0012368

SINGLE-SHELL TANK WASTE CHARACTERIZATION FOR TANK 241-U-110 CORE 12
SEGMENT 2 3 4

DATA PACKAGE

SECTION

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21

Westinghouse Hanford Company

012368

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OSM RCRA LEVEL C DATA ASSESSMENT

DATE 12-16-90 (Compact Simiele)

REVIEWED BY C.J. Simiele

LABORATORY WHC-222S

CASE # SST-241-U-110

SDG # #89-071 (Core 12 Segment 3)

SAMPLES/MATRIX Seq# 89-071

LAB ID:

Untreated: F0441

Fusion : F0446

Acid Digest: F0456

Water Leach: F0451

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS	IC	TOC	ICP
1.	Holding Time	X	X	O
2.	Calibration	O	O	X
3.	Analytical Blank	O	O	X
4.	LCS	*	*	*
5.	ICS (ICP ONLY)	N/A	N/A	*
6.	Matrix Spike	O	O	M
7.	Duplicate Analyses	X	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: (Samples were not qualified based on exceeded holding times.)

NOTES: *= no data provided with data package.
No Radiochemistry Validation completed on data package.

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

SUMMARY DATA REPORT

Report results are sample wet weight.

Single Shell Tank Project

Tank: 241-U-110
Core: 12
Segment: 3
Customer ID: 89-071

Undigested Sample Results

	Sample	Duplicate
pH	12.49	13.09
Percent Water	39.06%	39.04%

Fusion Analysis Results

		Sample	Duplicate
Fusion Dissolution		2.82 g/L	2.52 g/L
Total Alpha		4.29E-01 uci/g	4.44E-01 uci/g
Total Beta		8.51E+02 uci/g	9.68E+02 uci/g
GEA	Cs-137	6.35E+01 uci/g	5.44E+01 uci/g
Uranium		2.15E+03 ug/g	1.63E+03 ug/g

Water Digestion Results

	Sample	Duplicate
Water Digestion	10.03 g/L	9.74 g/L
Ion Chromatograph		
Fluoride	1.58E+04 ug/g	1.54E+04 ug/g
Chloride	2.00E+03 ug/g	1.94E+03 ug/g
Nitrate	6.31E+04 ug/g J	7.66E+04 ug/g
Phosphate	5.43E+04 ug/g ~~J~~	4.67E+04 ug/g
Sulfate	5.21E+03 ug/g UJ	4.65E+03 ug/g
Total Organic Carbon	7.13E+02 ug/g	7.34E+02 ug/g

Acid Digestion Results

ICP Results

	Sample ug/g	Duplicate ug/g
Aluminum	41643 ug/g	49481 ug/g
Antimony	LT	LT
Arsenic	LT	LT
Barium	LT	LT
Beryllium	LT	LT
Bismuth	37353 ug/g UJ	41129 ug/g
Boron	802 ug/g ~~U~~R	15 ug/g
Cadmium	LT	LT
Calcium	483 ug/g U	447 ug/g
Chromium	917 ug/g J	924 ug/g
Copper	LT	LT
Europium	LT	LT
Iron	21823 ug/g	22935 ug/g
Lanthanum	LT UJ	LT
Lead	226 ug/g J	403 ug/g
Lithium	LT	LT
Magnesium	287 ug/g J	570 ug/g
Manganese	927 ug/g	973 ug/g
Mercury	550 ug/g J	936 ug/g
Molybdenum	LT	LT
Nickel	LT	LT
Potassium	LT UJ	LT
Samarium	LT	LT
Selenium	LT UJ	284 ug/g
Silver	LT	LT
Sodium	119306 ug/g	106345 ug/g
Strontium	234 ug/g U	232 ug/g
Sulfur	644 ug/g	723 ug/g
Tantalum	LT UJ	LT
Thallium	LT	LT
Thorium	LT	LT
Tin	LT	LT
Titanium	LT	LT
Uranium	LT	LT
Vanadium	LT	LT
Zinc	262 ug/g UJ	154 ug/g
Zirconium	LT	LT

LT: Less Than
NC: Not Calibrated
NOT CALC: Not Calculated
Instrument Standards Outside Control Limits

12-10-90
C.J. Surpell.

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

QC Check: Holding Time

COMMENTS: IC (water leach) holding time of 2days for NO_3 exceeded by 125days. Holding time for F exceeded by 1016 days. Holding time of 28days for U, PO_4 & SO_4 exceeded by 99 days.

ACTION: None.

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

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

QC Check: Calibration

COMMENTS: IC calibration standards are within ±10% control limits. Calibration frequency met.

ACTION: None.

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

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

QC Check: Analytical Blank

COMMENTS: No contaminants detected in IC preparation blank and associated sample.

ACTION: None

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

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

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 12-16-90

QC Check: Matrix Spike

COMMENTS: IC matrix spike %Rec. ~~are~~ is within ±25% control limits for all anions.

ACTION: None

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

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

QC Check: Duplicate Analyses

COMMENTS: IC duplicate analyses RPD's out of ±20% control limits for NO_3 (% Rec = 51.4%).

ACTION: Qualify associated sample as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0451	NO_3	J			

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-11-90

QC Check: Holding Time

COMMENTS: TOC holding time of 28 days exceeded by 90 days.

ACTION: None.

sample #	constituent	value/qual	sample #	constituent	value/qual
~~F0451~~	~~WS~~ ~~TO~~				

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

QC Check: Calibration

COMMENTS: TOC calibration standards are within ±10% control limits. Calibration frequency met.

ACTION: None.

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

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

QC Check: Analytical Blank

COMMENTS: TOC ~~and~~ LWS preparation blank and associated sample are contaminant free.

ACTION: None

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

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

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 12-16-90

QC Check: Matrix Spike

COMMENTS: TOC matrix spike %Rec. is within ±25% control limits.

ACTION: None

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

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

QC Check: Duplicate Analyses

COMMENTS: TOC duplicate analyses RPD's is with ±20% control limits.

ACTION: None

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

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

QC Check: Holding Time

COMMENTS: ICP (acid digest.) holding time of six months was met.

ACTION: None

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

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

QC check: Calibration

COMMENTS: ICP calibration standards (non-digest) are within ±10% control limits. (Acid digest Calibration standards are out of ±10% control limits for: La (88.5%); K (85.6%); Ta (81.4%). Calibration frequency met.

ACTION: Qualify associated samples as per DSM guidelines

sample #	constituent	value/qual	sample #	constituent	value/qual
F0456	La	UJ			
	K				
	Ta				

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

QC Check: Analytical Blank

COMMENTS: Contaminants detected in ICP preparation blank and associated sample for the following elements: B, Ca, Sr $, Zn.

ACTION: Qualify associated samples as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0456	B	U			
	Ca				
	Sr				
	Zn				

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

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 12-16-90

QC Check: ICS

COMMENTS: No ICS 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 12-16-90

QC Check: Matrix Spike

COMMENTS: ICP matrix spike % Rec out of ±25% control limits for: B (5.3%); Cr (163%); Pb (69.8%).

ACTION: Qualify associated samples as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0456	B	R			
L	Cr	J			
	Pb	J			

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 12-16-90

QC Check: Duplicate Analyses

COMMENTS: ICP duplicate analyses RPD out of ±20% control limits for: B(98%); Pb(78%); Mg(99%); Hg(70%); Se(115%); Zn(41%).

ACTION: Qualify associated sample as per OSM guidelines.

sample #	constituent	value/qual	sample #	constituent	value/qual
F0456	B	J			
	Pb				
	Mg				
	Hg				
	Se	UJ			
	Zn	J			

___ of ___