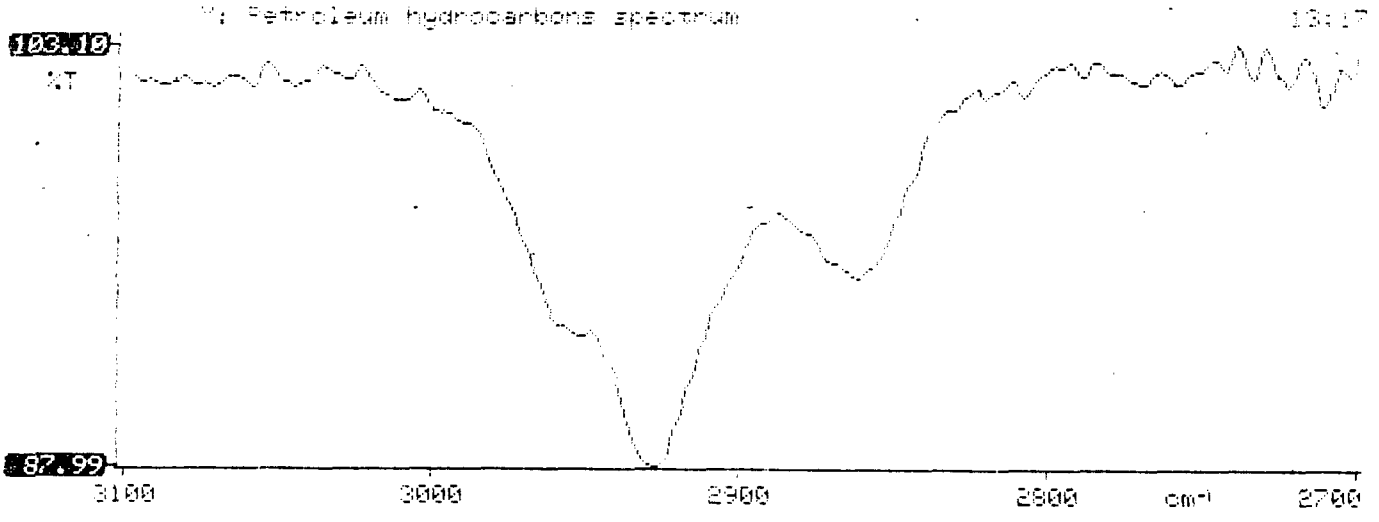

Petroleum Hydrocarbons spectrum
11:47
%T
58.72
58.72
3100
3000
2900
2800
cm-1
2700

```
*********************************************************************
*                                                                   *
*                                                                   *
*                                                                   *
*                                                                   *
*                                                                   *
*                                                                   *
*********************************************************************
*
  98/10/20   11:52
*
*   Sample identification
  DCB
*   Net absorbance at hydrocarbons (2930 cm-1)
  0.004
*
*
*
```

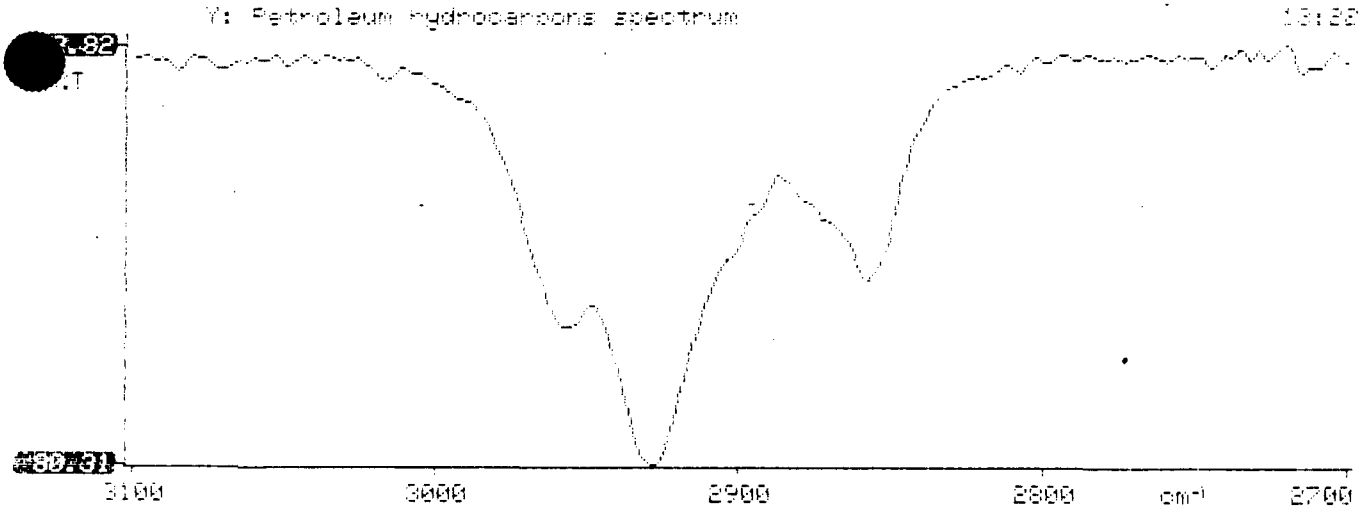


```
*****************************************************************
*                                                               *
*                    Oil and Grease and Petroleum Hydrocarbons  *
*                       in Water and Soil                       *
*                                                               *
*                Perkin-Elmer Model 1600 FT-IR                  *
*                      Analysis Report                          *
*****************************************************************
*
 05/10 20   11:5a
*
*   Sample Identification
 9810L066-005
*   Net absorbance of hydrocarbons (2930 cm-1)
 1.505
*
*
*
```

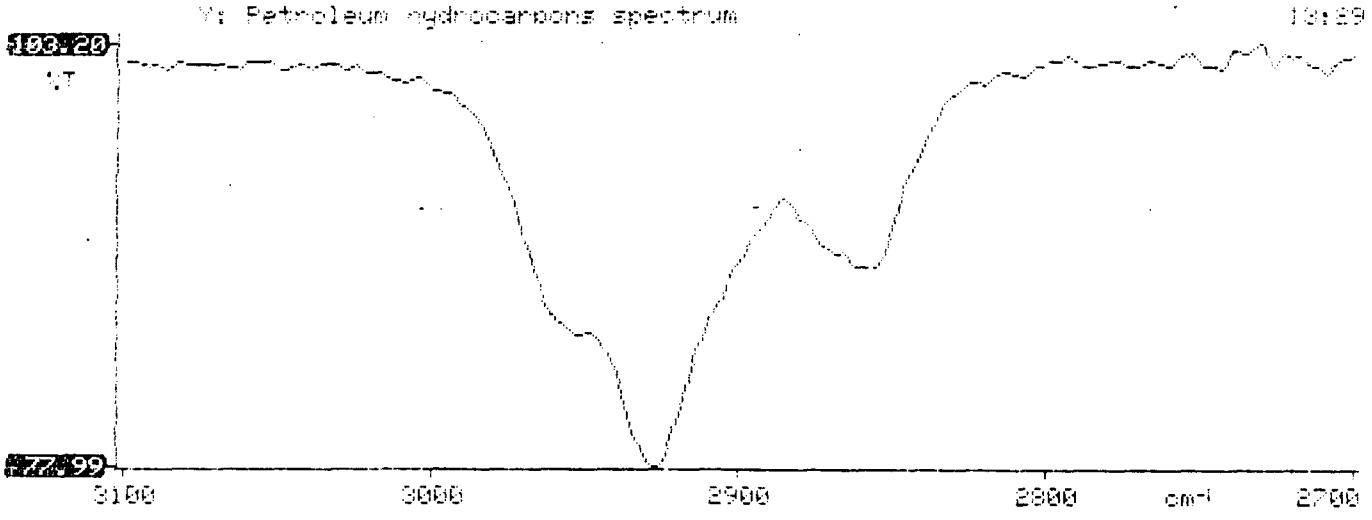



Petroleum hydrocarbons spectrum
13:17
103.10
%T
87.99
3100
3000
2900
2800
cm-1
2700

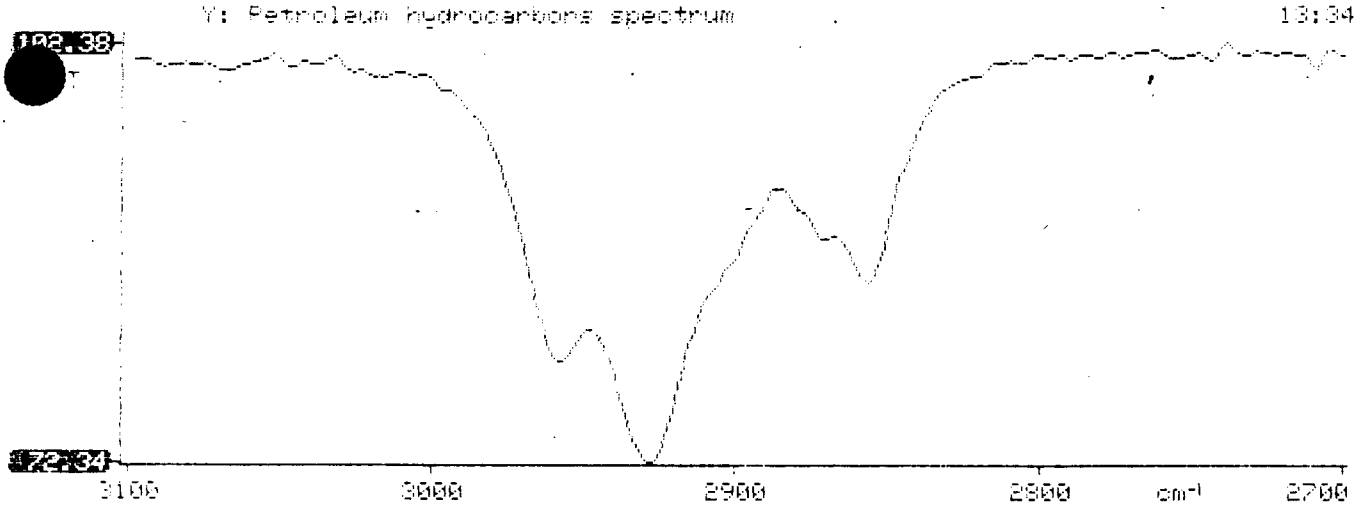
```
*****************************************************************
*                                                               *
*                    Perkin Elmer Corp                          *
*       Oil and Grease and Petroleum Hydrocarbons               *
*                    - Water and Soil -                         *
*                                                               *
*              Perkin Elmer Model 1310 FT-IR                    *
*                    Analysis Report                            *
*****************************************************************
*
 95/10/20  13:22
*
*  Sample identification:
 9R10L046-007   SK
*  Net absorbance of hydrocarbons (2930 cm-1)
 0.104
*
*
*
```



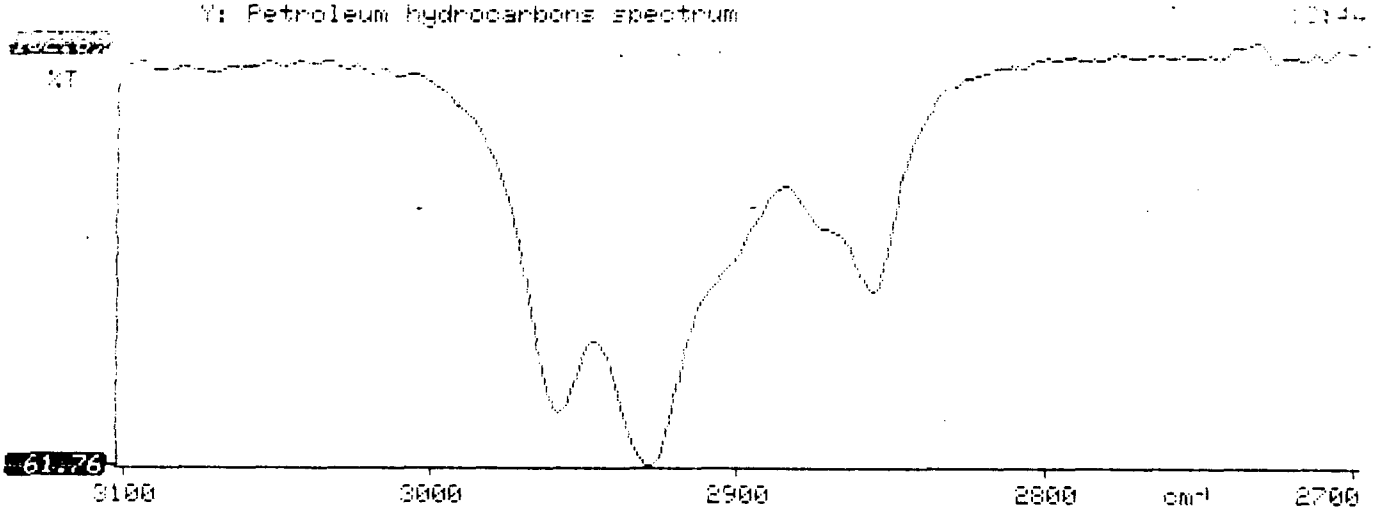
```
*****************************************************************
*                                                               *
*                        Test Method 1.1                        *
*      Oil and Grease and Petroleum Hydrocarbons                *
*                  in Water and Soil                            *
*                                                               *
*              Perkin-Elmer Model 1600 FT-IR                    *
*                     Analysis Report                           *
*                                                               *
*****************************************************************

 99/10/20   13:29

  Sample identification
 9510L068-007 R 5X
  Net absorbance of hydrocarbons (2930 cm-1)
 0.118
```



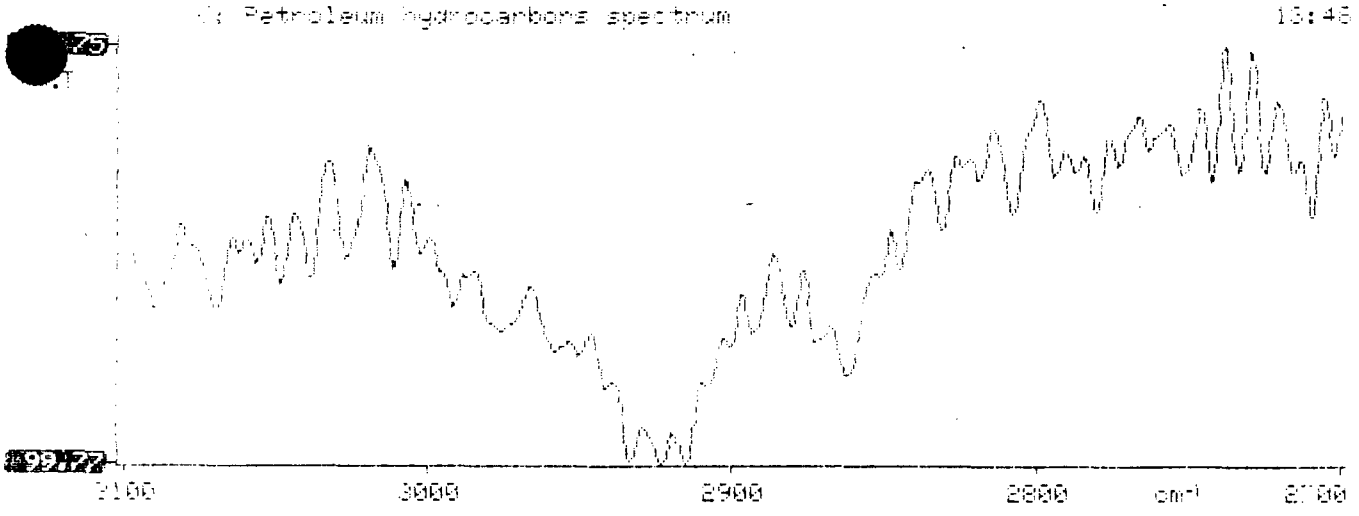
```
*****************************************************************
*                                                               *
*                                                               *
*                                                               *
*                  Perkin-Elmer Model 1320                      *
*                     Analysis report                           *
*                                                               *
*****************************************************************

 -04/10/20   13:34

   Sample identification
 FBID_Dec-0073   SX
   Net absorbance of hydrocarbons (2930 cm-1)
 0.147
```



```
*****************************************************************
*                    Test Method for                            *
*          [illegible] Petroleum Hydrocarbons                   *
*                 in Water and Soil                             *
*                                                               *
*            Perkin-Elmer Model 1600 FT-IR                      *
*                  Analysis Report                              *
*****************************************************************
*
 98/10/20  13:44
*
*  Sample identification
 CCV
*  Net absorbance of hydrocarbons (2930 cm-1)
 0.215
*
*
*
```



```
*****************************************************************
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*****************************************************************
*
 99/12/20  17:48
*
*  Sample identification
 CCR
*  Neg absorbance at hydrocarbons (2930 cm-1)
 0.000
*
*
*
```



Recra LabNet
Philadelphia

PETROLEUM HYDROCARBON PREP

Extracted By: AJM
Extraction Date: 10.19.98
Start Time/End Time: 11:02 : 15:00
Method #: 21-15-0418.1 (W) Rev. 00A
21-15-9071 (S) Rev. 02

Logbook #: 615
Prep Batch: 98LHC096
Analysis Log: 6506

RFW #	pH<2	Weight/Volume	Final Volume	Spiking Info./Comments
98LHC096-MB1		75gm	25ml	
-LCS				0.25ml LCS
-LCSD				0.25ml LCSD
98102 006-008				
-009				
-010				
-011				
-012				
007-001				
-002				
-003		"	"	
				DJP 10/19/98
				10/19/98

"R"= replicate, "S" = matrix spike, "T" = matrix spike duplicate

Standard:	ID	Prep Date	Expir Date
LCS	6506-101-13	10.19.98	10.23.98
MS	-14	"	"

Reviewed by/Date: 11/16/98

Recra LabNet

Philadelphia

Petroleum Hydrocarbon or Oil/Grease by IR

EXTRACTION:
Extracted By: AJP
Extraction Date: 10.19.98
Start Time: 11:00
End Time: 15:00

ANALYSIS:
Analyzed By: AJP
Analysis Date: 10.20.98
Start Time: 13:50
End Time: 15:29

Logbook #: 650C
Prep Batch: 98LHC096
Worksheet: TPH1020A
Method #: 21-15-0418.1 rev. (W)
21-15-9071.1 rev. (S)
21-15-0413.2 rev. (W)

RFW #	pH <2	Initial Wt or Vol (g/mL)	% Solids	Final Vol (mL)	Dil	Absorbance (cm^{-1}) O/G	Absorbance (cm^{-1}) HCIR	Final Result	Comments, % Rec.
C.100							C.C13		
C.420							C.C44		
2.100							C.201		
4.200							C.393		
8.400							0.815		
ICV	<2	1.5gm	100	25ml	None	NA	C.212	43.368	mg/kg
ICB							C.CC9	3.121	
CCV							0.206	71.292	
98LHC096-MB1							0.014	4.851	
-LC1							C.381	131.849	
-LC2							0.363	125.621	
9810LC066-008			87.38				0.039	15.452	
-009			92.99				0.028	10.426	
-010			94.89				0.048	17.511	
-011			94.72				0.042	15.351	
-012			93.18				0.039	14.490	
CCV							0.197	68.177	

"R" = Replicate, "S" = Matrix Spike, "T" = Matrix Spike Duplicate
Example Calculation: Concentrations (mg/L) = R x D x FV / V

Where:

R = concentration of Petroleum Hydrocarbons as determined from the calibration curve (mg/100 mL).
D = extract dilution factor, if used.
V = volume of sample, in L.
FV = final volume of extract, mL.

Standard:	ID	Prep Date	Expir Date
ICAL	6506102.15	10.20.98	10.21.98
ICV/CCV	.35	"	"
LCS	.75	"	"
MS			

Reviewed By/Date: [illegible] 11/16/98

RFW 21-21L-004/R-06/97

Recra LabNet
Philadelphia

Petroleum Hydrocarbon or Oil/Grease by IR

EXTRACTION:
Extracted By: AJM
Extraction Date: 10/9/98
Start Time: 11:02
End Time: 15:00

ANALYSIS:
Analyzed By: AJM
Analysis Date: 10-10-98
Start Time: 13:32
End Time: 15:29

Logbook #: 6506
Prep Batch: 98LHC09X6
Worksheet: IRH1024
Method #: 21-15-0418.1 rev. (W)
(21-15-9071.1 rev. (S))
21-15-0413.2 rev. (W)

RFW #	pH <2	Initial Wt or Vol (g/mL)	% Solids	Final Vol (mL)	Dil	Absorbance (cm^{-1}) O/G	Absorbance (cm^{-1}) HCIR	Final Result	Comments, % Rec.
CCB		7.54	100	25	NA	NA	0.010	3.467 mg/kg	
9810L067-001			92.61				0.028	10.469	
L67-002			84.31				0.002	0.782	
L67-003			93.89				0.024	8.852	
CCV			100				0.202	69.907	
CCB							0.012	4.159	

AJM 10/20/98

"R" = Replicate, "S" = Matrix Spike, "T" = Matrix Spike Duplicate
Example Calculation: Concentrations (mg/L) = R x D x FV / V

Where:

R = concentration of Petroleum Hydrocarbons as determined from the calibration curve (mg/100 mL).
D = extract dilution factor, if used.
V = volume of sample, in L.
FV = final volume of extract, mL.

Standard:	ID	Prep Date	Expir Date
ICAL			
ICV/CCV			
LCS			
MS			

Page 48

Reviewed By/Date: [illegible] 11/6/98.

RFW 21-21L-004/R-06/97

Page # 049

142

AJP
10.26.98

ESTON Analytics Inorganics Section

Date of Prep: 10/19/98
Date of Analysis: 10/20/98
Worksheet: TPH1020A
Computer #: SKL
Directory: INORGANICS

Run Batch: 98LHC896
Method: 9071.1 REV.2
Analyst: AJP
Instrument: FT-IR

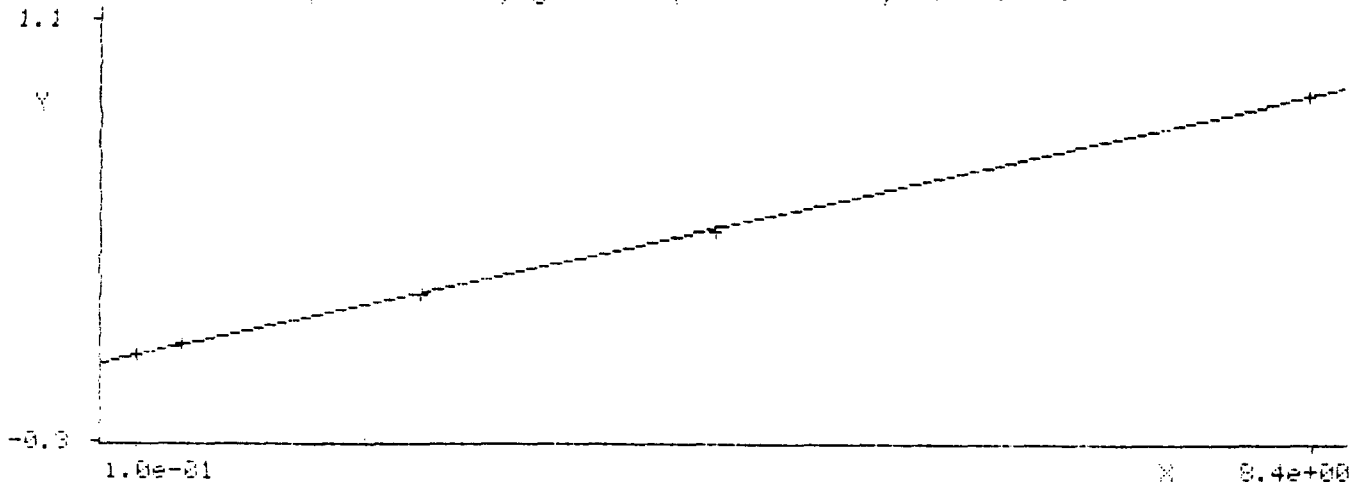
CALIB DATA
SLOPE: 0.10
INTERCEPT: 0.00
CORRELATION COEFF.: 0.9995

RFW SAMPLE ID	TEST	INST. ABS	INITIAL RESULT	DILUTION FACTOR	C/D	FINAL RESULT	DETECTION LIMIT 1.00	UNITS	REPLICATE ORIG SAMPLE RESULT	REP % DIFF	SPIKE LEVEL 4.20	SPIKE SAMPLE AMOUNT	% RECOV	LCS AMT LCS ?	% RECOV	SOILS PREP PREP BATCH	INITIAL SAMPLE WT.	FINAL VOL.	% SOLIDS	ANAL TIME	DATE PREP
ICV	IPHC-S	0.212	2.201	1	33.3333	73.368	3.333	MG/KG	-		2.1	70.000	104.8			98LHC896	7.50	25.00	100.00		
ICB	IPHC	0.009	0.094	1	33.3333	3.121 u	3.333	MG/KG								98LHC896	7.50	25.00	100.00		
ICV DUP	IPHC-S	0.206	2.139	1	33.3333	71.292	3.333	MG/KG								98LHC896	7.50	25.00	100.00		
98LHC896-MB1	IPHC	0.014	0.146	1	33.3333	4.851	3.333	MG/KG	3.121		2.1	70.000	97.4			98LHC896	7.50	25.00	100.00		
98LHC896-MB1	IPHC-S	0.381	3.955	1	33.3333	131.849	3.333	MG/KG								98LHC896	7.50	25.00	100.00		
98LHC896-MB1	IPHC-T	0.363	3.769	1	33.3333	125.621	3.333	MG/KG	4.851		4.2	140.000	90.7			98LHC896	7.50	25.00	100.00		
9810L066-008	IPHC	0.039	0.405	1	38.1476	15.452	3.815	MG/KG	4.851	5.0	4.2	140.000	86.3			98LHC896	7.50	25.00	100.00		
9810L066-009	IPHC	0.028	0.291	1	35.8461	10.426	3.585	MG/KG								98LHC896	7.50	25.00	87.38		
9810L066-010	IPHC	0.048	0.498	1	35.1284	17.511	3.513	MG/KG								98LHC896	7.50	25.00	92.99		
9810L066-011	IPHC	0.042	0.436	1	35.1914	15.351	3.519	MG/KG								98LHC896	7.50	25.00	94.89		
9810L066-012	IPHC	0.039	0.405	1	35.7731	14.498	3.577	MG/KG								98LHC896	7.50	25.00	94.72		
CCV	IPHC-S	0.197	2.045	1	33.3333	68.177	3.333	MG/KG								98LHC896	7.50	25.00	93.18		
CCB	IPHC	0.010	0.104	1	33.3333	3.467	3.333	MG/KG	0.000		2.1	70.000	97.4			98LHC896	7.50	25.00	100.00		
9810L067-001	IPHC	0.028	0.291	1	35.9932	10.469	3.599	MG/KG								98LHC896	7.50	25.00	100.00		
9810L067-002	IPHC	0.002	0.021	1	37.3232	0.782 u	3.732	MG/KG								98LHC896	7.50	25.00	92.61		
9810L067-003	IPHC	0.024	0.249	1	35.5025	8.852	3.550	MG/KG								98LHC896	7.50	25.00	89.31		
CCV	IPHC-S	0.202	2.097	1	33.3333	69.907	3.333	MG/KG								98LHC896	7.50	25.00	93.89		
CCB	IPHC	0.012	0.125	1	33.3333	4.159	3.333	MG/KG	0.000		2.1	70.000	99.9			98LHC896	7.50	25.00	100.00		
																98LHC896	7.50	25.00	100.00		

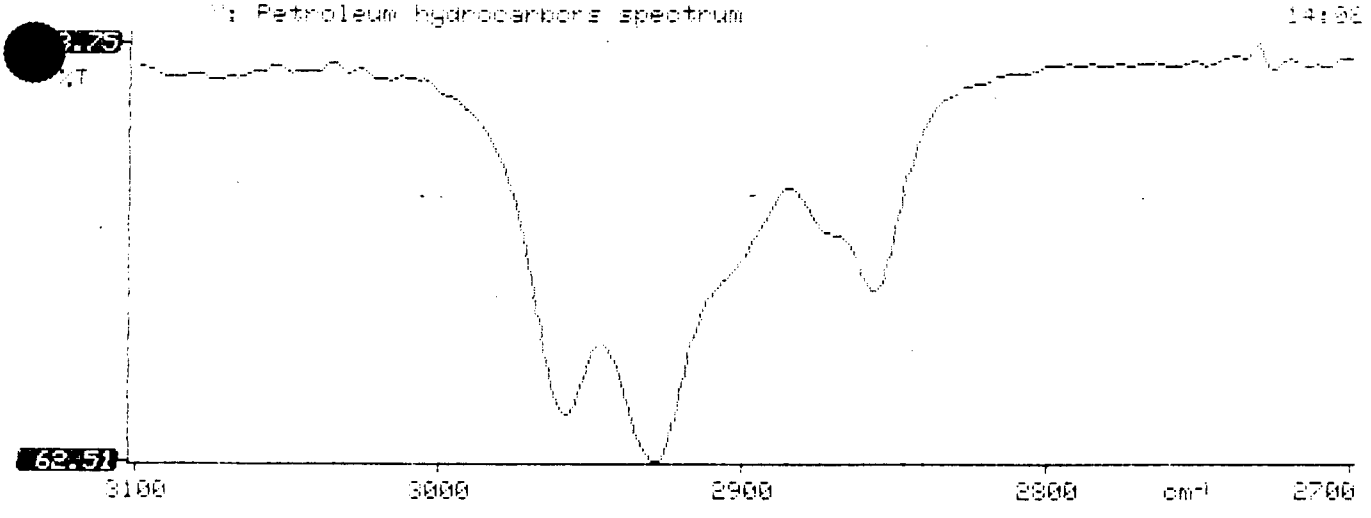
```
**********************************************************
*                    Test Method for                     *
*      Oil & . 3 ware and Sarsiell Hydrocarbons          *
*                  in Water and Soil                     *
*                                                        *
*            Perkin-Elmer Model 1600 FT-IR               *
*                 Calibration Report                     *
**********************************************************
*
 98/10/20  13:50
*
*  Prep Batch:
*
 98LHC096
*
*  Concentrations of standards, mg/100 ml
 0.100
 0.420
 2.100
 4.200
 8.400
*
*
*  Net absorbance of standards
 0.013
 0.044
 0.201
 0.393
 0.815
*
*
*
```

98LHC096
DJP
10.20.98

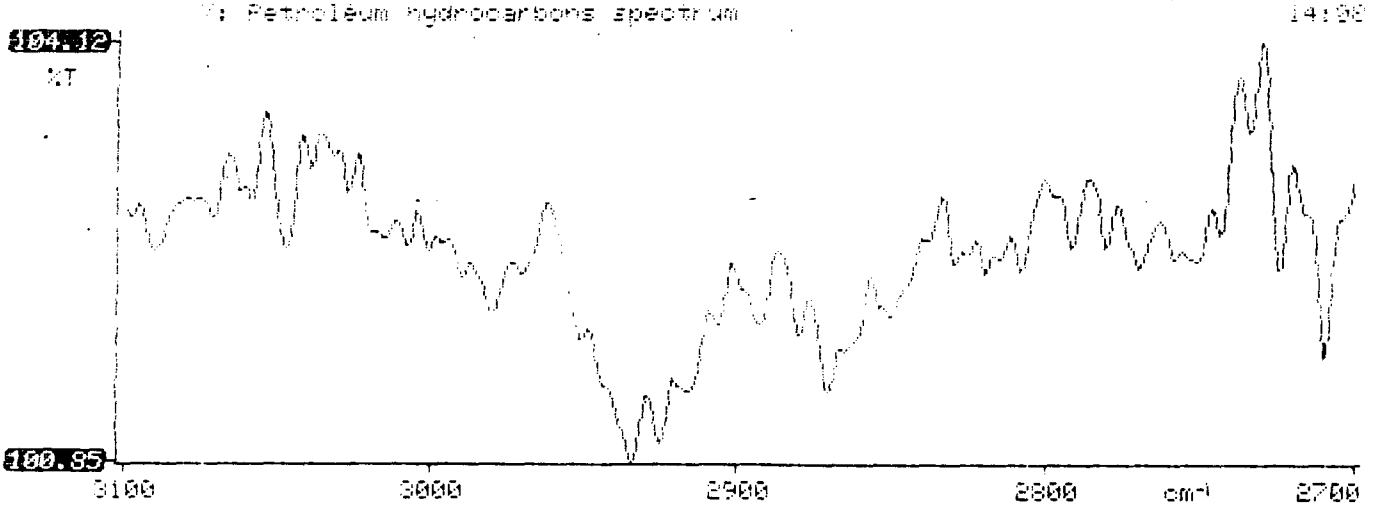
LSF: slope 9.629e-02; y-intercept -3.614e-05; correlation 0.99978

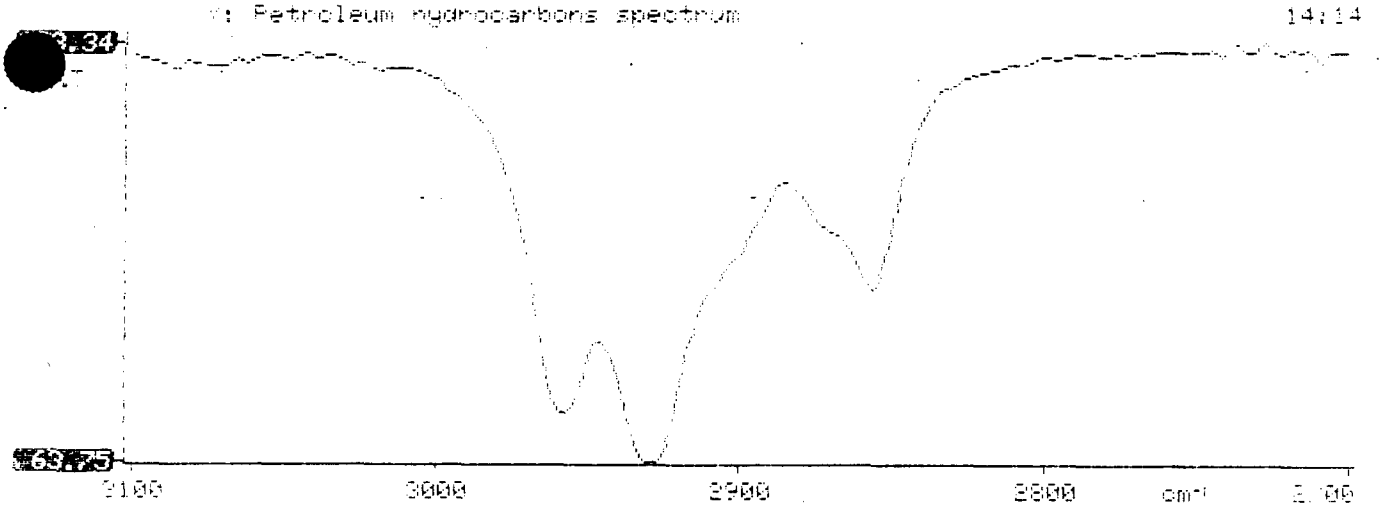


```
*****************************************************************
*                        Test method for                        *
*       Oil and Grease and Petroleum Hydrocarbons               *
*                  in Water and Soil                            *
*                                                               *
*              Perkin-Elmer Model 1600 FT-IR                    *
*                     Analysis Report                           *
*****************************************************************

 Printed:  14:01

*
*  Sample identification
  IDV
*  Net absorbance at hydrocarbons (2930) cm-1
  0.212
*
*
*
```

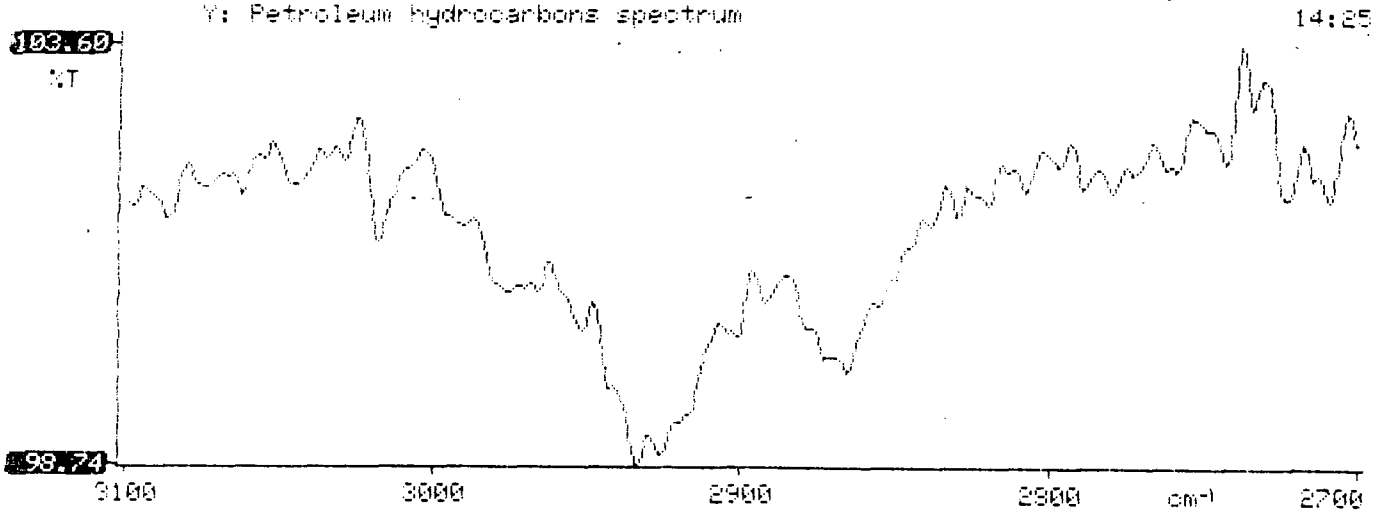


```
**********************************************************
*                    Heat Period 1.0                     *
*      Oil and Grease and Petroleum Hydrocarbons         *
*                  in Water and Soil                     *
*                                                        *
*            Perkin-Elmer Model 1600 FT-IR               *
*                  Analysis Report                       *
**********************************************************
*
 99/10/20  14:08
*
*  Sample identification
 ICB
*  Net absorbance of Hydrocarbons (2930 cm-1)
 0.000
*
*
*
```

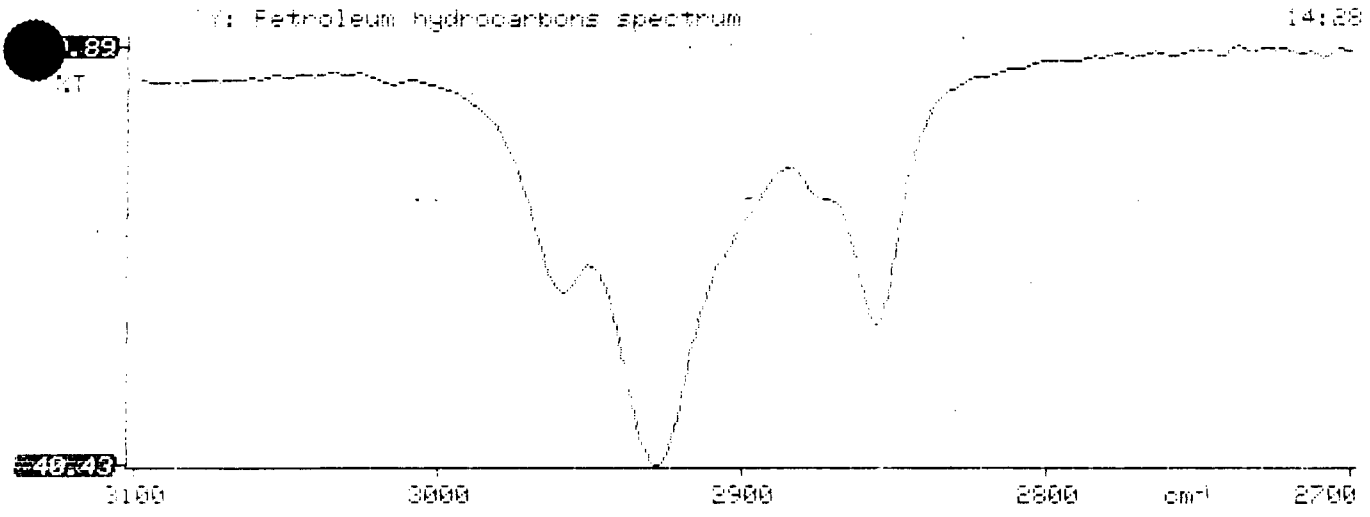



Petroleum hydrocarbons spectrum
14:14
3100
3000
2900
2800
cm-1

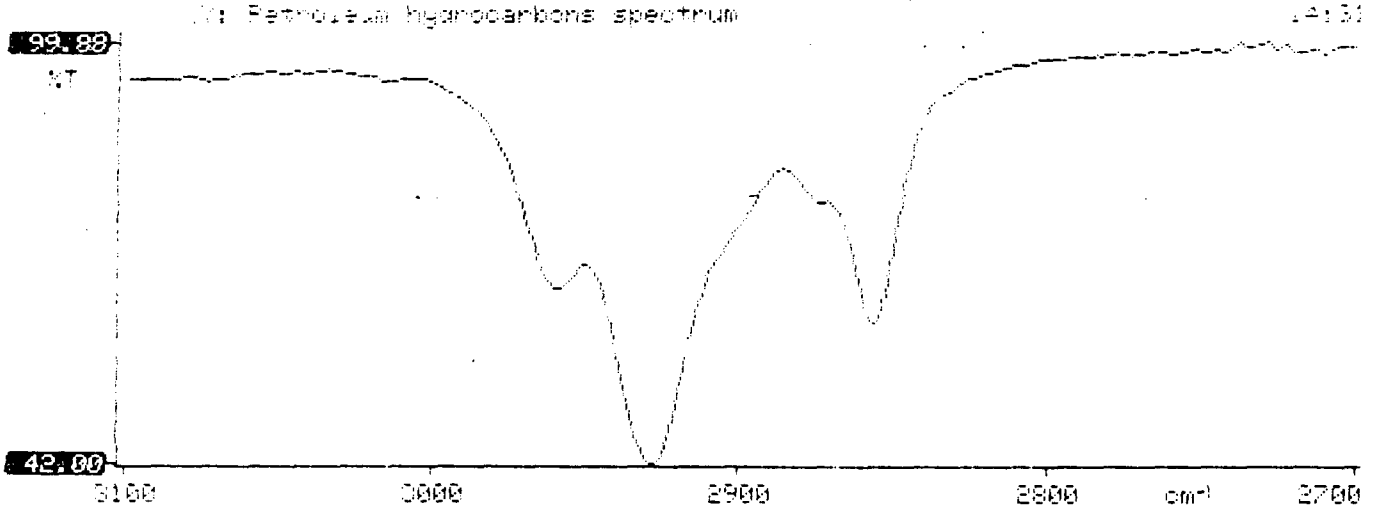
```
*****************************************************************
*                    Test Method for                            *
*      Oil and Grease and Petroleum Hydrocarbons                *
*                  in Water and Soil                            *
*                                                               *
*            Perkin-Elmer Model 1600 FT-IR                      *
*                  Analysis Reports                             *
*****************************************************************
*
 99/10/20   14:25
*
*   Sample Identification
 98LHC096-MB1
*   Net absorbance of Hydrocarbons (2930 cm-1)
 0.014
*
*
*
```



```
*,*************************************************************
*                    Test Method for:                         *
*      Oil and Grease and Petroleum Hydrocarbons              *
*                  in Water and Soil                          *
*                                                             *
*            Perkin-Elmer Model 1600 FT-IR                    *
*                   Analysis Report                           *
*************************************************************
*
 98/10/20  14:27
*
*  Sample identification
 9SLHC09e-LC1
*  Net absorbance of hydrocarbons (2930 cm-1)
 0.381
*
*
*
```



```
**********************************************************************
*                        Test Method for                             *
*       Oil and Grease and Petroleum Hydrocarbons                    *
*                    in Water and Soil                               *
*                                                                    *
*              Perkin-Elmer Model 1600 FT-IR                         *
*                    Analysis Report                                 *
**********************************************************************
*
  99/10/20   14:51
*
*   Sample identification
  VELP00FA-LCL
*   Net absorbance of hydrocarbons (2930 cm-1)
  0.361
*
*
*
```

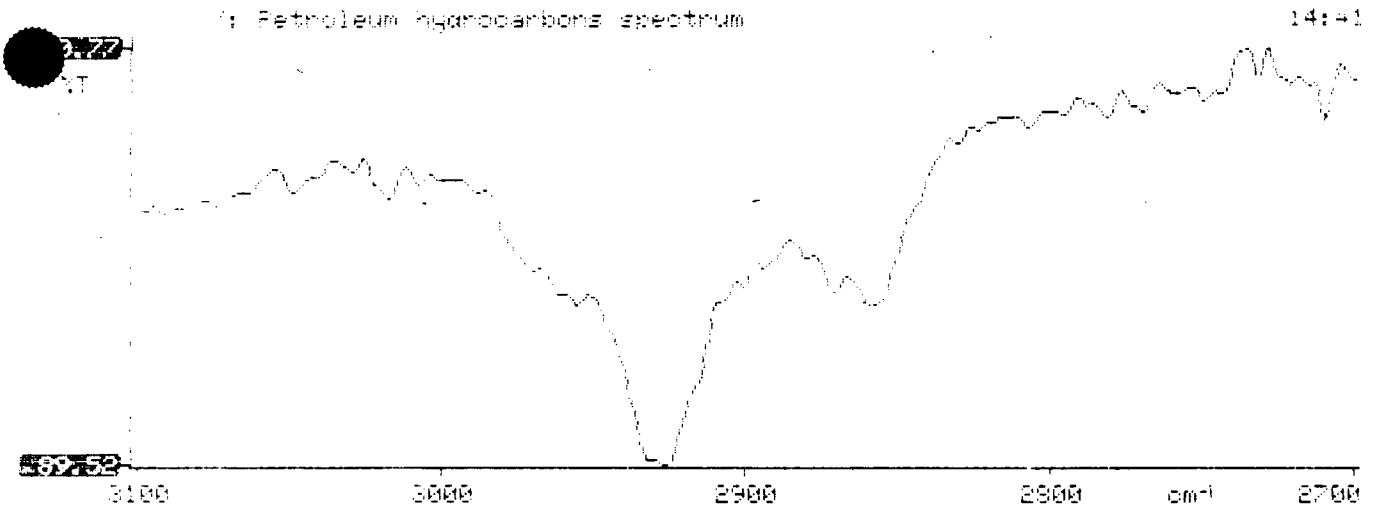


```
                    Test Method for
      Determination of Trace and Petroleum Hydrocarbons
                    in Water and Soil

          Perkin-Elmer Model 1600 FT-IR
                  Analysis Record
```

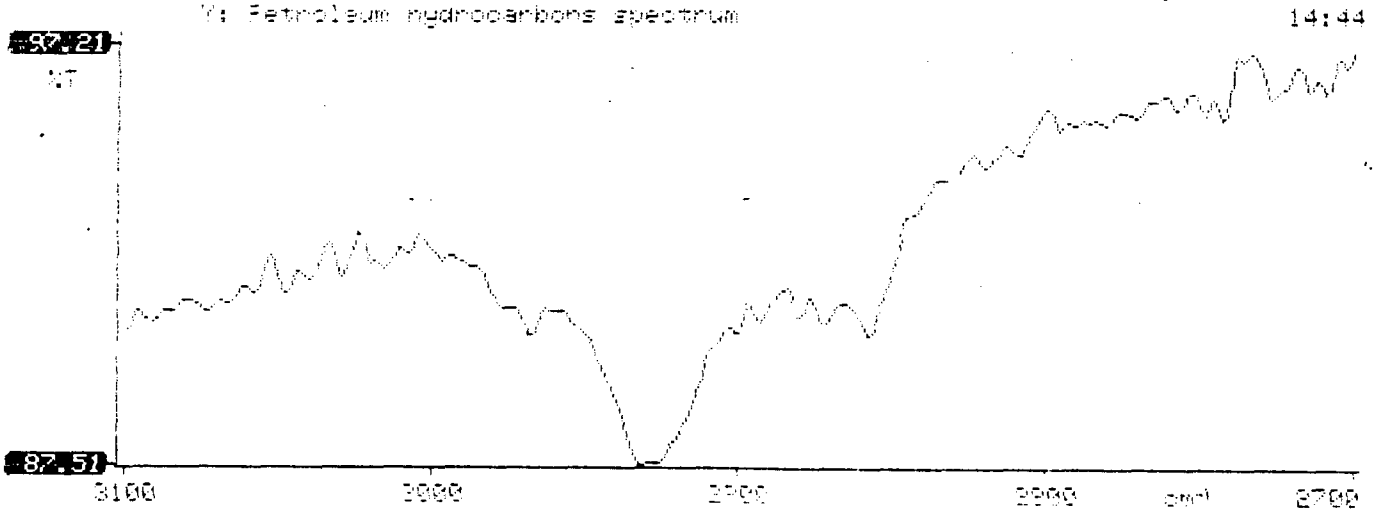
04/10/20 14:41

Sample Identification
RS10_Dec-008

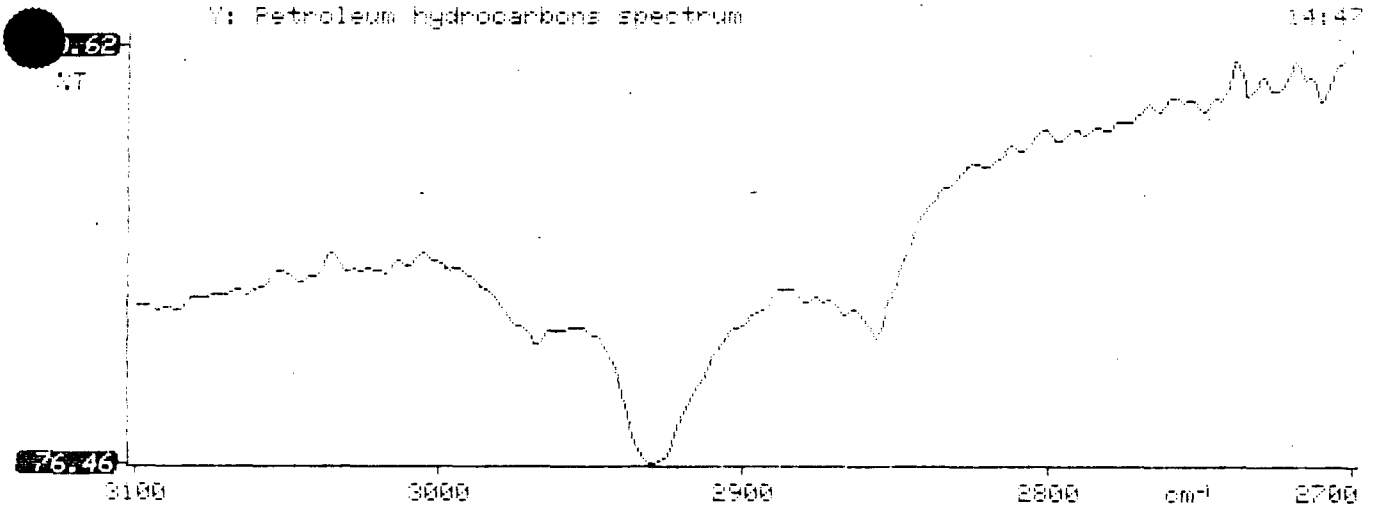
Net Absorbance of Hydrocarbons (2930 cm-1)
0.037



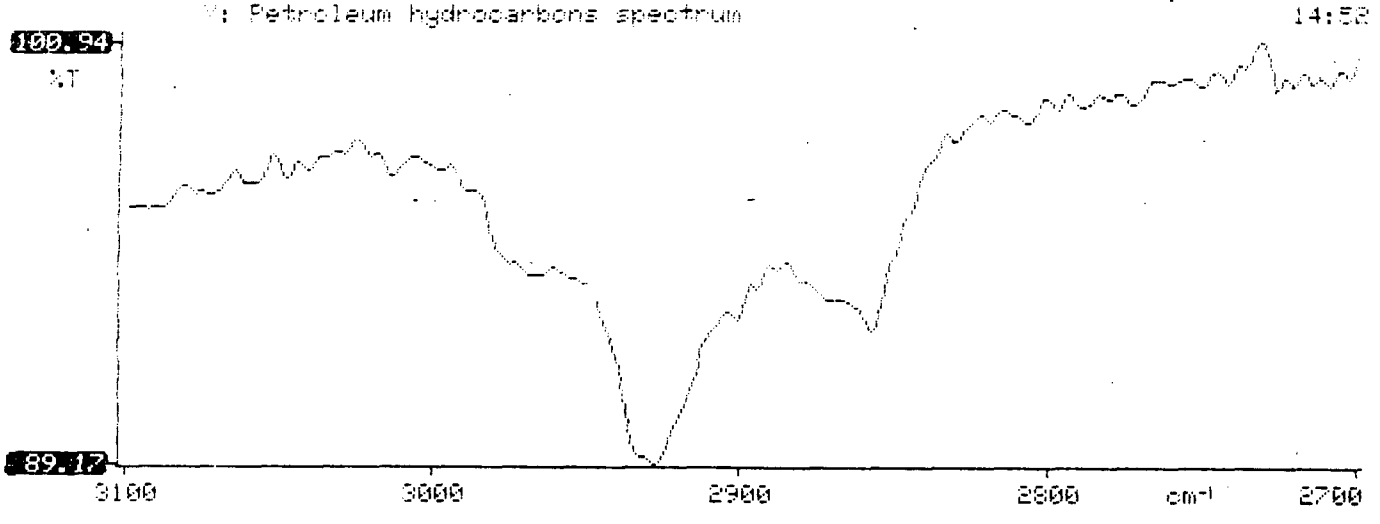
```
*****************************************************************
*                    Test Method for                            *
*      Oil and Grease and Petroleum Hydrocarbons                *
*                  in Water and Soil                            *
*                                                               *
*            Perkin-Elmer Model 1600 FT-IR                      *
*                  Analysis Report                              *
*****************************************************************
*
 9/11/20   14:44
*
*  Sample identification
 PE1CL06M-J09
*  Calculated absorbance of hydrocarbons (2930 cm-1)
 0.029
*
*
*
```



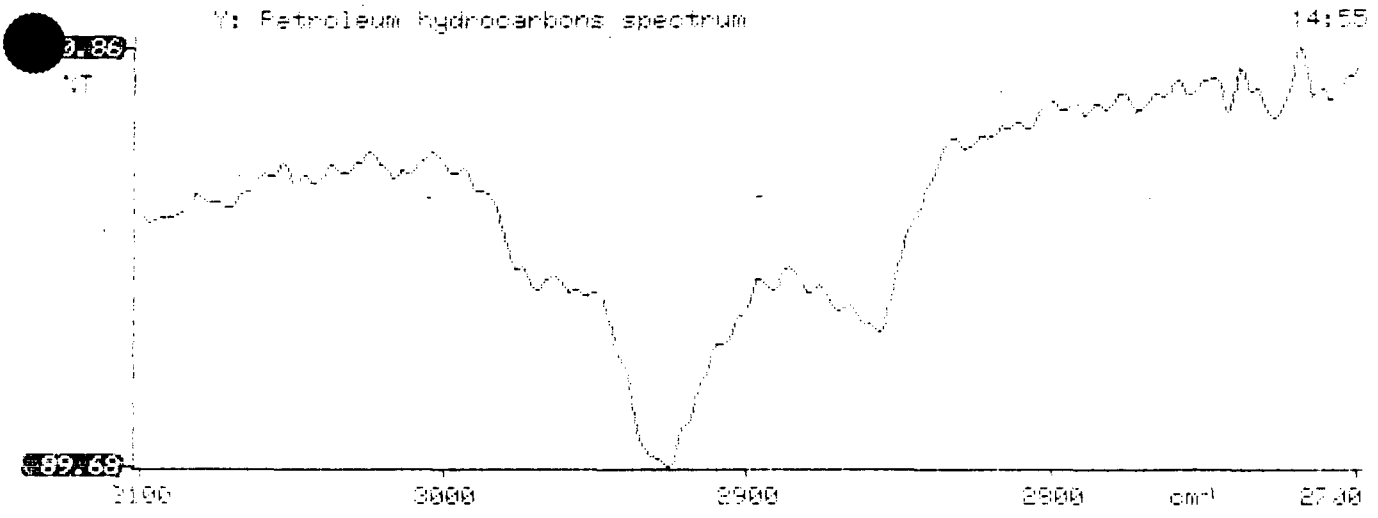
```
*****************************************************************
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*                                                               *
*****************************************************************
*
 28/11/20   14:47
*
*   Sample identification
 PB10L0ss-010
*   Net absorbance of hydrocarbons (2930 cm-1)
 0.049
*
*
*
```



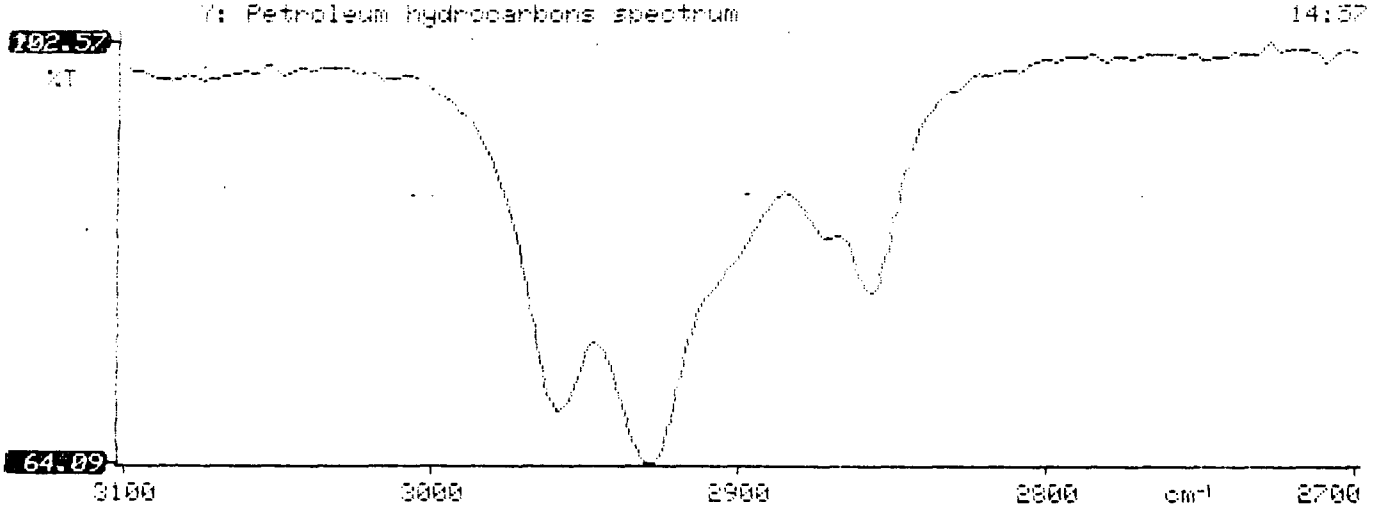
```
**********************************************************
*                    Test Method for                     *
*      Oil and Grease and Petroleum Hydrocarbons         *
*                  in Water and Soil                     *
*                                                        *
*            Perkin-Elmer Model 1600 FT-IR               *
*                  Analysis Report                       *
**********************************************************
*
 98/10/20   14:52
*
*  Sample identification
 9810L06a-011
*  Net absorbance of hydrocarbons (2930 cm-1)
 0.042
*
*
*
```



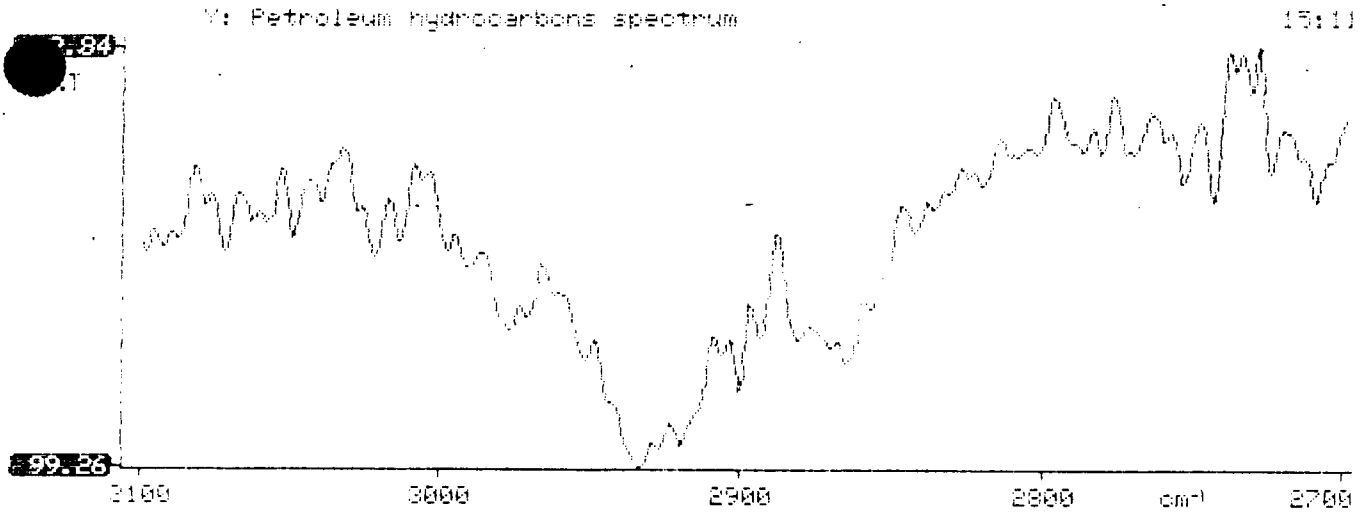
```
**********************************************************
*                    Test Name: Oil                      *
*      Oil and Grease and Petroleum Hydrocarbons         *
*                  in Water and Soil                     *
*                                                        *
*             Perkin-Elmer Model 1600 FT-IR              *
*                   Analysis Report                      *
**********************************************************
*
 09/12/20   14:55
*
*  Sample identification
 9810L066-012
*  Net absorbance of hydrocarbons (2930 cm-1)
 0.035
*
*
*
```



```
*****************************************************************
*                    Test Method for                            *
*      Oil and Grease and Petroleum Hydrocarbons                *
*                  in Water and Soil                            *
*                                                               *
*              Perkin-Elmer Model 1600 FT-IR                    *
*                    Analysis Report                            *
*****************************************************************
*
 98/10/20   14:57
*
*   Sample identification
 CCV
*   Net absorbance of Hydrocarbons (2930 cm-1)
 0.197
*
*
*
```

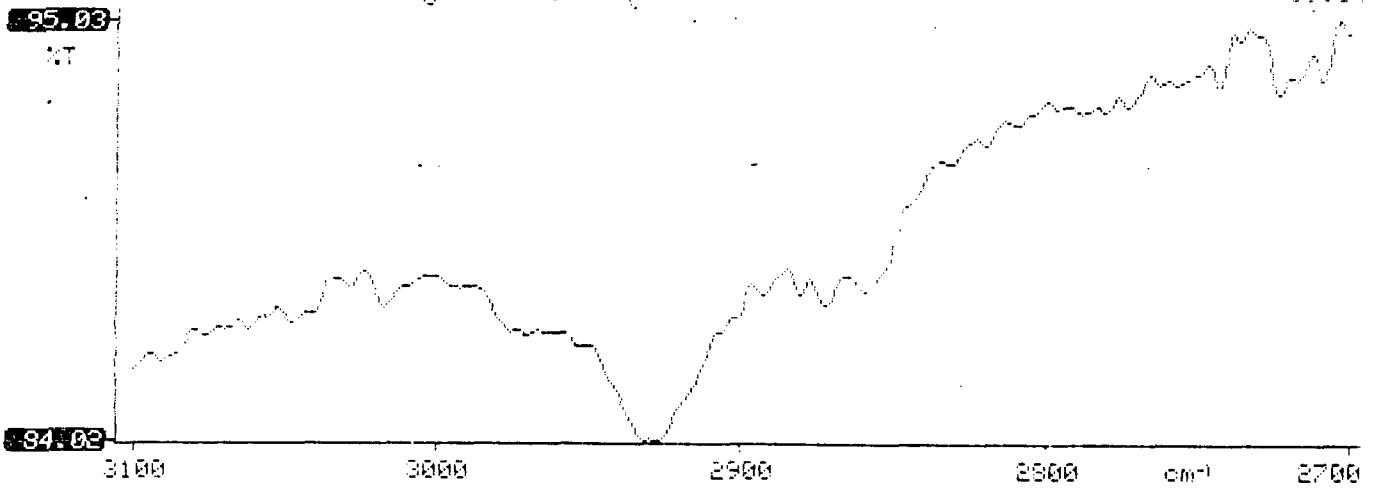


```
**********************************************************************
*                    Test Method for                                 *
*      Oil and Grease and Petroleum Hydrocarbons                     *
*                  in Water and Soil                                 *
*                                                                    *
*            Perkin-Elmer Model 1600 FT-IR                           *
*                  Analysis Report                                   *
**********************************************************************
*
 08/10/94   15:11
*
*  Sample identification
 DCB
*  Net absorbance of hydrocarbons (2930 cm-1
 0.010
*
*
*
```

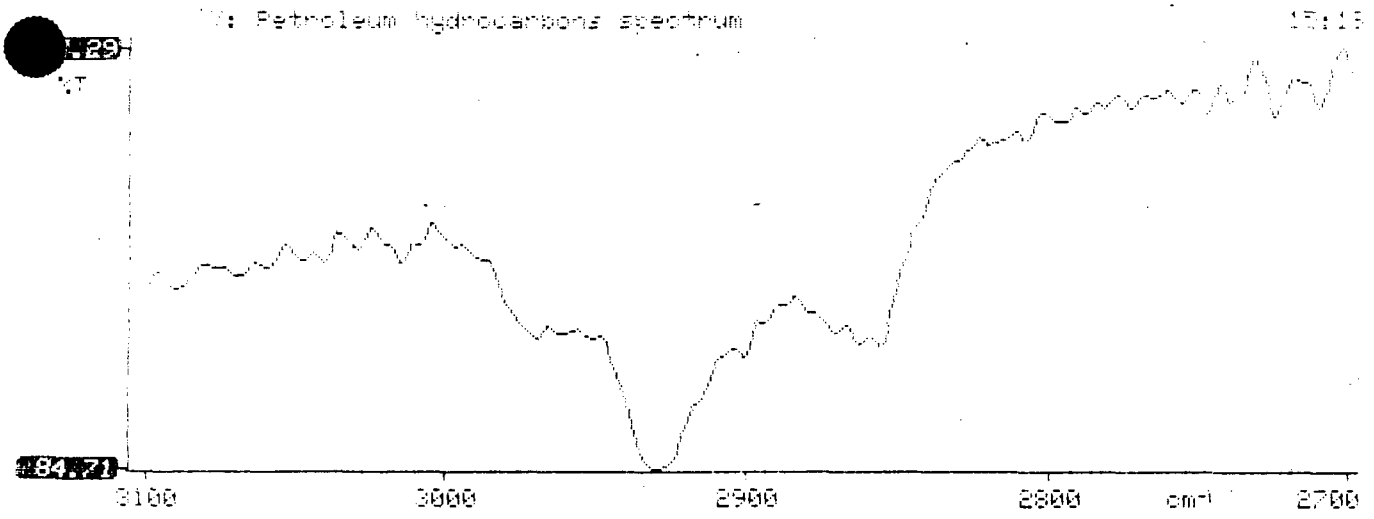


```
**********************************************************************
*                                                                    *
*                        Oil Method for                              *
*       Oil and Grease and Petroleum Hydrocarbons                    *
*                    in Water and Soil                               *
*                                                                    *
*                                                                    *
*              Perkin-Elmer Model 1600 FT-IR                         *
*                    Analysis Report                                 *
**********************************************************************
*
 98/10/20   15:14
*
*   Sample Identification
 9810L967-001
*   Net absorbance of hydrocarbons (2930 cm-1)
 0.029
*
*
*
```

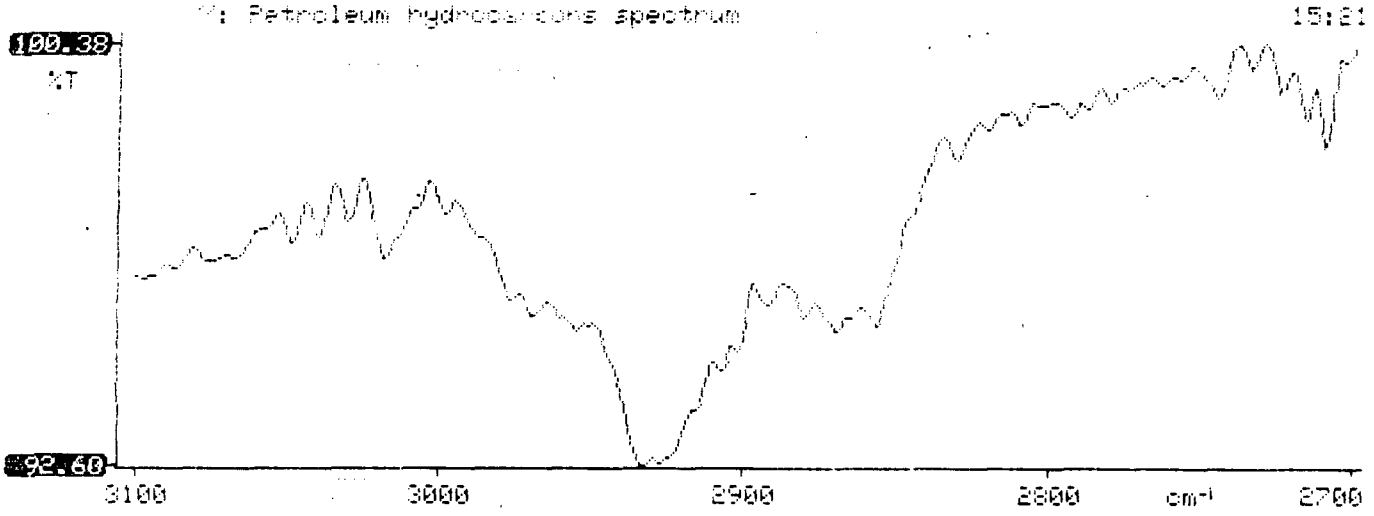
V: Petroleum hydrocarbons spectrum 15:14



```
**********************************************************************
*                                                                    *
*                        Test Report                                 *
*          Oil and Grease and Petroleum Hydrocarbons                 *
*                        in Water and Soil                           *
*                                                                    *
*                  Perkin-Elmer Model 1600 FT-IR                     *
*                        Analysis Report                             *
*                                                                    *
**********************************************************************
*
  29/11/97   15:18
*
*   Sample identification
  PE1OIL047-NOE
*   Wet absorbance of Hydrocarbons (2930 cm-1)
  0.041
*
*
*
```



```
*****************************************************************
*                        Test Method 418.1                      *
*        Oil and Grease and Petroleum Hydrocarbons              *
*                    in Water and Soil                          *
*                                                               *
*                 Perkin-Elmer Model 1600 FT-IR                 *
*                       Analysis Report                         *
*****************************************************************
*
 94/10/20   15:21
*
*   Sample identification
 9510L067-003
*   Net absorbance of hydrocarbons (2930 cm-1)
 0.024
*
*
*
```



Test Method for

Oil and Grease and Petroleum Hydrocarbons

in Water and Soil

Perkin-Elmer Model 1600 FT-IR

Analysis Report

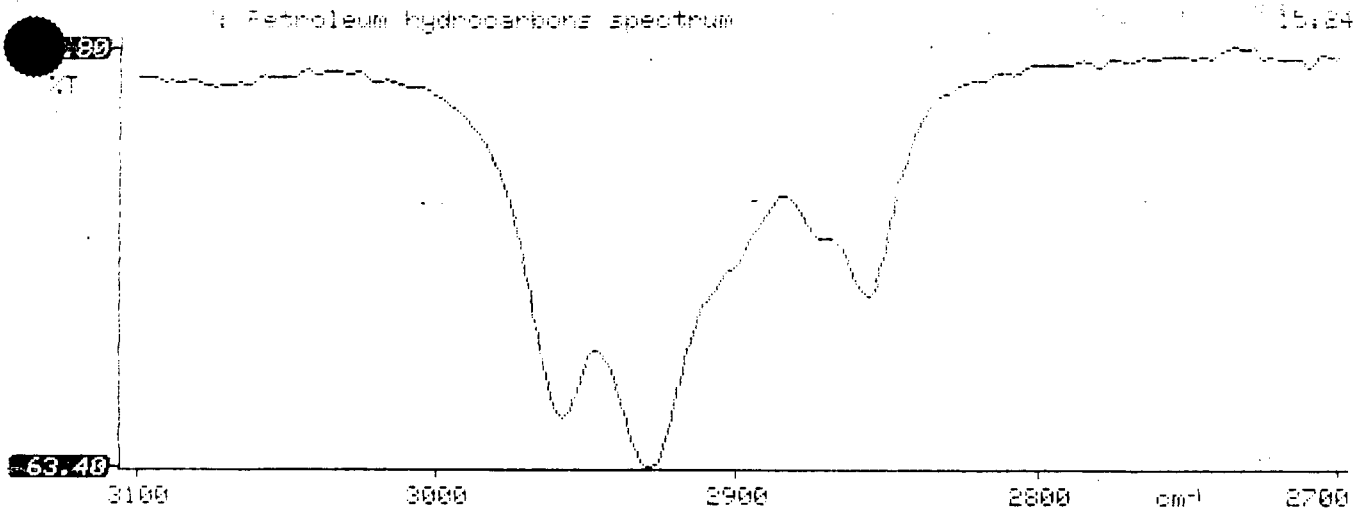
98/10/30 15:24

Sample identification

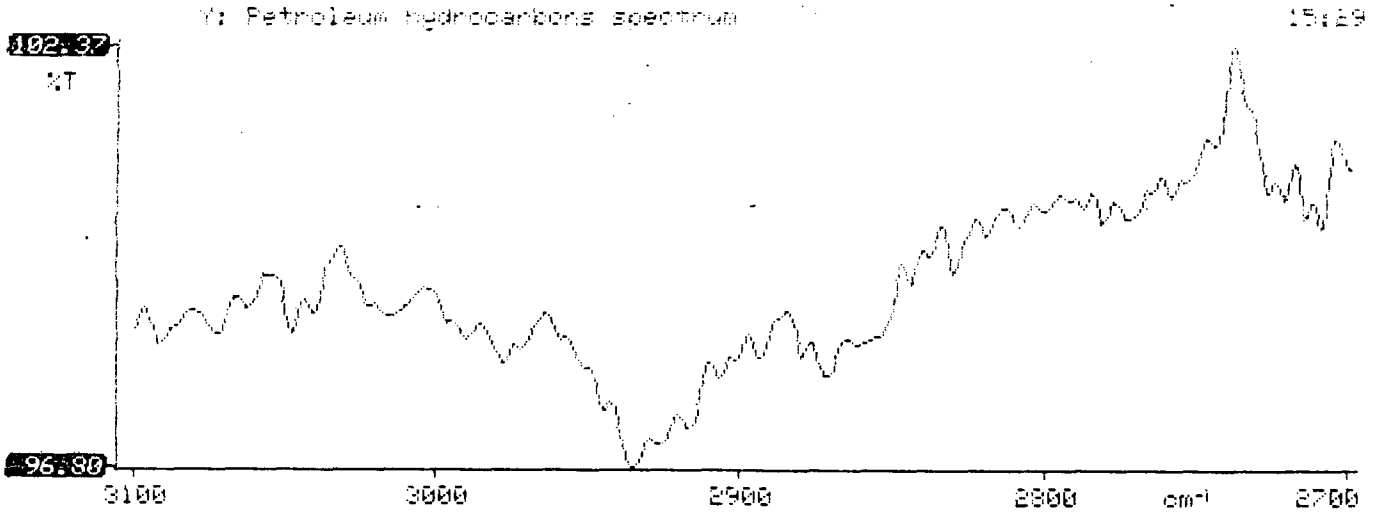
SCU

Net absorbance of hydrocarbons (2930 cm-1)

0.207



```
*****************************************************************
*                        Test Method 1664A                      *
*       Oil and Grease and Petroleum Hydrocarbons               *
*                  in Water and Soil                            *
*                                                               *
*            Perkin-Elmer Model 1600 FT-IR                      *
*                  Analysis Report                              *
*****************************************************************
*
  98/10/20   15:19
*
*  Sample Identification
  DCE
*  Net absorbance of hydrocarbons (2930 cm-1)
  0.012
*
*
*
```



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