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COMPLETE

ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 633308

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.	3a. USQ Required?	4. Date
Supplemental [] Direct Revision [X] Change ECN [] Temporary [] Standby [] Supersedure [] Cancel/Void []	John H. Baldwin, Data Assessment & Interpretation/R2-12/373-4533	[] Yes [X] No	06-18-96
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12. Description of Change

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13a. Justification (mark one)

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13b. Justification Details

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14. Distribution (include name, MSIN, and no. of copies)

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15. Design Verification Required	16. Cost Impact				17. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION			
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[X] No	Savings	[] $	Savings	[] $	Delay	[]

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	[]	Seismic/Stress Analysis	[]	Tank Calibration Manual	[]
Functional Design Criteria	[]	Stress/Design Report	[]	Health Physics Procedure	[]
Operating Specification	[]	Interface Control Drawing	[]	Spares Multiple Unit Listing	[]
Criticality Specification	[]	Calibration Procedure	[]	Test Procedures/Specification	[]
Conceptual Design Report	[]	Installation Procedure	[]	Component Index	[]
Equipment Spec.	[]	Maintenance Procedure	[]	ASME Coded Item	[]
Const. Spec.	[]	Engineering Procedure	[]	Human Factor Consideration	[]
Procurement Spec.	[]	Operating Instruction	[]	Computer Software	[]
Vendor Information	[]	Operating Procedure	[]	Electric Circuit Schedule	[]
OM Manual	[]	Operational Safety Requirement	[]	ICRS Procedure	[]
FSAR/SAR	[]	IEFD Drawing	[]	Process Control Manual/Plan	[]
Safety Equipment List	[]	Cell Arrangement Drawing	[]	Process Flow Chart	[]
Radiation Work Permit	[]	Essential Material Specification	[]	Purchase Requisition	[]
Environmental Impact Statement	[]	Fac. Proc. Samp. Schedule	[]	Tickler File	[]
Environmental Report	[]	Inspection Plan	[]		[]
Environmental Permit	[]	Inventory Adjustment Request	[]		[]

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number Revision
NA		

20. Approvals

Signature		Date	Signature		Date
OPERATIONS AND ENGINEERING			ARCHITECT-ENGINEER		
Cog. Eng. J. N. Baldwin	[signature]	7/12/96	PE		
Cog. Mgr. J. G. Kristofzski	[signature] for	7/17/96	QA		
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Safety			Design		
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Other			Other		
Production, Planning & Control A. D. Rice	[signature]	7-17-96			
			DEPARTMENT OF ENERGY		
			Signature or a Control Number that tracks the Approval Signature		
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"FINAL REPORT FOR TANK 241-U-109, ROTARY AND PUSH MODE CORES 123, 124 AND 128"

John H. Baldwin
Westinghouse Hanford Company, Richland, WA 99352
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ANALYTICAL SERVICES

FINAL REPORT FOR TANK 241-U-109, ROTARY AND PUSH MODE CORES 123, 124, AND 128

Project Coordinator: JOHN H. BALDWIN

Prepared for the U.S. Department of Energy
Office of Environmental Restoration
and Waste Management

by

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Part II consists of pages 2-1 through 2-351 and pages 2-2, 2-6, 2-17 and 2-61 were intentionally left blank.

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NARRATIVE

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FINAL REPORT FOR TANK 241-U-109, PUSH MODE CORES 123, 124 AND 128

SUMMARY

This is the final report for rotary (push mode) core samples taken from risers 2,7 and 19 of tank 241-U-109 (U-109) from December 20, 1995 through January 19, 1996. The samples were received, extruded, and analyzed at the 222-S Laboratories and underwent analyses consistent with the safety screening data quality objective (DQO) (Dukelow, et al. 1995), the organic DQO (Turner et al. 1995), the organic test plan (Meacham 1995) and the historical DQO (Simpson and McCain 1995)as identified in the Sampling and Analysis Plan for this tank (Baldwin 1996). Attachment 1, "Interim Safety Screening Results for Tank 241-U-109, Rotary and Push Mode Cores 123, 124 and 128" WHC-SD-WM-DP-181, Rev. 0, summarizes the results of the analyses required by the safety DQO.

The safety screening results obtained from this sampling and analysis activity, which include differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), total alpha activity analysis results, and combustible gas suggest that tank U-109 may be classified as "safe".

Attachment 1 provides the safety screening analysis results for DSC, TGA, Total Alpha, Combustible Gas, Visual Organic and Bulk Density/Specific Gravity as well as sample receipt and extrusion information. This report provides the remaining analytical results applicable to the organic DQO, the organic test plan and the historical DQO.

HISTORICAL ANALYSIS

According to the tank layer model, the upper waste in the tank (segments 1-4) should be salt slurry while the lower level waste (segments 4-8)should be salt cake, and segment 9 should be Redox Cladding Supernate. One sub-segment for each core that passed the "finger print" analyses for a particular waste type under went additional analyses. These analyses were conducted to better define the waste types for later comparison with the Historical model. The Segments chosen as representative of salt slurry were Core 123 Segment 4, Core 124 Segment 3 and Core 128 Segment 2. The segments chosen as representative of salt cake were Core 123 Segment 6L, Core 124 Segment 8U and Core 128 Segment 7U. The additional analyses that were conducted were ICP using a water digest to detect Sodium, Aluminum and Chromium, Beta Counting for SR-90, Total Beta and Total Uranium.

The core composite samples also under went the above special historical analyses.

TOTAL ORGANIC CARBON (TOC)

In accordance with the organic DQO, the organic test plan and historical DQO, total organic carbon (TOC) analysis was performed on all subsegments of the cores 123, 124 and 128 and the core composite for each of these using procedure LA-342-100, Revs. C and D (direct persulfate method). Average results of 3.34E+03, 4.02E+03 and 4.31E+03 µgC/g were obtained for the subsegments of cores 123, 124 and 128 respectively. The TOC for the subsegments ranged from 9.89E+03 µgC/g (Core 123 Segment 9A Result) to 1.09E+03 µgC/g (Core 123 Segment 3L Result). The core composites for cores 123, 124 and 128 had average results of 3.00E+03, 3.96E+03 and 4.37E+03 µgC/g. All results were less than the TOC notification limit of 30,000 µgC/g (3 weight percent carbon) in the *Unclassified Operating Specifications for Single Shell Waste Storage Tanks* (WHC 1996). These TOC results demonstrate agreement with the observed DSC behavior, supporting the conclusion that a low level of fuel is present in the tank U-109 waste. The RPD values exceeded 20% for four samples, C124 S4, C124 S7L, C124 S7U and C124 S9L. A triplicate result was run for two of the samples. The triplicate information is provided in Table 1. The standard and spike recoveries were within specified limits.

Table 1: TOC Triplicates

Core/Segment	Result	Duplicate	Triplicate
Core 124 / S7U	3790 µg/g	2710 µg/g	3590 µg/g
Core 124/ S9L	6070 µg/g	4930 µg/g	4930 µg/g

TOTAL INORGANIC CARBON (TIC)

In accordance with the historical DQO, total inorganic carbon (TIC) analysis was performed on all subsegments of the cores 123, 124 and 128 and the core composite for each of these using procedure LA-342-100, Rev. C and D (coloumetry method). Average results of 6.24E+03, 8.49E+03 and 9.56E+03 µgC/g were obtained for the subsegments of cores 123, 124 and 128 respectively. The TIC for the subsegments ranged from 1.61E+04 µgC/g (Core 124 Segment 6U Result) to 6.68E+02 µgC/g (Core 128 Segment 9 Duplicate). The core composites for cores 123, 124 and 128 had average results of 7.09E+03, 8.72E+03 and 9.21E+03 µgC/g. The RPD values exceeded 20% for four samples, C123 S5, C123 S8U, C123 S9A and C124 S2. A triplicate result was run for three of the samples. The triplicate information is provided in Table 2. The standard and spike recoveries were within specified limits.

Table 1: TIC Triplicates

Core/Segment	Result	Duplicate	Triplicate
Core 123 / S5U	4950 µg/g	3760 µg/g	3350 µg/g
Core 123 / S8U	7870 µg/g	9650 µg/g	10300 µg/g
Core 123 / S9A	6050 µg/g	13200 µg/g	5220 µg/g

INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPECTROSCOPY (ICP) ANALYSIS

ICP analysis for a suite of 12 metals was performed on each of the tank U-109 samples using procedure LA-505-151, Rev. D3. Each solid subsegment and core composite was prepared using a potassium hydroxide fusion digestion in a zircromium crucible (procedure LA-549-141, Rev. F0). The drainable liquid sample from Core 124 segment 3 was diluted with acid (procedure LA-505-159, Rev. D0) prior to ICP analysis. ICP analysis for a suite of three metals was performed on a water-leached aliquot of each of the core composite samples and the segments that were selected for the secondary historical analysis as most representative of their waste type based on the primary finger print analysis.

The ICP detected Uranium in only the bottom most sub-segment (9C) of Core 123 Segment 9 which had an average value of 12,700 μg/g. Uranium was below the detection limit of the ICP for all other segments.

A few of the samples exhibited RPDs greater than $\pm$15%. The spike recoveries were generally good except for sodium which is a laboratory contaminate. These criteria failures should have no impact on the use of the data.

In addition to being part of the requirements of the historical DQO, lithium analysis is necessary to determine the extent of any hydrostatic head fluid (HHF) contamination as a result of the core sampling process. While Lithium was not detected in any of the core segments, the secondary Ion chromatography (IC) analysis for Bromide did indicate HHF contamination of two segments. The IC results are discussed below.

ION CHROMATOGRAPHY

Ion chromatography analysis for nitrate anions was performed on each solid subsegment and core composite as required by Simpson and McCain (1995) using procedure LA-533-105, Rev. D1 after the samples had been prepared using a water leach. Bromide analysis was performed to determine possible hydrostatic head fluid (HHF) contamination from the push mode core sampling process.

As expected, there are very high concentratons of nitrate (generally greater than 10,000 μg/g) in tank U-109. A few of the samples exhibited RPDs greater than $\pm$15%. Core 123 had no RPD's exceeding the criterion, while Core 124 had two and Core 128 had five.

As stated earlier, bromide was detected in two of the solid samples and in the drainable liquid sample. The bromide indicates the incursion of HHF into the samples. The suspect samples are listed in Table 3. Bromide was below the detection level for all other segments and the core composite.

Table 3: Segments with Bromide	
Core/Segment	Average Br Concentration
Core 124 / S3	6570 μg/g
Core 124 / S3 / DL	9010 μg/mL
C128 / S5	1330 μg/g

As Segment 3 of core 124 is the only segment that had drainable liquid, it is believed that the drainable liquid is not a naturally occurring inherent part of the segment.

The intrusion evaluation yielded contradictory results. Bromide was detected in the solid and drainable liquid samples of core 124, segment 3, and in the solid results from core 128, segment five. However, lithium was not detected in either of these two segments (or in any others), as would be expected if substantial contamination had occurred. Utilizing HHF correction calculations, it was found that over 50 percent of the water present in the solid and drainable liquid portions of core 124, segment 3 were from HHF. Based on this evidence, these weight percent water results were not considered valid, and should not be utilized in the overall mean estimates or any other evaluations. However, a close examination of the core 124, segment 3 solid data from detected analitics such as aluminum, sodium, total alpha activity, TOC, and especially density, does not reveal any obvious discrepancies with the analytical results from neighboring segments. Therefore, it was determined that all Segment 3 data (except weight percent water) is valid data. The HHF correction calculations for core 128, segment 5 yielded a percent water result of 27.62, compared with the analytical result of 35.02. Since this was less than a 50 percent difference (21 percent), all data from this segment was retained, and the corrected percent water value of 27.62 may be utilized in all data evaluations (Table 4).

Table 4: Percent Water Corrections due to HHF

Core/Segment	Original TGA Result	Corrected TGA Result Based on Li results	Corrected TGA Result Based on Br results
C124/S3/DL	(53.2%)Not Valid	N/A	Not Valid
C124/S3	(42.0%)Not Valid	N/A	Not Valid
C128/S5	35.02%	N/A	27.62%

<u>The Laboatory Work Lists for the IC have "reject" printed with some sample numbers. The LABCORE computer has a problem with the worklist format which causes it to print "reject". The data is good.</u>

RADIOCHEMISTRY

In accordance with the historical DQO, gamma energy analysis (GEA) for ^{137}Cs and uranium analysis by laser fluorimetry (procedure LA-925-009, Rev. A-1) were performed using procedure LA-548-121, Rev. D1. A potassium hydroxide fusion digestion procedure was used to prepare the solid samples. Uranium results were obtained by both the ICP and laser fluorimetry methods. The ICP detected Uranium in only the bottom most sub-segment (9C) of segment 9 which had an average value of 12,700 $\mu g/g$. Uranium below the detection limit for the ICP for all other segments. Laser fluorimetry detected low levels of Uranium in all of the segments selected for historical analysis and the core composites.

Total beta analyses (procedure LA-508-101, Rev. D2) and ^{90}Sr analyses (procedure LA-220-101, Rev. D-0) were conducted on the selected historical sample segments and the core composites.

The only requested radiochemical analyses which use spikes as standard quality control protocol are the total beta and uranium assays, so no spikes in addition to these analyses were performed. No specific precision or accuracy requirements are defined in Simpson and McCain (1995), therefore no reruns were performed. RPD's for Laser fluorimetry were good with the exception of the RPD for Core 124 Segment 3 which had an RPD of 43.3%. RPD's for the GEA were good with the exception of the RPD for Core 123 Segment 4 which had an RPD of 51.9%. RPD's for Total Beta good with the exception of the RPD for Core 124 Segment 3 which had an RPD of 45.9%. RPD's for ^{90}Sr were good.

Organic DQO Analysis

The organic DQO requests TOC and the upper level 95% confidence level for TOC on a dry weight basis for each segment. Table 5 provides the dry weight TOC results. The average and UL 95% values include the triplicate values.

Table 5: U-109 Dry Weight TOC and Upper Limit 95% Confidence

Sample	% Water	Average ug/g	Upper Level (95%) ug/g
U-109 C123 S1	2.12E+01	3.41E+03	3.89E+03
U-109 C123 S2	1.66E+01	2.82E+03	3.80E+03
U-109 C123 S3(U)	6.38E+01	3.60E+03	3.69E+03
U-109 C123 S3(L)	8.49E+01	7.48E+03	9.16E+03
U-109 C123 S4	8.93E+01	1.89E+04	2.01E+04
U-109 C123 S5	1.19E+01	2.81E+03	3.85E+03
U-109 C123 S6(U)	2.37E+01	6.24E+03	6.82E+03
U-109 C123 S6(L)	3.20E+01	6.10E+03	6.70E+03
U-109 C123 S7(U)	1.95E+01	4.85E+03	6.93E+03
U-109 C123 S7(L)	1.76E+01	3.48E+03	5.58E+03
U-109 C123 S8(U)	2.36E+01	4.81E+03	6.75E+03
U-109 C123 S8(L)	1.89E+01	4.77E+03	5.64E+03
U-109 C123 S9(A)	3.77E+01	1.54E+04	1.86E+04
U-109 C123 S9(B)	2.09E+01	3.93E+03	6.25E+03
U-109 C123 S9(C)	1.71E+01	2.48E+03	2.52E+03
U-109 C124 S3	4.20E+01	4.24E+03	6.20E+03
U-109 C124 S4	1.10E+01	2.09E+03	4.29E+03
U-109 C124 S5(U)	2.25E+01	5.17E+03	6.02E+03
U-109 C124 S5(L)	2.14E+01	5.82E+03	6.02E+03
U-109 C124 S6(U)	2.88E+01	7.96E+03	1.00E+04
U-109 C124 S6(L)	3.60E+01	9.64E+03	1.06E+04
U-109 C124 S7(U)	1.59E+01	4.00E+03	5.15E+03
U-109 C124 S7(L)	1.91E+01	3.28E+03	5.70E+03
U-109 C124 S8(U)	3.46E+01	6.25E+03	7.03E+03
U-109 C124 S8(L)	3.40E+01	8.47E+03	9.90E+03
U-109 C124 S9(U)	3.51E+01	7.73E+03	1.21E+04
U-109 C124 S9(L)	4.21E+00	5.54E+03	6.70E+03
U-109 C128 S1	3.14E+01	7.23E+03	8.06E+03
U-109 C128 S2	2.04E+01	3.25E+03	3.92E+03
U-109 C128 S3	1.41E+01	3.13E+03	3.31E+03
U-109 C128 S4(U)	1.87E+01	3.25E+03	3.53E+03
U-109 C128 S4(L)	4.67E+01	1.19E+04	1.74E+04
U-109 C128 S5	3.50E+01	6.72E+03	7.64E+03
U-109 C128 S6(U)	3.49E+01	7.91E+03	8.01E+03

U-109 C128 S6(L)	3.33E+01	7.89E+03	9.02E+03
U-109 C128 S7(U)	3.47E+01	6.58E+03	7.46E+03
U-109 C128 S7(L)	4.06E+01	9.71E+03	9.97E+03
U-109 C128 S8(U)	2.41E+01	4.45E+03	4.70E+03
U-109 C128 S8(L)	3.10E+01	7.20E+03	8.58E+03
U-109 C128 S9	3.45E+01	5.62E+03	7.26E+03

Project Coordinator: John H. Baldwin

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SAMPLE DATA SUMMARY

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Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 1,2,3,3A,4,5,6U,6L,7U,7L,8U,8L,9A,9B,9C

SEGMENT PORTION: Core Composite

Sample#	B	AF	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T001379			Bulk Density of Sample	g/mL	n/a	n/a	1.790	n/a	n/a	n/a	n/a	5.00e-01	n/a

Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 123

SEGMENT PORTION: Core Composite

Sample#	R	Ad	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T001407			DSC Exotherm using Mettler	Joules/g	96.55	n/a	13.10	15.90	14.50	19.3	n/a	n/a	n/a
S96T001407			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	16.40	19.80	18.10	18.8	n/a	n/a	n/a
S96T001407			% Water by TGA using Mettler	%	99.22	n/a	18.19	21.53	19.86	16.8	n/a	n/a	n/a
S96T001407			TIC by Acid/Coulometry	ug/g	98.50	9.00e-01	6.48e+03	7.70e+03	7.09e+03	17.2	n/a	5.000	n/a
S96T001407			TOC by Persulfate/Coulometry	ug/g	92.70	8.100	3.26e+03	2.74e+03	3.00e+03	17.3	n/a	40.00	n/a
S96T001411		Z	Uranium by Phosphorescence	ug/g	91.39	1.690	6.97e+02	761.0	729.0	8.78	98.59	1.830	1.34E+00
S96T001411		Z	U-Phosphorescence Inst. Error	% Inst Error	3.12	5.370	1.140	1.200	1.170	1.20	n/a	n/a	n/a
S96T001411		Z	Strontium-89/90 High Level	uCi/g	101.6	7.70e-02	7.660	8.110	7.885	5.71	n/a	1.60e-02	1.67E+00
S96T001411		Z	Aluminum -ICP-Fusion	ug/g	98.80	<5.00e-02	2.46e+04	2.92e+04	2.69e+04	17.1	98.50	1.81e+03	n/a
S96T001411		Z	Bismuth -ICP-Fusion	ug/g	102.0	<1.00e-01	<2.03e+03	<1.97e3	n/a	n/a	97.60	2.03e+03	n/a
S96T001411		Z	Calcium -ICP-Fusion	ug/g	100.6	<1.00e-01	<2.03e+03	<1.97e3	n/a	n/a	102.2	2.03e+03	n/a
S96T001411		Z	Chromium -ICP-Fusion	ug/g	101.8	<1.00e-02	2.57e+03	2.88e+03	2.72e+03	11.4	101.0	203.0	n/a
S96T001411		Z	Iron -ICP-Fusion	ug/g	101.6	<5.00e-02	<1.01e+03	<9.87e2	n/a	n/a	101.0	1.01e+03	n/a
S96T001411		Z	Lithium -ICP-Fusion	ug/g	103.0	<1.00e-02	<2.03e+02	<1.97e2	n/a	n/a	98.80	203.0	n/a
S96T001411		Z	Manganese -ICP-Fusion	ug/g	98.80	<1.00e-02	<2.03e+02	<1.97e2	n/a	n/a	95.40	203.0	n/a
S96T001411		Z	Sodium -ICP-Fusion	ug/g	101.6	1.16e-01	2.28e+05	2.28e+05	2.28e+05	0.00	113.2	2.03e+03	n/a
S96T001411		Z	Nickel -ICP-Fusion	ug/g	100.2	<2.00e-02	1.68e+03	567.0	1.12e+03	99.1	100.7	405.0	n/a
S96T001411		Z	Phosphorus -ICP-Fusion	ug/g	100.6	<2.00e-01	4.26e+03	5.72e+03	4.99e+03	29.3	99.00	4.05e+03	n/a
S96T001411		Z	Silicon -ICP-Fusion	ug/g	102.6	<5.00e-02	<1.01e+03	<9.87e2	n/a	n/a	104.6	1.01e+03	n/a
S96T001411		Z	Uranium -ICP-Fusion	ug/g	98.80	<5.00e-01	<1.01e+04	<9.87e3	n/a	n/a	93.15	1.01e+04	n/a
S96T001411		Z	Cesium-137 by GEA	uCi/g	100.8	<2.99e-02	99.33	96.80	98.06	2.55	n/a	n/a	0.480
S96T001411		Z	Beta of Solid Sample	uCi/g	107.2	1.25e-01	1.07e+02	103.0	105.0	3.81	101.6	2.90e-02	3.74E-01
S96T001411		Z	Alpha of Digested Solid	uCi/g	101.6	<3.68e-03	3.78e-02	2.85e-02	3.31e-02	28.1	89.69	5.00e-03	2.85E+01
S96T001412		W	Bromide by Ion Chromatograph	ug/g	97.91	<1.26e-01	<9.14e+02	<9.74e2	n/a	n/a	n/a	914.3	n/a
S96T001412		W	Nitrate by IC-Dionex4000i/4500	ug/g	95.77	3.89e-01	4.37e+05	4.85e+05	4.51e+05	6.21	100.0	2.50e+03	n/a
S96T002515		I	Aluminum -ICP-H20 Dig/Acid	ug/g	96.20	<5.00e-02	7.75e+03	8.26e+03	8.00e+03	6.37	53.60	26.90	n/a
S96T002515		I	Chromium -ICP-H20 Dig/Acid	ug/g	100.6	<1.00e-02	4.97e+02	518.0	507.5	4.14	99.30	5.390	n/a
S96T002515		I	Sodium -ICP-H20 Dig/Acid	ug/g	98.40	1.170	2.45e+05	2.37e+05	2.41e+05	3.32	n/a	53.90	n/a

Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 1

SEGMENT PORTION: W Whole Segment

Sample#	R	Adj	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000177			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000177			DSC Exotherm on Perkin Elmer	Joules/g	100.5	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000177			% Water by TGA on Perkin Elmer	%	101.2	n/a	21.76	20.56	21.16	5.67	n/a	n/a	n/a
S96T000177			TIC by Acid/Coulometry	ug/g	99.17	2.100	8.13e+03	8.76e+03	8.44e+03	7.46	120.0	5.000	n/a
S96T000177			TOC by Persulfate/Coulometry	ug/g	93.67	6.300	2.75e+03	2.63e+03	2.69e+03	4.46	99.60	40.00	n/a
S96T000177			Bulk Density of Sample	g/mL	n/a	n/a	1.850	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000229	W		Bromide by Ion Chromatograph	ug/g	99.65	<1.26e-01	<1.18e+03	<1.29e3	n/a	n/a	92.17	1.18e+03	n/a
S96T000229	W		Nitrate by IC-Dionex[illegible]	ug/g	97.72	2.26e-01	3.50e+05	4.02e+05	3.76e+05	13.8	98.73	1.32e+03	n/a
S96T000256	Z		Aluminum -ICP-Fusion	ug/g	99.00	<5.00e-02	7.92e+03	8.24e+03	8.08e+03	3.96	99.30	1.27e+03	n/a
S96T000256	Z		Bismuth -ICP-Fusion	ug/g	100.2	<1.00e-01	<2.54e+03	<2.13e3	n/a	n/a	98.30	2.54e+03	n/a
S96T000256	Z		Calcium -ICP-Fusion	ug/g	99.40	<1.00e-01	<2.54e+03	<2.13e3	n/a	n/a	98.60	2.54e+03	n/a
S96T000256	Z		Chromium -ICP-Fusion	ug/g	103.8	<1.00e-02	2.89e+03	3.04e+03	2.96e+03	5.06	101.3	254.0	n/a
S96T000256	Z		Iron -ICP-Fusion	ug/g	103.6	<5.00e-02	1.15e+04	4.35e+03	8.18e+03	81.3	97.90	1.27e+03	n/a
S96T000256	Z		Lithium -ICP-Fusion	ug/g	97.40	<1.00e-02	<2.54e+02	<2.13e2	n/a	n/a	95.00	254.0	n/a
S96T000256	Z		Manganese -ICP-Fusion	ug/g	102.4	<1.00e-02	<2.54e+02	<2.13e2	n/a	n/a	100.3	254.0	n/a
S96T000256	Z		Sodium -ICP-Fusion	ug/g	97.20	1.71e-01	2.14e+05	2.22e+05	2.18e+05	3.67	106.1	2.54e+03	n/a
S96T000256	Z		Nickel -ICP-Fusion	ug/g	102.6	<2.00e-02	<5.08e+02	<4.26e2	n/a	n/a	100.0	508.0	n/a
S96T000256	Z		Phosphorus -ICP-Fusion	ug/g	105.0	<2.00e-01	<5.08e+03	<4.26e3	n/a	n/a	110.8	5.08e+03	n/a
S96T000256	Z		Silicon -ICP-Fusion	ug/g	97.00	<5.00e-02	1.65e+03	1.82e+03	1.74e+03	9.80	99.50	1.27e+03	n/a
S96T000256	Z		Uranium -ICP-Fusion	ug/g	96.10	<5.00e-01	<1.27e+04	<1.08e4	n/a	n/a	96.40	1.27e+04	n/a
S96T000256	Z		Cesium-137 by GEA	uCi/g	98.41	<4.18e-02	85.48	82.60	84.04	3.45	n/a	n/a	0.650
S96T000256	Z		Alpha of Digested Solid	uCi/g	113.2	<4.67e-03	2.36e-02	2.67e-02	2.51e-02	12.3	78.98	7.00e-03	3.61E+01

Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 2

SEGMENT PORTION: W Whole Segment

Sampled	R	AB	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000178			DSC Exotherm using Mettler	Joules/g	97.01	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000178			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000178			% Water by TGA using Mettler	%	102.1	n/a	17.33	15.78	16.55	9.36	n/a	n/a	n/a
S96T000178			TIC by Acid/Coulometry	ug/g	n/a	n/a	1.06e+03	2.35e+03	2.16e+03	18.1	100.0	5.000	n/a
S96T000178			TOC by Persulfate/Coulometry	ug/g	n/a	n/a	2.22e+03	2.48e+03	2.35e+03	11.1	96.60	40.00	n/a
S96T000230			Bulk Density of Sample	g/mL	n/a	n/a	1.810	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000230	W		Bromide by Ion Chromatograph	ug/g	99.65	<1.26e-01	<1.05e+03	<1.15e3	n/a	n/a	n/a	1.05e+03	n/a
S96T000230	W		Nitrate by IC-Dionex4000I/4500	ug/g	97.72	2.26e-01	2.22e+05	2.24e+05	2.38e+05	13.4	n/a	1.16e+05	n/a
S96T000259	Z		Aluminum -ICP-Fusion	ug/g	99.00	<5.00e-02	1.95e+04	1.88e+04	1.92e+04	3.66	98.70	1.25e+03	n/a
S96T000259	Z		Bismuth -ICP-Fusion	ug/g	100.2	<1.00e-01	<2.51e+05	<2.38e3	n/a	n/a	99.10	2.51e+03	n/a
S96T000259	Z		Calcium -ICP-Fusion	ug/g	99.60	<1.00e-01	<2.51e+05	<2.38e3	n/a	n/a	99.10	2.51e+03	n/a
S96T000259	Z		Chromium -ICP-Fusion	ug/g	105.8	<1.00e-02	1.87e+05	1.75e+05	1.81e+05	6.62	100.9	251.0	n/a
S96T000259	Z		Iron -ICP-Fusion	ug/g	105.6	<5.00e-02	<1.25e+05	<1.19e3	n/a	n/a	105.0	1.25e+05	n/a
S96T000259	Z		Lithium -ICP-Fusion	ug/g	97.46	<1.00e-02	<2.51e+02	<2.38e2	n/a	n/a	92.50	251.0	n/a
S96T000259	Z		Manganese -ICP-Fusion	ug/g	102.4	<1.00e-02	<2.51e+02	<2.38e2	n/a	n/a	97.80	251.0	n/a
S96T000259	Z		Sodium -ICP-Fusion	ug/g	97.20	1.71e-01	2.40e+05	2.31e+05	2.36e+05	3.82	117.3	2.51e+03	n/a
S96T000259	Z		Nickel -ICP-Fusion	ug/g	102.6	<2.00e-02	<5.02e+02	<4.77e2	n/a	n/a	100.3	502.0	n/a
S96T000259	Z		Phosphorus -ICP-Fusion	ug/g	105.0	<2.00e-01	<5.02e+03	<4.77e3	n/a	n/a	100.9	5.02e+03	n/a
S96T000259	Z		Silicon -ICP-Fusion	ug/g	97.00	<5.00e-02	<1.25e+05	<1.19e3	n/a	n/a	97.40	1.25e+03	n/a
S96T000259	Z		Uranium -ICP-Fusion	ug/g	96.10	<5.00e-01	<1.25e+04	<1.19e3	n/a	n/a	100.3	1.25e+04	n/a
S96T000259	Z		Cesium-137 by GEA	uCi/g	98.41	<4.18e-02	92.43	90.70	91.56	1.86	n/a	n/a	8.620
S96T000259	Z		Alpha of Digested Solid	uCi/g	113.2	<4.67e-03	1.57e-02	2.22e-02	1.90e-02	34.3	74.49	7.00e-03	5.00E+01

Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 3(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	B	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000180		DSC Exotherm using Mettler	Joules/g	96.20	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000180		DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000180		% Water by TGA using Mettler	%	102.8	n/a	8.620	8.350	8.485	3.18	n/a	n/a	n/a
S96T000180		TIC by Acid/Coulometry	ug/g	94.19	6.00e-01	7.28e+02	776.0	752.0	6.38	99.40	5.000	n/a
S96T000180		TOC by Persulfate/Coulometry	ug/g	92.00	5.800	1.09e+03	1.17e+03	1.13e+03	7.08	88.10	40.00	n/a
S96T000180		Bulk Density of Sample	g/mL	n/a	n/a	1.300	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000262	W	Bromide by Ion Chromatograph	ug/g	95.85	<1.26e-01	<1.02e+03	<1.02e3	n/a	n/a	n/a	1.00e+03	n/a
S96T000262	W	Nitrate by IC-Bisenzyme/EPA/300	ug/g	103.6	2.83e-01	5.96e+05	5.95e+05	5.96e+05	0.08	n/a	1.00e+03	n/a
S96T000261	Z	Aluminum -ICP-Fusion	ug/g	99.00	<5.00e-02	6.98e+05	4.31e+05	4.64e+05	14.5	97.90	1.00e+05	n/a
S96T000261	Z	Bismuth -ICP-Fusion	ug/g	100.2	<1.00e-01	<2.01e+05	<2.07e3	n/a	n/a	97.60	2.01e+05	n/a
S96T000261	Z	Calcium -ICP-Fusion	ug/g	99.40	<1.00e-01	<2.01e+05	<2.07e3	n/a	n/a	96.10	2.01e+05	n/a
S96T000261	Z	Chromium -ICP-Fusion	ug/g	103.8	<1.00e-02	1.57e+05	1.30e+05	1.44e+05	12.2	105.6	201.0	n/a
S96T000261	Z	Iron -ICP-Fusion	ug/g	105.6	<5.00e-02	<1.00e+03	<1.03e3	n/a	n/a	102.5	1.00e+03	n/a
S96T000261	Z	Lithium -ICP-Fusion	ug/g	97.40	<1.00e-02	<2.01e+02	<2.07e2	n/a	n/a	91.70	201.0	n/a
S96T000261	Z	Manganese -ICP-Fusion	ug/g	102.4	<1.00e-02	<2.01e+02	<2.07e2	n/a	n/a	99.60	201.0	n/a
S96T000261	Z	Sodium -ICP-Fusion	ug/g	97.20	1.71e-01	2.42e+05	2.41e+05	2.42e+05	0.41	141.3	2.01e+05	n/a
S96T000261	Z	Nickel -ICP-Fusion	ug/g	102.6	<2.00e-02	<4.01e+02	<4.14e2	n/a	n/a	100.0	401.0	n/a
S96T000261	Z	Phosphorus -ICP-Fusion	ug/g	105.0	<2.00e-01	<4.01e+03	<4.14e3	n/a	n/a	105.5	4.01e+03	n/a
S96T000261	Z	Silicon -ICP-Fusion	ug/g	97.00	<5.00e-02	<1.00e+03	<1.03e3	n/a	n/a	96.10	1.00e+03	n/a
S96T000261	Z	Uranium -ICP-Fusion	ug/g	96.10	<5.00e-01	<1.00e+04	<1.03e4	n/a	n/a	100.7	1.00e+04	n/a
S96T000261	Z	Cesium-137 by GEA	uCi/g	99.26	<2.32e-02	51.87	44.30	48.08	15.8	n/a	n/a	0.740
S96T000261	Z	Alpha of Digested Solid	uCi/g	113.2	<4.67e-03	1.24e-02	5.40e-03	8.90e-03	78.7	76.79	6.00e-03	5.63E+01

Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 3(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AB	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Errr%
S96T000260	Z		BTU Bomb Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000260	Z		% Water by TGA using Bottle	%	101.7	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000260	Z		TOC by Acid/Pyrolysis	ug/g	n/a	n/a	6.000	6.760	6.380	11.9	n/a	n/a	n/a
S96T000260	Z		TOC by Persulfate/Coulometry	ug/g	n/a	n/a	9.27e+02	901.0	929.0	6.83	n/a	n/a	n/a
S96T000260			Wet Density of Sample	g/mL	n/a	n/a	1.30e+03	1.31e+03	1.30e+03	0.77	n/a	5.000	n/a
S96T000260	W		Bromide by Ion Chromatograph	ug/g	99.85	<1.26e-01	1.260	n/a	n/a	n/a	n/a	48.80	n/a
S96T000260	W		Nitrate by IC-Bicarbonate/Carbon	ug/g	103.6	2.80e-01	<9.80e+02	<1.80e3	n/a	n/a	n/a	3.80e-01	n/a
S96T000260	Z		Aluminum -ICP-Fusion	ug/g	99.40	<3.00e-02	5.20e+03	5.30e+03	5.30e+03	2.00	99.40	900.0	n/a
S96T000260	Z		Bismuth -ICP-Fusion	ug/g	108.2	<1.00e-01	4.47e+03	4.42e+03	4.42e+03	2.00	99.40	1.00e+03	n/a
S96T000260	Z		Calcium -ICP-Fusion	ug/g	99.40	<1.00e-01	<1.90e+02	<1.90e3	n/a	n/a	97.80	950.0	n/a
S96T000260	Z		Chromium -ICP-Fusion	ug/g	103.8	<1.00e-02	1.35e+03	1.34e+03	1.34e+03	2.23	100.6	190.0	n/a
S96T000260	Z		Iron -ICP-Fusion	ug/g	103.6	<3.00e-02	<9.49e+02	<9.89e2	n/a	n/a	101.3	949.0	n/a
S96T000260	Z		Lithium -ICP-Fusion	ug/g	97.40	<1.00e-02	<1.90e+02	<1.98e2	n/a	n/a	99.80	190.0	n/a
S96T000260	Z		Manganese -ICP-Fusion	ug/g	102.4	<1.00e-02	<1.90e+02	<1.98e2	n/a	n/a	99.60	190.0	n/a
S96T000260	Z		Sodium -ICP-Fusion	ug/g	97.20	1.71e-01	2.27e+05	2.29e+05	2.28e+05	0.88	100.5	1.90e+03	n/a
S96T000260	Z		Nickel -ICP-Fusion	ug/g	102.6	<2.00e-02	<3.80e+02	<3.97e2	n/a	n/a	99.10	380.0	n/a
S96T000260	Z		Phosphorus -ICP-Fusion	ug/g	105.0	<2.00e-01	<3.80e+03	<3.97e3	n/a	n/a	106.4	3.80e+03	n/a
S96T000260	Z		Silicon -ICP-Fusion	ug/g	97.00	<3.00e-02	<9.49e+02	<9.89e2	n/a	n/a	95.40	949.0	n/a
S96T000260	Z		Uranium -ICP-Fusion	ug/g	96.10	<3.00e-01	<9.49e+03	<9.89e3	n/a	n/a	96.60	9.49e+03	n/a
S96T000260	Z		Cesium-137 by GEA	uCi/g	99.26	<2.32e-02	48.80	48.20	48.50	1.24	n/a	n/a	0.740
S96T000260	Z		Alpha of Digested Solid	uCi/g	113.2	<4.67e-03	1.24e-02	1.27e-02	1.26e-02	2.95	73.26	6.00e-03	4.35E+01

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Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 4

SEGMENT PORTION: W Whole Segment

Sample#	B	AE	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000181			BBC Exotherm using Mettler	Joules/g	95.25	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000181			BBC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000181			% Water by TGA using Mettler	%	101.7	n/a	8.430	9.430	8.930	11.2	n/a	n/a	n/a
S96T000181			TIC by Acid/Coulometry	ug/g	94.19	6.00e-01	4.38e+03	4.72e+03	4.55e+03	7.47	n/a	3.800	n/a
S96T000181			TOC by Persulfate/Coulometry	ug/g	92.00	8.800	2.00e+03	2.04e+03	2.02e+03	1.98	n/a	40.00	n/a
S96T000211			Bulk Density of Sample	g/mL	n/a	n/a	1.670	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000233	W		Bromide by Ion Chromatograph	ug/g	97.39	<1.26e-01	<1.49e+03	<1.56e3	n/a	n/a	n/a	1.49e+03	n/a
S96T000233	W		Nitrate by IC-Dionex4000i/4500	ug/g	99.35	<1.46e-01	5.86e+05	6.01e+05	5.94e+05	2.53	n/a	1.46e+03	n/a
S96T000262	Z		Uranium by Phosphorescence	ug/g	106.3	7.570	53.90	62.90	58.40	15.2	88.40	1.920	1.[illegible]
S96T000262	Z		U-Phosphorescence Inst. Error	% Inst Error	3.12	2.210	1.280	1.490	1.385	14.9	n/a	n/a	n/a
S96T000262	Z		Strontium-89/90 High Level	uCi/g	100.8	<1.16e-02	3.710	3.300	3.505	11.7	n/a	2.40e-02	2.51E+00
S96T000262	Z		Aluminium -ICP-Fusion	ug/g	97.60	<3.00e-02	7.84e+03	5.83e+03	6.42e+03	43.7	95.60	1.06e+03	n/a
S96T000262	Z		Bismuth -ICP-Fusion	ug/g	98.60	<1.00e-01	<2.14e+03	<2.28e3	n/a	n/a	97.80	2.13e+03	n/a
S96T000262	Z		Calcium -ICP-Fusion	ug/g	98.40	<1.00e-01	<2.14e+03	<2.28e3	n/a	n/a	99.10	2.13e+03	n/a
S96T000262	Z		Chromium -ICP-Fusion	ug/g	100.2	<1.00e-02	2.47e+03	2.69e+03	2.48e+03	0.81	98.60	213.0	n/a
S96T000262	Z		Iron -ICP-Fusion	ug/g	101.6	<3.00e-02	<1.06e+03	<1.14e3	n/a	n/a	101.5	1.06e+03	n/a
S96T000262	Z		Lithium -ICP-Fusion	ug/g	97.00	<1.00e-02	<2.14e+02	<2.28e2	n/a	n/a	91.50	213.0	n/a
S96T000262	Z		Manganese -ICP-Fusion	ug/g	99.20	<1.00e-02	<2.14e+02	<2.28e2	n/a	n/a	98.50	213.0	n/a
S96T000262	Z		Sodium -ICP-Fusion	ug/g	96.40	1.19e-01	2.38e+05	2.33e+05	2.32e+05	1.30	119.3	2.13e+03	n/a
S96T000262	Z		Nickel -ICP-Fusion	ug/g	99.60	<2.00e-02	<4.25e+02	<4.57e2	n/a	n/a	98.10	425.0	n/a
S96T000262	Z		Phosphorus -ICP-Fusion	ug/g	100.6	<2.00e-01	<4.25e+03	<4.57e3	n/a	n/a	105.2	4.25e+03	n/a
S96T000262	Z		Silicon -ICP-Fusion	ug/g	96.60	<3.00e-02	<1.06e+03	<1.14e3	n/a	n/a	93.50	1.06e+03	n/a
S96T000262	Z		Uranium -ICP-Fusion	ug/g	97.50	<3.00e-01	<1.06e+04	<1.14e4	n/a	n/a	100.0	1.06e+04	n/a
S96T000262	Z		Cesium-137 by GEA	uCi/g	99.26	<2.64e-02	85.01	50.00	67.50	51.9	n/a	n/a	8.560
S96T000262	Z		Beta of Solid Sample	uCi/g	111.1	3.10e-02	92.40	57.90	75.15	45.9	108.9	1.30e-02	2.80E-01
S96T000262	Z		Alpha of Digested Solid	uCi/g	98.80	<1.98e-03	5.53e-02	3.02e-02	4.28e-02	58.7	98.98	3.00e-03	1.62E+01
S96T002846	I		Aluminium -ICP-H20 Dig/Acid	ug/g	96.20	<3.00e-02	1.55e+03	1.67e+03	1.60e+03	8.75	97.20	24.30	n/a
S96T002846	I		Chromium -ICP-H20 Dig/Acid	ug/g	100.6	<1.00e-02	5.61e+02	652.0	606.5	15.0	99.30	4.860	n/a
S96T002846	I		Sodium -ICP-H20 Dig/Acid	ug/g	98.40	1.050	2.48e+05	2.84e+05	2.66e+05	13.5	184.8	48.60	n/a

Final Report
U-109 (P)

CORE NUMBER: 125
SEGMENT #: 5

SEGMENT PORTION: U Whole Segment

Sample#	R	AE	Analyte	Unit	Standard %	Blank	Result	Replicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000182			BBC Southern using Mettler	Joules/g	95.25	n/a	8.00e+00	8.00e+00	8.00e+00	0.00	n/a	n/a	n/a
S96T000182			BBC Southern Dry Calculated	Joules/g Dry	n/a	n/a	8.00e+00	8.00e+00	8.00e+00	0.00	n/a	n/a	n/a
S96T000182			% Water by TGA using Mettler	%	102.3	n/a	10.79	13.06	11.93	19.0	n/a	n/a	n/a
S96T000182			TIC by Acid/Coulometry	ug/g	94.19	6.80e-01	4.95e+03	3.76e+03	4.36e+03	27.3	n/a	n/a	n/a
S96T000182			TOC by Persulfate/Coulometry	ug/g	92.00	8.800	2.62e+03	2.15e+03	2.38e+03	11.7	n/a	1.000	n/a
S96T000263	W		Bulk Density of Sample	g/ml	n/a	n/a	1.590	n/a	n/a	n/a	n/a	40.00	n/a
S96T000263	W		Bromide by Ion Chromatograph	ug/g	97.99	<1.26e-01	<1.46e+03	<1.46e3	n/a	n/a	n/a	1.46e-01	n/a
S96T000263	W		Nitrate by IC-Bicarb/Carb/1/4500	ug/g	99.35	<1.40e-01	4.80e+03	5.38e+03	5.09e+03	11.4	98.31	1.40e-01	n/a
S96T000263	Z		Aluminum -ICP-Fusion	ug/g	97.60	<1.00e-02	1.01e+03	9.06e+03	9.58e+03	10.9	97.10	1.00e-02	n/a
S96T000263	Z		Bismuth -ICP-Fusion	ug/g	98.60	<1.00e-01	<1.99e+03	<1.77e3	n/a	n/a	100.3	1.99e+03	n/a
S96T000263	Z		Calcium -ICP-Fusion	ug/g	98.40	<1.00e-01	<1.99e+03	<1.77e3	n/a	n/a	96.40	1.99e+03	n/a
S96T000263	Z		Chromium -ICP-Fusion	ug/g	100.2	<1.00e-02	3.51e+03	2.51e+03	2.95e+03	30.4	99.20	199.0	n/a
S96T000263	Z		Iron -ICP-Fusion	ug/g	101.6	<5.00e-02	<9.95e+02	<8.87e2	n/a	n/a	101.7	995.0	n/a
S96T000263	Z		Lithium -ICP-Fusion	ug/g	97.00	<1.00e-02	<1.99e+02	<1.77e2	n/a	n/a	99.00	199.0	n/a
S96T000263	Z		Manganese -ICP-Fusion	ug/g	99.20	<1.00e-02	<1.99e+02	<1.77e2	n/a	n/a	98.60	199.0	n/a
S96T000263	Z		Sodium -ICP-Fusion	ug/g	96.40	1.19e-01	2.40e+03	2.27e+03	2.34e+03	5.57	114.3	1.99e+03	n/a
S96T000263	Z		Nickel -ICP-Fusion	ug/g	99.60	<2.00e-02	<3.97e+02	<3.55e2	n/a	n/a	98.60	397.0	n/a
S96T000263	Z		Phosphorus -ICP-Fusion	ug/g	100.6	<2.00e-01	<3.97e+02	<3.55e2	n/a	n/a	121.0	3.97e+03	n/a
S96T000263	Z		Silicon -ICP-Fusion	ug/g	94.60	<5.00e-02	<9.95e+02	<8.87e2	n/a	n/a	96.10	995.0	n/a
S96T000263	Z		Uranium -ICP-Fusion	ug/g	97.50	<5.00e-01	<9.95e+03	<8.87e3	n/a	n/a	101.8	9.95e+03	n/a
S96T000263	Z		Cesium-137 by GEA	uCi/g	99.60	<1.72e-02	1.01e+02	113.0	106.9	11.2	n/a	n/a	8.480
S96T000263	Z		Alpha of Digested Solid	uCi/g	98.80	<1.98e-03	3.24e-02	2.61e-02	2.92e-02	21.5	105.6	2.00e-03	2.10E+01

U-109 Final Report
U-109 (P)

CORE NUMBER: 125
SEGMENT #: 6(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	B	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000172			Bulk Density of Sample	g/mL	n/a	n/a	1.750	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000186			DSC Exotherm using Mettler	Joules/g	114.9	n/a	69.70	88.50	78.60	23.2	n/a	n/a	n/a
S96T000186			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	1.01e+02	130.1	115.5	23.2	n/a	n/a	n/a
S96T000186			% Water by TGA on Perkin Elmer	%	101.5	n/a	37.41	26.55	31.98	34.0	n/a	n/a	n/a
S96T000186			TIC by Acid/Coulometry	ug/g	100.0	1.600	1.08e+04	1.10e+04	1.09e+04	1.83	103.9	5.000	n/a
S96T000186			TOC by Persulfate/Coulometry	ug/g	91.00	5.00e-01	4.08e+03	4.21e+03	4.14e+03	3.14	99.80	40.00	n/a
S96T000256	IV		Bromide by Ion Chromatograph	ug/g	96.09	<1.26e-01	<2.27e+03	<2.19e3	n/a	n/a	n/a	2.27e+03	n/a
S96T000256	IV		Nitrate by IC-Dionex[illegible]	ug/g	100.7	2.71e-01	3.11e+05	2.89e+05	3.00e+05	7.38	n/a	2.52e+03	n/a
S96T000265	Z		Uranium by Phosphorescence	ug/g	89.36	5.180	1.49e+02	125.0	137.0	17.3	97.19	1.700	1.09E+00
S96T000265	Z		U-Phosphorescence Inst. Error	% Inst Error	3.10	2.290	1.090	1.060	1.075	1.06	n/a	n/a	n/a
S96T000265	Z		Strontium-89/90 High Level	uCi/g	97.56	<2.89e-02	7.160	7.690	7.425	7.14	n/a	3.70e-02	2.47E+00
S96T000265	Z		Aluminium -ICP-Fusion	ug/g	97.60	<5.80e-02	1.46e+04	1.35e+04	1.40e+04	7.83	95.60	942.0	n/a
S96T000265	Z		Bismuth -ICP-Fusion	ug/g	98.60	<1.00e-01	<1.88e+03	<1.81e3	n/a	n/a	95.60	1.88e+03	n/a
S96T000265	Z		Calcium -ICP-Fusion	ug/g	98.40	<1.00e-01	<1.88e+03	<1.81e3	n/a	n/a	95.60	1.88e+03	n/a
S96T000265	Z		Chromium -ICP-Fusion	ug/g	100.2	<1.00e-02	3.46e+03	3.53e+03	3.50e+03	2.00	101.0	188.0	n/a
S96T000265	Z		Iron -ICP-Fusion	ug/g	101.6	<5.00e-02	<9.42e+02	<9.05e2	n/a	n/a	101.3	942.0	n/a
S96T000265	Z		Lithium -ICP-Fusion	ug/g	97.00	<1.00e-02	<1.88e+02	<1.81e2	n/a	n/a	87.10	188.0	n/a
S96T000265	Z		Manganese -ICP-Fusion	ug/g	99.20	<1.00e-02	<1.88e+02	<1.81e2	n/a	n/a	99.60	188.0	n/a
S96T000265	Z		Sodium -ICP-Fusion	ug/g	96.40	1.19e-01	2.14e+05	2.08e+05	2.11e+05	2.84	81.90	1.88e+03	n/a
S96T000265	Z		Nickel -ICP-Fusion	ug/g	99.60	<2.00e-02	<3.77e+02	<3.62e2	n/a	n/a	99.80	377.0	n/a
S96T000265	Z		Phosphorus -ICP-Fusion	ug/g	100.6	<2.00e-01	<3.77e+03	<3.62e3	n/a	n/a	117.1	3.77e+03	n/a
S96T000265	Z		Silicon -ICP-Fusion	ug/g	94.60	<5.00e-02	<9.42e+02	<9.05e2	n/a	n/a	94.40	942.0	n/a
S96T000265	Z		Uranium -ICP-Fusion	ug/g	97.50	<5.00e-01	<9.42e+03	<9.05e3	n/a	n/a	96.75	9.42e+03	n/a
S96T000265	Z		Cesium-137 by GEA	uCi/g	99.26	<2.64e-02	1.47e+02	136.0	141.6	7.77	n/a	n/a	0.400
S96T000265	Z		Beta of Solid Sample	uCi/g	108.3	<5.60e-02	1.55e+02	146.0	150.5	5.98	98.44	6.50e-02	4.11E-01
S96T000265	Z		Alpha of Digested Solid	uCi/g	98.80	<1.98e-03	2.82e-02	2.92e-02	2.87e-02	3.48	104.8	2.00e-03	2.21E+01
S96T002547	1		Aluminium -ICP-H2O Dig/Acid	ug/g	96.20	<5.00e-02	8.46e+03	1.10e+04	9.73e+03	[illegible]	119.8	25.10	n/a
S96T002547	1		Chromium -ICP-H2O Dig/Acid	ug/g	100.6	<1.00e-02	1.96e+02	221.0	208.5	12.0	100.9	5.010	n/a
S96T002547	1		Sodium -ICP-H2O Dig/Acid	ug/g	98.40	1.140	2.49e+05	3.15e+05	2.82e+05	[illegible]	828.4	50.10	n/a

Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 6(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AP	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000183			% Water by TGA on Perkin Elmer	%	101.5	n/a	23.63	23.69	23.66	0.25	n/a	n/a	n/a
S96T000183			TIC by Acid/Coulometry	ug/g	96.86	2.000	1.27e+04	1.25e+04	1.26e+04	1.59	n/a	5.000	n/a
S96T000183			TOC by Persulfate/Coulometry	ug/g	91.67	3.500	4.69e+03	4.83e+03	4.76e+03	2.94	n/a	40.00	n/a
S96T000213			Bulk Density of Sample	g/mL	n/a	n/a	1.680	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000235	W		Bromide by Ion Chromatograph	ug/g	94.09	<1.26e-01	<2.92e+03	<2.78e3	n/a	n/a	92.17	2.92e+03	n/a
S96T000235	W		Nitrate by IC-Dionex4000i/4500	ug/g	100.7	2.71e-01	2.44e+05	3.06e+05	2.85e+05	14.7	108.5	3.24e+03	n/a
S96T000264	Z		Aluminum -ICP-Fusion	ug/g	97.60	<5.00e-02	1.52e+04	1.58e+04	1.55e+04	3.87	100.4	1.13e+03	n/a
S96T000264	Z		Bismuth -ICP-Fusion	ug/g	98.60	<1.00e-01	<2.26e+03	<2.31e3	n/a	n/a	95.60	2.26e+03	n/a
S96T000264	Z		Calcium -ICP-Fusion	ug/g	98.40	<1.00e-01	<2.26e+03	<2.31e3	n/a	n/a	95.90	2.26e+03	n/a
S96T000264	Z		Chromium -ICP-Fusion	ug/g	100.2	<1.00e-02	3.82e+03	3.92e+03	3.87e+03	2.58	101.4	226.0	n/a
S96T000264	Z		Iron -ICP-Fusion	ug/g	101.6	<5.00e-02	<1.13e+03	<1.17e3	n/a	n/a	101.3	1.13e+03	n/a
S96T000264	Z		Lithium -ICP-Fusion	ug/g	97.00	<1.00e-02	<2.26e+02	<2.31e2	n/a	n/a	90.80	226.0	n/a
S96T000264	Z		Manganese -ICP-Fusion	ug/g	99.20	<1.00e-02	<2.26e+02	<2.31e2	n/a	n/a	99.30	226.0	n/a
S96T000264	Z		Sodium -ICP-Fusion	ug/g	96.40	1.19e-01	2.07e+05	2.12e+05	2.10e+05	2.39	125.0	2.26e+03	n/a
S96T000264	Z		Nickel -ICP-Fusion	ug/g	99.60	<2.00e-02	<4.52e+02	<4.62e2	n/a	n/a	99.30	452.0	n/a
S96T000264	Z		Phosphorus -ICP-Fusion	ug/g	100.6	<2.00e-01	<4.52e+03	<4.62e3	n/a	n/a	116.4	4.52e+03	n/a
S96T000264	Z		Silicon -ICP-Fusion	ug/g	94.60	<5.00e-02	<1.13e+03	<1.17e3	n/a	n/a	94.90	1.13e+03	n/a
S96T000264	Z		Uranium -ICP-Fusion	ug/g	97.50	<5.00e-01	<1.13e+04	<1.17e4	n/a	n/a	99.65	1.13e+04	n/a
S96T000264	Z		Cesium-137 by GEA	uCi/g	99.60	<1.72e-02	1.56e+02	154.0	155.2	1.29	n/a	n/a	9.410

Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 7(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	S	Af	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000176			Bulk Density of Sample	g/ml	n/a	n/a	1.870	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000176			DSC Exotherm using Mettler	Joules/g	95.55	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000176			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000176			% Water by TGA using Mettler	%	102.4	n/a	15.26	20.01	17.63	27.1	n/a	n/a	n/a
S96T000176			TOC by Acid/Coulometry	ug/g	n/a	n/a	6.57e+03	6.64e+03	6.60e+03	1.06	n/a	n/a	n/a
S96T000176			TIC by Pyrolysis/Coulometry	ug/g	n/a	n/a	3.14e+03	2.58e+03	2.86e+03	19.2	n/a	5.00e	n/a
S96T000267	N		Bromide by Ion Chromatograph	ug/g	99.65	<12.70	<1.39e+03	<1.42e3	n/a	n/a	n/a	49.00	n/a
S96T000267	N		Nitrate by IC-Element[illegible]	ug/g	98.37	<14.18	4.86e+03	4.76e+03	4.82e+03	2.17	n/a	1.[illegible]	n/a
S96T000267	Z		Aluminum -ICP-Fusion	ug/g	96.26	<5.00e-02	1.17e+05	9.30e+04	1.05e+05	22.2	96.20	1.[illegible]	n/a
S96T000267	Z		Bismuth -ICP-Fusion	ug/g	97.40	<1.00e-01	<2.34e+03	<2.18e3	n/a	n/a	97.40	1.17e+03	n/a
S96T000267	Z		Calcium -ICP-Fusion	ug/g	97.20	<1.00e-01	<2.34e+03	<2.18e3	n/a	n/a	97.20	2.34e+03	n/a
S96T000267	Z		Chromium -ICP-Fusion	ug/g	99.40	<1.00e-02	3.16e+03	2.52e+03	2.69e+03	27.3	95.50	2.34e+03	n/a
S96T000267	Z		Iron -ICP-Fusion	ug/g	99.80	<3.00e-02	<1.17e+03	<1.08e3	n/a	n/a	98.10	234.0	n/a
S96T000267	Z		Lithium -ICP-Fusion	ug/g	98.60	<1.00e-02	<2.34e+02	<2.18e2	n/a	n/a	92.50	1.17e+03	n/a
S96T000267	Z		Manganese -ICP-Fusion	ug/g	99.40	<1.00e-02	<2.34e+02	<2.18e2	n/a	n/a	96.80	234.0	n/a
S96T000267	Z		Sodium -ICP-Fusion	ug/g	97.60	1.35e-01	2.50e+05	2.57e+05	2.40e+05	8.77	129.5	234.0	n/a
S96T000267	Z		Nickel -ICP-Fusion	ug/g	98.60	<2.00e-02	4.68e+02	4.33e2	n/a	n/a	96.10	2.34e+03	n/a
S96T000267	Z		Phosphorus -ICP-Fusion	ug/g	100.4	<2.00e-01	4.68e+03	4.33e3	n/a	n/a	110.3	468.0	n/a
S96T000267	Z		Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	<1.17e+03	<1.08e3	n/a	n/a	96.70	4.68e+03	n/a
S96T000267	Z		Uranium -ICP-Fusion	ug/g	90.10	<5.00e-01	<1.17e+04	<1.08e4	n/a	n/a	88.10	1.17e+03	n/a
S96T000267	Z		Cesium-137 by GEA	uCi/g	98.89	<2.96e-02	1.13e+02	95.00	103.5	18.4	n/a	1.17e+04	n/a
S96T000267	Z		Alpha of Digested Solid	uCi/g	106.6	<1.55e-03	1.63e-02	1.10e-02	1.36e-02	38.8	74.73	1.00e-03	0.540

Final Report
U-109 (P)

CORE NUMBER: 125
SEGMENT #: 7(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	S	Ad	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000185			% Water by TGA using Mettler	%	102.4	n/a	19.84	19.21	19.52	3.23	n/a	n/a	n/a
S96T000185			TIC by Acid/Coulometry	ug/g	n/a	n/a	1.09e+04	1.12e+04	1.08e+04	8.37	n/a	5.000	n/a
S96T000185			TOC by Persulfate/Coulometry	ug/g	n/a	n/a	3.64e+03	4.17e+03	3.90e+03	13.6	n/a	48.00	n/a
S96T000214			Bulk Density of Sample	g/mL	n/a	n/a	1.820	n/a	n/a	n/a	n/a	3.00e-01	n/a
S96T000217	U		Bromide by Ion Chromatograph	ug/g	99.65	<12.70	<1.30e+03	<1.29e3	n/a	n/a	97.74	1.30e+03	n/a
S96T000217	U		Nitrate by IC-Dionex4000i/4500	ug/g	98.37	<14.10	4.13e+05	4.16e+05	4.15e+05	0.72	95.57	1.42e+03	n/a
S96T000266	Z		Aluminum -ICP-Fusion	ug/g	96.20	<5.00e-02	1.59e+04	1.10e+04	1.34e+04	36.4	96.70	992.0	n/a
S96T000266	Z		Bismuth -ICP-Fusion	ug/g	97.40	<1.00e-01	<1.86e+03	<1.81e3	n/a	n/a	95.60	1.86e+03	n/a
S96T000266	Z		Calcium -ICP-Fusion	ug/g	97.20	<1.00e-01	<1.86e+03	<1.81e3	n/a	n/a	95.60	1.86e+03	n/a
S96T000266	Z		Chromium -ICP-Fusion	ug/g	99.60	<1.00e-02	3.27e+03	3.20e+03	3.24e+03	2.16	96.90	186.0	n/a
S96T000266	Z		Iron -ICP-Fusion	ug/g	99.80	<5.00e-02	<9.32e+02	<9.06e2	n/a	n/a	97.60	932.0	n/a
S96T000266	Z		Lithium -ICP-Fusion	ug/g	98.60	<1.00e-02	<1.86e+02	<1.81e2	n/a	n/a	95.60	186.0	n/a
S96T000266	Z		Manganese -ICP-Fusion	ug/g	99.40	<1.00e-02	<1.86e+02	<1.81e2	n/a	n/a	96.60	186.0	n/a
S96T000266	Z		Sodium -ICP-Fusion	ug/g	97.60	1.35e-01	2.28e+05	2.29e+05	2.28e+05	0.44	115.3	1.86e+03	n/a
S96T000266	Z		Nickel -ICP-Fusion	ug/g	98.60	<2.00e-02	<3.73e+02	<3.62e2	n/a	n/a	96.40	373.0	n/a
S96T000266	Z		Phosphorus -ICP-Fusion	ug/g	100.4	<2.00e-01	<3.73e+03	<3.62e3	n/a	n/a	117.1	3.73e+03	n/a
S96T000266	Z		Silicon -ICP-Fusion	ug/g	96.28	<5.00e-02	<9.32e+02	<9.06e2	n/a	n/a	94.90	932.0	n/a
S96T000266	Z		Uranium -ICP-Fusion	ug/g	98.10	<5.00e-01	<9.32e+03	<9.06e3	n/a	n/a	95.45	9.32e+03	n/a
S96T000266	Z		Cesium-137 by GEA	uCi/g	98.89	<2.96e-02	1.05e+02	103.0	104.0	1.92	n/a	n/a	0.500

Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 8(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	B	AP	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000269			Bulk Density of Sample	g/mL	n/a	n/a	1.840	n/a	n/a	n/a	n/a	3.00e-01	n/a
S96T000269			TOC Southern water Matrix	Joules/g	97.72	n/a	8.00e+00	8.00e+00	8.00e+00	0.00	n/a	n/a	n/a
S96T000269			TOC Southern Dry Calculated	Joules/g Dry	n/a	n/a	8.00e+00	8.00e+00	8.00e+00	0.00	n/a	n/a	n/a
S96T000269			% Water by TGA using Distiller	%	102.4	n/a	17.54	20.78	18.97	34.3	n/a	n/a	n/a
S96T000269			TIC by Acid/Coulometry	ug/g	96.86	2.000	9.44e+03	7.77e+03	8.60e+03	19.4	n/a	n/a	n/a
S96T000269		W	Bromide by Ion Chromatograph	ug/g	91.07	5.000	3.60e+03	4.35e+03	3.98e+03	18.8	n/a	5.000	n/a
S96T000269		W	Nitrate by IC-B	ug/g	92.17	<1.36e-01	<1.84e+03	<9.80e+3			n/a	40.00	n/a
S96T000269		Z	Aluminum -ICP-Fusion	ug/g	98.05	2.00e-01	3.59e+03	3.47e+03	3.53e+03	3.4	91.65	1.00e+03	n/a
S96T000269		Z	Bismuth -ICP-Fusion	ug/g	96.00	<1.00e-01	1.19e+03	1.17e+03	1.18e+03	1.7	96.10	2.00e+03	n/a
S96T000269		Z	Calcium -ICP-Fusion	ug/g	97.00	<1.00e-01	<1.81e+03	<1.80e+3			91.00	900.0	n/a
S96T000269		Z	Chromium -ICP-Fusion	ug/g	97.00	<1.00e-01	<1.31e+03	<1.80e+3	n/a	n/a	96.00	1.00e+03	n/a
S96T000269		Z	Iron -ICP-Fusion	ug/g	97.00	<1.00e-01	<1.15e+03	<1.80e+3	n/a	n/a	96.00	1.00e+03	n/a
S96T000269		Z	Lithium -ICP-Fusion	ug/g	97.00	<1.00e-01	<9.07e+02	<1.80e+3	2.25e+03	1.32	96.00	1.00e+03	n/a
S96T000269		Z	Magnesium -ICP-Fusion	ug/g	98.00	<1.00e-01	<1.81e+02	<1.80e+2	n/a	n/a	97.00	90.00	n/a
S96T000269		Z	Sodium -ICP-Fusion	ug/g	99.00	<1.00e-02	<1.81e+02	<1.80e+2	n/a	n/a	91.00	90.00	n/a
S96T000269		Z	Nickel -ICP-Fusion	ug/g	97.60	1.35e-01	2.26e+03	2.22e+03	2.25e+03	1.79	92.40	90.00	n/a
S96T000269		Z	Phosphorus -ICP-Fusion	ug/g	98.00	<2.00e-02	<3.62e+02	<3.75e2	n/a	n/a	95.20	1.81e+03	n/a
S96T000269		Z	Silicon -ICP-Fusion	ug/g	109.4	<2.00e-01	<3.63e+03	<3.75e3	n/a	n/a	95.20	923.0	n/a
S96T000269		Z	Uranium -ICP-Fusion	ug/g	96.20	<5.00e-02	<9.07e+02	<9.35e2	n/a	n/a	116.8	3.63e+03	n/a
S96T000269		Z	Cesium-137 by GEA	uCi/g	90.10	<5.00e-01	<9.07e+03	<9.35e3	n/a	n/a	93.70	907.0	n/a
S96T000269		Z	Alpha of Digested Solid	uCi/g	98.89	<2.96e-02	1.20e+02	112.0	115.9	6.90	87.60	9.07e+03	n/a
					106.6	<1.35e-03	1.58e-02	1.60e-02	1.59e-02	1.26	76.02	1.00e-03	1.27E+01

Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 8(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Sub Rec %	Det Limit	Count Err%
S96T000187			BBC Bombers using Mettler	Joules/g	97.72	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000187			BBC Bombers Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000187			% Water by TGA using Mettler	%	102.4	n/a	22.27	24.06	23.42	11.4	n/a	n/a	n/a
S96T000187			TIC by Acid/Coulometry	ug/g	96.86	2.000	7.87e+03	7.47e+03	8.76e+03	20.3	100.0	5.000	n/a
S96T000187			TOC by Persulfate/Coulometry	ug/g	91.67	3.500	3.44e+03	3.97e+03	3.68e+03	12.8	101.0	48.00	n/a
S96T000215			Bulk Density of Sample	g/cc	n/a	n/a	1.820	n/a	n/a	n/a	n/a	1.00e-01	n/a
S96T000249	W		Bromide by Ion Chromatograph	ug/g	92.17	<1.20e-01	<1.05e+03	<1.91e3	n/a	n/a	98.0	1.00e-01	n/a
S96T000249	W		Nitrate by IC-Dionex/DX120	ug/g	98.65	2.20e-01	3.43e+03	3.42e+03	3.42e+03	0.29	98.0	1.00e-01	n/a
S96T000266	Z		Aluminum -ICP-Fusion	ug/g	96.28	<5.00e-02	1.08e+04	1.07e+04	1.11e+04	3.31	98.0	2.00e-01	n/a
S96T000266	Z		Bismuth -ICP-Fusion	ug/g	97.40	<1.00e-01	<1.91e+03	<1.91e3	n/a	n/a	98.0	1.00e-01	n/a
S96T000266	Z		Calcium -ICP-Fusion	ug/g	97.20	<1.00e-01	<1.91e+03	<1.91e3	n/a	n/a	98.0	1.00e-01	n/a
S96T000266	Z		Chromium -ICP-Fusion	ug/g	99.40	<1.00e-01	3.44e+03	3.45e+03	3.45e+03	3.48	97.0	1.00e-01	n/a
S96T000266	Z		Iron -ICP-Fusion	ug/g	99.20	<5.00e-02	<9.55e+02	<9.55e2	n/a	n/a	97.0	1.00e-01	n/a
S96T000266	Z		Lithium -ICP-Fusion	ug/g	98.60	<1.00e-01	<1.91e+03	<1.91e3	n/a	n/a	97.0	1.00e-01	n/a
S96T000266	Z		Manganese -ICP-Fusion	ug/g	99.40	<1.00e-01	<1.91e+03	<1.91e3	n/a	n/a	97.0	1.00e-01	n/a
S96T000266	Z		Sodium -ICP-Fusion	ug/g	97.20	1.00e-01	2.11e+03	2.07e+03	2.10e+03	7.31	114.0	1.00e-01	n/a
S96T000266	Z		Nickel -ICP-Fusion	ug/g	98.60	<2.00e-02	<4.82e+02	<4.78e2	n/a	n/a	96.10	382.0	n/a
S96T000266	Z		Phosphorus -ICP-Fusion	ug/g	100.4	<2.00e-01	<3.82e+03	<3.78e3	n/a	n/a	128.0	3.82e+03	n/a
S96T000266	Z		Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	<9.55e+02	<9.55e2	n/a	n/a	97.40	955.0	n/a
S96T000266	Z		Uranium -ICP-Fusion	ug/g	90.10	<5.00e-01	<9.55e+03	<9.55e3	n/a	n/a	86.75	9.55e+03	n/a
S96T000266	Z		Cesium-137 by GEA	uCi/g	98.89	<2.96e-02	1.03e+02	112.0	107.5	8.37	n/a	n/a	0.510

Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 9(A)

SEGMENT PORTION: A Top Quarter of Segment

Sample#	S	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
596T000270			BOMC Exotherm using Mettler	Joules/g	92.44	n/a	19.00	35.70	27.35	61.1	n/a	n/a	n/a
596T000270			BOMC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	30.50	57.30	43.90	61.0	n/a	n/a	n/a
596T000270			% Water by TGA using Mettler	%	101.3	n/a	37.02	38.33	37.67	3.48	n/a	n/a	n/a
596T000270			TIC by Acid/Coulometry	ug/g	99.00	2.500	6.05e+03	1.32e+04	9.62e+03	76.3	n/a	5.000	n/a
596T000270			TOC by Persulfate/Coulometry	ug/g	92.67	2.900	9.89e+03	9.25e+03	9.57e+03	6.69	n/a	46.00	n/a
596T000216			Bulk Density of Sample	g/cc	n/a	n/a	1.420	n/a	n/a	n/a	n/a	3.00e-01	n/a
596T000241	W		Bromide by Ion Chromatograph	ug/g	98.44	<1.26e-01	<4.94e+02	<4.99e2	n/a	n/a	97.11	[illegible]	n/a
596T000241	W		Nitrate by IC-D [illegible]	ug/g	100.5	<1.42e-01	1.05e+05	1.06e+05	1.06e+05	0.95	[illegible]	[illegible]	n/a
596T000270	Z		Aluminum -ICP-Fusion	ug/g	97.80	<5.00e-02	1.15e+04	1.07e+04	1.11e+04	3.60	97.20	1.19e+03	n/a
596T000270	Z		Bismuth -ICP-Fusion	ug/g	100.0	<1.00e-01	<2.39e+03	<2.38e3	n/a	n/a	[illegible]	2.39e+03	n/a
596T000270	Z		Calcium -ICP-Fusion	ug/g	99.20	<1.00e-01	<2.39e+03	<2.38e3	n/a	n/a	[illegible]	2.39e+03	n/a
596T000270	Z		Chromium -ICP-Fusion	ug/g	100.6	<1.00e-02	3.49e+03	3.57e+03	3.53e+03	[illegible]	101.4	[illegible]	n/a
596T000270	Z		Iron -ICP-Fusion	ug/g	100.4	<5.00e-02	1.26e+05	1.28e+05	1.27e+05	1.57	97.00	1.19e+03	n/a
596T000270	Z		Lithium -ICP-Fusion	ug/g	99.40	<1.00e-01	<2.39e+03	<2.38e3	n/a	n/a	[illegible]	[illegible]	n/a
596T000270	Z		Manganese -ICP-Fusion	ug/g	101.4	<1.00e-02	2.21e+03	560.0	560.5	10.7	[illegible]	239.0	n/a
596T000270	Z		Sodium -ICP-Fusion	ug/g	98.00	1.34e-01	2.06e+05	2.05e+05	2.06e+05	0.49	100.1	2.39e+03	n/a
596T000270	Z		Nickel -ICP-Fusion	ug/g	101.2	<2.00e-02	<4.77e+02	<4.79e2	n/a	n/a	98.80	477.0	n/a
596T000270	Z		Phosphorus -ICP-Fusion	ug/g	105.4	<2.00e-01	3.98e+04	4.35e+04	4.16e+04	10.1	125.0	4.77e+03	n/a
596T000270	Z		Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	1.58e+03	1.60e+03	1.59e+03	1.26	95.20	1.19e+03	n/a
596T000270	Z		Uranium -ICP-Fusion	ug/g	97.40	<5.00e-01	<1.19e+04	<1.05e4	n/a	n/a	105.3	1.19e+04	n/a
596T000270	Z		Cesium-137 by GEA	uCi/g	95.94	<3.51e-02	68.07	67.50	67.78	0.88	n/a	n/a	0.640

Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 9(B)

SEGMENT PORTION: B Second Quarter of Segment

SampleID	R	AP	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Sub Rec %	Det Limit	Count Err%
S96T00271			Bulk Density of Sample	g/mL	n/a	n/a	comment	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T00271			BTU Parchers using Moisture	Joules/g	92.44	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T00271			BTU Parchers Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T00271			% Water by TGA using Moisture	%	100.9	n/a	17.51	21.86	20.68	20.5	n/a	n/a	n/a
S96T00271			TIC by Acid/Coulometry	ug/g	90.88	3.500	2.97e+03	2.77e+03	2.87e+03	5.95	98.00	5.000	n/a
S96T00271			TOC by Persulfate/Coulometry	ug/g	95.33	1.400	3.48e+03	2.82e+03	3.15e+03	18.4	96.00	40.00	n/a
S96T00271	N		Bromide by Ion Chromatograph	ug/g	98.46	<1.36e-01	<1.42e+02	<1.39e2	n/a	n/a	97.00	142.5	n/a
S96T00271	N		Nitrate by IC-Dionex(8081/9056)	ug/g	100.3	<1.36e-01	4.27e+03	4.62e+03	4.45e+03	7.80	101.0	142.5	n/a
S96T00271	Z		Aluminum -ICP-Fusion	ug/g	97.00	<3.30e-02	1.86e+05	1.80e+05	1.83e+05	3.67	95.7	891.0	n/a
S96T00271	Z		Bismuth -ICP-Fusion	ug/g	100.0	<1.36e-01	<1.76e+03	<1.35e3	n/a	n/a	98.00	1.76e+03	n/a
S96T00271	Z		Calcium -ICP-Fusion	ug/g	99.20	<1.36e-01	<1.76e+03	<1.35e3	n/a	n/a	97.20	1.76e+03	n/a
S96T00271	Z		Chromium -ICP-Fusion	ug/g	102.6	<1.36e-02	1.86e+03	1.86e+03	1.91e+03	2.38	96.00	178.0	n/a
S96T00271	Z		Iron -ICP-Fusion	ug/g	100.4	<3.30e-01	<3.91e+02	<9.39e2	n/a	n/a	99.00	891.0	n/a
S96T00271	Z		Lithium -ICP-Fusion	ug/g	97.40	<1.36e-02	<1.76e+02	<1.35e2	n/a	n/a	96.00	178.0	n/a
S96T00271	Z		Manganese -ICP-Fusion	ug/g	101.4	<1.36e-02	<1.76e+02	<1.35e2	n/a	n/a	97.00	178.0	n/a
S96T00271	Z		Sodium -ICP-Fusion	ug/g	98.00	1.34e-01	7.36e+05	7.27e+05	7.46e+05	3.09	102.4	1.76e+03	n/a
S96T00271	Z		Nickel -ICP-Fusion	ug/g	101.2	<2.00e-02	<3.54e+02	<3.87e2	n/a	n/a	97.10	356.0	n/a
S96T00271	Z		Phosphorus -ICP-Fusion	ug/g	105.4	<2.00e-01	8.06e+03	6.53e+03	7.30e+03	21.0	121.6	3.56e+03	n/a
S96T00271	Z		Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	<8.91e+02	<9.48e2	n/a	n/a	96.40	891.0	n/a
S96T00271	Z		Uranium -ICP-Fusion	ug/g	97.40	<5.00e-01	<8.91e+03	<9.68e3	n/a	n/a	99.20	8.91e+03	n/a
S96T00271	Z		Cesium-137 by GEA	uCi/g	95.94	<3.51e-02	66.92	70.40	68.66	5.10	n/a	n/a	0.550

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Final Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 9(C)

SEGMENT PORTION: C Third Quarter of Segment

Sample#	R	AS	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
596T000176			Bulk Density of Sample	g/mL	n/a	n/a	1.970	n/a	n/a	n/a	n/a	5.00e-01	n/a
596T000177			BTU Southern using Bomber	Joules/g	111.1	n/a	8.80e+00	8.80e+00	8.80e+00	0.00	n/a	n/a	n/a
596T000177			BTU Southern Dry Calculated	Joules/g Dry	n/a	n/a	8.80e+00	8.80e+00	8.80e+00	0.00	n/a	n/a	n/a
596T000177			% Water by TGA on Particle Sizer	%	100.7	n/a	17.58	16.80	17.09	3.32	n/a	n/a	n/a
596T000177			TIC by Acid/Coulometry	ug/g	99.00	2.500	1.61e+03	1.57e+03	1.59e+03	2.52	n/a	5.000	n/a
596T000177			TOC by Persulfate/Coulometry	ug/g	92.67	2.500	2.06e+03	2.05e+03	2.06e+03	0.49	n/a	60.00	n/a
596T000263	V		Bromide by Ion Chromatograph	ug/g	98.45	<1.26e-01	<2.44e+02	<2.38e2	n/a	n/a	97.65	[illegible]	n/a
596T000263	V		Nitrate by IC-Dionex[illegible]	ug/g	100.5	<1.46e-01	5.13e+03	5.03e+03	5.08e+03	0.40	97.57	[illegible]	n/a
596T000272	Z		Aluminum - ICP-Fusion	ug/g	97.80	<8.00e-02	2.11e+05	2.16e+05	2.14e+05	2.35	[illegible]	[illegible]	n/a
596T000272	Z		Bismuth - ICP-Fusion	ug/g	100.8	<1.00e-01	<1.79e+03	<1.81e3	n/a	n/a	[illegible]	1.78e+03	n/a
596T000272	Z		Calcium - ICP-Fusion	ug/g	99.80	<1.00e-01	<1.79e+03	<1.81e3	n/a	n/a	97.80	1.78e+03	n/a
596T000272	Z		Chromium - ICP-Fusion	ug/g	100.6	<1.00e-02	1.26e+03	1.19e+03	1.18e+03	10.2	99.70	178.0	n/a
596T000272	Z		Iron - ICP-Fusion	ug/g	100.4	<3.00e-02	<8.88e+02	<9.06e2	n/a	n/a	100.5	[illegible]	n/a
596T000272	Z		Lithium - ICP-Fusion	ug/g	99.40	<1.00e-02	<1.79e+02	<1.81e2	n/a	n/a	99.40	178.0	n/a
596T000272	Z		Manganese - ICP-Fusion	ug/g	101.4	<1.00e-02	<1.79e+02	<1.81e2	n/a	n/a	99.10	178.0	n/a
596T000272	Z		Sodium - ICP-Fusion	ug/g	98.00	1.34e-01	5.71e+04	6.11e+04	5.91e+04	6.77	105.1	1.78e+03	n/a
596T000272	Z		Nickel - ICP-Fusion	ug/g	101.2	<2.00e-02	<3.55e+02	<3.62e2	n/a	n/a	99.30	355.0	n/a
596T000272	Z		Phosphorus - ICP-Fusion	ug/g	105.4	<2.00e-01	<3.55e+03	<3.62e3	n/a	n/a	109.1	3.55e+03	n/a
596T000272	Z		Silicon - ICP-Fusion	ug/g	96.20	<3.00e-02	<8.88e+02	<9.06e2	n/a	n/a	97.40	888.0	n/a
596T000272	Z		Uranium - ICP-Fusion	ug/g	97.40	<5.00e-01	1.13e+04	1.41e+04	1.27e+04	22.0	103.5	8.88e+03	n/a
596T000272	Z		Cesium-137 by GEA	uCi/g	95.94	<3.51e-02	81.66	78.70	80.28	3.59	n/a	n/a	0.500
596T000272	Z		Alpha of Digested Solid	uCi/g	101.0	<3.06e-03	1.14e-02	1.14e-02	1.14e-02	0.00	72.96	7.00e-03	5.54E+01

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 2,3,4,5U,5L,6U,6L,7U,7L,8U,8L,9U,9L

SEGMENT PORTION: Core Composite

Sample#	R	AB	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
5961001656			Bulk Density of Sample	g/mL	n/a	n/a	1.710	n/a	n/a	n/a	n/a	5.00e-01	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 124

SEGMENT PORTION: Core Composite

Sample#	Q	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T001657			DSC Exotherm using Mettler	Joules/g	95.61	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T001657			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T001657			% Water by TGA using Mettler	%	99.66	n/a	26.27	24.46	25.37	7.14	n/a	n/a	n/a
S96T001657			TIC by Acid/Coulometry	ug/g	98.50	9.80e-01	8.95e+03	8.52e+03	8.72e+03	4.70	95.80	5.000	n/a
S96T001657			TOC by Persulfate/Coulometry	ug/g	92.70	8.100	4.06e+03	3.85e+03	3.96e+03	5.31	95.80	60.00	n/a
S96T001658		Z	Uranium by Phosphorescence	ug/g	91.39	1.690	2.70e+02	256.0	263.0	5.32	101.4	1.750	1.09E+00
S96T001658		Z	U-Phosphorescence Inst. Error	% Inst Error	3.12	3.370	1.090	1.270	1.180	1.27	n/a	n/a	n/a
S96T001658		Z	Strontium-90/90 High Level	uCi/g	101.6	7.70e-02	9.800	10.10	9.950	3.02	n/a	1.50e-02	1.55E+00
S96T001658		Z	Aluminum -ICP-Fusion	ug/g	98.80	5.00e-02	1.60e+04	1.28e+04	1.44e+04	22.2	98.80	971.0	n/a
S96T001658		Z	Bismuth -ICP-Fusion	ug/g	102.0	<1.00e-01	<1.95e+03	<1.95e3	n/a	n/a	101.5	1.95e+03	n/a
S96T001658		Z	Calcium -ICP-Fusion	ug/g	100.6	<1.00e-01	<1.95e+03	<1.95e3	n/a	n/a	101.5	1.95e+03	n/a
S96T001658		Z	Chromium -ICP-Fusion	ug/g	101.8	<1.00e-02	3.61e+03	3.70e+03	3.66e+03	2.46	100.9	196.0	n/a
S96T001658		Z	Iron -ICP-Fusion	ug/g	101.6	<5.00e-02	<9.71e+02	<9.75e2	n/a	n/a	101.0	971.0	n/a
S96T001658		Z	Lithium -ICP-Fusion	ug/g	103.0	<1.00e-02	<1.94e+02	<1.95e2	n/a	n/a	99.50	196.0	n/a
S96T001658		Z	Manganese -ICP-Fusion	ug/g	98.80	<1.00e-02	<1.94e+02	<1.95e2	n/a	n/a	95.60	196.0	n/a
S96T001658		Z	Sodium -ICP-Fusion	ug/g	101.6	1.16e-01	2.34e+05	2.34e+05	2.34e+05	0.00	117.4	1.95e+03	n/a
S96T001658		Z	Nickel -ICP-Fusion	ug/g	100.2	<2.00e-02	2.96e+03	2.97e+03	2.96e+03	0.34	98.90	388.0	n/a
S96T001658		Z	Phosphorus -ICP-Fusion	ug/g	100.6	<2.00e-01	6.00e+03	6.57e+03	6.28e+03	9.07	99.60	3.88e+03	n/a
S96T001658		Z	Silicon -ICP-Fusion	ug/g	102.6	<5.00e-02	4.55e+03	<9.75e2	n/a	n/a	102.5	971.0	n/a
S96T001658		Z	Uranium -ICP-Fusion	ug/g	98.80	<5.00e-01	<9.71e+03	<9.75e3	n/a	n/a	92.30	9.71e+03	n/a
S96T001658		Z	Cesium-137 by GEA	uCi/g	100.8	<2.99e-02	1.26e+02	124.0	125.0	1.60	n/a	n/a	0.590
S96T001658		Z	Beta of Solid Sample	uCi/g	107.2	1.25e-01	1.39e+02	133.0	136.0	4.41	97.92	2.00e-02	3.24E-01
S96T001658		Z	Alpha of Digested Solid	uCi/g	101.6	<5.68e-03	3.49e-02	3.37e-02	3.43e-02	3.50	85.24	5.00e-03	2.82E+01
S96T001659		W	Bromide by Ion Chromatograph	ug/g	97.91	<1.26e-01	<1.02e+03	<9.28e2	n/a	n/a	94.26	1.02e+03	n/a
S96T001659		W	Nitrate by IC-Dionex40001/4500	ug/g	95.77	3.89e-01	3.01e+05	2.71e+05	2.86e+05	10.5	n/a	2.78e+03	n/a
S96T002516		I	Aluminum -ICP-H20 Dig/Acid	ug/g	99.80	5.00e-02	1.07e+04	1.08e+04	1.08e+04	0.93	92.90	28.80	n/a
S96T002516		I	Chromium -ICP-H20 Dig/Acid	ug/g	103.2	<1.00e-02	5.42e+02	540.0	541.0	0.37	101.4	5.770	n/a
S96T002516		I	Sodium -ICP-H20 Dig/Acid	ug/g	102.2	1.440	2.43e+05	2.44e+05	2.44e+05	0.41	n/a	57.70	n/a

Final Report
U-109 (P)

CORE NUMBER: 126
SEGMENT #: 2

SEGMENT PORTION: U Whole Segment

Sample#	R	AB	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Sub Rec %	Det Limit	Count Err%
[illegible]			BOC Southern Ultra Matter	Joules/g	100.6	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
[illegible]			BOC Southern Dry Chemistry	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
[illegible]			% Water by KFA on Parkin Elmer	%	102.3	n/a	15.05	19.44	17.24	25.4	n/a	n/a	n/a
[illegible]			TOC by Acid/Coulometry	ug/g	99.17	1.500	3.74e+03	7.87e+03	5.81e+03	51.4	n/a	n/a	n/a
[illegible]			TOC by Persulfate/Chemistry	ug/g	95.33	2.200	1.29e+05	1.68e+05	1.48e+05	31.1	95.10	3.000	n/a
[illegible]	Z		Aluminum -ICP-Fusion	ug/g	99.40	<5.00e-02	7.15e+05	7.42e+05	7.68e+05	9.2	98.00	40.00	n/a
[illegible]	Z		Bismuth -ICP-Fusion	ug/g	99.40	<1.00e-01	<2.16e+05	<2.16e+5		n/a	92.40	1.[illegible]	n/a
[illegible]	Z		Calcium -ICP-Fusion	ug/g	99.40	<1.00e-01	<2.16e+05	<2.16e+5	n/a	n/a	95.10	[illegible]	n/a
[illegible]	Z		Chromium -ICP-Fusion	ug/g	100.0	<1.00e-02	2.44e+05	3.75e+05	3.18e+05	34.2	102.0	[illegible]	n/a
[illegible]	Z		Iron -ICP-Fusion	ug/g	99.40	<5.00e-03	1.38e+05	1.88e+05	1.63e+05	30.7	98.80	1.[illegible]	n/a
[illegible]	Z		Lithium -ICP-Fusion	ug/g	100.0	<1.00e-02	<2.16e+05	<2.16e+5	n/a	n/a	92.20	216.0	n/a
[illegible]	Z		Magnesium -ICP-Fusion	ug/g	99.40	<1.00e-02	<2.16e+05	<2.16e+5	n/a	n/a	101.3	216.0	n/a
S96T000344	Z		Sodium -ICP-Fusion	ug/g	100.0	1.25e-01	2.51e+05	2.50e+05	2.50e+05	0.40	28.40	2.16e+03	n/a
S96T000344	Z		Nickel -ICP-Fusion	ug/g	99.40	<2.00e-02	4.32e+02	4.28e+2	n/a	n/a	100.0	432.0	n/a
S96T000344	Z		Phosphorus -ICP-Fusion	ug/g	99.80	<2.00e-01	7.42e+03	8.15e+03	7.78e+03	9.38	99.10	4.32e+03	n/a
S96T000344	Z		Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	<1.08e+03	<1.07e3	n/a	n/a	99.80	1.08e+03	n/a
S96T000344	Z		Uranium -ICP-Fusion	ug/g	96.60	<5.00e-01	<1.08e+04	<1.07e4	n/a	n/a	94.80	1.08e+04	n/a
S96T000344	Z		Cesium-137 by GEA	uCi/g	96.68	<3.99e-02	58.97	62.60	60.78	5.92	n/a	n/a	0.720
S96T000344	Z		Alpha of Digested Solid	uCi/g	86.75	<3.28e-03	6.55e-02	7.13e-02	6.84e-02	8.48	79.59	3.00e-03	1.49E+01
S96T000357	W		Bromide by Ion Chromatograph	ug/g	100.7	<1.26e-01	<2.75e+03	<2.69e3	n/a	n/a	64.00	2.75e+03	n/a
S96T000357	W		Nitrate by IC-Dionex40001/4500	ug/g	102.0	4.75e-01	2.85e+05	2.68e+05	2.76e+05	6.15	90.07	3.05e+03	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 3

SEGMENT PORTION: V Whole Segment

Sample#	R	AB	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000342			Bulk Density of Sample	g/mL	n/a	n/a	1.260	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000349			BBC Exotherm using Bomber	Joules/g	100.6	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000349			BBC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000349			% Water by TGA on Parkin Elmer	%	100.7	n/a	42.89	41.08	41.98	4.31	n/a	n/a	n/a
S96T000349			TIC by Acid/Coulometry	ug/g	99.17	1.500	3.44e+03	3.26e+03	3.35e+03	11.0	n/a	5.000	n/a
S96T000349			TOC by Persulfate/Coulometry	ug/g	99.33	2.200	2.44e+03	2.28e+03	2.44e+03	11.4	n/a	40.00	n/a
S96T000345	Z		Uranium by Phosphorescence	ug/g	104.5	<1.85e-01	88.70	90.30	89.50	11.2	95.00	1.85e-01	2.30E+00
S96T000345	Z		U-Phosphorescence Inst. Error	% Inst Error	3.23	n/a	2.380	2.370	2.375	2.37	n/a	n/a	n/a
S96T000345	Z		Strontium-89/90 High Level	uCi/g	100.8	<3.47e-03	5.990	6.260	6.125	4.41	n/a	6.00e-03	1.75E+00
S96T000345	Z		Aluminum -ICP-Fusion	ug/g	98.40	<5.00e-02	1.02e+04	1.18e+04	1.10e+04	14.5	93.00	1.05e+03	n/a
S96T000345	Z		Bismuth -ICP-Fusion	ug/g	98.40	<1.00e-01	<2.05e+03	<2.15e3	n/a	n/a	97.80	2.05e+03	n/a
S96T000345	Z		Calcium -ICP-Fusion	ug/g	98.40	<1.00e-01	<2.05e+03	<2.15e3	n/a	n/a	96.60	2.05e+03	n/a
S96T000345	Z		Chromium -ICP-Fusion	ug/g	100.0	<1.00e-02	3.19e+03	3.36e+03	3.28e+03	5.19	101.4	205.0	n/a
S96T000345	Z		Iron -ICP-Fusion	ug/g	99.60	<5.00e-02	<1.03e+03	<1.09e3	n/a	n/a	101.7	1.03e+03	n/a
S96T000345	Z		Lithium -ICP-Fusion	ug/g	100.8	<1.00e-02	<2.05e+02	<2.15e2	n/a	n/a	93.50	205.0	n/a
S96T000345	Z		Manganese -ICP-Fusion	ug/g	99.40	<1.00e-02	<2.05e+02	<2.15e2	n/a	n/a	101.3	205.0	n/a
S96T000345	Z		Sodium -ICP-Fusion	ug/g	100.0	1.29e-01	2.23e+05	2.09e+05	2.16e+05	6.48	13.80	2.05e+03	n/a
S96T000345	Z		Nickel -ICP-Fusion	ug/g	99.40	<2.00e-02	<4.11e+02	<4.30e2	n/a	n/a	100.8	411.0	n/a
S96T000345	Z		Phosphorus -ICP-Fusion	ug/g	99.80	<2.00e-01	<4.11e+03	<4.30e3	n/a	n/a	110.3	4.11e+03	n/a
S96T000345	Z		Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	<1.03e+03	<1.09e3	n/a	n/a	99.60	1.03e+03	n/a
S96T000345	Z		Uranium -ICP-Fusion	ug/g	94.60	<5.00e-01	<1.03e+04	<1.09e4	n/a	n/a	96.40	1.03e+04	n/a
S96T000345	Z		Cesium-137 by GEA	uCi/g	96.68	<3.99e-02	90.72	105.0	97.86	14.6	n/a	n/a	0.570
S96T000345	Z		Beta of Solid Sample	uCi/g	104.4	<2.33e-02	1.08e+02	103.0	105.5	4.74	97.40	3.48e-02	3.66E-01
S96T000345	Z		Alpha of Digested Solid	uCi/g	86.75	<3.28e-03	6.52e-02	5.15e-02	4.83e-02	12.6	77.30	5.00e-03	1.89E+01
S96T000358	W		Bromide by Ion Chromatograph	ug/g	100.7	<1.26e-01	6.11e+03	6.57e+03	6.34e+03	7.26	63.30	2.17e+03	n/a
S96T000358	W		Nitrate by IC-Dionex4000i/4500	ug/g	102.0	4.75e-01	2.88e+05	2.83e+05	2.85e+05	1.75	89.74	2.40e+03	n/a
S96T002847	I		Aluminum -ICP-H20 Dig/Acid	ug/g	99.80	<5.00e-02	1.36e+04	1.31e+04	1.34e+04	3.75	46.40	28.50	n/a
S96T002847	I		Chromium -ICP-H20 Dig/Acid	ug/g	103.2	<1.00e-02	3.93e+02	366.0	379.5	7.11	101.1	5.710	n/a
S96T002847	I		Sodium -ICP-H20 Dig/Acid	ug/g	102.2	1.110	2.32e+05	2.24e+05	2.28e+05	3.51	n/a	57.00	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 30L

SEGMENT PORTION: Drainable Liquid

Sample#	B	AF	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000280			DSC Exotherm using Mettler	Joules/g	97.72	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000280			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000280			Specific Gravity	Sp.G.	99.14	n/a	1.397	1.398	1.397	0.07	n/a	1.00e-03	n/a
S96T000280			% Water by TGA using Mettler	%	102.4	n/a	33.37	33.03	33.20	0.64	n/a	n/a	n/a
S96T000280			TOC by Persulfate/Coulometry	ug/mL	n/a	n/a	2.32e+03	2.36e+03	2.34e+03	1.71	n/a	40.00	n/a
S96T000280	D		Aluminum-ICP-Acid Dil.	ug/mL	97.60	<5.00e-02	5.79e+03	5.67e+03	5.66e+03	0.53	95.50	20.10	n/a
S96T000280	D		Bismuth-ICP-Acid Dil.	ug/mL	102.0	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	100.3	40.10	n/a
S96T000280	D		Calcium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	107.4	40.10	n/a
S96T000280	D		Chromium-ICP-Acid Dil.	ug/mL	101.0	<1.00e-02	1.27e+02	126.0	127.5	0.78	101.4	4.010	n/a
S96T000280	D		Iron-ICP-Acid Dil.	ug/mL	101.0	<5.00e-02	< 20.00	<2.00e1	n/a	n/a	102.3	20.10	n/a
S96T000280	D		Lithium-ICP-Acid Dil.	ug/mL	101.0	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	97.60	4.010	n/a
S96T000280	D		Magnesium-ICP-Acid Dil.	ug/mL	96.00	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	95.60	4.010	n/a
S96T000280	D		Sodium-ICP-Acid Dil.	ug/mL	99.40	<1.00e-01	1.17e+05	1.16e+05	1.16e+05	0.97	n/a	40.10	n/a
S96T000280	D		Nickel-ICP-Acid Dil.	ug/mL	99.40	<2.00e-02	< 8.020	<8.02e0	n/a	n/a	101.3	8.020	n/a
S96T000280	D		Phosphorus-ICP-Acid Dil.	ug/mL	100.4	<2.00e-01	8.35e+02	858.0	850.5	0.12	97.70	80.20	n/a
S96T000280	D		Silicon-ICP-Acid Dil.	ug/mL	97.20	<5.00e-02	56.70	57.00	56.85	0.53	107.8	20.10	n/a
S96T000280	D		Uranium-ICP-Acid Dil.	ug/mL	95.50	<5.00e-01	<2.00e+02	<2.00e2	n/a	n/a	96.80	200.8	n/a
S96T000280			Fluoride-IC-Dionex 4000I/4500	ug/mL	101.0	<1.30e-02	3.74e+02	225.0	298.4	50.6	114.1	132.6	n/a
S96T000280			Chloride-IC-Dionex 4000I/4500	ug/mL	97.97	<1.70e-02	3.54e+03	3.58e+03	3.56e+03	1.12	102.7	175.4	n/a
S96T000280			Nitrite-IC - Dionex 4000I/4500	ug/mL	99.25	<1.07e-01	4.39e+04	4.19e+04	4.29e+04	4.66	105.4	1.09e+03	n/a
S96T000280			Bromide by Ion Chromatograph	ug/mL	98.09	<1.26e-01	9.10e+03	8.92e+03	9.01e+03	2.00	98.43	1.28e+03	n/a
S96T000280			Nitrate-IC - Dionex 4000I/4500	ug/mL	100.5	3.55e-01	3.64e+05	3.55e+05	3.59e+05	2.50	102.8	1.43e+03	n/a
S96T000280			Phosphate-IC-Dionex 4000I/4500	ug/mL	97.62	<1.19e-01	5.85e+03	6.09e+03	5.97e+03	4.02	95.24	1.21e+03	n/a
S96T000280			Sulfate by IC-Dionex4000I/4500	ug/mL	98.73	<1.36e-01	1.12e+04	1.10e+04	1.11e+04	1.80	99.66	1.39e+03	n/a
S96T000280			Oxalate by IC - Dionex 4000I	ug/mL	104.3	<1.05e-01	<1.07e+03	<1.07e3	n/a	n/a	107.1	1.07e+03	n/a
S96T000280			Alpha in Liquid Samples	uCi/mL	93.14	<2.29e-07	1.07e-03	<9.27E-4	n/a	n/a	91.87	2.00e-03	1.22E+02

Final Report
U-109 (P)

CORE NUMBER: 126
SEGMENT #: 4

SEGMENT PORTION: W Whole Segment

Sample#	B	AB	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Sck Rec %	Det Limit	Count Err%
S96T000345			Bulk Density of Sample	g/mL	n/a	n/a	1.620	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000346			DSC Exotherm using Netzler	Joules/g	101.6	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000346			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000346			% Water by TGA on Perkin Elmer	%	102.1	n/a	11.69	10.33	11.01	12.4	n/a	n/a	n/a
S96T000346			TIC by Acid/Coulometry	ug/g	99.17	1.500	3.27e+03	3.15e+03	3.21e+03	3.74	n/a	3.000	n/a
S96T000346			TOC by Persulfate/Coulometry	ug/g	95.33	2.200	1.55e+03	2.17e+03	1.86e+03	33.3	n/a	40.00	n/a
S96T000346		Z	Aluminum -ICP-Fusion	ug/g	98.40	<5.00e-02	8.49e+03	8.38e+03	8.44e+03	4.49	95.00	1.10e+03	n/a
S96T000346		Z	Bismuth -ICP-Fusion	ug/g	98.40	<1.00e-01	<2.21e+03	<2.10e3	n/a	n/a	97.40	2.21e+03	n/a
S96T000346		Z	Calcium -ICP-Fusion	ug/g	98.40	<1.00e-01	<2.21e+03	<2.10e3	n/a	n/a	97.40	2.21e+03	n/a
S96T000346		Z	Chromium -ICP-Fusion	ug/g	100.0	<1.00e-02	3.06e+03	3.12e+03	3.09e+03	2.00	98.70	221.0	n/a
S96T000346		Z	Iron -ICP-Fusion	ug/g	99.60	<5.00e-02	<1.10e+03	<1.05e3	n/a	n/a	100.3	1.10e+03	n/a
S96T000346		Z	Lithium -ICP-Fusion	ug/g	100.0	<1.00e-02	<2.21e+02	<2.10e2	n/a	n/a	95.20	221.0	n/a
S96T000346		Z	Manganese -ICP-Fusion	ug/g	99.40	<1.00e-02	<2.21e+02	<2.10e2	n/a	n/a	99.10	221.0	n/a
S96T000346		Z	Sodium -ICP-Fusion	ug/g	100.0	1.40e-01	2.54e+05	2.36e+05	2.55e+05	8.78	35.40	2.21e+03	n/a
S96T000346		Z	Nickel -ICP-Fusion	ug/g	99.40	<2.00e-02	<4.42e+02	<4.19e2	n/a	n/a	98.60	442.0	n/a
S96T000346		Z	Phosphorus -ICP-Fusion	ug/g	99.80	<2.00e-01	<4.42e+03	<4.19e3	n/a	n/a	102.5	4.42e+03	n/a
S96T000346		Z	Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	<1.10e+03	<1.05e3	n/a	n/a	96.10	1.10e+03	n/a
S96T000346		Z	Uranium -ICP-Fusion	ug/g	96.60	<5.00e-01	<1.10e+04	<1.05e4	n/a	n/a	95.30	1.10e+04	n/a
S96T000346		Z	Cesium-137 by GEA	uCi/g	96.68	<3.99e-02	74.32	78.20	76.26	5.11	n/a	n/a	0.650
S96T000346		Z	Alpha of Digested Solid	uCi/g	86.75	<3.28e-03	3.21e-02	3.07e-02	3.14e-02	4.46	78.32	5.00e-03	2.37E+01
S96T000359		W	Bromide by Ion Chromatograph	ug/g	100.7	<1.26e-01	<2.23e+03	<2.37e3	n/a	n/a	75.13	2.23e+03	n/a
S96T000359		W	Nitrate by IC-Dionex4000i/4500	ug/g	102.0	4.75e-01	4.01e+05	4.30e+05	4.16e+05	6.98	96.95	2.48e+03	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 5(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000285			Bulk Density of Sample	g/mL	n/a	n/a	1.720	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000362			DSC Exotherm using Mettler	Joules/g	97.72	n/a	2.15e+02	237.3	226.2	9.86	n/a	n/a	n/a
S96T000362			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	2.74e+02	301.9	287.8	9.83	n/a	n/a	n/a
S96T000362			% Water by TGA using Mettler	%	99.59	n/a	19.66	23.16	21.41	16.3	n/a	n/a	n/a
S96T000362			TIC by Acid/Coulometry	ug/g	97.84	3.500	1.20e+04	1.21e+04	1.20e+04	0.83	n/a	5.000	n/a
S96T000362			TOC by Persulfate/Coulometry	ug/g	96.00	1.300	4.66e+03	4.55e+03	4.58e+03	1.89	n/a	40.00	n/a
S96T000348		Z	Aluminum -ICP-Fusion	ug/g	98.40	<5.00e-02	1.71e+04	1.69e+04	1.70e+04	1.18	91.30	1.05e+03	n/a
S96T000348		Z	Bismuth -ICP-Fusion	ug/g	98.40	<1.00e-01	<2.10e+03	<2.08e3	n/a	n/a	99.20	2.10e+03	n/a
S96T000348		Z	Calcium -ICP-Fusion	ug/g	98.40	<1.00e-01	<2.10e+03	<2.08e3	n/a	n/a	98.20	2.10e+03	n/a
S96T000348		Z	Chromium -ICP-Fusion	ug/g	100.0	<1.00e-02	4.31e+03	4.44e+03	4.38e+03	2.97	99.70	210.0	n/a
S96T000348		Z	Iron -ICP-Fusion	ug/g	99.60	<5.00e-02	<1.05e+03	<1.04e3	n/a	n/a	98.60	1.05e+03	n/a
S96T000348		Z	Lithium -ICP-Fusion	ug/g	100.8	<1.00e-02	<2.10e+02	<2.08e2	n/a	n/a	89.80	210.0	n/a
S96T000348		Z	Manganese -ICP-Fusion	ug/g	99.40	<1.00e-02	<2.10e+02	<2.08e2	n/a	n/a	99.30	210.0	n/a
S96T000348		Z	Sodium -ICP-Fusion	ug/g	100.0	1.29e-01	2.29e+05	2.34e+05	2.32e+05	2.16	24.90	2.10e+03	n/a
S96T000348		Z	Nickel -ICP-Fusion	ug/g	99.40	<2.00e-02	<4.11e+02	<4.16e2	n/a	n/a	99.30	411.0	n/a
S96T000348		Z	Phosphorus -ICP-Fusion	ug/g	99.80	<2.00e-01	<4.11e+03	<4.16e3	n/a	n/a	122.7	4.11e+03	n/a
S96T000348		Z	Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	<1.05e+03	<1.04e3	n/a	n/a	96.60	1.05e+03	n/a
S96T000348		Z	Uranium -ICP-Fusion	ug/g	96.60	<5.00e-01	<1.05e+04	<1.04e4	n/a	n/a	98.20	1.05e+04	n/a
S96T000348		Z	Cesium-137 by GEA	uCi/g	96.68	<3.99e-02	1.59e+02	157.0	157.8	1.27	n/a	n/a	8.430
S96T000348		Z	Alpha of Digested Solid	uCi/g	95.78	<3.35e-03	2.83e-02	1.95e-02	1.99e-02	4.82	82.14	6.80e-03	3.01E+01
S96T000361		W	Bromide by Ion Chromatograph	ug/g	100.0	<1.26e-01	<9.22e+02	<9.90e2	n/a	n/a	n/a	921.7	n/a
S96T000361		W	Nitrate by IC-Dionex4000i/4500	ug/g	101.0	4.03e-01	2.86e+05	3.01e+05	2.93e+05	5.11	n/a	1.02e+03	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 5(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	S	AP	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000[illegible]			Bulk Density of Sample	g/mL	n/a	n/a	1.730	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000[illegible]			% Water by TGA using Mettler	%	99.98	n/a	20.75	24.35	22.55	16.1	n/a	n/a	n/a
S96T000[illegible]			TOC by Acid/Coulometry	ug/g	97.84	1.300	7.35e+03	7.67e+03	7.50e+03	4.33	95.80	5.000	n/a
S96T000[illegible]			TOC by Persulfate/Coulometry	ug/g	94.80	1.300	3.96e+03	4.11e+03	4.04e+03	5.24	94.20	40.00	n/a
S96T000347	Z		Aluminum -ICP-Fusion	ug/g	98.40	<5.00e-02	1.22e+04	1.46e+04	1.34e+04	14.7	92.10	1.20e+03	n/a
S96T000347	Z		Bismuth -ICP-Fusion	ug/g	98.40	<1.00e-01	<2.61e+03	<2.50e3	n/a	n/a	95.40	2.51e+03	n/a
S96T000347	Z		Calcium -ICP-Fusion	ug/g	98.40	<1.00e-01	<2.61e+03	<2.50e3	n/a	n/a	97.80	2.51e+03	n/a
S96T000347	Z		Chromium -ICP-Fusion	ug/g	100.0	<1.00e-02	4.24e+03	5.31e+03	4.[illegible]e+03	26.1	100.0	251.0	n/a
S96T000347	Z		Iron -ICP-Fusion	ug/g	99.60	<5.00e-02	<1.20e+03	<1.25e3	n/a	n/a	100.3	1.20e+03	n/a
S96T000347	Z		Lithium -ICP-Fusion	ug/g	100.0	<1.00e-02	<2.61e+02	<2.50e2	n/a	n/a	92.70	251.0	n/a
S96T000347	Z		Manganese -ICP-Fusion	ug/g	99.40	<1.00e-02	<2.61e+02	<2.50e2	n/a	n/a	100.0	251.0	n/a
S96T000347	Z		Sodium -ICP-Fusion	ug/g	100.0	1.29e-01	2.35e+05	2.39e+05	2.37e+05	1.69	97.40	2.51e+03	n/a
S96T000347	Z		Nickel -ICP-Fusion	ug/g	99.40	<2.00e-02	<4.81e+02	<5.00e2	n/a	n/a	99.80	481.0	n/a
S96T000347	Z		Phosphorus -ICP-Fusion	ug/g	99.80	<2.00e-01	<4.81e+03	<5.00e3	n/a	n/a	116.4	4.81e+03	n/a
S96T000347	Z		Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	<1.20e+03	<1.25e3	n/a	n/a	96.10	1.20e+03	n/a
S96T000347	Z		Uranium -ICP-Fusion	ug/g	94.60	<5.00e-01	<1.20e+04	<1.25e4	n/a	n/a	93.35	1.20e+04	n/a
S96T000347	Z		Cesium-137 by GEA	uCi/g	96.68	<5.99e-02	1.15e+02	135.0	125.0	16.0	n/a	n/a	8.550
S96T000347	Z		Alpha of Digested Solid	uCi/g	95.78	<5.35e-03	2.43e-02	4.61e-02	3.52e-02	61.9	83.42	7.00e-03	2.95E+01
S96T000360	W		Bromide by Ion Chromatograph	ug/g	100.5	<1.26e-01	<1.31e+03	<1.20e3	n/a	n/a	107.3	1.31e+03	n/a
S96T000360	W		Nitrate by IC-Dionex4000I/4500	ug/g	99.19	<1.40e-01	3.96e+05	3.99e+05	3.98e+05	0.75	105.7	1.45e+03	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 6(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	Af	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000287			Bulk Density of Sample	g/mL	n/a	n/a	1.660	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000504			DSC Exotherm using Mettler	Joules/g	97.72	n/a	90.30	97.10	93.70	7.26	n/a	n/a	n/a
S96T000504			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	1.41e+02	151.7	146.4	7.26	n/a	n/a	n/a
S96T000504			% Water by TGA using Mettler	%	99.59	n/a	36.39	35.57	35.98	2.28	n/a	n/a	n/a
S96T000504			TIC by Acid/Coulometry	ug/g	100.0	1.100	1.43e+06	1.39e+06	1.41e+06	2.84	n/a	5.000	n/a
S96T000504			TOC by Persulfate/Coulometry	ug/g	95.67	5.000	6.07e+05	6.27e+05	6.17e+05	3.26	n/a	40.90	n/a
S96T000350		Z	Aluminium -ICP-Fusion	ug/g	98.40	<5.00e-02	2.00e+04	2.13e+04	2.06e+04	6.30	91.60	916.0	n/a
S96T000350		Z	Bismuth -ICP-Fusion	ug/g	98.20	<1.00e-01	<1.83e+03	<1.86e3	n/a	n/a	97.40	1.83e+03	n/a
S96T000350		Z	Calcium -ICP-Fusion	ug/g	98.00	<1.00e-01	<1.83e+03	<1.86e3	n/a	n/a	96.60	1.83e+03	n/a
S96T000350		Z	Chromium -ICP-Fusion	ug/g	99.00	<1.00e-02	5.28e+03	5.79e+03	5.54e+03	9.21	96.40	183.0	n/a
S96T000350		Z	Iron -ICP-Fusion	ug/g	99.80	<5.00e-02	<9.16e+02	<9.31e2	n/a	n/a	97.80	916.0	n/a
S96T000350		Z	Lithium -ICP-Fusion	ug/g	100.8	<1.00e-02	<1.83e+02	<1.86e2	n/a	n/a	95.90	183.0	n/a
S96T000350		Z	Manganese -ICP-Fusion	ug/g	98.60	<1.00e-02	<1.83e+02	<1.86e2	n/a	n/a	97.40	183.0	n/a
S96T000350		Z	Sodium -ICP-Fusion	ug/g	100.2	1.47e-01	2.17e+05	2.16e+05	2.16e+05	0.46	50.30	1.83e+03	n/a
S96T000350		Z	Nickel -ICP-Fusion	ug/g	99.00	<2.00e-02	<3.66e+02	<3.74e2	n/a	n/a	97.10	366.0	n/a
S96T000350		Z	Phosphorus -ICP-Fusion	ug/g	96.60	<2.00e-01	<3.66e+03	<3.74e3	n/a	n/a	118.1	3.66e+03	n/a
S96T000350		Z	Silicon -ICP-Fusion	ug/g	96.00	<5.00e-02	<9.16e+02	<9.31e2	n/a	n/a	94.90	916.0	n/a
S96T000350		Z	Uranium -ICP-Fusion	ug/g	94.40	<5.00e-01	<9.16e+03	<9.31e3	n/a	n/a	100.4	9.16e+03	n/a
S96T000350		Z	Cesium-137 by GEA	uCi/g	98.52	<1.55e-02	1.98e+02	214.0	205.8	7.77	n/a	n/a	8.350
S96T000350		Z	Alpha of Digested Solid	uCi/g	90.96	<9.28e-03	3.93e-02	3.93e-02	3.93e-02	0.00	87.76	1.00e-02	2.92E+01
S96T000363		W	Bromide by Ion Chromatograph	ug/g	97.56	<1.26e-01	<5.10e+02	<4.82e2	n/a	n/a	n/a	509.8	n/a
S96T000363		W	Nitrate by IC-Dionex4000i/4500	ug/g	99.19	<1.40e-01	1.48e+05	1.61e+05	1.55e+05	8.41	n/a	566.1	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 6(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	Ad	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000[illegible]			Bulk Density of Sample	g/mL	n/a	n/a	1.680	n/a	n/a	n/a	n/a	5.80e-01	n/a
S96T000[illegible]			DSC Exotherm using Mettler	Joules/g	97.72	n/a	1.80e+02	192.2	186.1	6.61	n/a	n/a	n/a
S96T000[illegible]			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	2.53e+02	270.0	261.4	6.62	n/a	n/a	n/a
S96T000[illegible]			% Water by TGA using Mettler	%	99.59	n/a	38.97	26.65	28.81	15.8	n/a	n/a	n/a
S96T000[illegible]			TIC by Acid/Coulometry	ug/g	n/a	n/a	1.61e+04	1.48e+04	1.54e+04	8.41	n/a	5.690	n/a
S96T000[illegible]			TOC by Persulfate/Coulometry	ug/g	n/a	n/a	5.90e+03	5.43e+03	5.66e+03	8.30	n/a	40.00	n/a
S96T000349		Z	Aluminium -ICP-Fusion	ug/g	98.40	<5.00e-02	2.00e+04	1.97e+04	1.98e+04	1.51	92.90	975.0	n/a
S96T000349		Z	Bismuth -ICP-Fusion	ug/g	98.20	<1.00e-01	<1.95e+03	<1.82e3	n/a	n/a	96.10	1.95e+03	n/a
S96T000349		Z	Calcium -ICP-Fusion	ug/g	98.00	<1.00e-01	<1.95e+03	<1.82e3	n/a	n/a	94.20	1.95e+03	n/a
S96T000349		Z	Chromium -ICP-Fusion	ug/g	99.00	<1.00e-02	5.31e+03	5.37e+03	5.34e+03	1.12	99.20	195.0	n/a
S96T000349		Z	Iron -ICP-Fusion	ug/g	99.80	<5.00e-02	<9.75e+02	<9.11e2	n/a	n/a	98.80	975.0	n/a
S96T000349		Z	Lithium -ICP-Fusion	ug/g	100.8	<1.00e-02	<1.95e+02	<1.82e2	n/a	n/a	99.50	195.0	n/a
S96T000349		Z	Manganese -ICP-Fusion	ug/g	98.60	<1.00e-02	<1.95e+02	<1.82e2	n/a	n/a	98.10	195.0	n/a
S96T000349		Z	Sodium -ICP-Fusion	ug/g	100.2	1.47e-01	2.20e+05	2.20e+05	2.20e+05	0.00	45.80	1.95e+03	n/a
S96T000349		Z	Nickel -ICP-Fusion	ug/g	99.00	<2.00e-02	<3.89e+02	<3.64e2	n/a	n/a	97.80	389.0	n/a
S96T000349		Z	Phosphorus -ICP-Fusion	ug/g	96.60	<2.00e-01	<3.89e+03	<3.64e3	n/a	n/a	117.4	3.89e+03	n/a
S96T000349		Z	Silicon -ICP-Fusion	ug/g	96.00	<5.00e-02	<9.75e+02	<9.11e2	n/a	n/a	95.20	975.0	n/a
S96T000349		Z	Uranium -ICP-Fusion	ug/g	94.40	<5.00e-01	<9.75e+03	<9.11e3	n/a	n/a	89.80	9.75e+03	n/a
S96T000349		Z	Cesium-137 by GEA	uCi/g	98.52	<1.55e-02	1.96e+02	195.8	195.6	0.51	n/a	n/a	0.340
S96T000349		Z	Alpha of Digested Solid	uCi/g	90.96	<9.28e-03	3.63e-02	4.17e-02	3.90e-02	13.8	88.01	1.00e-02	3.21E+01
S96T000362		W	Bromide by Ion Chromatograph	ug/g	97.56	<1.26e-01	<4.85e+02	<4.91e2	n/a	n/a	96.52	485.0	n/a
S96T000362		W	Nitrate by IC-Dionex4000i/4500	ug/g	99.19	<1.40e-01	1.60e+05	1.77e+05	1.69e+05	10.1	101.4	536.5	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 7(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000289			Bulk Density of Sample	g/mL	n/a	n/a	1.700	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000506			DSC Exotherm using Mettler	Joules/g	96.55	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000506			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000506			% Water by TGA using Mettler	%	99.22	n/a	17.25	20.84	19.05	18.9	n/a	n/a	n/a
S96T000506			TIC by Acid/Coulometry	ug/g	100.0	1.350	6.36e+03	6.10e+03	6.24e+03	4.49	95.00	5.000	n/a
S96T000506			TOC by Persulfate/Coulometry	ug/g	95.67	1.000	2.34e+03	2.96e+03	2.65e+03	23.5	104.2	48.00	n/a
S96T000352	Z		Aluminum -ICP-Fusion	ug/g	98.40	<5.00e-02	9.12e+03	9.99e+03	9.51e+03	8.20	96.70	1.12e+03	n/a
S96T000352	Z		Bismuth -ICP-Fusion	ug/g	98.20	<1.00e-01	<2.23e+03	<2.04e3	n/a	n/a	92.30	2.23e+03	n/a
S96T000352	Z		Calcium -ICP-Fusion	ug/g	98.00	<1.00e-01	<2.23e+03	<2.04e3	n/a	n/a	93.70	2.23e+03	n/a
S96T000352	Z		Chromium -ICP-Fusion	ug/g	99.00	<1.00e-02	2.35e+03	2.51e+03	2.43e+03	6.58	99.50	223.0	n/a
S96T000352	Z		Iron -ICP-Fusion	ug/g	99.00	<5.00e-02	<1.12e+03	<1.02e3	n/a	n/a	99.10	1.12e+03	n/a
S96T000352	Z		Lithium -ICP-Fusion	ug/g	100.8	<1.00e-02	<2.23e+02	<2.04e2	n/a	n/a	92.20	223.0	n/a
S96T000352	Z		Manganese -ICP-Fusion	ug/g	98.60	<1.00e-02	<2.23e+02	<2.04e2	n/a	n/a	98.10	223.0	n/a
S96T000352	Z		Sodium -ICP-Fusion	ug/g	100.2	1.47e-01	2.36e+05	2.31e+05	2.34e+05	2.14	87.20	2.23e+03	n/a
S96T000352	Z		Nickel -ICP-Fusion	ug/g	99.00	<2.00e-02	<4.46e+02	<4.08e2	n/a	n/a	98.60	446.0	n/a
S96T000352	Z		Phosphorus -ICP-Fusion	ug/g	96.60	<2.00e-01	<4.46e+03	<4.08e3	n/a	n/a	110.5	4.46e+03	n/a
S96T000352	Z		Silicon -ICP-Fusion	ug/g	96.00	<5.00e-02	<1.12e+03	<1.02e3	n/a	n/a	96.40	1.12e+03	n/a
S96T000352	Z		Uranium -ICP-Fusion	ug/g	94.40	<5.00e-01	<1.12e+04	<1.02e4	n/a	n/a	92.30	1.12e+04	n/a
S96T000352	Z		Cesium-137 by GEA	uCi/g	98.52	<1.55e-02	95.80	100.0	97.90	4.29	n/a	n/a	0.520
S96T000352	Z		Alpha of Digested Solid	uCi/g	98.96	<9.28e-03	1.75e-02	1.25e-02	1.50e-02	33.3	99.56	5.00e-03	3.25E+01
S96T000365	W		Bromide by Ion Chromatograph	ug/g	98.61	<1.26e-01	<2.84e+03	<1.33e3	n/a	n/a	n/a	2.84e+03	n/a
S96T000365	W		Nitrate by IC-Dionex4000i/4500	ug/g	99.35	<1.40e-01	6.58e+05	4.41e+05	4.49e+05	3.78	n/a	3.15e+03	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 7(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AB	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000288			Bulk Density of Sample	g/mL	n/a	n/a	1.650	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000305			% Water by TGA using Mettler	%	99.22	n/a	15.78	15.98	15.88	1.26	n/a	n/a	n/a
S96T000305			TIC by Acid/Coulometry	ug/g	100.0	1.100	8.03e+03	9.14e+03	8.58e+03	12.9	89.0	5.000	n/a
S96T000305			TOC by Persulfate/Coulometry	ug/g	95.67	5.000	3.79e+03	2.71e+03	3.25e+03	33.2	96.44	40.00	n/a
S96T000351		Z	Aluminum -ICP-Fusion	ug/g	98.40	<5.00e-02	1.05e+04	1.17e+04	1.11e+04	10.8	95.80	1.24e+03	n/a
S96T000351		Z	Bismuth -ICP-Fusion	ug/g	98.20	<1.00e-01	<2.48e+03	<2.24e3	n/a	n/a	95.00	2.48e+03	n/a
S96T000351		Z	Calcium -ICP-Fusion	ug/g	98.00	<1.00e-01	<2.48e+03	<2.24e3	n/a	n/a	95.80	2.48e+03	n/a
S96T000351		Z	Chromium -ICP-Fusion	ug/g	99.00	<1.00e-02	3.15e+03	3.22e+03	3.18e+03	2.20	98.50	248.0	n/a
S96T000351		Z	Iron -ICP-Fusion	ug/g	99.80	<5.00e-02	<1.24e+03	<1.12e3	n/a	n/a	97.80	1.24e+03	n/a
S96T000351		Z	Lithium -ICP-Fusion	ug/g	100.8	<1.00e-02	<2.48e+02	<2.24e2	n/a	n/a	89.50	248.0	n/a
S96T000351		Z	Manganese -ICP-Fusion	ug/g	98.68	<1.00e-02	<2.48e+02	<2.24e2	n/a	n/a	98.10	248.0	n/a
S96T000351		Z	Sodium -ICP-Fusion	ug/g	100.2	1.47e-01	2.29e+05	2.28e+05	2.28e+05	0.44	56.60	2.48e+03	n/a
S96T000351		Z	Nickel -ICP-Fusion	ug/g	99.00	<2.00e-02	<4.95e+02	<4.48e2	n/a	n/a	97.80	495.0	n/a
S96T000351		Z	Phosphorus -ICP-Fusion	ug/g	96.60	<2.00e-01	<4.95e+03	<4.48e3	n/a	n/a	113.0	4.95e+03	n/a
S96T000351		Z	Silicon -ICP-Fusion	ug/g	96.00	<5.00e-02	<1.24e+03	<1.12e3	n/a	n/a	95.20	1.24e+03	n/a
S96T000351		Z	Uranium -ICP-Fusion	ug/g	94.40	<5.00e-01	<1.24e+04	<1.12e4	n/a	n/a	93.55	1.24e+04	n/a
S96T000351		Z	Cesium-137 by GEA	uCi/g	98.52	<1.55e-02	1.08e+02	124.0	116.0	13.8	n/a	n/a	0.510
S96T000351		Z	Alpha of Digested Solid	uCi/g	90.96	<9.28e-03	1.92e-02	2.15e-02	2.04e-02	11.3	87.78	6.00e-03	3.53E+01
S96T000344		W	Bromide by Ion Chromatograph	ug/g	98.61	<1.26e-01	<1.15e+03	<1.28e3	n/a	n/a	94.96	1.15e+03	n/a
S96T000344		W	Nitrate by IC-Dionex4000i/4500	ug/g	99.35	<1.40e-01	3.92e+05	3.81e+05	3.86e+05	2.85	93.19	1.28e+03	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 8(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	B	Ad	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000291			Bulk Density of Sample	g/mL	n/a	n/a	1.760	n/a	n/a	n/a	n/a	5.00e-03	n/a
S96T000308			DSC Exotherm using Mettler	Joules/g	94.55	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000308			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000308			% Water by TGA on Perkin Elmer	%	99.27	n/a	34.90	33.06	33.98	5.41	n/a	n/a	n/a
S96T000308			TIC by Acid/Coulometry	ug/g	99.17	2.900	1.12e+04	1.19e+04	1.16e+04	6.06	95.80	5.000	n/a
S96T000308			TOC by Persulfate/Coulometry	ug/g	97.00	3.00e-01	5.74e+03	5.44e+03	5.59e+03	5.37	91.00	40.00	n/a
S96T000354		Z	Aluminum -ICP-Fusion	ug/g	97.80	<5.00e-02	1.51e+04	1.49e+04	1.50e+04	1.33	87.70	984.0	n/a
S96T000354		Z	Bismuth -ICP-Fusion	ug/g	97.80	<1.00e-01	<1.97e+03	<1.75e3	n/a	n/a	96.40	1.97e+03	n/a
S96T000354		Z	Calcium -ICP-Fusion	ug/g	98.80	<1.00e-01	<1.97e+03	<1.75e3	n/a	n/a	93.00	1.97e+03	n/a
S96T000354		Z	Chromium -ICP-Fusion	ug/g	99.40	<1.00e-02	4.94e+03	4.95e+03	4.95e+03	0.20	97.10	197.0	n/a
S96T000354		Z	Iron -ICP-Fusion	ug/g	100.4	<5.00e-02	<9.84e+02	<8.77e2	n/a	n/a	99.80	984.0	n/a
S96T000354		Z	Lithium -ICP-Fusion	ug/g	99.20	<1.00e-02	<1.97e+02	<1.75e2	n/a	n/a	88.10	197.0	n/a
S96T000354		Z	Manganese -ICP-Fusion	ug/g	99.00	<1.00e-02	<1.97e+02	<1.75e2	n/a	n/a	98.30	197.0	n/a
S96T000354		Z	Sodium -ICP-Fusion	ug/g	98.60	1.47e-01	2.18e+05	2.16e+05	2.17e+05	0.92	n/a	1.97e+03	n/a
S96T000354		Z	Nickel -ICP-Fusion	ug/g	98.80	<2.00e-02	<3.94e+02	<3.51e2	n/a	n/a	97.80	394.0	n/a
S96T000354		Z	Phosphorus -ICP-Fusion	ug/g	100.4	<2.00e-01	<3.94e+03	<3.51e3	n/a	n/a	122.0	3.94e+03	n/a
S96T000354		Z	Silicon -ICP-Fusion	ug/g	95.80	<5.00e-02	<9.84e+02	<8.77e2	n/a	n/a	94.90	984.0	n/a
S96T000354		Z	Uranium -ICP-Fusion	ug/g	95.20	<5.00e-01	<9.84e+03	<8.77e3	n/a	n/a	99.30	9.84e+03	n/a
S96T000354		Z	Cesium-137 by GEA	uCi/g	101.5	<2.65e-02	1.57e+02	153.0	155.0	2.58	n/a	n/a	0.400
S96T000354		Z	Alpha of Digested Solid	uCi/g	90.96	<1.10e-02	4.28e-02	4.96e-02	4.62e-02	14.7	79.59	1.40e-02	3.87E+01
S96T000367		W	Bromide by Ion Chromatograph	ug/g	97.74	<1.26e-01	<1.12e+03	<1.13e3	n/a	n/a	n/a	1.12e+03	n/a
S96T000367		W	Nitrate by IC-Dionex4000i/4500	ug/g	98.53	4.05e-01	2.87e+05	2.86e+05	2.86e+05	0.35	n/a	1.24e+03	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 8(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A/P	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Blk Rec %	Det Limit	Count Err%
S96T000[illegible]			Bulk Density of Sample	g/mL	n/a	n/a	1.800	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000[illegible]			% Water by TGA on Perkin Elmer	%	102.1	n/a	35.18	34.01	34.59	3.38	n/a	n/a	n/a
S96T000[illegible]			TIC by Acid/Coulometry	ug/g	100.0	1.350	1.04e+04	1.12e+04	1.08e+04	7.61	n/a	5.000	n/a
S96T000[illegible]			TOC by Persulfate/Coulometry	ug/g	93.67	1.800	4.01e+03	4.17e+03	4.09e+03	3.91	n/a	48.00	n/a
S96T000[illegible]	Z		Uranium by Phosphorescence	ug/g	100.9	38.20	2.25e+02	255.0	240.0	12.5	86.29	1.000	1.[illegible]e+00
S96T000[illegible]	Z		U-Phosphorescence Inst. Error	% Inst Error	3.10	1.220	1.180	1.240	1.210	1.65	n/a	n/a	n/a
S96T000[illegible]	Z		Strontium-89/90 High Level	uCi/g	99.19	<2.79e-03	8.940	6.850	7.895	1.61	n/a	6.[illegible]e-03	1.[illegible]e+00
S96T000[illegible]	Z		Aluminum -ICP-Fusion	ug/g	97.80	<3.00e-02	1.32e+04	1.43e+04	1.40e+04	5.02	99.10	999.0	n/a
S96T000[illegible]	Z		Bismuth -ICP-Fusion	ug/g	97.80	<1.00e-01	<4.00e+03	<1.89e3	n/a	n/a	97.80	2.00e+03	n/a
S96T000[illegible]	Z		Calcium -ICP-Fusion	ug/g	98.00	<1.00e-01	<4.00e+03	<1.89e3	n/a	n/a	96.10	2.00e+03	n/a
S96T000[illegible]	Z		Chromium -ICP-Fusion	ug/g	99.40	<1.00e-02	4.02e+03	4.18e+03	4.10e+03	3.90	98.70	200.0	n/a
S96T000[illegible]	Z		Iron -ICP-Fusion	ug/g	100.4	<3.00e-02	<9.99e+02	<9.43e2	n/a	n/a	100.5	999.0	n/a
S96T000353	Z		Lithium -ICP-Fusion	ug/g	99.20	<1.00e-02	<2.00e+02	<1.89e2	n/a	n/a	95.50	200.0	n/a
S96T000353	Z		Manganese -ICP-Fusion	ug/g	99.00	<1.00e-02	<2.00e+02	<1.89e2	n/a	n/a	99.10	200.0	n/a
S96T000353	Z		Sodium -ICP-Fusion	ug/g	98.60	1.47e-01	2.27e+05	2.29e+05	2.28e+05	0.88	55.00	2.00e+03	n/a
S96T000353	Z		Nickel -ICP-Fusion	ug/g	98.80	<2.00e-02	<4.00e+02	<3.77e2	n/a	n/a	98.80	400.0	n/a
S96T000353	Z		Phosphorus -ICP-Fusion	ug/g	100.4	<2.00e-01	<4.00e+03	<3.77e3	n/a	n/a	132.8	4.00e+03	n/a
S96T000353	Z		Silicon -ICP-Fusion	ug/g	95.80	<3.00e-02	<9.99e+02	<9.43e2	n/a	n/a	96.40	999.0	n/a
S96T000353	Z		Uranium -ICP-Fusion	ug/g	95.20	<3.00e-01	<9.99e+03	<9.43e3	n/a	n/a	92.60	9.99e+03	n/a
S96T000353	Z		Cesium-137 by GEA	uCi/g	101.5	<2.65e-02	1.36e+02	142.0	139.0	4.32	n/a	n/a	8.430
S96T000353	Z		Beta of Solid Sample	uCi/g	108.3	<3.99e-02	1.51e+02	159.0	155.8	5.16	98.96	6.78e-02	4.44E-01
S96T000353	Z		Alpha of Digested Solid	uCi/g	90.96	<1.10e-02	2.47e-02	2.50e-02	2.49e-02	1.21	75.26	1.40e-02	5.12E+01
S96T000366	W		Bromide by Ion Chromatograph	ug/g	97.74	<1.26e-01	<9.56e+02	<9.46e2	n/a	n/a	97.83	955.6	n/a
S96T000366	W		Nitrate by IC-Dionex4000i/4500	ug/g	98.53	4.05e-01	3.28e+05	3.38e+05	3.33e+05	3.00	104.2	1.06e+03	n/a
S96T002848	I		Aluminum -ICP-H2O Dig/Acid	ug/g	99.80	<5.00e-02	1.10e+04	1.04e+04	1.07e+04	5.61	100.5	34.00	n/a
S96T002848	I		Chromium -ICP-H2O Dig/Acid	ug/g	103.2	<1.00e-02	8.98e+02	785.0	841.5	13.4	100.1	6.810	n/a
S96T002848	I		Sodium -ICP-H2O Dig/Acid	ug/g	102.2	1.010	2.40e+05	2.36e+05	2.38e+05	1.68	421.3	68.10	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 9(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000293			Bulk Density of Sample	g/mL	n/a	n/a	1.310	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000310			DSC Exotherm using Mettler	Joules/g	113.5	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000310			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000310			% Water by TGA using Mettler	%	99.12	n/a	44.54	39.73	42.13	11.4	n/a	n/a	n/a
S96T000310			TIC by Acid/Coulometry	ug/g	100.3	2.400	1.18e+03	1.02e+03	1.10e+03	14.5	n/a	5.000	n/a
S96T000310			TOC by Persulfate/Coulometry	ug/g	92.67	1.600	6.07e+03	4.93e+03	5.50e+03	20.7	n/a	40.00	n/a
S96T000356	Z		Aluminum -ICP-Fusion	ug/g	97.80	<5.00e-02	2.55e+04	1.37e+04	1.96e+04	60.2	85.80	1.65e+03	n/a
S96T000356	Z		Bismuth -ICP-Fusion	ug/g	97.80	<1.00e-01	<2.07e+03	<2.16e3	n/a	n/a	94.10	2.07e+03	n/a
S96T000356	Z		Calcium -ICP-Fusion	ug/g	98.00	<1.00e-01	<2.07e+03	<2.16e3	n/a	n/a	95.20	2.07e+03	n/a
S96T000356	Z		Chromium -ICP-Fusion	ug/g	99.40	<1.00e-02	3.09e+03	3.15e+03	3.12e+03	1.92	99.20	207.0	n/a
S96T000356	Z		Iron -ICP-Fusion	ug/g	100.4	<5.00e-02	<1.03e+03	<1.08e3	n/a	n/a	102.0	1.65e+03	n/a
S96T000356	Z		Lithium -ICP-Fusion	ug/g	99.20	<1.00e-02	<2.07e+02	<2.16e2	n/a	n/a	89.50	207.0	n/a
S96T000356	Z		Manganese -ICP-Fusion	ug/g	99.00	<1.00e-02	2.36e+02	251.0	243.5	6.16	98.40	207.0	n/a
S96T000356	Z		Sodium -ICP-Fusion	ug/g	98.60	1.47e-01	1.87e+05	1.95e+05	1.91e+05	4.19	26.90	2.07e+03	n/a
S96T000356	Z		Nickel -ICP-Fusion	ug/g	98.80	<2.00e-02	<4.13e+02	<4.32e2	n/a	n/a	97.80	413.0	n/a
S96T000356	Z		Phosphorus -ICP-Fusion	ug/g	100.4	<2.00e-01	5.42e+04	6.04e+04	5.73e+04	10.8	108.5	4.13e+03	n/a
S96T000356	Z		Silicon -ICP-Fusion	ug/g	95.80	<5.00e-02	<1.03e+03	<1.08e3	n/a	n/a	95.40	1.65e+03	n/a
S96T000356	Z		Uranium -ICP-Fusion	ug/g	95.20	<5.00e-01	<1.03e+04	<1.08e4	n/a	n/a	94.65	1.03e+04	n/a
S96T000356	Z		Cesium-137 by GEA	uCi/g	101.5	<2.65e-02	60.96	59.10	60.03	3.16	n/a	n/a	0.650
S96T000356	Z		Alpha of Digested Solid	uCi/g	98.96	<1.10e-02	8.70e-02	8.81e-02	8.75e-02	1.26	81.58	7.00e-03	1.31E+01
S96T000369	W		Bromide by Ion Chromatograph	ug/g	100.0	<1.26e-01	<1.09e+03	<1.24e3	n/a	n/a	98.96	1.09e+03	n/a
S96T000369	W		Nitrate by IC-Dionex4000I/4500	ug/g	101.0	4.03e-01	3.89e+04	4.68e+04	4.28e+04	18.4	103.1	1.21e+03	n/a

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 9(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	B	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000292			Bulk Density of Sample	g/mL	n/a	n/a	1.680	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000309			% Water by TGA using Mettler	%	99.12	n/a	35.87	34.41	35.14	4.15	n/a	n/a	n/a
S96T000309			TIC by Acid/Coulometry	ug/g	99.17	2.900	9.92e+03	9.27e+03	9.60e+03	6.77	n/a	5.000	n/a
S96T000309			TOC by Persulfate/Coulometry	ug/g	97.00	3.00e-01	4.57e+03	5.47e+03	5.02e+03	17.9	n/a	40.00	n/a
S96T000355		Z	Aluminum -ICP-Fusion	ug/g	97.80	<5.00e-02	1.21e+06	1.12e+06	1.16e+06	7.73	98.90	1.00e+03	n/a
S96T000355		Z	Bismuth -ICP-Fusion	ug/g	97.80	<1.00e-01	<2.01e+03	<1.95e3	n/a	n/a	95.90	2.01e+03	n/a
S96T000355		Z	Calcium -ICP-Fusion	ug/g	98.00	<1.00e-01	<2.01e+03	<1.95e3	n/a	n/a	96.10	2.01e+03	n/a
S96T000355		Z	Chromium -ICP-Fusion	ug/g	99.40	<1.00e-02	4.21e+03	4.18e+03	4.20e+03	0.72	96.10	201.0	n/a
S96T000355		Z	Iron -ICP-Fusion	ug/g	100.4	<5.00e-02	<1.00e+03	<9.75e2	n/a	n/a	100.0	1.00e+03	n/a
S96T000355		Z	Lithium -ICP-Fusion	ug/g	99.20	<1.00e-02	<2.01e+02	<1.95e2	n/a	n/a	92.00	201.0	n/a
S96T000355		Z	Manganese -ICP-Fusion	ug/g	99.00	<1.00e-02	<2.01e+02	<1.95e2	n/a	n/a	98.30	201.0	n/a
S96T000355		Z	Sodium -ICP-Fusion	ug/g	98.60	1.47e-01	2.20e+05	2.24e+05	2.22e+05	1.80	51.80	2.01e+03	n/a
S96T000355		Z	Nickel -ICP-Fusion	ug/g	98.80	<2.00e-02	<4.01e+02	<3.89e2	n/a	n/a	97.10	401.0	n/a
S96T000355		Z	Phosphorus -ICP-Fusion	ug/g	100.4	<2.00e-01	3.00e+04	2.94e+04	2.97e+04	2.02	96.70	4.01e+03	n/a
S96T000355		Z	Silicon -ICP-Fusion	ug/g	95.80	<5.00e-02	<1.00e+03	<9.75e2	n/a	n/a	96.90	1.00e+03	n/a
S96T000355		Z	Uranium -ICP-Fusion	ug/g	95.20	<5.00e-01	<1.00e+04	<9.75e3	n/a	n/a	94.30	1.00e+04	n/a
S96T000355		Z	Cesium-137 by GEA	uCi/g	101.5	<2.65e-02	1.22e+02	112.0	117.2	8.55	n/a	n/a	0.460
S96T000355		Z	Alpha of Digested Solid	uCi/g	90.96	<1.10e-02	4.76e-02	5.96e-02	5.36e-02	22.4	76.53	1.40e-02	2.91E+01
S96T000368		W	Bromide by Ion Chromatograph	ug/g	97.04	<1.26e-01	<1.12e+03	<1.12e3	n/a	n/a	96.35	1.12e+03	n/a
S96T000368		W	Nitrate by IC-Dionex4000i/4500	ug/g	99.51	<1.40e-01	1.04e+05	8.78e+04	9.57e+04	16.9	125.8	1.26e+03	n/a

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A-0002-3

Final Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: HHF

SEGMENT PORTION: Hydrostatic Head Fluid

Sample#	R	Af	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
5967000119		0	Lithium-ICP-Acid Bil.	ug/mL	99.60	<1.80e-02	1.03e+03	1.03e+03	1.03e+03	0.00	n/a	1.00e-01	n/a
5967000119			Fluoride-IC-Dionex 4000I/4500	ug/mL	93.05	<1.30e-02	< 27.57	<2.76e1	n/a	n/a	95.93	27.57	n/a
5967000119			Chloride-IC-Dionex 4000I/4500	ug/mL	101.5	<1.70e-02	63.94	115.8	89.47	57.1	96.68	36.86	n/a
5967000119			Nitrite-IC - Dionex 4000I/4500	ug/mL	99.81	<1.07e-01	<2.27e+02	<2.27e2	n/a	n/a	96.07	226.9	n/a
5967000119			Bromide by Ion Chromatograph	ug/mL	97.56	<1.26e-01	1.23e+04	1.23e+04	1.26e+04	1.61	98.43	267.2	n/a
5967000119			Nitrate-IC - Dionex 4000I/4500	ug/mL	100.5	<1.40e-01	<2.97e+02	401.0	n/a	n/a	98.96	296.9	n/a
5967000119			Phosphate-IC-Dionex 4000I/4500	ug/mL	102.6	<1.19e-01	<2.52e+02	<2.52e2	n/a	n/a	100.7	252.2	n/a
5967000119			Sulfate by IC-Dionex4000I/4500	ug/mL	98.57	<1.36e-01	<2.88e+02	<2.88e2	n/a	n/a	97.31	288.2	n/a
5967000119			Oxalate by IC - Dionex 4000I	ug/mL	107.5	<1.05e-01	<2.23e+02	<2.23e2	n/a	n/a	105.2	222.7	n/a

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WHC-SD-WM-DP-181, REV. 1

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: Core Composite

SEGMENT PORTION: Core Composite

Sample#	S	Af	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T001697			Bulk Density of Sample	g/mL	n/a	n/a	1.750	n/a	n/a	n/a	n/a	3.00e-01	n/a

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: n/a

SEGMENT PORTION: Core Composite

Sampled	#	AP	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Std Rec %	Det Limit	Count Err%
S96T001698			DSC Exotherm using Mettler	Joules/g	95.61	n/a	1.16e+02	96.30	106.2	18.6	n/a	n/a	n/a
S96T001698			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	1.67e+02	139.0	153.0	18.3	n/a	n/a	n/a
S96T001698			% Water by TGA using Mettler	%	99.66	n/a	30.13	31.25	30.68	3.59	n/a	n/a	n/a
S96T001698			TIC by Acid/Coulometry	ug/g	98.50	9.00e-01	8.77e+03	9.65e+03	9.21e+03	9.55	n/a	5.000	n/a
S96T001698			TOC by Persulfate/Coulometry	ug/g	92.70	8.100	4.14e+03	4.60e+03	4.37e+03	10.3	n/a	40.00	n/a

CORE NUMBER: 128
SEGMENT #: 128

SEGMENT PORTION: Core Composite

Sample#	Qual	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Rmk	Rec %	Det Limit	Count Err%
S96T001[illegible]	[illegible]	Uranium by Fluorescence	ug/g	91.39	1.000	2.84e+02	298.0	291.0	4.81		98.19	1.000	1.13E+00
S96T001[illegible]	[illegible]	[illegible] Inst. Error	% Inst Error	3.12	[illegible]	1.130	1.140	1.135	0.88		n/a	n/a	n/a
S96T001[illegible]	[illegible]	[illegible] High Level	uCi/g	101.4	7.70e-02	11.10	11.40	11.25	2.67		n/a	1.50e-02	1.38E+00
S96T001[illegible]	[illegible]	[illegible] - ICP-Fusion	ug/g	98.60	<5.00e-01	1.78e+03	1.80e+03	1.79e+03	1.12		97.58	911.0	n/a
S96T001[illegible]	[illegible]	[illegible] - ICP-Fusion	ug/g	102.0	<1.00e-01	<1.82e+03	<1.84e+3	n/a	n/a		105.7	1.00e+03	n/a
S96T001[illegible]	[illegible]	[illegible] - ICP-Fusion	ug/g	100.6	<1.00e-01	<1.82e+03	<1.84e+3	n/a	n/a		101.2	1.00e+03	n/a
S96T001[illegible]	[illegible]	Iron - ICP-Fusion	ug/g	101.8	<1.00e-01	<1.82e+03	<1.84e+3	n/a	2.05		100.4	911.0	n/a
S96T001[illegible]	[illegible]	Lithium - ICP-Fusion	ug/g	101.4	<3.00e-02	4.10e+03	4.44e+03	4.08e+03	1.05		100.3	911.0	n/a
S96T001[illegible]	[illegible]	Magnesium - ICP-Fusion	ug/g	100.8	<1.00e-01	<9.11e+02	<9.20e+2	n/a	n/a		100.3	911.0	n/a
S96T001[illegible]	[illegible]	Manganese - ICP-Fusion	ug/g	98.80	<1.00e-01	<1.82e+02	<1.84e+2	n/a	n/a		98.86	182.0	n/a
S96T001[illegible]	[illegible]	Molybdenum - ICP-Fusion	ug/g	101.6	1.16e-01	2.17e+03	2.19e+03	2.18e+03	0.92		95.49	182.0	n/a
S96T001[illegible]	[illegible]	Nickel - ICP-Fusion	ug/g	100.2	<2.00e-01	2.26e+03	2.28e+03	1.42e+03	112		122.6	1.82e+03	n/a
S96T001[illegible]	[illegible]	Phosphorus - ICP-Fusion	ug/g	100.6	<2.00e-01	7.56e+03	7.81e+03	7.68e+03	2.99		98.80	364.0	n/a
S96T001[illegible]	[illegible]	Silicon - ICP-Fusion	ug/g	102.6	<5.00e-02	<9.11e+02	1.85e+03	n/a	n/a		99.40	3.64e+03	n/a
S96T001[illegible]	[illegible]	Uranium - ICP-Fusion	ug/g	98.80	<5.00e-01	<9.11e+03	<9.72e3	n/a	n/a		104.3	911.0	n/a
S96T001[illegible]	[illegible]	Cesium-137 by GEA	ug/g	100.8	<2.99e-02	1.44e+02	143.0	143.7	0.70		91.20	9.11e+03	n/a
S96T001[illegible]	[illegible]	Beta of Solid Sample	uCi/g	107.2	1.25e-01	1.52e+02	150.0	151.0	1.32		n/a	n/a	n/a
S96T001[illegible]	[illegible]	Alpha of Digested Solid	uCi/g	101.6	<3.68e-03	4.02e-02	3.53e-02	3.77e-02	13.8		100.5	2.68e-02	0.540
S96T001700	N	Bromide by Ion Chromatograph	ug/g	95.13	<1.26e-01	<1.22e+03	<1.23e3	n/a	n/a		83.57	4.08e-03	2.98E-01
S96T001700	N	Nitrate by IC-Dionex40001/4500	ug/g	95.93	4.46e-01	2.65e+05	2.46e+05	2.55e+05	7.44		95.04	1.22e+03	2.63E+01
S96T002517	I	Aluminium -ICP-H20 Dig/Acid	ug/g	98.00	<5.00e-02	1.09e+04	1.15e+04	1.12e+04	5.36		112.2	1.35e+03	n/a
S96T002517	I	Chromium -ICP-H20 Dig/Acid	ug/g	101.8	<1.00e-02	5.05e+02	579.0	542.0	13.7		81.90	23.90	n/a
S96T002517	I	Sodium -ICP-H20 Dig/Acid	ug/g	99.60	1.000	2.34e+05	2.23e+05	2.28e+05	4.81		n/a	4.790	n/a
												47.90	n/a

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 1

SEGMENT PORTION: W Whole Segment

Sample#	R	Of	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000518			Bulk Density of Sample	g/mL	n/a	n/a	1.608	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000498			BTU Southern Union Battler	Joules/g	98.77	n/a	8.00e+00	14.00	7.400	200	n/a	n/a	n/a
S96T000498			BTU Southern Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	21.15	10.57	200	n/a	n/a	n/a
S96T000498			% Water by TGA Union Battler	%	99.59	n/a	31.05	31.75	31.40	2.26	n/a	n/a	n/a
S96T000498			TIC by Acid/Coulometry	ug/g	92.19	4.400	1.80e+04	1.64e+04	1.72e+04	9.30	n/a	n/a	n/a
S96T000498			TOC by Persulfate/Coulometry	ug/g	96.39	9.00e-01	5.05e+03	4.87e+03	4.96e+03	3.63	n/a	5.000	n/a
S96T000498	Z		Aluminum -ICP-Fusion	ug/g	97.20	<5.00e-02	1.55e+04	1.38e+04	1.46e+04	11.6	99.10	40.00	n/a
S96T000498	Z		Bismuth -ICP-Fusion	ug/g	100.2	<1.00e-01	<2.07e+03	<2.14e3	n/a	n/a	101.5	1.03e+03	n/a
S96T000498	Z		Calcium -ICP-Fusion	ug/g	101.4	<1.00e-01	<2.07e+03	<2.14e3	n/a	n/a	99.70	2.07e+03	n/a
S96T000498	Z		Chromium -ICP-Fusion	ug/g	101.0	<1.00e-02	8.79e+03	7.91e+03	8.35e+03	15.1	98.70	207.0	n/a
S96T000498	Z		Iron -ICP-Fusion	ug/g	101.4	<5.00e-02	1.38e+03	2.63e+03	2.00e+03	62.0	100.4	1.03e+03	n/a
S96T000498	Z		Lithium -ICP-Fusion	ug/g	102.4	<1.00e-02	<2.07e+02	<2.14e2	n/a	n/a	92.70	207.0	n/a
S96T000498	Z		Manganese -ICP-Fusion	ug/g	100.8	<1.00e-02	2.26e+02	<2.14e2	n/a	n/a	101.1	207.0	n/a
S96T000498	Z		Sodium -ICP-Fusion	ug/g	100.8	1.20e-01	2.31e+05	2.49e+05	2.40e+05	7.50	11.80	2.07e+03	n/a
S96T000498	Z		Nickel -ICP-Fusion	ug/g	100.2	<2.00e-02	<4.13e+02	<4.28e2	n/a	n/a	101.5	413.0	n/a
S96T000498	Z		Phosphorus -ICP-Fusion	ug/g	100.0	<2.00e-01	<4.13e+03	<4.28e3	n/a	n/a	147.6	4.13e+03	n/a
S96T000498	Z		Silicon -ICP-Fusion	ug/g	95.20	<5.00e-02	<1.03e+03	<1.07e3	n/a	n/a	100.3	1.03e+03	n/a
S96T000498	Z		Uranium -ICP-Fusion	ug/g	99.50	<5.00e-01	<1.03e+04	<1.07e4	n/a	n/a	105.3	1.03e+04	n/a
S96T000498	Z		Cesium-137 by GEA	uCi/g	98.16	6.70e-02	1.41e+02	126.0	133.3	11.2	n/a	n/a	0.460
S96T000498	Z		Alpha of Digested Solid	uCi/g	91.57	<2.14e-03	1.49e-01	1.51e-01	1.50e-01	1.33	80.36	5.00e-03	9.61E+00
S96T000511	W		Bromide by Ion Chromatograph	ug/g	97.56	2.55e-01	<1.04e+03	<9.84e2	n/a	n/a	93.91	1.04e+03	n/a
S96T000511	W		Nitrate by IC-Dionex4000i/4500	ug/g	96.58	2.52e-01	1.41e+05	1.95e+05	1.68e+05	32.1	86.46	1.16e+03	n/a

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 2

SEGMENT PORTION: W Whole Segment

Sample#	R	Af	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000411			Bulk Density of Sample	g/mL	n/a	n/a	1.740	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000426			DSC Exotherm using Mettler	Joules/g	98.77	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000426			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000426			% Water by TGA using Mettler	%	99.59	n/a	25.60	15.14	20.37	51.4	n/a	n/a	n/a
S96T000426			TIC by Acid/Coulometry	ug/g	92.19	4.400	5.02e+03	5.49e+03	5.26e+03	8.94	99.20	5.000	n/a
S96T000426			TOC by Persulfate/Coulometry	ug/g	96.33	9.00e-01	2.50e+03	2.67e+03	2.58e+03	6.58	100.7	40.00	n/a
S96T000499	Z		Uranium by Phosphorescence	ug/g	89.20	17.50	83.50	87.40	85.45	4.56	95.85	1.750	1.00e+00
S96T000499	Z		U-Phosphorescence Inst. Error	% Inst Error	5.11	1.000	1.000	1.000	1.000	1.09	n/a	n/a	n/a
S96T000499	Z		Strontium-89/90 High Level	uCi/g	100.8	<1.13e-02	4.710	4.960	4.835	5.17	n/a	2.30e-02	1.00e+00
S96T000499	Z		Aluminium -ICP-Fusion	ug/g	99.20	<5.00e-02	9.80e+03	9.64e+03	9.72e+03	1.75	95.20	972.0	n/a
S96T000499	Z		Bismuth -ICP-Fusion	ug/g	100.2	<1.00e-01	<1.94e+03	<2.07e3	n/a	n/a	96.10	1.94e+03	n/a
S96T000499	Z		Calcium -ICP-Fusion	ug/g	101.4	<1.00e-01	<1.94e+03	<2.07e3	n/a	n/a	97.60	1.94e+03	n/a
S96T000499	Z		Chromium -ICP-Fusion	ug/g	101.0	<1.00e-02	3.26e+03	3.28e+03	3.27e+03	0.61	100.3	194.0	n/a
S96T000499	Z		Iron -ICP-Fusion	ug/g	101.4	<5.00e-02	<9.72e+02	<1.05e3	n/a	n/a	100.0	972.0	n/a
S96T000499	Z		Lithium -ICP-Fusion	ug/g	102.4	<1.00e-02	<1.94e+02	<2.07e2	n/a	n/a	95.90	194.0	n/a
S96T000499	Z		Manganese -ICP-Fusion	ug/g	100.8	<1.00e-02	<1.94e+02	<2.07e2	n/a	n/a	100.3	194.0	n/a
S96T000499	Z		Sodium -ICP-Fusion	ug/g	100.8	1.20e-01	2.48e+05	2.44e+05	2.46e+05	1.63	n/a	1.94e+03	n/a
S96T000499	Z		Nickel -ICP-Fusion	ug/g	100.2	<2.00e-02	<3.89e+02	<4.14e2	n/a	n/a	99.60	389.0	n/a
S96T000499	Z		Phosphorus -ICP-Fusion	ug/g	100.0	<2.00e-01	<3.89e+03	<4.14e3	n/a	n/a	112.0	3.89e+03	n/a
S96T000499	Z		Silicon -ICP-Fusion	ug/g	95.20	<5.00e-02	<9.72e+02	<1.05e3	n/a	n/a	96.40	972.0	n/a
S96T000499	Z		Uranium -ICP-Fusion	ug/g	99.50	<5.00e-01	<9.72e+03	<1.05e4	n/a	n/a	95.75	9.72e+03	n/a
S96T000499	Z		Cesium-137 by GEA	uCi/g	98.16	6.70e-02	94.37	94.90	94.64	0.55	n/a	n/a	0.540
S96T000499	Z		Beta of Solid Sample	uCi/g	104.4	2.40e-02	99.60	98.70	99.15	0.91	95.75	2.90e-02	3.55E-01
S96T000499	Z		Alpha of Digested Solid	uCi/g	87.95	7.00e-03	3.45e-02	4.19e-02	3.82e-02	19.4	70.41	7.00e-03	2.52E+01
S96T000512	W		Bromide by Ion Chromatograph	ug/g	97.56	2.55e-01	<9.78e+02	<1.02e3	n/a	n/a	n/a	978.1	n/a
S96T000512	W		Nitrate by IC-Dionex4000i/4500	ug/g	96.58	2.52e-01	4.46e+05	4.67e+05	4.56e+05	4.60	n/a	2.68e+03	n/a
S96T002546	I		Aluminium -ICP-H20 Dig/Acid	ug/g	98.00	<5.00e-02	7.98e+03	7.54e+03	7.76e+03	5.67	79.70	23.60	n/a
S96T002546	I		Chromium -ICP-H20 Dig/Acid	ug/g	101.8	<1.00e-02	5.60e+02	532.0	546.0	5.13	97.60	4.720	n/a
S96T002546	I		Sodium -ICP-H20 Dig/Acid	ug/g	99.60	1.190	2.59e+05	2.56e+05	2.58e+05	1.17	n/a	47.20	n/a

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 3

SEGMENT PORTION: W Whole Segment

Sample#	B	AB	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Rck Rec %	Det Limit	Count Err%
S96T000512			Bulk Density of Sample	g/mL	n/a	n/a	1.608	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000525			BOMC Exotherm using Mettler	Joules/g	101.6	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000525			BOMC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000525			% Water by TGA using Mettler	%	102.8	n/a	15.21	12.93	14.07	16.2	n/a	n/a	n/a
S96T000525			TIC by Acid/Coulometry	ug/g	92.19	4.400	2.93e+03	2.92e+03	2.92e+03	0.34	n/a	3.000	n/a
S96T000525			TOC by Persulfate/Coulometry	ug/g	96.33	9.00e-01	2.71e+03	2.66e+03	2.68e+03	1.86	n/a	40.00	n/a
S96T000500		Z	Aluminum -ICP-Fusion	ug/g	99.20	<5.00e-02	9.93e+03	9.94e+03	9.94e+03	0.10	99.70	1.15e+03	n/a
S96T000500		Z	Bismuth -ICP-Fusion	ug/g	100.2	<1.00e-01	<2.30e+03	<2.31e3	n/a	n/a	100.0	2.30e+03	n/a
S96T000500		Z	Calcium -ICP-Fusion	ug/g	101.4	<1.00e-01	<2.30e+03	<2.31e3	n/a	n/a	101.3	2.30e+03	n/a
S96T000500		Z	Chromium -ICP-Fusion	ug/g	101.0	<1.00e-02	2.66e+03	2.71e+03	2.68e+03	1.86	98.50	230.0	n/a
S96T000500		Z	Iron -ICP-Fusion	ug/g	101.4	<5.00e-02	<1.15e+03	<1.17e3	n/a	n/a	100.3	1.15e+03	n/a
S96T000500		Z	Lithium -ICP-Fusion	ug/g	102.4	<1.00e-02	<2.30e+02	<2.31e2	n/a	n/a	98.30	230.0	n/a
S96T000500		Z	Manganese -ICP-Fusion	ug/g	100.8	<1.00e-02	<2.30e+02	<2.31e2	n/a	n/a	99.80	230.0	n/a
S96T000500		Z	Sodium -ICP-Fusion	ug/g	100.8	1.20e-01	2.53e+05	2.55e+05	2.54e+05	0.79	96.20	2.30e+03	n/a
S96T000500		Z	Nickel -ICP-Fusion	ug/g	100.2	<2.00e-02	<4.60e+02	<4.62e2	n/a	n/a	99.10	460.0	n/a
S96T000500		Z	Phosphorus -ICP-Fusion	ug/g	100.0	<2.00e-01	<4.60e+03	<4.62e3	n/a	n/a	103.2	4.60e+03	n/a
S96T000500		Z	Silicon -ICP-Fusion	ug/g	95.20	<5.00e-02	<1.15e+03	<1.17e3	n/a	n/a	97.40	1.15e+03	n/a
S96T000500		Z	Uranium -ICP-Fusion	ug/g	99.50	<5.00e-01	<1.15e+04	<1.17e4	n/a	n/a	110.5	1.15e+04	n/a
S96T000500		Z	Cesium-137 by GEA	uCi/g	98.16	6.70e-02	86.42	87.40	86.91	1.15	n/a	n/a	0.610
S96T000500		Z	Alpha of Digested Solid	uCi/g	91.57	<2.14e-03	2.59e-02	1.93e-02	2.26e-02	29.2	95.08	6.00e-03	2.72E+01
S96T000513		W	Bromide by Ion Chromatograph	ug/g	100.3	<1.26e-01	<1.46e+03	<1.52e3	n/a	n/a	95.99	1.46e+03	n/a
S96T000513		W	Nitrate by IC-Dionex4000i/4500	ug/g	102.8	4.13e-01	5.19e+05	4.61e+05	4.90e+05	11.8	95.08	1.62e+03	n/a

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 4(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	B	M	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Rmk Rec %	Det Limit	Count Err%
S96T000515			Bulk Density of Sample	g/mL	n/a	n/a	1.630	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000527			BTU Exotherm using Bottler	Joules/g	113.2	n/a	1.43e+02	97.30	119.9	37.8	n/a	n/a	n/a
S96T000527			BTU Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	2.48e+02	182.6	215.1	37.8	n/a	n/a	n/a
S96T000527			% Water by TGA on Perkin Elmer	%	102.2	n/a	47.87	45.55	46.71	4.97	n/a	n/a	n/a
S96T000527			TIC by Acid/Coulometry	ug/g	101.2	2.50e	8.95e+03	1.84e+04	9.66e+03	15.2	n/a	3.000	n/a
S96T000527			TOC by Persulfate/Coulometry	ug/g	97.33	5.00e	6.82e+03	5.90e+03	6.36e+03	14.5	n/a	40.00	n/a
S96T000502	Z		Aluminum -ICP-Fusion	ug/g	95.00	<5.00e-02	1.82e+04	1.88e+04	1.85e+04	3.25	98.40	1.07e+03	n/a
S96T000502	Z		Bismuth -ICP-Fusion	ug/g	97.60	<1.00e-01	<2.14e+03	<2.05e3	n/a	n/a	95.30	2.14e+03	n/a
S96T000502	Z		Calcium -ICP-Fusion	ug/g	101.4	<1.00e-01	<2.14e+03	<2.05e3	n/a	n/a	105.7	2.14e+03	n/a
S96T000502	Z		Chromium -ICP-Fusion	ug/g	100.2	<1.00e-02	7.56e+03	7.11e+03	7.34e+03	6.15	98.30	214.0	n/a
S96T000502	Z		Iron -ICP-Fusion	ug/g	99.60	<5.00e-02	<1.07e+03	<1.05e3	n/a	n/a	98.30	1.07e+03	n/a
S96T000502	Z		Lithium -ICP-Fusion	ug/g	96.20	<1.00e-02	<2.14e+02	<2.05e2	n/a	n/a	91.00	214.0	n/a
S96T000502	Z		Manganese -ICP-Fusion	ug/g	97.20	<1.00e-02	<2.14e+02	<2.05e2	n/a	n/a	95.20	214.0	n/a
S96T000502	Z		Sodium -ICP-Fusion	ug/g	98.00	1.11e-01	2.05e+05	2.02e+05	2.02e+05	0.69	66.20	2.14e+03	n/a
S96T000502	Z		Nickel -ICP-Fusion	ug/g	98.20	<2.00e-02	<4.27e+02	<4.10e2	n/a	n/a	95.90	427.0	n/a
S96T000502	Z		Phosphorus -ICP-Fusion	ug/g	104.6	<2.00e-01	8.64e+03	7.24e+03	7.94e+03	17.6	102.6	4.27e+03	n/a
S96T000502	Z		Silicon -ICP-Fusion	ug/g	96.60	<5.00e-02	<1.07e+03	<1.05e3	n/a	n/a	96.40	1.07e+03	n/a
S96T000502	Z		Uranium -ICP-Fusion	ug/g	92.60	<5.00e-01	<1.07e+04	<1.05e4	n/a	n/a	89.05	1.07e+04	n/a
S96T000502	Z		Cesium-137 by GEA	uCi/g	101.1	<1.76e-02	1.94e+02	196.0	195.2	1.03	n/a	n/a	0.360
S96T000502	Z		Alpha of Digested Solid	uCi/g	92.77	<7.90e-03	5.76e-02	6.59e-02	6.17e-02	13.4	91.07	1.80e-02	3.05E+01
S96T000515	W		Bromide by Ion Chromatograph	ug/g	101.2	<1.26e-01	<4.74e+02	<4.82e2	n/a	n/a	96.52	473.6	n/a
S96T000515	W		Nitrate by IC-Dionex4000i/4500	ug/g	99.67	<1.40e-01	1.20e+05	1.67e+05	1.44e+05	32.8	100.0	525.8	n/a

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Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 4(U)

SEGMENT PORTION: W Upper Half of Segment

Sample#	B	Ad	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000515			Bulk Density of Sample	g/ml	n/a	n/a	1.740	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000526			BOC Bomberm using Mettler	Joules/g	101.6	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000526			BOC Bomberm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000526			% Water by TGA using Mettler	%	102.8	n/a	19.72	17.67	18.70	11.0	n/a	n/a	n/a
S96T000526			TIC by Acid/Coulometry	ug/g	101.2	2.500	3.61e+03	3.66e+03	3.62e+03	0.83	101.0	5.000	n/a
S96T000526			TOC by Persulfate/Coulometry	ug/g	97.35	5.500	2.68e+03	2.61e+03	2.64e+03	2.65	95.00	40.00	n/a
S96T000501		Z	Aluminium -ICP-Fusion	ug/g	99.20	<5.00e-02	1.08e+04	9.89e+03	1.03e+04	8.80	99.50	1.08e+03	n/a
S96T000501		Z	Bismuth -ICP-Fusion	ug/g	100.2	<1.00e-01	<2.16e+03	<2.30e3	n/a	n/a	99.10	2.16e+03	n/a
S96T000501		Z	Calcium -ICP-Fusion	ug/g	101.4	<1.00e-01	<2.16e+03	<2.30e3	n/a	n/a	99.30	2.16e+03	n/a
S96T000501		Z	Chromium -ICP-Fusion	ug/g	101.0	<1.00e-02	2.53e+03	2.52e+03	2.52e+03	0.40	102.0	216.0	n/a
S96T000501		Z	Iron -ICP-Fusion	ug/g	101.4	<5.00e-02	<1.08e+03	<1.15e3	n/a	n/a	101.3	1.08e+03	n/a
S96T000501		Z	Lithium -ICP-Fusion	ug/g	102.4	<1.00e-02	<2.16e+02	<2.30e2	n/a	n/a	91.30	216.0	n/a
S96T000501		Z	Manganese -ICP-Fusion	ug/g	100.8	<1.00e-02	<2.16e+02	<2.30e2	n/a	n/a	101.5	216.0	n/a
S96T000501		Z	Sodium -ICP-Fusion	ug/g	100.8	1.20e-01	2.45e+05	2.48e+05	2.46e+05	1.22	n/a	2.16e+03	n/a
S96T000501		Z	Nickel -ICP-Fusion	ug/g	100.2	<2.00e-02	<4.32e+02	<4.59e2	n/a	n/a	100.3	432.0	n/a
S96T000501		Z	Phosphorus -ICP-Fusion	ug/g	100.0	<2.00e-01	<4.32e+03	<4.59e3	n/a	n/a	109.1	4.32e+03	n/a
S96T000501		Z	Silicon -ICP-Fusion	ug/g	95.20	<5.00e-02	<1.08e+03	<1.15e3	n/a	n/a	95.90	1.08e+03	n/a
S96T000501		Z	Uranium -ICP-Fusion	ug/g	99.50	<5.00e-01	<1.08e+04	<1.15e4	n/a	n/a	104.5	1.08e+04	n/a
S96T000501		Z	Cesium-137 by GEA	uCi/g	98.16	6.70e-02	98.42	91.80	95.11	6.94	n/a	n/a	0.360
S96T000501		Z	Alpha of Digested Solid	uCi/g	87.95	7.00e-03	4.75e-02	3.48e-02	4.11e-02	30.5	88.80	5.00e-03	1.85E+01
S96T000514		W	Bromide by Ion Chromatograph	ug/g	100.3	<1.26e-01	<1.48e+03	<1.55e3	n/a	n/a	n/a	1.48e+03	n/a
S96T000514		W	Nitrate by IC-Dionex4000i/4500	ug/g	102.8	4.13e-01	4.92e+05	3.04e+05	3.98e+05	47.2	n/a	1.65e+03	n/a

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 5

SEGMENT PORTION: W Whole Segment

Sample#	S	AP	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Rek Rec %	Det Limit	Count Err%
S96T000503			Bulk Density of Sample	g/mL	n/a	n/a	1.640	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000503			HHV Parthers using Mettler	Joules/g	113.2	n/a	8.990	13.80	11.35	43.2	n/a	n/a	n/a
S96T000503			HHV Parthers Dry Calculated	Joules/g Dry	n/a	n/a	13.78	21.25	17.47	43.2	n/a	n/a	n/a
S96T000503			% Water by TGA on Perkin Elmer	%	101.1	n/a	35.77	34.06	35.02	5.45	n/a	n/a	n/a
S96T000503			TIC by Acid/Coulometry	ug/g	101.2	2.500	1.85e+04	1.86e+04	1.86e+04	0.95	n/a	5.000	n/a
S96T000503			TOC by Persulfate/Coulometry	ug/g	97.33	2.500	4.27e+03	4.46e+03	4.36e+03	4.35	n/a	50.00	n/a
S96T000503		Z	Aluminum -ICP-Fusion	ug/g	95.00	<5.00e-02	1.34e+04	1.44e+04	1.39e+04	7.19	88.80	1.05e+03	n/a
S96T000503		Z	Bismuth -ICP-Fusion	ug/g	97.40	<1.00e-01	<2.06e+03	<1.96e3	n/a	n/a	92.50	2.06e+03	n/a
S96T000503		Z	Calcium -ICP-Fusion	ug/g	101.4	<1.00e-01	<2.06e+03	<1.96e3	n/a	n/a	101.3	2.06e+03	n/a
S96T000503		Z	Chromium -ICP-Fusion	ug/g	100.2	<1.00e-02	4.28e+03	4.56e+03	4.42e+03	6.33	98.40	206.0	n/a
S96T000503		Z	Iron -ICP-Fusion	ug/g	99.60	<5.00e-02	<1.03e+03	<9.81e2	n/a	n/a	96.40	1.03e+03	n/a
S96T000503		Z	Lithium -ICP-Fusion	ug/g	96.20	<1.00e-02	<2.06e+02	<1.96e2	n/a	n/a	89.80	206.0	n/a
S96T000503		Z	Manganese -ICP-Fusion	ug/g	97.20	<1.00e-02	<2.06e+02	<1.96e2	n/a	n/a	92.50	206.0	n/a
S96T000503		Z	Sodium -ICP-Fusion	ug/g	96.00	1.11e-01	2.20e+05	2.12e+05	2.16e+05	3.70	50.70	2.06e+03	n/a
S96T000503		Z	Nickel -ICP-Fusion	ug/g	98.20	<2.00e-02	<4.12e+02	<3.92e2	n/a	n/a	96.40	412.0	n/a
S96T000503		Z	Phosphorus -ICP-Fusion	ug/g	104.6	<2.00e-01	<4.12e+03	<3.92e3	n/a	n/a	109.6	4.12e+03	n/a
S96T000503		Z	Silicon -ICP-Fusion	ug/g	96.60	<5.00e-02	<1.03e+03	<9.81e2	n/a	n/a	96.70	1.03e+03	n/a
S96T000503		Z	Uranium -ICP-Fusion	ug/g	92.60	<5.00e-01	<1.03e+04	<9.81e3	n/a	n/a	87.35	1.03e+04	n/a
S96T000503		Z	Cesium-137 by GEA	uCi/g	101.1	<1.76e-02	1.47e+02	158.0	152.4	7.21	n/a	n/a	0.400
S96T000503		Z	Alpha of Digested Solid	uCi/g	92.77	<7.90e-03	1.61e-02	1.35e-02	1.48e-02	17.6	88.78	1.76e-02	8.73E+01
S96T000516		W	Bromide by Ion Chromatograph	ug/g	101.2	<1.26e-01	1.23e+03	1.33e+03	1.28e+03	7.81	84.17	457.0	n/a
S96T000516		W	Nitrate by IC-Dionex4000i/4500	ug/g	99.67	<1.40e-01	2.57e+05	2.55e+05	2.56e+05	0.78	64.66	507.4	n/a

5.

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 6(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	AF	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Sek Rec %	Det Limit	Count Err%
S96T000517			Bulk Density of Sample	g/mL	n/a	n/a	1.680	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000530			BTU Bomb Calorimeter using Mettler	Joules/g	100.5	n/a	74.30	77.60	75.85	4.89	n/a	n/a	n/a
S96T000530			BTU Bomb Calorimeter Dry Calculated	Joules/g Dry	n/a	n/a	1.11e+02	116.1	113.8	4.13	n/a	n/a	n/a
S96T000530			% Water by TGA using Mettler	%	99.75	n/a	33.26	33.37	33.31	0.33	n/a	n/a	n/a
S96T000530			TIC by Acid/Coulometry	ug/g	n/a	n/a	1.27e+04	1.29e+04	1.28e+04	1.56	n/a	3.000	n/a
S96T000530			TOC by Persulfate/Coulometry	ug/g	n/a	n/a	5.38e+03	5.14e+03	5.26e+03	4.56	n/a	40.00	n/a
S96T000505	Z		Aluminum -ICP-Fusion	ug/g	95.00	<5.00e-02	1.49e+04	1.50e+04	1.50e+04	0.67	89.80	1.12e+03	n/a
S96T000505	Z		Bismuth -ICP-Fusion	ug/g	97.40	<1.00e-01	<2.23e+03	<2.21e3	n/a	n/a	90.50	2.23e+03	n/a
S96T000505	Z		Calcium -ICP-Fusion	ug/g	101.4	<1.80e-01	<2.23e+03	<2.21e3	n/a	n/a	100.8	2.23e+03	n/a
S96T000505	Z		Chromium -ICP-Fusion	ug/g	100.2	<1.00e-02	5.00e+03	5.24e+03	5.12e+03	4.69	97.20	223.0	n/a
S96T000505	Z		Iron -ICP-Fusion	ug/g	99.60	<5.00e-02	<1.12e+03	<1.10e3	n/a	n/a	115.9	1.12e+03	n/a
S96T000505	Z		Lithium -ICP-Fusion	ug/g	96.20	<1.00e-02	<2.23e+02	<2.21e2	n/a	n/a	90.80	223.0	n/a
S96T000505	Z		Manganese -ICP-Fusion	ug/g	97.20	<1.00e-02	<2.23e+02	<2.21e2	n/a	n/a	95.00	223.0	n/a
S96T000505	Z		Sodium -ICP-Fusion	ug/g	96.00	1.11e-01	2.12e+05	2.14e+05	2.13e+05	0.94	98.20	2.23e+03	n/a
S96T000505	Z		Nickel -ICP-Fusion	ug/g	98.20	<2.00e-02	<4.47e+02	<4.41e2	n/a	n/a	94.90	447.0	n/a
S96T000505	Z		Phosphorus -ICP-Fusion	ug/g	104.6	<2.00e-01	<4.47e+03	<4.41e3	n/a	n/a	120.3	4.47e+03	n/a
S96T000505	Z		Silicon -ICP-Fusion	ug/g	96.60	<5.00e-02	<1.12e+03	<1.10e3	n/a	n/a	95.40	1.12e+03	n/a
S96T000505	Z		Uranium -ICP-Fusion	ug/g	92.60	<5.00e-01	<1.12e+04	<1.10e4	n/a	n/a	86.85	1.12e+04	n/a
S96T000505	Z		Cesium-137 by GEA	uCi/g	101.1	<1.76e-02	1.64e+02	164.0	164.0	0.00	n/a	n/a	0.390
S96T000505	Z		Alpha of Digested Solid	uCi/g	92.77	<7.90e-03	2.56e-02	1.51e-02	2.04e-02	51.6	87.50	1.90e-02	5.70E+01
S96T000518	W		Bromide by Ion Chromatograph	ug/g	101.2	<1.26e-01	<4.89e+02	<4.54e2	n/a	n/a	n/a	489.2	n/a
S96T000518	W		Nitrate by IC-Dionex40001/4500	ug/g	100.2	<1.40e-01	1.91e+05	1.80e+05	1.85e+05	5.93	n/a	543.1	n/a

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 6(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000516			Bulk Density of Sample	g/mL	n/a	n/a	1.670	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000529			% Water by TGA using Mettler	%	99.73	n/a	34.45	35.40	34.92	2.72	n/a	n/a	n/a
S96T000529			TIC by Acid/Coulometry	ug/g	95.52	2.400	1.33e+04	1.44e+04	1.38e+04	7.96	109.0	5.000	n/a
S96T000529			TOC by Persulfate/Coulometry	ug/g	92.00	9.00e-01	5.16e+03	5.14e+03	5.15e+03	0.39	101.0	40.00	n/a
S96T000504		Z	Aluminum -ICP-Fusion	ug/g	95.00	<5.00e-02	1.57e+04	1.77e+04	1.67e+04	12.0	89.70	1.09e+03	n/a
S96T000504		Z	Bismuth -ICP-Fusion	ug/g	97.40	<1.00e-01	<2.18e+03	<1.97e3	n/a	n/a	96.40	2.18e+03	n/a
S96T000504		Z	Calcium -ICP-Fusion	ug/g	101.4	<1.00e-01	<2.18e+03	<1.97e3	n/a	n/a	100.3	2.18e+03	n/a
S96T000504		Z	Chromium -ICP-Fusion	ug/g	100.2	<1.00e-02	5.49e+03	5.51e+03	5.50e+03	0.36	95.40	218.0	n/a
S96T000504		Z	Iron -ICP-Fusion	ug/g	99.60	<5.00e-02	<1.09e+03	<9.87e2	n/a	n/a	96.10	1.09e+03	n/a
S96T000504		Z	Lithium -ICP-Fusion	ug/g	96.20	<1.00e-02	<2.18e+02	<1.97e2	n/a	n/a	90.50	218.0	n/a
S96T000504		Z	Manganese -ICP-Fusion	ug/g	97.20	<1.00e-02	<2.18e+02	<1.97e2	n/a	n/a	92.20	218.0	n/a
S96T000504		Z	Sodium -ICP-Fusion	ug/g	96.00	1.11e-01	2.10e+05	2.03e+05	2.06e+05	3.39	58.50	2.18e+03	n/a
S96T000504		Z	Nickel -ICP-Fusion	ug/g	98.20	<2.00e-02	<4.37e+02	<3.95e2	n/a	n/a	95.90	437.0	n/a
S96T000504		Z	Phosphorus -ICP-Fusion	ug/g	104.6	<2.00e-01	<4.37e+03	<3.95e3	n/a	n/a	119.1	4.37e+03	n/a
S96T000504		Z	Silicon -ICP-Fusion	ug/g	96.60	<5.00e-02	<1.09e+03	<9.87e2	n/a	n/a	94.40	1.09e+03	n/a
S96T000504		Z	Uranium -ICP-Fusion	ug/g	92.60	<5.00e-01	<1.09e+04	<9.87e3	n/a	n/a	87.25	1.09e+04	n/a
S96T000504		Z	Cesium-137 by GEA	uCi/g	101.1	<1.76e-02	1.70e+02	188.0	178.9	10.1	n/a	n/a	8.380
S96T000504		Z	Alpha of Digested Solid	uCi/g	92.77	<7.90e-03	2.29e-02	2.86e-02	2.58e-02	22.1	89.54	1.80e-02	6.47E+01
S96T000517		W	Bromide by Ion Chromatograph	ug/g	101.2	<1.26e-01	<4.61e+02	<4.60e2	n/a	n/a	97.39	460.9	n/a
S96T000517		W	Nitrate by IC-Dionex4000I/4500	ug/g	100.2	<1.40e-01	1.42e+05	1.79e+05	1.60e+05	23.1	103.4	511.7	n/a

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 7(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T[illegible]519			Bulk Density of Sample	g/mL	n/a	n/a	1.670	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T[illegible]			BOC Bomberm using Mettler	Joules/g	100.9	n/a	77.90	79.90	78.90	2.54	n/a	n/a	n/a
S96T[illegible]			BOC Bomberm Dry Calculated	Joules/g Dry	n/a	n/a	1.31e+02	134.4	132.8	2.49	n/a	n/a	n/a
S96T[illegible]			% Water by TGA using Mettler	%	99.73	n/a	41.96	39.18	40.57	6.85	n/a	n/a	n/a
S96T[illegible]			TIC by Acid/Coulometry	ug/g	94.02	1.100	1.62e+04	1.55e+04	1.58e+04	4.42	n/a	5.000	n/a
S96T[illegible]			TOC by Persulfate/Coulometry	ug/g	95.00	6.800	5.74e+03	5.70e+03	5.72e+03	0.87	n/a	40.00	n/a
S96T000507	Z		Aluminum -ICP-Fusion	ug/g	95.80	<5.00e-02	1.67e+04	1.77e+04	1.72e+04	5.91	[illegible]	[illegible]	n/a
S96T000507	Z		Bismuth -ICP-Fusion	ug/g	99.40	<1.00e-01	<1.88e+03	<2.15e3	n/a	n/a	99.40	1.88e+03	n/a
S96T000507	Z		Calcium -ICP-Fusion	ug/g	102.6	<1.00e-01	<1.88e+03	<2.15e3	n/a	n/a	101.7	1.88e+03	n/a
S96T000507	Z		Chromium -ICP-Fusion	ug/g	100.0	<1.00e-02	5.78e+03	5.32e+03	5.55e+03	4.40	96.80	188.0	n/a
S96T000507	Z		Iron -ICP-Fusion	ug/g	100.0	<5.00e-02	<9.40e+02	<1.07e3	n/a	n/a	97.80	940.0	n/a
S96T000507	Z		Lithium -ICP-Fusion	ug/g	97.00	<1.00e-02	<1.88e+02	<2.15e2	n/a	n/a	92.50	188.0	n/a
S96T000507	Z		Manganese -ICP-Fusion	ug/g	97.20	<1.00e-02	<1.88e+02	<2.15e2	n/a	n/a	92.20	188.0	n/a
S96T000507	Z		Sodium -ICP-Fusion	ug/g	97.20	1.22e-01	1.87e+05	1.97e+05	1.92e+05	5.21	60.20	1.88e+03	n/a
S96T000507	Z		Nickel -ICP-Fusion	ug/g	98.80	<2.00e-02	<3.76e+02	<4.30e2	n/a	n/a	96.10	376.0	n/a
S96T000507	Z		Phosphorus -ICP-Fusion	ug/g	100.6	<2.00e-01	<3.76e+03	<4.30e3	n/a	n/a	116.6	3.76e+03	n/a
S96T000507	Z		Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	<9.40e+02	<1.07e3	n/a	n/a	95.20	940.0	n/a
S96T000507	Z		Uranium -ICP-Fusion	ug/g	94.60	<5.00e-01	<9.40e+03	<1.07e4	n/a	n/a	91.00	9.40e+03	n/a
S96T000507	Z		Cesium-137 by GEA	uCi/g	101.5	<3.06e-02	1.86e+02	203.0	194.4	8.74	n/a	n/a	0.360
S96T000507	Z		Alpha of Digested Solid	uCi/g	85.54	8.08e-03	3.41e-02	3.26e-02	3.33e-02	5.11	76.02	1.00e-02	3.09e+01
S96T000520	W		Bromide by Ion Chromatograph	ug/g	99.30	<1.26e-01	<4.85e+02	<4.43e2	n/a	n/a	n/a	485.1	n/a
S96T000520	W		Nitrate by IC-Dionex4000i/4500	ug/g	102.4	<1.40e-01	1.06e+05	1.05e+05	1.06e+05	0.95	n/a	538.7	n/a

Final Report
U-109 (P)

CORE NUMBER: 12B
SEGMENT #: 7(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AF	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Rck Rec %	Det Limit	Count Err%
S96T000518			Bulk Density of Sample	g/ml	n/a	n/a	1.670	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000531			% Water by 105 using Rotitor	%	99.75	n/a	30.85	39.27	34.46	26.6	n/a	n/a	n/a
S96T000531			TIC by Acid/Coulometry	ug/g	95.52	2.400	1.05e+04	1.17e+04	1.11e+04	10.3	85.00	5.000	n/a
S96T000531			TOC by Persulfate/Coulometry	ug/g	92.00	9.00e-01	4.39e+03	4.21e+03	4.30e+03	4.19	58.00	48.00	n/a
S96T000506	Z		Uranium by Phosphorescence	ug/g	105.5	29.50	2.55e+02	259.0	257.0	6.48	86.97	1.900	1.20E+00
S96T000506	Z		U-Phosphorescence Inst. Error	% Inst Error	3.13	1.390	1.290	1.210	1.250	1.21	n/a	n/a	n/a
S96T000506	Z		Strontium-89/90 High Level	uCi/g	105.3	2.00e-02	11.30	9.700	10.55	14.3	n/a	2.30e-02	1.45E+00
S96T000506	Z		Aluminum -ICP-Fusion	ug/g	95.80	<3.00e-02	1.40e+05	1.44e+05	1.46e+05	2.75	91.80	1.10e+03	n/a
S96T000506	Z		Bismuth -ICP-Fusion	ug/g	99.40	<1.00e-01	<2.20e+03	<2.21e3	n/a	n/a	99.10	2.20e+03	n/a
S96T000506	Z		Calcium -ICP-Fusion	ug/g	102.4	<1.00e-01	<2.20e+03	<2.21e3	n/a	n/a	102.7	2.20e+03	n/a
S96T000506	Z		Chromium -ICP-Fusion	ug/g	100.8	<1.00e-02	5.35e+03	4.85e+03	5.10e+03	9.80	97.90	220.0	n/a
S96T000506	Z		Iron -ICP-Fusion	ug/g	100.0	<3.00e-02	<1.10e+03	<1.11e3	n/a	n/a	97.80	1.10e+03	n/a
S96T000506	Z		Lithium -ICP-Fusion	ug/g	97.00	<1.00e-02	<2.20e+02	<2.21e2	n/a	n/a	92.70	220.0	n/a
S96T000506	Z		Manganese -ICP-Fusion	ug/g	97.20	<1.00e-02	<2.20e+02	<2.21e2	n/a	n/a	93.20	220.0	n/a
S96T000506	Z		Sodium -ICP-Fusion	ug/g	97.20	1.22e-01	2.05e+05	2.17e+05	2.11e+05	5.69	75.10	2.20e+03	n/a
S96T000506	Z		Nickel -ICP-Fusion	ug/g	98.80	<2.00e-02	<4.31e+02	<4.42e2	n/a	n/a	95.40	431.0	n/a
S96T000506	Z		Phosphorus -ICP-Fusion	ug/g	100.6	<2.00e-01	<4.31e+03	<4.42e3	n/a	n/a	114.9	4.31e+03	n/a
S96T000506	Z		Silicon -ICP-Fusion	ug/g	96.20	<3.00e-02	<1.10e+03	<1.11e3	n/a	n/a	95.60	1.10e+03	n/a
S96T000506	Z		Uranium -ICP-Fusion	ug/g	94.60	<3.00e-01	<1.10e+04	<1.11e4	n/a	n/a	91.75	1.10e+04	n/a
S96T000506	Z		Cesium-137 by GEA	uCi/g	101.5	<3.66e-02	1.72e+02	159.0	165.2	7.85	n/a	n/a	8.400
S96T000506	Z		Beta of Solid Sample	uCi/g	105.0	5.20e-02	1.68e+02	169.0	168.5	0.59	95.83	6.60e-02	6.39E-01
S96T000506	Z		Alpha of Digested Solid	uCi/g	85.54	8.00e-03	2.72e-02	2.10e-02	2.41e-02	25.7	73.72	1.10e-02	3.90E+01
S96T000519	W		Bromide by Ion Chromatograph	ug/g	99.30	<1.26e-01	<5.51e+02	<5.13e2	n/a	n/a	97.39	551.0	n/a
S96T000519	W		Nitrate by IC-Dionex4000i/4500	ug/g	102.4	<1.40e-01	1.96e+05	2.16e+05	2.06e+05	9.71	89.32	611.8	n/a
S96T002849	I		Aluminum -ICP-H20 Dig/Acid	ug/g	98.00	<3.00e-02	1.06e+04	1.07e+04	1.06e+04	0.94	79.40	25.10	n/a
S96T002849	I		Chromium -ICP-H20 Dig/Acid	ug/g	101.8	<1.00e-02	7.26e+02	746.0	736.0	2.72	96.30	5.020	n/a
S96T002849	I		Sodium -ICP-H20 Dig/Acid	ug/g	99.60	1.100	2.35e+05	2.23e+05	2.29e+05	5.24	n/a	50.20	n/a

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 8(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	B	AB	Analyte	Unit	Standard %	Blank	Result	Replicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000509			Bulk Density of Sample	g/mL	n/a	n/a	1.750	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000509			BTU Isotherm using Mettler	Joules/g	100.2	n/a	8.00e+00	77.40	38.70	200	n/a	n/a	n/a
S96T000509			BTU Isotherm Dry Calculated	Joules/g Dry	n/a	n/a	9.00e+00	112.2	56.10	200	n/a	n/a	n/a
S96T000509			% Water by TGA using Mettler	%	99.71	n/a	31.35	30.68	31.02	2.16	n/a	n/a	n/a
S96T000509			TIC by Acid/Coulometry	ug/g	94.02	1.100	1.13e+04	1.14e+04	1.14e+04	2.62	n/a	5.000	n/a
S96T000509			TOC by Persulfate/Coulometry	ug/g	95.00	6.800	4.82e+03	5.12e+03	4.97e+03	6.04	n/a	68.00	n/a
S96T000509	Z		Aluminum -ICP-Fusion	ug/g	95.80	<5.00e-02	1.29e+04	1.28e+04	1.28e+04	1.78	91.50	1.13e+03	n/a
S96T000509	Z		Bismuth -ICP-Fusion	ug/g	99.40	<1.00e-01	<2.27e+03	<2.38e2	n/a	n/a	95.70	2.27e+03	n/a
S96T000509	Z		Calcium -ICP-Fusion	ug/g	102.4	<1.00e-01	<2.27e+03	<2.38e2	n/a	n/a	101.7	2.27e+03	n/a
S96T000509	Z		Chromium -ICP-Fusion	ug/g	100.8	<1.00e-02	3.85e+03	3.75e+03	3.80e+03	2.63	97.70	227.0	n/a
S96T000509	Z		Iron -ICP-Fusion	ug/g	100.0	<5.00e-02	<1.13e+03	<1.19e2	n/a	n/a	98.30	1.13e+03	n/a
S96T000509	Z		Lithium -ICP-Fusion	ug/g	97.00	<1.00e-02	<2.27e+02	<2.38e2	n/a	n/a	94.70	227.0	n/a
S96T000509	Z		Manganese -ICP-Fusion	ug/g	97.20	<1.00e-02	<2.27e+02	<2.38e2	n/a	n/a	93.50	227.0	n/a
S96T000509	Z		Sodium -ICP-Fusion	ug/g	97.20	1.22e-01	2.26e+05	2.25e+05	2.26e+05	0.45	60.00	2.27e+03	n/a
S96T000509	Z		Nickel -ICP-Fusion	ug/g	98.80	<2.00e-02	<4.54e+02	<4.76e2	n/a	n/a	98.30	454.0	n/a
S96T000509	Z		Phosphorus -ICP-Fusion	ug/g	100.6	<2.00e-01	1.16e+04	9.02e+03	1.03e+04	25.0	98.00	4.54e+03	n/a
S96T000509	Z		Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	<1.13e+03	<1.19e3	n/a	n/a	95.90	1.13e+03	n/a
S96T000509	Z		Uranium -ICP-Fusion	ug/g	94.60	<5.00e-01	<1.13e+04	<1.19e4	n/a	n/a	91.40	1.13e+04	n/a
S96T000509	Z		Cesium-137 by GEA	uCi/g	101.5	<5.06e-02	1.37e+02	128.0	132.5	6.79	n/a	n/a	0.460
S96T000509	Z		Alpha of Digested Solid	uCi/g	85.54	8.00e-03	4.81e-02	6.15e-02	5.47e-02	24.1	79.34	1.10e-02	3.17E+01
S96T000522	W		Bromide by Ion Chromatograph	ug/g	101.4	<1.26e-01	<3.01e+02	<3.08e2	n/a	n/a	95.30	301.1	n/a
S96T000522	W		Nitrate by IC-Dionex4000i/4500	ug/g	101.0	<1.40e-01	1.99e+05	2.60e+05	2.29e+05	26.6	57.82	356.3	n/a

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 8(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AS	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000520			Bulk Density of Sample	g/mL	n/a	n/a	1.660	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000533			% Water by TGA using Mettler	%	99.71	n/a	25.85	26.26	26.05	1.70	n/a	n/a	n/a
S96T000533			TIC by Acid/Coulometry	ug/g	94.02	1.100	9.19e+03	9.65e+03	9.42e+03	4.88	106.0	3.900	n/a
S96T000533			TOC by Persulfate/Coulometry	ug/g	95.00	6.800	3.35e+03	3.41e+03	3.38e+03	1.78	104.0	49.00	n/a
S96T000508	Z		Aluminum -ICP-Fusion	ug/g	95.80	<5.00e-02	1.00e+04	9.59e+03	9.80e+03	4.19	90.10	1.04e+03	n/a
S96T000508	Z		Bismuth -ICP-Fusion	ug/g	99.40	<1.00e-01	<2.08e+03	<2.05e3	n/a	n/a	97.40	2.08e+03	n/a
996T000508	Z		Calcium -ICP-Fusion	ug/g	102.4	<1.00e-01	<2.08e+03	<2.05e3	n/a	n/a	101.0	2.08e+03	n/a
S96T000508	Z		Chromium -ICP-Fusion	ug/g	100.8	<1.00e-02	3.11e+03	3.02e+03	3.06e+03	2.94	96.40	208.0	n/a
S96T000508	Z		Iron -ICP-Fusion	ug/g	100.0	<5.00e-02	<1.04e+03	<1.02e3	n/a	n/a	96.90	1.04e+03	n/a
S96T000508	Z		Lithium -ICP-Fusion	ug/g	97.00	<1.00e-02	<2.08e+02	<2.05e2	n/a	n/a	92.70	208.0	n/a
S96T000508	Z		Manganese -ICP-Fusion	ug/g	97.20	<1.00e-02	<2.08e+02	<2.05e2	n/a	n/a	91.70	208.0	n/a
S96T000508	Z		Sodium -ICP-Fusion	ug/g	97.20	1.22e-01	2.29e+05	2.30e+05	2.30e+05	0.44	37.50	2.08e+05	n/a
S96T000508	Z		Nickel -ICP-Fusion	ug/g	98.80	<2.00e-02	<4.17e+02	<4.09e2	n/a	n/a	96.10	417.0	n/a
S96T000508	Z		Phosphorus -ICP-Fusion	ug/g	100.6	<2.00e-01	<4.17e+03	<4.09e3	n/a	n/a	113.0	4.17e+03	n/a
S96T000508	Z		Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	<1.04e+03	<1.02e3	n/a	n/a	95.90	1.04e+03	n/a
S96T000508	Z		Uranium -ICP-Fusion	ug/g	94.60	<5.00e-01	<1.04e+04	<1.02e4	n/a	n/a	90.40	1.04e+04	n/a
S96T000508	Z		Cesium-137 by GEA	uCi/g	101.5	<3.06e-02	1.13e+02	108.0	110.4	4.52	n/a	n/a	8.480
S96T000508	Z		Alpha of Digested Solid	uCi/g	85.54	8.00e-03	2.52e-02	2.24e-02	2.38e-02	11.8	75.51	7.00e-03	3.09E+01
S96T000521	W		Bromide by Ion Chromatograph	ug/g	101.4	<1.26e-01	<9.66e+02	<9.23e2	n/a	n/a	97.76	966.6	n/a
S96T000521	W		Nitrate by IC-Dionex4000i/4500	ug/g	101.0	<1.40e-01	3.45e+05	3.50e+05	3.48e+05	1.44	86.44	1.07e+05	n/a

Final Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 9

SEGMENT PORTION: Whole Segment

Sampled	Rep	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000510		Bulk Density of Sample	g/mL	n/a	n/a	1.440	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T000510		ICP Fusion Lotus Bottler	Joules/g	101.6	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000510		ICP Fusion Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T000510		% Water by TGA using Bottler	%	99.56	n/a	34.27	34.79	34.43	1.52	n/a	n/a	n/a
S96T000510		TOC by GC/Coulometry	ug/g	99.67	9.00e-01	7.41e+02	668.0	704.5	10.4	100.1	[illegible]	n/a
S96T000510		TOC by Carbonate/Coulometry	ug/g	95.83	12.20	3.86e+03	3.51e+03	3.68e+03	9.95	91.30	[illegible]	n/a
S96T000510	Z	Aluminum -ICP-Fusion	ug/g	95.80	<5.00e-02	3.70e+04	3.44e+04	3.58e+04	2.80	76.40	1.[illegible]e+03	n/a
S96T000510	Z	Bismuth -ICP-Fusion	ug/g	99.40	<1.00e-01	<2.21e+02	<2.15e2	n/a	n/a	100.4	2.21e+03	n/a
S96T000510	Z	Calcium -ICP-Fusion	ug/g	102.4	<1.00e-01	<2.21e+02	<2.15e2	n/a	n/a	102.7	2.21e+03	n/a
S96T000510	Z	Chromium -ICP-Fusion	ug/g	100.8	<1.00e-02	3.62e+03	3.07e+03	3.34e+03	1.65	98.30	221.0	n/a
S96T000510	Z	Iron -ICP-Fusion	ug/g	100.8	<5.00e-02	3.64e+03	<1.07e3	n/a	n/a	97.40	1.[illegible]e+03	n/a
S96T000510	Z	Lithium -ICP-Fusion	ug/g	97.00	<1.00e-02	<2.21e+02	<2.15e2	n/a	n/a	95.00	221.0	n/a
S96T000510	Z	Manganese -ICP-Fusion	ug/g	97.20	<1.00e-02	<2.21e+02	<2.15e2	n/a	n/a	95.90	221.0	n/a
S96T000510	Z	Sodium -ICP-Fusion	ug/g	97.20	1.22e-01	1.49e+05	1.52e+05	1.50e+05	1.99	63.70	2.21e+03	n/a
S96T000510	Z	Nickel -ICP-Fusion	ug/g	98.80	<2.00e-02	<4.41e+02	<4.27e2	n/a	n/a	97.80	441.0	n/a
S96T000510	Z	Phosphorus -ICP-Fusion	ug/g	100.6	<2.00e-01	4.02e+04	4.00e+04	4.01e+04	0.50	98.20	4.41e+03	n/a
S96T000510	Z	Silicon -ICP-Fusion	ug/g	96.20	<5.00e-02	2.84e+03	3.27e+03	3.06e+03	14.1	95.00	1.10e+03	n/a
S96T000510	Z	Uranium -ICP-Fusion	ug/g	94.60	<5.00e-01	<1.10e+04	<1.07e4	n/a	n/a	91.50	1.10e+04	n/a
S96T000510	Z	Cesium-137 by GEA	uCi/g	101.5	<5.06e-02	65.11	67.10	66.10	3.03	n/a	n/a	0.650
S96T000510	Z	Alpha of Digested Solid	uCi/g	85.54	8.00e-03	6.42e-02	4.80e-02	5.61e-02	28.9	76.28	5.00e-03	1.50e+01
S96T000523	W	Bromide by Ion Chromatograph	ug/g	96.87	<1.20e-01	<2.62e+02	<2.06e2	n/a	n/a	95.83	262.2	n/a
S96T000523	W	Nitrate by IC-Dionex4000i/4500	ug/g	97.88	<1.40e-01	3.08e+04	3.27e+04	3.18e+04	5.98	93.32	291.2	n/a

CHAIN OF CUSTODY FORMS

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group 95000232
595T004140

u-109 (p)

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING.

(1) Shipment Number 200W-08-TF (2) Sample Number 95-336 (3) Supervisor Hartley

(4) Tank U-109 (5) Riser 2 (6) Segment 1 (7) Core 123 (8) Cask Seal Number 316

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5	<0.5
Side Dose Rate	7	10
Bottom Dose Rate	7	7
Smearable Contamination	<20 (Alpha)	<20 (Alpha)
	<1000 (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-002101
B. Cask Seal Number	4452
C. Sampler Serial Number	94-154
D. Date and Time Sampler Unseated	12/20/95, 0594
E. Expected Liquid Content	20%
F. Expected Solid Content	80%
G. Dose Rate Through Drill String	400 mr/hr
H. Expected Sample Length	12 1/2"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

9

(12) Field Comments
Small amount of water on Bottom of Sampler

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-U-109	2225	James Sickels	12-21-95 1230	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels		Gil Swick II	12-21-95 1300	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
Gil Swick II			12-21-95	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43

SC-6800-209 (02/94)

WHC-SD-WM-DP-181, REV. 1

12/21/95 14:15 509 373 1434

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number 200W-08-TP (2) Sample Number 95-337 (3) Supervisor R Frank Frost

(4) Tank U-109 (5) Riser 2 (6) Segment 2 (7) Core 123 (8) Cask Seal Number 29-G

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5	<.5
Side Dose Rate	13	13
Bottom Dose Rate	10	15
Smearable Contamination	<20 (Alpha)	<20 (Alpha)
	<1000 (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-00210
B. Cask Seal Number	~~1520~~ 1292
C. Sampler Serial Number	95-145
D. Date and Time Sampler Unseated	12-20-95 1104
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	700mR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

99.

(12) Field Comments

NO-X RAY
Liquid on bottom 4" of sampler

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	2225 Lab	R. F. Frost James Sickels	12-21-95 12:30 PM	
(18) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels		[illegible]	12-22-95 0809	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
[illegible]		EE Dubes	12-22-95 1243	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(10) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, 36-05 Goldenrod - Tank Farm Operations, 24-05 RC-6000-309 (02/94)

WHC-SD-WM-DP-181, REV. 1

Group 95000

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 95-338 (3) Supervisor M.C. Jones

(4) Tank U-109 (5) Riser 2 (6) Segment 3 (7) Core 123 (8) Cask Serial Number C 2016

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5	<.5
Side Dose Rate	7	7
Bottom Dose Rate	8	8
Smearable Contamination	<20 (Alpha)	<20 (Alpha)
	4000 (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description	
A. Work Package Number	WS ~~ES~~-95-00210
B. Cask Seal Number	~~3240~~ 129 B 12-22-95
C. Sampler Serial Number	~~3240~~ 95-143
D. Date and Time Sampler Unseated	12-20-95 / 18:15
E. Expected Liquid Content	50%
F. Expected Solid Content	50%
G. Dose Rate Through Drill String	350 MR/HR
H. Expected Sample Length	9"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

6'

(12) Field Comments

Sample was only pushed 9" befor the down force limit was reached. NO-X-RAY

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	For M.C. Jones [signature] Jones Sickels	1810 12-22-95	
(18) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
[signature] Jones Sickels		[signature] Jones C Fabesky	1849 12-22-95	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
[signature] Jones C Fabesky		[signature] EE Dabes	7344 12-27-95	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(19) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S4-65 Goldenrod - Tank Farm Operations, S4-43 SC-6000-309 (02/94)

WHC-SD-WM-DP-181, REV. 1

594700010

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 95-338A (3) Supervisor M. C. Jones

(4) Tank U-109 (5) Riser 2 (6) Segment 3A (7) Core 123 (8) Cask Serial Number SW-23-G

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5	<0.5
Side Dose Rate	8	8
Bottom Dose Rate	8	8
Smearable Contamination	<20 (Alpha)	UNABLE TO PERFORM SURVEY (WET) (Alpha)
	4000 (Beta-Gamma)	(Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-00210
B. Cask Seal Number	~~3234~~ 4473
C. Sampler Serial Number	95-099
D. Date and Time Sampler Unseated	12-20-95/20:10
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	320 mR/HR
H. Expected Sample Length	10"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

9a

(12) Field Comments

NO-XRAY SAMPLE WAS ONLY PUSHED 10"

(24) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	M. JONES James Sickels	1230 12-21-95	
(18) Relinquished By (Sign and PRINT) James Sickels		(20) Received By (Sign and PRINT) James R. Sickels	(21) Date/Time 0950 12-22-95	(22) Receiver Comments
(23) Relinquished By (Sign and PRINT) James R. Sickels		(24) Received By (Sign and PRINT) EE Dubas	(25) Date/Time 1047 12-22-95	(26) Receiver Comments
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(19) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No; Cask Seal No. ☑ Yes ☐ No; Sample No. ☑ Yes ☐ No

WHC-SD-WM-DP-181, REV. 1

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-98-TF (2) Sample Number 95-339 (3) Supervisor M.L. Jones

(4) Tank 241-U-109 (5) Riser 2 (6) Segment 4 (7) Core 123 (8) Cask Serial Number SW-19-G

Radiation Survey Data:	(9) FIELD	(23) LABORATORY
Over Top Dose Rate	40.5	40.5
Side Dose Rate	12	14
Bottom Dose Rate	8	5
Smearable Contamination	420 (Alpha)	UNABLE TO (Alpha)
	4000 (Beta-Gamma)	DEFAIL SURFACE (WET) (Beta-Gamma)
NCT* (HPT)	(Signature)	NCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-0020
B. Cask Seal Number	323 4474
C. Sampler Serial Number	95-110
D. Date and Time Sampler Uncovered	12-20-95/21:34
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	200 MR/HR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

63

(12) Field Comments

NO. X-RAY WAS DONE.

(24) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	For M. Jones James Sickels	0715 12-22-95	
(18) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels			0715 12-22-95	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
		E.E. Dubes	1047 12-22-95	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

WHC-SD-WM-DP-181, REV. 1

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number: 2000-08-TF (2) Sample Number: 95-340 (3) Supervisor: Hartley

(4) Tank: U-109 (5) Riser: 2 (6) Segment: #5 (7) Core: 123 (8) Cask Serial Number: 16

Indication Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5	<.5
Side Dose Rate	7	7
Bottom Dose Rate	6	7
Smearable Contamination	<20 (Alpha)	<20 (Alpha)
	<1000 (Beta-Gamma)	<1000 (Beta-Gamma)
RCT (HPT)	(Signature)	RCT (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-00210/C
B. Cask Seal Number	4453
C. Sampler Serial Number	95-113
D. Date and Time Sampler Unsealed	12-21-95, 0526
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	HCC MV 142.
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

(12) Field Comments: Sampler Reasonably clean, some moisture on bottom.

(34) Laboratory Comments:

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	2225	For Hartley James Sickels	1010 12-22-95	
(18) Relinquished By (Sign and PRINT)		(19) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels		James Sickels	1209 12-22-95	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
James Sickels		EEDukes	1245 12-22-95	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with Site Record?		
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

WHC-SD-WM-DP-181, REV. 1

Pink - Core Surveillance, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-305 (02/94)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number: 2000-08-TF (2) Sample Number: 95-341 (3) Supervisor: Hartley

(4) Tank: U-109 (5) Riser: 7 (6) Segment: 6 (7) Core: 123 (8) Cask Solid Number: C2017

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	40.5	40.5
Side Dose Rate	18	23
Bottom Dose Rate	25	23
Smearable Contamination	620 (Alpha)	NOT ABLE (Alpha)
	4000 (Beta-Gamma)	TO PERFORM SURVEY (Beta-Gamma) (WET)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-CC210
B. Cask Seal Number	~~4454~~ 4477
C. Sampler Solid Number	95-114
D. Date and Time Sampler Unseated	12-21-95, 1102
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	1.8R
H. Expected Sample Length	14'

(11) INFORMATION (Include statement of laboratory tests to be performed.)

(12) Field Comments

NO - X-RAY
WASTE on bottom of sampler ½"

(34) Laboratory Comments:

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222S	James Sickels	0930 12-22-95	
(18) Relinquished By (Sign and PRINT)		(19) Received By (Sign and PRINT)	(20) Date/Time	(21) Receiver Comments
James Sickels			0955 12-22-95	
(22) Relinquished By (Sign and PRINT)		(23) Received By (Sign and PRINT)	(24) Date/Time	(25) Receiver Comments
		EEDubs	1047 12-22-95	
(26) Relinquished By (Sign and PRINT)		(27) Received By (Sign and PRINT)	(28) Date/Time	(29) Receiver Comments

(30) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☐ Yes ☐ No; Cask Seal No. ☑ Yes ☐ No; Sample No. ☑ Yes ☐ No

WHC-SD-WM-DP-181, REV. 1

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5 of 5

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-OB-TF (2) Sample Number 95-342 (3) Supervisor M.C. Jones

(4) Tank U-109 (5) Riser 2 (6) Segment 7 (7) Core 123 (8) Cask Serial Number SN-2-S

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5	<0.5
Side Dose Rate	20	20
Bottom Dose Rate	7	7
Smearable Contamination	<20 (Alpha)	<20 (Alpha)
	4000 (Beta-Gamma)	4000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description	
A. Work Package Number	WS-95-0021C
B. Cask Seal Number	3244
C. Sampler Serial Number	95-115
D. Date and Time Sampler Unseated	12-29-95/0200
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1100 MR/HR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

72

(12) Field Comments
NO -X-RAY

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	M.C. Jones James Sickels	1410 12-29-95	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels		James L. Fuhrmann	1410 12-29-95	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
James L. Fuhrmann		[illegible]	1437 12-29-95	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

WHC-SD-WM-DP-181, REV. 1

TF 5000-103 (12/94)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number 200U-08-TF (2) Sample Number 95-303 (3) Supervisor M. C. Jones

(4) Tank U-109 (5) Riser 2 (6) Segment 8 (7) Core 123 (8) Cask Serial Number SA-[illegible]

Radiation Survey Data:	(9) FIELD	(9.3) LABORATORY
Over Top Dose Rate	40.5	40.5
Side Dose Rate	21	21
Bottom Dose Rate	9	9
Smearable Contamination	420 (Alpha)	[illegible] (Alpha)
	4000 (Beta-Gamma)	4000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description	
A. Work Package Number	WS-95-00210
B. Cask Seal Number	3285
C. Sampler Serial Number	95-108
D. Date and Time Sampler Unseated	12-28-95/04:00
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1.5R/HR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

FL

(12) Field Comments

NO X-RAY

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	Fred M. Jones / Jones Sickels	12-21-95 10:00	
(18) Relinquished By (Sign and PRINT)		(19) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
Jones Sickels		Jones Sickels	12-28-95	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
Jones Sickels		Keith Fuller / KEITH FULLER	1432 12-28-95	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Continuous with this Record?		
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

WHC-SD-WM-DP-181, REV. 1

[illegible] (02/94)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number 200W-08-TF (2) Sample Number 95-344 (3) Supervisor M.C. Jones

(4) Tank U-109 (5) Riser 2 (6) Segment 9 (7) Core 123 (8) Cask Seal Number SN-24-6

Radiation Survey Data:	(9) FIELD	(23) LABORATORY
Over Top Dose Rate	<0.5	<0.5
Side Dose Rate	17	17
Bottom Dose Rate	9	9
Smearable Contamination	<20 (Alpha)	<20 (Alpha)
	4000 (Beta-Gamma)	4000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description	
A. Work Package Number	WS-95-00210
B. Cask Seal Number	4466
C. Sampler Seal Number	95-152
D. Date and Time Sampler Unsealed	12-28-95, 1034
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1 R/HR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

74

(12) Field Comments

NO- X-RAY

SLUDGE ON Sampler

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	For M. Jones James Sickels	12-29-95	
(18) Relinquished By (Sign and PRINT)		(19) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels		James R. Takahashi	12-29-95	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT) Gary Lafleur	(25) Date/Time 12-29-95	(26) Receiver Comments
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(30) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, 86-85 Goldenrod - Tank Farm Operations, 84-43 BC-6000-309 (03/94)

WHC-SD-WM-DP-181, REV. 1

96000017
S96T000119

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number: N/A (2) Sample Number: Li BLANK (3) Supervisor: M.C Jones

(4) Tank: U-109 (5) Riser: 19 (6) Segment: BLANK (7) Core: 124 (8) Cask Serial Number: N/A

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5 mr/hr	<0.5 mr/hr
Side Dose Rate	<0.5 mr/hr	<0.5 mr/hr
Bottom Dose Rate	<0.5 mr/hr	<0.5 mr/hr
Smearable Contamination	<20 dpm (Alpha)	<20 dpm (Alpha)
	<1K dpm (Beta-Gamma)	<1K dpm (Beta-Gamma)
RCT (HPT)	Lorna Q. Brown (Signature)	RCT (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-0210
B. Cask Seal Number	10485
C. Sampler Serial Number	N/A
D. Date and Time Sampler Unseated	1-4-96 / 10:20
E. Expected Liquid Content	100%
F. Expected Solid Content	0%
G. Dose Rate Through Drill String	<.5 mr/hr
H. Expected Sample Length	N/A

(11) INFORMATION (Include statement of laboratory tests to be performed.)

75

(12) Field Comments

Lithium Bromide BLANK 100 ML

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	MC JONES	1-4-96 1030	
(18) Relinquished By (Sign and PRINT)		**(20) Received By (Sign and PRINT)**	**(21) Date/Time**	**(22) Receiver Comments**
James Sickels			1-4-96 1030	
(23) Relinquished By (Sign and PRINT)		**(24) Received By (Sign and PRINT)**	**(25) Date/Time**	**(26) Receiver Comments**
		N. LAPIERS	1-4-96 1115	
(27) Relinquished By (Sign and PRINT)		**(28) Received By (Sign and PRINT)**	**(29) Date/Time**	**(30) Receiver Comments**

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S8-65 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

WHC-SD-WM-DP-181, REV. 1

96 000013
S96T000118

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number 57223 (2) Sample Number Field Blank (3) Supervisor M.C. Jones

(4) Tank U-109 (5) Riser 19 (6) Segment Blank (7) Core 124 (8) Cask Serial Number SU-67

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5	<.5
Side Dose Rate	<0.5	<.5
Bottom Dose Rate	<0.5	<.5
Smearable Contamination	<20 (Alpha)	<20 (Alpha)
	<1000 (Beta/Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description	
A. Work Package Number	WS-95-00210
B. Cask Seal Number	10483
C. Sampler Serial Number	95-041
D. Date and Time Sampler Unseated	1-4-96 / 10:15
E. Expected Liquid Content	100 %
F. Expected Solid Content	0 %
G. Dose Rate Through Drill String	<.5 MR/HR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

7.0

(12) Field Comments

Field Blank with H_2O.

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	M.C. Jones M.C. Jones	1-4-96 1030	
(18) Relinquished By (Sign and PRINT) For M. Jones James Sickels		(20) Received By (Sign and PRINT) David Keane	(21) Date/Time 1-5-96 10:00	(22) Receiver Comments
(23) Relinquished By (Sign and PRINT) David Keane		(24) Received By (Sign and PRINT) EEDubes	(25) Date/Time 1-5-96 1035	(26) Receiver Comments
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☐ Yes ☐ No; Cask Seal No. ☑ Yes ☐ No; Sample No. ☑ Yes ☐ No

WHC-SD-WM-DP-181, REV. 1

RC-5000-309 (02/94)

960000 13
S96T000120

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number: 57221 (2) Sample Number: 96-001 (3) Supervisor: Hartley

(4) Tank: U-109 (5) Riser: 19 (6) Segment: 1 (7) Core: 127 (8) Cask Serial Number: C2815

Radiation Survey Data:	(9) FIELD	(32) LABORATORY
Over Top Dose Rate	<0.5 mr	<0.5 mR
Side Dose Rate	1.7 mr	1.5 mR
Bottom Dose Rate	2.7 mr	2.0 mR
Smearable Contamination	<20 dpm (Alpha)	<20 dpm (Alpha)
	<1000 dpm (Beta-Gamma)	<1000 dpm (Beta-Gamma)
	RCT (HPT) (Signature)	RCT (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-00210/0
B. Cask Seal Number	4461
C. Sampler Serial Number	95-003
D. Date and Time Sampler Unseated	1-2-96, 2131
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	70 mr/HR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

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To: Jim Lee	From: John Baldwin
Co.	Co.
Dept.	Phone # 373 4533
Fax # 376 7191	Fax #

(12) Field Comments: Sampler Weton Bottom

(34) Laboratory

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	M.C. Jones	1-4-96 8:00	
(18) Relinquished By (Sign and PRINT)		**(19) Received By (Sign and PRINT)**	**(20) Date/Time**	**(22) Receiver Comments**
James Sickels JAMES SICKELS		C.E. Byd	1-4-96 1030	
(23) Relinquished By (Sign and PRINT)		**(24) Received By (Sign and PRINT)**	**(25) Date/Time**	**(26) Receiver Comments**
C.E. Byd		N. Lapiers N. LAPIERS	1-4-96 11:29	
(27) Relinquished By (Sign and PRINT)		**(28) Received By (Sign and PRINT)**	**(29) Date/Time**	**(30) Receiver Comments**

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

WHC-SD-WM-DP-181, REV. 1

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S8-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

S96T000121
9600003

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 57221 (2) Sample Number 96-002 (3) Supervisor Hartley

(4) Tank 4-109 (5) Riser 19 (6) Segment 2 (7) Core 124 (8) Cask Serial Number C2009

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5	<0.5 mr
Side Dose Rate	2.0 mr	1.5 mr
Bottom Dose Rate	2.5 mr	2.0 mr
Smearable Contamination	<20 dpm (Alpha)	<20 dpm (Alpha)
	<1000 dpm (Beta-Gamma)	<1000 dpm (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description	
A. Work Package Number	WS-95-00210/0
B. Cask Seal Number	4467
C. Sampler Serial Number	95-052
D. Date and Time Sampler Uncoated	1-3-96 0217
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	140 MR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

TB

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
4-109	222-S	M.C. Jones M.C. JONES	1-4-96 8:00	
(18) Relinquished By (Sign and PRINT)		(19) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels James Sickels		C.E. Byrd C.E. Byrd	1-4-96 1080	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
C.E. Byrd C.E. Byrd		N. Lapiers N. LAPIERS	1-4-96 11:27	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Date Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

Distribution: White - Core Sampling; Canary - Tank Farm Operations, S4-43

BC-6000-303 (02/94)

WHC-SD-WM-DP-181 REV. 1

S96T000122
9600013

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 57221 (2) Sample Number 96-003 (3) Supervisor Hartley

(4) Tank U-109 (5) Riser 19 (6) Segment 3 (7) Core 124 (8) Cask Seal Number 31-G

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5 mr	
Side Dose Rate	17 mr	14 mr/hr
Bottom Dose Rate	9 mr	7 mr/hr
Removable Contamination	<20 dpm (Alpha)	<20 dpm (Alpha)
	<1000 dpm (Beta-Gamma)	<1000 dpm (Beta-Gamma)
RCT* (HPT)	Timothy E Carmen (Signature)	RCT* (HPT) J K Morris (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-00210/0
B. Cask Seal Number	4463
C. Sampler Seal Number	95-053
D. Date and Time Sampler Unsealed	1-3-96, 1823
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	900 mr/HR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

FJ

(12) Field Comments

Damp on Bottom of Sampler

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	McJa Jones McC	1-4-96 0930	

(18) Relinquished By (Sign and PRINT)	(19) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels	James Sickels	1-4-96 1030	

(23) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
	N. Lapiers N. LAPIERS	1-4-96 11:15	

(27) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

WHC-SD-WM-DP-181, REV. 1

S96T000123
96000013

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 57222 (2) Sample Number 96-004 (3) Supervisor Hartley

(4) Tank U-109 (5) Riser 19 (6) Segment 4 (7) Core 124 (8) Cask Solid Number C 2013

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5	<0.5
Side Dose Rate	14	13
Bottom Dose Rate	11	11
Removable Contamination	<20 (Alpha)	<20 (Alpha)
	4000 (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description	
A. Work Package Number	WS-95-00240
B. Cask Seal Number	4455
C. Sampler Solid Number	95-048 2143
D. Date and Time Sampler Unsealed	1-3-96, 1400 HR
E. Exposed Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	1 R/HR.
H. Expected Sample Length	19"

(11) INFORMATION (include statement of laboratory tests to be performed.)

NO

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	M. Jones M.C. JONES	1-4-96 1400	
(18) Relinquished By (Sign and PRINT) Fred M. Jones James Sickels		(19) Received By (Sign and PRINT) Dave Dave O'Keane Keane	(20) Date/Time 1-5-96	(21) Receiver Comments
(22) Relinquished By (Sign and PRINT) Dave Dave O'Keane Keane		(23) Received By (Sign and PRINT) E.E. Dubes E.E. Dubes	(24) Date/Time 1-5-96 0930	(25) Receiver Comments
(26) Relinquished By (Sign and PRINT)		(27) Received By (Sign and PRINT)	(28) Date/Time	(29) Receiver Comments

(30) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No; Cask Seal No. ☑ Yes ☐ No; Sample No. ☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Mgmt ... Yellow - Originator ...

WHC-SD-WM-DP-161, REV. 1

596T000124
9600013

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 57220 (2) Sample Number 96-005 (3) Supervisor R. F. Grant

(4) Tank U-109 (5) Riser 19 (6) Segment 5 (7) Core 124 (8) Cask Seal Number C 2014

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5mr	<0.5 mr
Side Dose Rate	17mr	17 mr
Bottom Dose Rate	13mr	20 mr
Smearable Contamination	<20 dpm (Alpha)	<20 dpm (Alpha)
	<1000 dpm (Beta-Gamma)	<1000 dpm (Beta-Gamma)
RCT (HPT)	Timothy E Connor (Signature)	RCT (HPT) JR Morales (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-00210
B. Cask Seal Number	10386
C. Sampler Seal Number	95-056
D. Date and Time Sampler Uncovered	1-4-96 0219
E. Expected Liquid Content	0%
F. Expected Solid Content	100%
G. Dose Rate Through Drill String	1.4 R
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

(12) Field Comments

NO X-RAY
½" sludge on bottom of sampler.

(24) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	M. C. Jones	1-4-96 8:00	
(18) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
for M. Jones James Sickels		C E Byrd	1-4-96 0915	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
C E Byrd		N. Lapiers	1-4-96	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(19) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling SS-85 Goldenrod - Tank Farm Operations S-4-42

WHC-SD-WM-DP-181, REV. 1

S95-100125
96600013

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 57220 (2) Sample Number 96-006 (3) Supervisor R. Frank Eustill

(4) Tank U-109 (5) Riser 19 (6) Segment 6 (7) Core 124 (8) Cask Seal Number 14-G

Radiation Survey Data:	(9) FIELD	(10) LABORATORY
Over Top Dose Rate	<0.5mr	<0.5
Side Dose Rate	20mr	31 MR
Bottom Dose Rate	14mr	20
Smearable Contamination	<20 dpm (Alpha)	<20 dpm (Alpha)
	<1000 dpm (Beta-Gamma)	<1,000 dpm (Beta-Gamma)
RCT (HPT)	(Signature)	RCT (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-00210
B. Cask Seal Number	10398
C. Sampler Serial Number	94-427
D. Date and Time Sampler Unseated	1-4-96 0333
E. Expected Liquid Content	0%
F. Expected Solid Content	100%
G. Dose Rate Through Drill String	1.7R
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)
Lab HPT Dose rates were taken through side of CH Barrell, CPO HPT used end of Barrell for taking Dose rates JRM 1-4-96

(12) Field Comments
NO X-RAY
1/2" material on sample bottom.

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	M.C. JONES	1-4-96 8:00	
(18) Relinquished By (Sign and PRINT)		(19) Received By (Sign and PRINT)	(20) Date/Time	(22) Receiver Comments
Lance M. Jones Sickels		C. E. Byrd	1-4-96 09:16	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
C. E. Byrd		N. LAPIERS	1-4-96 0926	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No; Cask Seal No. ☑ Yes ☐ No; Sample No. ☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management. Yellow - Recipient of Sample. Pink - Core Sampling, S6-55. Goldenrod - Tank Farm Operations, S4-43

BC-6000-309 (02/94)

WHC-SD-WM-DP-181, REV. 1

S96T000126

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number: _____ (2) Sample Number: 96-007 (3) Supervisor: R. Frank Fuest Jr.

(4) Tank: U-109 (5) Riser: 19 (6) Segment: 7 (7) Core: 124 (8) Cask Seal Number: C 2012

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5 mr	<0.5 mr/HR
Side Dose Rate	15 mr	15 mr/HR
Bottom Dose Rate	8 mr	10 mr/HR
Smearable Contamination	<20 dpm (Alpha)	<20 dpm (Alpha)
	<1000 dpm (Beta-Gamma)	<1000 dpm (Beta-Gamma)
	RCT* (HPT) (Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-00210
B. Cask Seal Number	10394
C. Sampler Serial Number	94-055
D. Date and Time Sampler Unseated	1-4-96 0495
E. Expected Liquid Content	0%
F. Expected Solid Content	100%
G. Dose Rate Through Drill String	1.1R
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

00
C

(12) Field Comments

NO X-RAY
1/2" of sludge on bottom of sampler

(24) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	M. Jones	1-4-96 8:30	

(18) Relinquished By (Sign and PRINT)	(19) Received By (Sign and PRINT)	(20) Date/Time	(21) Receiver Comments
James Sickels	Chad Byd	1-4-96 0915	

(22) Relinquished By (Sign and PRINT)	(23) Received By (Sign and PRINT)	(24) Date/Time	(25) Receiver Comments
Chad Byd	N. LAPIERS	1-4-96 0451	

(26) Relinquished By (Sign and PRINT)	(27) Received By (Sign and PRINT)	(28) Date/Time	(29) Receiver Comments

(30) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No; Cask Seal No. ☑ Yes ☐ No; Sample No. ☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, 55-85 Goldenrod - Tank Farm Operations, 24-43

WHC-SD-WM-DP-181, REV. 1

96000013
S9000128

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 57222 (2) Sample Number 96-009 (3) Supervisor M. C. Jones

(4) Tank U-109 (5) Riser 19 (6) Segment 9 (7) Core 124 (8) Cask Seal Number 5-G

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<0.5	<0.5
Side Dose Rate	16	16
Bottom Dose Rate	8	7
Removable Contamination	<20 (Alpha)	<20 (Alpha)
	4000 (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number U/S-95-00210
B. Cask Seal Number 10884
C. Sampler Serial Number 94-421
D. Date and Time Sampler Unseated 1-4-96, ~~1107~~ 1107
E. Expected Liquid Content 30%
F. Expected Solid Content 70%
G. Dose Rate Through Drill String 200 mR/HR
H. Expected Sample Length 16ft

(11) INFORMATION (Include statement of laboratory tests to be performed.)

00
U.

(12) Field Comments

HDB went off with 2¾" left in stroke.
No x-ray

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	For M. Jones James Sickels	1-5-96 0900	
(18) Relinquished By (Sign and PRINT)		**(19) Received By (Sign and PRINT)**	**(21) Date/Time**	**(22) Receiver Comments**
James Sickels	James Sickels	David Keane Dave Keane	1-5-96	
(23) Relinquished By (Sign and PRINT)		**(24) Received By (Sign and PRINT)**	**(25) Date/Time**	**(26) Receiver Comments**
David Keane	Dave Keane	EEDobs	1-5-96 0930	
(27) Relinquished By (Sign and PRINT)		**(28) Received By (Sign and PRINT)**	**(29) Date/Time**	**(30) Receiver Comments**

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

WHC-SD-WM-DP-161, REV. 1

U 96000033
S96T000383

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

3OF1

(1) Shipment Number 57256 (2) Sample Number 96-025 (3) Supervisor Hartley

(4) Tank 4-109 (5) Riser 7 (6) Segment 1 (7) Core 128 (8) Cask Seal Number 23-G

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	2.5 mr/hr	2.5 mr/hr
Side Dose Rate	12 mr/hr	12 mr/hr
Bottom Dose Rate	10 mr/hr	10 mr/hr
Removable Contamination	<20 dpm/100cm² (Alpha)	<20 (Alpha)
	<1000 dpm/100cm² (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-00210/0
B. Cask Seal Number	4482
C. Sampler Serial Number	94-413
D. Date and Time Sampler Uncovered	1-16-96, 1028
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	250 mr/hr
H. Expected Sample Length	171'

(11) INFORMATION (Include statement of laboratory tests to be performed.)

GD
9.

(12) Field Comments: Sampler Looked Clean

(34) Laboratory Comments:

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
4-109	2225	For Hartley James Sickels	1-18-96 1200	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels James Sickels		JL Hensley JL Hensley	1-18-96 1200	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
JL Hensley JL Hensley		FE Dukes FE Dukes	1-19-96 1735	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S8-05 Goldenrod - Tank Farm Operations, S4-43

BC-6000-309 (02/94)

WHC-SD-WM-DP-181, REV. 1

COPY

CHAIN-OF-CUSTODY R. ORD FOR CORE SAMPLING

96000033
596T000384

(1) Shipment Number 572-56 (2) Sample Number 96-026 (3) Supervisor Hartley

(4) Tank U109 (5) Riser 7 (6) Segment 2 (7) Core 128 (8) Cask Seal Number 106

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.5 mr/hr	<.5 mr/hr
Side Dose Rate	12 mr/hr	[illegible]
Bottom Dose Rate	10 mr/hr	8 mr/hr
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20 (Alpha)
	<1000 dpm/100cm² (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description	
A. Work Package Number	WS-95-00210/0
B. Cask Seal Number	4485
C. Sampler Serial Number	94-426
D. Date and Time Sampler Unsealed	1-16-96, 1420
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	300 mR
H. Expected Sample Length	19'

(11) INFORMATION (Include statement of laboratory tests to be performed.)

00

(12) Field Comments:
① small amount of water on sample bottom
② no x-ray

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222S	For Hartley James Sickels	1-19-96 1200	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels JAMES SICKELS		J L HENSLEY J L Hensley	1-19-96 1300	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
J L HENSLEY J L Hensley		F E DeBoer F E DeBoer	1-19-96 1235	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Date Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, 36-65 Goldenrod - Tank Farm Operations, 54-43

WHC-SD-WM-DP-131, REV. 1

SC-6000-308 (02/94)

01/19/96 13:47 509 373 1434

96000033
S96T000385

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number 2004 (2) Sample Number 96-027 (3) Supervisor R. Frank Frost

(4) Tank U-109 (5) Riser 7 (6) Segment 3 (7) Core 128 (8) Cask Solid Number 1-G

Radiation Survey Data:	(9) FIELD	(23) LABORATORY
Over Top Dose Rate	<0.5	<0.5
Side Dose Rate	0	15
Bottom Dose Rate	9	10
Smearable Contamination	<20 (Alpha)	<20 (Alpha)
	4000 (Beta-Gamma)	<1K (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-00210
B. Cask Seal Number	1596
C. Sampler Serial Number	94-409 1-16-96
D. Date and Time Sampler Unseated	1-16-96 1843
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	800mR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

(12) Field Comments: No X-ray small amount of material on end of sample.

(24) Laboratory Comments:

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-U-109	222S	Frank Frost / James Sickels	1-22-96 1330	

(18) Relinquished By (Sign and PRINT)	(19) Received By (Sign and PRINT)	(20) Date/Time	(21) Receiver Comments
James Sickels / James Sickels	Donald Gano / Donald Gano	1-22-96 1333	

(22) Relinquished By (Sign and PRINT)	(23) Received By (Sign and PRINT)	(24) Date/Time	(25) Receiver Comments
Donald Gano / Donald Gano	Edward Erdos / EE Erdos	1-22-96 1400	

(26) Relinquished By (Sign and PRINT)	(27) Received By (Sign and PRINT)	(28) Date/Time	(29) Receiver Comments

(30) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No; Cask Seal No. ☑ Yes ☐ No; Sample No. ☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, 35-65 Goldenrod - Tank Farm Operations, 24-43

SC-6000-309 (02/94)

WHC-SD-WM-DP-181, REV. 1

96000623
S96T000386

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-OP-TF (2) Sample Number 96-028 (3) Supervisor M. C. Jones

(4) Tank U-109 (5) Floor 7 (6) Segment 4 (7) Core 128 (8) Cask Serial Number C-2014

COPY

Radiation Survey Data:	(9) FIELD	(32) LABORATORY
Over Top Dose Rate	<0.5	<0.5
Side Dose Rate	22	<22
Bottom Dose Rate	14	15
Smearable Contamination	<20 (Alpha)	<20 (Alpha)
	4000 (Beta-Gamma)	<110 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) Joe Valdez Jr. (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-00210
B. Cask Seal Number	10486
C. Sampler Serial Number	94-431
D. Date and Time Sampler Unwedged	1-17-96 0500
E. Expected Liquid Content	50%
F. Expected Solid Content	50%
G. Dose Rate Through Drill String	1.5 R/HR
H. Expected Sample Length	19

(11) INFORMATION (include statement of laboratory tests to be performed.)

GC
GS

(12) Field Comments:

LiBr was added to drill string

(34) Laboratory Comments:

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	For Jones James Sickels	1-22-96 1530	

(18) Relinquished By (Sign and PRINT)	(19) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels James Sickels	David Gore David Gore	1-22-96 1535	

(23) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
David Gore David Gore	E E Dubos	1-22-96 1600	

(27) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(30) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, 36-05 Goldenrod - Task Force Operations, 34-42 SC-2000-309 (02/94)

WHC-SD-WM-DP-181, REV. 1

96000033
S96T000389

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number 200W-98-TF (2) Sample Number 96-029 (3) Supervisor Mc JONES

(4) Tank U-109 (5) Riser 7 (6) Segment 5 (7) Core 128 (8) Cask Seal Number SD-31-6

Radiation Survey Data:	(9) FIELD	(32) LABORATORY
Over Top Dose Rate	<.5 mR/hr	<.5
Side Dose Rate	17 mR/hr	15
Bottom Dose Rate	14 mR/hr	15
Removable Contamination	<20 dpm	<20
(Alpha)	<1 dpm	<1K
(Beta-Gamma)		
RCT* (HPT) (Signature)	R Clem	Joe Valley Jr.

(10) Shipment Description	
A. Work Package Number	WS-95-00210
B. Cask Seal Number	104857
C. Sampler Serial Number	94-412
D. Date and Time Sampler Unseated	1-17-96/6:25
E. Expected Liquid Content	68%
F. Expected Solid Content	31%
G. Dose Rate Through Drill String	1R/HR
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

90

(12) Field Comments

LiBr was ADDED TO Drill String

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	222-S	Fred Jones / James Sickels	1-22-96 1933	
(18) Relinquished By (Sign and PRINT)		(19) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sickels		Daniel Gorre	1-22-96	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
Daniel Gorre		N LAPIERS	1-22-96 1500	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

WHC-SD-WM-DF-181, REV. 1

Yellow - Core Sampling, 56-85 Goldenrod - Tank Farm Operations, 84-43 BC-8000-309 (03/94)

96 000033
S96T009287

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 2000-08-TF (2) Sample Number 96-030 (3) Supervisor Hartley

(4) Tank U-109 (5) Riser 7 (6) Segment COPY (7) Core 128 (8) Cask Seal Number C2009

Radiation Survey Data:	(9) FIELD	(10) LABORATORY
Over Top Dose Rate	<0.5	<0.5
Side Dose Rate	19	20
Bottom Dose Rate	11	11
Smearable Contamination	<20 (dpm)	<20 (dpm)
	<100 (Beta-Gamma)	<1K (Beta-Gamma)
RCT* (PPT)	S.I. (Signature)	Joe Vally Jr. (Signature)

(11) Shipment Description

A. Work Package Number	WS-95-00210c
B. Cask Seal Number	4487
C. Sampler Serial Number	94-411
D. Date and Time Sampler Uncovered	1-17-96/1005
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	1 R/HR
H. Expected Sample Length	19'

(15) INFORMATION (Include statement of laboratory tests to be performed.)

91

(12) Field Comments: Small Amount of Sludge on Bottom of Sampler, 1 cup Lithium Bromide Added to Aid Sampler Seating in Core Barrel

(24) Laboratory Comments:

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	2225	For Hartley James Sickels	1-22-96 1330	
(18) Relinquished By (Sign and PRINT)		**(19) Received By (Sign and PRINT)**	**(20) Date/Time**	**(22) Receiver Comments**
James Sickels James Sickels		David Boyer David Boyer	1-22-96 1336	
(23) Relinquished By (Sign and PRINT)		**(24) Received By (Sign and PRINT)**	**(25) Date/Time**	**(26) Receiver Comments**
David Boyer David Boyer		F E Dulles FE Dulles	1-22-96 1400	
(27) Relinquished By (Sign and PRINT)		**(28) Received By (Sign and PRINT)**	**(29) Date/Time**	**(30) Receiver Comments**

(10) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with Site Record?		
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, 26-05 Goldenrod - Task Form Operations, 54-43

WHC-SD-WM-DP-181, REV. 1

BC-6000-309 (03/94)

(96000033
S96T000388

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 57256 (2) Sample Number 96-031 (3) Supervisor Hartley

(4) Tank U-109 (5) Riser 7 (6) Segment 7 (7) Core 128 (8) Cask Serial Number C2015

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.5 mr/hr	<.5 mr/hr
Side Dose Rate	25 mr/hr	25 mr/hr
Bottom Dose Rate	20 mr/hr	20 mr/hr
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20 (Alpha)
	<1000 dpm/100cm² (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description	
A. Work Package Number	WS-95-002 R1/0
B. Cask Seal Number	H486
C. Sampler Serial Number	94-051
D. Date and Time Sampler Unseated	1-17-96, 1359
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	1R
H. Expected Sample Length	19'

(11) INFORMATION (Include statement of laboratory tests to be performed.)

92

(12) Field Comments: large amount of waste on end of sample. NO X-ray

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	2225	For Hartley James Sickels	1-19-96 1200	
(18) Relinquished By (Sign and PRINT)		**(20) Received By (Sign and PRINT)**	**(21) Date/Time**	**(22) Receiver Comments**
James Sickels		J L Hensley	1-19-96 1200	
(23) Relinquished By (Sign and PRINT)		**(24) Received By (Sign and PRINT)**	**(25) Date/Time**	**(26) Receiver Comments**
J L Hensley		E E Dickes	1-19-96 1235	
(27) Relinquished By (Sign and PRINT)		**(28) Received By (Sign and PRINT)**	**(29) Date/Time**	**(30) Receiver Comments**

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
☑ Yes ☐ No	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S4-55 Goldenrod - Task Form Operations, S4-43

BC-6000-309 (02/94)

WHC-SD-WM-DP-181, REV. 1

96000033
S96T000390

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number 200W-98-TF (2) Sample Number 96-032 (3) Supervisor [illegible]

(4) Tank 11-109 (5) Riser 7 (6) Segment 8 (7) Core 128 (8) Cask Serial Number C-2013

Radiation Survey Data:	(9) FIELD	(23) LABORATORY
Over Top Dose Rate	<.5 mR/hr	<.5
Side Dose Rate	16 mR/hr	15
Bottom Dose Rate	8 mR/hr	10
Smearable Contamination	~20 dpm (Alpha)	<20 (Alpha)
	<11 dpm (Beta-Gamma)	<11 (Beta-Gamma)
RCT* (HPT)	R Klein (Signature)	RCT* (HPT) Joe Vally Jr. (Signature)

(10) Shipment Description

A. Work Package Number	WS-96-00210
B. Cask Seal Number	10395
C. Sampler Serial Number	94-410
D. Date and Time Sampler Uncapped	1-17-96 / 1841
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	1.2R
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

PG

(12) Field Comments: NO-XRAY sampler clean

(24) Laboratory Comments:

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
SL-109	2225 Lab	Joe Frost James Sokels	1435 1-22-96	
(18) Relinquished By (Sign and PRINT)		(19) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James Sokels James Sokels		David Dye David Dye	1-22-96	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
David Dye David Dye		N. Lapiers N. LAPIERS	1505 1-22-96	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?
☐ Yes ☐ No	☒ Yes ☐ No	Shipment No. ☒ Yes ☐ No; Cask Seal No. ☒ Yes ☐ No; Sample No. ☒ Yes ☐ No

WHC-SD-WM-DP-131, REV. 1

Yellow - Recipient of Sample Pink - Core Sampling, 24-25 Goldenrod - Tank Farm Operations, 24-43 BC-6000-309 (02/94)

96000033
596T00039/

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number 200W-08-TT (2) Sample Number 96-033 (3) Supervisor [illegible]

(4) Tank U-109 (5) Riser 7 (6) Segment 9 (7) Core 128 (8) Cask Seal Number C 2018

Radiation Survey Data:	(9) FIELD	(10) LABORATORY
Over Top Dose Rate	<.5 mR/hr	<5
Side Dose Rate	10 mR/hr	10
Bottom Dose Rate	8 mR/hr	10
Smearable Contamination	<20 dpm (Alpha)	<20
	<1K dpm (Beta-Gamma)	<4K
RCT* (RPT)	(Signature)	RCT* (RPT) (Signature)

(10) Shipment Description

A. Work Package Number	WS-95-00210
B. Cask Seal Number	1592
C. Sampler Serial Number	94-434
D. Date and Time Sampler Uncovered	1-19-96 / 0948
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	SEE WS/WP
H. Expected Sample Length	19"

(11) INFORMATION (Include statement of laboratory tests to be performed.)

94

(12) Field Comments

No X ray
Sampler Wet on Bottom

(13) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
U-109	2225 Lab	James Sickels	1/22/96 1400	
(18) Relinquished By (Sign and PRINT)		(19) Received By (Sign and PRINT)	(20) Date/Time	(21) Receiver Comments
James Sickels		David Day	1/22/96 1450	
(22) Relinquished By (Sign and PRINT)		(23) Received By (Sign and PRINT)	(24) Date/Time	(25) Receiver Comments
David Day		Natalie Lapiers	1-22-96 1545	
(26) Relinquished By (Sign and PRINT)		(27) Received By (Sign and PRINT)	(28) Date/Time	(29) Receiver Comments

(30) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
☑ Yes ☐ No	☒ Yes ☐ No	Shipment No. ☒ Yes ☐ No	Cask Seal No. ☒ Yes ☐ No	Sample No. ☒ Yes ☐ No

WHC-SD-WM-DP-181, REV. 1

PHOTOGRAPHS

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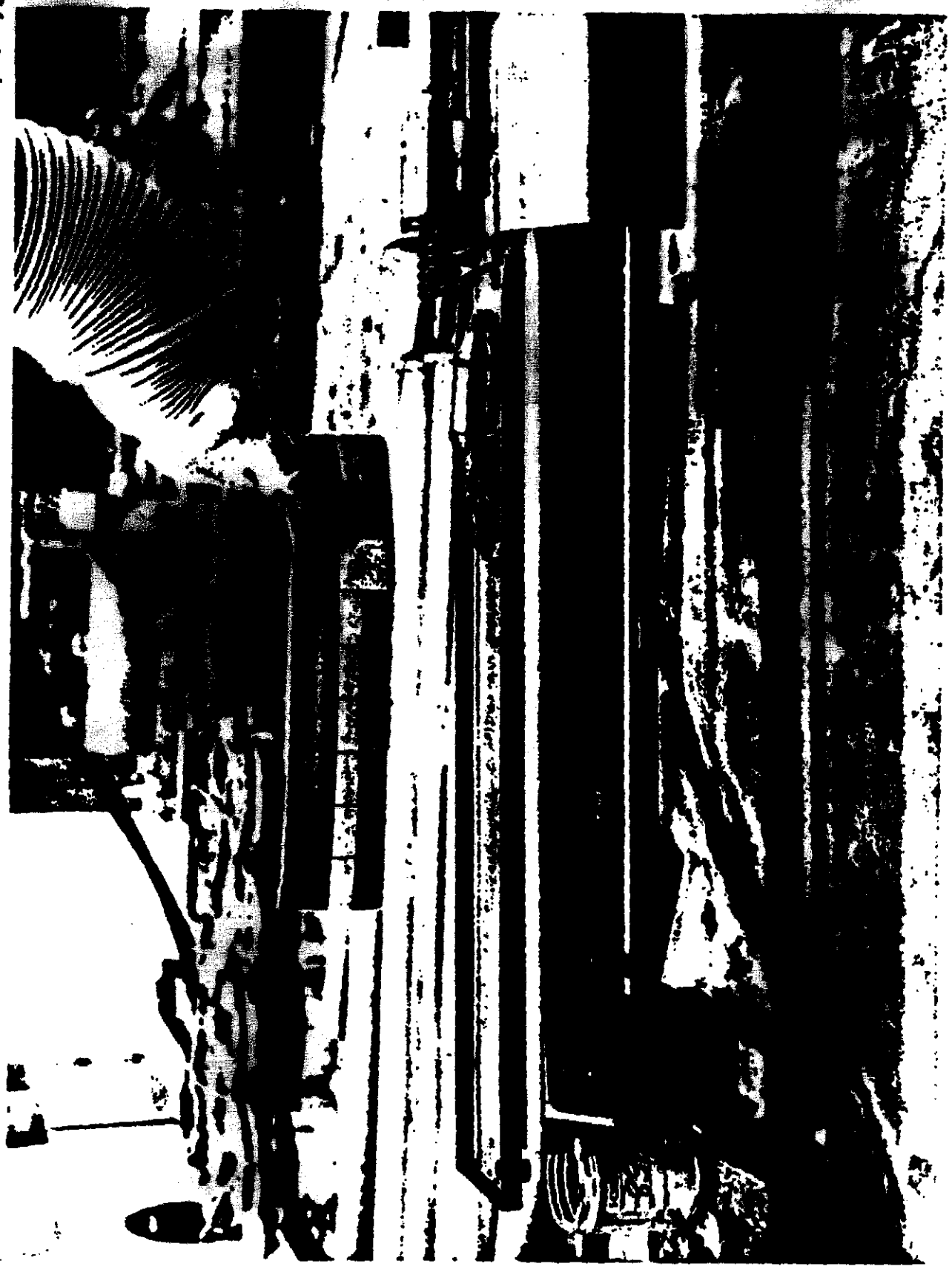
1-2-96

U-109 Core 123 Segment #1



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1-5-96

U-109 Core 123 Segment #2

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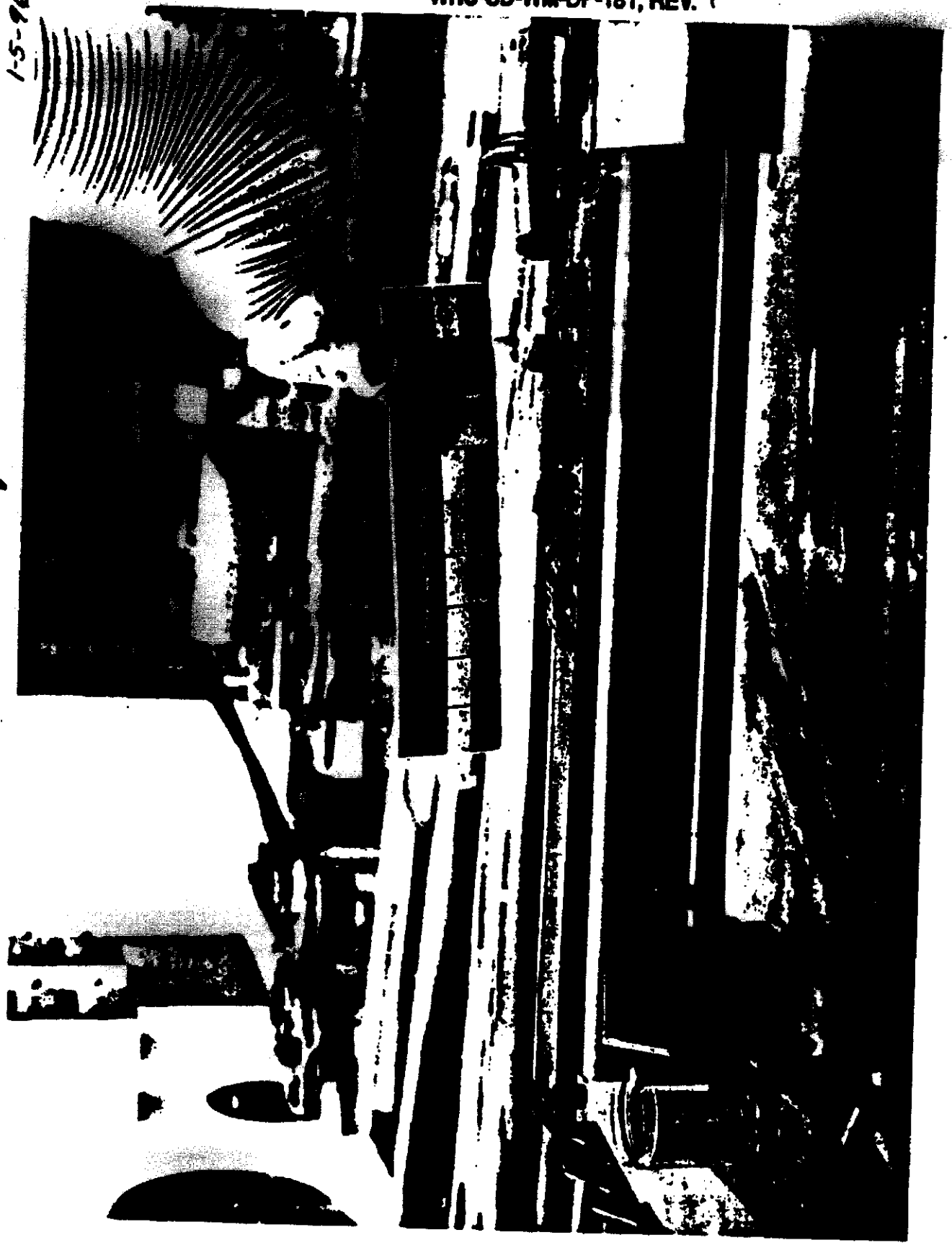
1-5-96

U-109 Core 123 Segment #3



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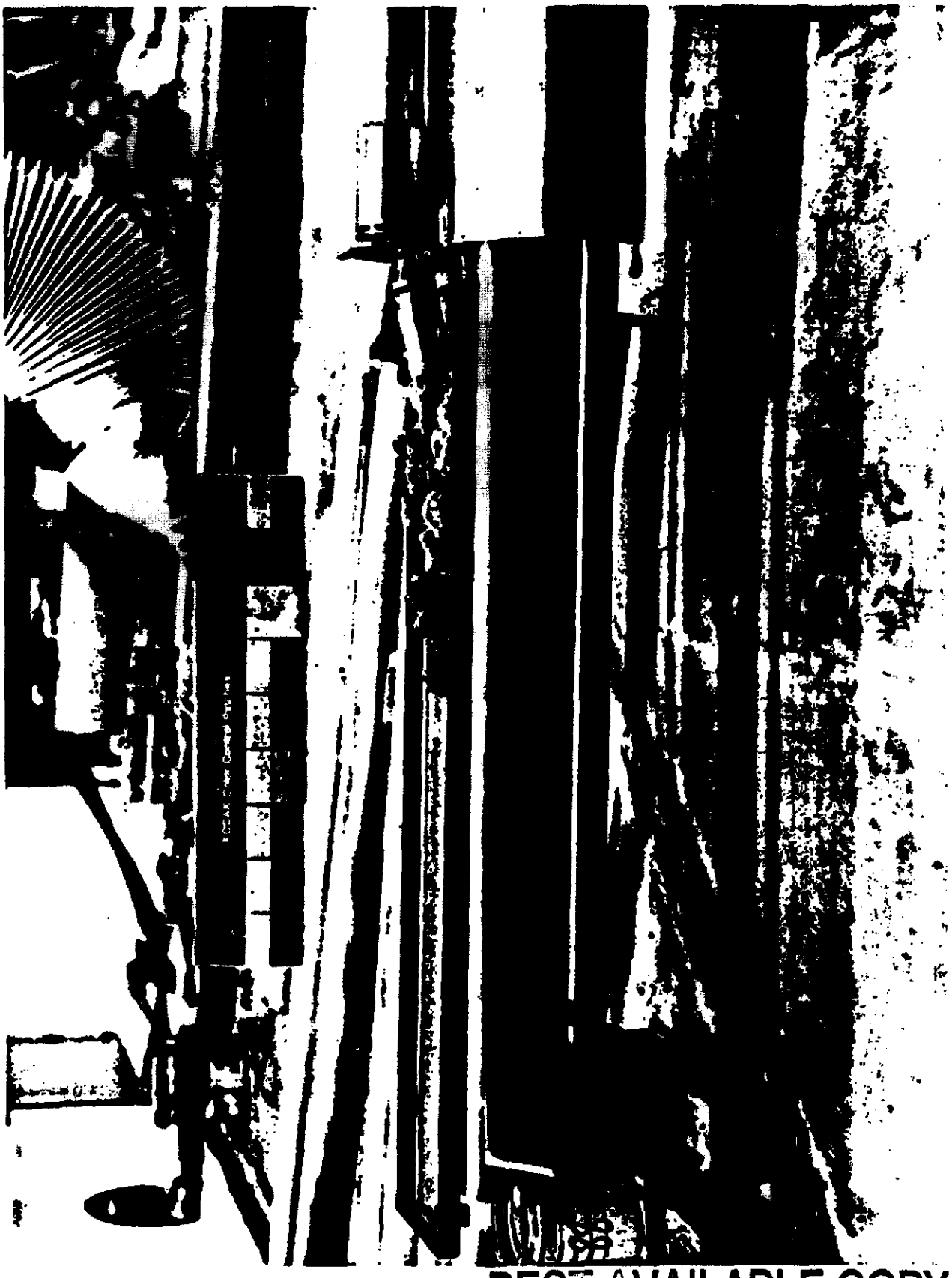
1-8-96

U-109 Core 123 segment 34



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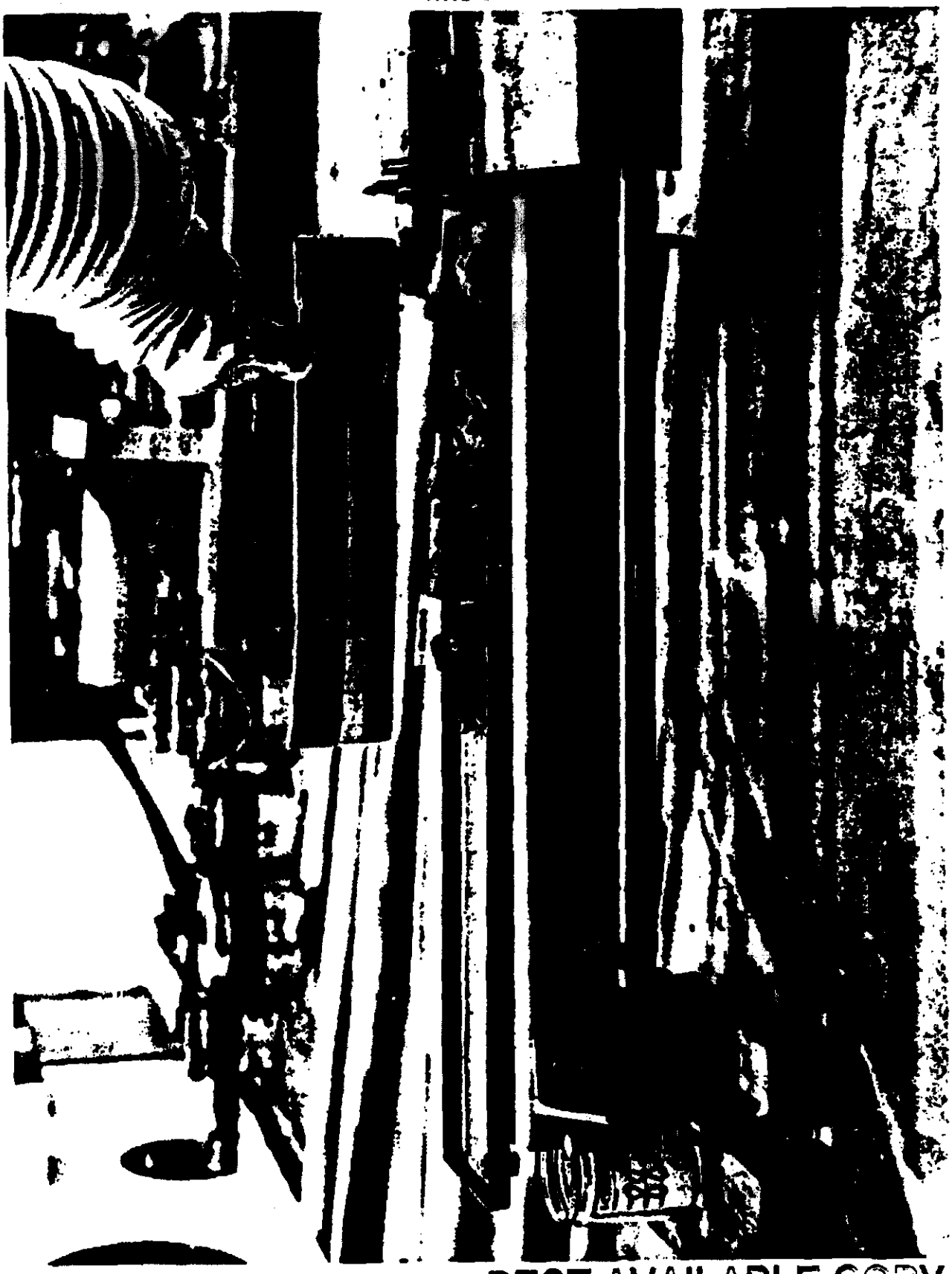
1-8-96

U-109 Core 123 segment #4



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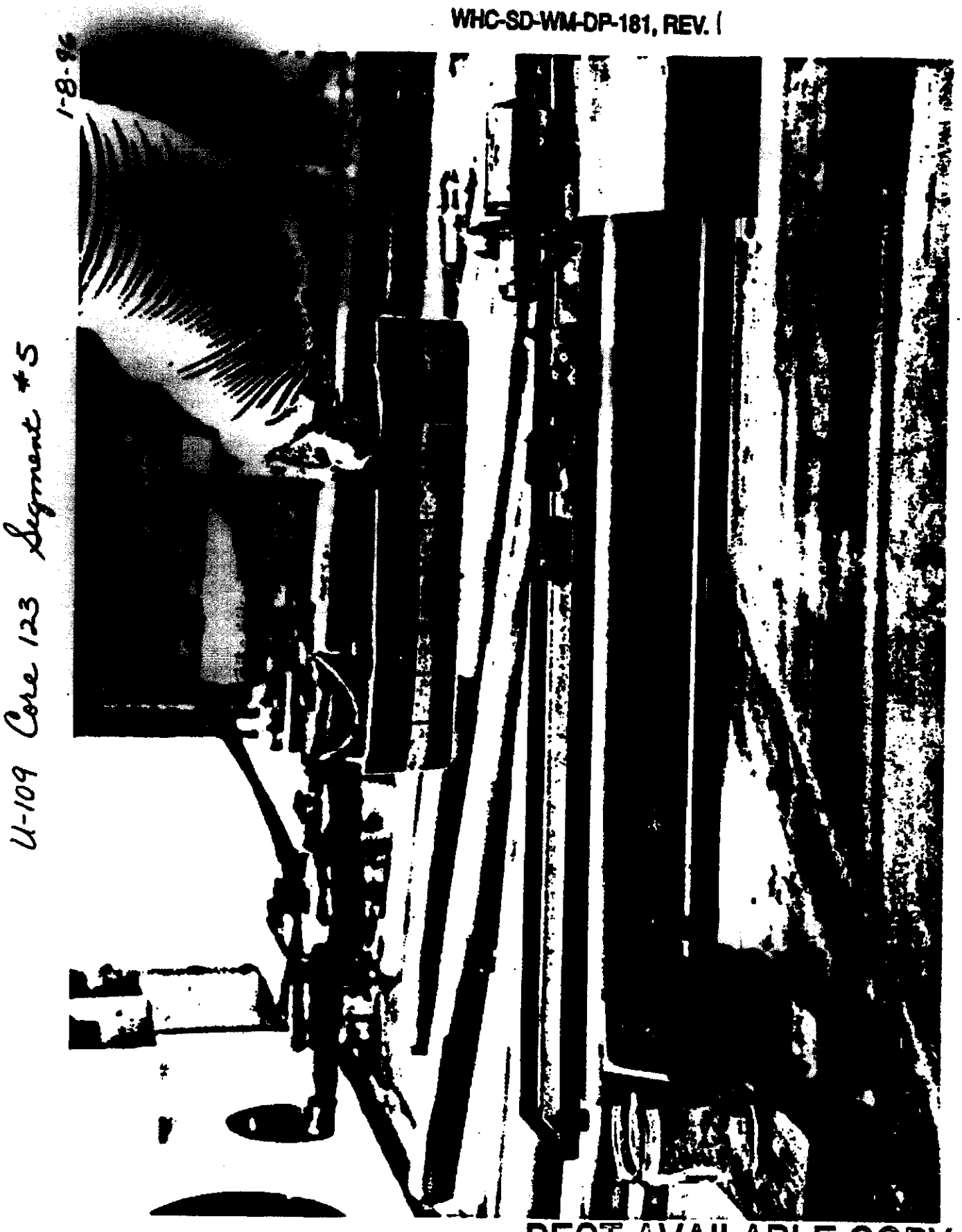

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1-8-96

U-109 Core 123 Segment #6

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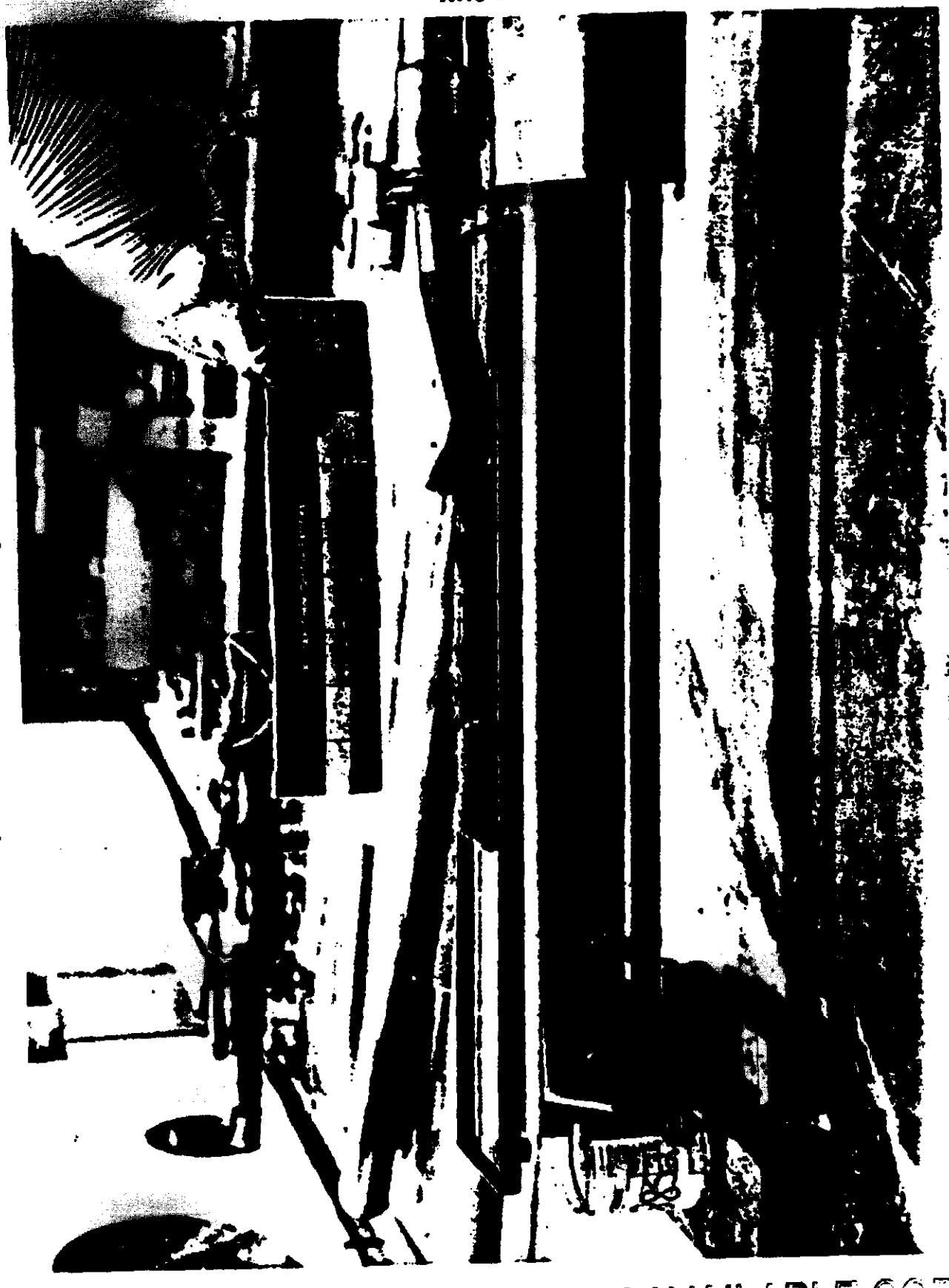
1-9-96

U-109 Core 123 segment #7



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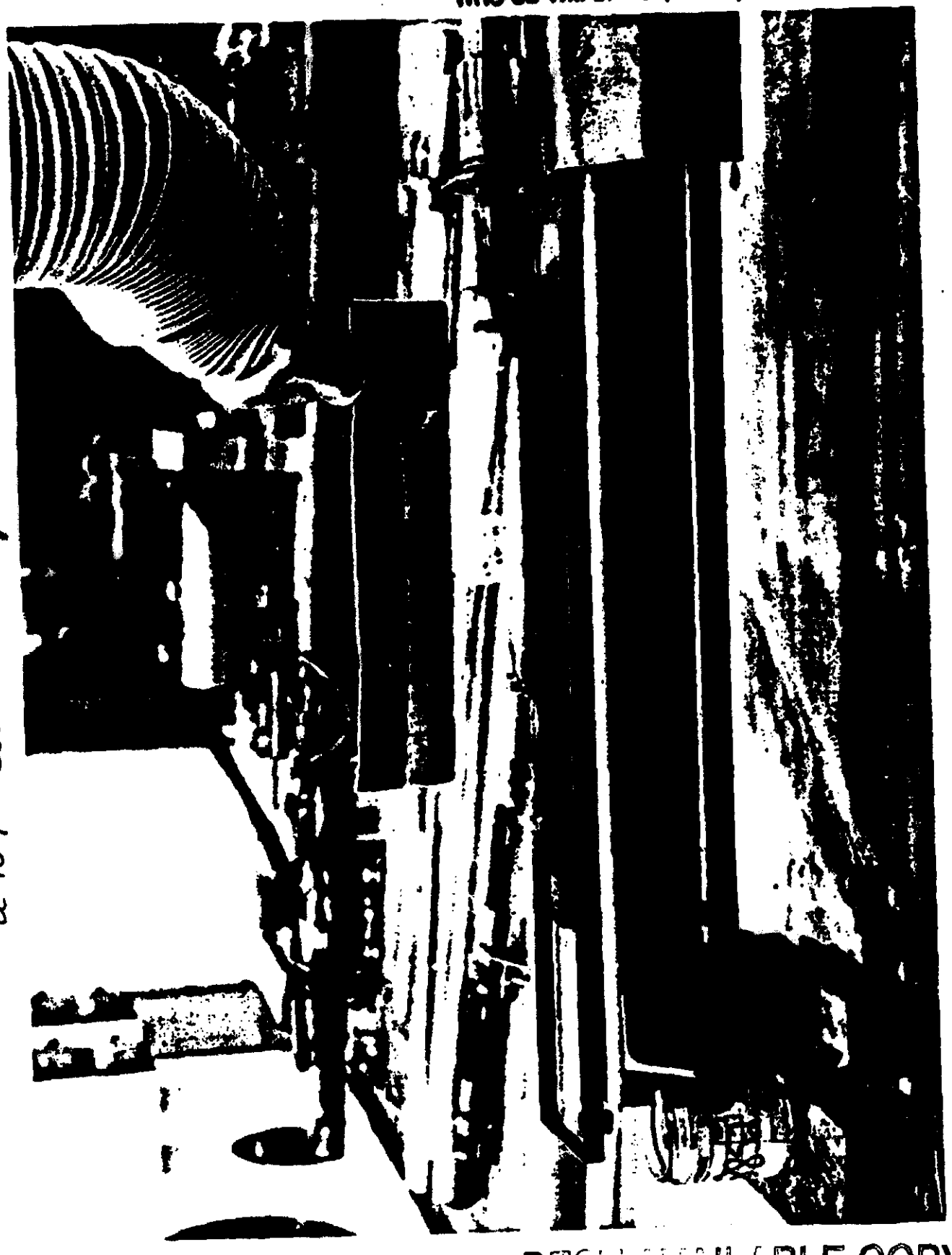
1-9-96

U-109 Core 123 segment #8



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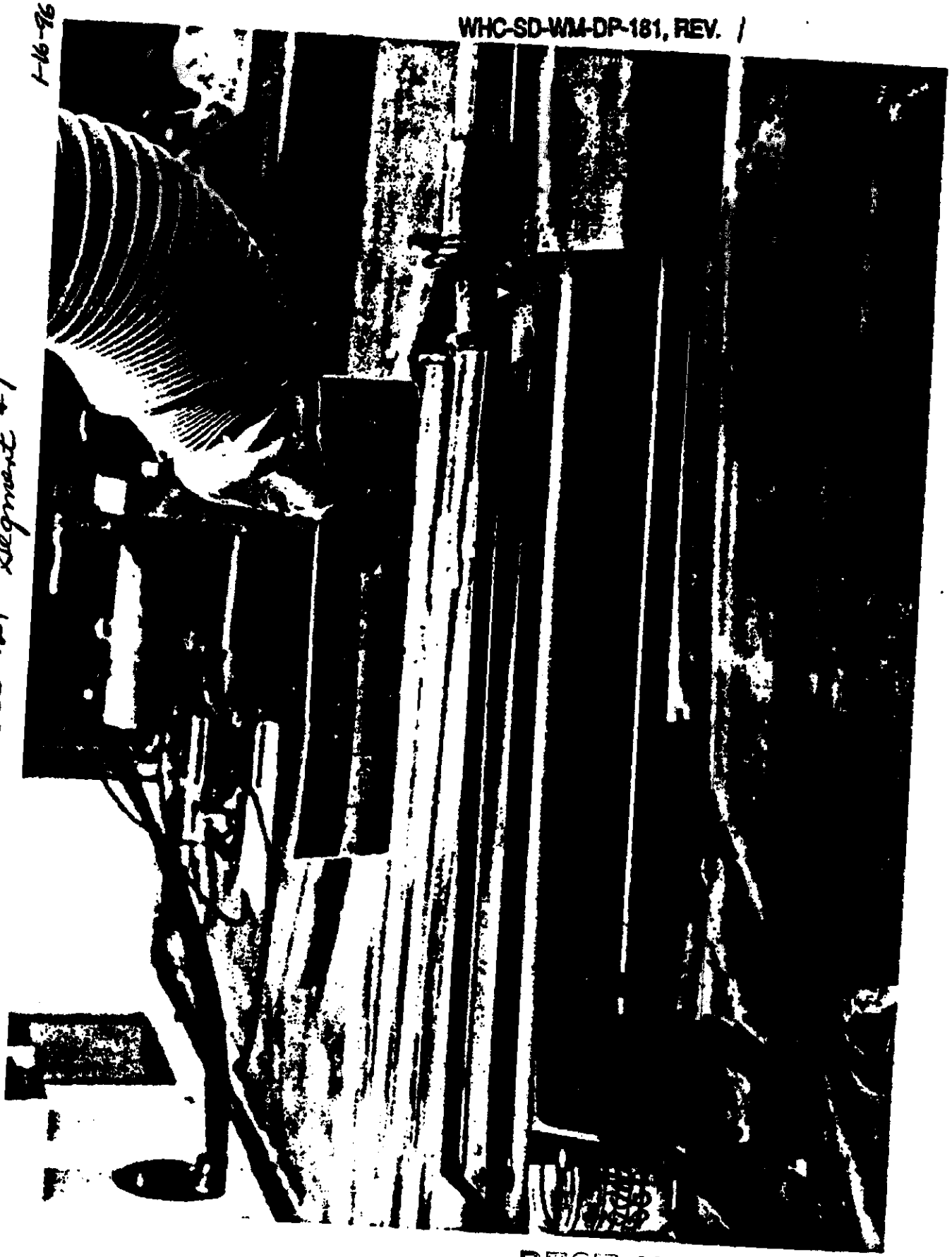
1-16-96

U-109 Core 124 Segment #1



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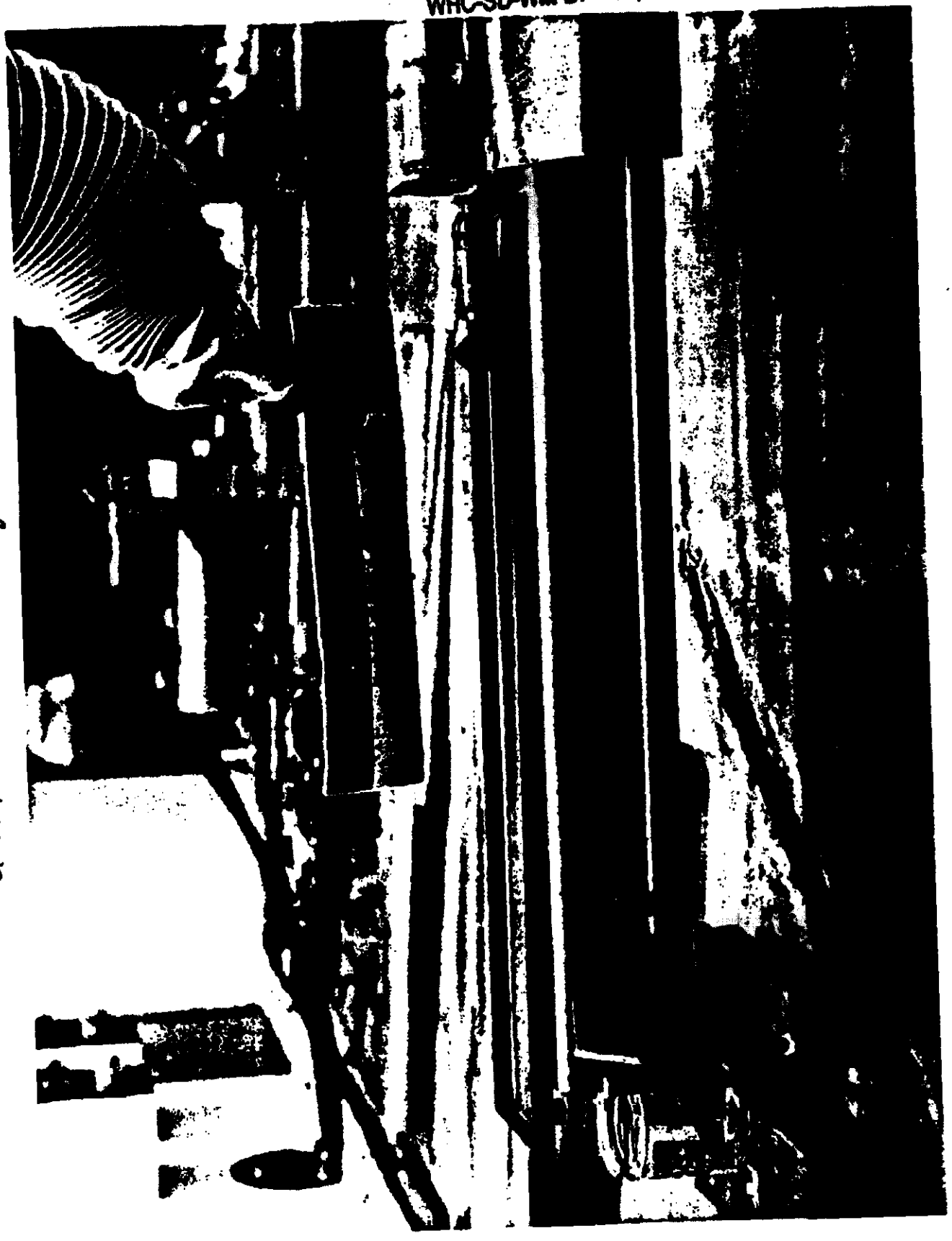
U-109 Core 124 Segment #2



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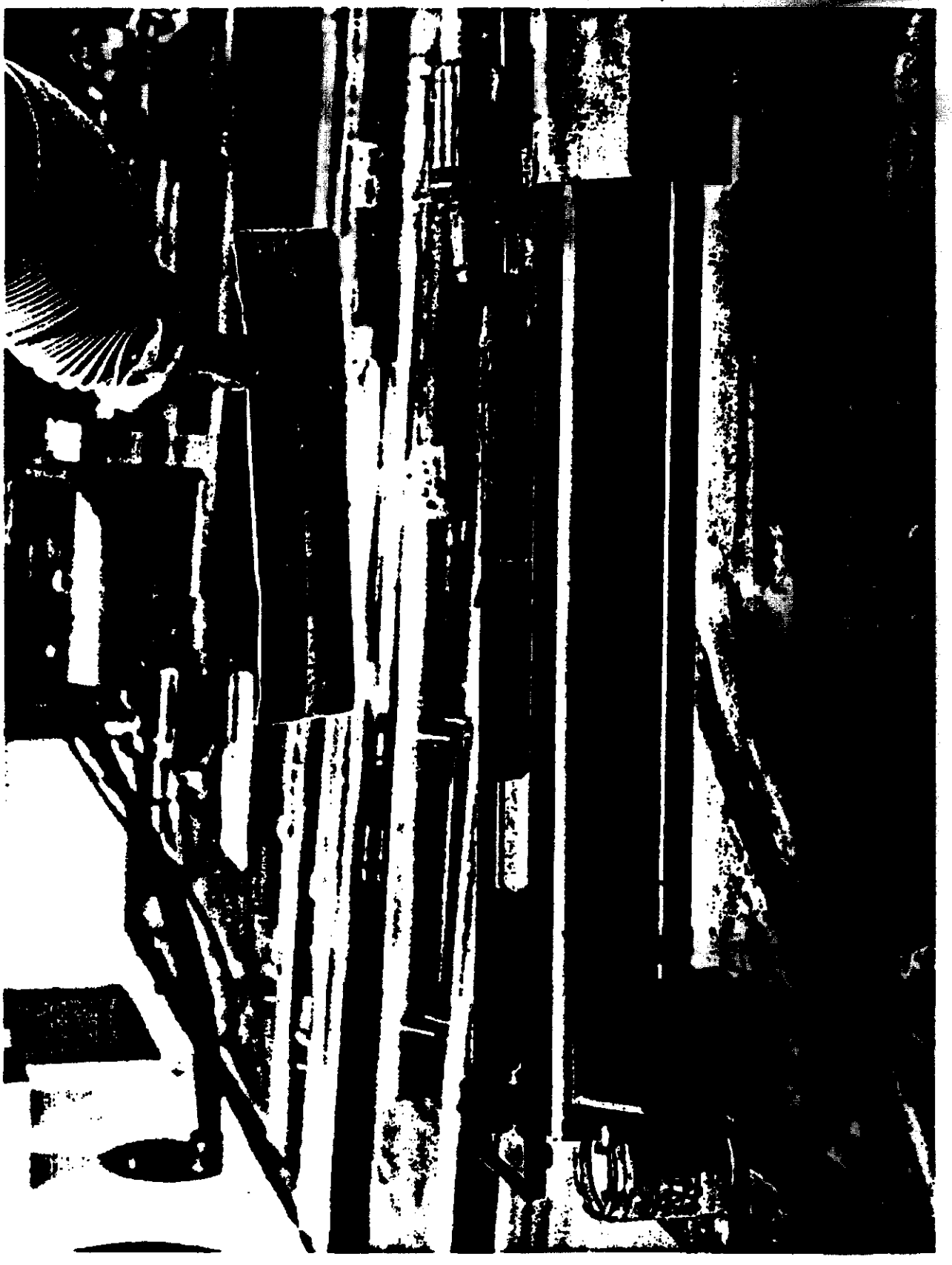

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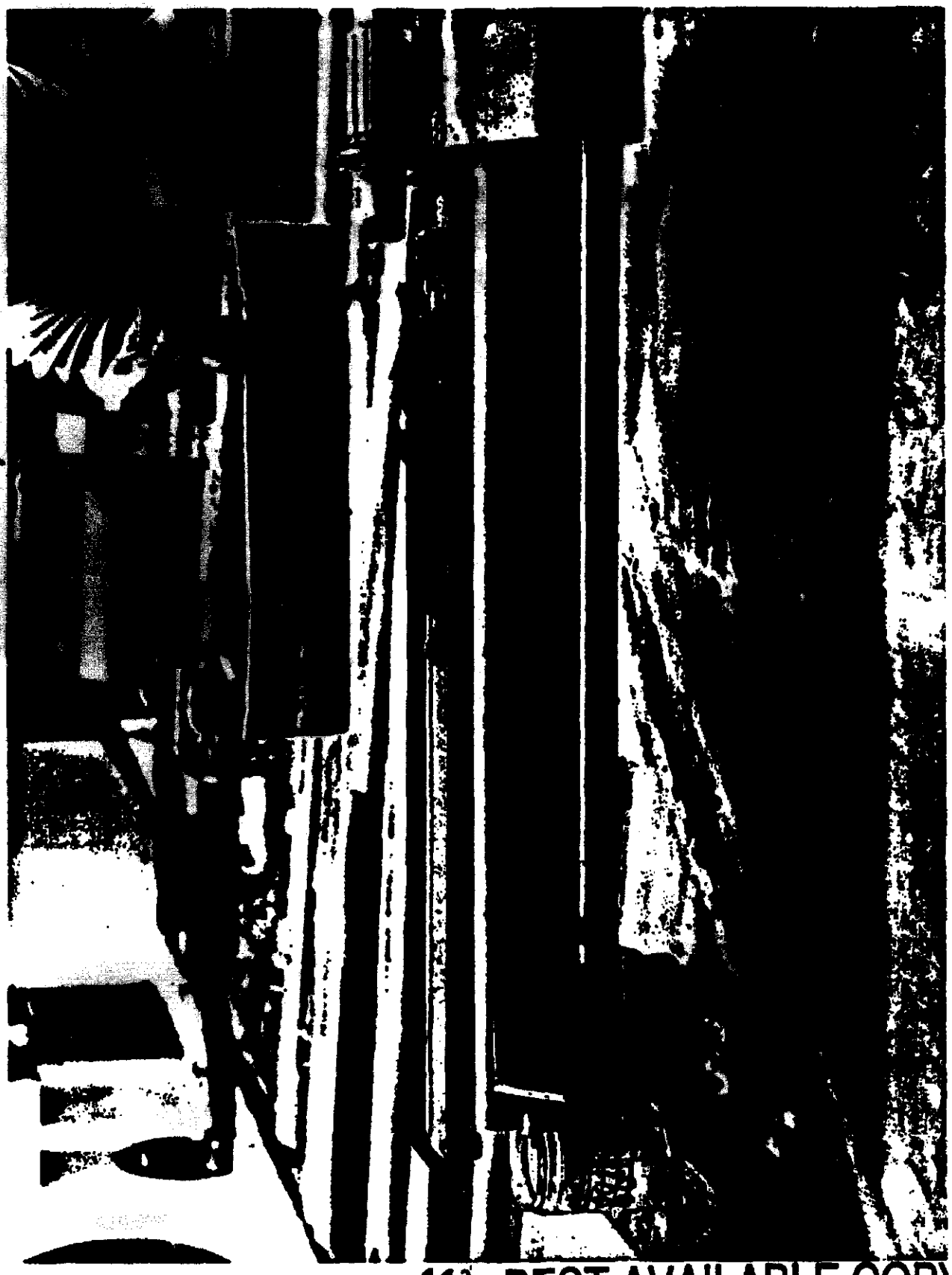

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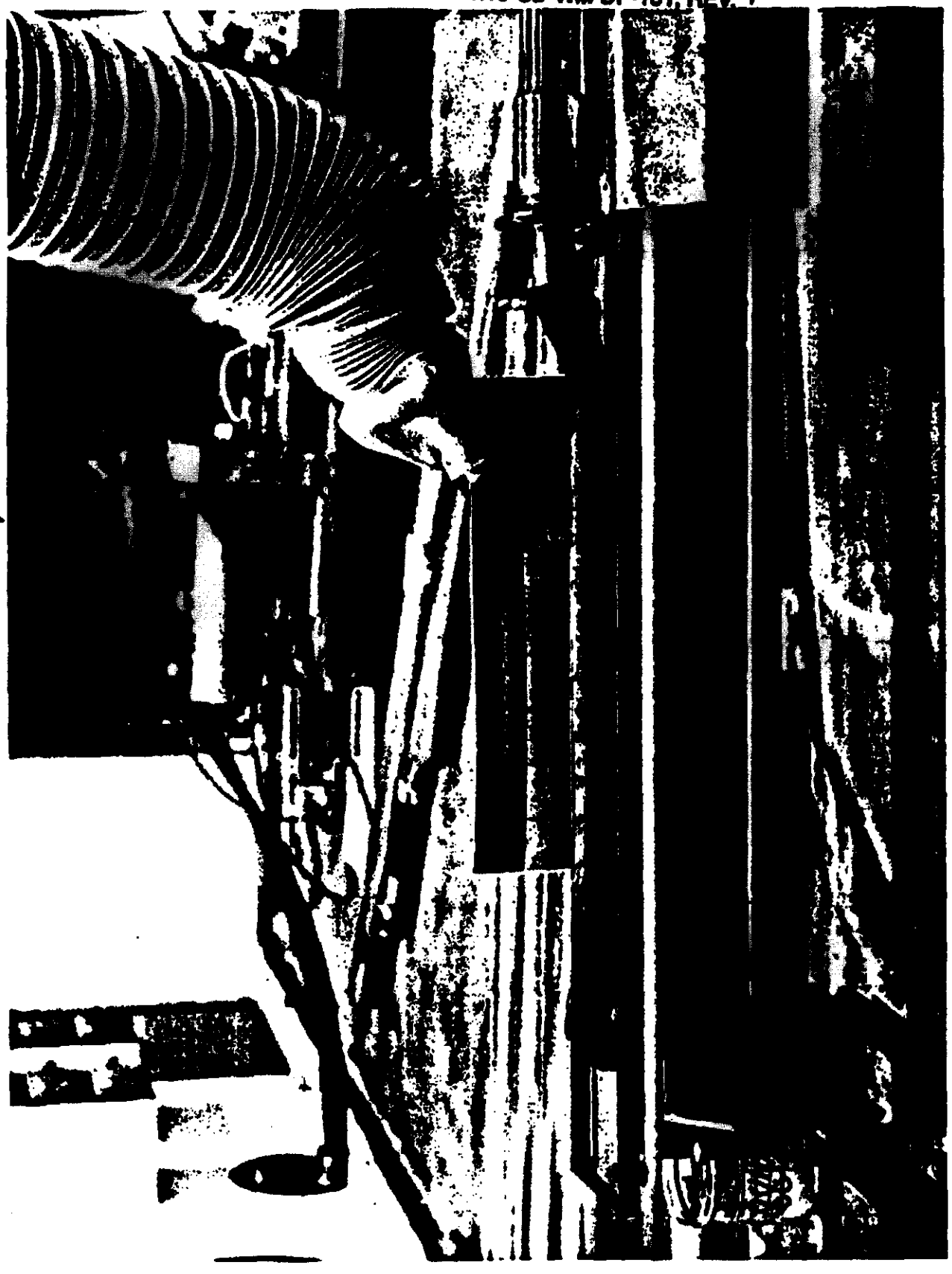

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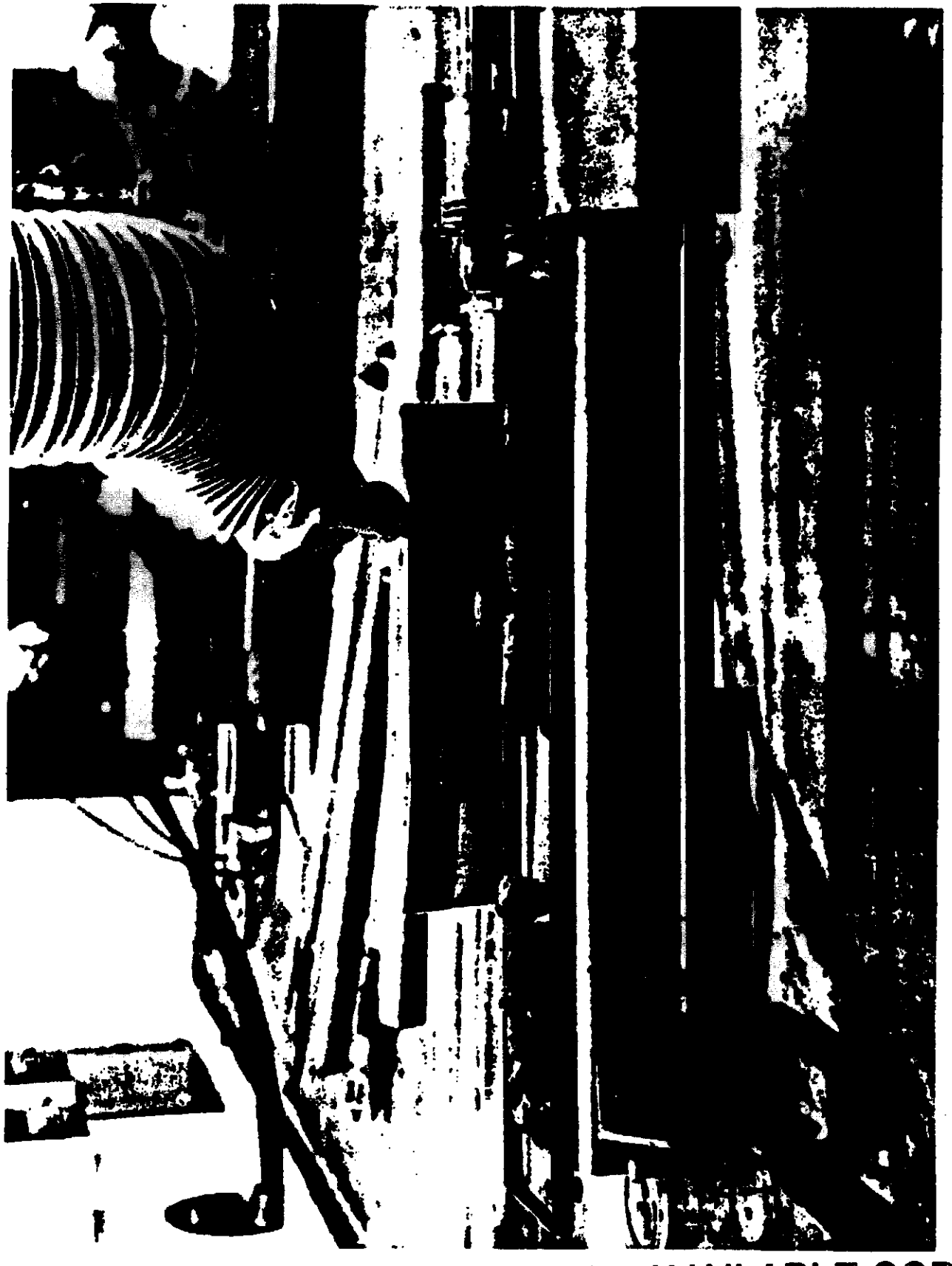

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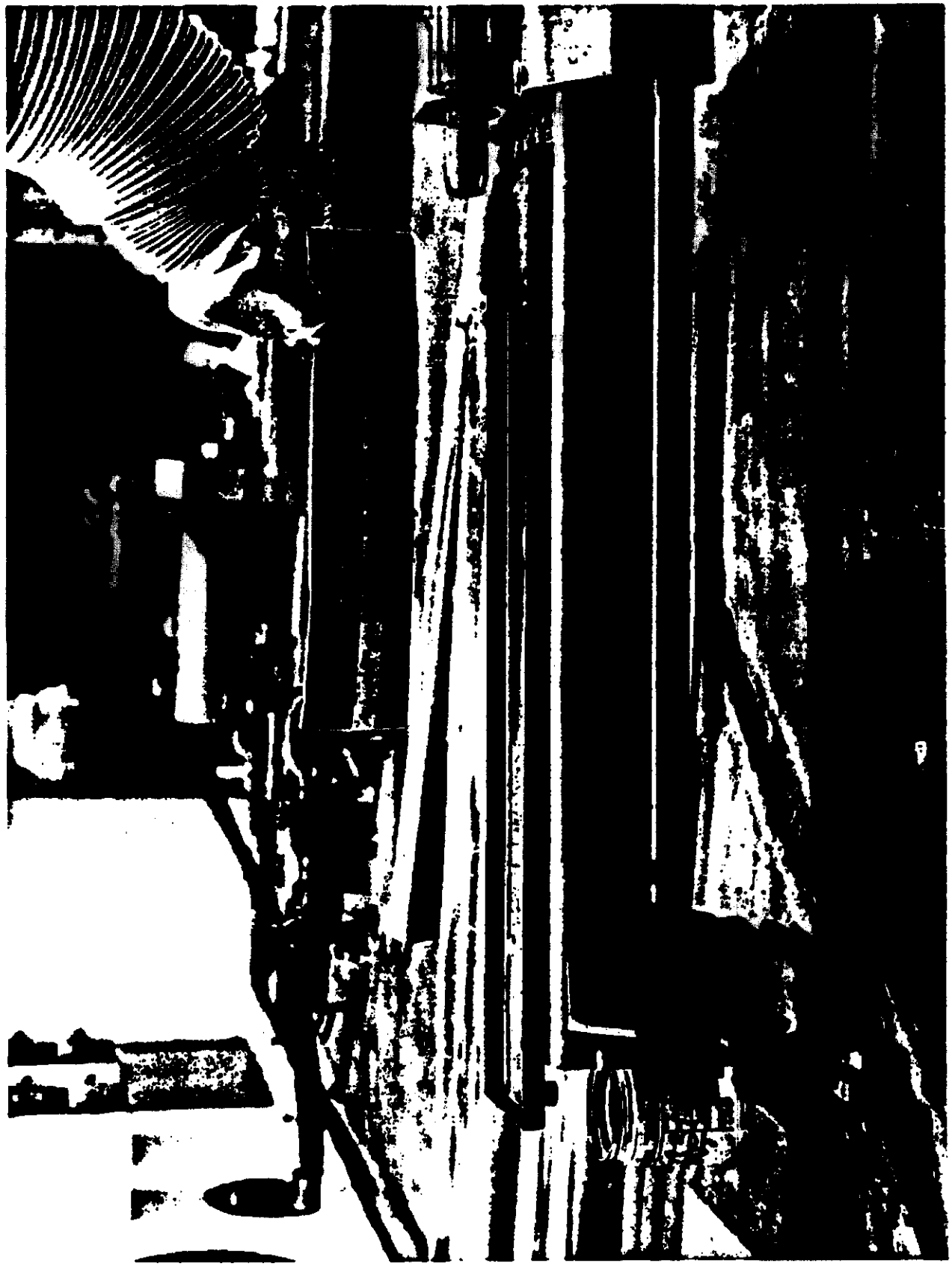

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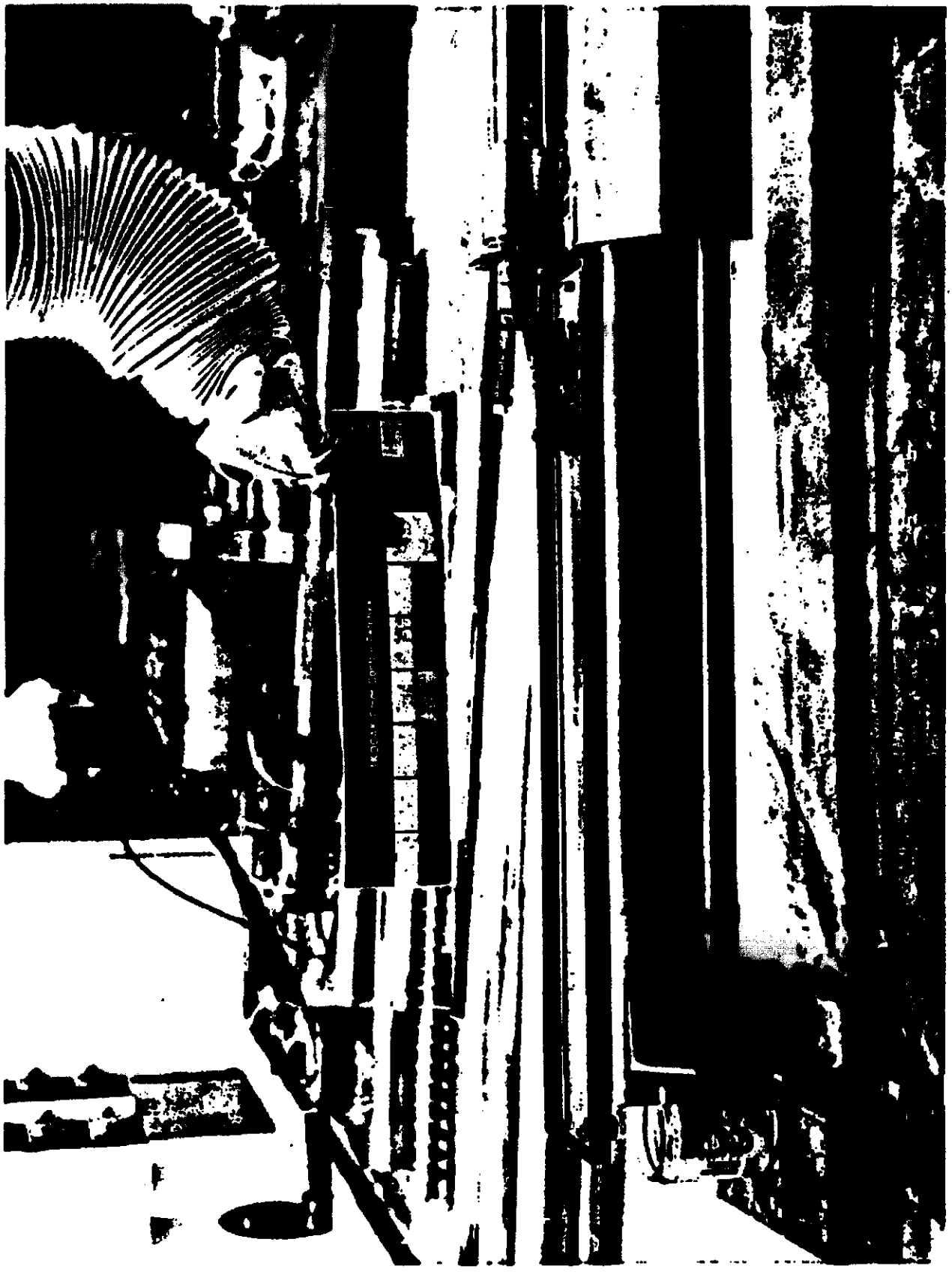

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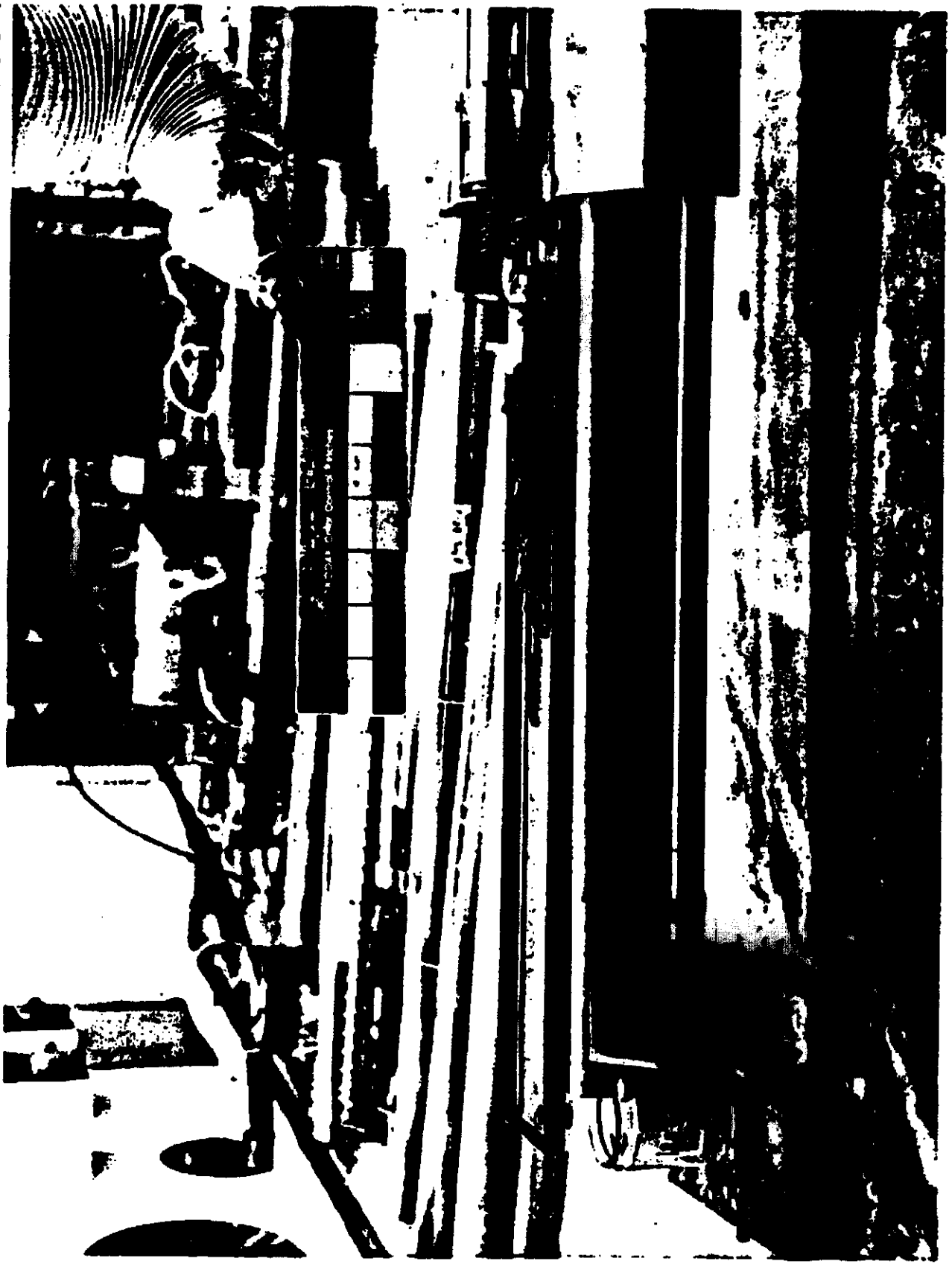

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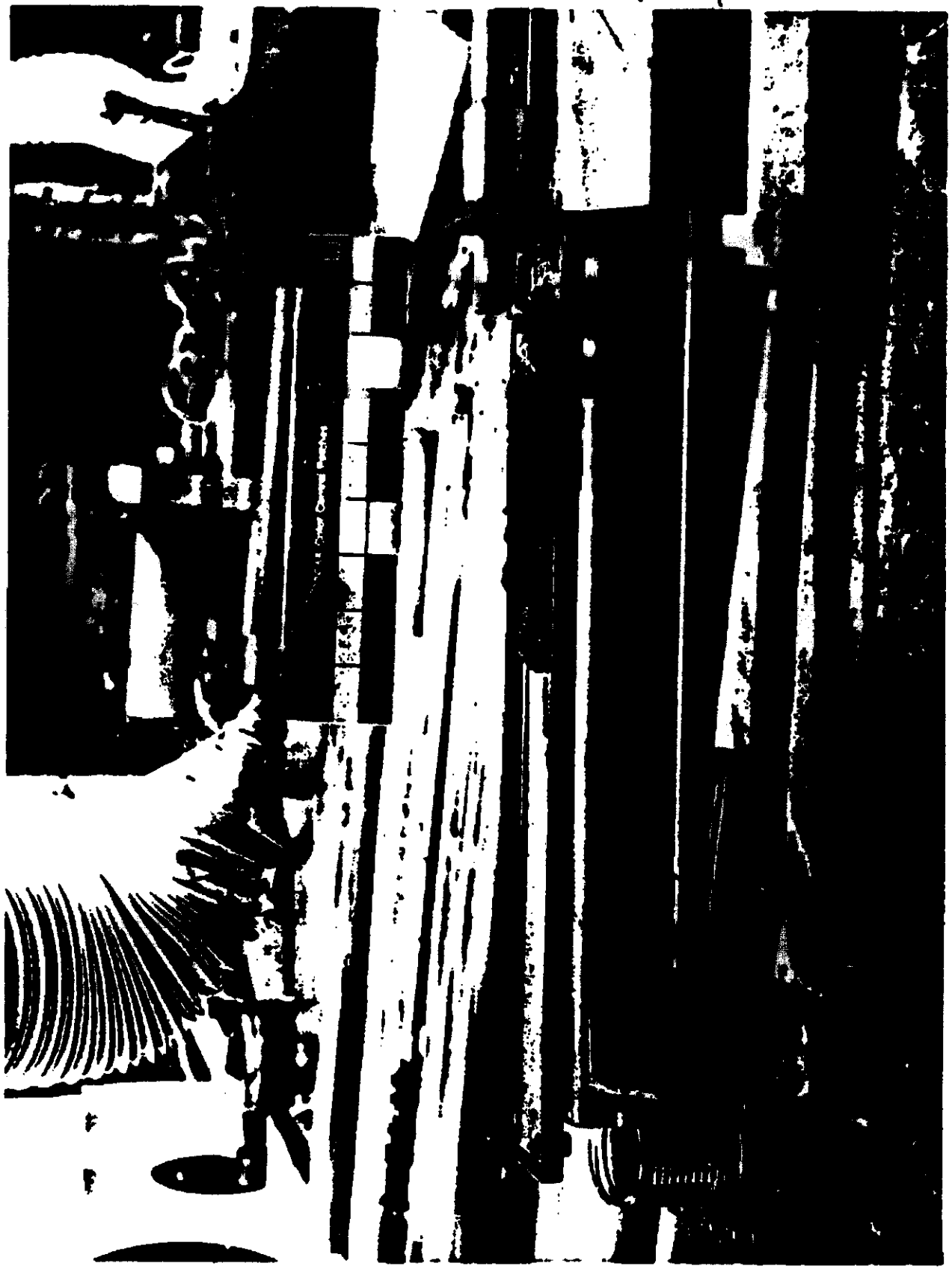

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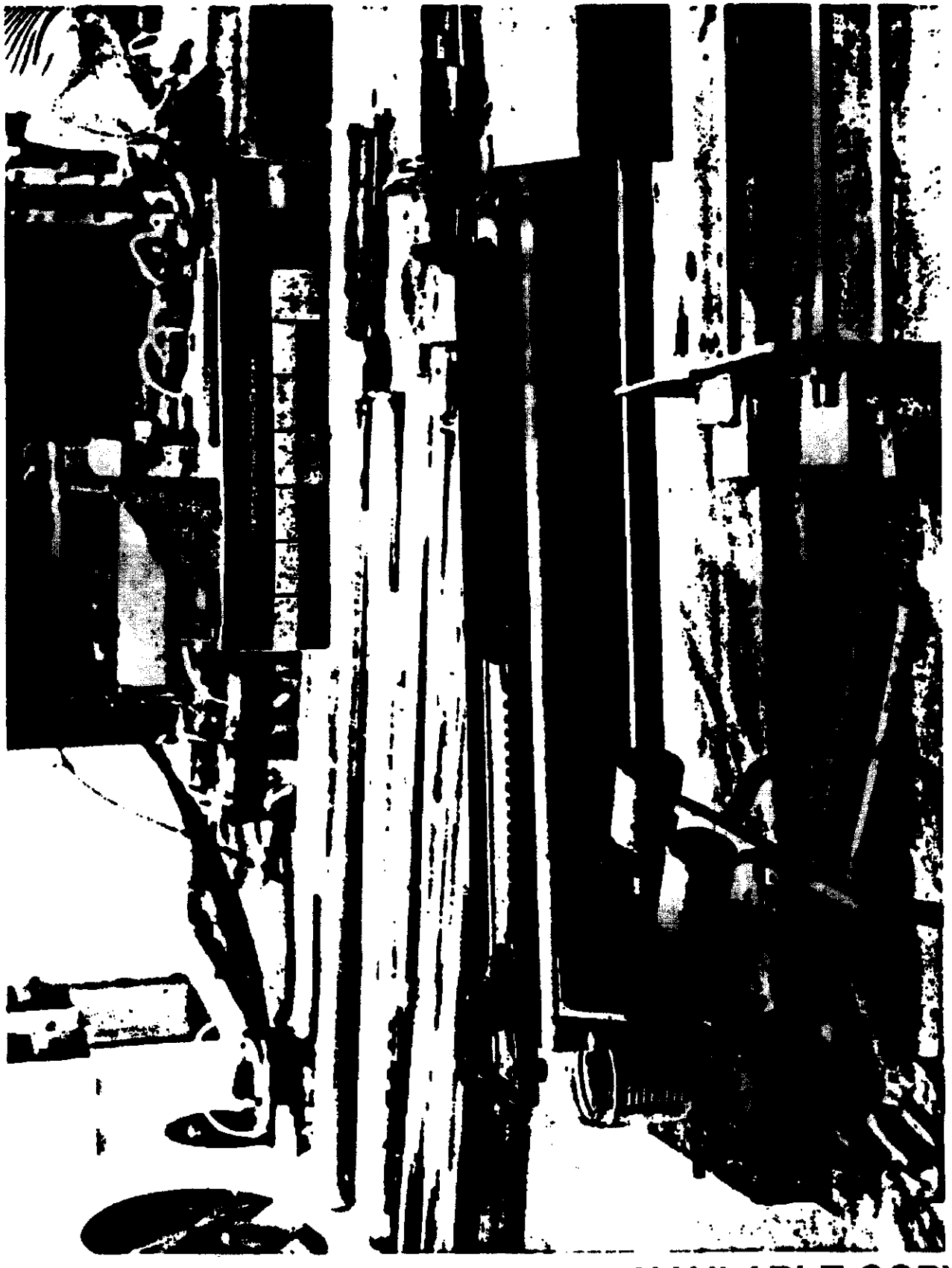

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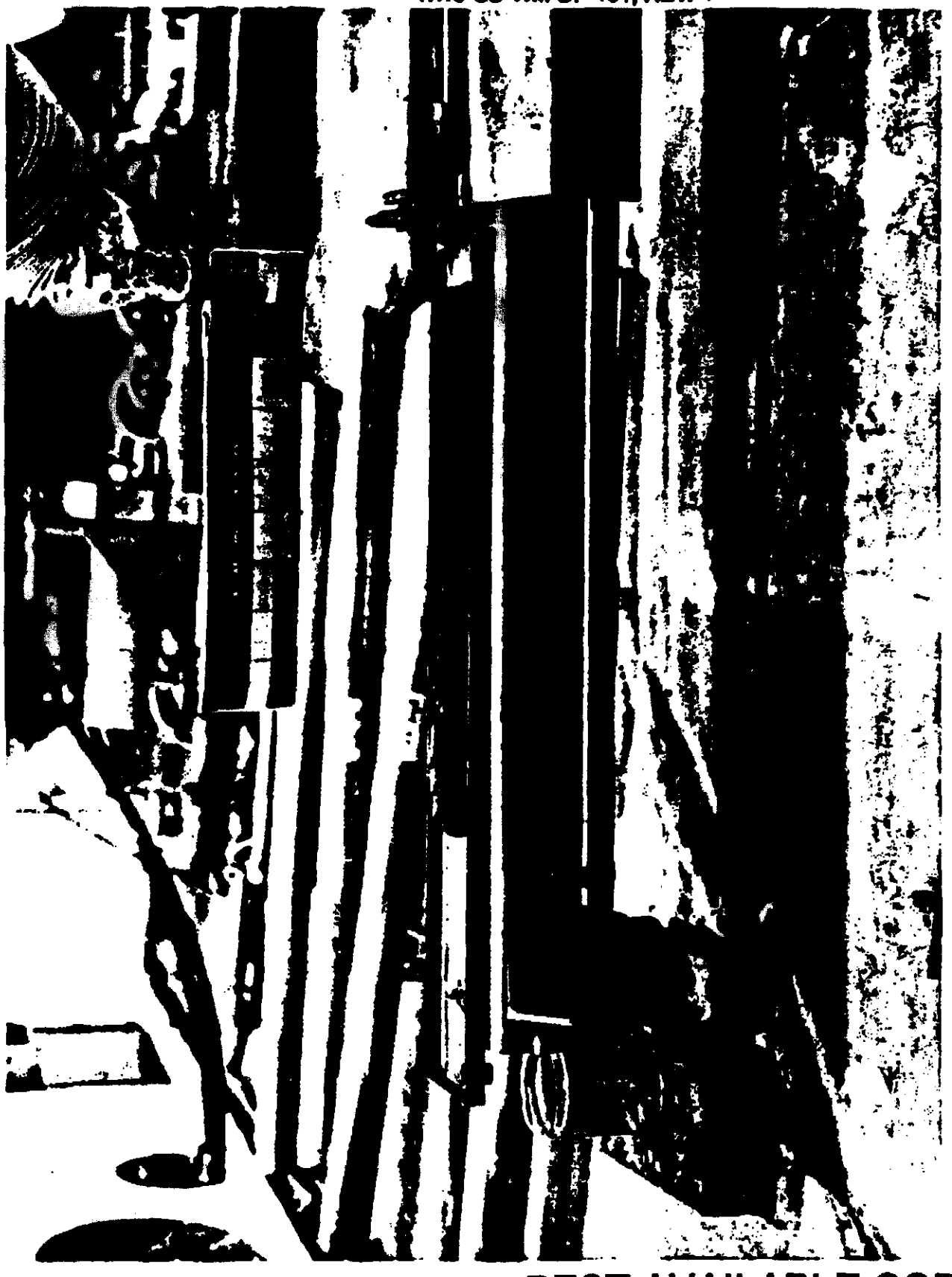

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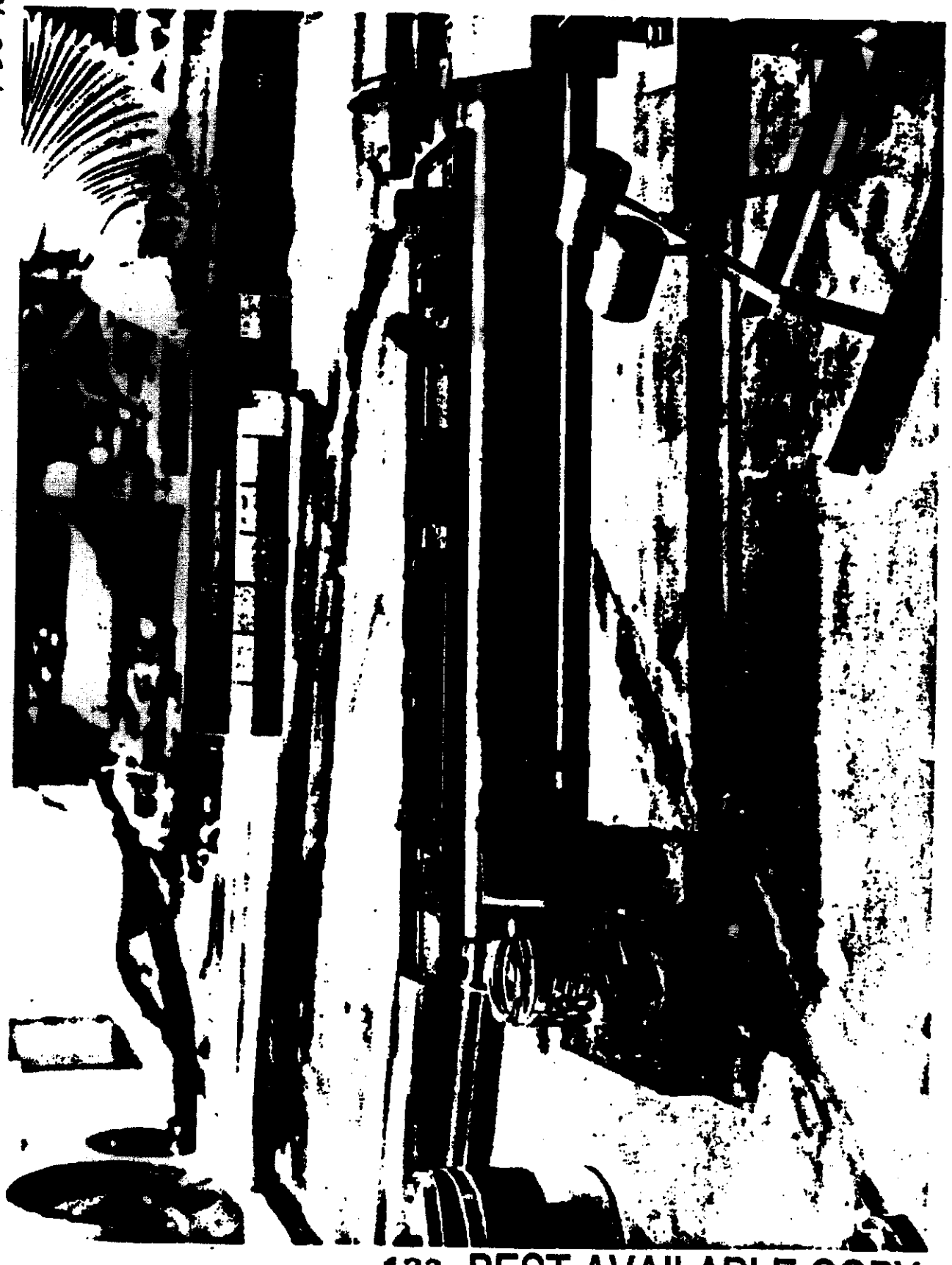

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U-109 Core 128 segment #8

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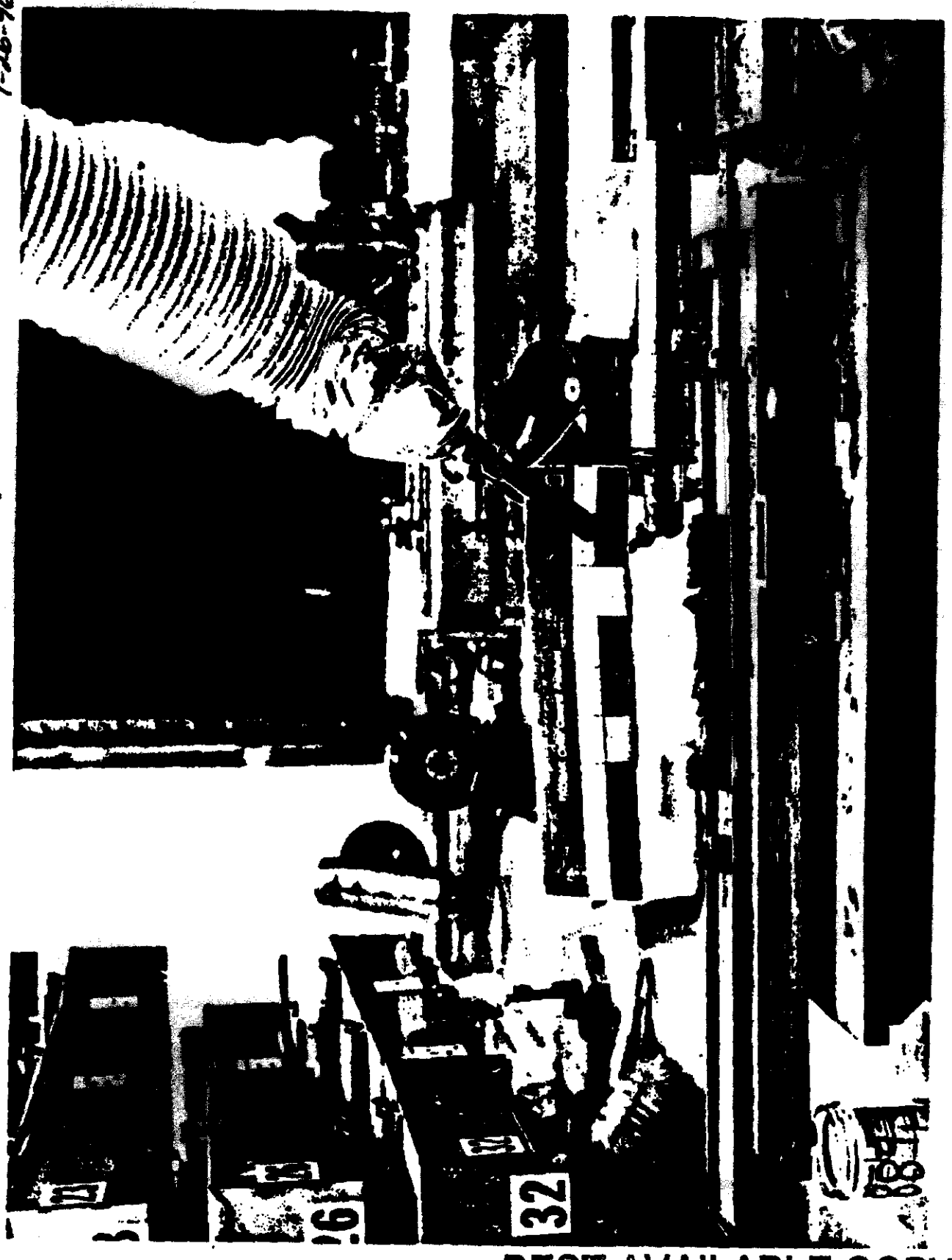

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SAMPLE HANDLING

SD-WM-DP-181
Rev 001

Due to the large volume, a copy of the data supporting the Data Validation Report and the Sample Data Summary,

Pages 127 thru 2232

is available only from Central Files.

Information regarding this can be found in the "Final Guidance on Administrative Records for Selecting CERCLA Response Actions, OSWER Directive 9833.3A-1, December 1990, Page 9 "Verified Sampling Data".

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

WHC-SD-WM-DP-181, REV. 0

ANALYTICAL SERVICES

INTERIM SAFETY SCREENING RESULTS FOR TANK 241-U-109, ROTARY AND PUSH MODE CORES 123, 124, AND 128

Project Coordinator: JOHN H. BALDWIN

Prepared for the U.S. Department of Energy
Office of Environmental Restoration
and Waste Management

by

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Richland, Washington

2-1

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TRADEMARKS:

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NARRATIVE

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SAFETY SCREEN RESULTS FOR TANK 241-U-109 PUSH MODE SAMPLES, CORE 123, CORE 124 AND CORE 128

Summary

This is the safety screening report for rotary (push mode) core samples taken from risers 2,7 and 19 of tank 241-U-109 (U-109) from December 20, 1995 through January 19, 1996. The samples were received, extruded, and analyzed at the 222-S Laboratories and underwent analyses consistent with the safety screening data quality objective (DQO) (Dukelow, et al. 1995), the organic DQO (Turner et al. 1995), the organic test plan (Meacham 1995) and the historical DQO (Simpson and McCain 1995)as identified in the Sampling and Analysis Plan for this tank (Baldwin 1996). This safety report summarizes the results of the analyses required by the safety DQO. In addition to the laboratory analytical requirements, a test for flammable gas concentration in the tank domespace was conducted at each riser.

The safety screening results obtained from this sampling and analysis activity, which include differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), and total alpha activity analysis results, suggest that tank U-109 may be classified as "safe".

Eleven of the segments from the three cores showed exothermic behavior. The exotherms were observed primarily in the 6th segment and extending approximately two segments above and below the 6th segment (4-8). The exotherms varied between 13.7 to 302 joules/g on a dry weight basis. The one-sided 95 percent confidence interval upper limits for the dry DSC results determined that one segment (Core 128 Segment 4L) slightly exceeded the DSC notification limit of 480 J/g limit with a calculated value of 493.4 J/g. This calculated value was a result of the variability in the data. The highest measured dry DSC result for Core 128 Segment 4L is 267.6 J/g, well below the DSC notification limit.

The one-sided 95 percent confidence interval upper limits for the total alpha activity results were all well below the total alpha activity notification limit.

The flammable gas concentration in the tank domespace measured between 1% and 5% of the lower flammability level.

The data summary tables included in this report compile the safety screening analytical results associated with each subsegment from these core samples. In addition, the results of the statistical analysis (calculation of the 95% confidence intervals for DSC analyses) is given in Table 2 on a segment by segment basis.

Sample Receipt and Extrusion

Table 1 summarizes the sample extrusion results for the tank U-109 core segments. For each segment, the recovery and a description of the material as it was extruded are included.

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TABLE 1: SUMMARY DESCRIPTION OF U-109 EXTRUSION SAMPLES

Core and Segment* Number	Riser	Sample Total Weight (Grams)	Sample Collection General Description
Core 123 Segment 1(W)	2	79.3	No drainable liquid. Extruded approximately 2 to 3 inches of solids. The solids were medium grey in color and the texture resembled a fine crystalline saltcake. The lower portion was soft, like wet sand. The upper portion had larger crystals and was harder. Subsampled solids into one jar.
Core 123 Segment 2(W)	2	293.3	No drainable liquid. Extruded approximately 10 inches of solids. The solids were medium gray in color except for the bottom inch which was a grayish brown. The texture resembled a fine crystalline saltcake. The upper portion of the solids appeared drier than the lower portion. The solids were subsampled into one jar.
Core 123 Segment 3(W)	2	170.9	This is the upper part of segment 3. No drainable liquid. Extruded approximately 10 inches of solids. The solids were medium gray in color with a little green blue tint in the bottom 4 inches. The texture of the solids resembled a fine crystalline saltcake. The solids were subsampled into one jar.
Core 123 Segment 3A(W)	2	169.6	This is the lower part of segment 3. No drainable liquid. Extruded approximately 8 inches of solids. The solids were bluish gray in color and the texture resembled a damp saltcake. The solids were subsampled into one jar.
Core 123 Segment 4(W)	2	303.0	No drainable liquid. Extruded approximately 12 inches of solids. The solids were bluish gray in color and the texture resembled a damp saltcake. The solids were subsampled into one jar.
Core 123 Segment 5(W)	2	106.3	No drainable liquid. Extruded approximately 4 inches of solids. The solids were bluish gray in color and the texture resembled a damp saltcake. The solids were subsampled into one jar.

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Core 123 Segment 6 (U),(L)	2	505.7	No drainable liquid. Extruded approximately 19 inches of solids. The solids were medium gray in color and the texture resembled a damp, putty like saltcake. The solids were subsampled into two jars.
Core 123 Segment 7 (U),(L)	2	393.6	No drainable liquid. Extruded approximately 14 inches of solids. The solids were medium gray in color with a bluish tint and the texture resembled a damp saltcake. The solids were subsampled into two jars.
Core 123 Segment 8 (U),(L)	2	454.1	No drainable liquid. Extruded approximately 16 inches of solids. The solids were medium gray in color with a bluish tint and the texture resembled a damp saltcake. The solids were subsampled into two jars.
Core 123 Segment 9 (A),(B),	2	419.9	No drainable liquid. Extruded approximately 16 inches of solids. The upper portion of the solids were dark gray, the middle portion was medium gray and the lower portion was yellow in color. The texture of the solids resembled a damp saltcake. The solids were subsampled into three jars.

Core 124 Segment 2(W)	19	26.6	No drainable liquid. Extruded approximately 2 inches of solids. The solids were black in color with a white/gray tint. The texture of the solids resembled a hard, slightly damp crystalline saltcake. The solids were subsampled into one jar.
Core 124 Segment 3DL,3(W)	19	372.2	Collected approximately 125 ml of drainable liquid. The liquid was black in color and opaque. Extruded approximately 10 inches of solids. The solids were gray in color and the texture resembled a wet, slushy saltcake. The solids were subsampled in one jar.
Core 124 Segment 4(W)	19	246.1	No drainable liquid. Extruded approximately 9 inches of solids. The solids were gray in color with a blue tint. The texture resembled a dry granular saltcake. The solids were subsampled into one jar.
Core 124 Segment 5(U),5(L)	19	474.5	No drainable liquid. Extruded approximately 18 inches of solids. The solids were gray in color with a white tint. The texture resembled a damp, smooth saltcake. The solids were subsampled into two jars.
Core 124 Segment 6(U),6(L)	19	477.4	No drainable liquid. Extruded approximately 19 inches of solids. The solids were medium gray in color and the texture resembled a damp, putty like saltcake. The solids were subsampled into two jars.
Core 124 Segment 7(U),7(L)	19	448.0	No drainable liquid. Extruded approximately 17.5 inches of solids. The solids were medium gray in color and the texture resembled a damp, putty like saltcake. The solids were subsampled into two jars.
Core 124 Segment 8(U),8(L)	19	445.3	No drainable liquid. Extruded approximately 16 inches of solids. The solids were medium gray in color and the texture resembled a damp, putty like saltcake. The solids were subsampled in two jars.
Core 124 Segment 9(U),9(L)	19	249.5	No drainable liquid. Extruded approximately 12 inches of solids. The upper portion of solids were black in color and the texture resembled a smooth saltcake. The lower portion was gray in color and the texture resembled a slightly pitted saltcake. The solids were subsampled into two jars.

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Core 128 Segment 1(W)	7	70.4	No drainable liquid. Extruded approximately 3 inches of solids. The solids were medium gray in color and the texture was a wet, crumbly saltcake. Subsampled solids into one jar.
Core 128 Segment 2(W)	7	143.9	No drainable liquid. Extruded approximately 6 inches of solids. The solids were medium gray in color with a bluish tint. The texture resembled a saltcake. The solids were subsampled into one jar.
Core 128 Segment 3(W)	7	216.1	No drainable liquid. Extruded approximately 10 inches of solids. The solids were medium gray in color with a bluish tint. The texture resembled a damp saltcake. The solids were subsampled into one jar.
Core 128 Segment 4(U),4(L)	7	314.4	No drainable liquid. Extruded approximately 14 inches of solids. The solids were dark gray in color. The texture of the solids resembled a wet saltcake. The solids were subsampled into half segments.
Core 128 Segment 5(W)	7	175.0	No drainable liquid. Extruded approximately 7 inches of solids. The solids were dark gray in color and the texture resembled a saltcake. The solids were subsampled into one jar.
Core 128 Segment 6(U),6(L)	7	381.4	No drainable liquid. Extruded approximately 16 inches of solids. The solids were dark gray in color and the texture resembled a wet saltcake. The solids were subsampled into half segments.
Core 128 Segment 7(U),7(L)	7	403.2	No drainable liquid. Extruded approximately 18 inches of solids. The solids were dark gray in color and the texture resembled a damp saltcake. The solids were subsampled into half segments.
Core 128 Segment 8(U),8(L)	7	439.5	No drainable liquid. Extruded approximately 17 inches of solids. The solids were dark gray in color and the texture resembled a saltcake. The solids were subsampled into half segments.
Core 128 Segment 9(W)	7	229.3	No drainable liquid. Extruded approximately 9 inches of solids. The solids ranged from brown to dark gray in color with white specks mixed throughout. The texture resembled a saltcake. The solids were subsampled into one jar.

* "W" represents a whole segment. "U" and "L" represent the upper and lower half sub-

segments. "A", "B", "C" represent sub-segments locations with "A" the top of the segment, "B" the middle of the segment and "C" the bottom of the segment.

Analytical Results

DIFFERENTIAL SCANNING CALORIMETRY

Differential scanning calorimetry on the applicable subsegments from tank U-109 were performed under a nitrogen purge using procedures LA-514-113, Revs. C-1 (Mettler[1] instrument) and LA-514-114, Rev. C-1 (Perkin-Elmer[2] instrument). Since both instruments were used during the DSC analysis, it must be noted that the two instruments produce raw data scans which present exotherms differently. On the Mettler instrument, an exotherm is represented by a peak, while the Perkin-Elmer instrument shows an exotherm as a valley.

Due to the corrosive effects on the DSC instruments the SAP was revised to allow DSC's to be run on only the lower half of each segment.

Eleven of the segments from the three cores showed exothermic behavior. The exotherms were observed primarily in the 6th segment and extending approximately two segments above and below the 6th segment (4-8). The exotherms varied between 13.7 to 302 joules/g on a dry weight basis. The RPD's for four of the segments exceeded the criteria of ≤ 30%. Because of the variability between some of the samples result and duplicate values, a triplicate was run for three of the samples. The triplicate results showed the same variability so no other analyses were run to try to improve the results.

Statistical analyses for the 95% confidence interval were performed on the DSC data. The upper limit (UL) of this interval was then compared to the notification limit of 480 J/g. For each subsegment, the sample mean, the standard deviation (SD) of the mean, and the UL to the 95% confidence interval are presented in Table 2. If the UL of any subsegment is less than 480 J/g, the hypothesis that the subsegment's exotherm is greater than or equal to the notification limit is rejected.

The one-sided 95 percent confidence interval upper limits for the dry DSC results determined that one segment (Core 128 Segment 4L) exceeded the DSC notification limit of 480 J/g limit with a calculated value of 493.4 J/g. This high calculated value is a result of the variability in the data. The highest measured dry DSC result for Core 128 Segment 4L was 267.6 J/g, well below the DSC notification limit.

The standard recoveries for the solid and liquid samples were within the desired range of 80% - 120%.

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Table 2. 95% Confidence Interval Calculations for Tank U-109 DSC Results						
CORE/Segment	Unit	Result	Duplicate / Triplicate	Average	SD(mean)	UL(95%)
123/ 6L	J/g	101	130.1/ 77.8	103	15.1	147.2
123/ 9A	J/g	30.5	57.3	43.9	13.4	128.5
124/ 5L	J/g	273.6	301.9	287.8	14.2	377.1
124/ 6L	J/g	141.1	151.7	146.4	5.3	179.9
124/ 6U	J/g	252.7	270	261.4	8.65	316
128/ 1	J/g	0	21.2/ 30.8	17.3	9.1	43.8
128/ 4L	J/g	267.6	182.6	225.1	42.5	493.4
128/ 5	J/g	13.7	21.24	17.5	3.8	41.3
128/ 6L	J/g	111.4	116.1	113.8	2.35	128.6
128/ 7L	J/g	131.1	134.4	132.8	1.7	143.2
128/ 8L	J/g	0	112.2/ 70.3	60.8	32.7	156.4

THERMOGRAVIMETRIC ANALYSIS (Percent Moisture)

Analyses for percent water by TGA were performed on the samples from tank U-109 and the field blank using procedures LA-560-112, Rev. B-1 (Mettler instrument) and LA-514-114, Rev. C-1 (Perkin-Elmer instrument). All samples were run under a nitrogen atmosphere.

Solid subsamples produced TGA results ranging from 6.00 (Core 123 Segment 3U) to 47.87 (Core 128 Segment 4L) weight percent water. TT liquid sample (Core 124 Segment 3DL) produced an average TGA result of 53.2 weight percent water.

Six subsegments had RPD values that exceeded the desired ≤ 20% criteria. A triplicate was run for two of the samples. The triplicate results showed the same variability so no other analyses were run to try to improve the results.

TGA analysis accuracy is determined by the standard recovery. All standard recoveries were within the LCS criteria range of 80% - 120%.

BULK DENSITY/SPECIFIC GRAVITY

The revised safety screening DQO (Dukelow, et al. 1995), states measurements of bulk density and specific gravity are to be performed on each subsample, primarily in order to convert the total alpha activity notification limit of 1 gram per liter (g/L) of plutonium-239 into units of microcuries per gram (µCi/g) which is used by the laboratory. Generally, a density of 1.5 g/ml is used as a conservative estimate of density for unknown materials and using this density value the total alpha reporting limit is determined to be 41 µCi/g. For U-109 the highest upper level total alpha result (segment 1 of core 128) was 0.16 µCi/g, at 95% confidence, with a corresponding density of 1.68 g/ml. The corrected reporting limit would be 37 µCi/g.

Procedure LO-160-103, Rev. B-0 was used to perform the bulk density measurements on the solid core composite samples, and procedure LA-510-112, Rev. C-3 was used during the specific gravity analyses on the drainable liquid samples.

In order to conserve sample material, no duplicate analyses were performed as part of the bulk density measurements, so no estimate of precision can be made. Further, no standard is run with this analysis, so there is no accuracy evaluation possible.

TOTAL ALPHA ACTIVITY

Per the safety screening DQO and the SAP, total alpha analyses were performed on the solid and liquid samples using procedure LA-508-101, Rev. D-2. Fusion digestions on the solid subsegments were prepared using procedure LA-549-141, Rev. E-0 and F-0, while the liquid samples were run without any preparation (i.e., direct analysis). The fusion preparation on the solid samples is identified by a "Z" in the aliquot or "A" column of the data summary tables. The highest alpha result was 0.15 µCi/g in segment 1 of core 128, well below the upper limit of 41 µCi/g. The corresponding upper limit 95% value is 0.16 µCi/g.

Because the total alpha results were close to the detection limit the RPD values generally exceeded the ≤ 20% criterion. As the largest of the average results for the total alpha analyses is nearly 250 times lower than the notification limit, and is near the detection limit, no further reruns were requested. Five of the 42 total alpha spike recoveries were slightly below the desired range of 75% - 125%. Generally, low spike recoveries occur because large sample sizes are used for the analyses, resulting in high amounts of solid material on the sample mount. All standard recoveries, which measure the accuracy of the total alpha analyses, were within the desired range of 80% - 120%.

VISUAL ORGANIC

No organic layer was observed in the drinable liquid.

Project Coordinator: John H. Baldwin

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SAMPLE DATA SUMMARY

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 1

SEGMENT PORTION: U Whole Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000177			% Water by TGA on Perkin Elmer	%	None	None	101.2	n/a	21.76	2.056e1	2.116e1	5.67	n/a	n/a	n/a
S96T000177			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+00	[illegible]	100.5	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000177			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000207			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.658	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000256		2	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	113.2	<4.670e-3	2.36e-02	2.670e-2	2.510e-2	12.3	73.90	7.000e-3	3.61E+01

[illegible] => Limit violated
[illegible] => Selected Limit

INTERIM

INTERIM

U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 2

SEGMENT PORTION: W Whole Segment

Sample#	B	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000178			% Water by TGA using Mettler	%	None	None	102.1	n/a	17.33	1.578e1	1.655e1	9.36	n/a	n/a	n/a
S96T000178			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000178			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	97.01	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000208			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.818	n/a	n/a	n/a	n/a	5.00e-1	n/a
S96T000259		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	113.2	<4.670e-3	1.57e-02	-2.220e-2	1.900e-2	34.3	74.49	7.00e-3	5.00E+01

=> Limit violated
=> Selected Limit

INTERIM

INTERIM

U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 3(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AB	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000179			% Water by TGA using Mettler	%	None	None	101.7	n/a	6.000	6.760e0	6.380e0	11.9	n/a	n/a	n/a
S96T000179			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000179			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	94.20	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000209			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.240	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000260		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	113.2	<4.670e-3	1.24e-02	1.290e-2	1.260e-2	3.92	75.26	6.000e-3	4.35E+01

=> Limit violated
=> Selected Limit

INTERIM

INTERIM

U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 3(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	AB	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000180			% Water by TGA using Mettler	%	None	None	102.0	n/a	8.620	8.350e0	8.485e0	3.18	n/a	n/a	n/a
S96T000180			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000180			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	94.20	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000210			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.300	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000261		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	113.2	<4.670e-3	1.24e-02	5.400e-3	8.900e-3	78.7	76.79	6.000e-3	5.63E+01

=> Limit violated
=> Selected Limit

INTERIM

INTERIM

U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 4

SEGMENT PORTION: W Whole Segment

Sample#	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000181			% Water by TGA using Mettler	%	None	None	101.7	n/a	8.430	9.430e0	8.930e0	11.2	n/a	n/a	n/a
S96T000181			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000181			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	95.25	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000211			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.620	n/a	n/a	n/a	n/a	3.000e-1	n/a
S96T000262		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	96.00	<1.900e-3	5.534e-02	3.020e-2	4.280e-2	58.7	96.00	3.000e-3	1.62E+01

[illegible] => Limit violated
[illegible] => Selected Limit

INTERIM

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 5

SEGMENT PORTION: W Whole Segment

Sampled	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000182			% Water by TGA using Mettler	%	None	None	102.3	n/a	10.79	1.306e1	1.193e1	19.0	n/a	n/a	n/a
S96T000182			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000182			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	95.25	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000212			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.590	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000263		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	98.80	<1.980e-3	3.24e-02	2.610e-2	2.920e-2	21.5	105.6	2.000e-3	2.10E+01

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[illegible] => Selected Limit

INTERIM

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INTERIM

U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 125
SEGMENT #: 6(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AB	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
596T000185			% Water by TGA on Perkin Elmer	%	None	None	101.5	n/a	23.63	2.369e1	2.366e1	0.25	n/a	n/a	n/a
596T000215			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.680	n/a	n/a	n/a	n/a	5.000e-1	n/a

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INTERIM

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 6(L)

SEGMENT PORTION: L Lower Half of Segment

Sampled	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000172			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.750	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000184			% Water by TGA on Perkin Elmer	%	None	None	101.5	n/a	37.41	2.655e1	3.196e1	34.0	n/a	n/a	n/a
S96T000184			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	1.01e+02	1.301e2	1.155e2	25.2	n/a	n/a	n/a
S96T000184			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	114.9	n/a	68.70	8.850e1	7.860e1	25.2	n/a	n/a	n/a
S96T000265		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	98.80	<1.980e-3	2.82e-02	2.920e-2	2.870e-2	3.48	104.8	2.800e-3	2.21E+01

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[illegible] => Selected Limit

INTERIM

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 7(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S967000185			% Water by TGA using Mettler	%	None	None	102.4	n/a	19.84	1.921e1	1.952e1	3.23	n/a	n/a	n/a
S967000214			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.820	n/a	n/a	n/a	n/a	5.000e-1	n/a

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 7(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	AB	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Bak Rec %	Det Limit	Count Err%
5967000175			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.870	n/a	n/a	n/a	n/a	5.000e-1	n/a
5967000186			% Water by TGA using Mettler	%	None	None	102.4	n/a	15.24	2.001e1	1.762e1	27.1	n/a	n/a	n/a
5967000186			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
5967000186			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	94.55	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
5967000267	Z		Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	106.6	<1.556e-3	1.63e-02	1.180e-2	1.360e-2	38.8	75.74	1.000e-3	1.43E+01

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Page: 8

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 8(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000187			% Water by TGA using Mettler	%	None	None	102.4	n/a	22.27	2.496e1	2.362e1	11.4	n/a	n/a	n/a
S96T000187			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000187			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	97.72	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000215			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.820	n/a	n/a	n/a	n/a	5.000e-1	n/a

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U-109 Safety Screening Report
U-109 (P)

Page: 7

CORE NUMBER: 123
SEGMENT #: 8(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	Af	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000174			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.840	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000188			% Water by TGA using Mettler	%	None	None	102.6	n/a	17.54	2.029e1	1.891e1	14.5	n/a	n/a	n/a
S96T000188			DSC Exotherm Dry Calculated	Joules/g dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000188			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	97.72	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000269		2	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	106.6	<1.550e-3	1.58e-02	1.600e-2	1.590e-2	1.26	76.62	1.000e-3	1.27E+01

=> Limit violated
=> Selected Limit

INTERIM

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 9(A)

SEGMENT PORTION: A Top Quarter of Segment

Sample#	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S9610000189			% Water by TGA using Mettler	%	None	None	101.3	n/a	37.02	3.833e1	3.767e1	3.48	n/a	n/a	n/a
S9610000189			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	30.50	5.730e1	4.390e1	61.0	n/a	n/a	n/a
S9610000189			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	92.44	n/a	19.00	3.570e1	2.735e1	61.1	n/a	n/a	n/a
S9610000216			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.420	n/a	n/a	n/a	n/a	5.000e-1	n/a

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[illegible] => Selected Limit

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U-109 Safety Screening Report
U-109 (P)

Page: 10

CORE NUMBER: 123
SEGMENT #: 9(B)

SEGMENT PORTION: B Second Quarter of Segment

Sample#	B	Alf	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000175			Bulk Density of Sample	g/mL	None	None	n/a	n/a	comment	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000190			% Water by TGA using Mettler	%	None	None	100.9	n/a	17.91	2.386e1	2.088e1	28.5	n/a	n/a	n/a
S96T000190			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[redacted]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000190			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[redacted]	92.44	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a

[redacted] => Limit violated
[redacted] => Selected Limit

INTERIM

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 123
SEGMENT #: 9(C)

SEGMENT PORTION: C Third Quarter of Segment

Sample#	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000176			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.970	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000191			% Water by TGA on Perkin Elmer	%	None	None	100.7	n/a	17.36	1.680e1	1.709e1	3.39	n/a	n/a	n/a
S96T000191			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000191			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	111.1	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000272	Z		Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	101.0	<3.060e-3	1.14e-02	1.140e-2	1.140e-2	0.00	72.96	7.000e-3	5.54E+01

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INTERIM

28-may-1996 10:45:26
A-0002-1

INTERIM

U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 2

SEGMENT PORTION: U Whole Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S9610000298			% Water by TGA on Perkin Elmer	%	None	None	102.3	n/a	15.85	1.964e1	1.775e1	21.4	n/a	n/a	n/a
S9610000298			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S9610000298			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	108.6	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S9610000344		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	86.75	<3.280e-3	6.55e-02	7.130e-2	6.840e-2	8.48	79.59	5.088e-3	1.49E+01

=> Limit violated
=> Selected Limit

INTERIM

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A-8082-1

U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 30L

SEGMENT PORTION: Drainable Liquid

Sample#	R	RF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
5961000280			% Water by TGA using Mettler	%	None	None	102.4	n/a	53.37	5.305e1	5.320e1	0.44	n/a	n/a	n/a
5961000280			Specific Gravity	Sp.G.	None	None	99.14	n/a	1.397	1.398e0	1.397e0	0.07	n/a	1.000e-3	n/a
5961000280			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a
5961000280			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	97.72	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
5961000280			Alpha in Liquid Samples	uCi/mL	-1.0e+00	[illegible]	93.14	<2.290e-7	1.07e-03	<9.276e-4	n/a	n/a	91.97	2.000e-3	1.72E+02

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[illegible] => Selected Limit

WHC-SD-WM-DP-181, REV. 1

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A-0002-1

INTERIM

U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 3

SEGMENT PORTION: W Whole Segment

Sample#	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000282			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.660	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000299			% Water by TGA on Perkin Elmer	%	None	None	100.7	n/a	42.89	4.108e1	4.198e1	4.31	n/a	n/a	n/a
S96T000299			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000299			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	106.6	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000345		2	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	86.75	<3.280e-3	4.52e+02	5.130e-2	4.830e-2	12.6	77.30	5.000e-3	1.89E+01

[illegible] => Limit violated
[illegible] => Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 4

SEGMENT PORTION: W Whole Segment

Sampled	R	AB	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000283			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.620	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000300			% Water by TGA on Perkin Elmer	%	None	None	102.1	n/a	11.69	1.033e1	1.101e1	12.4	n/a	n/a	n/a
S96T000300			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000300			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	101.6	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000346	Z		Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	86.75	<3.280e-3	3.21e-02	3.070e-2	3.140e-2	4.46	78.32	5.000e-3	2.39E+01

[redacted] => Limit violated
[redacted] => Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 5(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000284			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.736	n/a	n/a	n/a	n/a	3.[illegible]e-1	n/a
S96T000381			% Water by TGA using Mettler	%	None	None	99.98	n/a	20.73	2.435e1	2.254e1	16.1	n/a	n/a	n/a
S96T000347	Z		Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	95.78	<3.350e-3	2.43e-02	6.610e-2	3.520e-2	61.9	85.42	7.[illegible]e-3	2.[illegible]e-01

=> Limit violated
=> Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 5(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	Ad	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000285			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.720	n/a	n/a	n/a	n/a	5.800e-1	n/a
S96T000302			% Water by TGA using Mettler	%	None	None	99.59	n/a	19.66	2.316e1	2.141e1	16.3	n/a	n/a	n/a
S96T000302			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	2.74e+02	3.019e2	2.878e2	9.83	n/a	n/a	n/a
S96T000302			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	97.72	n/a	2.15e+02	2.373e2	2.262e2	9.86	n/a	n/a	n/a
S96T000348	Z		Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	95.78	<3.350e-3	2.03e+02	1.950e-2	1.990e-2	4.02	82.14	6.980e-3	3.81E+01

=> Limit violated
=> Selected Limit

INTERIM

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 6(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AB	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000286			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.680	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000303			% Water by TGA using Mettler	%	None	None	99.59	n/a	30.97	2.665e1	2.881e1	15.0	n/a	n/a	n/a
S96T000303			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	2.53e+02	2.700e2	2.614e2	6.62	n/a	n/a	n/a
S96T000303			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	97.72	n/a	1.80e+02	1.922e2	1.861e2	6.61	n/a	n/a	n/a
S96T000349		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	90.96	<9.280e-3	3.63e-02	4.170e-2	3.900e-2	13.8	88.81	1.000e-2	3.21E+01

[illegible] => Limit violated
[illegible] => Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 6(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	AB	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S961000287			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.660	n/a	n/a	n/a	n/a	5.000e-1	n/a
S961000304			% Water by TGA using Mettler	%	None	None	99.59	n/a	36.39	3.557e1	3.598e1	2.28	n/a	n/a	n/a
S961000304			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	1.41e+02	1.517e2	1.464e2	7.24	n/a	n/a	n/a
S961000304			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	97.72	n/a	90.36	9.710e1	9.370e1	7.26	n/a	n/a	n/a
S961000350		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	90.96	<9.280e-3	3.93e-02	3.950e-2	3.950e-2	0.00	87.76	1.080e-2	2.92E+01

=> Limit violated
=> Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 7(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Sak Rec %	Det Limit	Count Err%
S96T000288			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.650	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000305			% Water by TGA using Mettler	%	None	None	99.22	n/a	15.78	1.598e1	1.588e1	1.26	n/a	n/a	n/a
S96T000351	2		Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	90.96	<9.280e-3	1.92e-02	2.156e-2	2.046e-2	11.3	87.76	6.000e-3	3.53E+01

=> Limit violated
=> Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 7(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	AP	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000289			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.700	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000306			% Water by TGA using Mettler	%	None	None	99.22	n/a	17.25	2.084e1	1.905e1	18.9	n/a	n/a	n/a
S96T000306			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000306			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	96.55	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000352		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	90.96	<9.280e-3	1.75e-02	1.250e-2	1.500e-2	33.3	90.56	5.000e-3	3.25E+01

=> Limit violated
=> Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 8(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	B	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000290			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.000	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000307			% Water by TGA on Perkin Elmer	%	None	None	102.1	n/a	55.18	3.401e1	3.659e1	3.38	n/a	n/a	n/a
S96T000353		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[redacted]	90.96	<1.100e-2	2.47e-02	2.500e-2	2.490e-2	1.21	75.26	1.400e-2	5.12E+01

[redacted] => Limit violated
[redacted] => Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 8(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	B	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000291			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.760	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000308			% Water by TGA on Perkin Elmer	%	None	None	99.27	n/a	34.90	3.306e1	3.398e1	5.41	n/a	n/a	n/a
S96T000308			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000308			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	94.55	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000354		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	90.96	<1.100e-2	4.20e-02	4.960e-2	4.620e-2	14.7	79.59	1.400e-2	3.87E+01

=> Limit violated
=> Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 126
SEGMENT #: 9(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	H	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000292			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.680	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000309			% Water by TGA using Mettler	%	None	None	99.12	n/a	35.87	3.441e1	3.514e1	4.15	n/a	n/a	n/a
S96T000355		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[redacted]	90.96	<1.100e-2	4.76e-02	5.960e-2	5.360e-2	22.4	76.53	1.400e-2	2.91E+01

[redacted] => Limit violated
[redacted] => Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 124
SEGMENT #: 9(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	AP	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000295			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.310	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000319			% Water by TGA using Mettler	%	None	None	99.12	n/a	44.54	3.975e1	4.213e1	11.4	n/a	n/a	n/a
S96T000319			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[redacted]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000319			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[redacted]	113.5	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000356		2	Alpha of Digested Solid	uCi/g	-1.0e+00	[redacted]	90.96	<1.100e-2	8.700e-2	8.810e-2	8.755e-2	1.26	81.58	7.000e-3	1.31e-01

[redacted] => Limit violated
[redacted] => Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 1

SEGMENT PORTION: U Whole Segment

Sample#	R	AB	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000410			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.680	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000423			% Water by TGA using Mettler	%	None	None	99.59	n/a	31.04	3.175e1	3.139e1	2.26	n/a	n/a	n/a
S96T000423			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	2.115e1	1.057e1	200	n/a	n/a	n/a
S96T000423			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	98.77	n/a	0.00e+00	1.480e1	7.400e0	200	n/a	n/a	n/a
S96T000498		2	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	91.57	<2.140e-3	1.490e-01	1.510e-1	1.500e-1	1.33	80.36	5.000e-3	9.61E+00

[redacted] => Limit violated
[redacted] => Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 126
SEGMENT #: 2

SEGMENT PORTION: U Whole Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000511			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.740	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000424			% Water by TGA using Mettler	%	None	None	99.59	n/a	25.60	1.514e1	2.057e1	51.4	n/a	n/a	n/a
S96T000424			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000424			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	98.77	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T000499		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	87.95	7.00e-03	3.45e-02	4.190e-2	3.820e-2	19.4	70.41	7.000e-3	2.52e+01

=> Limit violated
=> Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 12B
SEGMENT #: 3

SEGMENT PORTION: U Whole Segment

Sample#	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T800412			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.680	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T800425			% Water by TGA using Mettler	%	None	None	102.8	n/a	15.21	1.295e1	1.487e1	16.2	n/a	n/a	n/a
S96T800425			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T800425			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	101.6	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
S96T800500		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	91.57	<2.140e-3	2.59e-02	1.930e-2	2.260e-2	29.2	99.88	6.000e-3	2.72E+01

=> Limit violated
=> Selected Limit

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U-109 Safety Screening Report
U-109 (P)

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CORE NUMBER: 128
SEGMENT #: 4(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
5961000413			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.740	n/a	n/a	n/a	n/a	5.000e-1	n/a
5961000426			% Water by TGA using Mettler	%	None	None	102.8	n/a	19.72	1.767e1	1.870e1	11.8	n/a	n/a	n/a
5961000426			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
5961000426			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	101.6	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
5961000501	Z		Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	87.95	7.00e-03	4.75e-02	3.480e-2	4.110e-2	30.5	88.00	5.000e-3	1.00E+01

[illegible] => Limit violated
[illegible] => Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 4(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000414			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.630	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000427			% Water by TGA on Perkin Elmer	%	None	None	102.2	n/a	47.87	4.555e1	4.671e1	4.97	n/a	n/a	n/a
S96T000427			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	2.68e+02	1.826e2	2.251e2	37.8	n/a	n/a	n/a
S96T000427			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	115.2	n/a	1.43e+02	9.730e1	1.199e2	37.8	n/a	n/a	n/a
S96T000502	Z		Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	92.77	<7.900e-3	5.76e-02	6.590e-2	6.170e-2	13.4	91.07	1.800e-2	3.06E+01

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[illegible] => Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 5

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S961000415			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.660	n/a	n/a	n/a	n/a	5.000e-1	n/a
S961000428			% Water by TGA on Perkin Elmer	%	None	None	101.1	n/a	35.97	3.406e1	3.582e1	5.45	n/a	n/a	n/a
S961000428			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[redacted]	n/a	n/a	13.79	2.124e1	1.747e1	43.2	n/a	n/a	n/a
S961000428			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[redacted]	113.2	n/a	6.908	1.380e1	1.135e1	43.2	n/a	n/a	n/a
S961000503	Z		Alpha of Digested Solid	uCi/g	-1.0e+00	[redacted]	92.77	<7.900e-3	1.61[illegible]e+02	1.350e-2	1.480e-2	17.6	88.78	1.700e-2	8.7[illegible]e+01

[redacted] => Limit violated
[redacted] => Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 6(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
5961000616			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.670	n/a	n/a	n/a	n/a	5.000e-1	n/a
5961000429			% Water by TGA using Mettler	%	None	None	99.73	n/a	34.45	3.540e1	3.492e1	2.72	n/a	n/a	n/a
5961000506	2		Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	92.77	<7.900e-3	2.29e-02	2.860e-2	2.580e-2	22.1	89.54	1.800e-2	6.47E+01

=> Limit violated
=> Selected Limit

INTERIM

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 6(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	AB	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000517			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.680	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000430			% Water by TGA using Mettler	%	None	None	99.75	n/a	33.26	3.337e1	3.331e1	0.33	n/a	n/a	n/a
S96T000430			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[redacted]	n/a	n/a	1.11e+02	1.161e2	1.136e2	4.13	n/a	n/a	n/a
S96T000430			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[redacted]	100.5	n/a	74.30	7.740e1	7.585e1	4.09	n/a	n/a	n/a
S96T000505		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[redacted]	92.77	<7.900e-3	2.364e-02	1.510e-2	2.040e-2	51.6	87.56	1.900e-2	5.70E+01

[redacted] => Limit violated
[redacted] => Selected Limit

INTERIM

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 7(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	B	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000418			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.670	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000431			% Water by TGA using Mettler	%	None	None	99.73	n/a	30.05	3.927e1	3.466e1	26.6	n/a	n/a	n/a
S96T000506		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	85.54	8.00e-03	2.72e-02	2.100e-2	2.410e-2	25.7	75.72	1.100e-2	3.90E+01

=> Limit violated
=> Selected Limit

INTERIM

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 7(L)

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	Ad	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T000619			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.670	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000432			% Water by TGA using Mettler	%	None	None	99.73	n/a	41.96	3.918e1	4.057e1	6.85	n/a	n/a	n/a
S96T000432			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	1.31e+02	1.344e2	1.328e2	2.49	n/a	n/a	n/a
S96T000432			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	100.9	n/a	77.90	7.990e1	7.890e1	2.53	n/a	n/a	n/a
S96T000507	2		Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	85.54	8.00e-03	3.41e-02	3.240e-2	3.330e-2	5.11	76.02	1.000e-2	3.09E+01

=> Limit violated
=> Selected Limit

INTERIM

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 8(U)

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	AP	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Sak Rec %	Det Limit	Count Err%
S96T000420			Bulk Density of Sample	g/ml	None	None	n/a	n/a	1.660	n/a	n/a	n/a	n/a	5.000e-1	n/a
S96T000433			% Water by TGA using Mettler	%	None	None	99.71	n/a	21.85	2.426e1	2.405e1	1.70	n/a	n/a	n/a
S96T000508		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	[redacted]	85.54	8.00e-03	2.52e-02	2.260e-2	2.390e-2	11.4	75.51	7.000e-3	3.00E+01

[redacted] => Limit violated
[redacted] => Selected Limit

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: U(L)

SEGMENT PORTION: L Lower Half of Segment

Sampled	R	AB	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
596T000421			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.790	n/a	n/a	n/a	n/a	5.000e-1	n/a
596T000434			% Water by TGA using Mettler	%	None	None	99.71	n/a	31.35	3.068e1	3.102e1	2.16	n/a	n/a	n/a
596T000434			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	1.122e2	5.610e1	200	n/a	n/a	n/a
596T000434			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	100.2	n/a	0.00e+00	7.740e1	3.870e1	200	n/a	n/a	n/a
596T000509	Z		Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	85.54	8.00e-03	4.81e-02	6.150e-2	5.470e-2	24.1	79.54	1.100e-2	3.17E+01

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U-109 Safety Screening Report
U-109 (P)

CORE NUMBER: 128
SEGMENT #: 9

SEGMENT PORTION: U Whole Segment

Sample#	R	AF	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
5961080K27			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.440	n/a	n/a	n/a	n/a	5.000e-1	n/a
5961080L35			% Water by TGA using Mettler	%	None	None	99.56	n/a	34.27	3.470e1	3.448e1	1.25	n/a	n/a	n/a
5961080L35			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	[illegible]	n/a	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
5961080L35			DSC Exotherm using Mettler	Joules/g	-1.0e+00	[illegible]	101.6	n/a	0.00e+00	0.000e0	0.000e0	0.00	n/a	n/a	n/a
5961080519	2		Alpha of Digested Solid	uCi/g	-1.0e+00	[illegible]	85.56	8.00e-03	6.42[illegible]	4.800e-2	5.610e-2	28.9	76.20	5.000e-3	1.50E+01

[redacted] => Limit violated
[redacted] => Selected Limit

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SD-WM-DP-181
Rev 001

Due to the large volume, a copy of the data supporting the Data Validation Report and the Sample Data Summary,

Pages 2-61 thru 2-351

is available only from Central Files.

Information regarding this can be found in the "Final Guidance on Administrative Records for Selecting CERCLA Response Actions, OSWER Directive 9833.3A-1, December 1990. Page 9 "Verified Sampling Data".