Westinghouse Hanford Company

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6 of 10

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OSM RCRA LEVEL C DATA ASSESSMENT

DATE 9-26-90

REVIEWED BY C.J. Simpson

LABORATORY WHC 222S

CASE # SST 241-U-110

SDG # Core 10 Composite

SAMPLES/MATRIX Seq(3) 89-040

Seq(4) 89-041

LAB ID

Untreated: F0911 3 F0899

Acid Digest: F0911

Water Leach: F0905

Fusion: F0899

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK / ANALYSIS	CN u	Hg u	ICP f
1. Holding Time	X	X	X
2. Calibration	O	O	M
3. Analytical Blanks	O	O	X
4. LCS	*	*	*
5. ICS (ICP ONLY)	N/A	N/A	*
6. Matrix Spike	O	O	M
7. Duplicate Analyses	O	O	X
8.			
9.			
10.			

O = data had no problems
X = data qualified due to minor problems
M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSSMENT:

NOTES: A=acid digested; u=untreated; w=water leach; f=fusion; * = no data provided with data package.

o Refer to the corresponding attachments for explanation of any problems.

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OSM RCRA LEVEL C DATA ASSESSMENT

DATE 10-4-90

REVIEWED BY C. J. Simiele

LABORATORY WHC 222S

CASE # SST-241-U-110

SDG # Core 5 Composite

SAMPLES/MATRIX Seq(3): # 89-040

Seq(H): # 89-041

LAB ID: untreated: F0911 & F0899

acid digested: F0911

water leach: F0905

fusion: F0899

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK / ANALYSIS	ICP^W	TOC^W	NH_3^W
1. Holding Times	X	O	X
2. Calibration	O	O	O
3. Analytical Blank	~~X~~ O	O	O
4. LCS	*	*	*
5. ICS (ICP only)	N/A	N/A	N/A
6. Matrix Spike	X	O	O
7. Duplicate Analyses	X	O	O
8.			
9.			
10.			

O = data had no problems
X = data qualified due to minor problems
M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSSMENT:

NOTES: w = water leach sample preparation
* = no data provided with data package

o Refer to the corresponding attachments for explanation of any problems.

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OSM RCRA LEVEL C DATA ASSESSMENT

DATE 10-4-90

REVIEWED BY C.J. Simiele

LABORATORY WHC 222-S

CASE # SST-241-U-110

SDG # Core 5 Composite

SAMPLES/MATRIX Sampler ID: Seq(3): #89-040
Seq(4): #89-041
LABID: Untreated: F0911 & F0899
Acid Digest: F0911
Water Leach: F0905
Fusion: F0899

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS	Carbonate W	NO_2 W	A.A W
1. Holding Times		X	X	X
2. Calibration		O	O	O
3. Analytical Blank		O	O	O
4. LCS		*	*	*
5. ICS (ICP only)		N/A	N/A	N/A
6. Matrix Spike		O	O	X
7. Duplicate Analyses		O	X	O
8.				
9.				
10.				

O = data had no problems
X = data qualified due to minor problems
M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSSMENT:

NOTES: W= water digestion, sample preparation.
*=no data provided with data package.

o Refer to the corresponding attachments for explanation of any problems.

9112513

Westinghouse
Hanford Company

OSM RCRA LEVEL C DATA ASSESSMENT

DATE 10-4-90

REVIEWED BY C.J. Simiele

LABORATORY WHC 222-S

CASE # SST-241-U-110

SDG # Core 5 Composite

SAMPLES/MATRIX Sampler ID: Seq(3): # 89-040
Seq(4): # 89-041
LAB ID: Untreated: F0911 & F0899
Acid digest: F0911
Water leach: F0905
Fusion: F0899

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS	ICP[W]	A.A.[A]	ICP[A]
1. Holding Time		X	X	O
2. Calibration		O	O	X
3. Analytical Blank		X	O	
4. LCS		*	*	*
5. ICS (ICP only)		*	N/A	~~#~~ *
6. Matrix Spike		X	O	X
7. Duplicate Analyses		X	X	X
8.				
9.				
10.				

O = data had no problems
X = data qualified due to minor problems
M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSSMENT: _____

NOTES: W= water leached samples; A= acid digested samples.
*= no data provided with data package.

o Refer to the corresponding attachments for explanation of any problems.

9112214

Westinghouse
Hanford Company

OSM RCRA LEVEL C DATA ASSESSMENT

DATE 9-26-90

REVIEWED BY C.J. Sumiele

LABORATORY WHC 222-S

CASE # SST-241-U-110

SDG # Core 5 Composite

Sampler ID:
SAMPLES/MATRIX Seq(3): 89-040
Seq(4): 89-041

LAB ID:
Untreated: F0911 & F0899
Acid digest: F0911
Water leach: F0905
Fusion: F0899

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS	pH	%H2O	
		(Duplicate Analysis only)		
1. —				
2. Duplicate.		O	O	
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

O = data had no problems
X = data qualified due to minor problems
M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSSMENT: _____

NOTES: _____

o Refer to the corresponding attachments for explanation of any problems.

Analytical Laboratory Data Summary

SINGLE SHELL TANK PROJECT

The next four pages of this report (including this page) summarizes the results for the analysis of the

Core 5 Composite Sample
Tank 241-U-110

UNTREATED SAMPLE RESULTS

	Sample	Duplicate
pH	12.89	12.92
% H2O	33.40%	33.60%
Mercury	0.10 ppm	0.12 ppm
Cyanide	<1.65 ug/g	<2.50 ug/g
Carbon 14	Analysis was not performed.	

Core 5 Composite
Fusion Dissolution

Data Summary
Results are Wet Weight

Radiological Analysis
Fusion Dissolution

Total Alpha	<0.78 uci/g	<0.63 uci/g
Total Beta	1330 uci/g	1360 uci/g
GEA		
Cs-137	39.20 uci/g	37.40 uci/g
Uranium	5450 ug/g	5150 ug/g
Plutonium	0.35 uci/g	0.34 uci/g
Americium 241	0.13 uci/g	0.01 uci/g
Neptunium 237	<0.42 uci/g	<0.45 uci/g
Technetium 99	<0.020 uci/g	<0.023 uci/g
Iodine 129	<0.13 uci/g	<0.18 uci/g
Strontium 90	0.04 uci/g	0.04 uci/g

ICP Results
Fusion Dissolution
CLP Elements

	Sample	Duplicate
Aluminum	114001 ug/g	110726 ug/g
Antimony	LT	1296 ug/g
Arsenic	NC	NC
Barium	LT	LT
Beryllium	LT	LT
Bismuth	37270 ug/g	42211 ug/g
Cadmium	LT	LT
Calcium	4383 ug/g J	2660 ug/g
Chromium	581 ug/g J	668 ug/g
Cobalt	LT UJ	394 ug/g
Copper	LT	LT
Iron	17334 ug/g	17280 ug/g
Lead	469 ug/g J	1810 ug/g
Lithium	LT	LT
Magnesium	8244 ug/g J	6735 ug/g
Manganese	5067 ug/g	4794 ug/g
Molybdenum	LT	LT
Nickel	7346 ug/g	7174 ug/g
Phosphorous	NC	NC
Potassium	NC	NC
Samarium	LT	LT
Selenium	LT UJ	948 ug/g
Silicon	30708 ug/g J	9346 ug/g
Silver	LT UJ	LT
Sodium	144203 ug/g	142135 ug/g
Strontium	637 ug/g	687 ug/g
Thallium	LT	LT
Vanadium	LT	LT
Zinc	7124 ug/g UJ	4492 ug/g

LT: Less Than
NC: Not Calibrated

Other ICP Elements		
Boron	LT UJ	110 ug/g
Cerium	NC R	NC
Europium	LT	LT
Lanthanum	LT	LT
Mercury	LT	LT
Neodymium	NC	NC
Sulfur	1327 ug/g J	1846 ug/g
Tantalum	LT ~~UJ~~ R	LT
Thorium	LT	LT
Tin	LT	LT
Titanium	LT	LT
Uranium	LT	LT
Zirconium	LT UJ	LT

9-26-90
C.V. Simpell

Core 5 Composite
Water Digestion

Data Summary

Results are Wet Weight

pH of Water Digested Solution

	Sample	Duplicate
pH	11.46	11.85

Anion Analysis

Water Digestion

	Sample	Duplicate
Fluoride	4380 ug/g J	14200 ug/g
Chloride	<1090 ug/g	<927 ug/g
Nitrate	33800 ug/g J	62700 ug/g
Phosphate	10900 ug/g J	28400 ug/g
Sulphate	10900 ug/g J	4340 ug/g
Ammonia	<12800 ug/g	<10900 ug/g
Carbonate	2850 ug/g	2610 ug/g
Chrome VI	Analysis not performed	
Nitrite	7270 ug/g J	13600 ug/g

Radiological Analysis

Water Digestion

	Sample	Duplicate
Total Alpha	<0.0037 uci/g	<0.0037 uci/g
Total Beta	10.2 uci/g	14.9 uci/g
GEA		
Cs-137	14 uci/g	13.6 uci/g
Putonium	0.00086 uci/g	<0.00056 uci/g
Americium 241	<0.0012 uci/g	<0.0010 uci/g
Carbon 14	0.00052 uci/g	0.00043 uci/g
Iodine 129	<0.0068 uci/g	<0.0098 uci/g
Neptunium 237	<0.116 uci/g	<0.099 uci/g
Strontium 90	0.076 uci/g	0.057 uci/g
Technetium 99	0.0031 uci/g	0.0066 uci/g
Tritium	0.0022 uci/g	0.0027 uci/g

Atomic Absorption Spectroscopy

Hydride Analysis
Water Digestion

	Sample	Duplicate
Arsenic	<0.54 ug/g	<0.46 ug/g
Mercury	<0.16 ug/g	<0.13 ug/g
Selenium	<1.08 ug/g J	<0.92 ug/g

ICP Results

Water Digestion

CLP Elements

	Sample	Duplicate
Aluminum	4332 ug/g J	6274 ug/g
Antimony	LT	LT
Arsenic	LT	LT
Barium	LT	LT
Beryllium	LT	LT
Bismuth	NC	NC
Cadmium	LT	LT
Calcium	63 ug/g UJ	1946 ug/g
Chromium	807 ug/g J	2405 ug/g
Cobalt	LT	LT
Copper	LT	LT
Iron	29 ug/g	LT
Lead	NC	NC
Lithium	LT	LT
Magnesium	92 ug/g U	2367 ug/g
Manganese	LT	LT
Molybdenum	LT	LT
Nickel	LT	LT
Phosphorous	NC	NC
Potassium	LT	LT
Samarium	NC	NC
Selenium	255 ug/g J	4289 ug/g
Silicon	NC	NC
Silver	LT	LT
Sodium	127953 ug/g	111278 ug/g
Strontium	LT	LT
Thallium	LT	LT
Vanadium	LT	LT
Zinc	19 ug/g UJ	1909 ug/g

LT: Less Than
NC: Not Calibrated
NOT CALC: Not Calculated

Other ICP Elements

	Sample	Duplicate
Boron	667 ug/g J	2498 ug/g
Cerium	LT	LT
Europium	LT	LT
Lanthanum	LT	LT
Mercury	66 ug/g UJ	1903 ug/g
Neodymium	LT	LT
Sulfur	1802 ug/g J	5103 ug/g
Tantalum	LT	LT
Thorium	NC	NC
Tin	LT	LT
Titanium	LT	LT
Uranium	NC	NC
Zirconium	LT	LT

9-26-90
C.J. Campbell

Core 5 Composite
Acid Digestion

Data Summary
Results are Wet Weight

Atomic Absorption Spectroscopy
Hydride Analysis
Acid Digestion

	Sample		Duplicate	
Arsenic	0.48	ug/g J	0.37	ug/g
Mercury	0.057	ug/g J	0.030	ug/g
Selenium	1.03	ug/g J	0.76	ug/g

ICP Results
Acid Digestion
CLP Elements

	Sample	Duplicate
Aluminum	105142 ug/g J	105902 ug/g
Antimony	NC	NC
Arsenic	196 ug/g J	145 ug/g
Barium	73 ug/g J	62 ug/g
Beryllium	4 ug/g J	3 ug/g
Bismuth	44549 ug/g	46161 ug/g
Cadmium	25 ug/g J	17 ug/g
Calcium	559 ug/g J	559 ug/g
Chromium	1371 ug/g J	1200 ug/g
Cobalt	NC	NC
Copper	104 ug/g J	78 ug/g
Iron	16978 ug/g	17952 ug/g
Lead	2962 ug/g	703 ug/g
Lithium	29 ug/g	15 ug/g
Magnesium	716 ug/g	594 ug/g
Manganese	5421 ug/g	5272 ug/g
Molybdenum	68 ug/g	54 ug/g
Nickel	623 ug/g	166 ug/g
Phosphorous	23475 ug/g UJ	18115 ug/g
Potassium	20967 ug/g J	705 ug/g
Samarium	1206 ug/g J	575 ug/g
Selenium	1007 ug/g	1165 ug/g
Silicon	NC	NC
Silver	82 ug/g R	51 ug/g
Sodium	149969 ug/g J	154636 ug/g
Strontium	736 ug/g J	698 ug/g
Thallium	8358 ug/g	1351 ug/g
Vanadium	88 ug/g	72 ug/g
Zinc	248 ug/g UJ	141 ug/g

LT: Less Than
NC: Not Calibrated
NOT CALC: Not Calculated

Other ICP Elements

Boron	71 ug/g UJ	43 ug/g
Cerium	1157 ug/g J	718 ug/g
Europium	17 ug/g J	10 ug/g
Lanthanum	100 ug/g UJ	50 ug/g
Mercury	624 ug/g J	293 ug/g
Neodymium	LT UJ	LT
Sulfur	2312 ug/g	1839 ug/g
Tantalum	236 ug/g J	161 ug/g
Thorium	4566 ug/g J	449 ug/g
Tin	165 ug/g J	126 ug/g
Titanium	79 ug/g UJ	55 ug/g
Uranium	13060 ug/g J	9775 ug/g
Zirconium	280 ug/g J	207 ug/g

9-26-90
C.J. Surprenant

RCRA LEVEL C QC

Name C.J. Simiele Date 10-4-90

QC Check: Holding Times

COMMENTS: Mercury and cyanide holding times were not met.

ACTION: None- Due to the unusual circumstances under which SST-241-U-110 samples were analyzed, and analyses which did not meet holding times, will not be qualified.

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

U

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Calibration

COMMENTS: All initial and continuing calibration with in control limits for CN.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simicic Date 9-27-90

QC Check: Analytical Blank

COMMENTS: Cyanide preparation blank appears to be contaminant free. (No D.L. provided with CN analysis.)

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9 1 1 2 2 5 1 3 0 2

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: LCS

COMMENTS: No LCS data. Provide with data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: Matrix Spike

COMMENTS: Matrix spike results for CN within Control Limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Duplicate Analyses

COMMENTS: Both sample and duplicate results are less then (<) values, therefore no Control Limits exist.

ACTION: None.

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Calibration

COMMENTS: All initial and continuing calibration results for Hg, are with in control limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9 1 1 2 1 3 0 9

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Analytical Blank

COMMENTS: Mercury preparation blank is Contaminant Free.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112261307

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: LCS

COMMENTS: No LCS data provided with this data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: Matrix Spike

COMMENTS: All matrix spike results for Hg within control limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9 1 1 2 4 1 1 3 9

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: Duplicate Analyses

COMMENTS: All Hg duplicate results within control limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

0 0 4 1 0 2 1 1 6

RCRA LEVEL C QC

Name C.J. Simiele Date 10-9-90

QC Check: Holding Time.

COMMENTS: Holding times were met for ICP analyses.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112110401

RCRA LEVEL C QC

Name C.J. Sumiela Date 9-26-90

QC Check: Calibration

COMMENTS: ICP (fusion prep) All initial calibration within control limits and calibration frequency. One continuing calibration check out of control limits for Cr, Co, Si & Ta.

ACTION: Qualify associated samples as per OSM guidelines

sample #	constituent	value/qual	sample #	constituent	value/qual
F0899	Cr	J			
	Co	UJ			
	Si	J			
	Ta	R			

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 10-4-90

QC Check: Analytical Blanks

COMMENTS: Possible contaminants detected in Zn for ICP fusion prepared sample.

ACTION: Qualify associated samples as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0899	Zn	U			

___ of ___

9112214 3

RCRA LEVEL C QC

Name C.J. Simiele Date 9-26-90

QC Check: LCS

COMMENTS: No LCS data provided with this data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112261504

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: ICS

COMMENTS: No ICS data provided with data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

F

RCRA LEVEL C QC

Name C. J. Simiele Date 9-26-90

QC Check: Matrix Spike

COMMENTS: ICP Analyses: ~~Nine~~ Ten % Recovery out of Control limits (constituents included - B, Ca, Cr, Cu, Mg, Si, Ag, Ta, Zn, Zr).

ACTION: Qualify associated data as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0899	Ca	J			
	Cr	J			
	Mg	J			
	Si	J			
	Ag	UJ			
	Zn	J			
	B	UJ			
	Ta	UJ			
	Zr	UJ			
	Cu	R			

___ of ___

9 1 1 2 0 2 1 4 0 6

RCRA LEVEL C QC

Name C.J. Simiele Date ~~10~~-9-26-90

QC Check: Duplicate Analyses

COMMENTS: ICP Analyses: Duplicate Analyses (fusion prep.) out of ±20% control limit include: Ca (39.3%); Co (205.4%); Pb (285.9%); Se (185.5%); Si (69.6%); Zn (37%); B (153.5%) & S (39.1%).
Note: All LT values were assumed to = that D.L. to determine the RPD.

ACTION: Qualify associated sample as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0899	Ca	J			
	Co	UJ			
	Pb	J			
	Se	J			
	Si	J			
	Zn	J			
	B	UJ			
	S	J			

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 10-4-90

QC Check: Holding Times

COMMENTS: IC analysis holding times were not met.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

0 0 4 1 1 2 1 1 6

w.

RCRA LEVEL C QC

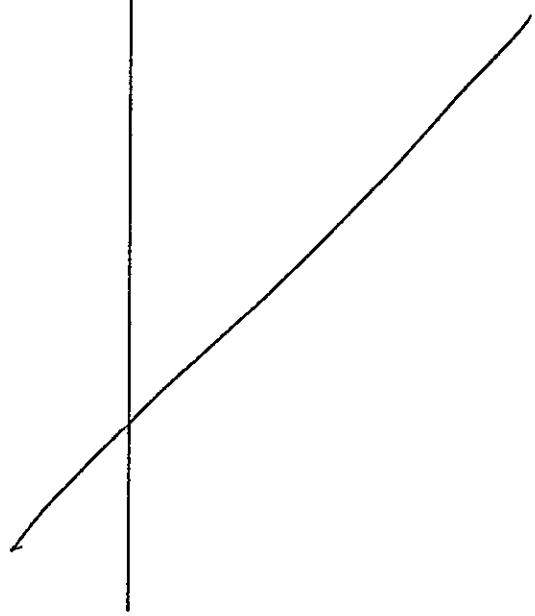
Name C. J. Simiele Date 9-26-90

QC Check: Calibration

COMMENTS: I.C. Analyses: All initial and continuing calibration with in control limits. Calibration frequency meets requirements.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual



___ of ___

9112261409

w

RCRA LEVEL C QC

Name C. J. Simiele Date 9-26-90

QC Check: Analytical Blank

COMMENTS: IC analyses: all instrument and preparation blanks contaminant free.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

0 1 4 1 0 5 2 1 1 6

u)

RCRA LEVEL C QC

Name C. J. Simiele Date 9-26-90

QC Check: Laboratory Control Samples

COMMENTS: No LCS data provide with this data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

W

RCRA LEVEL C QC

Name C.J. Simiele Date 9-26-90

QC Check: Matrix Spike

COMMENTS: IC Analyses: One spike %Rec (F) out of Control limits

ACTION: Qualify associated data as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0905	F	J			

___ of ___

W

RCRA LEVEL C QC

Name C.J. Simiele Date 9-210-90

QC Check: Duplicate Analyses

COMMENTS: IC Analyses: Four constituents (F, NO_3, PO_4 and SO_4) out of control limits

ACTION: Qualify associated data as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0905	F	J			
	NO_3	J			
	PO_4	J			
	SO_4	J			

___ of ___

9 1 1 2 2 5 1 1 5 1 3

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Holding Times

COMMENTS: TOC/TIC holding times were not met.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112501414

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Calibration

COMMENTS: TOC initial and continuing calibration with in control limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: Analytical Blank

COMMENTS: No contaminants detected in TOC preparation blank.

ACTION: None.

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9 1 1 2 0 5 1 4 1 6

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: LCS

COMMENTS: No LCS data provided with data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112211417

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Matrix Spike

COMMENTS: All matrix spike data for TOC within control limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9 1 1 2 1 5 1 8

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Duplicate Analyses

COMMENTS: All TOC duplicate results with in control limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112216

RCRA LEVEL C QC

Name C.J. Simuels Date 9-27-90

QC Check: Holding Times

COMMENTS: Holding times were not met for ammonia analysis.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

0 0 2 1 5 7 1 1 6

w

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Calibration

COMMENTS: Ammonia analyses: all intial and Continuing calibration with in Control Limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: Analytical Blank

COMMENTS: Ammonia analyses: preparation blank appears to be contaminant free. No D.L. provided for ammonia analysis.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: LCS

COMMENTS: No LCS data provided with data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

w

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: Matrix Spike

COMMENTS: Ammonia, matrix spike with in Control limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112271404

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: Duplicate Analyses

COMMENTS: Ammonia duplicate analyses with in control limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Holding Times

COMMENTS: Holding times were not met for Carbonate Analysis.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Calibration

COMMENTS: Carbonate Calibration, initial and continuing within control limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112261427

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Analytical Blank

COMMENTS: Carbonate preparation blank contaminant free

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9 1 1 2 5 0 1 4 2 3

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: LCS

COMMENTS: No LCS data provided with data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Matrix Spike

COMMENTS: All matrix spike data on Carbonate analyses within control limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

0 1 4 1 2 0 1 1 6

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Duplicate Analyses

COMMENTS: Duplicate analysis for carbonate with in ±20% control limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Holding Times

COMMENTS: Holding times were not met for nitrite analysis.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Calibration

COMMENTS: NO_2 analyses-all initial and continuing calibration within control limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112155213

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Analytical Blank

COMMENTS: Nitrite preparation blank appears to be contaminant free. No D.L. provided for nitrite analyses.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

91121124

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: LCS

COMMENTS: No LCS data provided with this data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112251475

(2)

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: Matrix Spike

COMMENTS: NO_2 analyses-matrix spike within Control limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9 1 1 2 7 1 4 7 6

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Duplicate Analyses

COMMENTS: Nitrite Duplicate analyses not with in control limits

ACTION: Qualify associated data as per OSM guidelines

sample #	constituent	value/qual	sample #	constituent	value/qual
F0905	NO_2	J			

____ of ____

9 1 1 2 0 1 1 4 1 7

RCRA LEVEL C QC

Name C.J. Sumiele Date 9-27-90

QC Check: Holding times

COMMENTS: Holding times were not met for mercury, arsenic & selenium analyses.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: Calibration

COMMENTS: All initial and continuing calibration for Hg, As and Se with in control limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Analytical Blank

COMMENTS: Hg, Se and As preparation blanks all contaminant free.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

91-12-1-0

RCRA LEVEL C QC

Name C. J. Simiele Date 9-26-90

QC Check: LCS

COMMENTS: No LCS data provided with this data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: Matrix Spike

COMMENTS: Se matrix spike out of control limits. Hg and As matrix spikes with in control limits.

ACTION: Qualify associated data as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0905	Se	J			

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Duplicate Analyses

COMMENTS: All duplicate analyses for Hg, As and Se with in control limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112513

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: Holding Times

COMMENTS: Holding times for ICP (water leached prepared) samples exceeded.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112 0114

RCRA LEVEL C QC

Name C.J. Simiele Date 9-26-90

QC Check: Calibration

COMMENTS: ICP Analyses: All inital and continuing calibration with in control limits. Calibration frequency meets requirements.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112214145

RCRA LEVEL C QC

Name C.J. Simiele Date 9-26-90

QC Check: Analytical Blank

COMMENTS: ICP Analyses: Possible contaminants detected in ~~sample~~ preparation blank and associated sample for: Ca, Mg, Zn, Hg and Th.

ACTION: Qualify associated samples as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0905	Ca	U			
	Mg				
	Zn				
	Hg				
	Th				

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-26-90

QC Check: LCS

COMMENTS: No LCS data provided with this data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112951247

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: ICS

COMMENTS: No ICS data provided with data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9 1 1 2 5 0 1 9 1 3

W

RCRA LEVEL C QC

Name C. J. Simiele Date 9-26-90

QC Check: Matrix Spike

COMMENTS: ICP Analyses: One spike % Rec out of Control limits. (Al)

ACTION: Qualify associated data as per OSM Guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0905	Al	J			

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-26-90

QC Check: Duplicate Analyses

COMMENTS: ICP Analyses: Duplicates out of ±20% Control limits include: Al(448%); Ca(2988.9%); Cr(198%); Fe(48.3%); Mg(2472.8%); Se(1582%); Zn(9947.4%); B(274.5%); Hg(2783.3%); & S(183.2%)

ACTION: Qualify all associated samples as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F905	Al	J			
	Ca				
	Cr				
	Fe				
	Mg				
	Se				
	Zn				
	B				
	Hg				
	S				

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Holding Times

COMMENTS: Holding times for Mercury, Arsenic and Selenium were exceeded. (Acid digestion prep. samples.)

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Calibration

COMMENTS: All A.A. untial ~~e~~ and continuing Calibration checks for Hg, As, Se within in control Limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: Analytical Blank

COMMENTS: All As, Se and Hg (acid digested) samples contaminant free.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-26-90

QC Check: LCS

COMMENTS: No LCS data provided with this data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

91120114

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Matrix Spike

COMMENTS: All A.A matrix spike data for Hg, As and Se with in control limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9 1 1 2 5 0 1 4 5

A

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Duplicate Analyses

COMMENTS: Duplicate A.A. results out of control limits for Hg, As and Se.

ACTION: Qualify associated data as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0911	Hg	J			
	As	J			
	Se	J			

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 9-27-90

QC Check: Holding Times

COMMENTS: Holding Times for ICP (acid digestion prepared) samples were met.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

9112301477

RCRA LEVEL C QC

Name C.J. Simiele Date 9-26-90

QC Check: Calibration

COMMENTS: ICP Analyses: All non-digested intial and Continuing calibration with in control limits. Eighteen elements out of control limits in digested standards.

ACTION: Qualify associated data as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0911	Al	J			
	Ba	J			
	B	J			
	Ce	J			
	Cr	J			
	Co	J			
	Fe	J			
	La	J			
	Li	J			
	Mn	J			
	Nd	UJ			
	Ni	J			
	Ag	R			
	Ta	J			
	Sn	J			
	Ti	J			
	Zn	J			
	Zr	J			

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 9-26-90

QC Check: Analytical Blank

COMMENTS: ICP Analyses: Possible contaminants Detected in blank and associated Sample for: B, La, P, Ti, and Zn.

ACTION: Qualify associated samples as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0911	B	U			
↓	La	↓			
	P				
	Ti				
	Zn				

___ of ___

A

RCRA LEVEL C QC

Name C.J. Simiele Date 9-26-90

QC Check: LCS

COMMENTS: No LCS data provided with this data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

0 4 1 2 1 5 1 1 6

RCRA LEVEL C QC

Name C. J. Simiele Date 9-27-90

QC Check: ICS

COMMENTS: No ICS check data provided with data package.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 9-26-90

QC Check: Matrix Spike

COMMENTS: ICP Analyses: Twenty Four, Spike % Rec. out of control limits. (Constituents included- Ba, B, Cd, Ca, Ce, Cr, Cu, La, Pb, Li, Mg, Mo, Nd, Ni, P, K, Ag, Sr, Ta, Sn, Ti, V, Zn, and Zr.)

ACTION: Qualify associated data as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
E0911	Ba	J			
	B				
	Cd				
	Ca				
	Ce				
	Cr				
	Cu				
	La				
	Pb				
	Li				
	Mg				
	Mo	J			
	Nd	UJ			
	Ni	J			
	P				
	K				
	Ag				
	Sr				
	Ta				
	Sn				
	Ti				
	V				
	Zn				
	Zr	J			

___ of ___

9112714.2

RCRA LEVEL C QC

Name C. J. Simiele Date 9-26-90

QC Check: Duplicate Analyses

COMMENTS: ICP Analyses: acid digested duplicate analysis out of ±20% control limit include: As(26%); Be(25%); Cd(32%); Cu(25%); Pb(76.3%); Li(48.3%); ~~Mg(4~~ Ni(73.4%); P(22.8%); K(96.6%); Sm(52.3%); Ag(37.8%); Tl(83.8 Zn(43.2%); B(39.4%); Ce(37.9%) Eu(41.2%); La(50%); Hg(69.1%); Ta(31.8%. Th(90.2%); Sn(23.6%); Ti(30.4%); U(25.2%); Zr(26.1%).

ACTION: Action: Qualify all associated samples as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0911	As	J			
	Be				
	Cd				
	Cu				
	Pb				
	Li				
	Ni				
	P				
	K				
	Sm				
	Ag				
	Tl				
	Zn				
	B				
	Ce				
	Eu				
	La				
	Hg				
	Ta				
	Th				
	Sn				
	Ti				
	U				
	Zr				

___ of ___